DEVELOPMENT REVIEW BOARD PANEL A AGENDA

May 08, 2023 at 6:30 PM

Wilsonville City Hall & Remote Video Conferencing

PARTICIPANTS MAY ATTEND THE MEETING AT:
City Hall, 29799 SW Town Center Loop East, Wilsonville, Oregon
Zoom: *https://us02web.zoom.us/j/85843043229*

TO PROVIDE PUBLIC TESTIMONY:
Individuals must submit a testimony card online:
https://www.ci.wilsonville.or.us/DRB-SpeakerCard
and email testimony regarding Resolution No. 411
to Cindy Luxhoj AICP, Associate Planner at
luxhoj@ci.wilsonville.or.us
by 2:00 PM on May 8, 2023.

CALL TO ORDER

CHAIR'S REMARKS

ROLL CALL

Yara Alatawy Rob Candrian
Jordan Herron Clark Hildum
Jean Svadlenka

CITIZEN INPUT

CONSENT AGENDA

1. Approval of minutes of the April 10, 2023 DRB Panel A meeting

PUBLIC HEARINGS

2. **Resolution No. 411. Delta Logistics Site Expansion.** The applicant is requesting approval of a Stage 1 Preliminary Plan, Stage 2 Final Plan, Site Design Review, Waivers, Class 3 Sign Permit, Type C Tree Removal Plan, Standard SROZ Map Verification, Standard SRIR Review and Variance for Development of a 58,116 square foot warehouse / manufacturing building with accessory office space at 9710 SW Day Road, and minor site modifications at 9835 SW Commerce Circle.

Case Files:

DB22-0007 Delta Logistics Site Expansion
- Stage 1 Preliminary Plan (STG122-0005)
- Stage 2 Final Plan (STG222-0006)
- Site Design Review (SDR22-0006)
- Waivers (WAIV22-0001)
- Class 3 Sign Permit (SIGN22-0004)
- Type C Tree Removal Plan (TPLN22-0005)
- Standard SROZ Map Verification (SROZ22-0006)
- Standard SRIR Review (SRIR22-0004)
- Variance (VAR22-0001)

BOARD MEMBER COMMUNICATIONS

3. Results of the April 24, 2023 DRB Panel B meeting

4. Recent City Council Action Minutes

STAFF COMMUNICATIONS

ADJOURN

The City will endeavor to provide the following services, without cost, if requested at least 48 hours prior to the meeting by contacting Shelley White, Administrative Assistant at 503-682-4960: assistive listening devices (ALD), sign language interpreter, and/or bilingual interpreter. Those who need accessibility assistance can contact the City by phone through the Federal Information Relay Service at 1-800-877-8339 for TTY/Voice communication.

Habrá intérpretes disponibles para aquéllas personas que no hablan Inglés, previo acuerdo. Comuníquese al 503-682-4960.

DEVELOPMENT REVIEW BOARD MEETING
MAY 8, 2023
6:30 PM

Consent Agenda:

1. Approval of minutes of April 10, 2023 DRB Panel A meeting

DEVELOPMENT REVIEW BOARD PANEL A
MEETING MINUTES
April 10, 2023 at 6:30 PM
Wilsonville City Hall & Remote Video Conferencing

CALL TO ORDER
A regular meeting of the Development Review Board Panel A was held at City Hall beginning at 6:30 p.m. on Monday, April 10, 2023. Vice Chair Hildum called the meeting to order at 6:34 p.m.

CHAIR'S REMARKS
The Conduct of Hearing and Statement of Public Notice were read into the record.

ROLL CALL
Present for roll call were: Clark Hildum, Rob Candrian, and Yara Alatawy. Jean Svadlenka and Jordan Herron were absent.

Staff present: Daniel Pauly, Amanda Guile-Hinman, Kimberly Rybold, Cindy Luxhoj, Zach Weigel, and Shelley White

CITIZENS INPUT – This is an opportunity for visitors to address the Development Review Board on items not on the agenda. There were no comments.

CONSENT AGENDA
1. Approval of Minutes of the March 13, 2023 DRB Panel A meeting

Rob Candrian moved to approve the March 13, 2023 DRB Panel A meeting minutes as presented. Yara Alatawy seconded the motion, which passed unanimously.

PUBLIC HEARINGS
2. **Resolution No. 413. Precision Countertops Project.** The applicant is requesting approval of a Stage 1 Preliminary Plan, Stage 2 Final Plan, Site Design Review, Waiver, Class 3 Sign Permit, and Type C Tree Removal Plan for development of a 66,000 square foot corporate headquarters and fabrication facility on property located at 25540 SW Garden Acres Road.

   Case Files:

DB22-0011 Precision Countertops
- Stage 1 Preliminary Plan (STG122-0006)
- Stage 2 Final Plan (STG222-0007)
- Site Design Review (SDR22-0007)
- Waiver (WAIV22-0003)
- Class 3 Sign Permit (SIGN22-00011)
- Type C Tree Removal Plan (TPLN22-0006)

Vice Chair Hildum called the public hearing to order at 6:41 p.m. and read the conduct of hearing format into the record. Vice Chair Hildum and Rob Candrian declared for the record that they had visited the site. No board member, however, declared a conflict of interest, ex parte contact, bias, or conclusion from a site visit. No board member participation was challenged by any member of the audience.

Cindy Luxhoj, Associate Planner, announced that the criteria applicable to the application were stated starting on page 2 of the Staff report, which was entered into the record. Copies of the report were made available to the side of the room and on the City's website.

The following exhibit was entered into the record:
- Exhibit B7: Updated arborist report dated April 4, 2023 from Teragan & Associates, Inc.

Ms. Luxhoj presented the Staff report via PowerPoint, briefly reviewing the site's location and surrounding features, as well as the role of the DRB, the application review process, and the conduct of hearing process, with these additional comments:
- The Applicant's request for an annexation and Zone Map Amendment was concurrently reviewed and recently approved by City Council. The City adopted the Coffee Creek Industrial Form Based Code and Pattern Book in February 2018. The Coffee Creek Design Overlay District Master Plan Area and the Precision Countertops site were highlighted on Slide 3.
- The project had been reviewed using all the applicable standards of the Coffee Creek Form Based Code and Pattern Book and complied with the Coffee Creek Review Procedures. Consistent with review procedures of Coffee Creek, City Council had reviewed and held the first reading on the annexation and Zone Map Amendment on March 20, 2023 with the second reading on April 3, 2023. Both ordinances were unanimously approved by City Council. The appeal period for both ended on May 3, 2023.
- Proper noticing was followed for the subject application. Notice was mailed to all property owners within 250 ft of the subject property and published in the newspaper. Additional postings were placed on the site and on the City's website. Public notice was mailed and posted on February 28, 2023, and again on March 21, 2023, in accordance with the revised review process for projects within Coffee Creek. No public comments were received during the comment period for the project.
- For the subject application from Precision Countertops, five of the six requests were objective in nature, as they involved verifying compliance with Code standards. The last request, which involved discretionary review, was for one waiver. (Slide 7)

- The Stage 1 Preliminary Plan proposed a corporate headquarters and countertop fabrication facility, 65,800 sq ft in size with a showroom, office space, storage, and fabrication spaces on roughly the western half of the property. The eastern portion of the site would remain undeveloped at present but with the possibility of future expansion. Operations would primarily include receiving, unloading, storing, cutting, and delivering kitchen countertops. (Slide 8)
- The Stage 2 Final Plan reviewed the function and design of the proposed project, including assuring the proposal met all performance standards of the PDI-RSIA Zone and the Coffee Creek Industrial Design Overlay District and Pattern Book. Based on the proposed use, 62 passenger vehicle parking spaces were required, and the project provided 71, including 15 at the front of the building facing SW Garden Acres Rd and 56 on the building's east side. The utility service and loading areas were located at the back of the building on its east side. (Slide 9)
- Roughly 26.9% of the project site was landscaped with plantings on all sides of the building, along all street frontages, around the perimeter of the parking areas, and in the wayside, required by the Coffee Creek Form Based Code along Garden Acres Rd. The eastern portion of the site was not proposed for development with the current application and would be maintained in its natural state. Landscaping occupied approximately 26.4 % of the west parking area and 18.8% of the east parking area.
- Proposed site improvements met or exceeded City standards for parking, circulation areas, pedestrian connections, landscaping, utilities, outdoor lighting, and other site features. The subject property was bounded on the west by addressing street SW Garden Acres Rd and on the north and east by required Supporting Streets as shown on the Coffee Creek Regulating Plan, Figure CC-1. The Applicant proposed the construction of half-street improvements for the required Supporting Street within a public access and utility easement along the north boundary of the site to the east extent of the site development area.
    - Initially, the Supporting Street would include an interim driveway access on Garden Acres Rd that would transition to a driveway off the Supporting Street when the property to the north was developed in the future. The proposed configuration met the minimum driveway spacing and curb-to-curb distance requirements on the primary frontage and created the planned intersection at SW Garden Acres Rd and the Supporting Street. The Supporting Street would be extended in the future to intersect with a second Supporting Street on the site's east boundary when that half of the property was developed. (Slide 10)
- The traffic study evaluated two intersections, including SW Garden Acres Rd/SW Ridder Rd/SW Clutter St, and SW Ridder Rd at SW 95th Ave. All intersections would remain at Level of Service (LOS) C or better, which exceeded the minimum standard of LOS D. The development would add an additional 43 PM Peak Hour trips, 13 into the site and 30 out, with a total of 294 daily trips. Of the additional trips, 19 new PM Peak Hour trips were estimated to pass through the I-5/Elligsen Rd interchange area, and two PM Peak Hour trips through the I-5/Wilsonville Rd interchange.
- With respect to Site Design Review, the Applicant used appropriate professional services to design structures and landscaped areas on site using quality materials. A metal building was proposed that would utilize several different profiles and textures of insulated exterior

panel in finish colors ranging from Teton and cool zinc gray to dark bronze. The variety of textures and colors would help break up the building planes and would define the base, body, and top of the structure. An 8-ft-high wrought iron fence with access-controlled gates was proposed to secure the loading and utility areas at the back of the building while allowing routine surveillance by police without requiring them to enter and circulate within the secure area of the site.

- The Applicant's landscaping plans complied with or exceeded the General Landscape or Low Screen Landscape Standard along SW Garden Acres Rd and the required Supporting Street. Loading berths would be screened with the High Screen Landscaping or, where located indoors, to the High Wall Standard. Landscaping along the Supporting Street also helped to soften the profile of the building along the street. No trees were proposed along the south side of the building, as numerous mature offsite trees would be retained in that area that reduced the likelihood of newly-planted trees growing or thriving in the understory.
- The proposed industrial wayside was located at the northwest corner of the building between SW Garden Acres Rd and the primary building entrance, providing 600 sq ft of passive recreation space. The site was landscaped on three sides, with the north side opening onto the pedestrian pathway from the sidewalk on SW Garden Acres Rd to the primary building entrance. Plantings were designed to visually define and enclose the wayside while allowing visual access for safety. (Slide 13)
- Class 3 Sign Permit. The Applicant proposed one building sign on the west front façade and two flag poles west of the main building entrance. Two flag poles to a maximum of 30-ft in height did not require a sign permit, and the proposed flag poles met the standard. No monument sign was proposed.
- With respect to the building sign, the Standards required that a sign constructed of individual elements be measured using the summed area of up to three geometric shapes drawn around all sign elements. The Applicant had measured the area of each individual letter rather than using shapes around the elements. Additionally, based on the length of the west façade, the allowed sign area was 120 sq ft; however, the proposed sign exceeded that by 5 sq ft.
- The proposed sign was also within a definable architectural feature; however, it was unclear whether there was a definable space between the sign and the top and bottom of that architectural feature. A condition of approval ensured that the sign would be measured and placed correctly and adjusted as needed to comply with the standards at the time of application for sign approval.
- Type C Tree Removal Plan. Of 22 inventoried onsite trees, 4 were stumps, 2 were dead, 9 in the west portion of the site were proposed for removal, and 7 would be retained on the east side of the site where development was expected to occur in the future. Trees proposed for removal were circled with red-dashed line on and trees to be retained were shown circled in green. (Slide 15)
- Of an additional 57 inventoried trees along the south property boundary, most were offsite, but some had not been determined to be onsite or offsite. All 57 trees were proposed to be retained and protected during construction. The Applicant's Tree Removal Plan included tree protection fencing around the root zone of the retained trees to protect them during

construction. The Applicant proposed planting in excess of 40 trees in landscaping throughout the site, which exceeded the one-for-one mitigation requirement.

- The application included a request for one waiver which involved discretionary review by the DRB. Per the Development Code, waivers must implement, or better implement, the purpose and objectives of the Planned Development Regulations. Further, in cases where the applicant elected to apply for the waiver track, instead of the clear and objective track within Coffee Creek, the Design Guidelines, including Intent Statements and other contents within the Pattern Book would guide approval of the project. The DRB may approve or deny the requested waiver based upon review of evidence submitted by the applicant. The requested waiver related to Table CC-3, Site Design Review, in the Development Standards Table in Section 4.134 (.11) of the Coffee Creek Industrial Design Overlay District Standards for parcel driveway width on a Supporting Street.
- The Applicant requested to waive the parcel driveway width standards for the east site access from the Supporting Street. The driveway was proposed to be 40-ft wide, which exceeded the maximum driveway width of 24 ft with the allowed 20% adjustment. Per the Applicant, the wider driveway was necessary to accommodate truck operations for turning requirements, movement, circulation, and safety considerations, and to provide access to the utility and loading area on the east side of the building. (Slide 16)
- With respect to the waiver criteria, the project was designed to conform to the Regulating Plan with addressing street SW Garden Acres Rd on the west and a Supporting Street on the north property boundary. As the Coffee Creek Design Overlay District Standards did not allow driveways on addressing streets, the site must take access from the Supporting Street. To accommodate truck traffic and turning movements at the east driveway, it must be wider than the allowed width. A narrower driveway would constrain truck-turning movements, leading to congestion on the Supporting Street from wide turns and/or queuing as trucks waited to enter the driveway. The Applicant specifically requested this waiver to allow flexibility in design that responded to site-specific features and conditions of the project.

Rob Candrian confirmed the waiver request was the one issue on which the DRB had latitude and asked what the original reasoning was to limit driveways to 24-ft wide.

Kimberly Rybold, Senior Planner, explained the Code Standards were developed in part to create a more connected, campus-like atmosphere as development occurred within Coffee Creek, so as they were devised, one of the considerations was to attempt to create a more connected area not only for vehicular traffic, but also for pedestrians, cyclists, and workers in the area. Subsequently, the intent behind the Clear and Objective Track and the Waiver Track was recognition that any development application that met all the Clear and Objective Standards could be evaluated administratively while waivers recognized that there might be some types of developments that had different needs and the waivers could allow for that. Development applications coming in for Coffee Creek were for industrial activities more so than they were for office or flex uses, which could also be considered for the area, and industrial activities had more truck traffic, which by nature had a greater turning radius. She believed the initial set of standards had not contemplated that.

Mr. Candrian asked if this type of waiver had been granted to other applicants previously.

Ms. Rybold replied it had been applied for with one other application in the past couple of years.

Vice Chair Hildum called for the Applicant's presentation.

Will Grimm, First Forty Feet, 412 NW Couch St, Portland, OR 97209 stated that he represented the client in the planning and regulatory process and thanked the Board and Ms. Luxhoj for the opportunity to speak on the project. They had been working on the project for approximately a year and a half, and it represented an exemplary model of what they were trying to develop in Coffee Creek while taking into account the progressive requirements and policies for transportation, being well-connected, and creating a network of streets that were walkable and bikeable. Vehicles also could be driven in the area, and there was industrial traffic, but they had paid attention to the area being well-connected. The Coffee Creek policies addressed that as well.

- This would not be a typical industrial area. It would be special, and they understood that through the Form Based Code, their team had addressed that very well. They had saved as many trees as they could and also created more areas of shade and canopy onsite. Landscape design was important, addressing climate action, and open spaces for employee respite was important in the design. Accessibility and circulation, safety, development connectivity and easy access, economic development and job growth, were all priorities for the project. Precision Countertops, as well as the design team, had paid attention to what the employees needed, not only in operations, but by keeping pedestrians away from traffic with clear, accessible, safe pathways and pedestrian spaces. Balancing those circulation systems was important, and it was also part of the Coffee Creek Overlay Objectives and Policies.
- They had worked very hard to get this project right, and one waiver seemed extraordinary, and it was only for the width of access. He believed the Applicant had done a great job, and concluded stating the team was ready to answer any questions Board members had.

Vice Chair Hildum asked if there were any plans for rain water mitigation.

Karl Koroch, TM Rippey Consulting Engineers, stated for stormwater mitigation, there was a large water quality treatment and detention pond located at the west side of the building. Additionally, three, smaller water quality treatment planters were located along the private road, and medium-sized planter located off the northwest corner of the building. Consequently, all the runoff from the site and the Supporting Street was mitigated per City and County standards both in terms of water quality and quantity, or flow rate.

Yara Alatawy asked if the south road was a dead end or connected to Garden Acres Rd.

Mr. Grimm replied that it was solely a fire access road.

Mr. Koroch added that the eastern portion was strictly for fire access coordinated with the fire marshal's office. There was a secondary portion gravel road that extended further west for maintenance of the water quality facility located west of the building. Neither road was connected to Garden Acres Rd.

Mr. Grimm stated that Garden Acres Rd access was restricted, so the southern portion was extended to protect the integrity of pedestrian walkability along Garden Acres Rd.

Vice Chair Hildum called for public testimony regarding the application and confirmed with Staff that no one was present at City Hall to testify and no one on Zoom indicated they wanted to testify.

Mr. Candrian confirmed Board members would be voting on the recommendations and approving them, as they were pro forma and complied with the Code, with the exception of the waiver.

Ms. Alatawy asked if mechanical, electrical, and plumbing was included in the present discussion.

Mr. Pauly explained that was reviewed by the building official afterwards. If there were concerns that impacted the two-dimensional site plan, that could be brought up. Staff would take note of anything else and pass it along to the building official.

Vice Chair Hildum confirmed there were no further questions or discussion and closed the public hearing at 7:19 pm.

Rob Candrian moved to approve the Staff report as written with the addition of Exhibit B7. Yara Alatawy seconded the motion, which passed unanimously.

Rob Candrian moved to adopt Resolution No. 413, including the approved Staff report. The motion was seconded by Yara Alatawy and passed unanimously.

Vice Chair Hildum read the rules of appeal into the record.

Vice Chair Hildum called for a brief recess and reconvened the meeting at 7:30 p.m.

3. **Resolution No. 415. Primary School in Frog Pond.** The applicant is requesting approval of a Stage 1 Preliminary Plan, Stage 2 Final Plan, Site Design Review, Class 3 Sign Permit and Waivers, and Type C Tree Removal Plan for construction of a new primary school on property located at 7151 SW Boeckman Road.

   Case Files:

DB22-0012 Frog Pond Primary School
- Stage 1 Preliminary Plan (STG122-0008)
- Stage 2 Final Plan (STG222-0010)
- Site Design Review (SDR22-0011)
- Class 3 Sign Permit and Waivers (SIGN22-00012)
- Type C Tree Removal Plan (TPLN22-0009)

Vice Chair Hildum called the public hearing to order at 7:30 p.m. and read the conduct of hearing format into the record. Vice Chair Hildum and Rob Candrian declared for the record that they had visited the site. No board member, however, declared a conflict of interest, ex parte contact, bias, or conclusion from a site visit. No board member participation was challenged by any member of the audience.

Cindy Luxhoj, Associate Planner, announced that the criteria applicable to the application were stated starting on page 2 of the Staff report, which was entered into the record. Copies of the report were made available to the side of the room and on the City's website.

The following exhibit was entered into the record:
- Exhibit D7: Additional public comment received via email from John Harrel dated April 6, 2023.

Ms. Luxhoj presented the Staff report via PowerPoint, briefly reviewing the site's history and noting the project's location and surrounding features, with these key comments:
- The primary school site was annexed and rezoned concurrent with the Frog Pond Estates Subdivision, and the park site was annexed and rezoned concurrent with the Frog Pond Meadows Subdivision. The subject site was zoned Public Facility consistent with the Comprehensive Plan designation of public. The new primary school was proposed as envisioned in the Frog Pond West Master Plan. The 12.6-acre property was owned by the West Linn- Wilsonville School District, and the northeastern portion was proposed to be sold to the City for use as a neighborhood park.
- Proper noticing was followed for the application, with the public hearing notice mailed to property owners within 250 ft of the subject property, onsite posting, and publication in the Wilsonville Spokesman. Six public comments were received during the comment period for the project, and an additional seventh comment, entered into the record as Exhibit D7, was received following publication of the DRB Staff report.
  - The comments expressed concerns about building orientation, site access, vehicular and bus traffic on surrounding streets, pedestrian and bicycle safety, noise and light pollution affecting existing residents, disruption to surrounding neighborhoods during construction, operation of the school, and landscaping. Public comments were forwarded to the Applicant so that they may respond during their presentation tonight.
- She reviewed the role of the DRB and the nature of the hearing process to set expectations for everyone participating in the hearing. (Slide 5)
- Four of the six requests for tonight's application for a primary school in Frog Pond were objective in nature as they involved verifying compliance with Code standards. The Class 3

Sign Permit was primarily objective but did include two waiver requests that were discretionary.

- The Stage 1 Preliminary Plan proposed a new primary school and associated improvements on the west portion of the site, as shown outlined in blue on Slide 7, and sale of the eastern portion of the site to the City for a new neighborhood park, outlined in green.
- The Stage 1 Preliminary Plan reviewed the overall development and layout for consistency with the Frog Pond West Master Plan and requirements of the Public Facility Zone. The Phase 1 development would include core facilities such as the commons, gym, library, and food service designed to support 350 students and 35 staff, as well as the eventual total enrollment of 550 students and 45 staff. Phase 1 would result in an approximately 58,138-sq-ft, one-story building, with a future phase adding 11,500 sq ft for a total building size of 69,630 sq ft.
  - The Phase 1 parking lot was proposed on the west side of the building with access from SW Sherman Dr, with a second parking lot proposed to be added in Phase 2 in the northeastern portion of the school site. Bus access was proposed on the south side of the site from SW Boeckman Rd.
  - The Stage 1 Preliminary Plan was consistent with the Comprehensive Plan Designation of public, proposed uses allowed outright in the Public Facilities Zone, and met or exceeded lot dimension and setback standards.
- The Stage 2 Final Plan reviewed the function and design of the proposed project, including consistency with the Stage 1 Preliminary Plan for a primary school and future park site.
  - With respect to traffic and queuing, the Level of Service (LOS) D standard would continue to be met by existing street improvements at the studied intersections with existing, planned, and this proposed development with the exception of the SW Boeckman Rd/SW Canyon Creek Rd intersection (# 5, Slide 9)
  - As discussed in the Transportation Impact Analysis (TIA), the SW Boeckman Rd/SW Canyon Creek Rd intersection operated at over an LOS E. The Wilsonville Transportation System Plan (TSP) already specified intersection improvements as a high priority project as part of Project UU-01.14 for this intersection. As such, the developer's Transportation System Development Charge (SDC) would contribute to the City's fund to implement the improvements and no additional offsite mitigations or conditions of approval would be necessary.
  - The new primary school would add an additional 406 AM Peak Hour trips, including 220 in and 186 out, 247 afternoon Peak Hour trips, including 114 in and 133 out, and 87 PM Peak Hour trips, including 39 in and 48 out. The proposed development was expected to generate one new PM Peak Hour trip through the I-5/SW Wilsonville Rd interchange area, and one new PM Peak Hour trip through the I-5/SW Elligsen Rd interchange area.
    - Additionally, eight school buses were included in the analysis of the transportation system. The eight buses would add 16 trips, including eight in and eight out in the AM and afternoon Peak Hours at the bus access on SW Boeckman Rd.
    - As discussed in the TIA, the main entrance and parking lot provided a drive aisle loop, as shown with red arrows on Slide 10. The loop would feature a student drop-off and pick-up curb striped at approximately 300 ft long with the potential to

accommodate up to 12 vehicles at a time for student loading when considering 25-ft of space per vehicle.

- As described in the Applicant's narrative, queuing of vehicles for student drop-off and pick-up could vary greatly depending on site layout, efficiency of parking-aid staff, and length of queuing area versus length of actual curbside loading area. The long curbside loading area and availability of additional queuing space through the parking lot, which totaled over 750 ft, was designed to prevent vehicle queues from spilling out of the site onto SW Sherman Dr.
  - The bus access provided queuing and loading areas for school buses and separated parent pick-up and drop-off from school buses. There was approximately 275 ft of curb space for buses, which had the potential to accommodate up to five buses at a time when considering 50 ft of space per bus. The school had estimated a maximum of eight buses would be needed for the school. Therefore, the TIA recommended that bus arrival and departure times be coordinated to avoid having all buses in the loading area at the same time or additional curb space be provided to accommodate all eight buses at once. (Slide 11)
- The Street Demonstration Plan in Figure 18 of the Frog Pond West Master Plan was an illustrative layout of the desired level of connectivity in the Frog Pond West neighborhood and was intended to guide, not bind, and allowed for flexibility provided that overall connectivity goals were met.
    - As shown in the portion of Figure 18 on Slide 12, the block size and shape, access and connectivity of the proposed school site complied with the Street Demonstration Plan for SW Sherman Dr as established when the Morgan Farm Subdivision was constructed and for SW Brisband St. The Applicant proposed an alternative to the pedestrian connection between SW Brisband St and SW Boeckman Rd, as shown outlined with a red-dashed line.
  - The Applicant proposed an alternative pathway from the SW Boeckman Rd sidewalk that traveled north along the bus lane to a path that meandered north along the eastern side of the school building to southwest Brisband St. That path, as indicated by the red-dotted line at the bottom of the illustration, was mostly within the fenced portion of the school property. (Slide 13)
  - For security purposes, the gates and the perimeter fence would be locked during school hours but open to the public at other times to facilitate access to the path and school grounds. During school hours, the pedestrian route would continue along the bus lane outside the perimeter fence to the front of the building and then onto the northwest corner of the site along SW Sherman Dr, shown along the top of the illustration on Slide 13. It would connect to SW Brisband St, thus completing the intent of the Frog Pond West Master Plan while addressing school security.
    - Staff would like to note that an alternative path along SW Wehler Way and through the city park to the east, which would connect to the path on the school site, would also be available in the future when the park was completed.
- Fence. The school site had frontage on SW Boeckman Rd, and as a result the development standards specific to Frog Pond West that required a wall and landscaping applied. The Applicant's plan showed a brick wall, with a black metal top railing, as an

extension of the wall and fence to the east at the southeast corner of the site. The wall was proposed to stop at the east edge of the bus entry driveway to improve visibility to and from the school site and to emphasize the native plantings and storm water features at the southwest corner of the property. (Slide 14)

- Bicycle Parking. The TIA assumed 22 classrooms in a 60,000-sq-ft building at full build out of Phases 1 and 2 of the new primary school. That resulted in the need for 97 bicycle parking spaces; however, the Phase 1 floor plan included 58,103 sq ft and 16 classrooms, with an additional 11,500 sq ft of floor area and eight more classrooms at full build-out of Phase 2, which was 9,630 sq ft and two more classrooms than anticipated in the TIA. Thus, the Applicant's plans did not provide adequate bicycle parking to comply with the Code standard. To address the discrepancy, the Applicant provided 52 bicycle parking spaces in Phase 1, highlighted in blue on Slide 15, and a condition of approval required the Applicant to demonstrate compliance with the standard prior to temporary occupancy of the school building.

- The scope of Site Design Review included review of the design, architecture, location, and context of the building and site improvements such as landscaping, lighting, exterior colors and finishes, and signs for consistency with the Stage 2 Final Plan and Code standards.
  - Because the school building and other site improvements were well within the site with significant building setbacks on all sides, the General Landscape Standard was required. The exception to that standard was the parking area along SW Sherman Dr, outlined in red on the bottom image on Slide 16, which must meet the low screen standard to buffer and screen the parking from the adjacent residential area.
  - To meet the requirement, the Applicant proposed various height and opacity shrubs and ground cover along the west and south perimeters of the parking area. Additionally, trees would be planted in the parking area and as street trees as shown in the right-of-way section on Slide 16. The shrubs, in combination with the layers of trees and other landscaping between the street right-of-way, parking, and the school building, were designed to provide the required buffer between the site, residences to the west, and SW Boeckman Rd.
- Class 3 Sign Permit. The Applicant proposed one building-mounted sign, one freestanding monument sign, and three flagpoles on the school site. The building sign had the school name mounted on the front canopy of the west side of the building near the main entrance. The monument sign, with an electronic reader board, was proposed on the south side of the driveway on SW Sherman Dr. The three flag poles were proposed to be located near the main entrance on the west side of the building. (Slide 17)
  - The proposed signs were proportional to and compatible with development in the Public Facility Zone. The electronic reader board and the third flag pole required waivers, which would be discussed later in the presentation under discretionary items.
- The Type C Tree Removal Plan reviewed inventoried trees on the site which were proposed for removal or retention and replacement and mitigation. There were 63 trees inventoried for the proposed development on the Applicant's tree protection and removal plan. Inventoried trees did not include those on the future city park portion of the site that would not be impacted by development on the school site.

    - The trees included a variety of fruit and ornamental trees, as well as a Cottonwood, Birch, and Douglas Fir planted around the existing house and out buildings and were not significant native-grown trees. Of the 63 trees, 47 were proposed for removal in Phase 1 construction, and 16 preserved. Of the 16 preserved trees, 13 were proposed for removal in Phase 2 during future construction. The Applicant proposed planting in excess of 90 trees on the site and as street trees, exceeding the required one-for-one mitigation requirement.
- The Applicant had included a request for two sign waivers, which involved discretionary review by the DRB. As stated, waivers must implement, or better implement, the purpose and objectives of the Plan Development Regulations. The Applicant requested two sign waivers, one to allow a third flag pole and one to allow an electronic reader board in the proposed monument sign.
    - With respect to the flag pole waiver, two flag poles up to a maximum of 30 ft in height on a site were exempt from sign permit requirements; however, the Applicant had proposed three flag poles to fly the required school district flags and had requested a waiver to the sign permit requirements for the third flag pole.
    - In response to the waiver criteria, the Applicant had stated that the proposed configuration would allow three flags to be displayed properly when half-mast protocol was in effect, and each pole would be adequately lit from above. The third flag pole was complementary in design and placement to the two allowed by the standard while meeting the state requirement for flag display. There was no evidence that the proposed flag pole would negatively impact traffic or general public safety.
    - Although changeable copy signs were listed as prohibited signs in Section 4.156, a waiver could be granted to allow an electronic reader board so long as specific criteria were met regarding automatic dimming technology, luminance of the sign, and copy hold time. The proposed electronic reader board design was complementary to the monument sign and school building and complied with waiver criteria with respect to display, illumination, copy hold time, and dimming technology.
- The Applicant requested a modification to two conditions of approval. The District had requested that Condition PFB 2 of the Engineering conditions be modified to address their concern that a development agreement or intergovernmental cooperative agreement may take longer to negotiate than the issuance of permits. As the primary driver of said condition being tied to permits was the Infrastructure Supplemental Fee and Boeckman Bridge Fee, the City's Development Engineering manager had proposed to revise the condition as shown on Slide 20.
    - The Applicant also requested a modification to Condition of Approval PFB 10 of the Engineering conditions to allow bus and service vehicle use of the driveway off SW Boeckman Rd that was limited by the condition for use only by school buses. As explained by the District, the modification would ensure access to the school building and landscaping areas for maintenance. Such maintenance activity occurred periodically, was low in volume, and coordinated by the District to avoid conflict with buses and high traffic times, including arrival and dismissal. As shown on Slide 21, the requested revision allowed the requested maintenance and was accepted by the City's Development Engineering Manager.

Vice Chair Hildum asked if Sherman Rd was built well enough to handle the additional traffic.

Amy Pepper, Development Engineering Manager, replied yes, it was designed as a local street, and as part of the traffic study, they analyzed future traffic flow on Sherman Dr. Scott Mansur with DKS was present to provide additional information about the Traffic Analysis or access off Sherman Dr/Boeckman Rd if needed.

Chair Hildum asked about traffic signaling at Sherman Dr and Boeckman Rd.

Ms. Pepper replied that the Traffic Analysis did not indicate that. Additionally, the Frog Pond West Master Plan analyzed intersections throughout the Frog Pond West as the area developed and thus far no traffic signal or roundabout was anticipated at that intersection.

Rob Candrian asked why the bus area was designed to accommodate only five buses when eight would be in service.

Ms. Luxhoj deferred the answer to the Applicant.

Vice Chair Hildum called for the Applicant's presentation.

Remo Douglas, Capital Construction Program Manager, West Linn-Wilsonville School District, stated that he oversaw all construction undertaken by the District. He thanked City Staff and the DRB for taking the time this evening to hear the presentation and acknowledged their responsibility to uphold the City Code. He was confident that with the conditions of approval issued by Staff that the subject development complied with Code and would benefit the community for many years. He thanked the community for their participation in the Applicant's outreach over the last year. Two community meetings were held at a local school where many questions and concerns were addressed. Online surveys were taken afterwards, and he had personally read every single survey response. Additionally, he engaged directly with folks who had called or emailed and conducted site visits to speak with people in the neighborhood. He presented the Applicant's presentation via PowerPoint with these comments:

- Staff had done an excellent job speaking to the design of the project, but there were a few details specific to how the Applicant had addressed the feedback and concerns received from neighbors over the last year, and he wanted to emphasize those points.
  - Slide 2 provided an illustration of how the Applicant would buffer the neighborhood to the west from the school site. The square footage was deliberately over the required amount due to a conversation with some neighbors at the site who stated that was their primary concern. Consequently, the parking lot was set back a bit more than necessary and the plantings went well above and beyond the required amount.
  - The Elevation View in the lower right corner of Slide 2 showed a vertical view of what the screening would look like from the street. There were shrubs and trees of varying heights to mask headlights and to provide visual interest. In addition to the required

street trees, two different types and sizes of trees were staggered as indicated by the bluer circles along with the larger green balloons.
    - Per community feedback, the view of a parking lot and/or commercial facility across the street, regardless of being allowed as a public facility zone, being typical for a school, being set back more than requirements, the Applicant wanted to go above and beyond for the neighborhood and contemplate how they could do things that were practical and effective, did not detract from the use of the school, and benefitted those neighbors.
    - They were going to be neighbors for a long time, and the District sought to be good neighbors from the start. There were a number of different plantings of differing types and sizes between the parking lot and neighboring residences and even more so between the school facility and neighboring residences.
- The traffic engineers on projects with the City of Wilsonville worked for the City. The District paid a fee, and they provided feedback and reports. The District had complied with every request made by both Engineering Staff and the traffic engineers hired by the City to perform that analysis.
    - He was confident the buses used by the District and the spacing provided for them, was adequate to fit all eight buses on the site. The assumption in the report was one of longer buses than used by the District and longer spacing in between them. The District had a bus service company that they had been contracted with for a long time that understood very well the type and size of buses the District used. Although bus types and sizes differed for various sectors of the student base, he was absolutely confident that all buses could arrive at a single time. Regardless, there were a number of schools in the District that required multiple shifts of buses, and that was coordinated smoothly with their bus company.
    - Each blue dash on Slide 5 indicated a vehicle, and each vehicle was assumed to be large so as to give a clear understanding of the minimum efficiency a parking lot could have. The combination of over 300 ft of an active pick-up/drop-off zone with a total of 700 ft of queuing would move the vehicles through very efficiently. Additionally, when the school was completed, there would be multiple access routes to the driveway via Brisband St. from the north and Boeckman Rd from the south.
- As conditioned under the project, the Applicant would be completing the Brisband St connection to the east and the rest of the neighborhood, so the neighborhood would no longer be landlocked.
    - The Applicant had worked hard over the last year and half to contemplate what sort of facility would be most appropriate for the location and the neighborhood it was being nestled into. They had quickly settled on a single-story school as they had the property to accommodate that. Although that used more of the property for the building, it dramatically changed the impression of the facility from the neighboring properties.
    - As Staff had noted, the proposed school could not take all of its parking off of Boeckman Rd due to traffic concerns, and they needed to split the traffic across the different frontages of the site. The City's traffic consultant could address that further if necessary. It was most effective and practical for Phase 1 of the school to include the passenger vehicle parking and drop-off area off of Sherman, and as noted by Staff during their

presentation, the additional parking for Phase 2 would be located in the northeast corner of the site and was expected to be staff parking with footpaths available from the parking lot into school. That would be constructed at a much later date.

- Bicycle parking had initially been shy a few spaces, but the Applicant had engaged with Staff in the interim and since incorporated additional spaces into the design. The project was up for bids tomorrow, and the contractors would be bidding it with the appropriate Code-compliant count. During the building permit process, that count would be evaluated and confirmed by Staff.
- Student and staff safety was also one of the community's main concerns. The enclosed area with fencing was a deliberate design feature with the north/south path specifically addressed. They had contemplated whether or not the school should be locked for the school day or not, and felt that particularly during out-of-school hours the meandering path through the meadow-like area along the eastern part of the property would be a much more pleasant experience for community members as they traversed it.
- The front entry plaza was a stark contrast from what might have been seen in the past of large asphalt areas with no plantings. The proposed school would feature several large, planted areas with trees and shrubs. The storm water from the building would be able to cascade through a water feature that meandered through the front plaza entry. The building itself was low and a single story with a modest brick and wood-like fiber cement siding for a complementary design to the neighborhood.
  - Slide 8 featured the view going into the entry canopy from the parent drop-off space. That entryway would help guide folks to the correct front door. The entry plaza area featured a number of trees. The gymnasium was to the left of the entry plaza, and the doors could be opened up during events to allow for congregating and mingling in the outdoor plaza prior to entering.
  - The classrooms wings featured simple, residential-style gabled roofs with very modest and tasteful materials complementary to the surrounding neighborhood. Many of the surrounding homes were two-story and would be taller than the vast majority of the school.
  - The covered play area to the north side of the building was also as low as possible and featured tables for students who did not want to play games such as wall ball and basketball but were interested in less kinetic activity. To the right of that was the playground area.

Rob Candrian asked why the bus area was built to accommodate five buses and not the eight that would be utilizing it.

Mr. Douglas replied that it would accommodate all eight buses. He noted that the traffic study contemplated standard-sized buses well above the size the District actually used and included a greater distancing between the buses when parked. It contemplated parking all the buses simultaneously, as that was the most efficient manner of handling that, although some existing schools used two shifts.

Vice Chair Hildum understood the school would accommodate 550 students when fully built out, but he did not see a whole lot of places for outdoor recreation other than two basketball courts and a small meeting area. He asked if there was any place else.

Mr. Douglas displayed the Site Key Plan (Slide 6) noting there was a large, typical playground. They had worked with a landscape architecture firm and their civil engineers on a lot of the outdoor design and had a starter version of the play equipment in the current Plan. In the northwest portion of the site, top left of Slide 6, there were a number of white circles in a shaded, irregular shape that represented the play equipment for a starter school of approximately 350 students. The shaded area to the right was additional hard surface area. Some of that area would remain dedicated to sports such as hopscotch, four square, and basketball as well as some additional play equipment.

- Additionally, this would be the first of the District schools in Wilsonville to have fully accessible surfacing, and they had coordinated with the City Parks Department about their experience with different materials in lieu of wood chips. The Applicant had also met with students many times over the last year, and they had very particular descriptions of their experience with the wood chips during playtime. Consequently, the Applicant would be utilizing a synthetic turf product that was approved for playground use with padding underneath to ensure that all students had access to the space.
- The large blank area in the upper right of Slide 6, the northeast portion of the property, was lawn for playfield. Generally speaking, the District deliberately did not demarcate specific sports fields at primary schools because they wanted the community and younger families to be able to utilize the large, open field with regularity. The District tucked the neighborhood primary schools in there with the hope of drawing the community. Additionally, the City was contemplating a park just to the east of the school, and rather than inviting regular, scheduled, competitive sporting events at the primary schools, the District preferred to keep them open and less formal so that families with young children were able to use them for free play. There was a significant area there, and it was consistent with many of the District's primary schools.
- In recent years, the District had found that more and more ball sports were not as popular as they had been in the past and a lower percentage of students liked to play them. Presently, there was more interest in taking a walk through the trees or sitting as a small group and hanging out. As such, the District was looking to do more of a savannah-type space along the eastern side of the school that featured native grasses and oak trees, that was aesthetically pleasing when looking in from the neighboring properties, and useful to students who were less interested in playing ball games.
- Off the southeast corner, there was a school garden with a number of garden beds. The District had worked closely with Crest Environmental Center in Wilsonville on designing the garden. It was the best and most effective primary school garden in the District and would serve as the standard for future programs that would be revitalized and expanded. It also had much-improved accessibility. Additionally, there was a gymnasium in the northern part of the school, so the Applicant believed recreation was well accounted for in the current design.

Mr. Hildum asked Mr. Douglas if he could speak further about onsite security precautions.

Mr. Douglas explained that as a part of the previous bond program in 2014 the Board [47:10] had dedicated an initial investment on security to enter the modern era on school security. With those funds, the District had hired an internationally recognized security firm who had done an assessment of all the schools in the District and provided a number of recommendations. The District had implemented a number of those recommendations through that first program at two new schools and two additional schools. The Board saw the great work the District was doing and allotted additional funds to secure two more schools.

- Working with a citizen committee in the leadup to the current 2019 bond program, the District ascertained the four things that were most important to citizens for improving school safety. Those items included intrusion-limiting, aka "bulletproof," glass, a type of specialty glass product that was very resistant to intrusion. For security purposes, the exact locations and performance of said glass was not something the District discussed, but it was fairly comprehensive at the newly built schools.
- The next layer of the system was the secure entry vestibule, which allowed folks to enter inside from the outdoors but prevented them from progressing further into the school without being buzzed in first by the administrative staff in the front office to sign in, be photographed, and receive a name tag. Once that process was complete, the visitor would be allowed entry into the rest of the school.
- The third element was security lockdown hardware. Following this upcoming summer, all schools in the District would have the same classroom lockdown hardware. All staff members would receive a fob with a keypad. Within 15-20 seconds of entering a code into the fob, all classrooms in the building were secured with an audible tone going out into each classroom prior to the doors automatically locking. Teachers were encouraged to open their classroom doors during the day as the flow of children from the open areas was central to several classrooms, but everyone in the school was notified simultaneously. Staff was trained to usher all students into a classroom, regardless of whether or not it was their student, and to shut the door.
- The fourth security measure was classroom lockdown curtains, simple light gray curtains on a hospital-curtain-style track that were easy to grab and sweep across multiple windows quickly and much easier to operate than individual blinds or curtains with pull-cords. When not in use, they remained to the side of the room and out of the way, but if a lockdown was triggered, staff could usher children into the classroom, slam the door, and quickly pull the curtain aside. That program was being finished this year for all schools in the District.
- Additionally, in the last year, there had been a lot of conversation about the playgrounds and securing those, so the superintendent and many others were currently talking to the schools about the next step of securing the perimeter of the playgrounds. The subject primary school was the first school to be designed with that in mind. There were a lot of gates around the school. They wanted the community to come, and they were most welcome. The community paid for these things and should be able to use them outside of school hours, but every day when the school bell rang, custodial staff would secure every one of the gates and then unlock them when the afternoon bell rang. The District wanted to

see lots of pedestrian and bicycle access. When a school was surrounded by homes on all sides in a local neighborhood, a lot of that activity usually occurred.

Mr. Candrian noted that a lot of the comments that had come in via email talked about the traffic that would affect the neighborhood. He understood the main drop-off and pick-up would share one entrance on Sherman Dr and be funneled to the same place. He asked why the decision was made to have both pick-up and drop-off traffic on one street and using the same driveway.

Mr. Douglas replied that the decision had been made after a conversation with the City's Traffic Engineering Consultant. In addition to the pick-up/drop-off area, there were a lot of marked crossings to ensure safe pedestrian access when crossing Sherman as well as additional crosswalks on other streets. Many times, congestion stemmed from driver confusion or vehicles coming from different directions, particularly in parking lots. The simple linear design of the subject school's pick-up/drop-off area maximized queue distance and prevented vehicles from being able to jump the queue, which could happen if another driveway accessed the area, causing a traffic jam in the parking lot and a backup onto Boeckman as vehicles were coming from two different directions. Under guidance from the City's Traffic Engineering Consultant, the Applicant agreed that the current design made a lot of sense.

- The primary source of congestion at any school in the District was a pick-up/drop-off location shared by buses and family vehicles. Consequently, on day one of meeting with designers, he advised them to separate bus and vehicle zones as sites did not flow well when they were together as evidenced by a long history of seeing that and having projects come in requesting to fix that where it had been designed in the past.
- The Applicant was confident, based on information from the City's Traffic Engineering Consultant, that the queuing distance was long enough to accommodate the anticipated vehicles. He explained that regardless of queuing distance, if only two cars at a time could exit passengers, that created the bottleneck. Consequently, the City had conservatively estimated 12 vehicles exiting passengers, which was plenty. In reality, there would be many more at a time, but the combination of that and the queuing before that would lead to a successful pick-up and drop-off without straggling out into the neighborhood.
- The Applicant had also worked closely with City Engineering and the Traffic Engineering Consultant to address bicycle and pedestrian traffic and had included marked crossings everywhere they had asked for. The Applicant believed they had done everything that the Code, Staff, and consultants had asked of them.

Mr. Candrian asked if there had been any discussion regarding limiting left turns heading south onto Sherman into the pick-up/drop-off area in the morning to limit congestion backing up onto other neighborhood streets. He believed a time-limited traffic restriction that would force all pick-up/drop-off traffic to head in the same direction could smooth the flow of traffic.

Mr. Douglas replied that he was unable to recall every specific conversation that occurred, but ultimately the requirements were guided by analysis of nearby intersections, and the consultants were very confident that the Applicant was well within the requirements related to

the pick-up/drop-off area. They did not have a final version yet of what the attendance boundary would be for the school, but the idea was to draw as many people from right near it as possible. As such, vehicles would be coming from different directions and they would, by the nature of where they were trying to go, disperse in different directions. He believed the traffic engineering reflected that notion.

Vice Chair Hildum called for public testimony regarding the application and confirmed with Staff that no one was present at City Hall to testify and no one on Zoom indicated they wanted to testify.

Becky Fromhart stated she had supplied her address on the card. Her main concern, as had also been expressed by Mr. Condrian, was the location where traffic would enter the school. She asked why that was not flipped so that the entrance was on a different street and understood the City's Traffic Engineers would have the answer to that. The main draw to the proposed school would be from the east, yet the entrance was on the west side of the school. She mentioned the limited turn concept for accessing the pick-up/drop-off zone and noted that vehicles would be coming from Brisband during the construction of the building. She thanked the Applicant for the trees on the west side and asked if they were all deciduous and would lose their leaves for half the year and asked if the proposed signage met the necessary requirements. She reiterated that her main concern was why the building orientation had not been flipped so that vehicles entered from the opposite direction since the main draw would be from the east side.

John Boyle stated that he lived in Morgan Farm, adjacent to the school property. He also thanked Mr. Douglas for adding the trees. He understood that every City standard was met for traffic flow, but 550 kids and 8 buses meant a couple hundred parents at 7:30 in the morning and 3:00 in the afternoon traveling down Sherman Dr., which was already difficult for residents and there were only 80 homes in Morgan Farm. Sherman Dr. was the only primary street into and out of their neighborhood presently, and a couple of hundred cars twice a day, plus other vehicles that already used the street, would basically shut off the neighborhood and make it extremely difficult for residents to get in and out.

- The residents wanted to be good neighbors also, and loved the design of the school, but felt that if the school was flipped to face east, it would give access off of Willow Creek Rd and Brisband St. Willow Creek was already a great road with trees down the middle, could easily accommodate the traffic, and did not go through a neighborhood the way Sherman Dr. did. He noted that if the main entrance did ultimately remain on Sherman, now was the time to move the school further east and widen Sherman Dr. If that was not done right now, the school would be built, widening Sherman Dr. would be impossible, and residents would always have to deal with the problem of traffic on Sherman entering the school parking lot. There was one chance to build this school, and there was one entrance into it, and he wanted all points to be taken into consideration.
- He questioned the need for an LED sign for an elementary school from an energy standpoint and noted that the proposal to place the sign on Sherman Dr. confirmed that that was

where most of the traffic was anticipated to be. He asked that the sign be moved to Boeckman Rd in the event the DRB approved the waiver.

John Harrel stated that he lived in Morgan Farm and his address was on the card. He appreciated all the work that had gone into the school. It was absolutely beautiful and stunning architecturally. It was fantastic and would outlive everyone in the room. However, he agreed with Mr. Boyle that this was the one chance to make any changes. He understood there was a lot of engineering that went into the construction of the school, but it felt like a lot of it was done by City Planning high-level stuff and not so much consideration given to the residents who would live across the street from it. He doubted the school orientation would be flipped, but widening Sherman Dr. would be fantastic.

- The LED sign on the corner of Sherman Rd. made no sense but fully explained why Morgan Farm did not get a neighborhood sign at its entrance. He had wondered why it did not, and it all made sense to him now, as he had lived in nice neighborhoods before.
- He had not heard anything previously about outside events, and understood that schools were always looking to money-making events to fill the coffers, but those sounded like the kinds of activities that had not been discussed. He appreciated that the school had no sports fields so close to so many homes. He felt like there needed to be some parameters put in place for outside events, not so much the type of event but the regularity in which they occurred because he was concerned about traffic.
- With 550 students and only 8 buses, a whole lot of vehicles would be coming through the neighborhood. He asked if the safety of the children who actually lived in the neighborhood, as people came en masse from outside of it to the school, had been taken into consideration. He believed it was a little bit ironic. He noted the Sherman Dr. entrance was stuck in his craw, but he appreciated everybody's time.

John Ciepiela stated he lived in Morgan Farm and his address was on the card. He agreed with many of Mr. Boyle's and Mr. Harrel's concerns. He believed the size of the entryway was short-sighted when looking at the future expansion north of Boeckman Rd. Many residents in the neighborhood had traffic concerns. They all went for walks, crossed Boeckman Rd, and thought about their children as it related not only to the speed at which most people drove on Boeckman, but also the multiple intersections within close proximity to Sherman Dr such as Laurel Glen St. and Willow Creek Dr., all with current or planned heavy residential traffic and no traffic lights or high-visibility crosswalks in place. The claim that there were multiple access points from Brisband St. was not reality. The majority of traffic would come from Boeckman Rd. regardless of what the traffic study stated.

- His two and three-year-old children would be the first class to commute on foot from their home. The current upgrade to Sherman Dr. did not give him or other parents with young children confidence regarding their daily commutes. If the school entrance must face Sherman Dr., he believed that future considerations of fundings on STC that were alluded to earlier should be taken now. Wider boulevard construction with increased radiuses off of Boeckman should be considered to accommodate the safer car and pedestrian movements from and adjacent to the streets within the neighborhood and off Boeckman Rd. similar to Willow Creek Dr.

Kathy Wiebe stated she lived on Chestnut Ln, right in the middle of Morgan Farm, and her address was on the card. She was concerned about parking as there were already no parking signs on every other street. In front of her home, there was parking available, but not in front of Mr. Boyle's home. Half of each street was a no parking zone. One night, she had to drive around the corner to Bunco and walk in the rain as there was no parking for Bunco. There was also no parking on Woodbury Lp.

- She was also concerned about fire. Her daughter's brand new home in Happy Valley had burned down to the ground a few years ago. It only took the fire department four minutes to respond, but the home burned down in that time because of difficulty getting into and out of that neighborhood. She was concerned for her own neighborhood in that regard as that could happen to anybody.
- Boeckman Rd was already a busy street. Many people in the neighborhood went for walks and crossed Boeckman Rd. She asked if there would be a stop light or crosswalks to allow children to cross Boeckman Rd.

Kameron Beeks asked where the primary laydown area would be for the development of Brisband St and where the primary point of entry would be for construction the traffic.

Duane Fromhart, Jennifer Harrel, and Cort Maleike had signed up for public testimony, but stated their comments had been addressed. Brianna Gelow was not available via Zoom.

Vice Chair Hildum called for the Applicant's rebuttal.

Mr. Douglas thanked the community members who testified and complimented them on conducting themselves politely and professionally. There could be tension and passion in regard to these types of things. He was a homeowner himself and was empathetic. For most people their home was their largest investment, where they had their families, and they cared deeply about it. The Wilsonville community showed repeatedly with these processes that they could conduct themselves extremely professionally and engage in meaningful conversation. It did not matter how folks approached it, it did not change how they responded, but it did make it a great deal more pleasant to go through the process, and he would try to hit on all of the points that had been brought up.

- As he understood it, per City Code and the applicable traffic requirements, there could not be a driveway off Boeckman Rd, and that precluded concentrating the parking lot efficiently down in the south or east of the property. Furthermore, per the Site Plan, while the parking lot was buffered, it was in relative proximity to homes to the west. It was across a lit public street as opposed to the homes on the east side of the property which shared a fence line with their side and backyards. Additionally, it would create a lot more asphalt impervious surface attempting to get a driveway all the way from Brisband along the east side of the property, and it would divide the school and park property from each other with a traffic lane that would need to be kept open at all times, hampering the ability to secure the site. Consequently, there was a concurrence of many factors that drove the decision to push the parking lot to the west side of the street.

- Partially in response to the community feedback, the Phase 2 parking that would be built when the school expanded to a larger capacity would be in the northeast corner. The Applicant hoped that outside of school hours it would be useful to park visitors and folks coming to use the playground and to reduce the amount of parking within the neighborhood due to activities associated with the school and the park. It would also help to balance the parking at the site even though the emphasis on the parking and drive access was on the west side. The Applicant believed the current parking configuration was the most correct in terms of use of the facility, efficient use of the space, and compliance with the City's traffic requirements.
- He was unaware whether or not each individual tree was deciduous, but there was a very short list of species allowed by the City for street trees, and he believed they might just be. He noted Landscape Architect Ann could provide more information. He understood that the larger of the different-colored balloons on Slide 4 were public street trees, and they were very limited by Code what types of trees those could be. The smaller, darker green trees were trees on the District site, and he had explicitly directed that they all be broad-leafed, year-round trees to maximize the coverage. If it provided comfort to the Board and the community, the District would happily accept an additional Condition of Approval to ensure that that happened.
- There were a number of comments related to Willow Creek Dr. While it could be accessed by extension off of Brisband St., there was not a significant difference in distance from the site, whether from the east or the west, according to the Traffic Analysis that was performed. Everything traffic-related surrounding the site was fully compliant with Code as verified by the City's Traffic Engineer, who he believed was present to answer any technical detail questions about that. To his knowledge, there were no issues with potential discrepancies with Code related to traffic or access to the site.
- Earlier, a single driveway was mentioned and it was explained that that was efficient for maximizing queuing and processing of vehicles through the site.
- He noted that in 2023 LED signs were a common part of everyday life and the District was trying to move beyond the change-out signs with large plastic letters. It was less about the energy efficiency, although that was an added benefit, but more about the ability to update the sign remotely from inside the school, which was especially convenient during inclement weather. Should the City reject the waiver request, they could revert back to the change copy sign, although it would not change the illumination level experienced by the neighborhood so he did not know how that would address that concern. However, if that was a decision the City wanted to make, it was, of course, well within their purview to do so.

Mr. Candrian asked Mr. Douglas to clarify where on Sherman the sign would be located.

Mr. Douglas replied that Meridian Creek Middle School, Wood Middle School, and Wilsonville High School all had the exact same display panel, and he believed he would be putting a package together soon to request one at Boeckman Primary School. These signs were the future; however, the City, rightfully, had stringent requirements around their use including nighttime dimming and only allowing the copy to change every 15 minutes. School staff was

always confused that the sign could not have a clock, but the minute hand changed 15 times too frequently for the City Code. He believed there should be a daily or weekly message that was consistent for the community.

- He indicated where the sign was located on Slide 5 and noted that it was set back onto the property. It was typical, and most appropriate, to locate the reader sign at the entrance because parent vehicles would pass the sign regardless of which direction they came from and the sign's express purpose was to convey it's message to the users of the site. Again, it was fully within the purview of the DRB and the City to make a determination on that waiver but noted that three or four had been approved so far elsewhere.
- He reiterated that all access points were Code compliant and noted that they had gone above and beyond in terms of vegetation and other buffering as well as maximizing the queuing in order to mitigate the changing experience for neighboring residents.
- Sherman Dr. was going to be widened beyond what it was presently to the standard the City had set for it. It would have parking along the east side which would increase parking for both the school and residents. Phase 1 included slightly above the Code minimum amount of parking. It was unusual for him to attend one of these hearings without a request to reduce parking below Code, but generally the District struck a balance between folks who wanted less parking and those who wanted more by doing the Code minimum on the number of parking spaces.
- He clarified that the School District did not make money on events. In good years, they covered the cost of the staff that managed and organized events to prevent overbooking of their sites. Primary schools were the least-booked venues as they did not have the big auditorium-type facilities that larger events and other groups wanted. Occasionally religious organizations might use them on a Sunday, but they were limited as to their attendance within the bounds of the parking allowed on the site. There had been a number of those events that had achieved success and grown in attendance, and they had been relocated to larger schools because their compliance with Code was contingent upon managing that use, so they did not allow that to become an issue. They would simply relocate an organization to a facility that could better accommodate their parking needs.
- Evening event use for a primary school was lower than for the high school and middle schools. There were simply fewer events and fewer after-school clubs. There were no sports teams or sports fields. The AV capacity in primary schools was deliberately less and only appropriate for events such as a school assembly in the morning or a 4th grade music night. Additionally, in the primary school gyms, a rubber poured urethane floor was used in lieu of a wood floor because those floors wore better and there was a lot less maintenance. They were well suited to 300-500 children sitting on them each morning; however, they had an adverse effect on interest from evening sports groups who believed a wood floor provided a better volleyball or basketball performance, which reduced the amount of evening usage by athletic groups in the winter.
- He noted 550 students was the standard population of a primary school at buildout in the District. There were some smaller sites in West Linn at a half or a quarter of the subject school's size, and those were smaller schools as appropriate to the size of the campus. The subject school was typical, standard, and had the space it needed to perform all the functions and accommodate that number of staff and students.

- The proximity of residents on all sides was a huge factor. Schools that were surrounded by homes had more students who walked or biked to school. There were a large number of crossings marked with the white, thick borders. The curbs were brought closer together on the side streets to limit how far little legs had to travel to go from safe curb to safe curb. That was all part of the City standards that had been put together and everything being provided at the subject school was in compliance with that Code. He believed there were two marked crossings with flashing beacons in which a button was pushed and the lights turned on to alert drivers to pedestrians. There was one at the southwest corner of the subject lot and one to the east. They were being constructed by the Boeckman Rd project, and as noted in the Staff presentation, the Applicant was paying over $1.1 million in development charges above the standard in order to accommodate all of the improvements that the City needed to do in the Frog Pond West development.
- The project included additional hydrants for fire service, and those plans had been reviewed explicitly by Tualatin Valley Fire & Rescue (TVF&R). He did not know that they had any changes proposed to the initial design. The District had worked with them closely ahead of time, and they had provided a letter as part of the record noting that TVF&R had reviewed and approved the plans. They were firmly aware of what the District had proposed to do and were confident in their ability to address fire in the event that the school was built.
- He reiterated that the District was getting construction bids at 5:00 the following day and they would then have a strong sense of who would be building the school. The District would work with that firm to determine how they planned to access the site. There were five prequalified general contractors who had gone through a proposal process and verified to the District's satisfaction that they were a partner worthy of engaging on the project. One of the factors in that decision was their ability to demonstrate their experience and ability to interact with neighboring residences. Even though the north side was vacant, he believed most of that land had been annexed into the City and had planning permits in place or were seeking them now, so it was reasonable to expect that by the time the school opened, it would be surrounded by homes.
- Each of the five contractors that made the mark and were allowed to bid on the project had expressed an ability to engage appropriately with neighboring residences, and while he did not have the exact logistics plan, they were required to develop that plan before being permitted to begin work on the project. Additionally, the District would share and discuss the plan with City Staff before it was implemented so everyone knew what was happening. The goal always was to minimize impact to neighboring residences.
- He acknowledged that there were concerns from a number of folks, particularly from the west of the site. The District had endeavored to work to mitigate those concerns and to address them proactively well in excess of Code. It would be easy under the Public Facility Code to do much less, but that was not how the District liked to operate, and it was not how he as an individual liked to operate. They had worked very hard to try to accommodate that and balance the needs and interests.
- There were neighbors from the southeast corner that had not spoken tonight, but he had spoken to them personally before tonight and they were all pleased that there was not a parking lot next to their home. There was a side lot with a 6-ft fence 8-10 ft from their homes that could potentially become a parking lot, and weighing all the logistics and

practicalities of the engineering of it, in addition to the notion of inefficiently placing a large parking lot next to the side yard of a home, the layout of the site seemed most appropriate.

- There were standard conditions of approval that contemplated not changing the Landscape Plan, which overall was appropriate, and the District knew how to go through Staff and the DRB process, if necessary, for any changes. He looked to engage with neighbors, especially ones over the fence, and talk about additional plantings and make those happen. Generally, the District had seen that favorably received by City Staff, but the District was looking to continue that engagement with neighbors over the course of construction to ensure that benefit to them was maximized.

Mr. Pauly added that generally it was okay to add landscaping, but not take any away.

Mr. Douglas noted that the conditions of approval strongly prohibited that.

Mr. Candrian asked how the traffic survey incorporated all of the potential future development with Frog Pond East and Frog Pond North. He also asked how people using surface streets to avoid interstate tolls was factored into the current traffic study.

Scott Mansur, DKS, replied that the proposed school and subdivision was part of the Frog Pond West Master Plan, which had looked at the full build-out of Frog Pond West, East, and South. At that time, they developed an infrastructure plan that looked at access and all internal streets to provide service. That was the long-range plan that projected 20 years into the future from when that study was done to look at long-term traffic.

- In the traffic study that was prepared for the school, any developments with Stage 2 approval were included in their analysis. Anything in the future was covered with the MP that had looked at full buildout.
- He advised everyone that primary schools typically had a peak of 15-20 minutes of people coming in and dropping off or picking up their children, and during that time, it was very constrained. As such, the Brisband St. connection was very important because it would allow neighbors to use Brisband to go over to Willow Creek Dr as a secondary access.
- DKS worked with the City Engineer during the master planning process to provide safe streets, and the wider a street was, the faster traffic went. That was a concern to consider when debating whether to widen Sherman Dr. A balance needed to be struck to ensure a street was big enough to provide adequate capacity for everyone who used the school but not so big as to encourage faster driving. It also needed to be multimodal so children could easily cross.
- There would be a push-button-activated, rectangular rapid-flashing beacon on Boeckman Rd on the east leg of the Boeckman Rd/Sherman Dr intersection to help stop traffic and allow schoolchildren to cross at that location. That would be constructed as part of the City's Boeckman Rd. project.
- It was helpful to keep in mind that often there were growing pains in Master Plan developments as phases of the development occurred. Currently Sherman Dr. was the only access in and out, but in the future Brisband St. would be connected to Willow Creek Dr. which would provide a secondary outlet in the event Sherman Dr. was too congested during

that 15-minute drop-off/pick-up period. There were also plans to connect Brisband St to the west and up and around as well as to connect Frog Pond Ln to Stafford Rd, and Brisband would turn in and connect to Kahle Rd. As development occurred, there would be a lot of additional access and internal circulation that would provide options to residents. Currently, however, the neighborhood was in the awkward phase of building a school in a subdivision that did not yet have its full infrastructure in place.

- He reminded everyone that the school would only have approximately 350 students on opening day. At max buildout, it would accommodate 550 but it could take 15-20 years to hit that level as more houses were built, but it would be a walkable, bikeable school for children, and the more comfortable parents felt with letting their children walk and bike to school, the less traffic there would be. Building a walkable/bikeable school was part of the design, and the School District had worked very hard to make the school safe for children to do so.
- The first step in student safety was separating buses from parent traffic, and the school had been designed that way. Buses would access the school via Boeckman Rd, eliminating a child getting hit by a bus after exiting their vehicle.
- He had completed over 100 school-related traffic studies and dealt with a lot of these issues, and the Site Plan that the School District was providing really checked all the boxes when it came to safety. The Traffic Analysis showed that the traffic being generated from the school met all the City's Code requirements. From a safety standpoint, he felt comfortable with the street that was being designed. Although he understood that during that 15-20-minute time period in the morning and afternoon there would be congestion on Sherman Dr, it met all City standards for intersection operation and it would operate in a safe manner for how it needed to deliver the traffic.

Vice Chair Hildum called for any additional Board member discussion to ensure they had gathered all the information they needed to make a decision.

Mr. Candrian asked how much latitude for discussion there was regarding an item that met all Code standards and did not have a waiver request.

Mr. Pauly explained that the question was whether or not it met Code.

Amanda Guile-Hinman, City Attorney, explained that if there was a criteria that the DRB believed was not met, they could discuss making a finding to that effect, but if the criteria was met, the decision ended there.

Mr. Candrian asked if the all the street improvements in the surrounding area, including development to the north, would be in place before the school opened.

Mr. Pauly replied that north of Brisband St there was land that had not yet gone through Land Use, so he did not know the exact timing, but confirmed that Brisband St would be completed prior to the school opening.

Mr. Candrian asked if Staff knew if Brisband St to Frog Pond was scheduled to be completed before the school opened.

Ms. Pepper responded that based on current timelines, it would not be complete. She believed the school was set to open fall of 2025, but they were at the mercy of developers and their timing. There was one subdivision at the end of Frog Pond that did not quite connect to Frog Pond. There was a vacant lot next to it that had not yet come in for Land Use Review.

Mr. Candrian asked when Willow Creek Dr was scheduled to be connected to Frog Pond.

Ms. Pepper replied that it was already connected. The project just north of Brisband St, Frog Pond Estates, had gone through DRB approval, Engineering Plan Review approval, and Staff was waiting for the developer to hire a contractor to get started. That project would complete one component of Brisband St before it connected to the School District's portion of the street improvements. She confirmed that it was likely that by the time the school opened, Brisband St would connect through, giving residents on that side options to access Boeckman Rd without having to use Sherman Dr.

Mr. Candrian stated that most other school signs were located off of busy roads, and asked why the sign for the proposed school was not going to be located at the corner of Sherman Dr/Boeckman Rd where more people would see it and it would be less inside the neighborhood.

Mr. Douglas responded that although there had been feedback tonight that traffic would come from Boeckman Rd, Stafford Rd, or Brisband Rd, that was factually incorrect. The projections, based on the traffic study, showed that it come equally from the two directions. The critical criteria for sign location was that everyone who entered the school site saw it. Locating the sign at the driveway ensured that people coming from either direction would see it. The District would not oppose a Condition of Approval to force the relocation of the sign if that made the DRB comfortable with approving the school, but he believed it would be a disservice to the school to do so.

Mr. Pauly added that over a decade ago, he was involved in crafting the standards around electronic signs. As those standards around hold time and luminance were put in, they had assumed these types of signs would be put by schools in residential areas so they were mindful of the sort of standards that would make them compatible with residential areas and would need to be met to grant a waiver for this type of sign.

Mr. Candrian understood that they wanted parents to see it, but there would also be a large contingent of the school arriving on bus. With the sign placement at the car entrance, no one on the bus would see it. He wondered if moving the sign outside of the direct neighborhood would make everyone somewhat happy, although he understood that no one would ever be entirely happy.

Mr. Douglas reiterated that if the DRB felt that was appropriate to allow that waiver to move forward, the District would not oppose it or appeal such a decision. As a practical matter, the people on the bus were students, and they generally did not retain any information on the sign to tell their parents, so the idea was to catch drivers who would recall it.

Vice Chair Hildum confirmed there were no further questions or discussion and closed the public hearing at 9:19 pm.

Rob Candrian moved to approve the Staff report, modifying Conditions of Approval PFB 2 and PFB 10, as read into the record by Staff, and adding Exhibit D7 and a Condition of Approval requiring the LED freestanding monument sign to be relocated to the southwest corner of the school site.
(Note: additional language shown in italicized bold text; deleted language struck through)

- PFB 2: **~~Prior to~~ *At the* Issuance of ~~Any~~ Building Permits:** The applicant shall ~~enter into a Development Agreement or Intergovernmental Cooperative Agreement with the City~~ ***pay an Infrastructure Supplemental Fee of $24,465.00 per equivalent dwelling unit, as adjusted pursuant to City Resolution No. 2649. The applicant shall also pay the Boeckman Bridge fee of $1,393.00 per equivalent dwelling unit as adjusted pursuant to City Resolution No. 2649, for the construction of Boeckman Bridge. Per the Frog Pond West Infrastructure Funding Plan, the project site equates to 43 equivalent dwelling units.***
- PFB 10. Access to SW Boeckman Road, classified as a minor arterial, shall be limited to school buses ***and service vehicles*** only. With the Public Works Permit: The construction drawings shall show the location of signage to prohibit all non-bus/***service vehicle*** traffic from using this access. Prior to Final Building Certificate of Occupancy: All necessary signage shall be installed, inspected and approved by the City.

Vice Chair Hildum seconded the motion.

Mr. Candrian stated he appreciated the comments from the community. He did not know if the DRB had latitude to redirect the traffic flow plan, and since was not a traffic flow expert, he would not make any recommendations, but he thought it was a valid concern, especially as the area would grow, and stated they would rely on the judgement of the experts as to how everything would be affected.

The motion passed unanimously.

Rob Candrian moved to adopt Resolution No. 415 with the amended Staff report.
The motion was seconded by Vice Chair Hildum and passed unanimously.

Vice Chair Hildum read the rules of appeal into the record.

BOARD MEMBER COMMUNICATIONS:

4. Results of the March 27, 2023 DRB Panel B meeting
5. Recent City Council Action Minutes

Mr. Pauly noted that that DRB meeting addressed a street name change, a unique request and the only time an application like that had been considered.

There were no comments.

STAFF COMMUNICATIONS

There were none.

ADJOURN
The meeting adjourned at 9:28 p.m.

Respectfully submitted,

Paula Pinyerd, ABC Transcription Services, LLC. for
Shelley White, Planning Administrative Assistant

Public Hearing:

2. **Resolution No. 411. Delta Logistics Site Expansion.** The applicant is requesting approval of a Stage 1 Preliminary Plan, Stage 2 Final Plan, Site Design Review, Waivers, Class 3 Sign Permit, Type C Tree Removal Plan, Standard SROZ Map Verification, Standard SRIR Review and Variance for Development of a 58,116 square foot warehouse / manufacturing building with accessory office space at 9710 SW Day Road, and minor site modifications at 9835 SW Commerce Circle.

Case Files:

DB22-0007 Delta Logistics Site Expansion

- Stage 1 Preliminary Plan (STG122-0005)
- Stage 2 Final Plan (STG222-0006)
- Site Design Review (SDR22-0006)
- Waivers (WAIV22-0001)
- Class 3 Sign Permit (SIGN22-0004)
- Type C Tree Removal Plan (TPLN22-0005)
- Standard SROZ Map Verification (SROZ22-0006)
- Standard SRIR Review (SRIR22-0004)
- Variance (VAR22-0001)

DEVELOPMENT REVIEW BOARD
RESOLUTION NO. 411

A RESOLUTION ADOPTING FINDINGS AND CONDITIONS OF APPROVAL, APPROVING A STAGE 1 PRELIMINARY PLAN, STAGE 2 FINAL PLAN, SITE DESIGN REVIEW, WAIVERS, CLASS 3 SIGN PERMIT, TYPE C TREE REMOVAL PLAN, STANDARD SROZ MAP VERIFICATION, AND STANDARD SRIR REVIEW, AND DENYING A VARIANCE REQUEST (VAR22-0001) FOR DEVELOPMENT OF A 58,116 SQUARE FOOT WAREHOUSE/MANUFACTURING BUILDING WITH ACCESSORY OFFICE SPACE AT 9710 SW DAY ROAD, AND MINOR SITE MODIFICATIONS AT 9835 SW COMMERCE CIRCLE.

WHEREAS, an application, together with planning exhibits for the above-captioned development, has been submitted by authorized representative Mackenzie on behalf of the owner/applicant, Delco Holdings, LLC, dba Delta Logistics, Inc., in accordance with the procedures set forth in Section 4.008 of the Wilsonville Code, and

WHEREAS, the subject site is located at 9710 SW Day Road and 9835 SW Commerce Circle on Tax Lots 600 and 601, Section 2B, and Tax Lot 400, Section 2CA, Township 3 South, Range 1 West, Willamette Meridian, City of Wilsonville, Washington County, Oregon, and

WHEREAS, the Planning Staff has prepared the staff report on the above-captioned subject dated May 1, 2023, and

WHEREAS, said planning exhibits and staff report were duly considered by the Development Review Board Panel A at a scheduled meeting conducted on May 8, 2023, at which time exhibits, together with findings and public testimony were entered into the public record, and

WHEREAS, the Development Review Board considered the subject and the recommendations contained in the staff report, and

WHEREAS, interested parties, if any, have had an opportunity to be heard on the subject.

NOW, THEREFORE, BE IT RESOLVED that the Development Review Board of the City of Wilsonville does hereby adopt the staff report dated May 1, 2023, attached hereto as Exhibit A1, with findings and recommendations contained therein, and authorizes the Planning Director to issue permits consistent with said recommendations for:

DB22-0007 Delta Logistics Site Expansion: Stage 1 Preliminary Plan (STG122-0005), Stage 2 Final Plan (STG222-0006), Site Design Review (SDR22-0006), Waivers (WAIV22-0001), Class 3 Sign Permit (SIGN22-0004), Type C Tree Removal Plan (TPLN22-0005), Standard SROZ Map Verification (SROZ22-0006), Standard SRIR Review (SRIR22-0004), and Variance (VAR22-0001).

ADOPTED by the Development Review Board of the City of Wilsonville at a regular meeting thereof this 8th day of May, 2023, and filed with the Planning Administrative Assistant on _____. This resolution is final on the 15th calendar day after the postmarked date of the written notice of decision per *WC Sec 4.022(.09)* unless appealed per *WC Sec 4.022(.02)* or called up for review by the Council in accordance with *WC Sec 4.022(.03).*

_____

Jean Svadlenka, Chair - Panel A
Wilsonville Development Review Board

Attest:

_____

Shelley White, Planning Administrative Assistant

WILSONVILLE
OREGON

Exhibit A1
Staff Report
Wilsonville Planning Division
Delta Logistics Site Expansion

Development Review Board Panel 'A'
Quasi-Judicial Public Hearing

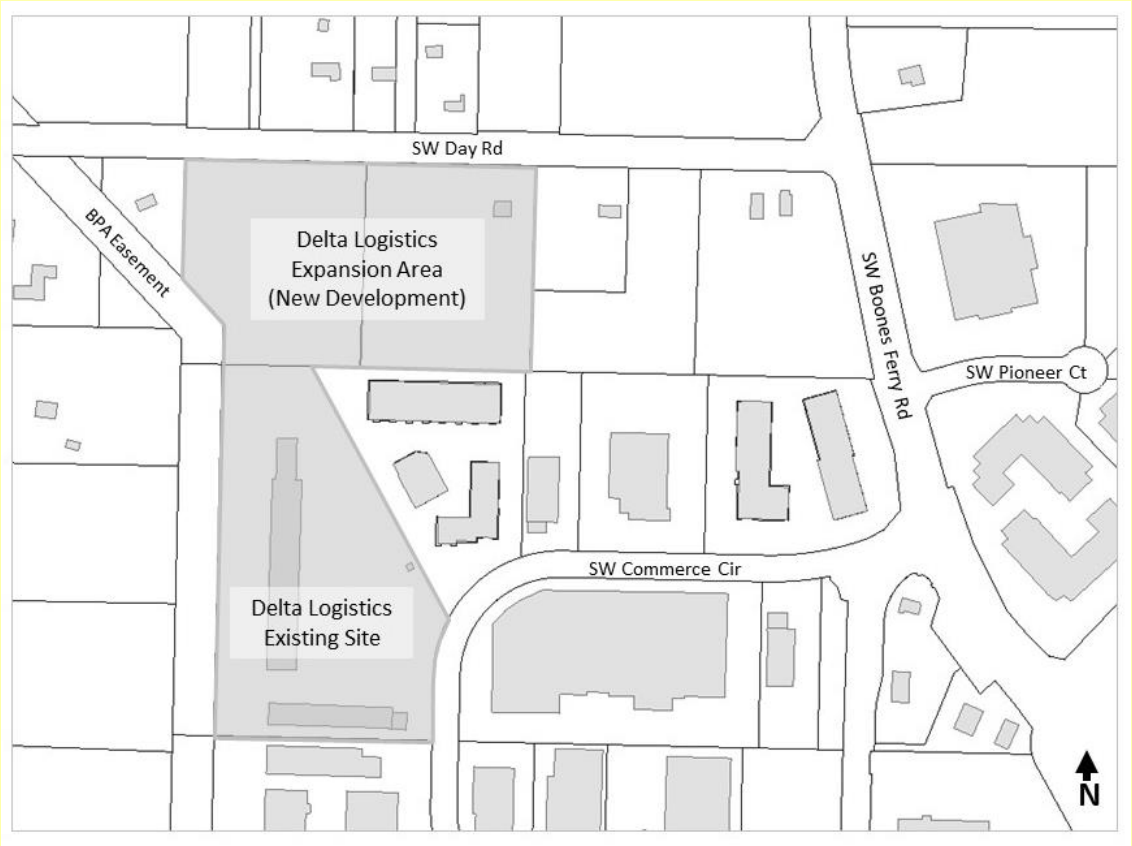
Hearing Date:	May 8, 2023
Date of Report:	May 1, 2023
Application No.:	DB22-0007 Delta Logistics Site Expansion
Request/Summary:	The requests before the Development Review Board include a Stage 1 Preliminary Plan, Stage 2 Final Plan, Site Design Review, Waivers, Class 3 Sign Permit, Type C Tree Removal Plan, Standard SROZ Map Verification, Standard SRIR Review, and Variance.
Location:	9710 SW Day Road and 9835 SW Commerce Circle. The property is specifically known as Tax Lots 600 and 601, Section 2B, and Tax Lot 400, Section 2CA, Township 3 South, Range 1 West, Willamette Meridian, Washington County, Oregon
Owner/Applicant:	Delco Holdings, LLC, dba Delta Logistics, Inc. (Contacts: Vladimir Tkach, Igor Nichiporchik)
Authorized Representative:	Mackenzie (Contact: Lee Leighton, AICP)
Comprehensive Plan Designation:	Industrial
Zone Map Classification (Current):	Future Development 20 Acre (FD-20)
Zone Map Classification (Proposed):	Planned Development Industrial-Regionally Significant Industrial Area (PDI-RSIA)
Staff Reviewers:	Cindy Luxhoj AICP, Associate Planner Amy Pepper, Development Engineering Manager Kerry Rappold, Natural Resources Program Manager

Staff Recommendation: **Approve with conditions** the requested Stage 1 Master Plan, Stage 2 Final Plan, Site Design Review, Waivers, Class 3 Sign Permit, Type C Tree Removal Plan, Standard SROZ Map Verification, and Standard SRIR Review, and **deny** the Variance request (VAR22-0001).

Applicable Review Criteria:

Development Code:	
Section 4.008	Application Procedures-In General
Section 4.009	Who May Initiate Application
Section 4.010	How to Apply
Section 4.011	How Applications are Processed
Section 4.014	Burden of Proof
Section 4.031	Authority of the Development Review Board
Subsection 4.035 (.04)	Site Development Permit Application
Subsection 4.035 (.05)	Complete Submittal Requirement
Section 4.110	Zones
Section 4.118	Standards Applying to Planned Development Zones
Section 4.117 and 4.135.5	Planned Development Industrial - RSIA Zone and Industrial Standards
Section 4.134	Coffee Creek Industrial Design Overlay District
Sections 4.139 through 4.139.11 as applicable	Significant Resource Overlay Zone (SROZ) Ordinance
Section 4.140	Planned Development Regulations
Section 4.154	On-site Pedestrian Access and Circulation
Section 4.155	Parking, Loading, and Bicycle Parking
Sections 4.156.01 through 4.156.11	Sign Regulations
Section 4.167	Access, Ingress, and Egress
Section 4.171	Protection of Natural Features and Other Resources
Section 4.175	Public Safety and Crime Prevention
Section 4.176	Landscaping, Screening, and Buffering
Section 4.177	Street Improvement Standards
Section 4.178	Sidewalk and Pathway Standards
Section 4.179	Mixed Solid Waste and Recyclables Storage
Section 4.196	Variances
Sections 4.199.20 through 4.199.60	Outdoor Lighting
Sections 4.300 through 4.320	Underground Utilities
Sections 4.400 through 4.450 as applicable	Site Design Review
Sections 4.600-4.640.20	Tree Preservation and Protection
Other Planning Documents:	
Wilsonville Comprehensive Plan	
Coffee Creek Master Plan	
Coffee Creek Industrial Design Overlay District Pattern Book	
Previous Land Use Approvals	

Vicinity Map



Background:

Coffee Creek Land Use Review Process

The subject area has long been rural/semi-rural adjacent to the growing City of Wilsonville. Metro added the +/-216 gross acre area now known as the Coffee Creek Industrial Area to the Urban Growth Boundary in 2002 to accommodate future industrial growth. To guide development of the area, the City of Wilsonville adopted the Coffee Creek Industrial Master Plan in 2007. In 2018, the City adopted the Coffee Creek Industrial Design Overlay District (Form-based Code) and accompanying Pattern Book to establish clear and objective regulations and guidelines for the street design and connectivity, site design, circulation, building form and architecture, and landscaping for future development in Coffee Creek. Projects meeting the clear and objective standards, including any limited adjustments, are reviewed and approved by the Planning Director under the Class 2 Administrative Review Process (Clear and Objective Track). The Development Code acknowledges there may be instances were proposed development is generally consistent with the goals of the Coffee Creek Industrial Design Overlay District, but flexibility may be desired by the applicant for one or more of the clear and objective standards. In this instance, applicants may elect to request waivers to these standards, which are then reviewed by the Development Review Board (Waiver Track). When choosing the Waiver Track

the applicant must demonstrate that the waiver request is consistent with the intent of the Coffee Creek Industrial Design Pattern Book and the guidelines contained therein.

As part of the Coffee Creek code amendments, the City also modified procedures governing City Council review of annexations and Zone Map amendments in Coffee Creek, allowing for City Council review of these requests without prior review or recommendation by the Development Review Board. This modification allows for the concurrent processing of the annexation and Zone Map amendment requests with the other related development permit applications.

Applicant's Proposed Project

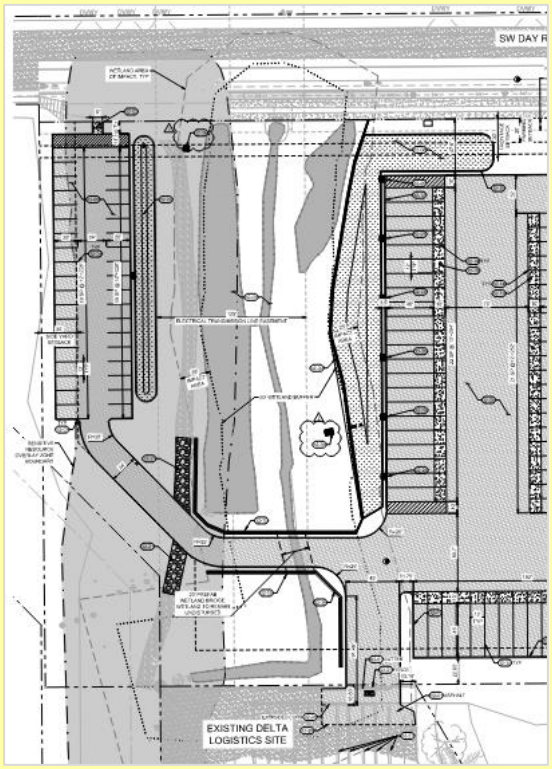
The applicant, Delco Holdings, LLC, dba Delta Logistics, Inc., desires to expand their operations northward from their current location at 9835 SW Commerce Circle. The proposed project includes a 58,125-square-foot warehouse/manufacturing development, with potential future internal addition of two (2) storage mezzanines for total future potential floor area of 62,107 square feet, and associated improvements. A house and accessory structures on the expansion site, located at 9710 SW Day Road, have been demolished and the site is currently vacant.

The Development Review Board will review these land use applications since the applicant is requesting waivers to Form-based Code standards and a variance. City Council held public hearings for the annexation (ANNX22-0003) and Zone Map amendment (ZONE22-0004) requests on January 5, 2023, adopting ordinances approving these requests on first reading. Second reading of these ordinances occurred on January 19, 2023. The annexation and Zone Map amendment ordinances will expire 120 days from City Council adoption, on May 18, 2023, if the Stage 2 Final Plan application is not approved by the Development Review Board.

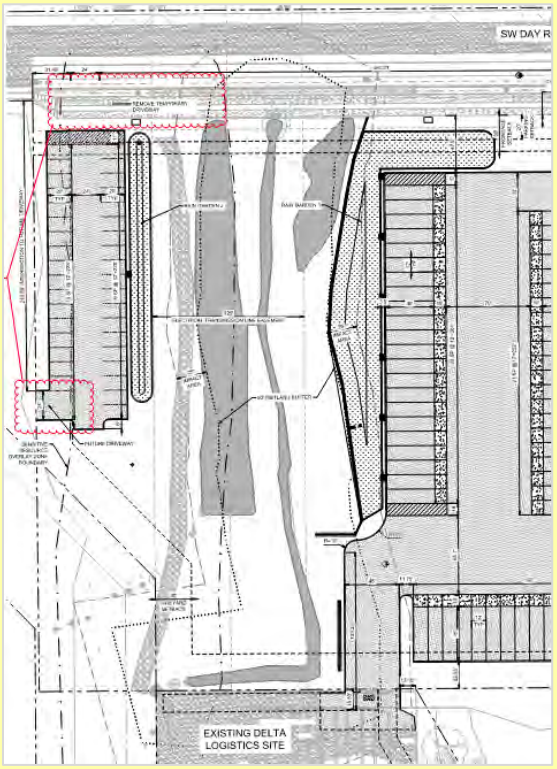
Site Design Options Proposed by Applicant

As shown below, the applicant has proposed three (3) design options for the subject site. All options include the same building configuration, parking areas, site circulation, etc. in the central and eastern parts of the site. The options differ in their interaction with the Significant Resource Overlay Zone (SROZ) and proposed site improvements in the western part of the property.

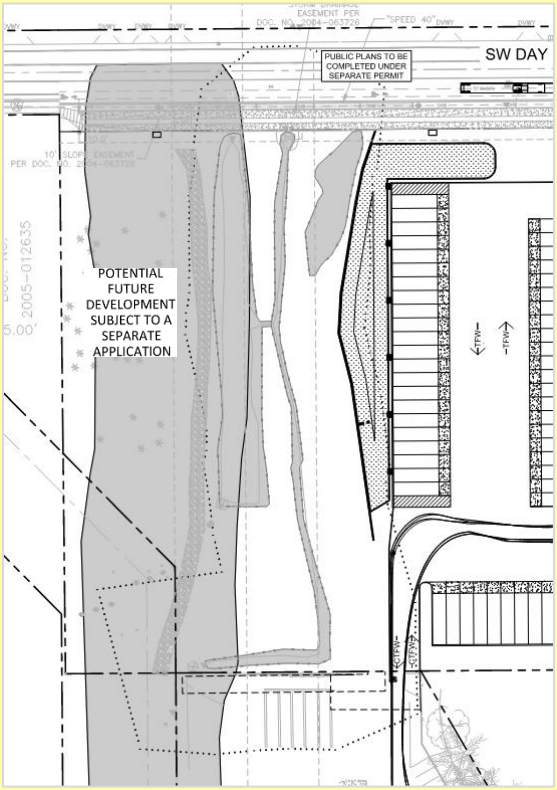
Option 1, the applicant's preferred option, as shown to the right, includes trailer cab parking/storage west of the SROZ and requests a variance to cross the SROZ with a drive aisle for access. The western half of the drive aisle connection between the Delta Logistics site to the south and the expansion area intrudes into the wetland buffer and impact area of the SROZ.



Option 2, as shown to the right, includes cab trailer parking/storage west of the SROZ the same as Option 1; however, the parking/storage is accessed via an interim driveway on SW Day Road. This driveway would be replaced in the future by a connection to a Supporting Street off-site to the west. This option removes the drive aisle crossing of the SROZ, but the south drive aisle continues to intrude into the wetland buffer and impact area. Option 2 does not include a variance request.



Option 3, as shown to the right, does not include any development west of, or crossing of, the SROZ and, therefore, does not include a variance request. The south drive aisle has been shifted to the east, thus removing the intrusion into the wetland buffer, although the drive aisle continues to intrude into the impact area, which is allowed.



Staff Report Focus on Site Design Option 3

Site design Options 1 and 2 are mentioned, where appropriate, in this staff report; however, the discussion and findings focus on the applicant's site design Option 3, as described above, for several reasons. Option 3 is the only site design alternative that does not intrude into the SROZ or its wetland buffer and impact area, does not require a variance, does not propose a second driveway on SW Day Road, results in the least disturbance of the natural area on the west side of the site, and preserves the most trees, while still achieving the majority of the applicant's development objectives for the site.

Summary:

Stage 1 Preliminary Plan

The Stage 1 Preliminary Plan proposes a speculative industrial development planned to contain warehouse/manufacturing uses with an office endcap at the building's northwest corner designed for accessory office space to serve the industrial tenant. The overall development and layout are consistent with the Coffee Creek Master Plan, Industrial Design Overlay District and Pattern Book.

Stage 2 Final Plan

The proposed Stage 2 Final Plan reviews the function and design of the proposed project, including assuring the proposal meets all the performance standards of the PDI-RSIA Zone and the Coffee Creek Industrial Design Overlay District.

Site Design Review

The proposed building is consistent with the building design standards in the Coffee Creek Industrial Design Overlay District, with exceptions as noted in the waiver requests. The applicant proposes a warehouse/manufacturing building that contains an office endcap on the northwest corner of the front façade on SW Day Road. The project will provide dense landscape plantings to create a natural character along the SW Day Road corridor, including an industrial wayside west of the site driveway, consistent with the Coffee Creek Industrial Design Overlay District requirements.

Waivers

The applicant requests two (2) waivers from Section 4.134 (.11) Development Standards Table CC-3 Site Design. The requested waivers relate to Parking Location and Extent on an Addressing Street and Retaining Wall Height and Design on an Addressing Street. The waiver requests are discussed in more detail in the Discussion Points – Discretionary Review of this staff report. See also Request D.

Class 3 Sign Permit

The subject property has frontage on SW Day Road (to north), a primary building entrance at the northwest corner of the building, and passenger vehicle parking on the north and south sides of the building. One building sign is proposed on the north sign-eligible elevation of the building facing SW Day Road. One ground-mounted sign is proposed at the north central part of the site on the east side of the proposed driveway on SW Day Road. Specific sign copy and design will be approved through subsequent sign permits.

Type C Tree Removal Plan

The subject property slopes from east to west with the steepest grades in the eastern part of the site. Trees are located primarily west of the SROZ and powerline easement, in the east part of the site where the house and accessory building were located, and along the east and south property boundaries. Proposed tree removal and replacement/mitigation is discussed in the Discussion Points – Verifying Compliance with the Standards section, below.

Standard SROZ Map Verification and SRIR Review

The applicant conducted a detailed site analysis consistent with the requirements of the Significant Resource Overlay Zone (SROZ) ordinance, which the City's Natural Resources Manager reviewed and approved. The applicant's standard Significant Resource Impact Report (SRIR) delineated specific resource boundaries and analyzed the impacts of exempt development

within the SROZ. The applicant's SRIR contained the required information, including an analysis and development recommendations for mitigating impacts.

Variance

The applicant requests a variance for site design Option 1 of the current application to cross the SROZ on the subject property with a drive aisle to enable access to the upland portion of the site located west of the SROZ and its Impact Area. This request is discussed in more detail in the Discussion Points – Discretionary Review of this staff report. See also Request I.

Public Comments:

No public comments were received during the comment period for the project.

Discussion Points – Verifying Compliance with Standards:

This section provides a discussion of key clear and objective development standards that apply to the proposed applications. The Development Review Board will verify compliance of the proposed applications with these standards. The ability of the proposed applications to meet these standards may be impacted by the Development Review Board's consideration of discretionary review items as noted in the next section of this report.

Traffic Impacts and Concurrency

The Traffic Impact Analysis (see Exhibit B1) performed by the City's consultant, DKS Associates, identifies the most probable used intersections for evaluation as:

- Signalized:
  - SW Boones Ferry Road/SW Day Road
  - SW Boones Ferry Road/SW 95th Ave
  - I-5 Southbound Ramps/SW Elligsen Road
  - I-5 Northbound Ramps/SW Elligsen Road
- Two-way Stop-Controlled:
  - Site Access/SW Day Road

The Level of Service (LOS) D standard will continue to be met by existing street improvements at the studied intersections with existing, planned, and this proposed development as follows:

TABLE 3: EXISTING 2021 STUDY INTERSECTION OPERATIONS

INTERSECTION	OPERATING STANDARD/ MOBILITY TARGET	EXISTING PM PEAK HOUR		
		V/C	DELAY	LOS
SIGNALIZED				
BOONES FERRY RD/ DAY RD	LOS D (City)	0.65	15.8	B
BOONES FERRY RD/ 95TH AVE	LOS D (City)	0.69	20.3	C
I-5 SOUTHBOUND RAMPS/ ELLIGSEN RD	v/c ≤ 0.99 (ODOT)	0.75	9.5	A
I-5 NORTHBOUND RAMPS/ ELLIGSEN RD	v/c ≤ 0.99 (ODOT)	0.33	7.2	A
TWO-WAY STOP- CONTROLLED				
SITE ACCESS/ DAY RD	LOS D (City)	-	-	-

SIGNALIZED INTERSECTION:
Delay = Average Intersection Delay (secs)
v/c = Total Volume-to-Capacity Ratio
LOS = Total Level of Service

TWO-WAY STOP CONTROLLED INTERSECTION:
Delay = Critical Movement Delay (secs)
v/c = Critical Movement Volume-to-Capacity Ratio
LOS = Critical Levels of Service (Major/Minor Road)

TABLE 5: FUTURE INTERSECTION OPERATIONS

INTERSECTION	OPERATING STANDARD/ MOBILITY TARGET	EXISTING + PROJECT			EXISTING + STAGE II			EXISTING + STAGE II + PROJECT		
		V/C	DELAY	LOS	V/C	DELAY	LOS	V/C	DELAY	LOS
SIGNALIZED										
BOONES FERRY RD/ DAY RD	LOS D (City)	0.66	16.0	B	0.66	15.8	B	0.67	16.0	B
BOONES FERRY RD/ 95TH AVE	LOS D (City)	0.70	20.4	C	0.71	20.6	C	0.71	20.7	C
I-5 SOUTHBOUND RAMPS/ ELLIGSEN RD	v/c ≤ 0.99 (ODOT)	0.76	9.6	A	0.79	10.3	B	0.79	10.4	B
I-5 NORTHBOUND RAMPS/ ELLIGSEN RD	v/c ≤ 0.99 (ODOT)	0.33	7.2	A	0.35	7.2	A	0.35	7.2	A
TWO-WAY STOP- CONTROLLED										
SITE ACCESS/ DAY RD	LOS D (City)	0.06	14.5	A/B	-	-	-	0.06	14.5	A/B

SIGNALIZED INTERSECTION:
Delay = Average Intersection Delay (secs)
v/c = Total Volume-to-Capacity Ratio
LOS = Total Level of Service

TWO-WAY STOP CONTROLLED INTERSECTION:
Delay = Critical Movement Delay (secs)
v/c = Critical Movement Volume-to-Capacity Ratio
LOS = Critical Levels of Service (Major/Minor Road)

The project will add an additional 33 PM peak hour trips (9 in, 24 out) with a total of 127 daily trips. Of the additional trips, 15 new PM peak hour trips are estimated to pass through the I-5/ Elligsen Road interchange area and 2 new PM peak hour trips through the I-5/Wilsonville Road interchange area.

TABLE 4: VEHICLE TRIP GENERATION

LAND USE (ITE CODE)	SIZE [a]	PM PEAK TRIP RATE	PM PEAK TRIPS			DAILY TRIPS
			IN	OUT	TOTAL	
Warehousing (150)	56.1 KSF	1.20 trips per KSF	9	24	33	127

[a] KSF = 1,000 square feet

Industrial Performance Standards

The PDI-RSIA zone prohibits development not meeting an extensive list of performance standards including wholly enclosed operations, no off-site vibrations, no off-site odors, screened outdoor storage, no heat or glare, no dangerous substances, no waste storage attracting pests, sewer conveyance meeting City standards, no noise violating the City's noise ordinance, no electrical disturbances, limits on air pollution, and no open burning. The proposed project can meet all the performance standards.

Pedestrian Access and Circulation

The primary pedestrian access is located east of the site driveway in the northeastern part of the site. From the sidewalk in SW Day Road, this access travels south across the parking aisle to the walkway in front of the office endcap, providing access to the primary building entrance. In Options 1 and 2, a secondary pedestrian access is proposed west of the SROZ connecting the sidewalk in SW Day Road with the cab trailer parking/storage in this part of the site; as no development is proposed west of the SROZ in Option 3, this secondary access is eliminated from the design.

Vehicular and Bicycle Parking

The proposed project requires a minimum of 41 vehicle parking spaces and, as it contains a planned manufacturing component, no limit exists for the number of spaces. The applicant proposes 41 stalls, the same as the minimum amount required. The applicant proposes to locate the parking along the north and south sides of the building. Fifteen (15) spaces are located in a single bay between the building and SW Day Road to serve as short term short-term visitor parking and ADA-accessible spaces. The applicant has requested a waiver to some of these spaces to be used for employee parking (see Request D). The remaining 26 spaces are located in a single bay on the south side of the building.

Required bicycle parking is calculated as the sum of the requirements for the individual primary uses. The applicant proposes 6 bicycle parking spaces all interior to the building in the warehouse area near the office endcap, which is two (2) spaces fewer than the minimum required as shown in the table below.

Use and Parking Standard	Square Feet	Minimum Off-street Spaces Required	Maximum Off-street Spaces Allowed	Proposed Off-street Spaces	Minimum Bicycle Parking Spaces	Proposed Bicycle Parking Spaces
Manufacturing	17,500 sf	1.6 per 1,000 = 28	No limit	--	1.0 per 10,000 (min 6) = 6	--
Warehouse/ Distribution	44,607 sf	0.3 per 1,000 = 13.4	0.5 per 1,000 = 22.3	--	1.0 per 20,000 (min 2) = 2	--
Total	**62,107 sf**	**41.4**	**No limit**	**41**	**8**	**6*1**
*1 All bicycle parking is proposed to be located inside the entry to the office endcap at the northwest corner of the building.						

Tree Removal and Retention/Protection

The site contained a house and accessory structures in the northeast corner with a driveway onto SW Day Road; however, the structures were recently demolished. The area surrounding and south of the house, in the eastern portion of the site, is forested, as is the area west of the SROZ and off-site along the property's south and east boundaries. The central part of the site is more open with few trees. As shown in the table below, 257 trees were inventoried for the current application, including 200 on site, 21 in the public right-of-way of SW Day Road, and 36 off site along the east and south property boundaries.

The applicant has taken tree preservation into consideration, and has limited tree removal to trees that are necessary to remove for development. Under Option 3, which does not include development west of the SROZ, 82 of the 257 trees are proposed for retention, including 46 on site and 36 off site, and 175 are proposed for removal. The proposed retaining wall along the east and south site boundaries is located outside the drip line of the 36 off-site trees to protect their critical root zones during construction. The applicant proposes planting 175 trees throughout the site and in the public right-of-way to mitigate for the removals, as shown in the table below.

Trees	Qty	Retain	Remove	Mitigate
On Site	200	46	154	154
Public ROW	21	0	21	21
Off Site	36	36	0	0
Total	257	82	175	175

Trees	
Landscape	
-Accent	40
-Primary	33
-Secondary	20
Stormwater	56
Street	26
Total	175

Discussion Points – Discretionary Review:

This section provides a discussion of discretionary review requests that are included as part of the proposed applications. The Development Review Board may approve or deny items in this section based upon a review of evidence submitted by the applicant.

Waivers to Coffee Creek Industrial Design Overlay District Standards

As shown in the table below, the applicant is requesting two (2) waivers, both of which relate to Table CC-3 Site Design within the Section 4.134 (.11) Development Standards Table. The requested waivers are listed in the following table and discussed in more detail under Request D of this staff report.

Waiver Requests	
Waiver 1: Table CC-3 4. Parking Location and Design, Parking Location and Extent/Addressing Streets	
Standard: Maximum 16 spaces with allowed adjustment to 20 spaces, limited to one double-loaded bay of parking, designated for short-term (1 hour or less), visitor, and disabled parking only between right-of-way of Addressing Street and building.	**Request:** The applicant proposes to use nine (9) of the 15 vehicle parking spaces between the building and Addressing Street SW Day Road for employee parking, as well as the permitted uses of short-term, visitor, and disabled parking.
Waiver 2: Table CC-3 5. Grading and Retaining Walls, Maximum Height and Retaining Wall Design/Addressing Streets	
Standards: Maximum Height: Where site topography requires adjustments to natural grades, landscape retaining walls shall be 48 inches tall maximum. Where the grade differential is greater than 30 inches, retaining walls may be stepped. Retaining Wall Design: Retaining walls longer than 50 linear feet shall introduce a 5-foot, minimum horizontal offset to reduce their apparent mass.	**Request:** Per the applicant's narrative, they propose significant grading and use of retaining walls to locate the building in the eastern part of the site and provide on-site paved access, circulation, and trailer parking with acceptable cross-slope characteristics. To do so, per the applicant's request, the height of the proposed retaining wall exceeds the parameters in the applicable Coffee Creek Industrial Design standards.

Variance

As discussed in the Background section, there are three site design options presented by the application for development of the subject property. Option 3, which is the focus of discussion in this staff report, does not include a variance request. However, the applicant has not withdrawn the request and proposes Option 1 as their preferred option. Option 1 includes trailer cab parking/storage west of the SROZ and requests a variance to cross the SROZ with a drive aisle

for access. As demonstrated in the findings under Request I, there is no exemption available in the SROZ ordinance to allow a private drive aisle crossing of the SROZ. However, granting of a variance is allowed provided all the variance conditions listed in Subsections 4.196 (.01) A. through G. exist related to the subject property. In this instance, the applicant has failed to demonstrate that the proposed drive aisle crossing of the SROZ as designed in site design Option 1 of the current application is the minimum necessary to relieve the alleged hardship, and they have not demonstrated that alternative designs have been thoroughly explored. Providing the Required Supporting Street on the western property boundary and accessing the western portion of the subject property from that street, rather than crossing the SROZ with a drive aisle, would result in less impact to the SROZ. Because the applicant has failed to demonstrate that they meet the applicable criteria, the variance is recommended for **denial** by the Development Review Board.

Conclusion and Conditions of Approval:

Staff has reviewed the applicant's analysis of compliance with the applicable criteria. The Staff Report adopts the applicant's responses as Findings of Fact except as noted in the Findings. Based on the Findings of Fact and information included in this Staff Report, and information received from a duly advertised public hearing, staff recommends that the Development Review Board approve, with the conditions below, the proposed Stage 1 Preliminary Plan, Stage 2 Final Plan, Site Design Review, Waivers, Class 3 Sign Permit, Type C Tree Removal Plan, Standard SROZ Map Verification, and Standard SRIR Review, and **deny** the Variance request (VAR22-0001).

Planning Division Conditions:

Request A: Stage 1 Preliminary Plan (STG122-0005)

PDA 1.	**General:** Minor changes in an approved preliminary development plan may be approved by the Planning Director through the Class 1 Administrative Review Process if such changes are consistent with the purposes and general character of the development plan. All other modifications, including extension or revision of the staged development schedule, shall be processed in the same manner as the original application and shall be subject to the same procedural requirements.

Request B: Stage 2 Final Plan (STG222-0006)

PDB 1.	**General:** The approved final plan and staged development schedule shall control the issuance of all building permits and shall restrict the nature, location and design of all uses. Minor changes in an approved final development plan may be approved by the Planning Director through the Class 1 Administrative Review Process if such changes are consistent with the purposes and general character of the development plan. All other modifications, including extension or revision of the staged development schedule, shall be processed in the same manner as the original application and shall be subject to the same procedural requirements.
PDB 2.	**Prior to Final Occupancy:** All exterior, roof and ground mounted, mechanical and utility equipment shall be screened from ground level off-site view from adjacent streets or properties. See Finding B40.
PDB 3.	The applicant's plan sheets indicate that illumination in the wayside will be provided by four (4) bollard fixtures; however, no fixture cut sheets are provided in the applicant's materials. **Prior to Building Permit Issuance:** The applicant shall provide cut sheets of the proposed bollard lighting. See Finding B48.
PDB 4.	Lighting is not shown along the pathway from SW Day Road to the primary entrance at the northwest corner of the building. **Prior to Building Permit Issuance:** To ensure safety for all users, the applicant shall provide lighting along the pathway and cut sheets and photometric information to demonstrate compliance with the standard and Outdoor Lighting requirements. See Finding B55.
PDB 5.	**Prior to Non-Grading Building Permit Issuance:** The applicant shall provide an additional two (2) bicycle parking spaces to comply with the required eight (8)

	spaces based on the proposed mix of uses within the building. See Findings B63 and B80.
PDB 6.	**Prior to Final Occupancy:** All travel lanes shall be constructed to be capable of carrying a twenty-three (23) ton load. See Finding B111.

Request C: Site Design Review (SDR22-0006)

PDC 1.	**Ongoing:** Construction, site development, and landscaping shall be carried out in substantial accord with the DRB-approved plans, drawings, sketches, and other documents. Minor revisions may be approved by the Planning Director through administrative review pursuant to Section 4.030. See Finding C14.
PDC 2.	**Prior to Temporary Occupancy:** All landscaping required and approved by the DRB shall be installed prior to occupancy of the proposed development unless security equal to one hundred and ten percent (110%) of the cost of the landscaping as determined by the Planning Director is filed with the City assuring such installation within six (6) months of occupancy. "Security" is cash, certified check, time certificates of deposit, assignment of a savings account or such other assurance of completion as shall meet with the approval of the City Attorney. In such cases the developer shall also provide written authorization, to the satisfaction of the City Attorney, for the City or its designees to enter the property and complete the landscaping as approved. If the installation of the landscaping is not completed within the six-month period, or within an extension of time authorized by the DRB, the security may be used by the City to complete the installation. Upon completion of the installation, any portion of the remaining security deposited with the City will be returned to the applicant. See Finding C27.
PDC 3.	**Ongoing:** The approved landscape plan is binding upon the applicant/owner. Substitution of plant materials, irrigation systems, or other aspects of an approved landscape plan shall not be made without official action of the Planning Director or DRB, pursuant to the applicable sections of Wilsonville's Development Code. See Findings C28 and C30.
PDC 4.	**Ongoing:** All landscaping shall be continually maintained, including necessary watering, weeding, pruning, and replacing, in a substantially similar manner as originally approved by the DRB, unless altered as allowed by Wilsonville's Development Code. See Finding C29.
PDC 5.	**Prior to Temporary Occupancy:** All trees shall be balled and burlapped and conform in grade to "American Standards for Nursery Stock" current edition. Tree size shall be a minimum of 2-inch caliper. See Finding C37.
PDC 6.	**Prior to Temporary Occupancy:** The following requirements for planting of shrubs and ground cover shall be met: • Non-horticultural plastic sheeting or other impermeable surface shall not be placed under landscaping mulch. • Native topsoil shall be preserved and reused to the extent feasible. • Surface mulch or bark dust shall be fully raked into soil of appropriate depth, sufficient to control erosion, and shall be confined to areas around plantings.

	• All shrubs shall be well branched and typical of their type as described in current AAN Standards and shall be equal to or better than 2-gallon containers and 10- to 12-inch spread. • Shrubs shall reach their designed size for screening within 3 years of planting. • Ground cover shall be equal to or better than the following depending on the type of plant materials used: gallon containers spaced at 4 feet on center minimum, 4-inch pot spaced 2 feet on center minimum, 2-1/4-inch pots spaced at 18 inches on center minimum. • No bare root planting shall be permitted. • Ground cover shall be sufficient to cover at least 80% of the bare soil in required landscape areas within 3 years of planting. • Appropriate plant materials shall be installed beneath the canopies of trees and large shrubs to avoid the appearance of bare ground in those locations. • Compost-amended topsoil shall be integrated in all areas to be landscaped, including lawns. See Finding C42.
PDC 7.	**Prior to Temporary Occupancy:** Plant materials shall be installed and irrigated to current industry standards and be properly staked to ensure survival. Plants that die shall be replaced in kind, within one growing season, unless appropriate substitute species are approved by the City. See Finding C42.
PDC 8.	**Prior to Building Permit Issuance:** Final review of the proposed building lighting's conformance with the Outdoor Lighting Ordinance will be determined at the time of Building Permit issuance. See Findings C45 through C53.
PDC 9.	**Ongoing:** Lighting shall be reduced one hour after close, to 50% of the requirements set forth in the Oregon Energy Efficiency Specialty Code. See Finding C52.

Request D: Waivers (WAIV22-0001)

No conditions for this request

Request E: Class 3 Sign Permit (SIGN22-0004)

PDE 1.	**Ongoing:** The approved signs shall be installed in a manner substantially similar to the plans approved by the DRB and stamped approved by the Planning Division.
PDE 2.	**Prior to Sign Installation/Ongoing:** The applicant/owner of the property shall obtain all necessary building and electrical permits for the approved signs, prior to their installation, and shall ensure that the signs are maintained in a commonly-accepted, professional manner.
PDE 3.	**Prior to Sign Installation/Ongoing:** The applicant/owner of the property shall apply for a Class 1 Sign Permit to determine compliance with the final placement, allowed monument sign area and Site Design Review standards. The monument sign shall not exceed 64 square feet in size. See Findings E11 and E17.
PDE 4.	**Prior to Sign Installation/Ongoing:** The applicant/owner of the property shall apply for Class 1 Sign Permit to determine compliance with the allowed building sign area and Site Design Review standards. The building sign shall not exceed 96 square feet in size. See Finding E19.

Request F: Type C Tree Removal Plan (TPLN22-0005)

PDF 1.	**General:** This approval for removal applies only to the 175 on-site trees identified in the applicant's submitted materials. All other trees on the property shall be maintained unless removal is approved through separate application.
PDF 2.	**Prior to Grading Permit Issuance:** The applicant shall submit an application for a Type 'C' Tree Removal Permit, together with the applicable fee. In addition to the application form and fee, the applicant shall provide the City's Planning Division an accounting of trees to be removed within the project site, corresponding to the approval of the DRB. The applicant shall not remove any trees from the project site until the tree removal permit, including the final tree removal plan, have been approved by Planning Division staff.
PDF 3.	**Prior to Temporary Occupancy/Ongoing:** The permit grantee or the grantee's successors-in-interest shall cause the replacement trees to be staked, fertilized and mulched, and shall guarantee the trees for two (2) years after the planting date. A "guaranteed" tree that dies or becomes diseased during the two (2) years after planting shall be replaced. See Findings F8 through F12.
PDF 4.	**Prior to Commencing Site Grading**: Prior to site grading or other site work that could damage trees, the applicant/owner shall install 6-foot-tall chain-link fencing around the drip line of preserved trees. Removal of the fencing around the identified trees shall only occur if it is determined the trees are not feasible to retain. The fencing shall comply with Wilsonville Public Works Standards Detail Drawing RD-1230. Fencing shall remain until authorized in writing to be removed by the Planning Division. See Finding F13.
PDF 5.	**Ongoing:** The project arborist shall monitor tree protection fencing and the condition of all preserved and protected trees during construction and shall submit quarterly monitoring reports to the City. Any adjustments to tree protection fencing, work within the tree protection fencing within the root protection zone of protected on- and off-site trees, or pruning of the roots or overstory (canopy and branches) of protected trees shall be supervised by the project arborist. See Finding F13.

Request G: Standard SROZ Map Verification (SROZ22-0006)

No conditions for this request.

Request H: Standard SRIR Review (SRIR22-0004)

No conditions for this request.

The following Conditions of Approval are provided by the Engineering, Natural Resources, or Building Divisions of the City's Community Development Department or Tualatin Valley Fire and Rescue, all of which have authority over development approval. A number of these Conditions of Approval are not related to land use regulations under the authority of the Development Review Board or Planning Director. Only those Conditions of Approval related to criteria in Chapter 4 of Wilsonville Code and the Comprehensive

Plan, including but not limited to those related to traffic level of service, site vision clearance, recording of plats, performance standards, and concurrency, are subject to the Land Use review and appeal process defined in Wilsonville Code and Oregon Revised Statutes and Administrative Rules. Other Conditions of Approval are based on City Code chapters other than Chapter 4, state law, federal law, or other agency rules and regulations. Questions or requests about the applicability, appeal, exemption or non-compliance related to these other Conditions of Approval should be directed to the City Department, Division, or non-City agency with authority over the relevant portion of the development approval.

Engineering Division Conditions:

PFA 1.	**Prior to Issuance of Public Works Permit**: Public Works Plans and Public Improvements shall conform to the "Public Works Plan Submittal Requirements and Other Engineering Requirements" in Exhibit C1.
PFA 2.	**Prior to Issuance of the Public Works Permit**: Submit site plans to Engineering showing street improvements along the development's frontage on SW Day Road, including street widening to accommodate two travel lanes, one center turn lane, curb, planter strip, street trees, bike lane, sidewalk, streetlights, and driveway approach. Street improvements shall be constructed in accordance with the Public Works Standards.
PFA 3.	**With the Public Works Permit:** The construction drawings shall show all necessary temporary water line looping to avoid long dead-end water lines. Water line looping to the existing water line across the SW Commerce Circle site is required to improve system performance and reliability.
PFA 4.	**Prior to the Issuance of Public Works Permit:** A final stormwater report shall be submitted for review and approval. The stormwater report shall include information and calculations to demonstrate how the proposed development meets the treatment, flow control, and source control requirements. Additionally, the report shall account for how stormwater from the upstream drainage areas, namely the parcel to the east, will be accounted for across this property.
PFA 5.	**Prior to Issuance of the Public Works Permit:** Applicant shall obtain an NPDES 1200C permit from the Oregon Department of Environmental Quality and a Local Erosion Control Permit from the City of Wilsonville. All erosion control measures shall be in place prior to starting any construction work, including any demolition work. Permits shall remain active until all construction work is complete and the site has been stabilized.
PFA 6.	**With the Public Works Permit:** The construction drawings shall show vaults and conduit for City Fiber in the SW Day Road right-of-way. **Prior to final completeness of the Public Works Permit:** All conduit and vaults necessary for City Fiber shall be installed, inspected and approved by the City.
PFA 7.	**With the Public Works Permit:** The construction drawings shall show all existing overhead utilities along the proposed development's frontage on SW Day Road will be placed underground. **Prior to final completeness of the Public Works Permit:** All existing overhead utilities along the proposed development's frontage on SW Day

	Road shall be placed underground. Placement of existing overhead utilities crossing SW Day Road are eligible for System Development Charge (SDC) Credits. When eligible, SDC Credits will be issued in accordance with City Code Section 11.100.
PFA 8.	**With the Public Works Permit:** The construction drawings shall show the location of any existing septic systems. **Prior to Final Building Permit Occupancy:** Submit documentation that the existing on-site septic systems were properly decommissioned per the requirements of OAR 340-071-0185.
PFA 9.	**With the Public Works Permit:** The construction drawings shall show the location of any existing well(s). **Prior to Final Building Permit Occupancy:** Submit documentation that any existing wells serving this property were properly abandoned in accordance with OAR 690-240 and the Water Resources Department requirements.
PFA 10.	Trucks are prohibited from turning left onto SW Day Road from the site. Trucks desiring to head west on SW Day Road must utilize the existing site access on SW Commerce Circle. **With the Public Works Permit:** The construction drawings shall show the location of internal signage and site improvements necessary to prohibit trucks from turning left onto SW Day Road. **Prior to Final Building Certificate of Occupancy:** All necessary internal signage and site improvements shall be installed, inspected and approved by the City.
PFA 11.	**Prior to Final Building Certificate of Occupancy:** The applicant shall dedicate all necessary 15-foot water line easements. All fire hydrants and water lines serving those fire hydrants shall be publicly owned. Any portion of that system that is located outside of the right-of-way shall be located in a 15-foot easement.
PFA 12.	**Prior to Final Building Certificate of Occupancy:** The applicant shall record a 15-foot right-of-way dedication along SW Day Road.
PFA 13.	**Prior to Final Building Certificate of Occupancy:** The applicant shall dedicate a 10-foot public utility easement along the SW Day Road right-of-way.
PFA 14.	**Prior to Final Building Certificate of Occupancy:** The applicant shall dedicate a 31-foot wide public access and utility easement along the western property line for the purposes of a future Supporting Street.
PFA 15.	The site is impacted by a Significant Resource Overlay Zone (SROZ). No structures, development or construction activities are permitted in the SROZ. **Prior to Final Building Certificate of Occupancy**: The applicant shall dedicate a conservation easement over all SROZ areas on the site.
PFA 16.	**Prior to Issuance of Any Occupancy Permits:** All public infrastructure improvements including but not limited to street, stormwater drainage, water quality and flow control, sanitary sewer, and water facilities shall be substantially complete with approval from the Community Development Director pursuant to Section 4.220 of the Development Code.
PFA 17.	**Prior to Issuance of Any Occupancy Permits:** All necessary easements shall be recorded with the County, including public water line, public access, public utility, private sanitary sewer, private stormwater and access easements, and conservation easements.

PFA 18.	**Prior to Issuance of Final Building Certificate of Occupancy:** The applicant shall provide a site distance certification by an Oregon Registered Professional Engineer for all driveway access per the Traffic Impact Study.
PFA 19.	**Prior to Any Paving:** Onsite stormwater facilities must be constructed and vegetated facilities planted. **Prior Issuance of Final Building Certificate of Occupancy:** The applicant must execute and record with the County a Stormwater Maintenance and Access Easement Agreement with the City
PFA 20.	**Prior to Any Paving:** Offsite stormwater facilities must be constructed and vegetated facilities planted. **Prior Issuance of Final Building Certificate of Occupancy:** The applicant must execute and record with the County a Stormwater Maintenance Agreement with the City.

Natural Resources Division Conditions:

All Requests

NR 1.	Natural Resource Division Requirements and Advisories listed in Exhibit C2 apply to the proposed development.

Master Exhibit List:

Entry of the following exhibits into the public record by the DRB confirms its consideration of the application as submitted. The exhibit list below includes exhibits for Planning Case File DB22-0007 and reflects the electronic record posted on the City's website and retained as part of the City's permanent electronic record. Any inconsistencies between printed or other electronic versions of the same Exhibits are inadvertent and the version on the City's website and retained as part of the City's permanent electronic record shall be controlling for all purposes.

Planning Staff Materials

A1. Staff report and findings (this document)
A2. Staff's Presentation Slides for Public Hearing (to be presented at Public Hearing)
A3. Staff Memorandum to DRB Dated January 12, 2023
A4. Staff Email to Applicant about Variance, Dated February 3, 2023
A5. Staff Email to Applicant about Retaining Wall, Dated March 17, 2023
A6. Staff Memorandum to DRB Dated March 27, 2023

Materials from Applicant

B1. **Applicant's Narrative and Materials** – *Available Under Separate Cover*
Part 1 Applicant's Application and Narrative
Part 2 Applicant's Exhibits C-E
Part 3 Applicant's Exhibits F-G
Part 4 Applicant's Exhibits H-Q
Part 5 Applicant's Exhibits R-V
B2. **Site Design Option 3 Staff Recommended** – *Available Under Separate Cover*
B3. **Site Design Option 2 Applicant's Alternate** – *Available Under Separate Cover*
B4. **Site Design Option 1 Applicant's Preferred** – *Available Under Separate Cover*
B5. Response to First Incomplete Notice, Dated July 29, 2022
B6. Response to Second Incomplete Notice, Dated October 11, 2022
B7. Letter from Applicant regarding Extent of Property, Dated October 24, 2022
B8. Response to Completeness Notice, Dated November 17, 2022
B9. Applicant's 120-day Waiver Request 1
B10. Applicant's 120-day Waiver Request 2
B11. Email from Applicant about Site Design Options, Dated March 1, 2023
B12. Letter from Schwabe Williamson & Wyatt about Undergrounding, Dated March 15, 2023
B13. Email from Applicant about Site Revisions, Dated April 11, 2023
B14. Applicant's Supplemental Retaining Wall Details

Development Review Team Correspondence

C1. Public Works Plan Submittal and Other Engineering Requirements
C2. Natural Resource Findings and Requirements

Other Correspondence

D1. ODOT Comment Regarding TPR Compliance Dated December 15, 2022, and City Response

Procedural Statements and Background Information:

1. The statutory 120-day time limit applies to this application. The application was received on April 19, 2022. Staff conducted a completeness review within the statutorily allowed 30-day review period and found the application to be incomplete on May 19, 2022. The applicant submitted additional materials on August 26, 2022. Staff conducted a second completeness review within the statutorily allowed 30-day review period and deemed the application incomplete on September 16, 2022. The applicant submitted additional materials on October 12, 2022, and on October 14, 2022, requested that the application be deemed complete per ORS 227.178(2)(b).

Staff deemed the application complete, as requested by the applicant, on October 14, 2022, noting that one item, a downstream analysis required per 301.5.01 of the Public Works Standards, remained incomplete. Staff noted that the applicant was allowed to submit additional information to the record for the application addressing this item, and they subsequently submitted the required information as Exhibit G of the applicant's materials (included in Exhibit B1).

Based on the October 14, 2022 completeness date, the City must render a final decision for the request, including any appeals, by February 11, 2023. However, the applicant requested that the 120-day review period be extended to March 30, 2023, to allow more time to process their application. Subsequent to the first extension request and following additional discussion of the variance request with City staff, the applicant requested that the 120-day review period be further extended to June 30, 2023, to allow additional time to process their application. Therefore, the City must render a final decision by June 30, 2023.

2. Surrounding land uses are as follows:

Compass Direction	Zone:	Existing Use:
North:	FD-20 (Washington County)	Rural Residential and Contractors' Establishment
East:	PDI-RSIA	Rural Residential and Industrial
South:	PDI	Industrial
West:	FD-20 (Washington County)	Rural Residential

3. Previous Planning Approvals:
    - 9825/9835 SW Commerce Circle
        - 85DR20 – Replace storage building with freight dock
        - 96DB15 – Stage II Final Plan and Site Design Review for a truck terminal building
        - 99AR42 – Add a covered wash area
        - 03AR35 – Add nine parking spaces to existing parking lot
    - 9710 SW Day Road – No approvals on file

4. The applicant has complied with Sections 4.008 through 4.011, 4.013-4.031, 4.034 and 4.035 of the Wilsonville Code, said sections pertaining to review procedures and submittal requirements. The required public notices have been sent and all proper notification procedures have been satisfied.

Findings of Fact:

NOTE: Pursuant to Section 4.014 the burden of proving that the necessary findings of fact can be made for approval of any land use or development application rests with the applicant in the case.

General Information

Application Procedures-In General
Section 4.008

The application is being processed in accordance with the applicable general procedures of this Section.

Initiating Application
Section 4.009

The application has been submitted on behalf of the property owners, Delco Holdings, LLC, dba Delta Logistics, Inc., and is signed by an authorized representative.

Pre-Application Conference
Subsection 4.010 (.02)

A pre-application conference was held on April 15, 2021 (PA21-0007) in accordance with this subsection.

Lien Payment before Approval
Subsection 4.011 (.02) B.

No applicable liens exist for the subject property. The application can thus move forward.

General Submission Requirements
Subsection 4.035 (.04) A.

The applicant has provided all of the applicable general submission requirements contained in this subsection.

Zoning-Generally
Section 4.110

This proposed development is in conformity with the applicable zoning district and City review uses the general development regulations listed in Sections 4.150 through 4.199.

Request A: Stage 1 Preliminary Plan (STG122-0005)

As described in the Findings below, the request meets the applicable criteria or will by conditions of approval.

Planned Development Regulations

Planned Development Purpose & Lot Qualifications
Subsections 4.140 (.01) and (.02)

A1. The property is of sufficient size to be developed in a manner consistent the purposes and objectives of Section 4.140. The subject property is greater than 2 acres and is designated for industrial development in the Comprehensive Plan. Concurrent with the request for a Stage 1 Preliminary Plan, the applicant proposes to rezone the property to PDI-RSIA (Planned Development Industrial-Regionally Significant Industrial Area). The property will be developed as a planned development in accordance with this subsection.

Ownership Requirements
Subsection 4.140 (.03)

A2. All the land subject to change under the proposal is under a single ownership.

Professional Design Team
Subsection 4.140 (.04)

A3. As can be found in the applicant's submitted materials, appropriate professionals have been involved in the planning and permitting process. Lee Leighton, AICP, with Mackenzie is the applicant's representative.

Planned Development Permit Process
Subsection 4.140 (.05)

A4. The subject property is greater than 2 acres, is designated for industrial development in the Comprehensive Plan, and is proposed to be zoned Planned Development Industrial-Regionally Significant Industrial Area (PDI-RSIA). The property will be developed as a planned development in accordance with this subsection.

Comprehensive Plan Consistency
Subsection 4.140 (.06)

A5. The proposed project, as found elsewhere in this report, complies with the Planned Development Industrial-Regionally Significant Industrial Area zoning designation, which implements the Comprehensive Plan designation of Industrial for this property.

Application Requirements
Subsection 4.140 (.07)

A6. Review of the proposed Stage 1 Preliminary Plan has been scheduled for a public hearing before the Development Review Board, in accordance with this subsection, and the applicant has met all the applicable submission requirements as follows:

- The property affected by the Stage 1 Preliminary Plan is under the sole ownership of Delco Holdings, LLC, dba Delta Logistics, Inc., and the application has been signed by the property owners.
- The application for a Stage 1 Preliminary Plan has been submitted on a form prescribed by the City.
- The professional design team and coordinator have been identified. See Findings A3 and B3.
- The applicant has stated the various uses involved in the Preliminary Plan and their locations.
- The boundary affected by the Stage 1 Preliminary Plan has been clearly identified and legally described.
- Sufficient topographic information has been submitted.
- Information on the land area to be devoted to various uses has been provided.
- Any necessary performance bonds will be required.
- Waiver information has been submitted.

Planned Development Industrial-Regionally Significant Industrial Area (PDI-RSIA) Zone

Purpose of PDI-RSIA
Subsection 4.135.5 (.01)

A7. The uses proposed in the Stage 1 Preliminary Plan area within the PDI-RSIA zone are limited to industrial uses, supporting the purpose stated in this subsection.

Uses Typically Permitted
Subsection 4.135.5 (.03)

A8. The proposed development consists of an industrial building where the intended uses are manufacturing/warehousing with accessory office space and associated industrial storage. These uses are consistent with the uses typically permitted and are, therefore, allowed uses.

Prohibited Uses
Subsection 4.135.5 (.04)

A9. No prohibited uses are proposed by the applicant. Performance standards will be required to be met as part of the Stage 2 Final Plan review.

Block and Access Standards
Subsections 4.135.5 (.05) and 4.131 (.03)

A10. The subject property is located within the Coffee Creek Industrial Design Overlay District and, therefore, subject to the Regulating Plan in Figure CC-1, which identifies SW Day Road along the property's northern boundary as an Existing/Planned Addressing Street. A Required Supporting Street is identified along the property's western boundary. No additional Existing/Planned Addressing Streets or Supporting Streets are identified abutting the subject property. Therefore, no additional streets are required at this location to satisfy the applicable block and access standards. See Finding B25 for additional discussion of block and access standards.

PDI-RSIA Performance Standards

Industrial Performance Standards
Subsections 4.135 (.06) A. through N.

A11. The Stage 1 Preliminary Plan enables conformance with the industrial performance standards. Final compliance is reviewed with the Stage 2 Final Plan (see Finding B26).

Other Standards for PDI-RSIA Zone

Lot Size
Subsections 4.135.5 (.07) A.

A12. Nothing in the Stage 1 Preliminary Plan would prevent lot size requirements from being met.

Setbacks
Subsections 4.135.5 (.07) C. through E.

A13. Nothing in the Stage 1 Preliminary Plan would prevent setback requirements from being met.

Coffee Creek Industrial Design Overlay District

Purpose of Coffee Creek Industrial Design Overlay District – High Quality Site Design
Subsection 4.134 (.01) A.

A14. The proposed development features a high-quality industrial building and site designed to meet the needs of a warehouse/manufacturing tenant that is well integrated with the adjacent streetscape and other public spaces. The high quality landscaping proposed is consistent with the Coffee Creek Industrial Design Overlay District by providing a dense planted area along SW Day Road, along with a wayside area that has been designed to connect with the public sidewalk system.

Purpose of Coffee Creek Industrial Design Overlay District – Multi-Modal Transportation Network
Subsection 4.134 (.01) B.

A15. The applicant proposes street improvements for Addressing Street SW Day Road consistent with the cross-sections as prescribed in the Coffee Creek Industrial Design Pattern Book. Sidewalks and a buffered bike lane providing multi-modal access to the site will be provided in a dedicated right-of-way along this road. Because none of the site design options propose street improvements for the Required Supporting Street along the west site boundary, the applicant is required by a condition of approval to dedicate a 31-foot-wide public access and utility easement along the western property line for the purposes of a future Supporting Street.

Purpose of Coffee Creek Industrial Design Overlay District – Preservation of Natural Features
Subsection 4.134 (.01) C.

A16. Natural features on the site include the SROZ and 257 inventoried trees, 200 of which are on site, 21 in the public right-of-way of SW Day Road, and 36 off site along the east and south property boundaries. The applicant's site design options propose substantial tree removal and manipulation of the site east of the SROZ to construct the building and other site improvements, including a retaining wall along the north, east, and south sides of the building. The options vary, however, in the degree to which they affect the natural features of the SROZ and upland area west of this resource. Option 3 preserves the most natural features on the site, in the SROZ and the western upland area. All design options propose to fully mitigate for the trees removed on site and in the public right-of-way of SW Day Road.

Purpose of Coffee Creek Industrial Design Overlay District – Minimize Adverse Impacts
Subsection 4.134 (.01) D.

A17. The proposed development will meet the required buffering and screening requirements and industrial performance standards, thereby minimizing impacts on adjacent properties.

Purpose of Coffee Creek Industrial Design Overlay District – Minimize Visibility of Parking and Circulation Areas
Subsection 4.134 (.01) E.

A18. The applicant has minimized the visibility of parking, circulation, and loading areas to the greatest extent possible by including extensive plantings along SW Day Road. Vehicular parking areas have been provided along the north and south sides of the building and are screened by landscaping from adjacent properties.

Purpose of Coffee Creek Industrial Design Overlay District – Pleasant and Functional Industrial District
Subsection 4.134 (.01) F.

A19. The proposed landscaping, wayside, pedestrian pathways, and parking and loading area screening will contribute toward the creation of a pleasant and functional industrial district for employees and visitors.

Purpose of Coffee Creek Industrial Design Overlay District – Timely and Predictable Process
Subsection 4.134 (.01) G.

A20. The proposed application is being reviewed consistent with the procedures identified in the Development Code and Coffee Creek Industrial Design Pattern Book.

Applicability of Coffee Creek Industrial Design Overlay District
Subsection 4.134 (.02) A.-D.

A21. The proposal is for the construction of a new building, therefore, the regulations of Section 4.134 apply.

Exceptions to Coffee Creek Industrial Design Overlay District
Subsection 4.134 (.03) A.-D.

A22. The proposed development does not include any activities subject to these exceptions.

Uses Typically Permitted
Subsection 4.134 (.04)

A23. The proposed use as a warehouse/manufacturing facility with accessory office space is permitted per Section 4.135.5(.03). See Finding A8.

Prohibited Uses
Subsection 4.134 (.05)

A24. The proposed use is not prohibited per Subsection 4.135.5(.03).

Request B: Stage 2 Final Plan (STG222-0006)

As described in the Findings below, the request meets the applicable criteria or will by conditions of approval.

Planned Development Regulations-Generally

Planned Development Purpose and Lot Qualifications
Subsections 4.140 (.01) and (.02)

B1. The proposed Stage 2 Final Plan is consistent with the Planned Development Regulations and is of sufficient size to be developed in a manner consistent with the purposes and objectives of Section 4.140. The subject property is greater than two (2) acres and is

designated for industrial development in the Comprehensive Plan. Concurrently with the request for a Stage 2 Final Plan, the applicant proposes to rezone the property to PDI-RSIA (Planned Development Industrial-Regionally Significant Industrial Area). The property will be developed as a planned development in accordance with this subsection.

Ownership Requirements
Subsection 4.140 (.03)

B2. The land included in the proposed Stage 2 Final Plan is under the single ownership of Delco Holdings, LLC, dba Delta Logistics, Inc., and the application has been signed by an authorized representative.

Professional Design Team
Subsection 4.140 (.04)

B3. As can be found in the applicant's submitted materials, appropriate professionals have been involved in the planning and permitting process. Lee Leighton, AICP, with Mackenzie has been designated the coordinator for the planning portion of the project.

Planned Development Permit Process
Subsection 4.140 (.05)

B4. The subject property is greater than 2 acres, is designated for industrial development in the Comprehensive Plan, and is intended to be zoned Planned Development Industrial-Regionally Significant Industrial Area. The property will be developed as a planned development in accordance with this subsection.

Stage 2 Final Plan Submission Requirements and Process

Timing of Submission
Subsection 4.140 (.09) A.

B5. The applicant is requesting both Stage 1 and Stage 2 approval, together with Site Design Review, as part of this application. The final plan provides sufficient information regarding conformance with both the preliminary development plan and Site Design Review.

Development Review Board Role
Subsection 4.140 (.09) B.

B6. The Development Review Board (DRB) is considering all applicable permit criteria set forth in the Planning and Land Development Code and staff is recommending the DRB approve the application with conditions of approval.

Stage 1 Conformance, Submission Requirements
Subsection 4.140 (.09) C.

B7. The Stage 2 Final Plan substantially conforms to the proposed Stage 1 Preliminary Plan, which has been submitted concurrently. The applicant has provided the required drawings and other documents showing all the additional information required by this subsection.

Stage 2 Final Plan Detail
Subsection 4.140 (.09) D.

B8. The applicant has provided sufficiently detailed information to indicate fully the ultimate operation and appearance of the development, including a detailed site plan, landscape plans, and elevation drawings.

Submission of Legal Documents
Subsection 4.140 (.09) E.

B9. No additional legal documentation is required for dedication or reservation of public facilities.

Expiration of Approval
Subsection 4.140 (.09) I. and Section 4.023

B10. The Stage 2 Final Plan approval, along with other associated applications, will expire two (2) years after approval, unless an extension is approved in accordance with these subsections. The applicant intends to construct the proposed building in one implementation phase promptly after land use approval, and well within the allotted time period.

Consistency with Plans
Subsection 4.140 (.09) J. 1.

B11. As documented in the applicant's materials, the proposed development for a manufacturing/warehousing tenant with accessory office space is consistent with the planned economic uses and activities and the form of development the City's planning work has been designed to foster and support. The property is intended to be zoned Planned Development Industrial-Regionally Significant Industrial Area (PDI-RSIA) consistent with the Industrial designation in the Comprehensive Plan. To staff's knowledge, the location, design, size, and uses are consistent with other applicable plans, maps, and ordinances, or will be by specific conditions of approval.

Traffic Concurrency
Subsection 4.140 (.09) J. 2.

B12. As shown in Transportation Impact Analysis (February 2022), included in Exhibit B1, the LOS D standard will continue to be met by existing street improvements at the studied intersections with existing, planned, and this proposed development, as follows:

- Signalized:
  - SW Boones Ferry Rd/SW Day Rd: LOS B, Volume-to-Capacity Ratio (V/C) 0.67
  - SW Boones Ferry Rd/SW 95th Ave: LOS C, V/C 0.71
  - I-5 Southbound Ramps/SW Elligsen Rd: LOS B, V/C 0.79
  - I-5 Northbound Ramps/SW Elligsen Rd: LOS A, V/C 0.35
- Two-Way Stop-Controlled:
  - Site Access/SW Day Rd: LOS A/B, V/C 0.06

Facilities and Services Concurrency
Subsection 4.140 (.09) J. 3.

B13. Frontage improvements and right-of-way dedications are proposed on SW Day Road consistent with City design sections for this Major Arterial, which is identified as an Existing/Planned Addressing Street in the Coffee Creek Regulating Plan (Figure CC-1). Per the Regulating Plan, a new partial Supporting Street is also required to be constructed in an easement along the west property boundary to serve as the access for this property. This facility would provide access to the site consistent with access spacing requirements that apply to SW Day Road, and enable properties to the west to obtain access to SW Day Road. However, with the Supporting Street as the only access for the property, a drive aisle crossing of the SROZ would be required for the property owner to have access to the larger, eastern portion of their property. Due to the protection regulations for the SROZ, the City Engineer evaluated whether an additional access on SW Day Road would function while maintaining safety and continuing to meet LOS standards (see Transportation Impact Analysis in Exhibit B1). As a result of that evaluation, the City approved both the driveway in the eastern part of the site and the Supporting Street west of the SROZ in order for the applicant to develop both portions of their property and have access in a manner with minimal impact on the SROZ.

The majority of the property, which provides the primary development potential, lies east of the SROZ. If the developer chooses not to develop the portion of the property west of the SROZ, or waits to develop it through a future application, as in Option 3 of the current application, then the City would support easement dedication for the Supporting Street at this time and its construction at that later date. The rationale for this is that access is not needed if there is no development on that portion of the site. However, if the applicant proposes to use that portion of the site for storage and/or other uses, as proposed in Options 1 and 2 of the current application, then construction of the Supporting Street is required.

Extension of public water and stormwater utilities are included in the applicant's proposed construction plans for the SW Day Road frontage. However, per the applicant's code response narrative, the City has directed the applicant to pay a fee in lieu of immediate construction to contribute to a future public sanitary sewer extension project because there is no existing line close enough to make a service connection at this time. The applicant proposes to construct a private sanitary sewer line connection south through the commonly owned property to the south to the existing line in SW Commerce Circle.

The proposed development will be adequately served by existing or immediately planned facilities and services as required by this standard.

Adherence to Approved Plans
Subsection 4.140 (.10) A.

B14. A condition of approval ensures adherence to approved plans except for minor revisions by the Planning Director.

Standards Applying in All Planned Development Zones

Additional Height Guidelines
Subsection 4.118 (.01)

B15. Staff does not recommend the Development Review Board require a height less than the applicant proposes as the proposed height provides for fire protection access, does not abut a low density zone, and does not impact scenic views of Mt. Hood or the Willamette River.

Underground Utilities
Subsection 4.118 (.02)

B16. All utilities on the property are required to be underground.

Waivers
Subsection 4.118 (.03)

B17. The applicant is requesting two (2) waivers (see Request D).

Other Requirements or Restrictions
Subsection 4.118 (.03) E.

B18. No additional requirements or restrictions are recommended pursuant to this subsection. Performance standards and requirements of the PDI-RSIA Zone address potential impacts from noise, odor, glare, etc.

Impact on Development Cost
Subsection 4.118 (.04)

B19. In staff's professional opinion, the determination of compliance or attached conditions do not unnecessarily increase the cost of development, and no evidence has been submitted to the contrary.

Requiring Tract Dedications
Subsection 4.118 (.05)

B20. No additional tracts are being required for recreational facilities or open space area. A 15-foot-wide right-of-way dedication and 10-foot-wide public utility easement are required along the site's frontage on SW Day Road. The applicant also is required to dedicate a 31-foot-wide public access and utility easement along the western property line for the purposes of a future Supporting Street.

Habitat Friendly Development Practices
Subsection 4.118 (.09)

B21. Extensive grading of the east and central parts of the site is proposed to allow improvements; however, trees on adjacent properties to the south and east will be preserved and protected during construction. The west part of the site, which is primarily SROZ, will be left in its natural state. No significant native vegetation would be retained by an alternative site design, the City's stormwater standards will be met limiting adverse hydrological impacts on water resources, and no impacts on significant wildlife corridors or fish passages have been identified.

Planned Development Industrial-Regionally Significant Industrial Area (PDI-RSIA) Zone

Purpose of PDI-RSIA
Subsection 4.135.5 (.01)

B22. The proposed development is an industrial building with the intended use of manufacturing/warehousing containing accessory office space. This meets the purpose statement of the PDI-RSIA zone as it provides for a regionally significant industrial operation and employment opportunities in an underutilized industrial site.

Uses Typically Permitted
Subsection 4.135.5 (.03)

B23. An industrial building with the intended use of manufacturing/warehousing containing accessory office space is consistent with the permitted uses in the Planned Development Industrial-Regionally Significant Industrial Area zone.

Prohibited Uses
Subsection 4.135.5 (.04)

B24. The applicant is not requesting approval for any prohibited use.

Block and Access Standards
Subsections 4.135.5 (.05) and 4.131 (.03)

B25. The subject property is in the Coffee Creek Industrial Design Overlay District and, therefore, subject to the Regulating Plan in Figure CC-1, which identifies SW Day Road as an Existing/Planned Addressing Street. The Regulating Plan also identifies a future Required Supporting Street along the subject property's western boundary.

As described in the Transportation Impact Analysis for the site, a full site access is proposed on SW Day Road approximately 1,200 feet west of the SW Boones Ferry Road intersection. Also proposed is an internal connection to Delta Logistics' auxiliary site property to the south, which has access to SW Commerce Circle. The full site access on SW Day Road will support both employee passenger vehicle traffic and freight truck traffic and is required to

meet the City's Public Works construction standards. Access spacing for a Major Arterial is a minimum 1,000 feet, with desired spacing of 1,320 feet.

The approximate spacing between the proposed site access and the SW Boones Ferry Road intersection is roughly 1,200 feet, meeting the City's minimum standard. However, there is a required Supporting Street connection to SW Day Road along the property's west boundary, approximately 420 feet from the proposed driveway. Ideally, the site would be able to connect directly to the future Supporting Street, but because of the SROZ on the west portion of the property, access to the proposed Supporting Street is not feasible within the site and, therefore, a direct access to SW Day Road is necessary.

Based on sight distance findings and the vertical curve on SW Day Road, trucks desiring to head west on SW Day Road will need to utilize the existing site access on Delta Logistics' auxiliary site on SW Commerce Circle. Appropriate coordination with truck drivers and signage will need to be installed on site to prohibit trucks from turning left out of the SW Day Road driveway. A condition of approval ensure these requirements are met.

PDI-RSIA Performance Standards

Industrial Performance Standards
Subsections 4.135 (.06) A. through N.

B26. The proposed project meets the performance standards of this subsection as follows:

- **Pursuant to Standard A** (enclosure of uses and activities), all non-parking/loading activities and uses, except for parking of semi-tractor trailers and cabs (see Standard M, below), are completely enclosed within the proposed building.
- **Pursuant to Standard B** (vibrations), there is no indication that the proposed development will produce vibrations detectable off site without instruments.
- **Pursuant to Standard C** (emissions), there is no indication that odorous gas or other odorous matter will be produced by the proposed use.
- **Pursuant to Standard D** (open storage), parking of semi-tractor trailers and cabs is appropriately screened as required (see Standard M, below), and the no other open storage areas are proposed on the site.
- **Pursuant to Standard E** (operations and residential areas), no residential districts exist within 100 feet of building openings and proposed loading zones.
- **Pursuant to Standard F** (heat and glare, exterior lighting), no exterior operations are proposed creating heat and glare, and exterior lighting will be equipped with directional throw and/or cutoffs so as not to produce light on adjacent properties.
- **Pursuant to Standard G** (dangerous substances), there are no prohibited dangerous substances expected on the development site.
- **Pursuant to Standard H** (liquid and solid wastes), there is no evidence that the standards for liquid and solid waste will be violated.
- **Pursuant to Standard I** (noise), there is no evidence that noise generated from the proposed operations will violate the City's Noise Ordinance. Noises produced in

violation of the Noise Ordinance would be subject to the enforcement procedures established in Wilsonville Code (WC) 6.204 for such violations.

- **Pursuant to Standard J** (electrical disturbances), no functions or construction methods are proposed that would interfere with electrical systems, and any construction activity that may require temporary electrical disruption for safety or connection reasons will be limited to the project site and coordinated with appropriate utilities.
- **Pursuant to Standard K** (discharge of air pollutants), there is no evidence that any prohibited discharge will be produced by the proposed project.
- **Pursuant to Standard L** (open burning), no open burning is proposed on the development site.
- **Pursuant to Standard M** (outdoor storage), parking/storage of semi-tractor trailers and cabs is proposed in the central part of the development site, east of the SROZ and west of the building. All parking in this area will be asphalt or concrete surface and screened at the property line by dense landscaping as required.
- **Pursuant to Standard N** (unused area landscaping), the subject property outside the SROZ and its buffer and Impact Area, will be completely developed with buildings, circulation areas, and landscaping.

Other Standards for PDI-RSIA Zone

Lot Size
Subsections 4.135.5 (.07) A.

B27. The existing parcel is less than 50 acres. The applicant has not submitted a request for land division, therefore, this subsection is not applicable.

Setbacks and Corner Vision
Subsections 4.135.5 (.07) C. through F.

B28. The proposed building is setback at least 30 feet on all sides of the property, and the project site is not a corner lot requiring compliance with the corner vision clearance standards. Right-of-way dedication for the Supporting Street required by the Regulating Plan (Figure CC-1) along the west property boundary is required by a condition of approval. See Finding B40 for additional information on setbacks within the Coffee Creek Industrial Design Overlay District.

Coffee Creek Design Overlay District Standards

Regulating Plan
Subsection 4.134 (.06) A.

B29. As shown in the illustration below, the proposed development fronts on SW Day Road (primary frontage), which is classified as an Addressing Street on the Regulating Plan (Figure CC-1). A Required Supporting Street is located along the west boundary of the property with an intersection at SW Day Road at its north terminus and connection to other Required Supporting Streets to the south that provide access to SW Garden Acres Road and the rest of the Coffee Creek Industrial Area.

Connectivity Standards
Subsection 4.134 (.06) B. 1.-2.

B30. The proposed development has primary frontage on SW Day Road, an Addressing Street. There is one required Supporting Street on the west side of the property and no Through Connections shown on Figure CC-4 adjacent to the property.

Review Process
Subsection 4.134 (.07)

B31. The applicant has addressed provisions of Sections 4.197, 4.700, and 4.140, as applicable, for the proposed development.

Waivers
Subsection 4.134 (.08) A. 1.-3.

B32. The applicant requests two (2) waivers in accordance with this subsection. See Request D.

Coffee Creek Design Overlay District Regulating Plan

Addressing Streets
Subsection 4.134 (.09) A. 1.

B33. The project abuts SW Day Road on the north, which is a designated Addressing Street on the Regulating Plan (Figure CC-1). The building's designated primary frontage faces SW Day Road and the applicant is proposing improvements consistent with the designation of Addressing Street for this arterial road.

Per Figure CC-1, there is a Required Supporting Street along the west side of the subject property. The Regulating Plan envisioned that access to SW Day Road would be limited to intersections at SW Grahams Ferry Road, this Required Supporting Street, and SW Boones Ferry Road, and that primary access to the subject property would be taken from the Supporting Street. However, this would require crossing the SROZ, a Goal 5 regulated natural resource that includes Tapman Creek and its associated wetlands, for internal site circulation and access to the majority of the developable property east of the SROZ. Because such a crossing is not permissible, one driveway access to SW Day Road was allowed east of the SROZ approximately 1,200 feet west of the SW Day Road/SW Boones Ferry Road intersection to minimize potential impacts on the SROZ from site development.

Should the applicant desire to develop the portion of the site west of the SROZ for trailer cab parking as shown on Options 1 and 2 of the submitted plans (see Exhibit B2), access would come from the Supporting Street envisioned in the Regulating Plan that is to be constructed along the west property boundary.

Overlay District
Subsection 4.134 (.09) A. 2.

B34. The subject property is located within the Coffee Creek Industrial Design Overlay District and is subject to the connectivity standards shown on Figures CC-4 and Table CC-1.

Connectivity Standards
Subsection 4.134 (.10) A.

B35. As discussed elsewhere in this staff report, the subject property is located within the area shown on Figure CC-1 – Regulating Plan bounded by Addressing Streets. Addressing Street SW Day Road bounds the site on its north side and a Required Supporting Street is located along the site's west boundary; therefore, it must meet the connectivity standards. Pursuant to this standard, Figure CC-1 and Figure CC-2, if the applicant proposes to develop the west part of the site, west of the SROZ, as in Options 1 and 2 of the current application, then they must construct part of the Supporting Street. Alternatively, if no development is proposed to occur west of the SROZ, as in Option 3 of the application, the applicant is required to dedicate an easement to allow construction of the Supporting Street in the future.

Street Types
Subsection 4.134 (.10) A. 1.-2.

B36. The subject property abuts Addressing Streets SW Day Road and a required Supporting Street along the west property boundary. Frontage improvements will be constructed based on the Addressing Street requirements for the SW Day Road frontage, and easement dedication for the Supporting Street along the west boundary of the site is required by a condition of approval.

Planned Pathways
Subsection 4.134 (.10) B.

B37. The Required Supporting Street along the subject site's west boundary continues as a Planned Pathway on the north side of SW Day Road on Figure CC-1 – Regulating Plan.

Maximum Connection Spacing
Subsection 4.134 (.10) C.

B38. A Supporting Street is required along the west boundary of the property that meets the maximum connection spacing requirements.

Connectivity Master Plan Requirement
Subsection 4.134 (.02) D.

B39. The applicant's site plan included in Exhibit B2 provides the information necessary to determine compliance with applicable connectivity requirements. There are no existing driveways, walkways, waysides or other features located near the subject property.

Development Standards
Subsection 4.134 (.11)

B40. The proposed development is bound by Addressing Street SW Day Road on the north, with a Supporting Street shown along the west property boundary, and is designated as a parcel subject to the Development Standards in Tables CC-1 through CC-4. Responses to the applicable criteria in Tables CC-1 through CC-4 are shown in the tables below.

Table CC-1 Street Design and Connectivity		
	Addressing Streets	Supporting Streets
General	Development Standards within this table are not adjustable.	
Response: The applicant does not propose any adjustments to the standards within Table CC-1 Street Design and Connectivity for the Addressing Street SW Day Road that borders the property on the north. However, none of the applicant's site design options include constructing or dedicating an easement for the Required Supporting Street that borders the property on the west; a condition of approval requires such dedication to allow future construction of this road.		
Connection Spacing	Not applicable, Addressing Streets exist or are planned	600 feet, maximum, centerline to centerline. Supporting Streets and Through Connections shall intersect with Garden Acres Road as shown on Figure CC-1, Regulating Plan; or if the Addressing Street is Day Road, no less than 1,000 feet apart, centerline to centerline.

Table CC-1 Street Design and Connectivity		
	Addressing Streets	Supporting Streets
Response: The proposed development abuts Addressing Street SW Day Road on its north boundary consistent with the connections and intersection spacing shown on Figure CC-1. A Required Supporting Street is shown approximately mid-way between SW Grahams Ferry Road to the west and SW Boones Ferry Road to the east, both Major Arterials in the Transportation System Plan; this local street borders the subject property along its west boundary. As discussed elsewhere in this staff report, to avoid crossing the SROZ within the proposed development, the applicant was allowed a driveway on SW Day Road, which is less than the desired spacing of 1,000 to 1,320 feet from the intersections with SW Grahams Ferry and SW Boones Ferry Roads.		
Connection Type	Addressing Streets are Day Road, Grahams Ferry Road, Cahalin Road, Garden Acres Road, Garden Acres Road, and "Future" Street.	Supporting Streets are those meeting Specifications, Figure CC-2. A Required Supporting Street is one that intersects with an Addressing Street. The exact location and design of these connections will be determined at the time of development review.
Response: The proposed development abuts Addressing Street SW Day Road on its north side, and a Required Supporting Street on its west side, as shown in Figure CC-1.		
Connection Hierarchy and Primary Frontage	If one of the streets or connections bounding a parcel is an Addressing Street, the Addressing Street shall be the Primary Frontage. If none of the bounding streets or connections is an Addressing Street, a Supporting Street shall be the Primary Frontage. See Figure CC-5.	
Response: The proposed building is designed to face Addressing Street SW Day Road as the primary frontage.		

Table CC-2 District Wide Planning and Landscaping		
	Addressing Streets	Supporting Streets
General	The following provisions apply: • Section 4.176 for landscaping standards • Section 4.610.10 for tree removal, relocation or replacement. • Section 4.610.10 (.01) C. for consideration of development alternatives to preserve wooded areas & trees.	
Response: As described by the applicant, the landscape plans use the General Landscape standard as the starting point for the portion of the site facing Addressing Street SW Day Road, while adding amenity		

features such as dense and varied plantings and a pedestrian wayside to provide the dense, naturalistic landscape character required by the Coffee Creek Design District standards along the roadway corridor. The planting scheme for the front of the property is designed to frame the street environment (public realm), provide shade and shelter for the wayside, and screen the parking and loading areas from view from the street, except at the driveway entrance. Two areas visible from SW Day Road are landscaped to the High Screen standard including on the south side of the wayside and north of the loading area on the west side of the building. See Request F for the Type C Tree Removal Plan

Table CC-3 Site Design		
	Addressing Streets	Supporting Streets
1. Parcel Access		
General	Unless noted otherwise below, the following provisions apply: • Section 4.177 (.02) for street design; • Section 4.177 (.03) to (.10) for sidewalks, bike facilities, pathways, transit improvements, access drives & intersection spacing. The following Development Standards are adjustable: • Parcel Driveway Spacing: 20% • Parcel Driveway Width: 10%	
Response: One (1) driveway is proposed on Addressing Street SW Day Road in the east part of the site. As discussed elsewhere in this staff report, to avoid crossing the SROZ within the proposed development, the applicant was allowed this driveway on SW Day Road, which is less than the desired spacing of 1,000 to 1,320 feet from the intersections with SW Grahams Ferry and SW Boones Ferry Roads. In the applicant's site design Option 2, a second interim driveway access to SW Day Road is proposed west of the SROZ to enable access to proposed trailer cab parking/storage without a drive aisle crossing of the SROZ; this interim driveway would be removed when the Required Supporting Street is constructed off-site to the west in the future and a connection is provided at the south end of the parking/storage area. This driveway does not meet the spacing standard and, therefore, is not approvable. Instead, per conditions of approval, the applicant is required to dedicate an easement for the Required Supporting Street along the property's west boundary to allow the road to be constructed in the future when development occurs west of the SROZ.		
Parcel Driveway Access	Not applicable	Limited by connection spacing standards Parcel Driveway Access may be employed to meet required connectivity, if it complies with Supporting Street Standards for Connection Spacing and Connection Type, see Figure CC-6. Subject to approval by City Engineer
Response: See discussing above regarding parcel driveway access.		

Table CC-3 Site Design		
	Addressing Streets	Supporting Streets
Parcel Driveway Spacing	Not applicable	150 feet, minimum See Figure CC-6
Response: See discussion above regarding parcel driveway spacing.		
Parcel Driveway Width	Not applicable	24 feet, maximum or complies with Supporting Street Standards
Response: As there is no restriction on parcel driveway width on an Addressing Street, the proposed driveway width on SW Day Road of 50 feet is consistent with the standard.		
2. Parcel Pedestrian Access		
General	Unless noted otherwise below, the following provisions apply: • Section 4.154 (.01) for separated & direct pedestrian connections between parking, entrances, street right-of-way & open space • Section 4.167 (.01) for points of access	
Response: General parcel pedestrian access standards are addressed in this staff report in Findings B53-62.		
Parcel Pedestrian Access Spacing	No restriction	
Response: In Options 1 and 2, there is approximately 560 feet between the primary parcel pedestrian access point on SW Day Road in the northeast part of the site and an access point to the proposed trailer cab parking/storage west of the SROZ. The access point west of the SROZ is not included in the Option 3 site design as no development is proposed in that area at this time.		
Parcel Pedestrian Access Width	8 feet wide minimum	
Response: The applicant provides one 8-foot-wide pedestrian access from the SW Day Road sidewalk in the northeast part of the site, which narrows to 7.5 feet on the west side of the office endcap at the primary building entrance. In Options 1 and 2, a secondary 8-foot-wide access point, also from SW Day Road, is provided west of the SROZ.		
Parcel Pedestrian Access to Transit	Provide separated & direct pedestrian connections between transit stops and parking, entrances, street right-of-way & open space.	
Response: The nearest transit stop to the expansion area is located to the west at the SW Day Road/SW Grahams Ferry Road intersection, with a connection provided in the sidewalk on the south side of SW		

Table CC-3 Site Design		
	Addressing Streets	Supporting Streets
Day Road. A walkway between the public sidewalk and the Primary Building Entrance at the northwest corner of the building is provided. Routing avoids crossing the main drive aisle within the site and is located away from the truck maneuvering area. The one needed pedestrian crossing is of the north parking area drive aisle, where circulation is limited to passenger vehicles, with good visibility for safety.		
3. Parcel Frontage		
Parcel Frontage, Defined	Parcel Frontage shall be defined by the linear distance between centerlines of the perpendicular Supporting Streets and Through-Parcel Connections. Where Parcel Frontage occurs on a curved segment of a street, Parcel Frontage shall be defined as the linear dimension of the Chord.	
Response: A Required Supporting Street is located along the west boundary of the property and the distance along the primary frontage, SW Day Road, between the east and west site boundaries is approximately 840 feet.		
Primary Frontage, Defined	The Primary Frontage is the Parcel Frontage on an Addressing Street. If the parcel is not bounded by Addressing Streets, it is the Parcel Frontage on a Supporting Street. See Figure CC-5.	
Response: The site has one Addressing Street, SW Day Road, on its north side, which is the designated Primary Frontage.		
Parcel Frontage Occupied by a Building	A minimum of 100 feet of the Primary Frontage shall be occupied by a building. The maximum Primary Frontage occupied by a building shall be limited only by required side yard setbacks.	No minimum
Response: The proposed building is sited with its long axis perpendicular to and its short axis, the primary façade, parallel to Addressing Street SW Day Road. The front (primary) façade is roughly 180 feet long, which exceeds the minimum 100 feet.		
4. Parking Location and Design		
General	Unless noted otherwise below, the following provisions apply: • Section 4.155 (03) Minimum and Maximum Off-Street Parking Requirements • Section 4.155 (04) Bicycle Parking • Section 4.155 (06) Carpool and Vanpool Parking Requirements	

Table CC-3 Site Design		
	Addressing Streets	Supporting Streets
	• Section 4.176 for Parking Perimeter Screening and Landscaping - permits the parking landscaping and screening standards as multiple options The following Development Standards are adjustable: • Parking Location and Extent: up to 20 spaces permitted on an Addressing Street	
Response: The proposed 15 passenger vehicle parking stalls shown on the site plan along the Addressing Street SW Day Road frontage are fewer than the allowance for up to 20 spaces in this area. Other aspects of parking location and design are addressed below and in findings elsewhere in this staff report.		
Parking Location and Extent	Limited to one double-loaded bay of parking, 16 spaces, maximum, designated for short-term (1 hour or less), visitor, and disabled parking only between right-of-way of Addressing Street and building.	Parking is permitted between right-of-way of Supporting Street and building.
Response: The parking area north of the building along the SW Day Road frontage provides 15 of the site's 41 proposed parking spaces. The applicant desires to use nine (9) of these spaces for employee parking, which is not allowed by this standard. A waiver request addresses this aspect of the proposal. With approval of the requested waiver, the project complies. See Request D.		
Parking Setback	20 feet minimum from the right-of-way of an Addressing Street.	15 feet minimum from the right-of-way of a Supporting Street.
Response: The edge of the drive aisle in the north parking, between the building and Addressing Street SW Day Road, is set back 20 feet from the right-of-way line as required.		
Parking Lot Sidewalks	Where off-street parking areas are designed for motor vehicles to overhang beyond curbs, sidewalks adjacent to the curbs shall be increased to a minimum of seven (7) feet in depth.	Where off-street parking areas are designed for motor vehicles to overhang beyond curbs, planted areas adjacent to the curbs shall be increased to a minimum of nine (9) feet in depth.
Response: The sidewalk along the front of the building on the south side of the parking area is eight (8) feet deep, which exceeds the minimum required depth of seven (7) feet.		
Parking Perimeter Screening and Landscaping	Screen parking area from view from Addressing Streets and Supporting Streets by means of one or more of the following: a. General Landscape Standard, Section 4.176 (.02) C.	

Table CC-3 Site Design		
	Addressing Streets	Supporting Streets
	b. Low Berm Standard, Section 4.176 (.02) E., except within 50 feet of a perpendicular Supporting Street or Through Connection as measured from the centerline.	
Response: The proposed project includes landscape plantings to the General Landscape standard to screen the north parking area from view from Addressing Street SW Day Road. Staff notes that, due to the change in grade in this area, the parking will be below the elevation of the road and generally not visible except at the driveway entrance. The criteria have been addressed under Findings B74-B79 and C32-44.		
Off-Street Loading Berth	One loading berth is permitted on the front façade of a building facing an Addressing Street. The maximum dimensions for a loading are 16 feet wide and 18 feet tall. A clear space 35 feet, minimum is required in front of the loading berth. The floor level of the loading berth shall match the main floor level of the primary building. No elevated loading docks or recessed truck wells are permitted. Access to a Loading Berth facing an Addressing Street may cross over, but shall not interrupt or alter, a required pedestrian path or sidewalk. All transitions necessary to accommodate changes in grade between access aisles and the loading berth shall be integrated into adjacent site or landscape areas. Architectural design of a loading berth on an Addressing Street shall be visually integrated with the scale, materials, colors, and other design elements of the building.	No limitation. Shall meet minimum standards in Section 4.155(.05).
Response: No loading berths are proposed on the front façade of the building facing Addressing Street SW Day Road. Loading berths are located on the west side of the building and will be screened from SW Day Road by a 16-foot-tall screening wall at the north end of the loading dock area, parallel to the frontage.		
Carpool and Vanpool Parking	No limitation	

Table CC-3 Site Design		
	Addressing Streets	Supporting Streets
Response: One of the two (2) proposed ADA accessible parking spaces in the north parking area is designated for vanpool parking.		
5. Grading and Retaining Walls		
General	The following Development Standards are adjustable: • Retaining Wall Design: 20%	
Response: The applicant proposes a retaining wall in the eastern part of the site, forming a "U" shape wrapping around the building and vehicle parking areas. The central part of the wall is parallel to the eastern site boundary, with north and south wings extending west parallel to the north and south property lines. The north section of the retaining wall is located parallel to SW Day Road south of the right-of-way on the north side of the parking area drive aisle; the top of wall is proposed to be even with the finished grade of the right-of-way. A second retaining wall is proposed on the western part of the site along the east boundary of the wetland buffer immediately west of a proposed stormwater facility. The north end of this wall is perpendicular to SW Day Road and less than the maximum allowed height of four (4) feet where it intersects the right-of-way. A waiver request addresses the east retaining wall. With approval of the requested waiver, the project complies. See Request D.		
Maximum height	Where site topography requires adjustments to natural grades, landscape retaining walls shall be 48 inches tall maximum. Where the grade differential is greater than 30 inches, retaining walls may be stepped.	
Response: The east retaining wall is proposed to exceed four (4) feet in height over a span of approximately 785 feet, including roughly 182 feet in the north parallel to Addressing Street SW Day Road, 450 feet in the center, and 153 feet in the south sections. The wall height above finished grade varies from about 6.6 feet in the north, to 18.7 feet in the center, to 15.1 feet in the south sections. A waiver request addresses this aspect of the proposal. With approval of the requested waiver, the project complies. See Request D.		
Required Materials	Materials for retaining walls shall be unpainted cast-in-place, exposed-aggregate, or board-formed concrete; brick masonry; stone masonry; or industrial-grade, weathering steel plate.	
Response: The applicant proposes a soil nail wall construction of the retaining wall with a scoured shotcrete finish and has provided cut sheets or other information sufficient to determine that the proposed materials comply with the standards. See Request D.		
Retaining Wall Design	Retaining walls longer than 50 linear feet shall introduce a 5-foot, minimum horizontal offset to reduce their apparent mass.	

Table CC-3 Site Design		
	Addressing Streets	Supporting Streets
Response: The retaining wall is proposed to have one (1) horizontal offset at the base comprised of a two (2) to three (3) foot tall landscape seating wall roughly 10 feet from the base of the soil nail wall. This provides the required horizontal offset to reduce the apparent mass of the wall. Tree and landscape plantings in the area between the seating wall and retaining wall will, over time, also soften the visual dominance of the wall. A waiver request addresses this aspect of the proposal. With approval of the requested waiver, the project complies. See Request D.		
6. Planting		
General	Unless noted otherwise below, the following provisions apply: • Section 4.176 Landscaping and Screening Standards	
Landscaping Standards Permitted	General Landscape Standard, Section 4.176 (.02) C. Low Berm Standard, Section 4.176 (.02) E., except within 50 feet of a perpendicular Supporting Street or Through Connection as measured from the centerline	General Landscape Standard, Section 4.176(.02)C. Low Screen Landscape Standard, Section 4.176(.02)D. Screen loading areas with High Screen Landscaping Standard, Section 4.176(.02)F., and High Wall Standard, Section 4.176(.02)G.
Response: The applicant has prepared landscaping plans that comply with or exceed the General Landscape Standard along Addressing Street SW Day Road.		
7. Location and Screening of Utilities and Services		
General	Unless noted otherwise below, the following provisions apply: • Sections 4.179 and 4.430. Mixed Solid Waste and Recyclables Storage in New Multi-Unit Residential and Non-Residential Buildings	
Response: The proposed trash/recycling enclosure is located at the back of the property on the south side of the building in a location that is not visible from Addressing Street SW Day Road. The applicant has addressed the standards for trash/recycling storage and provided correspondence from Republic Services supporting the proposed configuration. See Findings B110-B111 and C20-C24.		
Location and Visibility	Site and building service, equipment, and outdoor storage of garbage, recycling, or landscape maintenance tools and equipment is not permitted	Site and building service, utility equipment, and outdoor storage of garbage, recycling, or landscape maintenance tools and equipment is not permitted within the setback
Response: The proposed trash/recycling enclosure is located at the back (south side) of the building and is not visible from Addressing Street SW Day Road.		

Table CC-3 Site Design		
	Addressing Streets	Supporting Streets
Required Screening	Not permitted	High Screen Landscaping Standard, Section 4.176(.02)F. and/or High Wall Standard, Section 4.176 (.02) G.
Response: The trash/recycling enclosure is not located on an Addressing or Supporting Street; therefore, screening to the standard is not required.		

Table CC-4 Building Design		
	Addressing Streets	Supporting Streets
1. Building Orientation		
Front Façade	Buildings shall have one designated front façade and two designated side façades. If one of the streets or connections bounding a parcel is an Addressing Street, the front façade of the building shall face the Addressing Street. If two of the streets or connections bounding a parcel are Addressing Streets, the front façade of the building may face either Addressing Street, except when one of the Addressing Streets is Day Road. In that case, the front façade must face Day Road. If none of the bounding streets or connections is an Addressing Street, the front façade of the building shall face a Supporting Street. See Figure CC-5.	
Response: The front façade of the proposed building faces Addressing Street SW Day Road and there are no other Addressing Streets bounding the subject site.		
Length of Front Façade	A minimum of 100 feet of the Primary Frontage shall be occupied by a building. The maximum Primary Frontage occupied by a building shall be limited only by required side yard setbacks.	
Response: The building frontage faces Addressing Street SW Day Road and is roughly 180 feet long, which is in excess of the minimum standard of 100 feet.		
Articulation of Front Façade	Applies to a Front Façade longer than 175 feet that has more than 5,250 square feet of street-facing façade area: At least 10% of the street-facing façade of a building facing an Addressing Street must be divided into façade planes that are offset by at least 2 feet from the rest of the façade. Façade area used to meet this standard may be recessed behind, or project out from, the primary façade plane.	

Table CC-4 Building Design		
	Addressing Streets	Supporting Streets
Response: The front façade of the proposed building is approximately 180 feet long with roughly 7,000 sf of street-facing area (180 feet long x 38.75 feet in height). The office endcap at the northwest corner of the building, which is offset (projects outward) from the front building plane by 5 feet, is roughly 40 feet long with 1,600 sf of street facing façade area, which is roughly 22% of the front façade, demonstrating compliance with this standard.		
2. Primary Building Entrance		
General	The following Development Standards are adjustable: • Required Canopy: 10% • Transparency: 20%	
Response: The proposed Primary Building Entrance is at the northwest office area, with the entry doors on the west side of the endcap. The entrance is designed to meet the required horizontal dimensions for canopy coverage (i.e., width and depth), with the allowed adjustment, as well as the transparency requirement.		
Accessible Entrance	The Primary Building Entrance shall be visible from, and accessible to, an Addressing Street (or a Supporting Street if there is no Addressing Street frontage). A continuous pedestrian pathway shall connect from the sidewalk of an Addressing Street to the Primary Building Entrance with a safe, direct and convenient path of travel that is free from hazards and provides a reasonably smooth and consistent surface consistent with the requirements of Americans with Disabilities Act (ADA). The Primary Building Entrance shall be 15 feet wide, minimum and 15 feet tall, minimum.	
Response: The proposed path from the sidewalk in SW Day Road crosses the vehicular drive aisle for the north parking area, which is free from heavy truck traffic, at a location with good visibility for pedestrian safety. It connects to an ADA-compliant sidewalk ramp next to the building, extending south to the Primary Building Entrance on the west side of the office endcap. The Primary Building Entrance, located on the west side of the office endcap, includes glass industrial storefront 7 feet wide with 5.5-foot-wide reveal panels on both sides, for a total width of 18 feet. Height to the top of canopy at the building entrance is 16 feet.		
Location	150 feet, maximum from right-of-way of an Addressing Street, see Figure CC-7.	150 feet, maximum from right-of-way of a Supporting Street, if there is no Addressing Street Frontage, see Figure CC-7.
Response: The Primary Building Entrance, at the northwest building corner, is within 150 feet from SW Day Road, an Addressing Street.		

Table CC-4 Building Design		
	Addressing Streets	Supporting Streets
Visibility	Direct line of sight from an Addressing Street to the Primary Building Entrance.	
Response: The proposed public entrance is visible from points along the SW Day Road frontage.		
Accessibility	Safe, direct, and convenient path from adjacent public sidewalk.	
Response: The proposed path provides a direct connection from the sidewalk and crossing of the circulation area for the north parking area is clearly marked with striping.		
Required Canopy	Protect the Primary Building Entrance with a canopy with a minimum vertical clearance of 15 feet and an all-weather protection zone that is 8 feet deep, minimum and 15 feet wide, minimum.	
Response: Per the applicant's code narrative, the entrance area is designed to meet the required horizontal dimensions for canopy coverage, providing a depth of 8 feet along a 30-foot length of wall surrounding the main entrance. The clear height below the canopy is proposed to be 14.75 feet, which is 0.25 feet less than the required 15 feet, but within the allowed 10% adjustment.		
Transparency	Walls and doors of the Primary Building Entrance shall be a minimum of 65% transparent.	
Response: The main building entry, defined by an industrial storefront bracketed by concrete reveal panels on both sides and a second storefront on the north side, has a total area of roughly 374 sf. Of this area, the storefront glazing occupies roughly 212 sf or 57% of the entrance, which is 8% less than the 65% transparency required, but 5% greater than the 52% required with the allowed 20% adjustment.		
Lighting	The interior and exterior of the Primary Building Entrance shall be illuminated to extend the visual connection between the sidewalk and the building interior from day to night. Pathway lighting connecting the Primary Building Entrance to the adjacent sidewalk on an Addressing Street shall be scaled to the needs of the pedestrian.	

Table CC-4 Building Design		
	Addressing Streets	Supporting Streets
	Comply with Outdoor Lighting, Section 4.199	
Response: The proposed lighting plan is designed to comply with the prescriptive approach, satisfying these requirements. See Findings C45-C53.		
3. Overall Building Massing		
General	The following Development Standards are adjustable: • Required Minimum Height: 10% • Ground Floor Height: 10% • Base, Body, and Top Dimensions: 10% • Base Design: 10% • Top Design: 10%	
Response: As noted below, the proposed building elevations meet the requirements for Overall Building Massing without the need for adjustments.		
Front Setback	30 feet, minimum, except as provided below	30 feet maximum
Response: The front setback of the proposed building along Addressing Street SW Day Road at the building's northwest corner is approximately 71 feet, which exceeds the 30 feet minimum requirement.		
Allowance of Primary Building Entrance	Where the Primary Building Entrance is located on an Addressing Street it may extend into the required front yard setback by 15 feet maximum provided that: a. It has a two-story massing with a minimum height of 24 feet; b. The Parcel Frontage on the Addressing Street is limited to 100 feet; c. The building extension is 65% transparent, minimum; d. The entrance is protected with a weather-protecting canopy with a minimum vertical clearance of 15 feet; and The standards for site design and accessibility are met.	Not applicable
Response: This section is not applicable as the building does not extend into the front setback.		

Table CC-4 Building Design		
	Addressing Streets	Supporting Streets
Required Minimum Height	30 feet minimum.	
Response: The proposed building height is 38.75 feet, with the office end cap parapet extending to 40 feet, exceeding the 30-foot height minimum.		
Ground Floor Height	The Ground Floor height shall measure 15 feet, minimum from finished floor to finished ceiling (or 17.5 feet from finished floor to any exposed structural member).	
Response: Per the applicant's code narrative, the proposed building does not contain multiple floors, is designed with high overhead clearance for warehousing and industrial use, and to allow future installation of two (2) interior mezzanines. Ground floor height exceeds the 15-foot minimum requirement.		
Base, Body, and Top Dimensions	Buildings elevations shall be composed of a clearly demarcated base, body and top. a. For Buildings 30 feet in height (unless lower by adjustment): i. The base shall be 30 inches, minimum. ii. The body shall be equal to or greater than 75% of the overall height of the building. iii. The top of the building shall be 18 inches, minimum. b. For Buildings between 30 feet and 5 stories in height: i. The base shall be 30 inches, minimum; 2 stories, maximum. ii. The body shall be equal to or greater than 75% of the overall height of the building. iii. The top of the building shall be 18 inches, minimum. c. For Buildings greater than 6 stories in height: i. The base shall be 1 story, minimum, 3 stories, maximum. ii. The body shall be equal to or greater than 75% of the overall height of the building. iii. The top of the building shall be 18 inches, minimum.	
Response: The proposed building height is 38.75 to 40 feet, therefore, subparagraph b. is applicable to the development. Per the applicant's code narrative, a combination of reveals, color panelization of the concrete tilt-up walls, and perforated metal panels visually define the base, body, and top of the building. To add visual interest and reduce the perceived mass of the building, the pattern differs in two (2) areas of the front façade facing Addressing Street SW Day Road: the western office area and the main body of the building east of it. With respect to subparagraph b.i., the base is 30 inches minimum on the north and west facades of the building that are visible from SW Day Road. See further discussion under Base Design, below.		

Table CC-4 Building Design		
	Addressing Streets	Supporting Streets
With respect to subparagraph b.ii., the body height, which ranges from 30 to 34 feet, calculates to approximately 77% to 85% of the overall building height of 38.75 to 40 feet, exceeding the required 75%. The body of the office endcap is punctuated by the large, cantilevered canopy over the entrance, which also wraps around the corner to the north side of the building. The body of the front façade east of the endcap, as described in the applicant's narrative, is punctuated by a rhythmic series of windows set at second-floor level. A potential future mezzanine is proposed, so these windows will provide light to the interior space as well as add interest to the upper level of the façade, visible from SW Day Road as it climbs to the east. Additional reveals and color treatment break up the large wall surface area to appear as a series of vertical columns defining repeating rectangular patterns. This technique adds visual interest and reduces the perceived scale of the building. In compliance with subparagraph b.iii., the top of the building is 18 inches minimum on the north and west facades of the building that are visible from SW Day Road. See further discussion under Top Design, below.		
Base Design	The design of the building Base shall: a. Use a material with a distinctive appearance, easily distinguished from the building Body expressed by a change in material, a change in texture, a change in color or finish; b. Create a change in surface position where the Base projects beyond the Body of the building by 1 -1/2 inches, minimum; and/ or c. Low Berm Landscape Standard, Section 4.176 (.02) E.	
Response: As described by the applicant, the office endcap area projects five (5) feet out from the walls of the main part of the building on both the north and west sides, to emphasize its importance, and the base is defined by a reveal at the three (3)-foot level above the plaza walkway. The main building wall to the east of the office endcap defines the base as the first-floor level, visually defined by horizontal white striping and perforated metal panels that project two (2) inches from the building wall. To further reinforce the base, the horizontal striping and perforated panel material appear again west of the main entrance plaza, forming a screen wall within a landscape island. This extends the horizontal characteristic of the building's base while visually helping to conceal the loading docks to the south.		
Top Design	Building Tops define the skyline. The design of the Building Top shall: a. Use a material with a distinctive appearance, easily distinguished from the building Body expressed by a change in material, a change in texture, a change in color or finish; and/ or b. Create a change in surface position where the Top projects beyond, or recesses behind, the Body of the building by 1 -1/2 inches, minimum.	
Response: The office area on the north and west elevations as well as the main building wall along the front façade is defined by a dark cornice cap and a wide color band. The portion of the west elevation		

Table CC-4 Building Design		
	Addressing Streets	Supporting Streets
visible from Addressing Street SW Day Road also is defined by a cornice and narrower contrasting color stripe. The top is easily distinguishable from the body and meets the minimum 18-inch height dimension, thus satisfying the standard.		
Required Screening of Roof-mounted Equipment	Screen roof-mounted equipment with architectural enclosures using the materials and design of the building Body and/ or the building Top. No roof-mounted equipment shall be visible from an Addressing Street or Supporting Street.	
Response: As described by the applicant, the height of the cornice cap/parapet wall is designed to effectively screen units from view, based on typical dimensions/sizes of equipment suitable for this type of industrial building. A condition of approval ensures any rooftop mechanical equipment will be screened in compliance with this standard.		

Waysides

Waysides Purpose
Subsection 4.134 (.12) A.

B41. The proposed wayside complies with the purpose of Industrial Waysides by providing a passive recreation destination that is visually accessible from SW Day Road, an Addressing Street. The design is inviting and provides attractive landscaping features and benches for seating, with well-placed lighting features. The materials proposed for the wayside are durable and allow for easy maintenance.

Waysides Applicability
Subsection 4.134 (.12) B.

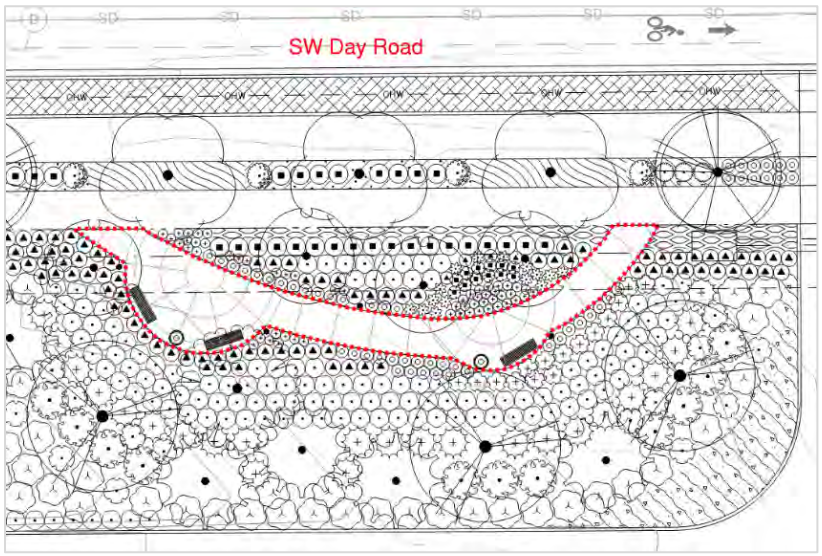
B42. The site is located within the Coffee Creek Master Plan area, therefore this section applies to the proposed development.

Table CC-5: Waysides			
Parcel Area	Required Wayside Area	Number of Waysides	Enhanced Transit Plaza ǂ
Greater than 8.0 acres, less than or equal to 13.0 acres	600 square feet, minimum	One	Not permitted
Response: The net site area (less right-of-way) is 8.88 acres; therefore the provisions that apply to the site require a 600-square-foot minimum wayside area. The proposed wayside is designed in the form of a looping detour path with two (2) seating areas on the south side of			

Table CC-5: Waysides			
Parcel Area	Required Wayside Area	Number of Waysides	Enhanced Transit Plaza ǂ
the sidewalk along the SW Day Road frontage. The paved surface of the wayside path/plaza contains approximately 700 square feet, which exceeds the minimum 600-square-foot requirement.			
ǂ In the future when SMART serves Coffee Creek, Industrial Waysides may comply with the standards for Enhanced Transit Plazas. See Table CC-5 in Subsection 4.134 (.12) B. for sites greater than 13.0 acres in size.			

Development Standards Applying to Waysides
Subsection 4.134 (.12) C. 1.-2.

B43. As shown in the illustration, below, the proposed wayside is exclusive of the required landscape screening and has at least one minimum dimension of 20 feet along the looping path on its southwest, south, and southeast sides. Perimeter landscaping does not obscure visual access to the wayside from the SW Day Road right-of-way; dense landscaping behind the wayside, on its south side, visually separates it from the outdoor semi-tractor trailer parking/storage interior to the site.



Waysides – Criteria

Perimeter Landscaping
Subsection 4.134 (.12) D. 1.

B44. The wayside is adjacent to the SW Day Road public sidewalk, in a landscape area roughly 48 feet wide. Compliant landscaping surrounds the perimeter of the wayside on its north

and south sides. The plantings are designed to visually define and enclose the wayside, while not obscuring views into it for safety.

Visibility
Subsection 4.134 (.12) D. 2.

B45. The proposed wayside abuts Addressing Street SW Day Road and is visible from the frontage; therefore, this criterion is met.

Accessible Pathway
Subsection 4.134 (.12) D. 3.

B46. The proposed wayside has a paved surface a minimum of 6 feet wide and up to 12 feet wide in the west seating area, exceeding the minimum width requirement of 5 feet.

Accessible Surface
Subsection 4.134 (.12) D. 4.

B47. Sheet L1.10 shows the west plaza/seating area within the wayside, which forms a paved half-circle surface, with dimensions of roughly 23 feet by 14 feet, which fits a 10′ x 10′ square (100 square feet minimum).

Required Amenities
Subsection 4.134 (.12) D. 5.

B48. As described above and shown in the applicant's plans, three (3) six (6)-foot-long benches are proposed, two (2) in the west and one (1) in the east seating areas, for a total of 18 linear feet of seating space. There is about 400 square feet in the two (2) seating areas combined, requiring 10 linear feet of outdoor seating and 18 linear feet is proposed, exceeding the requirement. Two (2) trash receptacles are shown, one (1) in each seating area near the benches. The applicant's Sheets L1.01 and L1.10 indicate that illumination will be provided by four (4) bollard fixtures – one (1) near each end of the loop and two (2) more centrally located along the path; however, no fixture cut sheets are provided in the applicant's materials. A condition of approval ensures the standard is met.

Installation and Maintenance
Subsection 4.134 (.12) D. 6.

B49. Per the applicant's code narrative, the property owner understands their installation and maintenance responsibility.

Solar Access
Subsection 4.134 (.12) D. 7.

B50. Proposed landscaping will provide solar access to the plaza during the mid-day period (10 am to 2 pm) in the fall, winter, and spring, while providing comfortable shade in the summer.

Optional Amenities
Subsection 4.134 (.12) D. 6.

B51. No optional amenities listed in this section are proposed in the wayside.

Signs

Signs – General Requirements
Subsection 4.134 (.13) B.

B52. The proposed development contains a monument sign and one (1) location where building signs are identified. Signage is addressed in Request E of this staff report.

On-site Pedestrian Access and Circulation

Conformance with Standards
Section 4.154 (.01) B. 1.

B53. All of the on-site pedestrian access and circulation standards are being applied to the proposed development.

Continuous Pathway System
Section 4.154 (.01) B. 1.

B54. A continuous pathway system will connect from the proposed public sidewalk improvements on SW Day Road to the main building entrance near the northwest building corner, closest to the street. The proposed pathway provides direct access to the building entrance while safely directing pedestrians away from the driveway edge and away from truck access and circulation routes. The parking area is less than three (3) acres in size and, therefore, an internal bicycle and pedestrian pathway is not required.

Safe, Direct, and Convenient
Section 4.154 (.01) B. 2.

B55. The plans show one (1) pathway from SW Day Road to the northwest corner of the building. The pathway is reasonably direct and convenient. Lighting is not shown along the pathway to ensure safety for all users; thus a condition of approval requires that the applicant demonstrate compliance with this standard.

Free from Hazards/Smooth Surface
Section 4.154 (.01) B. 2. a.

B56. The proposed pathway is planned to be free from hazards and will be a smooth hard surface.

Reasonably Direct
Section 4.154 (.01) B. 2. b.

B57. The plans show that a direct pedestrian connection is provided from the public sidewalk in SW Day Road to the primary entrance at the office endcap at the northwest corner of the building.

Building Entrance Connectivity/Meets ADA
Section 4.154 (.01) B. 2. c.

B58. As described above, the closest parking is ADA-accessible and a direct pathway is provided to the main building entrance northwest office endcap.

Vehicle/Pathway Separation
Section 4.154 (.01) B. 3.

B59. All pedestrian facilities, besides crosswalks, are raised to provide vertical separation or horizontally separated by landscaping.

Crosswalks
Section 4.154 (.01) B. 4.

B60. Where the pathway crosses the parking area, contrasting material and striping is proposed to clearly mark the crosswalk.

Pathway Width and Surface
Section 4.154 (.01) B. 5.

B61. All internal proposed pathways are constructed of concrete and have a minimum width of six (6) feet, and the parcel pedestrian access from SW Day Road to the internal walkway in front of the building entrance is eight (8) feet wide, which meets the Coffee Creek standards.

Pathway Signs
Section 4.154 (.01) B. 6.

B62. No pathways needing directional signage are proposed.

Parking Area Design Standards

Minimum and Maximum Parking
Subsection 4.155 (.03) G.

B63. The proposed project requires a minimum of 41 vehicle parking spaces and, as it contains a planned manufacturing component, no limit exists for the number of spaces, as shown in the table below. The applicant proposes 41 stalls, the same as the minimum amount required, in parking areas along the north and south sides of the building. Fifteen (15) spaces are located in a single bay between the building and SW Day Road to serve as short term short-term visitor parking and ADA-accessible spaces. The applicant has requested a waiver for some of these spaces to be used for employee parking (see Request D). The remaining 26 spaces are located in a single bay on the south side of the building.

Required bicycle parking is calculated as the sum of the requirements for the individual primary uses. The applicant proposes 6 bicycle parking spaces all interior to the building in the warehouse area near the office endcap, which is two (2) spaces fewer than the minimum required as shown in the table below.

The calculation of parking spaces is as follows:

Use and Parking Standard	Square Feet	Minimum Off-street Spaces Required	Maximum Off-street Spaces Allowed	Proposed Off-street Spaces	Minimum Bicycle Parking Spaces	Proposed Bicycle Parking Spaces
Manufacturing	17,500 sf	1.6 per 1,000 = 28	No limit	--	1.0 per 10,000 (min 6) = 6	--
Warehouse/ Distribution	44,607 sf	0.3 per 1,000 = 13.4	0.5 per 1,000 = 22.3	--	1.0 per 20,000 (min 2) = 2	--
Total	**62,107 sf**	**41.4**	**No limit**	**41**	**8**	**6[*1]**
[*1] All bicycle parking is proposed to be located inside the entry to the office endcap at the northwest corner of the building.						

Other Parking Area Design Standards
Subsections 4.155 (.02) and (.03)

B64. The applicable standards are met as follows:

Standard	Met	Explanation
Subsection 4.155 (.02) General Standards		
B. All spaces accessible and usable for parking	☒	Standard parking lot design
I. Parking lot screen of at least 6 feet adjacent to residential district.	☒	The parking is not adjacent to a residential district.
J. Sturdy bumper guards or curbs of at least 6 inches to prevent parked vehicles crossing property line or interfering with screening or sidewalks.	☒	The parking lot is surrounded by a six-inch curb.
K. Surfaced with asphalt, concrete or other approved material.	☒	Surfaced with asphalt
Drainage meeting City standards	☒	Drainage is professionally designed and being reviewed to meet City standards
L. Lighting will not shine into adjoining structures or into the eyes of passers-by.	☒	Lighting is proposed to be fully shielded and subject to the City's Outdoor Lighting Ordinance.
N. No more than 40% of parking compact spaces.	☒	Sixteen (16) of the required 41 parking spaces are allowed to be compact. Except for two (2)

		compact spaces in the parking area on the south side of the building, all parking spaces are proposed to be standard spaces.
O. Where vehicles overhang curb, planting areas at least 7 feet in depth.	☒	All parking area planting areas are at least seven (7) feet in depth.
Subsection 4.155 (.03) General Standards		
A. Access and maneuvering areas adequate.	☒	Access to the area is available to employees. Maneuvering area is plentiful.
A.1. Loading and delivery areas and circulation separate from customer/employee parking and pedestrian areas.	☒	The applicant proposes employee parking on the north and south sides of the building. ADA and short-term parking is proposed along the front of the building away from the loading and delivery areas.
Circulation patterns clearly marked.	☒	No markings needed to clarify circulation.
A.2. To the greatest extent possible, vehicle and pedestrian traffic separated.	☒	Vehicle and pedestrian traffic are clearly delineated and separated except for crosswalks.
C. Safe and Convenient Access, meet ADA and ODOT Standards.	☒	The proposed parking and access allow ADA and ODOT standards to be met.
For parking areas with more than 10 spaces, 1 ADA space for every 50 spaces.	☒	The applicant proposes two (2) ADA parking spaces, two (2) compact spaces, and 37 standard spaces.
D. Where possible, parking areas connect to adjacent sites.	☒	The new parking area is part of a single development.
Efficient on-site parking and circulation	☒	The proximity to the destination and pedestrian connections, and adequate maneuvering area make the circulation efficient.

Other Parking Standards and Policies and Procedures

Parking Variances and Waivers
Subsection 4.155 (.02) A. 1.-2.

B65. The applicant has not requested variances or waivers pursuant to this subsection.

Multiple Use Parking Calculations
Subsection 4.155 (.02) D.

B66. The proposed building is designed for single tenant occupancy, while providing flexibility to accommodate a mix of manufacturing, warehousing, and other industrial functions. The review considers the proposed uses of manufacturing and warehouse/distribution, with accessory office use, for the purpose of parking calculations.

Shared Parking
Subsection 4.155 (.02) E.

B67. The review only considers the proposed new use and no shared parking as described by this subsection is proposed.

Off-Site Parking Allowance
Subsection 4.155 (.02) G.

B68. No off-site parking was used for calculating the parking spaces provided.

Non-Parking Use of Parking Areas
Subsection 4.155 (.02) H.

B69. All parking areas are expected to be maintained and kept clear for parking unless a temporary use permit is granted or the Stage 2 approval is revised. Particularly no container or other storage is permitted in the parking areas.

Parking for Uses Not Listed
Subsection 4.155 (.02) M.

B70. The parking calculation is based on the listed uses of manufacturing and warehouse/distribution.

On-Street Parking for Parking Calculations
Subsection 4.155 (.03) F.

B71. The parking calculations do not include any on-street parking.

Electrical Vehicle Charging Stations
Subsection 4.155 (.03) H.

B72. The applicant's plans show four (4) spaces in the north parking area and four (4) spaces in the south parking area as future electric vehicle parking stalls (Exhibit B2); however, the applicant does not propose to install electrical charging stations with the current application.

Substituting Motorcycle Parking for Vehicle Parking
Subsection 4.155 (.03) I.

B73. The applicant does not propose motorcycle parking.

Parking Area Landscaping

Minimizing Visual Dominance of Parking
Subsection 4.155 (.03) B.

B74. As described by the applicant and illustrated on the plan sets, with the exception of the water quality facility and landscaping along the length of the SROZ, where no parking or loading is located, the site's landscaping seeks to minimize the visual dominance of parking and loading areas. Landscaping to the General, Low Screen, and High Screen standards is

provided as appropriate to minimize the visual dominance of parking on the north and south sides of the building, as well as the semi-tractor cab and trailer parking in the central part of the site.

10% Parking Area Landscape Requirement
Subsection 4.155 (.03) B. 1.

B75. Site design Option 3 provides 117,433 square feet of landscaped area, which is 34.9% of the net development area after right-of-way dedication. Parking area landscaping is 3,160 square feet, which is 15.9% of the 19,884 square feet of site area devoted to parking, which exceeds the minimum 10% requirement. Parking landscape areas have been counted as contributing to overall site landscaping, consistent with the provisions of this standard.

Landscape Screening of Parking
Subsection 4.155 (.03) B. 1.

B76. Proposed landscaping, combined with the grade change between the SW Day Road right-of-way and the north parking area, will substantially shield parking from view from the public right-of-way.

Tree Planting Area Dimensions
Subsection 4.155 (.03) B. 2.

B77. All tree planting areas meet or exceed the 8-foot minimum width and length.

Parking Area Tree Requirement
Subsection 4.155 (.03) B. 2. and 2. a.

B78. For a parking lot with a total of 41 parking spaces, one (1) tree per eight (8) parking spaces is required for a total of rounded to 9 total trees. Five (5) trees are shown within the landscaped islands within the parking area, and an additional 21 trees have been provided along the perimeter of the parking lot areas, for a total of 26 trees, which exceeds the requirement.

Parking Area Tree Clearance
Subsection 4.155 (.03) B. 2. b.

B79. All trees planted in the parking areas are varieties that could typically be maintained to provide a 7-foot clearance.

Bicycle Parking-General Provisions

Determining Minimum Bicycle Parking
Subsection 4.155 (.04) A. 1.

B80. Table 5 indicates that warehousing/distribution uses require one (1) bicycle space per 20,000 square feet with a minimum of two (2) spaces, while manufacturing uses require one (1) bicycle space per 10,000 square feet with a minimum of six (6) spaces required. Based on the proposed building size of 62,107 square feet (including future mezzanine expansion)

and the anticipated mix of uses, eight (8) bicycle parking spaces are required. The applicant proposes six (6) bicycle parking spaces interior to the building in the warehouse area near the office endcap (see Finding B63), which is two (2) fewer than required by the mix of uses. A condition of approval will ensure the requirement is met.

Bicycle Parking for Multiple Uses
Subsection 4.155 (.04) A. 3.

B81. As noted in Finding B80, the required bicycle parking is the sum of the requirements for warehouse/distribution (two (2) spaces) and manufacturing (six (6) spaces) uses onsite. Based on this, a total of eight (8) spaces is required and six (6) spaces are provided. A condition of approval will ensure the requirement is met.

Bicycle Parking Waivers
Subsection 4.155 (.04) A. 4.

B82. The applicant proposes no waivers to bicycle parking.

Bicycle Parking Standards

Bicycle Parking Space Dimensions
Subsection 4.155 (.04) B. 1.

B83. All provided bicycle parking spaces are long-term, internal to the building. A detail is provided for the long-term parking racks indicating adequate space dimensions.

Access to Bicycle Parking Spaces
Subsection 4.155 (.04) B. 1.

B84. The proposed bicycle parking spaces provide adequate accessible space.

Bicycle Maneuvering Area
Subsection 4.155 (.04) B. 2.

B85. Bicycle parking spaces are located on the north wall of the warehouse area, south of the office endcap, and therefore, provide adequate space for maneuvering.

Spacing of Bicycle Racks
Subsection 4.155 (.04) B. 3.

B86. A detail is provided for the bicycle parking racks indicating adequate spacing dimensions.

Bicycle Racks and Lockers Anchoring
Subsection 4.155 (.04) B. 4.

B87. A detail is provided for the bicycle parking racks indicating how they are anchored.

Bicycle Parking Location
Subsection 4.155 (.04) B. 5.

B88. As shown on the applicant's plans, bicycle parking is provided inside the building in a location that is easily accessible for bicyclists.

Long-term Bicycle Parking

Required Long-term Bicycle Parking
Subsection 4.155 (.04) C. 2.

B89. No long-term bicycle parking is required; however, all provided bicycle parking spaces are located within the building in an accessible and secure location.

Minimum Off-Street Loading Requirements

Determining Required Loading Berths
Subsection 4.155 (.05) A. 1.-2.

B90. The proposed building has 62,107 square feet of floor area (including future mezzanine space), therefore, a minimum of two (2) loading berths is required. The applicant proposes 17 loading berths located on the west side of the building, exceeding the standard.

Loading Berth Dimensions
Subsection 4.155 (.05) A. 3.

B91. As shown in the applicant's plan set, no loading berths are proposed on the front façade of the building facing SW Day Road. All 17 proposed loading berths are located at the west side of the building, which faces interior to the site perpendicular to SW Day Road. The loading berths and delivery doors exceed the dimensional standards as follows: loading berths roughly 55 feet long by 13 feet wide with dock doors measuring nine (9) feet by 10 feet, four (4) feet above grade; and delivery doors 12 feet by 14 feet at grade.

Existing Loading Berths
Subsection 4.155 (.05) A. 4.

B92. There are no existing uses or loading berths on the subject property.

Use of Off-Street Parking Areas for Loading
Subsection 4.155 (.05) A. 5.

B93. Off-street parking areas are not proposed to be used for loading and unloading operations.

Exception for On-Street Loading
Subsection 4.155 (.05) B.

B94. No loading area adjacent to or within a street right-of-way is proposed.

Access, Ingress, and Egress

Access at Defined Points
Subsection 4.167 (.01)

B95. As illustrated on the applicant's site plan, one (1) access point is located on SW Day Road for trucks, passenger vehicles, and emergency vehicles. A secondary access point is proposed on the south site boundary that provides a connection to the applicant's existing operation to the south for trucks and other vehicles.

Health, Safety, and Welfare
Subsection 4.167 (.01)

B96. By virtue of meeting applicable standards of Chapter 4, as well as being required to meet Public Works Standards, the access points will be consistent with the public's health, safety and general welfare.

Approval of Access Points
Subsection 4.167 (.01)

B97. The Engineering Division is reviewing and approving all proposed points of access to public streets.

Other Development Standards

Natural Features and Other Resources
Section 4.171

B98. The subject property is not located in a regulated flood hazard area. As described in the applicant's code response narrative, it features a west-facing slope east of Tapman Creek that steepens in the eastern part of the site. Natural features on the site include the SROZ and 257 inventoried trees, 200 of which are on site, 21 in the public right-of-way of SW Day Road, and 36 off site along the east and south property boundaries. The applicant's site design options propose substantial tree removal and manipulation of the site east of the SROZ to construct the building and other site improvements, including a retaining wall along the north, east, and south sides of the building. However, Option 3 preserves the most natural features on the site, in the SROZ and the western upland area. The applicant proposed to fully mitigate for the trees removed on site and in the public right-of-way of SW Day Road.

Public Safety and Crime Prevention

Design for Public Safety
Subsection 4.175 (.01)

B99. As described in the applicant's response narrative, although the SW Day Road frontage is densely screened by landscaping, the proposed site plan is designed to provide visibility of active use parts of the site and building from key points in the SW Day Road public right-

of-way (primarily at the driveway). This facilitates surveillance by law enforcement, and also enables citizens passing by on the public street to observe activity within the site. Site lighting, including in parking/circulation areas and along the pedestrian path to the office entrance, will contribute to safety during hours of darkness.

Addressing and Directional Signing
Subsection 4.175 (.02)

B100. Addressing will be as required by Tualatin Valley Fire and Rescue.

Surveillance and Access
Subsection 4.175 (.03)

B101. As the applicant states, by locating loading docks at a partially visible location at the west side of the building, the proposed design facilitates routine surveillance by police without requiring them to enter and circulate within the site. Vehicle parking areas, in particular the northern parking area near the main entrance, can be at least partially observed from points along SW Day Road, as well as from within the central part of the site.

Lighting to Discourage Crime
Subsection 4.175 (.04)

B102. Lighting has been designed in accordance with the City's outdoor lighting standards, which will provide sufficient illumination to discourage crime.

Landscaping Standards

Landscaping Standards Purpose
Subsection 4.176 (.01)

B103. In complying with the various landscape standards in Section 4.176, the applicant has demonstrated the Stage 2 Final Plan is in compliance with the landscape purpose statement.

Landscape Code Compliance
Subsection 4.176 (.02) B.

B104. No waivers or variances to landscape standards have been requested. Thus all landscaping and screening must comply with standards of this section.

Intent and Required Materials
Subsections 4.176 (.02) C. through I.

B105. As shown on the applicant's landscape plans and described in their response narrative, the applicant has used the General Landscape standard as the starting point for the portion of the site facing SW Day Road, an Addressing Street, while adding amenity features such as dense and varied plantings, and a pedestrian wayside, to provide the dense, naturalistic landscape character required by the Coffee Creek Design District standards along the roadway corridor. The planting scheme for the front of the property is designed to frame the street environment (public realm), provide shade and shelter for the wayside, and

screen the parking and loading areas from view from the street, except at the driveway entrance. Three (3) areas are landscaped to the High Screen standard including on the south side of the wayside, north of the loading area on the west side of the building, and surrounding the trash/recycling enclosure on the south side of the site. The sides and rear of the site, which are adjacent to other industrially-designated properties, are landscaped to the Low Screen standard.

Landscape Area and Locations
Subsection 4.176 (.03)

B106. Landscaping is proposed in more than three (3) distinct areas, the wayside area, and surrounding the parking lot and circulation areas. Site design Option 3 provides 117,433 square feet of landscaped area, which is 34.9% of the net development area after right-of-way dedication. Parking area landscaping is 3,160 square feet, which is 15.9% of the 19,884 square feet of site area devoted to parking.

Buffering and Screening
Subsection 4.176 (.04)

B107. The subject property's location in the Coffee Creek Industrial Area, with industrially-zoned neighboring properties, does not require buffering and screening to protect adjacent sensitive uses. The building's parapet-roof design provides screening of rooftop mechanical equipment from view from adjacent streets or properties; a condition of approval ensures screening is provided as required by the standards. The site plan includes parking/storage of semi-tractor cabs and trailers integral to the industrial use that will occur in the central part of the site. This area will be screened from view from the public right-of-way by dense landscaping along the north site perimeter. The loading docks on the west side of the site are screened by landscaping and a 16-foot-tall by 32-foot-long perforated metal panel screen wall parallel to the public right-of-way. Site perimeter fencing is not proposed.

Landscape Plans
Subsection 4.176 (.09)

B108. Sufficient information has been provided regarding landscaping and a condition of approval ensures final construction landscape plans meet the City's objective landscape standards.

Mixed Solid Waste and Recyclables Storage

DRB Review of Adequate Storage Area, Minimum Storage Area
Subsections 4.179 (.01)

B109. The predominant use of the proposed building is proposed warehousing/distribution and manufacturing, with accessory office use occupying less than 20% of the floor area. Therefore, the building requires provision of 10 square feet plus six (6) square feet per 1,000 square feet of floor area of mixed solid waste and recycling storage. At 62,107 square feet (with future mezzanine space), the building requires 10 plus 373 square feet, or 383 square

feet of storage. The applicant proposes an enclosure with dimensions of 19 feet by 20 feet, which is 380 square feet, three (3) feet fewer than the requirement; however, a letter from the franchise hauler, Republic Services, indicates that the proposed storage area meets their requirements.

Review by Franchise Garbage Hauler
Subsection 4.179 (.07)

B110. The applicant's Exhibit B1 includes a letter from Republic Services indicating coordination with the franchised hauler, and that the proposed storage area and site plan meets Republic Services requirements.

Other Development Standards

Access Drives and Travel Lanes
Subsection 4.177 (.01) E.

B111. These criteria are satisfied or will be satisfied by conditions of approval:

- All access drives are designed to provide a clear travel lane, free from obstructions.
- All travel lanes will be asphalt. A condition of approval will ensure they are capable of carrying a 23-ton load.
- Emergency access lanes are improved to a minimum of 12 feet and the development is being reviewed and approved by the Tualatin Valley Fire and Rescue.

Outdoor Lighting
Sections 4.199.20 through 4.199.60

B112. The proposal is required to meet the Outdoor Lighting Standards. See Findings C45-C53.

Underground Installation
Sections 4.300-4.320

B113. Utilities will be installed underground.

Request C: Site Design Review (SDR22-0006)

As described in the Findings below, the request meets the applicable criteria or will by conditions of approval.

Site Design Review

Excessive Uniformity, Inappropriateness Design
Subsection 4.400 (.01) and Subsection 4.421 (.03)

C1. Staff summarizes the compliance with this subsection as follows:

- **Excessive Uniformity:** The proposed development is unique to the particular development context and does not create excessive uniformity.

- **Inappropriate or Poor Design of the Exterior Appearance of Structures:** The proposed warehouse/manufacturing building is attractively designed with emphasis on the office endcap and provides color and material changes to add interest to all visible sides of the building.
- **Inappropriate or Poor Design of Signs**: One (1) building sign and one (1) freestanding monument sign are proposed. The signs are designed to visually fit in with the building architecture and appropriately sized. See Request E.
- **Lack of Proper Attention to Site Development:** The appropriate professional services have been used to design the site, demonstrating proper attention being given to site development.
- **Lack of Proper Attention to Landscaping:** Landscaping is provided exceeding the area requirements, has been professionally designed by a landscape architect, and includes a variety of plant materials, all demonstrating appropriate attention being given to landscaping.

Objectives of Site Design Review

Proper Functioning of the Site
Subsection 4.400 (.02) A. and Subsection 4.421 (.03)

C2. The applicant's plans are designed in a manner that insures proper functioning of the site.

High Quality Visual Environment
Subsection 4.400 (.02) A. and Subsection 4.421 (.03)

C3. A professionally designed building, landscaping, and a professional, site-specific layout supports a high-quality visual environment.

Encourage Originality, Flexibility, and Innovation
Subsection 4.400 (.02) B. and Subsection 4.421 (.03)

C4. The applicant proposes a warehouse/manufacturing building that contains an office endcap at the northwest corner of the front façade that adds substantially more glazing than a typical industrial development, contributing to an original and innovative design.

Discourage Inharmonious Development
Subsection 4.400 (.02) C. and Subsection 4.421 (.03)

C5. The project will continue the positive design precedent set by other developments in the Coffee Creek Industrial Area, as well as set a precedent for quality development on SW Day Road, thus encouraging future harmonious industrial development.

Proper Relationships with Site and Surroundings
Subsection 4.400 (.02) D. and Subsection 4.421 (.03)

C6. The applicant has considered unique landscaping features of the site, particularly integrating a large retaining was along the north, east, and south sides of the building, protecting and preserving off-site trees on the east and south property boundaries, and

given the exterior of the structure architectural interest, thus demonstrating appropriate attention to relationship of the site to its surroundings.

Attention to Exterior Appearances
Subsection 4.400 (.02) D. and Subsection 4.421 (.03)

C7. The applicant used appropriate professional services to design the exterior of the building. See also Finding B40 for Coffee Creek standards relating to building design.

Protect and Enhance City's Appeal
Subsection 4.400 (.02) E. and Subsection 4.421 (.03)

C8. The proposal adds future jobs to the city and enhances the appeal of SW Day Road by providing multi-modal street improvements.

Stabilize Property Values/Prevent Blight
Subsection 4.400 (.02) F. and Subsection 4.421 (.03)

C9. Development of this site on SW Day Road will add services and amenities with a quality design, which adds value to this street and prevents blight on the property.

Adequate Public Facilities
Subsection 4.400 (.02) G. and Subsection 4.421 (.03)

C10. Adequate public facilities will be provided as part of development.

Pleasing Environments and Behavior
Subsection 4.400 (.02) H. and Subsection 4.421 (.03)

C11. The site is located between SW Day Road and SW Grahams Ferry Road. Adding a new industrial development to the area with a quality design and wayside area will provide a pleasing environment and much needed pedestrian amenities.

Civic Pride and Community Spirit
Subsection 4.400 (.02) I. and Subsection 4.421 (.03)

C12. Adding a new development with a high quality design and creating additional jobs in the community will enhance SW Day Road and contribute to civic pride and community spirit.

Favorable Environment for Residents
Subsection 4.400 (.02) J. and Subsection 4.421 (.03)

C13. Adding a new industrial development with a quality design will create jobs, improve the Coffee Creek Industrial Area, and provide a favorable environment to residents and potential employees.

Jurisdiction and Power of the DRB for Site Design Review

Development Must Follow DRB Approved Plans
Section 4.420

C14. A condition of approval ensures construction, site development, and landscaping are carried out in substantial accord with the Development Review Board approved plans, drawings, sketches, and other documents.

Design Standards

Harmony of Proposed Buildings to Environment
Subsection 4.421 (.01) B.

C15. The proposed site design preserves and protects the SROZ and upland area on the west part of the site and off-site trees on the property's east and south boundaries. The site design integrates a large retaining wall with the natural landscape through careful placement and thoughtful use of finishing materials. Landscaping throughout the site help to blend the proposed development with the surrounding natural environment to the extent practicable while allowing industrial use of the site.

Advertising Features Do Not Detract
Subsection 4.421 (.01) F.

C16. All advertising features are sized and located appropriately to not detract from the design of the proposed structure and existing development on surrounding properties. See also Request E.

Design Standards Apply to All Buildings, Structures, Signs, and Features
Subsection 4.421 (.02)

C17. The project does not include any accessory structures on site.

Conditions of Approval to Ensure Proper and Efficient Function
Subsection 4.421 (.05)

C18. Staff does not recommend any additional conditions of approval to ensure the proper and efficient functioning of the development.

Color or Materials Requirements
Subsection 4.421 (.06)

C19. The applicant is proposing a tilt-up concrete structure with colors including Zircon (light gray), Gray Shingle (medium gray), Peppercorn (dark gray), and Extra White (see Materials Board in Exhibit B1). The building will also contain perforated metal panels, a steel canopy and metal top cap, and glass. The colors and materials chosen are appropriate for the development. Staff does not recommend any additional requirements or conditions related to colors and materials.

Standards for Mixed Solid Waste and Recycling Areas

Mixed Solid Waste and Recycling Areas Colocation
Subsection 4.430 (.02) A.

C20. The proposal provides an exterior storage area for solid waste and recyclables located southwest of the proposed building along the south boundary of the project site.

Exterior vs Interior Storage, Fire Code, Number of Locations
Subsections 4.430 (.02) C.-F.

C21. The applicant proposes a single, visible, exterior location southwest of the building. The enclosure is appropriately screened. Review of the Building Permit will ensure that the building and fire code standards are met.

Collection Vehicle Access, Not Obstruct Traffic or Pedestrians
Subsections 4.430 (.02) G.

C22. The letter from Republic Services, included in the applicant's materials in Exhibit B1, indicates the location and arrangement is accessible to collection vehicles. The location of the storage area does not impede sidewalks, parking area aisles, or public street right-of-way.

Dimensions Adequate to Accommodate Planned Containers
Subsections 4.430 (.03) A.

C23. Pursuant to the letter from Republic Services, the dimensions are adequate to accommodate the planned containers.

6-Foot Screen, 10-Foot Wide Gate
Subsections 4.430 (.03) C.

C24. The solid waste and recyclables storage area is enclosed by a 7-foot concrete tilt wall with two (2) 10-foot-wide gates, which meets the minimum standards.

Site Design Review Submission Requirements

Submission Requirements
Section 4.440

C25. The applicant submitted a site plan drawn to scale and digital materials board illustrating proposed finishes and paint colors.

Time Limit on Site Design Review Approvals

Void after 2 Years
Section 4.442

C26. The applicant plans to develop the proposed project within two (2) years and understands that the approval will expire after two (2) years unless the City grants an extension.

Installation of Landscaping

Landscape Installation or Bonding
Subsection 4.450 (.01)

C27. A condition of approval will assure installation or that appropriate security equal to one hundred and ten percent (110%) of the cost of the landscaping as determined by the Planning Director is filed with the City assuring such installation within six (6) months of occupancy.

Approved Landscape Plan
Subsection 4.450 (.02)

C28. A condition of approval will ensure that substitution of plant materials, irrigation systems, or other aspects of an approved landscape plan will not be made without official action of the Planning Director or DRB and provide ongoing assurance the criterion is met.

Landscape Maintenance and Watering
Subsection 4.450 (.03)

C29. A condition of approval will ensure landscaping is continually maintained in accordance with this subsection.

Modifications of Landscaping
Subsection 4.450 (.04)

C30. A condition of approval will provide ongoing assurance that this criterion is met by preventing modification or removal of landscaping without appropriate City review.

Natural Features and Other Resources

Protection
Section 4.171

C31. The proposed design of the site provides for protection of natural features and other resources, specifically the SROZ and upland areas on the west part of the site, as well as off-site trees along the property's east and south boundaries, consistent with the proposed Stage 2 Final Plan for the site and the purpose and objectives of Site Design Review.

Landscaping

Landscape Standards Code Compliance
Subsection 4.176 (.02) B.

C32. No waivers or variances to landscape standards have been requested; thus all landscaping and screening must comply with the standards of this section.

Intent and Required Materials
Subsections 4.176 (.02) C. through I.

C33. The minimum or higher standard has been applied throughout different landscape areas of the site and landscape materials are proposed to meet each standard in the different areas. Site Design Review is being reviewed concurrently with the Stage 2 Final Plan, which includes a thorough analysis of the functional application of the landscaping standards.

Landscape Area and Locations
Subsection 4.176 (.03)

C34. As indicated in the applicant's narrative and plan set the site contains 34.9% landscaped area exceeding the 15% requirement. Additionally, the parking lot area contains 15.9% of the overall area dedicated to landscaping, exceeding the 10% requirement.

Buffering and Screening
Subsection 4.176 (.04)

C35. Consistent with the proposed Stage 2 Final Plan, adequate screening is proposed.

Shrubs and Groundcover Materials
Subsection 4.176 (.06) A.

C36. All of the proposed shrubs in the applicant's landscape plans (Exhibit B2) meet the required 2-gallon minimum. A condition of approval will require that the detailed requirements of this subsection are met.

Plant Materials-Trees
Subsection 4.176 (.06) B.

C37. All trees in the applicant's Landscape Plan are proposed to be 2-inch caliper (deciduous) or 6 feet in height (coniferous) consistent with the requirements of this subsection. A condition of approval will require all trees to be balled and burlapped (B&B), well-branched and typical of their type as described in current American Association of Nurserymen (AAN) Standards.

Plant Materials-Buildings Larger than 24 Feet in Height or Greater than 50,000 Square Feet in Footprint Area
Subsection 4.176 (.06) C.

C38. The proposed building is 38.5 to 40 feet tall to the top of the roof parapet and exceeds 50,000 square feet in footprint area, which meets the threshold for requiring larger or more mature

plant materials as defined by this subsection. However, the design provides architectural interest by using a variety of materials in landscape areas surrounding the building. In addition, the applicant's landscape plans propose to include numerous trees in the parking areas and around the site perimeter that soften views of the building from surrounding areas. It is staff's professional opinion that larger or more mature plant materials are not needed to achieve the intent of this subsection.

Types of Plant Species
Subsection 4.176 (.06) E.

C39. The applicant has provided sufficient information in their plans showing the proposed landscape design meets the standards of this subsection.

Tree Credit
Subsection 4.176 (.06) F.

C40. In the current proposal, the number of on-site trees to be planted matches the number of trees to be removed; therefore, no eligible tree credits are being applied.

Exceeding Plant Standards
Subsection 4.176 (.06) G.

C41. The selected landscape materials do not violate any height or vision clearance requirements.

Landscape Installation and Maintenance
Subsection 4.176 (.07)

C42. Conditions of approval ensure that installation and maintenance standards are or will be met including that plant materials be installed to current industry standards and properly staked to ensure survival, and that plants that die are required to be replaced in kind, within one growing season, unless appropriate substitute species are approved by the City. The applicant's plan set includes an irrigation plan showing an underground irrigation system.

Landscape Plans
Subsection 4.176 (.09)

C43. The applicant's submitted plans provide the required information.

Completion of Landscaping
Subsection 4.176 (.10)

C44. The applicant has not requested to defer installation of plant materials.

Outdoor Lighting

Applicability
Sections 4.199.20 and 4.199.60

C45. An exterior lighting system is being installed for the proposed new development. The Outdoor Lighting standards thus apply.

Outdoor Lighting Zones
Section 4.199.30

C46. The project site is within LZ 2 and the proposed outdoor lighting systems will be reviewed under the standards of this lighting zone.

Optional Lighting Compliance Methods
Subsection 4.199.40 (.01) A.

C47. The applicant has elected to comply with the prescriptive option.

Wattage and Shielding
Subsection 4.199.40 (.01) B. 1.

C48. Based on the applicant's submitted materials, all proposed lighting will be shielded and is below the maximum wattage. A condition of approval will ensure that the requirements of the Outdoor Lighting Ordinance are met at the time of building permit issuance.

Table 7: Maximum Wattage And Required Shielding

Lighting Zone	Fully Shielded	Shielded	Partly Shielded	Unshielded
LZ 2	100	35	39	Low voltage landscape lighting 50 watts or less

Compliance with Oregon Energy Efficiency Specialty Code
Subsection 4.199.40 (.01) B. 2.

C49. The applicant is complying with the Oregon Energy Efficiency Specialty Code.

Mounting Height
Subsection 4.199.40 (.01) B. 3.

C50. All exterior mounted lighting on the building and pole-mounted lighting is less than 40 feet high, and thus complies with Table 8. A condition of approval will ensure the requirements of the Outdoor Lighting Ordinance are met at the time of building permit issuance.

Table 8: Maximum Lighting Mounting Height In Feet			
Lighting Zone	Lighting for private drives, driveways, parking, bus stops and other transit facilities	Lighting for walkways, bikeways, plazas and other pedestrian areas	All other lighting
LZ 2	40	18	8

Luminaire Setback
Subsection 4.199.40 (.01) B. 4.

C51. The subject property is bordered by the same base zoning and the same lighting zone on all sides. Staff understands the three times mounting height setback to only apply where the property abuts a lower lighting district. A condition of approval will ensure the requirements of the Outdoor Lighting Ordinance are met at the time of building permit issuance.

Lighting Curfew
Subsection 4.199.40 (.02) D.

C52. As stated by the applicant, it is feasible to install an automatic device or system meeting the lighting curfew requirements. Compliance is assured through an appropriate condition of approval.

Standards and Submittal Requirements
Sections 4.199.40 and 4.199.50

C53. All required materials have been submitted.

Request D: Waivers (WAIV22-0001)

Waiver 1: Vehicle Parking Location and Extent on Addressing Street

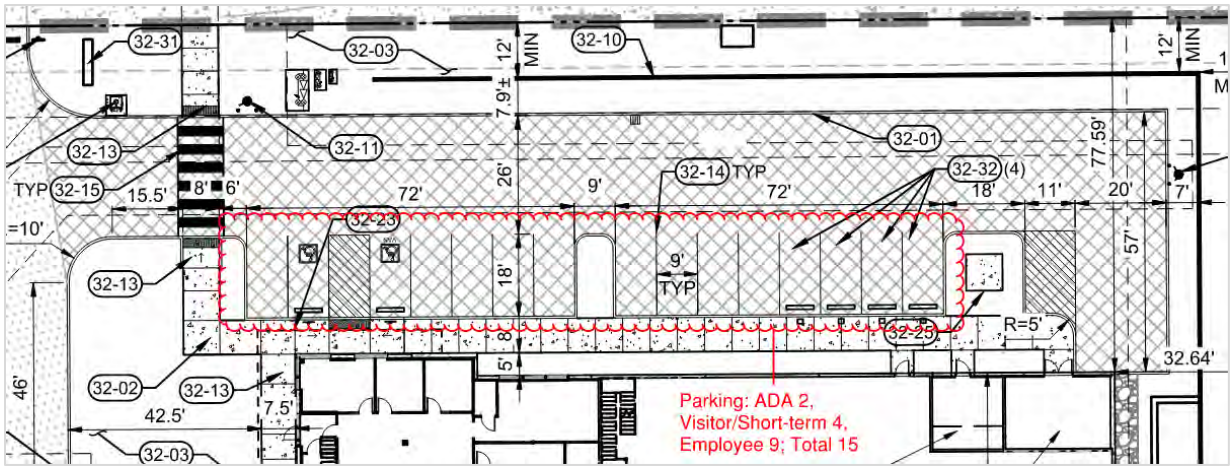
Waiver of Typical Development Standards
Subsections 4.134 (.08) and 4.118 (.03) A.

D1. The applicant requests to waive the vehicle parking area design standards from the Coffee Creek Design Overlay District. Subsection 4.134 (.11), Table CC-3, 4. Parking Location and Extent/Addressing Streets allows 16 spaces maximum with an adjustment to 20 spaces on an Addressing Street. This parking is limited to one double-loaded bay to be designated for short-term (1 hour of less), visitor, and disabled parking only between the right-of-way of the Addressing Street and building. This standard is listed as one of three in Section 4.134(.08) Waivers that shall not be waived unless there is substantial evidence in the whole record to support a finding that the intent and purpose of the standard will be met in alternative ways.

The applicant proposes 15 vehicle parking spaces on the north side of the building between the building and Addressing Street SW Day Road, which is less than the maximum of 16 spaces. However, the applicant proposes to designate nine (9) of the 15 spaces for employees, which is not permitted by the standard, thus requiring a waiver.

The applicant states the rationale for requesting this waiver as summarized below:

a. The configuration is proposed because the northwest corner of the building, closest to SW Day Road, is where the primary building entrance and office endcap is located. This corner, therefore, will be immediately visible to any motorist entering the driveway and the northern parking area will be conveniently located for use by visitors. Two (2) ADA accessible spaces are proposed to be located closest to the main entrance; however, an industrial facility of the type and size proposed typically has relatively few short-term visitors. Therefore, prohibiting employees from parking within the north parking area would reserve an excessive number of parking spaces for a non-existent user group, which would be wasteful and inefficient.
b. Designating a minimum of four (4) of the proposed 15 spaces in the north parking area for visitor/short-term use allows employees to use up to the remaining nine (9) spaces. This is intended to provide flexibility to meet the tenant's needs over time. In other words, if the activity pattern changes such that more visitor parking is needed, the tenant can direct employees to park in the south parking area, thereby increasing the allocation of spaces in the north parking area to meet the need.
c. The north parking area is ideal for safe and efficient access to the building for drivers with disabilities and short-term visitors, but their number cannot reasonably be expected to reach 15 at any time. The north parking area is also the appropriate parking location for employees who work primarily in the office part of the building, located at its northwest corner. Office employees who park in the spaces provided south of the building would have to walk through the warehouse to reach the office area. Further, a pedestrian walkway along the west side of the building is not feasible as it is the primary loading area for trucks. Therefore, it is reasonable to allow office staff to park in the north parking area, while meeting the intent of the standard by designating an appropriate number of spaces for short-term/visitor use.
d. Regardless of how spaces are allocated in the north parking area, ADA accessible, short-term/visitor, or employee, the visual appearance of the spaces will be the same. Further, the applicant's planting plan provides dense screening along the SW Day Road frontage, as well as a retaining wall, thus minimizing the visual impact of the proposed parking area along the street.



Purpose and Objectives of Planned Development Regulations
Subsection 4.140 (.01) B.

D2. Pursuant to Subsection 4.118 (.03) A., waivers must implement or better implement the purpose and objectives listed in this subsection. Subsection 4.134 (.08) requires substantial evidence in the whole record to support a finding that the intent and purpose of the standards will be met in alternative ways. As explained by the applicant in the narrative code response, the proposed minimum allocation of four (4) standard spaces for short-term/visitor use in the north parking area ensures that the intent of the standard is satisfied, while allowing flexibility for the building's tenant to manage on-site parking effectively and efficiently to meet operational needs in a changing economic and technological environment. The applicant requests the waiver from the parking location and extent standard for flexibility in responding to the design of the site.

Waiver 2: Grading and Retaining Walls Height on Addressing Street

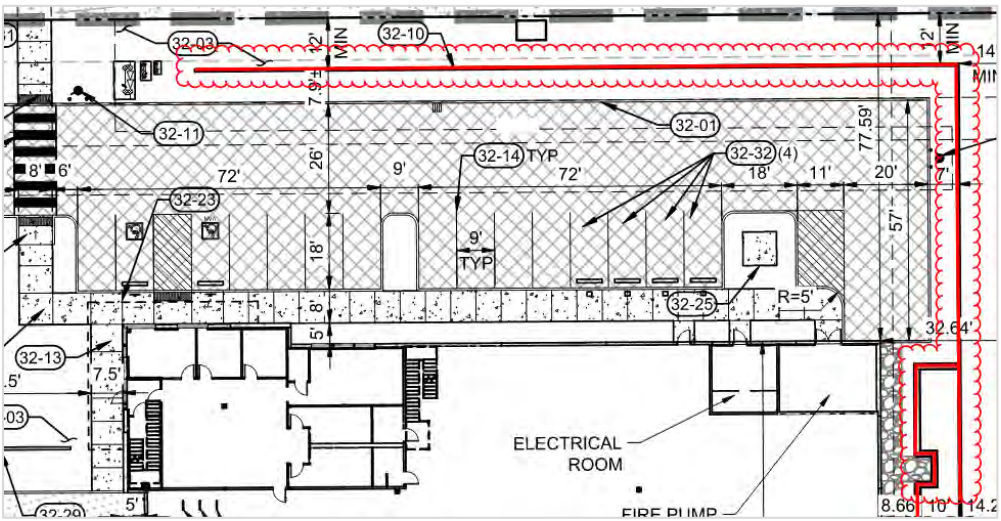
Waiver of Typical Development Standards
Subsections 4.134 (.08) and 4.118 (.03) A.

D3. The applicant requests to waive the maximum retaining wall height standard from the Coffee Creek Design Overlay District. Subsection 4.134 (.11), Table CC-3, 5. Grading and Retaining Walls/Maximum Height/Addressing Streets requires landscape retaining walls to be a maximum of 48 inches tall; there is an allowed adjustment of 20% to 57.6 inches.

As shown in the illustration below, the applicant proposes a retaining wall in the eastern part of the site, forming a "U" shape wrapping around the building and vehicle parking areas. The central part of the wall is parallel to the eastern site boundary, with north and south wings extending west parallel to the north and south property lines. The north section of the retaining wall is located parallel to SW Day Road south of the right-of-way on the north side of the parking area drive aisle; the top of wall is proposed to be even with the finished grade of the right-of-way. The retaining wall is proposed to exceed four (4) feet in height over a span of approximately 785 feet, including roughly 182 feet in the north, 450 feet in the center, and 153 feet in the south sections. The wall height varies from grade at

the west extent of the north wall to 18.7 feet at the northeast corner of the wall, 18.7 feet along the entire eastern (central) segment to the southeast corner, and descending to grade at the west extent of the south wall. The north segment of the retaining wall will not be visible from the SW Day Road right-of-way, except at its northeast corner and along the eastern portion that is not obscured by the building. It will be visible from within the north parking area and from the walkway to the office endcap at the northwest part of the building. The rest of the eastern segment and the southern segment of the wall will only be visible from within the site.

Retaining Wall – North Section



Retaining Wall North Section – Cross Section

A second retaining wall is proposed on the western part of the site along the east boundary of the wetland buffer immediately west of a proposed stormwater facility. The north end of this wall is perpendicular to SW Day Road and less that the maximum allowed height of four (4) feet where it intersects the right-of-way. Therefore, a waiver is not required for this

retaining wall and the remainder of discussion in this section focuses on the eastern part of the site.

The applicant provides detailed rationale for requesting this waiver as summarized below:

a. Tapman Creek flows from north to south through the site within the SROZ, with a required 50-foot vegetated corridor (protective buffer) on both sides of this wetland resource. The larger part of the property's upland developable area is located east of the Tapman Creek corridor. This area has an east-west dimension between roughly 555 and 600 feet and increases in grade from about 244 feet at the west (along the Tapman Creek 50-foot buffer edge) to 285 feet along the east property boundary. This 41-foot vertical difference results in an overall cross-slope of about 7.1%, which is in compatible with development of a large-floor industrial building that generally requires flat floors (zero percent slope) with egress or fire/emergency access doors at multiple locations around the perimeter. In addition, operational areas for semi-truck and trailer circulation should not exceed a cross-slope of 3%. In this context, creating a pad area capable of supporting industrial use at scale requires cutting into the uphill side of the subject site and filling on the downhill side, to form a sufficiently level platform area of adequate size for the proposed use.
b. Along the north frontage of the eastern development area described above, SW Day Road's centerline elevation transitions from about elevation 249 feet at the west to about 280 feet near the northeast property corner. The centerline slope is steeper in the eastern part of the segment, and there is an apex vertical curve east of the subject property that limits sight distance to the east. For these reasons, the site driveway needs to be located far enough west to provide adequate sight distances for vehicular movements at the driveway along the SW Day Road property frontage.
c. Site excavation as discussed above and construction of the proposed retaining wall will lower the interior of the eastern portion of the property, allowing the building to appear to be embedded into the west-facing hillside, This will tend to visually integrate the building into the topography of the area; rather than standing alone, popping up exposed within a flat surrounding area, the size and scale of the building will visually tend to merge with the rising hillside contour of the site and the tree community – consisting of both retained trees and new replacement tree plantings that will grow in over time – at the east side (back) of the building.
d. The proposed retaining wall configuration, as described above, involves a wall taller than the standards allow; however, the overall design helps to integrate the building into the existing landform and creates a strong visual and functional relationship between the street and the main entrance. This overall approach is consistent with the intent to prioritize the Addressing Street SW Day Road as the priority orientation for the principal visual and functional connections to be buildings' main entrance.

e. As shown in the illustration below, the proposed single retaining wall with a landscape seat and planting area at the base, provides a relatively flat area between the back of the building and the base of the wall wide enough to support planting of large canopy trees at grade. Specifically, the proposed planting plan includes replacement planting of Douglas-fir within the property within the space between the top of the retaining wall and the property boundary, and planting of western red cedar and smaller Kousa dogwood in the low area between the rear wall of the building and the retaining wall. Over a number of years, these trees can grow up to be taller than the proposed building, thereby re-forming the visual impression of a consolidated grove of coniferous trees along the property's eastern boundary.

f. The proposed surface treatment of the soil nail retaining wall – scored shotcrete – as shown in the example above, will mimic to the extent possible the appearance of cut basalt, which is the predominant underlying bedrock of the Coffee Creek area. In addition, although the visual dominance of the wall will be apparent following construction, it will diminish over time as trees and landscaping planted in the lower terrace grow in and soften the view.

Purpose and Objectives of Planned Development Regulations
Subsection 4.140 (.01) B.

D4. Pursuant to Subsection 4.118 (.03) A., waivers must implement or better implement the purpose and objectives listed in this subsection. The applicant requests to waive the retaining wall height to allow design flexibility. As described by the applicant and outlined above, grading is necessary to flatten the eastern and central parts of the site for a large industrial building with loading docks on the west side with access below the building's finished floor. Placing the retaining wall in the proposed locations allows this grade change

to occur as close as possible to the east property boundary while protecting the critical root zones of existing off-site trees to the east and south. Flexibility allows the site to be feasibly developed, while siting the driveway at a location with adequate sight distance for vehicular movements along the SW Day Road property frontage, and preserving and protecting the natural resources on the western part of the site. The proposed retaining wall is integral to an alternative site planning approach that balances industrial use of the property with protection of the natural environment to the extent practicable within the topographic and other constraints of the site.

Request E: Class 3 Sign Permit (SIGN22-0004)

As described in the Findings below, the request meets the applicable criteria or will by conditions of approval.

Sign Review and Submission

Class 3 Sign Permits Reviewed by DRB
Subsection 4.031 (.01) M. and Subsection 4.156.02 (.03)

E1. The application qualifies as a Class 3 Sign Permit subject to Development Review Board review.

What Requires Class 3 Sign Permit Review
Subsection 4.156.02 (.06)

E2. The request involves a single tenant in a development subject to Site Design Review by the Development Review Board, thus a Class 3 Sign Permit is required.

Class 3 Sign Permit Submission Requirements
Subsection 4.156.02 (.06) A.

E3. As indicated in the table below the applicant has satisfied the submission for Class 3 sign permits, which includes the submission requirements for Class 2 sign permits:

Requirement	Submitted	Waiver Granted		Condition of Approval	Not Applicable	Additional Findings/Notes
		Info Already Available to City	Info Not Necessary for Review			
Completed Application Form	☒	☐	☐	☐	☐	
Sign Drawings or Descriptions	☒	☐	☐	☐	☐	
Documentation of Tenant Spaces Used in Calculating Max. Sign Area	☐	☐	☐	☐	☒	
Drawings of Sign Placement	☒	☐	☐	☐	☐	
Project Narrative	☒	☐	☐	☐	☐	
Information on Any Requested Waivers or Variances	☐	☐	☐	☐	☒	

Class 3 Sign Permit Criteria

Class 2 Sign Permit Review Criteria: Generally and Site Design Review
Subsection 4.156.02 (.05) F.

E4. As indicated in Findings below, the proposed signs will satisfy the sign regulations for the applicable zoning district and the relevant Site Design Review criteria.

Class 2 Sign Permit Review Criteria: Compatibility with Zone
Subsection 4.156.02 (.05) F. 1.

E5. The applicant is proposing two (2) signs: one (1) ground-mounted monument sign located along SW Day Road east of the entry driveway and one (1) building-mounted sign over the entrance to the office endcap at the northwest corner of the building. The proposed signs are generally typical of, proportional to, and compatible with development in the PDI-RSIA zone. No evidence has been presented, nor testimony received, demonstrating the subject signs would detract from the visual appearance of the surrounding development.

Class 2 Sign Permit Review Criteria: Nuisance and Impact on Surrounding Properties
Subsection 4.156.02 (.05) F. 2.

E6. There is no evidence, and no testimony has been received, suggesting proposed signs would create a nuisance or negatively impact the value of surrounding properties.

Class 2 Sign Permit Review Criteria: Items for Special Attention
Subsection 4.156.02 (.05) F. 3.

E7. The signs do not conflict with the design or placement of other site elements, landscaping, or building architecture reviewed as part of this application.

Sign Measurement

Measurement of Cabinet Signs
Subsection 4.156.03 (.01) A.

E8. The sign measurements use rectangles, as allowed.

Freestanding and Ground Mounted Signs in the PDC, TC, PDI, and PF Zones

General Allowance
Subsection 4.156.08 (.01) A.

E9. The subject site has frontage on SW Day Road of sufficient length to be sign eligible. A single freestanding sign is proposed along SW Day Road east of the entry driveway in a code-compliant location.

Allowed Height
Subsection 4.156.08 (.01) B.

E10. The allowed height for the sign is eight (8) feet as it is located within the PDI-RSIA zone. The seven (7)-foot-tall freestanding sign, as shown in the plan detail on Sheet A5.10, thus meets the requirements of this subsection.

Allowed Area
Subsection 4.156.08 (.01) C.

E11. The proposed freestanding sign pertains to a single tenant within a 62,107-square-foot building fronting SW Day Road. As a result, the maximum allowed sign area is 64 square feet. A condition of approval will ensure that the sign does not exceed 64 square feet in size.

Pole or Sign Support Placement Vertical
Subsection 4.156.08 (.01) D.

E12. The applicant proposes constructing the freestanding sign and its foundation in a full vertical position.

Extending Over Right-of-Way, Parking, and Maneuvering Areas
Subsection 4.156.08 (.01) E.

E13. As shown on the applicant's plans, the subject freestanding sign will not extend into or above right-of-way, parking, and maneuvering areas.

Design of Freestanding Signs to Match or Complement Design of Buildings
Subsection 4.156.08 (.01) G.

E14. The proposed sign is coordinated with the building design.

Width Not Greater Than Height for Signs Over 8 Feet
Subsection 4.156.08 (.01) H.

E15. The proposed freestanding sign does not exceed eight (8) feet in height, therefore, the requirements of this subsection do not apply.

Sign Setback
Subsection 4.156.08 (.01) J.

E16. The setback requirements intend for freestanding signs to be located no further than 15 feet from the property line and no closer than two (2) feet from a sidewalk or other hard surface in the public right-of-way. The freestanding sign location as shown on the applicant's plans is roughly three (3) feet from the north property line and from the public sidewalk in SW Day Road, which meets the requirement.

Address Required to be on Sign
Subsection 4.156.08 (.01) K.

E17. The site fronts SW Day Road. A detail on Sheet A5.10 (Exhibit B2) shows the address of the applicant's operation on SW Commerce Circle rather than the address of the associated building, thus a condition of approval ensures the requirements of this subsection are met.

Building Signs in the PDC, PDI, and PF Zones

Establishing whether Building Facades are Eligible for Signs
Subsection 4.156.08 (.02) A.

E18. Two (1) facades of the proposed building are sign eligible as follows:

Façade	Sign Eligible	Criteria making sign eligible
North	Yes	Public entrance, Primary parking area
East	No	
South	No	
West	Yes	Public entrance

The proposed building is anticipated to have one (1) tenant, the building fronts SW Day Road, and there is one (1) building entrance on the west side of the office endcap at the

northwest corner of the building. The applicant proposes one (1) location for a future building sign, on the north façade of the building facing SW Day Road.

Building Sign Area Allowed
Subsection 4.156.08 (.02) B. 1.

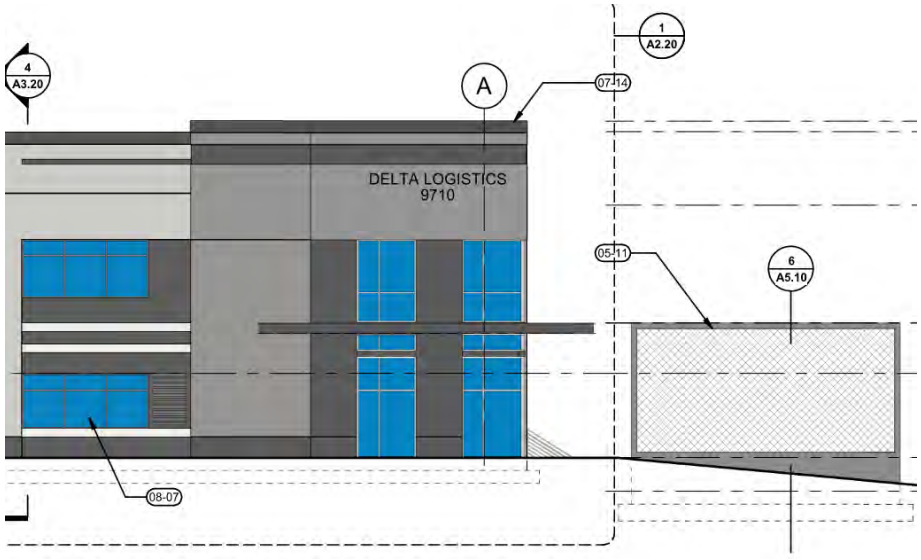
E19. The north façade of the proposed building is roughly 180 feet (ft) in length. For facades greater than 72 linear ft, the allowed sign area is 36 square feet (sf) plus 12 sf for each 24 linear feet or portion thereof greater than 72 ft up to a maximum of 200 sf. Therefore, the allowed sign area is 36 sf plus 60 sf (180 ft – 72 ft = 108 ft / 24 ft = 4.5 ft (rounded to 5 ft); 5 ft x 12 sf = 60 sf), or a total of 96 sf. As the dimensions of the proposed wall sign are not shown on the applicant's plan sheets (Exhibit B2), a condition of approval has been added to ensure the sign area does not exceed the allowed area of 96 sf.

Building Sign Length Not to Exceed 75 Percent of Façade Length
Subsection 4.156.08 (.02) C.

E20. The proposed building sign does not exceed 75% of the length of the north façade.

Building Sign Height Allowed
Subsection 4.156.08 (.02) D.

E21. The proposed building sign is within a definable architectural feature and has a definable space between the sign and the top and bottom of the architectural feature as shown in the illustration below.



Building Sign Types Allowed
Subsection 4.156.08 (.02) E.

E22. The applicant's plans do not include a detail of the proposed building sign; however, it is shown as wall flat on the elevations on Sheets A2.10 and A2.20. A condition of approval ensures compliance with the requirements of this subsection.

Site Design Review

Excessive Uniformity, Inappropriate Design
Subsection 4.400 (.01)

E23. With quality materials and design, the proposed signs will not result in excessive uniformity, inappropriateness or poor design, and the proper attention has been paid to site development.

Purpose and Objectives
Subsection 4.400 (.02) and Subsection 4.421 (.03)

E24. The signs are scaled and designed appropriately related to the subject site and the appropriate amount of attention has been given to visual appearance. The signs will provide local emergency responders and other individuals reference for the location of this development.

Design Standards
Subsection 4.421 (.01)

E25. The proposed location and approximate size of proposed signs is provided in the applicant's materials, however, detail about design, color, texture, lighting, or materials is not included. Therefore, it is not possible to determine whether the proposed signs would detract from the design of the surrounding properties. A condition of approval ensures compliance with the requirements of this subsection.

Design Standards and Signs
Subsection 4.421 (.02)

E26. Design standards have been applied to the proposed signs, as applicable.

Color or Materials Requirements
Subsection 4.421 (.06)

E27. As stated under Finding E25, above, no information about the proposed coloring of the signs is included in the applicant's materials, therefore, it is not possible to determine whether the coloring and materials are appropriate for the sign. A condition of approval ensure compliance with the requirements of this subsection.

Site Design Review-Procedures and Submittal Requirements
Section 4.440

E28. The applicant has submitted a sign plan as required by this section.

Request F: Type C Tree Removal Plan (TPLN22-0005)

As described in the Findings below, the request meets the applicable criteria or will by conditions of approval.

Type C Tree Removal-General

Review Authority
Subsection 4.610.00 (.03) B.

F1. The requested removal is connected to Site Design Review by the Development Review Board for new development. The tree removal is thus being reviewed by the DRB.

Conditions of Approval
Subsection 4.610.00 (.06) A.

F2. No additional conditions are recommended pursuant to this subsection.

Completion of Operation
Subsection 4.610.00 (.06) B.

F3. It is understood the tree removal will be completed by the time development of the proposed facility is completed, which is a reasonable time frame for tree removal.

Security for Permit Compliance
Subsection 4.610.00 (.06) C.

F4. No bond is anticipated to be required to ensure compliance with the tree removal plan as a bond is required for overall landscaping.

Tree Removal Standards
Subsection 4.610.10 (.01)

F5. The standards of this subsection are met as follows:

- Standard for the Significant Resource Overlay Zone: The proposed tree removal is not within the Significant Resource Overlay Zone (SROZ). As shown on the applicant's Tree Removal Plan (Sheet L0.03 in Exhibit B2) the six (6) existing trees in the SROZ are being retained and protected and mitigation includes planting of more than 20 native trees in the impact area east of Tapman Creek outside the PGE easement area.
- Preservation and Conservation: The applicant has taken tree preservation into consideration, and has limited tree removal to trees that are necessary to remove for development. Trees within the SROZ and in the upland area on the west of the site, and five (5) on-site trees along the east and south property boundaries will be preserved. The proposed retaining wall along the east and south site boundaries is located outside the drip line of 36 off-site trees to protect their critical root zones during construction.
- Development Alternatives: No significant wooded areas or trees would be preserved by practical design alternatives.

- Land Clearing: Land clearing is not proposed, and will not be a result of this development application.
- Residential Development: The proposed activity does not involve residential development, therefore this criteria does not apply.
- Compliance with Statutes and Ordinances: The necessary tree replacement and protection is planned according to the requirements of the tree preservation and protection ordinance.
- Relocation or Replacement: The applicant proposes to plant 175 trees as replacement for the 175 proposed for removal, thus complying with the one (1) to one (1) mitigation requirement.
- Limitation: Tree removal is limited to where it is necessary for construction or to address nuisances or where the health of the trees warrants removal.
- Tree Survey: A tree survey has been provided.

Review Process
Subsection 4.610.40 (.01)

F6. The proposed Type C Tree Plan is being reviewed concurrently with the Stage 2 Final Plan.

Tree Maintenance and Protection Plan
Section 4.610.40 (.02)

F7. The applicant has submitted the necessary copies of a Tree Maintenance and Protection Plan. See the applicant's materials in Exhibit B1 and Sheet L0.03 (Exhibit B2).

Replacement and Mitigation

Tree Replacement Requirement
Subsection 4.620.00 (.01)

F8. As shown in the table below, 257 trees were inventoried for the current application, including 200 on site, 21 in the public right-of-way of SW Day Road, and 36 off site along the east and south property boundaries. Under Option 3, which does not include development west of the SROZ, 82 of the 257 trees are proposed for retention, including 46 on site and 36 off site, and 175 are proposed for removal. The applicant proposes planting 175 trees throughout the site and in the public right-of-way to mitigate for the removals, which complies with the mitigation requirement.

Trees	Qty	Retain	Remove	Mitigate
On Site	200	46	154	154
Public	21	0	21	21
Off Site	36	36	0	0
Total	257	82	175	175

Trees	
Landscape	
-Accent	40
-Primary	33
-Seconday	20
Stormwater	56
Street	26
Total	175

Basis for Determining Replacement
Subsection 4.620.00 (.02)

F9. The applicant proposes removing 175 trees and planting 175 trees. Replacement trees will meet the minimum caliper requirement or will be required to by condition of approval.

Replacement Tree Requirements
Subsection 4.620.00 (.03)

F10. A condition of approval will ensure the relevant requirements of this subsection are met.

Replacement Tree Stock Requirements
Subsection 4.620.00 (.04)

F11. A condition of approval will ensure the relevant requirements of this subsection are met.

Replacement Trees Locations
Subsection 4.620.00 (.05)

F12. The applicant is proposing tree planting throughout the site including along SW Day Road, the wayside area, and in parking areas in locations appropriate for the development.

Protection of Preserved Trees

Tree Protection During Construction
Section 4.620.10

F13. Tree protection is required. All trees required to be protected must be clearly labeled as such, and suitable barriers to protect remaining trees must be erected, maintained, and remain in place until the City authorizes their removal or issues a final certificate of occupancy. Further, because numerous on- and off-site trees will be impacted by grading and earth moving for the proposed retaining wall along the north, east, and south property boundaries, the project arborist must monitor tree protection fencing and the condition of

all preserved and protected trees during construction and submit quarterly monitoring reports to the City. Any adjustments to tree protection fencing, work within the tree protection fencing within the root protection zone of protected on- and off-site trees, or pruning of the roots or overstory (canopy and branches) of protected trees must be supervised by the project arborist. A condition of approval will ensure the applicable requirements of this section are met.

Request G: Standard SROZ Map Verification (SROZ22-0006)

As described in the Findings below, the request meets the applicable criteria or will by conditions of approval.

SROZ Map Verification

Requirements and Process
Section 4.139.05

G1. Consistent with the requirements of this section, a verification of the SROZ boundary is required as the applicant requests a land use decision. The applicant conducted a detailed site analysis consistent with the requirements of this section, which the City's Natural Resources Manager reviewed and approved.

Request H: Standard SRIR Review (SRIR22-0004)

As described in the Findings below, the request meets the applicable criteria or will by conditions of approval.

Findings of Fact

1. Pursuant to Section 4.139.05 (Significant Resource Overlay Zone Map Verification), the map verification requirements shall be met at the time an applicant requests a land use decision. The applicant conducted a detailed site analysis consistent with code requirements, which the Natural Resources Manager reviewed and approved.

2. Tapman Creek and its associated wetland drainage are located within the western portion of the development site (Site ID Number 3.02). The riparian corridor for Tapman Creek includes two wetlands (i.e., Wetland 1 and Wetland 2).

3. Vegetation within the riparian corridor of Tapman Creek consists of invasive plant species, such as reed canarygrass, Himalayan blackberry and English ivy, and native plant species such as Oregon ash, serviceberry, snowberry, and trailing blackberry. The creek channel is 5-10 feet wide and 3-4 feet deep with steep, incised banks.

4. The Significant Resource Overlay Zone (SROZ) ordinance prescribes regulations for development within the SROZ and its associated 25-foot Impact Area. Setbacks from significant natural resources implement the requirements of Metro Title 3 Water Quality

Resource Areas, Metro Title 13 Nature in Neighborhoods, and Statewide Planning Goal 5. All significant natural resources have an Impact Area. Development or other alteration activities may be permitted within the SROZ and its associated Impact Area through the review of a Significant Resource Impact Report (SRIR). The primary purpose of the Impact Area is to insure that development does not encroach into the SROZ.

5. Pursuant to the City's SROZ ordinance, development is only allowed within the Area of Limited Conflicting Use (ALCU). The ALCU is located between the riparian corridor boundary, riparian impact area or the Metro Title 3 Water Quality Resource Area boundary, whichever is furthest from the wetland or stream, and the outside edge of the SROZ, or an isolated significant wildlife habitat (upland forest) resource site.

6. The applicant's standard Significant Resource Impact Report delineated specific resource boundaries and analyzed the impacts of exempt development within the SROZ. The applicant's SRIR contained the required information, including an analysis and development recommendations for mitigating impacts.

Background/Discussion

The SRIR assessed two wetlands (Figure 6a, Wetland Delineation Map – Overview, and Figure 6b, Wetland Delineation Map – Detail, in the applicant's Natural Resource Assessment Report; see Exhibit B1): Wetland 1 (west of Tapman Creek), Wetland 2 (east of Tapman Creek). Within the SRIR, a significance determination, based on the approved wetland delineation and updated Oregon Freshwater Wetland Assessment Methodology (OFWAM), was completed for the wetlands.

Wetland 1 (0.26 acre) was constructed as a compensatory wetland mitigation site for the widening of SW Day Road and the replacement of a single culvert with two culverts on Tapman Creek. The hydrology of the wetland is dependent on seasonal flows from Tapman Creek. The constructed wetland was planted with Pacific willow, spiraea, black hawthorn, Nootka rose, slough sedge, spreading rush, and red fescue. In the northerly part of the wetland, trees and shrubs are more common, whereas the southerly area is primarily herbaceous plants.

Wetland 2 (0.07 acre) occupies a broad, very shallow depression to the east of Tapman Creek. It appears to have no inlet or outlet and has hydrology sustained by high groundwater, impounded precipitation, and possibly seasonal flooding from Tapman Creek. Vegetation consists of Oregon ash, Nootka rose, English hawthorn, Himalayan blackberry, and spiraea.

In regards to the City's Natural Resources Inventory (circa 1992-93), a wetland determination, based on OFWAM, provided preliminary boundaries of wetlands in Wilsonville. The mapped boundaries for the wetland determinations relied on aerial photographs, topographic maps, Clackamas County soil survey, and limited field reconnaissance. In contrast to the wetland determination, the state approved wetland delineation, submitted by the applicant, identifies the precise boundaries, location and current condition of the wetlands on the property. The wetland delineation incorporated observations of on-site hydrology, soils and vegetation. In accordance

with the Corps of Engineers Wetlands Delineation Manual, Schott & Associates delineated the wetland locations and boundaries.

To be deemed a locally significant wetland (and included in the SROZ), as specified in the City of Wilsonville Natural Resource Inventory, a wetland must be one-half acre in size and satisfy the Oregon Freshwater Wetland Assessment Methodology (OFWAM). As documented in the applicant's report, the wetlands are less than one-half acre and do not satisfy the OFWAM criteria. Staff concurs with the applicant's wetland delineation and determination of local significance. Pursuant to Section 4.139.09(.01) (D), the applicant has demonstrated compliance with the provisions of the SROZ map refinement process for the wetland area.

Description of Request

The applicant is requesting approval of a standard Significant Resource Impact Report (SRIR) for proposed development that is located within the Significant Resource Overlay Zone (SROZ) and its associated Impact Area.

Summary of Issues

The applicant's proposed development includes three site design options as described below:

- **Option 1** (preferred by the applicant): Includes trailer cab parking west of SROZ and a request for variance to cross the SROZ with a drive aisle.
- **Option 2**: Includes cab trailer parking west of SROZ accessed via an interim driveway on SW Day Road, removes the drive aisle crossing of the SROZ, and does not include a variance request.
- **Option 3**: Does not include any development west of the SROZ or a variance request.

Pursuant to Section 4.139.00 and Section 4.139.06(.03), no development is allowed within the SROZ unless it is located within an ALCU. No ALCU is designated for the SROZ on the property, therefore, Option 1 and Option 2 cannot be approved. Development proposed for Option 3 qualifies as exempt uses.

Proposed exempt development in the SROZ and its associated Impact Area include the following:

1. Required street improvements on SW Day Road;
2. A stormwater facility (i.e., rain garden); and
3. A stormwater outfall – installation of pipe and outfall structure.

Exempt Uses in the SROZ

Use and Activities Exempt from These Regulations
Subsection 4.118 (.03) A. and 4.130.04

H1. Proposed exempt development in the SROZ and its associated Impact Area complies with the following exemptions.

1. Required street improvements on SW Day Road

Subsection 4.139.04 (.08) exempts the following use/activity: "The construction of new roads, pedestrian or bike paths into the SROZ in order to provide access to the sensitive area or across the sensitive area, provided the location of the crossing is consistent with the intent of the Wilsonville Comprehensive Plan. Roads and paths shall be constructed so as to minimize and repair disturbance to existing vegetation and slope stability."

Finding: The proposed street improvements are necessary for addressing Public Works Standards and development code requirements.

2. A stormwater facility (i.e., rain garden)

Subsection 4.139.04 (.13) exempts the following use/activity: "Enhancement of the riparian corridor or wetlands for water quality or quantity benefits, fish, or wildlife habitat as approved by the City and appropriate regulatory agencies."

Finding: Due to the current degraded nature of the open space area, the placement and operation of a stormwater facility will provide a water quality and habitat benefit through the planting of stormwater facility vegetation and the installation of soil media.

3. A stormwater outfall - installation of pipe and outfall structure:

Subsection 4.139.04 (.18) exempts the following use/activity: "Private or public service connection laterals and service utility extensions."

Finding: The stormwater pipe and outfall is necessary for conveying treated and controlled runoff to Tapman Creek.

Standard SRIR Requirements

Site Development Permit Application Requirements
Subsection 4.139.06 (.01) A.

H2. The applicant has submitted a land use application in conformance with the Planning and Land Development Ordinance.

Outline of Existing Features
Subsection 4.139.06 (.01) B.

H3. Preliminary plans have been submitted which include all of the proposed development.

Location of Wetlands or Water Bodies
Subsection 4.139.06 (.01) C.

H4. The SRIR assessed two wetlands (Figures 6a and 6b): Wetland 1 (west of Tapman Creek), Wetland 2 (east of Tapman Creek). Within the SRIR, a significance determination, based on

the approved wetland delineation and updated Oregon Freshwater Wetland Assessment Methodology (OFWAM), was completed for the wetlands.

Tree Inventory Requirement
Subsection 4.139.06 (.01) D.

H5. The preliminary plans include a tree inventory.

Location of SROZ and Impact Area Boundaries
Subsection 4.139.06 (.01) E.

H6. The SROZ and Impact Area boundaries have been identified on the preliminary plans.

Slope Cross-Section Measurements
Subsection 4.139 (.01) F.

H7. A slope analysis was included in the SRIR.

Metro Title 3 Boundary Delineation
Subsection 4.139 (.01) G.

H8. The SRIR includes a delineation of the Metro Title 3 Water Quality Resource Area boundary.

Photos of Site Conditions
Subsection 4.139 (.01) H.

H9. The SRIR includes representative site photographs.

Narrative Describing Impacts
Subsection 4.139 (.01) I.

H10. The proposed development impacts have been documented in the SRIR. In addition, the SRIR includes a mitigation plan, which will be implemented in the open space tract.

Standard SRIR Review Criteria
Section 4.139.06 (.03)

H11. In addition to the normal Site Development Permit Application requirements as stated in the Planning and Land Development Ordinance, the following standards shall apply to the issuance of permits requiring an SRIR. The SRIR must demonstrate how these standards are met in a manner that meets the purposes of this Section.

A. Except as specifically authorized by this code, development shall be permitted only within the Area of Limited Conflicting Use (see definition) found within the SROZ;

Finding: The proposed exempt development is located within the SROZ, but not a designated Area of Limited Conflicting Use. Only exempt development is allowed within a stream (riparian) corridor.

B. Except as specifically authorized by this code, no development is permitted within Metro's Urban Growth Management Functional Plan Title 3 Water Quality Resource Areas boundary;

Finding: The proposed exempt development is allowed within Metro's Title 3 Water Quality Resource Areas boundary.

C. No more than five (5) percent of the Area of Limited Conflicting Use (see definition) located on a property may be impacted by a development proposal. On properties that are large enough to include Areas of Limited Conflicting Use on both sides of a waterway, no more than five (5) percent of the Area of Limited Conflicting Use on each side of the riparian corridor may be impacted by a development proposal. This condition is cumulative to any successive development proposals on the subject property such that the total impact on the property shall not exceed five (5) percent;

Finding: The proposed SROZ boundary does not include an Area of Limited Conflicting Use.

D. Mitigation of the area to be impacted shall be consistent with Section 4.139.06 of this code and shall occur in accordance with the provisions of this Section;

Finding: The proposed mitigation is consistent with the Development Code provisions. The mitigation will provide an enhancement to the stream riparian corridor through the planting of native trees and shrubs.

E. The impact on the Significant Resource is minimized by limiting the degree or magnitude of the action, by using appropriate technology or by taking affirmative steps to avoid, reduce or mitigate impacts;

Finding: The impacts to the SROZ are the minimum necessary for addressing Public Works Standards and development code requirements.

F. The impacts to the Significant Resources will be rectified by restoring, rehabilitating, or creating enhanced resource values within the "replacement area" (see definitions) on the site or, where mitigation is not practical on-site, mitigation may occur in another location approved by the City;

Finding: Impacts to the SROZ will be mitigated for on-site.

G. Non-structural fill used within the SROZ area shall primarily consist of natural materials similar to the soil types found on the site;

Finding: Non-structural fill will consist of natural materials similar to the soil types found on the site.

H. The amount of fill used shall be the minimum required to practically achieve the project purpose;

Finding: The amount of fill has been minimized to the extent practicable.

I. Other than measures taken to minimize turbidity during construction, stream turbidity shall not be significantly increased by any proposed development or alteration of the site;

Finding: All proposed grading activities on-site will be managed pursuant to guidelines established and identified in the applicant's approved erosion control plan and a 1200-CN Erosion Control Permit. Stream turbidity is regulated under the City's Grading and Erosion Control Permit.

J. Appropriate federal and state permits shall be obtained prior to the initiation of any activities regulated by the U.S. Army Corps of Engineers and the Oregon Division of State Lands in any jurisdictional wetlands or water of the United States or State of Oregon, respectively.

Finding: The applicant has not proposed impacts to Wetland 1 and Wetland 2, which are regulated by the Oregon Division of State Lands and the U.S. Army Corps of Engineers.

Request I: Variance (VAR22-0001)

As described in the Findings below, the variance request does not meet the applicable criteria and is recommended for **denial** by the Development Review Board.

Variance Review Authority

Authority of Development Review Board
Subsection 4.031 (.01) E.

I1. As further described in the Findings below, the applicant's site design Option 1 includes a variance request to cross the Significant Resource Overlay Zone (SROZ) with a drive aisle to enable access to the upland portion of the site located west of the SROZ and its Impact Area. The Development Review Board has authority to act on variances, as authorized in Section 4.196, other than those that are reviewed and acted upon by the Planning Director through Administrative Review processes.

Variance Standards Applied
Subsection 4.031 (.01) E.

I2. As shown by Findings I5 through I11 below, the review applies the variance standards of Section 4.196 of the Code.

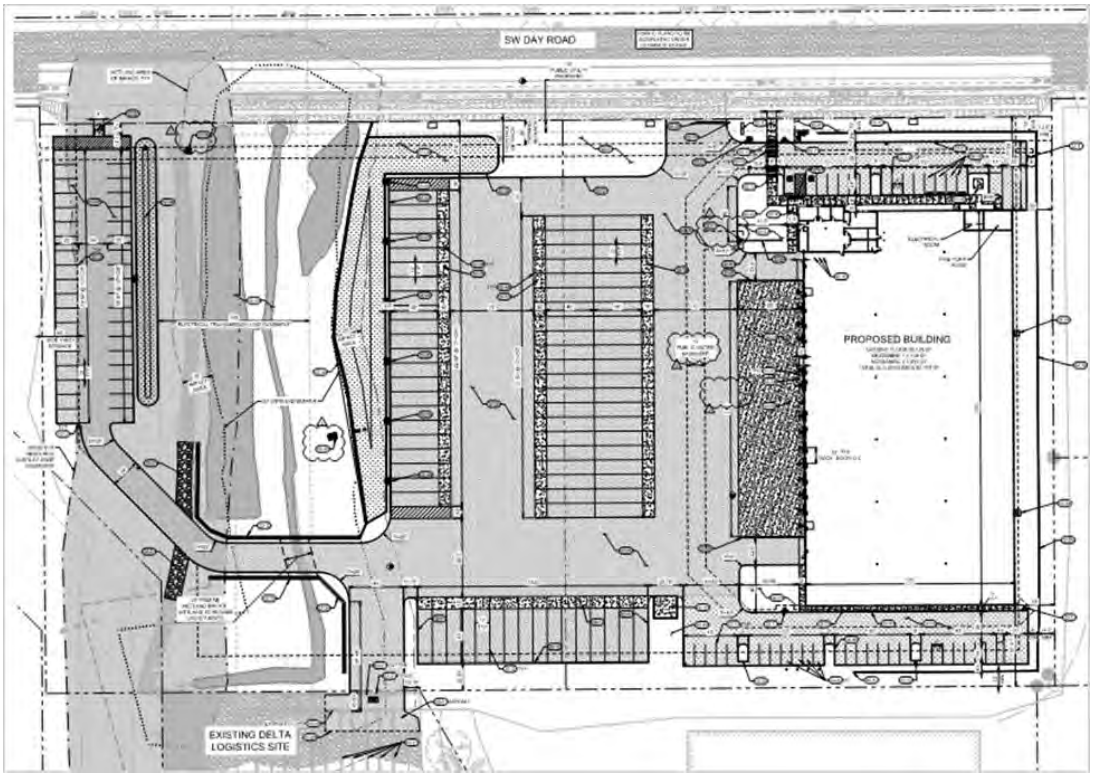
Significant Resource Overlay Zone Exempt Uses and Activities

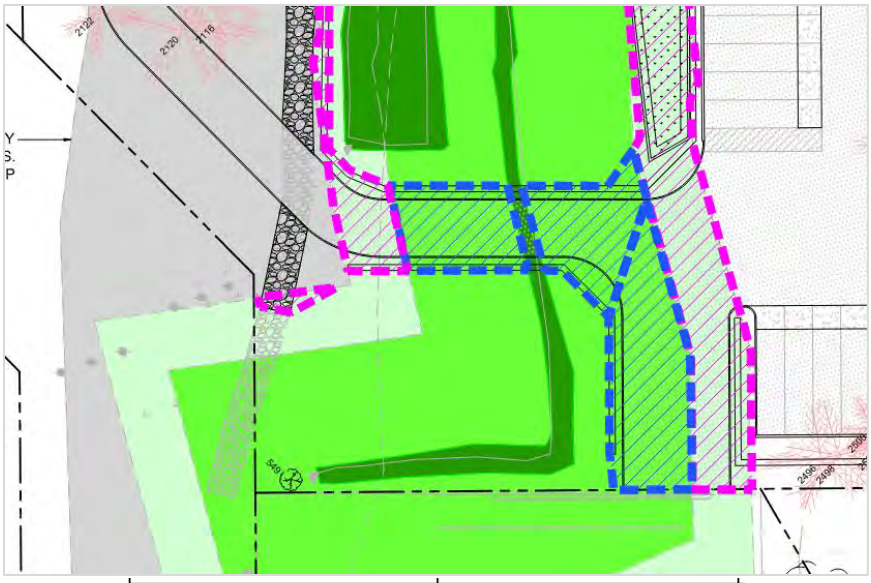
SROZ Regulations Applied
Section 4.139.02

I3. The regulations of Section 4.139.02 apply to the portion of any lot or development site that is within the SROZ and its associated Impact Areas. As discussed in the Findings for Requests G and H in this staff report, SROZ exists in the western part of the subject property including Tapman Creek and its associated wetland and Impact Area. Therefore, the standards of this section apply to the proposed development site.

Uses and Activities Exempt from SROZ Regulations
Section 4.139.04 (.01) through (.22)

I4. As shown in the illustrations below, the applicant's preferred site design Option 1 proposes to cross the SROZ on the subject property with a drive aisle to enable access to the upland portion of the site, which contains approximately 0.95 acre, located west of the SROZ and its Impact Area. The upland area is proposed to accommodate a parking/storage area for trailer cabs used in the applicant's operations.





IMPACT AREA	ESTABLISHMENT
WETLAND, SQ FT	DELINEATED
WETLAND BUFFER, SQ FT	50' DELINEATION OFFSET
SROZ, SQ FT	25' OFFSET FROM BUFFER

As discussed in Request H of this staff report, certain uses and activities are exempt from the SROZ regulations. Per Section 4.139.04 (.08), exempt uses include the construction of new roads, pedestrian or bike paths into the SROZ in order to provide access to the sensitive area or across the sensitive area, provided the location of the crossing is consistent with the intent of the Wilsonville Comprehensive Plan. Further, the regulations require that roads and paths, when permitted, be constructed so as to minimize and repair disturbance to existing vegetation and slope stability. This exemption applies to public roads and associated facilities, not private development. As such, the exemption does not apply to the proposed private drive aisle crossing of the SROZ in Option 1 of the current application, which is not designed to access the sensitive area and would not be for limited use. Rather, the crossing is proposed to provide regular, frequent truck crossings of the SROZ, an activity that does not minimize the disturbance. In addition, none of the other exempt uses and activities listed in Section 4.139.04 (.01) through (.22) apply to the proposed drive aisle crossing of the SROZ.

Variance Standards

Grounds for Granting Variance Request
Subsection 4.196 (.01)

I5. Where difficulties exist rendering compliance with the Code impractical and such compliance would create unnecessary hardship to the owner or user of land or buildings, the Development Review Board may grant a variance from the provisions of the Code. Granting of a variance is allowed after the prescribed public hearing as set forth in Section 4.013 and an investigation, provided all the conditions listed in Subsections 4.196 (.01) A.

through G., as discussed in Findings I6 through I11 below, exist related to the subject property.

Difficulty Applies Regardless of Owner
Subsection 4.196 (.01) A.

I6. Access to and development of the western portion of the subject property via internal circulation as proposed in the applicant's site design Option 1 is encumbered by location of the SROZ and its Impact Area. This encumbrance exists regardless of the owner and would apply the same for any owner of the subject property. However, access to the western portion of the subject property is achievable via a Required Supporting Street along the west property boundary as shown in the Regulating Plan (Figure CC-1). This situation also applies to any owner of the property. None of three (3) site design options presented by the applicant includes building the Supporting Street or dedicating right-of-way to allow its construction in the future. Thus, this variance condition is not met.

Variance Not Result of Illegal Act
Subsection 4.196 (.01) B.

I7. The requested relief is not the result of an illegal act on the part of the applicant or their agent in relation to the variance request. Therefore, this variance condition is met.

Unique Circumstances
Subsection 4.196 (.01) C.

I8. SROZ is present on properties throughout the City and development of those properties is constrained by the SROZ regulations, which apply to the portion of any lot or development site that is within the SROZ and its associated Impact Area. While the location of the SROZ on the subject property separates the western developable portion from the larger developable area east of the SROZ and its Impact Area, this circumstance is not unique to the site or atypical to the general conditions of the surrounding area. Thus, this variance condition is not met.

Request Relates to Subject Property
Subsection 4.196 (.01) D.

I9. At pre-application meetings with the City in 2019 and 2021 for the proposed project, the City informed the applicant that development would not be allowed in the SROZ and its Impact Area, explained that a drive aisle crossing of the SROZ would not be considered an exempt use under the SROZ regulations, and advised the applicant that any activity in the SROZ and its Impact Area would not be allowed. As discussed in other findings in this section, site access is intended to be from the Required Supporting Street on the western property line as shown in the Regulating Plan (Figure CC-1). Because of SROZ and Goal 5 natural resource protection regulations, the City cannot allow a drive aisle crossing of the SROZ, and therefore, driveway access on SW Day Road was allowed even though this access does not meet access spacing standards. The driveway on SW Day Road enables the applicant to access the eastern developable portion of their site without crossing the SROZ,

while development of the western upland portion is possible from a Required Supporting Street when developed in the future. Although the applicant has revised their plans to develop only the eastern portion of the site at this time, as shown in their site design Option 3, they have chosen to include the crossing in their preferred site design Option 1 to accommodate parking for trailer cabs used in their operations, rather than provide and take access from a new Supporting Street.

The practical difficulty asserted as a ground for the requested variance directly relates to the manner in which the applicant desires to develop the subject property on both sides of the SROZ. This they assert necessitates crossing the SROZ with a drive aisle for more efficient internal circulation between the east and west parts of the property and between the site expansion area and their existing operation to the south. However, this hardship asserted by the applicant is a function of their personal preference to which viable alternatives exist, such as constructing the Required Supporting Street to provide access the west part of the site. Such a difficulty, based on personal conditions or preferences, is specifically not allowed, by the variance condition, to be asserted as a basis for the variance request; therefore, this variance condition is not met.

Allowed Uses in Zone
Subsection 4.196 (.01) E.

I10. The proposed site expansion by Delta Logistics, including development of a warehouse/manufacturing facility and associated improvements on the vacant property at 9710 SW Day Road, is an allowed use in the PDI-RSIA zone. The variance code standards do not allow the property to be used for purposes not authorized within the zone. Thus, the proposal satisfies this variance condition.

Minimum Necessary to Relieve Hardship
Subsection 4.196 (.01) F.

I11. The applicant has failed to demonstrate that the proposed drive aisle crossing of the SROZ as designed in Option 1 of the current application is the minimum necessary to relieve the alleged hardship, nor have they demonstrated that alternative designs have been thoroughly explored. Providing the Required Supporting Street on the western property boundary and accessing the western portion of the subject property from that street would result in less impact to the SROZ. Therefore, this variance condition is not met.

WILSONVILLE
OREGON

Planning Division Memorandum

From: Cindy Luxhoj AICP, Associate Planner
To: Development Review Board Panel B
Date: January 12, 2023
RE: DB22-0007 Delta Logistics Site Expansion – Request to Reschedule Public Hearing to Panel A on February 13, 2023

The DB22-0007 Delta Logistics Site Expansion application was scheduled for public hearing before Development Review Board (DRB) Panel B on January 23, 2023. Requests for this application include:

DB22-0007 Delta Logistics Site Expansion
- Stage 1 Preliminary Plan (STG122-0005)
- Stage 2 Final Plan (STG222-0006)
- Site Design Review (SDR22-0006)
- Waivers (WAIV22-0001)
- Class 3 Sign Permit (SIGN22-0004)
- Type C Tree Removal Plan (TPLN22-0005)
- Standard SROZ Map Verification (SROZ22-0006)
- Standard SRIR Review (SRIR22-0004)
- Variance (VAR22-0001)

City staff met with the application on January 4, 2023, specifically about the variance request (VAR22-0001) to allow crossing of the Significant Resource Overlay Zone (SROZ) to access a developable portion of the project site. At this meeting, staff informed the applicant that the recommendation would be to deny the variance request, whereupon the applicant requested that the public hearing be rescheduled to February 13, 2023. Rescheduling will allow the applicant sufficient time to revise their plans to remove the SROZ crossing and redesign associated proposed site improvements.

Because the 120-day period within which a decision must be made on the application expires on February 11, 2023, the applicant has requested a waiver of the 120-day rule. They are giving the City through March 30, 2023, within which to make a final decision on the application. Therefore, rescheduling the DRB public hearing to February 13, 2023, is well within the extended 120-day review period.

City of Wilsonville
Exhibit A3 DB22-0007

From: Luxhoj, Cindy
To: "Lee Leighton (Mackenzie (Portland)) "; "Igor N"; vlad@deltagov.com
Cc: Rybold, Kim; Bateschell, Miranda; Pepper, Amy; Rappold, Kerry; Pauly, Daniel
Bcc: Luxhoj, Cindy; Guile-Hinman, Amanda
Subject: RE: Document Issue No. 23 - Delta Logistics - Dual Site Access Option II (Phase 1 & 2)
Date: Friday, February 3, 2023 4:40:37 PM
Attachments: image001.png

Lee,

This email responds to the land use and transportation analysis letters and graphics your team provided to the City on January 31, 2023, for the Delta Logistics Site Expansion project (Case File No. DB22-0007). These materials were submitted in follow-up to the virtual meeting conducted between City staff and the applicant's team on January 4, 2023. The January 4 meeting was convened to discuss the applicant's request for a variance to cross the Significant Resource Overlay Zone (SROZ) with a private drive aisle to access a proposed semi-tractor storage area west of the SROZ in the Delta Logistics site expansion area.

At the January 4 meeting, City staff communicated the following:

- No exemption exists in Code that would allow a crossing of the SROZ with a private drive aisle as proposed.
- Staff will not recommend to the Development Review Board (DRB) that they grant the variance request to allow the crossing because the application materials fail to demonstrate unnecessary hardship and fail to meet all the variance criteria.
- Should the applicant desire to access the western portion of the property, such access could be gained by providing half-street improvements in a Supporting Street along the property's western boundary as required in the Coffee Creek Industrial Design Overlay District (DOD) Regulating Plan (Figure CC-1).

At the January 4 meeting, City staff requested that the applicant submit revised materials showing the following:

- Removal of the proposed drive aisle crossing the SROZ.
- Half-street improvements in a Supporting Street along the property's western boundary providing access to SW Day Road if the applicant continues to propose development of their property west of the SROZ.
- Revision of the semi-tractor storage area west of the SROZ to accommodate and integrate with the half-street improvements.
- Reconfiguration of the drive aisle connection between the Delta Logistics existing site to the south and the expansion area on this lot to move the aisle east, out of the SROZ wetland buffer specifically and, preferably, the impact area as well.

Staff has reviewed the materials submitted on January 31, and determined that they fail to respond to our requests of January 4, as three of the four items as listed above – half-street improvement, revision of the storage area, reconfiguration of the drive aisle connection – are not addressed in the resubmittal. Further, although the alternative Option 2 removes the SROZ crossing, it includes an interim driveway access to SW Day Road and connection to a Supporting Street to be built off-site by others further to the west at an undetermined future time. The proposed design would preclude

development of the Supporting Street consistent with the Coffee Creek Industrial DOD Regulating Plan in the future, making it impossible for the City to implement the envisioned future street network, which is critical to providing internal connectivity within the industrial area and access to SW Day Road for properties on the south side of this major arterial.

Based on the application materials submitted to date, including the January 31 letters and graphics, there are two possible paths forward for this project:

- **DRB Public Hearing on February 27, 2023:** No additional materials are submitted by the applicant. Staff proceeds with preparing the staff report in preparation for the DRB public hearing on February 27, 2023, based on application materials submitted to date.
    - Anticipated staff recommendation to DRB: Deny variance request. Deny all other application requests.
- **Reschedule DRB Public Hearing to March 13 or March 27, 2023:** Staff delays preparing the staff report until the applicant submits revised materials addressing the compliance issues between what is proposed and the development review criteria as identified by staff. Revised materials are submitted either by February 14, 2023, for the March 13 hearing, or by February 28, 2023, for the March 27 hearing. Staff proceeds with preparing the staff report based on application materials submitted by the deadline.
    - Anticipated staff recommendation to DRB: Deny variance request. Recommendation on all other application requests is contingent on revised application materials, but there is a higher probability of a favorable recommendation with conditions.

The DRB public hearing notice for the February 27, 2023 meeting must publish next Tuesday, February 7, 2023. Therefore, staff requires a response indicating which path the applicant chooses to follow by 5:00 pm on February 6, 2023, to provide staff sufficient time to prepare and distribute the notice by the February 7 deadline. Please provide the response in written form, either by email or in a letter attachment.

Please be aware of the following other key dates for this application:

- The 120-day Waiver requested by the applicant extends the 120-day land use review period for a final decision on the application from the initial date of February 11, 2023, to and including March 30, 2023. This may need to be extended further.
- Ordinance Nos. 872 (Annexation) and 873 (Zone Map amendment) will expire 120 days from the Ordinance effective date unless a Stage 2 Final Plan for the subject area is approved by the City. The Ordinance effective date is February 18, 2023, making the 120-day expiration date June 18, 2023.

Thank you,

Cindy Luxhoj AICP
Associate Planner
City of Wilsonville

503.570.1572
luxhoj@ci.wilsonville.or.us
www.ci.wilsonville.or.us
Facebook.com/CityofWilsonville

29799 SW Town Center Loop East, Wilsonville, OR 97070

The Community Development Department has implemented a new online application and payment system. You can now apply and pay for most applications online. You can register for and access the new system for application and payment at https://www.ci.wilsonville.or.us/Online-Portal. If there are additional questions, please reach out to City staff.

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From: Luxhoj, Cindy <luxhoj@ci.wilsonville.or.us>
Sent: Tuesday, January 31, 2023 4:58 PM
To: 'Lee Leighton (Mackenzie (Portland)) ' <lleighton@mcknze.com>
Cc: Rybold, Kim <rybold@ci.wilsonville.or.us>; Bateschell, Miranda <bateschell@ci.wilsonville.or.us>; Pepper, Amy <apepper@ci.wilsonville.or.us>; Pauly, Daniel <pauly@ci.wilsonville.or.us>; White, Shelley <swhite@ci.wilsonville.or.us>
Subject: RE: Document Issue No. 23 - Delta Logistics - Dual Site Access Option II (Phase 1 & 2)

Hi Lee –

I'm acknowledging receipt of today's email. Staff is reviewing the file you provided and will respond about the requested meeting by the end of this week.

At this point we haven't required resubmit on the other application materials in the online portal, so you should be able to upload the file as "Other Supporting Information" using the "Add Attachment" tile on the DB22-0007 project page. Please be advised that the file will not be considered part of the project record until it is uploaded to the portal. Please let me know if you encounter any difficulty with the upload.

Thanks,

Cindy Luxhoj AICP
Associate Planner
City of Wilsonville

503.570.1572
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From: Lee Leighton (Mackenzie (Portland)) <lleighton@mcknze.com>
Sent: Tuesday, January 31, 2023 1:58 PM
To: Luxhoj, Cindy <luxhoj@ci.wilsonville.or.us>
Subject: Document Issue No. 23 - Delta Logistics - Dual Site Access Option II (Phase 1 & 2)

[This email originated outside of the City of Wilsonville]

2200502.00 - Delta Logistics Wilsonville Annex/ZC Issue 23

Issued by: Lee Leighton (Mackenzie)
On: 31 Jan 2023

Greetings, Wilsonville staff.

This material is submitted for the record in land use casefile DB22-0007, Delta Logistics Annex.

Following through on our virtual meeting of January 4, Mackenzie has prepared land use and transportation analysis letters and graphics to propose an alternative access scenario (Option II) for a western driveway access to the semi-tractor storage area in the northwest corner of the property.

Please use the URL below to download one file containing those items.

We would like to schedule a virtual meeting with staff to summarize our findings and present the proposal.

Also, please advise when the online permitting system is open for us to submit a copy using that online interface.

Thank you,

~Lee

Lee Leighton, AICP
Land Use Planning
Architecture | Interiors | Engineering | Planning
D 971.346.3727 P 503.224.9560 W mcknze.com
RiverEast Center, 1515 SE Water Avenue #100, Portland, OR 97214

Mackenzie Email Disclaimer

Access the documents for this issue

Recipients:

Andrei Shupenka (Built Environments NW (<Default>))
Roman Michalchuk (Built Environments NW (<Default>))
Dan Pauly (City of Wilsonville (Wilsonville))
Becky White (City of Wilsonville (Wilsonville))
Kim Rybold (City of Wilsonville (Wilsonville))
Cindy Luxhoj (City of Wilsonville (Wilsonville))
Amy Pepper (City of Wilsonville (Wilsonville))
Igor N (Delta Logistics (<Default>))
Vlad Tkach (Delta Logistics (<Default>))
Breezy Rinehart-Young (Mackenzie (Portland))
Adam Goldberg (Mackenzie (Portland))
Chelsey Reinoehl (Mackenzie (Portland))
Lee Leighton (Mackenzie (Portland))
Gregory Mino (Mackenzie (Portland))
Scott Moore (Mackenzie (Portland))
Nicole Ferreira (Mackenzie (Portland))
Kim Biafora (Schott & Associates, LLC (<Default>))
Elizabeth Howard (Schwabe Williamson & Wyatt (<Default>))
Hannah Warner (Schwabe Williamson & Wyatt (<Default>))
Garrett Stephenson (Schwabe Williamson & Wyatt (<Default>))

By opening these documents, you agree to the following terms and conditions, click here.

From:	Luxhoj, Cindy
To:	"Lee D. Leighton"; Scott Moore; Terry Flanagan; Nicole Ferreira; Breezy Rinehart-Young; Greg Mino; Janet T. Jones
Cc:	"Stephenson, Garrett H."; "Igor Nichiporchik"; "Vlad Tkach"; Guile-Hinman, Amanda; "Gaon, Joseph O."; Pepper, Amy; Bateschell, Miranda; Pauly, Daniel; Rybold, Kim; Weigel, Zach; Adam Goldberg; Kim Cartwright; conference@deltagov.com
Subject:	RE: DB22-0007 Delta Logistics - Project Status
Date:	Monday, March 27, 2023 8:48:28 AM
Attachments:	image001.png image003.png

Hi Lee,

I want to acknowledge receipt of your email, below, in follow-up to our meeting last week.

I quickly reviewed the task list you outline and it appears to summarize key points in our discussion related to the retaining wall, off-site trees and waiver criteria. However, due to heavy workload on other projects, I'm not able to comment in any more detail at this time.

As I indicated in the meeting, new or additional information to address the City's concerns as expressed in the meeting will need to be submitted by April 11, at the latest, to prepare for a May 8, 2023, DRB public hearing. If material is submitted earlier, it will give staff more opportunity to review and respond, which would be greatly appreciated.

Thank you and your team for all your efforts to work with staff on this project to get to a design with the greatest potential for approval at DRB.

Best,

Cindy Luxhoj AICP
Associate Planner
City of Wilsonville

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luxhoj@ci.wilsonville.or.us
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Facebook.com/CityofWilsonville

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From: Lee D. Leighton <LLeighton@mcknze.com>
Sent: Thursday, March 23, 2023 2:15 PM
To: Luxhoj, Cindy <luxhoj@ci.wilsonville.or.us>; Scott Moore <SMoore@mcknze.com>; Terry Flanagan <terry@teragan.com>; Nicole Ferreira <NFerreira@mcknze.com>; Breezy Rinehart-Young

<BRinehart@mcknze.com>; Greg Mino <GMino@mcknze.com>; Janet T. Jones <JTJ@mcknze.com>
Cc: 'Stephenson, Garrett H.' <GStephenson@SCHWABE.com>; 'Igor Nichiporchik' <igor@deltagov.com>; 'Vlad Tkach' <vlad@deltagov.com>; Guile-Hinman, Amanda <guile@ci.wilsonville.or.us>; 'Gaon, Joseph O.' <JGaon@schwabe.com>; Pepper, Amy <apepper@ci.wilsonville.or.us>; Bateschell, Miranda <bateschell@ci.wilsonville.or.us>; Pauly, Daniel <pauly@ci.wilsonville.or.us>; Rybold, Kim <rybold@ci.wilsonville.or.us>; Weigel, Zach <weigel@ci.wilsonville.or.us>; Adam Goldberg <AGoldberg@mcknze.com>; Kim Cartwright <kim@schottandassociates.com>; conference@deltagov.com
Subject: RE: DB22-0007 Delta Logistics - Project Status
Importance: High

[This email originated outside of the City of Wilsonville]

Greetings, Cindy and other Wilsonville staff:

Thank you again for sharing your concerns with us and providing guidance on how to address them in our meeting Tuesday. We appreciate your assurance that staff is working with the applicant to ensure that when the application proceeds to its public hearing, the proposed development plan and supporting materials will be sufficient to obtain approval from the DRB panel. We understood that staff expects to be able to recommend approval of the recently submitted Feb'23 Plan for site development when the issues and concerns we discussed in the meeting have been addressed with supplementary information.

As we discussed in the meeting, rescheduling the DRB hearing date to May 8, 2023 is acceptable to the applicant. We understand the City of Wilsonville will take care of associated notice requirements.

We will appreciate staff's review and comments on the following outline of follow-through tasks, which we prepared following the meeting:

- Please reply to confirm if you find this scope of work sufficient (assuming you will find the substantive work to be satisfactory when delivered).
- In particular, please let us know:
  (1) Are there any remaining issues or concerns this task list has overlooked?
  and
  (2) Are there specific additional Code standards you want us to respond to explicitly in expanded supplemental narrative/findings?

Delta Logistics
Tasks from March 21, 2023 meeting with City staff:

1. Clarify root zone protection for trees on neighboring properties adjacent to where cut and retaining walls are proposed (i.e., at the east and south site perimeters):

   1.1. Arborist Terry Flanagan/Teragan to perform a site visit, verify dripline

perimeters of affected trees, and provide field observation data to Mackenzie.

1.2. Arborist will provide narrative clarification of proposed tree protection measures, i.e., basis in best management practices and compliance with Code requirements.

1.3. Mackenzie will provide supplemental or revised planting plans including display of driplines and construction observation notes/instructions per 1.1 & 1.2 from arborist.

2. Clarify visual documentation of the appearance of the proposed cut retaining walls on the north, east and south sides of the site, as viewed from points within the site:

2.1. Mackenzie will prepare elevation drawings to illustrate the scale and character of proposed retaining walls and adjacent plantings, one assuming growth of the proposed trees and shrubs at 5 years and another at 20 years.

2.2. Mackenzie will include one or more graphic elements (e.g., parked vehicles, human figures) to provide context/relative scale.

3. Provide supplemental explanation and recommended findings regarding consistency of the proposed design – specifically with reference to the requested Waiver to exceed the allowed 4'/4.8' maximum retaining wall height and eliminate the minimum 5' horizontal offset requirement.

3.1. Discuss development standards for retaining walls and minimizing site grading (see Coffee Creek Pattern Book Section C at pp. 23-24).

3.2. Discuss relationship to Coffee Creek intent per 4.134(.08); factors include:

3.2.1. use of native plant materials,

3.2.2. focus on and prioritization of SROZ as the significant on-site resource feature,

3.2.3. minimizing grading adjacent to the resource,

3.2.4. achieving/maintaining naturalistic character,

3.2.5. responding to the character of the site's existing west-facing hillside slope (i.e., by excavating the pad and tucking the building partially into the land form)

For each of the three Tasks described above, we will plan to share material with staff as it is completed. Which is to say we intend to work with staff to resolve the tree protection and retaining wall appearance questions as soon as possible, and then follow through with expanded findings regarding our site analysis and design approach, allowing sufficient time for staff to review and incorporate that information into the staff report and recommendation.

We are confident we can demonstrate how the Waiver request complies with the intent of the

Coffee Creek design standards, and we will appreciate your help to ensure that our effort will cover all the proverbial bases.

Thank you,

~Lee

I am typically away from my desk on Wednesdays and Fridays.

If your project requires immediate attention, please contact Planning Department Manager Gabriela Frask, gfrask@mcknze.com, 971.346.3675

…

From: Luxhoj, Cindy <luxhoj@ci.wilsonville.or.us>
Sent: Friday, March 17, 2023 11:45 AM
To: Lee D. Leighton <LLeighton@mcknze.com>
Cc: 'Stephenson, Garrett H.' <GStephenson@SCHWABE.com>; 'Igor Nichiporchik' <igor@deltagov.com>; 'Vlad Tkach' <vlad@deltagov.com>; Guile-Hinman, Amanda <guile@ci.wilsonville.or.us>; 'Gaon, Joseph O.' <JGaon@schwabe.com>; Pepper, Amy <apepper@ci.wilsonville.or.us>; Bateschell, Miranda <bateschell@ci.wilsonville.or.us>; Pauly, Daniel <pauly@ci.wilsonville.or.us>; Rybold, Kim <rybold@ci.wilsonville.or.us>; Weigel, Zach <weigel@ci.wilsonville.or.us>
Subject: DB22-0007 Delta Logistics - Project Status
Importance: High

Hi Lee,

This email is to notify you and the rest of the applicant's team that we will need to reschedule the Development Review Board (DRB) Panel B hearing on this project from March 27, 2023, to a later date.

The primary reason for this decision is that staff is unable to recommend approval of the applicant's request to waive the standards of Section 4.134 (.11) of the Code for retaining wall maximum height and design. This decision is based on several factors, including but not limited to, demonstrating how the intent of the Coffee Creek Design Overlay District (DOD) and Pattern Book is met and potential impacts of retaining wall construction on the health and viability of mature off-site trees along the east and south property boundaries.

As addressing this concern likely will precipitate substantial revision to the applicant's site plan, this delay is necessary to provide adequate time for changes to be made. In addition, this delay will allow time to address other concerns such as those raised in the letter from Schwabe Williamson & Wyatt that we received on March 15, 2023.

Staff would like to schedule a virtual meeting (via Zoom) with you and your team next week to

discuss the above and any questions you may have about the status of the application. Some available times on our schedules include:

- Tuesday, March 21, 1:00-2:00 pm
- Wednesday, March 22, 10:00-11:00 am, 3:00-4:00 pm
- Thursday, March 23, 1:00-2:00 pm
- Thursday, March 24, 3:00-4:00 pm

Please let me know which of these times work for you and your team so that we can send a Zoom invitation.

Thank you,

Cindy Luxhoj AICP
Associate Planner
City of Wilsonville

503.570.1572
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Lee Leighton AICP
he, him, his
D 971-346-3727 **C** 503-382-7665

Land Use Planning
Senior Associate
Professional Licenses & Certifications

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Planning Division Memorandum

From: Cindy Luxhoj AICP, Associate Planner
To: Development Review Board Panel B
Date: March 27, 2023
RE: DB22-0007 Delta Logistics Site Expansion – Request to Reschedule Public Hearing

The DB22-0007 Delta Logistics Site Expansion application includes the following requests:

- Stage 1 Preliminary Plan (STG122-0005)
- Stage 2 Final Plan (STG222-0006)
- Site Design Review (SDR22-0006)
- Waivers (WAIV22-0001)
- Class 3 Sign Permit (SIGN22-0004)
- Type C Tree Removal Plan (TPLN22-0005)
- Standard SROZ Map Verification (SROZ22-0006)
- Standard SRIR Review (SRIR22-0004)
- Variance (VAR22-0001)

This application was originally scheduled for public hearing before Development Review Board (DRB) Panel B on January 23, 2023. However, after City staff met with the applicant on January 4, 2023, about anticipated denial of the variance request (VAR22-0001), the public hearing was rescheduled to a future date to allow sufficient time for the applicant to revise their plans.

The applicant's revised plans, which were subsequently submitted, include three site design options related to the SROZ; however, all three options develop the remainder of the site in the same way, with semi-tractor trailer parking/storage in the center and an industrial building on the east of the site. This common design includes a retaining wall along the north, east and south sides of the building with a maximum height of roughly 18 feet, for which the applicant has requested a waiver to the Coffee Creek Industrial Design Overlay standards for retaining wall maximum height and design.

In reviewing the applicant's materials during preparation of the DRB staff report for the March 27, 2023 public hearing, City staff determined that it is not possible to recommend approval of this waiver request. Because addressing this concern likely will precipitate substantial revision to the applicant's site plans, delaying the DRB public hearing is necessary to provide adequate time for changes to be made. In addition, this delay will allow time to address other City staff concerns

City of Wilsonville
Exhibit A6 DB22-0007

such as those raised in the letter from the applicant's attorney Schwabe Williamson & Wyatt that City staff received on March 15, 2023, about undergrounding of utilities.

City staff has proposed a meeting with the applicant to discuss the above concerns. The applicant previously requested to extend the 120-day review period on this application to June 30, 2023. However, if needed, the review period could be extended to October 14, 2023, which is 365 days from to date the application was deemed complete. Therefore, rescheduling the DRB public hearing to a future date is well within the extended 120-day review period.

Department	#	Item	Applicant's Response
		City of Wilsonville Site Development application forms submitted regarding the property described above list you as the applicant. The City received your applications on April 19, 2022, for an Annexation, Zone Map Amendment, Stage I Preliminary Plan, Stage II Final Plan, Site Design Review, Type C Tree Plan, SROZ Review, Significant Resource Impact Review, Variance, and Three (3) Waivers.	
		The application submitted is incomplete, based on the applicable provisions of ORS 227.178 (2) and Subsection 4.035(.05) Wilsonville Code ("WC"), due to the following missing items:	
Planning	1	Missing legal description and sketch depicting proposed Annexation and Zone Map Amendment.	The Annexation Petition with Legal Description and Map (Exh.A3) and Preliminary Certification from Oregon Department of Revenue (Exh.A4) were prepared but inadvertently omitted. They have been added to Exhibit A.
	2	Incomplete written responses to applicable review criteria. The applicable review criteria include the following: General Development Regulations and Standards: Outdoor Lighting: Sections 4.199 through 4.199.60	The Energy Compliance Table has been added to the findings for Outdoor Lighting.
	3	Insufficient detail in submitted plans and drawings. While some information is provided, the following is specific information still missing:	
		Landscape Plans:	
		* Indication of water consumption categories (high, moderate, low, and interim or unique) See WC Subsections 4.176(.09)A.-D.	Proposed water usage category is C. The information was in the plans, but we have reformatted for improved visibility. See in Exhibit B Sheet L0.01 Zoning Compliance Note, Section 4.176(.09) Water Usage.
		* Provide additional detail regarding compliance with the low berm standard. The narrative notes the retaining wall provides equivalent screening to this standard. It is unclear through the plans and narrative responses how the retaining wall achieves this.	Landscape is designed to the Low Screen Standard. The exposed face of the retaining wall faces the interior of the site rather than the public street; from SW Day Road, the landscaping, sunken grade and retaining wall cut off views toward the building and the parking area north of it. (Low berm is 3' berm with groundcover and trees every 30', low screen is 3' evergreen hedge and trees every 30'.) To a limited extent, the earthen berm helps reduce sound transmission between the street and the parking area. At other locations, the retaining wall and hedge provide a similar function.
		* Provide additional detail on compliance with the high screen standards noted in the narrative responses that are being included to mitigate the appearance of the loading docks.	The High Wall Standard is used to screen the loading docks. The High Screen is used to screen the wayside from the truck court.
	4	Dimensions for loading berths must be shown on the site plan. Length is shown but the width is omitted and with the inclusion of the canopy (see Engineering Division comment below) the height dimension must be included.	A 13' typical on-center spacing dimension for dock doors has been added to the Site Plan, Sheet C1.10. The dock doors' vertical clearance (> 16' grade-to-canopy) is provided on Detail 3, Sheet A3.21 "WALL SECTION AT DOCK DOOR."
	5	Include a circulation plan showing the direction of traffic flow into and out the property to the south and show any changes to the site. An additional land use application may be required to approve such changes.	We have added a new Exhibit O showing these movements. Only a short segment of paving (approximately 15' long from the existing edge of pavement to the property boundary and 45' wide, area of approximately 675 square feet) is necessary to make the proposed vehicular connection across the shared property boundary. There is no need to revise circulation within the Delta Logistics site in order to provide this access connection.
	6	Include the distance of subject property to any structures on adjacent properties.	We have added a new Exhibit P showing these distance calculations.
	7	Provide additional information and a copy of the PGE easement for staff to determine what can be constructed within this area. See subsection 4.210(.01) B. .16 WC.	We have added a new Exhibit Q containing a copy of this easement agreement. The applicant's review of the easement agreement indicates that the improvements proposed within the easement area are consistent with the easement.

City of Wilsonville
Exhibit B5 DB22-0007

Department	#	Item	Applicant's Response
	8	Insufficient information to determine compliance with minimum tree mitigation requirements. The applicant requests six (6) tree credits for preserved trees. Subsection 4.176 (.06) F. allows a landscape tree credit for preserved trees. However, no code language establishes an allowance for tree credits to count as mitigation for tree removal. The typical application for this code is in parking areas where a certain number of trees are required based on the number of parking spaces. If proposals preserve a large tree in these cases, fewer new trees need to be planted. However, if an applicant has a grove of 6 mature trees, and removes 5, the code does not establish the ability to avoid mitigating for the 5 removed trees by applying a tree credit from the one preserved tree. Staff is not aware of any circumstances where preserved tree credits were used as mitigation for tree removal. Please revise findings Section 4.600 to address tree mitigation based on the information. The application notes that payment into the tree fund will be required, please provide the estimated replacement cost per tree.	The narrative has been revised to clarify that Tree Credits can be applied only when required number of tree plantings exceeds the minimum number required as mitigation for tree removal.
	9	Insufficient findings and materials addressing standards of Coffee Creek Industrial DOD including, but not limited to, the following: a. Table CC-3 Building Design, 3. Overall Building Massing, Base, Body, and Top Dimensions; Base Design; Top Design. Include an additional drawing of the elevation that defines the Base, Body, and Top dimensions as defined in the Coffee Creek Industrial DOD. Demonstrate how the base and top create a change in surface position related to the body of the building. Exhibits should be included to demonstrate compliance with all other design related requirements of the Coffee Creek Industrial DOD or to determine if additional waiver requests are needed.	A new material specification has been added to visually define the first floor of the building (from grade to the 10' level) using a series of perforated metal panels that extend horizontally 2" from the surface of the north building wall, facing SW Day Road, west of the main entrance bump-out. For continuity of materials, the same material is used for the screen wall in the landscape island located south of the main building entrance. See Keynote 05-13 on Sheet A2.10 and Detail 7 on Sheet A5.10. The Response statement in the narrative report has been revised to describe the updated Base-Body-Top design.
	10	Downstream analysis not provided. Design does not account for upstream draining that flows across the property. Revise the drainage report to show how drainage from upstream areas will be accommodated through the side and provide the downstream analysis. Drainage from a portion of the shared access drains to the south with no apparent treatment or drainage provided.	We have included a revised storm report that incorporates treatment within the subject property for the equivalent area of the entire project, including the small amount of affected area within the existing Delta Logistics headquarters site to make the proposed drive aisle connection (approximately 675 SF: 15' long by 45' wide). The drainage ridge line boundary is shown on Sheet C1.20, north of the proposed property line crossing.
	11	Owner signature is required to remove trees located partially or fully off-site and within the jurisdiction of the City of Wilsonville.	The grading/retaining wall plan has been revised so that no trees located outside the subject property are proposed for removal. The retaining wall now rises to meet existing grade and thus better protects the root zones of existing trees on neighboring properties. The arborist's report has been revised to take note of this change.
Questions & Comments (Planning)	A	The color materials board (Exhibit N) shows a steel mesh panel identified as signage. The narrative responses to Section 4.156 only discuss a freestanding and wall mounted sign. Please clarify.	The visual screen panel proposed within the landscape island near the main entrance was labeled incorrectly in the initial submittal. It is not a sign. It is a thematic element that helps to visually screen the dock doors from SW Day Road, made of the same perforated metal material that defines and accentuates the Base of the building. No signage is proposed on its surface.
	B	Include a pedestrian connection from the parking area on the western portion of the site to the public sidewalk to avoid pedestrian conflicts within the drive aisles.	We have added an 8' wide pedestrian connection to the sidewalk in the western semi-tractor storage area.
	C	Section 4.134 Table CC-3 Site Design 2. Parcel Pedestrian Access requires 8 feet wide pavement width. The pedestrian access is shown not meeting this dimensional standard.	We have widened this path segment to 8'.
	D	Narrative responses refer to Tanner Creek, which is in Portland, rather than Tapman Creek which is the water body that traverses the subject property.	We have corrected the incorrect reference(s) in the narrative.
	E	Sheet 14 of the Narrative refers to incorrect widths for sidewalk, planter strip, and bike lane per the widths shown in the Pattern Book.	Mackenzie Civil Engineers communicated via email with City Engineering staff and on October 20, 2021 received specific direction to use a design section similar to the Arterial design section that was used nearby for improvements in Garden Acres Road. The proposed configuration is consistent with that direction from Wilsonville Engineering staff.

Department	#	Item	Applicant's Response
	F	The proposed building entrance is shown not meeting the standards in Table CC-4 Building Design 2. Primary Building Entrance Accessible Entrance. The entrance must be 15 feet wide and 15 feet tall. Should the applicant move forward with this design an additional waiver and fee along with narrative responses for the waiver will be required.	The building entrance has a canopy cover eight feet deep that extends for a width of 30 feet along the west-facing wall of the office bump-out, exceeding the width requirement. The canopy height, at 14'9" clear above the paved walkway, is only three inches, or 0.25', below the minimum 15' height requirement. In *Table CC-4, 2. Primary Building Entrance, General* says the Required Canopy is adjustable by up to 10%. The 0.25' reduction from the 15' requirement is a reduction of only 1.7%. Section 4.134(.06)C.3 provides that "*Adjustments to Development Standards may be granted by the Planning Director for quantifiable provisions, as noted in Tables CC-1 though CC-4, if the Planning Director finds that the adjusted Development Standard will perform as well as the Development Standard.*" With canopy height of 14'9", the proposed entrance design will shelter pedestrians and perform as well as a 15'0" design, and is therefore appropriate for approval with the requested adjustment.
	G	Currently, Tapman Creek is a constrained drainage system, which will convey storm flows from the future Basalt Creek Planning Area. Pursuant to Section 301.7.00 of the Public Works Standards, the crossing and culvert shall safely pass the 100-year design flow and not further exacerbate the existing constraints within the basin.	Specifications for design-build of the proposed bridge crossing of Tapman Creek will ensure that conveyance capacity is equal to or better than the existing two 36" and one 12" culverts providing flow from the north as it crosses SW Day Road.
Engineering Comments	A	Traffic Impact Analysis includes a requirement to prohibit trucks from turning left onto Day Road. The driveway approach shall be modified to prohibit left turns onto Day Road.	The Applicant has prepared a comparative turning movement analysis for a revised driveway with a modification to prohibit exiting left turns; the resulting configuration requires significant widening of the drivewy throat to accommodate truck turning movements, which will increase safety hazards for pedestrians and cyclists. See driveway analysis information including email correspondence in Exhibit I.
	B	Revise transitions to show separated bike lane along Day Road transitioning to the sidewalk at east and west ends of the project.	No action required; transitions are acceptable per Amy Pepper email dated 5/31/22.
	C	Show access from SW Commerce Circle and identify any modifications needed across the existing Delta Logistics site.	We have added a new Exhibit O showing these movements. Only a short segment of paving is necessary to make the proposed vehicular connection across the shared property boundary; the movements do not require circulation within the Delta Logistics site to change.
	D	Fire line serving hydrants shall be public and installed in 15’ water easement dedicated to the City.	See response to F below.
	E.1	The loading docks include a sanitary sewer connection. The loading docks must be revised to be hydraulically isolated and covered to prevent stormwater from entering the sewer system.	Revised architectual plans include a continuous 4' deep canopy cover over the loading doors to prevent stormwater from entering the dock drain system.
	E.2	Revise design to utilize native infiltration rates or design storm system design to mimic native infiltration rates. Provide a copy of the geotechnical report including infiltration rates of native soils. Clarify if rain garden is proposed to be installed on fill and not below the retaining wall. Low impact development is intended to have multiple dispersed facilities throughout a site and not one large facility. Use the City’s approved storm water details, not Clean Water Services details.	Section 4.4 of the Geotech report (Exhibit F, also referenced as Appendix G of the Preliminary Storm Report in Exhibit G) summarizes the infiltration testing results obtained at the site.
	F	Fire line serving hydrants shall be public and installed in a 15’ water easement dedicated to the City. Revised fire plans must be resubmitted to TVFR for concurrence for these modifications. The site shall be served by a separate irrigation meter / service line.	Site Utilities Plan C1.30 has been revised to show public lines in a 15' wide easement serving the onsite hydrants.
	G	Show easements for sewer lateral, cross-over access easement crossing existing Delta Logistics site, any storm water crossing property lines between the proposed and existing sites, and for the fire line serving the hydrants.	Easements for utility connections have been added to the Utility Plan, Sheet C1.31. A blanket access easement may be used for vehicular access.
	H	Drive aisle distance needs to meet Section 201.2.23m of the Public Works Standards.	We have added findings addressing the standards in Section 201.2.23.m of the Public Works Standards in the narrative report. Refer to the response to Section 4.167(.01).

Department	#	Item	Applicant's Response
	I	The sidewalk along Day Road does not appear to meet ADA requirements on the eastern edge of the project.	PROWAG R302.5.1 notes that where pedestrian routes are contained within a street or highway right-of-way, the grade of pedestrian access routes shall not exceed the general grade established for the adjacent street or highway. The general grade of the existing roadway is already in excess of the 5% maximum allowable longitudinal slope otherwise regulated when not in a public right-of-way, therefore the new curb and sidewalk have been designed to be consistent with the general grade of the roadway to the maximum extent practicable while allowing space for temporary transitions to existing on either end.
	J	The applicant shall pay a fee in lieu of constructing the sewer line in Day Road.	We have removed the dry sanitary sewer line segment from preliminary plans for SW Day Road improvements - see R-Series sheets in Exhibit C.
	K	The Geotechnical Report identifies the possibility for the need for controlled blasting. Please be aware that the PW Standards prohibit the use of explosives without the express written approval of the City Engineer.	The anticipated method of rock removal is chipping. The applicant understands that special written permission will be required if any blasting is proposed.
	L	All utilities except high voltage lines on Day Road shall be placed underground.	The applicant has coordinated with PGE; high-voltage lines will remain on poles but local distribution facilities will be undergrounded.
Natural Resources Comments	A	Revise plans to show SROZ boundary and 25’ impact area.	We have identified the SROZ, 50' WETLAND BUFFER and 25' IMPACT AREA with line patterns and shading on the Site Plan. Please see Sheet C1.10.
	B	Revise site plan to correspond with SRIR planting areas and totals in order for staff to be able to verify how the proposed mitigation in the SRIR with the total planting specified. The SRIR states 134 trees and 1,643 shrubs are proposed, but these are not shown on the plans in the locations indicated in Exhibit C. Figure 3. Mitigation Planting Area.	Sheet L0.05 identifies areas and provides planting specifications consistent with the Vegetated Corridor mitigation plan in the SRIR. It also provides native species compliance data for all proposed plantings.

MACKENZIE.

October 11, 2022

City of Wilsonville
Attention: Cindy Luxhoj
29799 SW Town Center Loop E
Wilsonville, OR 97070

Re: **Delta Logistics Annex (DB22-0007 et al.)**
Response to Incomplete Notice dated September 16, 2022
Project Number 2200502.00

Dear Cindy:

Thank you for the guidance in your letter of September 16, 2022. On behalf of the applicant, Mackenzie is submitting revised materials that respond to the two items you identified as necessary to deem the application complete. Mackenzie has also been in contact with City staff regarding further suggestions that are not specifically completeness-related; under separate cover, we intend to provide supplemental materials as soon as possible to aid staff review of the proposed development plans.

Completeness Item 1: "The Code response narrative has been revised with respect to tree credits; however, total estimated payment to the City Tree Fund, including cost per tree and number of trees, is not provided. Staff also notes that revised findings about tree removal and mitigation (for example on page 154 under Section 4.600.50) make a distinction between viable and non- viable trees with respect to required mitigation, and that 1:1 replacement is required for all trees, regardless of viability. Revise Findings in Section 4.600 and other application materials for consistency and as needed to address tree removal and mitigation for all inventoried on-site and off-site trees."
Response: Based in part on the page#/Section # that is referenced, this comment appears to be based on review of the prior version of the report rather than the 7/28 revised submittal; however, as we performed another review of the tree removal plan, it became apparent that additional trees were subject to mitigation requirements. Project Landscape Architect Nicole Ferreira has prepared a revised site analysis plan that identifies 210 trees subject to the mitigation requirement, as well as a revised tree planting plan providing on-site planting of 210 specimens to satisfy the mitigation requirement on-site. Those updated sheets accompany this letter for your review.

We have made corresponding revisions in the narrative/findings report that refer to tree removal and mitigation compliance. Please see the accompanying redlined version of the narrative with redline edits at those locations so you can locate them easily. We would like to coordinate with you to provide a clean version of the final report prior to its distribution to the DRB panel (or as soon as you wish).

Completeness Item 2: "A downstream analysis is not provided. A downstream analysis is required per 301.5.01 of the PW Standards. The design does not account for upstream drainage that flows across the property, including the property to the east. Revise the drainage report to show how drainage from upstream areas will be accommodated through the site and provide the downstream analysis. Drainage from a portion of the shared access drains to the south with no apparent treatment or detention provided. All stormwater must be properly managed. Rain gardens 1 and 2 shall overflow to the wetland, not the piped system in SW Day Road."
Response: Site Civil Engineer Breezy Rinehart-Young has revised the storm report to incorporate downstream analysis, including consideration of through flows that cross Day Road. A copy of the revised storm report accompanies this letter.

City of Wilsonville
Exhibit B6 DB22-0007

With submittal of these items, we ask the City to deem the application complete and commence the review process. We intend to remain in dialogue with staff to respond to questions and resolve issues in the course of that procedure, including responding to the remaining items listed in your September 16, 2022 letter.

Sincerely,

Brian Varricchione
Land Use Planner

Enclosure(s): Revised Tree Inventory/Planting Plan Drawing Sheets
Revised Storm Report
Redlined Narrative/Findings Report (Redline edition revised October 5, 2022)

c: Igor Nichiporchik, Vlad Tkach – Delta Logistics
Scott Moore – Mackenzie

Delta Logistics Inc.

9835 SW Commerce Cir.
Wilsonville, OR 97070
(503) 665-2200

October 24, 2022

City of Wilsonville
ATTN: Planning/Cindy Luxhoj
29799 SW Town Center Loop E
Wilsonville, OR 97070

RE: DB22-0007 Delta Logistics – Extent of Subject Property

Dear Ms. Luxhoj:

I am the property owner and applicant for land use application DB22-0007, regarding property on the south side of SW Day Road, currently addressed at 9710 SW Day Road (Washington County Tax Map 3S1 02B, Tax Lots 600 & 601).

I am also the owner of the abutting property to the south-southwest, at 9835 SW Commerce Circle (Washington County Tax Map 3S1 02CA, Tax Lot 400), which is the present location of the Delta Logistics operation. The proposal affects that property to a limited extent: the development plan includes a drive aisle connection that will enable vehicular circulation between the two sites, and includes a proposed private easement through the southern parcel to make a sanitary sewer connection to the public line in SW Commerce Circle.

I agree that the existing Delta Logistics property should be included as part of the "subject property" of the current application for the purposes of permitting the proposed minor site modifications affecting it, for analysis of the associated traffic impacts of the proposed project that will expand the current Delta Logistics operation, and for preparing the mailing list and signage for required public notices as appropriate, such as notices of application submittal and public hearing date(s). I understand that a land use permit, if and when issued by the City, may include conditions of approval affecting the existing Delta Logistics site to the extent they are necessary and appropriate to assure implementation of that permit.

Regards,

Vlad Tkach

Property Owner and Applicant

City of Wilsonville
Exhibit B7 DB22-0007

Delta Logistics Annex (Application Number: DB22-0007 et al.) November 17, 2022

Incomplete Letter (9/16/22) Item:	**Response Action/Evidence Provided:**
The submitted application remains incomplete, based on the applicable provisions of ORS 227.178(2) and Subsection 4.035(.05) Wilsonville Code ("WC"), due to the following missing items:	
1. The Code response narrative has been revised with respect to tree credits; however, total estimated payment to the City Tree Fund, including cost per tree and number of trees, is not provided. Staff also notes that revised findings about tree removal and mitigation (for example on page 154 under Section 4.600.50) make a distinction between viable and non- viable trees with respect to required mitigation, and that 1:1 replacement is required for all trees, regardless of viability. Revise Findings in Section 4.600 and other application materials for consistency and as needed to address tree removal and mitigation for all inventoried on-site and off-site trees.	Revised planting plans (L-Series sheets in the October submittal) identify 210 trees subject to mitigation and recommend planting 210 specimens on site. The narrative report was revised accordingly. **Cindy**: please compare notes with us when you review the tree inventory and planting plan, we will do a final round of obtaining a matching arborist's report to eliminate any remaining discrepancies that may be identified by your review.
2. A downstream analysis is not provided. A downstream analysis is required per 301.5.01 of the PW Standards. The design does not account for upstream drainage that flows across the property, including the property to the east. Revise the drainage report to show how drainage from upstream areas will be accommodated through the site and provide the downstream analysis. Drainage from a portion of the shared access drains to the south with no apparent treatment or detention provided. All stormwater must be properly managed. Rain gardens 1 and 2 shall overflow to the wetland, not the piped system in SW Day Road.	Submittal includes a revised Storm Report that includes consideration of Tapman Creek through-flow volume and limited downstream flow conditions. The revised civil plans (C-Series sheets) provide on-site detention for a 100-Year storm event and a corresponding Storm Report (Exhibit G).
In addition to the incompleteness items listed above, the following questions and comments regarding compliance came to City staff's attention while reviewing the materials for completeness. Please respond and/or incorporate into updated materials as appropriate.	
Planning Comments (in addition to incomplete items included above)	
A. A circulation plan showing the direction of traffic flow into and out the property to the south is provided in the resubmittal (Exhibit O) and proposed changes to the property are indicated on Sheet C1.10. Provide documentation that the property owner consents to expanding the current	Delta Logistics has provided a letter dated 10/24/22.

City of Wilsonville
Exhibit B8 DB22-0007

Incomplete Letter (9/16/22) Item:	Response Action/Evidence Provided:
application to include the proposed improvements on the property to the south.	
B. A legal description and sketch depicting proposed Annexation and Zone Map Amendment areas is included in the resubmittal; however, both depict Tax Lots 600 and 601 as one lot of record whereas Washington County tax maps indicate two separate tax lots. Clarify whether Tax Lots 600 and 601 are one or two separate lots of record and revise the submitted materials as needed.	Resolved per email correspondence, week of 10/17/22. The annexation legal description is for the specific purpose of describing the perimeter of the annexation territory (and not the parcelization within it).
C. Additional lighting information is included in the resubmittal; however, the "Power Consumption of Proposed Lighting Fixtures" table on page 128 of the Code response narrative is not complete.	[This is apparently from review of the prior version of the report rather than the 7/28 submittal.]
D. The narrative response still includes references to Tanner Creek rather than Tapman Creek, which need to be corrected.	[This is apparently from review of the prior version of the report rather than the 7/28 submittal.]
Engineering Comments (in addition to incomplete items included above)	
E. The project will be conditioned that the City will modify the driveway on SW Day Road as necessary in the future to address safety concerns and limit left turn movements.	Noted – this is consistent with prior email correspondence between City staff and Mackenzie Traffic Engineer Janet Jones.
F. Show access from SW Commerce Circle and identify any modifications needed across the existing Delta Logistics site. Inconsistent data is provided. Truck turning movements of the existing site are needed to confirm access is adequate without modifications to the SW Commerce Circle property. Any additional paving is required to have water quality and quantity improvements. The drive aisle is not addressed in Section 4.167 (.01) as identified in the response to comments.	Other than the additional paving right at the property boundary crossing to make the connection, no site changes are needed. Sheet C3.10 shows routing and truck movement through the existing Delta Logistics site between the subject property and SW Commerce Circle. Drainage at the crossing is in analysis basin 17 of the revised Storm Report (Exhibit G); treatment is provided as shown on revised Sheet C1.30. No new drive aisle is proposed, only making a connection to the existing truck drive aisle(s) within the Delta Logistics headquarters site.
G. The fire line serving hydrants shall be public and installed in a 15' water easement dedicated to the City. Easement areas shall be unencumbered with private utilities (except perpendicular crossings) and structures. Revised fire plans must be resubmitted to TVFR for concurrence for these	A 15' public water line easement is shown on revised Sheet C1.30.

Incomplete Letter (9/16/22) Item:	Response Action/Evidence Provided:
modifications. The site shall be served by a separate irrigation meter/service line. Relocate the hydrant from the loading dock area. Even with bollards, the hydrant is likely to be damaged at this location.	
H. The loading docks include a sanitary sewer connection. The loading docks must be hydraulically isolated and covered to prevent stormwater from entering the sewer system. The sewer lateral shall connect to the mainline, not the manhole in SW Commerce Circle and be located in a private sewer easement.	Based on email correspondence with City staff about hydraulic isolation, we believe the revised plans meet the City's standards. The sewer lateral in SW Commerce Circle connects to the main. The service lateral runs through a private sewer easement – see Sheets C1.30-1.31.
I. Infiltration testing shall be performed in accordance with Appendix B. At least one test for each proposed facility is required.	The Geotech report includes test bores in the vicinity of both rain gardens that encountered bedrock conditions. (See "Methodology" section of Storm Report, Exhibit G.) No evidence suggests that a different condition would be found nearby within the subject site. The question is moot because the revised rain garden design achieves detention of the 100-year storm without infiltration. See Sheets C1.30 and C5.12 and revised Storm Report.
J. Show easements for private sewer lateral, cross-over access easement across the existing Delta Logistics site (exhibit and civil plans are not consistent), and for stormwater crossing property lines between the proposed and existing sites.	Easements have been added - see revised Sheets C1.30 and 1.31.

WILSONVILLE
OREGON

APPLICANT REQUEST FOR WAIVER OF 120-DAY RULE (ORS 227.178(5))

Delta Logistics Expansion, 9710 SW Day Road

Project Name, Description

Vladimir Tkach, Applicant/Owner

Applicant's Name

DB22-0007 et al.

City of Wilsonville File Number

I have a pending land use application with the City for the file number identified above. I request a waiver of the 120-day rule to allow additional time for the City to process my land use application, as allowed by ORS 227.178. As a result, I am giving the City the period of time through and including the date of March 30, 2023 [1] to make a final decision on my land use application. Unless, an additional waiver is given by me, I understand the City will make a final decision on my land use application on or before the date specified in this letter.

Applicant's Signature

01/05/2023
Date

[1] In no event may the total amount of time, including all extensions, exceed 365 days from the date the application is deemed complete. Example: an application deemed complete on March 1, 2020, cannot be extended beyond March 1, 2021, and the City must make a final decision on or before March 1, 2021.

WILSONVILLE
OREGON

APPLICANT REQUEST FOR WAIVER OF 120-DAY RULE (ORS 227.178(5))

Delta Logistics Expansion, 9710 SW Day Road

Project Name, Description

Vladimir Tkach, Applicant/Owner

Applicant's Name

DB22-0007 et al.

City of Wilsonville File Number

I have a pending land use application with the City for the file number identified above. I request a waiver of the 120-day rule to allow additional time for the City to process my land use application, as allowed by ORS 227.178. As a result, I am giving the City the period of time through and including the date of June 30, 2023 [1] to make a final decision on my land use application. Unless, an additional waiver is given by me, I understand the City will make a final decision on my land use application on or before the date specified in this letter.

Applicant's Signature

02/07/2023
Date

[1] In no event may the total amount of time, including all extensions, exceed 365 days from the date the application is deemed complete. Example: an application deemed complete on March 1, 2020, cannot be extended beyond March 1, 2021, and the City must make a final decision on or before March 1, 2021.

From: Lee D. Leighton
To: Luxhoj, Cindy
Cc: Rybold, Kim; White, Shelley; Bateschell, Miranda; Pauly, Daniel; Igor Nichiporchik; Vlad Tkach; Adam Goldberg; Scott Moore; Nicole Ferreira; Breezy Rinehart-Young; Greg Mino; Janet T. Jones
Subject: RE: Document Issue No. 27 - DB22-0007 Delta Logistics Revised Plan Set and Report
Date: Wednesday, March 1, 2023 11:05:41 AM
Attachments: image001.png
image002.png
a7d0dbec-c393-4b37-bdf3-fb971919135e.png
mackenzie_monogram_rgb_emailsignature2_a986193c-328e-491e-9e12-e13ead8c5181.png

[This email originated outside of the City of Wilsonville]

Hi Cindy.

I'm happy to explain why the full text of the original report remains included in the February 28 land use narrative report, with redlining and font color changes that identify aspects of the report that are not needed to approve the February 28, 2023 revised plan set, referred to in the report (and below) as the "**Feb'23 Plan**."

To be clear, no aspect of the application, and nothing that has been placed in the record, is being withdrawn by the applicant.

The originally submitted site plan (which has effectively become Option 1) remains the applicant's preferred development plan. The applicant believes the application materials contain evidence sufficient to enable the City to approve that proposal, including the variance request. But, as we have discussed, staff is of a different opinion when it comes to at least one of the variance approval criteria.

The applicant subsequently submitted an "Option 2" development plan for implementation in two phases; Option 2 would eliminate the private crossing of Tapman Creek and instead access the proposed western semi tractor storage area initially by way of an interim driveway on SW Day Road, anticipating its closure and permanent realignment to a suitable position on the west property boundary if and when a new street or shared driveway is constructed west of the subject property. The phase 2 relocation would presumably, though not necessarily, occur in conjunction with industrial redevelopment of the neighboring property to the west, consistent with its Industrial Comp Plan Map designation. Based on subsequent email communications, the applicant understands City staff will not support Option 2 either.

The Feb'23 Plan, submitted yesterday, represents the applicant's effort to present an acceptable plan that staff can support at this time because it does not include private development of the part of the property west of Tapman Creek, or a stream crossing or driveway for access to that sub-area. Which is to say the proposed development of the eastern portion of the property does not trigger any of the issues staff have cited as the bases for staff's opposition to the Option 1 and Option 2 development plans. Accordingly, in the February 28, 2023 report, the strikeouts and the text presented in grey font identify aspects of the application that are either already completed (i.e.,

annexation and zone change) or not necessary for approval of the Feb'23 Plan.

Importantly, the Feb'23 Plan is not fundamentally incompatible with potential future realization of either Option 1 or Option 2, or for that matter some other yet-to-be identified full utilization alternative. The Feb'23 Plan is not as satisfactory to the applicant, to whom it does not represent the full realization of the property's actual potential; however, confronted with opposition from staff, it has become apparent that use of the western part of the property may be infeasible to achieve at this time. A practical solution may become realistic as further redevelopment occurs to the west in the Coffee Creek District over time (as well as the Basalt Creek District to the north), and the applicant remains hopeful that a satisfactory access plan for the western part of the site may become approvable in the future as economic development/urbanization proceed and the context evolves. Of course, the applicant recognizes that any such future development and use of the western part of the property will need to go through a separate City of Wilsonville review/approval process on its merits, if and when any such proposal is submitted.

So, specifically regarding the variance request: as the revised February 28 land use narrative report explains, the Feb'23 Plan encroaches on the 50' vegetated corridor only to the extent necessary to construct the arterial street improvements the City requires for widening of SW Day Road. Staff can determine whether a variance approval is necessary to allow that vegetated corridor encroachment (as a public improvement, it may be subject to an exception or exemption under the Code). If variance approval is not necessary for the required SW Day Road widening, the applicant's variance request can be denied at the same time the Feb'23 Plan is approved, because the proposed private development (outside the SW Day Road right-of-way) does not include any feature requiring variance approval.

Thank you,

~Lee

Lee Leighton AICP
he, him, his
D 971-346-3727 **C** 503-382-7665

Land Use Planning
Senior Associate
Professional Licenses & Certifications

Mackenzie.
ARCHITECTURE ▪ INTERIORS ▪ STRUCTURAL, CIVIL, AND TRAFFIC ENGINEERING
LAND USE AND TRANSPORTATION PLANNING ▪ LANDSCAPE ARCHITECTURE
PORTLAND, OR | VANCOUVER, WA | SEATTLE, WA
www.MACKENZIE.inc

Disclaimer

From: Luxhoj, Cindy <luxhoj@ci.wilsonville.or.us>
Sent: Wednesday, March 1, 2023 8:54 AM
To: Lee D. Leighton <LLeighton@mcknze.com>
Cc: Rybold, Kim <rybold@ci.wilsonville.or.us>; White, Shelley <swhite@ci.wilsonville.or.us>; Bateschell, Miranda <bateschell@ci.wilsonville.or.us>; Pauly, Daniel <pauly@ci.wilsonville.or.us>
Subject: RE: Document Issue No. 27 - DB22-0007 Delta Logistics Revised Plan Set and Report

Hi Lee,

I see that you successfully uploaded the revised files to the portal. Thank you!

I notice that "Variance" has been deleted from the list of requests on the front of the narrative/code compliance document. Could you clarify whether the applicant proposes to withdraw the variance request? If this is the case, then we should have that withdrawal request in writing to include in the record.

Thanks,

Cindy Luxhoj AICP
Associate Planner
City of Wilsonville

503.570.1572
luxhoj@ci.wilsonville.or.us
www.ci.wilsonville.or.us
Facebook.com/CityofWilsonville

29799 SW Town Center Loop East, Wilsonville, OR 97070

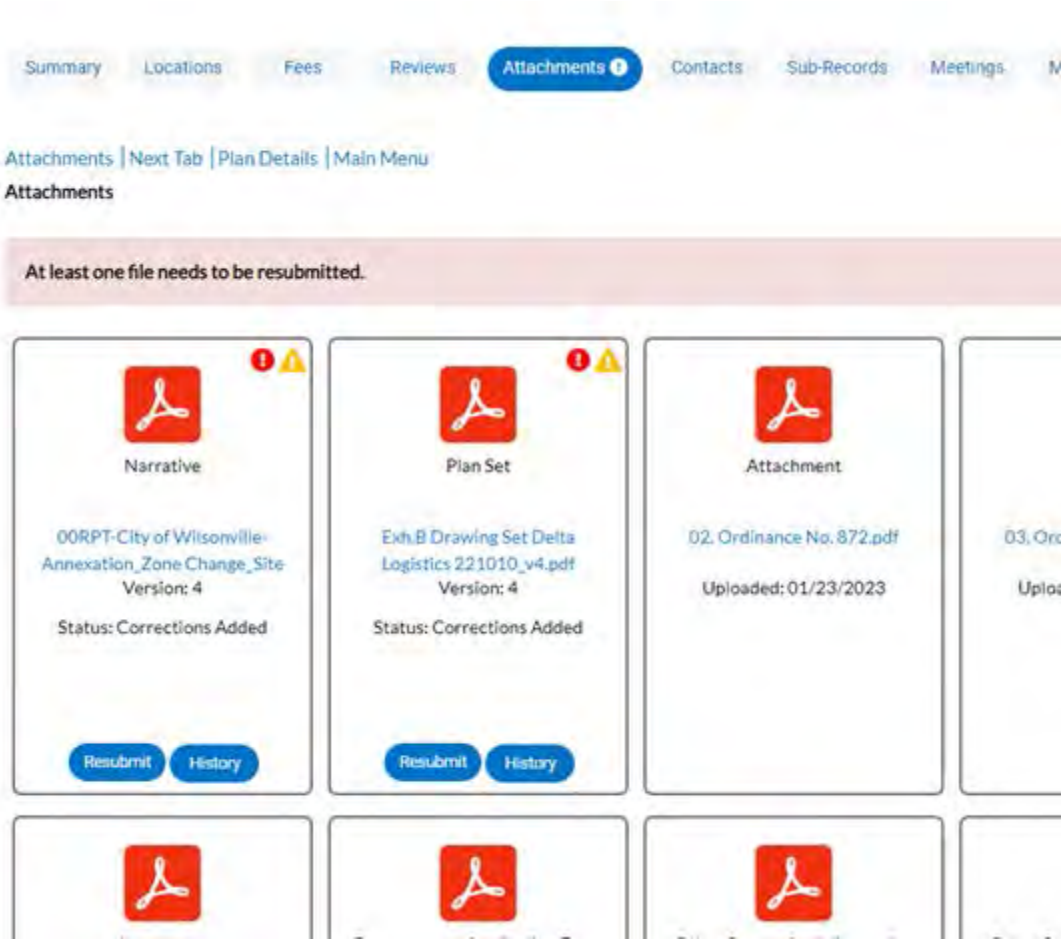
Disclosure Notice: Messages to and from this e-mail address may be subject to the Oregon Public Records Law.

From: Luxhoj, Cindy
Sent: Tuesday, February 28, 2023 2:21 PM
To: 'Lee Leighton (Mackenzie (Portland)) ' <lleighton@mcknze.com>
Cc: Rybold, Kim <rybold@ci.wilsonville.or.us>; White, Shelley <swhite@ci.wilsonville.or.us>; Bateschell, Miranda <bateschell@ci.wilsonville.or.us>; Pauly, Daniel <pauly@ci.wilsonville.or.us>
Subject: RE: Document Issue No. 27 - DB22-0007 Delta Logistics Revised Plan Set and Report

Hi Lee,

Thank you for providing these revisions.

I've enabled new uploads to the portal for the narrative/code compliance document and drawing set. See screenshot of attachments tab below. No need to resubmit all the other documents for this submittal if they haven't changed.



If you have any new documents (not revisions) that you want to add, please upload those with “add attachment”.

I also got your voicemail. Delivery of hard copies tomorrow morning is fine. Since DRB now reviews electronically, we only need one copy of the materials for the project file, but if you’ve already printed them, go ahead and send all three.

Let me know if you have any other questions.

Thanks,

Cindy Luxhoj AICP
Associate Planner
City of Wilsonville

503.570.1572
luxhoj@ci.wilsonville.or.us
www.ci.wilsonville.or.us
Facebook.com/CityofWilsonville

29799 SW Town Center Loop East, Wilsonville, OR 97070

Disclosure Notice: Messages to and from this e-mail address may be subject to the Oregon Public Records Law.

From: Lee Leighton (Mackenzie (Portland)) <lleighton@mcknze.com>
Sent: Tuesday, February 28, 2023 1:14 PM
To: Luxhoj, Cindy <luxhoj@ci.wilsonville.or.us>
Subject: Document Issue No. 27 - DB22-0007 Delta Logistics Revised Plan Set and Report

[This email originated outside of the City of Wilsonville]

2200502.00 - Delta Logistics Wilsonville Annex/ZC Issue 27

Issued by: Lee Leighton (Mackenzie)
On: 28 Feb 2023

Greetings Cindy and Wilsonville staff:

Please use the URL below to download digital copies of (1) revised plan sets dated 02/28/23 and (2) corresponding revised land use narrative report.

We will deliver three copies of full-size plan sets (folded) and reports, with exhibits attached, to City offices.

We can also upload document files to the City's online intake system. Please advise when it is configured to accept submittal of additional/replacement documents. With the exception of the drawing set (Exhibit B), none of the exhibit files have changed - let us know if you want us to upload only the changed files, or if you want a complete resubmittal set as of this date.

Thank you,

~Lee

Lee Leighton, AICP
Land Use Planning

Architecture | Interiors | Engineering | Planning
D 971.346.3727 P 503.224.9560 W mcknze.com
RiverEast Center, 1515 SE Water Avenue #100, Portland, OR 97214

Mackenzie Email Disclaimer

Access the documents for this issue

Recipients:

Andrei Shupenka (Built Environments NW (<Default>))
Roman Michalchuk (Built Environments NW (<Default>))
Dan Pauly (City of Wilsonville (Wilsonville))
Cindy Luxhoj (City of Wilsonville (Wilsonville))
Becky White (City of Wilsonville (Wilsonville))
Kim Rybold (City of Wilsonville (Wilsonville))
Igor N (Delta Logistics (<Default>))
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Chelsey Reinoehl (Mackenzie (Portland))
Brian Varricchione (Mackenzie (Portland))
Scott Moore (Mackenzie (Portland))
Lee Leighton (Mackenzie (Portland))
Kim Biafora (Schott & Associates, LLC (<Default>))
Garrett Stephenson (Schwabe Williamson & Wyatt (<Default>))
Terry Flanagan (Teragan & Associates, Inc. (Lake Oswego))

By opening these documents, you agree to the following terms and conditions, click here.

Schwabe
WILLIAMSON & WYATT®

March 15, 2023

Garrett H. Stephenson
Admitted in Oregon
T: 503-796-2893
gstephenson@schwabe.com

VIA E-MAIL (APEPPER@CI.WILSONVILLE.OR.US)

City of Wilsonville Planning
Attn: Amy Pepper
29799 SW Town Center Loop E
Wilsonville, OR 97070

RE: Utility Improvements Proposed at SW Day Road
City File No. DB22-0007
Our File No.: 138006-265126

Ms. Pepper:

This office represents Delta Logistics, Inc. ("**Delta**") in the above referenced matter. This letter responds to the City of Wilsonville's ("**City**") position that Delta must construct off-site developments to underground electric feeds serving four private residences on the opposite side of SW Day Road. We believe the City's position is in contrast to the express language in the Wilsonville Development Code ("**WDC**") and its interpreted intent. The required off-site developments also effectuate an unconstitutional taking.

Code Interpretation. Delta proposed rearranging the existing overhead facilities associated with the existing distribution, excepting high voltage lines, until such a time that the north industrial zoned property is redeveloped and, at that time, an underground feed would be warranted to support any new utilities. The City declined Delta's request, interpreting WDC 4.320(.01) to conclude that any new or existing utilities must be placed under ground. The City's interpretation of WDC 4.320(01) is inconsistent with the face of the text. WDC 4.300(.20) provides that "all new utility lines…shall be placed underground." This text plainly excludes "existing" utility lines, which are addressed in WDC 4.320(.01). This section provides: "[t]he developer or subdivider shall be responsible for and make all necessary arrangements with the serving utility to provide the *underground* services (including cost of *rearranging* any existing overhead facilities)." When interpreting statues, Oregon law instructs the interpretation to "not insert what has been omitted, or to omit what has been inserted." ORS 174.010. Here, WDC 4.320(01) expressly provides that overhead utilities may be required to be rearranged but not "placed underground," meaning that existing utilities do not need to be placed underground. If existing utilities were required to be underground, the WDC would state that.

Unconstitutional Taking. As part of the City's denial of Delta's proposal to rearrange existing utilities, the City is requiring costly off-site construction of four underground electric feeds that will serve four private residences on the opposite side of Delta's property on SW Day Road.

City of Wilsonville
Exhibit B12 DB22-0007

Exhibit 1. This requirement is an unconstitutional taking of Delta's financial resources. The City must satisfy the constitutional burden of rough proportionality as laid out in *Dolan v. City of Tigard*, 512 U.S. 374, 391-395 (1994); *Koontz v. St. Johns River Water Management* District, 570 U.S. 595 (2013) (the *Nollan* and *Dolan* analysis applies to requirements to pay money or make public improvements in addition to requirements to dedicate property). Requiring a landowner to pay money for public improvements in exchange for development approval is a compensable taking unless there is an "essential nexus" between the condition and the government interest. *Nollan v. California Coastal Com.*, 483 U.S. 825, 836-37 (1987).

Any *Nollan/Dolan* takings analysis must be done on a case-by-case basis, and the City carries the burden of demonstrating in the first instance that any exaction has an essential nexus, and is roughly proportional to, the nature and degree of the projected impacts of the project. Unique to this situation, the City is requiring costly developments that benefit private parties, for no other reason that the WDC requires it. The City may not establish an essential nexus simply by imposing a requirement for certain public improvements without connecting such a requirement to some impact caused by the project which triggers it. *Hill v. City of Portland*, 293 Or App 283 (2018). In *Hill*, the city identified a provision in its code that supported its valid governmental interest (traffic safety), but failed to demonstrate how advancing that valid interest established a "significant nexus" to the development request made of the applicant. The Court in *Hill* explained that a local government "cannot evade *Nollan's* requirement that it demonstrate that the impacts of a particular proposal 'substantially impede' a legitimate governmental interest so as to permit the denial of a permit outright, simply by defining approval criteria that do not take into account a proposal's impacts." *Id*. at 290. In the absence of such a showing, the City cannot require undergrounding of existing lines.

And, even if it could establish the required nexus in this instance, for the City to carry its constitutional burden its exactions must be "roughly proportional" to the expected impacts caused by the proposed development. *Dolan*, 512 U.S. at 391-95. City has not explained how requiring approximately $350,000 (nearly 50% of the total estimated cost of $720,000) (**Exhibit 2**) in off-site development of undergrounding overhead utilities to the north industrial zoned properties is roughly proportional to the parking lot and warehouse development proposed by Delta. We posit that it is not, because (1) the City has identified no impact that the project would have on existing public infrastructure that would require such line crossings and (2) has not explained how such an impact, if it exists, justifies such a cost.

For the above reasons, we ask that the City re-consider its position, and allow the Project to be constructed without placing underground existing electrical distribution lines crossing Day Road. Based on Delta's correspondence with Portland General Electric, the existing poles and high-voltage overhead feeder lines must remain in place. This is permitted under WDC 4.310. Thus, undergrounding existing services across Day Road will make no difference in whether the existing electrical poles remain. Therefore, Delta's approach can be summarized as follows:

- Delta will underground service delivery to its own property and provide conduit along its frontage that can accommodate distribution to neighboring properties.

- PGE can maintain overhead service delivery to the four residences north of Day Road, pending anticipated future redevelopment. Delta will cooperate with any future undergrounding effort required to serve that future development.

We hope that this will be acceptable to the City, but if it is not, the City must resolve the code and constitutional issues outlined above in order to require undergrounding of off-site electrical services across Day Road.

Please feel free to contact me with any questions.

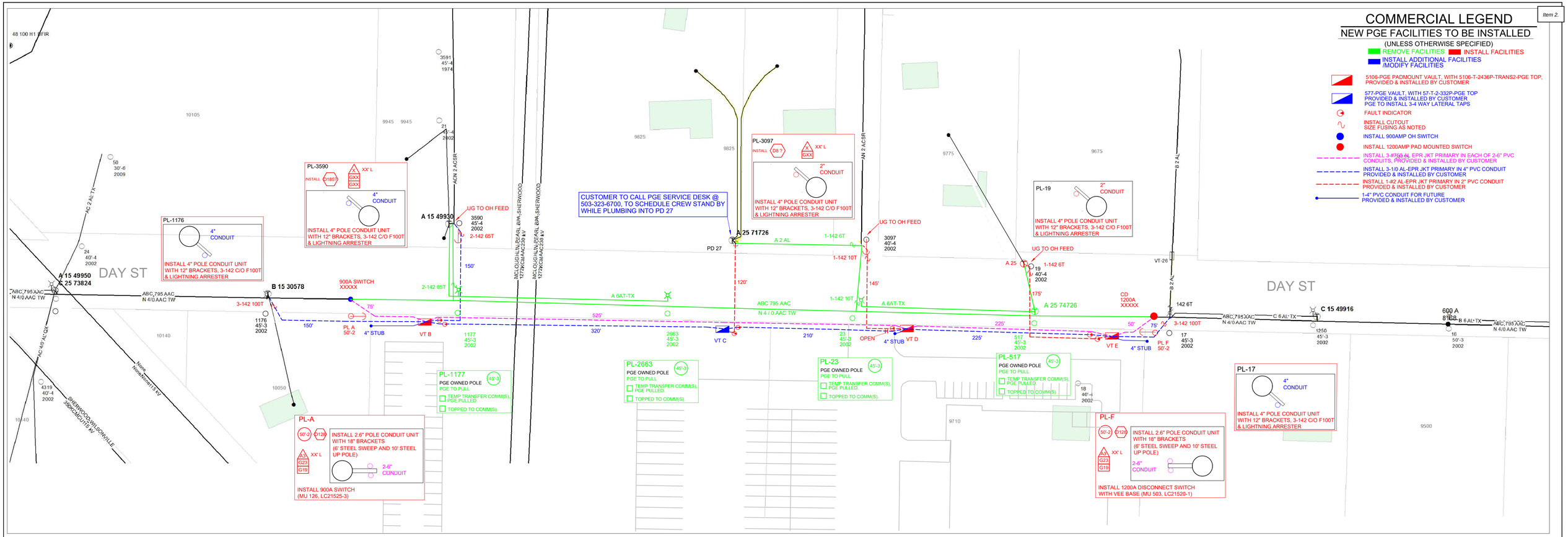
Best Regards,

Garrett H. Stephenson

GST:jmhi
Enclosures

cc: Igor Nichiporchik *(via email w/enclosures)*
Vlad Tkach *(via email w/enclosures)*
Greg Mino *(via email w/enclosures)*
Lee Leighton *(via email w/enclosures)*
Amanda Guile-Hinman *(via email w/enclosures)*
Joseph Gaon *(via email w/enclosures)*

PDX\138006\265126\GST\36194888.1

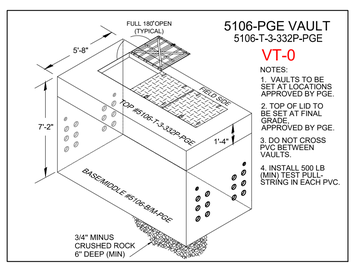


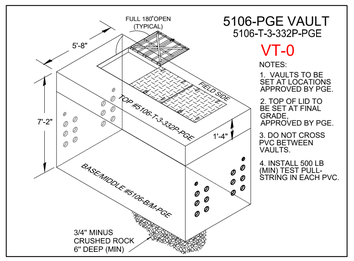
COMMERCIAL LEGEND

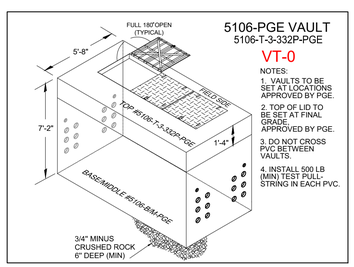
NEW PGE FACILITIES TO BE INSTALLED

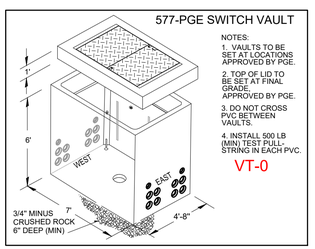
(UNLESS OTHERWISE SPECIFIED)

- REMOVE FACILITIES
- INSTALL FACILITIES
- INSTALL ADDITIONAL FACILITIES /MODIFY FACILITIES
- 5106-PGE PADMOUNT VAULT, WITH 5106-T-2436P-TRANS2-PGE TOP, PROVIDED & INSTALLED BY CUSTOMER
- 577-PGE VAULT, WITH 57-T-2-332P-PGE TOP PROVIDED & INSTALLED BY CUSTOMER PGE TO INSTALL 3-4 WAY LATERAL TAPS
- FAULT INDICATOR
- INSTALL CUTOUT SIZE FUSING AS NOTED
- INSTALL 900AMP OH SWITCH
- INSTALL 1200AMP PAD MOUNTED SWITCH
- INSTALL 3-#750 AL-EPR JKT PRIMARY IN EACH OF 2-6" PVC CONDUITS, PROVIDED & INSTALLED BY CUSTOMER
- INSTALL 3-1/0 AL-EPR JKT PRIMARY IN 4" PVC CONDUIT PROVIDED & INSTALLED BY CUSTOMER
- INSTALL 1-#2 AL-EPR JKT PRIMARY IN 2" PVC CONDUIT PROVIDED & INSTALLED BY CUSTOMER
- 1-4" PVC CONDUIT FOR FUTURE PROVIDED & INSTALLED BY CUSTOMER



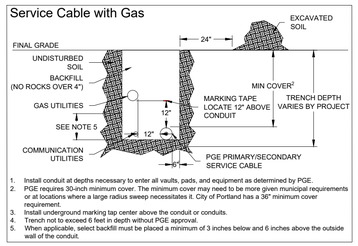






PRELIMINARY
NOT FOR CONSTRUCTION

Service Cable with Gas



1. Install conduit at depths necessary to enter all vaults, pads, and equipment as determined by PGE.
2. PGE requires 30-inch minimum cover. The minimum cover may need to be more given municipal requirements or at locations where a large radius sweep necessitates it. City of Portland has a 36" minimum cover requirement.
3. Install underground marking tap center above the conduit or conduits.
4. Trench not to exceed 6 feet in depth without PGE approval.
5. When applicable, select backfill must be placed a minimum of 3 inches below and 6 inches above the outside wall of the conduit.

POLES

HT-CL — POLE CLASS (1, 2, 3, 4, H1, H2, S)
POLE HEIGHT (FEET)

FRAMING

TRANSMISSION & DISTRIBUTION (SEE CODES BELOW)

- D102 AVIAN — FRAME DISTRIBUTION -LC10729, MU 0102 (3PH 10FT SGL HVY, TANG, POST)
- D128 — FRAME DISTRIBUTION -LC10717, MU 0128 (3PH 10FT SGL DE FIBERGLASS, POLY
- D185 — FRAME DISTRIBUTION -LC10716, MU 0185 (2PH 8FT SGL DE FIBERGLASS)
- D8 — FRAME DISTRIBUTION -LC10710, MU 0008 (1 PH SGL. DE, POLY)

ANCHORS

A (LEAD) (LBS)

ANCHOR CODE	10" SGL. HELIX	TRIPLE HELIX	14" SGL. HT"	10" EXPANDING	28" PLATE
A1	A3	A5	A7	A8	

GUYING

G (POS.-LBS.)

	3/16" O.H.	3/8" O.H.	7/16" O.H.	1/2" O.H.	3/8" D.G.	7/16" D.G.	1/2" D.G.
1 GUY	G1	G4	G7	G10	G16	G19	G22
2 GUYS	G2	G5	G8	G11	G17	G20	G23
3 GUYS	G3	G6	G9	G12	G18	G21	G24

LINE CREW NOTE:
CIRCUIT AND FEEDER INFORMATION IS FOR REFERENCE ONLY. MAP MAY NOT BE REAL TIME REPRESENTATION OF ACTUAL SYSTEM CONDITIONS.

JOB SITE ● VICINITY MAP

COMMERCIAL LEGEND: CMDEV

1. CUSTOMER IS RESPONSIBLE FOR ALL TRENCH, CONDUIT, VAULTS, PADS AND ROAD CROSSINGS. ALL CONDUIT TO BE INSTALLED WITH 36 INCHES (MIN) COVER AT TOP OF CONDUIT FROM FINAL GRADE.
2. A PGE STANDBY CREW IS REQUIRED FOR OPENING ALL ENERGIZED PGE VAULTS, JUNCTION BOXES, AND EQUIPMENT/FACILITIES, INCLUDING CONNECTION OR INSTALLATION OF CONDUITS AND PULL STRINGS. CALL SERVICE COORDINATION AT 503-323-6700 TO SCHEDULE A PGE STANDBY CREW.
3. ALL PGE CONDUCTORS TO BE INSTALLED IN GRAY, SCHEDULE 40, ELECTRICAL GRADE, PVC CONDUIT WITH NYLON PULL STRINGS (MIN. 500 LBS. TEST). PGE TO DETERMINE THE SIZE AND NUMBER OF CONDUITS REQUIRED, MAINTAIN 12 VERTICAL INCHES AND 24 HORIZONTAL INCHES CLEARANCE BETWEEN GAS AND OTHER UTILITIES. ALL ELBOWS 4 INCH & SMALLER TO BE 36 INCH RADIUS. ALL BENDS MUST BE FACTORY MADE. ALL ELBOWS LARGER THAN 4 INCH TO BE 60 INCH RADIUS. RIGID STEEL OR PGE APPROVED. FIBERGLASS BENDS ARE REQUIRED FOR RUNS OF 151 FEET OR LONGER, OR FOR ANY LENGTH RUN WITH MORE THAN 180 DEGREES IN BENDS. PVC SCHEDULE 40 BENDS ARE ACCEPTABLE FOR RUNS OF 150 FEET OR LESS. THE MAXIMUM TOTAL BENDS IN ANY CONDUIT RUN IS 270 DEGREES.
4. DIRECTIONAL BORING REQUIREMENTS: BLACK HDPE (HIGH DENSITY POLYETHYLENE) DUCT OR SCHEDULE 40 PVC WITH A MECHANICAL CONNECTION (CERTA-LOK OR LIKE MECHANICAL CONNECTION PRODUCT) AS AN ALTERNATIVE TO HDPE DUCT. HDPE SHALL MEET THE REQUIREMENTS OF PGE SPECIFICATION L22501 (AVAILABLE ON REQUEST FROM PGE PROJECT MANAGER). FOR SAFETY REASONS THE DUCT SHALL BE BLACK WITH THREE EQUALLY SPACE EXTRUDED RED STRIPES (WHICH IS A SPECIFICATION REQUIREMENT). MANDREL TEST OF HDPE PIPE IS REQUIRED AFTER INSTALLATION WITH PGE INSPECTOR PRESENT.
5. ALL PGE TRANSFORMERS TO BE INSTALLED 8 FEET (MIN) FROM ANY COMBUSTIBLE BUILDING, WALL OR OVERHANG AND 4 FEET (MIN) FROM ANY FIRE HYDRANT. PGE TRANSFORMERS MUST BE WITHIN 15 FEET OF A DRIVEABLE AREA. ALWAYS MAINTAIN 10 FEET CLEARANCE IN FRONT OF ALL TRANSFORMERS.
6. TRANSFORMER PADS ARE TO BE SET SO THAT THE TOP IS 2 INCHES ABOVE FINAL GRADE. CONDUIT IS TO BE INSTALLED IN PAD AS INDICATED IN DETAIL AND TO EXTEND 1 INCH ABOVE THE PAD.
7. STEEL BARRIER POSTS ARE REQUIRED AROUND TRANSFORMERS THAT ARE EXPOSED TO VEHICLES. REFER TO ELECTRICAL SERVICE REQUIREMENTS (ESR) SECTION 5.6.8.
8. ALL SWITCH VAULTS TO BE SET AT FINAL GRADE WITH 6 INCH GRAVEL BASE AND CONDUITS ALIGNED TO ENTER THE VAULT END LOWER KNOCKOUTS (TERM-A-DUCTS). (SEE DETAILS ON SKETCH)
9. PGE TO BE NOTIFIED AND INSPECT ALL CONDUIT, VAULT AND PAD INSTALLATIONS BEFORE BACKFILL. ALL NEW VAULT & PAD LOCATIONS TO BE FIELD VERIFIED WITH PGE AND CUSTOMER REPRESENTATIVE.
10. REFER TO PGE ELECTRICAL SERVICE REQUIREMENTS BOOK FOR FURTHER DETAILS & SPECIFIC REQUIREMENTS. LINK TO WWW.PORTLANDGENERAL.COM/BUILDERS/NEW-CONSTRUCTION/ELECTRIC-SERVICE-REQUIREMENTS.
11. DESIGN IS BASED ON STANDARD UNDERGROUND EQUIPMENT. NON-STANDARD UNDERGROUND EQUIPMENT MAY BE AN OPTION AT AN ADDITIONAL COST TO THE CUSTOMER.
12. THE POINT OF DELIVERY AND DIVISION OF OWNERSHIP BETWEEN THE CUSTOMER AND PGE WILL BE AT THE LINE SIDE OF THE NEW CUSTOMER PROVIDED SWITCH GEAR.

RIGHT-OF-WAY PERMIT NOTICE:

A PERMIT FROM THE LOCAL JURISDICTION IS REQUIRED BEFORE ANY WORK IN THE RIGHT-OF-WAY MAY BE PERFORMED. ONLY PGE APPROVED CONTRACTORS AND CONTRACTORS WHO HAVE MADE OTHER SPECIAL AGREEMENTS WITH PGE WILL BE ALLOWED TO WORK UNDER PGE'S PERMIT. THE CONTRACTOR MUST NOTIFY THE LOCAL JURISDICTION 48 HOURS BEFORE WORK IS TO BEGIN. A COPY OF THE PERMIT MUST BE ON SITE.

THINK SAFETY FIRST!

CONTACT SERVICE COORDINATOR
FOR TRENCH AND CONDUIT INSPECTION PRIOR TO BACKFILL. PGE WILL NOT INSTALL WIRE UNTIL TRENCH IS 100% BACKFILLED.
SERVICE COORDINATOR
503-323-6700 OR 800-542-8818

ANY DEVIATION FROM THIS DESIGN MUST BE APPROVED BY PGE PROJECT MANAGER

CALL 811 BEFORE YOU DIG

ATTENTION:
OREGON LAW REQUIRES YOU TO FOLLOW RULES ADOPTED BY THE OREGON UTILITY NOTIFICATION CENTER. THOSE RULES ARE SET FORTH IN OAR 952-001-0001 THROUGH 952-001-0100. YOU MAY OBTAIN COPIES OF THE RULES BY CALLING THE OREGON UTILITY NOTIFICATION CENTER ADMINISTRATION @ (503-232-1987)

TO REQUEST UTILITY LOCATES CALL THE OREGON UTILITY NOTIFICATION CENTER, 811 AT LEAST 2 BUSINESS DAYS PRIOR TO EXCAVATION.

811 Know what's below. Call before you dig.

PGE CONSTRUCTION DRAWING

AS-BUILT VERIFICATION & NESC VIOLATIONS CORRECTED

This document accurately represents FIELD Construction.

Foreman: Date:

General Foreman: Date:
(Signature only required for field construction changes.)

CONST. PROJECT MGR: PHONE:

DATE:	SCALE:	ACCOUNT:	AWO:	JOB NO:
12/29/2022	NTS	1070001	1000011118	M3228270

TITLE: Delta Logistics, Inc.
CIRCUIT: SIZE: 22X34
LOCATION: 9710 SW Day Rd, SHERWOOD
DESCRIPTION: Undergrounding of facilities along the frontage

COUNTY:	SECTION (S):	WORK WITH:	SHEET:
WASHINGTON			1 OF 1

DESIGN BY: Jose Velasco — PHONE: (503) 672-5454 — DRAWN BY: MARIUS LACATUSU

BEAVERTON LINE CREW CENTER
2213 SW 153RD DR
BEAVERTON, OR 97006

172

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PRELIMINARY

Delta Logistics Wilsonville
New PGE Facilities - 4 Crossings on North Day Rd
Preliminary Budget

Project name	Delta Logistics Wilsonville 9710 SW Day Rd Wilsonville OR 97070
Client	Delta Logistics Inc.
Architect	Mackenzie
Estimator	Roman Michalchuk
Bid date	3/14/2023 10:00 AM
Project	New PGE Facilities
Notes	*Scope of work: Preliminary budget for New PGE Facilities associated with (4) properties on the North side of the Day Road.* *Notes Qualifications: Budget is based on the design by PGE dated 12/29/2022* *Price may vary with additional details and specifications. -Work to be performed* *during normal business hours.* *Exclusions: - Architectural /Engineering and all associated costs. -Low voltage* *equipment, circuitry and wiring, including but not limited to, telephone, data cabling, connections and security systems. -Rekeying of locks.-Mini blinds cleaning. -Signage. -All work not specifically addressed in quotation. - System development fees. - Building permit and fees. - Special inspections. -PGE fees. Due to unforeseen escalation costs and material shortages we will only be able to hold quoted price for 30 days. Lead times may be delayed due to material shortages and product availability.*

Group	Phase	Description	Total Amount	Notes
01-00-10		**GENERAL REQUIREMENTS**		
	01-31-01	**Project Manager**		
		Project Manager	10,000	Coordination of subcontractors insurance compliance, pay applications, subcontract issuance, site meeting, project documentation, warranties and as builds.
	01-31-05	**Superintendent**		
		Superintendent	25,000	Full-time on-site superintendent
	01-31-07	**PM Assistant**		
		PM Assistant	5,625	Assist PM with project administration.
	01-31-53	**Fuel**		
		Fuel	1,500	Fuel.
	01-45-23	**Testing And Inspecting Services**		
		Land Surveying	10,000	Allowance for land surveying.
	01-51-13	**Temporary Electric**		
		Temporary Electricity	10,000	Allowance for a temporary electricity if needed (generator rental)
	01-52-13	**Field Offices And Sheds**		
		Field Offices & Sheds	550	Field Office/Storage.
	01-52-19	**Sanitary Facilities**		
		Sanitary Facilities	500	Sanitary Facilities.
	01-55-26	**Traffic Control**		
		Traffic Control	16,500	Traffic Control.
	01-74-13	**Progress Cleaning**		
		Progress Cleaning, General Labor, Workplace Safety	2,500	Progress cleaning, general labor. Workplace safety.
31-00-00		**EARTHWORK**		
	31-00-10	**Earthwork**		
		Earthwork & Site Utilities	80,000	Provide labor and equipment to excavate and back fill associated with boring under the Day Rd to accommodate new electrical to (4) neighboring properties. - Provide and install 4" PVC conduit
32-00-00		**EXTERIOR IMPROVEMENTS**		
	32-17-00	**Exterior Improvements**		
		AC Paving	10,000	Allowance to patch asphalt that may require after completion of the underground boring scope.
	32-50-00	**Landscaping & Irrigation**		
		Landscaping	8,000	Allowance for landscape to apply bark dust around area of work / grass seeds.
33-00-00		**UTILITIES**		
	33-00-10	**Utilities -- Subcontractors**		
		PGE Fees	75,000	Allowance for PGE Fees includes new transformers and wire to the neighboring properties. Assumes transformers will be on the poles.
		Underground Boring	68,000	Provide labor and equipment for underground boring at (4) locations total to approximately 600 ln/ft.

Estimate Totals

Description	Amount	Totals	Rate	Cost Basis
Labor	40,625			
Subcontract	282,550			

Estimate Totals

Mat/Equipment				
	323,175	**323,175**		
Liability Insurance	4,363		1.350 %	C
Overhead	8,887		2.750 %	C
Contractor's Fee	6,906		2.000 %	T
OCAT	1,968		0.570 %	T
Total		***345,299***		

We agree to do the above estimated work for the price of 345,299 dollars. For work completed, Contractor's invoice shall be submitted, to Owner no later than the first day of a month and, upon approval, the Owner shall make payment to the Contractor no later than the fifteenth day of the same month. If the Owner receives the application for payment after the first day of the month payment shall be made no later than fifteen days from the date Owner receives the application for payment. Payments due but unpaid shall bear monthly interest of 1 1/2% from the date payment is due. All work covered under this agreement is limited to the scope of work shown on this estimate.

Signature _____
Print Name _____
Date _____

Signature _____
Print Name _____
Date _____

Lee D. Leighton

From: Lee D. Leighton
Sent: Tuesday, April 11, 2023 3:42 PM
To: Luxhoj, Cindy
Cc: 'Stephenson, Garrett H.'; 'Igor Nichiporchik'; 'Vlad Tkach'; Guile-Hinman, Amanda; 'Gaon, Joseph O.'; Pepper, Amy; Bateschell, Miranda; Pauly, Daniel; Rybold, Kim; Weigel, Zach; Adam Goldberg; Kim Cartwright; Brett Shipton; Scott Moore; Terry Flanagan; Nicole Ferreira; Breezy Rinehart-Young; Greg Mino; Janet T. Jones
Subject: DB22-0007 Delta Logistics Wilsonville Annex/ZC - Notes on Supplemental Submittal of April 11, 2023
Attachments: Exh.T Teragan Ltr - Tree Protection Review 23-04-11.pdf; Exh.V LTR-Delta Logistics Supplement Coffee Creek DOD Pattern Book Waiver Compliance-230411.pdf; Exh.U - Wall Alignment Revision.pdf; Exh.S - Section_Elevation Figures.pdf

Importance: High

Hi Cindy:

For the DB22-0007 land use application, we are on track to upload the following additional Exhibits before the end of the day today:

Exhibit R. Updated Tree Plan sheet(s) with Drip Line dimensions for off-site trees near the eastern/southern retaining wall
Exhibit S. Section/Elevation figures – views of retaining wall configuration and proposed plantings
Exhibit T. Arborist's Report supplement
Exhibit U. Conceptual plan for horizontal realignment of retaining wall to protect root zones
Exhibit V. Supplemental Findings Letter – Waiver #1 compliance with intent of Coffee Creek Pattern Book

I am attaching copies of four of the files for your immediate viewing… we will upload Exhibit R, which is a larger file.

These items address the evidence needs staff presented in our virtual meeting on Tuesday, March 21:

- Revised L-Series sheets, including tree removal/mitigation plans, now show drip lines for trees along the east and south property boundaries (as well as the 6x diameter and 12x diameter circles referenced by the arborist) - see Exhibit R.
- Elevation drawings illustrate the appearance of the proposed cut retaining wall from points within the site, including both 5-year and 20-year grow-in sizing of the proposed trees and shrubs – see Exhibit S.
- A letter from the project arborist explains and supports the root protection practices represented in the revised L-Series sheets – see Exhibit T.
- A conceptual plan illustration shows how we propose to shift the specific alignment of the retaining wall on the east and south sides to avoid entirely where feasible, and otherwise minimize, construction impacts within the measured driplines of the existing trees on neighboring properties – see Exhibit U.
    - As I discussed with you by phone this morning, we intend to follow through with revised civil engineering plans (the C-Series sheets in the drawing set) that will be fully aligned with the Exhibit U conceptual drawing.
    - We ask that you review Exhibit U with other City staff as soon as possible and give us a reading on the acceptability of these solution concepts, so we can proceed with confidence to update the many-layered drawings.
    - That will enable us to schedule that work for completion and submittal April 25 to support publication of the staff report and recommendation to the DRB. We will coordinate with you at that time compile

City of Wilsonville
Exhibit B13 DB22-0007 .76

and submit a complete updated version of the plan set (Exhibit B) for distribution to DRB reviewers along with the staff report.

- Supplemental detailed findings for the Waiver 1 request, specifically discussing how the development plan, including the proposed single, tall retaining wall, is consistent with the intent statements in the Coffee Creek Pattern Book – see Exhibit V.

Once again, we appreciate the guidance staff has provided to help this application along the path to being supported by staff. We hope you will agree that these revised materials address the remaining approval issues – please bring any deficiency to our attention as soon as possible so we can address it and remain on track for the May 8 DRB hearing date.

~Lee

I am typically away from my desk on Wednesdays and Fridays.

If your project requires immediate attention, please contact Planning Department Manager Gabriela Frask, gfrask@mcknze.com, 971.346.3675

Lee Leighton AICP
he, him, his
D 971-346-3727 **C** 503-382-7665

Land Use Planning
Senior Associate
Professional Licenses & Certifications

Disclaimer

Mackenzie.
ARCHITECTURE ▪ INTERIORS ▪ STRUCTURAL, CIVIL, AND TRAFFIC ENGINEERING
LAND USE AND TRANSPORTATION PLANNING ▪ LANDSCAPE ARCHITECTURE
PORTLAND, OR | VANCOUVER, WA | SEATTLE, WA www.MACKENZIE.inc

From: Lee D. Leighton
To: Luxhoj, Cindy; Nicole Ferreira; Breezy Rinehart-Young
Cc: Igor Nichiporchik; Adam Goldberg; Rybold, Kim; Pepper, Amy; Scott Moore; Greg Mino
Subject: RE: Delta Logistics Wilsonville Annex/ZC
Date: Wednesday, April 26, 2023 11:27:23 AM
Attachments: image001.png
image003.png
CornerStone® - Mutual Materials.pdf
84483054-77ca-4096-be1a-f63e5340f06a.png

[This email originated outside of the City of Wilsonville]

Hi Cindy. For seating wall materials, please see the attached print from the Mutual Materials webpage. We propose to use CornerStone block in the Summit Blend Traditional color, as indicated by the green box highlighting that choice. The photo example illustrates a typical residential installation at seating wall height.

(… And just to be absolutely clear, the installation on the east side of the proposed building will NOT include a fire pit as seen in the example photo!)

Please let me know is this gives you what you need for the DRB package.

Thanks, ~Lee

I am typically away from my desk on Wednesdays and Fridays.

If your project requires immediate attention, please contact Planning Department Manager Gabriela Frask, gfrask@mcknze.com, 971.346.3675

Lee Leighton AICP
he, him, his
D 971-346-3727 **C** 503-382-7665
Land Use Planning
Senior Associate
Professional Licenses & Certifications

From: Lee D. Leighton <LLeighton@mcknze.com>
Sent: Wednesday, April 26, 2023 10:38 AM
To: Luxhoj, Cindy <luxhoj@ci.wilsonville.or.us>; Nicole Ferreira <NFerreira@mcknze.com>; Breezy Rinehart-Young <BRinehart@mcknze.com>
Cc: Igor Nichiporchik <igor@deltagov.com>; Adam Goldberg <AGoldberg@mcknze.com>; Rybold, Kim <rybold@ci.wilsonville.or.us>; Pepper, Amy <apepper@ci.wilsonville.or.us>; Scott Moore <SMoore@mcknze.com>; Greg Mino <GMino@mcknze.com>
Subject: RE: Delta Logistics Wilsonville Annex/ZC
Importance: High

Hi Cindy. I'm working with the team to provide those details to you today for the seating wall.

I have attached image examples of a typical sculpted shotcrete surface we previously submitted for

the record, from a road construction project in the vicinity. They provide a good characterization of the intended appearance of the soil nail wall.

Thanks,

~Lee

I am typically away from my desk on Wednesdays and Fridays.

If your project requires immediate attention, please contact Planning Department Manager Gabriela Frask, gfrask@mcknze.com, 971.346.3675

Lee Leighton AICP
he, him, his
D 971-346-3727 **C** 503-382-7665

Land Use Planning
Senior Associate
Professional Licenses & Certifications

From: Luxhoj, Cindy <luxhoj@ci.wilsonville.or.us>
Sent: Wednesday, April 26, 2023 8:38 AM
To: Lee D. Leighton <LLeighton@mcknze.com>
Cc: Igor Nichiporchik <igor@deltagov.com>; Adam Goldberg <AGoldberg@mcknze.com>; Rybold, Kim <rybold@ci.wilsonville.or.us>; Pepper, Amy <apepper@ci.wilsonville.or.us>
Subject: RE: Delta Logistics Wilsonville Annex/ZC

Hi Lee,

I've downloaded the revised set from the portal and am able to view/use.

Will you be providing details and visual examples for of the sculpted shotcrete finish of the soil nail wall and the low seating wall as illustrated in Option 3, which you asked Breezy and Nicole to do in your April 21 follow up email to our phone conversation? Just want to be sure all the applicant's materials are included as Exhibits in the staff report. Please adivse.

Thanks so much,

Cindy Luxhoj AICP
Associate Planner
City of Wilsonville

503.570.1572
luxhoj@ci.wilsonville.or.us
www.ci.wilsonville.or.us
Facebook.com/CityofWilsonville

WILSONVILLE OREGON

29799 SW Town Center Loop East, Wilsonville, OR 97070

Disclosure Notice: Messages to and from this e-mail address may be subject to the Oregon Public Records Law.

From: Lee D. Leighton <LLeighton@mcknze.com>
Sent: Tuesday, April 25, 2023 5:45 PM
To: Luxhoj, Cindy <luxhoj@ci.wilsonville.or.us>
Cc: Igor Nichiporchik <igor@deltagov.com>; Adam Goldberg <AGoldberg@mcknze.com>
Subject: Delta Logistics Wilsonville Annex/ZC

[This email originated outside of the City of Wilsonville]

Hi Cindy:

We completed the upload of the final revised Exhibit B (Plan Set) including the changes we discussed recently in the configuration of the soil nail retaining wall.

Please confirm that you are able to open and use the new file.

Thank you,

~Lee

I am typically away from my desk on Wednesdays and Fridays.

If your project requires immediate attention, please contact Planning Department Manager Gabriela Frask, gfrask@mcknze.com, 971.346.3675

Lee Leighton AICP
he, him, his
D 971-346-3727 **C** 503-382-7665

Land Use Planning
Senior Associate
Professional Licenses & Certifications

Disclaimer

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CornerStone-Related Case Studies

- **Retaining Wall Ideas** (https://www.mutualmaterials.com/retaining-wall-block-uses/)
- **CornerStone Residential Retaining Walls Shape Backyard Paradise** (https://www.mutualmaterials.com/residential-retaining-walls-shape-backyard-paradise/)

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(https://plus.google.com/share?url=https%3A%2F%2Fwww.mutualmaterials.com%2Fproducts%2Fcornerstone
(https://pinterest.com/pin/create/button/?url=https%3A%2F%2Fwww.mutualmaterials.com%2Fproducts%2Fcornerstone%2F&description=CornerStone%C2
content%2Fuploads%2F2018%2F08%2F3715.jpg%3Ffit%3D300%252C200%26ssl%3D1)
(mailto:?body=https%3A%2F%2Fwww.mutualmaterials.com%2Fproducts%2Fcornerstone%2F&subject=Corner
(https://www.mutualmaterials.com/products/cornerstone/?action=print)

Category: Traditional Retaining Walls (https://www.mutualmaterials.com/product-categories/hardscape/retaining-walls-2/retaining-wall-traditional-series/)
Availability: Product Sold at Mutual Materials Branch, Also Available Online

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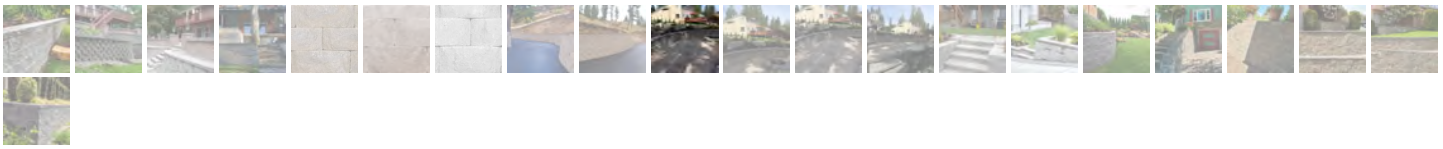
(https://www.mutualmaterials.com/)

n%2Fwww.mutualmaterials.com%2Fwp-



Product Details

Colors

CornerStone Colors

(https://i0.wp.com/www.mutualmaterials.com/wp-content/uploads/2015/11/CornerStone-Gray.jpg?fit=600%2C600&ssl=1)

Gray
Traditional

(https://i0.wp.com/www.mutualmaterials.com/wp-content/uploads/2015/11/CornerStone-SummitBlend.jpg?fit=600%2C600&ssl=1)

Summit Blend
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Exhibit C1
Public Works Plan Submittal Requirements
and Other Engineering Requirements

1. All construction or improvements to public works facilities shall be in conformance to the City of Wilsonville Public Works Standards - 2017.

2. Applicant shall submit insurance requirements to the City of Wilsonville in the following amounts:

Coverage *(Aggregate, accept where noted)*	**Limit**
Commercial General Liability:	
▪ General Aggregate (per project)	$3,000,000
▪ General Aggregate (per occurrence)	$2,000,000
▪ Fire Damage (any one fire)	$50,000
▪ Medical Expense (any one person)	$10,000
Business Automobile Liability Insurance:	
▪ Each Occurrence	$1,000,000
▪ Aggregate	$2,000,000
Workers Compensation Insurance	$500,000

3. No construction of, or connection to, any existing or proposed public utility/improvements will be permitted until all plans are approved by Staff, all fees have been paid, all necessary permits, right-of-way and easements have been obtained and Staff is notified a minimum of 24 hours in advance.

4. All public utility/improvement plans submitted for review shall be based upon a 22"x 34" format and shall be prepared in accordance with the City of Wilsonville Public Work's Standards.

5. Plans submitted for review shall meet the following general criteria:

   a. Utility improvements that shall be maintained by the public and are not contained within a public right-of-way shall be provided a maintenance access acceptable to the City. The public utility improvements shall be centered in a minimum 15-ft. wide public easement for single utilities and a minimum 20-ft wide public easement for two parallel utilities and shall be conveyed to the City on its dedication forms.
   b. Design of any public utility improvements shall be approved at the time of the issuance of a Public Works Permit. Private utility improvements are subject to review and approval by the City Building Department.
   c. In the plan set for the PW Permit, existing utilities and features, and proposed new private utilities shall be shown in a lighter, grey print. Proposed public improvements shall be shown in bolder, black print.

d. All elevations on design plans and record drawings shall be based on NAVD 88 Datum.
e. All proposed on and off-site public/private utility improvements shall comply with the State of Oregon and the City of Wilsonville requirements and any other applicable codes.
f. Design plans shall identify locations for street lighting, gas service, power lines, telephone poles, cable television, mailboxes and any other public or private utility within the general construction area.
g. As per City of Wilsonville Ordinance No. 615, all new gas, telephone, cable, fiber-optic and electric improvements etc. shall be installed underground. Existing overhead utilities shall be undergrounded wherever reasonably possible.
h. Any final site landscaping and signing shall not impede any proposed or existing driveway or interior maneuvering sight distance.
i. Erosion Control Plan that conforms to City of Wilsonville Ordinance No. 482.
j. Existing/proposed right-of-way, easements and adjacent driveways shall be identified.
k. All engineering plans shall be printed to PDF, combined to a single file, stamped and digitally signed by a Professional Engineer registered in the State of Oregon.
l. All plans submitted for review shall be in sets of a digitally signed PDF and three printed sets.

6. Submit plans in the following general format and order for all public works construction to be maintained by the City:

a. Cover sheet
b. City of Wilsonville construction note sheet
c. Land Use Conditions of Approval sheet
d. General construction note sheet
e. Existing conditions plan.
f. Erosion control and tree protection plan.
g. Site plan. Include property line boundaries, water quality pond boundaries, sidewalk improvements, right-of-way (existing/proposed), easements (existing/proposed), and sidewalk and road connections to adjoining properties.
h. Grading plan, with 1-foot contours.
i. Composite utility plan; identify storm, sanitary, and water lines; identify storm and sanitary manholes.
j. Detailed plans; show plan view and either profile view or provide i.e.'s at all utility crossings; include laterals in profile view or provide table with i.e.'s at crossings; vertical scale 1"= 5', horizontal scale 1"= 20' or 1"= 30'.
k. Street plans.
l. Storm sewer/drainage plans; number all lines, manholes, catch basins, and cleanouts for easier reference.
m. Stormwater LIDA facilities (Low Impact Development): provide plan and profile views of all LIDA facilities.
n. Water and sanitary sewer plans; plan; number all lines, manholes, and cleanouts for easier reference.

o. Where depth of water mains are designed deeper than the 3-foot minimum (to clear other pipe lines or obstructions), the design engineer shall add the required depth information to the plan sheets.
p. Detailed plan for storm water detention facility (both plan and profile views), including water quality orifice diameter and manhole rim elevations. Provide detail of inlet structure and energy dissipation device. Provide details of drain inlets, structures, and piping for outfall structure. Note that although storm water detention facilities are typically privately maintained they will be inspected by engineering, and the plans must be part of the Public Works Permit set.
q. Detailed plan for water quality facility (both plan and profile views). Note that although storm water quality facilities are typically privately maintained they will be inspected by Natural Resources, and the plans must be part of the Public Works Permit set.
r. Composite franchise utility plan.
s. City of Wilsonville detail drawings.
t. Illumination plan.
u. Striping and signage plan.
v. Landscape plan.

7. Design engineer shall coordinate with the City in numbering the sanitary and stormwater sewer systems to reflect the City's numbering system. Video testing and sanitary manhole testing will refer to City's numbering system.

8. The applicant shall install, operate and maintain adequate erosion control measures in conformance with the standards adopted by the City of Wilsonville Ordinance No. 482 during the construction of any public/private utility and building improvements until such time as approved permanent vegetative materials have been installed.

9. Applicant shall work with City Engineering before disturbing any soil on the respective site. If 5 or more acres of the site will be disturbed applicant shall obtain a 1200-C permit from the Oregon Department of Environmental Quality. If 1 to less than 5 acres of the site will be disturbed a 1200-CN permit from the City of Wilsonville is required.

10. The applicant shall be in conformance with all stormwater and flow control requirements for the proposed development per the Public Works Standards.

11. A storm water analysis prepared by a Professional Engineer registered in the State of Oregon shall be submitted for review and approval by the City.

12. The applicant shall be in conformance with all water quality requirements for the proposed development per the Public Works Standards. If a mechanical water quality system is used, prior to City acceptance of the project the applicant shall provide a letter from the system manufacturer stating that the system was installed per specifications and is functioning as designed.

13. Storm water quality facilities shall have approved landscape planted and/or some other erosion control method installed and approved by the City of Wilsonville prior to paving.

14. The applicant shall contact the Oregon Water Resources Department and inform them of any existing wells located on the subject site. Any existing well shall be limited to irrigation purposes only. Proper separation, in conformance with applicable State standards, shall be maintained between irrigation systems, public water systems, and public sanitary systems. Should the project abandon any existing wells, they shall be properly abandoned in conformance with State standards.

15. All survey monuments on the subject site, or that may be subject to disturbance within the construction area, or the construction of any off-site improvements shall be adequately referenced and protected prior to commencement of any construction activity. If the survey monuments are disturbed, moved, relocated or destroyed as a result of any construction, the project shall, at its cost, retain the services of a registered professional land surveyor in the State of Oregon to restore the monument to its original condition and file the necessary surveys as required by Oregon State law. A copy of any recorded survey shall be submitted to Staff.

16. Streetlights shall be in compliance with City dark sky, LED, and PGE Option C requirements.

17. Sidewalks, crosswalks and pedestrian linkages in the public right-of-way shall be in compliance with the requirements of the U.S. Access Board.

18. No surcharging of sanitary or storm water manholes is allowed.

19. The project shall connect to an existing manhole or install a manhole at each connection point to the public storm system and sanitary sewer system.

20. A City approved energy dissipation device shall be installed at all proposed storm system outfalls. Storm outfall facilities shall be designed and constructed in conformance with the Public Works Standards.

21. The applicant shall provide a 'stamped' engineering plan and supporting information that shows the proposed street light locations meet the appropriate AASHTO lighting standards for all proposed streets and pedestrian alleyways.

22. All required pavement markings, in conformance with the Transportation Systems Plan and the Bike and Pedestrian Master Plan, shall be completed in conjunction with any conditioned street improvements.

23. Street and traffic signs shall have a hi-intensity prismatic finish meeting ASTM 4956 Spec Type 4 standards.

24. The applicant shall provide adequate sight distance at all project driveways by driveway placement or vegetation control. Specific designs to be submitted and approved by the City Engineer. Coordinate and align proposed driveways with driveways on the opposite side of the proposed project site.

25. The applicant shall provide adequate sight distance at all project street intersections, alley intersections and commercial driveways by properly designing intersection alignments, establishing set-backs, driveway placement and/or vegetation control. Coordinate and align proposed streets, alleys and commercial driveways with existing streets, alleys and commercial driveways located on the opposite side of the proposed project site existing roadways. Specific designs shall be approved by a Professional Engineer registered in the State of Oregon. As part of project acceptance by the City the Applicant shall have the sight distance at all project intersections, alley intersections and commercial driveways verified and approved by a Professional Engineer registered in the State of Oregon, with the approval(s) submitted to the City (on City approved forms).

26. Access requirements, including sight distance, shall conform to the City's Transportation Systems Plan (TSP) or as approved by the City Engineer. Landscaping plantings shall be low enough to provide adequate sight distance at all street intersections and alley/street intersections.

27. Applicant shall design interior streets and alleys to meet specifications of Tualatin Valley Fire & Rescue and Allied Waste Management (United Disposal) for access and use of their vehicles.

28. The applicant shall provide the City with a Stormwater Maintenance and Access Easement Agreement (on City approved forms) for City inspection of those portions of the storm system to be privately maintained. Applicant shall provide City with a map exhibit showing the location of all stormwater facilities which will be maintained by the Applicant or designee. Stormwater or rainwater LID facilities may be located within the public right-of-way upon approval of the City Engineer. Applicant shall maintain all LID storm water components and private conventional storm water facilities; maintenance shall transfer to the respective homeowners association when it is formed.

29. The applicant shall "loop" proposed waterlines by connecting to the existing City waterlines where applicable.

30. Applicant shall provide a minimum 6-foot Public Utility Easement on lot frontages to all public right-of-ways. An 8-foot PUE shall be provided along Collectors. A 10-ft PUE shall be provided along Minor and Major Arterials.

31. For any new public easements created with the project the Applicant shall be required to produce the specific survey exhibits establishing the easement and shall provide the City with the appropriate Easement document (on City approved forms).

32. Mylar Record Drawings:

At the completion of the installation of any required public improvements, and before a 'punch list' inspection is scheduled, the Engineer shall perform a record survey. Said survey shall be the basis for the preparation of 'record drawings' which will serve as the physical record of those changes made to the plans and/or specifications, originally approved by Staff, that occurred during construction. Using the record survey as a guide, the appropriate changes will be made to the construction plans and/or specifications and a complete revised 'set' shall be submitted. The 'set' shall consist of drawings on 3 mil. Mylar and an electronic copy in AutoCAD, current version, and a digitally signed PDF.

Exhibit C2
Natural Resources Findings & Requirements

Findings for SRIR22-0004

(if SRIR include related findings here)

Significant Resource Overlay Zone

1. The applicant shall submit the SROZ mapping as ARCGIS shape files or a compatible format.
2. All landscaping, including herbicides used to eradicate invasive plant species and existing vegetation, in the SROZ shall be reviewed and approved by the Natural Resources Manager. Native plants are required for landscaping in the SROZ.
3. Prior to any site grading or ground disturbance, the applicant is required to delineate the boundary of the SROZ. Six-foot (6') tall cyclone fences with metal posts pounded into the ground at 6'-8' centers shall be used to protect the significant natural resource area where development encroaches into the 25-foot Impact Area.
4. Submit a final mitigation plan that addresses the requirements in Section 4.139.07. The mitigation plan shall be reviewed and approved by the Natural Resources Manager.
5. The applicant shall submit a monitoring and maintenance plan to be conducted for a period of five years following mitigation implementation. The applicant shall be responsible for ongoing maintenance and management activities, and shall submit an annual report to the Natural Resources Manager documenting such activities, and reporting progress towards the mitigation goals. The report shall contain, at a minimum, photographs from established photo points, quantitative measure of success criteria, including plant survival and vigor if these are appropriate data. The Year 1 annual report shall be submitted one year following mitigation action implementation. The final annual report (Year 5 report) shall document successful satisfaction of mitigation goals, as per the stated performance standards.

City of Wilsonville
Exhibit C2 DB22-0007

Oregon
Kate Brown, Governor

Department of Transportation
Region 1 Headquarters
123 NW Flanders Street
Portland, Oregon 97209
(503) 731.8200
FAX (503) 731.8259

December 15, 2022 ODOT #12816

ODOT Response

Project Name: Annexation/Rezoning Delta Logistics Warehouse	**Applicant:** Delta Logistics, Inc.
Jurisdiction: City of Wilsonville	**Jurisdiction Case #:** DB22-0007
Site Address: 9710 SW Day Rd, Wilsonville, OR 97140	**State Highway:** OR 141

We have reviewed the applicant's proposal for annexation to the City of Wilsonville and rezone to PDI-RSIA for approximately 9.17 acres. The project includes development plans for a 58,116 square foot warehouse/manufacturing building with accessory office space. The project location is west of the SW Boones Ferry and I-5 interchange. ODOT has permitting authority for the roadway up to SW Boones Ferry at Day Rd. ODOT has an interest in assuring that the proposed zone change/comprehensive plan amendment is consistent with the identified function, capacity and performance standard of this facility.

For zone changes and comprehensive plan amendments, local governments must make a finding that the proposed amendment complies with the Transportation Planning Rule (TPR), OAR 660-012-0060. There must be substantial evidence in the record to either make a finding of "no significant effect" on the transportation system, or if there is a significant effect, require assurance that the land uses to be allowed are consistent with the identified function, capacity, and performance standard of the transportation facility.

In order to determine whether or not there will be a significant effect on the State transportation system, ODOT requests that City of Wilsonville require the applicant to prepare a traffic impact study (TIS) prepared by a transportation engineer registered in Oregon. The analysis should address the following:

1. A comparison between the land use with the highest trip generation rate allowed outright under the proposed zoning/comp plan designation and the land use with the highest trip generation rate allowed outright under the existing zoning/comprehensive plan designation (this is commonly referred to as the "reasonable worst case" traffic analysis). The analysis should utilize the current edition of Institute of Transportation Engineers (ITE) *Trip Generation* manual, unless otherwise directed. To determine the maximum amount of building square footage that could be put on the site the analyst should look at the number of parking spaces, building height, and required landscaping in the local development code.

   Note: It is important that the applicant's transportation engineer provide ODOT the opportunity to review and concur with the mix of land uses and square footage they propose to use for the "reasonable worst case" traffic analysis for both existing and

City of Wilsonville
Exhibit D1 DB22-0007

proposed zoning prior to commencing the traffic analysis, particularly if the applicant chooses to perform their analysis using a trip generation rate determined by any means other than ITE *Trip Generation.*

2. Analysis may rely on existing and planned transportation improvements in which a funding mechanism is in place including but not limited to projects identified in:
   - State Transportation Improvement Program (STIP),
   - Local/County Capital Improvement Plans (CIP),
   - Financially constrained Regional Transportation System Plan (RTP),

3. The analysis should apply the highway mobility standard (volume-to-capacity ratio) identified in the OHP over the planning horizon in the adopted local transportation system plan of the area or 15 years from the proposed date of amendment adoption, whichever is greater (OHP Action 1F2).
4. In situations where the highway facility is operating above the OHP mobility standard and transportation improvements are not anticipated within the planning horizon to bring performance to standard, the performance standard is to avoid further degradation. If the proposed zone change or comprehensive plan amendment increases the volume-to-capacity ratio further, it will significantly affect the facility (OHP Action 1F6).
5. The analysis should not include any existing or proposed approaches on the highway unless the proposed site is landlocked[1]. If landlocked, the analysis should only use one approach to the highway.

Additionally, ODOT recommends proportional share contribution from the applicant to City of Wilsonville's project for a lane addition to the I-5 southbound off ramp.

Prior to commencing the TIS, the applicant should contact John Russell, P.E., at the email listed below to obtain ODOT concurrence with the scope of the study.

Thank you for providing ODOT the opportunity to participate in this land use review. If you have any questions regarding this matter, please contact the Development Review Planner listed below.

[1] A parcel is considered 'landlocked' if it has no other reasonable access other than to a state highway. Burden of proof is on the applicant to provide justification as to why access to a road other than a state highway is not reasonable.

Please send a copy of the Notice of Decision including conditions of approval to:

ODOT Region 1 Planning
Development Review
123 NW Flanders St
Portland, OR 97209
ODOT_R1_DevRev@odot.oregon.gov

Development Review Planner: Diana Powers	Diana.Powers@odot.oregon.gov
Traffic Contact: John Russell, P.E.	John.Russell@odot.oregon.gov

From: TAYAR Abraham
To: Pepper, Amy; DANIELSON Marah B; POWERS Diana
Cc: Luxhoj, Cindy; RUSSELL John
Subject: RE: ODOT Case # 12816 Annexation/Rezoning Delta Logistics Warehouse
Date: Tuesday, December 20, 2022 1:51:49 PM
Attachments: image001.png

[This email originated outside of the City of Wilsonville]

Hi Amy,
Just as a side note, the TIA that was submitted for the record (your attachment) refers to ODOT mobility target at the I-5 Interchange with a volume to capacity (v/c) ratio of 0.99. The mobility target at an Interchange is 0.85 v/c. Both I-5 off-ramps are reported to operate below the 0.85 v/c ratio which meets ODOT STD. I think it might be beneficial to ask DKS to resubmit the TIA with the correct ODOT mobility target for the records. In addition, It is unclear from your response if City intend to collect contribution to the TSP project of widening the Southbound off-ramp with additional right-turn lane which was assumed in the TIA.
Thanks,
Avi Tayar. P.E. | Oregon Department of Transportation | Region 1 | Planning & Research Program | Development Review Engineering Team Lead
123 NW Flanders St | Portland, OR 97209 | ☎: 503-731-8221 | 7: 503-731-8259 | ✉: Abraham.tayar@ODOT.state.or.us
Work Schedule: M-TH 7:30 AM through 6:00

From: Pepper, Amy
Sent: Tuesday, December 20, 2022 10:51 AM
To: DANIELSON Marah B ; POWERS Diana
Cc: Luxhoj, Cindy ; TAYAR Abraham ; RUSSELL John
Subject: RE: ODOT Case # 12816 Annexation/Rezoning Delta Logistics Warehouse

> This message was sent from outside the organization. Treat attachments, links and requests with caution. Be conscious of the information you share if you respond.

Marah ~
That is correct. The TSP and Comp Plan have been amended. We will apply TPR Section 9 and make a finding of no significant effect.
Thank you for your quick review!
Amy

From: DANIELSON Marah B <Marah.B.DANIELSON@odot.oregon.gov>
Sent: Tuesday, December 20, 2022 9:57 AM
To: Pepper, Amy <apepper@ci.wilsonville.or.us>; POWERS Diana <Diana.POWERS@ODOT.Oregon.gov>
Cc: Luxhoj, Cindy <luxhoj@ci.wilsonville.or.us>; TAYAR Abraham <Abraham.TAYAR@odot.oregon.gov>; RUSSELL John <John.RUSSELL@odot.oregon.gov>
Subject: RE: ODOT Case # 12816 Annexation/Rezoning Delta Logistics Warehouse

[This email originated outside of the City of Wilsonville]

Does this mean that the city has already updated the TSP and Comp Plan as part of the Coffee Creek Master Plan adoption and this property is already accounted for in the TSP and consistent with the

comp plan? If so, the city can apply TPR section 9 and make a finding of no significant effect.
Marah Danielson, Senior Planner
ODOT Development Review Program
Marah.b.danielson@odot.oregon.gov
503.731.8258

From: Pepper, Amy <apepper@ci.wilsonville.or.us>
Sent: Tuesday, December 20, 2022 9:37 AM
To: POWERS Diana <Diana.POWERS@ODOT.Oregon.gov>
Cc: Luxhoj, Cindy <luxhoj@ci.wilsonville.or.us>; DANIELSON Marah B <Marah.B.DANIELSON@odot.oregon.gov>; TAYAR Abraham <Abraham.TAYAR@odot.oregon.gov>; RUSSELL John <John.RUSSELL@odot.oregon.gov>
Subject: RE: ODOT Case # 12816 Annexation/Rezoning Delta Logistics Warehouse

This message was sent from outside the organization. Treat attachments, links and requests with caution. Be conscious of the information you share if you respond.

Diana ~
Cindy asked that I follow up on ODOT's comments as part of the Delta Logistics Warehouse off of Day Road. The subject property is part of the Coffee Creek Master Planned area. As part of the Coffee Creek Master Planning effort, the City worked with ODOT to evaluate the impacts of traffic from this industrial area. The proposed project is part of the evaluated industrial uses. Attached is the Traffic Impact Analysis that was completed for the project.
Please let me know if you have any additional questions or comments about this project.
Amy

From: Luxhoj, Cindy <luxhoj@ci.wilsonville.or.us>
Sent: Thursday, December 15, 2022 2:51 PM
To: Pepper, Amy <apepper@ci.wilsonville.or.us>
Subject: FW: ODOT Case # 12816 Annexation/Rezoning Delta Logistics Warehouse
Hi Amy – Here's the ODOT letter.
Cindy Luxhoj AICP
Associate Planner
City of Wilsonville
503.570.1572
luxhoj@ci.wilsonville.or.us
www.ci.wilsonville.or.us
Facebook.com/CityofWilsonville

29799 SW Town Center Loop East, Wilsonville, OR 97070
The Community Development Department has implemented a new online application and payment system. You can now apply and pay for most applications online. You can register for and access the new system for application and payment at https://www.ci.wilsonville.or.us/Online-Portal. If there are additional questions, please reach out to City staff.
Disclosure Notice: Messages to and from this e-mail address may be subject to the Oregon Public Records Law.
From: Diana.POWERS@odot.state.or.us <Diana.POWERS@odot.state.or.us>
Sent: Thursday, December 15, 2022 2:20 PM
To: marah.b.danielson@odot.oregon.gov; abraham.tayar@odot.oregon.gov; john.russell@odot.oregon.gov; Diana.POWERS@odot.oregon.gov; Luxhoj, Cindy <luxhoj@ci.wilsonville.or.us>
Subject: ODOT Case # 12816 Annexation/Rezoning Delta Logistics Warehouse
Good afternoon Cindy,

Attached are ODOT's comments for the annexation and rezoning proposed for the Delta Logistics Warehouse off Day Rd. Please share these comments with the applicant and let me know if you have any questions.

Thank you,

Diana Powers
ODOT Development Review Planner
diana.powers@odot.oregon.gov

WILSONVILLE
OREGON

Planning Division
Development Permit Application

Final action on development application or zone change is required within 120 days in accordance with provisions of ORS 227.175

A pre application conference is normally required prior to submittal of an application. Please visit the City's website for submittal requirements

Pre-Application Meeting Date: 04/15/2021

Incomplete applications will not be scheduled for public hearing until all of the required materials are submitted.

29799 SW Town Center Loop E, Wilsonville, OR 97070
Phone: 503.682.4960 Fax: 503.682.7025
Web: www.ci.wilsonville.or.us

Applicant: (primary contact)
Name: Igor Nichiporchik, Project Manager
Company: Delta Logistics, Inc.
Mailing Address: 9835 Commerce Circle
City, State, Zip: Wilsonville OR 97070
Phone: 503.405.8976 Fax:
E-mail: igor@deltagov.com

Authorized Representative:
Name: Lee Leighton
Company: Mackenzie
Mailing Address: 1515 SE Water Avenue, Suite 100
City, State, Zip: Portland, OR 97214
Phone: 971-346-3727 Fax:
E-mail: LLeighton@mcknze.com

Property Owner:
Name: Vladimir Tkach, Owner
Company: Delta Logistics, Inc.
Mailing Address: 9835 Commerce Circle
City, State, Zip: Wilsonville OR 97070
Phone: Fax:
E-mail: vlad@deltagov.com

Property Owner's Signature:
Printed Name: Vladimir Tkach Date: 4/6/2022

Applicant's Signature: (If different from Property Owner)
Printed Name: Date:

Site Location and Description:
Project Address if Available: 9710 SW Day Road, Sherwood OR 97140 Suite/Unit
Project Location: South side of SW Day Road between Boones Ferry and Grahams Ferry Roads, Coffee Creek Industrial District
Tax Map #(s): 3S1 02B Tax Lot #(s): 000600 & 00601 County: ☒ Washington ☐ Clackamas

Request:
Consolidated application for annexation and land use approvals for development of a 9.13-acre +/- site with a 58,122 +/- square foot industrial building and associated improvements for site access, fleet vehicle/equipment storage, parking, landscaping, stormwater management facilities, and development impact mitigation actions.

Project Type: **Class I** ☐ **Class II** ☐ **Class III** ☒
☐ Residential ☐ Commercial ☒ Industrial ☐ Other:

Application Type(s):

☒ Annexation	☐ Appeal	☐ Comp Plan Map Amend	☐ Parks Plan Review
☐ Final Plat	☐ Major Partition	☐ Minor Partition	☐ Request to Modify Conditions
☐ Plan Amendment	☐ Planned Development	☐ Preliminary Plat	
☐ Request for Special Meeting	☐ Request for Time Extension	☒ Signs	☒ Site Design Review
☒ SROZ/SRIR Review	☐ Staff Interpretation	☒ Stage I Master Plan	☒ Stage II Final Plan
☒ Type C Tree Removal Plan	☐ Tree Permit (B or C)	☐ Temporary Use	☒ Variance
☐ Villebois SAP	☐ Villebois PDP	☐ Villebois FDP	☐ Other (describe)
☒ Zone Map Amendment	☒ Waiver(s)	☐ Conditional Use	

City of Wilsonville
Exhibit B1 (Part 1) DB22-0007

MACKENZIE.

ANNEXATION
ZONE MAP AMENDMENT
STAGE I AND II PLANNED DEVELOPMENT REVIEW
SITE DESIGN REVIEW
SIGNIFICANT RESOURCE OVERLAY ZONE REVIEW
TYPE C TREE PLAN DRB REVIEW
CLASS 3 SIGN PERMIT
WAIVERS
~~VARIANCE~~

To
City of Wilsonville

For
Delta Logistics Site Expansion
9710 SW Day Road

Dated
April 12, 2022
(Revised July 28, 2022)
(Revised October 5, 2022)
(Revised February 28, 2023)

Project Number
2200502.00

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PO Box 14310, Portland, OR 97293 | T 503.224.9560 | www.mcknze.com

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A. Application and Annexation Petition Forms
B. Drawing Set (Site Plan, Grading, Utilities, Architectural Elevations, Floorplans, Landscape Plans, and details)
C. Natural Resource Assessment Report and Recommendations
D. Arborist's Report and Recommendations
E. Traffic Impact Analysis and Related Correspondence
F. Geotechnical Report
G. Storm Report
H. Electric Powerline Easement Coordination (Bonneville Power Administration)
I. Vertical Curve Sight Distance Analysis
J. Solid Waste Service Provider Letter
K. Photometric Lighting Plan
L. TVF&R Service Provider Letter
M. Perspective Renderings
N. Colors and Materials Panel (Images)
O. Site Circulation Diagram (Aerial Photo Overlay)
P. Distances to Structures on Neighboring Properties (Aerial Photo Overlay)
Q. PGE Easement (Book 492 Page 11)

I. PROJECT SUMMARY

Applicant/Owner:	Delta Logistics, Inc. Owner: Vlad Tkach Project Manager: Igor Nichiporchik 9835 Commerce Circle Wilsonville, OR 97070
Site Address:	9710 SW Day Rd, Sherwood, OR 97140
Assessor Site Acreage:	9.13 AC
Tax Map/Lot #:	Washington County 3S1 02B 00600 & 00601
Comprehensive Plan:	Industrial
Current Zoning:	Future Development 20-acre (FD-20) (Washington County)
Adjacent Zoning:	Planned Development Industrial (PDI), PDI-Regionally Significant Industrial Area (PDI-RSIA)
Existing Structures:	One existing structure on 3S1 02B 00600.
Request:	Land use approvals for construction of an approximately 62,107 SF warehouse/manufacturing building with ancillary office space: ▪ Annexation and Zone Map Amendment ▪ Stage I and Stage II Planned Development Review ▪ Significant Resource Overlay Zone (SROZ) Review ▪ Site Design Review ▪ Waivers ▪ Variance ▪ Type C Tree Plan DRB Review ▪ Class 3 Sign Permit
Project Contact:	Lee Leighton, AICP Mackenzie 1515 SE Water Ave Suite 100 Portland, OR 97214 lleighton@mcknze.com 971-346-3727

II. INTRODUCTION

Notes regarding the February 28, 2023 Revised Plans and Narrative Report:

The applicant's initial development plan and supporting application materials proposed development of the western upland part of the property (outside the protected Tapman Creek/wetlands vegetated corridor) for use as a storage area for semi-tractor units, or "bobtails." The proposal included a private bridge crossing of Tapman Creek to allow vehicular access to the bobtail storage within the property, with on-site mitigation plantings for the impacted portions of the Tapman Creek wetland and vegetated corridor ("buffer") areas. The proposal also included a Variance request to allow the private creek crossing.

The applicant was subsequently advised that Wilsonville staff would not recommend approval of the Variance request. The applicant responded by providing an "Option II" development plan that eliminated the on-site stream crossing and proposed an additional, interim driveway near the west edge of the property's SW Day Road frontage for access to the bobtail storage, with a commitment to close that access and relocate it onto a Supporting Street if and when such a street is constructed immediately west of the subject property.

The applicant was subsequently advised that staff would recommend denial of any plan for western access unless the applicant proposed to align the Supporting Street partially within the subject property and propose to construct the vehicular, pedestrian, and landscape improvements required for a Supporting Street within the subject property itself. Such an alignment is incompatible with implementation of the applicant's bobtail storage plan.

To avoid holding up the remainder of the proposed development plan (for the upland property east of the Tapman Creek corridor) over the apparent impasse, the applicant's February 28, 2023 revisions to the proposed plans ("**the Feb'23 Plan**") do not include any proposed private site development on the west side of Tapman Creek. The Feb'23 Plan does still include dedication of public right-of-way and construction of street widening improvements along the full property frontage on SW Day Road.

Also, while Design Review and related components of the application package were under review, the proposed Annexation and Zone Map Amendment applications proceeded through the approval process and were complete as of the February 28, 2023 resubmittal.

For reference and context, this report contains the applicant's recommended findings for the initial development plan, with **redline additions** and ~~deletions~~ reflecting specific changes in the Feb'23 Plan. Sections and statements related to actions that are now completed, as discussed above, or which are not applicable to the Feb'23 Plan are prefaced by an [explanatory statement in square brackets] and appear in grey font.

Description of Request

This request includes applications for the following land use approvals in a consolidated/concurrent process:

1. **[Completed.] Annexation** and **Zone Map Amendment** to apply the City's Planned Development – Regionally Significant Industrial Area/Coffee Creek Industrial Design Overlay District designation to the property immediately upon annexation.
2. **Stage I** and **Stage II Planned Development Review.**

3. **Significant Resource Overlay Zone (SROZ) Review** for approval of proposed development impacts and compensatory mitigation actions affecting the Tapman Creek riparian corridor and adjacent buffer areas.
4. **[Not applicable to the Feb'23 Plan.]** **Variance** from SROZ provisions to allow a private access to cross Tapman Creek within the site and associated development impacts.
5. **Site Design Review** for a new approximately 58,125 SF industrial building (anticipated to be warehouse/distribution and manufacturing) in a single-phase development, with potential future internal addition of two storage mezzanines that would add 3,982 SF of floor area, for total future potential floor area of 62,107 SF.
6. **Waivers** from specific Code standards, for approval under Guidelines in the Coffee Creek Industrial Design Overlay District Pattern Book:
   Waiver 1. **Retaining Walls, maximum height, and design:** The applicant proposes significant grading and use of retaining walls to locate the building in the eastern part of the site and provide on-site paved access, circulation, and trailer storage with acceptable cross-slope characteristics. To do so, the lengths, heights, and horizontal alignment/configuration of the proposed retaining walls will need to exceed the parameters in the applicable Coffee Creek Industrial Design standards.
   Waiver 2. **Vehicle Parking Area:** In addition to providing visitor and disabled parking, the proposed 15-space parking area between the building and the Addressing Street is intended to include parking for some employees.
7. **Type C Tree Plan DRB Review** for proposed tree conservation, removal and mitigation replanting consistent with the above development plans.
8. **Class 3 Sign Permit** to identify locations and sizes/proportions of proposed nonexempt signs; actual sign permitting will be deferred until tenanting of the building.

Following the introductory sections, the recitation of Code provisions and applicant's responses are organized based on the sequence presented above.

Existing Site and Surrounding Land Use

The subject property, currently zoned FD-20 under Washington County Zoning, is the site of one existing residence, for which the applicant has obtained a demolition permit from Washington County; its removal is in process at this time under that permit.

The site contains numerous mature trees and substantial topographic variation. The eastern part of the property has a west-facing slope that descends to the Tapman Creek corridor. In the western part of the property, Tapman Creek flows from north-to-south through the site; the stream and adjacent riparian corridor separate upland, non-resource portions of the property that are located on both the east and west. The applicant has provided environmental assessment reports and impact mitigation recommendations from Schott and Associates, Inc., precisely identifying Sensitive Resource Overlay Zone (SROZ) boundaries within the site and proposing resource protection and impact mitigation measures based on the proposed development plan. The applicant has also provided an Arborist's Report prepared by Teragan Associates, with recommendations for tree plantings and retention to the extent compatible with industrial use of the site and the health of conserved trees.

The current City Limit line is collinear with the property's south, east, and north boundaries (the City has previously annexed the Day Road corridor). The subject property and all the properties surrounding it are designated Industrial on the Comprehensive Plan Map. To the northeast, on the opposite side of Day Road, are located a contracting operation and a distribution fleet storage facility. Adjacent parcels to the

east are in City of Wilsonville and are zoned Planned Development Industrial/Regionally Significant Industrial Area (PDI/RSIA). Adjacent parcels to the south, including the existing Delta operation, are in City of Wilsonville and are zoned Planned Development Industrial (PDI). The existing industrial operations to the south are addressed on the north side of the SW Commerce Circle loop. Existing development to the east, west, and northwest is predominantly rural in character, with a low-intensity mix of residences and small business activities.

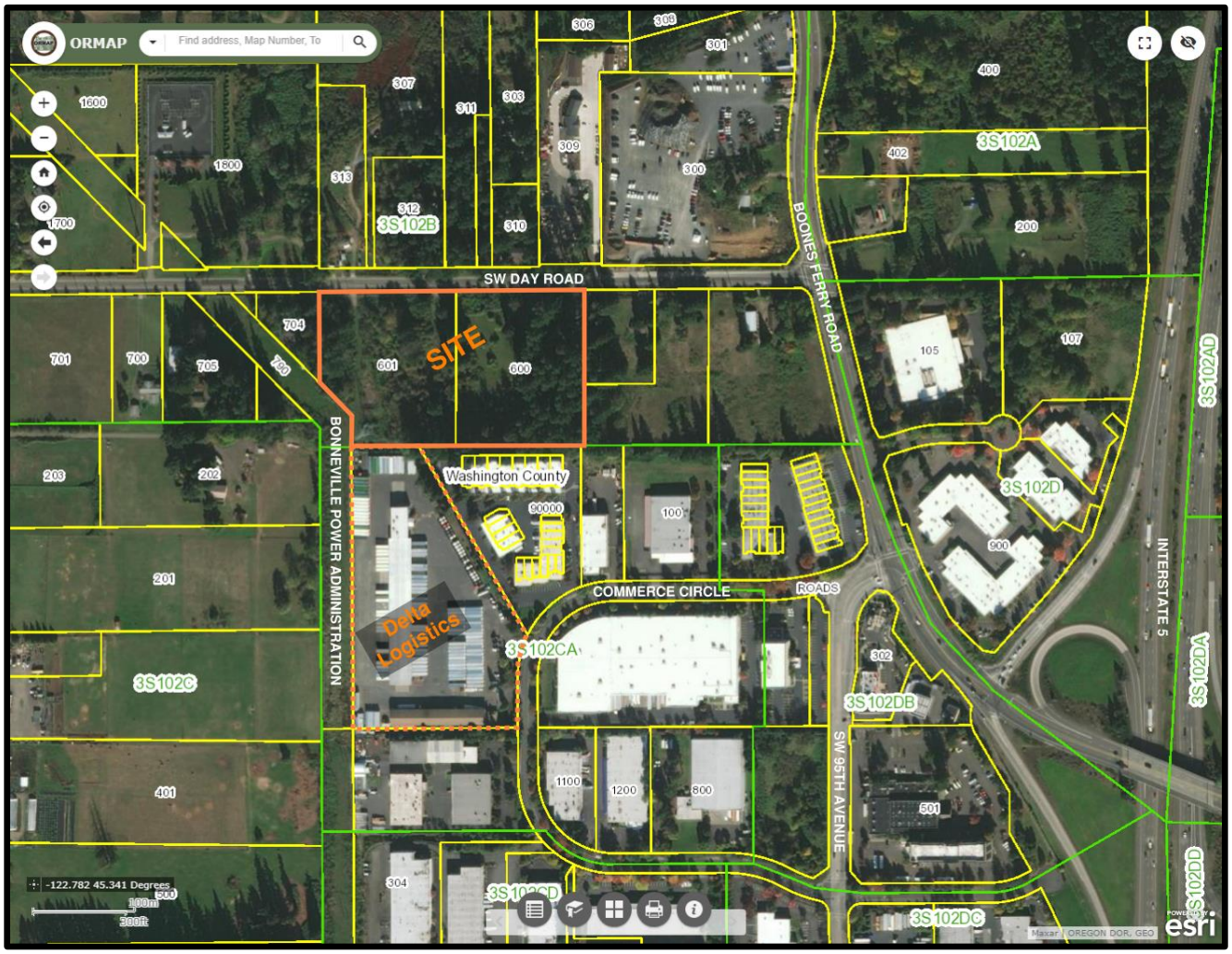
Description of Proposed Development

The proposed site development plan will require substantial tree removal in the eastern part of the site, and re-grading and retaining walls near the site's eastern perimeter, to lower the building's finished floor elevation and associated site grades. This approach will make it possible to position the proposed single-story building and vehicular circulation to achieve access to both Day Road and the Delta site to the south, circulation and storage of semi-tractor rigs ("bobtails") and trailers, passenger vehicle parking for employees and visitors, pedestrian access to and from Day Road, and site landscaping and features consistent with the Coffee Creek Design Standards and Pattern Book Guidelines.

Building construction will be concrete tilt-up, with an office area at the northwest corner (providing the closest pedestrian access to Day Road) and west-facing loading docks.

~~In the western part of the site,~~ Preservation and planting of additional trees in the Tapman Creek riparian corridor **on the east side of Tapman Creek** and dense landscape plantings along Day Road will screen the building, parking, and loading/trailer storage areas from the Day Road right-of-way. A pedestrian Wayside, consistent with Coffee Creek requirements, will be located adjacent to the Day Road sidewalk in the landscape area west of the proposed driveway. The site's surface **pond** ~~ponds~~ for stormwater quality treatment will be located on **the east side** ~~both the east- and west sides~~ of the Tapman Creek SROZ riparian corridor – outside the required 50-foot-wide upland buffer areas – effectively widening and protecting the riparian habitat corridor from impacts associated with human activity.

Aerial Image – Project Site and Vicinity



TABULATION OF SITE PLAN FEATURES (from Sheet C1.10, Exhibit B):

Total Site Area (per survey):	**399,402 SF +/- (9.17 acres)**	
Less: Right-of-Way Dedication:	-12,683 SF +/- (0.29 acres)	
Site Area Net of ROW:	**386,719 SF +/- (8.88 acres)**	
Less: Reserve Area West of Tapman Creek:	-49,868 SF +/1 (1.14 acres)	
Development Area Net of ROW:	**336,851 SF +/- (7.73 acres)**	**100.0%**
SROZ Resource Constraint Area:	56,415 SF +/- (1.30 acres)	
Building Area:	58,125 SF +/- (1.33 acres)	**17.3%** ~~15.0%~~
Parking and Paving Coverage:	**161,293 SF +/- (3.70 acres)**	**47.9%**
Total Impervious (Building + Parking):	**219,418 SF +/- (5.04 acres)**	**65.1%**

Total Landscape (LS) (includes SROZ):	**117,433 SF +/- (2.70 acres) |**	**34.9%**
Minimum Landscape Area Requirement:	**50,528 SF +/- (1.16 acres) |**	**15.0%**
Landscape in Excess of Minimum:	**66,905 SF +/- (1.54 acres)**	
~~Parking and Paving Coverage:~~	~~190,265 SF +/- (4.37 acres) |~~	~~49.2%~~
~~**Total Impervious (Building + Parking):**~~	~~**248,390 SF +/- (5.70 acres) |**~~	~~**64.2%**~~
~~**Total Landscape (LS) (includes SROZ):**~~	~~**138,317 SF +/- (3.18 acres) |**~~	~~**35.8%**~~
Minimum Landscape Area Requirement:	58,006 SF +/- (1.33 acres) |	15.0%
Landscape in Excess of Minimum:	80,311 SF +/- (1.84 acres)	

Parking Area Landscaping

Parking Areas:	19,884 SF +/- (0.46 acres) |	100.0%
Parking Area Landscaping:	3,160 SF +/- (0.07 acres) |	15.9% *
Minimum Parking Area LS Requirement:	1,988 SF +/- (0.05 acres) |	10.0% *

* 3,160 SF = 15.9% of the 19,884 SF of site area in Parking Areas; this exceeds the 10% minimum requirement in § 4.155(.03)B.1.

Site Parking Summary:

Standard Parking (18'x9'):	39 Stalls
Accessible:	2 Stalls

Site Fleet Storage Summary:

Trailers (50'x12'):	**79** ~~80~~ Stalls
~~Tractor Stalls (20'x12'):~~	~~38 Stalls~~

Public Improvements and Transportation

Access and Circulation

The site has usable development areas on both sides of the Tapman Creek corridor, outside the SROZ boundaries, but separate driveway accesses for the two sub-areas are not desirable due to arterial street access spacing requirements on Day Road. **The Feb'23 Plan includes proposed development and use only of the portion of the property east of Tapman Creek at this time.**

[The following statement is not applicable to the Feb'23 Plan.] Instead, the proposed site plan includes making a vehicular connection between the two sub-areas within the property itself. This will allow Delta to contain vehicle movements – fleet storage of semi-tractor "bobtails" and management of trailers – within the expanded operating area, without having to add to traffic on Day Road and other public streets to meet internal circulation needs. The proposed integrated circulation will allow management of truck operations north-south between the existing Delta facility and the new Day Road expansion, as well as east-west within the Day Road expansion site. Because the City's SROZ regulations do not appear to have

anticipated such a situation (involving a private crossing of Tapman Creek), this application includes a Waiver request for the proposed configuration.

Right-of-Way Dedication and Public Improvements

The subject property is located on the south side of SW Day Road, approximately 700' west of SW Boones Ferry Road and approximately 1,350' east of SW Grahams Ferry Road/Garden Acres planned intersection. SW Day Road is designated as a Major Arterial in the Wilsonville Transportation System Plan (TSP), and is designated as an Addressing Street in the Coffee Creek Industrial Design Overlay District Regulating Plan.

Currently, SW Day Road extends west to intersect and cross SW Grahams Ferry Road. In the City of Wilsonville Transportation System Plan (TSP) Figure 3-6. Major Arterial Cross-Section, a Major Arterial includes final curb-to-curb width of 68 feet within an overall 95-107-foot right-of-way easement, containing four (4) travel lanes and a center left turn lane, bike lanes, planting strips and sidewalks. Because the applicant does not control property on the north side of SW Day Road, the applicant is unable to make a right-of-way dedication except along the subject property south-side frontage. The applicant's design team has worked closely with City staff to prepare a feasible interim configuration for street improvements in conjunction with the proposed development. The proposed roadway construction is found in the R-series drawing sheets (R0.00 through R1.51). Construction within the right-of-way will include:

- An approximately 15-foot dedication of public right-of-way to widen the existing 37-foot half right-of-way to 52-feet, consistent with a future overall width of 102' +/- feet and the full Major Arterial street design section (see Street Section on Sheet R0.02).
- Saw-cutting to match the existing pavement .
- Construction of widened pavement surface and the southern curb at final line and grade.
- Curbside planter strip.
- Bike lane.
- Planter strip between bike lane and sidewalk.
- Sidewalk.
- Street lights.
- Street signs.
- Interim striping to direct movements at required east and west transitions with the existing narrower paved width conditions.

This configuration is designed to provide capacity and safe operations on an interim basis with two (2) travel lanes and one (1) center turn lane until development occurs on property to the north, when matching improvements can be constructed on the north side of the street.

Extensions of public utilities (water, sanitary sewer, and storm drainage) are included in the applicant's proposed construction plans for SW Day Road frontage.

Transportation Impact Analysis

The City's traffic engineering consulting firm, DKS Associates, prepared a Traffic Impact Study (TIS), included as Exhibit E. The analysis studied five intersections in the vicinity, Site Access/Day Road, Boones Ferry Road/Day Road, Boones Ferry Road/95th Avenue, I-5 Southbound Ramps/Elligsen Road, and I-5 Northbound Ramps/Elligsen Road, and concluded that all will achieve Level of Service (LOS) C with the proposed development, which exceeds the minimum operating standard, LOS D.

Site Access

One driveway is proposed for access to the Addressing Street, SW Day Road. The DKS Traffic Impact Study (TIS) supports the proposed driveway location, noting that the apex vertical curve in Day Road east of the site constrains sight distances to the east, so the proposed driveway location is consistent with an acceptable plan for access spacing in this specific segment of Day Road. The applicant also prepared a turning movement analysis comparing an unrestricted-movement configuration against a design that would preclude exiting left turn movements, responding to a request from Wilsonville Engineering staff; that email correspondence is included in Exhibit I, following the access location study.

Utilities

There are existing public water and storm drain lines in Day Road, capable of serving the proposed development. To meet Wilsonville public works construction requirements, proposed Day Road improvements include right-of-way dedication and construction to final line and grade for the future five-lane width of the arterial street, with a curbside planter strip, a bike path, a second planter strip and a sidewalk along the property frontage. Although this specific configuration differs from the design section for SW Day Road in the Coffee Creek Pattern Book, it is similar to a configuration the City recently approved for improvements in SW Garden Acres Road at the proposed Black Creek Logistics Center project (CB21-0085 et al), a short distance west of the subject property.

Public utilities construction within the street adjacent to the Day Road site frontage will not include a sanitary sewer line at this time, because there is no existing line extending to the property to which it could connect. The applicant proposes to extend a private sanitary sewer line to the south, through the existing Delta Logistics site, to connect to the public sewer line in Commerce Circle. Engineering staff have indicated that the applicant can pay a fee in lieu of construction to make a fair share contribution to funding a future public sewer installation project in SW Day Road.

III. NARRATIVE AND COMPLIANCE

The following City of Wilsonville development code sections contain responses to the standards that apply to this proposal.

[Annexation and Zone Map Amendment have been approved. The following Section is not applicable to review of the Feb'23 Plan.]

A. Annexation and Zone Map Amendment

Section 4.700. Procedures Relating To The Processing Of Requests For Annexation And Urban Growth Boundary Amendments

(.01) The City of Wilsonville is located within the Portland Metropolitan Area, and is therefore subject to regional government requirements affecting changes to the city limits and changes to the Urban Growth Boundary (UGB) around Wilsonville. The City has the authority to annex properties as prescribed in State law, but the City's role in determining the UGB is primarily advisory to Metro, as provided in Oregon Revised Statutes. The following procedures will be used to aid the City Council in formulating recommendations to those regional entities. [Amended by Ordinance No. 538, 2/21/02.]

A. Proponents of such changes shall provide the Planning Director with all necessary maps and written information to allow for review by city decision-makers. The Planning Director, after consultation with the City Attorney, will determine whether each given request is

quasi-judicial or legislative in nature and will make the necessary arrangements for review based upon that determination.

Response: The applicant has submitted a request for annexation of two parcels into Wilsonville City Limits. Given the small size and single ownership, this will likely be deemed a quasi-judicial application.

B. Written information submitted with each request shall include an analysis of the relationship between the proposal and the City's Comprehensive Plan, applicable statutes, as well as the Statewide Planning Goals and any officially adopted regional plan that may be applicable.

Response: The following responses provide information as the annexation and zone change request relates to the Comprehensive Plan and the Statewide Planning Goals.

Comprehensive Plan

The applicant has reviewed the Comprehensive Plan for applicable policies that demonstrate the project's compliance with annexation-related approval criteria. As demonstrated in this submittal package, this project is consistent with the City's adopted zoning and development standards and will serve to implement the goals, policies, and objectives of the comprehensive plan.

The annexation of the property and subsequent development as proposed will further the city's goals for Coffee Creek Industrial Area and align with specific city annexation polices:

Policy 2.2.1. *The City of Wilsonville shall plan for the eventual urbanization of land within the local planning area, beginning with land within the Urban Growth Boundary.*

Implementation Measure 2.2.1.a*. Allow annexation when it is consistent with future planned public services and when a need is clearly demonstrated for immediate urban growth.*

Response: The subject site is located within the UGB and in the Coffee Creek Industrial Area. This area has been identified for industrial development such as this proposal. The applicant is proposing to construct public services extensions including roadway improvements, necessary infrastructure, and utility services to the site in accordance with City of Wilsonville standards.

Implementation Measure 2.2.1.*e Changes in the City boundary will require adherence to the annexation procedures prescribed by State law and Metro standards. Amendments to the City limits shall be based on consideration of:*

1. *Orderly, economic provision of public facilities and services, i.e., primary urban services are available and adequate to serve additional development or improvements are scheduled through the City's approved Capital Improvements Plan.*
2. *Availability of sufficient land for the various uses to insure choices in the marketplace for a 3 to 5 year period.*
3. *Statewide Planning Goals.*
4. *Applicable Metro Plans;*
5. *Encouragement of development within the City limits before conversion of urbanizable (UGB) areas.*
6. *Consistency with legislative Master Plans and other applicable provisions of the Comprehensive Plan and Development Code.*

Response: Metro and the City of Wilsonville have identified the Coffee Creek sub-area for industrial and employment land uses, and the City has gone through years of planning work to adopt zoning and other regulations to guide and direct such annexation, development, and use. This submittal package responds to applicable approval standards, guidelines, and criteria to demonstrate that the proposal is consistent with all of those policies, plans, and regulations. The project will be developed with public facilities and services as identified in the City's Capital Improvement Plan, and which are adequate to serve the site. The project type and use matches the goals and objectives of the city within the Coffee Creek Industrial Area.

Implementation Measure 3.1.2.a *Urban development will be allowed only in areas where necessary facilities and services can be provided.*
Response: The applicant's design team has worked closely with City staff to verify that utility service systems have capacity to serve the site, and to design extensions of utility services (in SW Day Road right-of-way) that will serve not only the subject property, but allow further connections and extensions to serve other properties in the Coffee Creek Industrial Area.

Statewide Planning Goals

Goal 1: Citizen Involvement
Objective: *To develop a citizen involvement program that insures the opportunity for citizens to be involved in all phases of the planning process.*
Response: The City's acknowledged Comprehensive Plan & Development Code includes citizen involvement procedures with which the review of this application will comply. This process allows for citizens to communicate their input into the annexation and zoning map amendment review conducted by the City at public hearings or by submitting written comments. The Development Review Board will review and comment on the proposed annexation and zoning map amendment to make a recommendation to the City Council. The City Council will hold a hearing on the matter. Notice of the hearing is posted on site and elsewhere; the City mails notices to nearby property owners, and notice is published in the newspaper. This process complies with Goal 1.

Goal 2: Land Use Planning
Objective: *To establish a land use planning process and policy framework as a basis for all decision and actions related to use of land and to assure an adequate factual base for such decisions and actions.*
Response: The procedural requirements for annexation and zone changes are contained in the Development Code, which involve assessment of the application's merits, notice to affected parties, and public hearings. The proposal is to annex and change the zoning designation of urban land within the Urban Growth Boundary, in compliance with Goal 2. Notice of the annexation and zoning map amendment will be provided by the City to the Oregon Department of Land Conservation and Development (DLCD) and Metro as required, and the City's decision will be based on findings of fact.

Goal 3: Agricultural Lands
Objective: *To preserve and maintain agricultural lands.*
Response: This Goal is not applicable because the site is within the Metro Urban Growth Boundary and no identified agricultural resources are located on site.

Goal 4: Forest Lands

Objective: *To conserve forest lands by maintaining the forest land base and to protect the state's forest economy by making possible economically efficient forest practices that assure the continuous growing and harvesting of forest tree species as the leading use on forest land consistent with sound management of soil, air, water, and fish and wildlife resources and to provide for recreational opportunities and agriculture.*

Response: This Goal is not applicable because the site is within the Metro Urban Growth Boundary and no identified forest resources are located on site.

Goal 5: Open Spaces, Scenic and Historic Areas and Natural Resources

Objective: *To protect natural resources and conserve scenic and historic areas and open spaces.*

Response: The subject site contains designated open space/scenic resources in the Significant Resource Overlay Zone (SROZ) corridor along Tapman Creek. The application package includes on-site inventory/analysis and recommendations by Schott and Associates, providing the best available scientific data for use in identifying the characteristics of the resource, assessing impacts, and proposing on-site compensatory mitigation for proposed impacts, consistent with the provisions of the City's SROZ Code provisions (see Exhibit C). The data support the City's evaluation of the proposed development for compliance with Development Code provisions to limit impacts to natural resources and to provide protection for significant Goal 5 resources, under the City's Acknowledged program for managing significant resources. Therefore, the proposed annexation and zone change are consistent with this Goal.

Goal 6: Air, Water and Land Resources Quality

Objective: *To maintain and improve the quality of the air, water and land resources of the state.*

Response: The site is currently planned for industrial uses. If the annexation is approved, the site would be subject to City regulations seeking to minimize off-site impacts from noise, vibration, odors, glare, or other "nuisance" effects, consistent with the types of economic activities allowed within the zone. The potential harmful effects on air, water, and land resource quality are therefore limited. The annexation and zone change proposal will therefore have no significant impact with respect to this Goal.

Goal 7: Areas Subject to Natural Disasters and Hazards

Objective: *To protect people and property from natural hazards.*

Response: According to data from the Oregon Department of Geology and Minerals,[1] the subject site is not located within a landslide hazard area, and there are no known active fault lines in the immediate vicinity. According to the Federal Emergency Management Agency's Flood Insurance Rate Map 41067C0609E, effective November 4, 2016, the subject property is not located in a regulated flood hazard area. The development proposal will be required to document compliance with the applicable standards for development at the time of building permit review. The proposal to annex and zone the subject property for industrial development is consistent with avoidance of natural disasters and hazards under Goal 7.

[1] https://gis.dogami.oregon.gov/maps/hazvu/

Goal 8: Recreational Needs

Objective: *To satisfy the recreational needs of the citizens of the state and visitors and, where appropriate, to provide for the siting of necessary recreational facilities including destination resorts.*

Response: The annexation area is presently designated Industrial on the Comprehensive Plan Map and will be zoned Planned Development Industrial – Regionally Significant Industrial Area (PDI-RSIA) upon annexation. The site is not identified as a resource site suitable for park and recreation use in any adopted City resource inventories or plans. Consequently, the proposed annexation and zone change will have no effect on the City's recreational land supply.

Goal 9: Economic Development

Objective: *To provide adequate opportunities throughout the state for a variety of economic activities vital to the health, welfare, and prosperity of Oregon's citizens.*

Response: The 2012 Economic Opportunities Analysis (EOA) identifies the Coffee Creek Master Plan Area as containing approximately 174 acres of industrial land area, 50 acres of which could be served with adequate public facilities in the next four (4) years. The proposed project is within this area and aligns with the EOA's intentions of ensuring the City has adequate industrial lands to provide jobs and economic opportunity. The proposed annexation and zoning map amendment set the stage for a proposed development that will contribute to the state and local economy by providing industrial employment and associated benefits; therefore, the proposed annexation, rezoning, and development are consistent with this Goal.

Goal 10: Housing

Objective: *To provide for the housing needs of citizens of the state.*

Response: The property proposed for annexation is designated Industrial on the Comprehensive Plan map. The proposed annexation and zone change to Planned Development Industrial – Regionally Significant Industrial Area (PDI-RSIA) will have no effect on the housing supply within City Limits. Goal 10 is not applicable to this request.

Goal 11: Public Facilities and Services

Objective: *To plan and develop a timely, orderly and efficient arrangement of public facilities and services to serve as a framework for urban and rural development.*

Response: The subject property lies within the Urban Growth Boundary (UGB) and therefore requires the extension of public facilities and services as urban development occurs. Public extensions of water, sanitary sewer and storm sewer services are proposed to be constructed as illustrated in Exhibit B; therefore, this goal will be furthered by annexation and implementation of the proposed project.

Goal 12: Transportation

Objective: *To provide and encourage a safe, convenient and economic transportation system.*

Response: Statewide Planning Goal 12 is implemented by the state Transportation Planning Rule (TPR). The City adopted a Transportation System Plan (TSP) in 2013 and adopted amendments to it in November 2020. The transportation impacts associated with future industrial development of the subject site were analyzed as part of the TSP, which based its analysis on the site's Industrial Comprehensive Plan designation. The

proposed zoning is consistent with the land designation and trip generation assumptions used to develop the TSP, and therefore complies with OAR 660-012-0060(9). For these reasons, the proposed annexation and rezoning are consistent with the TPR.

Goal 13: Energy Conservation
Objective: *To conserve energy.*

1. *Land use plans should be based on utilization of the following techniques and implementation devices which can have a material impact on energy efficiency:*
   a. *Lot size, dimension, and siting controls;*
   b. *Building height, bulk and surface area;*
   c. *Density of uses, particularly those which relate to housing densities;*
   d. *Availability of light, wind and air;*
   e. *Compatibility of and competition between competing land use activities; and*
   f. *Systems and incentives for the collection, reuse and recycling of metallic and nonmetallic waste.*

Response: Clustering industrial activities near each other facilitates carpooling and allows for convenient access to principal roadways designated for truck traffic. The subject property is adjacent to land designated for industrial uses; therefore, the proposal will contribute to a more energy-efficient land use pattern within the City's Urban Growth Boundary and is consistent with this Goal.

Goal 14: Urbanization
Objective: *To provide for an orderly and efficient transition from rural to urban land use.*
Response: The subject property is within the Metro Urban Growth Boundary (UGB) and no expansion of the UGB is proposed. The proposed annexation and zone change will achieve the transition from rural to urbanized land as foreseen in the Comprehensive Plan. Development of the site triggers requirements for the applicant to provide infrastructure, including necessary water lines, sewer lines, storm drainage lines, and street improvements; therefore, the application is consistent with this Goal.

Goal 15: Willamette River Greenway
Response: The site is not located near the Willamette River. This Goal is not applicable.

Goal 16: Estuarine Resources
Response: The site is not located in or near an estuary. This Goal is not applicable.

Goal 17: Coastal Shorelands
Response: The site is not located near the Coast. This Goal is not applicable.

Goal 18: Beaches and Dunes
Response: The site is not located near beaches or dunes. This Goal is not applicable.

Goal 19: Ocean Resources
Response: The site is not located near the Ocean. This Goal is not applicable.

C. The Planning Director shall review the information submitted by the proponents and will prepare a written report for the review of the City Council and the Planning Commission or Development Review Board. If the Director determines that the information submitted by the proponents does not adequately support the request, this shall be stated in the Director's staff report.

Response: This provision provides procedural guidance for implementation and requires no evidence from the applicant. The applicant has endeavored to provide adequate information to allow the City to approve the annexation and zone change proposal.

D. If the Development Review Board, Planning Commission, or City Council determine that the information submitted by the proponents does not adequately support the request, the City Council may oppose the request to the regional entity having the final decision-making authority.

Response: This provision provides procedural guidance for implementation and requires no evidence from the applicant. The applicant has endeavored to provide adequate information to allow the City to approve the annexation and zone change proposal.

(.02) Each quasi-judicial request shall be reviewed by the Development Review Board, which shall make a recommendation to the City Council after concluding a public hearing on the proposal.

Response: The applicant has submitted a quasi-judicial annexation request for review by the Development Review Board and adoption by the City Council. This provision provides procedural guidance for implementation and requires no evidence from the applicant.

(.03) Each legislative request shall be reviewed by the Planning Commission, which shall make a recommendation to the City Council after concluding a public hearing on the proposal.

Response: The applicant has submitted a quasi-judicial annexation request. This standard does not apply because this is not a legislative proposal introduced by the City.

(.04) The City Council shall consider the information in the record of the Development Review Board or Planning Commission and shall, after concluding a public hearing on the request, determine the appropriate course of action. That course of action may be:

A. In the case of a proposed amendment to the Regional Urban Growth Boundary: forward its recommendation in the form of a Resolution to the Metro Council.

Response: The applicant is not proposing an amendment to the UGB. This standard does not apply.

B. In the case of a proposed annexation to the City, select from the following as allowed by State law (ORS 222):

1. Take no action;
2. Declare the subject property, or some portion thereof, to be annexed;
3. Set the matter for election of the voters residing within the affected territory; or
4. Set the matter for election of City voters.

Response: The applicant requests that the City Council declare the property identified in Exhibit A (annexation legal description and map) to be annexed to the City in accordance with option "2" above.

(.05) The City Council may adopt a development agreement with the owners of property that is proposed for annexation to the City, and such agreement may include an agreement to annex at a future date. A development agreement with an agreement to annex shall be subject to the same procedural requirement as other annexations in terms of staff report preparation, public review, and public hearings.

Response: The applicant requests annexation of the subject property, which is within the City's UGB. The proposed annexation is consistent with the Wilsonville Comprehensive Plan, and the Coffee Creek Master Plan. This submittal includes a written description of the request and the following supporting documents:

- Land Use Application Form.
- Annexation Petition Form.

- Deed/Legal Description and Map.
- Ownership Certification.
- Voter Registrations at Subject Property.
- Proposed Zone Map Amendment.

The applicant has also submitted applications for a proposed industrial development project for consolidated review and approval. The applicant is not aware of development issues requiring the use of a development agreement, but is amenable to entering into such an agreement to the extent it would facilitate the requested permit approvals.

Section 4.197. Zone Changes and Amendments To This Code – Procedures

(.01) The following procedure shall be followed in applying for an amendment to the text of this Chapter: [detailed provisions omitted for brevity]

Response: The applicant is not requesting an amendment to the text of the Development Code. These provisions do not apply.

(.02) In recommending approval or denial of a proposed zone map amendment, the Planning Commission or Development Review Board shall at a minimum, adopt findings addressing the following criteria:

A. That the application before the Commission or Board was submitted in accordance with the procedures set forth in Section 4.008, Section 4.125 (.18)(B)(2) or, in the case of a Planned Development, Section 4.140; and [Amended by Ord 557, adopted 9/5/03]

Response: The applicant has submitted this request for Annexation, Zone Map Amendment, Stage I and II Planned Development Review, SROZ Review, Site Design Review, Variance, Waivers, Type C Tree Plan DRB Review, and Class 3 Sign Permit in accordance with the City's procedural requirements, including utilization of City forms, payment of application fees, and submission of supporting evidence. This standard is met.

B. That the proposed amendment is consistent with the Comprehensive Plan map designation and substantially complies with the applicable goals, policies and objectives, set forth in the Comprehensive Plan text; and

Response: The site is designated Industrial on the Comprehensive Plan map and has been identified by Metro as a Regionally Significant Industrial Area. The proposed Planned Development Industrial – Regionally Significant Industrial Area (PDI-RSIA) zone is consistent with the Comprehensive Plan map designation. Compliance with applicable Comprehensive Plan provisions is demonstrated above in the response to Section 4.700(.01)(B). This standard is met.

C. In the event that the subject property, or any portion thereof, is designated as "Residential" on the City's Comprehensive Plan Map; specific findings shall be made addressing substantial compliance with Implementation Measures 4.1.4.b, d, e, q, and x of Wilsonville's Comprehensive Plan text; and [Amended by Ordinance No. 538, 2/21/02.]

Response: The subject property is designated Industrial (not Residential) in the Comprehensive Plan Map. This provision does not apply.

D. That the existing primary public facilities, i.e., roads and sidewalks, water, sewer and storm sewer are available and are of adequate size to serve the proposed development; or, that adequate facilities can be provided in conjunction with project development. The Planning Commission and Development Review Board shall utilize any and all means to insure that all primary facilities are available and are adequately sized; and

Response: The proposal includes the construction and upgrades to public facilities to ensure they meet city standards and are adequate for the proposed development. The applicant's engineering team has coordinated with city staff to ensure that system capacities are available to serve the site, and that the sizing and construction of public infrastructure extensions will meet the city's design standards and planned capacity needs.

The following upgrades and new construction are proposed:

Frontage improvements (See the R-series of civil engineering drawing sheets):

Roads: The existing roadway will be widened and improved consistent with ultimate future construction of SW Day Road consistent with the applicable Major Arterial design section in the Coffee Creek plan, including two (2) travel lanes and a center turn lane. Striping will maintain two travel lanes as an interim configuration, pending urban development of property on the north side of SW Day Road Street.

Sidewalks: Based on direction the applicant received from Wilsonville Engineering staff, the proposed Day Road frontage improvements include a new 6' sidewalk, a 4.5' planter strip, a 7' bike lane, and a 6' landscape planter strip on the south side of the curb. These improvements are similar to the design section recently approved for SW Garden Acres Road in the Black Creek Logistics Center proposal (DB21-0058 et al), which also differ from the design section in the Coffee Creek Pattern Book.

Water: An 18" public water line exists in SW Day Road and is sized appropriately.

Sewer: There is no existing sanitary sewer extending to the edge of the property frontage on SW Day Road at this time, but plans call for a future 12" line. The applicant proposes to serve the property by constructing a private sewer connection extending south through the existing Delta Logistics property (common owner), connecting to the existing sanitary sewer line in Commerce Circle. The applicant understands that a fee-in-lieu-of-construction can be paid to the City to contribute an appropriate proportional share to the future cost of a public sewer installation project in SW Day Road.

Stormwater: A 12" stormwater line extension is proposed in SW Day Road.

Driveways: One (1) 50' site access driveway is proposed on SW Day Road, which is an Addressing Street in the Coffee Creek District Plan. Additional access to the site will occur with a proposed 45' driveway connecting to the existing Delta Logistics operation (common owner) to the south, providing a vehicular connection to SW Commerce Circle.

E. That the proposed development does not have a significant adverse effect upon Significant Resource Overlay Zone areas, an identified natural hazard, or an identified geologic hazard. When Significant Resource Overlay Zone areas or natural hazard, and/or geologic hazard are located on or abut the proposed development, the Planning Commission or Development Review Board shall use appropriate measures to mitigate and significantly reduce conflicts between the development and identified hazard or Significant Resource Overlay Zone and

Response: The proposed development is located in a Significant Resource Overlay Zone as shown in the City of Wilsonville Significant Resource Overlay Zone Map. The applicant has submitted a Significant Resource Impact Report (SRIR) that evaluates the proposed project and provides

recommendations to mitigate impacts on the SROZ area of the site (see Exhibit C). Development impacts and mitigation actions are discussed in more detail in Section 4.139 of this report. With the approval of the SRIR and the Variance to allow the proposed impact and mitigation actions, this standard is met.

F. That the applicant is committed to a development schedule demonstrating that development of the property is reasonably expected to commence within two (2) years of the initial approval of the zone change; and

Response: The applicant intends to begin construction as soon as the necessary permits are approved. This criterion is met.

G. That the proposed development and use(s) can be developed in compliance with the applicable development standards or appropriate conditions are attached that insure that the project development substantially conforms to the applicable development standards.

Response: The land use submittal package and accompanying civil plans show that the proposed development can be completed in compliance with the applicable development standards. The applicant's engineers have worked with city staff and have revised plans responding to comments, to achieve compliance with the city's standards. This criterion is met.

H. Adequate public facilities, services, and transportation networks are in place, or are planned to be provided concurrently with the development of the property. The applicant shall demonstrate compliance with the Transportation Planning Rule, specifically by addressing whether the proposed amendment has a significant effect on the transportation system pursuant to OAR 660-012-0060. A Traffic Impact Analysis (TIA) shall be prepared pursuant to the requirements in Section 4.133.05.(01).

Response: The application contains site plans (see Exhibit B) demonstrating how the applicant proposes to connect to public utilities and streets, which have been designed based on the understanding that the site would be developed with an industrial use.

The proposed annexation and zone change from the Washington County: Future Development 20-Acre District (FD-20) to the City of Wilsonville Planned Development Industrial – Regionally Significant Industrial Area does not significantly affect the transportation system pursuant to OAR 660-012-0060(9), which states the following:

> *660-012-0060*
> *(9) Notwithstanding section (1) of this rule, a local government may find that an amendment to a zoning map does not significantly affect an existing or planned transportation facility if all of the following requirements are met.*
> *(a) The proposed zoning is consistent with the existing comprehensive plan map designation and the amendment does not change the comprehensive plan map;*
> *(b) The local government has an acknowledged TSP and the proposed zoning is consistent with the TSP; and*
> *(c) The area subject to the zoning map amendment was not exempted from this rule at the time of an urban growth boundary amendment as permitted in OAR 660-024-0020(1)(d), or the area was exempted from this rule but the local government has a subsequently acknowledged TSP amendment that accounted for urbanization of the area.*

As noted above, the proposed zoning is consistent with the Acknowledged Comprehensive Plan Map and the applicant has not requested an amendment to the Comprehensive Plan designation. The City's TSP has been acknowledged by the Oregon Department of Land Conservation and

Development and the proposed zoning is consistent with the TSP, which analyzed the site based on its Industrial Comprehensive Plan designation. Furthermore, the site was not exempted from the Transportation Planning Rule as part of a prior UGB amendment. Based on these conditions, the proposed zoning complies with OAR 660-012-0060(9).

The TIA in Exhibit E has been prepared by the City's transportation consultant (DKS Associates) in accordance with the provisions of Section 4.133.05.(01), and has also been reviewed and accepted by the City's professional engineering staff. This standard is met.

(.03) If affirmative findings cannot be made for all applicable criteria listed above the Planning Commission or Development Review Board shall recommend that the proposed text or map amendment, as the case may be, be denied.
Response: The applicant has provided sufficient information to support City approval of the annexation and zone change proposal.

(.04) City Council action approving a change in zoning shall be in the form of a Zoning Order.
Response: This provision provides procedural guidance for implementation and requires no evidence from the applicant.

(.05) In cases where a property owner or other applicant has requested a change in zoning and the City Council has approved the change subject to conditions, the owner or applicant shall sign a statement accepting, and agreeing to complete the conditions of approval before the zoning shall be changed.
Response: The subject site is currently in Washington County, but its annexation into the City of Wilsonville has been anticipated. The site will be annexed and then immediately zoned as a Regionally Significant Industrial Area within the Coffee Creek Industrial Overlay District. No conditions of approval are anticipated for the zone change itself, as conditions will instead be applied to the associated development proposal approvals, such as Stage I and II Planned Development Review and Site Design Review. The applicant acknowledges that the City Council may require a development agreement if Council finds that doing so would be appropriate in this circumstance. This criterion is met.

B. Stage I and Stage II Planned Development Plan

Section 4.117. Standards Applying To Industrial Developments In Any Zone

(.01) All industrial developments, uses, or activities are subject to performance standards. If not otherwise specified in the Planning and Development Code, industrial developments, uses, and activities shall be subject to the performance standards specified in Section 4. 135 (.05) (PDI Zone).
Response: The proposal is for an industrial development and will comply with the performance standards. These standards are addressed more specifically in this narrative under Section 4.135.5. This standard is met.

Section 4.118. Standards Applying to all Planned Development Zones

(.01) Height Guidelines: In "S" overlay zones, the solar access provisions of Section 4.137 shall be used to determine maximum building heights. In cases that are subject to review by the Development Review Board, the Board may further regulate heights as follows:

- *A. Restrict or regulate the height or building design consistent with adequate provision of fire protection and fire-fighting apparatus height limitations.*
- *B. To provide buffering of low density developments by requiring the placement of three or more story buildings away from the property lines abutting a low density zone.*
- *C. To regulate building height or design to protect scenic vistas of Mt. Hood or the Willamette River.*

Response: The proposal is not located in an "S" overlay zone. This standard does not apply.

(.02) Underground Utilities shall be governed by Sections 4.300 to 4.320. All utilities above ground shall be located so as to minimize adverse impacts on the site and neighboring properties.
Response: All underground utilities will comply with City of Wilsonville standards as detailed in the responses to Sections 4.300 to 4.320, below.

(.03) Notwithstanding the provisions of Section 4.140 to the contrary, the Development Review Board, in order to implement the purposes and objectives of Section 4.140, and based on findings of fact supported by the record may:

- *A. Waive the following typical development standards:*
  1. *minimum lot area;*
  2. *lot width and frontage;*
  3. *height and yard requirements;*
  4. *lot coverage;*
  5. *lot depth;*
  6. *street widths;*
  7. *sidewalk requirements;*
  8. *height of buildings other than signs;*
  9. *parking space configuration and drive aisle design;*
  10. *minimum number of parking or loading spaces;*
  11. *shade tree islands in parking lots, provided that alternative shading is provided;*
  12. *fence height;*
  13. *architectural design standards;*
  14. *transit facilities; and*
  15. *On-site pedestrian access and circulation standards; and*
  16. *Solar access standards, as provided in section 4.137.*

Response: The applicant is proposing two (2) waivers to the Coffee Creek Design Overlay listed above. This criterion is met.

B. The following shall not be waived by the Board, unless there is substantial evidence in the whole record to support a finding that the intent and purpose of the standards will be met in alternative ways:

1. open space requirements in residential areas…;
2. minimum density standards of residential zones…;
3. minimum landscape, buffering, and screening standards;

Response: Not applicable; this proposal is not located in a residential area and the applicant is not proposing waivers to these standards.

C. The following shall not be waived by the Board, unless there is substantial evidence in the whole record to support a finding that the intent and purpose of the standards will be met in alternative ways, and the action taken will not violate any applicable federal, state, or regional standards:

1. maximum number of parking spaces;
2. standards for mitigation of trees that are removed;
3. standards for mitigation of wetlands that are filled or damaged; and
4. trails or pathways shown in the Parks and Recreation Master Plan.

Response: Not applicable; the applicant is not proposing waivers to these standards.

D. Locate individual building, accessory buildings, off-street parking and loading facilities, open space and landscaping and screening without reference to lot lines; and

Response: As shown in Exhibit B, the applicant is proposing buildings, parking, loading areas, and landscape areas that comply with applicable setback standards. The applicant is not requesting different setbacks as part of the Planned Development application. This standard does not apply.

E. Adopt other requirements or restrictions, inclusive of, but not limited to, the following:

1. Percent coverage of land by buildings and structures in relationship to property boundaries to provide stepped increases in densities away from low-density development.
2. Parking ratios and areas expressed in relation to use of various portions of the property and/or building floor area.
3. The locations, width and improvement of vehicular and pedestrian access to various portions of the property, including portions within abutting street or private drive. [amended by Ord. 682, 9/9/10]
4. Arrangement and spacing of buildings and structures to provide appropriate open spaces around buildings.
5. Location and size of off-street loading areas and docks.
6. Uses of buildings and structures by general classification, and by specific designation when there are unusual requirements for parking, or when the use involves noise, dust, odor, fumes, smoke, vibration, glare or radiation incompatible with present or potential development of surrounding property. Such incompatible uses may be excluded in the amendment approving the zone change or the approval of requested permits.
7. Measures designed to minimize or eliminate noise, dust, odor, fumes, smoke, vibration, glare, or radiation which would have an adverse effect on the present or potential development on surrounding properties.
8. Schedule of time for construction of the proposed buildings and structures and any stage of development thereof to insure consistency with the City's adopted Capital Improvements Plan and other applicable regulations.

9. *A waiver of the right of remonstrance by the applicant to the formation of a Local Improvement District (LID) for streets, utilities and/or other public purposes.*
10. *Modify the proposed development in order to prevent congestion of streets and/or to facilitate transportation.*
11. *Condition the issuance of an occupancy permit upon the installation of landscaping or upon a reasonable scheduling for completion of the installation of landscaping. In the latter event, a posting of a bond or other security in an amount equal to one hundred ten percent (110%) of the cost of the landscaping and installation may be required.*
12. *A dedication of property for streets, pathways, and bicycle paths in accordance with adopted Facilities Master Plans or such other streets necessary to provide proper development of adjacent properties.*

Response: The applicant acknowledges that the Development Review Board may impose other requirements or restrictions, including but not limited to those specified above; however, given the nature of the proposed warehouse/distribution use, the applicant believes it is unnecessary to impose special restrictions or conditions of approval on the development.

(.04) The Planning Director and Development Review Board shall, in making their determination of compliance in attaching conditions, consider the effects of this action on availability and cost. The provisions of this section shall not be used in such a manner that additional conditions, either singularly or cumulatively, have the effect of unnecessarily increasing the cost of development. However, consideration of these factors shall not prevent the Board from imposing conditions of approval necessary to meet the minimum requirements of the Comprehensive Plan and Code.

Response: The applicant acknowledges that the Development Review Board must consider the effects of availability and cost when considering the attachment of conditions as described in Section 4.118 of the WDC. If imposition of conditions depends on consideration of cost factors, the applicant will participate in development cost estimates to inform that discussion; however, the applicant is not aware of any such issues at the time of submitting a complete application package.

(.05) The Planning Director, Development Review Board, or on appeal, the City Council, may as a condition of approval for any development for which an application is submitted, require that portions of the tract or tracts under consideration be set aside, improved, conveyed or dedicated for the following uses:

A. *Recreational Facilities: The Director, Board, or Council, as the case may be, may require that suitable area for parks or playgrounds be set aside, improved or permanently reserved for the owners, residents, employees or patrons of the development consistent with adopted Park standards and Parks and Recreation Master Plan.*
B. *Open Space Area: Whenever private and/or common open space area is provided, the City shall require that an association of owners or tenants be established which shall adopt such Articles of Incorporation, By-Laws or other appropriate agreement, and shall adopt and impose such Declaration of Covenants and Restrictions on such open space areas and/or common areas that are acceptable to the Development Review Board. Said association shall be formed and continued for the purpose of maintaining such open space area. Such an association, if required, may undertake other functions. It shall be created in such a manner that owners of property shall automatically be members and shall be subject to assessments levied to maintain said open space area for the purposes intended. The period of existence of such association shall be not less than twenty (20) years and it shall continue thereafter and until a majority vote of the members shall terminate it, and the City Council formally votes to accept such termination.*

C. Easements: Easements necessary to the orderly extension of public utilities, and the protection of open space, may be required as a condition of approval. When required, such easements must meet the requirements of the City Attorney prior to recordation.

Response: The applicant acknowledges that the Planning Director and Development Review Board have this authority; however, establishment of recreational facilities or open space areas would be inconsistent with the City's planning for industrial use of this property. The applicant will provide public utility easements to adjoining public streets as necessary, as depicted in the R-series drawing sheets in Exhibit B. This standard is met.

(.06) Nothing in this Code shall prevent the owner of a site that is less than two (2) acres in size from filing an application to rezone and develop the site as a Planned Development. Smaller properties may or may not be suitable for such development, depending upon their particular sizes, shapes, locations, and the nature of the proposed development, but Planned Developments shall be encouraged at any appropriate location.

Response: The subject property is larger than two (2) acres. This standard does not apply.

(.07) Density Transfers. In order to protect significant open space or resource areas, the Development Review Board may authorize the transfer of development densities from one portion of a proposed development to another. Such transfers may go to adjoining properties, provided that those properties are considered to be part of the total development under consideration as a unit.

Response: The applicant is not proposing a density transfer. This standard does not apply.

(.08) Wetland Mitigation and other mitigation for lost or damaged resources. The Development Review Board may, after considering the testimony of experts in the field, allow for the replacement of resource areas with newly created or enhanced resource areas. The Board may specify the ratio of lost to created and/or enhanced areas after making findings based on information in the record. As much as possible, mitigation areas shall replicate the beneficial values of the lost or damaged resource areas.

Response: The subject property contains a significant creek resource and is partially within the Significant Resource Overlay Zone (SROZ). **Development impacts with required 50' resource buffer areas are limited to the required widening of SW Day Road along the property frontage, with on-site plantings in buffer areas to mitigate for those unavoidable impacts.**

[The following statement is not applicable to the Feb'23 Plan.] Development impacts will be limited to outside the identified SROZ riparian corridor, except the proposed creek crossing, for which the applicant has included a Variance request. The application package includes a detailed Significant Resources Impact Report (SRIR) as Exhibit C. The SRIR provides mitigation measures recommended to compensate for the impact of development on the significant natural resources on site, including mitigation ratios that exceed the minimum requirements in the Wilsonville Development Ordinance. Refer to detailed findings in Section 4.139 below.

(.09) Habitat-Friendly Development Practices. To the extent practicable, development and construction activities of any lot shall consider the use of habitat-friendly development practices, which include:

A. Minimizing grading, removal of native vegetation, disturbance and removal of native soils, and impervious area;

B. Minimizing adverse hydrological impacts on water resources, such as using the practices described in Part (a) of Table NR-2 in Section 4.139.03, unless their use is prohibited by an applicable and required state or federal permit, such as a permit required under the federal Clean Water Act, 33 U.S.C. §§1251 et seq., or the federal Safe Drinking Water Act, 42 U.S.C. §§300f et seq., and including conditions or plans required by such permit;

C. Minimizing impacts on wildlife corridors and fish passage, such as by using the practices described in Part (b) of Table NR-2 in Section 4.139.03; and

D. Using the practices described in Part (c) of Table NR-2 in Section 4.139.03.

Response: The proposed site plan uses **a rain garden on the east side** ~~rain gardens on both sides~~ of the resource area of the SROZ to screen and segregate the riparian corridor from the industrial activity area. The proposed rain **garden is** ~~gardens are~~ designed to provide on-site treatment and detention of storm runoff before discharging runoff to the public storm drain system in SW Day Road, thus maintaining the present hydrology of Tapman Creek. Additionally, the proposed landscaping plan includes dense plantings of native species – see in particular the landscaping plans in the L-series sheets in Exhibit B. For these reasons, the proposal complies with the applicable standards.

Section 4.134. Coffee Creek Industrial Design Overlay District

(.01) Purpose. The Coffee Creek Industrial Design Overlay District (Coffee Creek DOD) is an overlay district within the Planned Development Industrial - Regionally Significant Industrial Area (RSIA) Zone Section 4.135.5. The purpose of this Coffee Creek DOD is to implement the Coffee Creek Industrial Area Master Plan (2007) by establishing standards for street design and connectivity, site design and circulation, building form, and building architecture and landscape for all development located within the master plan area. These standards are intended to result in:

A. An industrial district featuring cohesive and high-quality site, landscape, and building design that is well integrated with adjacent streetscapes and other public spaces.

Response: The proposed development features a high-quality industrial building and site designed to meet the needs of a warehousing/distribution and manufacturing tenant seeking to locate in Wilsonville's desirable Coffee Creek Industrial Area. The proposed site plan responds to existing site features/opportunities by orienting the building, access/circulation, and other features to protect and preserve the wetlands and vegetated corridor within the SROZ in the western third of the property, and by sequestering the riparian area behind dense landscaping and rain garden stormwater detention facilities on **its east side** ~~both sides~~ and adjacent to the SW Day Road street frontage.

This site-sensitive approach is consistent with this and other Purpose statements of the Coffee Creek DOD, because it provides a functional facility for the types of employment desired in the District while conserving existing natural site features and integrating them into landscape design to form a densely planted, naturalistic streetscape environment along SW Day Road. For most passers-by, the landscaping and screening will obscure views of the truck maneuvering/dock area and focus attention on the building's office areas, located at the building's northwest corner; however, for the facility's users, importantly including west-bound truck drivers approaching the facility, visibility into the site from its driveway supports destination recognition and way-finding, which contribute to safer and smoother operations on the Addressing Street, SW Day Road.

Importantly, the proposed building form emphasizes two prominent office endcaps that bracket the recessed bay of dock doors. This configuration enables management to monitor site activities with views directly into the dock/circulation area from the office corners. This highly functional layout, desired by users in this industrial class, allows the facility to be quickly recognized from vantage points at the SW Day Road driveway, while being for the most part screened from view from outside the property by the dense landscape plantings adjacent to virtually all of the SW Day Road frontage except the driveway itself.

Pedestrian access, circulation, and points of interest, including relationships to integrated surface water quality treatment features, are integrated into the landscape design along the street edge.

Well-defined walkways provide pedestrian access between the public sidewalk and the building's office entrance. A wayside landscape feature consistent with Coffee Creek industrial standards will be installed west of the Day Road driveway, to establish site recognition and encourage pedestrian activity in the public right of way.

These combined features all contribute to the build-out of the Coffee Creek DOD consistent with this Purpose statement and the others listed below. The Applicant has responded below to all of the applicable standards that apply in the Coffee Creek DOD.

B. A multi-modal transportation network accommodating pedestrian, bicyclists, transit riders, motorists, and freight in the context of a modern light industrial district.

Response: The project, including street and other public works improvements, is designed to meet the transportation network standards for SW Day Road as prescribed in the Wilsonville Light Industrial Pattern Book (see image below). The design plans for proposed improvements are found in the R-series of civil engineering drawings in Exhibit B.

Day Road

Type	Major Arterial
Role in Network	Freight and Bike Route
Design Speed	Under 35 mph
Right-of-Way Easement	110 feet
Curb-to-Curb Width	82 feet
Travel Lanes (number)	4
Travel Lane Width	10-12 feet
Center Turn Lane Width	14 feet
Parking Lane Width	0
Bike Facilities Width	10 feet Buffered Bike Lane
Sidewalk Width	6 feet each side
Planting Strip Width	8 feet

The proposal includes a 6' public sidewalk along the frontage. Within the public right-of-way, a 4.5' planter strip separates the 6' sidewalk from a 7' bike lane, which is then separated by a 6' planter strip and curb adjacent to the paved Day Road street surface. That landscaping is complemented by on-site landscaping islands with dense plantings and pedestrian amenity features, including a pedestrian wayside with a seating area, that will give the Day Road corridor a naturalistic appearance and partially obscure the proposed building. (See R- and L-Series Sheets in Exhibit B.) The applicant notes that this specific design section differs from the Pattern Book – it was provided to the applicant by the City's Engineering Department, to make improvements in SW Day Road be consistent with the design section the City recently approved for SW Garden Acres Road abutting the Black Creek Logistics Center project, a short distance west of the subject property (DB21-0085 et al).

A pedestrian path meeting ADA requirements is proposed east of the driveway, linking the SW Day Road sidewalk and the main building entrance, which is located at the office area in the building's northwest corner. This alignment keeps pedestrian movements as far as possible from the truck tractor-trailer operations that will dominate the central **portion** ~~and western portions~~ of the site, locating the necessary vehicular drive aisle crossing at a safe, visible location outside the central truck maneuvering/dock apron area. Based on the above findings, this standard is met.

C. Preservation of trees and natural features.
Response: The western part of the site contains SROZ areas and wetlands. An SRIR has been prepared that identifies resource boundaries, inventories existing conditions, assesses impacts caused by the proposed development plan, and proposes compensatory mitigation actions to preserve and enhance the site's habitat resource qualities and functions (see Exhibit C). The proposed site plan organizes site access/circulation and locates the building and other features to preserve the Tapman Creek riparian corridor and SROZ resource values~~, including on-site mitigation for the impact of the proposed drive aisle crossing the creek~~. **Note that the SRIR demonstrated the feasibility of on-site mitigation for impacts including the private crossing of Tapman Creek as initially proposed; however, the Feb'23 Plan does not include that creek crossing, so its impacts are much more limited. The planting plan in the Feb'23 Plan provides mitigation plantings exceeding the minimum area ratio (2.5:1) required for its reduced buffer impacts.** This standard is met.

D. Minimization of adverse impacts to adjacent properties from development that detracts from the character and appearance of the area.
Response: The site has industrial zoning and the proposed uses are allowed in the PD-RSIA zone. The proposed development will meet the required buffers and screening, thereby minimizing impacts on adjacent properties, which are in the same (Industrial) Comp Plan designation. This standard is met.

E. Minimization of the off-site visibility of vehicular parking, circulation and loading areas.
Response: Minimization of visibility is provided to the extent feasible based on use and site constraints. Vehicle parking is located on both the north and south sides of the building. The north parking area has 16 parking stalls, the maximum number allowed between the Addressing Street and the building based on the Coffee Creek DOD, and it is screened from the frontage on SW Day Road by site grading and a retaining wall (the parking area will be several feet lower than the abutting roadway as it climbs to the east) and landscape plantings adjacent to SW Day Road. The loading, truck parking and circulation areas are similarly screened by dense plantings adjacent to SW Day Road, with the exception of the driveway itself. This standard is met.

F. Creation of a pleasant and functional industrial district for employees and visitors.
Response: The proposed landscaping, wayside, pedestrian pathway, and parking predominantly on the sides of the building will make this site contribute to creating a pleasant and functional industrial district. This standard is met.

G. A predictable and timely process for reviewing light industrial development applications.
Response: This provision provides procedural guidance for implementation and requires no evidence from the applicant.

(.02) Applicability. The Coffee Creek DOD shall apply to all properties within the Coffee Creek Industrial Area Master Plan as shown in the Regulating Plan (Figure CC-1). The provisions of this section shall apply to:

A. All new building construction.
B. Any exterior modifications to existing, non-residential buildings, subject to Section 4.134 (.03).
C. All development of site improvements including but not limited to new paved parking lots, outdoor storage, display areas, signs, and landscaping.
D. All building expansions greater than 1,250 square feet.

Response: The proposal is for the construction of a new building. This standard applies.

(.03) Exceptions. This section does not apply to the following:
A. Maintenance of the exterior of an existing industrial/employment structure, such as painting to the approved color palette, reroofing, or residing with the same or similar materials.
B. Interior remodeling.
C. Maintenance of existing dwellings and accessory buildings.
D. Maintenance of agricultural buildings.

Response: The proposal does not include any activities subject to these exceptions. This standard does not apply.

(.04) Uses that Are Typically Permitted. The uses permitted shall be governed by Section 4.135.5 (.03).
Response: The proposed use is permitted by Section 4.135.5(.03). See details of compliance in the response to Section 4.135 of this narrative. This standard is met.

(.05) Prohibited Uses. The uses prohibited shall be governed by Section 4.135.5 (.04).
Response: The proposed use is not a prohibited use per Section 4.135.5 (.04). This standard does not apply.

(.06) Overview of Coffee Creek DOD Standards.
A. Section 4.134 (.09) Regulating Plan. The Regulating Plan organizes all existing and future streets, drives, and shared-use paths within the Coffee Creek Industrial Area into a hierarchy of Addressing Streets, Supporting Streets and Through Connections.

B. Section 4.134 (.10) Connectivity Standards.
1. New Supporting Streets and Through Connections are required within the Coffee Creek DOD to meet Connectivity Requirements as shown on Figure CC-4.

Response: SW Day Road is an Addressing Street, and a **Supporting Street** ~~Through Connection~~ corridor is shown on Figure CC-1 adjacent to the subject property. **Initially, the applicant understood** Staff ~~has~~ indicated that, due to constraints of this Required **Supporting Street** ~~Through Connection~~ planned adjacent to BPA property, a **Supporting Street** ~~Through Connection Road~~ **would** ~~will~~ not be required and a pedestrian path/trail connection **would be** ~~is~~ a more appropriate alternative. Because the BPA corridor shifts away from the proposed site, improvements for the trail will not be required as part of this application. This standard has been met.

2. The Street Types specify the cross sections for each of the street and shared-use path types within the Regulating Plan. These cross section specifications apply to both existing and proposed new streets. A range of cross sections for Supporting Streets and Through Connections is permitted and detailed in Figures CC-2 and CC-3.

Response: The project will include dedication and improvements along the property's frontage on SW Day Road to meet Addressing Street requirements. This standard is met.

C. Section 4.134 (.11) Development Standards Table.

1. The Development Standards Table provides an overview of all applicable development standards. The development standards for any given parcel are determined by the existing or future street or shared-use path type on which the parcel fronts, as detailed in Table CC-1.

Response: The development standards Table CC-1 below provides a summary of compliance with the development standards. The responses in the table also highlight those standards for which the applicant is requesting waivers. This standard is met.

2. Areas bounded by new Supporting Streets and Through Connections are designated as Parcels and are required to comply with Development Standards governing site design, building orientation and frontage. The development standards for site design, building façade and landscape design are intended to work in tandem with the street types to create a cohesive and unified public realm.

Response: The subject property is adjacent to (bounded by) an Addressing Street rather than a Supporting Street or a Through Connection, so this application package demonstrates compliance with the appropriate development standards in that context, including waiver requests as needed. Because the subject property is not bounded by a Supporting Street or a Through Connection, this provision is not applicable.

3. Adjustments to Development Standards may be granted by the Planning Director for quantifiable provisions, as noted in Tables CC-1 though CC-4, if the Planning Director finds that the adjusted Development Standard will perform as well as the Development Standard.

Response: When feasible the applicant will meet the development standards. Where site conditions or project requirements do not enable the applicant to meet the standards, the applicant has referenced the Coffee Creek DOD Pattern Book to show how the project will satisfy the purposes of the Coffee Creek Development Standards. This standard is met.

D. Coffee Creek DOD Pattern Book. The Coffee Creek DOD Pattern Book provides supplemental design guidelines, which are intended to allow more flexibility in design than the Development Standards while satisfying the purpose of the Coffee Creek DOD.

Response: When applying for a waiver to a development standard, the applicant has relied on the Coffee Creek DOD Pattern Book's design guidelines to demonstrate how the purposes of the Coffee DOD are satisfied.

(.07) Review Process. Development applications shall follow the application review process described in:

A. Section 4.197 Zone Changes and Amendments.
B. Section 4.198 Comprehensive Plan Changes.
C. Section 4.700 Annexation and Urban Growth Boundary Amendments
D. Section 4.140 Planned Development Regulations.

Response: This narrative addresses applicable provisions of Sections 4.197, 4.700, and 4.140. As no Comprehensive Plan Change has been requested, Section 4.198 has not been addressed. This standard is met.

(.08) Waivers. The Development Review Board may waive standards as listed in Section 4.134 (.11), consistent with the provisions of Section 4.118 (.03).

A. The following standards shall not be waived, unless there is substantial evidence in the whole record to support a finding that the intent and purpose of the standards will be met in alternative ways:

1. Required minimum building height as provided in Section 4.134 (.11) Table CC-4;

2. Parking location and design along addressing streets in Section 4.134 (.11) Table CC-3; and

3. Parcel pedestrian access as listed in Section 4.134 (.11) Table CC-3.

Response: The applicant is not proposing a waiver from building height or parcel pedestrian access requirements. The applicant is proposing waivers with respect to the proposed retaining wall configuration and the utilization of parking between the building and SW Day Road (Addressing Street), supported by substantial evidence (in Section III.D below) that the project meets the intent and purpose of the standards in alternative ways. This provision is satisfied.

B. In addition to meeting the purposes and objectives of Section 4.140, any waivers granted in the Coffee Creek DOD must be found to be consistent with the intent of the Coffee Creek DOD Pattern Book.

Response: When applying for a waiver to a development standard, the applicant has relied on the Coffee Creek DOD Pattern Book's design guidelines to satisfy the purpose of the Coffee DOD. Further discussion is included in Section III.D of this narrative. This standard is met.

(.09) Coffee Creek DOD Regulating Plan, Figure CC-1.

A. Components of the Regulating Plan Map

1. Addressing Streets. Existing and planned streets within the Regulating Plan Area are called Addressing Streets and include Cahalin Road, Day Road, Clutter Street, Grahams Ferry Road, Garden Acres Road, and "Future" Street.

2. Overlay District. Land area identified within the Coffee Creek DOD on Figure CC-1 is subject to additional Connectivity Standards as detailed in Figure CC-4 and Table CC-1.

Response: SW Day Road serves as the Addressing Street for the proposal, which includes proposed construction of street improvements along the property frontage consistent with that designation. Based on the response for Section 4.134 (.10) Connectivity Standards, the subject property is not at a location where additional Connectivity Standards apply.

(.10) Coffee Creek Connectivity Standards

A. Street Types, Figure CC-1. Within the land area bounded by Addressing Streets, connectivity shall be provided through new streets or private drives and shared use paths. The location, alignment, and cross-section of required streets or private drives and shared-use paths is flexible, as long as they comply with spacing and minimum cross section standards. New connections may be one of the following types:

1. Supporting Streets. Supporting Streets are new public streets or public easements. They shall meet the development standards set out in Figure CC-2.

a. A Required Supporting Street is one that intersects with an Addressing Street as shown on Figure CC-1. The exact location and design of these connections will be determined at the time of development review.

b. Planned Intersections are locations where Existing and Planned Addressing Streets intersect with required Supporting Streets, and Planned Pathways, as generally shown in Figure CC-1.

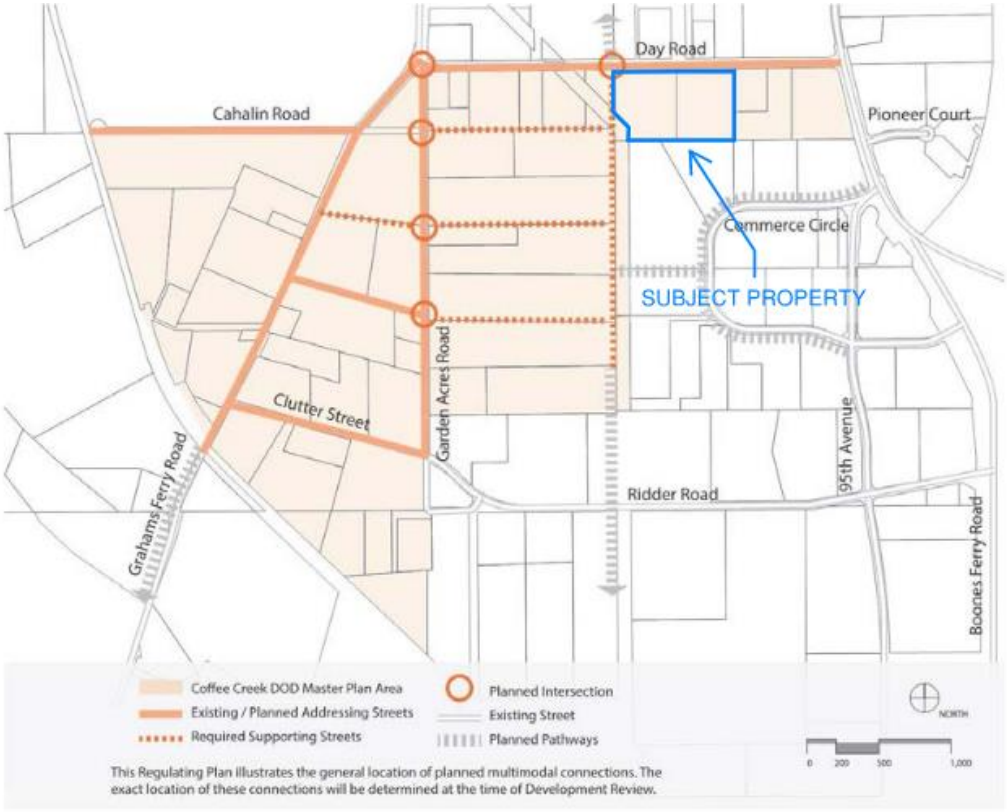


Figure CC-1 - Regulating Plan

2. Through Connections. Through Connections are new public streets or public easements with multi-use paths, or streets or public easements that combine characteristics of streets and multi-use paths. They shall meet the Development Standards set out in Figure CC-3.

Response: The applicant will construct frontage improvements on SW Day Road. Based on response to Section 4.134 (.10) Connectivity Standards and the Subject Property's location, no additional connectivity standards will apply to the development.

B. Planned Pathways are multi-use paths or pedestrian connections that are planned in the Transportation Systems Plan to occur in the location generally shown in Figure CC-1. A Planned Pathway may be employed to meet required connectivity, if it complies with Through Connection Standards for Connection Spacing and Connection Type, see Figure CC-6.

Response: The Subject Property is not at a location where a pathway or other pedestrian connection is planned. No pedestrian connection construction is required (other than street frontage improvements as discussed above).

C. Maximum Connection Spacing.

1. *Addressing Streets. When intersecting with an Addressing Street, new Supporting Streets and Through Connections shall meet maximum spacing standards as set out in Table CC-1.*
2. *Internal Supporting Streets and Through Connections. See Figure CC-4 and Table CC-1.*

Response: Per Figure CC-1, the Subject Property is not at a location where a new Supporting Street or Through Connection is required.

D. Required Connectivity Master Plan. Connectivity Master Plans are required for all development within the Coffee Creek DOD. Development proposals shall show conceptually how the Connectivity Requirements will be met. In addition, the Connectivity Master Plan should generally indicate how parking, driveways, walkways, waysides, etc., will relate or connect to adjacent parcels.

Response: The site plan (Sheet C1.10 of Exhibit B) provides the information required to understand how the proposed development plan meets applicable connectivity requirements. The proposed driveway location is based on extensive analysis of sight distance limitations on the segment of SW Day Road, providing an optimal location that is compatible with future needs for adjacent properties to add driveways to the east and west in the future (see TIA in Exhibit E)**, or a Supporting Street meeting the 1,000-foot minimum spacing requirement along SW Day Road in Table CC-1**.

(.11) Development Standards Table. Areas bounded by Addressing Streets, Supporting Streets and Through Connections shall be designated as a Parcel and subject to the Development Standards in Tables CC-1 through CC-4.

Table CC-1: Street Design and Connectivity			
	Addressing Streets	***Supporting Streets***	***Through Connections***
General	*Development Standards within this table are not adjustable.*		
Connection Spacing	*Not applicable, Addressing Streets exist or are planned*	*600 feet, maximum, centerline to centerline.* *Supporting Streets and Through Connections shall intersect with Garden Acres Road as shown on Figure CC-1, Regulating Plan; or if the Addressing Street is Day Road, no less than 1,000 feet apart, centerline to centerline.*	
Connection Type	*Addressing Streets are Day Road, Grahams Ferry Road, Cahalin Road, Garden Acres Road, Clutter Street, and "Future" Street.*	*Supporting Streets are those meeting Specifications, Figure CC-2.* *A Required Supporting Street is one that intersects with an Addressing Street. The exact location and design of these connections will be determined at the time of development review.*	*Through Connections are those meeting Specifications, Figure CC- 3.* *Through Connections may be multimodal or used exclusively for bicycle and pedestrian access.*
Response: SW Day Road is an Addressing Street. There are no other bounding streets for this site.			

Table CC-1: Street Design and Connectivity			
	Addressing Streets	***Supporting Streets***	***Through Connections***
Connection Hierarchy and Primary Frontage	*If one of the streets or connections bounding a parcel is an Addressing Street, the Addressing Street shall be the Primary Frontage.* *If none of the bounding streets or connections is an Addressing Street, a Supporting Street shall be the Primary Frontage.* *See Figure CC-5.*		
Response: SW Day Road is the primary (and only) frontage and the building façade is oriented towards it.			

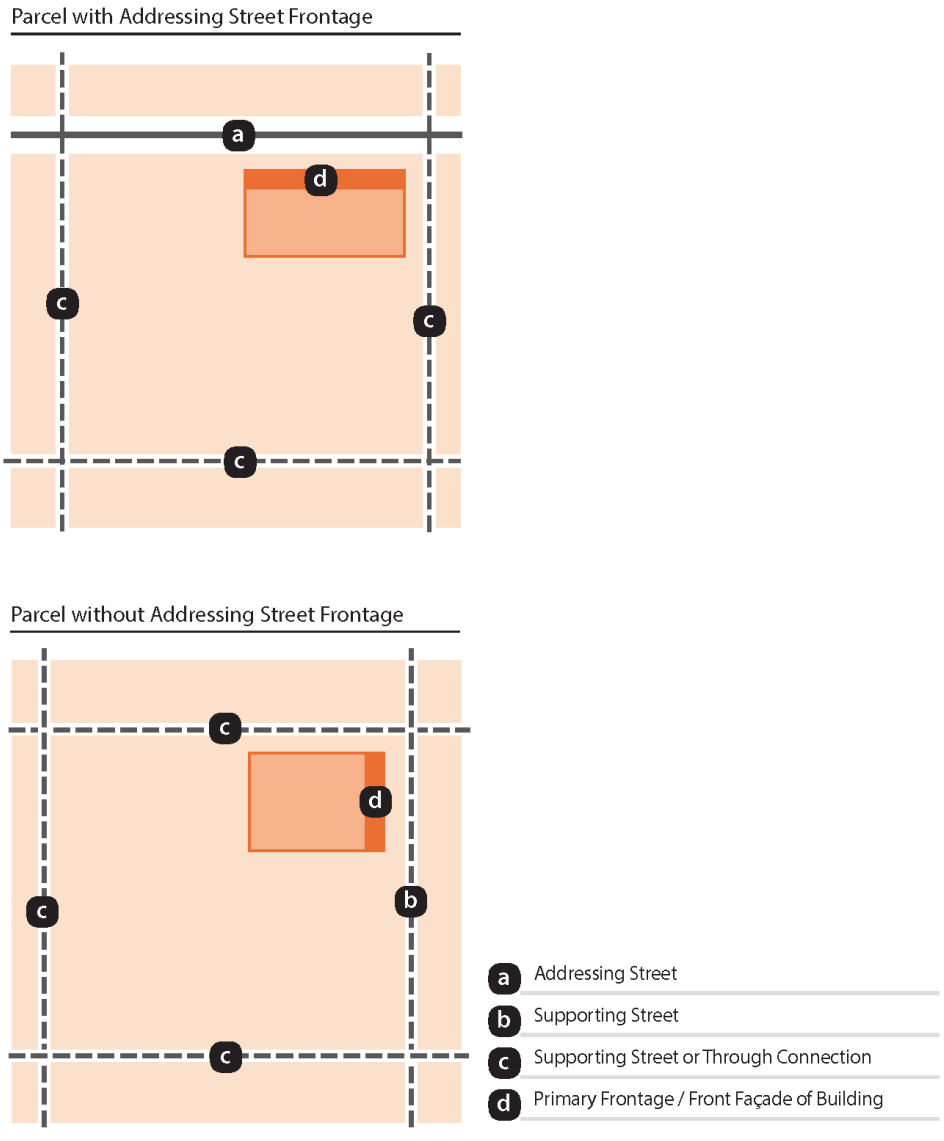


Figure CC-5 - Connection Hierarchy and Primary Frontage

Table CC-2: District-Wide Planning and Landscaping			
	Addressing Streets	***Supporting Streets***	***Through Connections***
General	*The following provisions apply:* • *Section 4.176 for landscaping standards* • *Section 4.610.10 for tree removal, relocation or replacement.* • *Section 4.610.10 (.01) C. for consideration of development alternatives to preserve wooded areas & trees.*		
Response: The project's planting plan satisfies or exceeds the General Standard along the SW Day Road frontage (front property line) and the Low Screen standard at the sides (east and west) and rear (south). Site grading and retaining walls require an alternative approach to the required Low Berm standards, which is discussed below in findings for the Waiver 1 request below. Due to the site's natural slope/grade characteristics, retaining walls are needed at several locations within the finished site, including between the SW Day Road frontage and the north elevation of the building. The Low Berm standard of the Coffee Creek DOD is not feasible due to the grade change requiring the retaining wall; however, the design of the retaining wall and finished grades of the site and building with proposed landscaping will meet the intent of Section 4.176 for Low Berm landscaping. More particularly, the exposed face of the retaining wall faces the interior of the site rather than the public street; from SW Day Road, the landscaping, sunken grade and retaining wall cut off views toward the building and the parking area north of it. (Low berm is 3' berm with groundcover and trees every 30', low screen is 3' evergreen hedge and trees every 30'.) To a limited extent, the earthen berm also helps reduce sound transmission between the street and the parking area. At other locations, the retaining wall and hedge provide a similar function.		

Table CC-3: Site Design			
	Addressing Streets	***Supporting Streets***	***Through Connections***
1. Parcel Access			
General	*Unless noted otherwise below, the following provisions apply:* • *Section 4.177 (.02) for street design;* • *Section 4.177 (.03) to (.10) for sidewalks, bike facilities, pathways, transit improvements, access drives & intersection spacing.* *The following Development Standards are adjustable:* • *Parcel Driveway Spacing: 20%* • *Parcel Driveway Width: 10%*		
Parcel Driveway Access	*Not applicable*	*Limited by connection spacing standards* *Parcel Driveway Access may be employed to meet required connectivity, if it complies with Supporting Street Standards for Connection Spacing and Connection Type, see Figure CC-6.*	*Limited by connection standards for motorized vehicle access.* *Parcel Driveway Access may be employed to meet required connectivity, if it complies with Through Connection Standards for Connection Spacing and*

Table CC-3: Site Design			
	Addressing Streets	***Supporting Streets***	***Through Connections***
		Subject to approval by City Engineer	*Connection Type, see Figure CC-6.* *Subject to approval by City Engineer*
Parcel Driveway Spacing	*Not applicable*	*150 feet, minimum* *See Figure CC-6*	*150 feet, minimum* *See Figure CC-6*
Parcel Driveway Width	*Not applicable*	*24 feet, maximum or complies with Supporting Street Standards*	*24 feet, maximum or complies with Through Connection Standards*
Response: One (1) driveway is proposed on SW Day Road, which is an Addressing Street. A second, internal private parcel access is proposed near the southwest corner of the site, connecting the project site with the adjacent parcel under common ownership – the driveway would circulate through the off-site parcel connecting to Commerce Circle, a local industrial street. Each of the driveways is designed with a location, width, and configuration suitable to accommodate turning movements by all types of vehicles anticipated at this facility, including semi tractor-trailer rigs. See technical information and communications with Wilsonville Engineering staff in Exhibit I regarding the location, design, and controls for the proposed driveway.			
2. Parcel Pedestrian Access			
General	*Unless noted otherwise below, the following provisions apply:* • *Section 4.154 (.01) for separated & direct pedestrian connections between parking, entrances, street right-of-way & open space* • *Section 4.167 (.01) for points of access*		
Parcel Pedestrian Access Spacing	*No restriction*		
Parcel Pedestrian Access Width	*8 feet wide minimum*		
Parcel Pedestrian Access to Transit	*Provide separated & direct pedestrian connections between transit stops and parking, entrances, street right-of-way & open space.*		
Response: A walkway between the public sidewalk and main building entrance at the northwest corner of the building is provided. The routing avoids crossing the main drive aisle (driveway throat) within the site and is located away from the truck maneuvering area. The one needed pedestrian crossing is of the north parking area drive aisle, where circulation is limited to passenger vehicles, with good visibility for safety.			
3. Parcel Frontage			
Parcel Frontage, Defined	*Parcel Frontage shall be defined by the linear distance between centerlines of the perpendicular Supporting Streets and Through-Parcel Connections. Where Parcel Frontage occurs on a curved segment of a street, Parcel Frontage shall be defined as the linear dimension of the Chord.*		

Table CC-3: Site Design			
	Addressing Streets	***Supporting Streets***	***Through Connections***
Primary Frontage, Defined	*The Primary Frontage is the Parcel Frontage on an Addressing Street. If the parcel is not bounded by Addressing Streets, it is the Parcel Frontage on a Supporting Street.* *See Figure CC-5.*		
Parcel Frontage Occupied by a Building	*A minimum of 100 feet of the Primary Frontage shall be occupied by a building.* *The maximum Primary Frontage occupied by a building shall be limited only by required side yard setbacks.*	*No minimum*	
Response: The proposed building is sited with its shorter axis parallel to the Addressing Street in order to maximize site circulation and operations while still providing a strong front façade with the focal point on the northwest corner of the building, visible from the driveway and from the pedestrian path linking to the public sidewalk. The front (primary) façade exceeds 100' and is designed to create a strong visual relationship with SW Day Road (Primary Frontage on the Addressing Street), together with the landscape screening in the foreground. The proposed plan complies with these requirements.			
4. Parking Location and Design			
General	*Unless noted otherwise below, the following provisions apply:* • *Section 4.155 (03) Minimum and Maximum Off-Street Parking Requirements* • *Section 4.155 (04) Bicycle Parking* • *Section 4.155 (06) Carpool and Vanpool Parking Requirements* • *Section 4.176 for Parking Perimeter Screening and Landscaping - permits the parking landscaping and screening standards as multiple options* *The following Development Standards are adjustable:* • *Parking Location and Extent: up to 20 spaces permitted on an Addressing Street*		
Response: A total of fifteen (15) parking stalls is proposed on the north side of the building, between the building and the Addressing Street. Two (2) of those fifteen spaces are ADA-compliant; the remainder are standard. This is fewer than the allowed maximum of 20 between the building and an Addressing Street. The proposal complies with these provisions.			
Parking Location and Extent	*Limited to one double-loaded bay of parking, 16 spaces, maximum, designated for short-term (1 hour or less), visitor, and disabled parking only between right-of-way of Addressing Street and building.*	*Parking is permitted between right-of-way of Supporting Street and building.*	*Parking is permitted between right-of-way of Through Connection and building.*
Response: A total of fifteen (15) parking stalls, including two (2) ADA-compliant stalls, are proposed in the north parking area located between the building and the Addressing Street, near the office area. The stalls are in a single			

Table CC-3: Site Design			
	Addressing Streets	***Supporting Streets***	***Through Connections***
row closest to the building, with an 8-foot walkway to the main entrance of the building. A Waiver request is included to allow more flexibility in the use of the standard spaces, so employees can be allowed to use some of them.			
Parking Setback	*20 feet minimum from the right-of-way of an Addressing Street.*	*15 feet minimum from the right-of-way of a Supporting Street.*	*10 feet minimum from the right-of-way of a Through Connection.*
Response: The project complies because no parking spaces are located within 20' of SW Day Road.			
Parking Lot Sidewalks	*Where off-street parking areas are designed for motor vehicles to overhang beyond curbs, sidewalks adjacent to the curbs shall be increased to a minimum of seven (7) feet in depth.*	*Where off-street parking areas are designed for motor vehicles to overhang beyond curbs, planted areas adjacent to the curbs shall be increased to a minimum of nine (9) feet in depth.*	
Response: Walkways where vehicles may overhang curbs will be at least 7' wide, in compliance with this standard.			
Parking Perimeter Screening and Landscaping	*Screen parking area from view from Addressing Streets and Supporting Streets by means of one or more of the following:* *a. General Landscape Standard, Section 4.176 (.02) C.* *b. Low Berm Standard, Section 4.176 (.02) E., except within 50 feet of a perpendicular Supporting Street or Through Connection as measured from the centerline.*		*Screen parking area from view from Through Connections by means of* *a. Low Screen Landscape Standard, Section 4.176 (.02) D., or* *b. High Screen Landscaping Standard, Section 4.176 (.02) F., or* *c. High Wall Standard, Section 4.176 (.02) G., or* *d. Partially Sight-obscuring Fence Standard, Section 4.176 (.02) I.*
Response: The planting plan is designed to meet or exceed the General Landscape standard, satisfying this requirement. See detailed discussion under Section 4.176.			
Off-Street Loading Berth	*One loading berth is permitted on the front façade of a building facing an Addressing Street. The maximum dimensions for a loading are 16 feet wide and 18 feet tall. A clear space 35 feet, minimum is required in front of the loading berth.*	*No limitation. Shall meet minimum standards in Section 4.155 (.05).*	

Table CC-3: Site Design			
	Addressing Streets	***Supporting Streets***	***Through Connections***
	The floor level of the loading berth shall match the main floor level of the primary building. No elevated loading docks or recessed truck wells are permitted. *Access to a Loading Berth facing an Addressing Street may cross over, but shall not interrupt or alter, a required pedestrian path or sidewalk. All transitions necessary to accommodate changes in grade between access aisles and the loading berth shall be integrated into adjacent site or landscape areas.* *Architectural design of a loading berth on an Addressing Street shall be visually integrated with the scale, materials, colors, and other design elements of the building.*		
Response: No loading berth is proposed for the front façade of the building facing the Addressing Street.			
Carpool and Vanpool Parking	*No limitation*		
5. Grading and Retaining Walls			
General	*The following Development Standards are adjustable:* • *Retaining Wall Design: 20%*		
Maximum height	*Where site topography requires adjustments to natural grades, landscape retaining walls shall be 48 inches tall maximum.* *Where the grade differential is greater than 30 inches, retaining walls may be stepped.*		
Required Materials	*Materials for retaining walls shall be unpainted cast-in-place, exposed-aggregate, or board-formed concrete; brick masonry; stone masonry; or industrial-grade, weathering steel plate.*		
Retaining Wall Design	*Retaining walls longer than 50 linear feet shall introduce a 5-foot, minimum horizontal offset to reduce their apparent mass.*		
Response: The topography of the site necessitates the use of retaining walls in several locations on site in order to create appropriate grades and set the building finish floor elevation as needed for the proposed operation.			

Table CC-3: Site Design			
	Addressing Streets	***Supporting Streets***	***Through Connections***
Waiver request 1 is to allow the proposed configuration and maximum height of the retaining walls, discussed in detail in the Waiver section of this report.			
6. Planting			
General	*Unless noted otherwise below, the following provisions apply:* • *Section 4.176 Landscaping and Screening Standards*		
Landscaping Standards Permitted	*General Landscape Standard, Section 4.176 (.02) C.* *Low Berm Standard, Section 4.176 (.02) E., except within 50 feet of a perpendicular Supporting Street or Through Connection as measured from the centerline*	*General Landscape Standard, Section 4.176 (.02) C. Low Screen Landscape Standard, Section 4.176 (.02) D.* *Screen loading areas with High Screen Landscaping Standard, Section 4.176 (.02) F., and High Wall Standard, Section 4.176 (.02) G.*	
Response: The applicant has prepared Landscaping Plans (see L-series sheets in Exhibit B) that comply with or exceed the General Landscape Standard along the SW Day Road (Addressing Street) frontage.			
7. Location and Screening of Utilities and Services			
General	*Unless noted otherwise below, the following provisions apply:* • *Sections 4.179 and 4.430. Mixed Solid Waste and Recyclables Storage in New Multi-Unit Residential and Non-Residential Buildings*		
Location and Visibility	*Site and building service, equipment, and outdoor storage of garbage, recycling, or landscape maintenance tools and equipment is not permitted*	*Site and building service, utility equipment, and outdoor storage of garbage, recycling, or landscape maintenance tools and equipment is not permitted within the setback*	*No limitation*
Required Screening	*Not permitted*	*High Screen Landscaping Standard, Section 4.176 (.02) F. and/ or High Wall Standard, Section 4.176 (.02) G.*	
Response: A compliant receptacle for garbage and recycling is proposed at the rear of the property, in the southwest corner of the site. The applicant has provided correspondence from Republic Services supporting the proposed configuration (see Exhibit J).			

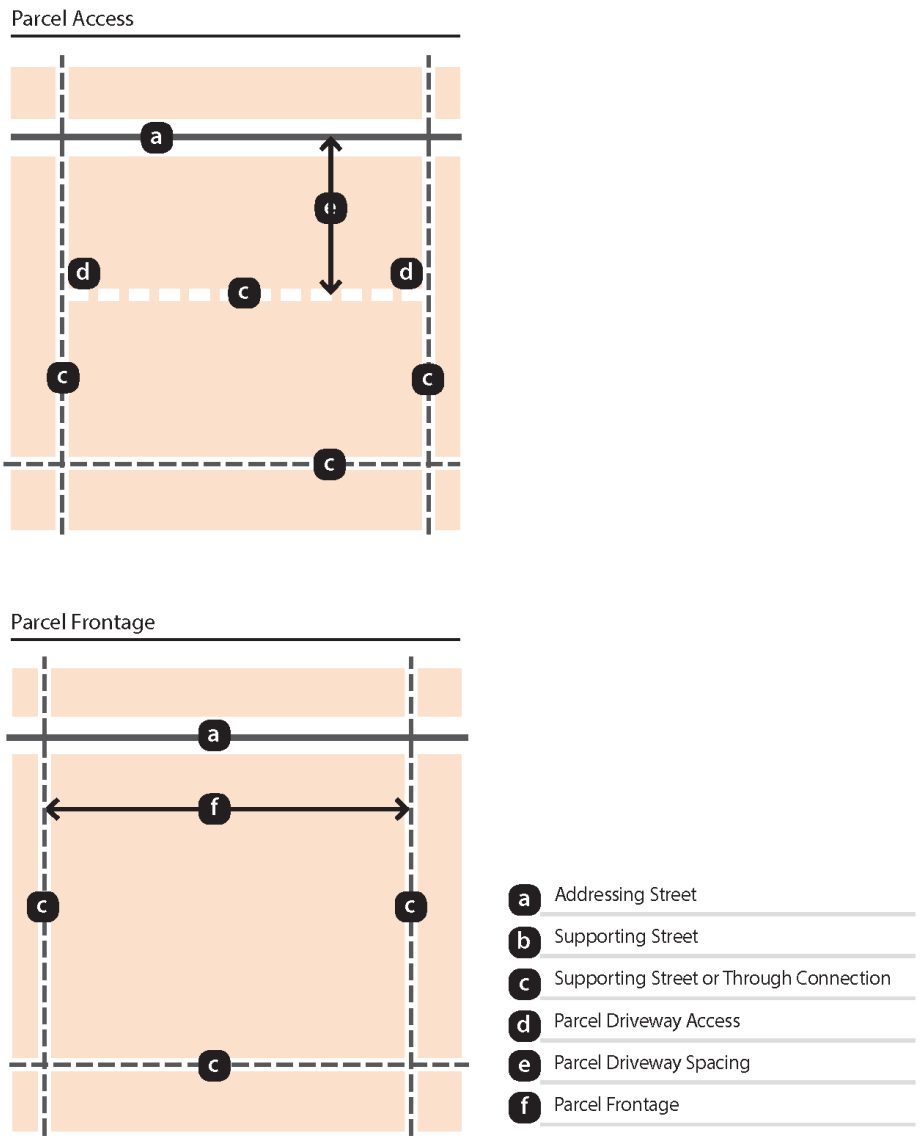


Figure CC-6 - Site Design - Parcel Access

Table CC-4: Building Design			
	Addressing Streets	***Supporting Streets***	***Through Connections***
1. Building Orientation			
Front Façade	*Buildings shall have one designated front façade and two designated side façades.* *If one of the streets or connections bounding a parcel is an Addressing Street, the front façade of the building shall face the Addressing Street.* *If two of the streets or connections bounding a parcel are Addressing Streets, the front façade of the building may face either Addressing Street, except when one of the Addressing Streets is Day Road. In that case, the front façade must face Day Road.*		

Table CC-4: Building Design			
	Addressing Streets	***Supporting Streets***	***Through Connections***
	If none of the bounding streets or connections is an Addressing Street, the front façade of the building shall face a Supporting Street. *See Figure CC-5.*		
Response: The front façade of the building faces north toward the Addressing Street, SW Day Road, with the main office and principal entrance in the northwest corner, close to the driveway and the pedestrian walkway. The building's west façade is where the dock doors are located. The east façade faces an emergency-access corridor between the building and the retaining wall, which will be screened by landscaping. The south wall of the building, which cannot be seen from the public right-of-way, is at a location interior to the block adjacent to other industrial uses. The building's position and orientation are optimized to create a strong visual and functional relationship with SW Day Road, while responding to the site's environmental and regulatory constraints.			
Length of Front Façade	*A minimum of 100 feet of the Primary Frontage shall be occupied by a building.* *The maximum Primary Frontage occupied by a building shall be limited only by required side yard setbacks.*		
Response: The building is sited with its long axis perpendicular to SW Day Road, so the dock doors can face west rather than toward the Addressing Street. The building's north façade (the east-west dimension facing SW Day Road) extends 180', meeting this standard. The proposed building design complies with this requirement.			
Articulation of Front Façade	*Applies to a Front Façade longer than 175 feet that has more than 5,250 square feet of street-facing façade area:* *At least 10% of the street-facing façade of a building facing an Addressing Street must be divided into façade planes that are offset by at least 2 feet from the rest of the façade. Façade area used to meet this standard may be recessed behind, or project out from, the primary façade plane.*		
Response: The front façade of the building complies with this standard because the 5-foot bump-out that emphasizes the office at the northwest building corner extends 40', or 22% of the 180-foot façade length. See architectural plan and elevation drawings, the A series of drawing sheets in Exhibit B. This requirement is met.			
2. Primary Building Entrance			
General	*The following Development Standards are adjustable:* • *Required Canopy: 10%* • *Transparency: 20%*		
Response: The proposed primary entrance is at the northwest office area. The entrance area is designed to meet the required horizontal dimensions for canopy coverage, providing depth of 8' along a 30' length of wall surrounding the main entrance; however, the clear height below the canopy will be 14'9", or 0.25' less than the required 15'. The applicant therefore requests an adjustment to allow an 0.25' reduction from the 15' requirement, which is a reduction of only 1.7%; up to a 10% reduction is allowed by adjustment. With canopy height of 14'9", the proposed entrance design will shelter pedestrians and perform as well as a 15'0" design, and is therefore appropriate for approval with the requested adjustment.			

Table CC-4: Building Design			
	Addressing Streets	***Supporting Streets***	***Through Connections***
Accessible Entrance	*The Primary Building Entrance shall be visible from, and accessible to, an Addressing Street (or a Supporting Street if there is no Addressing Street frontage). A continuous pedestrian pathway shall connect from the sidewalk of an Addressing Street to the Primary Building Entrance with a safe, direct and convenient path of travel that is free from hazards and provides a reasonably smooth and consistent surface consistent with the requirements of Americans with Disabilities Act (ADA).* *The Primary Building Entrance shall be 15 feet wide, minimum and 15 feet tall, minimum.*		
Response: A pedestrian pathway extends from the public sidewalk along SW Day Road to the office endcap on the front façade. This standard is met.			
Location	*150 feet, maximum from right-of-way of an Addressing Street, see Figure CC-7.*	*150 feet, maximum from right-of-way of a Supporting Street, if there is no Addressing Street Frontage, see Figure CC-7.*	
Response: The primary entrance, near the northwest building corner, is located about 70' from the public right-of-way, which complies with this standard.			
Visibility	*Direct line of sight from an Addressing Street to the Primary Building Entrance.*		
Response: The proposed entrance is visible from points along the Day Road frontage, particularly at the pedestrian path connection to the sidewalk and at the driveway.			
Accessibility	*Safe, direct, and convenient path from adjacent public sidewalk.*		
Response: The proposed path provides a direct connection from the sidewalk to the plaza at the main entrance. The path alignment crosses the vehicular drive aisle at a point near the building entrance that is removed from heavy truck movements and has good visibility for pedestrian safety.			
Required Canopy	*Protect the Primary Building Entrance with a canopy with a minimum vertical clearance of 15 feet and an all-weather protection zone that is 8 feet deep, minimum and 15 feet wide, minimum.*		
Response: The office entrance canopy covers the minimum 8' by 15' horizontal area at the main entrance door.			
Transparency	*Walls and doors of the Primary Building Entrance shall be a minimum of 65% transparent.*		
Response: Glazing, including doors, at the office entrance complies with this requirement.			
Lighting	*The interior and exterior of the Primary Building Entrance shall be illuminated to extend the visual connection between the sidewalk and the building interior from day to night. Pathway lighting connecting the Primary Building Entrance to the adjacent sidewalk on an Addressing Street shall be scaled to the needs of the pedestrian.* *Comply with Outdoor Lighting, Section 4.199*		

Table CC-4: Building Design			
	Addressing Streets	***Supporting Streets***	***Through Connections***
Response: The proposed lighting plan is designed to comply with the prescriptive approach, satisfying these requirements. See lighting plan and fixtures data in Exhibit K.			
3. Overall Building Massing			
General	*The following Development Standards are adjustable:* • *Required Minimum Height: 10%* • *Ground Floor Height: 10%* • *Base, Body, and Top Dimensions: 10%* • *Base Design: 10%* • *Top Design: 10%*		
Response: The proposed building is designed to satisfy Building Massing requirements without requiring adjustments, as explained in the following responses to specific standards.			
Front Setback	*30 feet, minimum, except as provided below*	*30 feet maximum*	*30 feet maximum*
Response: The northwest building corner will be located 52' from the front property line (SW Day Road frontage) after dedication of additional right-of-way. The front building setback exceeds the minimum 30' requirement.			
Allowance of Primary Building Entrance	*Where the Primary Building Entrance is located on an Addressing Street it may extend into the required front yard setback by 15 feet maximum provided that:* *a. It has a two-story massing with a minimum height of 24 feet;* *b. The Parcel Frontage on the Addressing Street is limited to 100 feet;* *c. The building extension is 65% transparent, minimum;* *d. The entrance is protected with a weather-protecting canopy with a minimum vertical clearance of 15 feet; and* *e. The standards for site design and accessibility are met.*	*Not applicable*	*Not applicable*
Response: Not applicable; no extension into the minimum front setback is requested.			

Table CC-4: Building Design			
	Addressing Streets	***Supporting Streets***	***Through Connections***
Required Minimum Height	*30 feet minimum.*		
Response: Proposed building height is 40' at the office corner parapet. This standard is met.			
Ground Floor Height	*The Ground Floor height shall measure 15 feet, minimum from finished floor to finished ceiling (or 17.5 feet from finished floor to any exposed structural member).*		
Response: The proposed building does not contain multiple floors and is designed with high overhead clearance for warehousing and industrial use. Ground Floor Height exceeds the 15' minimum requirement. The structure is designed to allow future installation of two (2) interior mezzanines.			
Base, Body, and Top Dimensions	*Buildings elevations shall be composed of a clearly demarcated base, body and top.* *a. For Buildings 30 feet in height (unless lower by adjustment):* *i. The base shall be 30 inches, minimum.* *ii. The body shall be equal to or greater than 75% of the overall height of the building.* *iii. The top of the building shall be 18 inches, minimum.* *b. For Buildings between 30 feet and 5 stories in height:* *i. The base shall be 30 inches, minimum; 2 stories, maximum.* *ii. The body shall be equal to or greater than 75% of the overall height of the building.* *iii. The top of the building shall be 18 inches, minimum.* *c. For Buildings greater than 6 stories in height:* *i. The base shall be 1 story, minimum, 3 stories, maximum.* *ii. The body shall be equal to or greater than 75% of the overall height of the building.* *iii. The top of the building shall be 18 inches, minimum.*		
Response: A combination of reveals, color panelization of the concrete tilt-up walls, and perforated metal panels will visually define the base, body, and top of the building. To add visual interest and reduce the perceived mass of the building, the pattern differs in the two (2) component areas of the façade facing the Addressing Street: the western office area, and the main body of the building to the east of it (see Elevation drawings on Sheet A2.10 in Exhibit B and Perspective Renderings in Exhibit M). The office area projects 5' out from the walls of the main part of the building on both the north and west sides, to emphasize its importance. The top of the office area is defined by a dark cornice cap and a wide color band, and the base is defined by a reveal at the 3-foot level above the plaza walkway; the body is punctuated by the large, cantilevered canopy over the entrance, which also wraps around the corner to the north side of the building. To the west, the color and banding pattern on the main part of the building changes: while the top is defined by the cornice and a narrower contrasting-color stripe, the body is punctuated by a rhythmic series of windows set at second-floor level. A potential future mezzanine is proposed, so these windows will provide light to the interior space as well as add interest to the upper level of the façade, visible from SW Day Road as it climbs to the east. Additional reveals and color treatment break up the large wall surface area to appear as a series of vertical columns defining repeating rectangular patterns. This technique adds visual interest and reduces the perceived scale of the building.		

Table CC-4: Building Design			
	Addressing Streets	***Supporting Streets***	***Through Connections***
In the eastern part of the north building wall, the first-floor level of the building forms the base, accentuated by horizontal white stripes below and above perforated metal panels that project 2" from the concrete wall surface between the columnar dividers. To further reinforce the base, the horizontal striping and perforated panel material appear again west of the main entrance plaza, forming a screen wall within a landscape island. This playfully extends the horizontal characteristic of the building's base while visually helping to conceal the truck docks to the south.			
Base Design	*The design of the building Base shall:* *a. Use a material with a distinctive appearance, easily distinguished from the building Body expressed by a change in material, a change in texture, a change in color or finish;* *b. Create a change in surface position where the Base projects beyond the Body of the building by 1 -1/2 inches, minimum; and/ or* *c. Low Berm Landscape Standard, Section 4.176 (.02) E.*		
Response: The design emphasizes the appearance of the north façade, facing SW Day Road. As noted above, at the office bump-out (a 5-foot horizontal change from the main building wall) a change in color is used to define the building base at the 3-foot level. At points behind the office endcap to the south, the west elevation is dominated by the loading bays, so the strategy is to visually screen and de-emphasize perception of that area rather than call attention to the maneuvering of trucks and trailers. As discussed just above, the north façade's main building wall east of the office bump-out defines the base as the first-floor level, visually defined by horizontal white striping and perforated metal panels that project 2" from the building wall. (See in Exhibit B Keynote 05-13 on Sheet A2.10 and Detail 7 of Sheet A5.10; see materials information in Exhibit N.) A more utilitarian approach is taken on the building's east and south sides, because they are substantially screened from view from any public area, neighboring sites are designated for industrial use, and the combination of retaining walls and tree plantings will substantially screen the building from view on those sides. The only site features at the south are employee parking, trailer parking, and landscaping along the rear property line, and a paved drive aisle making the connection to the Delta Logistics headquarters site to the south.			
Top Design	*Building Tops define the skyline.* *The design of the Building Top shall:* *a. Use a material with a distinctive appearance, easily distinguished from the building Body expressed by a change in material, a change in texture, a change in color or finish; and/ or* *b. Create a change in surface position where the Top projects beyond, or recesses behind, the Body of the building by 1 -1/2 inches, minimum.*		
Response: As discussed above, the proposed panelization and color treatment of the building comply with this standard.			
Required Screening of Roof-mounted Equipment	*Screen roof-mounted equipment with architectural enclosures using the materials and design of the building Body and/ or the building Top. No roof-mounted equipment shall be visible from an Addressing Street or Supporting Street.*		
Response: The parapet wall height will screen rooftop mechanical equipment. The structural design of the roof provides tenants with flexibility to install rooftop mechanical equipment at locations meeting their needs. Specific proposed locations and specifications for such equipment will be incorporated in tenant improvement plans. The			

Table CC-4: Building Design			
	Addressing Streets	***Supporting Streets***	***Through Connections***
height of the parapet wall is designed to effectively screen units from view, based on typical dimensions/sizes of equipment suitable for this type of industrial building.			

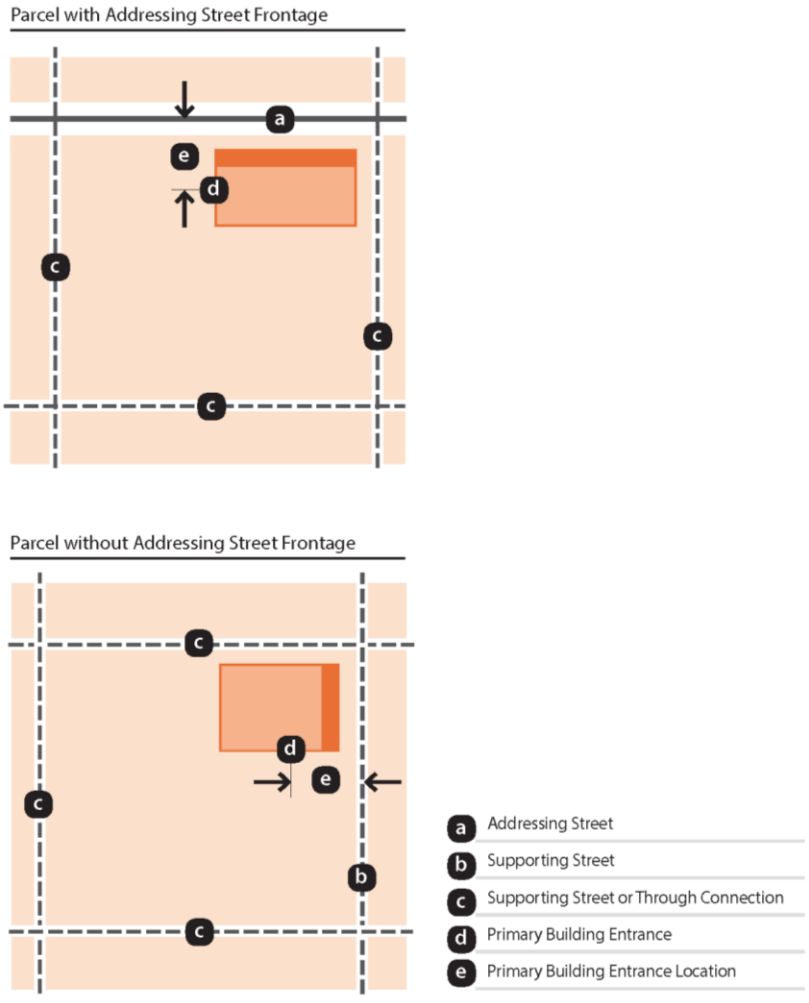


Figure CC-7 - Building Design - Primary Building Entrance

(.12) Waysides.

B. Applicability. All projects in the Coffee Creek Master Plan Area shall provide waysides according to the standards in Table CC-5.

Response: The site is located in the Coffee Creek Master Plan Area. This section applies.

C. General. The following development standards apply to all Waysides:

1. Required Wayside Area is exclusive of required landscape screening.

2. Required Minimum Dimension of 20 feet (either width or depth).

Response: The proposed wayside is exclusive of the required landscape screening (but integrated within it) and has at least one minimum dimension of 20'. Please refer to the detailed description in the response to subsection D.1 immediately below.

D. Criteria. Waysides shall meet the following criteria:

1. Perimeter Landscaping. In addition to the minimum size and dimensions, landscape three sides of the Industrial Wayside to a depth of 20 feet, minimum according to Section 4.176 (.02). Permitted screening includes: Section 4.176 (.02) D. Low Screen Landscaping Standard; Section 4.176 (.02) E. Low Berm Standard; or Section 4.176 (.02) E. High Screen Landscaping Standard. Perimeter landscaping shall not obscure visual access to the Industrial Wayside. Unscreened surface parking lots, chain link fencing, or service yards are prohibited adjacent to Industrial Waysides.

Response: To be integrated with the naturalistic character desired along the Addressing Street, SW Day Road, the industrial wayside is proposed as a curving paved path that diverts from the sidewalk to form a loop with two seating areas within a densely landscape refuge. Located west of the proposed driveway, the Wayside's elevation will be similar to that of the sidewalk, providing for ADA accessibility at both ends of the loop.

The landscape area meets or exceeds a 20-foot perimeter around the path/plaza on its southwest, south, and southeast sides, i.e., everywhere other than the public sidewalk, to which it is adjacent and closely related to provide an inviting configuration.

Illumination will be provided by four (4) bollard fixtures. One (1) bollard is near each end of the loop, and two (2) are more centrally located along the curved path. (See detail on Sheet L1.10 in Exhibit B.) A trash receptacle is proposed between the sidewalk and the bench, on the west side of the path near the staircase.

Based on the submitted materials, the proposal complies with the standards of this section.

2. Visibility. Industrial Waysides shall be visible from and accessible to Addressing Streets.

Response: The Industrial Wayside is directly adjacent to and visible from SW Day Road, which is an Addressing Street.

3. Accessible Pathway. A paved walking surface, width: 5 feet, minimum, meeting ADA standards is required to connect Industrial Wayside with Addressing Street.

Response: As shown on Sheet L1.10, a paved surface meeting the required width connects the Wayside to SW Day Road, an Addressing Street, at both ends of the curving path.

4. Accessible Surface. Industrial Waysides shall have an accessible surface, 100 square feet, minimum; dimensions 10 feet, minimum meeting ADA standards.

Response: As shown on Sheet L1.10, the western seating area within the Wayside plaza is large enough for a 10' by 10' square (100 SF) to fit comfortably within its curving edges.

5. Required Amenities.

a. Seating. Outdoor seating shall be provided. Publicly accessible plazas, courtyards, and pocket parks shall include at least one linear foot of seating per each 40 square feet of plaza, courtyard or pocket park space on site. Outdoor seating shall be in the form of:

1. *Free standing outdoor benches consistent with the standards; or*
2. *Seating incorporated into low walls, berms, or raised planters.*

b. *Landscaping. The landscaping must be planted and maintained according to Section 4.176 (.02) C.*

c. *Lighting.*

d. *Recycling/ Waste Receptacle. Locate waste and recycling stations nearest to the accessible path and away from stormwater facilities.*

Response: As explained above under subparagraph 1 and illustrated on Sheet L1.10, all of the required features have been provided in the proposed Wayside.

6. *Installation and Maintenance. Industrial Waysides shall be programmed, planned, constructed, and maintained at the expense of the applicant. The landscaping must be planted and maintained according to Section 4.176 (.07). Recycling, waste receptacles, and pet waste stations shall be serviced at an acceptable professional interval to prevent being over filled or creating unsanitary or visually messy appearances.*

Response: These provisions establish ongoing performance responsibilities of the property owner. The applicant/owner, operator of Delta Logistics on the neighboring property to the south, does not intend to fall by the Wayside.

7. *Solar Access. Exposure to sunlight. Southern exposure is encouraged. Design facilities to permit direct sunlight to enter the Industrial Wayside and strike the required accessible surface between the hours of 10:00 am and 2:00 pm local time.*

Response: Because the Wayside is located within the central landscape island on the south side of SW Day Road, the plantings that surround and form it must strike a balance between competing objectives: on the one hand, forming a dense, naturalistic screen along SW Day Road; on the other, providing solar access to the Wayside. Responding to this challenging context, the planting plan uses a combination of evergreen and deciduous trees, locating the deciduous specimens around the bench/plaza itself. Additionally, the row of evergreen trees that will form an all-season visual screen between the street and the site is interrupted by substitution of a deciduous tree immediately south of the plaza, which will provide winter-time solar access to the plaza during the mid-day period (10 am to 2 pm). The plaza will therefore enjoy mid-day sunshine on those fall, winter, and spring days when it is not cloudy or rainy, and comfortable shade during the summer.

8. *Lighting. Lighting for Industrial Waysides is required to permit reasonable use, utility, security, and nighttime safety. Lighting installed in Industrial Waysides shall conform to the requirements of Section 4.199. All outside lighting shall be so arranged and shielded so as not to shine into adjacent areas and to prevent any undue glare or reflection and any nuisance, inconvenience, and hazardous interference of any kind on adjoining streets or property.*

Response: As noted above in the response to subparagraph 1, Illumination will be provided by four (4) illuminated bollards spaced along the looping path. One (1) bollard is located near each end, and two (2) are more centrally located.

E. *Optional Amenities include the following:*

1. *Picnic tables and benches. Locate picnic tables and benches on the Accessible Surface;*
2. *Arbors or trellises;*

3. *Drinking Fountains. Locate drinking fountains and benches on the Accessible Surface;*
4. *Sculpture and other works of art;*
5. *Bicycle repair stations;*
6. *Exercise stations; or*
7. *Pet waste stations. Locate pet waste stations nearest to the accessible path and away from stormwater facilities.*

Response: None of the listed optional amenities is proposed.

Table CC-5: Waysides (excerpt)			
Parcel Area	***Required Wayside Area***	***Number of Waysides***	***Enhanced Transit Plaza ‡***
Greater than 8.0 acres, less than or equal to 13.0 acres	*600 square feet, minimum*	*One*	*Not permitted*
Response: The site contains 8.88 acres, so these provisions require one Wayside containing at least 600 SF. The proposed Wayside is designed in the form of a looping detour path on the south side of the SW Day Road frontage's public sidewalk, with two (2) seating areas. The paved surface of the Wayside path/plaza contains approximately 700 SF, which exceeds the minimum 600 SF requirement.			

‡ *In the future when SMART serves Coffee Creek, Industrial Waysides may comply with the standards for Enhanced Transit Plazas, as follows:*

**Up to 400 square feet of the space requirement for Industrial Waysides may be satisfied by installation of an enhanced transit stop. An enhanced transit stop must provide weather protection, paved surface, and seating, as approved by SMART Transit.*

***Up to 800 square feet of the space requirement for Industrial Waysides may be satisfied by installation of an enhanced transit stop, provided parcel fronts on two or more Addressing Streets. An enhanced transit stop must provide weather protection, paved surface, and seating, as approved by SMART Transit.*

****For Parcel Frontage greater than 1,500 feet, and area greater than 51.0 acres, up to fifty percent of the space requirement for Industrial Waysides may be satisfied by restoration of wetlands, riparian zones, or other habitat because of the significant passive recreation opportunities provided.*

(.13) Signs.

A. Applicability. PDI Zone requirements of Section 4.156.01 through 4.156.11 apply to the Coffee Creek DOD with the following modifications and adjustments.

B. General.

1. *Site Frontage as described in Section 4.156.08 is the Primary Frontage.*
2. *Monument-style signs are required. Pole-style freestanding signs are not permitted.*
3. *Maximum area for signs on buildings is based on linear length (in feet) of the façade adjacent to the Primary Frontage.*
4. *Directional and Wayfinding Signs shall be placed at the intersection of Supporting Streets and Through Connections.*

Response: The proposed complement of site signage includes one monument sign, located in the landscape area just east of the driveway, and one wall-mounted sign facing SW Day Road to identify the building tenant, located high on the front (north) building façade near the northwest building corner.

The proposed sign area for the monument sign is up to 64 SF.

The proposed sign area for the wall signs is a total of up to 96 SF, based on the building's 180-foot north façade facing SW Day Road.

Section 4.135.5. Planned Development Industrial – Regionally Significant Industrial Area

(.02) The PDI-RSIA Zone shall be governed by Section 4.140, Planned Development Regulations, and as otherwise set forth in this Code.

Response: Responses to Section 4.140 and other applicable sections of the Code are provided in this narrative. This standard is met.

(.03) Uses that are typically permitted:

A. Wholesale houses, storage units, and warehouses.

C. Assembly of electrical equipment, including the manufacture of small parts.

D. The light manufacturing, simple compounding or processing packaging, assembling and/or treatment of products, cosmetics, drugs, and food products, unless such use is inconsistent with air pollution, excess noise, or water pollution standards.

K. Accessory uses, buildings and structures customarily incidental to any of the aforesaid principal permitted uses.

(remaining items omitted for brevity)

Response: The proposed development is for a flexible-use core-and-shell industrial building and site whose intended uses can be expected to change as its tenancies change over its useful life. The development is suitable for light industrial activities including warehouse and distribution consistent with subparagraph A, assembly and small parts manufacturing consistent with subparagraph C, light manufacturing and related activities consistent with subparagraph D, accessory office space and on-site truck tractor and trailer storage consistent with subparagraph K, and on-site parking for employees and visitors. These uses are consistent with the above list and are therefore allowed uses. The specific initial use of the building will be determined when an initial tenant is identified and Tenant Improvement plans are submitted for construction of interior improvements to suit that particular user. This standard is met.

(.04) Prohibited uses.

A. Retail operations exceeding 3,000 square feet of area for sales, service area or storage area for retail inventory in a single building, or 20,000 square feet of sales, service or storage area for multiple buildings, except training facilities whose primary purpose is to provide training to meet industrial needs.

B. Any use or activity that violates the performance standards specified in Subsection 4.135.5(.06), below.

Response: This application does not include a request to use a portion of the building for retail operations. This application does not request approval for any prohibited use. This standard is met.

(.05) Block and Access Standards. The PDI-RSIA Zone shall be subject to:

A. The same block and access standards as the PDC Zone [Section 4.131(.02) and (.03)] for properties located outside of the Coffee Creek Industrial Design Overlay District; or

B. The access and block size standards in Section 4.134 for those properties located within the Coffee Creek Industrial Design Overlay District.

Response: The subject property is in the Coffee Creek Design Overlay District and therefore subject to the Regulating Plan in Figure CC-1, which identifies Day Road as an "Existing/Planned Addressing Street," and also identifies appropriate corridors for future "Required Supporting Streets." No such Required Supporting Street is identified **within** ~~in or abutting~~ the subject property; therefore, no additional streets are required at this location to satisfy the applicable block and access requirements. This standard is met.

(.06) Performance Standards. The following performance standards apply to all industrial properties and sites within the PDI-RSIA Zone, and are intended to minimize the potential adverse impacts of

industrial activities on the general public and on other land uses or activities. They are not intended to prevent conflicts between different uses or activities that may occur on the same property or site.

A. All uses and operations except storage, off-street parking, loading and unloading shall be confined, contained and conducted wholly within completely enclosed buildings, unless outdoor activities have been approved as part of Stage II, Site Design or Administrative Review.

B. Vibration: Every use shall be so operated that the ground vibration inherently and recurrently generated from equipment other than vehicles is not perceptible without instruments at any boundary line of the property or site on which the use is located.

C. Emission of odorous gases or other odorous matter in quantities detectable at any time and at any point on any boundary line of the property or site on which the use is located are prohibited.

D. Any open storage shall comply with the provisions of Section 4.176 and this Section.

E. No building customarily used for night operation, such as a bakery, bottling and distribution plant or other similar use, shall have any opening, other than stationary windows or required fire exits, within one hundred (100) feet of any residential district and any space used for loading or unloading commercial vehicles in connection with such an operation shall not be within one hundred (100) feet of any residential district.

F. Heat and Glare.

1. Operations producing heat or glare shall be conducted entirely within an enclosed building.

2. Exterior lighting on private property shall be screened, baffled, or otherwise directed away from adjacent residential properties. This is not intended to apply to street lighting.

G. Dangerous Substances: Any use which involves the presence, storage or handling of any explosive, nuclear waste product or any other substance in a manner which would cause a health or safety hazard on any adjacent land use or site shall be prohibited.

H. Liquid and Solid Wastes:

1. Any storage of wastes which would attract rodents or insects or otherwise create a health hazard shall be prohibited.

2. Waste products which are stored outside shall be concealed from view from any property line by a sight-obscuring fence or planting as required by Section 4.176.

3. No connection with any public sewer shall be made or maintained in violation of applicable City or State standards.

4. No wastes conveyed shall be allowed to or permitted, caused to enter, or allowed to flow into any public sewer in violation of applicable City or State standards.

5. All drainage permitted to discharge into a street gutter, caused to enter or allowed to flow into any pond, lake, stream or other natural water course shall be limited to surface waters or waters having similar characteristics as determined by the City, County, and State Department of Environmental Quality.

6. All operations shall be conducted in conformance with the city's standards and ordinances applying to sanitary and storm sewer discharges.

I. Noise: Noise generated by the use, with the exception of traffic uses from automobiles, trucks and trains, shall not violate any applicable standards adopted by the Oregon Department of Environmental Quality and W.C. 6.204 governing noise control in the same or similar locations. [Amended by Ord. 631, 7/16/07]

J. Electrical Disturbances. Except for electrical facilities wherein the City is pre-empted by other governmental entities, electrical disturbances generated by uses within the PDI-RSIA Zone which interfere with the normal operation of equipment or instruments within the

PDI-RSIA Zone are prohibited. Electrical disturbances which routinely cause interference with normal activity in abutting residential uses are also prohibited.

K. Discharge Standards: There shall be no emission of smoke, fallout, fly ash, dust, vapors, gases or other forms of air pollution that may cause a nuisance or injury to human, plant or animal life or to property. Plans for construction and operation shall be subject to the recommendations and regulations of the State Department of Environmental Quality. All measurements of air pollution shall be by the procedures and with equipment approved by the State Department of Environmental Quality or equivalent and acceptable methods of measurement approved by the City. Persons responsible for a suspected source of air pollution upon request of the City shall provide quantitative and qualitative information regarding the discharge that will adequately and accurately describe operation conditions.

L. Open burning is prohibited.

Response: These provisions (A through L) are performance standards with which future tenants will be required to comply in the occupancy and use of the property on an ongoing basis. This application does not include a request for exemption from any of the above standards. Based on the submitted materials, the proposal complies with applicable standards and it will be feasible to maintain compliance over time.

M. Storage.

1. *Outdoor storage must be maintained in an orderly manner at all times.*
2. *Outdoor storage areas shall be gravel surfaced or better and shall be sufficient for the materials being handled and stored. If a gravel surface is not sufficient to meet the performance standards for the use, the area shall be suitably paved.*
3. *Any open storage that would otherwise be visible at the property line shall be concealed from view at the abutting property line by a sight obscuring fence or planting not less than 6' in height.*

Response: These provisions are not applicable because the proposed development does not include any areas designated for use as outdoor storage, with the exception of fleet parking for truck tractor vehicles and semi-trailers. Any future such activity by a tenant will be required to obtain approvals as necessary, and must comply with the above standards.

N. Landscaping.

1. *Unused property, or property designated for expansion or other future use shall be landscaped and maintained as approved by the Development Review Board. Landscaping for unused property disturbed during construction shall include such materials as plantings of ornamental shrubs, lawns, native plants, and mowed, seeded fieldgrass.*
2. *Contiguous unused areas of undisturbed fieldgrass may be maintained in their existing state. Large stands of invasive weeds such as Himalayan blackberry, English ivy, cherry laurel, reed canary grass or other identified invasive species shall be removed and/or mowed at least annually to reduce fire hazard. These unused areas, located with a phased development project or a future expansion cannot be included in the area calculated to meet the landscape requirements for the initial phase(s) of the development.*
3. *Unused property shall not be left with disturbed soils that are subject to siltation and erosion. Any disturbed soil shall be seeded for complete erosion cover germination and shall be subject to applicable erosion control standards.*

Response: These provisions are not applicable because the proposed development does not include any surplus "unused" area or property reserved for future expansion.

(.07) Other Standards.

A. Lot Size:

1. Parcels less than 50 acres in size at the time of adoption of this amended Section: Land divisions may occur in conformance with an approved Master Plan consistent with the requirements of this section. No lot size limit, save and except as shall be consistent with the other provisions of this code.

Response: The site is smaller than 50 acres but no land division is proposed. This provision is not applicable.

2. Parcels 50 acres or greater in size existing on October 25, 2004 may be divided into any number of parcels or lots pursuant to an approved Master Plan provided that at least one lot or parcel of at least 50 acres in size remains. Provided further however, at least forty percent (40%) of the lot or parcel so created has been developed or planned for industrial uses and associated accessory uses and no portion has been developed or planned for the uses listed in Section 4.135.5(03)(I.)(1.) through (3).

Response: The parcel is smaller than 50 acres. This standard does not apply.

3. Uses not subject to the foregoing lot size provisions:

a. Public facilities and services

b. Separation of a lot or parcel in order to protect a natural resource, to provide a public amenity, or to implement a remediation plan for a site identified by DEQ pursuant to ORS 465.225.

c. Separation of a lot or parcel containing a nonconforming use from the remainder of the site in order to improve the utility of the remainder site for the intended industrial uses

d. Separation for the purposes of financing when the new lot or parcel is consistent with the approved Master Plan.

e. Division of lots or parcels consistent with a Master Plan approved by the City prior to July 1, 2004.

Response: The applicant is not proposing any of these uses or seeking approval pursuant to this Section. These provisions do not apply.

B. Maximum Lot Coverage. No limit save and except as shall be consistent with the other provisions of this code.

Response: The proposed site plan satisfies minimum requirements for site landscaping and other factors limiting site coverage.

C. Front Yard Setback. Thirty (30) feet. Structures on corner or through lots shall observe the minimum front yard setback on both streets. Setbacks shall also be maintained from the planned rights-of-way shown on any adopted City street plan.

Response: The proposed building is set back more than 30' from the front property line, which is the SW Day Road frontage.

D. Rear and Side Yard Setback. Thirty (30) feet. Structures on corner or through lots shall observe the minimum rear and side yard setback on both streets. Setbacks shall also be maintained from the planned rights-of-way shown on any adopted City street plan.

Response: The proposed building is set back more than 30' from the side and rear property lines, none of which abuts a planned future street right-of-way in the TSP or Coffee Creek Industrial District Plan.

E. No setback is required when rear or side yards abut a railroad siding.
Response: Not applicable; the property does not abut a railroad siding.

F. Corner Vision. Corner lots shall have no lot obstruction to exceed the vision clearance standards of Section 4.177.
Response: The property is not a corner lot. This standard is not applicable.

G. Off-street Parking and Loading. As required in Section 4.155.
Response: Parking and loading meet minimum requirements; see detailed responses below in Section 4.155.

H. Signs. As required in Sections 4.156.01 through 4.156.11.
Response: The site plan includes a free-standing screen wall within a landscape area west of the main building entrance; its purpose is to visually emphasize and guide visitors to the entrance location while partially visually screening the loading dock area to the south from passers-by on SW Day Road. Please see Sign Permit Type C.

Section 4.140. Planned Development Regulations

(.02) Lot Qualification.

A. Planned Development may be established on lots which are suitable for and of a size to be planned and developed in a manner consistent with the purposes and objectives of Section 4.140.

B. Any site designated for development in the Comprehensive Plan may be developed as a Planned Development, provided that it is zoned "PD." All sites which are greater than two (2) acres in size, and designated in the Comprehensive Plan for commercial, residential, or industrial use shall be developed as Planned Developments, unless approved for other uses permitted by the Development Code. Smaller sites may also be developed through the City's PD procedures, provided that the location, size, lot configuration, topography, open space and natural vegetation of the site warrant such development.

Response: The site exceeds two (2) acres and is designated Industrial in the Comprehensive Plan; it is therefore designated for a planned development. This standard applies.

(.03) Ownership.

A. The tract or tracts of land included in a proposed Planned Development must be in one (1) ownership or control or the subject of a joint application by the owners of all the property included. The holder of a written option to purchase, with written authorization by the owner to make applications, shall be deemed the owner of such land for the purposes of Section 4.140.

B. Unless otherwise provided as a condition for approval of a Planned Development permit, the permittee may divide and transfer units or parcels of any development. The transferee shall use and maintain each such unit or parcel in strict conformance with the approval permit and development plan.

Response: The site is two (2) lots with one (1) owner. This standard is met.

(.04) Professional Design.

A. The applicant for all proposed Planned Developments shall certify that the professional services of the appropriate professionals have been utilized in the planning process for development.

B. Appropriate professionals shall include, but not be limited to the following to provide the elements of the planning process set out in Section 4.139:

1. An architect licensed by the State of Oregon;

2. A landscape architect registered by the State of Oregon;

3. An urban planner holding full membership in the American Institute of Certified Planners, or a professional planner with prior experience representing clients before the Development Review Board, Planning Commission, or City Council; or

4. A registered engineer or a land surveyor licensed by the State of Oregon.

C. One of the professional consultants chosen by the applicant from either 1, 2, or 3, above, shall be designated to be responsible for conferring with the planning staff with respect to the concept and details of the plan.

D. The selection of the professional coordinator of the design team will not limit the owner or the developer in consulting with the planning staff.

Response: The applicant certifies that appropriate professionals have been utilized including Oregon-licensed/registered architects, landscape architects, an AICP planner, and professional engineer. More particularly, the design team leadership includes the following Mackenzie staff:

- Architect/Project Manager: Scott Moore, AIA
- Landscape Architect: Steven Tuttle, PLA
- Planner: Lee Leighton, AICP
- Civil Engineer: Greg Mino, PE

This standard is met.

(.05) Planned Development Permit Process.

A. All parcels of land exceeding two (2) acres in size that are to be used for residential, commercial or industrial development, shall, prior to the issuance of any building permit:

1. Be zoned for planned development;

2. Obtain a planned development permit; and

3. Obtain Development Review Board, or, on appeal, City Council approval.

B. Zone change and amendment to the zoning map are governed by the applicable provisions of the Zoning Sections, inclusive of Section 4.197

C. Development Review Board approval is governed by Sections 4.400 to 4.450

D. All planned developments require a planned development permit. The planned development permit review and approval process consists of the following multiple stages, the last two or three of which can be combined at the request of the applicant:

1. Pre-application conference with Planning Department;

2. Preliminary (Stage I) review by the Development Review Board. When a zone change is necessary, application for such change shall be made simultaneously with an application for preliminary approval to the Board; and

3. Final (Stage II) review by the Development Review Board

4. In the case of a zone change and zone boundary amendment, City Council approval is required to authorize a Stage I preliminary plan.

Response: The site meets the criteria for a planned development, and with this application the applicant is simultaneously applying for a Zone Map Amendment, Stage I and II Planned Development Review, SROZ Review, Site Design Review including Waivers, Variance, Type C Tree Plan Review and Class 3 Sign Permit.

These provisions allow applicants to combine approval requests in this manner. These provisions are satisfied.

(.06) Staff Report:

A. The planning staff shall prepare a report of its findings and conclusions as to whether the use contemplated is consistent with the land use designated on the Comprehensive Plan. If there is a disagreement as to whether the use contemplated is consistent, the applicant, by request, or the staff, may take the preliminary information provided to the Development Review Board for a use interpretation.

B. The applicant may proceed to apply for Stage I - Preliminary Approval - upon determination by either staff or the Development Review Board that the use contemplated is consistent with the Comprehensive Plan.

Response: The applicant is requesting both Stage I and Stage II approvals as part of this application, and requests prompt review of the complete application package.

(.07) Preliminary Approval (Stage One):

A. Applications for preliminary approval for planned developments shall:

1. Be made by the owner of all affected property or the owner's authorized agent; and

2. Be filed on a form prescribed by the City Planning Department and filed with said Department.

3. Set forth the professional coordinator and professional design team as provided in subsection (.04), above.

4. State whether the development will include mixed land uses, and if so, what uses and in what proportions and locations.

Response: This application package includes the required information to meet these evidence requirements.

B. The application shall include conceptual and quantitatively accurate representations of the entire development sufficient to judge the scope, size, and impact of the development on the community; and, in addition to the requirements set forth in Section 4.035, shall be accompanied by the following information:

1. A boundary survey or a certified boundary description by a registered engineer or licensed surveyor.

2. Topographic information as set forth in Section 4.035

3. A tabulation of the land area to be devoted to various uses, and a calculation of the average residential density per net acre.

4. A stage development schedule demonstrating that the developer intends receive Stage II approval within two (2) years of receiving Stage I approval, and to commence construction within two (2) years after the approval of the final development plan, and will proceed diligently to completion; unless a phased development schedule has been approved; in which case adherence to that schedule shall be considered to constitute diligent pursuit of project completion.

5. A commitment by the applicant to provide in the Final Approval (Stage II) a performance bond or other acceptable security for the capital improvements required by the project.

6. If it is proposed that the final development plan will be executed in stages, a schedule thereof shall be provided.

7. Statement of anticipated waivers from any of the applicable site development standards.

Response: This application package meets the criteria listed above. Regarding items 1-3, Civil Engineer Greg Mino supervised the preparation of the C-series and R-series drawing sheets in Exhibit B, which provide the required data. Regarding item 4, the applicant has submitted for concurrent approval of Stage I and Stage II Planned Development requests, together with Site Design Review and related requests, to allow full development of the project in a single phase, to commence within two (2) years following approvals. Regarding item 5, the applicant will provide acceptable form(s) of surety prior to construction of public works elements. Item 6 is not applicable because a single phase of construction is proposed. Regarding item 7, this application package includes requests for two (2) waivers, which are discussed in detail in Section D below.

C. An application for a Stage I approval shall be considered by the Development Review Board as follows:

1. A public hearing as provided in Section 4.013.

2. After such hearing, the Board shall determine whether the proposal conforms to the permit criteria set forth in this Code, and may approve or disapprove the application and the accompanying preliminary development plan or require such changes therein or impose such conditions of approval as are in its judgment, necessary to ensure conformity to said criteria and regulations. In so doing, the Board may, in its discretion, authorize submission of the final development plan in stages, corresponding to different units or elements of the development. It shall do so only upon evidence assuring completion of the entire development in accordance with the preliminary development plan and stage development schedule.

3. A final decision on a complete application and preliminary plan shall be rendered within one hundred and twenty (120) days after the application is deemed complete unless a continuance is agreed upon by the applicant and the appropriate City decision-making body.

4. The determination of the Development Review Board shall become final at the end of the appeal period for the decision, unless appealed to the City Council in accordance with Section 4.022 of this Code.

Response: This provision provides procedural guidance for implementation and requires no evidence within the applicant's narrative.

(.09) Final Approval (Stage Two):

[Note: Outline Number is incorrect.]

A. Unless an extension has been granted by the Development Review Board, within two (2) years after the approval or modified approval of a preliminary development plan (Stage I), the applicant shall file with the City Planning Department a final plan for the entire development or when submission in stages has been authorized pursuant to Section 4.035 for the first unit of the development, a public hearing shall be held on each such application as provided in Section 4.013.

B. After such hearing, the Development Review Board shall determine whether the proposal conforms to the permit criteria set forth in this Code, and shall approve, conditionally approve, or disapprove the application.

C. The final plan shall conform in all major respects with the approved preliminary development plan, and shall include all information included in the preliminary plan plus the following:

1. The location of water, sewerage and drainage facilities;

2. Preliminary building and landscaping plans and elevations, sufficient to indicate the general character of the development;

3. *The general type and location of signs;*
4. *Topographic information as set forth in Section 4.035;*
5. *A map indicating the types and locations of all proposed uses; and*
6. *A grading plan.*

D. *The final plan shall be sufficiently detailed to indicate fully the ultimate operation and appearance of the development or phase of development. However, Site Design Review is a separate and more detailed review of proposed design features, subject to the standards of Section 4.400.*

Response: The applicant is requesting approval of both Stage I and Stage II approval, together with Site Design Review, as part of this application. Accordingly, the final plan provides sufficient information regarding conformance with both the preliminary development plan and Site Design Review. This standard is met.

E. *Copies of legal documents required by the Development Review Board for dedication or reservation of public facilities, or for the creation of a non-profit homeowner's association, shall also be submitted.*

Response: As the applicant is requesting both Stage I and Stage II approvals as part of this application, the Development Review Board has not yet required dedication or reservation of public facilities. The proposed development does not anticipate locating any public utility facilities outside the Day Road public right-of-way, and there is no reason to form a homeowner's association or other entity to support this development. This standard does not apply.

F. *Within thirty (30) days after the filing of the final development plan, the Planning staff shall forward such development plan and the original application to the Tualatin Valley Fire and Rescue District, if applicable, and other agencies involved for review of public improvements, including streets, sewers and drainage. The Development Review Board shall not act on a final development plan until it has first received a report from the agencies or until more than thirty (30) days have elapsed since the plan and application were sent to the agencies, whichever is the shorter period.*

Response: This provision provides procedural guidance for implementation and requires no evidence from the applicant.

G. *Upon receipt of the final development plan, the Development Review Board shall conduct a public hearing and examine such plan and determine:*
1. *Whether it conforms to all applicable criteria and standards; and*
2. *Whether it conforms in all substantial respects to the preliminary approval; or*
3. *Require such changes in the proposed development or impose such conditions of approval as are in its judgment necessary to insure conformity to the applicable criteria and standards.*

H. *If the Development Review Board permits the applicant to revise the plan, it shall be resubmitted as a final development plan within sixty (60) days. If the Board approves, disapproves or grants such permission to resubmit, the decision of the Board shall become final at the end of the appeal period for the decision, unless appealed to the City Council, in accordance with Sections 4.022 of this Code.*

Response: As the applicant is requesting both Stage I and Stage II approvals as part of this application, the final development plan is integrally consistent with the preliminary development plan; therefore, the applicant does not need to revise the final plan to comply with a prior Stage I approval. The applicant's narrative and accompanying plans and reports demonstrate conformance with applicable approval standards for the Planned Development and Site Design Review. This standard is met.

I. All Stage II Site Development plan approvals shall expire two years after their approval date, if substantial development has not occurred on the property prior to that time. Provided, however, that the Development Review Board may extend these expiration times for up to three (3) additional periods of not more than one (1) year each. Applicants seeking time extensions shall make their requests in writing at least thirty (30) days in advance of the expiration date. Requests for time extensions shall only be granted upon (1) a showing that the applicant has in good faith attempted to develop or market the property in the preceding year or that development can be expected to occur within the next year, and (2) payment of any and all Supplemental Street SDCs applicable to the development. Upon such payment, the development shall have vested traffic generation rights under 4.140 (.10), provided however, that if the Stage II approval should expire, the vested right to use trips is terminated upon City repayment, without interest, of Supplemental Street SDCs. For purposes of this Ordinance, "substantial development" is deemed to have occurred if the required building permits or public works permits have been issued for the development, and the development has been diligently pursued, including the completion of all conditions of approval established for the permit. [Amended by Ord 561, adopted 12/15/03.]

Response: The applicant intends to construct the proposed building in one (1) implementation phase promptly after land use approval, and well within the allotted time period. To that end, the applicant is requesting both Stage I and Stage II approvals, together with Site Design Review and other land use requests, as part of this consolidated application. This standard is met.

J. A planned development permit may be granted by the Development Review Board only if it is found that the development conforms to all the following criteria, as well as to the Planned Development Regulations in Section 4.140:

1. The location, design, size and uses, both separately and as a whole, are consistent with the Comprehensive Plan, and with any other applicable plan, development map or Ordinance adopted by the City Council.

Response: The City of Wilsonville has worked for many years to plan and prepare for light industrial development in the Coffee Creek Regionally Significant Industrial Area (RSIA). As documented in the applicant's submitted materials, the proposed development for manufacturing, warehousing and distribution with supporting office areas is consistent with the planned economic uses/activities as well as the forms of development that all of the City's planning work has been designed to foster and support. Significantly, this project will be one of the first few actual development proposals to realize the benefits of the planning work.

2. That the location, design, size and uses are such that traffic generated by the development at the most probable used intersection(s) can be accommodated safely and without congestion in excess of Level of Service D, as defined in the Highway Capacity Manual published by the National Highway Research Board, on existing or immediately planned arterial or collector streets and will, in the case of commercial or industrial developments, avoid traversing local streets. Immediately planned arterial and collector streets are those listed in the City's adopted Capital Improvement Program, for which funding has been approved or committed, and that are scheduled for completion within two years of occupancy of the development or four year if they are an associated crossing, interchange, or approach street improvement to Interstate 5.

a. In determining levels of Service D, the City shall hire a traffic engineer at the applicant's expense who shall prepare a written report containing the

following minimum information for consideration by the Development Review Board:

i. An estimate of the amount of traffic generated by the proposed development, the likely routes of travel of the estimated generated traffic, and the source(s) of information of the estimate of the traffic generated and the likely routes of travel; [Added by Ord. 561, adopted 12/15/03.]

ii. What impact the estimate generated traffic will have on existing level of service including traffic generated by (1) the development itself, (2) all existing developments, (3) Stage II developments approved but not yet built, and (4) all developments that have vested traffic generation rights under section 4.140(.10), through the most probable used intersection(s), including state and county intersections, at the time of peak level of traffic. This analysis shall be conducted for each direction of travel if backup from other intersections will interfere with intersection operations. [Amended by Ord 561, adopted 12/15/03.]

b. The following are exempt from meeting the Level of Service D criteria standard:

i. A planned development or expansion thereof which generates three (3) new p.m. peak hour traffic trips or less;

ii. A planned development or expansion thereof which provides an essential governmental service.

c. Traffic generated by development exempted under this subsection on or after Ordinance No. 463 was enacted shall not be counted in determining levels of service for any future applicant. [Added by Ord 561, adopted 12/15/03.]

d. Exemptions under 'b' of this subsection shall not exempt the development or expansion from payment of system development charges or other applicable regulations. [Added by Ord 561, adopted 12/15/03.]

e. In no case will development be permitted that creates an aggregate level of traffic at LOS "F". ([Added by Ord 561, adopted 12/15/03.]

Response: The City's traffic engineering consulting firm, DKS Associates, prepared a Traffic Impact Study (TIS), included as Exhibit E. The analysis studied five (5) intersections in the vicinity – Site Access/Day Road, Boones Ferry Road/Day Road, Boones Ferry Road/95th Avenue, I-5 Southbound Ramps/Elligsen Road, and I-5 Northbound Ramps/Elligsen Road – and concluded that all will achieve Level of Service (LOS) C with the proposed development, which exceeds the minimum operating standard, LOS D. This standard is met.

3. That the location, design, size and uses are such that the residents or establishments to be accommodated will be adequately served by existing or immediately planned facilities and services.

Response: Currently, SW Day Road extends west to intersect and cross SW Grahams Ferry Road. In the Coffee Creek Light Industrial Pattern Book, the Addressing Street Typology diagram for Day Road includes final curb-to-curb width of 82' within an overall 110-foot right-of-way, containing four (4) travel lanes and a center left turn lane, bike lanes, planting strips and sidewalks. Because the applicant does not control property on the north side of Day Road, the applicant is unable to make a right-of-way dedication except along the subject property south-side frontage. The applicant's design team has worked

closely with City staff to prepare a feasible interim configuration for street improvements in conjunction with the proposed development. The proposed roadway construction is found in the R-series drawing sheets. Construction within the right-of-way will include:

- An approximately 15-foot dedication of public right-of-way to widen the existing 37-foot half right-of-way to 52-feet, consistent with a future overall width of 102+/- feet and the full Major Arterial street design section (see Street Section on Sheet R0.02).
- Saw-cutting to match the existing pavement.
- Construction of widened pavement surface and the southern curb at final line and grade.
- Curbside planter strip.
- Bike lane.
- Planter strip between bike lane and sidewalk.
- Sidewalk.
- Street lights.
- Street signs.

This configuration is designed to provide capacity and safe operations on an interim basis with two (2) travel lanes and no center turn lane until development occurs on property to the north, when matching improvements can be constructed on the north side of the street.

Extensions of public water and storm drainage utilities are included in the applicant's proposed construction plans for the Day Road frontage; however, City Engineering staff has directed the applicant to pay a fee in lieu of immediate construction to contribute to a future public sanitary sewer extension project because there is no existing line close enough to make a service connection at this time. The applicant proposes to construct a private sanitary sewer line connecting south through the commonly owned property to the existing line in SW Commerce Circle.

For all the above reasons, the "*establishments to be accommodated will be adequately served by existing or immediately planned facilities and services*" as required by this standard. This standard is met.

K. Mapping: Whenever a Planned Development permit has been granted, and so long as the permit is in effect, the boundary of the Planned Development shall be indicated on the Zoning Map of the City of Wilsonville as the appropriate "PD" Zone.

Response: This provision provides procedural guidance to staff for implementation and requires no evidence from the applicant.

L. Adherence to Approved Plan and Modification Thereof: The applicant shall agree in writing to be bound, for her/himself and her/his successors in interest, by the conditions prescribed for approval of a development. The approved final plan and stage development schedule shall control the issuance of all building permits and shall restrict the nature, location and design of all uses. Minor changes in an approved preliminary or final development plan may be approved by the Director of Planning if such changes are consistent with the purposes and general character of the development plan. All other modifications, including extension or revision of the stage development schedule, shall be

processed in the same manner as the original application and shall be subject to the same procedural requirements.

Response: The applicant fully intends to comply with the City's approval and intends to sign the necessary agreements. This standard is met.

M. In the event of a failure to comply with the approved plan or any prescribed condition of approval, including failure to comply with the stage development schedule, the Development Review Board may, after notice and hearing, revoke a Planned Development permit. General economic conditions that affect all in a similar manner may be considered as a basis for an extension of a development schedule. The determination of the Board shall become final thirty (30) days after the date of decision unless appealed to the City Council.

Response: This provision provides procedural guidance for implementation and requires no evidence from the applicant. The applicant fully intends to comply with the City's approval.

(.10) Early Vesting of Traffic Generation. Applicants with Stage I or Master Plan approvals occurring after June 2, 2003 may apply to vest the right to use available transportation capacity at the intersections of Wilsonville Road with Boone's Ferry Road and with Town Center Loop West, and/or the I-5 interchange. Vesting for properties with such approvals shall occur upon execution of a vesting agreement satisfactory to the city, which agreement shall include a proposed development schedule or phasing plan and either provide for the payment of any and all Supplemental Street SDCs or provide other means of financing public improvements. Vesting for properties pending such approvals shall occur upon such agreement and the date the approvals are final.

The number of trips vested is subject to modification based upon updated traffic analysis associated with subsequent development approvals for the property. A reduction in vested trips shall attend repayment of vesting fees by the City. An increase in available vested trips shall occur upon payment of necessary vesting fees.

Vesting shall remain valid and run with the property, unless an approval that is necessary for vesting to occur is terminated or a vesting agreement is terminated. If the vested right to use certain trips is lost or terminated, as determined by the Community Development Director with the concurrence of City Council, such trips shall be made available to other development upon City repayment, without interest, of associated vesting fees.

Response: The applicant is not proposing to vest trips or utilize vested trips. This standard does not apply.

C. Significant Resource Overlay Zone (SROZ)

Section 4.139.00 Significant Resource Overlay Zone (SROZ) Ordinance

Definitions:* (excerpts*)

1. Area of Limited Conflicting Uses: An Area of Limited Conflicting Uses is either:

A. An area located between the riparian corridor boundary, riparian impact area or the Urban Growth Management Functional Plan (UGMFP) Metro Title 3 Water Quality Resource Area boundary, whichever is furthest away from the wetland or stream, and the outside edge of the SROZ; or

B. An isolated significant wildlife habitat (upland forest) resource site.

…

4. Encroachment Area: An area within the Area of Limited Conflicting Uses where development may be permitted.

5. Impact Area: The area adjacent to the outer boundary of a Significant Resource within which development or other alteration activities may be permitted through the review of a Significant Resource Impact Report (SRIR) or where an SRIR has been waived in accordance with this ordinance. The impact area is 25 feet wide unless otherwise specified in this ordinance or by the decision making body.

6. Riparian Corridor: Is a Goal 5 resource that includes the water areas, fish habitat, adjacent riparian areas, and wetlands within the riparian area boundary. The "riparian area" is the area adjacent to a river, lake, stream, consisting of lands that include the area of transition from aquatic ecosystem to a terrestrial ecosystem. The Riparian Corridor is diagrammatically defined in Section 4.139.00.

Table NR – 1: Metro Water Quality Resource Area Slope Calculations

Protected Water Feature Type (See definitions)	***Slope Adjacent to Protected Water Feature***	***Starting Point for Measurements from Water Feature***	***Width of Vegetated Corridor (Setback)***
PrimaryProtected Water Features 1	*<25%*	*-Edge of bankful stage or 2-year storm level;* *-Delineated edge of Title 3 wetland*	*50 feet*
Primary Protected Water Features 1	*>25% for 150 feet or more5*	*-Edge of bankful stage or 2-year storm level;* *-Delineated edge of Title 3 wetland*	*200 feet*

Protected Water Feature Type (See definitions)	***Slope Adjacent to Protected Water Feature***	***Starting Point for Measurements from Water Feature***	***Width of Vegetated Corridor (Setback)***
PrimaryProtected Water Features 1	*>25% for less than 150 feet5*	*-Edge of bankful stage or 2-year storm level;* *-Delineated edge of Title 3 wetland*	*Distance from starting point of measurement to top of ravine (break in >25% slope) 3,* *plus 50 feet 4*
Secondary Protected Water Features 2	*<25%*	*-Edge of bankful stage or 2-year storm level;* *-Delineated edge of Title 3 wetland*	*15 feet*
Secondary Protected Water Features 2	*>25%5*	*-Edge of bankful stage or 2-year storm level;* *-Delineated edge of Title 3 wetland*	*50 feet*

1. *Primary Protected Water Features include: all perennial streams and streams draining greater than 100 acres, Title 3 wetlands, natural lakes and spring.*
2. *Secondary Protected Water Features include intermittent streams draining 50-100 acres.*
3. *Where the protected Water Feature is confined by a ravine or gully, the top of ravine is the break in the ≥25% slope*
4. *A maximum reduction of 25 feet may be permitted in the width of vegetated corridor beyond the slope break if a geotechnical report demonstrates that slope is stable. To establish the width of the vegetated corridor, slope should be measured in 25-foot increments away from the water feature until slope is less than 25% (top of ravine).*
5. *Vegetated corridors in excess of 50-feet from primary protected features, or in excess of 15-feet from secondary protected features, apply on steep slopes only in the uphill direction from the protected water feature.*

Section 4.139.01 SROZ - Purpose

The Significant Resource Overlay Zone (SROZ) is intended to be used with any underlying base zone as shown on the City of Wilsonville Zoning Map. The purpose of the Significant Resource Overlay Zone is to implement the goals and policies of the Comprehensive Plan relating to natural resources, open space, environment, flood hazard, and the Willamette River Greenway. In addition, the purposes of these regulations are to achieve compliance with the requirements of the Metro Urban Growth Management Functional Plan (UGMFP) relating to Title 3 Water Quality Resource Areas, and Title 13 Habitat Conservation Areas, and that portion of Statewide Planning Goal 5 relating to significant natural resources.

It is not the intent of this ordinance to prevent development where the impacts to significant resources can be minimized or mitigated. [Amended by Ord. # 674 11/16/09]

Section 4.139.02 <u>Where These Regulations Apply</u>

The regulations of this Section apply to the portion of any lot or development site, which is within a Significant Resource Overlay Zone and its associated "Impact Areas". The text provisions of the Significant Resource Overlay Zone ordinance take precedence over the Significant Resource Overlay Zone maps. The Significant Resource Overlay Zone is described by boundary lines shown on the City of Wilsonville Significant Resource Overlay Zone Map. For the purpose of implementing the provisions of this Section, the Wilsonville Significant Resource Overlay Zone Map is used to determine whether a Significant Resource Impact Report (SRIR) is required. Through the development of an SRIR, a more specific determination can be made of possible impacts on the significant resources.

Unless otherwise exempted by these regulations, any development proposed to be located within the Significant Resource Overlay Zone and/or Impact Area must comply with these regulations. Where the provisions of this Section conflict with other provisions of the City of Wilsonville Planning and Land Development Ordinance, the more restrictive shall apply.

The SROZ represents the area within the outer boundary of all inventoried significant natural resources. The Significant Resource Overlay Zone includes all land identified and protected under Metro's UGMFP Title 3 Water Quality Resource Areas and Title 13 Habitat Conservation Areas, as currently configured, significant wetlands, riparian corridors, and significant wildlife habitat that is inventoried and mapped on the Wilsonville Significant Resource Overlay Zone Map. [Amended by Ord. # 674 11/16/09]

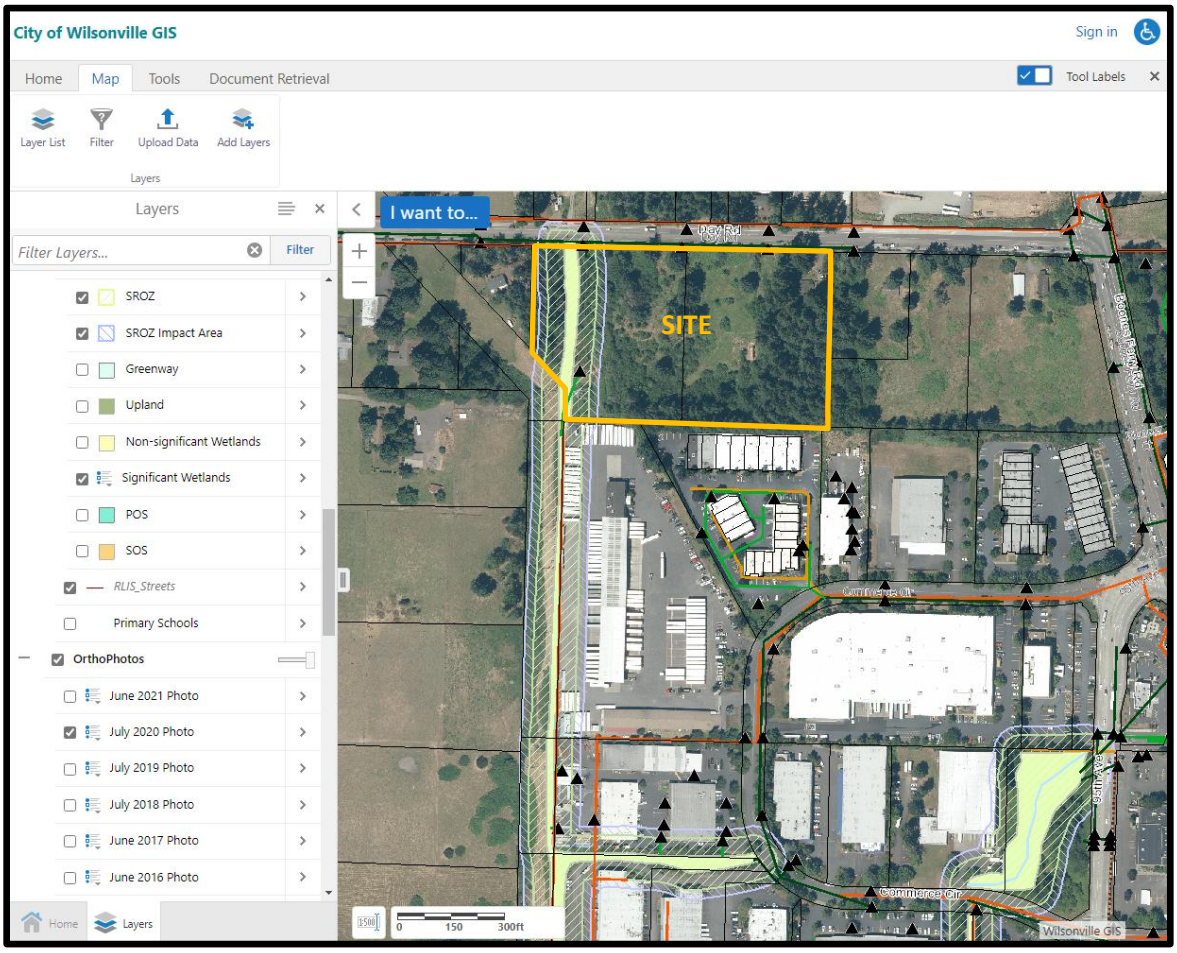
Response: The City's SROZ overlay covers a north-south corridor through the western portion of the site. The SROZ corridor is centered on Tapman Creek, which the City's Geographic Information System (GIS) identifies as a Significant Wetland, but it also roughly corresponds to side-by-side power transmission lines corridors, with a Portland General Electric (PGE) easement on the east and a Bonneville Power Administration (BPA) fee-owned and easement corridor on the west.

No part of the subject property is located within the BPA corridor, and no activities or improvements are proposed within it.

[The following statement is not applicable to the Feb'23 Plan.]
Within the PGE easement, construction will be limited to the proposed internal drive aisle with the existing Delta Logistics site and the crossing of Tapman Creek for access to the semi-tractor storage area to the west (which is outside both power line corridors). The only activity will be movement of trucks and trailers.

The proposed building is located several hundred feet east, far from the SROZ.

Figure III-1. Wilsonville GIS Image – SROZ Boundaries



Based on the presence of the SROZ designation, a Significant Resource Impact Report (SRIR) is required to support specific determinations regarding impacts on significant resources and appropriate mitigation measures. Exhibit C contains that SRIR, including boundary determinations, assessment of conditions, and recommended mitigation actions to compensate for proposed impacts on the riparian corridor and protective buffer boundaries. Therefore, the applicant has provided substantial evidence to support implementation of the SROZ requirements. **The SRIR in Exhibit C demonstrates the feasibility of providing on-site mitigation exceeding a 2.5:1 ratio within the subject property for a substantially larger impact than that of the Feb'23 Plan; it is therefore feasible for the applicant to provide mitigation for the much smaller buffer impact area associated with the Feb'23 Plan (which includes no private crossing of Tapman Creek or private development west of it).**

Section 4.139.03 Administration

(.01) Resources. The text provisions of this section shall be used to determine whether applications may be approved within the Significant Resource Overlay Zone. The following maps and documents may be used as references for identifying areas subject to the requirements of this Section:

- *C. Metro's UGMFP Title 3 Water Quality Resource Area maps.*
- *D. The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM)*
- *E. The Wilsonville Local Wetland Inventory (LWI) (1998)*
- *F. The Wilsonville Riparian Corridor Inventory (RCI) (1998)*
- *G. Locally adopted studies or maps*
- *H. City of Wilsonville slope analysis maps*

I. Clackamas and Washington County soils surveys

J. Metro's UGMFP Title 13 Habitat Conservation Area Map [Added by Ord. # 674 11/16/09]

Response: Exhibit C contains a Natural Resource Assessment Report for the subject property. The report was prepared by Kim Biafora of Schott and Associates, a qualified field biologist. In her field investigations and report, Ms. Biafora uses methodology consistent with the above resource data sources, as well as responding specifically to the requirements of the SROZ Chapter for scientific identification and assessment of resources, and for mitigation recommendations to compensate for proposed impacts on identified resources. The Schott report, being based on site-specific field investigations, represents the best available scientific evidence available for this site; it should therefore be relied upon as the basis for defining riparian corridor boundaries, identifying impacts associated with proposed development, and performing compensatory mitigation actions consistent with the City's SROZ requirements.

(.02) Impact Area. The "Impact Area" is the area adjacent to the outer boundary of a Significant Resource within which development or other alteration activities may be permitted through the review of an SRIR (Significant Resource Impact Report). Where it can be clearly determined by the Planning Director that development is only in the Impact Area and there is no impact to the Significant Resource, development may be permitted without SRIR review. The impact area is 25 feet wide unless otherwise specified in this ordinance or by the decision making body. Designation of an Impact Area is required by Statewide Planning Goal 5. The primary purpose of the Impact Area is to ensure that development does not encroach into the SROZ.

(.03) Significant Resource Impact Report (SRIR). For proposed non-exempt development within the SROZ, the applicant shall submit a Significant Resource Impact Report (SRIR) as part of any application for a development permit.

Response: The SRIR in Exhibit C identifies the riparian corridor and impact areas, and proposes mitigation actions in accordance with the provisions of this Chapter. (In Exhibit C, see Figures 2 and 3, and impact area calculations in Appendix A, following the report.)

(.04) Prohibited Activities. New structures, development and construction activities shall not be permitted within the SROZ if they will negatively impact significant natural resources. Gardens, lawns, application of chemicals, uncontained areas of hazardous materials as defined by DEQ, domestic animal waste, dumping of materials of any kind, or other activities shall not be permitted within the SROZ if they will negatively impact water quality.

Unauthorized land clearing or grading of a site to alter site conditions is not allowed, and may result in the maximum requirement of mitigation/enhancement regardless of pre-existing conditions.

Response: The SRIR in Exhibit C identifies SROZ boundaries and analyzes impacts associated with all features of the proposed development plan, including the proposal to construct a vehicular crossing of Tapman Creek for access to the western upland portion of the property, and proposes compensatory mitigation actions within the property. (In Exhibit C, see Figures 2 and 3, and Appendix A, following the report.) Summarizing from the report's Summary and Conclusions:

(1) No encroachment to onsite wetlands or waters is proposed.
(2) No tree removal is proposed within the SROZ.
(3) Low-to-moderate vegetated corridor/riparian corridor conditions are present at the specific proposed internal vehicular crossing location, as well as along the north property boundary, where the required widening of SW Day Road will impact features.
(4) "The proposed encroachments are not expected to affect the overall functions of the riparian/Vegetated Corridor as the preponderance of the SROZ will remain intact and the elements with existing moderate function will not be affected."

(5) The proposed Mitigation and Enhancement Plan will provide functional uplift to the remaining onsite riparian/Vegetated Corridor. The Plan will enhance 32,863 SF of riparian/Vegetated Corridor and provide benefits that exceed the mitigation recommendations of the SROZ regulation.

As noted above, the SRIR in Exhibit C demonstrates the feasibility of providing on-site mitigation exceeding a 2.5:1 ratio within the subject property for a substantially larger impact than that of the Feb'23 Plan; it is therefore feasible for the applicant to provide mitigation for the much smaller buffer impact area associated with the Feb'23 Plan (which includes no private crossing of Tapman Creek or private development west of it). More particularly, the Feb'23 Plan impacts 1,850 SF of vegetated corridor (50' buffer) area and proposes enhancement of 6,305 SF of riparian/vegetated corridor, with 3,360 SF of riparian forest community and 2,945 SF of riparian shrub community (within the PGE power lines corridor where tree plantings are inappropriate). The Feb'23 Plan's proposed mitigation plantings result in a 3.4:1 mitigation ratio, which exceed the 3.2:1 ratio in the Schott Report's recommendation.

Figure III-2 – Excerpt from Sheet R1.10 (not to scale, emphasis added)

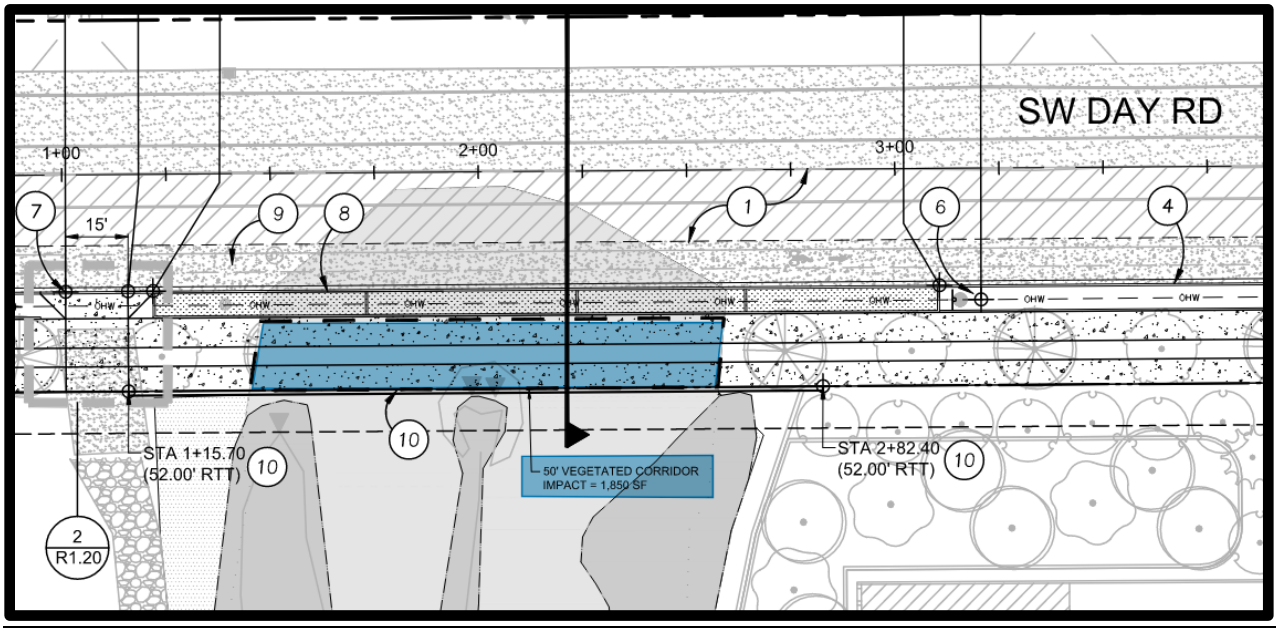


Figure III-3 – Mitigation Plant Schedule from Sheet L0.05 (emphasis added)

MITIGATION PLANT SCHEDULE PER SRIR

RIPARIAN FOREST COMMUNITY: 3,360 SF					
SPECIES	TYPE	MIN SIZE*	SPACING	QTY	TOTAL
OREGON ASH *FRAXINUS LATIFOLIA*	TREE	2-INCH CAL	15 FT OC	11	
SCOULER FTS WILLOW *SALIX SCOULERIANA*	TREE	2 GAL OR BARE ROOT	8 FT OC	31	
WESTERN REDCEDAR *THUJA PLICATA*	TREE	2 GAL OR BARE ROOT	8 FT OC	31	73 TREES
REDOSIER DOGWOOD *CORNUS STOLONIFERA*	SHRUB	1 GAL OR BARE ROOT	5 FT OC CLUSTER	30	
RED ELDERBERRY *SAMBUCUS RACEMOSA*	SHRUB	1 GAL OR BARE ROOT	5 FT OC CLUSTER	30	
SNOWBERRY *SYMPHORICARPOS ALBUS*	SHRUB	1 GAL OR BARE ROOT	5 FT OC CLUSTER	30	
SALMONBERRY *RUBUS SPECTABILIS*	SHRUB	1 GAL OR BARE ROOT	5 FT OC CLUSTER	14	
SWAMP ROSE *ROSA PISOCARPA*	SHRUB	1 GAL OR BARE ROOT	5 FT OC CLUSTER	30	
RIPARIAN SHRUB COMMUNITY : 2,945 SF					
SPECIES	TYPE	MIN SIZE*	SPACING	QTY	
REDOSIER DOGWOOD *CORNUS STOLONIFERA*	SHRUB	1 GAL OR BARE ROOT	5 FT OC CLUSTER	15	
RED ELDERBERRY *SAMBUCUS RACEMOSA*	SHRUB	1 GAL OR BARE ROOT	5 FT OC CLUSTER	30	
SNOWBERRY *SYMPHORICARPOS ALBUS*	SHRUB	1 GAL OR BARE ROOT	5 FT OC CLUSTER	15	
SALMONBERRY *RUBUS SPECTABILIS*	SHRUB	1 GAL OR BARE ROOT	5 FT OC CLUSTER	10	
SWAMP ROSE *ROSA PISOCARPA*	SHRUB	1 GAL OR BARE ROOT	5 FT OC CLUSTER	17	
INDIAN PLUM *OEMLERIA CERASIFORMIS*	SHRUB	1 GAL OR BARE ROOT	5 FT OC CLUSTER	30	251 SHRUBS
PROTIME 402*	HERB	25 LBS PER ACRE		1.7 LBS	

*NATIVE RIPARIAN MIX INCLUDES BLUE WILDRYE (ELYMUS GLAUCUS), MEADOW BARLEY (HORDEUM BRACHYANTHERUM), AND TUFTED HAIRGRASS (DESCHAMPSIA CESPITOSA)

Based on those facts, the proposed development, including the mitigation plan, will not negatively impact significant natural resources. This requirement is met.

(.05) Habitat-Friendly Development Practices. To the extent practicable, development and construction activities that encroach within the Significant Resource Overlay Zone and/or Impact Area shall be designed, located and constructed to:

A. Minimize grading, removal of native vegetation, disturbance and removal of native soils, and impervious area;

B. Minimize adverse hydrological impacts on water resources, such as using the practices described in Part (a) of Table NR-2, unless their use is prohibited by an applicable and required state or federal permit, such as a permit required under the federal Clean Water Act, 33 U.S.C. §§1251 et seq., or the federal Safe Drinking Water Act, 42 U.S.C. §§300f et seq., and including conditions or plans required by such permit;

C. Minimize impacts on wildlife corridors and fish passage, such as by using the practices described in Part (b) of Table NR-2; and

D. Consider using the practices described in Part (c) of Table NR-2. [Section 4.139.03(.05) added by Ord. # 674 11/16/09]

Response: The annotated Table NR-2 below indicates the habitat-friendly development practices the applicant proposes to implement on this project, satisfying this requirement:

Proposed	***Table NR-2: Habitat-Friendly Development Practices***
	Part (A) Design and Construction Practices to Minimize Hydrologic Impacts
Y	*1. Amend disturbed soils to original or higher level of porosity to regain infiltration and stormwater storage capacity.*
	2. Use pervious paving materials for residential driveways, parking lots and walkways.
Y	*3. Incorporate stormwater management in road right-of ways.*
Y	*4. Landscape with rain gardens to provide on-lot detention, filtering of rainwater and groundwater re-charge.*
	5. Use green roofs for runoff reduction, energy savings, improved air quality, and enhanced aesthetics.
Y	*6. Disconnect downspouts from roofs and direct the flow to vegetated infiltration/filtration areas such as rain gardens.*
	7. Retain rooftop runoff in a rain barrel for later on-lot use in lawn and garden watering.
Y	*8. Use multi-functional open drainage systems in lieu of more conventional curb and gutter systems.*
Y	*9. Use bioretention cells as rain gardens in landscaped parking lot islands to reduce runoff volume and filter pollutants.*
	10. Apply a treatment train approach to provide multiple opportunities for storm water treatment and reduce the possibility of system failure.
n/a	*11. Reduce sidewalk width and grade them such that they drain to the front yard of a residential lot or retention area.*
n/a	*12. Reduce impervious impacts of residential driveways by narrowing widths and moving access to the rear of the site.*
n/a	*13. Use shared driveways.*
n/a	*14. Reduce width of residential streets, depending on traffic and parking needs.*
n/a	*15. Reduce street length, primarily in residential areas, by encouraging clustering and using curvilinear designs.*
n/a	*16. Reduce cul-de-sac radii and use pervious vegetated islands in center to minimize impervious effects, and allow them to be utilized for truck maneuvering/loading to reduce need for wide loading areas on site.*
	16. Minimize car spaces and stall dimensions, reduce parking ratios, and use shared parking facilities and structured parking.

	17. Minimize the number of steam crossings and place crossing perpendicular to stream channel, if possible.
	18. Allow narrow street right-of-ways through stream corridors whenever possible to reduce adverse impacts of transportation corridors.
	Part (B) Design and Construction Practices to Minimize Impacts on Wildlife Corridors and Fish Passage
Y	*1. Carefully integrate fencing into the landscape to guide animals toward animal crossings under, over, or around transportation corridors.*
Y	*2. Use bridge crossings rather than culverts, wherever possible.*
Y	*3. If culverts are utilized, install slab, arch or box type culverts, preferably using bottomless designs that more closely mimic stream bottom habitat.*
Y	*4. Design stream crossings for fish passage with shelves and other design features to facilitate terrestrial wildlife passage.*
Y	*5. Extend vegetative cover through the wildlife crossing in the migratory route, along with sheltering areas.*
	Part (C) Miscellaneous Other Habitat Friendly Design and Construction Practices
Y	*1. Use native vegetation throughout the development.*
Y	*2. Locate landscaping adjacent to SROZ.*
Y	*3. Reduce light spill-off into SROZ areas from development.*
Y	*4. Preserve and maintain existing trees and tree canopy coverage, and plant trees, where appropriate, to maximize future tree canopy coverage.*

Section 4.139.04 Uses and Activities Exempt from These Regulations

A request for exemption shall be consistent with the submittal requirements listed under Section 4.139.06(.01)(B – I), as applicable to the exempt use and activity. [detailed provisions omitted for brevity]

(.01) Emergency procedures or emergency activities undertaken which are necessary for the protection of public health, safety, and welfare. Measures to remove or abate hazards and nuisances. Areas within the SROZ that are disturbed because of emergency procedures or activities should be repaired and mitigated.

(.02) Maintenance and repair of buildings, structures, yards, gardens or other activities or uses that were in existence prior to the effective date of these regulations.

(.03) Alterations of buildings or accessory structures which do not increase building coverage.

(.04) The following agricultural activities lawfully in existence as of the effective date of this ordinance:

A. Mowing of hay, grass or grain crops.

B. Tilling, disking, planting, seeding, harvesting and related activities for pasture, tree crops, commercial woodlots, food crops or business crops, provided that no additional lands within the SROZ are converted to these uses after the effective date of this ordinance.

(.05) Operation, maintenance, and repair of irrigation and drainage ditches, constructed ponds, wastewater facilities, stormwater detention or retention facilities, and water facilities consistent with the Stormwater Master Plan or the Comprehensive Plan.

(.06) Maintenance and repair of streets and utility services within rights-of way, easements, access drives or other previously improved areas. [Amended by Ord. 682, 9/9/10]

(.07) Normal and routine maintenance and repair of any public improvement or public recreational area regardless of its location.

(.08) The construction of new roads, pedestrian or bike paths into the SROZ in order to provide access to the sensitive area or across the sensitive area, provided the location of the crossing is consistent with the intent of the Wilsonville Comprehensive Plan. Roads and paths shall be constructed so as to minimize and repair disturbance to existing vegetation and slope stability.

(.09) Maintenance and repair of existing railroad tracks and related improvements.

(.10) The removal of invasive vegetation such as Himalayan Blackberry, English Ivy, Poison Oak, Scots (Scotch) Broom or as defined as invasive in the Metro Native Plant List.

(.11) The planting or propagation of any plant identified as native on the Metro Native Plant List. See Wilsonville Planning Division to obtain a copy of this list.

(.12) Grading for the purpose of enhancing the Significant Resource as approved by the City.

(.13) Enhancement of the riparian corridor or wetlands for water quality or quantity benefits, fish, or wildlife habitat as approved by the City and other appropriate regulatory authorities.

(.14) Flood control activities pursuant to the Stormwater Master Plan, save and except those stormwater facilities subject to Class II Administrative Review, as determined by the Planning Director, to ensure such facilities meet applicable standards under federal, state and local laws, rules and regulations.

(.15) Developments that propose a minor encroachment into the Significant Resource Overlay Zone. The purpose of this adjustment would be to allow for minor encroachments of impervious surfaces such as accessory buildings, eave overhangs, building appurtenances, building access and exiting requirements or other similar feature. The total adjustment shall not exceed 120 square feet in cumulative area.

(.16) The expansion of an existing single family dwelling not exceeding 600 square feet in area. The expansion of an existing single family dwelling or structures that are accessory to a single family dwelling inside the SROZ, provided that the following criteria have been satisfied. An SRIR is not required to evaluate and reach a decision on the issuance of a permit to expand a single-family residence under this paragraph.

A. The expansion of a single family structure or improvement (including decks and patios) shall not be located any closer to the stream or wetland area than the existing structure or improvement; and

B. The coverage of all structures within the SROZ on the subject parcel shall not be increased by more than 600 square feet, based on the coverage in existence prior to the effective date of this ordinance; and,

C. The applicant must obtain the approval of an erosion and sediment control plan from the City's Building and Environmental Services Divisions; and,

D. No part of the expansion is located within the Metro UGMFP Title 3 Water Quality Area.

(.17) New Single-Family Dwelling. The construction of a new single family dwelling is exempt unless the building encroaches into the Impact Area and/or the SROZ.

A. If the proposed building encroaches only into the Impact Area then an abbreviated SRIR may be required as specified in Section 4.139.05, unless it can be clearly determined by the Planning Director that the development proposal will have no impact on the Significant Resource. The primary purpose of the Impact Area is to insure that development does not encroach into the SROZ.

Development otherwise in compliance with the Planning and Land Development Ordinance may be authorized within the Impact Area.

B. If the proposed building encroaches into the SROZ, then a complete or abbreviated SRIR report is required.

(.18) Private or public service connection laterals and service utility extensions.

(.19) A Stage II development permit or other development permits issued by the City and approved prior to the effective date of this ordinance.

(.20) The installation of public streets and utilities specifically mapped within a municipal utility master plan, the Transportation Systems Plan or a capital improvement plan.

(.21) Structures which are non conforming to the standards of this Section may be re-built in the event of damage due to fire or other natural hazard subject to Sections 4.189 – 4.192 of the Planning and Land Development Ordinance, provided that the structure is placed within the same foundation lines (See Figure NR-6.). An SRIR is not required to evaluate and reach a decision on the issuance of a permit to replace a structure subject to this paragraph.

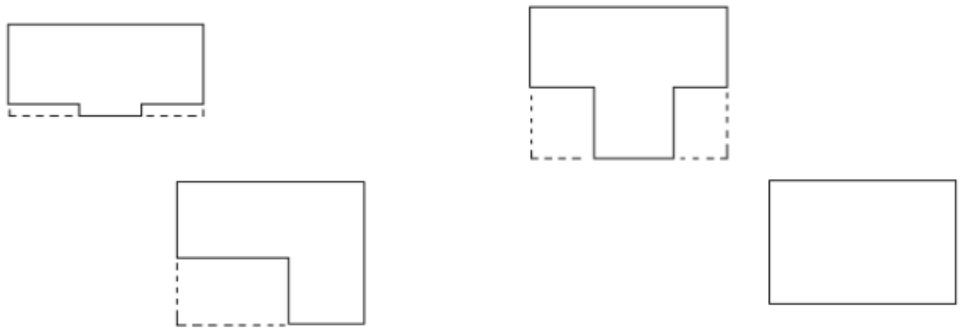


Figure NR-6. Building Line Examples

(.22) Any impacts to resource functions from the above excepted activities, such as gravel construction pads, erosion/sediment control materials or damaged vegetation, shall be mitigated using appropriate repair or restoration/enhancement techniques.

Response: The proposed site development's features are not listed as Exceptions. These provisions are not applicable; however, they are included here because some of them are referenced and discussed in the Variance section below.

Section 4.139.05 <u>Significant Resource Overlay Zone Map Verification</u>

The map verification requirements described in this Section shall be met at the time an applicant requests a building permit, grading permit, tree removal permit, land division approval, or other land use decision. Map verification shall not be used to dispute whether the mapped Significant Resource Overlay Zone

boundary is a significant natural resource. Map refinements are subject to the requirements of Section 4.139.10(.01)(D).

(.01) In order to confirm the location of the Significant Resource Overlay Zone, map verification shall be required or allowed as follows:

A. Development that is proposed to be either in the Significant Resource Overlay Zone or less than 100 feet outside of the boundary of the Significant Resource Overlay Zone, as shown on the Significant Resource Overlay Zone Map.

B. A lot or parcel that:

1. Either contains the Significant Resource Overlay Zone, or any part of which is less than 100 feet outside the boundary of the Significant Resource Overlay Zone, as shown on the Significant Resource Overlay Zone Map; and

2. Is the subject of a land use application for a partition, subdivision, or any land use application that the approval of which would authorize new development on the subject lot or parcel.

(.02) An application for Significant Resource Overlay Zone Map Verification may be submitted even if one is not required pursuant to Section 4.139.05(.01).

(.03) If a lot or parcel or parcel is subject to Section 4.139.05(.01), an application for Significant Resource Overlay Zone Map Verification shall be filed concurrently with the other land use applications referenced in Section 4.139.05(.01)(B)(2) unless a previously approved Significant Resource Overlay Zone Map Verification for the subject property remains valid.

(.04) An applicant for Significant Resource Overlay Zone Map Verification shall use one or more of the following methods to verify the Significant Resource Overlay Zone boundary:

A. The applicant may concur with the accuracy of the Significant Resource Overlay Zone Map of the subject property;

B. The applicant may demonstrate a mapping error was made in the creation of the Significant Resource Overlay Zone Map;

C. The applicant may demonstrate that the subject property was developed lawfully prior to June 7, 2001.

(.05) The Planning Director shall determine the location of any Significant Resource Overlay Zone on the subject property by considering information submitted by the applicant, information collected during any site visit that may be made to the subject property, information generated by Significant Resource Overlay Zone Map Verification that has occurred on adjacent properties, and any other relevant information that has been provided.

(.06) For applications filed pursuant to Section 4.139.05(.04)(A) and (C), a Significant Resource Overlay Zone Map Verification shall be consistent with the submittal requirements listed under Section 4.139.06(.01)(B-H).

(.07) For applications filed pursuant to Section 4.139.05(.04)(B), a Significant Resource Overlay Zone Map Verification shall be consistent with the submittal requirements listed under Section 4.139.06(.02)(D)(1).

Response: Consistent with Goal 5 requirements, the Schott report (see Exhibit C) identifies resource boundaries and associated SROZ Vegetated Corridor/Safe Harbor boundaries based on field investigations to delineate stream and wetland resource boundaries and assessment of conditions. Figure 2 of Exhibit C provides appropriate data for verification of the SROZ Map, and for use in the SRIR and proposed mitigation plan. This requirement is met.

Section 4.139.06 <u>Significant Resource Impact Report (SRIR) and Review Criteria</u>

A Significant Resource Impact Report (SRIR) is a report that delineates specific resource boundaries and analyzes the impacts of development within mapped significant resource areas based upon the requirements of this Section. An SRIR is only required for non-exempt development that is located within the Significant Resource Overlay Zone and/or its associated 25 foot Impact Area.

The Significant Resource Overlay Zone Map identifies areas that have been classified as significant natural resources. The preparation of the Significant Resource Overlay Zone Map did not include specific field observations of every individual property. These maps are designed to be specific enough to determine whether further environmental review of a development proposal is necessary. If any portion of the development or alteration of the land (except those exempted by this Section) is located within the Significant Resource Overlay Zone boundary or the identified Impact Area, then an SRIR is required before any development permit can be issued. Where it can be clearly determined by the Planning Director that development is only in the Impact Area and there is no impact to the Significant Resource, development may be permitted without SRIR review.

The Planning Director may consult with a professional with appropriate expertise to evaluate an applicant's SRIR prepared under this Section or may rely on appropriate staff expertise, in order to properly evaluate the report's conclusions.

(.01) Abbreviated SRIR Requirements. [detailed provisions omitted for brevity]
Response: Review under subparagraph (1) is not requested. This section is not applicable.

(.02) Application Requirements for a Standard SRIR. The following requirements must be prepared and submitted as part of the SRIR evaluation for any development not included in paragraph A above:

A. A Site Development Permit Application must be submitted in compliance with the Planning and Land Development Ordinance.

B. The SRIR shall be conducted and prepared by a natural resource professional knowledgeable and qualified to complete such a report.

C. The qualifications of the person or persons preparing each element of the analysis shall be included with the SRIR.

D. The SRIR shall include the following:

1. Physical Analysis. The analysis shall include, at a minimum:

a. Soil types;

b. Geology;

c. Hydrology of the site;

d. Outline of any existing features including, but not limited to, structures, decks, areas previously disturbed, and existing utility locations;

e. Location of any wetlands or water bodies on the site and the location of the stream centerline and top-of-bank.

f. Within the area proposed to be disturbed, the location, size and species of all trees that are more than six (6) inches DBH. Trees outside the area proposed to be disturbed may be individually shown or shown as drip line with an indication of species type or types;

g. A property survey together with topography shown by contour lines prepared at two-foot vertical intervals. Five-foot vertical intervals may

be allowed for steep sloped areas. The survey shall be prepared by an Oregon Registered Land Surveyor or Civil Engineer.

h. The location of the SROZ and Impact Area boundaries;

i. A minimum of three slope cross-section measurements transecting the site, equally spaced at no more than 100-foot increments. The measurements should be made perpendicular to the stream;

j. A map that delineates the Metro UGMFP Title 3 Water Quality Resource Area boundary (using Metro Title 3 field observed standards);

k. A map that delineates the Goal 5 safe harbor boundary (using the standards found within the Oregon Administrative Rule OAR 660-23(1996));

l. The existing site significant resource conditions shall be determined and identified by a natural resource professional; and

m. Current photos of site conditions shall be provided to supplement the above information.

2. The analysis shall include development recommendations including grading procedures, soil erosion control measures, slope stabilization measures, and methods of mitigating hydrologic impacts. For projects that affect possible wetlands, a copy of the Local Wetland Inventory (LWI) map pertaining to the site shall be provided. Notice of the proposal shall be given to the Oregon Division of State Lands and the Army Corp of Engineers.

3. Ecological Analysis. The Ecological Analysis shall include a map, using the Physical Analysis map as a base, showing the delineated boundaries and coverage of wetlands, riparian corridors, and wildlife habitat resources identified on the site.

a. Wetland boundaries shall be delineated using the method currently accepted by the Oregon Division of State Lands and the US Army Corps of Engineers. Riparian boundaries shall be delineated using the riparian corridor descriptions in this ordinance. Boundaries of mapped Goal 5 wildlife habitat shall be verified by field observation.

b. The analysis shall include an inventory that lists and describes the native and ornamental dominant and sub-dominant groundcover, shrub and tree species occurring on the site and wildlife observed during at least one site visit (specify date). The report shall also include recommended measures for minimizing the adverse impacts of the proposed development on unique and/or significant features of the ecosystem. The analysis shall include a report that discusses the ecological functions and values of the SROZ area, discussing each parameter listed below. The discussion shall be based on actual field observations and data obtained by a natural resource professional.

c. Wetlands (based on evaluation criteria in the Oregon Freshwater Wetlands Assessment Methodology (OFWAM), Oregon Division of State Lands)

i. wildlife habitat diversity

ii. fish habitat

iii. water quality protection

iv. *hydrologic control*

d. *Wildlife Habitat (includes riparian corridors and upland forested areas)1*

i. *wildlife habitat diversity*

ii. *water quality protection*

iii. *ecological integrity*

iv. *connectivity*

v. *uniqueness*

e. *Riparian Corridors* [*Based on criteria developed for the City of Wilsonville by Fishman Environmental Services, in the Natural Resources Inventory and Goal 5/Title 3/ESA Compliance and Protection Plan: Inventory Update, 1999-2000]*
Stream-riparian ecosystems:

i. *Presence and abundance of Large Woody Debris (LWD) in and adjacent to stream*

ii. *Tree/shrub canopy stream shade production (water temperature and aquatic plant growth control)*

iii. *Erosion and sediment control by riparian vegetation*

iv. *Water quality protection by riparian vegetation*

v. *River-floodplain ecosystem (Willamette River)*

vi. *Presence of functional floodplain (inundated annually)*

vii. *Type and condition of functional floodplain vegetation*

viii. *Use of river-floodplain by ESA-listed species*

ix. *Role as wildlife corridor connecting significant wildlife habitat areas*

4. *Mitigation and Enhancement Proposal. The applicant must propose a Significant Resource mitigation and enhancement plan as part of the SRIR. The mitigation and enhancement shall increase the natural values and quality of the remaining Significant Resource lands located on the site or other location as approved by the City. The mitigation and enhancement proposal shall conform to the mitigation standards identified in this Section.*

5. *Waiver of Documentation: The Planning Director may waive the requirement that an SRIR be prepared where the required information has already been made available to the City, or may waive certain provisions where the Director determines that the information is not necessary to review the application. Such waivers may be appropriate for small-scale developments and shall be processed under Administrative Review. Where such waivers are granted by the Planning Director, the Director shall clearly indicate the reasons for doing so in the record, citing the relevant information relied upon in reaching the decision.*

Response: The Natural Resource Assessment Report (see Exhibit C) responds specifically to this Section and contains all the required elements specified above. These submittal standards are met.

(.03) SRIR Review Criteria. In addition to the normal Site Development Permit Application requirements as stated in the Planning and Land Development Ordinance, the following standards shall apply to

the issuance of permits requiring an SRIR. The SRIR must demonstrate how these standards are met in a manner that meets the purposes of this Section.

A. Except as specifically authorized by this code, development shall be permitted only within the Area of Limited Conflicting Use (see definition) found within the SROZ;

4.139.00.1. Area of Limited Conflicting Uses: An Area of Limited Conflicting Uses is either:

A. An area located between the riparian corridor boundary, riparian impact area or the Urban Growth Management Functional Plan (UGMFP) Metro Title 3 Water Quality Resource Area boundary, whichever is furthest away from the wetland or stream, and the outside edge of the SROZ; or

B. An isolated significant wildlife habitat (upland forest) resource site.

Response: Appendix A of Exhibit C contains a site plan on which impact areas are identified, including impact area calculations. Impacts are associated with (1) required widening of Day Road, (2) proposed improvements including surface stormwater management facilities adjacent to the required 50' buffer (vegetated corridor) on both sides of Tapman Creek, and (3) the proposed driveway access from the subject property to the abutting site to the south, which is also owned by the applicant, and the vehicular crossing of Tapman Creek. The first two forms of development are allowed by provisions of the code. **In the Feb'23 Plan, the proposed vehicular crossing of Tapman Creek has been deleted, and the north-south drive aisle to the existing Delta Logistics headquarters site has been narrowed to a 26' paved width and shifted to the east as far as practicable, so it is located entirely within only the Impact Area and fully outside the minimum 50' vegetated corridor around the wetland resource. The Feb'23 Plan therefore complies with this provision, and Variance approval is not necessary.**

[The following statement is not applicable to the Feb'23 Plan.]
The third feature, which is unique to this applicant and property situation, is the subject of an accompanying Variance request. With approval of the requested Variance, the proposed access configuration will be authorized in accordance with code provisions.

B. Except as specifically authorized by this code, no development is permitted within Metro's Urban Growth Management Functional Plan Title 3 Water Quality Resource Areas boundary;

Response: As noted above, in the Feb'23 Plan, the proposed driveway access from the subject property to the abutting site to the south has been narrowed to a 26' paved width and shifted to the east, so it can be constructed in the Impact Area and fully outside the minimum 50' vegetated corridor. This requirement is met.

[The following statement is not applicable to the Feb'23 Plan.]
As noted above, the proposed driveway access from the subject property to the abutting site to the south and the vehicular crossing of Tapman Creek are the subject of an accompanying Variance request. With approval of the requested Variance, the proposed access configuration will be authorized in accordance with code provisions.

C. No more than five (5) percent of the Area of Limited Conflicting Use (see definition) located on a property may be impacted by a development proposal. On properties that are large enough to include Areas of Limited Conflicting Use on both sides of a waterway, no more than five (5) percent of the Area of Limited Conflicting Use on each side of the riparian corridor may be impacted by a development proposal. This condition is cumulative to any successive development proposals on the subject property such that the total impact on the property shall not exceed five (5) percent;

Response: <u>Required widening of SW Day Road to meet the Arterial development standard affects 1,850 SF of land within the 50' vegetated corridor around Tapman Creek and the associated wetland feature. Mitigation for that impact is included in the Feb'23 Plan's proposed mitigation plan. The private site development features of the Feb'23 Plan are all located partially within the Impact Area but fully outside the 50' vegetated corridor. This standard is met.</u>

[The following statement is not applicable to the Feb'23 Plan.]
The principal feature to be located within the Area of Limited Conflicting Use (ALCU) is a water quality treatment/detention facility, consistent with Low-Impact Development guidelines. Situated between the trailer storage area and the protected SROZ riparian corridor, it will further isolate and protect the riparian corridor. The other development feature within the ALCU is limited paving for the southern cross-site access and the crossing of Tapman Creek to allow the property owner to access and use the western upland part of the property, located outside the SROZ. The combined area impacts of those features will exceed 5 percent of the Area of Conflicting Use. Please refer to the Variance section below for further discussion of those aspects of the proposal.

D. Mitigation of the area to be impacted shall be consistent with Section 4.139.06 of this code and shall occur in accordance with the provisions of this Section;

Response: The applicant has presented a detailed SRIR that includes the following specific mitigation recommendations:

- A total of 134 trees and 1,643 shrubs are proposed to be planted. Bare ground shall be planted or seeded with native grasses or herbs
- Trees will be planted at the higher end of the required density (8 feet on center) outside the ROW to compensate for the lack of tree planting within the utility ROW.
- The proposed mitigation plan far exceeds the planting numbers prescribed by 4.139.06(.02)(E)(1)(b) and results in a mitigation ratio of 3.2:1, exceeding the ratio prescribed by Table NR-4.

The SRIR notes that, "while the overall area of the riparian/Vegetated Corridor will be smaller, wildlife habitat, ecological integrity, and water quality protection functions will substantially improve through removal of widespread invasive species and establishment of native forest and shrub communities." The report concludes that "[t]he Mitigation and Enhancement Plan provides functional uplift to the remaining onsite riparian/Vegetated Corridor. The Plan will enhance 32,863 sq. ft. of riparian/Vegetated Corridor and provide benefits that exceed the mitigation recommendations of the SROZ regulation." Therefore, the mitigation plan presented by the applicant satisfies this requirement.

<u>The SRIR was based on the applicant's original proposal, including semi-tractor storage in the western part of the property and a private drive aisle crossing Tapman Creek to provide access to it. Those features are not included in the Feb'23 Plan, which also narrows and shifts the alignment of the north-south drive aisle to be completely outside the 50' vegetated corridor. As a result, the only impact on the 50' vegetated corridor is caused by the required widening of SW Day Road to meet the City's Arterial design standard, and the impact area is reduced to 1,850 SF. (See Sheet R1.10 in Exhibit B.) Mitigation for that impact is proposed to include planting of 73 trees and 251 shrubs, distributed between the riparian forest and the riparian shrub community planting areas, with total square footage of 6,305 SF of mitigation area – a ratio of 3.4:1, exceeding the required 2.5:1 ratio requirement as well as the 3.2:1 ratio in the SRIR recommendation. The proposed mitigation is therefore in compliance with the applicable standard and consistent with the SRIR, although the actual impact area and associated mitigation area have been substantially reduced relative to the initial proposal.</u>

E. The impact on the Significant Resource is minimized by limiting the degree or magnitude of the action, by using appropriate technology or by taking affirmative steps to avoid, reduce or mitigate impacts;

Response: The proposed development plan respects the significant resource by locating the building in the eastern part of the site, and all improvements are consistent with the property's Industrial Comprehensive Plan designation in the upland portions of the property, outside the vegetated corridor surrounding the resource. **The proposed site improvements to achieve vehicular access across the south property boundary (to and from property also owned and operated by the applicant) will use a 26' pavement width located outside the 50' vegetated corridor. The access design is consistent with the minimum width necessary for managed internal circulation, including queueing of trucks and one-way movement at a time. These design and construction techniques keep paving and vehicle movements outside the riparian corridor. As noted above in the response to subparagraph D, the proposed mitigation plan (for resource impacts caused by required widening of SW Day Road) exceeds the requirements set out in Table NR-4; therefore, the proposal complies with this requirement.**

[The following statement is not applicable to the Feb'23 Plan.]
The proposed site improvements to achieve vehicular access across the south property boundary (to and from property also owned and operated by the applicant), and to cross Tapman Creek to access and use the suitable upland area west of the SROZ, will use narrow pavement widths (consistent with the minimum width for two-way circulation) and an open-bottom bridge, box culvert or similar technology for the stream crossing. These design and construction techniques will minimize the degree to which the riparian corridor is impacted. As noted above in the response to subparagraph D, the proposed mitigation plan exceeds the requirements set out in Table NR-4; therefore, the proposal complies with this requirement.

F. The impacts to the Significant Resources will be rectified by restoring, rehabilitating, or creating enhanced resource values within the "replacement area" (see definitions) on the site or, where mitigation is not practical on-site, mitigation may occur in another location approved by the City;

Response: The SRIR in Exhibit C proposes the actions listed above in the response to subparagraph D for implementation within the subject property, enhancing the habitat value of the Tapman Creek riparian corridor rather than an off-site location. As noted in the SRIR, the resulting mitigation will "provide benefits that exceed the mitigation recommendations of the SROZ regulation" (see Exhibit C, Summary and Conclusions). **The proposed mitigation in the Feb'23 Plan uses a similar mitigation ratio, exceeding the 2.5:1 requirement, to mitigate for the limited impacts associated with the Feb'23 Plan (i.e., with no Tapman Creek crossing, narrowed/shifted alignment of the north-south drive aisle, and no private development west of Tapman Creek).** This requirement is met.

G. Non-structural fill used within the SROZ area shall primarily consist of natural materials similar to the soil types found on the site;

Response: Except where structural fill is required for widening of Day Road and to elevate portions of the development area to achieve gravity drainage to **Tapman Creek,** ~~the City's storm drain system in Day Road,~~ no fill placement is proposed within the SROZ area (see in Exhibit C proposed Site Grading Plan, Sheet 1.20, and proposed grading for Day Road construction in the R-Series Sheets). All mitigation plantings and associated materials to be placed within the SROZ will be specified to comply with this standard.

H. The amount of fill used shall be the minimum required to practically achieve the project purpose;

Response: The proposed site plan uses short retaining walls rather than slope transitions at the boundaries of the SROZ to reduce the amount of fill required for a functional development plan. **The applicant's design minimizes the need for fill placement in those SROZ areas by using retaining walls rather than fill slopes at the edges of the drive aisle and paved areas, and using retaining walls to form and define the on-site rain gardens for stormwater management. This approach elevates the drive surface to create the needed crossing and elevates the storm treatment facilities to achieve gravity discharge to Tapman Creek, while avoiding placement of fill outside the minimum width necessary to meet those design requirements. This requirement is met.**

[The following statement is not applicable to the Feb'23 Plan.]
The project purpose for which the variance is necessary is a creek crossing to allow vehicular access to the western portion of the property, and associated impacts on the SROZ Riparian Corridor and SROZ Area of Limited Conflicting Use. The applicant's design minimizes the need for fill placement in those SROZ areas by using a bridge crossing of the creek, using retaining walls rather than fill slopes at the edges of the drive aisle and paved areas, and using retaining walls to form and define the on-site rain gardens for stormwater management. This approach elevates the drive surface to create the needed crossing and elevates the storm treatment facilities to achieve gravity discharge to the City's storm drainage line in Day Road, while avoiding placement of fill outside the minimum width necessary to meet those design requirements. This requirement is met.

I. Other than measures taken to minimize turbidity during construction, stream turbidity shall not be significantly increased by any proposed development or alteration of the site;

Response: Site development is designed to convey all runoff from the building roof and paved areas to surface water quality and detention facilities designed using Low-Impact Development (LID) technologies and methods. Treated runoff will ~~not~~ be discharged to Tapman Creek (the resource to be protected by the SROZ riparian corridor)~~, but will outfall to the City's storm drain line that flows to the west in Day Road~~; therefore, the proposed development plan complies with this requirement.

J. Appropriate federal and state permits shall be obtained prior to the initiation of any activities regulated by the U.S. Army Corps of Engineers and the Oregon Division of State Lands in any jurisdictional wetlands or water of the United States or State of Oregon, respectively.

Response: This provision is not applicable because the proposed development plan does not impact jurisdictional wetlands or waters under USACE or Oregon jurisdiction. The applicant acknowledges that permits from the appropriate agencies would be required for any such impacts.

Section 4.139.07 Mitigation Standards

The following mitigation standards apply to significant wildlife habitat resource areas for encroachments within the Area of Limited Conflicting Uses, and shall be followed by those proposing such encroachments. Wetland mitigation shall be conducted as per permit conditions from the US Army Corps of Engineers and Oregon Division of State Lands. While impacts are generally not allowed in the riparian corridor resource area, permitted impacts shall be mitigated by: using these mitigation standards if the impacts are to wildlife habitat values; and using state and federal processes if the impacts are to wetland resources in the riparian corridor. Mitigation is not required for trees lost to a natural event such as wind or floods.

(.01) The applicant shall review the appropriate Goal 5 Inventory Summary Sheets for wildlife habitat (i.e. upland) contained in the City of Wilsonville Natural Resource Inventory and Goal 5/Title 3/ESA Compliance and Protection Plan ("Compliance and Protection Plan"- May 2000) to determine the resource function ratings at the time the inventory was conducted.

Response: The applicant's consultant performed the required research prior to preparing the Natural Resource Assessment Report in Exhibit C. This requirement is met.

(.02) The applicant shall prepare a Mitigation Plan document containing the following elements:

A. The Mitigation Plan shall contain an assessment of the existing natural resource function ratings at the time of the proposed encroachment for the site compared to the function ratings recorded in the Compliance and Protection Plan.

B. The Mitigation Plan shall contain an assessment of the anticipated adverse impacts to significant wildlife habitat resources. The impact assessment shall discuss impacts by resource functions (as listed in the Compliance and Protection Plan, May 2000) for each resource type, and shall map the area of impact (square feet or acres) for each function.

C. The Mitigation Plan shall present a proposed mitigation action designed to replace the lost or impacted resource functions described in Subsection B, above. The mitigation plan shall be designed to replace lost or impacted functions by enhancement of existing resources on, or off the impact site, or creation of new resource areas.

D. For mitigation projects based on resource function enhancement, the area ratios presented in Table NR - 2 shall be applied. These ratios are based on the resource function ratings at the time of the proposed action, as described in Subsection A, above. The mitigation action shall be conducted on the appropriate size area as determined by the ratios in Table NR - 2.

E. The Mitigation Plan shall include a planting plan containing the following elements:

1. Required Plants and Plant Densities. All trees, shrubs and ground cover shall be native vegetation. An applicant shall comply with Section 4.139.06(.02)(E)(1)(a) or (b), whichever results in more tree plantings, except where the disturbance area is one acre or more, the applicant shall comply with Section 4.139.06(.02)(E)(1)(b).

a. The mitigation requirement shall be calculated based on the number and size of trees that are removed from the site. Trees that are removed from the site shall be replaced as shown in Table NR – 3. Conifers shall be replaced with conifers. Bare ground shall be planted or seeded with native grasses or herbs.

Table NR – 3: Tree Replacement Requirements

Size of Tree to be Removed (inches in diameter at breast height)	*Number of Trees and Shrubs to be Planted*
6 to 12	*2 trees and 3 shrubs*
over 12 to 18	*3 trees and 6 shrubs*
over 18 to 24	*5 trees and 12 shrubs*
over 24 to 30	*7 trees and 18 shrubs*
over 30	*10 trees and 30 shrubs*

b. The mitigation requirement shall be calculated based on the size of the disturbance within the Significant Resource Overlay Zone. Native trees

and shrubs shall be planted at a rate of five (5) trees and twenty-five (25) shrubs per every 500 square feet of disturbance area (calculated by dividing the number of square feet of disturbance area by 500, and then multiplying that result times five (5) trees and twenty-five (25) shrubs, and rounding all fractions to the nearest whole number of trees and shrubs; for example, if there will be 330 square feet of disturbance area, then 330 divided by 500 equals 0.66, and 0.66 times five equals 3.3, so three (3) trees shall be planted, and 0.66 times twenty-five (25) equals 16.5, so seventeen (17) shrubs shall be planted). Bare ground shall be planted or seeded with native grasses or herbs.

2. *Plant Size. Replacement trees and shrubs shall be at least one-gallon in size and shall be at least twelve (12) inches in height.*
3. *Plant Spacing. Trees shall be planted between eight (8) and twelve (12) feet on center, and shrubs shall be planted between four (4) and five (5) feet on center, or clustered in single species groups of no more than four (4) plants, with each cluster planted between eight (8) and ten (10) feet on center. When planting near existing trees, the drip line of the existing tree shall be the starting point for plant spacing measurements.*
4. *Plant Diversity. Shrubs shall consist of at least two (2) different species. If five (5) trees or more are planted, then no more than fifty (50) percent of the trees may be of the same genus.*
5. *Invasive Vegetation. Invasive non-native or noxious vegetation shall be removed within the mitigation area prior to planting, and shall be removed or controlled for five (5) years following the date that the mitigation planting is completed.*
6. *Mulching and Browse Protection. Mulch shall be applied around new plantings at a minimum of three inches in depth and eighteen inches in diameter. Browse protection shall be installed on trees and shrubs. Mulching and browse protection shall be maintained during the two-year plant establishment period.*
7. *Tree and Shrub Survival. Trees and shrubs that die shall be replaced in kind to the extent necessary to ensure that a minimum of eighty (80) percent of the trees and shrubs initially required shall remain alive on the fifth anniversary of the date that the mitigation planting is completed. [Section 4.139.07(.02)(E.) added by Ord. # 674 11/16/09]*

Response: The mitigation planting plan (see Exhibit C at pages 11-14) provides detailed recommendations responding specifically to the requirements of this Section. These requirements are met.

(.03) Proposals for mitigation action where new natural resource functions and values are created (i.e. creating wetland or wildlife habitat where it does not presently exist) will be reviewed and may be approved by the Development Review Board or Planning Director if it is determined that the proposed action will create natural resource functions and values that are equal to or greater than those lost by the proposed impact activity.

Response: As noted in the SRIR's conclusions, the wildlife habitat, ecological integrity, and water quality protection functions will substantially improve through removal of widespread invasive species and establishment of native forest and shrub communities, and connectivity and uniqueness habitat functions will remain the same (see Exhibit C at page 15). This requirement is met.

(.04) Mitigation actions shall be implemented prior to or at the same time as the impact activity is conducted.

Response: Mitigation actions will be completed in conjunction with the proposed single-phase implementation of the development plan. This requirement is met.

(.05) Mitigation plans shall have clearly stated goals and measurable performance standards.
Response: The mitigation plan explicitly states Mitigation Goals and Performance Standards at page 13 of the SRIR (see Exhibit C). This requirement is met.

(.06) All mitigation plans shall contain a monitoring and maintenance plan to be conducted for a period of five years following mitigation implementation. The applicant shall be responsible for ongoing maintenance and management activities, and shall submit an annual report to the Planning Director documenting such activities, and reporting progress towards the mitigation goals. The report shall contain, at a minimum, photographs from established photo points, quantitative measure of success criteria, including plant survival and vigor if these are appropriate data. The Year 1 annual report shall be submitted one year following mitigation action implementation. The final annual report (Year 5 report) shall document successful satisfaction of mitigation goals, as per the stated performance standards. If the ownership of the mitigation site property changes, the new owners will have the continued responsibilities established by this section.
Response: The mitigation plan explicitly contains Maintenance and Monitoring requirements at pages 13-14 of the SRIR (see Exhibit C). This requirement is met.

(.07) The Mitigation Plan document shall be prepared by a natural resource professional.
Response: Page 1 of the SRIR provides the author's Statement of Qualifications (see Exhibit C). This requirement is met.

(.08) Prior to any site clearing, grading or construction, the SROZ area shall be staked, and fenced per approved plan. During construction, the SROZ area shall remain fenced and undisturbed except as allowed by an approved development permit.
Response: This requirement can be met by a condition of approval requiring these instructions to appear on construction permit drawings.

(.09) For any development which creates multiple parcels intended for separate ownership, the City shall require that the SROZ areas on the site be encumbered with a conservation easement or tract.
Response: This provision is not applicable because no land division is proposed.

(.10) The City may require a conservation easement over the SROZ that would prevent the owner from activities and uses inconsistent with the purpose of this Section and any easements therein. The purpose of the conservation easement is to conserve and protect resources as well as to prohibit certain activities that are inconsistent with the purposes of this section. Such conservation easements do not exclude the installation of utilities.
Response: This statement of the City's authority requires no evidence submittal by the applicant.

(.11) At the Planning Directors discretion, mitigation requirements may be modified based on minimization of impacts at the impact activity site. Where such modifications are granted by the Planning Director, the Director shall clearly indicate the reasons for doing so in the record, citing the relevant information relied upon in reaching the decision.
Response: This statement of the Planning Director's authority requires no evidence submittal by the applicant.

(.12) The Director may study the possibility of a payment-in-lieu-of system for natural resource impact mitigation. This process would involve the public acquisition and management of natural resource properties partially funded by these payments.

TABLE NR – 4: NATURAL RESOURCE ENHANCEMENT MITIGATION RATIOS

Existing Function Rating at Impact Site*	*Existing Function* Rating at Mitigation Site*	*Proposed Function* Rating at Mitigation Site*	*Area Ratio (Mitigation:Impact)*
L	*L*	*M*	*2:1*
L	*L*	*H*	*1 ½ : 1*
L	*M*	*H*	*2 : 1*
M	*L*	*M*	*3 : 1*
M	*L*	*H*	*2 : 1*
M	*M*	*H*	*2 ½ : 1*
H	*L*	*M*	*4 : 1*
H	*L*	*H*	*3 : 1*
H	*M*	*H*	*2 ½ : 1*
H	*H*	*H+*	*5 : 1*

* *mitigation function (i.e water quality, ecological integrity) shall be the same as impacted function*

\+ *improve on a H rating*

NOTE: These mitigation ratios were created by specifically for the Natural Resources Plan by Fishman Environmental Services.

Response: This statement of the Planning Director's authority requires no evidence submittal by the applicant. The applicant notes that proposed mitigation will be achieved within the property and within the affected SROZ area, through actions that will improve habitat functional values. No off-site mitigation or payment of a fee-in-lieu is proposed.

Section 4.139.08 Activities Requiring a Class I Administrative Review Process

Section 4.139.09 <u>Activities Requiring a Class II Administrative Review Process</u>

Response: These Sections are not applicable because approval is requested through the DRB Procedure in Section 4.139.10.

Section 4.139.10 Development Review Board (DRB) Process

The following actions require review through a Development Review Board quasi-judicial process. Nothing contained herein shall be deemed to require a hearing body to approve a request for a permit under this Section.

(.01) Exceptions. The following exceptions may be authorized through a Development Review Board quasi-judicial review procedure.

A. Unbuildable Lot. For existing non-developed lots that are demonstrated to be unbuildable by the provisions of this Section, the SROZ shall be reduced or removed to assure the lot will be buildable by allowing up to 3,000 square feet of land to be developed by impervious improvements for residential use, or 5,000 square feet of impervious improvements for non-residential uses, while still providing for the maximum protection of the significant resources, if not in conflict with any other requirements of the Planning and Land Development Ordinance. This section shall not apply to lots created after the effective date of this ordinance.

B. Large Lot Exception. An exception under this paragraph is authorized and may allow impact into wetlands, riparian corridors and wildlife habitat areas, and shall not be limited to locations solely within the Area of Limited Conflicting Use. Mitigation is required, and for wetland impacts, state and federal permit requirements shall be followed. An exception to the standards of this Section may be authorized where the following conditions apply:

1. The lot is greater than one acre in size; and

2. At least 85 percent of the lot is located within the SROZ based on surveyed resource and property line boundaries; and

3. No more than 10 percent of the area located within the SROZ on the property may be excepted and used for development purposes; and

4. Through the review of an SRIR, it is determined that a reduction of the SROZ does not reduce the values listed on the City of Wilsonville Natural Resource Function Rating Matrix for the resource site; and

5. The proposal is sited in a location that avoids or minimizes impacts to the significant resource to the greatest extent possible.

6. For purposes of this subsection, "lot" refers to an existing legally created lot of record as of the date of the adoption of the SROZ.

C. Public. If the application of this Section would prohibit a development proposal by a public agency or public utility, the agency or utility may apply for an exception pursuant to this Section. The hearing body shall use the SRIR review criteria identified within this section.

D. Map Refinement process. The applicant may propose to amend the SROZ boundary through a Development Review Board quasi-judicial zone change where more detailed information is provided, such as a state approved wetland delineation. The criteria for amending the SROZ are as follows:

1. Any map refinement must be evaluated by considering the riparian corridor types contained in this ordinance.

2. Other supporting documents to be considered in evaluating a proposal to refine a map include, but are not limited to:

a. Natural Resources Inventories (LWI/RCI);

b. The Economic, Social, Environmental and Energy (ESEE) Analysis;

c. Metro Functional Plans;

d. Wilsonville Comprehensive Plan;

e. State approved wetland delineations;

f. Detailed slope analysis

3. An SRIR must be prepared by the applicant in conformance with the provisions of this Section.

4. The Hearing Body (including City Council) may amend the Significant Resource Overlay Zone (in or out) upon making a determination that the land area in question is or is not a significant resource. The criteria for determining that land is significant shall be based on finding that the site area has at least one rating of "high" using the function criteria listed in the Natural Resource Function Rating Matrices.

(.02) Adding Wetlands. Except for water quality or storm water detention facilities, the City shall initiate amendments to the Significant Resource Overlay Zone maps to add wetlands when the City receives significant evidence that a wetland meets any one of the following criteria:

A. The wetland is fed by surface flows, sheet flows or precipitation, and has evidence of flooding during the growing season, and has 60 percent or greater vegetated cover, and is over one-half acre in size; or the wetland qualifies as having intact water quality function under the 1996 Oregon Freshwater Wetland Assessment Methodology; or

B. The wetland is in the Metro Title 3 Flood Management Area as corrected by the most current FEMA Flood Insurance Rate Maps, and has evidence of flooding during the growing season, and is five acres or more in size, and has a restricted outlet or no outlet; or the wetland qualifies as having intact hydrologic control function under the 1996 Oregon Freshwater Wetland Assessment Methodology; or

C. The wetland or a portion of the wetland is within a horizontal distance of less than one - fourth mile from a water body which meets the Department of Environmental Quality definition of water quality limited water body in OAR Chapter 340, Division 41 (1996).

D. Created or restored wetlands that meet the requirements of Section 4.139.10(.02) shall be added to the Significant Resource Overlay Zone. [Added by Ord. # 674 11/16/09]

(.03) Development of structures, additions and improvements that relate to uses other than single family residential.

(.04) Variances. A variance may be taken to any of the provisions of this Section per the standards of Section 4.196 of the Planning and Land Development Ordinance.

Response: This application requests approval for proposed development under subparagraph (.03) ~~and for a variance under subparagraph (.04) and the standards of Section 4.196 (see Variance section below)~~. The request is therefore appropriate for review and approval through the DRB Process.

Section 4.139.11 Special Provisions

(.01) Reduced front, rear and side yard setback. Applications on properties containing the SROZ may reduce the front, rear and side yard setback for developments or additions to protect the significant resource, as approved by the Development Review Board.

(.02) Density Transfer. For residential development proposals on lands which contain the SROZ, a transfer of density shall be permitted within the development proposal site. The following formula

shall be used to calculate the density that shall be permitted for allowed residential use on the property:

A. Step 1. Calculate Expected Maximum Density. The Expected Maximum Density (EMD) is calculated by multiplying the acreage of the property by the maximum density permitted in the Wilsonville Comprehensive Plan.

B. Step 2. The density that shall be permitted on the property shall be equal to the EMD obtained in Step 1, provided:

1. The density credit can only be transferred to that portion of the development site that is not located within the designated Significant Resource; and

2. 50% of the maximum number of dwelling units that are within the SROZ are allowed to be transferred to the buildable portion of the proposed development site provided that the standards for outdoor living area, landscaping, building height and parking shall still be met. Applicants proposing a density transfer must demonstrate compatibility between adjacent properties as well as satisfy the setback requirements of the zone in which the development is proposed or meet Section 4.139.10 A. above; and

3. The types of residential uses and other applicable standards permitted in the zone shall remain the same; and

4. Land area within the Significant Resource Overlay Zone may be used to satisfy the requirements for outdoor recreation/open space area consistent with the provisions found in Section 4.113 of the Planning and Land Development Ordinance.

(.03) Alteration of constructed drainageways. Alteration of constructed drainageways may be allowed provided that such alterations do not adversely impact stream flows, flood storage capacity and in stream water quality and provide more efficient use of the land as well as provide improved habitat value through mitigation, enhancement and/or restoration. Such alterations must be evaluated through an SRIR and approved by the City Engineer and Development Review Board.

Response: These provisions are not applicable because none of the listed actions is part of this proposal.

D. Site Design Review

Section 4.154. On-site Pedestrian Access and Circulation

(.01) On-site Pedestrian Access and Circulation

A. The purpose of this section is to implement the pedestrian access and connectivity policies of the Transportation System Plan. It is intended to provide for safe, reasonably direct, and convenient pedestrian access and circulation.

B. Standards. Development shall conform to all of the following standards:

1. Continuous Pathway System. A pedestrian pathway system shall extend throughout the development site and connect to adjacent sidewalks, and to all future phases of the development, as applicable.

2. Safe, Direct, and Convenient. Pathways within developments shall provide safe, reasonably direct, and convenient connections between primary building entrances and all adjacent parking areas, recreational areas/playgrounds, and public rights-of-way and crosswalks based on all of the following criteria:

a. *Pedestrian pathways are designed primarily for pedestrian safety and convenience, meaning they are free from hazards and provide a reasonably smooth and consistent surface.*
b. *The pathway is reasonably direct. A pathway is reasonably direct when it follows a route between destinations that does not involve a significant amount of unnecessary out-of-direction travel.*
c. *The pathway connects to all primary building entrances and is consistent with the Americans with Disabilities Act (ADA) requirements.*
d. *All parking lots larger than three acres in size shall provide an internal bicycle and pedestrian pathway pursuant to Section 4.155(.03)(B.)(3.)(d.).*

Response: As illustrated on sheet C1.10 of Exhibit B, a continuous ADA-compliant pathway will connect from the proposed public sidewalk improvement on SW Day Road to the main building entrance near the northwest building corner, closest to SW Day Road. The proposed pathway provides direct access to the building entrance while safely directing pedestrians away from the driveway edge, and away from truck access and circulation routes. The parking area is less than three acres in size and therefore an internal bicycle and pedestrian pathway is not required. This standard is met.

3. *Vehicle/Pathway Separation. Except as required for crosswalks, per subsection 4, below, where a pathway abuts a driveway or street it shall be vertically or horizontally separated from the vehicular lane. For example, a pathway may be vertically raised six inches above the abutting travel lane, or horizontally separated by a row of bollards.*

Response: As illustrated on sheet C1.10 of Exhibit B, the pedestrian path is located approximately 36' east of the SW Day Road driveway. It makes a direct perpendicular connection from that point to a pedestrian crossing of the drive aisle of the northern parking area and then the walkway at the main building entrance. This pathway runs perpendicular to the driveway, with ramps at the crossing location (see detail 1 on Sheet C1.22 of Exhibit B). This standard is met.

4. *Crosswalks. Where a pathway crosses a parking area or driveway, it shall be clearly marked with contrasting paint or paving materials (e.g., pavers, light-color concrete inlay between asphalt, or similar contrast).*

Response: Detail 1 on Sheet C1.22 of Exhibit B provides the proposed alignment and ramp slopes for the pedestrian drive aisle crossing to the main entrance. The crossing will be clearly marked using striping. The standard is met.

5. *Pathway Width and Surface. Primary pathways shall be constructed of concrete, asphalt, brick/masonry pavers, or other durable surface, and not less than five (5) feet wide. Secondary pathways and pedestrian trails may have an alternative surface except as otherwise required by the ADA.*
6. *All pathways shall be clearly marked with appropriate standard signs.*

Response: Signage is not necessary to identify the path because it is framed by landscaping on both sides of the striped drive aisle crossing, which adequately marks its location at the critical location for safety. This standard is met.

Section 4.155. General Regulations - Parking, Loading and Bicycle Parking

(.02) General Provisions:

A. The provision and maintenance of off-street parking spaces is a continuing obligation of the property owner. The standards set forth herein shall be considered by the Development Review Board as minimum criteria.

1. The Board shall have the authority to grant variances or planned development waivers to these standards in keeping with the purposes and objectives set forth in the Comprehensive Plan and this Code.

2. Waivers to the parking, loading, or bicycle parking standards shall only be issued upon a findings that the resulting development will have no significant adverse impact on the surrounding neighborhood, and the community, and that the development considered as a whole meets the purposes of this section.

Response: The applicant acknowledges the continuing obligation to provide and maintain parking for site users. One of the requested waivers is to allow some of the 15 parking spaces (two (2) of which are ADA-accessible) provided in the north parking area, between the building and the Addressing Street (SW Day Road) to be used for employee parking, instead of being restricted to visitor and short-term use. (See detailed findings in the Waivers section below.) With approval of that waiver request, this standard is met.

B. No area shall be considered a parking space unless it can be shown that the area is accessible and usable for that purpose, and has maneuvering area for the vehicles, as determined by the Planning Director.

Response: As illustrated on Sheet C1.10 in Exhibit B, all parking spaces are proposed to be hard-surfaced as required, and off-street maneuvering space is provided in drive aisles that comply with the City's dimensional requirements. This standard is met.

C. In cases of enlargement of a building or a change of use from that existing on the effective date of this Code, the number of parking spaces required shall be based on the additional floor area of the enlarged or additional building, or changed use, as set forth in this Section. Current development standards, including parking area landscaping and screening, shall apply only to the additional approved parking area.

Response: No building enlargement or change of use is proposed, since this is a proposal for a new building. This standard does not apply.

D. In the event several uses occupy a single structure or parcel of land, the total requirement for off-street parking shall be the sum of the requirements of the several uses computed separately, except as modified by subsection "E," below.

Response: The proposed building is designed for single tenant occupancy, while providing flexibility to accommodate a mix of light manufacturing, warehousing, and other industrial functions. The proposed building contains total floor area of 62,107 SF (including proposed future mezzanines); within that, 4,475 SF of conditioned space suitable for accessory office support is proposed.

On-site parking of 41 spaces is proposed, with 15 on the north side of the building (including 2 ADA) and 26 on its south side. The parking complement is designed to support flexibility to accommodate an allocation of up to 17,500 SF to manufacturing uses while meeting the minimum parking requirement, which would be 41 spaces:

			Parking Ratio/KSF		Required Parking	
Manufacturing/Warehouse Mix			**Min**	**Max**	**Min**	**Max**
Warehouse/Distribution	44,607	72%	0.3	0.5	13.4	22.3
Manufacturing	17,500	28%	1.6	no limit	28.0	no limit

Combined (including future mezzanines)	62,107	100%			**41.4**	no limit

The proposal to provide 41 parking spaces is also designed to support full utilization of the portion of the building designed for office use within the shell, a total of 4,475 SF in two (2) sub-areas (2,437 at the northwest building corner, 2,038 at the southwest building corner), in conjunction with a Warehouse/Distribution use. When the parking ratio for office use is applied to that portion of the building, the allowed parking range falls between a minimum of 28 and a maximum of 45. With that perspective, the proposal to provide 41 on-site parking spaces complies with the parking ratio requirements:

			Parking Ratio/KSF		**Required Parking**	
Warehouse/Office Support			**Min**	**Max**	**Min**	**Max**
Warehouse/Distribution	57,632	93%	0.3	0.5	17.3	28.8
Office	4,475	7%	2.7	4.1	12.1	18.3
Combined (including future mezzanines)	62,107	100%			**29.4**	**47.2**

Based on the above findings, this standard is met.

E. Owners of two (2) or more uses, structures, or parcels of land may utilize jointly the same parking area when the peak hours of operation do not overlap, provided satisfactory legal evidence is presented in the form of deeds, leases, or contracts securing full and permanent access to such parking areas for all the parties jointly using them.

Response: The applicant does not propose to share parking with nearby uses. This standard does not apply.

F. Off-street parking spaces existing prior to the effective date of this Code may be included in the amount necessary to meet the requirements in case of subsequent enlargement of the building or use to which such spaces are necessary.

Response: The site will be completely redeveloped, and no existing parking spaces will remain. This standard does not apply.

G. Off-Site Parking. Except for single-family dwellings, the vehicle parking spaces required by this Chapter may be located on another parcel of land, provided the parcel is within 500 feet of the use it serves and the DRB has approved the off-site parking through the Land Use Review. The distance from the parking area to the use shall be measured from the nearest parking space to the main building entrance, following a sidewalk or other pedestrian route. The right to use the off-site parking must be evidenced in the form of recorded deeds, easements, leases, or contracts securing full and permanent access to such parking areas for all the parties jointly using them.

Response: The applicant does not propose any off-site parking. This standard does not apply.

H. The conducting of any business activity shall not be permitted on the required parking spaces, unless a temporary use permit is approved pursuant to Section 4.163.

Response: The applicant is not requesting authorization to perform business activities within required parking spaces. This standard does not apply.

I. Where the boundary of a parking lot adjoins or is within a residential district, such parking lot shall be screened by a sight-obscuring fence or planting. The screening shall be continuous along that boundary and shall be at least six (6) feet in height.

Response: The parking lot is not within a residential lot. Adjacent zoning includes City of Wilsonville Planned Development Industrial – Regionally Significant Industrial Area (PDI-RSIA) to the east; Washington County Future Development 20-Acre (FD-20) to the north and west; and Planned Development Industrial (PDI) to the south. None of these zones are a residential district, so this standard does not apply and no parking lot screening is required under this provision.

Notably, a high screen landscaping design is proposed along a portion of SW Day Road to screen the proposed truck parking from the right-or-way. Similarly, a landscape screen is proposed near the building entrance to obscure the visual impacts of the loading area from the vehicle entrance.

J. Parking spaces along the boundaries of a parking lot shall be provided with a sturdy bumper guard or curb at least six (6) inches high and located far enough within the boundary to prevent any portion of a car within the lot from extending over the property line or interfering with required screening or sidewalks.

Response: As illustrated on Sheet C1.10 in Exhibit B, all parking spaces adjacent to property lines have a six-inch curb at the front to ensure adequate space for landscaping and sidewalks and to prevent vehicles from crossing the property line. This standard is met.

K. All areas used for parking and maneuvering of cars shall be surfaced with asphalt, concrete, or other surface, such as pervious materials (i. e. pavers, concrete, asphalt) that is found by the City's authorized representative to be suitable for the purpose. In all cases, suitable drainage, meeting standards set by the City's authorized representative, shall be provided. [Amended by Ord. # 674 11/16/09]

Response: As noted on Sheet C1.10 in Exhibit B, all parking and maneuvering areas are proposed to be paved. Sheet C1.30 illustrates the required stormwater management system. This standard is met.

L. Artificial lighting which may be provided shall be so limited or deflected as not to shine into adjoining structures or into the eyes of passers-by.

Response: As illustrated on the lighting plan (see Exhibit K), the applicant intends to comply using the prescriptive approach. This standard is met.

M. Off-street parking requirements for types of uses and structures not specifically listed in this Code shall be determined by the Development Review Board if an application is pending before the Board. Otherwise, the requirements shall be specified by the Planning Director, based upon consideration of comparable uses.

Response: Minimum parking standards for the proposed range of light manufacturing and warehouse/distribution uses are listed in this Code. This standard does not apply.

N. Up to forty percent (40%) of the off-street spaces may be compact car spaces as identified in Section 4.001 - "Definitions," and shall be appropriately identified.

Response: As illustrated on Sheet C1.10 in Exhibit B, no compact parking spaces are proposed. This standard is met.

O. Where off-street parking areas are designed for motor vehicles to overhang beyond curbs, planting areas adjacent to said curbs shall be increased to a minimum of seven (7) feet in depth. This standard shall apply to a double row of parking, the net effect of which shall be to create a planted area that is a minimum of seven (7) feet in depth.

Response: Landscape islands and pedestrian walkways abutting parking spaces have been designed to provide adequate width to meet standards, assuming a two-foot bumper overhang. This standard is met.

(.03) Minimum and Maximum Off-Street Parking Requirements:

A. Parking and loading or delivery areas shall be designed with access and maneuvering area adequate to serve the functional needs of the site and shall:

1. Separate loading and delivery areas and circulation from customer and/or employee parking and pedestrian areas. Circulation patterns shall be clearly marked.

2. To the greatest extent possible, separate vehicle and pedestrian traffic.

Response: As illustrated on Sheet C1.10 in Exhibit B, parking areas are primarily proposed on the north and south sides of the building, while loading and delivery facilities are located in the center and western portions of the site, providing sufficient separation between trucks and passenger vehicles. Pedestrian pathways and crossings are provided from the public street and the north parking area to the primary building entrance at the northwest office-area corners. Employees who park in the south will be able to enter the building at the south side of the building to ensure safe access to the building without interference from truck traffic. This standard is met.

B. Parking and loading or delivery areas shall be landscaped to minimize the visual dominance of the parking or loading area, as follows:

1. Landscaping of at least ten percent (10%) of the parking area designed to be screened from view from the public right-of-way and adjacent properties. This landscaping shall be considered to be part of the fifteen percent (15%) total landscaping required in Section 4.176.03 for the site development.

Response: As illustrated on Sheets C.1.10 and L1.10 of Exhibit B, virtually all of the site's landscaping seeks to "*minimize the visual dominance of the parking or loading area*" with the exception of the water quality facility and landscaping along the length of Tapman Creek, where no parking or loading is located. As reported on Sheet C1.10 in Exhibit B, overall site landscaping of **117,433** ~~144,417~~ SF is provided, or **34.9%** ~~37.3%~~ of net ~~site~~ **development** area after right-of-way dedication, exceeding the minimum 15% requirement. Parking area landscaping is provided at **3,160** ~~4,535~~ SF, which is **15.9%** ~~12.9%~~ of the **19,884** ~~35,128~~ SF of site area devoted to parking areas, exceeding the minimum 10% requirement. Parking area landscape areas have been counted as contributing to overall site landscaping, consistent with this provision. This standard is met.

2. Landscape tree planting areas shall be a minimum of eight (8) feet in width and length and spaced every eight (8) parking spaces or an equivalent aggregated amount.

a. Trees shall be planted in a ratio of one (1) tree per eight (8) parking spaces or fraction thereof, except in parking areas of more than two hundred (200) spaces where a ratio of one (1) tree per six (six) spaces shall be applied as noted in subsection (.03)(B.)(3.). A landscape design that includes trees planted in areas based on an aggregated number of parking spaces must provide all area calculations.

b. Except for trees planted for screening, all deciduous interior parking lot trees must be suitably sized, located, and maintained to provide a branching minimum of seven (7) feet clearance at maturity.

Response: As illustrated on Sheet L1.10 of Exhibit B, landscape tree plantings occur at a maximum of every eight (8) parking spaces, and planter islands are at least 8' in width and length. Interior parking lot trees will be Frontier Elm (*Ulmus X);* these trees have a mature height of 60' and mature width of 40'. This standard is met.

3. *Due to their large amount of impervious surface, new development with parking areas of more than two hundred (200) spaces that are located in any zone, and that may be viewed from the public right of way, shall be landscaped to the following additional standards:*

Response: As illustrated on Sheet C1.10 of Exhibit B, 41 parking spaces are proposed (39 standard passenger spaces and 2 ADA-accessible spaces), which is fewer than 200 parking spaces. This standard does not apply.

C. *Off Street Parking shall be designed for safe and convenient access that meets ADA and ODOT standards. All parking areas which contain ten (10) or more parking spaces, shall for every fifty (50) standard spaces., provide one ADA-accessible parking space that is constructed to building code standards, Wilsonville Code 9.000.*

Response: As illustrated on Sheet C1.10 of Attachment B, 39 standard vehicle parking spaces are proposed, and 2 accessible spaces are proposed to comply with provisions of the ADA and Oregon Structural Specialty Code. This standard is met.

D. *Where possible, parking areas shall be designed to connect with parking areas on adjacent sites so as to eliminate the necessity for any mode of travel of utilizing the public street for multiple accesses or cross movements. In addition, on-site parking shall be designed for efficient on-site circulation and parking.*

Response: As illustrated on Sheets C0.10 and C1.10 of Exhibit B, the site is adjacent to an existing industrial site under the same ownership as this project site. These two sites will be connected by a drive aisle to allow efficient circulation between similar operations without utilizing public streets. **This standard is met.**

[The following statement is not applicable to the Feb'23 Plan.]
Additionally, the proposed on-site parking includes a tractor "bobtail" parking lot west of Tapman Creek connecting to the main site with a bridge crossing on-site instead of creating a second access to the public street. This standard is met.

E. *In all multi-family dwelling developments, there shall be sufficient areas established to provide for parking and storage of motorcycles, mopeds and bicycles. Such areas shall be clearly defined and reserved for the exclusive use of these vehicles.*

Response: No multi-family residences are proposed as part of this development. This standard does not apply.

F. *On-street parking spaces, directly adjoining the frontage of and on the same side of the street as the subject property, may be counted towards meeting the minimum off-street parking standards.*

Response: No on-street parking is proposed in SW Day Road along the property's frontage. The applicant has not proposed to count on-street parking to satisfy the minimum parking standard. This standard does not apply.

G. *Table 5 shall be used to determine the minimum and maximum parking standards for various land uses. The minimum number of required parking spaces shown on Tables 5 shall be determined by rounding to the nearest whole parking space. For example, a use containing 500 square feet, in an area where the standard is one space for each 400 square feet of floor area, is required to provide one off-street parking space. If the same use contained more than 600 square feet, a second parking space would be required.*

Structured parking and on-street parking are exempted from the parking maximums in Table 5.

Response: The proposed building is proposed by the property owner for land uses including light manufacturing and warehouse/distribution activities that may change over time with different tenancies. On-site parking provision using the parking ratios in Table 5 is designed for flexibility in accommodating such uses, with up to an approximately 18,000 SF allocation of area to manufacturing uses. Please see parking calculations in the response to Section 4.155(.02)D. Table 5 indicates that warehouse uses require between 0.3 spaces and 0.5 spaces per 1,000 SF, while manufacturing uses require at least 1.6 spaces per 1,000 SF but have no maximum. Based on the proposed building size of 62,107 SF, the anticipated mix of uses and the share of the building interior configured for office use (4,475 SF), the development is required to have at least 29 spaces. The Code imposes no maximum limit on manufacturing uses. As illustrated on Sheet C1.10 of Attachment B, the applicant is proposing 41 parking spaces, which is within the allowed range. This standard is met.

H. Electrical Vehicle Charging Stations:

1. Parking spaces designed to accommodate and provide one or more electric vehicle charging stations on site may be counted towards meeting the minimum off-street parking standards.

2. Modification of existing parking spaces to accommodate electric vehicle charging stations on site is allowed outright.

Response: No electrical vehicle charging stations are proposed. This standard does not apply.

I. Motorcycle parking:

1. Motorcycle parking may substitute for up to 5 spaces or 5 percent of required automobile parking, whichever is less. For every 4 motorcycle parking spaces provided, the automobile parking requirement is reduced by one space.

2. Each motorcycle space must be at least 4 feet wide and 8 feet deep. Existing parking may be converted to take advantage of this provision.

Response: No motorcycle parking is proposed. This standard does not apply.

(.04) Bicycle Parking:

A. Required Bicycle Parking - General Provisions.

1. The required minimum number of bicycle parking spaces for each use category is shown in Table 5, Parking Standards.

2. Bicycle parking spaces are not required for accessory buildings. If a primary use is listed in Table 5, bicycle parking is not required for the accessory use.

3. When there are two or more primary uses on a site, the required bicycle parking for the site is the sum of the required bicycle parking for the individual primary uses.

4. Bicycle parking space requirements may be waived by the Development Review Board per Section 4.118(.03)(A.)(9.) and (10.).

Response: Based on the proposed building size of 62,107 SF and the anticipated mix of activities (up to 17,500 SF of manufacturing and the remaining 40,122 SF in warehouse/distribution use), the ratios in Table require the proposed development to provide at least six (6) bicycle parking spaces. As illustrated on Sheets A1.11, A5.06 and C1.10 of Attachment B, the applicant is providing a total of six (6) interior bicycle spaces within the warehouse area near the office. This standard is met.

B. Standards for Required Bicycle Parking

1. *Each space must be at least 2 feet by 6 feet in area and be accessible without moving another bicycle.*
2. *An aisle at least 5 feet wide shall be maintained behind all required bicycle parking to allow room for bicycle maneuvering. Where the bicycle parking is adjacent to a sidewalk, the maneuvering area may extend into the right-of-way.*
3. *When bicycle parking is provided in racks, there must be enough space between the rack and any obstructions to use the space properly.*
4. *Bicycle lockers or racks, when provided, shall be securely anchored.*
5. *Bicycle parking shall be located within 30 feet of the main entrance to the building or inside a building, in a location that is easily accessible for bicycles. For multi-tenant developments, with multiple business entrances, bicycle parking may be distributed on-site among more than one main entrance.*

Response: As illustrated on Sheets A1.11, A5.06 and C1.10 in Exhibit B, all required bicycle parking will be provided as interior spaces within the warehouse near the primary (office) entrance to the building, to comply with the design standards above. This standard will be met.

C. Long-term Bicycle Parking

1. *Long-term bicycle parking provides employees, students, residents, commuters, and others who generally stay at a site for several hours a weather-protected place to park bicycles.*
2. *For a proposed multi-family residential, retail, office, or institutional development, or for a park and ride or transit center, where six (6) or more bicycle parking spaces are required pursuant to Table 5, 50% of the bicycle parking shall be developed as long-term, secure spaces. Required long-term bicycle parking shall meet the following standards:*
   a. *All required spaces shall meet the standards in subsection (B.) above, and must be covered in one of the following ways: inside buildings, under roof overhangs or permanent awnings, in bicycle lockers, or within or under other structures.*
   b. *All spaces must be located in areas that are secure or monitored (e.g., visible to employees, monitored by security guards, or in public view).*
   c. *Spaces are not subject to the locational criterion of (B.)(5.).*

Response: The proposed use is industrial, not multi-family residential, retail, office, institutional, or a park and ride or transit center; therefore, the long-term bicycle parking standards do not apply to this project.

Note: In considering proposed waivers to the following standards, the City will consider the potential uses of the site and not just the uses that are currently proposed. For waivers to exceed the maximum standards, applicants shall bear the burden of proving that Metro, State, and federal clean air standards will not be violated.

TABLE 5: PARKING STANDARDS (excerpt)			
Use	***Parking Minimums***	***Parking Maximums***	***Bicycle Minimums***
e. Commercial			
5. Office or flex space (except medical or dental)	*2.7 per 1,000 sq. ft.*	*4.1 per 1000 sq. ft.*	*1 per 5,000 sq. ft. Min. of 2*

TABLE 5: PARKING STANDARDS (excerpt)				
f.	***Industrial***			
1.	*Manufacturing establishment*	*1.6 per 1,000 sq. ft.*	*No Limit*	*1 per 10,000 sq. ft. Min. of 6*
2.	*Storage warehouse, wholesale establishment, rail or trucking freight terminal*	*.3 per 1000 sq. ft.*	*.5 per 1000 sq. ft.*	*1 per 20,000 sq. ft. Min. of 2*

(.05) Minimum Off-Street Loading Requirements:

A. Every building that is erected or structurally altered to increase the floor area, and which will require the receipt or distribution of materials or merchandise by truck or similar vehicle, shall provide off-street loading berths on the basis of minimum requirements as follows:

1. Commercial, industrial, and public utility uses which have a gross floor area of 5,000 square feet or more, shall provide truck loading or unloading berths in accordance with the following tables:

Square feet of Floor Area	*Number of Berths Required*
Less than 5,000	*0*
5,000 - 30,000	*1*
30,000 - 100,000	*2*
100,000 and over	*3*

2. Restaurants, office buildings, hotels, motels, hospitals and institutions, schools and colleges, public buildings, recreation or entertainment facilities, and any similar use which has a gross floor area of 30,000 square feet or more, shall provide off-street truck loading or unloading berths in accordance with the following table:

Square feet of Floor Area	*Number of Berths Required*
Less than 30,000	*0*
30,000 - 100,000	*1*
100,000 and over	*2*

3. A loading berth shall contain space twelve (12) feet wide, thirty-five (35) feet long, and have a height clearance of fourteen (14) feet. Where the vehicles generally used for loading and unloading exceed these dimensions, the required length of these berths shall be increased to accommodate the larger vehicles.

4. If loading space has been provided in connection with an existing use or is added to an existing use, the loading space shall not be eliminated if elimination would result in less space than is required to adequately handle the needs of the particular use.

5. Off-street parking areas used to fulfill the requirements of this Ordinance shall not be used for loading and unloading operations except during periods of the day when not required to meet parking needs.

Response: The proposed 62,107 SF industrial building exceeds 30,000 SF and is under 100,000 SF. Per the table above, at least two (2) loading berths are required. As depicted on Exhibit B Sheet C1.10, the proposed building will provide 17 loading docks that meet or exceed the dimensional

standards of criterion (3). The existing residential use will be eliminated as part of the development, and loading operations are not proposed within required off-street parking spaces. This standard is met.

B. Exceptions and Adjustments.

1. The Planning Director or Development Review Board may approve a loading area adjacent to or within a street right-of-way where it finds that loading and unloading operations:

a. Are short in duration (i.e., less than one hour);

b. Are infrequent (less than three operations daily);

c. Do not obstruct traffic during peak traffic hours;

d. Do not interfere with emergency response services or bicycle and pedestrian facilities; and

e. Are acceptable to the applicable roadway authority.

Response: The applicant is not proposing to perform loading operations adjacent to or within the street. This standard does not apply.

(.06) Carpool and Vanpool Parking Requirements:

A. Carpool and vanpool parking spaces shall be identified for the following uses:

1. New commercial and industrial developments with seventy-five (75) or more parking spaces,

2. New institutional or public assembly uses, and

3. Transit park-and-ride facilities with fifty (50) or more parking spaces.

B. Of the total spaces available for employee, student, and commuter parking, at least five percent, but not fewer than two, shall be designated for exclusive carpool and vanpool parking.

C. Carpool and vanpool parking spaces shall be located closer to the main employee, student or commuter entrance than all other parking spaces with the exception of ADA parking spaces.

D. Required carpool/vanpool spaces shall be clearly marked "Reserved - Carpool/Vanpool Only."

Response: As illustrated on Exhibit B Sheet C1.10, the proposed development will provide 41 parking spaces. Since this is lower than the threshold of 75 spaces, the carpool and vanpool provisions do not apply.

(.07) Parking Area Redevelopment. The number of parking spaces may be reduced by up to 10% of the minimum required parking spaces for that use when a portion of the existing parking area is modified to accommodate or provide transit-related amenities such as transit stops, pull-outs, shelters, and park and ride stations.

Response: The applicant is not proposing a parking reduction for transit-related amenities. This standard does not apply.

Section 4.167. General Regulations - Access, Ingress and Egress

(.01) Each access onto streets or private drives shall be at defined points as approved by the City and shall be consistent with the public's health, safety and general welfare. Such defined points of access shall be approved at the time of issuance of a building permit if not previously determined in the development permit. [Amended by Ord. 682, 9/9/10]

Response: As illustrated on Sheet C1.10 of Exhibit B, one (1) driveway to SW Day Road is proposed. Additionally, an internal drive aisle connection to the southern property under common ownership is part of the design and the operational plan. This configuration supports access between the site and SW

Commerce Circle in order to provide operational access primarily for internal operations, i.e., management of truck tractors ("bobtails") and trailers by staff of Delta Logistics or future site tenants.

The proposed access driveway is also subject to Section 201.2.23.m of the 2017 Public Works Standards:

> *201.2.23 Driveways*
> *Access to private property shall be permitted with the use of driveway curb cuts. The following specifies the minimum requirements for driveways:*
> *…*
> *m. Parking lot drive aisles shall align with the approved access driveway. A clear drive aisle, containing no parking spaces or intersecting drive aisles, shall be provided at all parking lot access driveways in accordance with Detail No. RD-1105 of these standards and as follows:*
>
> 1. *Within 50 feet of the back of sidewalk or right-of-way boundary, whichever is greater, for access driveways with less than 100 Average Daily Trips (ADT).*
> 2. *Within 100 feet of the back of sidewalk or right-of-way boundary, whichever is greater, for access driveways with 100 or more Average Daily Trips (ADT).*
> 3. *The clear drive aisle shall not have a width greater than the approved access driveway.*
> 4. *The City Engineer may reduce the clear drive aisle length to not less than 20 feet from the back of sidewalk or right-of-way boundary, whichever is greater. The City Engineer may require submission of additional information, including but not limited to a traffic study prepared and certified by a registered professional Traffic Engineer in the State of Oregon. Any reduction in the required clear drive aisle length shall be based on the following:*
>   *(a) Queuing areas are designed such that vehicles do not obstruct a driveway, fire access lane, walkway, or public right-of-way.*
>   *(b) On-site circulation is designed in such a way as to not create a safety hazard by reducing the clear drive aisle length.*

Detail RD-1105 provides a diagram on which the drive aisle aligned with a driveway (i.e., perpendicular to the street) is shown to have no parking spaces or intersecting drive aisles within a specified distance *L* as measured from the back of sidewalk or right-of-way boundary. As noted in the TIA (see Exhibit E), the proposed use is projected to generate 127 weekday trips, so subparagraph 2 is the nominal standard that applies to the proposed development; however, the applicant requests approval of the proposed driveway configuration pursuant to subparagraph 4, based on the following findings:

1. The proposed driveway configuration is designed to prioritize the movement of incoming vehicles and so avoid congestion at the driveway throat that could spill back onto the street.
2. Non-employee incoming passenger vehicle traffic separates from tractor-trailer truck traffic just inside the driveway, and proceeds east to the vehicle parking area on the north side of the building. The drive aisle serving those parking spaces is set back the required minimum 20' from the right-of-way. When vehicles parked in this area depart, they must yield to vehicles entering the site, as well as yield to exiting vehicles approaching from the south or from the west. If a vehicle queue forms on this approach to the driveway, it will extend to the east, away from the driveway throat, so as not to congest driveway operation, fire access, a walkway, or a public right-of-way.
3. Incoming employee vehicles will proceed south to the parking area on the south side of the building. Exiting employee vehicles, approaching northbound, will be required to yield to incoming vehicle movements in the driveway throat.

4. Incoming tractor-trailer trucks will proceed south to the loading docks, or west into the trailer storage area, before maneuvering to dock or park a trailer. The nearest overhead door (a drive-in door rather than a loading dock) is located more than 120' from the right-of-way, measured edge-to-edge, and the nearest dock door is more than 140' from the right-of-way, measured edge-to-edge. These distances are sufficient to ensure that truck maneuvering will not obstruct the driveway throat.
5. All exiting trucks will be required to allow incoming vehicles to clear the driveway before proceeding. If a vehicle queue forms on the southern or western approach to the driveway, it will extend to the south or to the west, respectively, away from the driveway throat, so as not to congest driveway operation, fire access, a walkway, or a public right-of-way.
6. Review of the resulting driveway configuration was included in the Traffic Impact Analysis (TIA) prepared by the City's Traffic Engineer, which is included as Exhibit E of this application. The TIA does not conclude that the proposed driveway configuration, including the reduced length of the drive aisle, will create a hazard.

Based on the above analysis, this standard is met.

Section 4.169. General Regulations – Double-Frontage Lots

(.01) Buildings on double frontage lots (i.e., through lots) and corner lots must meet the front yard setback for principal buildings on both streets or tracts with a private drive. [Amended by Ord. 682, 9/9/10]
Response: This standard does not apply as the site is not a double-frontage or corner lot.

(.02) Given that double-frontage lots tend to have one end that is regarded as a rear yard by the owner, the Development Review Board may establish special maintenance conditions to apply to such areas. Such conditions may include the requirement that the subject homeowners association, if any, be responsible for the on-going maintenance of the street frontage areas of double-frontage lots.
Response: The development site is not a double-frontage lot. This standard does not apply.

Section 4.171. General Regulations - Protection of Natural Features and Other Resources

(.02) General Terrain Preparation:
- *A. All developments shall be planned, designed, constructed and maintained with maximum regard to natural terrain features and topography, especially hillside areas, floodplains, and other significant landforms.*
- *B. All grading, filling and excavating done in connection with any development shall be in accordance with the Uniform Building Code*
- *C. In addition to any permits required under the Uniform Building Code, all developments shall be planned, designed, constructed and maintained so as to:*
  1. *Limit the extent of disturbance of soils and site by grading, excavation and other land alterations.*
  2. *Avoid substantial probabilities of: (1) accelerated erosion; (2) pollution, contamination, or siltation of lakes, rivers, streams and wetlands; (3) damage to vegetation; (4) injury to wildlife and fish habitats.*
  3. *Minimize the removal of trees and other native vegetation that stabilize hillsides, retain moisture, reduce erosion, siltation and nutrient runoff, and preserve the natural scenic character.*

Response: The site development plan needs to achieve a balance between the purposes of the site's Industrial Comprehensive Plan designation – notably, active industrial use for employment and economic development – and the site's natural topography and resource constraints. The site's topography features a west-facing slope east of Tapman Creek that steepens in the eastern part of the site. From approximately

elevation 284 along the property's east boundary, the slope descends to elevation 245 at the foot of the Bonneville Power Administration tower located near the southwest corner of the property, adjacent to Tapman Creek; that 39-foot difference over the approximately 700-foot separation represents an overall east-west cross-slope of 5.6 percent. On the west side of Tapman Creek, the ground elevation rises gently to approximately elevation 250 at the west property boundary.

The property's overall slope, and in particular the eastern hillside slope, is much steeper than is preferable for industrial development. Substantial manipulation of the site is necessary to provide a central area with a slope suitable for access and operations by semi tractor-trailer trucks, while keeping development outside the SROZ overlay in the western part of the site to the maximum extent feasible. The SROZ designation and regulations generally seek to prohibit private development within the vegetated corridor (buffer areas) along both sides of the creek.

[The following statement is not applicable to the Feb'23 Plan.]
This application includes a Variance request to allow a crossing of Tapman Creek for access to the usable 0.95-acre area in the western part of the property that is outside the SROZ but on the opposite side of it; please refer to the Variance section below for that discussion.

The applicant's proposed development plans include a Grading Plan and cross-sections (see Sheets C1.20, C1.21 and C1.22 in Exhibit B), and an Erosion and Sediment Control (ESC) Plan (see Sheets C4.00 through C4.60 in Exhibit B) with construction management practices to satisfy the requirements of subparagraphs B and C.1, -2 and -3. The development plan is supported by the Geotechnical report in Exhibit F that provides specific recommendations for excavation and site construction, including the design and anchoring of the proposed retaining walls.

The use of retaining walls as proposed allows the finish floor of the building to be lowered enough to make its entrances and loading dock doors match grade with the central area of the site, creating a functional relationship for industrial operations. The central trailer storage area will not be flat, but its approximately 2% downhill slope to the northwest will provide for positive site drainage to the proposed rain garden on the east side of the SROZ corridor, while being acceptable for management and storage of trailer units.

Alternatively, if the proposed development plan were to be based on the use of slope transitions rather than retaining walls, the resulting building would need to be substantially smaller, but the removal of trees necessary to implement the plan would be about the same, because the soil removal necessary to achieve stable slopes would be inconsistent with root zone protection at the current trees' elevations in the eastern portion of the site.

Finally, no tree removal is proposed in the protected SROZ resource area along Tapman Creek, and additional plantings are proposed in the impact mitigation plan (see Exhibit C) and the landscape planting plan (L-series sheets in Exhibit B), supported by the Arborist's Report (see Exhibit D). To summarize, the development plan prioritizes limiting impacts on the identified significant resource within the SROZ by concentrating development in the areas outside of it to the maximum extent feasible, consistent with full utilization of the portions of the property that do not contain significant resource areas. **As noted above, the proposal to develop the western upland part of the property for bobtail storage has been removed from the Feb'23 Plan.** The proposed development plan therefore satisfies these provisions.

(.03) Hillsides: All developments proposed on slopes greater than 25% shall be limited to the extent that:

A. An engineering geologic study approved by the City, establishes that the site is stable for the proposed development, and any conditions and recommendations based on the study are incorporated into the plans and construction of the development. The study shall include items specified under subsection 4.171(.07)(A.)(2.)(a-j):

B. Slope stabilization and re-vegetation plans shall be included as part of the applicant's landscape plans.

C. Buildings shall be clustered to reduce alteration of terrain and provide for preservation of natural features.

D. Creation of building sites through mass pad grading and successive padding or terracing of building sites shall be avoided where feasible.

E. Roads shall be of minimum width, with grades consistent with the City's Public Works Standards.

F. Maintenance, including re-vegetation, of all grading areas is the responsibility of the developer, and shall occur through October 1 of the second growing season following receipt of Certificates of Occupancy unless a longer period is approved by the Development Review Board.

G. The applicant shall obtain an erosion and sediment control permit from the City's Building and Environmental Services Division's.

Response: As noted just above, from approximately elevation 284 along the property's east boundary, the site's ground surface descends to elevation 245 at the foot of the Bonneville Power Administration tower located near the southwest corner of the property, adjacent to Tapman Creek. That 39-foot difference over the approximately 700-foot separation represents an overall east-west cross-slope of 5.6 percent. On the west side of Tapman Creek, the ground elevation rises gently to approximately elevation 250 along at the west property boundary. Based on those data, the site's slope is less than 25% and these provisions are not applicable.

(.04) Trees and Wooded Areas.

A. All developments shall be planned, designed, constructed and maintained so that:

1. Existing vegetation is not disturbed, injured, or removed prior to site development and prior to an approved plan for circulation, parking and structure location.

2. Existing wooded areas, significant clumps/groves of trees and vegetation, and all trees with a diameter at breast height of six inches or greater shall be incorporated into the development plan and protected wherever feasible.

3. Existing trees are preserved within any right-of-way when such trees are suitably located, healthy, and when approved grading allows.

Response: As noted in the responses above, no tree removal is proposed within the protected SROZ Resource Area along both sides of Tapman Creek. Tree conservation at some perimeter locations around the site may be feasible, but it will depend on root structures encountered during excavation and construction, especially where retaining walls are necessary to achieve the proposed building location and grading. Tree protection measures, and tree removal in other parts of the site as needed to implement the proposed development plan, will be implemented in accordance with the recommendations in the Arborist's Report (see Exhibit D). These practices comply with subparagraph 2.

Consistent with subparagraph 1, the contractor will not begin clearing operations until appropriate erosion and sedimentation control permits as well as grading permits have been issued by the City and the Oregon Department of Environmental Quality (DEQ 1200C Permit).

Regarding subparagraph 3, required widening and construction plans for SW Day Road do not allow any of the trees currently within that improvement corridor to be retained.

Based on the above findings, these standards are met.

B. Trees and woodland areas to be retained shall be protected during site preparation and construction according to City Public Works design specifications, by:

1. Avoiding disturbance of the roots by grading and/or compacting activity.

Response: As illustrated on Sheet C1.20 of Exhibit B, on-site protection measures will be established around the SROZ resource area and tree protection fencing will be installed to protect root zones for trees to be conserved outside that area.

2. Providing for drainage and water and air filtration to the roots of trees which will be covered with impermeable surfaces.

Response: No trees are proposed for retention at locations where their root zones would be covered by impermeable surfaces; this provision is not applicable.

3. Requiring, if necessary, the advisory expertise of a registered arborist/horticulturist both during and after site preparation.

Response: Arborist consultation can be required on-site as excavation and grading are done, to assess root damage and make determinations with respect to trees affected by mass grading, retaining wall construction, and utilities installations. Compliance can be assured through a condition of approval.

4. Requiring, if necessary, a special maintenance, management program to insure survival of specific woodland areas of specimen trees or individual heritage status trees.

Response: The site does not contain uniquely valuable specimen trees or heritage status trees; this requirement is not applicable.

(.05) High Voltage Powerline Easements and Rights of Way and Petroleum Pipeline Easements:

A. Due to the restrictions placed on these lands, no residential structures shall be allowed within high voltage powerline easements and rights of way and petroleum pipeline easements, and any development, particularly residential, adjacent to high voltage powerline easements and rights of way and petroleum pipeline easements shall be carefully reviewed.

B. Any proposed non-residential development within high voltage powerline easements and rights of way and petroleum pipeline easements shall be coordinated with and approved by the Bonneville Power Administration, Portland General Electric Company or other appropriate utility, depending on the easement or right of way ownership.

Response: A 125-foot wide electrical transmission line easement runs the north/south length of the property along the general alignment of Tapman Creek. No residential or non-residential development will take place within the powerline easement except for a new 24-foot wide drive aisle and creek crossing connecting the west parking lot to the main project site. Construction documents are designed in coordination with Bonneville Power Administration as demonstrated in Exhibit H. This standard is met.

(.06) Hazards to Safety: Purpose:

A. To protect lives and property from natural or human-induced geologic or hydrologic hazards and disasters.

B. To protect lives and property from damage due to soil hazards.

C. To protect lives and property from forest and brush fires.

D. To avoid financial loss resulting from development in hazard areas.

(.07) Standards for Earth Movement Hazard Areas:

A. No development or grading shall be allowed in areas of land movement, slump or earth flow, and mud or debris flow, except under one of the following conditions:

1. *Stabilization of the identified hazardous condition based on established and proven engineering techniques which ensure protection of public and private property. Appropriate conditions of approval may be attached by the City.*
2. *An engineering geologic study approved by the City establishing that the site is stable for the proposed use and development. The study shall include the following:*
   a. *Index map.*
   b. *Project description, to include: location; topography, drainage, vegetation; discussion of previous work; and discussion of field exploration methods.*
   c. *Site geology, to include: site geologic map; description of bedrock and superficial materials including artificial fill; location of any faults, folds, etc.; and structural data including bedding, jointing, and shear zones.*
   d. *Discussion and analysis of any slope stability problems.*
   e. *Discussion of any off-site geologic conditions that may pose a potential hazard to the site or that may be affected by on-site development.*
   f. *Suitability of site for proposed development from geologic standpoint.*
   g. *Specific recommendations for cut slope stability, seepage and drainage control, or other design criteria to mitigate geologic hazards.*
   h. *Supportive data, to include: cross sections showing subsurface structure; graphic logs of subsurface explorations; results of laboratory tests; and references.*
   i. *Signature and certification number of engineering geologist registered in the State of Oregon.*
   j. *Additional information or analyses as necessary to evaluate the site.*

B. *Vegetative cover shall be maintained or established for stability and erosion control purposes.*

C. *Diversion of storm water into these areas shall be prohibited.*

D. *The principal source of information for determining earth movement hazards is the State Department of Geology and Mineral Industries (DOGAMI) Bulletin 99 and any subsequent bulletins and accompanying maps. Approved site specific engineering geologic studies shall be used to identify the extent and severity of the hazardous conditions on the site, and to update the earth movement hazards database.*

Response: According to data from the Oregon Department of Geology and Minerals (DOGAMI)[2], the subject site is located within a landslide hazard area ("Moderate – Landsliding Possible"), but there are no known active fault lines in the immediate vicinity. Furthermore, site-specific geotechnical investigation and construction recommendations (see Exhibit F) did not identify landslide potential. The contractor will not begin clearing operations until appropriate erosion and sedimentation control permits and grading permits have been issued by the City and the Oregon Department of Environmental Quality, to ensure that adequate measures will be in place to minimize erosion potential. The proposed stormwater system, illustrated on Sheet C1.30 of Exhibit B, has been designed based on the findings and specific recommendations in the Geotechnical Report (see Exhibit F); it will collect on-site stormwater runoff, direct it through surface water quality treatment facilities **and outfall to Tapman Creek.** ~~To a storm control manhole, and finally discharge it to the existing public storm drain system in the SW Day Road right-of-way.~~ A Storm Report is included as Exhibit G. This standard is met.

(.08) Standards for Soil Hazard Areas:

[2] https://gis.dogami.oregon.gov/maps/hazvu/

A. Appropriate siting and design safeguards shall insure structural stability and proper drainage of foundation and crawl space areas for development on land with any of the following soil conditions: wet or high water table; high shrink-swell capability; compressible or organic; and shallow depth-to-bedrock.

The principal source of information for determining soil hazards is the State DOGAMI Bulletin 99 and any subsequent bulletins and accompanying maps. Approved site-specific soil studies shall be used to identify the extent and severity of the hazardous conditions on the site, and to update the soil hazards database accordingly.

Response: In Exhibit G of the Preliminary Storm Report (see Exhibit G), the applicant has provided documentation of poor soil infiltration characteristics at the subject property (*Geotechnical Design Memo on Infiltration Infeasibility*, June 9, 2020). All construction will be based on recommendations by the consulting geological engineer to ensure structural stability. Based on the geological engineer's findings and recommendations, on-site storm drainage systems have been designed to treat and release all stormwater to **Tapman Creek** ~~the public system~~ rather than attempt to infiltrate it on-site.

The applicant's storm report and on-site stormwater management facilities sizing calculations assume zero on-site infiltration. This assumption is based on the geotechnical engineering report's recommendation that on-site infiltration should not be used as a design approach. As a result, the preliminary storm report demonstrates the feasibility of meeting stormwater management requirements with no reliance on on-site infiltration, which contributes to on-site soil stability. This requirement is met.

(.09) Historic Protection: Purpose: [detailed provisions omitted for brevity]

Response: The subject property has not been identified as containing or being adjacent to any significant historic, cultural, or archaeological resources. These provisions are not applicable.

(.10) Alteration and Development Criteria:

A. Demolition or alteration of any structure, or any change in any site or object which has been designated as a cultural resource, is prohibited unless it is determined:

1. In the case of a designated cultural resource, the proposed work would not detrimentally alter, destroy or adversely affect any exterior architectural or other identified feature; or

2. In the case of any property located within a historic district, the proposed construction, removal, rehabilitation, alteration, remodeling, excavation or exterior alteration conforms to any prescriptive standards as adopted by the City, and does not adversely affect the character of the district; or

3. In the case of construction of a new improvement, building or structure upon a cultural resource site, the exterior of such improvements will not adversely affect and will be compatible with the external appearance of existing designated improvements, buildings and structures on said site; or

4. That no reasonable use can be made of the property without such approval.

Response: These provisions are not applicable because the subject property is not a designated cultural resource site and is not within a historic district.

(.11) Cultural Resource Designation Criteria: A cultural resource may be designated and placed on the Cultural Resources Inventory if it meets the following criteria:

A. It exemplifies or reflects special elements of the City's cultural, social, economic, political, aesthetic, engineering or architectural history; or

B. It is identified with persons or events significant in local, state, or national history; or

C. It embodies distinctive characteristics of a style, type, period, or method of construction, or it is a valuable example of the use of indigenous materials or craftsmanship; or

D. It is representative of the notable work of a builder, designer, or architect.

Response: These provisions are not applicable because the subject property is not a designated cultural resource site, and it is not proposed for such designation.

Section 4.172. Flood Plain Regulations

Response: According to Flood Insurance Rate Map 41067C0609E, effective November 4, 2016, the subject property is not located in a regulated flood hazard area. These provisions are not applicable.

Section 4.175. Public Safety and Crime Prevention

(.01) All developments shall be designed to deter crime and insure public safety.

Response: Although the SW Day Road frontage is densely screened by landscaping, the proposed site plan is designed to provide visibility of active use parts of the site and building from key points in the SW Day Road public right-of-way (primarily at the driveway). This facilitates surveillance by law enforcement, and also enables citizens passing by on the public street to observe activity within the site. Site lighting, including in parking/circulation areas and along the pedestrian path to the office entrance, will contribute to safety during hours of darkness. This standard is met.

(.02) Addressing and directional signing shall be designed to assure identification of all buildings and structures by emergency response personnel, as well as the general public.

Response: The applicant will prepare and submit plans for address number signage and direction for internal circulation in conjunction with construction permit submittals.

(.03) Areas vulnerable to crime shall be designed to allow surveillance. Parking and loading areas shall be designed for access by police in the course of routine patrol duties.

Response: By locating docking areas at a partially visible location at the side of the building, the proposed design facilitates routine surveillance by police without requiring them to enter and circulate within the site. Vehicle parking areas, in particular the northern parking area near the main entrance, can be at least partially observed from points along SW Day Road, as well as from within the central part of the site. This standard is met.

(.04) Exterior lighting shall be designed and oriented to discourage crime.

Response: Site lighting will illuminate parking and activity areas, to enable public surveillance and thereby discourage crime.

Section 4.176. Landscaping, Screening, and Buffering

Note: the reader is encouraged to see Section 4.179, applying to screening and buffering of storage areas for solid waste and recyclables.

(.02) Landscaping and Screening Standards.

B. Subsections "C" through "I," below, state the different landscaping and screening standards to be applied throughout the City. The locations where the landscaping and screening are required and the depth of the landscaping and screening is stated in various places in the Code.

Response: The landscape plans in Exhibit B have been designed to conform to the applicable landscaping and screening standards, as described in responses to subsections "C" through "I" below. This standard is met.

C. All landscaping and screening required by this Code must comply with all of the provisions of this Section, unless specifically waived or granted a Variance as otherwise provided in the Code. The landscaping standards are minimum requirements; higher standards can be substituted as long as fence and vegetation-height limitations are met. Where the standards set a minimum based on square footage or linear footage, they shall be interpreted as applying to each complete or partial increment of area or length (e.g., a landscaped area of between 800 and 1600 square feet shall have two trees if the standard calls for one tree per 800 square feet.

Response: The applicant's landscaping plan, in the L-series drawing sheets of Exhibit B, demonstrates compliance with the standards in this Section.

C. General Landscaping Standard.

1. Intent. The General Landscaping Standard is a landscape treatment for areas that are generally open. It is intended to be applied in situations where distance is used as the principal means of separating uses or developments and landscaping is required to enhance the intervening space. Landscaping may include a mixture of ground cover, evergreen and deciduous shrubs, and coniferous and deciduous trees.

2. Required materials. Shrubs and trees, other than street trees, may be grouped. Ground cover plants must fully cover the remainder of the landscaped area (see Figure 21: General Landscaping). The General Landscaping Standard has two different requirements for trees and shrubs:

a. Where the landscaped area is less than 30 feet deep, one tree is required for every 30 linear feet.

b. Where the landscaped area is 30 feet deep or greater, one tree is required for every 800 square feet and two high shrubs or three low shrubs are required for every 400 square feet.

Response: The front portion of the site, facing SW Day Road (an Addressing Street), is subject to Coffee Creek Design District standards calling for a dense, naturalistic landscape character along that roadway corridor. The applicant has used the General Landscape standard as the starting point for that site edge, while adding amenity features such as dense and varied plantings, and a pedestrian Wayside. The planting scheme for the front of the property is designed to frame the public realm (street environment), provide shade and shelter for a centrally located Wayside, and screen the parking and loading areas from view from the street (except at the driveway entrance). The plan also provides views into the SROZ Resource Area and the rain-garden **planter** ~~planters~~ (stormwater facilities) to its east ~~and west~~ from SW Day Road. In these ways, the special planting scheme responds to the unique opportunities this site presents, providing naturalistic screening and views from the SW Day Road corridor that will exceed the basic requirements of the General Landscape standard. The sides and rear of the site, which are adjacent to other Industrially-designated properties, are landscaped to meet the Low Screen standard.

D. Low Screen Landscaping Standard.

1. Intent. The Low Screen Landscaping Standard is a landscape treatment that uses a combination of distance and low screening to separate uses or developments. It is intended to be applied in situations where low screening is adequate to soften the impact of one use or development on another, or where visibility between areas is more important than a total visual screen. The Low Screen Landscaping Standard is usually applied along street lot lines or in the area separating parking lots from street rights-of-way.

2. *Required materials. The Low Screen Landscaping Standard requires sufficient low shrubs to form a continuous screen three (3) feet high and 95% opaque, year-round. In addition, one tree is required for every 30 linear feet of landscaped area, or as otherwise required to provide a tree canopy over the landscaped area. Ground cover plants must fully cover the remainder of the landscaped area. A three (3) foot high masonry wall or a berm may be substituted for the shrubs, but the trees and ground cover plants are still required. When applied along street lot lines, the screen or wall is to be placed along the interior side of the landscaped area. (See Figure 22: Low Screen Landscaping).*

Response: Plantings along the side and rear lot lines, which abut other industrially-designated properties and are therefore not considered visually sensitive boundaries, are designed in compliance with the Low Screen landscaping standard.

E. Low Berm Landscaping Standard.

1. *Intent. The Low Berm Standard is intended to be applied in situations where moderate screening to reduce both visual and noise impacts is needed to protect abutting uses or developments from one-another, and where it is desirable and practical to provide separation by both distance and sight- obscuring materials. This screening is most important where either, or both, of the abutting uses or developments can be expected to be particularly sensitive to noise or visual impacts.*
2. *Required materials. The Low Berm Standard requires a berm at least two feet six inches (2' 6") high along the interior side of the landscaped area (see Figure 23: Low Berm Landscaping). If the berm is less than three (3) feet high, low shrubs meeting the Low Screen Landscaping Standard, above, are to be planted along the top of the berm, assuring that the screen is at least three (3) feet in height. In addition, one tree is required for every 30 linear feet of berm, or as otherwise required to provide a tree canopy over the landscaped area. Ground cover plants must fully cover the remainder of the landscaped area.*

Response: As noted above, the applicant has used the General Landscape standard as the starting point for the front (SW Day Road) site edge, while adding amenity features such as varied intensive plantings and a pedestrian Wayside. The overall site grading requirements for access and circulation, including the retaining wall on the north, east and south sides of the building, make it impractical to construct a berm of sufficient height to utilize this standard.

F. High Screen Landscaping Standard.

1. *Intent. The High Screen Landscaping Standard is a landscape treatment that relies primarily on screening to separate uses or developments. It is intended to be applied in situations where visual separation is required.*
2. *Required materials. The High Screen Landscaping Standard requires sufficient high shrubs to form a continuous screen at least six (6) feet high and 95% opaque, year-round. In addition, one tree is required for every 30 linear feet of landscaped area, or as otherwise required to provide a tree canopy over the landscaped area. Ground cover plants must fully cover the remainder of the landscaped area. A six (6) foot high masonry wall or a berm may be substituted for the shrubs, but the trees and ground cover plants are still required. When applied along street lot lines, the screen or wall is to be placed along the interior side of the landscaped area. (See Figure 24: High Screen Landscaping).*

Response: No side of the subject property requires High Screen landscaping. These provisions are not applicable. Notably, however, a high screen landscaping area is provided between the main

site access and the loading area to reduce visual impacts of the loading area from the public street as well as complementing and elevating the visual attraction of the primary front façade.

G. High Wall Standard.

1. Intent. The High Wall Standard is intended to be applied in situations where extensive screening to reduce both visual and noise impacts is needed to protect abutting uses or developments from one-another. This screening is most important where either, or both, of the abutting uses or developments can be expected to be particularly sensitive to noise or visual impacts, or where there is little space for physical separation.

2. Required materials. The High Wall Standard requires a masonry wall at least six (6) feet high along the interior side of the landscaped area (see Figure 25: High Wall Landscaping). In addition, one tree is required for every 30 linear feet of wall, or as otherwise required to provide a tree canopy over the landscaped area. Ground cover plants must fully cover the remainder of the landscaped area.

Response: No side of the subject property requires High Wall landscaping. These provisions are not applicable.

I. High Berm Standard.

1. Intent. The High Berm Standard is intended to be applied in situations where extensive screening to reduce both visual and noise impacts is needed to protect abutting uses or developments from one-another, and where it is desirable and practical to provide separation by both distance and sight- obscuring materials. This screening is most important where either, or both, of the abutting uses or developments can be expected to be particularly sensitive to noise or visual impacts.

2. Required materials. The High Berm Standard requires a berm at least four (4) feet high along the interior side of the landscaped area (see Figure 26: High Berm Landscaping). If the berm is less than six (6) feet high, low shrubs meeting the Low Screen Landscaping Standard, above, are to be planted along the top of the berm, assuring that the screen is at least six (6) feet in height In addition, one tree is required for every 30 linear feet of berm, or as otherwise required to provide a tree canopy over the landscaped area. Ground cover plants must fully cover the remainder of the landscaped area.

Response: No side of the subject property requires High Berm landscaping. These provisions are not applicable.

J. Partially Sight-Obscuring Fence Standard.

1. Intent. The Partially Sight-Obscuring Fence Standard is intended to provide a tall, but not totally blocked, visual separation. The standard is applied where a low level of screening is adequate to soften the impact of one use or development on another, and where some visibility between abutting areas is preferred over a total visual screen. It can be applied in conjunction with landscape plantings or applied in areas where landscape plantings are not necessary and where nonresidential uses are involved.

2. Required materials. Partially Sight-Obscuring Fence Standard are to be at least six (6) feet high and at least 50% sight-obscuring. Fences may be made of wood (other than plywood or particle-board), metal, bricks, masonry or other permanent materials (see Figure 27: Partially Sight-Obscuring Fence).

Response: No side of the subject property requires Partially Sight-Obscuring Fence screening. These provisions are not applicable.

K. Fully Sight-Obscuring Fence Standard.

1. Intent. The Fully Sight-Obscuring Fence Standard is intended to provide a totally blocked visual separation. The standard is applied where full visual screening is needed to reduce the impact of one use or development on another. It can be applied in conjunction with landscape plantings or applied in areas where landscape plantings are not necessary.

2. Required materials. Fully sight-obscuring fences are to be at least six (6) feet high and 100% sight-obscuring. Fences may be made of wood (other than plywood or particle-board), metal, bricks, masonry or other permanent materials (see Figure 28: Totally Sight-Obscuring Fence).

Response: No side of the subject property requires Fully Sight-Obscuring Fence screening. These provisions are not applicable.

(.03) Landscape Area. Not less than fifteen percent (15%) of the total lot area, shall be landscaped with vegetative plant materials. The ten percent (10%) parking area landscaping required by section 4.155.03(B)(1) is included in the fifteen percent (15%) total lot landscaping requirement. Landscaping shall be located in at least three separate and distinct areas of the lot, one of which must be in the contiguous frontage area. Planting areas shall be encouraged adjacent to structures. Landscaping shall be used to define, soften or screen the appearance of buildings and off-street parking areas. Materials to be installed shall achieve a balance between various plant forms, textures, and heights. The installation of native plant materials shall be used whenever practicable. (For recommendations refer to the Native Plant List maintained by the City of Wilsonville). [Amended by Ord. # 674 11/16/09]

Response: As reported above at pages 4-5, overall site landscaping of **117,433** ~~138,317~~ SF is provided, or **34.9%** ~~35.8%~~ of net site area after right-of-way dedication. Parking area landscaping is provided at 3,160 SF, which is 15.9% of the 19,884 SF of the site devoted to parking areas. The landscape plan provides several distinct landscape areas, most of which are concentrated in the front yard, to screen the building, frame the public realm (SW Day Road corridor) punctuated by views into the site, and provide the pedestrian Wayside. Dense plantings with a variety of predominantly native species, together with boulders, water in functioning storm treatment rain gardens, and seating areas all contribute to an interesting and varied landscape composition in the foreground of the proposed industrial building. These requirements are satisfied.

(.04) Buffering and Screening. Additional to the standards of this subsection, the requirements of the Section 4.137.5 (Screening and Buffering Overlay Zone) shall also be applied, where applicable.

A. All intensive or higher density developments shall be screened and buffered from less intense or lower density developments.

B. Activity areas on commercial and industrial sites shall be buffered and screened from adjacent residential areas. Multi-family developments shall be screened and buffered from single-family areas.

C. All exterior, roof and ground mounted, mechanical and utility equipment shall be screened from ground level off-site view from adjacent streets or properties.

D. All outdoor storage areas shall be screened from public view, unless visible storage has been approved for the site by the Development Review Board or Planning Director acting on a development permit.

E. In all cases other than for industrial uses in industrial zones, landscaping shall be designed to screen loading areas and docks, and truck parking.

F. In any zone any fence over six (6) feet high measured from soil surface at the outside of fenceline shall require Development Review Board approval.

Response: The subject property's location in the Coffee Creek Industrial Area, with industrially-designated neighboring properties, does not require buffering and screening to protect adjacent sensitive uses (i.e., "*less intense or lower density developments"*). The building's parapet-roof design provides screening of rooftop mechanical equipment from view from adjacent streets or properties, consistent with subparagraph C. The site plan does not include any outdoor storage areas subject to subparagraph D. Subparagraph E is not applicable because the project is an industrial project in an industrial zone. Perimeter fencing is not proposed, so subparagraph F is not applicable.

(.05) Sight-Obscuring Fence or Planting. The use for which a sight-obscuring fence or planting is required shall not begin operation until the fence or planting is erected or in place and approved by the City. A temporary occupancy permit may be issued upon a posting of a bond or other security equal to one hundred ten percent (110%) of the cost of such fence or planting and its installation. (See Sections 4.400 to 4.470 for additional requirements.)

Response: The subject property's location in the Coffee Creek Industrial Area, with industrially-designated neighboring properties, does not require sight-obscuring fencing or plantings for the anticipated light industrial and warehousing uses. This provision is not applicable to this proposal; however, should a future tenant propose to conduct an activity for which such fencing would be required, they will have to obtain approval for an appropriate screening plan before proceeding.

(.06) Plant Materials.

A. Shrubs and Ground Cover. All required ground cover plants and shrubs must be of sufficient size and number to meet these standards within three (3) years of planting. Non-horticultural plastic sheeting or other impermeable surface shall not be placed under mulch. Native topsoil shall be preserved and reused to the extent feasible. Surface mulch or bark dust are to be fully raked into soil of appropriate depth, sufficient to control erosion, and are confined to areas around plantings. Areas exhibiting only surface mulch, compost or barkdust are not to be used as substitutes for plant areas.

1. Shrubs. All shrubs shall be well branched and typical of their type as described in current AAN Standards and shall be equal to or better than 2-gallon containers and 10" to 12" spread.

2. Ground cover. Shall be equal to or better than the following depending on the type of plant materials used: gallon containers spaced at 4 feet on center minimum, 4" pot spaced 2 feet on center minimum, 2-1/4" pots spaced at 18 inch on center minimum. No bare root planting shall be permitted. Ground cover shall be sufficient to cover at least 80% of the bare soil in required landscape areas within three (3) years of planting. Where wildflower seeds are designated for use as a ground cover, the City may require annual re-seeding as necessary.

3. Turf or lawn in non-residential developments. Shall not be used to cover more than ten percent (10%) of the landscaped area, unless specifically approved based on a finding that, due to site conditions and availability of water, a larger percentage of turf or lawn area is appropriate. Use of lawn fertilizer shall be discouraged. Irrigation drainage runoff from lawns shall be retained within lawn areas.

4. Plant materials under trees or large shrubs. Appropriate plant materials shall be installed beneath the canopies of trees and large shrubs to avoid the appearance of bare ground in those locations.

5. Integrate compost-amended topsoil in all areas to be landscaped, including lawns, to help detain runoff, reduce irrigation and fertilizer needs, and create a sustainable, low-maintenance landscape.

Response: Detailed instructions for landscape plants, materials and installation are provided in the Landscaping Plan (L-series sheets in Exhibit B). The specifications have been prepared in compliance with these and other City of Wilsonville requirements.

B. Trees. All trees shall be well-branched and typical of their type as described in current American Association of Nurserymen (AAN) Standards and shall be balled and burlapped. The trees shall be grouped as follows:

1. Primary trees which define, outline or enclose major spaces, such as Oak, Maple, Linden, and Seedless Ash, shall be a minimum of 2" caliper.

2. Secondary trees which define, outline or enclose interior areas, such as Columnar Red Maple, Flowering Pear, Flame Ash, and Honeylocust, shall be a minimum of 1-3/4" to 2" caliper.

3. Accent trees which, are used to add color, variation and accent to architectural features, such as Flowering Pear and Kousa Dogwood, shall be 1-3/4" minimum caliper.

4. Large conifer trees such as Douglas Fir or Deodar Cedar shall be installed at a minimum height of eight (8) feet.

5. Medium-sized conifers such as Shore Pine, Western Red Cedar or Mountain Hemlock shall be installed at a minimum height of five to six (5 to 6) feet.

Response: Detailed specifications for landscape plants, materials and installation are provided in the Landscaping Plan (L-series sheets in Exhibit B). The specifications have been prepared in compliance with these requirements.

C. Where a proposed development includes buildings larger than twenty-four (24) feet in height or greater than 50,000 square feet in footprint area, the Planning Director or the Development Review Board, as applicable, may require larger or more mature plant materials:

1. At maturity, proposed trees shall be at least one-half the height of the building to which they are closest, and building walls longer than 50 feet shall require tree groups located no more than fifty (50) feet on center, to break up the length and height of the façade.

2. Either fully branched deciduous or evergreen trees may be specified depending upon the desired results. Where solar access is to be preserved, only solar- friendly deciduous trees are to be used. Where year-round sight obscuring is the highest priority, evergreen trees are to be used.

3. The following standards are to be applied:

a. Deciduous trees:

i. Minimum height of ten (10) feet; and

ii. Minimum trunk diameter (caliper) of 2 inches (measured at four and one-half [4 1/2] feet above grade).

b. Evergreen trees: Minimum height of twelve (12) feet.

Response: Detailed specifications for landscape plants, materials and installation are provided in the Landscaping Plan (L-series sheets in Exhibit B). The specifications have been prepared in compliance with these requirements.

D. Street Trees. In order to provide a diversity of species, the Development Review Board may require a mix of street trees throughout a development. Unless the Board waives the requirement for reasons supported by a finding in the record, different types of street trees shall be required for adjoining blocks in a development.

1. *All trees shall be standard base grafted, well branched and typical of their type as described in current AAN Standards and shall be balled and burlapped (b&b). Street trees shall be planted at sizes in accordance with the following standards:*
   a. *Arterial streets - 3" minimum caliper*
   b. *Collector streets - 2" minimum caliper.*
   c. *Local streets or residential private access drives - 1-3/4" minimum caliper.*
   d. *Accent or median tree -1-3/4" minimum caliper.*
2. *The following trees and varieties thereof are considered satisfactory street trees in most circumstances; however, other varieties and species are encouraged and will be considered:*
   a. *Trees over 50 feet mature height: Quercus garryana (Native Oregon White Oak), Quercus rubra borealis (Red Oak), Acer Macrophylum (Native Big Leaf Maple), Acer nigrum (Green Column Black Maple), Fraxinus americanus (White Ash), Fraxinus pennsylvannica 'Marshall' (Marshall Seedless Green Ash), Quercus coccinea (Scarlet Oak), Quercus pulustris (Pin Oak), Tilia americana (American Linden).*
   b. *Trees under 50 feet mature height: Acer rubrum (Red Sunset Maple), Cornus nuttallii (NativePacific Dogwood), Gleditsia triacanthos (Honey Locust), Pyrus calleryana 'Bradford' (Bradford Pear), Tilia cordata (Little Leaf Linden), Fraxinus oxycarpa (Flame Ash).*
   c. *Other street tree species. Other species may be specified for use in certain situations. For instance, evergreen species may be specified where year-round color is desirable and no adverse effect on solar access is anticipated. Water-loving species may be specified in low locations where wet soil conditions are anticipated.*

Response: Detailed specifications for landscape plants, materials and installation are provided in the Landscaping Plan (L-series sheets in Exhibit B) and the public street construction plans (R-series sheets in Exhibit B). The specifications have been prepared in compliance with these requirements.

E. Types of Plant Species.

1. *Existing landscaping or native vegetation may be used to meet these standards, if protected and maintained during the construction phase of the development and if the plant species do not include any that have been listed by the City as prohibited. The existing native and non-native vegetation to be incorporated into the landscaping shall be identified.*
2. *Selection of plant materials. Landscape materials shall be selected and sited to produce hardy and drought-tolerant landscaping. Selection shall be based on soil characteristics, maintenance requirements, exposure to sun and wind, slope and contours of the site, and compatibility with other vegetation that will remain on the site. Suggested species lists for street trees, shrubs and groundcovers shall be provided by the City of Wilsonville.*
3. *Prohibited plant materials. The City may establish a list of plants that are prohibited in landscaped areas. Plants may be prohibited because they are potentially damaging to sidewalks, roads, underground utilities, drainage improvements, or foundations, or because they are known to be invasive to native vegetation.*

Response: Detailed specifications for landscape plants, materials and installation are provided in the Landscaping Plan (L-series sheets in Exhibit B). The specifications have been prepared in compliance with these requirements.

F. Tree Credit.

Existing trees that are in good health as certified by an arborist and are not disturbed during construction may count for landscaping tree credit as follows (measured at four and one-half feet above grade and rounded to the nearest inch):

Existing trunk diameter	*Number of Tree Credits*
18 to 24 inches in diameter	*3 tree credits*
25 to 31 inches in diameter	*4 tree credits*
32 inches or greater	*5 tree credits*

1. It shall be the responsibility of the owner to use reasonable care to maintain preserved trees. Trees preserved under this section may only be removed if an application for removal permit under Section 4.610.10(01)(H) has been approved. Required mitigation for removal shall be replacement with the number of trees credited to the preserved and removed tree.

2. Within five years of occupancy and upon notice from the City, the property owner shall replace any preserved tree that cannot be maintained due to disease or damage, or hazard or nuisance as defined in Chapter 6 of this code. The notice shall be based on complete information provided by an arborist Replacement with the number of trees credited shall occur within one (1) growing season of notice.

G. Exceeding Standards. Landscape materials that exceed the minimum standards of this Section are encouraged, provided that height and vision clearance requirements are met.

H. Compliance with Standards. The burden of proof is on the applicant to show that proposed landscaping materials will comply with the purposes and standards of this Section.

Response: On-site trees to be conserved include a 20" willow (# 791) and a 20" Oregon ash (#2074), both located within the SROZ area. This results in six (6) Tree Credits applicable to the mitigation requirement of **175** ~~210~~ replacement trees, based on the Arborist's Report (see Sheets L0.03 and L0.04 in Exhibit B and Exhibit D). Tree Credits are not applicable where the number of trees removed exceeds the number of trees that can be planted within the site as mitigation. In this proposal, the number of on-site trees to be planted matches the number of trees to be removed, so compliance is achieved without claiming any Tree Credits.

(.07) Installation and Maintenance.

A. Installation. Plant materials shall be installed to current industry standards and shall be properly staked to assure survival. Support devices (guy wires, etc.) shall not be allowed to interfere with normal pedestrian or vehicular movement.

B. Maintenance. Maintenance of landscaped areas is the on-going responsibility of the property owner. Any landscaping installed to meet the requirements of this Code, or any condition of approval established by a City decision-making body acting on an application, shall be continuously maintained in a healthy, vital and acceptable manner. Plants that die are to be replaced in kind, within one growing season, unless appropriate substitute species are approved by the City. Failure to maintain landscaping as required in this Section shall constitute a violation of this Code for which appropriate legal remedies, including the revocation of any applicable land development permits, may result.

C. Irrigation. The intent of this standard is to assure that plants will survive the critical establishment period when they are most vulnerable due to a lack of watering and also to assure that water is not wasted through unnecessary or inefficient irrigation. Approved irrigation system plans shall specify one of the following:

1. A permanent, built-in, irrigation system with an automatic controller. Either a spray or drip irrigation system, or a combination of the two, may be specified.

2. *A permanent or temporary system designed by a landscape architect licensed to practice in the State of Oregon, sufficient to assure that the plants will become established and drought-tolerant.*
3. *Other irrigation system specified by a licensed professional in the field of landscape architecture or irrigation system design.*
4. *A temporary permit issued for a period of one year, after which an inspection shall be conducted to assure that the plants have become established. Any plants that have died, or that appear to the Planning Director to not be thriving, shall be appropriately replaced within one growing season. An inspection fee and a maintenance bond or other security sufficient to cover all costs of replacing the plant materials shall be provided, to the satisfaction of the Community Development Director. Additionally, the applicant shall provide the City with a written license or easement to enter the property and cause any failing plant materials to be replaced.*

D. *Protection. All required landscape areas, including all trees and shrubs, shall be protected from potential damage by conflicting uses or activities including vehicle parking and the storage of materials.*

Response: The landscaping plan (L-series sheets in Exhibit B) demonstrates the feasibility of installing landscape materials in compliance with these requirements. Compliance can be assured through imposition of a condition of approval.

(.08) Landscaping on Corner Lots. All landscaping on corner lots shall meet the vision clearance standards of Section 4.177. If high screening would ordinarily be required by this Code, low screening shall be substituted within vision clearance areas. Taller screening may be required outside of the vision clearance area to mitigate for the reduced height within it.

Response: This standard is not applicable as this site is not a corner lot.

(.09) Landscape Plans. Landscape plans shall be submitted showing all existing and proposed landscape areas. Plans must be drawn to scale and show the type, installation size, number and placement of materials. Plans shall include a plant material list. Plants are to be identified by both their scientific and common names. The condition of any existing plants and the proposed method of irrigation are also to be indicated. Landscape plans shall divide all landscape areas into the following categories based on projected water consumption for irrigation:

A. *High water usage areas (+/- two (2) inches per week): small convoluted lawns, lawns under existing trees, annual and perennial flower beds, and temperamental shrubs;*
B. *Moderate water usage areas (+/- one (1) inch per week): large lawn areas, average water-using shrubs, and trees;*
C. *Low water usage areas (Less than one (1) inch per week, or gallons per hour): seeded fieldgrass, swales, native plantings, drought-tolerant shrubs, and ornamental grasses or drip irrigated areas.*
D. *Interim or unique water usage areas: areas with temporary seeding, aquatic plants, erosion control areas, areas with temporary irrigation systems, and areas with special water–saving features or water harvesting irrigation capabilities.*

These categories shall be noted in general on the plan and on the plant material list.

Response: As indicated in the planting plan, all landscape areas of the site fall into category C, Low water usage areas (see in Exhibit B, Sheet L0.01, a Zoning Compliance Note for Section 4.176(.09) Water Usage). The proposed plant palette is 95% native and 100% drought tolerant once established.

(.10) Completion of Landscaping. The installation of plant materials may be deferred for a period of time specified by the Board or Planning Director acting on an application, in order to avoid hot summer or cold winter periods, or in response to water shortages.

In these cases, a temporary permit shall be issued, following the same procedures specified in subsection (.07)(C)(3), above, regarding temporary irrigation systems. No final Certificate of Occupancy shall be granted until an adequate bond or other security is posted for the completion of the landscaping, and the City is given written authorization to enter the property and install the required landscaping, in the event that the required landscaping has not been installed. The form of such written authorization shall be submitted to the City Attorney for review.

Response: This application does not request deferral of plant material installation; however, depending on the seasonality of construction, the applicant may work with City staff to utilize these provisions to plant at the appropriate time(s), as allowed under this provision.

(.11) Street Trees Not Typically Part of Site Landscaping. Street trees are not subject to the requirements of this Section and are not counted toward the required standards of this Section. Except, however, that the Development Review Board may, by granting a waiver or variance, allow for special landscaping within the right-of-way to compensate for a lack of appropriate on-site locations for landscaping. See subsection (.06), above, regarding street trees.

Response: Based on the submitted materials, the proposal complies with applicable standards.

(.12) Mitigation and Restoration Plantings. A mitigation plan is to be approved by the City's Development Review Board before the destruction, damage, or removal of any existing native plants. Plantings intended to mitigate the loss of native vegetation are subject to the following standards. Where these standards conflict with other requirements of this Code, the standards of this Section shall take precedence. The desired effect of this section is to preserve existing native vegetation.

- *A. Plant Sources. Plant materials are to be native and are subject to approval by the City. They are to be non-clonal in origin; seed source is to be as local as possible, and plants must be nursery propagated or taken from a pre-approved transplantation area. All of these requirements are to be addressed in any proposed mitigation plan.*
- *B. Plant Materials. The mitigation plan shall specify the types and installation sizes of plant materials to be used for restoration. Practices such as the use of pesticides, fungicides, and fertilizers shall not be employed in mitigation areas unless specifically authorized and approved.*
- *C. Installation. Install native plants in suitable soil conditions. Plant materials are to be supported only when necessary because of extreme winds at the site. Where support is necessary, all stakes, guy wires or other measures are to be removed as soon as the plants can support themselves. Protect from animal and fowl predation and foraging until establishment.*
- *D. Irrigation. Permanent irrigation systems are generally not appropriate in restoration situations, and manual or temporary watering of new plantings is often necessary. The mitigation plan shall specify the method and frequency of manual watering, including any that may be necessary after the first growing season.*
- *E. Monitoring and Reporting. Monitoring of native landscape areas is the on-going responsibility of the property owner. Plants that die are to be replaced in kind and quantity within one year. Written proof of the survival of all plants shall be required to be submitted to the City's Planning Department one year after the planting is completed.*

Response: The applicant has included in this request a Tree Plan Type C for DRB review and approval because industrial development of the property cannot be achieved without removal of numerous existing trees. All trees within the SROZ will be preserved, and the proposed development plan includes

mitigation in the form of replacement plantings at on-site locations ~~to the extent feasible for safety and long term health of the trees, supplemented by payment of a fee in lieu of on-site replanting for the remainder of the mitigation requirement~~. Please refer to the Tree Mitigation Plan, Sheet L0.04 in Exhibit B, the Arborist's Report in Exhibit D, and the detailed discussion below in the Tree Plan Type C section of this report.

Figure 21: General Landscaping

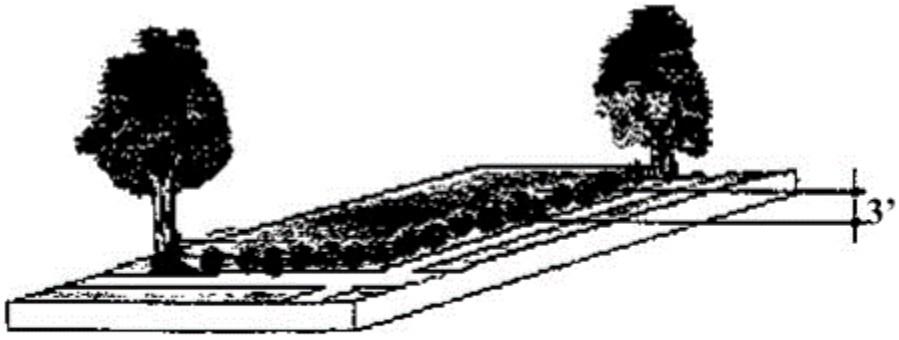


Figure 22: Low Screen Landscaping

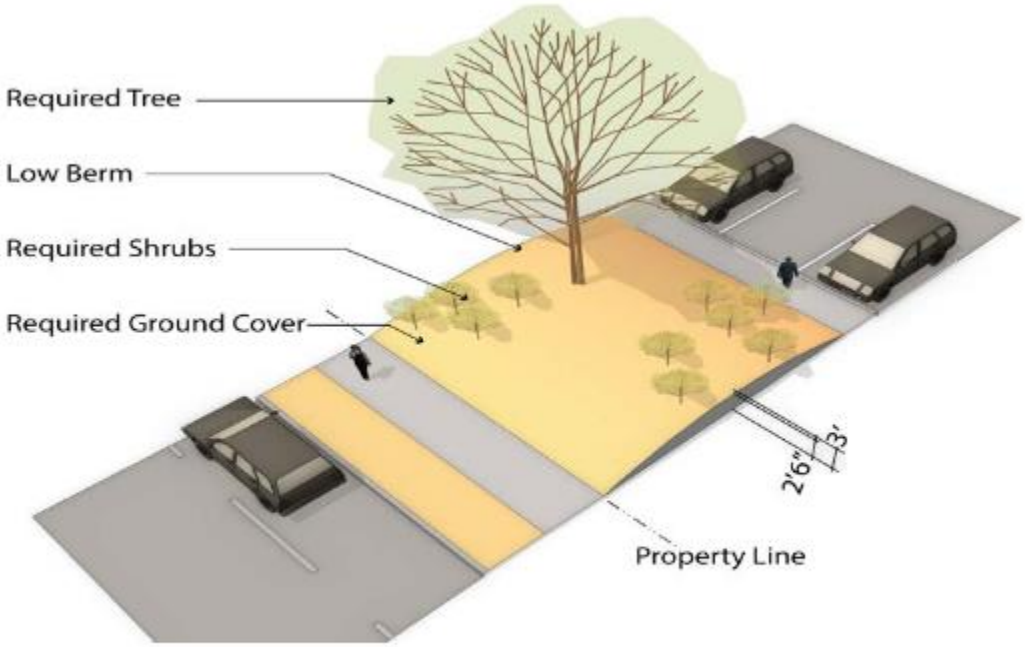


Figure 23: Low Berm Landscaping

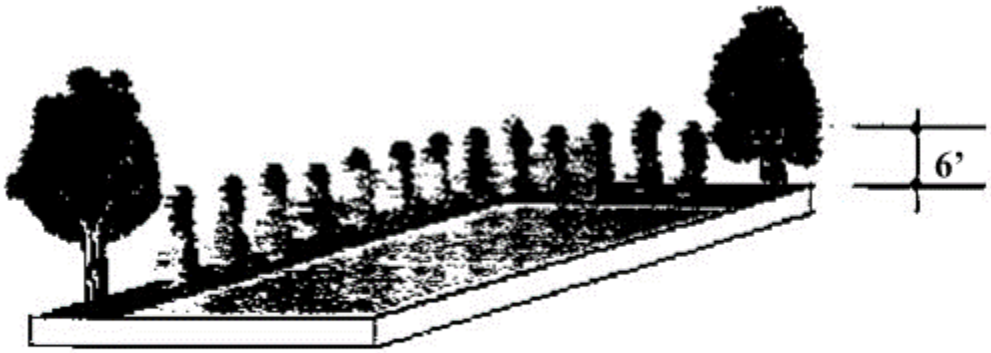


Figure 24: High Screen Landscaping

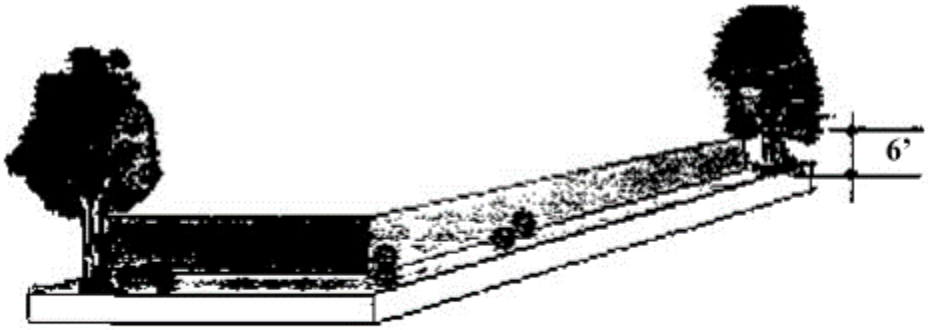


Figure 25: High Wall Landscaping

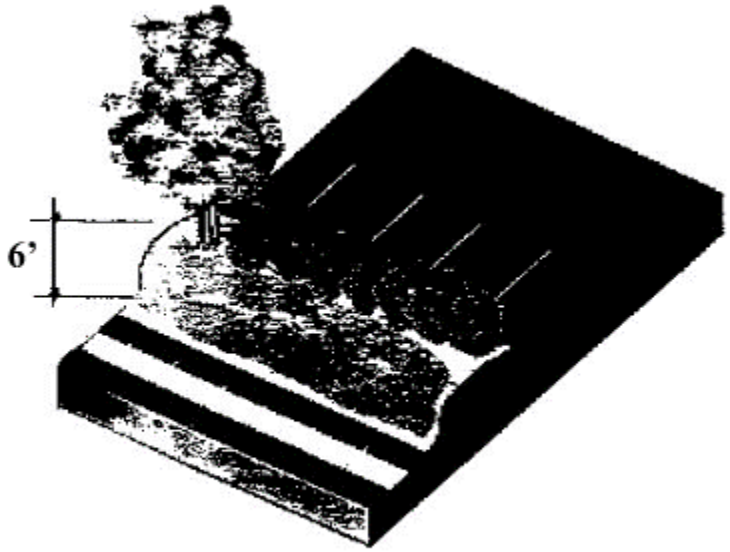


Figure 26: High Berm Landscaping

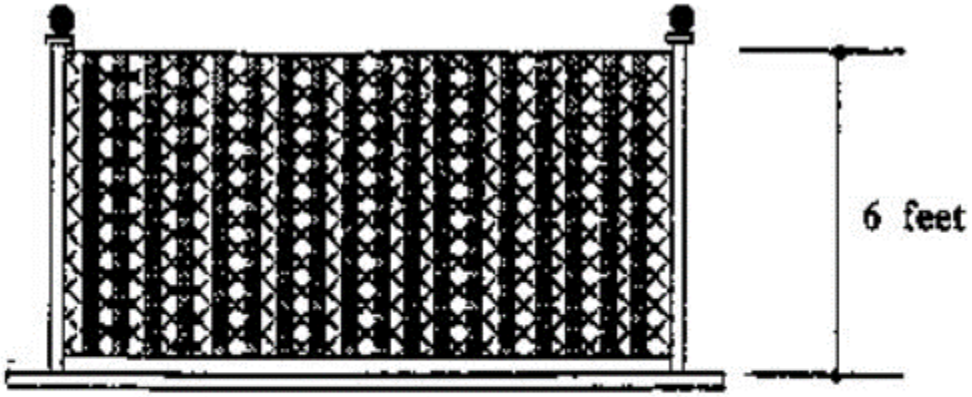


Figure 27: Partially Sight-Obscuring Fence

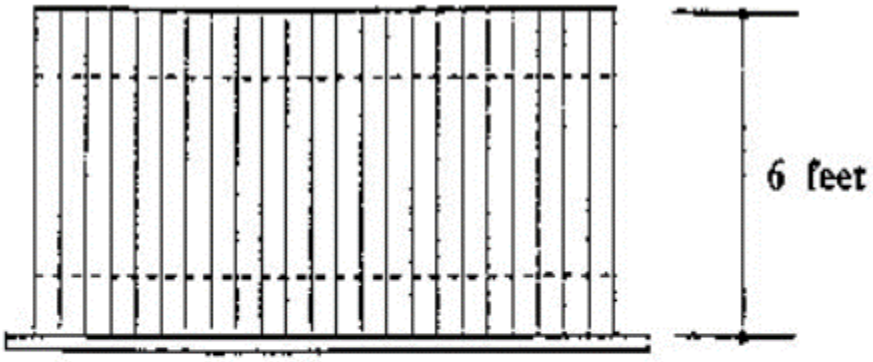


Figure 28: Totally Sight-Obscuring Fence

TREE CLEARANCES

The Landscaping Graphics

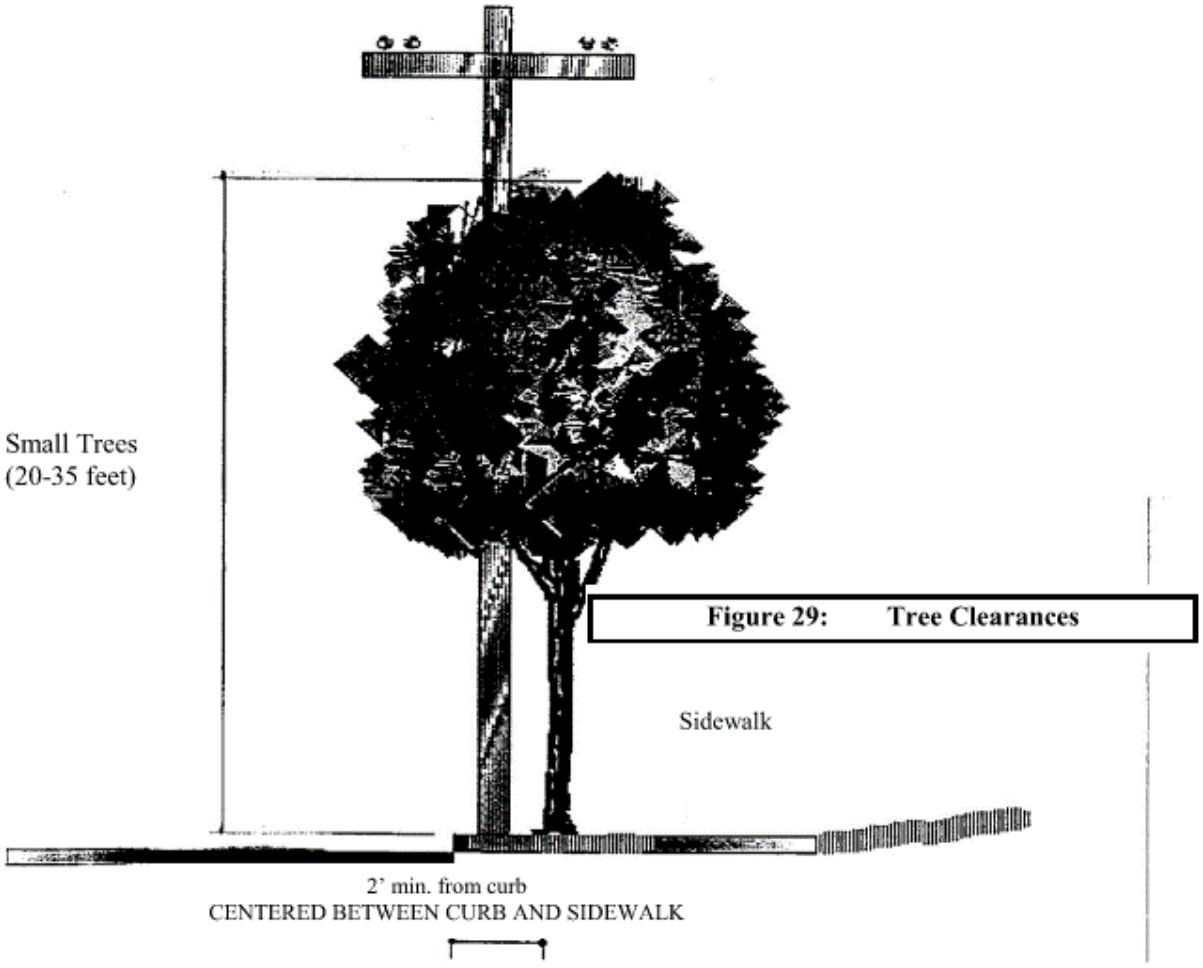


Figure 29: Tree Clearances

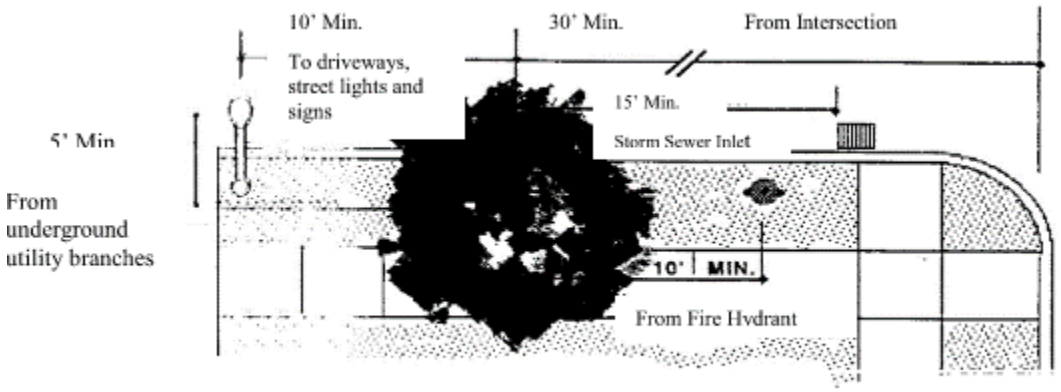


Figure 30: Tree Clearances

Section 4.177. Street Improvement Standards

This section contains the City's requirements and standards for pedestrian, bicycle, and transit facility improvements to public streets, or within public easements. The purpose of this section is to ensure that development, including redevelopment, provides transportation facilities that are safe, convenient, and adequate in rough proportion to their impacts.

(.01) Development and related public facility improvements shall comply with the standards in this section, the Wilsonville Public Works Standards, and the Transportation System Plan, in rough proportion to the potential impacts of the development. Such improvements shall be constructed at the time of development or as provided by Section 4.140, except as modified or waived by the City Engineer for reasons of safety or traffic operations.

Response: The applicant has proposed to construct improvements in SW Day Road along the full length of the property frontage, including urban street improvements and a (dry) sanitary sewer line, consistent with Public Works plans and standards. (Water and storm drainage system lines are already present within the public right-of-way.) See the R-series sheets in Exhibit B. This provision is satisfied.

(.02) Street Design Standards.

A. All street improvements and intersections shall provide for the continuation of streets through specific developments to adjoining properties or subdivisions.

1. Development shall be required to provide existing or future connections to adjacent sites through the use of access easements where applicable. Such easements shall be required in addition to required public street dedications as required in Section 4.236(.04).

Response: The subject property's location on the south side of SW Day Road does not require reservation of a corridor for future street connectivity through the site. Moreover, the site will connect to the property to the south under the same ownership, allowing circulation between this site and Delta Logistics's existing operation to the south, including access to Commerce Circle. This standard is met.

B. The City Engineer shall make the final determination regarding right-of-way and street element widths using the ranges provided in Chapter 3 of the Transportation System Plan and the additional street design standards in the Public Works Standards.

Response: The applicant's consultant team has designed the right-of-way and street improvements on the R-series sheets in Exhibit B based on applicable Public Works Standards and direction provided by City Engineering staff. This standard is met.

C. Rights-of-way.

1. Prior to issuance of a Certificate of Occupancy Building permits or as a part of the recordation of a final plat, the City shall require dedication of rights-of-way in accordance with the Transportation System Plan. All dedications shall be recorded with the County Assessor's Office.

2. The City shall also require a waiver of remonstrance against formation of a local improvement district, and all non-remonstrances shall be recorded in the County Recorder's Office as well as the City's Lien Docket, prior to issuance of a Certificate of Occupancy Building Permit or as a part of the recordation of a final plat.

3. In order to allow for potential future widening, a special setback requirement shall be maintained adjacent to all arterial streets. The minimum setback shall be 55 feet from the centerline or 25 feet from the right-of-way designated on the Master Plan, whichever is greater.

Response: The applicant proposes to dedicate public right-of-way to widen and construct the south side of SW Day Road consistent with future construction to meet the applicable Major Arterial design section and lane configuration. This standard is met.

D. Dead-end Streets. New dead-end streets or cul-de-sacs shall not exceed 200 feet in length, unless the adjoining land contains barriers such as existing buildings, railroads or freeways, or environmental constraints such as steep slopes, or major streams or rivers, that prevent future street extension and connection. A central landscaped island with rainwater management and infiltration are encouraged in cul-de-sac design. No more than 25 dwelling units shall take access to a new dead-end or cul-de-sac street unless it is determined that the traffic impacts on adjacent streets will not exceed those from a development of 25 or fewer units. All other dimensional standards of dead-end streets shall be governed by the Public Works Standards. Notification that the street is planned for future extension shall be posted on the dead-end street. [Amended by Ord. # 674 11/16/09]

Response: No new dead-end streets or cul-de-sac are proposed as part of this project. This standard does not apply.

E. Corner or clear vision area.

1. A clear vision area which meets the Public Works Standards shall be maintained on each corner of property at the intersection of any two streets, a street and a railroad or a street and a driveway. However, the following items shall be exempt from meeting this requirement:

a. Light and utility poles with a diameter less than 12 inches.

b. Trees less than 6" d.b.h., approved as a part of the Stage II Site Design, or administrative review.

c. Except as allowed by b., above, an existing tree, trimmed to the trunk, 10 feet above the curb.

d. Official warning or street sign.

e. Natural contours where the natural elevations are such that there can be no cross-visibility at the intersection and necessary excavation would result in an unreasonable hardship on the property owner or deteriorate the quality of the site.

Response: Landscape plantings at the proposed driveway are designed to provide adequate visibility in both directions for safe operations. Landscape maintenance practices will ensure visibility on an ongoing basis.

F. Vertical clearance - a minimum clearance of 12 feet above the pavement surface shall be maintained over all streets and access drives.

Response: As illustrated on the L-series sheets in Exhibit B, no structural elements are proposed over streets and drives. Trees planted in proximity to streets will be trimmed to provide adequate vertical clearance as required. This standard is met.

G. Interim improvement standard. It is anticipated that all existing streets, except those in new subdivisions, will require complete reconstruction to support urban level traffic volumes. However, in most cases, existing and short-term projected traffic volumes do not warrant improvements to full Master Plan standards. Therefore, unless otherwise specified by the Development Review Board, the following interim standards shall apply.

1. Arterials - 24 foot paved, with standard sub-base. Asphalt overlays are generally considered unacceptable, but may be considered as an interim improvement based on the recommendations of the City Engineer, regarding adequate structural quality to support an overlay.

2. Half-streets are generally considered unacceptable. However, where the Development Review Board finds it essential to allow for reasonable development, a half-street may be approved. Whenever a half-street improvement is approved, it shall conform to the requirements in the Public Works Standards:

3. When considered appropriate in conjunction with other anticipated or scheduled street improvements, the City Engineer may approve street improvements with a single asphalt lift. However, adequate provision must be made for interim storm drainage, pavement transitions at seams and the scheduling of the second lift through the Capital Improvements Plan.

[Amended by Ord. 610, 5/1/06]

Response: The applicant has worked closely with City of Wilsonville Engineering staff to come up with an interim improvements plan for SW Day Road. The plan includes improvements on the south side of Day Road meeting the applicable Major Arterial standard, which will safely accommodate traffic immediately as well as set the stage for similar improvements on the north side of Day Road when development of the neighboring property occurs in the future. This approach is appropriate because (1) the applicant does not control the property on the north side of the street and cannot dedicate additional right-of-way from it, (2) that property is not included in this development application, and (3) it is feasible to design an interim configuration that meets the Public Works Standards on the south side of the street and provides sufficient operational capacity to serve until the full street configuration can be constructed in the future. Future completion on the north side is likely to occur as part of a private development project as development continues to occur in the Coffee Creek **and Basalt Creek** Industrial Area**s**. The applicant therefore requests approval of the proposed public street improvement plan, as described in the R-series sheets in Exhibit B, pursuant to subparagraph 2.

(.03) Sidewalks. Sidewalks shall be provided on the public street frontage of all development. Sidewalks shall generally be constructed within the dedicated public right-of-way, but may be located outside of the right-of-way within a public easement with the approval of the City Engineer.

A. Sidewalk widths shall include a minimum through zone of at least five feet. The through zone may be reduced pursuant to variance procedures in Section 4.196, a waiver pursuant to Section 4.118, or by authority of the City Engineer for reasons of traffic operations, efficiency, or safety.

B. Within a Planned Development, the Development Review Board may approve a sidewalk on only one side. If the sidewalk is permitted on just one side of the street, the owners will

be required to sign an agreement to an assessment in the future to construct the other sidewalk if the City Council decides it is necessary.

Response: As illustrated on the Sheet R1.10 in Exhibit B, the applicant is proposing a 6-foot sidewalk along the south side of SW Day Road. This standard is met.

(.04) Bicycle Facilities. Bicycle facilities shall be provided to implement the Transportation System Plan, and may include on-street and off-street bike lanes, shared lanes, bike boulevards, and cycle tracks. The design of on-street bicycle facilities will vary according to the functional classification and the average daily traffic of the facility.

Response: The proposed construction includes the eastbound bike path outside the paved**/curbed** vehicular travel width on the south side of SW Day Road the entire length of the site frontage, with transitions at both east and west to tie in with existing conditions. This configuration is consistent with the ultimate design section for Day Road, so future widening to the east and west can align and connect to it. This requirement is met.

(.05) Multiuse Pathways. Pathways may be in addition to, or in lieu of, a public street. Paths that are in addition to a public street shall generally run parallel to that street, and shall be designed in accordance with the Public Works Standards or as specified by the City Engineer. Paths that are in lieu of a public street shall be considered in areas only where no other public street connection options are feasible, and are subject to the following standards.

- *A. Paths shall be located to provide a reasonably direct connection between likely pedestrian and bicyclist destinations. Additional standards relating to entry points, maximum length, visibility, and path lighting are provided in the Public Works Standards.*
- *B. To ensure ongoing access to and maintenance of pedestrian/bicycle paths, the City Engineer will require dedication of the path to the public and acceptance of the path by the City as public right-of-way; or creation of a public access easement over the path.*

Response: No multiuse pathways are proposed as part of this development. As SW Day Road will accommodate motor vehicles, there will be a separate bicycle path, the sidewalk will accommodate pedestrians, and the property is not situated where an off-street pedestrian pathway is warranted to meet pedestrian access needs. This standard does not apply.

(.06) Transit Improvements

Development on sites that are adjacent to or incorporate major transit streets shall provide improvements as described in this section to any bus stop located along the site's frontage, unless waived by the City Engineer for reasons of safety or traffic operations. Transit facilities include bus stops, shelters, and related facilities. Required transit facility improvements may include the dedication of land or the provision of a public easement.

- *A. Development shall at a minimum provide:*
  - *1. Reasonably direct pedestrian connections, as defined by Section 4.154, between building entrances and the transit facility and between buildings on the site and streets adjoining transit stops.*
  - *2. Improvements at major transit stops. Improvements may include intersection or mid-block traffic management improvements to allow for pedestrian crossings at major transit stops.*
- *B. Developments generating an average of 49 or more pm peak hour trips shall provide bus stop improvements per the Public Works Standards. Required improvements may include provision of benches, shelters, pedestrian lighting; or provision of an easement or dedication of land for transit facilities.*
- *C. In addition to the requirements of 4.177(.06)(A.)(2.), development generating more than 199 pm peak hour trips on major transit streets shall provide a bus pullout, curb extension,*

and intersection or mid-block traffic management improvements to allow for pedestrian crossings at major transit stops.

D. In addition to the requirement s of 4.177(.06)(A.) and (B.), development generating more than 500 pm peak-hour trips on major transit streets shall provide on-site circulation to accommodate transit service

Response: These provisions are not applicable because the proposed development is not adjacent to a major transit facility.

(.07) Residential Private Access Drives. Residential Private Access Drives shall meet the following standards:

A. Residential Private Access Drives shall provide primary vehicular access to no more than four (4) dwelling units, excluding accessory dwelling units.

B. The design and construction of a Residential Private Access Drive shall ensure a useful lifespan and structural maintenance schedule comparable, as determined by the City Engineer or City's Authorized Representative, to a local street constructed in conformance to current public works standards.

1. The design of residential private access drives shall be stamped by a professional engineer registered in the state of Oregon and shall be approved by the City Engineer or City's Authorized Representative to ensure the above requirement is met.

2. Prior to issuing a certificate of occupancy for any residential dwelling unit whose primary vehicular access is from a Residential Private Access Drive the City Engineer or City's Authorized Representative shall certify construction of the Residential Private Access Drive substantially conforms the design approved by the City Engineer or City's Authorized Representative.

C. Residential Private Access Drives shall be named for addressing purposes. All Residential Private Access Drives shall use the suffix "Lane", i.e. SW Oakview Lane.

D. Residential Private Access Drives shall meet or exceed the standards for access drives and travel lanes established in Subsection (.08) of this Section.
[Amended by Ord. 682, 9/1/10]

Response: The proposed development is industrial, not residential. This standard does not apply.

(.08). Access Drive and Driveway Approach Development Standards.

A. An access drive to any proposed development shall be designed to provide a clear travel lane free from any obstructions.

Response: The proposed driveway is located to allow safe turning movements to and from the site, and to minimize conflicting movements within the site as well. The applicant has worked extensively with staff regarding the proposed driveway location, by providing detailed information to demonstrate satisfactory sight distances as well as compatibility with access management needs along this segment of SW Day Road, anticipating that additional future industrial development will also require accesses with acceptable spacing and sight distance characteristics.

To minimize travel obstructions, parking for visitors and some employees is located in the eastern part of the site on the north side of the building, with additional employee parking on the south side of the building. Large semi-tractor-trailer rig movements occur in the western and central parts of the site. The pedestrian path to the building does not cross a truck movement corridor within the site, and it is separated from the driveway for safety; a well-marked crossing of the passenger vehicle drive aisle leads to the main entrance near the northwest building corner. This provision is met.

B. Access drive travel lanes shall be constructed with a hard surface capable of carrying a 23-ton load.

C. Where emergency vehicle access is required, approaches and driveways shall be designed and constructed to accommodate emergency vehicle apparatus and shall conform to applicable fire protection requirements. The City may restrict parking, require signage, or require other public safety improvements pursuant to the recommendations of an emergency service provider.

D. Secondary or emergency access lanes may be improved to a minimum 12 feet with an all-weather surface as approved by the Fire District. All fire lanes shall be dedicated easements.

Response: The proposed site plan demonstrates feasibility to comply with these structural and emergency access requirements. Detailed specifications will be included in plans submitted for site construction.

E. Minimum access requirements shall be adjusted commensurate with the intended function of the site based on vehicle types and traffic generation.

Response: The one-driveway configuration, including proposed driveway widths, is appropriate to accommodate the anticipated mix of vehicles at the site, based on its intended use for light manufacturing and warehousing activities.

F. The number of approaches on higher classification streets (e.g., collector and arterial streets) shall be minimized; where practicable, access shall be taken first from a lower classification street.

Response: SW Day Road is designated a Major Arterial in the TSP and designated as an Addressing Street in the Coffee Creek Industrial Design Overlay District, which makes it the appropriate street on which to take access. In the case of the subject property, it is also the only urban street frontage available for driveway access. Notably, the site will have access south to Commerce Circle, a local industrial road, via access driveway across the adjacent parcel under common ownership reducing trips at the SW Day Road driveway. This standard is met.

G. The City may limit the number or location of connections to a street, or impose access restrictions where the roadway authority requires mitigation to alleviate safety or traffic operations concerns.

Response: Due to site and surrounding area conditions such as an apex vertical curve sight distance constraint to the east of the site on SW Day Road, as well as grading, stormwater, and SROZ consideration, the one-driveway configuration at its proposed location is the most appropriate design. **This standard is met.**

[The following statement is not applicable to the Feb'23 Plan.]
Notably, the applicant explored the feasibility of a second access west of Tapman Creek to access the western portion of the site without impacting the SROZ area; however, such an additional access to SW Day Road would not satisfy the City's desired spacing for intersections along this segment of SW Day Road. The applicant proposes a private crossing of Tapman Creek (on-site) to provide access to an approximately 0.95-acre truck tractor parking area in the western portion of the site while limiting the number of connections to a Major Arterial. This standard is met.

H. The City may require a driveway to extend to one or more edges of a parcel and be designed to allow for future extension and inter-parcel circulation as adjacent properties develop. The City may also require the owner(s) of the subject site to record an access

easement for future joint use of the approach and driveway as the adjacent property(ies) develop(s).

Response: During preparation of the Traffic Impact Study (TIS), staff asked the applicant to consider realigning the driveway to the northeastern property corner, to form a shared driveway with the neighboring property to the east. The applicant performed a detailed analysis of feasible spacing and sight distances for a variety of potential driveway locations, and provided that to the City's traffic engineering consultant. Although sight distance to the east is somewhat constrained at the proposed driveway location due to the vertical profile of SW Day Road, shifting the proposed driveway to the east would only compound that sight distance hazard and shorten drivers' available reaction time.

The applicant has provided staff substantial evidence (see Exhibit I) that the proposed driveway location rather than a joint use driveway with the adjacent parcel to the east is preferable for both sites and for the public, to provide safe operating conditions. Based on that analysis, the TIA also supports the proposed driveway location (see Exhibit E). For those specific reasons, the City should approve the proposed driveway location and should not impose requirements under this provision in this case.

I. Driveways shall accommodate all projected vehicular traffic on-site without vehicles stacking or backing up onto a street.

J. Driveways shall be designed so that vehicle areas, including but not limited to drive-up and drive-through facilities and vehicle storage and service areas, do not obstruct any public right-of-way.

Response: The driveway and internal circulation are configured to allow exiting vehicles to queue as necessary within the site without congesting incoming vehicle movements. This provision is satisfied. The site includes no drive-up, drive-through, or vehicle storage or service areas. These provisions are met.

K. Approaches and driveways shall not be wider than necessary to safely accommodate projected peak hour trips and turning movements, and shall be designed to minimize crossing distances for pedestrians.

Response: The proposed driveway widths have been based on movement patterns and turning radii associated with the anticipated mix of vehicles, to minimize potential for conflicting movements within the public right-of-way. These provisions are met.

L. As it deems necessary for pedestrian safety, the City, in consultation with the roadway authority, may require traffic-calming features, such as speed tables, textured driveway surfaces, curb extensions, signage or traffic control devices, or other features, be installed on or in the vicinity of a site.

Response: The DKS TIA for the project does not identify any need for traffic-calming features to be installed in public streets in the vicinity.

M. Approaches and driveways shall be located and designed to allow for safe maneuvering in and around loading areas, while avoiding conflicts with pedestrians, parking, landscaping, and buildings.

Response: As noted above, the proposed driveway is located to allow safe turning movements to and from the site, and to minimize conflicting movements within the site as well. Large semi-tractor-trailer rig movements are centralized between the western edge of building and SROZ area, passenger vehicle movements occur primarily in the east, to parking areas on the north and south sides of the building, and the pedestrian path from the sidewalk to the main building entrance is separated from the entrance/exit driveway for safety. The driveway width is designed

to allow turning movements by large vehicles without conflicting movements in the public street. This provision is met.

N. Where a proposed driveway crosses a culvert or drainage ditch, the City may require the developer to install a culvert extending under and beyond the edges of the driveway on both sides of it, pursuant applicable Public Works standards.

Response: This provision is not applicable because this project will connect to an existing public storm drain system line within the SW Day Road right-of-way. See R-series sheets in Exhibit B for details.

O. Except as otherwise required by the applicable roadway authority or waived by the City Engineer, temporary driveways providing access to a construction site or staging area shall be paved or graveled to prevent tracking of mud onto adjacent paved streets.

Response: Following land use approval, the applicant will provide construction plans that comply with this requirement.

P. Unless constrained by topography, natural resources, rail lines, freeways, existing or planned or approved development, or easements or covenants, driveways proposed as part of a residential or mixed-use development shall meet local street spacing standards and shall be constructed to align with existing or planned streets, if the driveway.

1. Intersects with a public street that is controlled, or is to be controlled in the planning period, by a traffic signal;

2. Intersects with an existing or planned arterial or collector street; or

3. Would be an extension of an existing or planned local street, or of another major driveway.

Response: This provision is not applicable because the proposed project is not a residential or mixed-use development.

(.09) Minimum street intersection spacing standards.

A. New streets shall intersect at existing street intersections so that centerlines are not offset. Where existing streets adjacent to a proposed development do not align properly, conditions shall be imposed on the development to provide for proper alignment.

B. Minimum intersection spacing standards are provided in Transportation System Plan Table 3-2.

Response: This provision is not applicable because no new street intersection is proposed as part of this project.

(.10) Exceptions and Adjustments. The City may approve adjustments to the spacing standards of subsections (.08) and (.09) above through a Class II process, or as a waiver per Section 4.118(.03)(A.), where an existing connection to a City street does not meet the standards of the roadway authority, the proposed development moves in the direction of code compliance, and mitigation measures alleviate all traffic operations and safety concerns. Mitigation measures may include consolidated access (removal of one access), joint use driveways (more than one property uses same access), directional limitations (e.g.,

Response: This provision is not applicable because subsections (.08) and (.09) are not applicable for the reasons stated above.

Section 4.179. Mixed Solid Waste and Recyclables Storage in New Multi-Unit Residential and Non-Residential Buildings

(.01) All site plans for multi-unit residential and non-residential buildings submitted to the Wilsonville Development Review Board for approval shall include adequate storage space for mixed solid waste and source separated recyclables. [Amended by Ordinance No. 538, 2/21/02.]
Response: As shown on Sheets C1.32 and A5.06 of Exhibit B, solid waste facilities are proposed at the south edge of the site near the building, with sufficient linear approach area and turning radii for service vehicles. Correspondence from Republic Services in Exhibit J confirms the trash hauler's assessment that the waste facilities are appropriate for the proposed use. This standard is met.

(.02) The floor area of an interior or exterior storage area shall be excluded from the calculation of building floor area for purposes of determining minimum storage requirements.
Response: The area of the waste storage facilities has not been included in the computation of floor area requiring waste storage. This standard is met.

(.03) The storage area requirement shall be based on the predominant use(s) of the building. If a building has more than one of the uses listed herein and that use occupies 20 percent or less of the floor area of the building, the floor area occupied by that use shall be counted toward the floor area of the predominant use(s). If a building has more than one of the uses listed herein and that use occupies more than 20 percent of the floor area of the building, then the storage area requirement for the whole building shall be the sum of the requirement for the area of each use.
Response: The building is proposed to have industrial uses, consisting primarily of warehouse and distribution. While there will be incidental office area, it falls below the 20% threshold, and the waste storage areas are thus computed based on those industrial use categories. The applicant's method of calculation complies with this provision.

(.04) Storage areas for multiple uses on a single site may be combined and shared.
Response: As shown on Sheet A5.06 of Exhibit B, the applicant is proposing a single waste storage area. This standard is met.

(.05) The specific requirements are based on an assumed storage height of four feet for solid waste/recyclables. Vertical storage higher than four feet but no higher than seven feet may be used to accommodate the same volume of storage in a reduced floor space. Where vertical or stacked storage is proposed, the site plan shall include drawings to illustrate the layout of the storage area and dimensions for the containers.
Response: The applicant is proposing to use waste bins not exceeding seven feet in height, consistent with these standards, to accommodate anticipated waste volume in a smaller space.

(.06) The specific requirements for storage area are as follows:

- *A. Multi-unit residential buildings containing five-ten units shall provide a minimum storage area of 50 square feet. Buildings containing more than ten residential units shall provide an additional five square feet per unit for each unit above ten.*
- *B. Non-residential buildings shall provide a minimum storage area of ten square feet, plus:*
  - *1. Office: Four square feet per 1,000 square feet gross floor area (GFA);*
  - *2. Retail: Ten square feet per 1,000 square feet GFA;*
  - *3. Wholesale / Warehouse / Manufacturing: Six square feet per 1,000 square feet GFA; and*
  - *4. Other: Four square feet per 1,000 square feet GFA.*

Response: Based on the proposed 62,107 SF of warehouse/distribution use, this standard requires minimum waste enclosure area of 373 SF. The proposed development plan provides a waste enclosure

meeting this requirement, located within the landscape area south of the building between the southern vehicle parking area and the adjacent bay of trailer storage spaces to the west of it. The proposed waste enclosure location and configuration have been reviewed and approved by the trash hauler, Republic Services, anticipating weekly service (see Exhibit J). The proposed development complies.

(.07) The applicant shall work with the City's franchised garbage hauler to ensure that site plans provide adequate access for the hauler's equipment and that storage area is adequate for the anticipated volumes, level of service and any other special circumstances which may result in the storage area exceeding its capacity. The hauler shall notify the City by letter of their review of site plans and make recommendations for changes in those plans pursuant to the other provisions of this section.
Response: Exhibit J is a letter from the trash hauler agreeing that the waste storage facility is appropriate for the proposed warehouse/distribution and manufacturing use, and that adequate circulation is available on site. This standard is met.

(.08) Existing multi-unit residential and non-residential developments wishing to retrofit their structures to include storage areas for mixed solid waste and recycling may have their site plans reviewed and approved through the Class I Administrative Review process, according to the provisions of Section 4.035. Site plans for retrofitting existing developments must conform to all requirements of this Section, "Mixed Solid Waste and Recyclables Storage In New Multi-Unit Residential and Non-Residential Buildings," and 4.430, "Location, Design and Access Standards for Mixed Solid Waste and Recycling Areas," of the Wilsonville City Code.
Response: The applicant is not proposing to retrofit existing solid waste facilities. This standard does not apply.

(.09) When applicable, the applicant must comply with Wilsonville Code Section 8.010. [Added by Ordinance #837 – August 5, 2019]
Response: Wilsonville Code Section 8.010 states in its entirety that "The regulation of disposal and hauling, including both hauler and customer requirements, for solid waste, recycling, yard debris, organic materials, and other materials shall be adopted by City ordinance." The applicant intends to comply with the applicable standards set by the City and the hauler.

Section 4.180. Exceptions and Modifications - Projections into Required Yards

(.01) Certain non-structural architectural features are permitted to project into required yards or courts, without requiring the approval of a Variance or Reduced Setback Agreement, as follows:

- *A. Into any required yard:*
  - *1. Architectural features may project into the required yard not more than two (2) inches for each foot of required setback.*
  - *2. Open, unenclosed fire escapes may project a distance not exceeding forty-eight (48) inches.*
- *B. Into any required yard, adjoining a street or tract with a private drive: [Amended by Ord. 682, 9/9/10]*
  - *1. Architectural features may project a distance not exceeding forty (40) inches.*
  - *2. An uncovered porch, terrace, or patio extending no more than two and one-half (2 1/2) feet above the finished elevation may extend within three (3) feet of an interior side lot line, or within ten (10) feet of a front lot line or of an exterior side lot line.*

Response: As illustrated on Sheet C1.10 in Exhibit B, the proposed structure complies with the required setbacks; no projections into setbacks are proposed. This standard does not apply.

Section 4.181. Exceptions & Modifications - Height Limits

Except as stipulated in Sections 4.800 through 4.804, height limitations specified elsewhere in this Code shall not apply to barns, silos or other farm buildings or structures on farms; to church spires; belfries; cupolas; and domes; monuments; water towers; windmills; chimneys; smokestacks; fire and hose towers; flag poles; above-ground electric transmission, distribution, communication and signal lines, towers and poles; and properly screened mechanical and elevator structures.

Response: As shown on Sheet A2.10 in Exhibit B, the proposed building will have a height of 40', in compliance with the minimum 30' requirement as well as the maximum allowed height, which in the Coffee Creek Industrial Design Overlay can exceed six stories. This height measurement excludes rooftop mechanical equipment. None of the other structure types noted above are proposed as part of this development. This standard is met.

Section 4.182. Exceptions and Modifications - Setback Modifications

In any residential zone where the average depth of at least two (2) existing front yards on adjoining lots or within one hundred fifty (150) feet of the lot in question and within the same block front is less or greater than the minimum or maximum front yard depth prescribed elsewhere in this Code, the required depth of the front yard on such lot shall be modified. In such case, the front yard depth shall not be less than the average depth, nor more than the greater depth, of existing front yards on at least two (2) adjoining lots within one hundred and fifty (150) feet. In the case of a corner lot, the depth of the front yard may be reduced to that of the lot immediately adjoining, provided, however, that the depth of a front yard on any corner lot shall be at least ten (10) feet.

Response: This site is not in a residential zone. This standard does not apply.

Section 4.191. Non-Conforming Site Conditions

(.01) A property with non-conforming site conditions that is in use may continue to be used.

(.02) If a property with non-conforming site conditions is abandoned, as defined herein, for a period of eighteen (18) months, it may not again be used unless brought into conformity with the requirements of this ordinance. Except, however, that an abandoned property with non-conforming site conditions may be re-occupied if a Variance is approved per the requirements of Section 4.196.

(.03) Normal maintenance of a property with non-conforming site conditions is permitted, provided that the site conditions do not become even less conforming as a result.

(.04) Any application for a change of occupancy, as determined by the City's Building Official, or any application for discretionary review by the City shall justify conditions of approval that will bring the site into conformity with site improvement standards.

(.05) A structure with non-conforming site conditions may be expanded or enlarged, provided that there is a proportional decrease in the non-conforming site conditions. For example, an application to expand the floor area of a building by 10%, on a site that has 20% shortage of required parking, will be permitted, provided that at least a 10% increase in parking is also provided.

Response: The site was previously developed as a personal residence. When the proposed development is constructed, the existing use will cease to operate on this site and the entire site will be developed to meet current development requirements. No non-conforming site conditions will remain.

Section 4.192. Non-Conforming Lots

(.01) A non-conforming lot may be used for any purpose allowed by zoning, provided that any structure built or located upon a non-conforming lot must meet all of the lot development standards of the zone, or be approved through the Variance procedures of Section 4.196. Except, however, if the non-conforming lot is contiguous to other property under legal control of the same owner or owners, no variance shall be

granted for a structure or use that could be accommodated on that contiguous lot, or combination of lots, without a Variance.

(.02) A lot line adjustment between nonconforming lots may be approved where either:

A. Both lots involved in the adjustment will be conforming to zoning standards as a result of the adjustment; or

B. The Planning Director or Development Review Board finds, based on information in the record, that each of the lots involved in the adjustment will be suitable for development as allowed in the zone, as a result of the adjustment.

Response: Upon annexation and PD-RSIA zoning as proposed, the proposed development site's size and dimensions will make it a conforming lot. These standards do not apply.

Section 4.199 Outdoor Lighting

Section 4.199.20. Applicability.

(.01) This Ordinance is applicable to:

A. Installation of new exterior lighting systems in public facility, commercial, industrial and multi-family housing projects with common areas.

B. Major additions or modifications (as defined in this Section) to existing exterior lighting systems in public facility, commercial, industrial and multi-family housing projects with common areas.

Response: The proposed development is for an industrial building; therefore, this section applies.

(.02) Exemption. The following luminaires and lighting systems are EXEMPT from these requirements:

A. Interior lighting.

B. Internally illuminated signs.

C. Externally illuminated signs.

D. Temporary lighting for theatrical, television, and performance areas.

E. Lighting in swimming pools and other water features governed by Article 680 of the National Electrical Code.

F. Building Code required exit path lighting.

G. Lighting specifically for stairs and ramps.

H. Temporary and seasonal lighting provided that individual lamps are 10 watts or less.

I. Lighting required and/or regulated by the City (i.e. construction related activities), Federal Aviation Administration, U.S. Coast Guard or other Federal or State agency.

J. Single-family residential lighting.

K. Code Required Signs.

L. American flag.

M. Landscape lighting.

N. Lights approved by the City through an Administrative Review Temporary Use Permit process.

O. Public street lights.

P. ATM security lighting.

Q. Those "Exceptions" listed in the "Exterior Lighting Power Allowance" provisions of the Oregon Energy Efficiency Specialty Code.

Response: The applicant is seeking approval of those lighting systems which do not fall into the exemptions listed above.

Section 4.199.30. Lighting Overlay Zones.

(.01) The designated Lighting Zone as indicated on the Lighting Overlay Zone Map for a commercial, industrial, multi-family or public facility parcel or project shall determine the limitations for lighting systems and fixtures as specified in this Ordinance.

A. Property may contain more than one lighting zone depending on site conditions and natural resource characteristics.

Response: As illustrated in Figure 30 (in Section 4.199.60 below), this site and neighboring properties on all sides are entirely in Lighting Zone LZ 2. This standard is met.

(.02) The Lighting Zones shall be:

A. LZ 1. Developed areas in City and State parks, recreation areas, SROZ wetland and wildlife habitat areas; developed areas in natural settings; sensitive night environments; and rural areas. This zone is intended to be the default condition for rural areas within the City.

B. LZ 2. Low-density suburban neighborhoods and suburban commercial districts, industrial parks and districts. This zone is intended to be the default condition for the majority of the City.

C. LZ 3. Medium to high-density suburban neighborhoods and districts, major shopping and commercial districts as depicted on the Lighting Overlay Zone Map.

D. LZ 4. Reserved for limited applications with special lighting requirements. This zone is appropriate for users who have unique site or operating circumstances that warrant additional light. This zone shall not be applied to residential or agricultural areas.

[Section 4.199.30(.02) amended by Ord. 688, 11/15/10]

Response: Based on the descriptions above, this site is in Lighting Zone LZ 2 (as confirmed by the City's Lighting Overlay Zones map). A portion of the site is within an SROZ riparian corridor area but will meet the requirements of 4.199.40 "Exception 5" below as shown on the lighting analysis in Exhibit K.

(.03) Modification of Lighting Zones.

A. The City Council may modify the designated Lighting Zones of one or more parcels if the City Council finds that the original Lighting Zone was in error, a change in circumstances has occurred warranting the change since the designation was established or the purposes of this section are better served.

B. The Development Review Board (DRB) may modify the designated Lighting Zones as part of the Stage II, Site Design Review Process if the DRB finds that the original Lighting Zone was in error, or a change in circumstances has occurred warranting the change since the designation was established or the purposes of this section are better served.

C. This ordinance establishes a Lighting Overlay Zone Map. The Planning Division shall maintain the current Lighting Overlay Zone Map.

Response: The applicant is not seeking any modifications from the City's Lighting Overlay Zones map. This standard does not apply.

Section 4.199.40. Lighting Systems Standards for Approval.

(.01) Non-Residential Uses and Common Residential Areas.

A. All outdoor lighting shall comply with either the Prescriptive Option or the Performance Option below.

Response: The applicant is utilizing the Prescriptive Option for outdoor lighting.

B. Prescriptive Option. If the lighting is to comply with this Prescriptive Option, the installed lighting shall meet all of the following requirements according to the designated Lighting Zone.

1. The maximum luminaire lamp wattage and shielding shall comply with Table 7.

2. *Except for those exemptions listed in Section 4.199.20(.02), the exterior lighting for the site shall comply with the Oregon Energy Efficiency Specialty Code, Exterior Lighting.*
3. *The maximum pole or mounting height shall be consistent with Table 8.*
4. *Each luminaire shall be set back from all property lines at least 3 times the mounting height of the luminaire:*
    a. *Exception 1: If the subject property abuts a property with the same base and lighting zone, no setback from the common lot lines is required.*
    b. *Exception 2: If the subject property abuts a property which is zoned (base and lighting) other than the subject parcel, the luminaire shall be setback three times the mounting height of the luminaire, measured from the abutting parcel's setback line. (Any variance or waiver to the abutting property's setback shall not be considered in the distance calculation).*
    c. *Exception 3: If the luminaire is used for the purpose of street, parking lot or public utility easement illumination and is located less than 3 mounting heights from the property line, the luminaire shall include a house side shield to protect adjoining property.*
    d. *Exception 4: If the subject property includes an exterior column, wall or abutment within 25 feet of the property line, a luminaire partly shielded or better and not exceeding 60 lamp watts may be mounted onto the exterior column, wall or abutment or under or within an overhang or canopy attached thereto.*
    e. *Exception 5: Lighting adjacent to SROZ areas shall be set back 3 times the mounting height of the luminaire, or shall employ a house side shield to protect the natural resource area.*

Response: The lighting plan in Exhibit K shows proposed locations for bollard lights, shielded site lights, and shielded wall packs that comply with the Prescriptive Option, including the applicable exceptions listed in subparagraphs 4.a through -e. Exhibit K contains a photometric analysis and manufacturer data sheets for typical proposed fixtures. The subject property is in Lighting Overlay Zone 2 and surrounding properties are in Industrial land use designations. This requirement is met.

C. Performance Option. If the lighting is to comply with the Performance Option, the proposed lighting design shall be submitted by the applicant for approval by the City meeting all of the following:

1. *The weighted average percentage of direct uplight lumens shall be less than the allowed amount per Table 9.*
2. *The maximum light level at any property line shall be less than the values in Table 9, as evidenced by a complete photometric analysis including horizontal illuminance of the site and vertical illuminance on the plane facing the site up to the mounting height of the luminaire mounted highest above grade. The Building Official or designee may accept a photometric test report, demonstration or sample, or other satisfactory confirmation that the luminaire meets the shielding requirements of Table 7. Luminaires shall not be mounted so as to permit aiming or use in any way other than the manner maintaining the shielding classification required herein:*
    a. *Exception 1. If the property line abuts a public right-of-way, including a sidewalk or street, the analysis may be performed across the street at the adjacent property line to the right-of-way.*

b. Exception 2. If, in the opinion of the Building Official or designee, compliance is impractical due to unique site circumstances such as lot size or shape, topography, or size or shape of building, which are circumstances not typical of the general conditions of the surrounding area. The Building Official may impose conditions of approval to avoid light trespass to the maximum extent possible and minimize any additional negative impacts resulting to abutting and adjacent parcels, as well as public rights-of-way, based on best lighting practices and available lighting technology.

3. The maximum pole or mounting height shall comply with Table 8.

Response: The applicant is utilizing the prescriptive option rather than the performance option. This standard does not apply.

D. Curfew. All prescriptive or performance based exterior lighting systems shall be controlled by automatic device(s) or system(s) that:

1. Initiate operation at dusk and either extinguish lighting one hour after close or at the curfew times according to Table 10; or

2. Reduce lighting intensity one hour after close or at the curfew time to not more than 50% of the requirements set forth in the Oregon Energy Efficiency Specialty Code unless waived by the DRB due to special circumstances; and

3. Extinguish or reduce lighting consistent with 1. and 2. above on Holidays.

The following are exceptions to curfew:

a. Exception 1: Building Code required lighting.

b. Exception 2: Lighting for pedestrian ramps, steps and stairs.

c. Exception 3: Businesses that operate continuously or periodically after curfew.

Response: It is feasible for the applicant to install an automatic device or system meeting these requirements; compliance can be assured through an appropriate condition of approval.

(.02) Special Permit for Specific Lighting Fixtures and Systems and When Exceeding Lighting Requirements.

A. This section is intended to apply to situations where more than normal foot candles are required due to a unique circumstance or use or where it is absolutely essential to perform the proposed activities after dark. All special permits shall be reviewed by the DRB.

B. Upon issuance of a special permit by the Development Review Board (DRB), lighting systems not complying with the technical requirements of this Ordinance may be installed, maintained, and replaced for lighting that exceeds the maximums permitted by this Ordinance. This section is intended to be applied to uses such as sports lighting systems including but not limited to, sport fields and stadiums, such as baseball and football field lighting, tennis court lighting, swimming pool area lighting and prisons; other very intense lighting defined as having a light source exceeding 200,000 lumens or an intensity in any direction of more than 2,000,000 candelas; building façade lighting of portions of buildings over two stories high; and public monuments.

C. To obtain such a permit, applicants shall demonstrate that the proposed lighting installation:

1. Is within Lighting Zone 3 or above.

2. Has been designed to minimize obtrusive light and artificial sky glow, supported by a signed statement from a registered civil or electrical engineer describing the mitigation measures. Such statement shall be accompanied by calculations

indicating the light trespass levels (horizontal and vertical at ground level) at the property line.

3. *Will not create excessive glare, sky glow, or light trespass beyond that which can be reasonably expected by application of best lighting practices, and available technology.*
4. *Provides appropriate lighting curfew hours based on the use and the surrounding areas.*

D. The DRB may impose conditions of approval to mitigate any negative impacts resulting to the abutting parcel, based on best lighting practices and available lighting technology.

E. The City may charge a review fee and may, at the Building Official's option, employ the services of a qualified professional civil or electrical engineer to review such submittals and the cost thereof shall be an additional fee charged to the applicant.

Response: The site does not appear to be eligible for a special lighting permit since it is located in Lighting Overlay Zone 2. The applicant is not seeking approval of a special permit for lighting. This standard does not apply.

Section 4.199.50. Submittal Requirements.

(.01) Applicants shall submit the following information as part of DRB review or administrative review of new commercial, industrial, multi-family or public facility projects:

A. A statement regarding which of the lighting methods will be utilized, prescriptive or performance, and a map depicting the lighting zone(s) for the property.

B. A site lighting plan that clearly indicates intended lighting by type and location. For adjustable luminaires, the aiming angles or coordinates shall be shown.

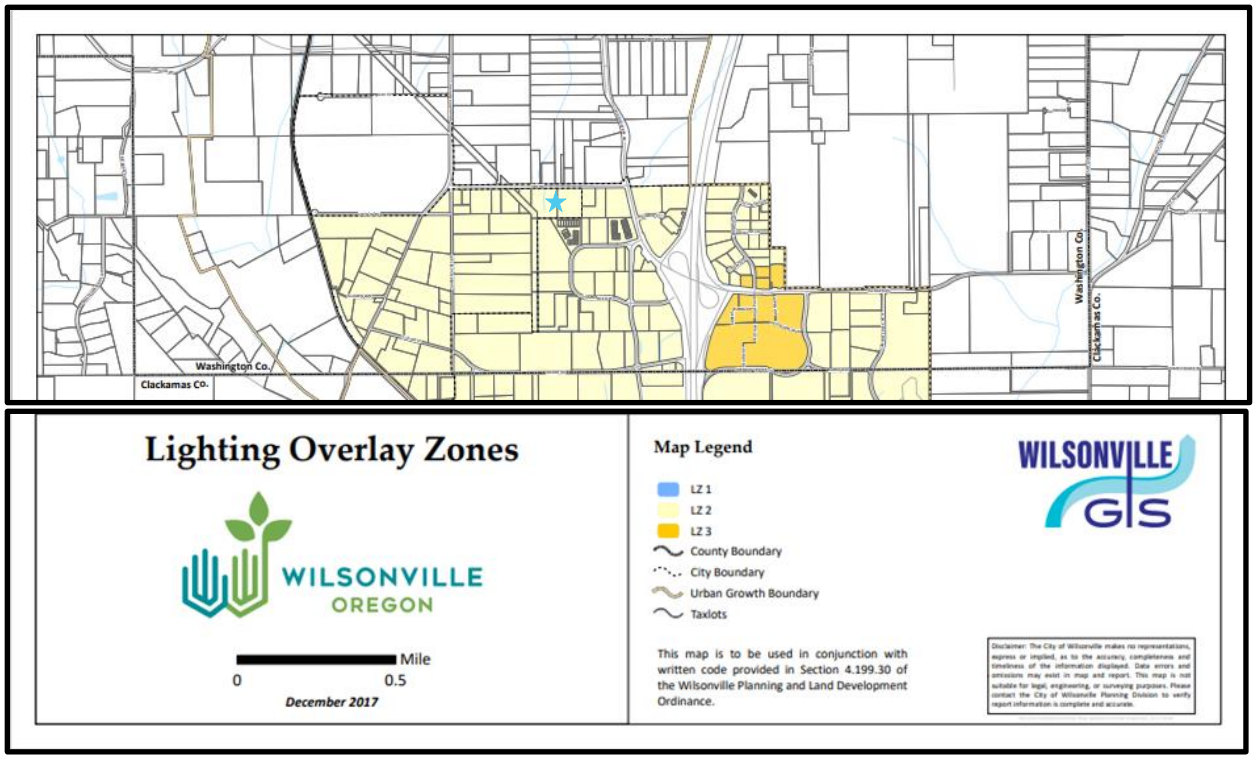
C. For each luminaire type, Drawings, cut sheets or other documents containing specifications for the intended lighting including but not limited to, luminaire description, mounting, mounting height, lamp type and manufacturer, lamp watts, ballast, optical system/distribution, and accessories such as shields.

D. Calculations demonstrating compliance with Oregon Energy Efficiency Specialty Code, Exterior Lighting, as modified by Section 4.199.40(.01)(B.)(2.) [Amended by Ord. 688, 11/15/10]

E. Lighting plans shall be coordinated with landscaping plans so that pole lights and trees are not placed in conflict with one another. The location of lights shall be shown on the landscape plan. Generally, pole lights should not be placed within one pole length of landscape and parking lot trees.

F. Applicants shall identify the hours of lighting curfew.

Response: The applicant proposes to comply using the Prescriptive Method. The property, identified by a blue star in the excerpt from the City's Lighting Overlay Zones Map below, and surrounding sites are all in Lighting Overlay Zone 2 (LZ 2).



The lighting plan in Exhibit K shows proposed locations for lighting fixtures and provides luminaire specifications (manufacturers' data sheets for typical fixtures). Lighting locations have been coordinated with the landscape planting plan to avoid conflicts. In Lighting Overlay Zone 2, the lighting curfew time is 10:00 PM (2,200 hours).

The [OR Energy Code] for outdoor illumination establishes maximum energy use figures for building exterior areas, expressed in Watts per Square Foot (W/SF), with reference to Table 9.4.2 Individual Lighting Power Allowances for Building Exteriors [ANSI/ASHRAE/IES Standard 90.1-2019 (I-P)]. For buildings in Zones 1 through 4, those maximum energy consumption standards allow a range between 0.03 W/SF and 0.08 W/SF for Uncovered Parking Areas, and between 0.03 and 0.04 W/SF for Landscaping Areas.

The applicant's exterior lighting plan includes the following exterior area lighting fixtures (not including four proposed low-intensity bollard lights along the proposed pedestrian paths, including the Wayside, which are exempt):

Power Consumption of Proposed Lighting Fixtures

Shielded Fixture Type	Count	Input Watts/Unit	Total Watts	Watts/Area (342,494 SF parking & landscape)
Pole-Mounted Luminaire (ISON LED Area Light High Performance Gen 1, 75W, 13000 Lumens, 5000K, Type IV)	2 Poles @ 4 Luminaires	75.118 W	601 W	0.002
	18 Poles @ 1 Luminaire	75.118 W	1,352 W	0.004

Wall-Mounted Lumen Select Wall Pack Full-cutoff, 120-277V, 3000lm, 24W, 80CRI, 5000K	19 @ 1 Luminaire	24 W	456 W	0.001
Total Proposed Fixtures and Consumption	**45 luminaires**		**2,409 W**	**0.007 W/SF**
Allowable Maximum Range (Zones 1 – 4)			***21,086 W***	***0.062 W/SF***
Proposed Power Consumption as % of Lowest Allowable Maximum Per Code			**11%**	**11%**

Based on this analysis, power consumption per unit area for the proposed development is only 11% of the allowed power consumption rate per unit of area. This requirement is satisfied.

(.02) In addition to the above submittal requirements, Applicants using the Prescriptive Method shall submit the following information as part of the permit set plan review:

A. A site lighting plan (items 1 A - F, above) which indicates for each luminaire the 3 mounting height line to demonstrate compliance with the setback requirements. For luminaires mounted within 3 mounting heights of the property line the compliance exception or special shielding requirements shall be clearly indicated.

Response: Exhibit K provides a Site Lighting Plan. Notably, all the neighboring properties are designated Industrial and are also in the same Lighting Overlay Zone, LZ 2, as the subject property. Luminaire setbacks and other design factors are subject to the Exceptions in Section 4.199.40(.01)B.4.

(.03) In addition to the above submittal requirements, Applicants using the Performance Method shall submit the following information as part of the permit set plan review:

A. Site plan showing horizontal isocandle lines, or the output of a point-by-point computer calculation of the horizontal illumination of the site, showing property lines and light levels immediately off of the subject property.

B. For each side of the property, the output of a point-by-point vertical footcandle calculation showing illumination in the vertical plane at the property line from grade to at least 10 feet higher than the height of the tallest pole.

C. Lighting plans shall be prepared by a qualified licensed engineer.

Response: The applicant is utilizing the prescriptive option rather than the performance option. This standard does not apply.

(.04) In addition to the above applicable submittal requirements, Applicants for Special Permits shall submit the following to the DRB for review:

A. Tabulation of International Engineering Society of North America (IESNA) lighting recommendations for each task including area illuminated, recommended illumination level, actual maintained illumination level, and luminaires used specifically to achieve the indicated criteria.

B. Lighting plans shall be prepared by a qualified licensed engineer.

Response: The applicant is not seeking approval of a special permit for lighting. This standard does not apply.

(.05) For all calculations, the following light loss factors shall be used unless an alternative is specifically approved by the City:

Metal halide	*0.6*
High pressure sodium	*0.8*
Compact fluorescent	*0.7*
Full size fluorescent	*0.75*
Incandescent	*0.9*
Halogen	*0.95*
Other	*As approved*

Response: The applicant understands these factors to apply to implementation of the Performance Method, which is not used in this application.

Section 4.199.60. Major Additions or Modifications to Pre-Existing Sites.

(01.) Major Additions. If a major addition occurs on a property, all of the luminaires on the site shall comply with the requirements of this Section. For purposes of this sub-section, the following are considered to be major additions:

A. Additions of 50 percent or more in terms of additional dwelling units, gross floor area, seating capacity, or parking spaces, either with a single addition or with cumulative additions after July 2, 2008.

B. Modification or replacement of 50 percent or more of the outdoor lighting luminaries' within a 5-year timeframe existing as of July 2, 2008.

Response: The applicant has submitted requests for a new development, not a major addition. This standard does not apply.

Table 7: Maximum Wattage And Required Shielding

Lighting Zone	***Fully Shielded***	***Shielded***	***Partly Shielded***	***Unshielded***
LZ 1	*70*	*20*	*13*	*Low voltage landscape lighting 50 watts or less*
LZ 2	*100*	*35*	*39*	*Low voltage landscape lighting 50 watts or less*
LZ 3	*250*	*100*	*70*	*Landscape and facade lighting 100 watts or less; ornamental lighting on private drives of 39 watts and less*
LZ 4	*450*	*150*	*150*	*Landscape and facade lighting 250 watts or less; ornamental lights on private drives and lanterns 70 watts or less; marquee lighting not employing medium based lamps*

[Table 7 amended by Ord. 682, 9/9/10; Ord. 688, 11/15/10]

Table 8: Maximum Lighting Mounting Height In Feet			
Lighting Zone	**Lighting for private drives, driveways, parking, bus stops and other transit facilities**	**Lighting for walkways, bikeways, plazas and other pedestrian areas**	**All other lighting**
LZ 0	20	8	4
LZ 1	25	12	4
LZ 2	40	18	8
LZ 3	40	18	16
LZ 4	Height limit to be determined by Special Use Permit Only		

Lighting mounted onto buildings or other structures shall not exceed a mounting height greater than 4 feet higher than the tallest part of the building or structure at the place where the lighting is installed, nor higher than 33.33 percent of the horizontal distance of the light from the nearest property line, whichever is less.

Table 9: Performance Method			
Lighting Zone	**Maximum percentage of direct uplight lumens**	**Maximum Light Level at Property Line**	
		Horizontal plane at grade (foot candles - fc)	**Vertical plane facing the site in question, from grade to mounting height of highest mounted luminaire (foot candles – fc)**
LZ 0	0	0.01 fc	0.02 fc
LZ 1	1%	0.05 fc	0.1 fc
LZ 2	5%	0.2 fc	0.4 fc
LZ 3	10%	0.4 fc	0.8 fc
LZ 4	20%	0.8 fc	1.6 fc

Table 10: Curfew	
Lighting Zone	**Curfew Time**
LZ 0	8:00 PM (2000 hours)
LZ 1	
LZ 2	10:00 PM (2200 hours)
LZ 3	Midnight (2400 hours)
LZ 4	

[Tables, above, renumbered by Ord. 688, 11/15/10

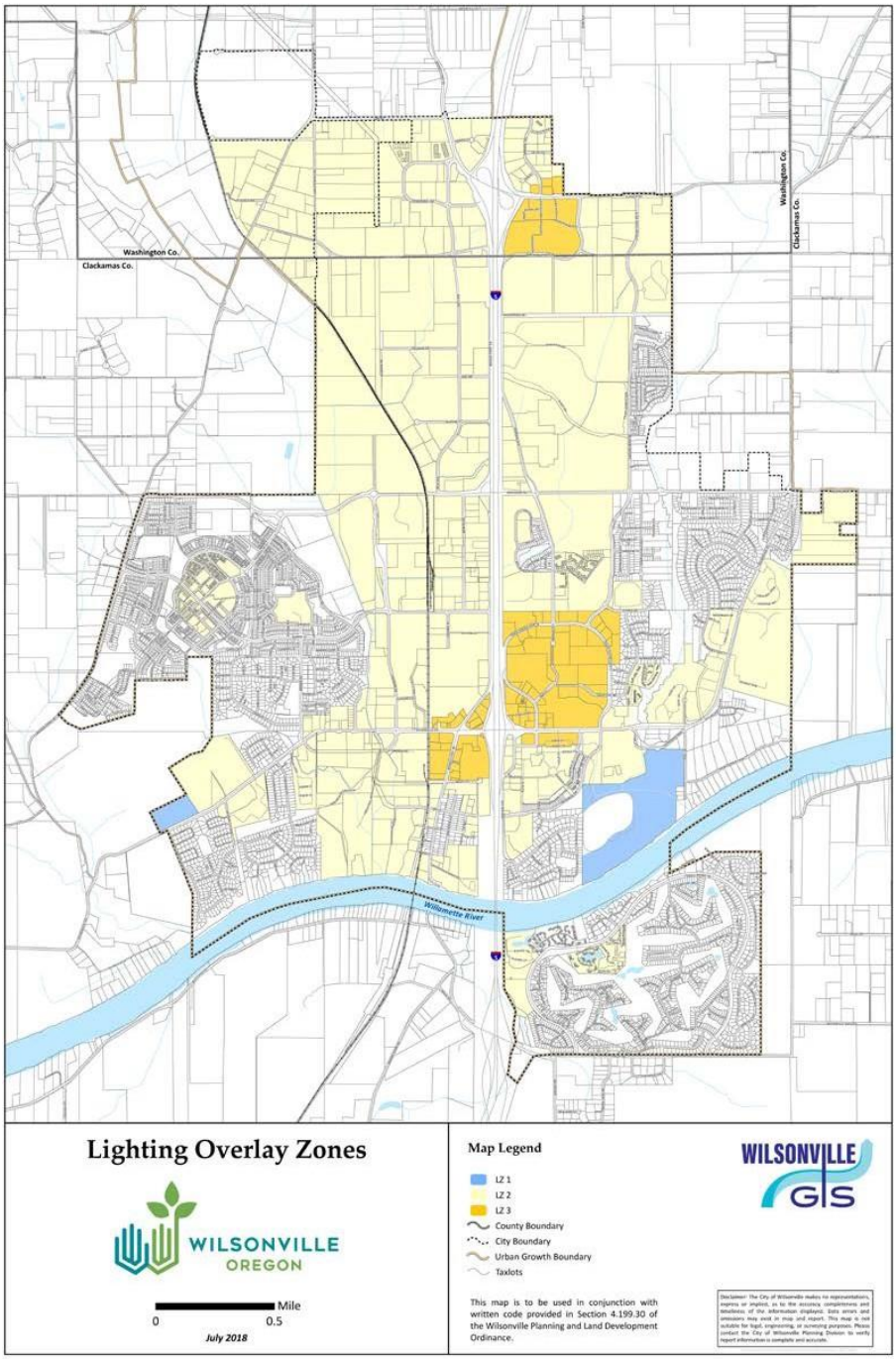


Figure 30: Lighting Overlay Zone Map
[Amended by Ord. 821 adopted 7/2/2018]

[Section 4.199 – 4.199.60 added by Ord. No. 649, adopted 6/2/08]

UNDERGROUND UTILITIES

Section 4.300. General

(.01) The City Council deems it reasonable and necessary in order to accomplish the orderly and desirable development of land within the corporate limits of the City, to require the underground installation of utilities in all new developments.

(.02) After the effective date of this Code, the approval of any development of land within the City will be upon the express condition that all new utility lines, including but not limited to those required for power, communication, street lighting, gas, cable television services and related facilities, shall be placed underground.

(.03) The construction of underground utilities shall be subject to the City's Public Works Standards and shall meet applicable requirements for erosion control and other environmental protection.

Section 4.310. Exceptions

Section 4.300 of this Code shall not apply to surface-mounted transformers, surface-mounted connection boxes, wireless communication facilities, and meter cabinets and other appurtenances which are reasonably necessary to be placed above ground, or to temporary utility service facilities during construction, or to high capacity electric and communication feeder lines, or to utility transmission lines operating at 50,000 volts or more.

Response: The applicant's proposed development plans include installation of underground utilities **in the property's north frontage on SW Day Road,** as prescribed by these provisions. These requirements are met.

Section 4.320. Requirements

(.01) The developer or subdivider shall be responsible for and make all necessary arrangements with the serving utility to provide the underground services (including cost of rearranging any existing overhead facilities). All such underground facilities as described shall be constructed in compliance with the rules and regulations of the Public Utility Commission of the State of Oregon relating to the installation and safety of underground lines, plant, system, equipment and apparatus.

(.02) The location of the buried facilities shall conform to standards supplied to the subdivider by the City. The City also reserves the right to approve location of all surface-mounted transformers.

(.03) Interior easements (back lot lines) will only be used for storm or sanitary sewers, and front easements will be used for other utilities unless different locations are approved by the City Engineer. Easements satisfactory to the serving utilities shall be provided by the developer and shall be set forth on the plat.

Response: Proposed utility system extensions and alignments have been prepared in consultation with City staff and service providers. The submitted plans demonstrate the feasibility of achieving compliance. **A significant factor in this instance is that the existing power poles on the south side of SW Day Road support not only distribution lines, which can be undergrounded, but also high-capacity transmission lines, which cannot. As a result, installing underground facilities to serve the subject property will not result in removal of the power poles on the south side of the roadway.** Detailed plans will be submitted for permitting prior to construction. Condition(s) of approval can assure compliance in the permitting and construction process.

SITE DESIGN REVIEW

Section 4.400. Purpose

(.01) Excessive uniformity, inappropriateness or poor design of the exterior appearance of structures and signs and the lack of proper attention to site development and landscaping in the business, commercial, industrial and certain residential areas of the City hinders the harmonious development of the City, impairs the desirability of residence, investment or occupation in the City, limits the opportunity to attain the optimum use in value and improvements, adversely affects the stability and value of property, produces degeneration of property in such areas and with attendant deterioration of conditions affecting

the peace, health and welfare, and destroys a proper relationship between the taxable value of property and the cost of municipal services therefor.

(.02) The City Council declares that the purposes and objectives of site development requirements and the site design review procedure are to:

A. Assure that Site Development Plans are designed in a manner that insures proper functioning of the site and maintains a high quality visual environment.

B. Encourage originality, flexibility and innovation in site planning and development, including the architecture, landscaping and graphic design of said development;

C. Discourage monotonous, drab, unsightly, dreary and inharmonious developments;

D. Conserve the City's natural beauty and visual character and charm by assuring that structures, signs and other improvements are properly related to their sites, and to surrounding sites and structures, with due regard to the aesthetic qualities of the natural terrain and landscaping, and that proper attention is given to exterior appearances of structures, signs and other improvements;

E. Protect and enhance the City's appeal and thus support and stimulate business and industry and promote the desirability of investment and occupancy in business, commercial and industrial purposes;

F. Stabilize and improve property values and prevent blighted areas and, thus, increase tax revenues;

G. Insure that adequate public facilities are available to serve development as it occurs and that proper attention is given to site planning and development so as to not adversely impact the orderly, efficient and economic provision of public facilities and services.

H. Achieve the beneficial influence of pleasant environments for living and working on behavioral patterns and, thus, decrease the cost of governmental services and reduce opportunities for crime through careful consideration of physical design and site layout under defensible space guidelines that clearly define all areas as either public, semi-private, or private, provide clear identity of structures and opportunities for easy surveillance of the site that maximize resident control of behavior -- particularly crime;

I. Foster civic pride and community spirit so as to improve the quality and quantity of citizen participation in local government and in community growth, change and improvements;

J. Sustain the comfort, health, tranquility and contentment of residents and attract new residents by reason of the City's favorable environment and, thus, to promote and protect the peace, health and welfare of the City.

Response: The applicant's submitted plans in Exhibit B respond to applicable development standards, including the Coffee Creek Pattern Book. The plans demonstrate that the proposed development will function properly and will contribute to producing the high-quality visual environment desired in the Coffee Creek Industrial area. The proposed development plan reflects the appropriate consideration the applicant's design team has given to all the above purposes and objectives of the Site Design Review process. For most design issues, the project straightforwardly satisfies the standards the City has adopted to implement the above purposes and objectives; however, the application includes two (2) waiver

requests for which the applicant has provided appropriate findings of compliance with the intent of the regulations (in a separate subsection D below).

Section 4.420. Jurisdiction and Powers of the Board

(.01) Application of Section. Except for single-family or two-family dwellings in any residential zoning district, and in the Village zone, row houses or apartments, no Building Permit shall be issued for a new building or major exterior remodeling of an existing building, and no Sign Permit, except as permitted in Sections 4.156.02 and 4.156.05, shall be issued for the erection or construction of a sign relating to such new building or major remodeling, until the plans, drawings, sketches and other documents required for a Sign Permit application have been reviewed and approved by the Board.
Response: The applicant is requesting DRB approval of the proposed signage, as discussed further in the responses to Section 4.156, below. This standard is met.

(.02) Development in Accord with Plans. Construction, site development and landscaping shall be carried out in substantial accord with the plans, drawings, sketches and other documents approved by the Board, unless altered with Board approval. Nothing in this subsection shall be construed to prevent ordinary repair, maintenance and replacement of any part of the building or landscaping which does not involve a substantial change from the purpose of Section 4.400. If the Board objects to such proposed changes, they shall be subject to the procedures and requirements of the site design review process applicable to new proposals.
Response: The applicant intends to construct a project that aligns with the general form and design depicted in the accompanying plans, subject to possible minor alterations that may arise during preparation of construction drawings for permit review. This standard is met.

(.03) Variances. The Board may authorize variances from the site development requirements, based upon the procedures, standards and criteria listed in Section 4.196. Variances shall be considered in conjunction with the site design review process.
Response: <u>No variance is necessary for approval of the Feb'23 Plan. This standard is not applicable.</u>

[The following statement is not applicable to the Feb'23 Plan.]
This application requests a variance for the proposed private crossing of Tapman Creek and associated development impacts; the request is addressed in Section 4.196 of this report. This variance request is included in the application for this annexation and site design review application. This standard is met.

Section 4.421. Criteria and Application of Design Standards

(.01) The following standards shall be utilized by the Board in reviewing the plans, drawings, sketches and other documents required for Site Design Review. These standards are intended to provide a frame of reference for the applicant in the development of site and building plans as well as a method of review for the Board. These standards shall not be regarded as inflexible requirements. They are not intended to discourage creativity, invention and innovation. The specifications of one or more particular architectural styles is not included in these standards. (Even in the Boones Ferry Overlay Zone, a range of architectural styles will be encouraged.)

A. Preservation of Landscape. The landscape shall be preserved in its natural state, insofar as practicable, by minimizing tree and soils removal, and any grade changes shall be in keeping with the general appearance of neighboring developed areas.

Response: The proposed development site is not in a natural state; the property has been used as a residence for a period of several decades. The site's topography, sloping downhill to the west, is not distinctive, although the site is relatively steep as compared to most sites zoned for industrial development. Notably, Tapman Creek runs north/south through the western portion of the site and has an associated SROZ riparian corridor area. The applicant has made significant

adaptations of the proposed development plan in order to incorporate a significant open space area for the conservation, enhancement and protection of that SROZ riparian corridor area, pursuant to the proposed impact mitigation **recommendations** ~~plan~~ in Exhibit C. This standard is met.

B. Relation of Proposed Buildings to Environment. Proposed structures shall be located and designed to assure harmony with the natural environment, including protection of steep slopes, vegetation and other naturally sensitive areas for wildlife habitat and shall provide proper buffering from less intensive uses in accordance with Sections 4.171 and 4.139 and 4.139.5. The achievement of such relationship may include the enclosure of space in conjunction with other existing buildings or other proposed buildings and the creation of focal points with respect to avenues of approach, street access or relationships to natural features such as vegetation or topography.

Response: As noted above, the sloping site requires regrading to accommodate industrial warehousing and distribution, utilizing retaining walls to achieve appropriate grades; the massing of the building and extensive landscaping will minimize the visual impacts of the retaining walls as demonstrated in the site renderings (see Exhibit B). The site's principal environmental feature is the SROZ riparian corridor that will be protected and retained in the western part of the site. Additionally, the site plan achieves harmony with the natural environment using dense landscape plantings to create a naturalistic character along the SW Day Road corridor, provide a pedestrian Wayside adjacent to the street, and visually screen the proposed building. This standard is met.

C. Drives, Parking and Circulation. With respect to vehicular and pedestrian circulation, including walkways, interior drives and parking, special attention shall be given to location and number of access points, general interior circulation, separation of pedestrian and vehicular traffic, and arrangement of parking areas that are safe and convenient and, insofar as practicable, do not detract from the design of proposed buildings and structures and the neighboring properties.

Response: The applicant has proposed a one-driveway configuration because it achieves efficient access and circulation while minimizing conflicting movements among the different vehicle types that will access the site (semi tractor-trailer rigs, delivery vans, passenger vehicles), pedestrians and cyclists. Concentrating large truck maneuvering and docking in the central part of the site allows passenger vehicles to travel safely to the vehicle parking lot north of the building near the primary entrance. Employees parking south of the building will be able to enter the building at the south elevation, avoiding pedestrian conflict with the loading area. Pedestrian walkways are separated from vehicular driveways for safety, crossing drive aisles at locations with good visibility near the building's entrances. These standards are met.

D. Surface Water Drainage. Special attention shall be given to proper site surface drainage so that removal of surface waters will not adversely affect neighboring properties of the public storm drainage system.

Response: The proposed plans (see Exhibit B) include site grading for positive on-site drainage to surface facilities for water quality treatment and detention, with discharge to **Tapman Creek.** ~~the existing public system in SW Day Road.~~ This standard is met.

E. Utility Service. Any utility installations above ground shall be located so as to have a harmonious relation to neighboring properties and site. The proposed method of sanitary and storm sewage disposal from all buildings shall be indicated.

Response: Utility service plans, including installation of underground utility facilities, are provided in the C- (on-site) and R-series (Day Road public improvements) drawing sheets in Exhibit B. Utility

service connections will be made underground. Of note, the project will include **payment of a fee in lieu of** construction of a dry sanitary sewer line in SW Day Road**.** ~~for future connection as adjacent development occurs along SW Day Road, but the~~ **The** site will be serviced by a sanitary sewer connection **within a private sanitary sewer easement** through the south adjacent common ownership parcel to the sewer main in Commerce Circle. This standard is met.

F. Advertising Features. In addition to the requirements of the City's sign regulations, the following criteria should be included: the size, location, design, color, texture, lighting and materials of all exterior signs and outdoor advertising structures or features shall not detract from the design of proposed buildings and structures and the surrounding properties.

Response: This application incorporates the locations, general configurations and sizing of a proposed monument sign and wall signage to identify the building tenant, as part of the overall composition and project design. This requirement is met in a way that will set the stage for the applicant to obtain over-the-counter permits to install tenant-specific compliant signs in the future.

G. Special Features. Exposed storage areas, exposed machinery installations, surface areas, truck loading areas, utility buildings and structures and similar accessory areas and structures shall be subject to such setbacks, screen plantings or other screening methods as shall be required to prevent their being incongruous with the existing or contemplated environment and its surrounding properties. Standards for screening and buffering are contained in Section 4.176.

Response: As noted above and discussed in detail under other Section headings, materials in Exhibit B including the site plan and in particular the landscape planting plan, show how a dense landscaping treatment along the SW Day Road frontage will effectively screen views from the public realm into the truck loading area. Those technical plans are supplemented by perspective rendering drawings in Exhibit N, providing representative images to characterize future build-out conditions. No outdoor storage area or exposed machinery installation is proposed. The submitted materials meet this requirement.

(.02) The standards of review outlined in Sections (a) through (g) above shall also apply to all accessory buildings, structures, exterior signs and other site features, however related to the major buildings or structures.

Response: The submitted plans include all known features of the proposed development project, to support analysis consistent with this provision.

(.03) The Board shall also be guided by the purpose of Section 4.400, and such objectives shall serve as additional criteria and standards.

Response: The applicant has responded to the Purpose statements in Section 4.400 above.

(.04) Conditional application. The Planning Director, Planning Commission, Development Review Board or City Council may, as a Condition of Approval for a zone change, subdivision, land partition, variance, conditional use, or other land use action, require conformance to the site development standards set forth in this Section.

Response: The applicant is seeking Site Design Review approval as part of this application package, so no approval condition requiring conformance to site development standards is necessary. This standard does not apply.

(.05) The Board may attach certain development or use conditions in granting an approval that are determined necessary to insure the proper and efficient functioning of the development, consistent with

the intent of the Comprehensive Plan, allowed densities and the requirements of this Code. In making this determination of compliance and attaching conditions, the Board shall, however, consider the effects of this action on the availability and cost of needed housing. The provisions of this section shall not be used in such a manner that additional conditions either singularly or accumulatively have the effect of unnecessarily increasing the cost of housing or effectively excluding a needed housing type.

Response: The applicant recognizes the DRB's authority to impose conditions of approval necessary to ensure conformance to adopted Code standards; however, the proposed use and development are consistent with the subject property's proposed PDI-RSIA zoning and compatible with the adjoining industrial zoning. For these reasons, no imposition of additional conditions over and above Code standards is necessary or warranted to meet the intent of the Comprehensive Plan or to protect the best interests of the surrounding properties and neighborhoods, the City as a whole, and the intent of this Code. This criterion is met without additional conditions.

(.06) The Board or Planning Director may require that certain paints or colors of materials be used in approving applications. Such requirements shall only be applied when site development or other land use applications are being reviewed by the City.

- *A. Where the conditions of approval for a development permit specify that certain paints or colors of materials be used, the use of those paints or colors shall be binding upon the applicant. No Certificate of Occupancy shall be granted until compliance with such conditions has been verified.*
- *B. Subsequent changes to the color of a structure shall not be subject to City review unless the conditions of approval under which the original colors were set included a condition requiring a subsequent review before the colors could be changed.*

Response: The applicant requests DRB approval of the general color scheme illustrated in Exhibit M, Perspective Renderings, and Exhibit N, Colors and Materials Panel (Images); however, to allow flexibility to tailor final color selections to best meet the intent of the proposal while responding to the site's real-world natural daylight conditions, and in recognition of the DRB's discretion provided by this standard, the applicant requests that the DRB not impose conditions mandating use of those specific colors. This standard is met.

Section 4.430. Location, Design and Access Standards for Mixed Solid Waste and Recycling Areas

(.01) The following locations, design and access standards for mixed solid waste and recycling storage areas shall be applicable to the requirements of Section 4.179 of the Wilsonville City Code.

Response: The proposed trash enclosure meets the requirements of Section 4.179 of the Wilsonville City Code. The applicant's responses to individual criteria are provided in this narrative under Section 4.179 ~~and in the Waivers section, requesting a waiver to allow a reduced size for the waste enclosure~~.

(.02) Location Standards:

- *A. To encourage its use, the storage area for source separated recyclables shall be co-located with the storage area for residual mixed solid waste.*
- *B. Indoor and outdoor storage areas shall comply with Uniform Building and Fire Code requirements.*
- *C. Storage area space requirements can be satisfied with a single location or multiple locations and can combine with both interior and exterior locations.*
- *D. Exterior storage areas can be located within interior side yard or rear yard areas. Minimum setback shall be three (3) feet. Exterior storage areas shall not be located within a required front yard setback, including double frontage lots.*
- *E. Exterior storage areas shall be located in central and visible locations on a site to enhance security for users.*

F. Exterior storage areas can be located in a parking area if the proposed use provides at least the minimum number of parking spaces required for the use after deducting the area used for storage. Storage areas shall be appropriately screened according to the provisions of Section 4.430 (.03), below.

G. The storage area shall be accessible for collection vehicles and located so that the storage area will not obstruct pedestrian or vehicle traffic movement on the site or on public streets adjacent to the site.

Response: The proposal includes a single storage area for recyclables and mixed solid waste. The storage area complies with Uniform Building and Fire Code requirements; see details in Exhibit B, Sheets C1.10 (location) and A5.10 (details). The storage area is not located in a setback or in a parking area. The storage area is in a visible location. The trash hauler, Republic Services, has provided a letter (see Exhibit J) stating "We have reviewed your design plan site access and flow pattern and determined that it is adequate for our trucks to navigate the site and service the trash and recycle enclosure." These standards are met.

(.03) Design Standards.

A. The dimensions of the storage area shall accommodate containers consistent with current methods of local collection.

B. Storage containers shall meet Uniform Fire Code standards and be made of or covered with waterproof materials or situated in a covered area.

C. Exterior storage areas shall be enclosed by a sight obscuring fence, wall or hedge at least six (6) feet in height. Gate openings for haulers shall be a minimum of ten (10) feet wide and shall be capable of being secured in a closed or open position. In no case shall exterior storage areas be located in conflict with the vision clearance requirements of Section 4.177.

D. Storage area(s) and containers shall be clearly labeled to indicate the type of materials accepted.

Response: The design of the storage area was provided to Republic Services who is the local hauler for review. They have provided their approval of the storage area. Storage containers will meet Uniform Fire Code standards and be clearly labeled to indicate the type of materials. Individual storage containers will be covered. The storage area will be enclosed by tilt up concrete walls. See storage area details on Sheet A5.10 of Exhibit B. These standards are met.

(.04) Access Standards.

A. Access to storage areas can be limited for security reasons. However, the storage area shall be accessible to users at convenient times of the day and to collect service personnel on the day and approximate time they are scheduled to provide collection service.

B. Storage areas shall be designed to be easily accessible to collection trucks and equipment, considering paving, grade and vehicle access. A minimum of ten (10) feet horizontal clearance and eight feet of vertical clearance is required if the storage area is covered.

C. Storage areas shall be accessible to collection vehicles without requiring backing out of a driveway onto a public street. If only a single access point is available to the storage area, adequate turning radius shall be provided to allow collection vehicles to safely exit the site in a forward motion.

Response: The storage area will be accessible to users, and to collection personnel. The location and design of the storage area was provided for review to the trash hauler, Republic Services. Republic Services has provided a letter (see Exhibit J), stating "The trash and recycle enclosure will not have a roof and no vertical overhead obstructions. Your enclosure dimensions of 20' Ft. [sic] wide X 10'Ft. [sic] deep with two swinging gates that open a minimum of 120 degrees and are equipped with wind pins to secure gates in the closed and open positions will accommodate the storage and access of our equipment. The transition

from the enclosure to the driveway is level with a smooth transition with no obstructions." These standards are met.

Section 4.440. Procedure

(.01) Submission of Documents. A prospective applicant for a building or other permit who is subject to site design review shall submit to the Planning Department, in addition to the requirements of Section 4.035, the following:

- *A. A site plan, drawn to scale, showing the proposed layout of all structures and other improvements including, where appropriate, driveways, pedestrian walks, landscaped areas, fences, walls, off-street parking and loading areas, and railroad tracks. The site plan shall indicate the location of entrances and exits and direction of traffic flow into and out of off-street parking and loading areas, the location of each parking space and each loading berth and areas of turning and maneuvering vehicles. The site plan shall indicate how utility service and drainage are to be provided.*
- *B. A Landscape Plan, drawn to scale, showing the location and design of landscaped areas, the variety and sizes of trees and plant materials to be planted on the site, the location and design of landscaped areas, the varieties, by scientific and common name, and sizes of trees and plant materials to be retained or planted on the site, other pertinent landscape features, and irrigation systems required to maintain trees and plant materials. An inventory, drawn at the same scale as the Site Plan, of existing trees of 4" caliper or more is required. However, when large areas of trees are proposed to be retained undisturbed, only a survey identifying the location and size of all perimeter trees in the mass in necessary.*
- *C. Architectural drawings or sketches, drawn to scale, including floor plans, in sufficient detail to permit computation of yard requirements and showing all elevations of the proposed structures and other improvements as they will appear on completion of construction. Floor plans shall also be provided in sufficient detail to permit computation of yard requirements based on the relationship of indoor versus outdoor living area, and to evaluate the floor plan's effect on the exterior design of the building through the placement and configuration of windows and doors.*
- *D. A Color Board displaying specifications as to type, color, and texture of exterior surfaces of proposed structures. Also, a phased development schedule if the development is constructed in stages.*
- *E. A sign Plan, drawn to scale, showing the location, size, design, material, color and methods of illumination of all exterior signs.*
- *F. The required application fee.*

Response: The required documents listed above have been included in this application package as Exhibit B, with the exception of the fee which was paid separately. This standard is met.

(.02) As soon as possible after the preparation of a staff report, a public hearing shall be scheduled before the Development Review Board. In accordance with the procedures set forth in Section 4.010(2) and 4.012, the Development Review Board shall review and approve, approve with conditions, or deny the proposed architectural, site development, landscaping or sign plans of the applicant. If the Board finds that additional information or time are necessary to render a decision, the matter may be continued to a date certain. The applicant shall be immediately notified in writing of any such continuation or delay together with the scheduled date of review.

Response: This provision provides procedural guidance for implementation and requires no evidence within the applicant's narrative.

Section 4.441. Effective Date of Decisions
A decision of the Board shall become effective fourteen (14) calendar days after the date of the decision, unless the decision is appealed to, or called up by, the Council. If the decision of the Board is appealed to, or called up by, the City Council, the decision of the Council shall become effective immediately.
Response: This provision provides procedural guidance for implementation and requires no evidence from the applicant.

Section 4.442. Time Limit on Approval
Site design review approval shall be void after two (2) years unless a building permit has been issued and substantial development pursuant thereto has taken place; or an extension is granted by motion of the Board.
Response: The applicant intends to seek a building permit and begin construction within the timeframes outlined by Code. This standard is met.

Section 4.443. Preliminary Consideration
An applicant may request preliminary consideration by the Board of general plans prior to seeking a building permit. When seeking preliminary consideration, the applicant shall submit a site plan showing the proposed structures, improvements and parking, together with a general description of the plans. The Board shall approve or reject all or part of the applicant's general plan within the normal time requirements of a formal application. Preliminary approval shall be deemed to be approval of the final plan to the extent that the final design contains the characteristics of the preliminary design.
Response: The applicant has submitted for concurrent Stage I and Stage II Planned Development Review pursuant to this Section.

Section 4.450. Installation of Landscaping

(.01) All landscaping required by this section and approved by the Board shall be installed prior to issuance of occupancy permits, unless security equal to one hundred and ten percent (110%) of the cost of the landscaping as determined by the Planning Director is filed with the City assuring such installation within six (6) months of occupancy. "Security" is cash, certified check, time certificates of deposit, assignment of a savings account or such other assurance of completion as shall meet with the approval of the City Attorney. In such cases the developer shall also provide written authorization, to the satisfaction of the City Attorney, for the City or its designees to enter the property and complete the landscaping as approved. If the installation of the landscaping is not completed within the six-month period, or within an extension of time authorized by the Board, the security may be used by the City to complete the installation. Upon completion of the installation, any portion of the remaining security deposited with the City shall be returned to the applicant.

(.02) Action by the City approving a proposed landscape plan shall be binding upon the applicant. Substitution of plant materials, irrigation systems, or other aspects of an approved landscape plan shall not be made without official action of the Planning Director or Development Review Board, as specified in this Code.

(.03) All landscaping shall be continually maintained, including necessary watering, weeding, pruning, and replacing, in a substantially similar manner as originally approved by the Board, unless altered with Board approval.

(.04) If a property owner wishes to add landscaping for an existing development, in an effort to beautify the property, the Landscape Standards set forth in Section 4.176 shall not apply and no Plan approval or permit shall be required. If the owner wishes to modify or remove landscaping that has been accepted or approved through the City's development review process, that removal or modification must first be approved through the procedures of Section 4.010.

Response: The applicant acknowledges the City's authority under these provisions to require installation and maintenance of landscape features in accordance with construction plans after approval, and applicant accepts responsibility for care, maintenance, and procedures for approval of non-additive modifications to landscape features.

E. Waivers

This application includes requests for two (2) Waivers from specific Code standards. Waiver 1, to allow linear segments of retaining walls taller than four (4) feet without horizontal offsets, is eligible for approval under the Guidelines in the Coffee Creek Industrial Design Overlay District Pattern Book, pursuant to WDO Section 4.134(.08)B; however, Waiver 2, a request to provide limited employee vehicle parking between the proposed building and SW Day Road (an Addressing Street) is subject to the additional evidence requirements of WDO Section 4.134(.08)A.

The applicable approval criteria for waivers are found in Section 4.134.(.08) and referenced other Sections of the WDO:

WDO 4.134(.08) Waivers. The Development Review Board may waive standards as listed in Section 4.134 (.11), consistent with the provisions of Section 4.118 (.03).

A. The following standards shall not be waived, unless there is substantial evidence in the whole record to support a finding that the intent and purpose of the standards will be met in alternative ways:
- *1. Required minimum building height as provided in Section 4.134 (.11) Table CC-4;*
- *2. Parking location and design along addressing streets in Section 4.134 (.11) Table CC-3; and*
- *3. Parcel pedestrian access as listed in Section 4.134 (.11) Table CC-3.*

B. In addition to meeting the purposes and objectives of Section 4.140, any waivers granted in the Coffee Creek DOD must be found to be consistent with the intent of the Coffee Creek DOD Pattern Book.

Section 4.140. Planned Development Regulations.

(.01) Purpose.

A. The provisions of Section 4.140 shall be known as the Planned Development Regulations. The purposes of these regulations are to encourage the development of tracts of land sufficiently large to allow for comprehensive master planning, and to provide flexibility in the application of certain regulations in a manner consistent with the intent of the Comprehensive Plan and general provisions of the zoning regulations and to encourage a harmonious variety of uses through mixed use design within specific developments thereby promoting the economy of shared public services and facilities and a variety of complimentary activities consistent with the land use designation on the Comprehensive Plan and the creation of an attractive, healthful, efficient and stable environment for living, shopping or working.

B. It is the further purpose of the following Section:
- *1. To take advantage of advances in technology, architectural design, and functional land use design:*

2. *To recognize the problems of population density, distribution and circulation and to allow a deviation from rigid established patterns of land uses, but controlled by defined policies and objectives detailed in the comprehensive plan;*
3. *To produce a comprehensive development equal to or better than that resulting from traditional lot land use development.*
4. *To permit flexibility of design in the placement and uses of buildings and open spaces, circulation facilities and off-street parking areas, and to more efficiently utilize potentials of sites characterized by special features of geography, topography, size or shape or characterized by problems of flood hazard, severe soil limitations, or other hazards;*
5. *To permit flexibility in the height of buildings while maintaining a ratio of site area to dwelling units that is consistent with the densities established by the Comprehensive Plan and the intent of the Plan to provide open space, outdoor living area and buffering of low-density development.*
6. *To allow development only where necessary and adequate services and facilities are available or provisions have been made to provide these services and facilities.*
7. *To permit mixed uses where it can clearly be demonstrated to be of benefit to the users and can be shown to be consistent with the intent of the Comprehensive Plan.*
8. *To allow flexibility and innovation in adapting to changes in the economic and technological climate.*

Response: In the context of this proposal for speculative industrial development of one roughly 9.13-acre site, consistent with its land use designation on the Comprehensive Plan Map, the most salient Purpose statement is #4, which allows flexibility in site design to respond to site-specific features and conditions at the project level. The other Purpose statements apply more broadly within the community at large, or concern flexibility not required for approval of this application (such as #5, allowing flexibility with respect to building height).

Each of the waivers requested by the Applicant is described below, followed by a discussion about why the proposed development is consistent with the intent of the Planned Development Regulations, and how the proposed alternative development approach is consistent with the intent of relevant elements of the Coffee Creek DOD Pattern Book.

Waiver 1. Grading and Retaining Walls

Several segments of proposed retaining walls exceed the maximum height of 48" (4') or 4.8' with a 20% allowed adjustment. The Grading Plan (Sheet C2.11 of Exhibit B) includes the locations of the proposed retaining walls, and Sheets C2.11-C2.12 provide elevation profiles of the retaining walls.

The proposed development requires a waiver from the following applicable standards:

WDO Chapter 4.134(11.)/Table CC-3/5. Grading and Retaining Walls /Maximum Height: Where site topography requires adjustments to natural grades, landscape retaining walls shall be 48 inches tall maximum.

WDO Chapter 4.134(11.)/Table CC-3/5. Grading and Retaining Walls /Retaining Wall Design: Retaining walls longer than 50 linear feet shall introduce a 5-foot, minimum horizontal offset to reduce their apparent mass.

The following Development Standards are adjustable: Retaining Wall Design (20%)
Response: A waiver is necessary because contouring the site for industrial use will require a retaining wall in the eastern part of the site, forming a "U" shape wrapping around the building and vehicle parking areas. The central part of the wall is parallel to the eastern site boundary line, with north and south wings extending west parallel to the north and south property lines. The retaining wall will exceed 4' in height over a span of approximately 455'; at the wall's highest point, it will be 16' above the abutting grade.

This continuous wall is necessary because the economic feasibility of the site requires flat grading for the building's concrete slab foundation, and the remaining usable area of the site must provide trailer storage and circulation for semi-tractor-trailer rigs with limited cross-slopes for maneuverability, stability, and operating safety. The operating area with limited cross-slope can only be achieved by excavating material from the eastern part of the site to lower the building's finish floor elevation (FFE).

A Waiver is required for the height of this retaining wall because the continuous wall will not have horizontal offsets due to space limitations. At the rear of the building, the proposed wall's function is to provide a 20' wide corridor between the retaining wall and the building for emergency access by firefighters on foot; it will not be visible from points outside the property, or from most points within the property. On the north and south sides, the wall's appearance (as viewed from within the site) will be softened by landscaping. Because the exposed face of the north wall segment faces south, toward the interior of the site, it will not be visible from the SW Day Road public right-of-way.

WDC Section 4.140. Planned Development Regulations.

The following responses address each of the requirements of Section 4.140 in regard to the waiver request:

B. It is the further purpose of the following Section:

1. To take advantage of advances in technology, architectural design, and functional land use design:

Response: The request for retaining walls over the maximum height of 4' and linear distance of 50' without a horizontal offset of 5' is a response to the functional requirements for this unique site. With a land use designation of Planned Development Industrial – Regionally Significant Industrial Area (PDI-RSIA), to achieve its highest and best use, the site must be able to accommodate heavy truck traffic. Additionally, the nature of industrial buildings requires large, flat footprints to accommodate industrial uses and functionality.

Due to the vertical curve sight distance limitation on SW Day Road, the required preservation of the SROZ riparian corridor, required on-site stormwater treatment rain garden, and the need to match grades at both the proposed driveway on SW Day Road and the proposed access driveway to the south, site access is limited to one driveway on SW Day Road.

Grading necessary to flatten the site for a large industrial building – and in particular to provide truck docks on the west side of the building with the pavement level four feet below the building's finish floor – results in having to make a significant grade transition as close as possible to the east property line, to set the building's finish floor at a feasible elevation to satisfy all those requirements.

Based on the above facts, the proposed functional site design enables efficient development and economic use of the property for industrial employment, using an alternative design approach to achieve consistency with this Purpose statement.

2. *To recognize the problems of population density, distribution and circulation and to allow a deviation from rigid established patterns of land uses, but controlled by defined policies and objectives detailed in the comprehensive plan;*

Response: The applicant recognizes the City's desire to limit the size and scale of retaining walls for reasons such as aesthetics and human/pedestrian scale; however, a deviation from rigid retaining wall height and length restrictions, exceeding the allowed 20% adjustment allowed by the standards, is necessary at this specific site due to its intended use for industrial economic development, its existing topography, access location limitations, and protections that apply to the Tapman Creek SROZ riparian corridor. For the reasons explained just above in the response for purpose statement 1, flexibility is needed in site development due to a combination of multiple physical constraints and operating requirements for industry. The proposed retaining walls are integral to an alternative site planning approach for efficient development and industrial use of the property, consistent with access requirements and aesthetic needs, such as landscape screening and SROZ riparian corridor protection and enhancement.

3. *To produce a comprehensive development equal to or better than that resulting from traditional lot land use development.*

Response: As noted above, the site plan proposes a single, optimized access location to comply with the City's arterial access management requirements; it provides internal circulation to the Delta Logistics site to the south for efficiency in managing semi tractor-trailer rigs; it provides stormwater treatment and infiltration; it creates an industrial Wayside space near the access driveway; and it preserves and enhances an SROZ riparian corridor in the western portion of the site. Achieving these objectives while developing the property with a large industrial building and associated truck docking facilities could not be done if perimeter grade transitions had to be made using grading and slopes, or with multiple retaining walls with 5' lateral offsets, because their horizontal width would shorten critical east-west dimensions and compromise site capacity. The requested alternative – allowing segments of retaining walls to exceed 4.0 feet or 4.8' – deviates just enough from traditional lot land use development standards to enable the site to achieve its industrial use function efficiently, practically and safely, without compromising aesthetic goals – particularly because the exposed sides of the proposed retaining walls face away from SW Day Road and for the most part will not be visible from the public right-of-way.

4. *To permit flexibility of design in the placement and uses of buildings and open spaces, circulation facilities and off-street parking areas, and to more efficiently utilize potentials of sites characterized by special features of geography, topography, size or shape or characterized by problems of flood hazard, severe soil limitations, or other hazards;*

Response: Although the site does not have flood, soil, or other hazards, as discussed above, significant constraints affect its building siting, access, and circulation. The topography has enough overall slope – generally downhill from east to west – that significant grading and use of retaining walls is necessary to flatten the site enough to construct a large industrial building with a level concrete slab floor, while matching the existing grades on the north and south sides of the site for driveway access/circulation, and while conserving and enhancing the SROZ riparian corridor in the western portion of the site. For all the above reasons, realizing the site's economic use potential depends on allowing the requested limited deviation from retaining wall height limitations.

5. *To permit flexibility in the height of buildings while maintaining a ratio of site area to dwelling units that is consistent with the densities established by the Comprehensive Plan and the intent of the Plan to provide open space, outdoor living area and buffering of low-density development.*

Response: The proposed project is not a residential development, and the Waiver request is unrelated to the proposed building height. This purpose statement is not applicable.

6. *To allow development only where necessary and adequate services and facilities are available or provisions have been made to provide these services and facilities.*

Response: The proposed project has adequate access to necessary services and facilities for industrial development, and the proposed waiver does not impact the provision or efficacy of those existing services and facilities.

7. *To permit mixed uses where it can clearly be demonstrated to be of benefit to the users and can be shown to be consistent with the intent of the Comprehensive Plan.*

Response: This is not a "mixed-use" proposal in the sense of accommodating commercial, residential, or institutional uses within the site along with industrial tenants; the proposed project is designed to support one (1) industrial tenant consistent with the intent of the Comprehensive Plan and the list of allowed uses in the PD-RSIA Zone. The site and building are designed for industrial use, with warehouse/manufacturing space, ancillary office space, employee parking, and loading docks. The use of retaining walls to achieve the proposed site plan is essential for the end-user tenant to sustain economic, efficient, safe, and practical operational functions consistent with the Comprehensive Plan designation of the site for industrial uses.

8. *To allow flexibility and innovation in adapting to changes in the economic and technological climate.*

Response: The site and industrial building are designed to be flexible and capable of accommodating a variety of industrial tenants consistent with the property's PD-RSIA Zoning. Tenant needs will change over time along with economic needs of the community; creating a place with appropriate access, circulation, operational flexibility, and efficiency of operations will ensure this site remains a valuable and productive asset for the City of Wilsonville's economic development within the Coffee Creek Industrial Design Overlay District.

Response Summary: The proposed configuration is consistent with the Intent Statement for Street Design and Connectivity, as well as numerous guidelines in the *Pattern Book – Design Guidelines for Coffee Creek Industrial Design Overlay District (the Pattern Book)*:

Section B-2.5 Special Landscape Features: *Intentional aesthetic use of industrial materials*

Integrate the materials of industry at an industrial scale. This guideline may be accomplished by designing buildings, enclosures, and retaining walls with the simple, natural, unembellished materials common to industry. Use unfinished steel, raw aluminum, and plain concrete as the finish materials for the construction of site and building elements.

Response: The proposed retaining walls along the eastern boundary, creek crossing, and the storm facility will be constructed of simple unembellished materials and will be integrated into the proposed landscape plantings. The exposed face of the wall along the eastern boundary will face west, toward the back of the building, and it will not be visible from the public right-of-way. The wall on the west side of the stormwater management pond will face west towards the SROZ riparian corridor, which will visually obscure the wall from the public right-of-way. Landscape plantings will soften the appearance of the retaining wall faces.

Based on the above findings, Waiver 1 should be approved.

Waiver 2. Parking Location and Extent

In addition to providing visitor and disabled parking, the proposed 15-space parking area between the building and the Addressing Street is intended to include parking for some employees. The WDO's Waiver provisions allow compliance with discretionary guidelines in lieu of meeting prescriptive standards.

The proposed development requires a waiver from the following applicable standards:

WDO Chapter 4.134(11.)/Table CC-3/4. Parking Location and Extent/Addressing Street:

- *Limited to one double-loaded bay of parking, 16 spaces, maximum, designated for short-term (1 hour or less), visitor, and disabled parking only between right-of-way of Addressing Street and building.*

The following Development Standards are adjustable:

- *Parking Location and Extent: up to 20 spaces permitted on an Addressing Street*

WDO Chapter 4.134(11.)/Table CC-3/4. Parking Location and Design/Parking Location and Extent

Unless noted otherwise below, the following provisions apply:

- *Section 4.176 for Parking Perimeter Screening and Landscaping - permits the parking landscaping and screening standards as multiple options*

Response: The proposed site plan and building design do not comply with the standard because the eastern parking lot between the building and Addressing Street (SW Day Road) is proposed to allow some employee parking along with accommodations for disabled, short-term, and visitor parking. The total number of parking spaces in this area is 15 spaces, which the applicant proposes to designate for use as two (2) disabled parking spaces with appropriate markings and signage, four (4) visitor/short-term parking spaces identified by signage, and nine (9) employee spaces. (An additional 24 employee parking spaces are provided in the parking area located south of the building.)

This configuration is proposed because the northwest corner of the building, closest to the public street (SW Day Road), will be the location of the primary entrance and the main office space. It will be immediately visible to any motorist entering the driveway, and the northern parking spaces will be conveniently located for use by visitors. The ADA accessible spaces will of course be located closest to the main entrance; however, an industrial facility of this type and size typically has relatively few short-term visitors, unlike retail, service, or office businesses. In this context, prohibiting employees from parking within the north parking area would reserve an excessive number of parking spaces for a non-existent user group, which would be wasteful and inefficient.

This Waiver request is to allow the applicant to designate a minimum of four (4) of the proposed 13 standard spaces in the north parking area for visitor/short-term use. This will allow employees to use up to the remaining nine (9) standard spaces. Importantly, the proposal is intended to be flexible to meet a tenant's needs over time; that is, if the activity pattern changes such that more visitor parking is needed, the tenant can simply direct employees to park in the south parking area and thereby increase the allocation of standard spaces in the north parking area to meet that need.

<u>Approval Criteria:</u>

WDO 4.134(.08) Waivers. The Development Review Board may waive standards as listed in Section 4.134 (.11), consistent with the provisions of Section 4.118 (.03).

A. The following standards shall not be waived, unless there is substantial evidence in the whole record to support a finding that the intent and purpose of the standards will be met in alternative ways:

1. Required minimum building height as provided in Section 4.134 (.11) Table CC-4;

2. Parking location and design along addressing streets in Section 4.134 (.11) Table CC-3; and

3. Parcel pedestrian access as listed in Section 4.134 (.11) Table CC-3.

B. In addition to meeting the purposes and objectives of Section 4.140, any waivers granted in the Coffee Creek DOD must be found to be consistent with the intent of the Coffee Creek DOD Pattern Book.

Response: The proposed parking location and design requires a Waiver. This application provides substantial evidence regarding the parking required for the proposed development, including how the proposed parking configuration limits conflicting movements between passenger vehicles and tractor-trailer truck rigs to the extent feasible. The findings below demonstrate how the proposed parking location meets the intent and purpose of the standards, consistent with the evidence requirement in subparagraph A.2.

WDC Section 4.140. Planned Development Regulations.

The following responses address each of the requirements of Section 4.140 with regard to the waiver request:

B. It is the further purpose of the following Section:

1. To take advantage of advances in technology, architectural design, and functional land use design:

Response: The request (to allow the 15-space parking area between the building and Addressing Street not to be limited to just disability, visitor, and short-term parking, but to include some employee parking) arises from design in response to the shape and context of this unique site. Development for industrial use consistent with the Planned Development Industrial – Regionally Significant Industrial Area (PDI-RSIA) zoning requires the site and building to accommodate heavy truck traffic. Additionally, especially in the warehouse/ distribution industry, a large single-level building with a high number of dock doors is required.

As explained above for Waiver 1, this site is not flat enough to be feasible for industrial use without substantial grading including retaining walls, to locate the building and truck/trailer storage areas with satisfactory cross-slope characteristics. Due to grade issues in relation to SW Day Road as well as fire access requirements, the building needs to be set back from Day Road and must have drive aisles that extend to the rear of the building on both its north and south sides.

At the north, the required access corridor between the building and SW Day Road will be substantially lower than the roadway's elevation as it climbs to the west, because it must remain close to the building's finish floor elevation to meet emergency egress and firefighting access requirements. As a result, its visual impact will be minimal because the corridor is lower than motorists or pedestrians passing by on SW Day Road, and will be screened by landscaping. In this context, it is the logical location to provide parking proximate to the principal entrance and the main office space; the east-west dimension of the building makes it feasible to provide two (2) ADA accessible spaces and an additional 13 standard spaces on the north side of the building.

The north parking area is ideal for safe and efficient access to the building for drivers with disabilities and short-term visitors, but their number cannot reasonably be expected to reach fifteen (15) at any time. The north parking area is also the appropriate parking location for employees who work primarily in the office of the building. Office employees who park in the spaces provided south of the building will have to walk through the warehouse to reach the office area. A pedestrian walkway along the west side of the building is infeasible as it is the primary loading area for trucks; therefore, it makes the most sense for office staff to be allowed to park in the lot north of the building, while meeting the intent of the standard by designating an appropriate number of spaces for short term/visitor use.

Importantly, the location and size/capacity of the north parking area satisfies the physical design provisions of Section 4.134/ Table CC-3.4, so the configuration of the parking area will be visually consistent with the intent of the standard. The Waiver request concerns only whether employees of the facility will be prohibited from using any of the parking spaces.

2. *To recognize the problems of population density, distribution and circulation and to allow a deviation from rigid established patterns of land uses, but controlled by defined policies and objectives detailed in the comprehensive plan;*

Response: The requested Waiver is not related to the physical configuration of the proposed north parking area: a single bay of parking containing up to 16 spaces is allowed to be located between the building and an Addressing Street. The Waiver relates only to which groups of people are permitted to use those parking spaces: two (2) ADA-accessible spaces are proposed, reserved to meet those users' needs, but the standard allows use of the remaining proposed 13 standard spaces only for *short-term (1 hour or less)* or *visitor* parking. Reserving that many spaces for such needs at an industrial facility of this nature would be needlessly wasteful because the actual demand for short-term/visitor parking will be much smaller. The applicant's proposal to designate a minimum of four standard spaces for short-term/visitor use will achieve an appropriate allocation of parking for those needs while also allowing some employees to park in the north parking area. The proposed configuration (minimum designation of parking spaces) therefore meets the objective in an acceptable alternative way.

3. *To produce a comprehensive development equal to or better than that resulting from traditional lot land use development.*

Response: The proposed site plan provides a 58,125-SF footprint industrial building with a long north/south axis, which is the configuration that produces the maximum practicable building area while allowing the required site grading to accommodate preservation of the SROZ riparian corridor, on-site stormwater treatment, and operational parking/loading areas. The proposed north parking area complies with the physical design requirements of the Coffee Creek standards (i.e., one bay with not more than 16 parking spaces between the building and an Addressing Street), but the Coffee Creek regulation would allow only short-term or visitor use of 13 of the 15 spaces in the north parking area. Such a limitation would be counterproductive, requiring all office employees to walk a long distance through the warehouse/production area, while reserving spaces well in excess of the anticipated number of short-term visitors. Allowing tenants to optimize allocation of parking spaces, while maintaining a reasonable minimum allocation of four spaces for short-term/visitor parking in the north area as proposed, will produce a development that will equally or better meet the needs of the building tenant and employees (as compared to enforcement of the regulatory parking restriction, which would be the functional equivalent of "traditional lot land use development" in this context).

4. *To permit flexibility of design in the placement and uses of buildings and open spaces, circulation facilities and off-street parking areas, and to more efficiently utilize potentials of sites characterized by special features of geography, topography, size or shape or characterized by problems of flood hazard, severe soil limitations, or other hazards;*

Response: Although the site does not have flood, soil, or other hazard concerns, significant constraints affect siting, access, and circulation, as discussed above. The result of those constraints is that vehicle parking cannot feasibly be located at the sides of the building, so it is on the south side of the building, opposite SW Day Road, and on the north side of the building, between the building and the Addressing Street. The north parking area meets the size/capacity limitation in the Coffee Creek standards, but the standards would not allow any use of the north parking area by employees (other than those requiring accessible parking spaces).

In this context, it is reasonable for the applicant to request a Waiver to allow "*flexibility of design in the … [use] of off-street parking areas*" as intended by this criterion, to make a reasonable minimum allocation of four (4) standard parking spaces within the northern parking area and to allow up to nine (9) spaces to be used by employees. The Waiver will allow efficient use of the site's parking capacity without a detrimental effect on the sufficiency of short-term/visitor parking near the principal entrance, consistent with this purpose statement.

5. *To permit flexibility in the height of buildings while maintaining a ratio of site area to dwelling units that is consistent with the densities established by the Comprehensive Plan and the intent of the Plan to provide open space, outdoor living area and buffering of low-density development.*

Response: The proposed project is not a residential development. This purpose statement is not applicable.

6. *To allow development only where necessary and adequate services and facilities are available or provisions have been made to provide these services and facilities.*

Response: The proposed project has adequate access to necessary services and facilities for industrial development, and the proposed waiver does not impact the provision or efficacy of those existing services and facilities.

7. *To permit mixed uses where it can clearly be demonstrated to be of benefit to the users and can be shown to be consistent with the intent of the Comprehensive Plan.*

Response: This Waiver request is not to allow mixed-use occupancy at the subject property. If approved, the Waiver will have no effect on this Policy.

8. *To allow flexibility and innovation in adapting to changes in the economic and technological climate.*

Response: The site and building are designed to be flexible and capable of accommodating a variety of industrial tenants consistent with the property's PD-RSIA Zoning. Tenant needs will change over time along with economic needs of the community; creating a place with appropriate access, parking, circulation, operational flexibility, and efficiency of operations will ensure this site remains a valuable and productive asset for the City of Wilsonville's economic development within the Coffee Creek Industrial Design Overlay District. The proposed minimum allocation of four (4) standard spaces for short-term/visitor use will ensure that the intent of the regulation will be satisfied, and will also allow flexibility for the building's tenant to manage on-site parking effectively and efficiently to meet operational needs in a changing economic and technological climate.

For all the above reasons, the proposed site plan and parking configuration furthers the purposes of the regulation in an alternative way and should be approved.

Response Summary: The proposed configuration is consistent with the Intent Statement for Street Design and Connectivity, as well as numerous guidelines in the *Pattern Book – Design Guidelines for Coffee Creek Industrial Design Overlay District (the Pattern Book)*:

Section C-2.1 Parking Location and Design: *Front yard surface parking on an Addressing Street*

Surface parking is permitted in the front yard setback for development along Addressing Streets and Supporting Streets with limitations. Design parking lots to result in an attractive and functional experience for staff and visitors arriving by car. To enhance the design quality of parking lots in front yards along Addressing Streets, consider increasing the quality of the materials used and treating the surface of the parking lot and walkway system as a plaza that connects to, and integrates with, the primary building entrance.

Response: The proposed building is oriented to SW Day Road as its front, with its long axis perpendicular to that Addressing Street, and the office bump-out with principal building entrance at the northwest corner is a prominent feature visible from the Addressing Street. The applicant's planting plan will provide dense screening along the SW Day Road frontage, as well as a retaining wall (16' of elevation change over 185') minimizing the visual impact of the proposed parking area along that roadway. Its design clusters parking in a single-sided pod close to the principal building entrance, while making the grade transition necessary between the Addressing Street at the north and the ADA-accessible walkway. Perimeter landscaping along SW Day Road is designed to screen the parking and the building, providing views into the site at limited locations, such as the pedestrian walkway from the sidewalk to the building and the access driveway. A high screen landscaping area is also prominently featured immediately west of the building, providing visual interest that frames the principal building entrance and visually obscures the loading area from the public street. These features will partially enclose the parking area and the walkway, making them function as the approach plaza surrounding the primary building entrance. As noted above, the proposed north parking area's physical size/capacity (15 spaces, of which two (2) are accessible) and location comply with the Coffee Creek Design Standards; the Waiver only affects whether any of the building's employees are allowed to park near their workplace entrance.

Approving the requested Waiver, requiring a minimum allocation of four (4) spaces to short-term/visitor parking, and allowing employees to use the remaining available nine (9) parking spaces located between the building and the Addressing Street will enable the entire site to perform at its highest and best use in the PDI-RSIA zone.

Based on the above findings, Waiver 2 should be approved.

[The following Variance Section is not applicable to the Feb'23 Plan.]

F. Variance

Section 4.196. - Variances.

(.01) Where difficulties exist rendering compliance with Chapter 4 impractical and such compliance would create unnecessary hardship to the owner or user of land or buildings, the Development Review Board may grant a variance from the provisions of this Code after the prescribed public hearing as set forth in Section 4.013, and after an investigation; provided all of the following conditions exist:

Response: This application includes a Variance request because applicable traffic management and SROZ provisions combine in a way that appears to deny an approval path for this property owner to be able to access, develop and use the upland portions of the subject property on both sides of Tapman Creek, which flows from north to south through the western portion of the site.

The applicant has proposed a single-driveway access on Day Road at an appropriate location to achieve adequate sight distances in relation to the vertical curvature of the road surface to the east, as well as compatibility with the need for other driveway locations along the road segment in the future. City staff has advised the applicant that, because Day Road is a designated Major Arterial street, the minimum access spacing standard is 1,000', but desired spacing is 1,320' (see TIA at page 15 in Exhibit E). Although access to the western upland portion of the property (west of the SROZ) could be accomplished by allowing a second driveway on Day Road, it would be less than 400' from the proposed single-driveway location, and cannot meet either of those spacing standards.

Alternatively, the applicant proposes to create a vehicular connection within the site to accommodate internal movements between the site and Delta Logistics's adjacent existing trucking/distribution operation, and to incorporate a short bridge or culvert crossing of Tapman Creek that will allow access to the far northwestern part of the property. The northwestern upland portion of the site contains approximately 0.95 acre outside the SROZ, which is sufficient land area to accommodate a storage lot for the semi-tractor rigs (also called "bobtails") that are used in Delta Logistics's operations as well as a Low-Impact Development (LID) surface water quality management facility to treat storm runoff from that sub-area.

The internal-access approach provides the additional benefit of accommodating necessary vehicle operations and movements within Delta's site, rather than having to route trips to and from separate driveways on Day Road, entering and leaving public streets in the area. That efficiency can help to relieve potential for congestion on the public streets in the immediate area.

Unfortunately, the provisions in the SROZ chapter of the code do not appear to have anticipated this unusual situation (i.e., where usable areas of an industrially-zoned property are split by an SROZ corridor), and the code provisions do not provide a path for approval of a private crossing of the resource (Tapman Creek). As discussed above in the responses to SROZ provisions of the code, the applicant has presented a Natural Resource Assessment Report and impact mitigation recommendations for the proposed crossing and other development impacts, which exceed the minimum mitigation requirements in the code. This is to say the applicant has demonstrated the feasibility of constructing the proposed crossing while satisfying impact mitigation needs associated with it, but Variance approval will also be necessary to allow it.

A. The difficulty would apply to the particular land or building regardless of the owner.
Response: This situation arises because the subject property contains two (2) upland land areas, each of which is of sufficient size to be useful for industrial activities consistent with the property's Industrial designation in the City's Comprehensive Plan Map, but the code does not provide an approval path within the SROZ regulations for a crossing of the SROZ riparian corridor to allow access to both parts of the site. At the same time, the component areas of the site are not far enough apart to allow separate driveways on Day Road, due to the minimum access spacing requirement of 1,000' on a Major Arterial roadway. For these reasons, the difficulty is associated with the property and not with the particular owner. This requirement is met.

B. The request for a variance is not the result of an illegal act on the part of the applicant or the applicant's agent.

Response: The need for variance relief came to light as the applicant's design team worked to prepare development plans for the property. The applicant – the owner of an established business in Wilsonville – is in the process of obtaining all required approvals to demolish the existing residence (in Washington County's jurisdiction at this time), annex the subject property into the City of Wilsonville, and obtain all necessary permits for the proposed development. This requirement is met.

C. The plight of the owner is due to unique circumstances, such as lot size or shape, topography, and size or shape of building, which are not typical of the general conditions of the surrounding area.

Response: As explained above, the difficulty is due to the site's specific location, with frontage on SW Day Road and Tapman Creek flowing from north to south through the site. The site is not large enough to allow separate driveways to access the east and west portions of the property due to the City's regulation requiring minimum access spacing of 1,000', and the SRZ code provisions do not provide an approval path to allow a creek crossing in this circumstance – irrespective of whether satisfactory or even advantageous compensatory mitigation can be achieved as a result. This unique set of circumstances is not typical of properties in the surrounding area. This requirement is met.

D. The practical difficulty or unnecessary hardship asserted as a ground for a variance must relate to the premises for which the variance is sought and not to other premises or personal conditions of the applicant.

Response: The requested Variance relates solely to the question of achieving access and beneficial use of both the east- and the west upland areas of the subject property, which are separated by the SROZ designation of the Tapman Creek riparian corridor. Because two (2) driveways on Day Road will not be allowed due to minimum access spacing requirements, the only other option is to allow a creek crossing to provide access to and beneficial use of both portions of the property. Any owner/developer of the subject property would confront this difficulty in seeking to fully utilize the property. For that reason, the situation and need is wholly independent of the applicant's desire to make an access connection between the subject property and the existing Delta Logistics operation to the south. This requirement is met.

E. The variance does not allow the property to be used for purposes not authorized within the zone involved.

Response: The requested Variance is unrelated to the list of potential uses proposed for the site. No exception from the applicability of zoning standards regarding the uses of the property is requested. This requirement is met.

F. The variance is the minimum necessary to relieve the hardship.

Response: The applicant has provided an environmental assessment report and recommendations for mitigation actions in the SROZ area within the site that will more than compensate for the limited impacts associated with the proposed access configuration, including the crossing of Tapman Creek. By using a narrow crossing width (sufficient for two-way circulation without conflicts), impacts are limited and can be mitigated entirely within the subject property itself (see Exhibit C). This requirement is met.

G. Where the variance is sought to allow development within a flood zone, the following additional standards shall apply: [detailed provisions omitted for brevity]

Response: These provisions are not applicable because the subject property is not located within a flood zone.

G. Type C Tree Plan DRB Review

Section 4.600.20. Applicability of Subchapter

(.01) The provisions of this subchapter apply to the United States and the State of Oregon, and to their agencies and subdivisions, including the City of Wilsonville, and to the employees and agents thereof.

(.02) By this subchapter, the City of Wilsonville regulates forest practices on all lands located within its urban growth boundary, as provided by ORS 527.722.

(.03) The provisions of this subchapter apply to all land within the City limits, including property designated as a Significant Resource Overlay Zone or other areas or trees designated as protected by the Comprehensive Plan, City zoning map, or any other law or ordinance; except that any tree activities in the Willamette River Greenway that are regulated by the provisions of WC 4.500 - 4.514 and requiring a conditional use permit shall be reviewed by the DRB under the application and review procedures set forth for Tree Removal Permits.
Response: Upon annexation, the subject site will be located within Wilsonville city limits. This section applies.

Section 4.600.30. Tree Removal Permit Required

(.01) Requirement Established. No person shall remove any tree without first obtaining a Tree Removal Permit (TRP) as required by this subchapter.

(.02) Tree Removal Permits will be reviewed according to the standards provided for in this subchapter, in addition to all other applicable requirements of Chapter 4.

(.03) Although tree activities in the Willamette River Greenway are governed by WC 4.500 - 4.514, the application materials required to apply for a conditional use shall be the same as those required for a Type B or C permit under this subchapter, along with any additional materials that may be required by the Planning Department. An application for a Tree Removal Permit under this section shall be reviewed by the Development Review Board.
Response: This application includes a request for a Type C Tree Removal Permit.

Section 4.600.40. Exceptions

(.01) Exception from requirement. Notwithstanding the requirement of WC 4.600.30(1), the following activities are allowed without a Tree Removal Permit, unless otherwise prohibited:

A. Agriculture, Commercial Tree Farm or Orchard. Tree removal or transplanting occurring during use of land for commercial purposes for agriculture, orchard(s), or tree farm(s), such as Christmas tree production.

B. Emergencies. Actions made necessary by an emergency, such as tornado, windstorm, flood, freeze, utility damage or other like disasters, in order to prevent imminent injury or damage to persons or property or restore order and it is impractical due to circumstances to apply for a permit.

1. When an emergency has occurred, a Tree Removal Permit must be applied for within thirty (30) days following the emergency tree removal under the application procedures established in this subchapter.

2. *In addition to complying with the permit application requirements of this subchapter, an applicant shall provide a photograph of any tree removed and a brief description of the conditions that necessitated emergency removal. Such photograph shall be supplied within seven days of application for a permit. Based on good cause shown arising out of the emergency, the Planning Director may waive any or all requirements of this section.*

3. *Where a Type A Permit is granted for emergency tree removal, the permitee is encouraged to apply to the City Tree Fund for replanting assistance.*

C. *City utility or road work in utility or road easements, in utility or road right-of-ways, or in public lands. However, any trees removed in the course of utility work shall be mitigated in accordance with the standards of this subchapter.*

D. *Nuisance abatement. The City is not required to apply for a Tree Removal Permit to undertake nuisance abatement as provided in WC 6.200 et seq. However, the owner of the property subject to nuisance abatement is subject to all the provisions of this subchapter in addition to the requirements of WC 6.200 et seq.*

E. *The removal of filbert trees is exempt from the requirements of this subchapter.*

F. *The Charbonneau District, including its golf course, is exempt from the requirements of WC 4.600.30(1) on the basis that by and through the current CC&R's of the Charbonneau Country Club, the homeowners' association complies with all requirements of WC 4.610.30(1)(C)(1). This exception has been based upon the Tree Maintenance and Protection Plan that has been submitted by the Charbonneau Country Club and approved by the Planning Director. Tree removal activities remain subject to all applicable standards of this subchapter. Unless authorized by the City, this exception does not include tree removal upon any public easements or public property within the district. In the event that the CC&R's are changed relative to the effect of the Tree Maintenance and Protection Plan, then the Planning Director shall review whether such effect is material, whether it can be mitigated, and if not, may disallow the exemption.*

Response: The applicant is not requesting an exemption.

Section 4.600.50. Application For Tree Removal Permit

(.01) Application for Permit. A person seeking to remove one or more trees shall apply to the Director for a Tree Removal Permit for a Type A, B, C, or D permit, depending on the applicable standards as provided in this subchapter.

(A) An application for a tree removal permit that does not meet the requirements of Type A may be submitted as a Type B application.

(.02) Time of Application. Application for a Tree Removal Permit shall be made before removing or transplanting trees, except in emergency situations as provided in WC 4.600.40 (1)(B) above. Where the site is proposed for development necessitating siteplan or plat review, application for a Tree Removal Permit shall be made as part of the site development application as specified in this subchapter.

(.03) Fees. A person applying for a Tree Removal Permit shall pay a non-refundable application fee; as established by resolution of the City Council.

A. *By submission of an application, the applicant shall be deemed to have authorized City representatives to have access to applicant's property as may be needed to verify the information provided, to observe site conditions, and if a permit is granted, to verify that terms and conditions of the permit are followed.*

Response: A total of 259 trees was inventoried, 199 trees on the subject property including six (6) within the SROZ, and 60 trees within neighboring properties near the perimeter of the site. (See Arborist's Report in Exhibit D.) The Arborist's Report identifies six (6) trees for conservation, all of which are located within the SROZ: a group of five (5) mature trees in the north (three (3) Oregon ash and two (2) willows) and one (1) English hawthorn near the southwest corner of the site.

Proposed tree removal is shown on Sheet C0.10 and Sheets L0.03 and L0.04 of Exhibit B. The applicant is requesting a Type C tree removal permit.

The Arborist's Report includes assessment of the health of the trees to identify viable and non-viable specimens; a table with inventory/assessment details is provided in Attachment 3 of the Arborist's Report. **Based on those viability assessments, Sheets L0.03 and L0.04 of Exhibit B and the Arborist's Report show that mitigation for 175 trees is appropriate on a one-for-one basis with standard nursery specimens (i.e., requiring replanting of 175 trees). The proposed planting plan includes 175 trees to be planted on-site, which matches the minimum mitigation planting requirement. This standard is met.**

[The following statements are not applicable to the Feb'23 Plan.]
Based on those viability assessments, Sheets L0.03 and L0.04 of Exhibit B and the Arborist's Report show that mitigation for 210 trees is appropriate on a one-for-one basis with standard nursery specimens, i.e., requiring replanting of 210 trees. The proposed planting plan includes 210 trees to be planted on-site, which matches the minimum mitigation planting requirement. This standard is met.

Section 4.610.00. Application Review Procedure

(.01) The permit applicant shall provide complete information as required by this subchapter in order for the City to review the application.
Response: The applicant has submitted a complete application for the city's review.

(.02) Departmental Review. All applications for Tree Removal Permits must be deemed complete by the City Planning Department before being accepted for review. When all required information has been supplied, the Planning Department will verify whether the application is complete. Upon request of either the applicant or the City, the City may conduct a field inspection or review meeting. City departments involved in the review shall submit their report and recommendations to the Planning Director who shall forward them to the appropriate reviewing authority.
Response: The applicant acknowledges the procedure for the determination of completeness and Departmental Review.

(.03) Reviewing Authority.

B. *Type C. Where the site is proposed for development necessitating site plan review or plat approval by the Development Review Board, the Development Review Board shall be responsible for granting or denying the application for a Tree Removal Permit, and that decision may be subject to affirmance, reversal or modification by the City Council, if subsequently reviewed by the Council. For site development applications subject to a Class II administrative review process in the Coffee Creek Industrial Design Overlay District, the Planning Director shall be responsible for the granting or denial of the Tree Removal Permit application.*

Response: The proposed development is located within the Coffee Creek Industrial Design Overlay District. The applicant has requested consolidated review with a development proposal that requires action by the Development Review Board (DRB).

(.04) Notice. Before the granting of a Type C Tree Removal Permit, notice of the application shall be sent by regular mail to all owners within two hundred fifty feet (250') of the property where the trees are located as provided for in WC 4.010. The notice shall indicate where the application may be inspected and when a public hearing on the application will be held.
Response: This is procedural direction and requires no evidence from the applicant. A notice of application will be sent out to all owners within 250'.

(.05) Denial of Tree Removal Permit. Whenever an application for a Tree Removal Permit is denied, the permit applicant shall be notified, in writing, of the reasons for denial.
Response: This is procedural direction and requires no evidence from the applicant. The applicant understands they will be notified if the tree removal permit is denied.

(.06) Grant of a Tree Removal Permit. Whenever an application for a Type B, C or D Tree Removal Permit is granted, the reviewing authority shall:

A. Conditions. Attach to the granting of the permit any reasonable conditions considered necessary by the reviewing authority including, but not limited to, the recording of any plan or agreement approved under this subchapter, to ensure that the intent of this Chapter will be fulfilled and to minimize damage to, encroachment on or interference with natural resources and processes within wooded areas;

B. Completion of Operations. Fix a reasonable time to complete tree removal operations; and

C. Security. Require the Type C permit grantee to file with the City a cash or corporate surety bond or irrevocable bank letter of credit in an amount determined necessary by the City to ensure compliance with Tree Removal Permit conditions and this Chapter.

1. This requirement may be waived by the Planning Director if the tree removal must be completed before a plat is recorded, and the applicant has complied with WC 4.264(1) of this Code.

Response: The applicant acknowledges that the reviewing authority may apply conditions or other requirements when granting a Tree Removal Permit.

Section 4.610.10. Standards For Tree Removal, Relocation Or Replacement

(.01) Except where an application is exempt, or where otherwise noted, the following standards shall govern the review of an application for a Type A, B, C or D Tree Removal Permit:

A. Standard for the Significant Resource Overlay Zone. The standard for tree removal in the Significant Resource Overlay Zone shall be that removal or transplanting of any tree is not inconsistent with the purposes of this Chapter.
Response: The subject site is partially located in a Significant Resource Overlay Zone, so this standard applies; however, no tree removal is proposed in the SROZ.

B. Preservation and Conservation. No development application shall be denied solely because trees grow on the site. Nevertheless, tree preservation and conservation as a design principle shall be equal in concern and importance to other design principles.

Response: The site layout, including planting of replacement trees, has been designed to mitigate for impacts associated with site development for industrial use by replanting trees throughout the site to the extent it is feasible to do so. See the Tree Mitigation Plan (Sheet L0.04 of Exhibit B), the Natural Resource Assessment Report and Recommendations (Exhibit C), and the Arborist's Report (Exhibit D) for details.

C. Developmental Alternatives. Preservation and conservation of wooded areas and trees shall be given careful consideration when there are feasible and reasonable location alternatives and design options on-site for proposed buildings, structures or other site improvements.

Response: Preservation and conservation of wooded areas and trees was given careful consideration in site planning and design; however, based on multiple site constraints (as discussed in the Introduction section above), most of the existing trees need to be removed to accommodate the proposed building and associated site improvements. The building is located in the eastern part of the site, as far from the Tapman Creek SROZ corridor as is practical. The proposed grading plan responds to the site's topography and its relationship to SW Day Road, ~~including the relatively shallow public storm drain line within the roadway,~~ by using retaining walls at several locations to achieve satisfactory elevation, access and slope characteristics within the site. The rain-garden design of stormwater management facilities allows additional trees to be planted **adjacent to** ~~on both sides of~~ the SROZ corridor along Tapman Creek, further insulating and shading the vegetated corridor along the creek. This standard is met.

D. Land Clearing. Where the proposed activity requires land clearing, the clearing shall be limited to designated street rights-of-way and areas necessary for the construction of buildings, structures or other site improvements.

Response: Clearing and grading on the site will be limited to the extents of site improvement. Construction on the site will also be in alignment with the recommendations in the Arborist's report (see Exhibit D) to protect trees in the SROZ, and at other locations around the site's perimeter to the extent feasible, during construction. See the Tree Protection and Mitigation Plan on Sheet L0.04 of Exhibit B. This standard is met.

E. Residential Development. Where the proposed activity involves residential development, residential units shall, to the extent reasonably feasible, be designed and constructed to blend into the natural setting of the landscape.

Response: The proposed development is not residential. This standard does not apply.

F. Compliance With Statutes and Ordinances. The proposed activity shall comply with all applicable statutes and ordinances.

Response: The applicant has submitted this application and narrative to show compliance with all applicable statutes and ordinances.

G. Relocation or Replacement. The proposed activity shall include necessary provisions for tree relocation or replacement, in accordance with WC 4.620.00, and the protection of those trees that are not to be removed, in accordance with WC 4.620.10.

Response: Per the Arborist's report (see Exhibit D), no tree relocation is proposed; **175** ~~210~~ trees are subject to Code provisions for mitigation/replacement planting. Trees to remain within the site and adjacent to the site are to be protected by measures as outlined in the Arborist's report. (See Sheets L0.03 and L0.04 in Exhibit B.)

H. Limitation. Tree removal or transplanting shall be limited to instances where the applicant has provided completed information as required by this Chapter and the reviewing authority determines that removal or transplanting is necessary based on the criteria of this subsection.

1. Necessary For Construction. Where the applicant has shown to the satisfaction of the reviewing authority that removal or transplanting is necessary for the construction of a building, structure or other site improvement, and that there is no feasible and reasonable location alternative or design option on-site for a proposed building, structure or other site improvement; or a tree is located too close to existing or proposed buildings or structures, or creates unsafe vision clearance.

2. Disease, Damage, or Nuisance, or Hazard. Where the tree is diseased, damaged, or in danger of falling, or presents a hazard as defined in WC 6.208, or is a nuisance as defined in WC 6.200 et seq., or creates unsafe vision clearance as defined in this Code.

(a) As a condition of approval of Stage II development, filbert trees must be removed if they are no longer commercially grown or maintained.

3. Interference. Where the tree interferes with the healthy growth of other trees, existing utility service or drainage, or utility work in a previously dedicated right-of-way, and it is not feasible to preserve the tree on site.

4. Other. Where the applicant shows that tree removal or transplanting is reasonable under the circumstances.

Response: The removal of trees at this site is necessary for the construction of a warehouse building and site improvements. Tree removal is necessary for construction because there is no feasible or reasonable alternative design option for industrial use; industrial warehouse buildings require a flat concrete slab foundation for efficient and cost-effective construction and operations, as well as relatively flat paved site areas for circulation and maneuvering of semi-tractor trucks and trailers. Due to site constraints, including the Tapman Creek SROZ corridor, there is no alterative design approach that could increase the preservation of on-site trees while meeting user requirements. The Arborist's report (see Exhibit D) includes identification of diseased, damaged, nuisance or hazard trees, as well as overcrowded trees, and provides recommendations for their retention or removal, with mitigation calculations as appropriate. This standard is met.

I. Additional Standards for Type C Permits.

1. Tree survey. For all site development applications reviewed under the provisions of Chapter 4 Planning and Zoning, the developer shall provide a Tree Survey before site development as required by WC 4.610.40, and provide a Tree Maintenance and Protection plan, unless specifically exempted by the Planning Director or DRB, prior to initiating site development.2. Platted Subdivisions. The recording of a final subdivision plat whose preliminary plat has been reviewed and approved after the effective date of Ordinance 464 by the City and that conforms with this subchapter shall include a Tree Survey and Maintenance and Protection Plan, as required by this subchapter, along with all other conditions of approval.

3. *Utilities. The City Engineer shall cause utilities to be located and placed wherever reasonably possible to avoid adverse environmental consequences given the circumstances of existing locations, costs of placement and extensions, the public welfare, terrain, and preservation of natural resources. Mitigation and/or replacement of any removed trees shall be in accordance with the standards of this subchapter.*

Response: A Tree Survey and Tree Maintenance and Protection plan has been submitted as part of the Arborist's Report (see Exhibit D). See also Sheets L0.03 and L0.04 of Exhibit B.

J. Exemption. Type D permit applications shall be exempt from review under standards D, E, H and I of this subsection.

Response: This application is not for a Type D permit; this exemption does not apply.

Section 4.610.40. Type C Permit

(.01) Approval to remove any trees on property as part of a site development application may be granted in a Type C permit. A Type C permit application shall be reviewed by the standards of this subchapter and all applicable review criteria of Chapter 4. Application of the standards of this section shall not result in a reduction of square footage or loss of density, but may require an applicant to modify plans to allow for buildings of greater height. If an applicant proposes to remove trees and submits a landscaping plan as part of a site development application, an application for a Tree Removal Permit shall be included. The Tree Removal Permit application will be reviewed in the Stage II development review process. The DRB shall review all Type C permits, with the exception of Class II development review applications located within the Coffee Creek Industrial Design Overlay District, where the Planning Director shall have review authority. Any plan changes made that affect trees after Stage II review of a development application shall be subject to review by the original approval authority. Where mitigation is required for tree removal, such mitigation may be considered as part of the landscaping requirements as set forth in this Chapter.

Tree removal shall not commence until approval of the required Stage II application and the expiration of the appeal period following that decision. If a decision approving a Type C permit is appealed, no trees shall be removed until the appeal has been settled.

Response: The applicant is requesting a Type C permit. These standards and procedure apply.

(.02) The applicant must provide ten copies of a Tree Maintenance and Protection Plan completed by an arborist that contains the following information:

A. A plan, including a topographical survey bearing the stamp and signature of a qualified, registered professional containing all the following information:

1. *Property Dimensions. The shape and dimensions of the property, and the location of any existing and proposed structure or improvement.*

2. *Tree survey. The survey must include:*

   a. *An accurate drawing of the site based on accurate survey techniques at a minimum scale of one inch (1") equals one hundred feet (100') and which provides a) the location of all trees having six inches (6") or greater d.b.h. likely to be impacted, b) the spread of canopy of those trees, c) the common and botanical name of those trees, and d) the approximate location and name of any other trees on the property.*

b. *A description of the health and condition of all trees likely to be impacted on the site property. In addition, for trees in a present or proposed public street or road right-of-way that are described as unhealthy, the description shall include recommended actions to restore such trees to full health. Trees proposed to remain, to be transplanted or to be removed shall be so designated. All trees to remain on the site are to be designated with metal tags that are to remain in place throughout the development. Those tags shall be numbered, with the numbers keyed to the tree survey map that is provided with the application.*

c. *Where a stand of twenty (20) or more contiguous trees exist on a site and the applicant does not propose to remove any of those trees, the required tree survey may be simplified to accurately show only the perimeter area of that stand of trees, including its drip line. Only those trees on the perimeter of the stand shall be tagged, as provided in "b," above.*

d. *All Oregon white oaks, native yews, and any species listed by either the state or federal government as rare or endangered shall be shown in the tree survey.*

3. *Tree Protection. A statement describing how trees intended to remain will be protected during development, and where protective barriers are necessary, that they will be erected before work starts. Barriers shall be sufficiently substantial to withstand nearby construction activities. Plastic tape or similar forms of markers do not constitute "barriers."*

4. *Easements and Setbacks. Location and dimension of existing and proposed easements, as well as all setbacks required by existing zoning requirements.*

5. *Grade Changes. Designation of grade changes proposed for the property that may impact trees.*

6. *Cost of Replacement. A cost estimate for the proposed tree replacement program with a detailed explanation including the number, size and species.*

7. *Tree Identification. A statement that all trees being retained will be identified by numbered metal tags, as specified in subsection "A," above in addition to clear identification on construction documents.*

Response: Sheet L0.04 of Exhibit B provides a Tree Maintenance and Protection Plan based on the Arborist's Report (Exhibit D).

Section 4.620.00. Tree Relocation, Mitigation, Or Replacement

(.01) Requirement Established. A Type B or C Tree Removal Permit grantee shall replace or relocate each removed tree having six (6) inches or greater d.b.h. within one year of removal.

Response: Trees proposed for removal are subject to replacement planting requirements. See Sheets L0.03 Tree Removal Plan and L0.04 Tree Mitigation Plan in Exhibit B, which show trees to be removed and location and species of mitigation trees, consistent with the Arborist's Report and recommendations in Exhibit D. Consistent with the Arborist's findings and recommendations, the proposed planting plan includes **175** ~~210~~ trees to be planted on-site. The applicant proposes to satisfy the full mitigation

requirement (**175** ~~210~~ replacement trees) through on-site plantings (**175** ~~210~~ trees), so no contribution to the City Tree Fund pursuant to Section 4.620.00(.06) is required. This standard is met.

(.02) Basis For Determining Replacement. The permit grantee shall replace removed trees on a basis of one (1) tree replanted for each tree removed. All replacement trees must measure two inches (2") or more in diameter. Alternatively, the Planning Director or Development Review Board may require the permit grantee to replace removed trees on a per caliper inch basis, based on a finding that the large size of the trees being removed justifies an increase in the replacement trees required. Except, however, that the Planning Director or Development Review Board may allow the use of replacement Oregon white oaks and other uniquely valuable trees with a smaller diameter.

Response: As documented on Sheet L0.04 of Exhibit B and supported by the Arborist's Report (see Exhibit D), mitigation is required for **175** ~~210~~ viable trees greater than 6" DBH that are proposed for removal. The on-site trees are predominantly Douglas firs; no Oregon white oaks or other uniquely valuable trees are proposed for removal. (The only Oregon white oak inventoried is a 12" specimen located on a neighboring property; all trees located on neighboring properties are proposed for retention.)

This Code provision calls for replacement of removed trees at a 1 to 1 value using 2" caliper replacement trees.[3] The applicant has proposed **175** ~~210~~ on-site tree plantings at the site perimeter as well as other locations, including enhanced, dense tree planting along the SW Day Road frontage and adjacent to the Tapman Creek corridor to create a naturalistic character. The proposed number of on-site tree plantings **(175)** ~~(210)~~ matches the number to be removed **(175)** ~~(210)~~, so the required 1:1 mitigation ratio is satisfied and no contribution to the City Tree Fund is warranted. These requirements are met.

(.03) Replacement Tree Requirements. A mitigation or replacement tree plan shall be reviewed by the City prior to planting and according to the standards of this subsection.

A. Replacement trees shall have shade potential or other characteristics comparable to the removed trees, shall be appropriately chosen for the site from an approved tree species list supplied by the City, and shall be state Department of Agriculture Nursery Grade No. 1 or better.

B. Replacement trees must be staked, fertilized and mulched, and shall be guaranteed by the permit grantee or the grantee's successors-in-interest for two (2) years after the planting date.

C. A "guaranteed" tree that dies or becomes diseased during that time shall be replaced.

D. Diversity of tree species shall be encouraged where trees will be replaced, and diversity of species shall also be maintained where essential to preserving a wooded area or habitat.

Response: Replacement trees will be used to enhance the plantings along the SW Day Road frontage of the site and along the Tapman Creek SROZ corridor, as well as to provide screening at perimeter locations. Trees are to be staked, fertilized, mulched, and guaranteed. (See Sheet L0.04 in Exhibit B.)

[3] Section 4.176(.06)F provides Tree Credits for conservation of large specimens. The applicant calculates that six (6) Tree Credits accrue from the protection and conservation of a 20" willow (# 791) and a 20" Oregon ash (#2074) within the SROZ area of the site; however, Tree Credits are not applicable where the number of trees removed exceeds the number of trees that can be planted within the site as mitigation. In this case, the number of trees to be planted matches the minimum requirement, so compliance is achieved without claiming Tree Credits under Section 4.076(.06)F.

(.04) All trees to be planted shall consist of nursery stock that meets requirements of the American Association of Nurserymen (AAN) American Standards for Nursery Stock (ANSI Z60.1) for top grade.
Response: All on-site tree planting will meet the ANSI Z60.1 standard. Compliance can be assured through a condition of approval.

(.05) Replacement Tree Location.

A. City Review Required. The City shall review tree relocation or replacement plans in order to provide optimum enhancement, preservation and protection of wooded areas. To the extent feasible and desirable, trees shall be relocated or replaced on-site and within the same general area as trees removed.

B. Relocation or Replacement Off-Site. When it is not feasible or desirable to relocate or replace trees on-site, relocation or replacement may be made at another location approved by the City.

Response: Proposed tree plantings are located on-site and in the Day Road right-of-way along the site frontage. The mitigation trees will be planted adjacent to SW Day Road to enhance the pedestrian wayside, within the rain gardens on both sides of the SROZ corridor, and in perimeter areas of the site. An additional contribution to the City Tree Fund is proposed for planting of an additional 24 trees at offsite location(s).

(.06) City Tree Fund. Where it is not feasible to relocate or replace trees on site or at another approved location in the City, the Tree Removal Permit grantee shall pay into the City Tree Fund, which fund is hereby created, an amount of money approximately the value as defined by this subchapter, of the replacement trees that would otherwise be required by this subchapter. The City shall use the City Tree Fund for the purpose of producing, maintaining and preserving wooded areas and heritage trees, and for planting trees within the City.

A. The City Tree Fund shall be used to offer trees at low cost on a first-come, first-serve basis to any Type A Permit grantee who requests a tree and registers with the City Tree Fund.

B. In addition, and as funds allow, the City Tree Fund shall provide educational materials to assist with tree planting, mitigation, and relocation.

Response: Mitigation planting of **175** ~~210~~ trees will occur on site and in the abutting widened SW Day Road right-of-way. As noted above, the proposed number of trees to be planted matches the number of trees to be removed **(175)** ~~(210)~~, so compliance is achieved without making a contribution to the City Tree Fund. This standard is met.

(.07) Exception. Tree replacement may not be required for applicants in circumstances where the Director determines that there is good cause to not so require. Good cause shall be based on a consideration of preservation of natural resources, including preservation of mature trees and diversity of ages of trees. Other criteria shall include consideration of terrain, difficulty of replacement and impact on adjacent property.
Response: As noted at several points in this report, the site's existing topography has existing slopes that are not conducive to industrial development, requiring substantial site regrading to achieve a functional site plan. Tree conservation is not feasible in this context because the amount of soil disturbance necessary to reconfigure the ground surface cannot avoid causing too much damage to trees' root zones.

The applicant has designed the site plan to minimize and mitigate on-site for impacts on the Tapman Creek SROZ corridor, including planting of trees within vegetated corridors and **the rain garden on the east side** ~~rain gardens on both sides~~ of the creek. The applicant requests consideration of these factors by the

Director, and a determination whether a full or partial exception from replacement tree planting requirements may be appropriate in this case.

Section 4.620.10. Tree Protection During Construction

(.01) Where tree protection is required by a condition of development under Chapter 4 or by a Tree Maintenance and Protection Plan approved under this subchapter, the following standards apply:

A. All trees required to be protected must be clearly labeled as such.

B. Placing Construction Materials Near Tree. No person may conduct any construction activity likely to be injurious to a tree designated to remain, including, but not limited to, placing solvents, building material, construction equipment, or depositing soil, or placing irrigated landscaping, within the drip line, unless a plan for such construction activity has been approved by the Planning Director or Development Review Board based upon the recommendations of an arborist.

C. Attachments to Trees During Construction. Notwithstanding the requirement of WC 4.620.10(1)(A), no person shall attach any device or wire to any protected tree unless needed for tree protection.

D. Protective Barrier. Before development, land clearing, filling or any land alteration for which a Tree Removal Permit is required, the developer shall erect and maintain suitable barriers as identified by an arborist to protect remaining trees. Protective barriers shall remain in place until the City authorizes their removal or issues a final certificate of occupancy, whichever occurs first. Barriers shall be sufficiently substantial to withstand nearby construction activities.

Plastic tape or similar forms of markers do not constitute "barriers." The most appropriate and protective barrier shall be utilized. Barriers are required for all trees designated to remain, except in the following cases:

1. Right-of-Ways and Easements. Street right-of-way and utility easements may be cordoned by placing stakes a minimum of fifty (50) feet apart and tying ribbon, plastic tape, rope, etc., from stake to stake along the outside perimeters of areas to be cleared.

2. Any property area separate from the construction or land clearing area onto which no equipment will venture may also be cordoned off as described in paragraph (D) of this subsection, or by other reasonable means as approved by the reviewing authority.

Response: Tree protection measures are specified in the Arborist's Report, and will be implemented in the construction plans for the site. See the Arborist's Report, Exhibit D.

Section 4.620.20. Maintenance And Protection Standards

(.01) The following standards apply to all activities affecting trees, including, but not limited to, tree protection as required by a condition of approval on a site development application brought under this Chapter or as required by an approved Tree Maintenance and Protection Plan.

A. Pruning activities shall be guided by the most recent version of the ANSI 300 Standards for Tree, Shrub, and Other Woody Plant Maintenance. Information on these standards shall be available upon request from the Planning Department.

B. Topping is prohibited.

1. Exception from this section may be granted under a Tree Removal Permit if necessary for utility work or public safety.

Response: The applicant will perform maintenance and protection practices according to ANSI 300 standards. This standard will be met.

Section 4.630.00. Appeal

(.01) The City shall not issue a Tree Removal Permit until approval has been granted by either the Planning Director or the DRB. Any applicant denied a Type A or B permit may appeal the decision as provided for in review of Class I Development Applications, or Class II Development Applications, whichever is applicable. Decisions by the Planning Director may be appealed to the DRB as provided in WC 4.022. Decisions by the DRB may be appealed to the City Council as provided in WC 4.022.
Response: The applicant acknowledges this process and their right to appeal a denied permit.

(.02) The City shall not issue a Tree Removal Permit approved by the Development Review Board until fifteen (15) calendar days have passed following the approval. The grant or denial of a Tree Removal Permit may be appealed to the City Council in the same manner as provided for in WC 4.022. An appeal must be filed in writing, within the fifteen (15) calendar day period following the decision being appealed. The timely filing of an appeal shall have the effect of suspending the issuance of a permit pending the outcome of the appeal. The City Council, upon review, may affirm, reverse or modify the decision rendered by the Development Review Board based upon the same standards of review specified for the DRB in the Wilsonville Code.
Response: The applicant acknowledges there is a 15-day appeal period between granting or denying a Tree Removal permit and issuance for an approved permit.

Section 4.630.10. Display Of Permit; Inspection

The Tree Removal Permit grantee shall conspicuously display the permit on-site. The permit grantee shall display the permit continuously while trees are being removed or replaced or while activities authorized under the permit are performed. The permit grantee shall allow City representatives to enter and inspect the premises at any reasonable time, and failure to allow inspection shall constitute a violation of this subchapter.
Response: The permit will be conspicuously displayed on the job site. This standard will be met.

Section 4.630.20. Variance For Hardship

Any person may apply for a variance of this subchapter as provided for in Section 4.196 of this Chapter.
Response: A variance is not requested.

Section 4.630.30. Severability

If any part of this ordinance is found by a court of competent jurisdiction to be invalid, that part shall be severable and the remainder of this ordinance shall not be affected.
Response: This provision requires no evidence from the applicant.

Section 4.640.00. Violation; Enforcement

(.01) The cutting, damaging, or removal of any individual tree without a permit as required by this ordinance constitutes a violation punishable as a separate infraction under WC 1.013. In addition, each violation of a condition or a violation of any requirement of this Chapter shall constitute a separate infraction.
Response: The tree removal plan shall be followed. This standard will be met.

(.02) Retroactive Permit. A person who removes a tree without obtaining a Type A or Type B permit may apply retroactively for a permit. In addition to all application requirements of this Chapter, the person must be able to demonstrate compliance with all requirements of this subchapter, in addition to paying a triple permit fee and a penalty per tree in an amount established by resolution of City Council. Mitigation requirements of this subchapter apply to all retroactive permits.
Response: This application is not a request for a retroactive permit. This provision requires no evidence from the applicant.

(.03) Nuisance Abatement. Removal of a tree in violation of this Chapter is a nuisance and may be abated as provided in Sections 6.230 to 6.244, 6.250, and 6.260 of the Wilsonville Code.
Response: It is not the applicant's intention to remove any tree in violation of this Chapter. This provision requires no evidence from the applicant.

(.04) Withholding Certificate of Occupancy. The City Building Official has the authority to issue a stop-work order, withhold approval of a final plat, or withhold issuance of a certificate of occupancy, permits or inspections until the provisions of this Chapter, including any conditions attached to a Tree Removal Permit, have been fully met.
Response: This provision requires no evidence from the applicant.

(.05) Fines. Fines for a violation shall be imposed according to WC 1.012.
Response: This provision requires no evidence from the applicant.

(.06) Mitigation. The City shall require the property owner to replace illegally removed or damaged trees. The City may also require a combination of payment and tree replacement.

A. The City shall notify the property owner in writing that a violation has occurred and mitigation is required. Within thirty (30) days of the date of mailing of the notice, the property owner shall provide a mitigation plan to the City. The plan shall provide for replacement of a tree of similar species and size taking into account the suitability of the site and nursery stock availability.

B. Replacement will be on an inch-for-inch basis computed by adding the total diameter measured at d.b.h. in inches of the illegally removed or damaged trees. The City may use any reasonable means to estimate the tree loss if destruction of the illegally removed or damaged trees prevents exact measurement. All replaced trees must be a minimum two-inch (2") caliper. If the mitigation requirements cannot be completed on the property, the City may require completion at another approved location. Alternatively, the City may require payment into the City Tree Fund of the value of the removed tree as established by the Planning Department.

Response: This application is for a Type III Tree Removal permit associated with new development. It is not in response to a notice of violation or other enforcement action. The above provisions are not applicable.

Section 4.640.10. Alternative Enforcement

(.01) In the event that a person commits more than one violation of WC 4.600.30 to WC 4.630.00, the following alternative sentence may be imposed:

A. If a person has gained money or property through the commission of an offense under this section, then upon conviction thereof, the court, in lieu of imposing a fine, may sentence the person to pay an amount, fixed by the court, not to exceed double the amount of the gain from the commission of the offense.

B. "Gain" is defined as the amount of money or value of property derived from the commission of the violation, less the amount of money or value of property seized by or surrendered to the City. "Value" shall be the greater of the market value or replacement cost as determined by a licensed professional in the tree, nursery, or landscape field.

C. Any fines collected by the City under this section shall accrue to the City Tree Fund.

Response: Understood. It is not the applicant's intention to remove any tree in violation of this Chapter. This provision requires no evidence from the applicant.

Section 4.640.20. Responsibility For Enforcement.

Compliance with this Chapter shall be enforced by the City Attorney, the City Attorney's designee, and Clackamas County or Washington County law enforcement officers.
Response: This provision provides procedural guidance for enforcement actions and requires no evidence from the applicant.

H. Class 3 Sign Permit

Section 4.156. Sign Regulations

Section 4.156.02. Sign Review Process and General Requirements.

(.01) Permit Required. Unless exempt under Section 4.156.05, no sign, permanent or temporary, shall be displayed or installed in the City without first obtaining a sign permit.
Response: This application includes a request for a Class III sign permit. Proposed signage includes one ground mounted monument sign and one building mounted sign on the front (north) façade at the prominent office corner.

The applicant's intent is to have all future particular signs comply, through Class I or II review, with the City's applicable regulations regarding sign sizes, locations, materials, illumination and other characteristics.

For this Class III review, elevation drawings (Sheets A2.10 and A2.20 in Exhibit B) show the approximate position for potential future tenant signage on the north wall, near the northwest building corner. The icon represents a conceptual signage location, with future permit issuance to be based on demonstration that the sign complies with applicable area limitations.

All wall signs will be made of discrete-element lettering and/or logo art with backlighting for night-time visibility. Internally-illuminated cabinet signs with single translucent face panels are not proposed.

(.02) Sign Permits and Master Sign Plans. Many properties in the City have signs pre-approved through a Master Sign Plan. For the majority of applications where a Master Sign Plan has been approved the applicant need not consult the sign requirements for the zone, but rather the Master Sign Plan, copies of which are available from the Planning Division. Signs conforming to a Master Sign Plan require only a Class I Sign Permit.
Response: This application is not applying for a Master Sign Plan, and no Master Sign Plan was previously approved for the site. This standard does not apply.

(.03) Classes of Sign Permits, Master Sign Plans, and Review Process. The City has three classes of sign permits for permanent signs: Class I, Class II, and Class III. In addition, non-residential developments with three or more tenants require a Master Sign Plan. Class I sign permits are reviewed through the Class I Administrative Review Process as outlined in Subsection 4.030(.01)(A.). Class II sign permits are reviewed through the Class II Administrative Review Process as outlined in Subsection 4.030 (.01)(B.). Class III Sign Permits and Master Sign Plans are reviewed by the Development Review Board (DRB) as outlined in Section 4.031.
Response: This application includes a request for a Class III sign permit.

(.06) Class III Sign Permit. Sign permit requests shall be processed as a Class III Sign Permit when associated with new development, except as noted in Subsection 4.156.02 (.05) C., or redevelopment requiring DRB review, and not requiring a Master Sign Plan; when a sign permit request is associated with a waiver or non-administrative variance; or when the sign permit request involves one or more freestanding or ground mounted signs greater than eight (8) feet in height in a new location. [Section 4.156.02 Section (.06) amended per Ordinance No. 812, 02/22/18]
Response: The applicant is requesting a Class III Sign Permit as part of this application. The applicant is proposing two (2) signs: a ground-mounted monument sign located along SW Day Road near the proposed driveway, and one (1) building mounted sign on the north wall, near the main entrance at the northwest building corner. See Sheet C1.10 for the location of the ground mounted sign, and Sheet A5.10 for sign details. Sheet A2.10 shows the sign location on the north building elevation. All sheets are located in Exhibit B. Proposed sign locations are also represented in the Perspective Renderings in Exhibit M.

A. Class III Sign Permit Submission Requirements: Ten (10) paper and electronic copies of the submission requirements for Class II Sign Permits plus information on any requested waivers or variances in addition to all required fees.
Response: The applicant's submittal package includes digital files and the number of paper copies requested by City staff.

B. Class III Sign Permit Review Criteria: The review criteria for Class II Sign Permits plus waiver or variance criteria when applicable.

Section 4.156.02.(.05)E. Class II Sign Permit Review Criteria: Class II Sign Permits shall satisfy the sign regulations for the applicable zoning district and the Site Design Review Criteria in Sections 4.400 through 4.421, as well as the following criteria:

1. *The proposed signage is compatible with developments or uses permitted in the zone in terms of design, materials used, color schemes, proportionality, and location, so that it does not interfere with or detract from the visual appearance of surrounding development;*

2. *The proposed signage will not create a nuisance or result in a significant reduction in the value or usefulness of surrounding development; and*

3. *Special attention is paid to the interface between signs and other site elements including building architecture and landscaping, including trees.*

Response: The proposed signage plan includes identifying locations, and potential maximum sizes/proportions for one monument sign near the northeast corner of the site and a wall sign on the building, providing flexibility for the future accommodation of tenants. The sign locations and sizes are designed to be integrated with and to complement the form of the building, including its specific approach to expressing the base-middle-top concept. The sign sizes and locations form part of an integrated whole approach to composition of site elements, including the building, site circulation and parking areas, and landscaping features, particularly along the SW Day Road frontage, the public realm from which the site will be visible to the public. As a result, the proposed signage plan satisfies the Class II Sign Permit Review Criteria cited above. No waiver or variance is requested with respect to signage. This requirement is met.

(.07) Master Sign Plans. A Master Sign Plan is required for non-residential developments with three (3) or more tenants. In creating a Master Sign Plan thought should be given to needs of initial tenants as well as the potential needs of future tenants. (…)

Response: The building is not expected to have more than one tenant and will therefore not require a Master Sign Plan.

(.08) Waivers and Variances. Waivers and variances are similar in that they allow deviation from requirements such as area, and height from ground. They differ in that waivers are granted by the DRB as part of a comprehensive review of the design and function of an entire site to bring about an improved design and variances are granted by either the Planning Director or DRB to relieve a specific hardship caused by the regulations.

A. *Waivers. The DRB may grant waivers for sign area, sign height from ground (no waiver shall be granted to allow signs to exceed thirty-five (35) feet in height), number of signs, or use of electronic changeable copy signs in order to better implement the purpose and objectives of the sign regulations as determined by making findings that all of the following criteria are met:*

   1. *The waiver will result in improved sign design, in regards to both aesthetics and functionality.*

   2. *The waiver will result in a sign or signs more compatible with and complementary to the overall design and architecture of a site, along with adjoining properties, surrounding areas, and the zoning district than signs allowed without the waiver.*

   3. *The waiver will result in a sign or signs that improve, or at least do not negatively impact, public safety, especially traffic safety.*

   4. *Sign content is not being considered when determining whether or not to grant a waiver.*

B. *Variances.*

   1. *Administrative Variance: In reviewing a Sign Permit the Planning Director may grant or deny a variance to relieve a hardship through the Class II Administrative Review process. Such a variance shall only be approved where the variance does not exceed twenty percent (20%) of area, height, or setback requirements. The Planning Director shall approve such a variance only upon finding that the*

application complies with all of the required variance criteria listed in Section 4.196.

2. *Other Variances: In addition to the authority of the Planning Director to issue administrative variances as noted above, the Development Review Board may authorize variances from sign requirements of the Code, subject to the standards and criteria listed in Section 4.196.*

Response: The applicant is not requesting a waiver or variance from the sign standards.

(.09) Temporary Sign Permits. Temporary sign permits shall be reviewed as follows:

A. *30 days and less- Class I Administrative Review*

B. *31 days up to 120 days- Class II Administrative Review*

C. *Submission Requirements: Applications for a temporary sign permit shall include the following in addition to the required application fee:*

1. *Completed application form prescribed by the City and signed by the property owner or their authorized representative,*

2. *Two (2) copies of sign drawings or descriptions showing all materials, sign area and dimensions used to calculate areas, number of signs, location and placement of signs, and other details sufficient to judge the full scale of the sign or signs,*

3. *Information showing the proposed sign or signs conform with all applicable code requirements.*

D. *Review Criteria: Temporary Sign Regulations in Section 4.156.09*

E. *When a temporary sign permit request is submitted as part of the broader temporary use permit request of the same duration, the sign request shall not require an additional fee.*

Response: The applicant is not requesting a temporary sign permit.

(.10) Waiver of Documentation. The Planning Director may, in his or her discretion, waive an application document for Class I, Class II, and temporary sign permits where the required information has already been made available to the City, or where the Planning Director determines the information contained in an otherwise required document is not necessary to review the application.

Response: The application is for a Class III permit; a waiver is not requested or allowed.

Section 4.156.03. Sign Measurement

(.01) Sign Area:

A. *Cabinet Signs and Similar: The area for signs enclosed by cabinet, frame, or other background (including lighted surface) not otherwise part of the architecture of a building or structure shall be the area of a shape drawn around the outer dimension of the cabinet, frame, or background.*

1. *If the cabinet, frame, or background is an irregular shape the signs perimeter shall be measured the same as an individual element sign under B. below.*

2. The sign area does not include:

a. Foundations, supports, and other essential structures that are not designed to serve as a backdrop or border to the sign;

b. Architectural elements of a freestanding or ground mounted sign designed to match or complement the architectural design of buildings on the site not and otherwise meeting the definition of a sign;

c. A pole or other structural support, unless such pole or structural support is internally illuminated or otherwise so designed to constitute a display device.

B. Individual Element Signs: The area for signs constructed of individual elements (letters, figures, etc.) attached to a building wall or similar surface or structure shall be the summed area of up to three squares, rectangles , circles, or triangles drawn around all sign elements.

1. The descender on the lower case letters "q, y, p g, or j." shall not be included in sign area when the letter otherwise matches the font of other letters in the sign, the descender is no more than 1/2 the cap height of the font, and the descender is no wider than the main body of the letter.

C. Round or Three-Dimensional Signs: The area of a round or three-dimensional sign shall be the maximum surface area visible from any one location on the ground measured the same as A. above except if the maximum surface area is an irregular shape the signs perimeter shall be measured the same as an individual element sign under B. above.

D. Awning or Marquee Signs: The area of signs incorporated into awnings or marquees shall be the area of the entire panel containing the sign measured the same as A. above unless it is clear that part of the panel contains no sign-related display or decoration, other than the background color of the awning.

E. Painted Wall Signs: The area of painted wall signs shall be determined as follows:

1. If individual elements are painted without a background it shall be calculated in the manner indicated in B. above.

2. If a background is painted it shall be calculated in the manner indicated in A. above.

F. Temporary Signs: The area of temporary signs including banners, lawn signs, and rigid signs shall be calculated in the manner indicated in A. above.

G. Unless otherwise specified, the sign area of a two-sided sign, with two matching sides, shall be considered to be the area of one side. For example, the sign area of a two-sided sign having thirty-two (32) square feet per sign face shall be considered to be thirty-two (32) square feet, unless this code specifies otherwise.

Response: Specific sign type and size will be chosen by the future tenant and approved through a Type I sign application that is not part of this application.

(.02) Sign Height above Ground.

A. The height above ground of a freestanding or ground-mounted sign is measured from the average grade directly below the sign to the highest point of the sign or sign structure except as follows:

1. A freestanding or ground mounted sign on a man-made base, including a graded earth mound, shall be measured from the grade of the nearest pavement or top of any pavement curb to the highest point of the sign or sign structure. In all cases signs on a berm shall be allowed to be eight (8) feet in height from the top of the berm.

2. A freestanding or ground mounted sign placed below the elevation of the right-of-way it fronts shall be measured from the lowest point in the right-of-way along the frontage to the highest point of the sign.

Response: One (1) ground mounted sign is proposed. The top of the sign will not exceed 8' above finished grade. See sign details, Exhibit B, Sheet A5.06.

(.03) Sign Height and Length.

A. Height of a sign is the vertical distance between the lowest and highest points of the sign.

B. Length of a sign is the horizontal distance between the furthest left and right points of the sign.

Response: How the city determines sign height and length was used to calculate proposed sign height, width, and areas.

(.04) Final Determination of Sign Measurement. The Planning Director shall be responsible for determining the area, height above ground and height and length of a sign, subject to appeal as specified in Section 4.022. Applicants for sign plans and permits shall provide the dimensions needed to calculate the area, height above ground, height, and length.

Response: Sign size, height, and width dimensions are shown on the plans provided and described in this narrative.

Section 4.156.04. Non-Conforming Signs.

(.01) Non-Conforming Signs. Non-conforming signs, which may be non-conforming structures or non-conforming uses, are subject to the standards for non-conforming uses and non-conforming structures delineated in Sections 4.189 through 4.190. Except, however, that a non-conforming sign that is damaged beyond fifty percent (50%) of its value, as determined by the City Building Official, may only be reconstructed if the reconstructed sign meets all applicable zoning, structural, and electrical standards applicable at the time of reconstruction. Nothing in this Section is intended to impair any previously approved sign permit that has been issued by the City of Wilsonville, subject to state or federal law, or to require the removal of any sign that was legally erected or installed prior to the effective date of these regulations. In the event that a previously erected or installed sign no longer meets applicable City zoning standards it may remain in place, subject to the standards for non-conforming uses or nonconforming structures noted above. However, a sign that is required to be moved solely because of a public taking may be replaced on the site, and maintain its non-conforming status, subject to a Class II Sign Permit, provided

the replacement sign is found to not increase in non-conformity to current code standards other than required setbacks.
Response: This application is for new development. This standard does not apply.

Section 4.156.05. Signs Exempt From Sign Permit Requirements.

(.01) The following signs are exempt from the permit requirements of this code and do not require sign permits. Unless otherwise specified, the area of the exempted signs shall not be included in the calculations of sign area permitted on a given site:

A. Traffic or other governmental or directional signs, as may be authorized by the City or other units of government having jurisdiction within the City.

B. Signs installed by public utility companies indicating danger, or which serve as an aid to public safety, or which show the location of utilities or public facilities, including underground utilities.

C. Flags displayed from permanently-located freestanding or wall-mounted flagpoles that are designed to allow raising and lowering of flags. One site may have up to two (2) exempt flags; no exempt flag may be more than thirty (30) feet in height.

Response: The proposed signs do not fall into an exempt sign category.

(.02) Other Signs. No sign permit is necessary before placing, constructing or erecting the following signs. However, in all other particulars such signs shall conform to the requirements of applicable Building and Electrical Codes, as well as this Code.

A. Signs inside a building except for prohibited signs listed in Section 4.156.06.

B. Name Plates and Announcements.

1. A sign identifying the name, street address, occupation and/or profession of the occupant of the premises in the aid of public health and safety. One name plate, not exceeding a total of three (3) square feet shall be allowed for each occupant. The name plate shall be affixed to the building.

2. Announcements posted on a given property (e.g., no smoking, no parking, rules of conduct, etc.) and not intended to be read from off-site, are permitted to be located as needed. Such announcements shall not be considered to be part of the sign allotment for the property.

C. Directional Signs. Designed for non-changing messages, directional signs facilitate the safe movement of the traveling public. Such signs are subject to the following standards and conditions:

1. The sign area does not exceed three (3) square feet per sign face,

2. The sign location is not within public rights-of-way and meets City vision clearance requirements;

3. No sign lighting;

4. *No logo or a logo that does not exceed one (1) square foot in size; and*

5. *No more than one (1) directional sign is located on the same tax lot.*

D. *Changes of Copy Only, where the graphics contained on an existing sign are changed, but the sign itself is not structurally altered, and no building or electrical permit is required.*

E. *Signs not visible from any off-site location.*

F. *Holiday lights and decorations, in place between November 15 and January 15.*

G. *Signs on scoreboards or ballfields located on public property.*

H. *One small decorative banner per dwelling unit placed on site, in residential zones.*

I. *Lawn Signs meeting the standards of Table S-1 and the following conditions:*

1. *Such signs shall not be intentionally illuminated and shall not display movement.*

2. *Such signs shall not obscure sight lines of the motoring public, obscure traffic or other government signs, or create a nuisance to the use or occupancy of any property.*

3. *Lawn signs associated with temporary events may be posted no longer than sixty (60) days before the beginning of an event and must be removed at the event's completion.*

4. *Lawn signs not associated with temporary events may be posted for one period of up to sixty (60) days in a calendar year.*

5. *Such signs may be up to six (6) feet in height.*

6. *Such signs may be one (1) or two (2) sided.*

J. *Rigid Signs meeting the standards of Table S-1 and the following conditions:*

1. *Such signs shall not be intentionally illuminated and shall not display movement.*

2. *Such signs shall not obscure sight lines of the motoring public, obscure traffic or other government signs, or create a nuisance to the use or occupancy of any property.*

3. *Such signs may be up to six (6) feet in height, except signs on lots with an active construction project (active building permit), which may be up to ten (10) feet in height. (Note that signs exceeding six (6) feet in height typically require building permits.)*

4. *Such signs may be one (1), two (2), or three (3) sided.*

5. *On Residential and Agriculture zoned lots:*

a. A rigid sign not associated with an ongoing temporary event may be displayed for no more than sixty (60) days each calendar year.

b. A rigid sign associated with an ongoing temporary event may be displayed for the duration of that event. Note: Section 4.156.06 (.01) Q. of this Code prohibits signs associated with temporary events to remain posted after the completion of the event.

6. On Commercial, Industrial, or Public Facility zoned lots:

a. A rigid sign not associated with an ongoing temporary event may be displayed for no more than ninety (90) days each calendar year.

b. A rigid sign associated with an ongoing temporary event may be displayed for the duration of that temporary event. Note: Section 4.156.06(.01)(Q.) of this Code prohibits signs associated with temporary events to remain posted after the completion of the event.

c. A temporary event must have an end, marked by the occurrence of a specifically anticipated date or happening. A temporary event may not be a part of a broader, continuing event or of related, serial events. Temporary events shall not be defined by content, but may include isolated merchandise sales or discounts, or availability of real estate for sale or lease.

K. Signs allowed in Subsections 6.150 (1) and (2) Wilsonville Code for special events.

Response: The proposed signs do not fall into a class of signs for which no permits are required. The applicant is aware that the sign types listed above do not require a permit.

Section 4.156.06. Prohibited Signs

(.01) Prohibited Signs. The following signs are prohibited and shall not be placed within the City:

A. Search lights, strobe lights, and signs containing strobe lights or other flashing lights, unless specifically approved in a sign permit.

B. Obstructing signs, a sign or sign structure such that any portion of its surface or supports will interfere in any way with the free use of any fire escape, exit, hydrant, standpipe, or the exterior of any window; any sign projecting more than twelve (12) inches from a wall, except projecting signs that are specifically permitted through the provisions of this Code.

C. Changing image signs, including those within windows.

D. Changeable copy signs that use lighting changed digitally, unless specifically approved through a waiver process connected with a Class III Sign Permit or Master Sign Plan. In granting a waiver for a digital changeable copy signs the DRB shall ensure the following criteria will be met:

1. The sign shall be equipped with automatic dimming technology which automatically adjusts the sign's brightness in direct correlation with ambient light

conditions and the sign owner shall ensure appropriate functioning of the dimming technology for the life of the sign.

2. *The luminance of the sign shall not exceed five thousand (5000) candelas per square meter between sunrise and sunset, and five hundred (500) candelas per square meter between sunset and sunrise.*

E. Roof signs - signs placed on the top of a building or attached to the building and projecting above the top of that building, unless specifically approved through the temporary sign permit procedures or the architectural design of a building makes the slope of the roof below the peak a practicable location of signs on a building and the general location of signs on the roof is approved by the DRB during Stage II Approval, as applicable, and Site Design Review.

F. Signs obstructing vision clearance areas.

G. Pennants, streamers, festoon lights, balloons, and other similar devices intended to be moved by the wind, unless specifically authorized in an approved sign permit.

H. Signs attached to trees, public sign posts, or public utility poles, other than those placed by appropriate government agencies or public utilities.

I. Signs using bare-bulb illumination or signs lighted so that the immediate source of illumination is visible, unless specifically authorized by the Development Review Board or City Council such as Digital Changeable Copy Signs. This is not intended to prohibit the use of neon or LED's as a source of illumination.

J. Signs that use flame as a source of light or that emit smoke or odors.

K. Any sign, including a window sign, which is an imitation of or resembles an official traffic sign or signal; and which may include display of words or graphics that are likely to cause confusion for the public, such as "STOP," "GO," "SLOW," "CAUTION," "DANGER," "WARNING," etc.

L. Any sign, including a window sign, which by reason of its size, location, movements, content, coloring or manner of illumination may be confused with, or construed as, a traffic control device, or which hides from view any traffic sign, signal, or device.

M. Portable signs, exceeding six (6) square feet of sign area per side, other than those on vehicles or trailers. The display of signs on a vehicle or trailer is prohibited where the vehicle or trailer is not fully operational for use on public roads or where the primary function of the vehicle or trailer is advertising. Examples where the primary function of the vehicle or trailer is advertising include mobile billboards such as those on which advertising space is rented, sold, or leased.

N. Signs located on public property in violation of Section 4.156.10.

O. Signs placed on private property without the property owner's permission.

P. Signs erected or installed in violation of standards prescribed by the City of Wilsonville, State of Oregon or the U.S. government.

Q. Signs associated with temporary events, after the temporary event is completed.

R. Any private signs, including window signs, with a luminance greater than five thousand (5000) candelas per square meter between sunrise and sunset and five hundred (500) candelas per square meter between sunset and sunrise.

S. Video Signs

Response: The proposed signs are not prohibited signs.

Section 4.156.06. Prohibited Signs. Section 4.156.07. Sign Regulations In Residential Zones.
Response: The site is not in a residential zone. These standards do not apply.

Section 4.156.08. Sign Regulations in the PDC, TC, PDI, and PF Zones.

(.01) Freestanding and Ground Mounted Signs:

A. One freestanding or ground mounted sign is allowed for the first two-hundred (200) linear feet of site frontage. One additional freestanding or ground mounted sign may be added for through and corner lots having at least two-hundred (200) feet of frontage on one street or right-of-way and one-hundred (100) feet on the other street or right-of-way.

Response: One (1) ground mounted frontage sign is allowed, and one (1) is proposed. This standard is met.

B. The allowed height above ground of a freestanding or ground mounted sign is twenty (20) feet except as noted in 1-2 below.1. The maximum allowed height above ground for signs along the frontage of Interstate 5, and parallel contiguous portions of streets, as identified in Figure S-4, associated with multiple tenants or businesses may be increased by three (3) feet for each tenant space of ten thousand (10,000) square feet or more of gross floor area up to a maximum of thirty-five (35) feet.

2. The allowed height above ground for signs in the TC Zone, Old Town Overlay Zone, and PDI Zone is eight (8) feet, except those signs along the frontage of Interstate 5 and parallel contiguous portions of streets identified in Figure S-4.

Response: The site is located in the PD-RSIA Zone and does not have I-5 frontage. Therefore, the sign can be up to 8' high. The proposed sign meets this standard. See sign details in Exhibit B, Sheet A5.10, and sign location in Exhibit B, Sheet C1.10.

C. The maximum allowed area for each freestanding or ground-mounted sign is determined based on gross floor area and number of tenant spaces:

1. For frontages along streets other than those indicated in 2 below sign area allowed is calculated as follows:

a. The sign area allowed for signs pertaining to a single tenant:

Gross Floor Area in a Single Building	***Maximum Allowed Sign Area***
Less than 11,000 sq. ft.	*32 sq. ft.*

11,000-25,999 sq. ft.	*32 sq. ft. + 2 sq. ft. per 1000 sq. ft. of floor area greater than 10,000 rounded down to the nearest 1,000 sq. ft.*
26,000 sq. ft. or more	*64 sq. ft.*

i. For PF (Public Facility) zoned properties adjacent to residential zoned land the maximum allowed area is thirty-two (32) square feet.

b. The maximum allowed sign area for signs pertaining to multiple tenants or businesses is thirty-two (32) square feet plus the following for each tenant space:

Gross Floor Area of Tenant Space	***Additional Allowed Sign Area for Tenant Space***
Less than 1,000 sq. ft.	*3 sq. ft.*
1,000-10,999 sq. ft.	*3 sq. ft. + 3 sq. ft. per 1,000 sq. ft. of floor area rounded down to the nearest 1,000 sq. ft.*
11,000 sq. ft. or more	*32 sq. ft.*

i. The total sign area shall not exceed two hundred (200) square feet, except in the TC Zone, Old Town Overlay Zone, and PDI Zone the total sign area shall not exceed eighty (80) square feet.

ii. Though the maximum allowed sign area is calculated based on number of tenant spaces and their size, the content of the sign and area used for different content is at the discretion of the sign owner, except for required addressing.

Response: The proposed building is anticipated to have one tenant, with Gross Floor Area exceeding 26,000 SF. Per the table in subparagraph a, freestanding/ground-mounted sign area of up to 64 SF is allowed. The proposed sign complies with this standard. See sign details on Sheet A5.10 of Exhibit B.

D. Pole or sign support placement shall be installed in a full vertical position.

Response: The sign will be placed on a concrete vertical base. See Sheet A5.10, Exhibit B. This standard is met.

E. Freestanding and ground mounted signs shall not extend into or above public rights-of-way, parking areas, or vehicle maneuvering areas.

Response: The sign is not located within a public right of way, parking area or vehicle maneuvering area. The sign location is shown in Exhibit B, Sheet C1.10. This standard is met.

F. The location of free standing or ground mounted signs located adjacent to or near the Public Right-of-Way shall be in compliance with the City's Public Works Standards for sight distance clearance. Prior to construction, the location of the sign shall be approved by the City of Wilsonville Engineering Division.

Response: The sign has been placed to meet sight distance clearance requirements. See sign location in Exhibit B, Sheet C1.10. This standard is met.

G. Freestanding and ground mounted signs shall be designed to match or complement the architectural design of buildings on the site.

Response: The proposed form of the monument sign base is designed to complement the architectural design of the building and extend the use of its forms, materials, and colors close to the edge of the street. This standard is met.

H. For freestanding and ground mounted signs greater than eight (8) feet in height, the width of the sign shall not exceed the height.

Response: The sign is not greater than 8' in height. This standard is met.

I. Along street frontages in the TC Zone and Old Town Overlay Zone monument style signs are required.

Response: The site is not located in the TC Zone or Old Town Overlay Zone. This standard does not apply.

J. Freestanding and ground mounted signs shall be no further than fifteen (15) feet from the property line and no closer than two (2) feet from a sidewalk or other hard surface in the public right-of-way.

Response: The ground mounted sign is located about 3' from the north property line and from the sidewalk. See sign location in Exhibit B, Sheet C1.10. This standard is met.

K. Except for those signs fronting Interstate 5, freestanding and ground mounted signs shall include the address number of associated buildings unless otherwise approved in writing by the City and the Fire District.

Response: The ground mounted sign will include the address number of the associated building. This standard will be met.

L. When a sign is designed based on the number of planned tenant spaces it shall remain a legal, conforming sign regardless of the change in the number of tenants or configuration of tenant spaces.

Response: The sign is designed based on the building having a single tenant.

(.02) Signs on Buildings.

A. Sign Eligible Facades: Building signs are allowed on a facade of a tenant space or single tenant building when one or more of the following criteria are met:

1. The facade has one or more entrances open to the general public;

2. The facade faces a lot line with frontage on a street or private drive with a cross section similar to a public street, and no other buildings on the same lot obstruct the view of the building facade from the street or private drive; or

3. The facade is adjacent to the primary parking area for the building or tenant.

Response: The proposed building is designed to have a single tenant, with a single principal entrance open to the general public located near the northwest building corner. The length of the front façade of the building measures 180'. Visitor/short-term parking is located in the north parking area, between the building and SW Day Road, near the building entrance. The north façade is therefore eligible for a building wall sign pursuant to subparagraph 3.

B. Sign Area Allowed:

1. The sign area allowed for all building signs on a sign eligible façade is shown in the table below:

Linear Length of Façade (feet)	***Sign Area Allowed****
Less than 16	*Area equal to linear length*
16 to 24	*24 sq. ft.*
Greater than 24 to 32	*32 sq. ft.*
Greater than 32 to 36	*Area equal to linear length*
Greater than 36 to 72	*36 sq. ft.*
Greater than 72	*36 sq. ft. plus 12 sq. ft. for each 24 linear feet or portion thereof greater than 72 up to a maximum of 200 sq. ft.*

**Except as noted in 2. through 5. below*

2. The sign area allowed for facades with a primary public entrance or with a frontage along a public street dominated by windows or glazing may be increased by transferring to the façade up to one half (1/2) the sign area allowed for adjacent facades up to fifty (50) square feet. In no case shall the allowed sign area exceed an area equal to the linear length of the façade.

3. The sign area allowed is increased as follows for signs at separate building entrances:

a. For building entrances open to the general public located at least fifty (50) feet apart on the same facade, the sign area allowed is increased by fifty (50) percent up to fifty (50) square feet.

b. For building entrances located less than fifty (50) feet apart on the same facades, the sign area allowed is increased by twenty (20) percent up to twenty (20) square feet.

6. Calculating linear length of a façade for the purpose of determining maximum sign area allowed. For facades of a single tenant building the length the facade measured at the building line, except as noted in a. and b. below. For multi-tenant buildings the width of the façade of the tenant space shall be measured from the centerline of the party walls or the outer extent of the exterior wall at the building line, as applicable, except as noted in a. and b. below. Applicants shall provide the dimensions needed to calculate the length. Each tenant space or single occupant building shall not be considered to have more than five (5) total facades.

a. *If a façade is curvilinear, stepped, or otherwise not a straight line, the façade shall be measured by drawing a straight line between the edges of the façade as shown in the figure below.*

b. *For an "L" shaped tenant space or single tenant building the longest leg of the interior of the "L" shall be basis for measuring the length of the L-shaped facade. Sign area allowed based on the longest leg can be distributed between legs.*

C. *The length of individual tenant signs shall not exceed seventy-five (75) percent of the length of the facade of the tenant space.*

D. *The height of building signs shall be within a definable sign band, fascia, or architectural feature and allow a definable space between the sign and the top and bottom of the sign band, fascia, or architectural feature.*

E. *Types of signs permitted on buildings include wall flat, fascia, projecting, blade, marquee and awning signs. Roof-top signs are prohibited.*

Response: The proposed building is expected to have a single tenant. The building's front façade measures 180' in length and the building has one entrance accessible to the public, near the northwest building corner. Based on those parameters, a wall sign of up to 96 SF is allowed.

Table III-1. Maximum North Façade Wall Sign Area Calculations (Typical)

Scenario	Share of Façade	Length of Façade Lin. Ft.	Maximum Wall Sign SF	Maximum Total North Façade Sign Area SF
Single-Tenant Occupancy	100%	180	96	96 *

* For a single tenant with signs at both office entrances, an additional increase of up to 50 SF is applicable because the entrances are greater than 50' apart. [§4.156.08(.02)B.3.a]

The calculations in Table III-1 are based on the tenant having a base sign of 36 SF, plus additional square footage for the length of the facade. Staff advised the applicant that only multiple signs of a single tenant are eligible for provisions in §4.156.08(.02)B.3.a allowing a sign area increase of 50% up to a maximum of 50 SF; however, only a single entrance is proposed, so that provision is not applicable.

The building has a primary parking area on its north side, proximate to the office entrance. A secondary parking area is located on the south side of the building, but it is designed to be used by employees of the facility, so no wall signage is proposed on the south wall.

Table III-2 Maximum Wall Sign Area Allowed per §4.156.08.(.02)B.1

Length of Façade, Lin. Ft.	Maximum Wall Sign SF
< 16	= linear length
16-24	24
> 24-32	32

> 32-36	= linear length
> 36-72	36
72 - <96	48
96 - <120	60
120 - <144	72
144 - <168	84
168 - <192	96
192 - <216	108
216 - <240	120
240 - <264	132
264 - <288	144
288 - <312	156
312 - <336	168
336 - <360	180
360 - <384	192
384 +	200

The proposed wall sign location and maximum size complies with applicable Code requirements. Future tenants will be required to obtain Class I sign permits before installing signs, but that permitting can be completed quickly and efficiently when the proposed signs are compliant with this approved program.

(.03) Additional signs. Notwithstanding the signs allowed based on the site in (.01) and (.02) above, the following signs may be permitted, subject to standards and conditions in this Code:

A. Directional Signs: In addition to exempt directional signs allowed under Subsection 4.156.05 (.02) C. freestanding or ground mounted directional signs six (6) square feet or less in area and four (4) feet or less in height:

1. The signs shall be designed to match or complement the architectural design of buildings on the site;

2. The signs shall only be placed at the intersection of internal circulation drives; and

3. No more than one (1) sign shall be placed per intersection corner with no more than two (2) signs per intersection.

B. Planned Development Signs. Up to thirty (32) square feet of the allowed sign area for freestanding signs in a planned development may be used for a separate on-site monument sign or off-site monument sign on an adjacent parcel identifying the Planned Development project.

C. Blade Signs. To aid in pedestrian wayfinding, one (1) blade sign, not to exceed six (6) square feet, per facade eligible for building signs. Blade signs over pedestrian accessible areas shall provide a minimum of eight (8) feet of clearance from the ground.

D. Fuel or Service Station Price Signs. In addition to the freestanding or ground mounted signs allowed, changeable copy signs shall be allowed for the purpose of advertising fuel prices, subject to the following standards and conditions:

1. The signs shall have a maximum of eleven (11) square feet in area per face per type of fuel sold and shall be permanently affixed to the building or a freestanding sign.

2. The signs shall not be considered in calculating the sign area or number of signs allowed.

3. Signs on fuel pumps shall be permitted, providing that they do not project beyond the outer edge of the pump in any direction.

Response: No additional signs are proposed at this time, but future tenants may apply for additional signage.

Section 4.156.09. Temporary Signs In All Zones.

The following temporary signs may be permitted in addition to the permanent signs allowed in different zones and exempt temporary signs unless specifically prohibited in a master sign plan or other sign approval:

(.01) General Allowance. Except as noted in subsection (.02) below up to two (2) temporary signs not exceeding a combined total of twenty four (24) square feet may be permitted per lot or non-residential tenant. Such signs may be banners, rigid signs, lawn signs, portable signs, or other signs of similar construction.

(.02) Opening Banner for a New Business or Housing Development. A banner corresponding with the opening of a new business or housing development may be permitted, subject to the following standards and conditions:

A. One such banner shall be allowed either from the date of issuance of Building Permits until four (4) weeks after issuance of Certificates of Occupancy, or if no Building Permit is issued, for four (4) weeks after occupancy of a new business.

B. Such banner may be two-sided but shall not exceed thirty-two (32) square feet per face.

C. Such signs shall not be permitted at the same time as general allowance signs in (.01) above.

(.03) Annual Event Signs. Up to ten (10) lawn signs may be permitted to be located in the public right-of-way for up to fourteen (14) days if all of the following are met:

A. Signs will not be located in the areas listed in Subsection 4.156.10 (.01) A. 4.

B. The applicant or event has not been issued a permit for and placed signs in the public right-of-way in the previous six (6) months;

C. Not more than one (1) other permit has been issued for lawn signs in the right-of-way during the time period the applicant is requesting;

D. The event to which the signs pertain is expected to attract two hundred fifty (250) or more people;

E. The request is not in addition to exempt lawn signs for large special events allowed for in Section 6.150; and

F. The applicant has indicated on a map the exact locations the signs will be placed and has submitted an application along with the required fee.

(.04) Inflatable Signs. Inflatable signs may be permitted for a maximum of fifteen (15) days of display use in any calendar year subject to the following standards and conditions:

A. Does not exceed ten (10) feet in overall height; and

B. If attached to a building in any manner, it meets applicable building code requirements including consideration of wind loads.

Response: No additional signs are proposed at this time, but future tenants may apply for temporary signage.

Section 4.156.10. Signs on City and ODOT Right-Of-Way.
Response: No signs are proposed on City or ODOT Right-Of-Way. This standard does not apply.

Section 4.156.11. Sign Enforcement.
Response: This section provides direction for enforcement of sign regulations and requires no evidence submittal by the applicant.

IV. CONCLUSION

Based on the information presented and discussed in this narrative and the attached supporting plans and documentation, this application meets applicable standards necessary for land use approval. The proposed development complies with all applicable standards of the Wilsonville Planning and Land Development Ordinance. The applicant respectfully requests approval by the City.

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NATURAL RESOURCE ASSESSMENT REPORT FOR

9710 SW Day Road

T3S, R1W, Section 2B, Tax Lot 600 & 601
Wilsonville, Washington County, Oregon

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Schott & Associates, Inc.

Date:

January 2022

Project #: 2739

City of Wilsonville
Exhibit B1 (Part 2) DB22-0007

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Introduction

Schott & Associates (S&A) was contracted to conduct a natural resource assessment for the proposed project site located at 9710 SW Day Road, Wilsonville, Washington County, OR (T3S, R1W, Section 2B, Tax Lot 600 & 601; Figure 1). The site features natural resources including streams, wetlands, and associated riparian corridors and Impact Areas that are subject to City of Wilsonville's Significant Resource Overlay Zone (SROZ) Ordinance (Section 4.139.00 of the Wilsonville Planning and Land Development Code). This report is intended to fulfil the requirements of SROZ Map Verification pursuant to Section 4.139.06(.01)(B-H) and a standard Significant Resource Impact Report (SRIR) pursuant to Section 4.139.06(0.02)(D)(1). Wetland delineation has been approved by the Oregon Department of State Lands (DSL; WD#2021-0556; Appendix H).

Statement of Qualifications

Schott & Associates has over 30 years of experience in environmental consultation and project permitting. S&A staff is composed of well qualified and experienced individuals. All have been through wetland delineation training and are proficient in performing wetland delineations and habitat assessments. Kim Biafora was assigned to manage this project and performed project coordination, fieldwork, and report and map production.

Kim Biafora is a wetland scientist and GIS analyst who joined Schott & Associates in April 2018. She received her Bachelor's degree from Portland State University in Environmental Science and Management. Kim contributes 10 years of experience in wetland delineation and reporting, permitting, habitat assessment and mapping, data collection and analysis, and GIS applications to the company. Kim has worked largely in the lower Columbia River region and has a foundation in Pacific Northwest ecology with expertise in lowland and montane rainforest, and tidal estuarine and freshwater wetland habitats. She is versed in general ecological survey and data analysis methods, as well as protocols specific to wetland delineation and functions assessment, habitat mapping and assessment and mitigation site monitoring. She is familiar with wetland/habitat ordinance and permitting requirements for many local jurisdictions throughout Oregon and Washington, as well as state and federal wetland regulation.

Site Description

The project site consisted of the entirety of tax lots 600 and 601. This site featured a single-family residence in the northeastern section and a graveled area and access road in the southern and central portion. An unimproved access road and associated 125-foot electric transmission line and storm drainage easement cut south across the western portion of the site from SW Day Road to a transmission tower located in the southwestern site corner. A 100-foot BPA right-of-way (ROW) is located in the southwest corner adjacent to the 125-foot utility easement (refer to Appendix B for topographic survey). The remainder of the site was undeveloped and generally vegetated by Douglas-fir (*Psuedotsuga menziesii*) forest in the eastern and western portions and English hawthorn (*Crataegus monogyna*)/Himalayan blackberry (*Rubus armeniacus*) shrubland in the central portion (refer to Appendix C for tree survey).

Site topography included a west-facing hillslope in the eastern portion which flattened out in the central portion and remained fairly level in the western portion. Tapman Creek, a tributary to Seely Ditch and the Willamette River, flowed from double 36-inch diameter culverts under SW Day Road, south through the western portion of the site and into a culvert at the southwestern site corner. A compensatory wetland mitigation (CWM) site was located just west of and parallel to the creek. The CWM site was constructed to mitigate for the widening of SW Day Road and replacement of a single culvert with the existing 88-foot-long double culverts at Tapman Creek (DSL #25201-FP; Corps #2002-00173). Both of these features are within the 125-foot utility easement.

The site was surrounded by commercial development to the north and south and rural residential development to the east and west. At the time of assessment, the site was zoned for 20-acre future development (Washington County zoning designation FD-20). According to the Wilsonville SROZ map, significant natural resources are mapped on the site (Appendix D).

Methods

Prior to visiting the site, the following existing data and information was reviewed:

- Washington County InterMap (http://washims.co.washington.or.us/InterMap/)
- U.S. Fish and Wildlife Service (UFWS) National Wetland Inventory (NWI) and Oregon Department of Forestry (ODF) mapping
- Metro Title 3 lands mapping
- U.S. Department of Agriculture (USDA) NRCS gridded Soil Survey Geographic (gSSURGO) database for Washington County
- Google Earth aerial photographs from the time period between 1994 and 2019
- Oregon Department of Geology and Mineral Industries (DOGAMI) LiDAR data

Schott & Associates initially visited the site October 23, 2019. Follow-up fieldwork was performed on September 1, 2021 to document any changes since 2019 fieldwork. Data on vegetation, hydrology, and soils were collected according to methods described in the *Corps Wetland Delineation Manual* (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Delineation Manual: Western Mountains, Valleys, and Coast (Version 2)* (Environmental Laboratory 2010). Nineteen sample plots were established throughout the site to locate the boundaries of wetlands. Plant indicator status was determined using the 2018 National Wetland Plant List (Corps 2018). Onsite streams were delineated via the ordinary high-water mark (OHWM) as indicated by top of bank, wrack or scour lines, change in vegetation communities, or gage elevation where applicable.

All identified wetlands and waters are classified according to the USFWS *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et al. 1979) and the *Guidebook for Hydrogeomorphic (HGM)-based Assessment of Oregon Wetland and*

Riparian Sites (DSL 2001). A wetland delineation report was prepared and submitted to DSL. The report received DSL concurrence in December 2021 (Appendix H).

Wetland functional analysis was conducted according to the Oregon Freshwater Wetlands Assessment Methodology (OFWAM) per section 4.139.06(.02)(D)(3)(c).

Application and width of Vegetated Corridors were determined based on water type, flow period, drainage basin, and adjacent slopes according to Table NR-1 of Section 4.139.00. Water type and flow period were determined based on a combination of field observations, available data and information, and guidance from state and federal agencies. Drainage basins were delineated using topography data available from the Oregon Department of Geology and Mineral Industries (DOGAMI) LiDAR data. Adjacent slopes were measured at a minimum of three slope cross-sections established perpendicular to the water feature spaced at no more than 100-foot increments using a combination of field measurements and topographical survey data. Vegetated corridor width in areas where the slopes are equal to or greater than 25% gradient are extended to 50 feet beyond the break in slope, up to 200 feet from the edge of the water resource for primary protected water features and 50 feet for secondary protected water features.

The composition, structure, and condition of Vegetated Corridors were assessed at representative sample points established in each community type. Wildlife habitat assessment of Vegetated Corridors was conducted according to Metro's 2001 Wildlife Habitat Assessment Methodology.

Ground-level photographs were collected to document site conditions (Appendix E).

Results

Physical Analysis

Five soil series were mapped within the study site boundary according to the USDA NRCS soil survey for Washington County. Saum silt loam at slopes from 2-20% was mapped in the eastern, southern, and much of the northern site margins. The Saum series consists of very deep, well drained soils that formed in colluvium and residuum from the Columbia River Basalt Group and occurs on summits and side slopes in areas affected by mass movement. This series is nonhydric and not subject to flooding or ponding. Quatama loam at slopes of 0-30% was mapped over a small area along the northern site margin. The Quatama series consists of very deep, moderately well-drained soils that formed from stratified glaciolacustrine deposits from the Missoula Floods and occurs on terrace steps and risers. This series is predominantly nonhydric (4% hydric inclusions) and not subject to flooding or ponding. Salem gravelly silt loam at slopes of 0-12% was mapped in the western site margin. The Salem series is a very deep, well-drained soil that formed from loamy alluvium over sandy and gravelly alluvium and occurs on stream terraces. This series is nonhydric and not subject to flooding or ponding. Briedwell stony silt loam at slopes of 0-20% was mapped in the central portion of the site. The Briedwell series consists of very deep, well drained soils that formed in mixed alluvium and occurs on stream terraces. This series is nonhydric and not subject to flooding or ponding.

Wapato silty clay loam at slopes of 0-3% was mapped through the western portion of the site in the area corresponding with the location of Tapman Creek and the CWM site. The Wapato series consists of very deep, poorly drained soils that formed in loamy mixed alluvium and occur on floodplains and basins. This series is predominantly hydric (92% hydric inclusions) and subject to frequent flooding and ponding.

Wetlands and Waters

Two wetlands and one wetland drainage (Tapman Creek) were identified within the study site; Wetlands 1 and 2 totaled 0.33 acre and Tapman Creek totaled 0.10 acre on site. Wetland, sample plots, and photo point locations are shown on Figure 2.

Tapman Creek: Tapman Creek was a wetland drainage which originated on the site from a pair of culverts installed under SW Day Road and drained south through the western portion of the study site between Wetlands 1 and 2 (described below). At the southern boundary, the creek turned sharply west and drained into a collapsed metal culvert. The creek featured a defined bed and bank and was identified as a creek by ODF; however, this study classified it as a wetland drainage based on the presence of hydric soils and vegetation throughout its length onsite. The boundary was mapped based on top of bank, scour, and paired plots and covered 0.10 acre onsite. At the approximate center, Tapman Creek connected with Wetland 1 (CWM site). The channel was 5-10 feet wide and approximately 3-4 feet deep with steep, incised banks featuring some erosion and undercutting. The channel has likely been artificially deepened and rerouted along its southern reach at some point. It was almost entirely vegetated along its length with reed canarygrass (*Phalaris arundinacea*; FACW), water parsley (*Oenanthe sarmentosa*; OBL), creeping buttercup (*Ranunculus repens*; FAC), and Himalayan blackberry (FAC). Riparian vegetation included Oregon ash (*Fraxinus latifolia*; FACW), English hawthorn (FAC), Himalayan blackberry, serviceberry (*Amelanchier alnifolia*; FACU), snowberry (*Symphoricarpos albus*; FACU), English ivy (*Hedera helix*; FACU), and trailing blackberry (*Rubus ursinus*; FACU), According to ODF stream mapping, Tapman Creek is a small, seasonal, fish-bearing tributary to Seely Ditch located approximately two miles south of the site. It drains a basin of approximately 400 acres. The drainage was assessed as a riverine flow-through HGM class with a Cowardin class of seasonally flooded, palustrine emergent (PEMC). It meets the definition of a Primary Protected Water Feature according to Table NR-1 of Section 4.139.00.

The soil sample met the Corps hydric soil indicator for redox dark surface. Soils were black in matrix color with common to many yellow-red redoximorphic concentrations occurring as soft masses and pore linings. Soil texture was silty clay loam. Corps wetland hydrological indicators observed included sparsely vegetated concave surface, water-stained leaves, sediment deposits, FAC-neutral test, and geomorphic position. No surface water was present during October 2019 or September 2021 fieldwork and a seasonal flow period was assumed.

Wetland 1: Wetland 1 consisted of the CWM site constructed in 2002 and covered 0.26 acre. The wetland was sustained by seasonal flows conducted south under SW Day Road through a culvert as well as high flows from Tapman Creek. The CWM site was

excavated from hydric soils to increase stormwater capacity and alleviate downstream flooding of Tapman Creek. According to the CWM plan, the northern portion of the CWM site (0.1 acre) was designed as a water quality facility and the remaining 0.25 acre was to serve as mitigation. The CWM site was planted with Pacific willow (*Salix lasiandra*; FACW), spiraea (*Spiraea douglasii*; FACW), black hawthorn (*Crataegus douglasii*; FAC), Nootka rose (*Rosa nutkana*; FAC), slough sedge (*Carex obnupta*; OBL), spreading rush (*Juncus patens*; FACW), and red fescue (*Festuca rubra*; FAC). The wetland featured steep, well-defined banks that were graded at a 3:1 slope. It connected with Tapman Creek in the approximate center of the wetland, though this connection does not appear part of the original design. Additionally, a pipe outlet was present in the southwestern portion of the wetland, that isn't shown on site design plan. It is unknown whether this pipe serves as an overflow pipe or discharges into the wetland.

The wetland was assessed as a depressional outflow HGM class and an excavated, seasonally flooded palustrine scrub-shrub (PSSCx) Cowardin class. Vegetation included a patchy canopy of Oregon ash with a dense understory of Pacific willow, Scouler's willow (*Salix scouleriana;* FAC), Sitka willow (*S. sitchensis*; FACW), spiraea, Nootka rose, Himalayan blackberry, reed canarygrass, and soft rush (*Juncus effusus*; FACW). The northern portion of the wetland featured more shrub and tree cover while the southern portion featured more herbaceous cover. This wetland does not meet the definition of a primary or secondary protected water resource according to Table NR-1.

The soil samples met the Corps hydric soil indicator for redox dark surface. Soils were black (10 YR 2/1) to very dark gray (10 YR 3/1) in matrix color with common to many yellow-red redoximorphic concentrations occurring as soft masses. Soil texture was silty clay loam. Corps wetland hydrological indicators including high water table and soil saturation were observed during October 2019 fieldwork.

Wetland 2: Wetland 2 occupied a broad, very shallow depression to the east of Tapman Creek and covered 0.07 acre. It appeared to have no inlet or outlet and was likely hydrologically sustained by high groundwater and impounded precipitation and possibly received overbank flooding from Tapman Creek during very high flow events. The wetland was assessed as a flats HGM class and a seasonally flooded palustrine forested (PFOC) Cowardin class. Vegetation consisted of an Oregon ash stand with a sparse understory of Nootka rose, English hawthorn, Himalayan blackberry, and spiraea. This wetland does not meet the definition of a primary or secondary protected water resource according to Table NR-1.

The soil samples met the Corps hydric soil indicator for redox dark surface. Soils were black in matrix color with common to many yellow-red redoximorphic concentrations occurring as soft masses and pore linings. Soil texture was silty clay loam. Corps wetland hydrological indicators observed included oxidized rhizospheres along living roots, geomorphic position, and FAC-neutral test.

Vegetated Corridors

According to Table NR-1, the Vegetated Corridor applied to primary protected water features (Tapman Creek, an intermittent stream draining more than 100 acres) has a base width of 50 feet. The base width can extend up to 200 feet in cases where the adjacent slope gradient is greater than or equal to 25%. Slope gradients adjacent to Tapman Creek varied from 2-4%. Thus, the Vegetated Corridor applied to the creek was 50 feet wide and totaled 0.99 acre (43,189 sq. ft) onsite. The Vegetated Corridor boundary is coincident with the Goal 5 safe harbor boundary according to the standards within the Oregon Administrative Rule OAR 660-023-990(5). This rule accords all streams with average annual stream flow less than 1,000 cubic feet per second a 50-foot riparian corridor. The Vegetated Corridor and safe harbor boundary are shown in Figure 2.

Vegetation in the onsite Vegetated Corridor was dominated by nonnative vegetation including English hawthorn, Himalayan blackberry, orchardgrass (*Dactylis glomerata*), creeping bentgrass (*Agrostis stolonifera*), tall fescue (*Schedonorus arundinaceus*), hairy cat's ear (*Hypochaeris radicata*), wild carrot (*Daucus carota*), oxeye daisy (*Leucanthemum vulgare*), and dovefoot geranium (*Geranium molle*). A few Oregon ash trees were present within the Vegetated Corridor, as well as in Wetlands 1 and 2 as described above.

Impact Areas

Impact Areas consist of the 25 ft. wide band adjacent to the outer 50 ft. Vegetated Corridor boundary. The Impact Area featured a utility maintenance access road west of the Vegetated Corridor and mixed shrubs east of the Vegetated Corridor. Vegetation included English hawthorn, Himalayan blackberry, and Nootka rose with nonnative turfgrasses and weedy forbs. Impact Areas onsite totaled 0.51 acre (22,332 sq. ft.)

Ecological Analysis

Wetlands

Wetlands were assessed based on evaluation criteria in the Oregon Freshwater Wetlands Assessment Methodology (OFWAM). OFWAM evaluates wildlife habitat, fish habitat, water quality, and hydrologic control functions. A summary of functional analysis is presented in Table 1 below. OFWAM assessment forms are included as Appendix F.

Table 1. Wetland Functional Analysis Summary

Function	**Tapman Creek**	**Wetland 1**	**Wetland 2**
Wildlife Habitat	Habitat for some species	Habitat for some species	Habitat for some species
Fish Habitat	Impacted/degraded	Impacted/degraded	N/A
Water Quality	Intact	Intact	None
Hydrologic Control	Impacted/degraded	Impacted/degraded	Impacted/degraded

Tapman creek provides some wildlife habitat based on its surface water connection to other wetlands, presence of vegetative buffer greater than 25 feet, and unimpacted water

quality in upstream reaches; however, it lacks diversity of habitat and vegetation structure and is surrounded by developed land uses. Fish habitat function was assessed as impacted/degraded based on the modified character of the channel, low cover of stream shading by riparian vegetation, developed surroundings, and lack of fish access. Water quality function was assessed as intact based on a surface water hydrological source, flooding or ponding during a portion of the growing season, high cover of wetland vegetation, and surrounding developed uses. Hydrological control function was assessed as impacted/degraded as the stream is not within a 100-year floodplain or closed basin, is dominated by emergent vegetation, and has an upstream forested/natural area land use.

Wetland 1 provides some wildlife habitat based on the presence of multiple habitat types, woody vegetation, surface water connection to other wetlands, vegetative buffer, and unimpacted water quality in upstream reaches; however, it is less than 0.5 acre in size and is surrounded by developed uses. Fish habitat function was assessed as impacted/degraded based on developed surroundings and lack of fish access. Water quality function was assessed as intact based on a surface water hydrological source, flooding or ponding during a portion of the growing season, high cover of wetland vegetation, and surrounding developed uses. Hydrological control function was assessed as impacted/degraded as the wetland is not within a 100-year floodplain or closed basin, has minor outlet restriction, and has an upstream forested/natural area land use.

Wetland 2 provides some wildlife habitat based on the presence of woody vegetation, waterbodies within one mile, vegetative buffer, and unimpacted water quality in upstream reaches; however, it features low habitat interspersion, is less than 0.5 acre in size, and is surrounded by developed uses. Fish habitat function was assessed as not present due to lack of surface water and fish access. Water quality function was assessed as not present based on a ground water hydrological source, lack of flooding or ponding during the growing season, small size, lack of connected wetlands, and lack of water quality impairments in upstream reaches Hydrological control function was assessed as impacted/degraded as the wetland is not within a 100-year floodplain or closed basin, has no evidence of flooding or ponding during the growing season, and has an upstream forested/natural area land use.

Wildlife Habitat

Wildlife habitat in riparian/Vegetated Corridors was assessed according to Metro's 2001 Wildlife Habitat Assessment (WHA) Methodology. The assessment evaluates wildlife habitat diversity (food, cover, water sources), water quality protection, ecological integrity (disturbance), connectivity, and uniqueness. Riparian/Vegetated Corridors were generally vegetated by invasive species including Himalayan blackberry, English hawthorn, nonnative grasses, and weedy forbs along with some native Oregon ash, Scouler's willow, Nootka rose, spiraea, snowberry, and trailing blackberry cover.

Based on WHA results, overall wildlife habitat value provided onsite was moderate to low. The results are summarized in Table 2 and discussed below. The WHA form is included as Appendix G.

Table 2. Wildlife Habitat Assessment Scores

Parameter	Component	Score/Total	Rating
Habitat Diversity	Water	15/28	Moderate
	Food	10/24	Moderate
	Cover	14/28	Moderate
Ecological Integrity	Physical Disturbance	1/4	Low
	Human Disturbance	2/4	Moderate
Connectivity			Low
Uniqueness		0/4	Low

Habitat diversity scored moderate based on the presence of a seasonal stream/wetlands, limited food sources with a short season, and primarily shrub cover. Habitat features generally favored small mammals and passerine birds common to urban and suburban areas. Ecological integrity scored low-moderate based on the dominance of invasive species within the vegetation community, low tree cover, and developed surrounding land use but infrequent direct human use. Connectivity was scored low due to the developed surrounding land use, busy adjacent road corridor, and piping of the stream as it enters and exits the site. Uniqueness was scored low due to a lack of rare, threatened, or sensitive plant or wildlife species, rare habitat types, scenic value, or educational potential.

Riparian Corridor Condition

Riparian corridor condition was assessed as generally moderate. Little large woody debris was present in or adjacent to the stream as few trees grow in the riparian area or could be recruited from offsite areas since Tapman Creek is conducted onsite via culverts. Some shading is present in the northern portion of the site where larger woody shrubs (willow) or trees occur, but as Himalayan blackberry generally dominates the riparian vegetation community, there is little overhanging vegetation to provide stream shading. Erosion and sediment control is provided by dense growth of invasive reed canarygrass, which dominates the creek channel. Some erosion and scour was evident within the stream channel, but was not significant. The well-vegetated riparian buffer provides good water quality protection as demonstrated by the OFWAM functional analysis of Tapman Creek. Due to channelization and the constrained nature of the creek, little floodplain connectivity is evident, though some minor overbank flooding may occur during very high-water events. Habitat onsite is connected with larger, intact, high-quality wetland/stream and forested upland habitat to the north of the site across SW Day Road; however, the habitat onsite is poorer quality, disturbed by utility maintenance, and cut off from the habitat to the north by the high-traffic road. South of the site, the area is developed for commercial and utility use and no habitat functions are present.

Proposed Plan

The proposed project consists of the expansion of the transportation company to the south (Delta Logistics) and includes the construction of a large warehouse in the eastern portion

of the site with parking and truck trailer storage in the central and western portions of the property. Crossing of Tapman Creek is required to access the western portion of the property. Construction of direct access from SW Day Road to the western portion of the site is prohibited by the City for the purpose of achieving preferred access spacing. Widening and improvements along the property's frontage of SW Day Road is also required by the City as a condition of project approval. The site plan has been designed to avoid encroachments to the stream and wetland and minimize encroachments to the Vegetated Corridor while meeting those City goals. The site plan also positions vegetated water quality treatment facilities as a buffer between the proposed development and remaining SROZ area. Areas of proposed encroachment are vegetated entirely by invasive species and contain no tree canopy. The site plan included in Appendix A. The development design implements the following habitat friendly development practices:

- Incorporates stormwater management in road rights-of-way
- Disconnects downspouts from roofs and directs the flow to vegetated water qualify facility
- Minimizes the number of stream crossings and places crossing perpendicular to stream channel
- Uses a bridge crossing rather than culverts
- Uses native vegetation throughout the development
- Locates landscaping adjacent to SROZ
- Reduces light spill-off into SROZ areas from development
- Preserves and maintains existing trees and tree canopy coverage, and plans trees, where appropriate to maximize future tree canopy coverage

Prior to any site clearing, grading or construction, the SROZ area shall be staked, and fenced per approved plan. During construction, the SROZ area shall remain fenced and undisturbed except as allowed by an approved development permit.

Proposed Encroachments

Encroachments are proposed to the Vegetated Corridor and Impact Area. Encroachments will occur in the northern portion of the Vegetated Corridor for the City required widening of SW Day Rd and in the southern portion for the Tapman Creek crossing. These areas are vegetated entirely by invasive species including Himalayan blackberry and reed canarygrass. No trees or native species will be removed as a result of construction. Encroachments will occur on both sides of the creek for the road crossing and along the eastern portion of the Impact Area for the road widening, creek crossing, and construction of a vegetated water quality and stormwater detention facility. No encroachments to Tapman Creek or the wetlands are proposed. No trees will be removed from the SROZ. Development activity has been limited to the Impact Area where practical except where necessary to widen SW Day Road and cross Tapman Creek to access the western portion of the site. Encroachments are summarized in Table 3 below

Table 3. Encroachment Summary

SROZ	Total Area	Encroachment (sq. ft.)	Remaining Area
Vegetated corridor	43,189	10,300	32,889
Impact area	22,332	14,500	7,332
TOTAL	65,521	23,300	42,222

Proposed encroachments will reduce the overall area of Vegetated Corridor by 10,300 sq. ft.; however, the impact to the overall functions and values of the water resources and riparian corridor is expected to be minimal since it will be left largely intact and the encroachment area is currently low functioning and dominated with nonnative species. The encroachments are proposed at the margins of the site adjacent to or in the vicinity of existing development. The elements with existing moderate function will not be affected. The proposed vegetated stormwater quality facilities located to the east and west of the remaining Vegetated Corridor will operate as a buffer to the SROZ area by intercepting and treating stormwater runoff before it reaches the area. The mitigation plan described below has been developed to improve the existing function of the riparian corridor and offset any potential impacts.

Mitigation and Enhancement Plan

The mitigation plan was developed with guidance from Wilsonville Development Code Section 4.139.06(.02)(E)(1)(b) and Table NR-4. Section 4.139.06(.02)(E)(1)(b) requires native trees and shrubs to be planted at a minimum rate of five (5) trees and twenty-five (25) shrubs per every 500 sq.ft. of disturbance area. For a disturbance area of 10,300 sq. ft., planting at this rate amounts to 103 trees and 515 shrubs. Table NR-4 prescribes a ratio of mitigation area to disturbance area based on the existing function of the site and proposed function of the site. Based on the functional assessment of the vegetated corridor/riparian corridor described above, both the impact site and mitigation site have low-to-moderate natural resource function based on low canopy cover, high invasive species cover, proximity to developed land uses, channelization of Tapman Creek, and fragmented connectivity to other habitats. The proposed mitigation plan is expected to provide ecological uplift and increase wildlife habitat, ecological integrity, and water quality protection functions as shown in Table 4 below. The prescribed mitigation ratio was determined as 2.5:1.

Table 4. Natural Resource Enhancement Mitigation Ratios

Function	Mitigation Site/Impact Site Existing Function	Mitigation Site Proposed Function	Change
Wildlife Habitat	Moderate	High	Increase

Ecological Integrity	Low	Moderate	Increase
Connectivity	Low	Low	None
Water Quality Protection	Moderate	High	Increase
Uniqueness	Low	Low	None
Ratio per Table NR-4			**2.5:1**
Proposed Mitigation Ratio			**3.2:1**

The proposed mitigation plan will enhance the remaining vegetated corridor/riparian area east of the existing access road which is assessed as low-to-moderate in natural resource function with low canopy cover and high nonnative species cover. The enhancement activities involve removal of invasive species and planting of native trees, shrubs, and herbs over 32,863 sq. ft of SROZ area. As much of the SROZ west of Wetland 1 is located within the utility ROW, tree planting will be limited to areas outside of the easements. Trees will be planted at the higher end of the required density (8 ft. on center) in this area to compensate for the lack of tree planting within the utility ROW. A total of 134 trees and 1,643 shrubs are proposed to be planted. Bare ground shall be planted or seeded with native grasses or herbs. The proposed mitigation plan far exceeds the planting numbers prescribed by 4.139.06(.02)(E)(1)(b) and results in a mitigation ratio of 3.2:1 exceeding the ratio prescribed by Table NR-4.

Planting Plan

The planting plan is proposed for the 32,863 sq. ft. of vegetated/riparian corridor and is shown on Figure 3. As the planting site is adjacent to a stream and wetlands, a riparian community was selected. The forest community will include 134 trees and 430 shrubs planted over 8,600 sq. ft. outside of the utility ROW. The shrub community will include 1,213 shrubs over 24,263 sq. ft. inside of the utility ROW. The planting palette is listed in Table 5 below. The species selected are appropriate to proposed site conditions. All bare ground within the enhancement area will be seeded with ProTime 400 or equivalent at a rate to achieve 100% aerial cover.

Table 5. Planting Palette for Vegetated Corridor Enhancement Area (32,863 ft²)

Species	**Category**	**Minimum Size***	**Spacing**	**Quantity**
Riparian Forest Community (outside the ROW): 8,600 sq. ft.				
Oregon ash *Fraxinus latifolia*	Tree	2 gal.	8'OC	37
Scouler's willow *Salix scouleriana*	Tree	2 gal. or bare root	8'OC	37
Western redcedar Thuja plicata	Tree	2 gal. or bare root	8'OC	60
Redosier dogwood *Cornus stolonifera*	Shrub	1 gal. or bare root	5'OC cluster	86
Red elderberry *Sambucus racemosa*	Shrub	1 gal. or bare root	5'OC cluster	86

Snowberry *Symphoricarpos albus*	Shrub	1 gal. or bare root	5'OC cluster	86
Salmonberry *Rubus spectabilis*	Shrub	1 gal. or bare root	5'OC cluster	86
Swamp rose *Rosa pisocarpa*	Shrub	1 gal. or bare root	5'OC cluster	86
Riparian Shrub Community (inside the ROW): 24,263 sq. ft.				
Redosier dogwood *Cornus stolonifera*	Shrub	1 gal. or bare root	5'OC cluster	200
Red elderberry *Sambucus racemosa*	Shrub	1 gal. or bare root	5'OC cluster	200
Snowberry *Symphoricarpos albus*	Shrub	1 gal. or bare root	5'OC cluster	213
Salmonberry *Rubus spectabilis*	Shrub	1 gal. or bare root	5'OC cluster	200
Swamp rose *Rosa pisocarpa*	Shrub	1 gal. or bare root	5'OC cluster	200
Indian plum *Oemleria cerasiformis*	Shrub	1 gal. or bare root	5'OC cluster	200
ProTime 402*	herb		25 lbs/acre	17.5 lbs

*Native riparian mix includes blue wildrye (*Elymus glaucus*), meadow barley (*Hordeum brachyantherum*), and tufted hairgrass (*Deschampsia cespitosa*)

The mitigation planting plan was designed according Section 4.139.07(.02)(E) and shall meet the following:

- The planting plan shall be implemented prior to or at the same time as the impact activity is conducted
- All trees, shrubs and ground cover shall be native vegetation.
- Trees and shrubs shall be at least one-gallon in size and shall be at least twelve (12) inches in height.
- Trees shall be planted between eight (8) and twelve (12) feet on center, and shrubs shall be planted between four (4) and five (5) feet on center, or clustered in single species groups of no more than four (4) plants, with each cluster planted between eight (8) and ten (10) feet on center. When planting near existing trees, the drip line of the existing tree shall be the starting point for plant spacing measurements
- Shrubs shall consist of at least two (2) different species. If five (5) trees or more are planted, then no more than fifty (50) percent of the trees may be of the same genus.
- Invasive non-native or noxious vegetation shall be removed within the mitigation area prior to planting and shall be removed or controlled for five (5) years following the date that the mitigation planting is completed.

- Mulch shall be applied around new plantings at a minimum of three inches in depth and eighteen inches in diameter. Browse protection shall be installed on trees and shrubs. Mulching and browse protection shall be maintained during the two-year plant establishment period.
- Trees and shrubs that die shall be replaced in kind to the extent necessary to ensure that a minimum of eighty (80) percent of the trees and shrubs initially required shall remain alive on the fifth anniversary of the date that the mitigation planting is completed

Mitigation Goals and Performance Standards

The mitigation site goal is as follows:

Enhance 32,890 sq. ft. of vegetated corridor to improve riparian corridor, water quality protection, ecological integrity and wildlife habitat functions by removing invasive species and maintaining a native, woody-dominated plant community.

Performance standards are based on Metro's Title 3 water quality performance standards to protect and improve water quality and protect the functions and values of Water Quality Resource Areas (Metro 2018). This plan's performance standards for forest and/or shrub dominated areas and shall consist of the following:

1. Establishment of permanent monitoring locations during the first annual monitoring.
2. Cover of native herbaceous species is at least 60%
3. Cover of invasive species is no more than 10%. After the site has matured to the stage when desirable canopy species reach 50% cover, the cover of invasive species may increase but may not exceed 30%.
4. Bare substrate represents no more than 20% cover
5. Density of woody vegetation is at least 1,600 live trees or shrubs per acre OR the cover of native woody vegetation on site is at least 50%. Native volunteer species may be included in the cover or density estimate.
6. By Year 3 and thereafter, at least 6 different native species must be present. To qualify, a species must have at least 5% average cover in the habitat class and occur in at least 10% of the plots sampled
7. By Year 5, a minimum of eighty (80) percent of the trees and shrubs initially required shall remain alive

Maintenance and Monitoring

Monitoring will occur annually over a 5-year monitoring period to assess condition of plantings, irrigation, mulch etc. Monitoring will be conducted by qualified personnel during peak growing season (July-August). Annual monitoring reports will be provided to the Planning Director for review by December of each monitoring year. The report shall contain, at a minimum, photographs from established photo points, quantitative measure of success criteria, including plant survival and vigor. The Year 1 annual report shall be submitted one year following mitigation action implementation. The final annual

report (Year 5 report) shall document successful satisfaction of mitigation goals, as per the stated performance standards

The applicant will be responsible for coordinating ongoing maintenance and management. If the ownership of the mitigation site property changes, the new owners will have the continued responsibilities Maintenance activities including mulching, weed removal, herbivory control, and supplemental planting will be conducted by a qualified contractor at least twice per growing season and once prior to the growing season or more frequently as indicated by monitoring results. Any failed plants will be replaced in-kind with the cause of loss (wildlife damage, poor plant stock, drought, weed overgrowth, etc.) documented and additional maintenance done to address the cause of loss and ensure future plant survival.

Summary and Conclusions

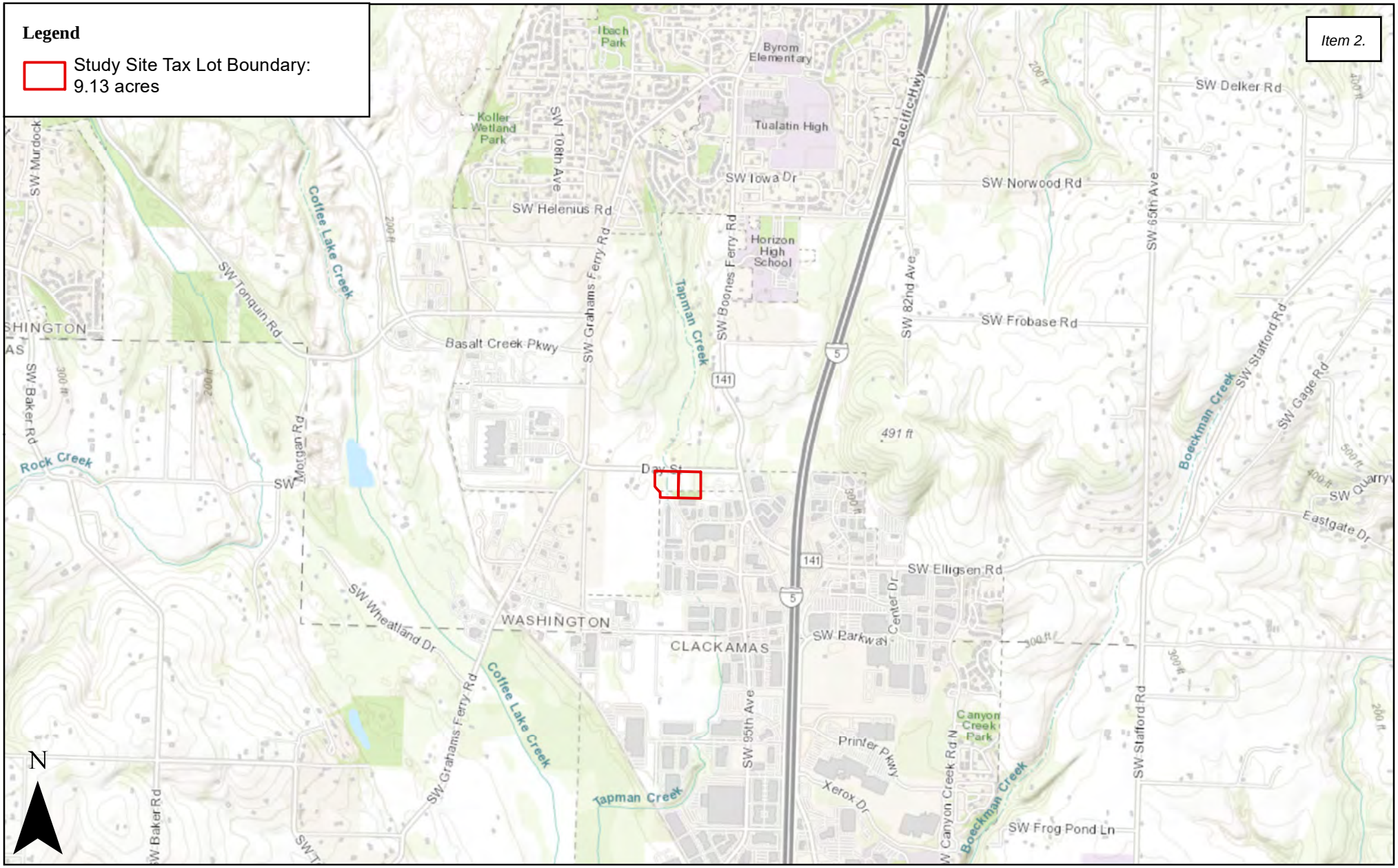
In summary, the applicant (Delta Logistics) proposes a commercial development on a property located at 9710 SW Day Road (T3S, R1W, Section 2B, Tax Lot 600 & 601).

- The property features SROZ area in the western portion including wetlands (0.33 acre), Tapman Creek (0.10 acre), and associated Vegetated Corridor (43,189 sq. ft) and Impact Areas (22,332 sq. ft.).
- The proposed design maximizes use of the site while minimizing adverse impacts to natural resources and incorporates several habitat friendly development practices. No encroachments to onsite wetlands or waters are proposed and no trees will be removed from the SROZ.
- Encroachments to Vegetated Corridor (10,300 sq. ft.) and Impact Areas (14,500 sq. ft.) are proposed due to City-required widening and improvements along the property's frontage of SW Day Road and to access the west side of Tapman Creek. Accessing the western portion of the property from SW Day Road is prohibited by the City, leaving a stream crossing as the only option to utilize this valuable area.
    - The existing Vegetated Corridor/riparian corridor conditions were assessed as low-to-moderate in function with high invasive species cover and low tree canopy cover. These areas are within a utility easement and are historically disturbed.
    - The specific areas of the of the SROZ proposed for encroachment (particularly along SW Day Road) are low-functioning and vegetated entirely by invasive or nonnative species (primarily Himalayan blackberry and reed canarygrass) and lack tree cover.
    - The proposed encroachments are not expected to affect the overall functions of the riparian/Vegetated Corridor as the preponderance of the SROZ will remain intact and the elements with existing moderate function will not be affected. Vegetated water quality treatment facilities are positioned between the remaining SROZ area and the development and will serve as a buffer by intercepting and treating stormwater runoff. The encroachments are proposed at the margins of the site adjacent to or

in the vicinity of existing development. A mitigation plan has been developed to offset any potential impacts to natural resources.

- The Mitigation and Enhancement Plan provides functional uplift to the remaining onsite riparian/Vegetated Corridor. The Plan will enhance 32,863 sq. ft. of riparian/Vegetated Corridor and provide benefits that exceed the mitigation recommendations of the SROZ regulation.
    - A total of 134 trees and 1,643 shrubs are proposed to be planted. Bare ground shall be planted or seeded with native grasses or herbs
    - Trees will be planted at the higher end of the required density (8 ft. on center) outside the ROW to compensate for the lack of tree planting within the utility ROW.
    - The proposed mitigation plan far exceeds the planting numbers prescribed by 4.139.06(.02)(E)(1)(b) and results in a mitigation ratio of 3.2:1 exceeding the ratio prescribed by Table NR-4.
    - While the overall area of the riparian/Vegetated Corridor will be smaller, wildlife habitat, ecological integrity, and water quality protection functions will substantially improve through removal of widespread invasive species and establishment of native forest and shrub communities.
    - Connectivity and uniqueness functions will remain the same.

FIGURE 1: PROJECT VICINITY MAP



Date: 9/9/2021

Data Source: ESRI, 2021; Washington County Intermap, 2021

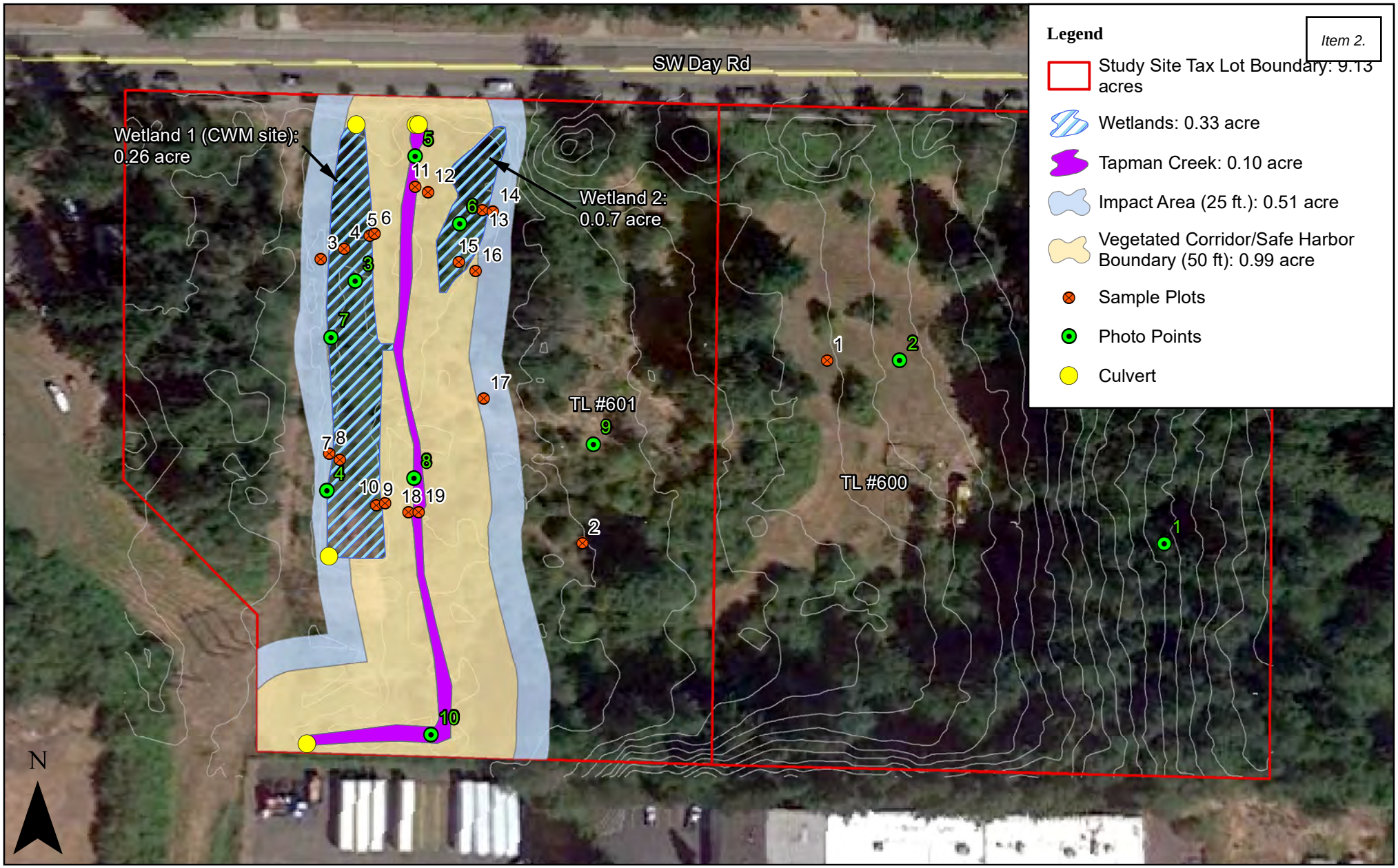
Figure 1. Location Map

SCHOTT & ASSOCIATES, Inc.

SW Day Road Project Site: S&A #2739

0 1,000 2,000 415 et

FIGURE 2: EXISTING CONDITIONS – SIGNIFICANT RESOURCE OVERLAY ZONE



Date: 1/11/2022

Data Source: Google Earth, 2021; Washington County Intermap, 2021; DOGAMI, 2014

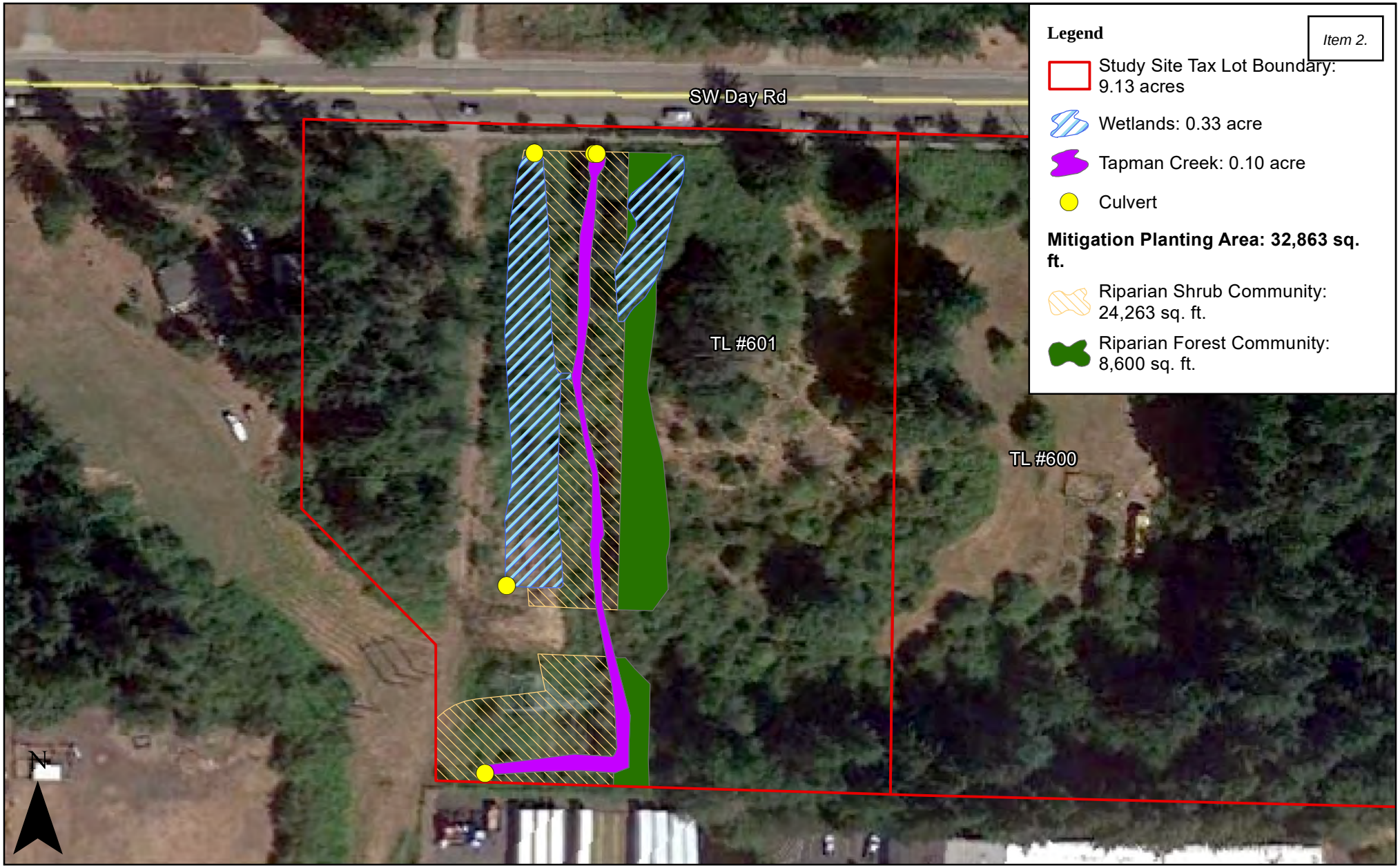
Figure 2. Existing Conditions - Significant Resources Overlay Zone

SW Day Road Project Site: S&A #2739

0 50 100 feet

SCHOTT & ASSOCIATES, Inc.

FIGURE 3: MITIGATION PLANTING AREA



Date: 1/11/2022

Data Source: Google Earth, 2021;
Washington County Intermap, 2021

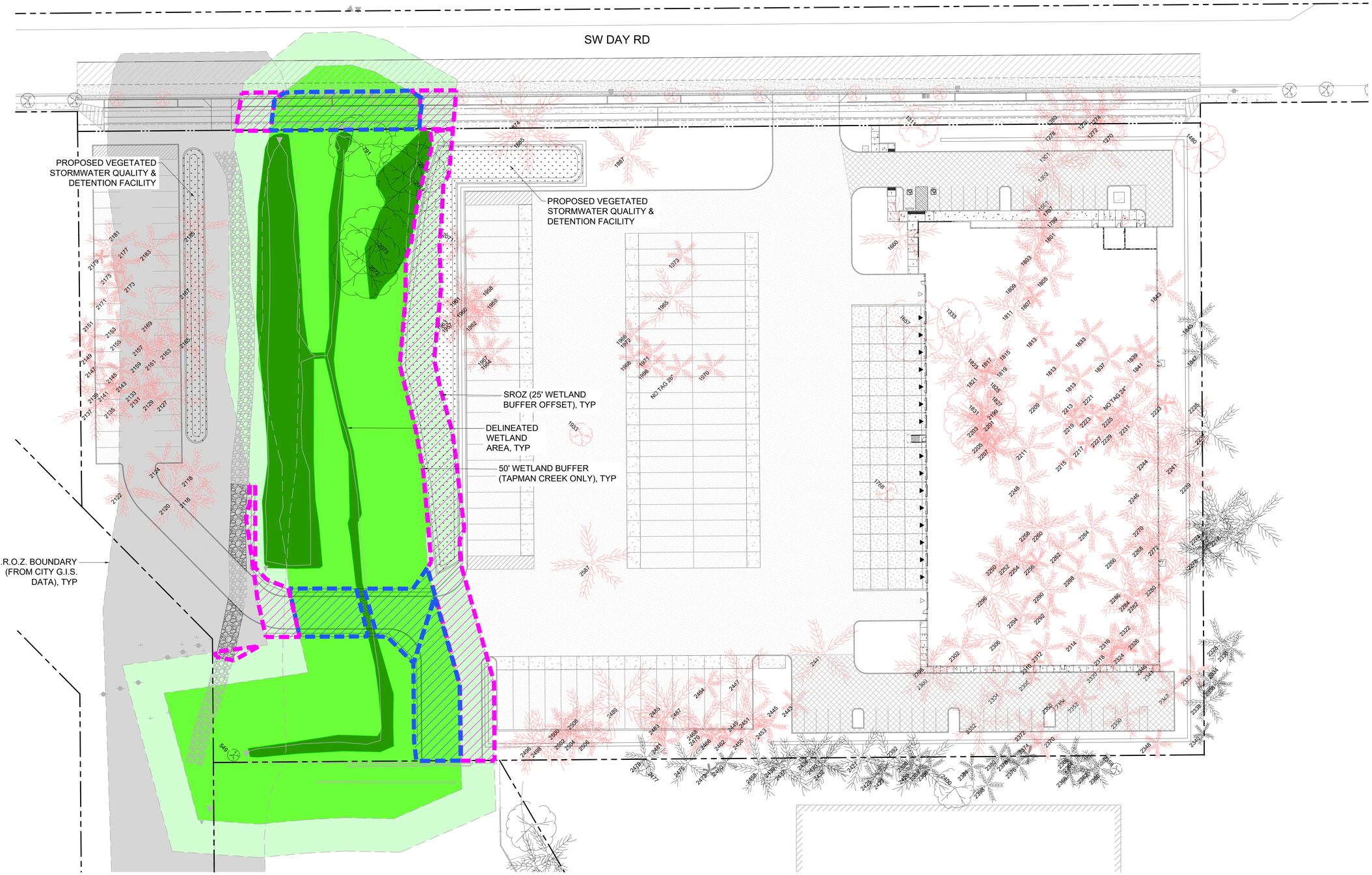
Figure 3. Mitigation Planting Area

SW Day Road Project Site: S&A #2739

0 50 100 et

SCHOTT & ASSOCIATES, Inc.

APPENDIX A: SITE PLAN



1 - WETLANDS IMPACT EXHIBIT

IMPACT AREA	ESTABLISHMENT	DAY ROAD WIDENING		GENERAL SITEWORK		CREEK BRIDGING & SEMI-TRACTOR STORAGE		TOTALS
		TEMPORARY	PERMANENT	TEMPORARY	PERMANENT	TEMPORARY	PERMANENT	
WETLAND, SQ FT	DELINEATED	0	0	0	0	0	0	**0**
WETLAND BUFFER, SQ FT	50' DELINEATION OFFSET	0	3,200	0	3,300	0	3,800	**10,300**
SROZ, SQ FT	25' OFFSET FROM BUFFER	0	1,500	0	11,500	0	1,500	**14,500**
TREES (IN SROZ), EA	SURVEY	-	0	-	0	-	0	**0**
TREES (NON-SROZ), EA	SURVEY	-	4	-	174	-	33	**211**

STREET TREES NOT TABULATED & WILL BE REPLACED

Architecture ▪ Interiors
Planning ▪ Engineering

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Vancouver, WA
360.695.7879
Seattle, WA
206.749.9993
www.mcknze.com

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DESIGN DRIVEN | CLIENT FOCUSED

Client

DELTA LOGISTICS
9835 SW COMMERCE CIRCLE
WILSONVILLE, OR
97070

Project

DELTA LOGISTICS SITE EXPANSION FRONTAGE MPROVEMENTS
9710 SW DAY RD.
CITY OF WILSONVILLE, OR

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REVISION SCHEDULE

Delta	Issued As	Issue Date
-	ISSUED	11/30/2021
-	ISSUED	12/02/2021
-	ISSUED	12/15/2021
-	ISSUED	01/18/2022

SHEET TITLE:
WETLANDS IMPACT EXHIBIT

DRAWN BY: CME

CHECKED BY: GIM

SHEET

JOB NO. **2200502.04**

DESIGN DEVELOPMENT SET 12/17/21

220050200\DRAWINGS\CIVIL\EXHIBIT\502-WETLAND IMPACT.DWG GIM 01/18/22 09:29 1:30.00

APPENDIX B. TOPOGRAPHIC SURVEY

TOPOGRAPHIC SURVEY

9710 SW DAY ROAD

LOCATED IN THE SW 1/4 AND THE NW 1/4
SECTION 2, T.3S., R.1W., W.M.
WASHINGTON COUNTY, OREGON

PRELIMINARY RESULTS

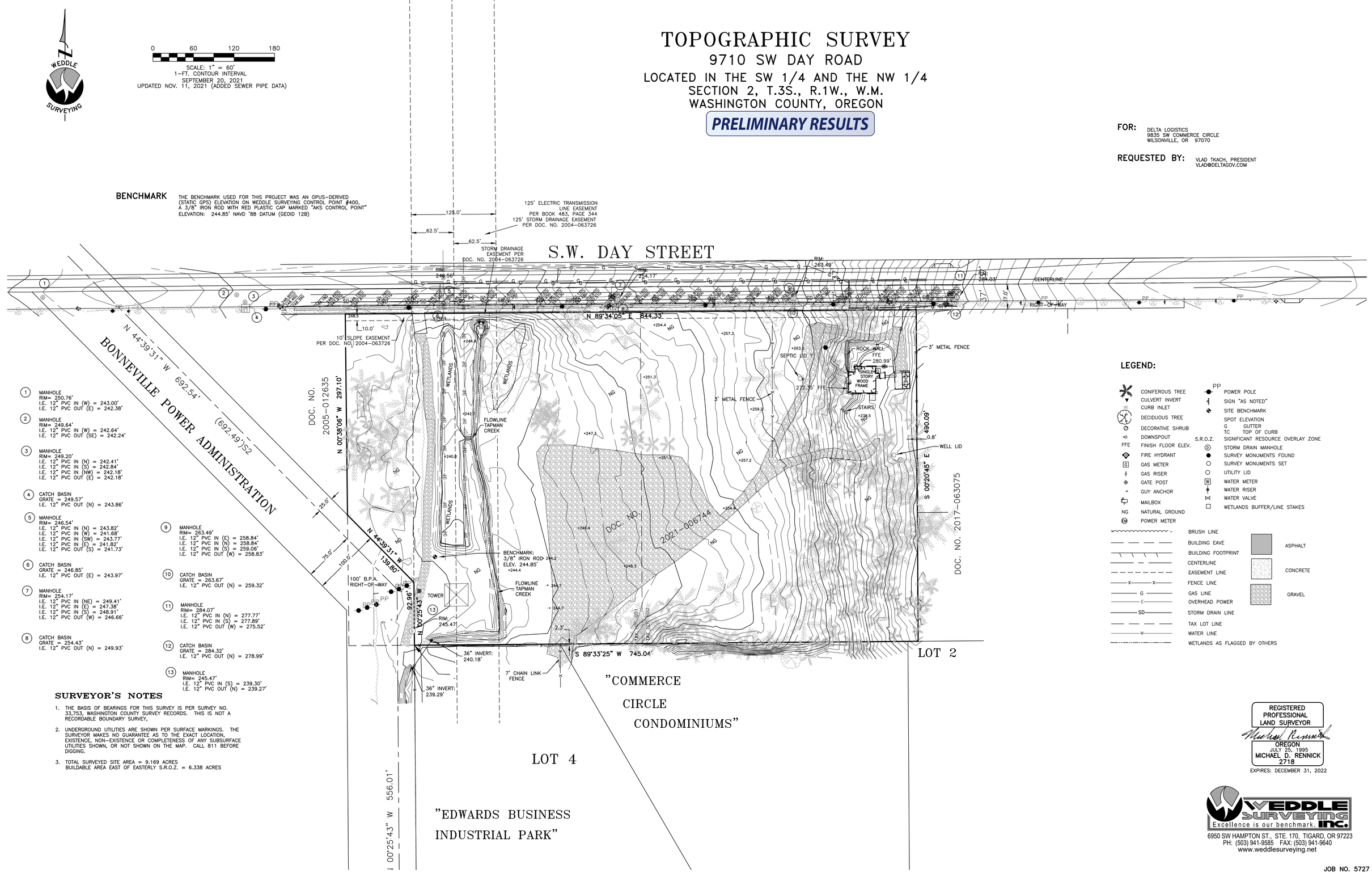
WEDDLE SURVEYING

0 60 120 180
SCALE: 1" = 60'
1-FT. CONTOUR INTERVAL
SEPTEMBER 20, 2021
UPDATED NOV. 11, 2021 (ADDED SEWER PIPE DATA)

FOR: DELTA LOGISTICS
9835 SW COMMERCE CIRCLE
WILSONVILLE, OR 97070

REQUESTED BY: VLAD TKACH, PRESIDENT
VLAD@DELTAGOV.COM

BENCHMARK THE BENCHMARK USED FOR THIS PROJECT WAS AN OPUS-DERIVED (STATIC GPS) ELEVATION ON WEDDLE SURVEYING CONTROL POINT #400, A 3/8" IRON ROD WITH RED PLASTIC CAP MARKED "AKS CONTROL POINT"
ELEVATION: 244.85' NAVD '88 DATUM (GEOID 12B)



1. MANHOLE
RIM= 250.76'
I.E. 12" PVC IN (W) = 243.00'
I.E. 12" PVC OUT (E) = 242.38'

2. MANHOLE
RIM= 249.64'
I.E. 12" PVC IN (W) = 242.64'
I.E. 12" PVC OUT (SE) = 242.24'

3. MANHOLE
RIM= 249.20'
I.E. 12" PVC IN (N) = 242.41'
I.E. 12" PVC IN (S) = 242.84'
I.E. 12" PVC IN (NW) = 242.18'
I.E. 12" PVC OUT (E) = 242.18'

4. CATCH BASIN
GRATE = 249.57'
I.E. 12" PVC OUT (N) = 243.86'

5. MANHOLE
RIM= 246.54'
I.E. 12" PVC IN (N) = 243.82'
I.E. 12" PVC IN (W) = 241.68'
I.E. 12" PVC IN (SW) = 243.77'
I.E. 12" PVC IN (E) = 241.82'
I.E. 12" PVC OUT (S) = 241.73'

6. CATCH BASIN
GRATE = 246.85'
I.E. 12" PVC OUT (E) = 243.97'

7. MANHOLE
RIM= 254.17'
I.E. 12" PVC IN (NE) = 249.41'
I.E. 12" PVC IN (E) = 247.38'
I.E. 12" PVC IN (S) = 248.91'
I.E. 12" PVC OUT (W) = 246.66'

8. CATCH BASIN
GRATE = 254.43'
I.E. 12" PVC OUT (N) = 249.93'

9. MANHOLE
RIM= 263.49'
I.E. 12" PVC IN (E) = 258.84'
I.E. 12" PVC IN (N) = 258.84'
I.E. 12" PVC IN (S) = 259.06'
I.E. 12" PVC OUT (W) = 258.83'

10. CATCH BASIN
GRATE = 263.67'
I.E. 12" PVC OUT (N) = 259.32'

11. MANHOLE
RIM= 284.07'
I.E. 12" PVC IN (N) = 277.77'
I.E. 12" PVC IN (S) = 277.89'
I.E. 12" PVC OUT (W) = 275.52'

12. CATCH BASIN
GRATE = 284.32'
I.E. 12" PVC OUT (N) = 278.99'

13. MANHOLE
RIM= 245.47'
I.E. 12" PVC IN (S) = 239.30'
I.E. 12" PVC OUT (N) = 239.27'

SURVEYOR'S NOTES

1. THE BASIS OF BEARINGS FOR THIS SURVEY IS PER SURVEY NO. 33,753, WASHINGTON COUNTY SURVEY RECORDS. THIS IS NOT A RECORDABLE BOUNDARY SURVEY.
2. UNDERGROUND UTILITIES ARE SHOWN PER SURFACE MARKINGS. THE SURVEYOR MAKES NO GUARANTEE AS TO THE EXACT LOCATION, EXISTENCE, NON-EXISTENCE OR COMPLETENESS OF ANY SUBSURFACE UTILITIES SHOWN, OR NOT SHOWN ON THE MAP. CALL 811 BEFORE DIGGING.
3. TOTAL SURVEYED SITE AREA = 9.169 ACRES
BUILDABLE AREA EAST OF EASTERLY S.R.O.Z. = 6.338 ACRES

LEGEND:

- CONIFEROUS TREE
- CULVERT INVERT
- CURB INLET
- DECIDUOUS TREE
- DECORATIVE SHRUB
- DOWNSPOUT
- FFE FINISH FLOOR ELEV.
- FIRE HYDRANT
- G GAS METER
- GAS RISER
- GATE POST
- GUY ANCHOR
- MAILBOX
- NG NATURAL GROUND
- PM POWER METER
- PP POWER POLE
- SIGN "AS NOTED"
- SITE BENCHMARK
- SPOT ELEVATION
- G GUTTER
- TC TOP OF CURB
- S.R.O.Z. SIGNIFICANT RESOURCE OVERLAY ZONE
- STORM DRAIN MANHOLE
- SURVEY MONUMENTS FOUND
- SURVEY MONUMENTS SET
- UTILITY LID
- WATER METER
- WATER RISER
- WATER VALVE
- WETLANDS BUFFER/LINE STAKES

- BRUSH LINE
- BUILDING EAVE
- BUILDING FOOTPRINT
- CENTERLINE
- EASEMENT LINE
- FENCE LINE
- G GAS LINE
- E OVERHEAD POWER
- SD STORM DRAIN LINE
- TAX LOT LINE
- W WATER LINE
- WETLANDS AS FLAGGED BY OTHERS

ASPHALT
CONCRETE
GRAVEL

REGISTERED PROFESSIONAL LAND SURVEYOR
OREGON
JULY 25, 1995
MICHAEL D. RENNICK
2718
EXPIRES: DECEMBER 31, 2022

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www.weddlesurveying.net

JOB NO. 5727

APPENDIX C. TREE SURVEY

Tree No.	Common Name	Scientific Name	DBH[1]	C-Rad[2]	Condition[3]	Structure	Comments	Not On Property	Treatment	Mitigation[4]
549	English hawthorn	*Crataegus monogyna*	5	2.5	Fair	Fair	Multiple stems		tbd	tbd
791	Willow	*Salix sp.*	20	10	Poor	Very Poor	Data visually collected due to inaccessible area		tbd	tbd
874	Douglas-fir	*Pseudotsuga menziesii*	36	18	Good	Fair	Broken limbs at base		tbd	tbd
1270	Douglas-fir	*Pseudotsuga menziesii*	47	23.5	Fair	Fair	Co-dominant stem with included bark, broken limbs in crown		tbd	tbd
1272	Douglas-fir	*Pseudotsuga menziesii*	41	20.5	Good	Good			tbd	tbd
1274	Douglas-fir	*Pseudotsuga menziesii*	33	16.5	Good	Fair	Wood pecker damage at base		tbd	tbd
1276	Douglas-fir	*Pseudotsuga menziesii*	28	14	Fair	Fair	Thin crown		tbd	tbd
1278	Douglas-fir	*Pseudotsuga menziesii*	31	15.5	Fair	Fair	Thin crown, sap sucker damage at base		tbd	tbd
1280	Douglas-fir	*Pseudotsuga menziesii*	43	21.5	Good	Good			tbd	tbd
1301	Douglas-fir	*Pseudotsuga menziesii*	40	20	Good	Good			tbd	tbd
1303	Douglas-fir	*Pseudotsuga menziesii*	50	25	Fair	Poor	Weeping crack at 12', decay with sloughing bark at base		tbd	tbd
1311	sweet cherry	*Prunus avium*	20	10	Very Poor	Very Poor	Tree in heavy decline		tbd	tbd
1333			Tree not present				Tree not present		tbd	tbd
1480	sweet cherry	*Prunus avium*	8	4	Fair	Poor	Data visually collected	x	tbd	tbd
1501	Douglas-fir	*Pseudotsuga menziesii*	30	15	Good	Good			tbd	tbd
1657			Tree not present				Tree not present		tbd	tbd
1660	Douglas-fir	*Pseudotsuga menziesii*	39	19.5	Fair	Fair	Broken limbs at base, thin crown		tbd	tbd
1766			Tree not present				Tree not present		tbd	tbd
1797	Douglas-fir	*Pseudotsuga menziesii*	49	24.5	Fair	Fair	Wood pecker damage at base		tbd	tbd
1799	Douglas-fir	*Pseudotsuga menziesii*	44	22	Fair	Fair	Co-dominant stem with included bark		tbd	tbd
1801	Douglas-fir	*Pseudotsuga menziesii*	44	22	Fair	Fair	Co-dominant stem with included bark, cracks and wood pecker holes at base		tbd	tbd
1803	Douglas-fir	*Pseudotsuga menziesii*	23	11.5	Fair	Fair	Thin crown, excavation in root zone		tbd	tbd
1805	Douglas-fir	*Pseudotsuga menziesii*	33	16.5	Fair	Fair	Buried root flare		tbd	tbd
1807	Douglas-fir	*Pseudotsuga menziesii*	26	13	Good	Good			tbd	tbd
1809	Douglas-fir	*Pseudotsuga menziesii*	41	20.5	Fair	Fair	Torsion cracks at base, excavation in root zone		tbd	tbd

Tree No.	Common Name	Scientific Name	DBH[1]	C-Rad[2]	Condition[3]	Structure	Comments	Not On Property	Treatment	Mitigation[4]
1811	Douglas-fir	*Pseudotsuga menziesii*	49	24.5	Fair	Fair	Torsion cracks in stem, wood pecker damage at base		tbd	tbd
1813	Douglas-fir	*Pseudotsuga menziesii*	25	12.5	Fair	Fair	Thin crown, bark damage at base		tbd	tbd
1815	Douglas-fir	*Pseudotsuga menziesii*	22	11	Good	Fair	Crack with good response growth at base		tbd	tbd
1817	Douglas-fir	*Pseudotsuga menziesii*	13	6.5	Dead	Dead			tbd	tbd
1819	Douglas-fir	*Pseudotsuga menziesii*	20	10	Good	Good			tbd	tbd
1821	Douglas-fir	*Pseudotsuga menziesii*	18	9	Fair	Fair	Contorted stem at 25’		tbd	tbd
1821.1	Douglas-fir	*Pseudotsuga menziesii*	24	12	Good	Fair	Swelling at base where other tree was removed		tbd	tbd
1821.2	Douglas-fir	*Pseudotsuga menziesii*	16	8	Fair	Fair	Contorted stem at 15’, bark damage at base		tbd	tbd
1823			Tree not present				Tree not present		tbd	tbd
1825			Tree not present				Tree not present		tbd	tbd
1827			Tree not present				Tree not present		tbd	tbd
1831			Tree not present				Tree not present		tbd	tbd
1833	Douglas-fir	*Pseudotsuga menziesii*	31	15.5	Good	Good			tbd	tbd
1835	Douglas-fir	*Pseudotsuga menziesii*	34	17	Fair	Fair	Thin crown		tbd	tbd
1837	Douglas-fir	*Pseudotsuga menziesii*	28	14	Good	Fair	Excavation in root zone		tbd	tbd
1839	Douglas-fir	*Pseudotsuga menziesii*	23	11.5	Fair	Fair	Thin crown		tbd	tbd
1841	Douglas-fir	*Pseudotsuga menziesii*	33	16.5	Good	Fair	Holes in trunk at base		tbd	tbd
1843	Douglas-fir	*Pseudotsuga menziesii*	51	25.5	Fair	Fair	Thin crown		tbd	tbd
1845	Douglas-fir	*Pseudotsuga menziesii*	48	24	Fair	Fair	Thin crown, dead limbs in crown		tbd	tbd
1847	Douglas-fir	*Pseudotsuga menziesii*	22	11	Fair	Fair	Thin crown, bark damage at base		tbd	tbd
1849	Douglas-fir	*Pseudotsuga menziesii*	26	13	Good	Good			tbd	tbd
1885	Douglas-fir	*Pseudotsuga menziesii*	23	11.5	Good	Fair	Broken limbs at base		tbd	tbd
1887	Douglas-fir	*Pseudotsuga menziesii*	38	19	Good	Fair	Broken limbs at base		tbd	tbd
1933			Tree not present				Tree not present		tbd	tbd
1957	Douglas-fir	*Pseudotsuga menziesii*	23	11.5	Dead	Dead			tbd	tbd
1958	Douglas-fir	*Pseudotsuga menziesii*	27	13.5	Dead	Dead			tbd	tbd
1959	Douglas-fir	*Pseudotsuga menziesii*	21	10.5	Dead	Dead			tbd	tbd
1960	Douglas-fir	*Pseudotsuga menziesii*	14	7	Poor	Poor	Thin crown, dead top		tbd	tbd

Tree No.	Common Name	Scientific Name	DBH[1]	C-Rad[2]	Condition[3]	Structure	Comments	Not On Property	Treatment	Mitigation[4]
1961	Douglas-fir	*Pseudotsuga menziesii*	17	8.5	Dead	Dead			tbd	tbd
1962	Douglas-fir	*Pseudotsuga menziesii*	22	11	Dead	Dead			tbd	tbd
1963	Douglas-fir	*Pseudotsuga menziesii*	27	13.5	Poor	Poor	Dead top		tbd	tbd
1964	Douglas-fir	*Pseudotsuga menziesii*	26	13	Poor	Poor	Tree in decline		tbd	tbd
1965	Douglas-fir	*Pseudotsuga menziesii*	26	13	Fair	Fair	Thin crown		tbd	tbd
1966	Douglas-fir	*Pseudotsuga menziesii*	26	13	Fair	Fair	Thin crown		tbd	tbd
1967	Douglas-fir	*Pseudotsuga menziesii*	26	13	Fair	Good	Epicormic growth on limbs		tbd	tbd
1968	Douglas-fir	*Pseudotsuga menziesii*	31	15.5	Good	Fair	Broken limbs at base		tbd	tbd
1969	Douglas-fir	*Pseudotsuga menziesii*	28	14	Good	Fair	Broken limbs at base		tbd	tbd
1970	Douglas-fir	*Pseudotsuga menziesii*	31	15.5	Fair	Fair	Thin crown		tbd	tbd
1971	Douglas-fir	*Pseudotsuga menziesii*	22	11	Fair	Fair	Thin crown		tbd	tbd
1972	Douglas-fir	*Pseudotsuga menziesii*	24	12	Fair	Fair	Thin crown		tbd	tbd
1973	Douglas-fir	*Pseudotsuga menziesii*	51	25.5	Fair	Fair	Broken limbs at base, over extended limbs		tbd	tbd
2071	Douglas-fir	*Pseudotsuga menziesii*	31	15.5	Good	Fair	Bark damage at base, ivy at base		tbd	tbd
2072	Oregon ash	*Fraxinus latifolia*	11	5.5	Poor	Poor	Contorted stem, thin crown		tbd	tbd
2073	Willow	*Salix sp.*	14	7	Dead	Dead			tbd	tbd
2074	Oregon ash	*Fraxinus latifolia*	20	10	Poor	Poor	Dead limbs in crown, over extended limbs		tbd	tbd
2075	Oregon ash	*Fraxinus latifolia*	14	7	Fair	Poor	One failed stem at base, decay at base, heavy lean		tbd	tbd
2116	Douglas-fir	*Pseudotsuga menziesii*	21	10.5	Dead	Dead			tbd	tbd
2118	Douglas-fir	*Pseudotsuga menziesii*	24	12	Dead	Dead			tbd	tbd
2120	Douglas-fir	*Pseudotsuga menziesii*	32	16	Poor	Poor	Dead top		tbd	tbd
2122	Douglas-fir	*Pseudotsuga menziesii*	32	16	Fair	Fair	Thin crown, bark damage at base		tbd	tbd
2124	Douglas-fir	*Pseudotsuga menziesii*	17	8.5	Fair	Fair	Bark damage at base, ivy in crown		tbd	tbd
2127	Douglas-fir	*Pseudotsuga menziesii*	33	16.5	Good	Fair	Bark damage at base		tbd	tbd
2129	Douglas-fir	*Pseudotsuga menziesii*	18	9	Very Poor	Very Poor	Dead top		tbd	tbd
2131	Douglas-fir	*Pseudotsuga menziesii*	16	8	Poor	Poor	Ivy in crown, thin crown		tbd	tbd
2133	Douglas-fir	*Pseudotsuga menziesii*	15	7.5	Fair	Fair	Ivy in crown		tbd	tbd
2135	Douglas-fir	*Pseudotsuga menziesii*	15	7.5	Fair	Fair	Thin crown, ivy covering base		tbd	tbd
2137	Douglas-fir	*Pseudotsuga menziesii*	30	15	Fair	Good	Bark damage at base		tbd	tbd
2139	Douglas-fir	*Pseudotsuga menziesii*	37	18.5	Good	Good			tbd	tbd
2141	Douglas-fir	*Pseudotsuga menziesii*	19	9.5	Fair	Fair	Co-dominant stem with included bark at bas, fruiting body at base		tbd	tbd
2143	Douglas-fir	*Pseudotsuga menziesii*	16	8	Dead	Dead			tbd	tbd
2145	Douglas-fir	*Pseudotsuga menziesii*	26	13	Fair	Fair	Thin crown		tbd	tbd
2147	Douglas-fir	*Pseudotsuga menziesii*	15	7.5	Fair	Fair	Thin crown		tbd	tbd
2149	Douglas-fir	*Pseudotsuga menziesii*	24	12	Fair	Poor	Thin crown, contorted stem, ivy covering base		tbd	tbd
2151	Douglas-fir	*Pseudotsuga menziesii*	29	14.5	Poor	Poor	Thin crown, ivy covering stem		tbd	tbd

Tree No.	Common Name	Scientific Name	DBH[1]	C-Rad[2]	Condition[3]	Structure	Comments	Not On Property	Treatment	Mitigation[4]
2153	Douglas-fir	*Pseudotsuga menziesii*	15	7.5	Dead	Dead			tbd	tbd
2155	Douglas-fir	*Pseudotsuga menziesii*	12	6	Fair	Fair	Ivy covering base		tbd	tbd
2157	Douglas-fir	*Pseudotsuga menziesii*	19	9.5	Dead	Dead			tbd	tbd
2159	Douglas-fir	*Pseudotsuga menziesii*	32	16	Good	Fair	Ivy covering base		tbd	tbd
2161	Douglas-fir	*Pseudotsuga menziesii*	16	8	Dead	Dead			tbd	tbd
2163	Douglas-fir	*Pseudotsuga menziesii*	24	12	Fair	Fair	Thin crown		tbd	tbd
2165	Douglas-fir	*Pseudotsuga menziesii*	26	13	Dead	Dead			tbd	tbd
2167	Douglas-fir	*Pseudotsuga menziesii*	34	17	Fair	Fair	Bark damage at base, thin crown		tbd	tbd
2169	Douglas-fir	*Pseudotsuga menziesii*	28	14	Poor	Fair	Thin crown		tbd	tbd
2171	Douglas-fir	*Pseudotsuga menziesii*	22	11	Fair	Fair	Thin crown, ivy covering base, bark damage at base		tbd	tbd
2173	Douglas-fir	*Pseudotsuga menziesii*	21	10.5	Very Poor	Very Poor	Tree in heavy decline		tbd	tbd
2175	Douglas-fir	*Pseudotsuga menziesii*	26	13	Dead	Dead			tbd	tbd
2177	Douglas-fir	*Pseudotsuga menziesii*	24	12	Very Poor	Very Poor	Tree in heavy decline		tbd	tbd
2179	Douglas-fir	*Pseudotsuga menziesii*	15	7.5	Dead	Dead			tbd	tbd
2181	Douglas-fir	*Pseudotsuga menziesii*	21	10.5	Dead	Dead			tbd	tbd
2183	Douglas-fir	*Pseudotsuga menziesii*	24	12	Dead	Dead			tbd	tbd
2185	Douglas-fir	*Pseudotsuga menziesii*	23	11.5	Poor	Very Poor	Tree previously topped		tbd	tbd
2199	Douglas-fir	Pseudotsuga menziesii	30	15	Good	Fair	Limb with included bark at 25', bark damage at base		tbd	tbd
2201	Douglas-fir	*Pseudotsuga menziesii*	14	7	Good	Poor	Co-dominant stem at base, heavy lean		tbd	tbd
2203	Douglas-fir	*Pseudotsuga menziesii*	27	13.5	Good	Fair	Co-dominant stem at base		tbd	tbd
2205	Douglas-fir	*Pseudotsuga menziesii*	29	14.5	Good	Fair	Bark damage at base		tbd	tbd
2207	Douglas-fir	*Pseudotsuga menziesii*	26	13	Good	Good			tbd	tbd
2209	Douglas-fir	*Pseudotsuga menziesii*	19	9.5	Fair	Fair	Thin crown, bark damage at base		tbd	tbd
2211	Douglas-fir	*Pseudotsuga menziesii*	42	21	Fair	Poor	Thin crown, decay at base		tbd	tbd
2213	Douglas-fir	*Pseudotsuga menziesii*	24	12	Poor	Fair	Thin crown		tbd	tbd
2215	Douglas-fir	*Pseudotsuga menziesii*	17	8.5	Fair	Fair	Bark damage at base		tbd	tbd
2217	Douglas-fir	*Pseudotsuga menziesii*	27	13.5	Fair	Fair	Pistol butt stem, thin crown		tbd	tbd
2219	Douglas-fir	*Pseudotsuga menziesii*	16	8	Fair	Fair	Thin crown		tbd	tbd
2221	Douglas-fir	*Pseudotsuga menziesii*	16	8	Good	Good			tbd	tbd
2223	Douglas-fir	*Pseudotsuga menziesii*	12	6	Fair	Fair	Thin crown		tbd	tbd
2225	Douglas-fir	*Pseudotsuga menziesii*	23	11.5	Poor	Poor	Sloughing bark at base, thin crown		tbd	tbd
2227	Douglas-fir	*Pseudotsuga menziesii*	25	12.5	Good	Good			tbd	tbd
2229	Douglas-fir	*Pseudotsuga menziesii*	13	6.5	Fair	Fair	Thin crown		tbd	tbd
2231	Douglas-fir	*Pseudotsuga menziesii*	22	11	Poor	Poor	Red ring rot fruiting bodies on stem		tbd	tbd

Tree No.	Common Name	Scientific Name	DBH[1]	C-Rad[2]	Condition[3]	Structure	Comments	Not On Property	Treatment	Mitigation[4]
2233	Douglas-fir	*Pseudotsuga menziesii*	21	10.5	Poor	Poor	Bark damage at base, thin crown, decay at base		tbd	tbd
2235	Douglas-fir	*Pseudotsuga menziesii*	38	19	Fair	Fair	Thin crown, excavation in root zone		tbd	tbd
2237	Douglas-fir	*Pseudotsuga menziesii*	32	16	Fair	Fair	Data visually collected	x	tbd	tbd
2239	Douglas-fir	*Pseudotsuga menziesii*	35	17.5	Fair	Poor	Insect damage at base, thin crown		tbd	tbd
2241	Douglas-fir	*Pseudotsuga menziesii*	25	12.5	Poor	Poor	Bark damage at base, thin crown		tbd	tbd
2241.1	Douglas-fir	*Pseudotsuga menziesii*	14	7	Dead	Dead			tbd	tbd
2244	Douglas-fir	*Pseudotsuga menziesii*	29	14.5	Fair	Fair	Thin crown, decay at base		tbd	tbd
2246	Douglas-fir	*Pseudotsuga menziesii*	28	14	Fair	Fair	Thin crown		tbd	tbd
2248	Douglas-fir	*Pseudotsuga menziesii*	47	23.5	Good	Good			tbd	tbd
2250	Douglas-fir	*Pseudotsuga menziesii*	23	11.5	Fair	Fair	Decay at base, thin crown, barbed wire in base		tbd	tbd
2252	Douglas-fir	*Pseudotsuga menziesii*	14	7	Fair	Fair	Thin crown, soil around base		tbd	tbd
2254	Douglas-fir	*Pseudotsuga menziesii*	14	7	Fair	Fair	Thin crown		tbd	tbd
2256	Douglas-fir	Pseudotsuga menziesii	16	8	Fair	Fair	Thin crown		tbd	tbd
2258	Douglas-fir	*Pseudotsuga menziesii*	23	11.5	Good	Poor	Excavation in root zone, bark damage at base		tbd	tbd
2260	Douglas-fir	Pseudotsuga menziesii	16	8	Fair	Fair	Bark damage at base, thin crown		tbd	tbd
2262	Douglas-fir	*Pseudotsuga menziesii*	26	13	Fair	Fair	Contorted stem, thin crown		tbd	tbd
2264	Douglas-fir	*Pseudotsuga menziesii*	13	6.5	Poor	Poor	Contorted top, bark damage at base, thin crown		tbd	tbd
2266	Douglas-fir	*Pseudotsuga menziesii*	11	5.5	Fair	Fair	Thin crown, rock piled at base		tbd	tbd
2268	Douglas-fir	*Pseudotsuga menziesii*	26	13	Poor	Poor	Thin crown, ivy at base		tbd	tbd
2270	Douglas-fir	*Pseudotsuga menziesii*	32	16	Poor	Poor	Decay at base		tbd	tbd
2272	Douglas-fir	*Pseudotsuga menziesii*	46	23	Fair	Fair	Old wound with decay at base, thin crown		tbd	tbd
2274	Douglas-fir	*Pseudotsuga menziesii*	16	8	Good	Good	Data visually collected	x	tbd	tbd
2276	Douglas-fir	*Pseudotsuga menziesii*	17	8.5	Good	Good	Data visually collected	x	tbd	tbd
2278	Douglas-fir	*Pseudotsuga menziesii*	14	7	Poor	Poor	Thin crown, bark damage at base, appears to be on edge of property line		tbd	tbd
2280	Douglas-fir	*Pseudotsuga menziesii*	32	16	Poor	Fair	Decay at base, thin crown		tbd	tbd
2282	Douglas-fir	*Pseudotsuga menziesii*	31	15.5	Poor	Poor	Decay at base, thin crown		tbd	tbd
2284	Douglas-fir	*Pseudotsuga menziesii*	20	10	Poor	Poor	Decay at base		tbd	tbd
2286	Douglas-fir	*Pseudotsuga menziesii*	33	16.5	Fair	Fair	Thin crown		tbd	tbd
2288	Douglas-fir	*Pseudotsuga menziesii*	32	16	Fair	Fair	Thin crown		tbd	tbd
2290	Douglas-fir	*Pseudotsuga menziesii*	17	8.5	Very Poor	Very Poor	Dead top		tbd	tbd
2292	Douglas-fir	*Pseudotsuga menziesii*	18	9	Fair	Fair	Ivy covering base, thin crown		tbd	tbd
2294	Douglas-fir	*Pseudotsuga menziesii*	31	15.5	Poor	Poor	Decay at base, ivy covering base		tbd	tbd
2296	Douglas-fir	*Pseudotsuga menziesii*	41	20.5	Fair	Poor	Decay at base, thin crown		tbd	tbd

Tree No.	Common Name	Scientific Name	DBH[1]	C-Rad[2]	Condition[3]	Structure	Comments	Not On Property	Treatment	Mitigation[4]
2298	Douglas-fir	*Pseudotsuga menziesii*	39	19.5	Fair	Fair	Thin crown		tbd	tbd
2300	Douglas-fir	*Pseudotsuga menziesii*	16	8	Fair	Fair	Thin crown		tbd	tbd
2302	Douglas-fir	*Pseudotsuga menziesii*	16	8	Poor	Poor	Decay in stem at 20', thin crown		tbd	tbd
2304	Douglas-fir	*Pseudotsuga menziesii*	24	12	Good	Fair	Fence in base		tbd	tbd
2306	Douglas-fir	*Pseudotsuga menziesii*	54	27	Fair	Fair	Broken limb at base, thin crown		tbd	tbd
2308	Douglas-fir	*Pseudotsuga menziesii*	18	9	Fair	Fair	Thin crown		tbd	tbd
2310	Douglas-fir	*Pseudotsuga menziesii*	13	6.5	Fair	Fair	Thin crown		tbd	tbd
2312	Douglas-fir	*Pseudotsuga menziesii*	14	7	Poor	Poor	Thin crown		tbd	tbd
2314	Douglas-fir	*Pseudotsuga menziesii*	16	8	Poor	Poor	Thin crown		tbd	tbd
2316	Douglas-fir	*Pseudotsuga menziesii*	25	12.5	Fair	Fair	Ivy covering base		tbd	tbd
2318	Douglas-fir	*Pseudotsuga menziesii*	24	12	Fair	Fair	Ivy covering base		tbd	tbd
2320	Douglas-fir	*Pseudotsuga menziesii*	39	19.5	Good	Fair	Pistol butt		tbd	tbd
2322	Douglas-fir	*Pseudotsuga menziesii*	23	11.5	Fair	Fair	Ivy covering base		tbd	tbd
2324	Douglas-fir	*Pseudotsuga menziesii*	23	11.5	Fair	Fair	Ivy covering base		tbd	tbd
2326	Douglas-fir	*Pseudotsuga menziesii*	15	7.5	Fair	Fair	Ivy growing on stem		tbd	tbd
2328	Douglas-fir	*Pseudotsuga menziesii*	20	10	Good	Good	Data visually collected	x	tbd	tbd
2330	Douglas-fir	*Pseudotsuga menziesii*	16	8	Poor	Poor	Data visually collected	x	tbd	tbd
2332	Douglas-fir	*Pseudotsuga menziesii*	25	12.5	Good	Good			tbd	tbd
2334	Douglas-fir	*Pseudotsuga menziesii*	18	9	Fair	Fair	Data visually collected	x	tbd	tbd
2336	Douglas-fir	*Pseudotsuga menziesii*	18	9	Fair	Fair	Data visually collected	x	tbd	tbd
2338	Douglas-fir	*Pseudotsuga menziesii*	32	16	Good	Good	Data visually collected	x	tbd	tbd
2340	Douglas-fir	*Pseudotsuga menziesii*	22	11	Good	Fair	Bark damage on roots, appears to be on edge of property line		tbd	tbd
2342	Douglas-fir	*Pseudotsuga menziesii*	25	12.5	Fair	Fair	Thin crown		tbd	tbd
2344	Douglas-fir	*Pseudotsuga menziesii*	16	8	Fair	Fair	Thin crown		tbd	tbd
2346	Douglas-fir	*Pseudotsuga menziesii*	14	7	Fair	Poor	Decay in stem, bark damage at base		tbd	tbd
2348	Douglas-fir	*Pseudotsuga menziesii*	25	12.5	Poor	Poor	Decay in stem, thin crown		tbd	tbd
2350	Douglas-fir	*Pseudotsuga menziesii*	39	19.5	Good	Good			tbd	tbd
2352	Douglas-fir	*Pseudotsuga menziesii*	18	9	Poor	Poor	Exposed roots, thin crown		tbd	tbd
2354	Douglas-fir	*Pseudotsuga menziesii*	19	9.5	Fair	Fair	Thin crown		tbd	tbd
2356	Douglas-fir	*Pseudotsuga menziesii*	23	11.5	Good	Good			tbd	tbd
2358	Pacific madrone	*Arbutus menziesii*	18	9	Poor	Fair	Data visually collected	x	tbd	tbd
2360	Douglas-fir	*Pseudotsuga menziesii*	20	10	Good	Good	Data visually collected	x	tbd	tbd
2362	Douglas-fir	*Pseudotsuga menziesii*	16	8	Good	Fair	Data visually collected	x	tbd	tbd
2364	Douglas-fir	*Pseudotsuga menziesii*	27	13.5	Fair	Good	Data visually collected	x	tbd	tbd
2366	Douglas-fir	*Pseudotsuga menziesii*	13	6.5	Poor	Fair	Thin crown, appears to be on edge of property line		tbd	tbd
2368	Douglas-fir	*Pseudotsuga menziesii*	22	11	Good	Good	Data visually collected	x	tbd	tbd
2370	Douglas-fir	*Pseudotsuga menziesii*	21	10.5	Fair	Good	Thin crown		tbd	tbd
2372	Douglas-fir	*Pseudotsuga menziesii*	26	13	Good	Good			tbd	tbd

Tree No.	Common Name	Scientific Name	DBH[1]	C-Rad[2]	Condition[3]	Structure	Comments	Not On Property	Treatment	Mitigation[4]
2374	Douglas-fir	*Pseudotsuga menziesii*	12	6	Good	Good	Appears to be on edge of property line		tbd	tbd
2376	Douglas-fir	*Pseudotsuga menziesii*	34	17	Good	Good	Data visually collected	x	tbd	tbd
2378	Douglas-fir	*Pseudotsuga menziesii*	14	7	Good	Fair	Data visually collected	x	tbd	tbd
2380	Douglas-fir	*Pseudotsuga menziesii*	25	12.5	Fair	Good	Data visually collected	x	tbd	tbd
2382	Douglas-fir	*Pseudotsuga menziesii*	36	18	Poor	Fair	Ivy covering base, thin crown		tbd	tbd
2384	Douglas-fir	*Pseudotsuga menziesii*	25	12.5	Poor	Poor	Data visually collected	x	tbd	tbd
2386	Douglas-fir	*Pseudotsuga menziesii*	22	11	Good	Good	Data visually collected	x	tbd	tbd
2388	Douglas-fir	*Pseudotsuga menziesii*	25	12.5	Poor	Poor	Data visually collected	x	tbd	tbd
2390	Douglas-fir	*Pseudotsuga menziesii*	36	18	Fair	Fair	Data visually collected	x	tbd	tbd
2392	Douglas-fir	*Pseudotsuga menziesii*	36	18	Fair	Good	Data visually collected	x	tbd	tbd
2398	Douglas-fir	*Pseudotsuga menziesii*	17	8.5	Good	Good	Data visually collected	x	tbd	tbd
2400	bigleaf maple	*Acer macrophyllum*	10	5	Good	Fair	Data visually collected	x	tbd	tbd
2420	Douglas-fir	*Pseudotsuga menziesii*	14	7	Fair	Poor	Data visually collected	x	tbd	tbd
2423	Douglas-fir	*Pseudotsuga menziesii*	28	14	Good	Fair	Data visually collected	x	tbd	tbd
2425	Douglas-fir	*Pseudotsuga menziesii*	10	5	Poor	Poor	Data visually collected	x	tbd	tbd
2427	Douglas-fir	*Pseudotsuga menziesii*	32	16	Fair	Good	Data visually collected	x	tbd	tbd
2430	Douglas-fir	*Pseudotsuga menziesii*	17	8.5	Good	Fair	Data visually collected	x	tbd	tbd
2432	Douglas-fir	*Pseudotsuga menziesii*	27	13.5	Good	Fair	Data visually collected	x	tbd	tbd
2434	Douglas-fir	*Pseudotsuga menziesii*	21	10.5	Fair	Fair	Fence in base, thin crown, appears to be on edge of property line		tbd	tbd
2437	Douglas-fir	*Pseudotsuga menziesii*	28	14	Good	Fair	Data visually collected	x	tbd	tbd
2439	Douglas-fir	*Pseudotsuga menziesii*	16	8	Good	Good	Data visually collected	x	tbd	tbd
2441	Douglas-fir	*Pseudotsuga menziesii*	28	14	Fair	Fair	Thin crown		tbd	tbd
2443	Douglas-fir	*Pseudotsuga menziesii*	20	10	Fair	Fair	Thin crown, bark damage at base		tbd	tbd
2445	Douglas-fir	*Pseudotsuga menziesii*	20	10	Fair	Fair	Thin crown		tbd	tbd
2447	Douglas-fir	*Pseudotsuga menziesii*	13	6.5	Good	Fair	Bark damage at base		tbd	tbd
2449	Douglas-fir	*Pseudotsuga menziesii*	22	11	Fair	Fair	Thin crown		tbd	tbd
2451	Douglas-fir	*Pseudotsuga menziesii*	28	14	Fair	Poor	Wood pecker damage at base, thin crown, decay at base		tbd	tbd
2453	Douglas-fir	*Pseudotsuga menziesii*	12	6	Fair	Fair	Thin crown		tbd	tbd
2455	Douglas-fir	*Pseudotsuga menziesii*	18	9	Poor	Poor	Red ring rot, thin crown		tbd	tbd
2458	Douglas-fir	*Pseudotsuga menziesii*	25	12.5	Good	Good	Data visually collected	x	tbd	tbd
2460	Douglas-fir	*Pseudotsuga menziesii*	18	9	Good	Good	Data visually collected	x	tbd	tbd
2462	Douglas-fir	*Pseudotsuga menziesii*	12	6	Fair	Fair	Thin crown		tbd	tbd
2464	Douglas-fir	*Pseudotsuga menziesii*	14	7	Poor	Poor	Broken top, decay in stem		tbd	tbd
2466	Douglas-fir	*Pseudotsuga menziesii*	10	5	Fair	Fair	Thin crown		tbd	tbd
2468	Douglas-fir	*Pseudotsuga menziesii*	23	11.5	Fair	Fair	Co-dominant stem with included bark		tbd	tbd
2470	Douglas-fir	*Pseudotsuga menziesii*	23	11.5	Fair	Fair	Co-dominant stem with included bark, ivy covering stem		tbd	tbd

Tree No.	Common Name	Scientific Name	DBH[1]	C-Rad[2]	Condition[3]	Structure	Comments	Not On Property	Treatment	Mitigation[4]
2472	Douglas-fir	*Pseudotsuga menziesii*	10	5	Good	Fair	Data visually collected	x	tbd	tbd
2475	Douglas-fir	*Pseudotsuga menziesii*	40	20	Good	Good	Data visually collected	x	tbd	tbd
2477	Oregon white oak	*Quercus garryana*	12	6	Fair	Fair	Data visually collected	x	tbd	tbd
2479	Douglas-fir	*Pseudotsuga menziesii*	26	13	Fair	Fair	Thin crown, fence in base		tbd	tbd
2481	Douglas-fir	*Pseudotsuga menziesii*	16	8	Fair	Fair	Thin crown		tbd	tbd
2483	Douglas-fir	*Pseudotsuga menziesii*	18	9	Good	Good			tbd	tbd
2485	Douglas-fir	*Pseudotsuga menziesii*	14	7	Fair	Fair	Bark damage at base		tbd	tbd
2487	Douglas-fir	*Pseudotsuga menziesii*	26	13	Poor	Poor	Broken limbs in crown, thin crown		tbd	tbd
2489	Douglas-fir	*Pseudotsuga menziesii*	33	16.5	Poor	Poor	Thin crown		tbd	tbd
2496	Douglas-fir	*Pseudotsuga menziesii*	24	12	Fair	Fair	Thin crown		tbd	tbd
2498	Douglas-fir	*Pseudotsuga menziesii*	27	13.5	Fair	Fair	Co-dominant stem with included bark, thin crown		tbd	tbd
2500	Douglas-fir	*Pseudotsuga menziesii*	19	9.5	Dead	Dead			tbd	tbd
2502	Douglas-fir	*Pseudotsuga menziesii*	24	12	Good	Good			tbd	tbd
2504	Douglas-fir	*Pseudotsuga menziesii*	16	8	Fair	Fair	Thin crown		tbd	tbd
2506	Douglas-fir	*Pseudotsuga menziesii*	20	10	Fair	Fair	Bark damage at base, thin crown		tbd	tbd
2508	Douglas-fir	*Pseudotsuga menziesii*	24	12	Poor	Fair	Thin crown		tbd	tbd
2587	Douglas-fir	*Pseudotsuga menziesii*	36	18	Fair	Poor	Co-dominant stem with included bark		tbd	tbd

[1]**DBH** is the trunk diameter in inches measured per International Society of Arboriculture (ISA) standards.

[2]**C-Rad** is the approximate crown radius in feet.

[3]**Condition and Structure** ratings range from dead, very poor, poor, fair, to good.

[4]**Mitigation** is recommended for the removal of trees over 6-inch DBH. Trees that are less than 6-inch DBH are not recommended for mitigation.

DRAFT

REQUESTED BY:

LEE LEIGHTON (MACKENZIE)

FOR: DELTA LOGISTICS
9835 SW COMMERCE CIRCLE
WILSONVILLE, OR 97070

TREE SURVEY

9710 SW DAY ROAD

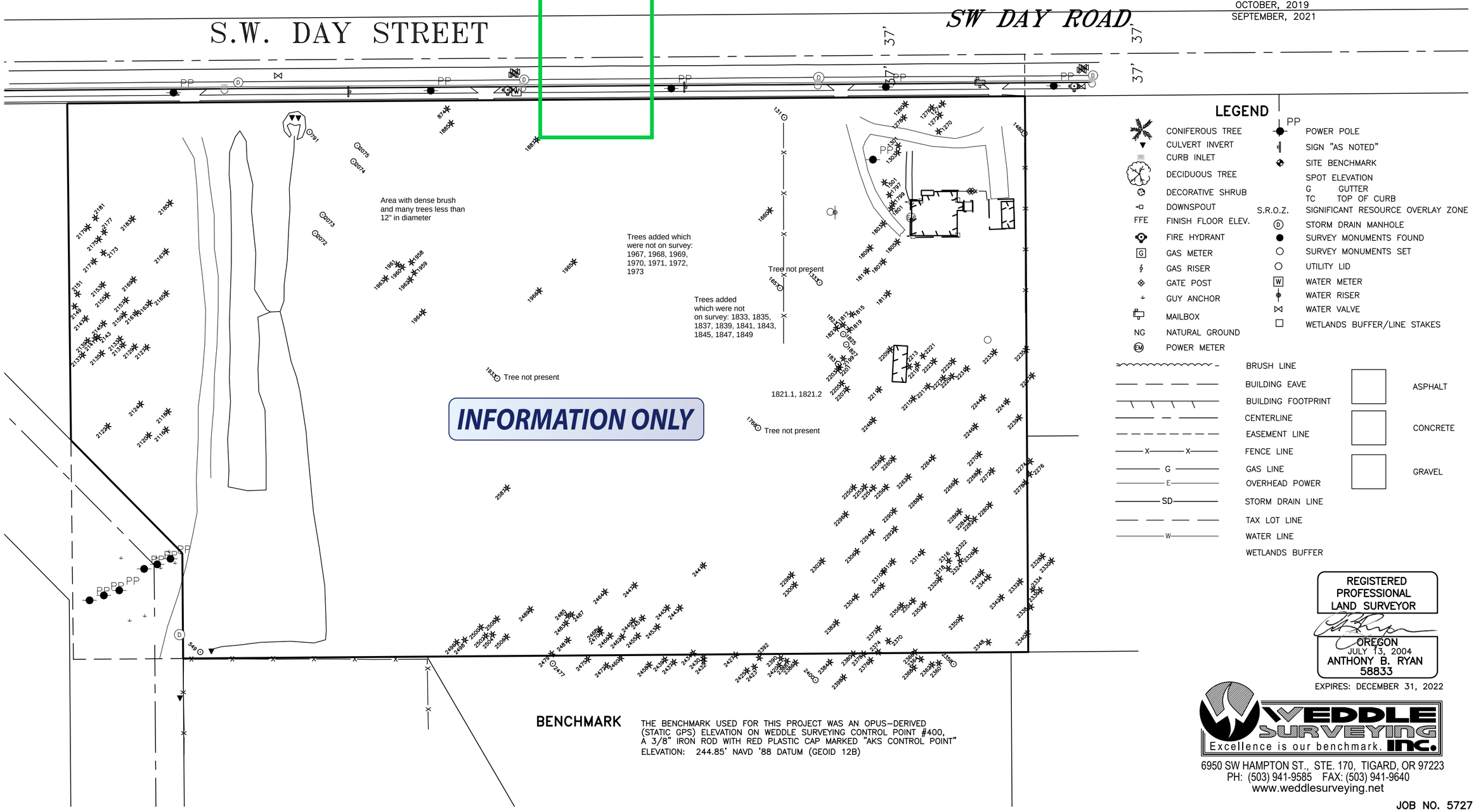
LOCATED IN THE SW 1/4 AND THE NW 1/4
SECTION 2, T.3S., R.1W., W.M.
WASHINGTON COUNTY, OREGON

SURVEYOR'S NOTES

1. THE BASIS OF BEARINGS FOR THIS SURVEY IS PER SURVEY NO. 29,223, WASHINGTON COUNTY SURVEY RECORDS. THIS IS NOT A RECORDABLE BOUNDARY SURVEY, A RECORD OF SURVEY IS IN PROGRESS.
2. UNDERGROUND UTILITIES ARE SHOWN PER SURFACE MARKINGS. THE SURVEYOR MAKES NO GUARANTEE AS TO THE EXACT LOCATION, EXISTENCE, NON-EXISTENCE OR COMPLETENESS OF ANY SUBSURFACE UTILITIES SHOWN, OR NOT SHOWN ON THE MAP. CALL 811 BEFORE DIGGING.
3. TOTAL SURVEYED SITE AREA = 9.169 ACRES
BUILDABLE AREA EAST OF EASTERLY S.R.O.Z. = 6.338 ACRES
4. DUE TO THE DENSE, OVERGROWN NATURE OF VEGETATION ON SITE, NOT ALL TREES WERE MAPPED AND A 3-D SURFACE OVER THE ENTIRE SITE WAS NOT OBTAINABLE.

0 60 120 180

SCALE: 1" = 60'
OCTOBER, 2019
SEPTEMBER, 2021



LEGEND

	CONIFEROUS TREE	PP	POWER POLE
	CULVERT INVERT		SIGN "AS NOTED"
	CURB INLET		SITE BENCHMARK
	DECIDUOUS TREE		SPOT ELEVATION
	DECORATIVE SHRUB	G	GUTTER
	DOWNSPOUT	TC	TOP OF CURB
FFE	FINISH FLOOR ELEV.	S.R.O.Z.	SIGNIFICANT RESOURCE OVERLAY ZONE
	FIRE HYDRANT	D	STORM DRAIN MANHOLE
G	GAS METER		SURVEY MONUMENTS FOUND
	GAS RISER		SURVEY MONUMENTS SET
	GATE POST		UTILITY LID
	GUY ANCHOR	W	WATER METER
	MAILBOX		WATER RISER
NG	NATURAL GROUND		WATER VALVE
EM	POWER METER		WETLANDS BUFFER/LINE STAKES

	BRUSH LINE		ASPHALT
	BUILDING EAVE		CONCRETE
	BUILDING FOOTPRINT		GRAVEL
	CENTERLINE		
	EASEMENT LINE		
X X	FENCE LINE		
G	GAS LINE		
E	OVERHEAD POWER		
SD	STORM DRAIN LINE		
	TAX LOT LINE		
W	WATER LINE		
	WETLANDS BUFFER		

BENCHMARK

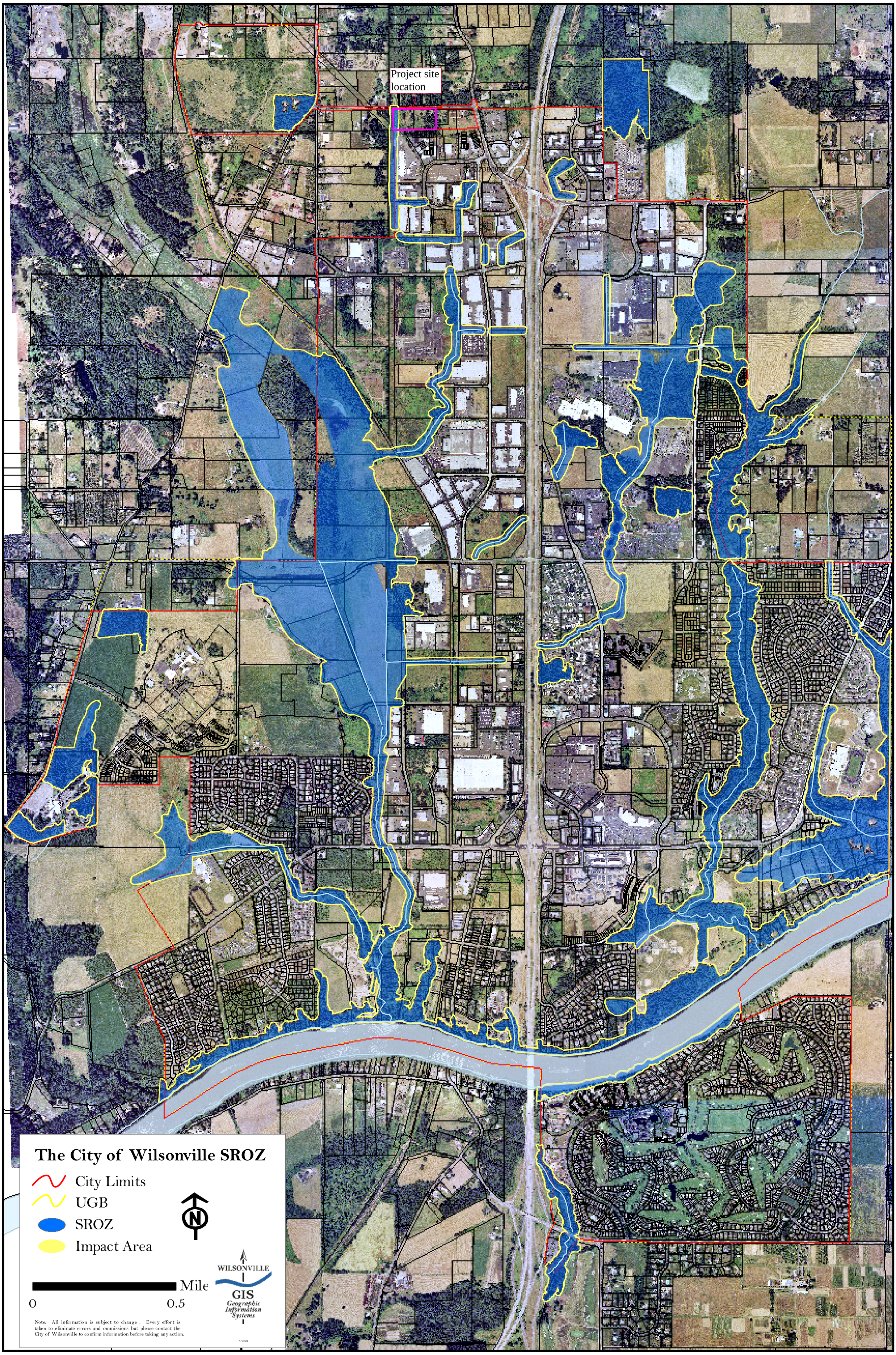
THE BENCHMARK USED FOR THIS PROJECT WAS AN OPUS-DERIVED (STATIC GPS) ELEVATION ON WEDDLE SURVEYING CONTROL POINT #400, A 3/8" IRON ROD WITH RED PLASTIC CAP MARKED "AKS CONTROL POINT"
ELEVATION: 244.85' NAVD '88 DATUM (GEOID 12B)

REGISTERED PROFESSIONAL LAND SURVEYOR
OREGON
JULY 13, 2004
ANTHONY B. RYAN
58833
EXPIRES: DECEMBER 31, 2022

WEDDLE SURVEYING, INC.
Excellence is our benchmark.
6950 SW HAMPTON ST., STE. 170, TIGARD, OR 97223
PH: (503) 941-9585 FAX: (503) 941-9640
www.weddlesurveying.net

JOB NO. 5727

APPENDIX D. WILSONVILLE SIGNIFICANT RESOURCE OVERLAY ZONE MAP


Project site location
3S102DB00302
31W
The City of Wilsonville SROZ
City Limits
UGB
SROZ
Impact Area
N
0
0.5
Mile
WILSONVILLE
GIS
Geographic Information Systems
Note: All information is subject to change . Every effort is taken to eliminate errors and ommissions but please contact the City of Wilsonville to confirm information before taking any action.
5/2007

APPENDIX E. GROUND LEVEL PHOTOGRAPHS

Photo Point 1. From forested hillside in the eastern portion of the site facing north (photo date: 10/23/2019).

Photo Point 1. From forested hillside in the eastern portion of the site facing east (photo date: 10/23/2019).

Photo Point 1. From forested hillside in the eastern portion of the site facing south (photo date: 10/23/2019).

Photo Point 1. From forested hillside in the eastern portion of the site facing west (photo date: 10/23/2019).

Photo Point 2. From the bottom of the hill in the central portion of the site facing north (photo date: 10/23/2019).

Photo Point 2. From the bottom of the hill in the central portion of the site facing east (photo date: 10/23/2019).

Photo Point 2. From the bottom of the hill in the central portion of the site facing south (photo date: 10/23/2019).

Photo Point 2. From the bottom of the hill in the central portion of the site facing west (photo date: 10/23/2019).

Photo Point 3. From the northern portion of Wetland 1 (CWM site) facing north toward wetland area (photo date: 10/23/2019).

Photo Point 3. From the northern portion of Wetland 1 (CWM site) facing east toward wetland boundary (photo date: 10/23/2019).

Photo Point 3. From the northern portion of Wetland 1 (CWM site) facing south toward wetland area (photo date: 10/23/2019).

Photo Point 3. From the northern portion of Wetland 1 (CWM site) facing west toward wetland boundary (photo date: 10/23/2019).

Photo Point 4. From the southern portion of Wetland 1 (CWM site) facing north along wetland boundary at toe of slope (photo date: 10/23/2019).

Photo Point 4. From Wetland 1 (CWM site) facing east toward wetland area (photo date: 10/23/2019).

Photo Point 4. From the southern portion of Wetland 1 (CWM site) facing south along wetland boundary at toe of slope (photo date: 10/23/2019).

Photo Point 4. From Wetland 1 (CWM site) facing west toward access road and upland forest area (photo date: 10/23/2019).

Photo Point 5. From the northern portion of Tapman Creek (wetland drainage) facing north toward double culverts (photo date: 10/23/2019).

Photo Point 5. From the northern portion of Tapman Creek (wetland drainage) facing east toward drainage bank (photo date: 10/23/2019).

Photo Point 5. From the northern portion of Tapman Creek (wetland drainage) facing south, downslope (photo date: 10/23/2019).

Photo Point 5. From the northern portion of Tapman Creek (wetland drainage) facing west toward drainage bank (photo date: 10/23/2019).

Photo Point 6. From Wetland 2 facing north toward wetland area (photo date: 10/23/2019).

Photo Point 6. From Wetland 2 facing east toward wetland boundary (photo date: 10/23/2019).

Photo Point 6. From Wetland 2 facing south toward wetland area (photo date: 10/23/2019).

Photo Point 6. From Wetland 2 facing west toward wetland boundary (photo date: 10/23/2019).

Photo Point 7. From the top of bank of the CWM site (Wetland 1) facing south (photo date: 9/1/2021).

Photo Point 7. From the top of bank of the CWM site (Wetland 1) facing north (photo date: 9/1/2021).

Photo Point 7. From the top of bank of the CWM site (Wetland 1) facing west (photo date: 9/1/2021).

Photo Point 8. From the top of bank of Tapman Creek (wetland drainage) in the central portion facing north, upslope (photo date: 9/1/2021).

Photo Point 8. From the top of bank of Tapman Creek (wetland drainage) in the central portion facing east across the drainage (photo date: 9/1/2021).

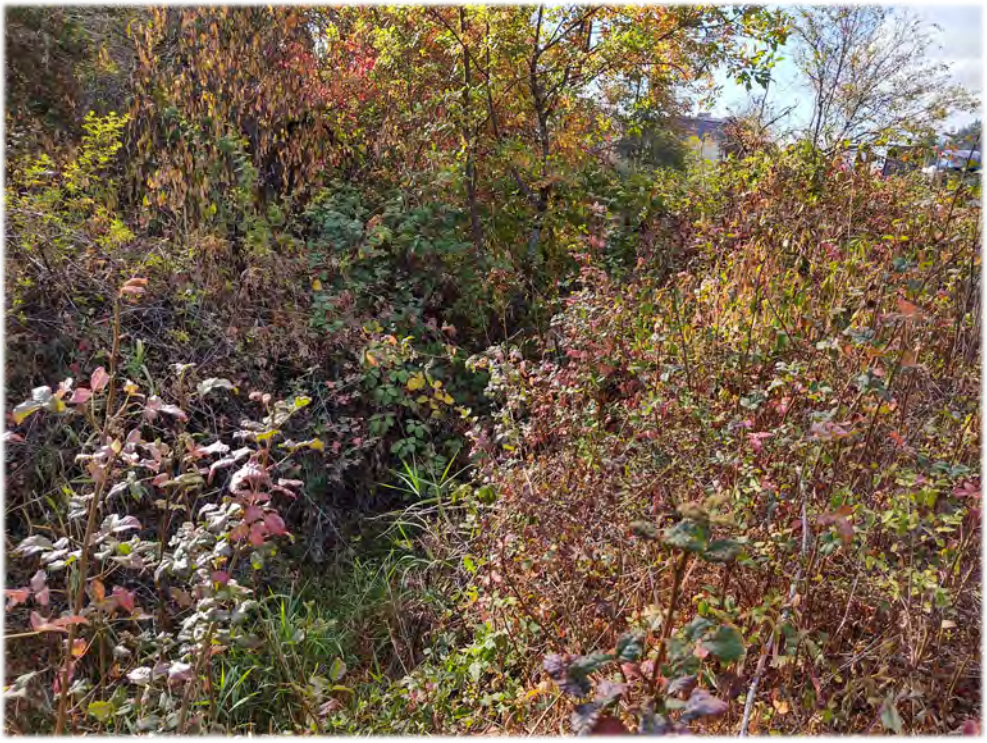


Photo Point 8. From the top of bank of Tapman Creek (wetland drainage) in the central portion facing south, downslope (photo date: 9/1/2021).

Photo Point 8. From the top of bank of Tapman Creek (wetland drainage) in the central portion facing west toward CWM site (Wetland 1) (photo date: 9/1/2021).

Photo Point 9. From the recently graveled area facing west (photo date: 9/1/2021).

Photo Point 9. From the recently graveled area facing north (photo date: 9/1/2021).

Photo Point 9. From the recently graveled area facing east (photo date: 9/1/2021).

Photo Point 9. From the recently graveled area facing south (photo date: 9/1/2021).

Photo Point 10. From the southern end of Tapman Creek facing west (photo date: 9/1/2021).

Photo Point 10. From the southern end of Tapman Creek facing east (photo date: 9/1/2021).

Schott & Associates
P.O. Box 589
Aurora, OR. 97002
503.678.6007

APPENDIX F. OFWAM FORMS

OREGON FRESHWATER WETLAND ASSESSMENT METHODOLOGY (OFWAM)
ASSESSMENT QUESTIONS

Wetland 1

Wildlife Habitat (WH)

1. How many Cowardin wetland classes are present (include vertical strata ≥20% cover)?
   a. 2 or more b. 1 with >5 plant species c. 1 w/ ≤5 plant species
2. What is the dominant wetland vegetation cover type?
   a. Woody vegetation b. Emergent vegetation and ponding, or open water only
   c. Emergent vegetation or wet meadow
3. What is the degree of Cowardin class interspersion for the wetland being observed (Fig. 3)?
   a. High b. Moderate c. Low
4. How many acres of unvegetated open water are present?
   a. More than 1 acre b. Between 0.5 and 1 acre c. Less than 0.5 acre
5. How is the wetland connected to another body of water, such as a stream, lake or pond (F. 2)?
   a. The wetland is connected by surface water to another body of water
   b. No surface water connection exists, but other bodies of water lie within 1 mile
   c. No surface water connection exits, and no other bodies of water lie within 1 mile
6. How is the wetland connected to other wetlands?
   a. Connected to other wetlands within a 3-mile radius by a perennial or intermittent stream, irrigation or drainage ditch, culvert, canal or lake
   b. Not connected by surface water, but other unconnected wetlands lie within a 3-mile radius
   c. Not connected to other wetlands by surface waters, and no other unconnected wetlands lie within a 3-mile radius
7. What is the water quality condition of stream reaches in the watershed upstream of the wetland or adjacent to the wetland?
   a. No upstream or adjacent reached are listed as *water quality limited*, and all upstream or adjacent reaches are listed as *no problem* (or no data available) for nonpoint source pollutants
   b. One or more upstream or adjacent reaches are listed in *moderate* water quality condition for nonpoint source pollutants
   c. One or more upstream or adjacent reaches are listed as *water quality limited* or in *severe* water quality condition for nonpoint source pollutants
8. What is the dominant existing land use within 500 feet of the wetland's edge?
   a. Exclusive Forest Use or Open Space b. Agriculture c. Developed uses
9b. What percent of the wetland's edge is bordered by a vegetative buffer at least 25 feet wide?
   a. Greater than 40% b. Between 10 and 40% c. Less than 10%
   Is it 50 feet wide or wider? yes___ no___ notes:

Wildlife Habitat Assessment Criteria	
The wetland provides *diverse* wildlife habitat if:	At least four questions are answered "a," and no more than one is answered "c."
The wetland provides *habitat for some species* if:	Answers do not satisfy the above- or below-listed criteria.
The wetland's wildlife habitat function is *lost or not present* if:	All questions are answered "c."

Fish Habitat (FH)

Part A - Streams

1. What percentage of the stream is shaded by stream-side (riparian) vegetation?
   a. More than 75% b. Between 50 and 75% c. Less than 50%
2. What is the physical character of the stream channel?
   a. The stream is in a natural channel, or modified portions of the stream are returning to a natural channel
   b. Only portions of the stream channel are modified
   c. The stream is extensively modified or confined in a non-vegetated channel or pipe
3. What percentage of the entire stream contains instream structures such as large woody debris, floating submerged vegetation, large rocks or boulders?
   a. More than 25% b. Between 10 and 25% c. Less than 10%
4. What is the water quality condition of stream reaches in the watershed upstream of the wetland or adjacent to the wetland (= WH7)?
   a. No upstream or adjacent reached are listed as *water quality limited*, and all upstream or adjacent reaches are listed as *no problem* (or no data available) for nonpoint source pollutants
   b. One or more upstream or adjacent reaches are listed in *moderate* water quality condition for nonpoint source pollutants
   c. One or more upstream or adjacent reaches are listed as *water quality limited* or in *severe* water quality condition for nonpoint source pollutants
5. What is the dominant existing land use within 500 feet of the wetland's edge (= WH8)?
   a. Exclusive Forest Use or Open Space b. Agriculture c. Developed uses
6. Are fish present in a stream, lake or pond associated with the wetland?
   a. Salmon, trout or sensitive species are present at some time during the year
   b. Species not covered in "a" are present at some time during the year
   c. No species are present at any time during the year

Part B - Lakes and Ponds

1. Does the lake or pond contain areas of both deep and shallow water?
   a. Yes b. Cannot be determined. c. No
2. What percentage of the wetland complex contains cover objects such as submerged logs, floating or submerged vegetation, large rocks or boulders?
   a. More than 25% b. Between 10 and 75% c. Less than 10%
3. What percentage of the shoreline is shaded at the water's edge by forested or scrub-shrub vegetation?
   a. 60% or more b. Between 20 and 59% c. Less than 20%
4. What is the water quality condition of stream reaches in the watershed upstream of the wetland or adjacent to the wetland (= WH7)?
   a. No upstream or adjacent reached are listed as *water quality limited*, and all upstream or adjacent reaches are listed as *no problem* (or no data available) for nonpoint source pollutants
   b. One or more upstream or adjacent reaches are listed in *moderate* water quality condition for nonpoint source pollutants
   c. One or more upstream or adjacent reaches are listed as *water quality limited* or in *severe* water quality condition for nonpoint source pollutants
5. What is the dominant existing land use within 500 feet of the wetland's edge (= WH8)?
   a. Exclusive Forest Use or Open Space b. Agriculture c. Developed uses
6. Are fish in a stream, lake or pond associated with the wetland?
   a. Salmon, trout or sensitive species are present at some time during the year
   b. Species not covered in "a" are present at some time during the year

c. No species are present at any time during the year

Fish Habitat Assessment Criteria	
The wetland's fish habitat function is *intact* if:	Three or more questions are answered "a," and no more than one is answered "c."
The wetlands's fish habitat function is *impacted or degraded* if:	Answers do not satisfy the above- or below-listed criteria.
The wetlands's fish habitat function is *lost or not present* if:	All questions are answered "c."

Water Quality (Pollutant Removal; WQ)

1. What is the wetland's primary source of water?
   a. Surface flow, including streams and ditches b. Precipitation or sheet flow
   c. Groundwater, including seeps and springs
2. Is there evidence of flooding or ponding during a portion of the growing season?
   a. Yes b. Unable to determine or not applicable c. No
3. What is the degree of wetland vegetation cover?
   a. High (>60%; OW<40%) b. Moderate (~60%; OW=40%) c. Low (<60%; OW>40%)
4. What is the wetland's area in acres?
   a. >5 acres
   b. Between 0.5 acre and 5 acres; or <0.5 acres and the wetland is connected to other wetlands within a 3-mile radius by a perennial or intermittent stream, irrigation or drainage ditch, canal or lake
   c. <0.5 acre, and the wetland is not connected to other wetlands within a 3-mile radius by a perennial or intermittent stream, irrigation or drainage ditch, canal or lake
5. What is the dominant, existing land use within 500 feet of the wetland's edge (opposite WH8)?
   a. Developed uses b. Agriculture c. Exclusive Forest Use or Open Space
6. What is the water quality condition of stream reaches in the watershed upstream of the wetland or adjacent to the wetland (opposite WH7)?
   a. One or more upstream or adjacent reaches are listed as *water quality limited* or in *severe* water quality condition for nonpoint source pollutants
   b. One or more upstream or adjacent reaches are listed in *moderate* water quality condition for nonpoint source pollutants
   c. No upstream or adjacent reached are listed as *water quality limited*, and all upstream or adjacent reaches are listed as *no problem* (or no data available) for nonpoint source pollutants

Water Quality Assessment Criteria	
A wetland's water-quality function is *intact* if:	Four or more questions are answered "a."
A wetland's water-quality function is *impacted or degraded* if:	Answers do not satisfy the above- or below-listed criteria.
A wetlands's water-quality function is *lost or not present* if:	Four or more questions are answered "c."

Hydrologic Control (Flood Control & Water Supply; HC)

1. Is all or part of the wetland located within the 100-year floodplain or within an enclosed basin?
   a. Yes b. No
2. Is there evidence of flooding or ponding during a portion of the growing season?
   a. Yes b. Unable to determine or not applicable c. No
3. What is the wetland's area in acres?
   a. >5 acres b. Between 0.5 and 5 acres c. <0.5 acre
4. Is waterflow out of the wetland restricted (eg., beaver dam, concrete structure, undersized culvert)?
   a. Yes, the outlet is restricted or the wetland has not outlet
   b. Minor restrictions slow down the water (i.e., undersized culvert)
   c. No the outlet has unrestricted flow
5. What is the dominant wetland vegetation cover type (=WH2)?
   a. Woody vegetation
   b. Emergent vegetation and ponding, or open water only
   c. Emergent vegetation or wet meadow
6. What is the dominant existing land use within 500 feet of the wetland on the downstream or down-slope edge of the wetland?
   a. Developed uses b. Agriculture c. Exclusive Forest Use or Open Space
7. What is the dominant land use in the watershed upstream from the assessment area?
   a. Urban or Urbanizing b. Agriculture c. Forested or Natural Area

Hydrologic Control Assessment Criteria	
A wetland's hydrologic control function is *intact* if:	Four or more questions are answered "a."
A wetland's hydrologic control function is *impacted of degraded* if:	Answers do not satisfy the above- or below-listed criteria.
A wetland's hydrologic control function is *lost or not present* if:	Four or more questions are answered "c."

OFWAM FUNCTION SUMMARY

WH: Some habitat

FH: Impacted or degraded

WQ: Intact

HC: Impacted or degraded

OREGON FRESHWATER WETLAND ASSESSMENT METHODOLOGY (OFWAM)
ASSESSMENT QUESTIONS

Wetland 2

Wildlife Habitat (WH)

1. How many Cowardin wetland classes are present (include vertical strata ≥20% cover)?
   a. 2 or more b. 1 with >5 plant species c. 1 w/ ≤5 plant species
2. What is the dominant wetland vegetation cover type?
   a. Woody vegetation b. Emergent vegetation and ponding, or open water only
   c. Emergent vegetation or wet meadow
3. What is the degree of Cowardin class interspersion for the wetland being observed (Fig. 3)?
   a. High b. Moderate c. Low
4. How many acres of unvegetated open water are present?
   a. More than 1 acre b. Between 0.5 and 1 acre c. Less than 0.5 acre
5. How is the wetland connected to another body of water, such as a stream, lake or pond (F. 2)?
   a. The wetland is connected by surface water to another body of water
   b. No surface water connection exists, but other bodies of water lie within 1 mile
   c. No surface water connection exits, and no other bodies of water lie within 1 mile
6. How is the wetland connected to other wetlands?
   a. Connected to other wetlands within a 3-mile radius by a perennial or intermittent stream, irrigation or drainage ditch, culvert, canal or lake
   b. Not connected by surface water, but other unconnected wetlands lie within a 3-mile radius
   c. Not connected to other wetlands by surface waters, and no other unconnected wetlands lie within a 3-mile radius
7. What is the water quality condition of stream reaches in the watershed upstream of the wetland or adjacent to the wetland?
   a. No upstream or adjacent reached are listed as *water quality limited*, and all upstream or adjacent reaches are listed as *no problem* (or no data available) for nonpoint source pollutants
   b. One or more upstream or adjacent reaches are listed in *moderate* water quality condition for nonpoint source pollutants
   c. One or more upstream or adjacent reaches are listed as *water quality limited* or in *severe* water quality condition for nonpoint source pollutants
8. What is the dominant existing land use within 500 feet of the wetland's edge?
   a. Exclusive Forest Use or Open Space b. Agriculture c. Developed uses
9b. What percent of the wetland's edge is bordered by a vegetative buffer at least 25 feet wide?
   a. Greater than 40% b. Between 10 and 40% c. Less than 10%
   Is it 50 feet wide or wider? yes___ no___ notes:

Wildlife Habitat Assessment Criteria	
The wetland provides *diverse* wildlife habitat if:	At least four questions are answered "a," and no more than one is answered "c."
The wetland provides *habitat for some species* if:	Answers do not satisfy the above- or below-listed criteria.
The wetland's wildlife habitat function is *lost or not present* if:	All questions are answered "c."

Fish Habitat (FH)

Part A - Streams

1. What percentage of the stream is shaded by stream-side (riparian) vegetation?
   a. More than 75% b. Between 50 and 75% c. Less than 50%
2. What is the physical character of the stream channel?
   a. The stream is in a natural channel, or modified portions of the stream are returning to a natural channel
   b. Only portions of the stream channel are modified
   c. The stream is extensively modified or confined in a non-vegetated channel or pipe
3. What percentage of the entire stream contains instream structures such as large woody debris, floating submerged vegetation, large rocks or boulders?
   a. More than 25% b. Between 10 and 25% c. Less than 10%
4. What is the water quality condition of stream reaches in the watershed upstream of the wetland or adjacent to the wetland (= WH7)?
   a. No upstream or adjacent reached are listed as *water quality limited*, and all upstream or adjacent reaches are listed as *no problem* (or no data available) for nonpoint source pollutants
   b. One or more upstream or adjacent reaches are listed in *moderate* water quality condition for nonpoint source pollutants
   c. One or more upstream or adjacent reaches are listed as *water quality limited* or in *severe* water quality condition for nonpoint source pollutants
5. What is the dominant existing land use within 500 feet of the wetland's edge (= WH8)?
   a. Exclusive Forest Use or Open Space b. Agriculture c. Developed uses
6. Are fish present in a stream, lake or pond associated with the wetland?
   a. Salmon, trout or sensitive species are present at some time during the year
   b. Species not covered in "a" are present at some time during the year
   c. No species are present at any time during the year

Part B - Lakes and Ponds

1. Does the lake or pond contain areas of both deep and shallow water?
   a. Yes b. Cannot be determined. c. No
2. What percentage of the wetland complex contains cover objects such as submerged logs, floating or submerged vegetation, large rocks or boulders?
   a. More than 25% b. Between 10 and 75% c. Less than 10%
3. What percentage of the shoreline is shaded at the water's edge by forested or scrub-shrub vegetation?
   a. 60% or more b. Between 20 and 59% c. Less than 20%
4 What is the water quality condition of stream reaches in the watershed upstream of the wetland or adjacent to the wetland (= WH7)?
   a. No upstream or adjacent reached are listed as *water quality limited*, and all upstream or adjacent reaches are listed as *no problem* (or no data available) for nonpoint source pollutants
   b. One or more upstream or adjacent reaches are listed in *moderate* water quality condition for nonpoint source pollutants
   c. One or more upstream or adjacent reaches are listed as *water quality limited* or in *severe* water quality condition for nonpoint source pollutants
5. What is the dominant existing land use within 500 feet of the wetland's edge (= WH8)?
   a. Exclusive Forest Use or Open Space b. Agriculture c. Developed uses
6. Are fish in a stream, lake or pond associated with the wetland?
   a. Salmon, trout or sensitive species are present at some time during the year
   b. Species not covered in "a" are present at some time during the year

c. No species are present at any time during the year

Fish Habitat Assessment Criteria	
The wetland's fish habitat function is *intact* if:	Three or more questions are answered "a," and no more than one is answered "c."
The wetlands's fish habitat function is *impacted or degraded* if:	Answers do not satisfy the above- or below-listed criteria.
The wetlands's fish habitat function is *lost or not present* if:	All questions are answered "c."

Water Quality (Pollutant Removal; WQ)

1. What is the wetland's primary source of water?
   a. Surface flow, including streams and ditches b. Precipitation or sheet flow
   c. Groundwater, including seeps and springs
2. Is there evidence of flooding or ponding during a portion of the growing season?
   a. Yes b. Unable to determine or not applicable c. No
3. What is the degree of wetland vegetation cover?
   a. High (>60%; OW<40%) b. Moderate (~60%; OW=40%) c. Low (<60%; OW>40%)
4. What is the wetland's area in acres?
   a. >5 acres
   b. Between 0.5 acre and 5 acres; or <0.5 acres and the wetland is connected to other wetlands within a 3-mile radius by a perennial or intermittent stream, irrigation or drainage ditch, canal or lake
   c. <0.5 acre, and the wetland is not connected to other wetlands within a 3-mile radius by a perennial or intermittent stream, irrigation or drainage ditch, canal or lake
5. What is the dominant, existing land use within 500 feet of the wetland's edge (opposite WH8)?
   a. Developed uses b. Agriculture c. Exclusive Forest Use or Open Space
6. What is the water quality condition of stream reaches in the watershed upstream of the wetland or adjacent to the wetland (opposite WH7)?
   a. One or more upstream or adjacent reaches are listed as *water quality limited* or in *severe* water quality condition for nonpoint source pollutants
   b. One or more upstream or adjacent reaches are listed in *moderate* water quality condition for nonpoint source pollutants
   c. No upstream or adjacent reached are listed as *water quality limited*, and all upstream or adjacent reaches are listed as *no problem* (or no data available) for nonpoint source pollutants

Water Quality Assessment Criteria	
A wetland's water-quality function is *intact* if:	Four or more questions are answered "a."
A wetland's water-quality function is *impacted or degraded* if:	Answers do not satisfy the above- or below-listed criteria.
A wetlands's water-quality function is *lost or not present* if:	Four or more questions are answered "c."

Hydrologic Control (Flood Control & Water Supply; HC)

1. Is all or part of the wetland located within the 100-year floodplain or within an enclosed basin?
   a. Yes b. No
2. Is there evidence of flooding or ponding during a portion of the growing season?
   a. Yes b. Unable to determine or not applicable c. No
3. What is the wetland's area in acres?
   a. >5 acres b. Between 0.5 and 5 acres c. <0.5 acre
4. Is waterflow out of the wetland restricted (eg., beaver dam, concrete structure, undersized culvert)?
   a. Yes, the outlet is restricted or the wetland has not outlet
   b. Minor restrictions slow down the water (i.e., undersized culvert)
   c. No the outlet has unrestricted flow
5. What is the dominant wetland vegetation cover type (=WH2)?
   a. Woody vegetation
   b. Emergent vegetation and ponding, or open water only
   c. Emergent vegetation or wet meadow
6. What is the dominant existing land use within 500 feet of the wetland on the downstream or down-slope edge of the wetland?
   a. Developed uses b. Agriculture c. Exclusive Forest Use or Open Space
7. What is the dominant land use in the watershed upstream from the assessment area?
   a. Urban or Urbanizing b. Agriculture c. Forested or Natural Area

Hydrologic Control Assessment Criteria	
A wetland's hydrologic control function is *intact* if:	Four or more questions are answered "a."
A wetland's hydrologic control function is *impacted of degraded* if:	Answers do not satisfy the above- or below-listed criteria.
A wetland's hydrologic control function is *lost or not present* if:	Four or more questions are answered "c."

OFWAM FUNCTION SUMMARY

WH: Some habitat

FH: Not present

WQ: Lost

HC: Impacted or degraded

OREGON FRESHWATER WETLAND ASSESSMENT METHODOLOGY (OFWAM)
ASSESSMENT QUESTIONS

Wetland Tapman Creek

Wildlife Habitat (WH)

1. How many Cowardin wetland classes are present (include vertical strata ≥20% cover)?
   a. 2 or more b. 1 with >5 plant species c. 1 w/ ≤5 plant species
2. What is the dominant wetland vegetation cover type?
   a. Woody vegetation b. Emergent vegetation and ponding, or open water only
   c. Emergent vegetation or wet meadow
3. What is the degree of Cowardin class interspersion for the wetland being observed (Fig. 3)?
   a. High b. Moderate c. Low
4. How many acres of unvegetated open water are present?
   a. More than 1 acre b. Between 0.5 and 1 acre c. Less than 0.5 acre
5. How is the wetland connected to another body of water, such as a stream, lake or pond (F. 2)?
   a. The wetland is connected by surface water to another body of water
   b. No surface water connection exists, but other bodies of water lie within 1 mile
   c. No surface water connection exits, and no other bodies of water lie within 1 mile
6. How is the wetland connected to other wetlands?
   a. Connected to other wetlands within a 3-mile radius by a perennial or intermittent stream, irrigation or drainage ditch, culvert, canal or lake
   b. Not connected by surface water, but other unconnected wetlands lie within a 3-mile radius
   c. Not connected to other wetlands by surface waters, and no other unconnected wetlands lie within a 3-mile radius
7. What is the water quality condition of stream reaches in the watershed upstream of the wetland or adjacent to the wetland?
   a. No upstream or adjacent reached are listed as *water quality limited*, and all upstream or adjacent reaches are listed as *no problem* (or no data available) for nonpoint source pollutants
   b. One or more upstream or adjacent reaches are listed in *moderate* water quality condition for nonpoint source pollutants
   c. One or more upstream or adjacent reaches are listed as *water quality limited* or in *severe* water quality condition for nonpoint source pollutants
8. What is the dominant existing land use within 500 feet of the wetland's edge?
   a. Exclusive Forest Use or Open Space b. Agriculture c. Developed uses
9b. What percent of the wetland's edge is bordered by a vegetative buffer at least 25 feet wide?
   a. Greater than 40% b. Between 10 and 40% c. Less than 10%
   Is it 50 feet wide or wider? yes___ no___ notes:

Wildlife Habitat Assessment Criteria	
The wetland provides *diverse* wildlife habitat if:	At least four questions are answered "a," and no more than one is answered "c."
The wetland provides *habitat for some species* if:	Answers do not satisfy the above- or below-listed criteria.
The wetland's wildlife habitat function is *lost or not present* if:	All questions are answered "c."

Fish Habitat (FH)

Part A - Streams

1. What percentage of the stream is shaded by stream-side (riparian) vegetation?
   a. More than 75% b. Between 50 and 75% c. Less than 50%
2. What is the physical character of the stream channel?
   a. The stream is in a natural channel, or modified portions of the stream are returning to a natural channel
   b. Only portions of the stream channel are modified
   c. The stream is extensively modified or confined in a non-vegetated channel or pipe
3. What percentage of the entire stream contains instream structures such as large woody debris, floating submerged vegetation, large rocks or boulders?
   a. More than 25% b. Between 10 and 25% c. Less than 10%
4. What is the water quality condition of stream reaches in the watershed upstream of the wetland or adjacent to the wetland (= WH7)?
   a. No upstream or adjacent reached are listed as *water quality limited*, and all upstream or adjacent reaches are listed as *no problem* (or no data available) for nonpoint source pollutants
   b. One or more upstream or adjacent reaches are listed in *moderate* water quality condition for nonpoint source pollutants
   c. One or more upstream or adjacent reaches are listed as *water quality limited* or in *severe* water quality condition for nonpoint source pollutants
5. What is the dominant existing land use within 500 feet of the wetland's edge (= WH8)?
   a. Exclusive Forest Use or Open Space b. Agriculture c. Developed uses
6. Are fish present in a stream, lake or pond associated with the wetland?
   a. Salmon, trout or sensitive species are present at some time during the year
   b. Species not covered in "a" are present at some time during the year
   c. No species are present at any time during the year

Part B - Lakes and Ponds

1. Does the lake or pond contain areas of both deep and shallow water?
   a. Yes b. Cannot be determined. c. No
2. What percentage of the wetland complex contains cover objects such as submerged logs, floating or submerged vegetation, large rocks or boulders?
   a. More than 25% b. Between 10 and 75% c. Less than 10%
3. What percentage of the shoreline is shaded at the water's edge by forested or scrub-shrub vegetation?
   a. 60% or more b. Between 20 and 59% c. Less than 20%
4. What is the water quality condition of stream reaches in the watershed upstream of the wetland or adjacent to the wetland (= WH7)?
   a. No upstream or adjacent reached are listed as *water quality limited*, and all upstream or adjacent reaches are listed as *no problem* (or no data available) for nonpoint source pollutants
   b. One or more upstream or adjacent reaches are listed in *moderate* water quality condition for nonpoint source pollutants
   c. One or more upstream or adjacent reaches are listed as *water quality limited* or in *severe* water quality condition for nonpoint source pollutants
5. What is the dominant existing land use within 500 feet of the wetland's edge (= WH8)?
   a. Exclusive Forest Use or Open Space b. Agriculture c. Developed uses
6. Are fish in a stream, lake or pond associated with the wetland?
   a. Salmon, trout or sensitive species are present at some time during the year
   b. Species not covered in "a" are present at some time during the year

c. No species are present at any time during the year

Fish Habitat Assessment Criteria	
The wetland's fish habitat function is *intact* if:	Three or more questions are answered "a," and no more than one is answered "c."
The wetlands's fish habitat function is *impacted or degraded* if:	Answers do not satisfy the above- or below-listed criteria.
The wetlands's fish habitat function is *lost or not present* if:	All questions are answered "c."

Water Quality (Pollutant Removal; WQ)

1. What is the wetland's primary source of water?
   a. Surface flow, including streams and ditches b. Precipitation or sheet flow
   c. Groundwater, including seeps and springs
2. Is there evidence of flooding or ponding during a portion of the growing season?
   a. Yes b. Unable to determine or not applicable c. No
3. What is the degree of wetland vegetation cover?
   a. High (>60%; OW<40%) b. Moderate (~60%; OW=40%) c. Low (<60%; OW>40%)
4. What is the wetland's area in acres?
   a. >5 acres
   b. Between 0.5 acre and 5 acres; or <0.5 acres and the wetland is connected to other wetlands within a 3-mile radius by a perennial or intermittent stream, irrigation or drainage ditch, canal or lake
   c. <0.5 acre, and the wetland is not connected to other wetlands within a 3-mile radius by a perennial or intermittent stream, irrigation or drainage ditch, canal or lake
5. What is the dominant, existing land use within 500 feet of the wetland's edge (opposite WH8)?
   a. Developed uses b. Agriculture c. Exclusive Forest Use or Open Space
6. What is the water quality condition of stream reaches in the watershed upstream of the wetland or adjacent to the wetland (opposite WH7)?
   a. One or more upstream or adjacent reaches are listed as *water quality limited* or in *severe* water quality condition for nonpoint source pollutants
   b. One or more upstream or adjacent reaches are listed in *moderate* water quality condition for nonpoint source pollutants
   c. No upstream or adjacent reached are listed as *water quality limited*, and all upstream or adjacent reaches are listed as *no problem* (or no data available) for nonpoint source pollutants

Water Quality Assessment Criteria	
A wetland's water-quality function is *intact* if:	Four or more questions are answered "a."
A wetland's water-quality function is *impacted or degraded* if:	Answers do not satisfy the above- or below-listed criteria.
A wetlands's water-quality function is *lost or not present* if:	Four or more questions are answered "c."

Hydrologic Control (Flood Control & Water Supply; HC)

1. Is all or part of the wetland located within the 100-year floodplain or within an enclosed basin?
   a. Yes b. No
2. Is there evidence of flooding or ponding during a portion of the growing season?
   a. Yes b. Unable to determine or not applicable c. No
3. What is the wetland's area in acres?
   a. >5 acres b. Between 0.5 and 5 acres c. <0.5 acre
4. Is waterflow out of the wetland restricted (eg., beaver dam, concrete structure, undersized culvert)?
   a. Yes, the outlet is restricted or the wetland has not outlet
   b. Minor restrictions slow down the water (i.e., undersized culvert)
   c. No the outlet has unrestricted flow
5. What is the dominant wetland vegetation cover type (=WH2)?
   a. Woody vegetation
   b. Emergent vegetation and ponding, or open water only
   c. Emergent vegetation or wet meadow
6. What is the dominant existing land use within 500 feet of the wetland on the downstream or down-slope edge of the wetland?
   a. Developed uses b. Agriculture c. Exclusive Forest Use or Open Space
7. What is the dominant land use in the watershed upstream from the assessment area?
   a. Urban or Urbanizing b. Agriculture c. Forested or Natural Area

Hydrologic Control Assessment Criteria	
A wetland's hydrologic control function is *intact* if:	Four or more questions are answered "a."
A wetland's hydrologic control function is *impacted of degraded* if:	Answers do not satisfy the above- or below-listed criteria.
A wetland's hydrologic control function is *lost or not present* if:	Four or more questions are answered "c."

OFWAM FUNCTION SUMMARY

WH: Some habitat

FH: Not present

WQ: Lost

HC: Impacted or degraded

APPENDIX G. HABITAT ASSESSMENT FORM

Component		Degree	Score	Comments
WATER	Quantity and Seasonality	None Seasonal Perennial 0……4……8	4	Small seasonal wetland/streams present
	Quality	Stagnant Seasonally Flushed Continually Flushed 0……3……6	3	Wetlands seasonally inundated and sloped
	Proximity to Cover	None Nearby Immediately adjacent 0……3……6	4	Dense blackberry thicket proximal to wetland. Cover for small wildlife only
	Diversity (Streams, Ponds, Wetlands)	One Two Three 2……4……8	4	2 water types present
	WATER TOTAL		15	
FOOD	Variety	Low Medium High 0……4……8	2	Blackberry and hawthorn berries only major food source
	Quality and Seasonality	None Limited Year around 0……4……8	2	Short berry season
	Proximity to Cover	None Nearby Immediately adjacent 0……4……8	6	Blackberry thicket provides cover for small wildlife only. Forest cover nearby offers cover for larger
	FOOD TOTAL		10	
COVER	Structural Diversity	Low Medium High 0……4……8	4	Mostly shrub, some trees
	Variety	Low Medium High 0……4……8	4	Mostly shrub, some trees
	Nesting	Low Medium High 0……2……4	2	
	Escape	Low Medium High 0……2……4	2	
	Seasonality	None Limited Year around 0……2……4	2	
	COVER TOTAL		14	

ADDITIONAL VALUE				
DISTURBANCE	PHYSICAL	Permanent Temporary Undisturbed 0…….2…….4	1	invasive species dominant, little natural tree cover
	HUMAN	High Medium Low 0…….2…….4	2	Surrounded by developed uses
HABITAT INTERSPERSION		Low Medium High 0…….3…….6	3	
UNIQUE FEATURES 0-4		Wildlife _____ Rarity of Habitat _____ Flora _____ Type_____ Scenic _____ Educational _____ Potential _____ Potential _____	0	none

APPENDIX H: DSL CONCURRENCE LETTER: WD2021-0556

Oregon
Kate Brown, Governor

Department of State Lands
775 Summer Street NE, Suite 100
Salem, OR 97301-1279
(503) 986-5200
FAX (503) 378-4844
www.oregon.gov/dsl

State Land Board

Kate Brown
Governor

Shemia Fagan
Secretary of State

Tobias Read
State Treasurer

December 2, 2021

Delta Logistics, Inc.
Attn: Vladimir Tkach
9835 SW Commerce Circle
Wilsonville, OR 97070

Re: WD # 2021-0556 **Approved**
Wetland Delineation Report for SW Day Road
Washington County; T3S R1W S02B TLs 600 and 601; RGL # 1793
City of Sherwood Local Wetlands Inventory Wetland 3.03

Dear Vladimir Tkach:

The Department of State Lands has reviewed the wetland delineation report prepared by Schott and Associates for the site referenced above. Based upon the information presented in the report, and additional information submitted upon request, we concur with the wetland and waterway boundaries as mapped in Figures 6A and 6B of the report. Please replace all copies of the preliminary wetland maps with these final Department-approved maps.

Within the study area, 2 wetlands (Wetland 1 and 2, totaling approximately 0.33 acres) and Tapman Creek were identified. The wetlands and creek are subject to the permit requirements of the state Removal-Fill Law. Normally, a state permit is required for cumulative fill or annual excavation of 50 cubic yards or more in wetlands or below the ordinary high-water line (OHWL) of the waterway (or the 2-year recurrence interval flood elevation if OHWL cannot be determined). However, Wetland 1 is a compensatory wetland mitigation (CWM) area (RGL # 1793). Any impact within a CWM area may require a state permit.

This concurrence is for purposes of the state Removal-Fill Law only. We recommend that you attach a copy of this concurrence letter to any subsequent state permit application to speed application review. Federal, other state agencies or local permit requirements may apply as well. The U.S. Army Corps of Engineers will determine jurisdiction under the Clean Water Act, which may require submittal of a complete Wetland Delineation Report.

Please be advised that state law establishes a preference for avoidance of wetland impacts. Because measures to avoid and minimize wetland impacts may include reconfiguring parcel layout and size or development design, we recommend that you work with Department staff on appropriate site design before completing the city or county land use approval process.

This concurrence is based on information provided to the agency. The jurisdictional determination is valid for five years from the date of this letter unless new information necessitates a revision. Circumstances under which the Department may change a determination are found in OAR 141-090-0045 (available on our web site or upon request). In addition, laws enacted by the legislature and/or rules adopted by the Department may result in a change in jurisdiction; individuals and applicants are subject to the regulations that are in effect at the time of the removal-fill activity or complete permit application. The applicant, landowner, or agent may submit a request for reconsideration of this determination in writing within six months of the date of this letter.

Thank you for having the site evaluated. If you have any questions, please contact the Jurisdiction Coordinator for Washington County, Chris Stevenson, PWS, at (503) 986-5246.

Sincerely,

Peter Ryan, SPWS
Aquatic Resource Specialist

Enclosures

ec: Kim Biafora, Schott and Associates
City of Sherwood Planning Department
Danielle Erb, Corps of Engineers
Michael De Blasi, DSL
Lindsey Obermiller, Clean Water Services

WETLAND DELINEATION / DETERMINATION REPORT COVER FORM

Fully completed and signed report cover forms and applicable fees are required before report review timelines are initiated by the Department of State Lands. Make checks payable to the Oregon Department of State Lands. To pay fees by credit card, go online at: https://apps.oregon.gov/DSL/EPS/program?key=4.

Attach this completed and signed form to the front of an unbound report or include a hard copy with a digital version (single PDF file of the report cover form and report, minimum 300 dpi resolution) and submit to: **Oregon Department of State Lands, 775 Summer Street NE, Suite 100, Salem, OR 97301-1279.** A single PDF of the completed cover from and report may be e-mailed to: **Wetland_Delineation@dsl.state.or.us**. For submittal of PDF files larger than 10 MB, e-mail DSL instructions on how to access the file from your ftp or other file sharing website.

Contact and Authorization Information

☐ Applicant ☒ Owner Name, Firm and Address:
Vladimir Tkach/ Delta Logistics, Inc.
9835 SW Commerce Cir,
Wilsonville, OR 97070

Business phone # 800-595-3077
Mobile phone # (optional)
E-mail: Vlad@deltagov.com

☐ Authorized Legal Agent, Name and Address (if different):

Business phone #
Mobile phone # (optional)
E-mail:

I either own the property described below or I have legal authority to allow access to the property. I authorize the Department to access the property for the purpose of confirming the information in the report, after prior notification to the primary contact.

Typed/Printed Name: Vladimir Tkach **Signature:**

Date: 09/27/2021 Special instructions regarding site access: ____

Project and Site Information

Project Name: SW Day Road

Latitude: 45.339611° Longitude: -122.778340°
decimal degree - centroid of site or start & end points of linear project

Proposed Use:
Trailer parking/storage

Tax Map # 3S102B
Tax Lot(s) 600, 601

Tax Map #
Tax Lot(s)

Project Street Address (or other descriptive location):
9710 SW Day Rd

Township 3S Range 1W Section 2B QQ NW/SE
Use separate sheet for additional tax and location information

City: Wilsonville County: Washington

Waterway: Tapman Creek River Mile: 6

Wetland Delineation Information

Wetland Consultant Name, Firm and Address:
Kim Biafora
Schott & Associates
PO Box 589
Aurora, OR 97002

Phone # (503) 678-6028
Mobile phone # (if applicable)
E-mail: kim@schottandassociates.com

The information and conclusions on this form and in the attached report are true and correct to the best of my knowledge.

Consultant Signature: Kim Biafora Date: 10/7/2021

Primary Contact for report review and site access is ☐ Consultant ☐ Applicant/Owner ☐ Authorized Agent

Wetland/Waters Present? ☒ Yes ☐ No Study Area size: 9.13 Total Wetland Acreage: 0.33

Check Applicable Boxes Below

☐ R-F permit application submitted
☒ Mitigation bank site
☐ EFSC/ODOE Proj. Mgr: ____
☐ Wetland restoration/enhancement project (not mitigation)
☒ Previous delineation/application on parcel
If known, previous DSL # 25201-FP

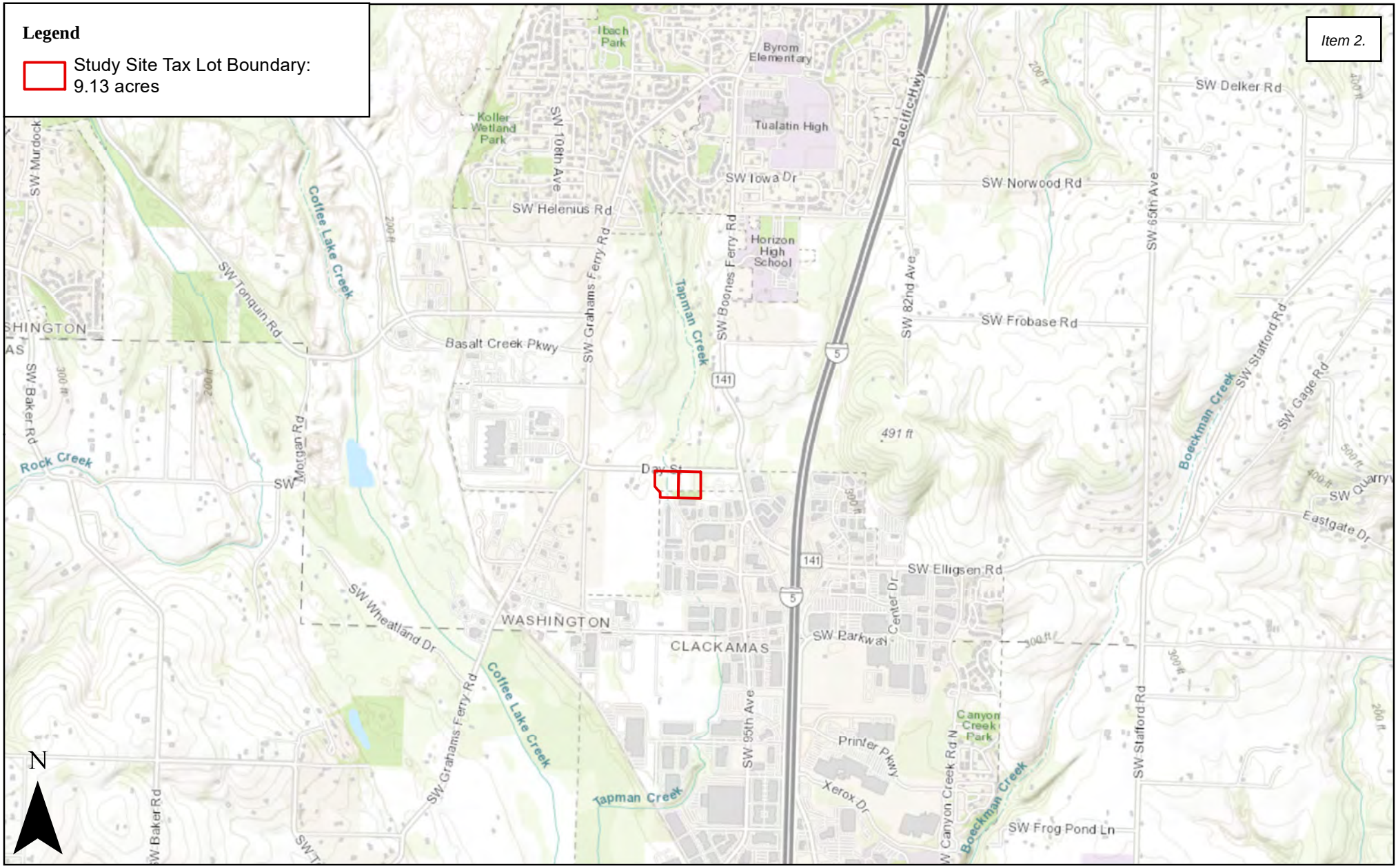
☐ Fee payment submitted $ ____
☐ Resubmittal of rejected report ($100)
☐ Request for Reissuance. See eligibility criteria. (no fee)
DSL # ____ Expiration date____
☐ LWI shows wetlands or waters on parcel
Wetland ID code ____

For Office Use Only

DSL Reviewer: ____ Fee Paid Date: ____/____/____ DSL WD # ____

Date Delineation Received: ___/___/___ Scanned: ☐ Electronic: ☐ DSL App.# ____

March 2018



Date: 9/9/2021

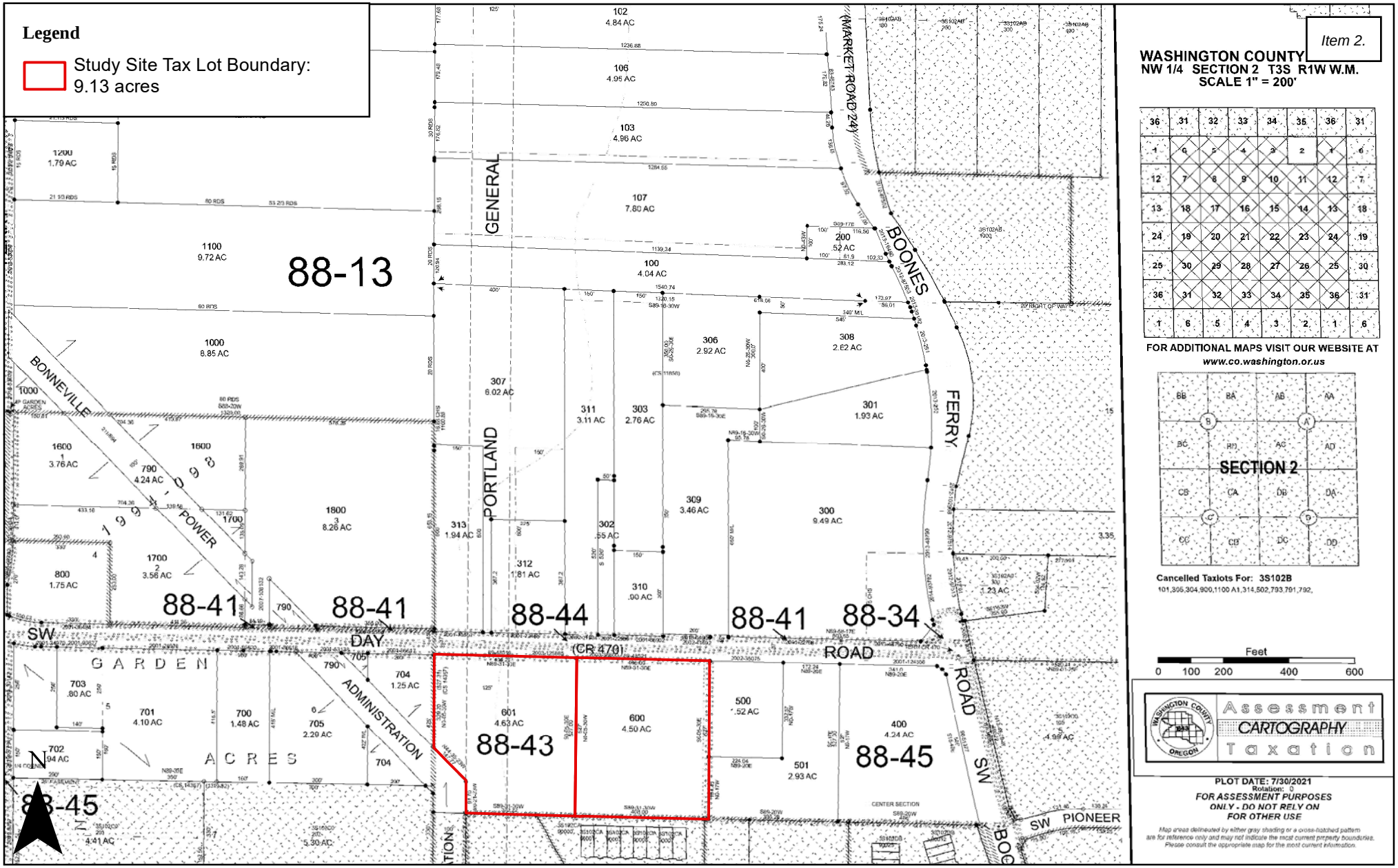
Data Source: ESRI, 2021; Washington County Intermap, 2021

Figure 1. Location Map

SCHOTT & ASSOCIATES, Inc.

SW Day Road Project Site: S&A #2739

0 1,000 2,000 476 et



Date: 9/9/2021

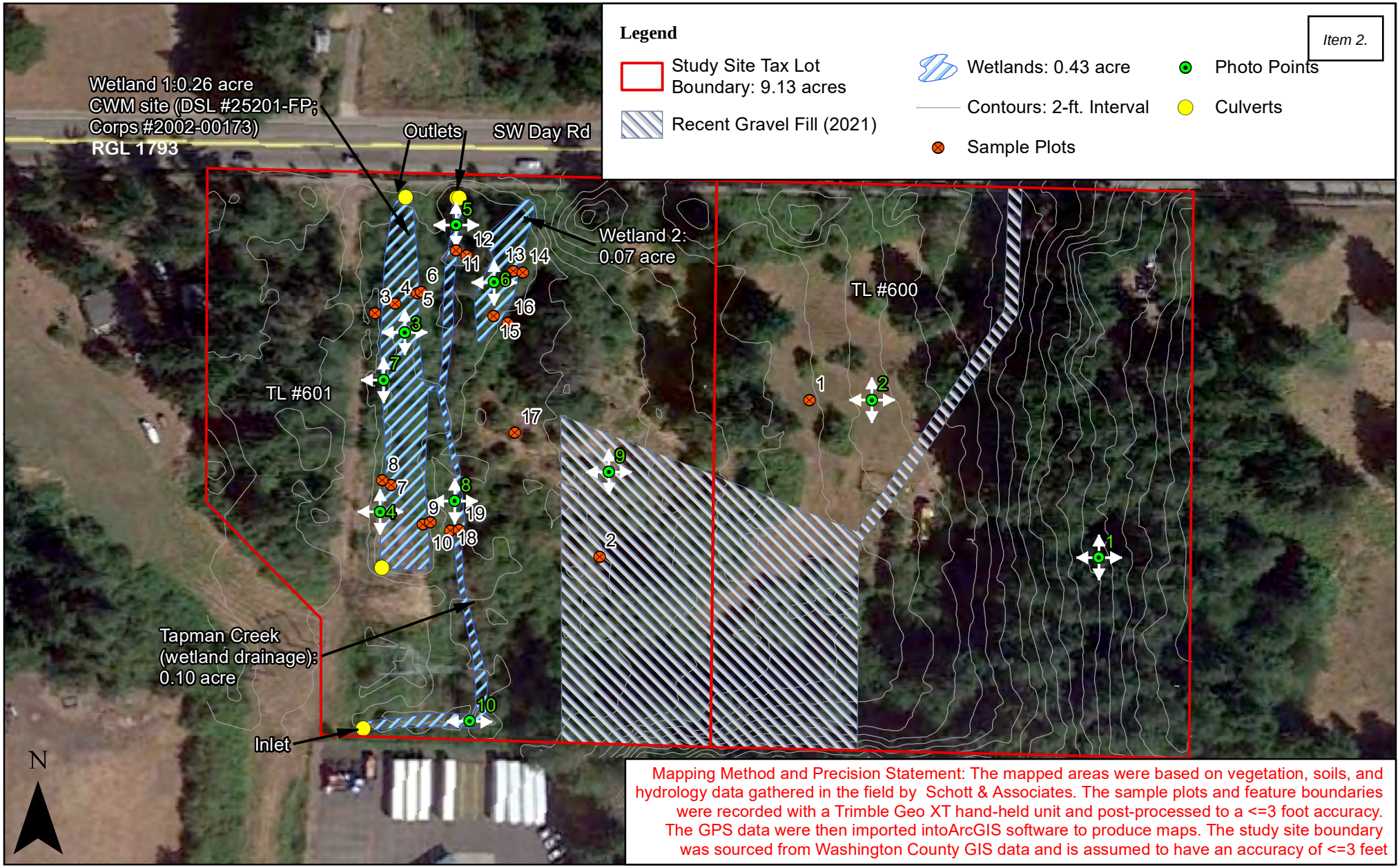
Data Source: Washington County Intermap, 2021

Figure 2. Washington County Tax Map-3S102B

SW Day Road Project Site: S&A #2739

0 200 400 477 et

SCHOTT & ASSOCIATES, Inc.



Mapping Method and Precision Statement: The mapped areas were based on vegetation, soils, and hydrology data gathered in the field by Schott & Associates. The sample plots and feature boundaries were recorded with a Trimble Geo XT hand-held unit and post-processed to a <=3 foot accuracy. The GPS data were then imported intoArcGIS software to produce maps. The study site boundary was sourced from Washington County GIS data and is assumed to have an accuracy of <=3 feet

Date: 11/29/2021

Data Source: ESRI, 2021; Washington County Intermap, 2021; DOGAMI, 2014

DSL WD # 2021-0556
Approval Issued 12/2/2021
Approval Expires 12/2/2026

Figure 6a. Wetland Delineation Map - Overview

SCHOTT & ASSOCIATES, Inc.

SW Day Road Road Project Site: S&A #2739

0 50 100 478 et

Mapping Method and Precision Statement: The mapped areas were recorded utilizing a Trimble Geo 7X hand-held unit and post-processed to a <= 3 foot accuracy. The GPS data were then imported into ArcGIS software to produce maps. The study site boundary was sourced from the Washington County GIS Department and is assumed to have an accuracy of <=3 feet.

Date: 11/29/2021

Data Source: ESRI, 2021; Marion County GIS Dept, 2021; DOGAMI, 2014

DSL WD # 2021-0556
Approval Issued 12/2/2021
Approval Expires 12/2/2026

Figure 6b. Wetland Delineation Map - Detail

SW Day Road Project Site: S&A # 2739

SCHOTT & ASSOCIATES, Inc.

0 30 60 ft

SCHOTT & ASSOCIATES
Ecologists & Wetlands Specialists
21018 NE Hwy 99E • P.O. Box 589 • Aurora, OR 97002 • (503) 678-6007 • FAX: (503) 678-6011

March 1, 2023

City of Wilsonville Planning Staff
29799 SW Town Center Loop E
Wilsonville, OR 97070

CC: Lee Leighton (Mackenzie, Portland); lleighton@mcknze.com
Igor Nichiporchik (Delta Logistics); igor@deltagov.com
Vlad Tkach (Delta Logistics); vlad@deltagov.com

Re: 2200502.00 Delta Logistics Wilsonville Annex/Zone Change February 2023 plan revision

To whom it concerns,

Schott & Associates (S&A) prepared the natural resource assessment report (January 2022) for the proposed transportation company expansion project at 9710 SW Day Road, sponsored by Delta Logistics (applicant). The proposal involved impacts to the Significant Natural Resource Overlay Zone (SROZ) associated with Tapman Creek from a private crossing to allow vehicular access to the western portion of the property, as well as road widening and improvements along the property's frontage of SW Day Road as required by the City. The proposal would have resulted in 10,300 sq. ft. of impact to the 50-foot Vegetated Corridor associated with Tapman Creek. The applicant proposed mitigation in the form of enhancement of the remaining Vegetated Corridor at a ratio of 3.2:1.

The applicant has decided to modify the site plan and refrain from developing the western portion of the site since the City does not support the proposal to cross Tapman Creek or the alternative plan of constructing a second driveway from SW Day Road to access the western portion of the site. However, the revised proposal still includes the City-required street improvements to SW Day Road along the property frontage, which will result in 1,850 sq. ft. of permanent encroachment into the Tapman Creek Vegetated Corridor adjacent to the roadway. The applicant proposes to mitigate the impact through enhancement of 6,305 sq. ft. of remaining Vegetated Corridor, to include invasive species removal and planting of native trees and shrubs appropriate to site conditions and constraints (e.g., the PGE transmission line easement). The proposed mitigation ratio is 3.4:1. As documented in the natural resource assessment report prepared in January 2022, the Tapman Creek Vegetated Corridor was assessed as low-to-moderate in function with high invasive species cover and low tree canopy cover. The proposed Vegetated Corridor encroachment area is along an existing roadway and is vegetated entirely with invasive Himalayan blackberry (*Rubus armeniacus*) or reed canarygrass (*Phalaris arundinacea*). No trees or native species will be removed as a result of the roadway improvements. The project is expected to have very little impact to the overall function of the SROZ, as the Vegetated Corridor will be left largely undisturbed and unfragmented. Invasive species removal

and establishment of native forest and shrub communities will improve wildlife habitat, ecological integrity, and water quality protection functions of the Tapman Creek riparian corridor.

Please feel free to contact me with any questions or concerns.

Sincerely,

Kim Cartwright

Kim Cartwright, Wetland Ecologist
503-678-6028
kim@schottandassociates.com

TERAGAN & ASSOCIATES, INC.
ARBORICULTURAL CONSULTANTS

MEMORANDUM

DATE: April 11, 2022

TO: Igor Nichiporchik (Delta Logistics)

FROM: Todd Prager, RCA #597, ISA Board Certified Master Arborist
Terrence P. Flanagan, ISA Board Certified Master Arborist, PN-0120BTML

RE: Tree Removal and Protection Recommendations for Delta Logistics Site Expansion

---

Summary

This memorandum provides tree removal and protection recommendations for the Delta Logistics Site Expansion development.

Background

Delta Logistics is proposing to construct the Delta Logistics Site Expansion development at 9710 SW Day Road in Wilsonville, Oregon. The site survey with existing trees is provided in Attachment 1 and the proposed site plan with proposed grading is provided in Attachment 2.

The assignment requested of our firm for this project was as follows:

1. Provide an assessment of the existing trees.
2. Provide recommendations for tree removal and retention based on the proposed site improvements.
3. Provide protection recommendations for the trees to be retained.

Tree Assessment

In September 2021, and March and April of 2022, our firm completed an assessment of the existing trees at the site. The complete inventory data is provided in the tree inventory spreadsheet in Attachment 3. The data collected for each tree includes the tree number, species (common and scientific names), trunk diameter (DBH), crown radius, tree health condition, tree structural condition, pertinent comments, whether the tree was on a neighboring property, and treatment (remove or retain). The tree numbers in the tree inventory in Attachment 3 correspond to the tree numbers on the existing conditions survey in Attachment 1 and proposed site plan in Attachment 2.

Proposed Tree Removal

A typical minimum root protection zone allows encroachments no closer than a radius from a tree of .5 feet per inch of DBH if no more than 25 percent of the root protection zone area (estimated at one foot radius per inch of DBH) is impacted. Figure 1 illustrates this concept. This standard may need to be adjusted on a case-by-case basis due to tree health, species, root distribution, whether the tree will be impacted on multiple sides, and other factors.

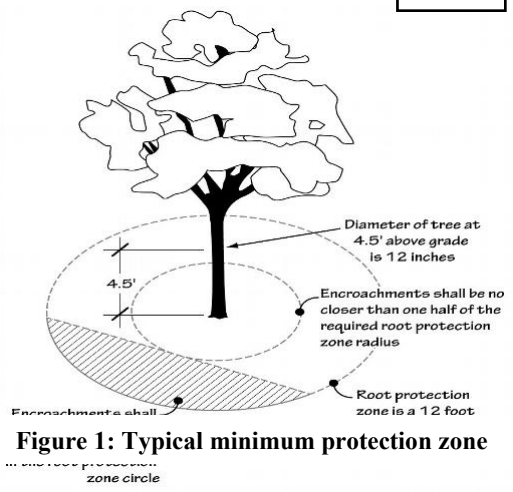


Figure 1: Typical minimum protection zone

Based on the proposed construction, grading, and utility footprint shown in Attachment 1, all onsite trees are proposed for removal except for six trees within the significant resource overlay zone (trees 549, 791, and 2072 through 2075). In addition, all but 13 of the inventoried offsite trees highlighted in green in Attachment 2 are recommended for removal if approved by the neighboring property owners.

Mitigation is recommended for the removal of trees over 6-inch DBH that are in fair to good health and structural condition. Based on these criteria, mitigation is required for 170 trees to be removed at a minimum ratio of 1:1. The tree inventory in Attachment 3 lists the trees subject to mitigation. The proposed landscape plan for the project needs to include a minimum of 158, 2-inch caliper mitigation trees unless a mitigation fee is provided.

Protection recommendations for the trees to be retained at the site are provided in the next section of this report.

Tree Protection Recommendations

The following recommendations apply to the trees to be retained:

- **Protection Fencing**: Establish tree protection fencing in the locations shown on the plan sheet redlines in Attachment 2. The intent of the tree protection fencing is to protect vegetation in the significant resource overlay zone and the minimum root protection zones detailed in Figure 1.
- **Property Line Trees:** All of the inventoried offsite trees are recommended for retention. Adjustments to the proposed construction or grading have been made to adequately protect their root zones. There are four trees near the property line that are shown to be removed. I recommend informing the neighbors of the potential tree impacts via certified letter so they are fully aware of the potential impacts and can make an informed decision about the trees should there be any questions of ownership.
- **Directional Felling** - Fell the trees to be removed away from the trees to be retained so they do not contact or otherwise damage the trunks or branches of the retained trees. No vehicles or heavy equipment should be permitted within the tree protection zones during tree removal operations.
- **Stump Removal** - The stumps of the trees to be removed within the tree protection zones that are adjacent to the trees to be preserved shall be retained or carefully stump ground so as not to disturb the root systems of the retained trees.
- **Periodic Risk Assessments:** The offsite retained trees were previously protected within a stand of surrounding trees. The removal of adjacent trees will expose the retained trees to changes in wind forces which will increase their risk of windthrow. I recommend the project arborist conduct a tree risk assessment immediately

following site clearing to identify trees that pose significant risks. For trees that pose significant risks, mitigation strategies for retaining them such as pruning, or snag creation should be explored as recommended by the project arborist. Any recommended tree removal or snag creation will require the review and approval of the City of Wilsonville and impacted property owners. Risk assessments should be conducted periodically throughout construction to document whether trees are adapting to the new site conditions and risks are mitigated appropriately with City approval.

- **Protect Crowns of Trees**: The crowns of the trees may extend beyond the tree protection fencing. Care will need to be taken to not contact or otherwise damage the crowns of the trees during construction activities. Any required pruning shall be completed by an ISA certified arborist consistent with ANSI A300 pruning standards as directed by the project arborist.
- **Sediment Fencing**: Sediment fencing shall be installed outside the protection zones of the trees to be retained to minimize root disturbances. If erosion control is required inside the root zones, straw wattles shall be used on the soil surface.

Attachment 3 includes additional recommendations to protect the trees during construction.

Conclusion

All onsite trees are proposed for removal except for six trees within the significant resource overlay zone (trees 549, 791, and 2072 through 2075). All of the inventoried offsite trees are recommended for retention. The mitigation requirements for the project will be met through onsite replanting of a minimum of 158 trees unless a mitigation fee is provided. The trees to be retained will be protected by adhering to the recommendations in this report.

Please contact me if you have questions, concerns, or need any additional information.

Sincerely,

Todd Prager

Todd Prager
ASCA Registered Consulting Arborist #597
ISA Board Certified Master Arborist, WE-6723B
ISA Qualified Tree Risk Assessor
AICP, American Planning Association

Attachment 1:	Site Survey with Existing Trees
Attachment 2:	Proposed Site Plan with Tree Removal and Tree Protection
Attachment 3:	Tree Inventory
Attachment 4:	Additional Tree Protection Recommendations
Attachment 5:	Assumptions and Limiting Conditions

REQUESTED BY:

LEE LEIGHTON (MACKENZIE)

FOR: DELTA LOGISTICS
9835 SW COMMERCE CIRCLE
WILSONVILLE, OR 97070

TREE SURVEY
"DELTA LOGISTICS"
9710 SW DAY ROAD
IN THE SW 1/4 AND THE NW 1/4
SECTION 2, T.3S., R.1W., W.M.
WASHINGTON COUNTY, OREGON

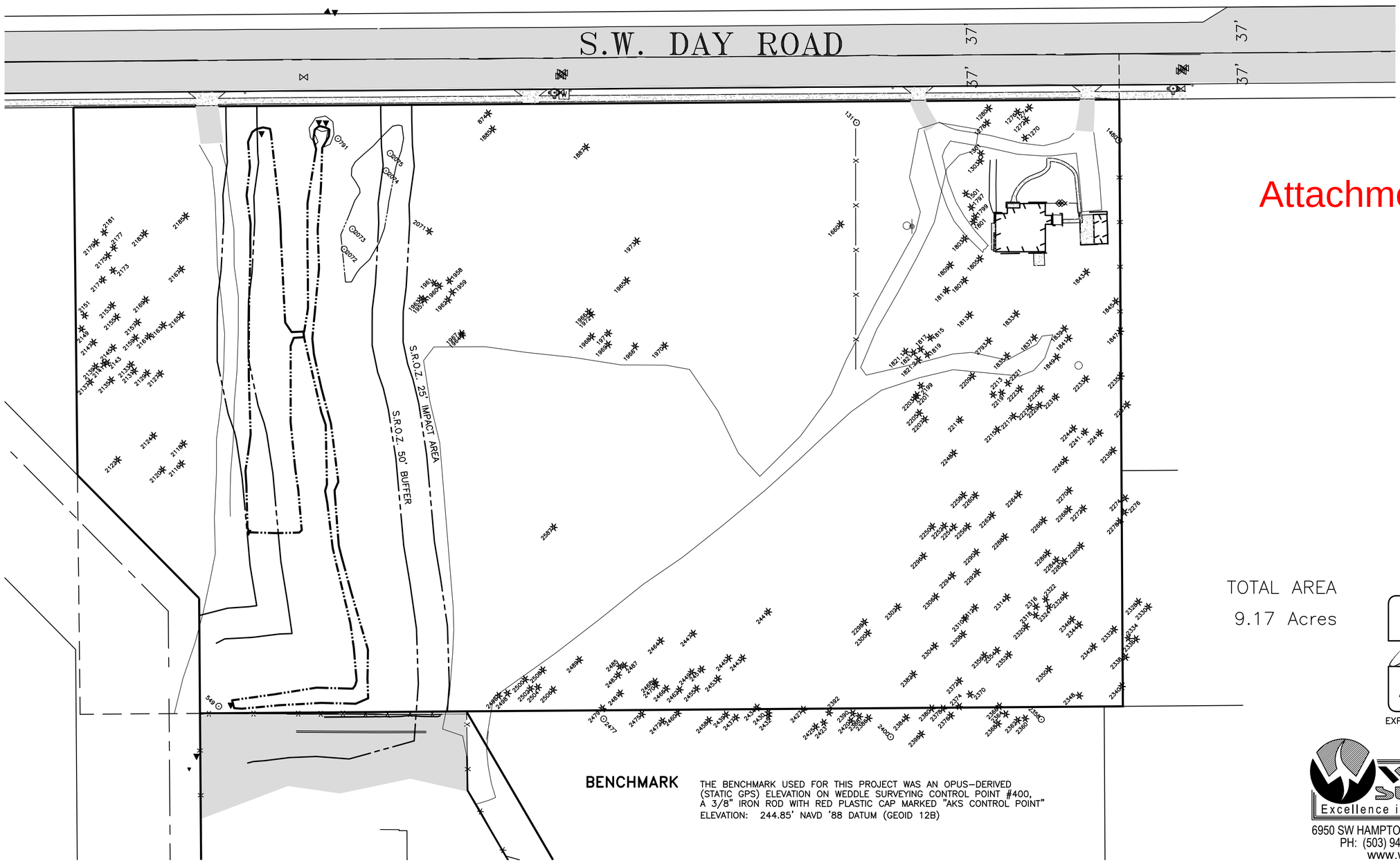
WEDDLE SURVEYING

0 60 120 180

SCALE: 1" = 60'
OCTOBER, 2019
REVISED: SEPTEMBER, 2021
UPDATED: APRIL 6, 2022 (TREES ADDED)

SURVEYOR'S NOTES

1. THE BASIS OF BEARINGS FOR THIS SURVEY IS PER SURVEY NO. 29,223, WASHINGTON COUNTY SURVEY RECORDS. THIS IS NOT A RECORDABLE BOUNDARY SURVEY, A RECORD OF SURVEY IS IN PROGRESS.
2. UNDERGROUND UTILITIES ARE SHOWN PER SURFACE MARKINGS. THE SURVEYOR MAKES NO GUARANTEE AS TO THE EXACT LOCATION, EXISTENCE, NON-EXISTENCE OR COMPLETENESS OF ANY SUBSURFACE UTILITIES SHOWN, OR NOT SHOWN ON THE MAP. CALL 811 BEFORE DIGGING.
3. TOTAL SURVEYED SITE AREA = 9.169 ACRES
BUILDABLE AREA EAST OF EASTERLY S.R.O.Z. = 6.338 ACRES
4. DUE TO THE DENSE, OVERGROWN NATURE OF VEGETATION ON SITE, NOT ALL TREES WERE MAPPED AND A 3-D SURFACE OVER THE ENTIRE SITE WAS NOT OBTAINABLE.



Attachment 1

TOTAL AREA
9.17 Acres

REGISTERED
PROFESSIONAL
LAND SURVEYOR
OREGON
JULY 13, 2004
ANTHONY B. RYAN
58833
EXPIRES: DECEMBER 31, 2022

BENCHMARK THE BENCHMARK USED FOR THIS PROJECT WAS AN OPUS-DERIVED (STATIC GPS) ELEVATION ON WEDDLE SURVEYING CONTROL POINT #400, A 3/8" IRON ROD WITH RED PLASTIC CAP MARKED "AKS CONTROL POINT"
ELEVATION: 244.85' NAVD '88 DATUM (GEOID 12B)

WEDDLE SURVEYING INC.
Excellence is our benchmark.
6950 SW HAMPTON ST., STE. 170, TIGARD, OR 97223
PH: (503) 941-9585 FAX: (503) 941-9640
www.weddlesurveying.net

JOB NO. 5727

TREE DATA

ALL TREES (224 TREES)	QTY	RETAIN	REMOVE	MITIGATION REQ
ON SITE - LIVING < 6" DBH	150	10	140	140
PUBLIC - LIVING < 6" DBH	18	0	18	18
OFF SITE - LIVING < 6" DBH	36	36	0	0
DEAD TREES	20	1	19	0
TOTAL	224	47	177	158

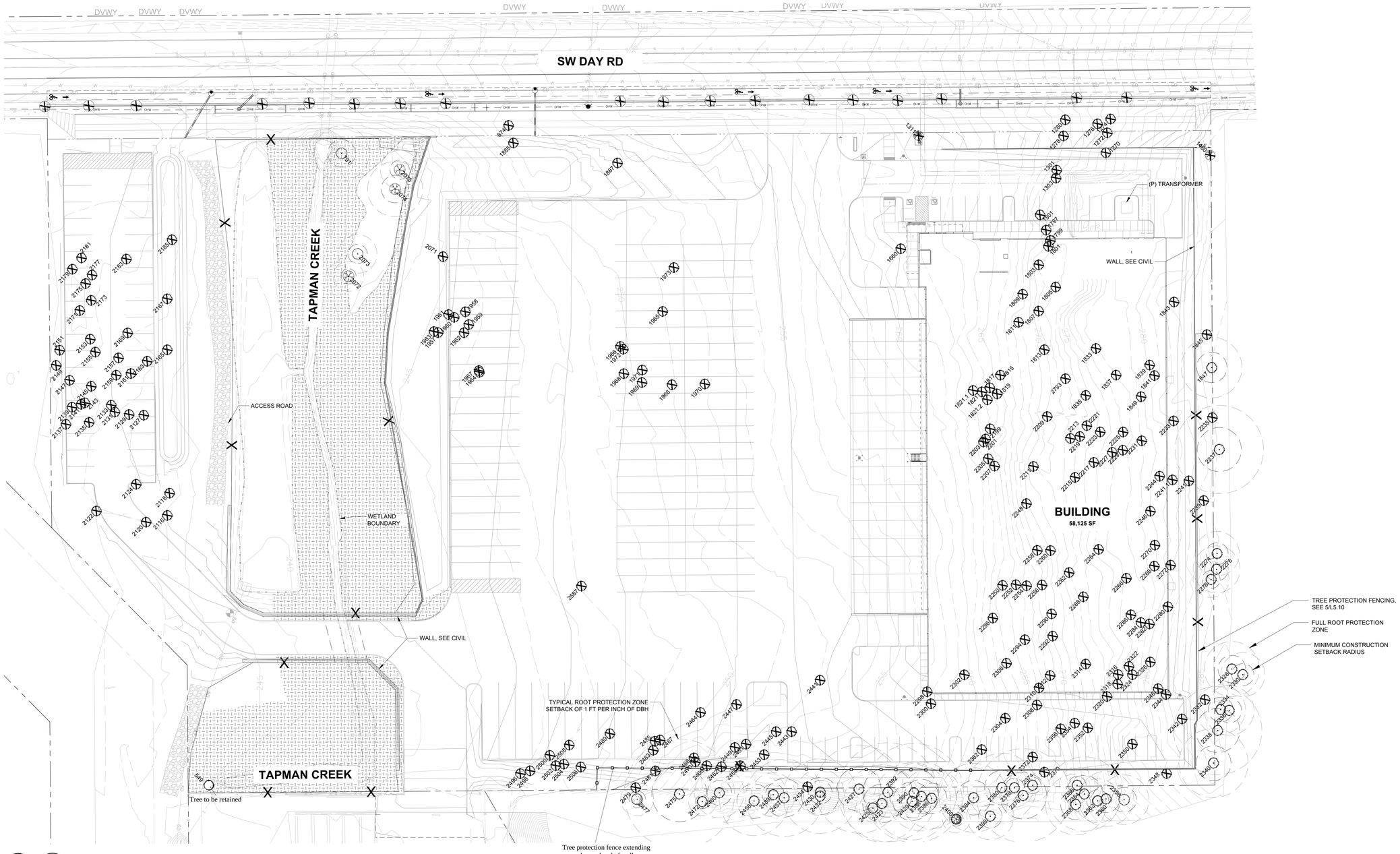
TREE INVENTORY - ON SITE AND PUBLIC

EXISTING	BOTANICAL / COMMON NAME	QTY
	DOUGLAS FIR TO REMOVE	193
	DOUGLAS FIR TO REMAIN	5
	ENGLISH HAWTHORN TO REMAIN	1
	EXISTING WILLOW TO REMAIN	2
	OREGON ASH TO REMAIN	3
	STREET TREES TO REMOVE	18
	SWEET CHERRY TO REMOVE	2

TREE INVENTORY - OFF SITE PRIVATE

EXISTING	BOTANICAL / COMMON NAME	QTY
	BIGLEAF MAPLE TO REMAIN	1
	DOUGLAS FIR TO REMAIN	33
	OREGON WHITE OAK TO REMAIN	1
	PACIFIC MADRONE TO REMAIN	1

Attachment 2: Proposed Site Plan with Tree Removal and Tree Protection



1 L0.03 TREE REMOVAL PLAN

30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.

Architecture ▪ Interiors
Planning ▪ Engineering

Portland, OR
503.224.9560
Vancouver, WA
360.695.7879
Seattle, WA
206.749.9993
www.mcknze.com

MACKENZIE.
DESIGN DRIVEN | CLIENT FOCUSED

Client

DELTA LOGISTICS
9835 SW COMMERCE CIRCLE
WILSONVILLE, OR 97070

Project

DELTA LOGISTICS SITE EXPANSION
9710 SW DAY RD.
CITY OF WILSONVILLE, OR

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REVISION SCHEDULE

Delta	Issued As	Issue Date

SHEET TITLE:
TREE REMOVAL PLAN

DRAWN BY: SKA

CHECKED BY: NRF

SHEET
L0.03

JOB NO. **2200502.04**

UPDATED PRICING SET - 07/14/22

Tree No.	Common Name	Scientific Name	DBH[1]	C-Rad[2]	Condition[3]	Structure	Comments	Not On Property	Treatment	Location	Mitigation[4]
549	English hawthorn	*Crataegus monogyna*	5	2.5	Fair	Fair	Multiple stems		Retain	Private	None
791	Willow	*Salix sp.*	20	10	Poor	Very Poor	Data visually collected due to inaccessible area		Retain	SROZ	None
874	Douglas-fir	*Pseudotsuga menziesii*	36	18	Good	Fair	Broken limbs at base	x	Remove	Public	1
1270	Douglas-fir	*Pseudotsuga menziesii*	47	23.5	Fair	Fair	Co-dominant stem with included bark, broken limbs in crown		Remove	Private	1
1272	Douglas-fir	*Pseudotsuga menziesii*	41	20.5	Good	Good			Remove	Private	1
1274	Douglas-fir	*Pseudotsuga menziesii*	33	16.5	Good	Fair	Wood pecker damage at base	x	Remove	Public	1
1276	Douglas-fir	*Pseudotsuga menziesii*	28	14	Fair	Fair	Thin crown	x	Remove	Public	1
1278	Douglas-fir	*Pseudotsuga menziesii*	31	15.5	Fair	Fair	Thin crown, sap sucker damage at base	x	Remove	Private	1
1280	Douglas-fir	*Pseudotsuga menziesii*	43	21.5	Good	Good		x	Remove	Public	1
1301	Douglas-fir	*Pseudotsuga menziesii*	40	20	Good	Good			Remove	Private	1
1303	Douglas-fir	*Pseudotsuga menziesii*	50	25	Fair	Poor	Weeping crack at 12', decay with sloughing bark at base		Remove	Private	None
1311	sweet cherry	*Prunus avium*	20	10	Very Poor	Very Poor	Tree in heavy decline		Remove	Private	None
1480	sweet cherry	*Prunus avium*	8	4	Fair	Poor	Data visually collected	x	Remove	Private	None
1501	Douglas-fir	*Pseudotsuga menziesii*	30	15	Good	Good			Remove	Private	1
1660	Douglas-fir	*Pseudotsuga menziesii*	39	19.5	Fair	Fair	Broken limbs at base, thin crown		Remove	Private	1
1797	Douglas-fir	*Pseudotsuga menziesii*	49	24.5	Fair	Fair	Wood pecker damage at base		Remove	Private	1
1799	Douglas-fir	*Pseudotsuga menziesii*	44	22	Fair	Fair	Co-dominant stem with included bark		Remove	Private	1
1801	Douglas-fir	*Pseudotsuga menziesii*	44	22	Fair	Fair	Co-dominant stem with included bark, cracks and wood pecker holes at base		Remove	Private	1
1803	Douglas-fir	*Pseudotsuga menziesii*	23	11.5	Fair	Fair	Thin crown, excavation in root zone		Remove	Private	1
1805	Douglas-fir	*Pseudotsuga menziesii*	33	16.5	Fair	Fair	Buried root flare		Remove	Private	1
1807	Douglas-fir	*Pseudotsuga menziesii*	26	13	Good	Good			Remove	Private	1
1809	Douglas-fir	*Pseudotsuga menziesii*	41	20.5	Fair	Fair	Torsion cracks at base, excavation in root zone		Remove	Private	1
1811	Douglas-fir	*Pseudotsuga menziesii*	49	24.5	Fair	Fair	Torsion cracks in stem, wood pecker damage at base		Remove	Private	1
1813	Douglas-fir	*Pseudotsuga menziesii*	25	12.5	Fair	Fair	Thin crown, bark damage at base		Remove	Private	1
1815	Douglas-fir	*Pseudotsuga menziesii*	22	11	Good	Fair	Crack with good response growth at base		Remove	Private	1
1817	Douglas-fir	*Pseudotsuga menziesii*	13	6.5	Dead	Dead			Remove	Private	None
1819	Douglas-fir	*Pseudotsuga menziesii*	20	10	Good	Good			Remove	Private	1
1821	Douglas-fir	*Pseudotsuga menziesii*	18	9	Fair	Fair	Contorted stem at 25'		Remove	Private	1
1821.1	Douglas-fir	*Pseudotsuga menziesii*	24	12	Good	Fair	Swelling at base where other tree was removed		Remove	Private	1
1821.2	Douglas-fir	*Pseudotsuga menziesii*	16	8	Fair	Fair	Contorted stem at 15', bark damage at base		Remove	Private	1
1833	Douglas-fir	*Pseudotsuga menziesii*	31	15.5	Good	Good			Remove	Private	1
1835	Douglas-fir	*Pseudotsuga menziesii*	34	17	Fair	Fair	Thin crown		Remove	Private	1
1837	Douglas-fir	*Pseudotsuga menziesii*	28	14	Good	Fair	Excavation in root zone		Remove	Private	1
1839	Douglas-fir	*Pseudotsuga menziesii*	23	11.5	Fair	Fair	Thin crown		Remove	Private	1
1841	Douglas-fir	*Pseudotsuga menziesii*	33	16.5	Good	Fair	Holes in trunk at base		Remove	Private	1

Tree No.	Common Name	Scientific Name	DBH[1]	C-Rad[2]	Condition[3]	Structure	Comments	Not On Property	Treatment	Location	Mitigation[4]
1843	Douglas-fir	*Pseudotsuga menziesii*	51	25.5	Fair	Fair	Thin crown		Remove	Private	1
1845	Douglas-fir	*Pseudotsuga menziesii*	48	24	Fair	Fair	Thin crown, dead limbs in crown		Remove	Private	1
1847	Douglas-fir	*Pseudotsuga menziesii*	22	11	Fair	Fair	Thin crown, bark damage at base		Retain	Private	None
1849	Douglas-fir	*Pseudotsuga menziesii*	26	13	Good	Good			Remove		1
1885	Douglas-fir	*Pseudotsuga menziesii*	23	11.5	Good	Fair	Broken limbs at base		Remove	Private	1
1887	Douglas-fir	*Pseudotsuga menziesii*	38	19	Good	Fair	Broken limbs at base		Remove	Private	1
1957	Douglas-fir	*Pseudotsuga menziesii*	23	11.5	Dead	Dead			Remove	Private	None
1958	Douglas-fir	*Pseudotsuga menziesii*	27	13.5	Dead	Dead			Remove	Private	None
1959	Douglas-fir	*Pseudotsuga menziesii*	21	10.5	Dead	Dead			Remove	Private	None
1960	Douglas-fir	*Pseudotsuga menziesii*	14	7	Poor	Poor	Thin crown, dead top		Remove	Private	None
1961	Douglas-fir	*Pseudotsuga menziesii*	17	8.5	Dead	Dead			Remove	Private	None
1962	Douglas-fir	*Pseudotsuga menziesii*	22	11	Dead	Dead			Remove	Private	None
1963	Douglas-fir	*Pseudotsuga menziesii*	27	13.5	Poor	Poor	Dead top		Remove	Private	None
1964	Douglas-fir	*Pseudotsuga menziesii*	26	13	Poor	Poor	Tree in decline		Remove	Private	None
1965	Douglas-fir	*Pseudotsuga menziesii*	26	13	Fair	Fair	Thin crown		Remove	Private	1
1966	Douglas-fir	*Pseudotsuga menziesii*	26	13	Fair	Fair	Thin crown		Remove	Private	1
1967	Douglas-fir	*Pseudotsuga menziesii*	26	13	Fair	Good	Epicormic growth on limbs		Remove	Private	1
1968	Douglas-fir	*Pseudotsuga menziesii*	31	15.5	Good	Fair	Broken limbs at base		Remove	Private	1
1969	Douglas-fir	*Pseudotsuga menziesii*	28	14	Good	Fair	Broken limbs at base		Remove	Private	1
1970	Douglas-fir	*Pseudotsuga menziesii*	31	15.5	Fair	Fair	Thin crown		Remove	Private	1
1971	Douglas-fir	*Pseudotsuga menziesii*	22	11	Fair	Fair	Thin crown		Remove	Private	1
1972	Douglas-fir	*Pseudotsuga menziesii*	24	12	Fair	Fair	Thin crown		Remove	Private	1
1973	Douglas-fir	*Pseudotsuga menziesii*	51	25.5	Fair	Fair	Broken limbs at base, over extended limbs		Remove	Private	1
2071	Douglas-fir	*Pseudotsuga menziesii*	31	15.5	Good	Fair	Bark damage at base, ivy at base		Remove	Private	1
2072	Oregon ash	*Fraxinus latifolia*	11	5.5	Poor	Poor	Contorted stem, thin crown		Retain	SROZ	None
2073	Willow	*Salix sp.*	14	7	Dead	Dead			Retain	SROZ	None
2074	Oregon ash	*Fraxinus latifolia*	20	10	Poor	Poor	Dead limbs in crown, over extended limbs		Retain	SROZ	None
2075	Oregon ash	*Fraxinus latifolia*	14	7	Fair	Poor	One failed stem at base, decay at base, heavy lean		Retain	SROZ	None
2116	Douglas-fir	*Pseudotsuga menziesii*	21	10.5	Dead	Dead			Remove	Private	None
2118	Douglas-fir	*Pseudotsuga menziesii*	24	12	Dead	Dead			Remove	Private	None
2120	Douglas-fir	*Pseudotsuga menziesii*	32	16	Poor	Poor	Dead top		Remove	Private	None
2122	Douglas-fir	*Pseudotsuga menziesii*	32	16	Fair	Fair	Thin crown, bark damage at base		Remove	Private	1
2124	Douglas-fir	*Pseudotsuga menziesii*	17	8.5	Fair	Fair	Bark damage at base, ivy in crown		Remove	Private	1
2127	Douglas-fir	*Pseudotsuga menziesii*	33	16.5	Good	Fair	Bark damage at base		Remove	Private	1
2129	Douglas-fir	*Pseudotsuga menziesii*	18	9	Very Poor	Very Poor	Dead top		Remove	Private	None
2131	Douglas-fir	*Pseudotsuga menziesii*	16	8	Poor	Poor	Ivy in crown, thin crown		Remove	Private	None
2133	Douglas-fir	*Pseudotsuga menziesii*	15	7.5	Fair	Fair	Ivy in crown		Remove	Private	1
2135	Douglas-fir	*Pseudotsuga menziesii*	15	7.5	Fair	Fair	Thin crown, ivy covering base		Remove	Private	1
2137	Douglas-fir	*Pseudotsuga menziesii*	30	15	Fair	Good	Bark damage at base		Remove	Private	1
2139	Douglas-fir	*Pseudotsuga menziesii*	37	18.5	Good	Good			Remove	Private	1
2141	Douglas-fir	*Pseudotsuga menziesii*	19	9.5	Fair	Fair	Co-dominant stem with included bark at bas, fruiting body at base		Remove	Private	1
2143	Douglas-fir	*Pseudotsuga menziesii*	16	8	Dead	Dead			Remove	Private	None
2145	Douglas-fir	*Pseudotsuga menziesii*	26	13	Fair	Fair	Thin crown		Remove	Private	1
2147	Douglas-fir	*Pseudotsuga menziesii*	15	7.5	Fair	Fair	Thin crown		Remove	Private	1

Tree No.	Common Name	Scientific Name	DBH[1]	C-Rad[2]	Condition[3]	Structure	Comments	Not On Property	Treatment	Location	Mitigation[4]
2149	Douglas-fir	*Pseudotsuga menziesii*	24	12	Fair	Poor	Thin crown, contorted stem, ivy covering base		Remove	Private	None
2151	Douglas-fir	*Pseudotsuga menziesii*	29	14.5	Poor	Poor	Thin crown, ivy covering stem		Remove	Private	None
2153	Douglas-fir	*Pseudotsuga menziesii*	15	7.5	Dead	Dead			Remove	Private	None
2155	Douglas-fir	*Pseudotsuga menziesii*	12	6	Fair	Fair	Ivy covering base		Remove	Private	1
2157	Douglas-fir	*Pseudotsuga menziesii*	19	9.5	Dead	Dead			Remove	Private	1
2159	Douglas-fir	*Pseudotsuga menziesii*	32	16	Good	Fair	Ivy covering base		Remove	Private	1
2161	Douglas-fir	*Pseudotsuga menziesii*	16	8	Dead	Dead			Remove	Private	None
2163	Douglas-fir	*Pseudotsuga menziesii*	24	12	Fair	Fair	Thin crown		Remove	Private	1
2165	Douglas-fir	*Pseudotsuga menziesii*	26	13	Dead	Dead			Remove	Private	None
2167	Douglas-fir	*Pseudotsuga menziesii*	34	17	Fair	Fair	Bark damage at base, thin crown		Remove	Private	1
2169	Douglas-fir	*Pseudotsuga menziesii*	28	14	Poor	Fair	Thin crown		Remove	Private	1
2171	Douglas-fir	*Pseudotsuga menziesii*	22	11	Fair	Fair	Thin crown, ivy covering base, bark damage at base		Remove	Private	1
2173	Douglas-fir	*Pseudotsuga menziesii*	21	10.5	Very Poor	Very Poor	Tree in heavy decline		Remove	Private	None
2175	Douglas-fir	*Pseudotsuga menziesii*	26	13	Dead	Dead			Remove	Private	None
2177	Douglas-fir	*Pseudotsuga menziesii*	24	12	Very Poor	Very Poor	Tree in heavy decline		Remove	Private	None
2179	Douglas-fir	*Pseudotsuga menziesii*	15	7.5	Dead	Dead			Remove	Private	None
2181	Douglas-fir	*Pseudotsuga menziesii*	21	10.5	Dead	Dead			Remove	Private	None
2183	Douglas-fir	*Pseudotsuga menziesii*	24	12	Dead	Dead			Remove	Private	None
2185	Douglas-fir	*Pseudotsuga menziesii*	23	11.5	Poor	Very Poor	Tree previously topped		Remove	Private	None
2199	Douglas-fir	Pseudotsuga menziesii	30	15	Good	Fair	Limb with included bark at 25', bark damage at base		Remove	Private	1
2201	Douglas-fir	*Pseudotsuga menziesii*	14	7	Good	Poor	Co-dominant stem at base, heavy lean		Remove	Private	None
2203	Douglas-fir	*Pseudotsuga menziesii*	27	13.5	Good	Fair	Co-dominant stem at base		Remove	Private	1
2205	Douglas-fir	*Pseudotsuga menziesii*	29	14.5	Good	Fair	Bark damage at base		Remove	Private	1
2207	Douglas-fir	*Pseudotsuga menziesii*	26	13	Good	Good			Remove	Private	1
2209	Douglas-fir	*Pseudotsuga menziesii*	19	9.5	Fair	Fair	Thin crown, bark damage at base		Remove	Private	1
2211	Douglas-fir	*Pseudotsuga menziesii*	42	21	Fair	Poor	Thin crown, decay at base		Remove	Private	None
2213	Douglas-fir	*Pseudotsuga menziesii*	24	12	Poor	Fair	Thin crown		Remove	Private	1
2215	Douglas-fir	*Pseudotsuga menziesii*	17	8.5	Fair	Fair	Bark damage at base		Remove	Private	1
2217	Douglas-fir	*Pseudotsuga menziesii*	27	13.5	Fair	Fair	Pistol butt stem, thin crown		Remove	Private	1
2219	Douglas-fir	*Pseudotsuga menziesii*	16	8	Fair	Fair	Thin crown		Remove	Private	1
2221	Douglas-fir	*Pseudotsuga menziesii*	16	8	Good	Good			Remove	Private	1
2223	Douglas-fir	*Pseudotsuga menziesii*	12	6	Fair	Fair	Thin crown		Remove	Private	1
2225	Douglas-fir	*Pseudotsuga menziesii*	23	11.5	Poor	Poor	Sloughing bark at base, thin crown		Remove	Private	None
2227	Douglas-fir	*Pseudotsuga menziesii*	25	12.5	Good	Good			Remove	Private	1
2229	Douglas-fir	*Pseudotsuga menziesii*	13	6.5	Fair	Fair	Thin crown		Remove	Private	1
2231	Douglas-fir	*Pseudotsuga menziesii*	22	11	Poor	Poor	Red ring rot fruiting bodies on stem		Remove	Private	None
2233	Douglas-fir	*Pseudotsuga menziesii*	21	10.5	Poor	Poor	Bark damage at base, thin crown, decay at base		Remove	Private	None
2235	Douglas-fir	*Pseudotsuga menziesii*	38	19	Fair	Fair	Thin crown, excavation in root zone		Remove	Private	1
2237	Douglas-fir	*Pseudotsuga menziesii*	32	16	Fair	Fair	Data visually collected	x	Retain	Private	None
2239	Douglas-fir	*Pseudotsuga menziesii*	35	17.5	Fair	Poor	Insect damage at base, thin crown		Remove	Private	None
2241	Douglas-fir	*Pseudotsuga menziesii*	25	12.5	Poor	Poor	Bark damage at base, thin crown		Remove	Private	None

Tree No.	Common Name	Scientific Name	DBH[1]	C-Rad[2]	Condition[3]	Structure	Comments	Not On Property	Treatment	Location	Mitigation[4]
2241.1	Douglas-fir	*Pseudotsuga menziesii*	14	7	Dead	Dead			Remove	Private	None
2244	Douglas-fir	*Pseudotsuga menziesii*	29	14.5	Fair	Fair	Thin crown, decay at base		Remove	Private	1
2246	Douglas-fir	*Pseudotsuga menziesii*	28	14	Fair	Fair	Thin crown		Remove	Private	1
2248	Douglas-fir	*Pseudotsuga menziesii*	47	23.5	Good	Good			Remove	Private	1
2250	Douglas-fir	*Pseudotsuga menziesii*	23	11.5	Fair	Fair	Decay at base, thin crown, barbed wire in base		Remove	Private	1
2252	Douglas-fir	*Pseudotsuga menziesii*	14	7	Fair	Fair	Thin crown, soil around base		Remove	Private	1
2254	Douglas-fir	*Pseudotsuga menziesii*	14	7	Fair	Fair	Thin crown		Remove	Private	1
2256	Douglas-fir	Pseudotsuga menziesii	16	8	Fair	Fair	Thin crown		Remove	Private	1
2258	Douglas-fir	*Pseudotsuga menziesii*	23	11.5	Good	Poor	Excavation in root zone, bark damage at base		Remove	Private	None
2260	Douglas-fir	Pseudotsuga menziesii	16	8	Fair	Fair	Bark damage at base, thin crown		Remove	Private	1
2262	Douglas-fir	*Pseudotsuga menziesii*	26	13	Fair	Fair	Contorted stem, thin crown		Remove	Private	1
2264	Douglas-fir	*Pseudotsuga menziesii*	13	6.5	Poor	Poor	Contorted top, bark damage at base, thin crown		Remove	Private	None
2266	Douglas-fir	*Pseudotsuga menziesii*	11	5.5	Fair	Fair	Thin crown, rock piled at base		Remove	Private	1
2268	Douglas-fir	*Pseudotsuga menziesii*	26	13	Poor	Poor	Thin crown, ivy at base		Remove	Private	None
2270	Douglas-fir	*Pseudotsuga menziesii*	32	16	Poor	Poor	Decay at base		Remove	Private	None
2272	Douglas-fir	*Pseudotsuga menziesii*	46	23	Fair	Fair	Old wound with decay at base, thin crown		Remove	Private	1
2274	Douglas-fir	*Pseudotsuga menziesii*	16	8	Good	Good	Data visually collected	x	Remove	Private	1
2276	Douglas-fir	*Pseudotsuga menziesii*	17	8.5	Good	Good	Data visually collected	x	Remove	Private	None
2278	Douglas-fir	*Pseudotsuga menziesii*	14	7	Poor	Poor	Thin crown, bark damage at base, appears to be on edge of property line		Retain	Private	None
2280	Douglas-fir	*Pseudotsuga menziesii*	32	16	Poor	Fair	Decay at base, thin crown		Remove	Private	None
2282	Douglas-fir	*Pseudotsuga menziesii*	31	15.5	Poor	Poor	Decay at base, thin crown		Remove	Private	None
2284	Douglas-fir	*Pseudotsuga menziesii*	20	10	Poor	Poor	Decay at base		Remove	Private	None
2286	Douglas-fir	*Pseudotsuga menziesii*	33	16.5	Fair	Fair	Thin crown		Remove	Private	1
2288	Douglas-fir	*Pseudotsuga menziesii*	32	16	Fair	Fair	Thin crown		Remove	Private	1
2290	Douglas-fir	*Pseudotsuga menziesii*	17	8.5	Very Poor	Very Poor	Dead top		Remove	Private	None
2292	Douglas-fir	*Pseudotsuga menziesii*	18	9	Fair	Fair	Ivy covering base, thin crown		Remove	Private	1
2294	Douglas-fir	*Pseudotsuga menziesii*	31	15.5	Poor	Poor	Decay at base, ivy covering base		Remove	Private	None
2296	Douglas-fir	*Pseudotsuga menziesii*	41	20.5	Fair	Poor	Decay at base, thin crown		Remove	Private	None
2298	Douglas-fir	*Pseudotsuga menziesii*	39	19.5	Fair	Fair	Thin crown		Remove	Private	1
2300	Douglas-fir	*Pseudotsuga menziesii*	16	8	Fair	Fair	Thin crown		Remove	Private	1
2302	Douglas-fir	*Pseudotsuga menziesii*	16	8	Poor	Poor	Decay in stem at 20', thin crown		Remove	Private	None
2304	Douglas-fir	*Pseudotsuga menziesii*	24	12	Good	Fair	Fence in base		Remove	Private	1
2306	Douglas-fir	*Pseudotsuga menziesii*	54	27	Fair	Fair	Broken limb at base, thin crown		Remove	Private	1
2308	Douglas-fir	*Pseudotsuga menziesii*	18	9	Fair	Fair	Thin crown		Remove	Private	1
2310	Douglas-fir	*Pseudotsuga menziesii*	13	6.5	Fair	Fair	Thin crown		Remove	Private	1
2312	Douglas-fir	*Pseudotsuga menziesii*	14	7	Poor	Poor	Thin crown		Remove	Private	None
2314	Douglas-fir	*Pseudotsuga menziesii*	16	8	Poor	Poor	Thin crown		Remove	Private	None
2316	Douglas-fir	*Pseudotsuga menziesii*	25	12.5	Fair	Fair	Ivy covering base		Remove	Private	1
2318	Douglas-fir	*Pseudotsuga menziesii*	24	12	Fair	Fair	Ivy covering base		Remove	Private	1
2320	Douglas-fir	*Pseudotsuga menziesii*	39	19.5	Good	Fair	Pistol butt		Remove	Private	1

Tree No.	Common Name	Scientific Name	DBH[1]	C-Rad[2]	Condition[3]	Structure	Comments	Not On Property	Treatment	Location	Mitigation[4]
2322	Douglas-fir	*Pseudotsuga menziesii*	23	11.5	Fair	Fair	Ivy covering base		Remove	Private	1
2324	Douglas-fir	*Pseudotsuga menziesii*	23	11.5	Fair	Fair	Ivy covering base		Remove	Private	1
2326	Douglas-fir	*Pseudotsuga menziesii*	15	7.5	Fair	Fair	Ivy growing on stem		Remove	Private	1
2328	Douglas-fir	*Pseudotsuga menziesii*	20	10	Good	Good	Data visually collected	x	Retain	Private	None
2330	Douglas-fir	*Pseudotsuga menziesii*	16	8	Poor	Poor	Data visually collected	x	Retain	Private	None
2332	Douglas-fir	*Pseudotsuga menziesii*	25	12.5	Good	Good			Remove	Private	1
2334	Douglas-fir	*Pseudotsuga menziesii*	18	9	Fair	Fair	Data visually collected	x	Retain	Private	None
2336	Douglas-fir	*Pseudotsuga menziesii*	18	9	Fair	Fair	Data visually collected	x	Retain	Private	None
2338	Douglas-fir	*Pseudotsuga menziesii*	32	16	Good	Good	Data visually collected	x	Retain	Private	1
2340	Douglas-fir	*Pseudotsuga menziesii*	22	11	Good	Fair	Bark damage on roots, appears to be on edge of property line		Retain	Private	None
2342	Douglas-fir	*Pseudotsuga menziesii*	25	12.5	Fair	Fair	Thin crown		Remove	Private	1
2344	Douglas-fir	*Pseudotsuga menziesii*	16	8	Fair	Fair	Thin crown		Remove	Private	1
2346	Douglas-fir	*Pseudotsuga menziesii*	14	7	Fair	Poor	Decay in stem, bark damage at base		Remove	Private	None
2348	Douglas-fir	*Pseudotsuga menziesii*	25	12.5	Poor	Poor	Decay in stem, thin crown		Remove	Private	None
2350	Douglas-fir	*Pseudotsuga menziesii*	39	19.5	Good	Good			Remove	Private	1
2352	Douglas-fir	*Pseudotsuga menziesii*	18	9	Poor	Poor	Exposed roots, thin crown		Remove	Private	None
2354	Douglas-fir	*Pseudotsuga menziesii*	19	9.5	Fair	Fair	Thin crown		Remove	Private	1
2356	Douglas-fir	*Pseudotsuga menziesii*	23	11.5	Good	Good			Remove	Private	1
2358	Pacific madrone	*Arbutus menziesii*	18	9	Poor	Fair	Data visually collected	x	Retain	Private	None
2360	Douglas-fir	*Pseudotsuga menziesii*	20	10	Good	Good	Data visually collected	x	Retain	Private	None
2362	Douglas-fir	*Pseudotsuga menziesii*	16	8	Good	Fair	Data visually collected	x	Retain	Private	None
2364	Douglas-fir	*Pseudotsuga menziesii*	27	13.5	Fair	Good	Data visually collected	x	Remove	Private	1
2366	Douglas-fir	*Pseudotsuga menziesii*	13	6.5	Poor	Fair	Thin crown, appears to be on edge of property line		Retain	Private	None
2368	Douglas-fir	*Pseudotsuga menziesii*	22	11	Good	Good	Data visually collected	x	Retain	Private	None
2370	Douglas-fir	*Pseudotsuga menziesii*	21	10.5	Fair	Good	Thin crown		Remove	Private	1
2372	Douglas-fir	*Pseudotsuga menziesii*	26	13	Good	Good			Remove	Private	1
2374	Douglas-fir	*Pseudotsuga menziesii*	12	6	Good	Good	Appears to be on edge of property line		Retain	Private	None
2376	Douglas-fir	*Pseudotsuga menziesii*	34	17	Good	Good	Data visually collected	x	Retain	Private	None
2378	Douglas-fir	*Pseudotsuga menziesii*	14	7	Good	Fair	Data visually collected	x	Retain	Private	None
2380	Douglas-fir	*Pseudotsuga menziesii*	25	12.5	Fair	Good	Data visually collected	x	Retain	Private	None
2382	Douglas-fir	*Pseudotsuga menziesii*	36	18	Poor	Fair	Ivy covering base, thin crown		Remove	Private	None
2384	Douglas-fir	*Pseudotsuga menziesii*	25	12.5	Poor	Poor	Data visually collected	x	Retain	Private	None
2386	Douglas-fir	*Pseudotsuga menziesii*	22	11	Good	Good	Data visually collected	x	Retain	Private	None
2388	Douglas-fir	*Pseudotsuga menziesii*	25	12.5	Poor	Poor	Data visually collected	x	Retain	Private	None
2390	Douglas-fir	*Pseudotsuga menziesii*	36	18	Fair	Fair	Data visually collected	x	Retain	Private	None
2392	Douglas-fir	*Pseudotsuga menziesii*	36	18	Fair	Good	Data visually collected	x	Retain	Private	None
2398	Douglas-fir	*Pseudotsuga menziesii*	17	8.5	Good	Good	Data visually collected	x	Retain	Private	None
2400	bigleaf maple	*Acer macrophyllum*	10	5	Good	Fair	Data visually collected	x	Retain	Private	None
2420	Douglas-fir	*Pseudotsuga menziesii*	14	7	Fair	Poor	Data visually collected	x	Retain	Private	None
2423	Douglas-fir	*Pseudotsuga menziesii*	28	14	Good	Fair	Data visually collected	x	Retain	Private	None
2425	Douglas-fir	*Pseudotsuga menziesii*	10	5	Poor	Poor	Data visually collected	x	Retain	Private	None
2427	Douglas-fir	*Pseudotsuga menziesii*	32	16	Fair	Good	Data visually collected	x	Retain	Private	None
2430	Douglas-fir	*Pseudotsuga menziesii*	17	8.5	Good	Fair	Data visually collected	x	Retain	Private	None
2432	Douglas-fir	*Pseudotsuga menziesii*	27	13.5	Good	Fair	Data visually collected	x	Retain	Private	None

Tree No.	Common Name	Scientific Name	DBH[1]	C-Rad[2]	Condition[3]	Structure	Comments	Not On Property	Treatment	Location	Mitigation[4]
2434	Douglas-fir	*Pseudotsuga menziesii*	21	10.5	Fair	Fair	Fence in base, thin crown, appears to be on edge of property line		Remove	Private	1
2437	Douglas-fir	*Pseudotsuga menziesii*	28	14	Good	Fair	Data visually collected	x	Retain	Private	None
2439	Douglas-fir	*Pseudotsuga menziesii*	16	8	Good	Good	Data visually collected	x	Retain	Private	None
2441	Douglas-fir	*Pseudotsuga menziesii*	28	14	Fair	Fair	Thin crown		Remove	Private	1
2443	Douglas-fir	*Pseudotsuga menziesii*	20	10	Fair	Fair	Thin crown, bark damage at base		Remove	Private	1
2445	Douglas-fir	*Pseudotsuga menziesii*	20	10	Fair	Fair	Thin crown		Remove	Private	1
2447	Douglas-fir	*Pseudotsuga menziesii*	13	6.5	Good	Fair	Bark damage at base		Remove	Private	1
2449	Douglas-fir	*Pseudotsuga menziesii*	22	11	Fair	Fair	Thin crown		Remove	Private	1
2451	Douglas-fir	*Pseudotsuga menziesii*	28	14	Fair	Poor	Wood pecker damage at base, thin crown, decay at base		Remove	Private	None
2453	Douglas-fir	*Pseudotsuga menziesii*	12	6	Fair	Fair	Thin crown		Remove	Private	1
2455	Douglas-fir	*Pseudotsuga menziesii*	18	9	Poor	Poor	Red ring rot, thin crown		Remove	Private	None
2458	Douglas-fir	*Pseudotsuga menziesii*	25	12.5	Good	Good	Data visually collected	x	Retain	Private	None
2460	Douglas-fir	*Pseudotsuga menziesii*	18	9	Good	Good	Data visually collected	x	Retain	Private	None
2462	Douglas-fir	*Pseudotsuga menziesii*	12	6	Fair	Fair	Thin crown		Remove	Private	1
2464	Douglas-fir	*Pseudotsuga menziesii*	14	7	Poor	Poor	Broken top, decay in stem		Remove	Private	None
2466	Douglas-fir	*Pseudotsuga menziesii*	10	5	Fair	Fair	Thin crown		Remove	Private	1
2468	Douglas-fir	*Pseudotsuga menziesii*	23	11.5	Fair	Fair	Co-dominant stem with included bark		Remove	Private	1
2470	Douglas-fir	*Pseudotsuga menziesii*	23	11.5	Fair	Fair	Co-dominant stem with included bark, ivy covering stem		Remove	Private	1
2472	Douglas-fir	*Pseudotsuga menziesii*	10	5	Good	Fair	Data visually collected	x	Retain	Private	None
2475	Douglas-fir	*Pseudotsuga menziesii*	40	20	Good	Good	Data visually collected	x	Retain	Private	None
2477	Oregon white oak	*Quercus garryana*	12	6	Fair	Fair	Data visually collected	x	Retain	Private	None
2479	Douglas-fir	*Pseudotsuga menziesii*	26	13	Fair	Fair	Thin crown, fence in base		Remove	Private	1
2481	Douglas-fir	*Pseudotsuga menziesii*	16	8	Fair	Fair	Thin crown		Remove	Private	1
2483	Douglas-fir	*Pseudotsuga menziesii*	18	9	Good	Good			Remove	Private	1
2485	Douglas-fir	*Pseudotsuga menziesii*	14	7	Fair	Fair	Bark damage at base		Remove	Private	1
2487	Douglas-fir	*Pseudotsuga menziesii*	26	13	Poor	Poor	Broken limbs in crown, thin crown		Remove	Private	None
2489	Douglas-fir	*Pseudotsuga menziesii*	33	16.5	Poor	Poor	Thin crown		Remove	Private	None
2496	Douglas-fir	*Pseudotsuga menziesii*	24	12	Fair	Fair	Thin crown		Remove	Private	1
2498	Douglas-fir	*Pseudotsuga menziesii*	27	13.5	Fair	Fair	Co-dominant stem with included bark, thin crown		Remove	Private	1
2500	Douglas-fir	*Pseudotsuga menziesii*	19	9.5	Dead	Dead			Remove	Private	None
2502	Douglas-fir	*Pseudotsuga menziesii*	24	12	Good	Good			Remove	Private	1
2504	Douglas-fir	*Pseudotsuga menziesii*	16	8	Fair	Fair	Thin crown		Remove	Private	1
2506	Douglas-fir	*Pseudotsuga menziesii*	20	10	Fair	Fair	Bark damage at base, thin crown		Remove	Private	1
2508	Douglas-fir	*Pseudotsuga menziesii*	24	12	Poor	Fair	Thin crown		Remove	Private	None
2587	Douglas-fir	*Pseudotsuga menziesii*	36	18	Fair	Poor	Co-dominant stem with included bark		Remove	Private	None
2793	Douglas-fir	*Pseudotsuga menziesii*	24	18	Good	Fair	One sided		Remove	Private	1
	Street tree							X	Remove	Public	1
	Street tree							X	Remove	Public	1
	Street tree							X	Remove	Public	1
	Street tree							X	Remove	Public	1
	Street tree							X	Remove	Public	1

Tree No.	Common Name	Scientific Name	DBH[1]	C-Rad[2]	Condition[3]	Structure	Comments	Not On Property	Treatment	Location	Mitigation[4]
	Street tree							X	Remove	Public	1
	Street tree							X	Remove	Public	1
	Street tree							X	Remove	Public	1
	Street tree							X	Remove	Public	1
	Street tree							X	Remove	Public	1
	Street tree							X	Remove	Public	1
	Street tree							X	Remove	Public	1
	Street tree							X	Remove	Public	1
	Street tree							X	Remove	Public	1
	Street tree							X	Remove	Public	1
	Street tree							X	Remove	Public	1
	Street tree							X	Remove	Public	1
	Street tree							X	Remove	Public	1
	Street tree							X	Remove	Public	1

[1]**DBH** is the trunk diameter in inches measured per International Society of Arboriculture (ISA) standards.

[2]**C-Rad** is the approximate crown radius in feet.

[3]**Condition and Structure** ratings range from dead, very poor, poor, fair, to good.

[4]**Mitigation** is recommended for the removal of trees over 6-inch DBH. Trees that are less than 6-inch DBH are not recommended for mitigation

Attachment 4
Tree Protection Recommendations

Before Construction Begins

1. Notify all contractors of tree protection procedures. For successful tree protection on a construction site, all contractors must know and understand the goals of tree protection.
    a. Hold a tree protection meeting with all contractors to explain the goals of tree protection.
    c. Have all contractors sign memoranda of understanding regarding the goals of tree protection. The memoranda should include a penalty for violating the tree protection plan. The penalty should equal the resulting fines issued by the local jurisdiction plus the appraised value of the tree(s) within the violated tree protection zone per the current Trunk Formula Method as outlined in the current edition of the ***Guide for Plant Appraisal*** by the Council of Tree & Landscape Appraisers. The penalty should be paid to the owner of the property.
2. Fencing
    a. Tree protection fencing may be set as shown in Attachment 2.
    b. The fencing should be put in place before the ground is cleared to protect the trees and the soil around the trees from disturbances.
    c. Fencing should be established by the project arborist based on the needs of the trees to be protected and to facilitate construction.
    d. Fencing should consist of 4-foot high steel fencing on concrete blocks or other anchoring devices, or 4-foot metal fencing secured to the ground with 6-foot metal posts to prevent it from being moved by contractors, sagging, or falling down.
    e. Fencing should remain in the position that is established by the project arborist and not be moved without approval from the project arborist until final project approval.
3. Signage
    a. All tree protection fencing should have signage as follows so that all contractors understand the purpose of the fencing:

> **TREE PROTECTION ZONE**
>
> **DO NOT REMOVE OR ADJUST THE LOCATION OF THIS TREE PROTECTION FENCING**
> **UNAUTHORIZED ENCROACHMENT MAY RESULT IN FINES**
>
> Please contact the project arborist if alterations to the location of the tree protection fencing are necessary.
>
> Todd Prager, Project Arborist, Teragan & Associates, 971-295-4835

    b. Signage should be placed every 75-feet or less.

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During Construction

1. Protection Guidelines Within the Tree Protection Zones:
    a. No new buildings; grade change or cut and fill, during or after construction; new impervious surfaces; or utility or drainage field placement should be allowed within the tree protection zones.
    b. No traffic should be allowed within the tree protection zones. This includes but is not limited to vehicle, heavy equipment, or even repeated foot traffic.
    c. No storage of materials including but not limiting to soil, construction material, or waste from the site should be permitted within the tree protection zones. Waste includes but is not limited to concrete wash out, gasoline, diesel, paint, cleaner, thinners, etc.
    d. Construction trailers should not be parked/placed within the tree protection zones.
    e. No vehicles should be allowed to park within the tree protection zones.
    f. No other activities should be allowed that will cause soil compaction within the tree protection zones.
2. The trees should be protected from any cutting, skinning or breaking of branches, trunks or woody roots.
3. The project arborist should be notified prior to the cutting of woody roots from trees that are to be retained to evaluate and oversee the proper cutting of roots with sharp cutting tools. Cut roots should be immediately covered with soil or mulch to prevent them from drying out.
4. Trees that have woody roots cut should be provided supplemental water during the summer months.
5. Any necessary passage of utilities through the tree protection zones should be by means of tunneling under woody roots by hand digging or boring with oversight by the project arborist.
6. Any deviation from the recommendations in this section should receive prior approval from the project arborist.

After Construction

1. Carefully landscape the areas within the tree protection zones. Do not allow trenching for irrigation or other utilities within the tree protection zones.
2. Carefully plant new plants within the tree protection zones. Avoid cutting the woody roots of trees that are retained.
3. Do not install permanent irrigation within the tree protection zones unless it is drip irrigation to support a specific planting or the irrigation is approved by the project arborist.
4. Provide adequate drainage within the tree protection zones and do not alter soil hydrology significantly from existing conditions for the trees to be retained.
5. Provide for the ongoing inspection and treatment of insect and disease populations that can damage the retained trees and plants.
6. The retained trees may need to be fertilized if recommended by the project arborist.
7. Any deviation from the recommendations in this section should receive prior approval from the project arborist.

Attachment 5
Assumptions and Limiting Conditions

1. Any legal description provided to the consultant is assumed to be correct. The information provided by Delta Logistics and their consultants was the basis of the information provided in this report.
2. It is assumed that this property is not in violation of any codes, statutes, ordinances, or other governmental regulations.
3. The consultant is not responsible for information gathered from others involved in various activities pertaining to this project. Care has been taken to obtain information from reliable sources.
4. Loss or alteration of any part of this delivered report invalidates the entire report.
5. Drawings and information contained in this report may not be to scale and are intended to be used as display points of reference only.
6. The consultant's role is only to make recommendations. Inaction on the part of those receiving the report is not the responsibility of the consultant.
7. The purpose of this report is to:
    - Provide an assessment of the existing trees;
    - Provide recommendations for tree removal and retention based on the proposed site improvements; and
    - Provide protection recommendations for the trees to be retained.

TERAGAN & ASSOCIATES, INC.
ARBORICULTURAL CONSULTANTS

Subject: Addendum to Tree Plan for the Delta Logistics Project in Wilsonville

Address of the Site:	9710 SW Day Road, Wilsonville, OR
Date of Report:	February 28, 2023
Addendum Submitted To:	Igor Nichiporchik, Delta Logistics

This addendum reviews the changes to the plans that were included in the tree plan for the project dated April 11, 2022. The changes to the project that I received on February 27, 2023 include the removal of the western part of the property from the planned development. The trees on the western section of the property west of Tapman Creek will not be removed. In addition, there are five tree seast of the creek but north of the planned edge of the parking lot/storm water facility that will also not be removed but will be protected with appropriate tree protection fencing location.

The rest of the trees east of the western edge of the planned parking lot on the property will be removed on the property. The tree protection fencing as shown on sheet L0.04, Tree Mitigation Plan dated 02/28/23 will adequately protect the trees that will not be removed on the neighboring properties and the western section of the subject property.

The mitigation tree planting is addressed on the landscape plan. There are several Oregon ash trees that will be planted jus twest of the tree protection fence as shown on sheet L0.04. The landscape contractor will have adjust the tree protection fencing from the planned location during the property development to around the trees that are to be protected as shown on the Tree Mitigation Plan included in the appendix of this memo to ensure that the existing trees are not inadvertently impacted by the process of planting the mitigation trees.

Please contact us with any questions/concerns.

Thank you,

Terrence P. Flanagan

Terrence P. Flanagan
ISA Board Certified Master Arborist, #PN-0120 BMTL
ISA Tree Risk Assessment Qualified
Member, American Society of Consulting Arborists

Appendix #1 – Adjusted Tree Protection Plan for Landscaping Phase

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Appendix #1 Adjusted Tree Protection Plan

MITIGATION REQUIREMENTS

REPLACE LIVING TREES 6-INCH DBH OR LARGER WITH A 2-INCH CALIPER TREE OR LARGER OF SIMILAR MATURE CANOPY SIZE AND STRUCTURE.

TOTAL TREES REQUIRING MITIGATION	175
TOTAL 2" CAL. TREES IN PLAN	175
TOTAL TREES REQUIRING FEE IN LIEU	0

TREE CREDITS (SECTION 4.176,06.F)

DBH IS 18-24"	3 TREE CREDITS
DBH IS 25-31"	4 TREE CREDITS
DBH IS 32" OR GREATER	5 TREE CREDITS

FOR FULL LIST OF TREES TO BE REMOVED SEE EXHIBIT D ARBORIST'S REPORT.

TREES TO BE RETAINED		DBH	CREDITS	CONDITION
549	CRATAEGUS MONOGYNA	5"	0	FAIR
791	WILLOW / SALIX	20"	0	POOR
1847	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	22"	0	FAIR
2072	OREGON ASH / FRAXINUS LATIFOLIA	11"	0	POOR
2073	WILLOW / SALIX	14"	0	DEAD
2074	OREGON ASH / FRAXINUS LATIFOLIA	20"	0	POOR
2075	OREGON ASH / FRAXINUS LATIFOLIA	14"	0	FAIR
2116	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	21"	0	DEAD
2118	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	24"	0	DEAD
2120	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	32"	0	POOR
2122	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	32"	5	FAIR
2124	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	17"	0	FAIR
2127	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	33"	5	GOOD
2129	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	18"	0	VERY POOR
2131	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	16"	0	POOR
2133	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	15"	0	FAIR
2135	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	15"	0	FAIR
2137	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	30"	4	FAIR
2139	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	37"	5	GOOD
2141	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	19"	3	FAIR
2143	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	16"	0	DEAD
2145	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	26"	4	FAIR
2147	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	15"	0	FAIR
2149	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	24"	3	FAIR
2151	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	29"	0	POOR
2153	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	15"	0	DEAD
2155	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	12"	0	FAIR
2157	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	19"	0	DEAD
2159	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	32"	5	GOOD
2161	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	16"	0	DEAD
2163	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	24"	3	FAIR
2165	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	26"	0	DEAD
2167	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	34"	5	FAIR
2169	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	28"	4	POOR
2171	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	22"	3	FAIR
2173	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	21"	0	VERY POOR
2175	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	26"	0	DEAD
2177	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	24"	0	VERY POOR
2179	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	15"	0	DEAD
2181	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	21"	0	DEAD
2183	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	24"	0	DEAD
2185	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	23"	3	POOR
2278	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	14"	0	POOR
2340	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	22"	3	GOOD
2366	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	13"	0	POOR
2374	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	12"	0	GOOD

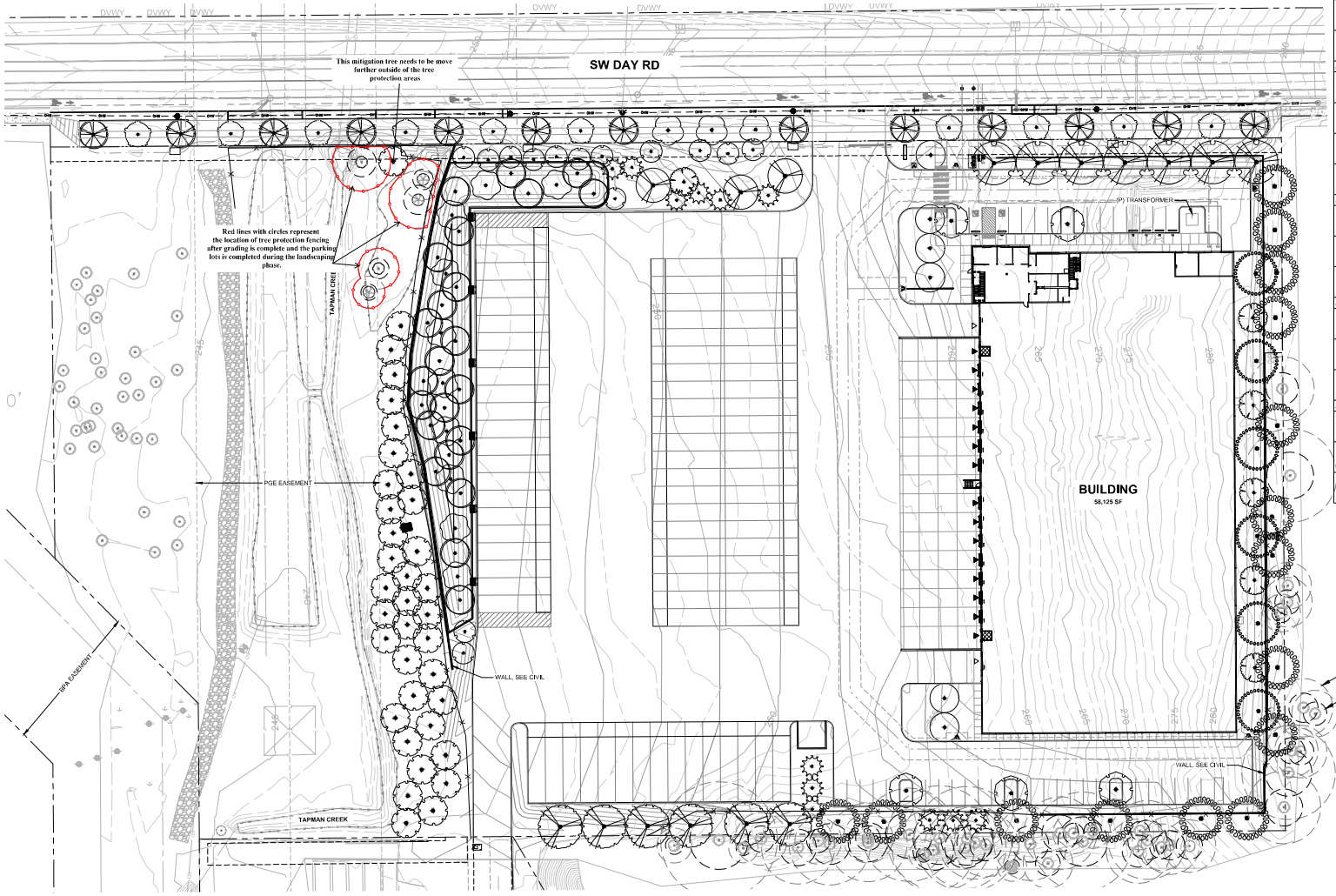
TOTAL TREE CREDITS 55 TREES

EXISTING TREE INVENTORY

EXISTING	BOTANICAL / COMMON NAME	QTY
	DOUGLAS FIR TO REMAIN	40
	ENGLISH HAWTHORN TO REMAIN	1
	OREGON ASH TO REMAIN	3
	WILLOW TO REMAIN	2

PROPOSED TREES

ACCENT TREES	QTY	BOTANICAL / COMMON NAME
	6	ACER RUBRUM 'BOWHALL' BOWHALL RED MAPLE
	14	AMELANCHIER ALNIFOLIA 'AUTUMN BRILLIANCE' SERVICEBERRY
	6	CORNUS KOUSA X NUTTALLII 'KN4-43' STARLIGHT KOUSA DOGWOOD
PRIMARY TREES	**QTY**	**BOTANICAL / COMMON NAME**
	7	FRAXINUS PENNSYLVANICA 'MARSHALL'S SEEDLESS' MARSHALL'S SEEDLESS GREEN ASH
	6	PINUS PONDEROSA PONDEROSA PINE
	15	PSEUDOTSUGA MENZIESII DOUGLAS FIR
	6	QUERCUS GARRYANA OREGON WHITE OAK
SECONDARY TREES	**QTY**	**BOTANICAL / COMMON NAME**
	12	CALOCEDRUS DECURRENS INCENSE CEDAR
	3	TILIA TOMENTOSA 'STERLING' STERLING SILVER LINDEN
	5	ULMUS X 'FRONTIER' FRONTIER ELM
STORMWATER TREES	**QTY**	**BOTANICAL / COMMON NAME**
	10	CORNUS X 'EDDIE'S WHITE WONDER' EDDIE'S WHITE WONDER DOGWOOD
	29	FRAXINUS LATIFOLIA OREGON ASH
	23	RHAMNUS PURSHIANA CASCARA BUCKTHORN
STREET TREES	**QTY**	**BOTANICAL / COMMON NAME**
	13	ACER GRANDIDENTATUM 'SCHMIDT' TM ROCKY MOUNTAIN GLOW MAPLE
	3	CORNUS KOUSA 'MILKY WAY' MILKY WAY KOUSA DOGWOOD
	10	PARROTIA PERSICA 'INGE'S RUBY VASE' TM RUBY VASE PERSIAN PARROTIA



1 L0.04 TREE MITIGATION PLAN

30 0 15 30 60 120 (IN FEET) 1 inch = 30 ft.

NOTE

1. OFFSITE TREES IMPACTED BY ONSITE IMPROVEMENT ON ADJACENT PRIVATE PROPERTY ARE RECOMMENDED FOR REMOVAL AND MITIGATION CONTINGENT UPON APPROVAL OF ADJACENT PROPERTY OWNER.

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WILSONVILLE, OR 97070

Project
DELTA LOGISTICS SITE EXPANSION
9710 SW DAY RD.
CITY OF WILSONVILLE, OR

PRELIMINARY NOT FOR CONSTRUCTION

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REVISION SCHEDULE

Delta	Issued As	Issue Date

TREE MITIGATION PLAN

SHEET
L0.04

DELTA LOGISTICS ANNEX

TRANSPORTATION IMPACT ANALYSIS

FEBRUARY 2022

PREPARED FOR:

WILSONVILLE
OREGON

PREPARED BY DKS ASSOCIATES

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INTRODUCTION

This study evaluates the transportation impacts associated with the proposed Delta Logistics Annex industrial development to be located at 9710 Day Road in Wilsonville, Oregon. The project will consist of an approximately 56,100 square foot industrial building which will have direct access to Day Road and an internal connection to the existing auxiliary operations at 9835 Commerce Circle. The project site is located within the Wilsonville Coffee Creek Industrial Design Overlay Zone.

The purpose of this transportation impact analysis is to identify potential mitigation measures needed to offset transportation impacts that the proposed development may have on the nearby transportation network. The impact analysis is focused on the study intersections, which were selected for evaluation. The intersections are listed below and shown in Figure 1. Table 1 lists important characteristics of the study area and proposed project.

1. Site Access/ Day Road
2. Boones Ferry Road/ Day Road
3. Boones Ferry Road/ 95th Avenue
4. I-5 Southbound Ramps/ Elligsen Road
5. I-5 Northbound Ramps/ Elligsen Road

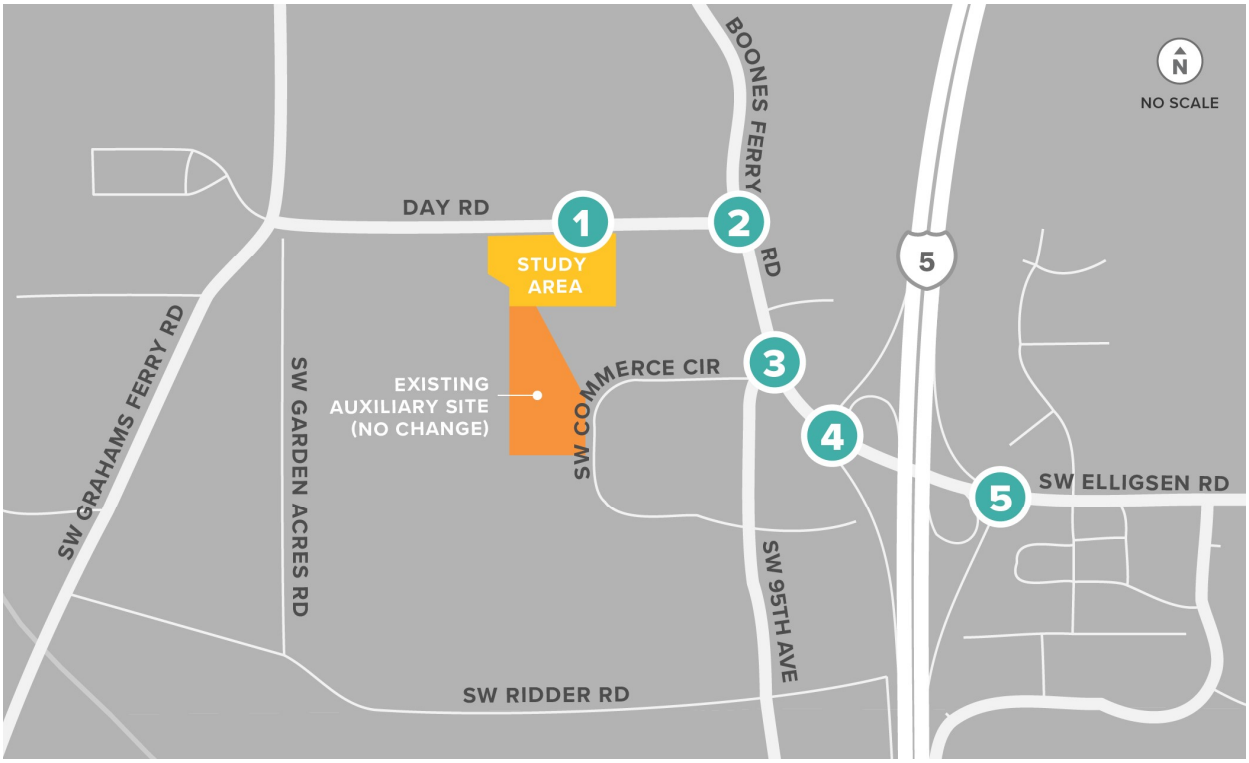


FIGURE 1: STUDY AREA

TABLE 1: STUDY AREA AND PROPOSED PROJECT CHARACTERISTICS

STUDY AREA	
NUMBER OF STUDY INTERSECTIONS	Five
ANALYSIS PERIODS	Weekday PM peak hour (one hour between 4pm and 6pm)
PROPOSED DEVELOPMENT	
SIZE AND LAND USE	56,100 square-foot industrial building
PROJECT TRIPS	33 PM peak hour trips (9 in, 24 out), 127 weekday trips
VEHICLE ACCESS POINTS	One full site access on Day Road and an internal connection to an auxiliary site property on Commerce Circle.
OTHER TRANSPORTATION FACILITIES	
PEDESTRIAN AND BICYCLE FACILITIES	Sidewalks and bicycle lanes currently exist on Day Road fronting the project site.
TRANSIT FACILITIES	SMART Transit Route 5 and TriMet Route 96 have bus stops in the project vicinity.

EXISTING CONDITIONS

This chapter provides documentation of existing study area conditions, including the study area roadway network, pedestrian and bicycle facilities, and existing traffic volumes and operations.

STUDY AREA ROADWAY NETWORK

Key roadways in the study area are summarized in Table 2 along with their existing roadway characteristics. The functional classifications for City of Wilsonville streets are provided in the City of Wilsonville Transportation System Plan (TSP).[1]

TABLE 2: STUDY AREA ROADWAY CHARACTERISTICS

ROADWAY	FUNCTIONAL CLASSIFICATION	LANES	POSTED SPEED	SIDEWALKS	BIKE FACILITIES	ON-STREET PARKING
DAY ROAD	Major Arterial	3	40 mph [a]	Partial [b]	Yes	No
BOONES FERRY ROAD	Major Arterial	3-4	35 mph [c] 45 mph [c]	Yes	Yes	No
95TH AVENUE	Minor Arterial	3	35 mph	Yes	Yes	No
COMMERCE CIRCLE	Local	2	25 mph	Partial [d]	No	Yes
ELLIGSEN ROAD	Major Arterial	4	35 mph	Yes	Yes	No

[a] 35 mph advisory speed west of Boones Ferry Road due to hill and limited sight distance.
[b] Sidewalks only exist on the south side of Day Road.
[c] Posted speed limit on Boones Ferry Road is 35 mph south of Day Road & 45 mph north of Day Road.
[d] Sidewalks exist on the south side of Commerce Circle for approximately 1000 linear feet west of the southern intersection with 95th Avenue.

BICYCLE AND PEDESTRIAN FACILITIES

There are existing marked bicycle lanes on Day Road, Boones Ferry Road, and Elligsen Road (no bike facilities on Commerce Circle). Full sidewalks exist on Boones Ferry Road, Elligsen Road, and 95th Avenue (partial sidewalks on Day Road and Commerce Circle).

PUBLIC TRANSIT SERVICE

South Metro Area Regional Transit (SMART) provides public transportation services within Wilsonville and outlying areas, including Canby, Salem, and the south end of Portland. Route 5 provides service between Wilsonville Transit Center and Commerce Circle on Monday through

[1] Wilsonville Transportation System Plan, Amended November 16, 2020.

Friday with 30-minute headways during peak periods. The closest bus stops are located at the Grahams Ferry Road/ Day Road intersection and at two points along the Commerce Circle loop.

TriMet provides public transportation services in the Portland Metro region. Route 96 services the northern extents of Wilsonville via Boones Ferry Road and Commerce Circle on Monday through Friday with approximately 30-minute intervals during peak periods. Stops are located at the Boones Ferry Road/ Day Road intersection and at a few locations along the Commerce Circle loop.

PLANNED PROJECTS

The City of Wilsonville Transportation System Plan (TSP) has a list of Higher Priority projects which includes the recommended projects reasonably expected to be funded through 2035. These are the highest priority solutions to meet the City's most important needs. The list includes the following projects that impact the key roadways near the proposed project site.[2]

- SI-07 – Add a second southbound right turn lane to the I-5 Exit Ramp at the Boones Ferry Road intersection.
- SI-08 – Improve operations at the Boones Ferry Road/95th Avenue intersection by removing the east private access approach. Pioneer Court access onto Boones Ferry Road will be right-on/right-out. Additional access will occur via a north-south local street connection between Pioneer Court, passing under the Day Road I-5 overcrossing approach, and a new west-east local street (north of Day Road) with full intersection access at Boones Ferry Road.
- RW-02 – Widen Day Road from Boones Ferry Road to Grahams Ferry Road to include additional travel lanes in both directions along with bike lanes and sidewalks; project includes improvements at the Day Road/ Boones Ferry Road and Day Road/ Grahams Ferry Road intersections.
- RW-04 – Widen Boones Ferry Road from Day Road to Basalt Creek Parkway to five lanes.

EXISTING TRAFFIC VOLUMES

Intersection turning movement count data was utilized from a previous traffic study. Those counts were collected on two consecutive weekdays during the PM peak period (4:00-6:00 pm) in September 2021 at the study intersections, and the specific movement data was averaged.

In July 2021, ODOT released their final COVID Monitoring Traffic Report, which indicated that statewide traffic levels were approximately back to "pre-COVID" levels (plus or minus 5%). Other local agencies in the area have anecdotally noted similar observations on the local street system. Additionally, the traffic counts were collected when Wilsonville schools were back to full-time, in-person attendance. Therefore, no COVID adjustment was applied to the traffic counts.

Figure 1 shows the Existing 2021 PM peak hour traffic volumes for the study intersections, along with the lane configurations and traffic control.

[2] Table 5-3/Figure 5-4 and Table 5-4/Figure 5-5, Wilsonville Transportation System Plan, Amended April 15, 2019.

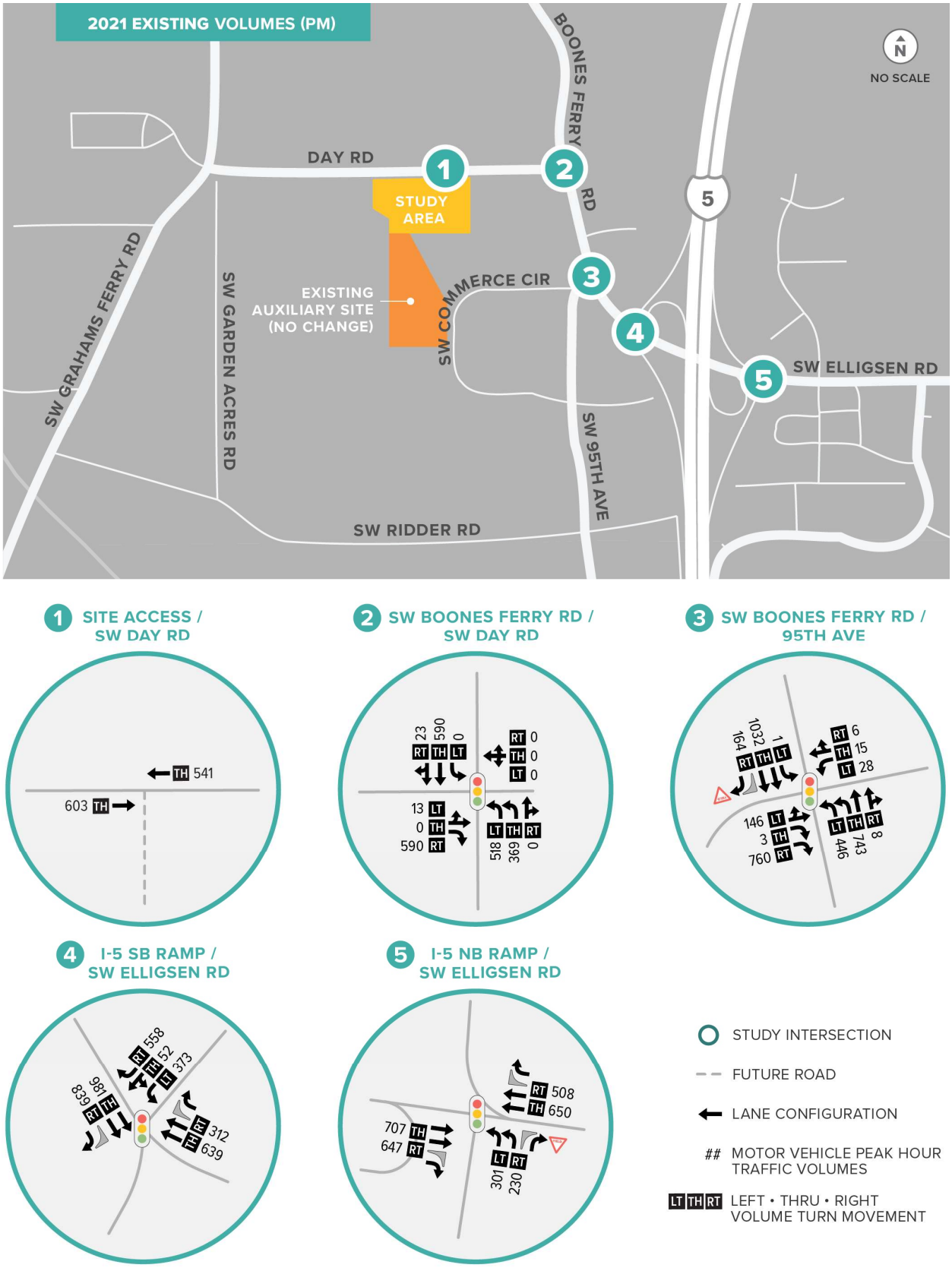


FIGURE 2: EXISTING PM PEAK HOUR TRAFFIC VOLUMES

INTERSECTION PERFORMANCE MEASURES

Agency mobility standards often require intersections to meet level of service (LOS) or volume-to-capacity (V/C) intersection operation thresholds.

- The intersection LOS is similar to a "report card" rating based upon average vehicle delay. Level of service A, B, and C indicate conditions where traffic moves without significant delays over periods of peak hour travel demand. Level of service D and E are progressively worse operating conditions. Level of service F represents conditions where average vehicle delay has become excessive and demand has exceeded capacity. This condition is typically evident in long queues and delays.
- The volume-to-capacity (v/c) ratio represents the level of saturation of the intersection or individual movement. It is determined by dividing the peak hour traffic volume by the maximum hourly capacity of an intersection or turn movement. When the V/C ratio approaches 0.95, operations become unstable and small disruptions can cause the traffic flow to break down, resulting in the formation of excessive queues.

The City of Wilsonville requires study intersections on public streets to meet its minimum acceptable level of service (LOS) standard, which is LOS D for the overall intersection for the PM peak period.

The two intersections located at the Interstate-5/Elligsen Road interchange are required to meet ODOT mobility targets, which are identified in the METRO Regional Transportation Plan (2018) and the Oregon Highway Plan (1999). For the I-5 corridor between the Marquam Bridge to Wilsonville, the PM peak hour target for the first and second hour is a v/c ratio equal to or less than 0.99.[3]

EXISTING INTERSECTION OPERATIONS

An analysis of the 2021 existing intersection operations was performed at the study intersections to determine the current operating conditions of the study area. Intersection operations were analyzed for the PM peak hour using Highway Capacity Manual (HCM) 6th Edition methodology.[4] The volume to capacity (v/c) ratio, delay, and level of service (LOS) of each study intersection are listed in Table 3.

[3] Table 2.4, Regional Transportation Plan, METRO, December 6, 2018.

Table 7, Oregon Highway Plan, Oregon Department of Transportation, 1999.

[4] Highway Capacity Manual, 6th Edition, Transportation Research Board, 2017.

TABLE 3: EXISTING 2021 STUDY INTERSECTION OPERATIONS

INTERSECTION	OPERATING STANDARD/ MOBILITY TARGET	EXISTING PM PEAK HOUR		
		V/C	DELAY	LOS
SIGNALIZED				
BOONES FERRY RD/ DAY RD	LOS D (City)	0.65	15.8	B
BOONES FERRY RD/ 95TH AVE	LOS D (City)	0.69	20.3	C
I-5 SOUTHBOUND RAMPS/ ELLIGSEN RD	v/c ≤ 0.99 (ODOT)	0.75	9.5	A
I-5 NORTHBOUND RAMPS/ ELLIGSEN RD	v/c ≤ 0.99 (ODOT)	0.33	7.2	A
TWO-WAY STOP- CONTROLLED				
SITE ACCESS/ DAY RD	LOS D (City)	-	-	-

SIGNALIZED INTERSECTION:
Delay = Average Intersection Delay (secs)
v/c = Total Volume-to-Capacity Ratio
LOS = Total Level of Service

TWO-WAY STOP CONTROLLED INTERSECTION:
Delay = Critical Movement Delay (secs)
v/c = Critical Movement Volume-to-Capacity Ratio
LOS = Critical Levels of Service (Major/Minor Road)

As shown, all study intersections meet the City's operating standard under the existing analysis scenario. HCM reports are provided in the appendix.

PROJECT IMPACTS

This chapter reviews the impacts that the proposed development may have on the study area transportation system. This analysis includes trip generation and distribution estimates, future year traffic volumes, and operating conditions for the study intersections.

PROPOSED DEVELOPMENT

The proposed Delta Logistics Annex industrial development is located at 9710 Day Road in Wilsonville, Oregon. The project will consist of an approximately 56,100 square foot industrial building which will have direct access to Day Road. The development serves as an annex to the existing operations of Delta Logistics at 9835 SW Commerce Circle and will include an internal connection between the two sites. The project site is located within the Wilsonville Coffee Creek Industrial Design Overlay Zone.

FUTURE ANALYSIS SCENARIOS

Operating conditions were analyzed at the study intersections for the following traffic scenarios. The comparison of the following scenarios enables the assessment of project impacts:

- Existing + Stage II
- Existing + Project
- Existing + Stage II + Project

All future analysis scenarios assume the same traffic control as existing conditions. Stage II represents traffic from other developments that have Stage II approval or are under construction in Wilsonville.

TRIP GENERATION

Trip generation is the method used to estimate the number of vehicles added to site driveways and the adjacent roadway network by a development during a specified period (i.e., such as the PM peak hour).

For this study, the Institute of Transportation Engineers (ITE) trip generation rates for Warehousing (150) were used.[5] This ITE land use code was deemed appropriate through a comparison of the Warehousing (150) trip generation rate with a weekday PM peak hour driveway count that was collected at the existing auxiliary site access for Delta Logistics. The traffic count showed a similar traffic generation as would be expected for the Warehousing (150) land use code, which validates that the land use code would be acceptable for the new site. The total trip generation for the proposed development is shown in Table 4.

[5] Trip Generation Manual, 11th Edition, Institute of Transportation Engineers, 2021.

TABLE 4: VEHICLE TRIP GENERATION

LAND USE (ITE CODE)	SIZE [a]	PM PEAK TRIP RATE	PM PEAK TRIPS			DAILY TRIPS
			IN	OUT	TOTAL	
Warehousing (150)	56.1 KSF	1.20 trips per KSF	9	24	33	127

[a] KSF = 1,000 square feet

As shown, the proposed development is expected to generate a total 33 PM peak hour trips (9 in, 24 out). The project trips at the study intersections are shown in Figure 2 in the following section.

VEHICLE TRIP DISTRIBUTION

Vehicle trip distribution provides an estimation of where vehicles would be coming from and going to. It is given as a percentage at key gateways to the study area and is used to route project trips through the study intersections. Figure 3 shows the trip distribution for the proposed site. The trip distribution was based on the Wilsonville Travel Demand Model[6] and matched prior studies conducted near the project vicinity.[7]

Due to study site having an internal access point to the existing auxiliary site, the vehicle trips that originated south along 95th Avenue were routed through the existing auxiliary site access on Commerce Circle. With 15% of trips on 95th Avenue, this equated to 4 trips out and 1 trip in during the PM peak hour in which the generated vehicles do not interact with a study intersection.

PROJECT TRIPS THROUGH CITY OF WILSONVILLE INTERCHANGE AREAS

The project trips through the two City of Wilsonville I-5 interchange areas were estimated based on the trip generation and distribution assumptions as discussed prior. Approximately 5% of the project trips are expected to travel through the I-5/Wilsonville Road interchange area and 45% are expected to travel through the I-5/Elligsen Road interchange area; that is, the proposed development is expected to generate 2 new PM peak hour trips through the I-5/Wilsonville Road interchange area and 15 new PM peak hour trips through the I-5/Elligsen Road interchange area.

FUTURE TRAFFIC VOLUMES

Traffic volumes were estimated at the study intersections for the three future analysis scenarios. The future scenarios include various combinations of three types of traffic: Existing, Project, and Stage II. Stage II development trips are estimated based on the list of currently approved Stage II developments provided by City staff.[8] The Stage II list is included in the appendix. Figure 4 shows the PM peak hour traffic volumes used to analyze the future scenarios.

[6] 2035 Wilsonville Travel Demand Model, Select Zone Analysis, Zone 4143.

[7] Coffee Creek Industrial Development, Transportation Impact Study, DKS Associates, November 2021.

[8] Daniel Pauly Email, City of Wilsonville, September 21, 2021.

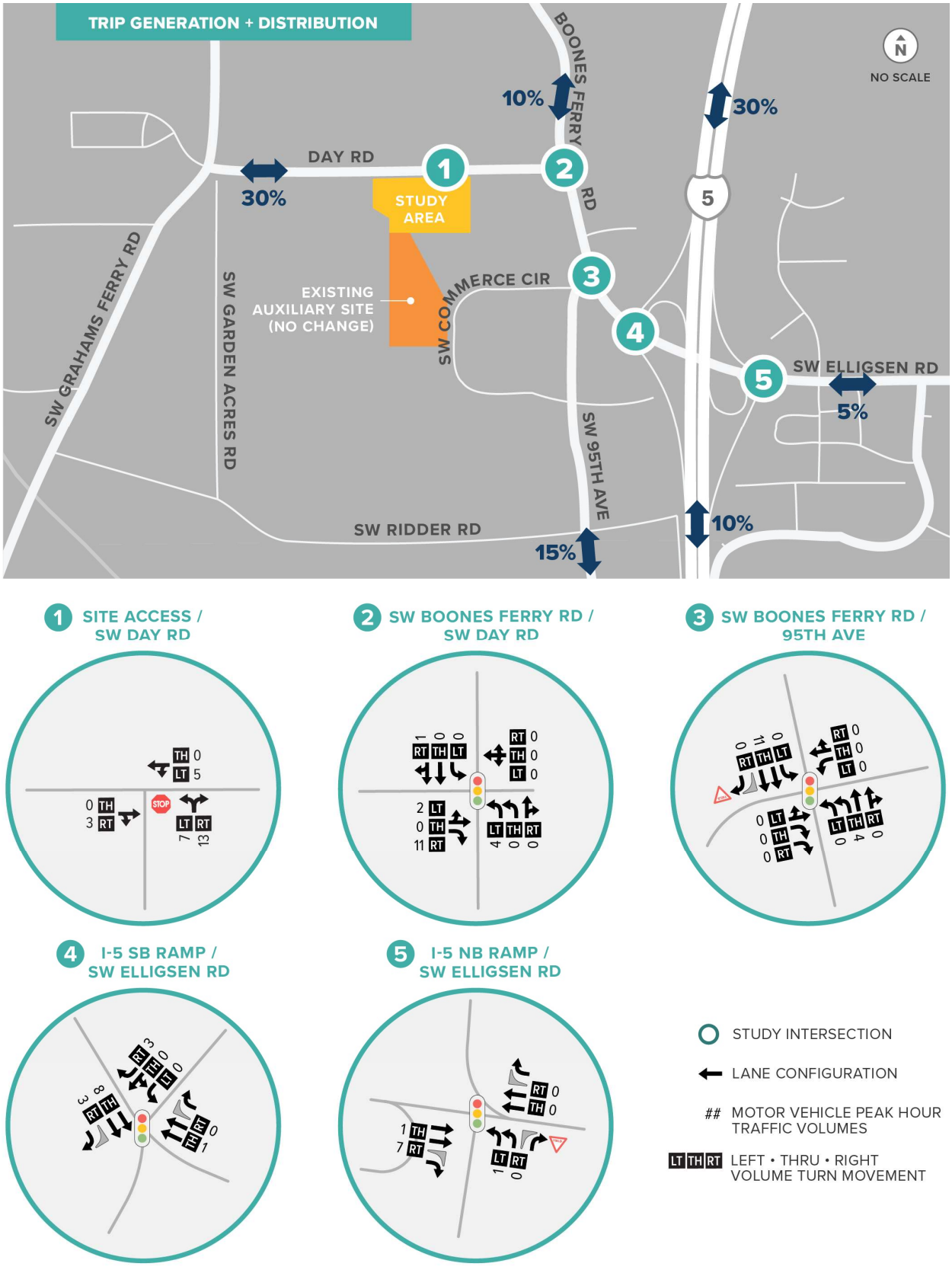


FIGURE 3: TRIP DISTRIBUTION AND PROJECT TRIPS

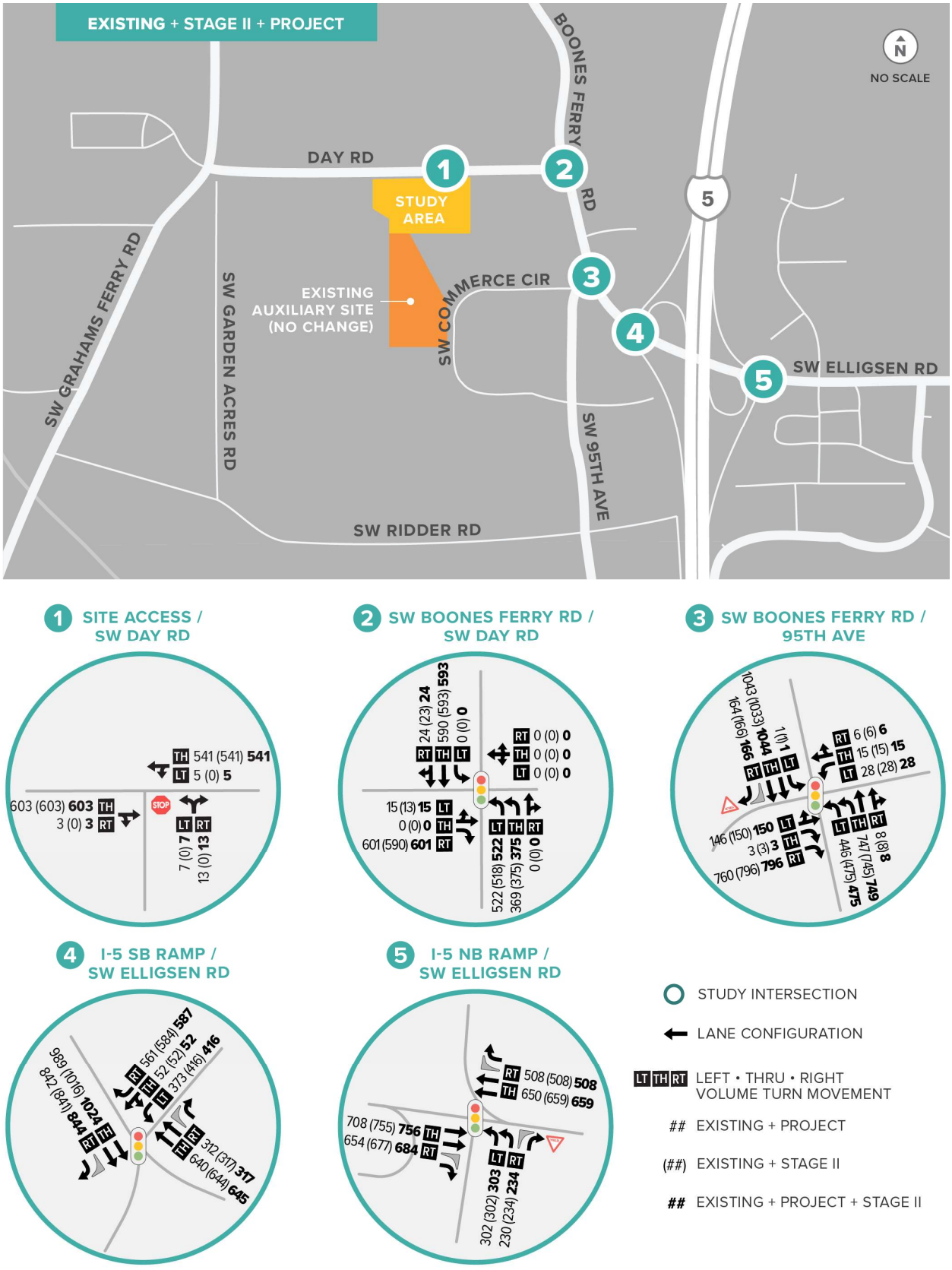


FIGURE 4: FUTURE PM PEAK HOUR TRAFFIC VOLUMES

FUTURE INTERSECTION OPERATIONS

An analysis of the future intersection operations was performed at the study intersections for each future scenario. Intersection operations were analyzed for the PM peak hour using Highway Capacity Manual (HCM) 6th Edition methodology.[9] The volume to capacity (v/c) ratio, delay, and level of service (LOS) of each study intersection are listed in Table 5.

TABLE 5: FUTURE INTERSECTION OPERATIONS

INTERSECTION	OPERATING STANDARD/ MOBILITY TARGET	EXISTING + PROJECT			EXISTING + STAGE II			EXISTING + STAGE II + PROJECT		
		V/C	DELAY	LOS	V/C	DELAY	LOS	V/C	DELAY	LOS
SIGNALIZED										
BOONES FERRY RD/ DAY RD	LOS D (City)	0.66	16.0	B	0.66	15.8	B	0.67	16.0	B
BOONES FERRY RD/ 95TH AVE	LOS D (City)	0.70	20.4	C	0.71	20.6	C	0.71	20.7	C
I-5 SOUTHBOUND RAMPS/ ELLIGSEN RD	v/c ≤ 0.99 (ODOT)	0.76	9.6	A	0.79	10.3	B	0.79	10.4	B
I-5 NORTHBOUND RAMPS/ ELLIGSEN RD	v/c ≤ 0.99 (ODOT)	0.33	7.2	A	0.35	7.2	A	0.35	7.2	A
TWO-WAY STOP- CONTROLLED										
SITE ACCESS/ DAY RD	LOS D (City)	0.06	14.5	A/B	-	-	-	0.06	14.5	A/B

SIGNALIZED INTERSECTION:
Delay = Average Intersection Delay (secs)
v/c = Total Volume-to-Capacity Ratio
LOS = Total Level of Service

TWO-WAY STOP CONTROLLED INTERSECTION:
Delay = Critical Movement Delay (secs)
v/c = Critical Movement Volume-to-Capacity Ratio
LOS = Critical Levels of Service (Major/Minor Road)

As shown, all study intersections are expected to meet the City's operating standard under all future analysis scenarios. HCM reports are provided in the appendix.

SITE REVIEW

This chapter provides a documented evaluation of the site plan, including discussions on the site access and sight distance, frontage improvements, pedestrian and bicycle facilities, circulation, and parking. The site plan is provided in the appendix.

SITE ACCESSES

A full site access is currently proposed on Day Road approximately 1,200 feet west of the Boones Ferry Road intersection. Also shown is an internal connection to the auxiliary site property to the

[9] Highway Capacity Manual, 6th Edition, Transportation Research Board, 2017.

south, which has access to Commerce Circle. The full site access on Day Road will support both employee passenger vehicle traffic and freight truck traffic. The proposed access on Day Road is required to meet the City's public works construction standards.[10] The access spacing standard for a Major Arterial is to be a minimum 1,000 feet, but the desired spacing is 1,320 feet.

The approximate spacing between the proposed site access and the Boones Ferry Road intersection is 1,000 feet, meeting the City's minimum standard. However, as shown in the City's Development Code for the Coffee Creek Industrial Design Overlay Zone[11], there is a proposed Supporting Street connection to Day Road that is proposed to be built just to the east of the project property, approximately 420 feet from the proposed driveway. Ideally, the site would be able to connect directly to the future Supporting Street, but because of the existing wetlands and the Significant Resource Overlay Zone (SROZ) on the west side of the property, access to the proposed Supporting Street is not feasible and therefore, a direct access to Day Road is necessary.

INTERSECTION SIGHT DISTANCE

The proposed driveway is to meet the recommend sight distances per AASHTO[12]. The posted speed on Day Road is 40 mph and there is a 5% uphill grade traveling eastbound and a 2% uphill grade traveling westbound from the proposed driveway. Based on these conditions, the preliminary intersection sight distance requirement along Day Road is shown in the table below.

TABLE 6: PRELIMINARY INTERSECTION SIGHT DISTANCE (ISD) PER AASHTO

DIRECTION OF TRAVEL	DESIGN SPEED	PASSENGER CAR	TRUCK
Left Turn From Driveway	40 mph	530 ft	780 ft
Right Turn From Driveway		475 ft	720 ft
DKS PRELIMINARY FIELD MEASUREMENTS:			
Looking to the Left: approximately 750 feet		✓	✗
Looking to the Right: approximately 600 feet		✓	✓

Sight distance was evaluated and documented in a memo by Mackenzie that verified sight distances at the proposed driveway are met for passenger cars but not for trucks.[13] A field visit

[10] Table 2.12 Public Works Construction Standards, City of Wilsonville, 2017.

[11] Wilsonville Development Code, Section 4.134.

[12] Table 9-7 and 9-9, A Policy on Geometric Design of Highways and Streets, 7th Edition, American Association of State Highway and Transportation Officials (AASHTO), 2018 with 2019 Errata.

[13] Delta Logistics – Wilsonville Annexation, Day Road Sight Distance Evaluation, Makenzie, March 18, 2021.

conducted by DKS also verified the same sight distance findings at the proposed site access as Mackenzie.[14]

In January 2022, Makenzie evaluated the intersection sight distances at three alternative driveway locations along Day Road at both a 35 mph and 40 mph design speed to determine if recommended sight distances could be met at any of the other locations and at a lower posted speed. However, due to the vertical curve on Day Road, none of the other driveway locations were able to meet recommended intersection sight distances.

Based on these findings, DKS recommends that the proposed driveway be provided as shown on the site plan. Trucks desiring to head west on Day Road will need to utilize to the existing site access to the site on SW Commerce Circle. Appropriate coordination with truck drivers and signage will need to be installed on site to prohibits trucks from turning left out of the Day Road driveway.

Prior to occupancy, sight distance at any new or modified access points will need to be verified, documented, and stamped by a registered professional Civil or Traffic Engineer licensed in the State of Oregon.

FRONTAGE IMPROVEMENTS

Based on the City's street cross-section design standards,[15] major arterials are required to have sidewalks, planter strips, and bike lanes along the project frontage. As sidewalks, planter strips, and bike lanes already exist along the project frontage, the project sponsor should verify that the existing facilities meet the facility width requirements.

CIRCULATION & STRUCTURE

As an industrial warehousing and trucking site, there is the necessity for substantial semi-truck tractor and trailer parking. The site separates out the personal vehicle, semi-tractor, and semi-trailer parking into three areas. The passenger car parking areas are located on the south side of the property and along the north side of the building. Semi-trailer parking is located just west of the building at the center of the property and semi-tractor parking is located on the far west side of the property. A circular isle is provided around the semi-trailer parking area that connects the Day Road access, internal access to the auxiliary site, and loading dock doors.

The semi-tractor parking area on the west end of the property is accessed a drive aisle that is shown to cross over a Significant Resource Overlay Zone (SROZ). While the parking area appears to be outside of the SROZ, the access road to reach the parking area would require building the access road within the SROZ. Based on discussions with the City, it is our understanding that a crossing over the SROZ will not be permitted and therefore, the proposed semi-tractor parking should be relocated elsewhere on the project site.

[14] Field visit conducted by DKS Associates on October 27, 2021.

[15] Wilsonville Transportation System Plan, Amended November 16, 2020.

PARKING

The proposed project is required to comply with the City code for the number of personal vehicular parking stalls and bicycle parking spaces that are provided on site.[16] Assuming the entire building is classified as Storage Warehouse, the project site is to have between 0.3 and 0.5 vehicle parking spaces per 1,000 square feet of building, which equates to between 17 and 29 spaces. The site plan shows a proposed 56 vehicular parking spaces, exceeding the maximum number of parking stalls per code for Storage Warehouse land use.

Based on the ITE Parking Generation Manual, the 85th percentile parking demand for Land Use 150 (Warehousing) is 0.81 parking stalls per 1,000 square feet of building. This results in an estimated parking demand of 47 parking stalls for the project site. Because the project site is anticipated to be a distribution center, it will need to provide enough parking for the truck/freight drivers' personal vehicles as well as on-site employees' personal vehicles. The proposed 56 parking passenger car spaces is appropriate for this project site.

This industrial site is also to have one bicycle parking space per 20,000 square feet, which equates to three bicycle parking spots. The site plan does not show any proposed bicycle parking spaces. It is recommended that the final site plan show a minimum of three bicycle parking spaces to meet the City code requirement.

SUMMARY OF PROJECT IMPACTS

The key findings of the study for the Delta Logistics Annex development are discussed below.

- The proposed Delta Logistics Annex industrial development includes an approximately 56,100 square foot industrial building that will serve as an annex to the existing operations of Delta Logistics located on Commerce Circle.
- The proposed development is expected to generate 33 PM peak hour trips (9 in, 24 out) and 127 weekday trips.
- Of the PM peak hour project trips, 2 new trips are expected to travel through the I-5/ Wilsonville Road interchange area and 15 new trips are expected to travel through the I-5/ Elligsen Road interchange area.
- The traffic operations at the five study intersections are expected to operate within the City's operating standard and ODOT's mobility target under project build conditions.
- The proposed site driveway does not meet access spacing standards nor the recommended intersection sight distances for trucks turning left out of the driveway. However, based on the intersection sight distance evaluation, the proposed driveway location provides the best intersection sight distance as compared to other locations along Day Road.

[16] Wilsonville Development Code, Section 4.155, Table 5, Updated October 2019.

- A condition of approval will be needed to prohibit trucks from turning left onto Day Road. Trucks desiring to head west on Day Road will need to utilize to the existing site access on SW Commerce Circle. Appropriate coordination with truck drivers and internal signage will need to be installed on site to prohibits trucks from turning left out of the Day Road site driveway. Prior to occupancy, sight distance at any new or modified access points will need to be verified, documented, and stamped by a registered professional Civil or Traffic Engineer licensed in the State of Oregon.
- Based on discussions with the City, it is our understanding that a crossing over the SROZ will not be permitted and therefore, the proposed parking lot on the west side of the site should be relocated.
- It is recommended that the final site plan includes a minimum of three bicycle parking spaces to meet the City code requirement.

APPENDIX

CONTENTS

A. TRAFFIC COUNT DATA

B. HCM REPORT – EXISTING CONDITIONS

C. STAGE II LIST

D. HCM REPORT – EXISTING + PROJECT

E. HCM REPORT – EXISTING + STAGE II

F. HCM REPORT – EXISTING + STAGE II + PROJECT

G. SITE PLAN

APPENDIX A

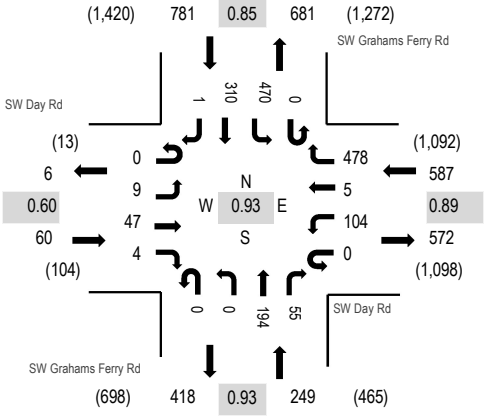
TRAFFIC COUNT DATA

ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

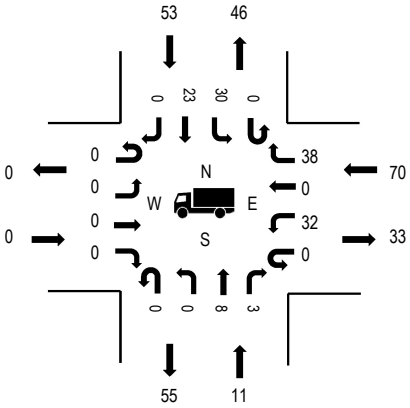
Location: 1 SW Grahams Ferry Rd & SW Day Rd PM
Date: Tuesday, September 21, 2021
Study Peak Hour: 04:10 PM - 05:10 PM
Peak 15-Minutes in Study Peak Hour: 04:35 PM - 04:50 PM

Study Peak Hour (for all study intersections)

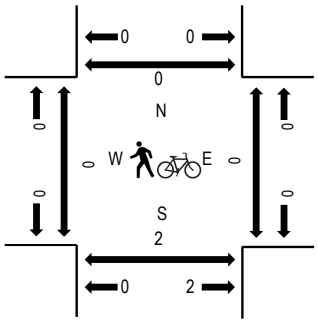
Motorized Vehicles



Heavy Vehicles



Pedestrians/Bicycles in Crosswalk



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	0.0%	0.60
WB	11.9%	0.89
NB	4.4%	0.93
SB	6.8%	0.85
All	8.0%	0.93

Traffic Counts - Motorized Vehicles

Interval Start Time	SW Day Rd Eastbound				SW Day Rd Westbound				SW Grahams Ferry Rd Northbound				SW Grahams Ferry Rd Southbound					Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total	
4:00 PM	0	1	18	2	0	6	0	44	0	0	7	5	0	42	20	1	146	1,696
4:05 PM	0	2	4	0	0	5	0	30	0	0	15	4	0	32	25	0	117	1,660
4:10 PM	0	0	4	0	0	4	0	38	0	0	18	1	0	53	36	0	154	1,677
4:15 PM	0	0	6	0	0	5	1	38	0	0	14	3	0	34	31	0	132	1,661
4:20 PM	0	1	4	1	0	8	0	53	0	0	12	7	0	50	19	0	155	1,641
4:25 PM	0	2	8	0	0	6	0	42	0	0	22	9	0	36	15	0	140	1,630
4:30 PM	0	0	5	1	0	10	0	46	0	0	10	3	0	39	18	0	132	1,618
4:35 PM	0	1	8	0	0	8	1	41	0	0	19	3	0	39	27	0	147	1,600
4:40 PM	0	2	3	0	0	7	0	29	0	0	20	8	0	46	31	0	146	1,542
4:45 PM	0	1	2	0	0	19	1	41	0	0	9	6	0	41	35	1	156	1,510
4:50 PM	0	1	4	0	0	5	0	35	0	0	17	4	0	39	36	0	141	1,477
4:55 PM	0	0	1	1	0	14	1	40	0	0	18	3	0	32	20	0	130	1,433
5:00 PM	0	0	1	1	0	9	0	38	0	0	10	4	0	31	16	0	110	1,385
5:05 PM	0	1	1	0	0	9	1	37	0	0	25	4	0	30	26	0	134	
5:10 PM	0	1	1	1	0	4	0	43	0	0	11	4	0	46	27	0	138	
5:15 PM	0	0	0	0	0	6	1	32	0	0	20	7	0	27	19	0	112	
5:20 PM	0	0	1	1	0	5	1	35	0	0	20	3	0	56	22	0	144	
5:25 PM	0	0	1	0	0	6	0	41	0	1	17	6	0	36	20	0	128	
5:30 PM	0	0	3	1	0	7	0	37	0	0	12	7	0	32	15	0	114	
5:35 PM	0	0	0	0	0	1	0	32	0	0	7	6	0	25	18	0	89	
5:40 PM	0	0	1	0	0	2	0	44	0	0	17	3	0	34	13	0	114	
5:45 PM	0	1	3	0	0	11	0	44	0	0	8	7	0	39	9	1	123	
5:50 PM	0	0	1	0	0	10	0	30	0	0	6	3	0	39	8	0	97	
5:55 PM	0	0	0	1	0	7	2	19	0	0	15	5	0	25	8	0	82	
Count Total	0	14	80	10	0	174	9	909	0	1	349	115	0	903	514	3	3,081	
Peak Hour	0	9	47	4	0	104	5	478	0	0	194	55	0	470	310	1	1,677	

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles on Crosswalk

Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
4:00 PM	0	1	11	9	21	4:00 PM	0	0	0	0	0	4:00 PM	0	0	0	0	0
4:05 PM	0	5	7	7	19	4:05 PM	0	0	0	0	0	4:05 PM	0	0	0	0	0
4:10 PM	0	3	6	9	18	4:10 PM	0	0	0	0	0	4:10 PM	0	0	0	0	0
4:15 PM	0	1	7	7	15	4:15 PM	0	0	0	0	0	4:15 PM	0	0	0	0	0
4:20 PM	0	2	5	4	11	4:20 PM	0	0	0	0	0	4:20 PM	0	0	0	0	0
4:25 PM	0	0	8	4	12	4:25 PM	0	0	0	0	0	4:25 PM	0	0	0	0	0
4:30 PM	0	1	7	4	12	4:30 PM	0	0	1	0	1	4:30 PM	0	0	0	0	0
4:35 PM	0	2	5	6	13	4:35 PM	0	0	0	0	0	4:35 PM	0	1	0	0	1
4:40 PM	0	0	1	3	4	4:40 PM	0	0	0	0	0	4:40 PM	0	1	0	0	1
4:45 PM	0	1	11	6	18	4:45 PM	0	0	0	0	0	4:45 PM	0	0	0	0	0
4:50 PM	0	0	5	6	11	4:50 PM	0	0	0	0	0	4:50 PM	0	0	0	0	0
4:55 PM	0	0	8	0	8	4:55 PM	0	0	0	0	0	4:55 PM	0	0	0	0	0
5:00 PM	0	1	4	2	7	5:00 PM	0	0	0	0	0	5:00 PM	0	0	0	0	0
5:05 PM	0	0	3	2	5	5:05 PM	0	0	0	1	1	5:05 PM	0	0	0	0	0
5:10 PM	0	0	5	2	7	5:10 PM	0	0	1	0	1	5:10 PM	0	0	0	0	0
5:15 PM	0	1	5	1	7	5:15 PM	0	1	0	0	1	5:15 PM	0	0	0	0	0
5:20 PM	0	0	2	1	3	5:20 PM	0	0	0	0	0	5:20 PM	0	0	0	0	0
5:25 PM	0	0	2	2	4	5:25 PM	0	0	0	0	0	5:25 PM	0	0	0	0	0
5:30 PM	0	1	4	2	7	5:30 PM	0	0	0	0	0	5:30 PM	0	0	0	0	0
5:35 PM	0	1	2	3	6	5:35 PM	0	0	0	0	0	5:35 PM	0	0	0	0	0
5:40 PM	0	1	3	2	6	5:40 PM	0	0	0	1	1	5:40 PM	0	0	0	0	0
5:45 PM	0	1	1	4	6	5:45 PM	0	0	0	0	0	5:45 PM	0	0	0	0	0
5:50 PM	0	1	4	0	5	5:50 PM	0	0	0	0	0	5:50 PM	0	0	0	0	0
5:55 PM	0	3	3	0	6	5:55 PM	0	0	0	0	0	5:55 PM	0	0	0	0	0
Count Total	0	26	119	86	231	Count Total	0	1	2	2	5	Count Total	0	2	0	0	2
Peak Hour	0	11	70	53	134	Peak Hour	0	0	1	1	2	Peak Hour	0	2	0	0	2

ALL TRAFFIC DATA SERVICES
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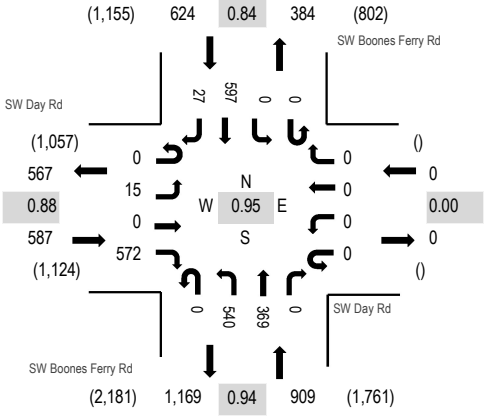
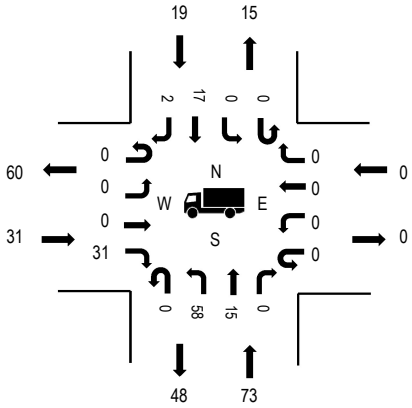
Location: 2 SW Boones Ferry Rd & SW Day Rd PM
Date: Tuesday, September 21, 2021
Study Peak Hour: 04:10 PM - 05:10 PM
Peak 15-Minutes in Study Peak Hour: 04:35 PM - 04:50 PM

Study Peak Hour (for all study intersections)

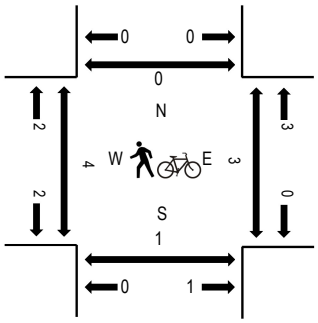
Motorized Vehicles



Heavy Vehicles



Pedestrians/Bicycles in Crosswalk



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	5.3%	0.88
WB	0.0%	0.00
NB	8.0%	0.94
SB	3.0%	0.84
All	5.8%	0.95

Traffic Counts - Motorized Vehicles

Interval Start Time	SW Day Rd Eastbound				SW Day Rd Westbound				SW Boones Ferry Rd Northbound				SW Boones Ferry Rd Southbound					Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total	
4:00 PM	0	2	0	64	0	0	0	0	0	30	21	0	0	0	35	6	158	2,101
4:05 PM	0	1	0	50	0	0	0	0	0	43	23	0	0	0	44	4	165	2,100
4:10 PM	0	1	0	50	0	0	0	0	0	42	32	0	0	0	58	3	186	2,120
4:15 PM	0	1	0	47	0	0	0	0	0	37	32	0	0	0	63	2	182	2,094
4:20 PM	0	1	0	54	0	0	0	0	0	51	23	0	0	0	55	5	189	2,072
4:25 PM	0	1	0	60	0	0	0	0	0	53	28	0	0	0	32	4	178	2,064
4:30 PM	0	4	0	46	0	0	0	0	0	45	30	0	0	0	42	2	169	2,040
4:35 PM	0	0	0	50	0	0	0	0	0	46	37	0	0	0	41	2	176	2,026
4:40 PM	0	3	0	49	0	0	0	0	0	47	38	0	0	0	42	1	180	1,999
4:45 PM	0	0	0	48	0	0	0	0	0	31	31	0	0	0	68	1	179	1,999
4:50 PM	0	0	0	37	0	0	0	0	0	49	33	0	0	0	47	3	169	1,988
4:55 PM	0	2	0	60	0	0	0	0	0	38	18	0	0	0	51	1	170	1,973
5:00 PM	0	0	0	35	0	0	0	0	0	46	28	0	0	0	45	3	157	1,939
5:05 PM	0	2	0	36	0	0	0	0	0	55	39	0	0	0	53	0	185	
5:10 PM	0	1	0	46	0	0	0	0	0	39	30	0	0	0	40	4	160	
5:15 PM	0	2	0	35	0	0	0	0	0	34	33	0	0	0	54	2	160	
5:20 PM	0	0	0	54	0	0	0	0	0	43	33	0	0	0	45	6	181	
5:25 PM	0	1	0	50	0	0	0	0	0	40	25	0	0	0	35	3	154	
5:30 PM	0	0	0	40	0	0	0	0	0	41	43	0	0	0	31	0	155	
5:35 PM	0	2	0	29	0	0	0	0	0	35	34	0	0	0	48	1	149	
5:40 PM	0	3	0	36	0	0	0	0	0	53	40	0	0	0	46	2	180	
5:45 PM	0	1	0	46	0	0	0	0	0	35	44	0	0	0	39	3	168	
5:50 PM	0	5	0	39	0	0	0	0	0	33	41	0	0	0	35	1	154	
5:55 PM	0	2	0	28	0	0	0	0	0	28	31	0	0	0	43	4	136	
Count Total	0	35	0	1,089	0	0	0	0	0	994	767	0	0	0	1,092	63	4,040	
Peak Hour	0	15	0	572	0	0	0	0	0	540	369	0	0	0	597	27	2,120	

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles on Crosswalk

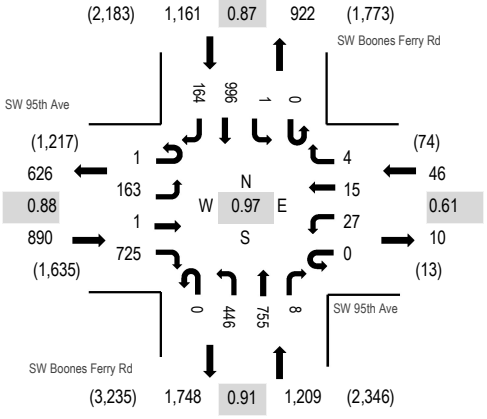
Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
4:00 PM	8	10	0	1	19	4:00 PM	0	1	0	0	1	4:00 PM	0	0	0	0	0
4:05 PM	3	7	0	1	11	4:05 PM	0	0	0	0	0	4:05 PM	0	0	0	0	0
4:10 PM	3	7	0	2	12	4:10 PM	0	2	0	0	2	4:10 PM	0	0	1	0	1
4:15 PM	6	3	0	3	12	4:15 PM	0	2	0	1	3	4:15 PM	0	0	1	0	1
4:20 PM	1	5	0	2	8	4:20 PM	0	1	0	0	1	4:20 PM	0	0	0	0	0
4:25 PM	4	14	0	1	19	4:25 PM	0	0	0	1	1	4:25 PM	0	0	0	0	0
4:30 PM	3	5	0	0	8	4:30 PM	0	0	0	0	0	4:30 PM	0	0	0	0	0
4:35 PM	2	3	0	1	6	4:35 PM	0	1	0	0	1	4:35 PM	0	0	1	0	1
4:40 PM	2	10	0	1	13	4:40 PM	0	1	0	0	1	4:40 PM	0	0	0	0	0
4:45 PM	2	5	0	3	10	4:45 PM	0	0	0	0	0	4:45 PM	2	1	0	0	3
4:50 PM	3	9	0	3	15	4:50 PM	0	0	0	1	1	4:50 PM	2	0	0	0	2
4:55 PM	2	3	0	1	6	4:55 PM	0	0	0	2	2	4:55 PM	0	0	0	0	0
5:00 PM	2	4	0	1	7	5:00 PM	0	0	0	0	0	5:00 PM	0	0	0	0	0
5:05 PM	1	5	0	1	7	5:05 PM	0	0	0	1	1	5:05 PM	0	0	0	0	0
5:10 PM	1	5	0	0	6	5:10 PM	0	0	0	1	1	5:10 PM	0	0	0	0	0
5:15 PM	0	0	0	1	1	5:15 PM	0	1	0	1	2	5:15 PM	0	0	0	0	0
5:20 PM	0	3	0	4	7	5:20 PM	0	1	0	0	1	5:20 PM	0	0	0	0	0
5:25 PM	2	1	0	1	4	5:25 PM	0	0	0	0	0	5:25 PM	0	0	0	0	0
5:30 PM	2	5	0	0	7	5:30 PM	1	0	0	0	1	5:30 PM	0	0	0	0	0
5:35 PM	3	1	0	1	5	5:35 PM	0	0	0	0	0	5:35 PM	0	0	0	0	0
5:40 PM	3	4	0	0	7	5:40 PM	0	1	0	0	1	5:40 PM	0	0	0	0	0
5:45 PM	3	2	0	1	6	5:45 PM	0	1	0	0	1	5:45 PM	0	0	0	0	0
5:50 PM	1	6	0	1	8	5:50 PM	0	0	0	0	0	5:50 PM	0	0	0	0	0
5:55 PM	0	4	0	1	5	5:55 PM	0	2	0	0	2	5:55 PM	0	0	1	0	1
Count Total	57	121	0	31	209	Count Total	1	14	0	8	23	Count Total	4	1	4	0	9
Peak Hour	31	73	0	19	123	Peak Hour	0	7	0	6	13	Peak Hour	4	1	3	0	8

ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

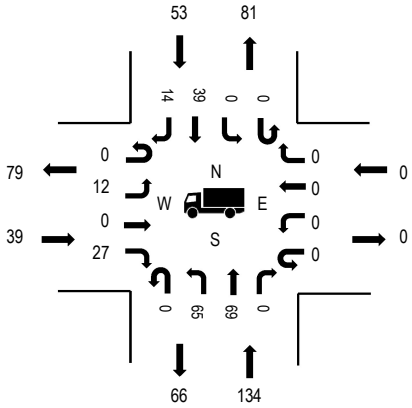
Location: 3 SW Boones Ferry Rd & SW 95th Ave PM
Date: Tuesday, September 21, 2021
Study Peak Hour: 04:10 PM - 05:10 PM
Peak 15-Minutes in Study Peak Hour: 04:35 PM - 04:50 PM

Study Peak Hour (for all study intersections)

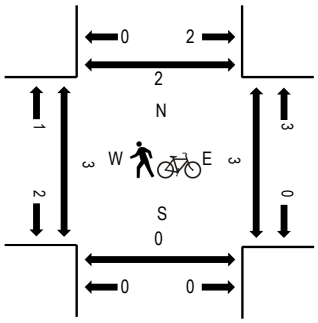
Motorized Vehicles



Heavy Vehicles



Pedestrians/Bicycles in Crosswalk



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	4.4%	0.88
WB	0.0%	0.61
NB	11.1%	0.91
SB	4.6%	0.87
All	6.8%	0.97

Traffic Counts - Motorized Vehicles

Interval Start Time	SW 95th Ave Eastbound				SW 95th Ave Westbound				SW Boones Ferry Rd Northbound				SW Boones Ferry Rd Southbound					Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total	
4:00 PM	0	11	0	55	0	2	1	0	0	41	43	1	0	0	82	17	253	3,293
4:05 PM	0	10	0	85	0	2	2	0	0	41	55	1	0	0	81	10	287	3,298
4:10 PM	0	18	0	77	0	2	2	0	0	26	59	2	0	0	78	11	275	3,306
4:15 PM	0	11	0	56	0	3	0	0	0	36	74	1	0	0	103	18	302	3,295
4:20 PM	0	16	0	62	0	1	1	0	0	36	50	0	0	0	95	17	278	3,249
4:25 PM	0	13	0	39	0	0	1	1	0	34	67	1	0	0	83	17	256	3,216
4:30 PM	0	16	0	62	0	3	0	0	0	39	66	2	0	0	73	16	277	3,233
4:35 PM	0	15	0	91	0	5	1	1	0	43	78	1	0	0	59	10	304	3,174
4:40 PM	0	15	0	50	0	0	1	0	0	29	56	0	0	0	101	6	258	3,096
4:45 PM	1	13	0	67	0	2	0	0	0	44	61	0	0	0	71	12	271	3,095
4:50 PM	0	9	1	48	0	0	5	0	0	27	65	1	0	1	97	11	265	3,063
4:55 PM	0	10	0	44	0	3	1	1	0	48	52	0	0	0	89	19	267	3,006
5:00 PM	0	14	0	57	0	7	1	1	0	42	54	0	0	0	65	17	258	2,945
5:05 PM	0	13	0	72	0	1	2	0	0	42	73	0	0	0	82	10	295	
5:10 PM	0	17	0	77	0	3	0	0	0	38	51	0	0	0	73	5	264	
5:15 PM	0	14	0	54	0	1	1	0	0	44	47	0	0	0	85	10	256	
5:20 PM	0	10	0	48	0	1	0	0	0	39	68	0	0	0	65	14	245	
5:25 PM	0	8	0	46	0	5	1	1	0	39	69	0	0	0	88	16	273	
5:30 PM	0	10	0	45	0	2	0	0	0	21	63	0	0	0	67	10	218	
5:35 PM	0	14	1	37	0	1	0	0	0	38	60	0	0	0	63	12	226	
5:40 PM	0	9	0	41	0	1	0	0	0	42	80	0	0	0	64	20	257	
5:45 PM	0	18	0	28	0	1	0	0	0	31	70	0	0	0	78	13	239	
5:50 PM	0	15	0	44	0	1	0	0	0	33	54	0	0	0	47	14	208	
5:55 PM	0	8	0	40	0	1	1	0	0	22	46	0	0	0	73	15	206	
Count Total	1	307	2	1,325	0	48	21	5	0	875	1,461	10	0	1	1,862	320	6,238	
Peak Hour	1	163	1	725	0	27	15	4	0	446	755	8	0	1	996	164	3,306	

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles on Crosswalk

Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
4:00 PM	6	11	0	9	26	4:00 PM	0	1	0	1	2	4:00 PM	0	0	1	0	1
4:05 PM	1	7	0	3	11	4:05 PM	0	1	0	0	1	4:05 PM	1	0	0	0	1
4:10 PM	7	11	0	5	23	4:10 PM	2	1	0	0	3	4:10 PM	0	0	1	1	2
4:15 PM	5	11	0	9	25	4:15 PM	0	0	0	0	0	4:15 PM	0	0	0	0	0
4:20 PM	3	7	0	3	13	4:20 PM	0	1	0	0	1	4:20 PM	0	0	1	0	1
4:25 PM	4	17	0	6	27	4:25 PM	0	0	0	0	0	4:25 PM	0	0	0	0	0
4:30 PM	2	13	0	5	20	4:30 PM	0	1	0	0	1	4:30 PM	0	0	1	0	1
4:35 PM	3	10	0	4	17	4:35 PM	0	2	0	0	2	4:35 PM	1	0	0	1	2
4:40 PM	2	11	0	3	16	4:40 PM	0	0	0	0	0	4:40 PM	0	0	0	0	0
4:45 PM	5	12	0	3	20	4:45 PM	0	0	0	0	0	4:45 PM	0	0	0	0	0
4:50 PM	3	13	0	6	22	4:50 PM	0	0	0	0	0	4:50 PM	0	0	0	0	0
4:55 PM	1	5	0	4	10	4:55 PM	0	0	0	0	0	4:55 PM	1	0	0	0	1
5:00 PM	3	11	0	2	16	5:00 PM	0	0	0	1	1	5:00 PM	1	0	0	0	1
5:05 PM	1	13	0	3	17	5:05 PM	0	0	0	0	0	5:05 PM	0	0	0	0	0
5:10 PM	2	11	0	0	13	5:10 PM	0	0	0	0	0	5:10 PM	0	0	0	0	0
5:15 PM	0	4	0	2	6	5:15 PM	1	0	0	0	1	5:15 PM	1	0	0	0	1
5:20 PM	3	8	0	1	12	5:20 PM	1	0	0	0	1	5:20 PM	0	0	0	0	0
5:25 PM	4	7	0	3	14	5:25 PM	0	0	0	0	0	5:25 PM	0	0	0	0	0
5:30 PM	3	5	0	3	11	5:30 PM	0	0	0	0	0	5:30 PM	0	0	0	0	0
5:35 PM	3	6	0	4	13	5:35 PM	0	0	0	0	0	5:35 PM	0	0	0	0	0
5:40 PM	2	7	0	4	13	5:40 PM	0	0	0	0	0	5:40 PM	0	0	0	0	0
5:45 PM	3	6	0	3	12	5:45 PM	2	0	0	0	2	5:45 PM	0	0	0	0	0
5:50 PM	1	5	0	0	6	5:50 PM	0	0	0	0	0	5:50 PM	1	0	0	1	2
5:55 PM	3	7	0	3	13	5:55 PM	0	2	0	0	2	5:55 PM	0	0	2	0	2
Count Total	70	218	0	88	376	Count Total	6	9	0	2	17	Count Total	6	0	6	3	15
Peak Hour	39	134	0	53	226	Peak Hour	2	5	0	1	8	Peak Hour	3	0	3	2	8

ALL TRAFFIC DATA SERVICES
(303) 216-2439
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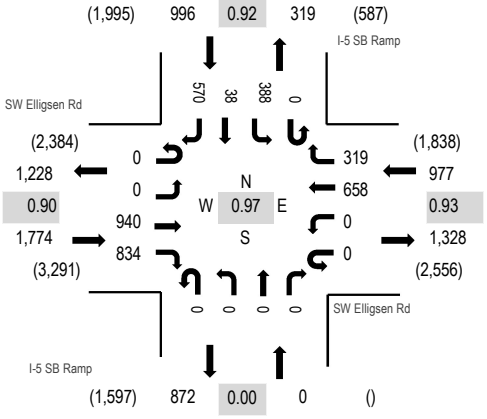
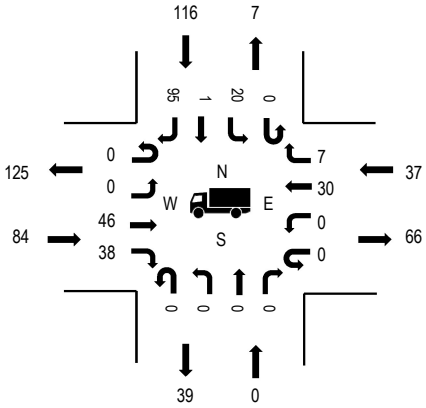
Location: 4 I-5 SB Ramp & SW Elligsen Rd PM
Date: Tuesday, September 21, 2021
Study Peak Hour: 04:10 PM - 05:10 PM
Peak 15-Minutes in Study Peak Hour: 04:35 PM - 04:50 PM

Study Peak Hour (for all study intersections)

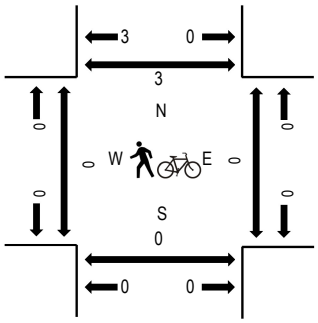
Motorized Vehicles



Heavy Vehicles



Pedestrians/Bicycles in Crosswalk



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	4.7%	0.90
WB	3.8%	0.93
NB	0.0%	0.00
SB	11.6%	0.92
All	6.3%	0.97

Traffic Counts - Motorized Vehicles

Interval Start Time	SW Elligsen Rd Eastbound				SW Elligsen Rd Westbound				I-5 SB Ramp Northbound				I-5 SB Ramp Southbound					Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total	
4:00 PM	0	0	76	62	0	0	41	33	0	0	0	0	0	38	18	46	314	3,748
4:05 PM	0	0	103	73	0	0	50	23	0	0	0	0	0	33	4	50	336	3,740
4:10 PM	0	0	77	75	0	0	52	31	0	0	0	0	0	31	1	40	307	3,747
4:15 PM	0	0	98	73	0	0	74	33	0	0	0	0	0	27	3	35	343	3,739
4:20 PM	0	0	79	89	0	0	44	18	0	0	0	0	0	18	3	47	298	3,711
4:25 PM	0	0	69	61	0	0	40	19	0	0	0	0	0	36	1	62	288	3,687
4:30 PM	0	0	76	61	0	0	54	22	0	0	0	0	0	34	4	52	303	3,693
4:35 PM	0	0	99	59	0	0	66	26	0	0	0	0	0	26	4	47	327	3,669
4:40 PM	0	0	80	66	0	0	44	34	0	0	0	0	0	48	0	53	325	3,601
4:45 PM	0	0	77	71	0	0	55	24	0	0	0	0	0	37	2	48	314	3,568
4:50 PM	0	0	59	77	0	0	57	21	0	0	0	0	0	31	7	44	296	3,500
4:55 PM	0	0	75	67	0	0	53	26	0	0	0	0	0	27	2	47	297	3,438
5:00 PM	0	0	69	61	0	0	59	25	0	0	0	0	0	40	7	45	306	3,376
5:05 PM	0	0	82	74	0	0	60	40	0	0	0	0	0	33	4	50	343	
5:10 PM	0	0	95	61	0	0	49	25	0	0	0	0	0	29	6	34	299	
5:15 PM	0	0	74	72	0	0	45	28	0	0	0	0	0	37	7	52	315	
5:20 PM	0	0	55	61	0	0	55	29	0	0	0	0	0	27	1	46	274	
5:25 PM	0	0	58	76	0	0	50	11	0	0	0	0	0	38	2	59	294	
5:30 PM	0	0	66	61	0	0	61	30	0	0	0	0	0	24	0	37	279	
5:35 PM	0	0	57	47	0	0	62	18	0	0	0	0	0	32	0	43	259	
5:40 PM	0	0	70	40	0	0	60	13	0	0	0	0	0	53	0	56	292	
5:45 PM	0	0	60	46	0	0	43	17	0	0	0	0	0	32	0	48	246	
5:50 PM	0	0	58	39	0	0	38	13	0	0	0	0	0	34	0	52	234	
5:55 PM	0	0	58	49	0	0	39	28	0	0	0	0	0	21	0	40	235	
Count Total	0	0	1,770	1,521	0	0	1,251	587	0	0	0	0	0	786	76	1,133	7,124	
Peak Hour	0	0	940	834	0	0	658	319	0	0	0	0	0	388	38	570	3,747	

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles on Crosswalk

Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
4:00 PM	11	0	5	12	28	4:00 PM	0	0	1	0	1	4:00 PM	0	1	0	1	2
4:05 PM	3	0	0	7	10	4:05 PM	0	0	0	1	1	4:05 PM	0	0	0	0	0
4:10 PM	8	0	5	9	22	4:10 PM	0	0	0	0	0	4:10 PM	0	0	0	0	0
4:15 PM	11	0	4	8	23	4:15 PM	0	0	0	0	0	4:15 PM	0	0	0	1	1
4:20 PM	5	0	5	9	19	4:20 PM	0	0	1	0	1	4:20 PM	0	0	0	0	0
4:25 PM	6	0	3	12	21	4:25 PM	0	0	0	0	0	4:25 PM	0	0	0	1	1
4:30 PM	7	0	4	8	19	4:30 PM	0	0	1	1	2	4:30 PM	0	0	0	1	1
4:35 PM	5	0	2	7	14	4:35 PM	0	0	1	0	1	4:35 PM	0	0	0	0	0
4:40 PM	4	0	1	14	19	4:40 PM	0	0	0	0	0	4:40 PM	0	0	0	0	0
4:45 PM	9	0	3	12	24	4:45 PM	0	0	0	0	0	4:45 PM	0	0	0	0	0
4:50 PM	12	0	4	9	25	4:50 PM	0	0	0	0	0	4:50 PM	0	0	0	0	0
4:55 PM	9	0	0	8	17	4:55 PM	0	0	0	0	0	4:55 PM	0	0	0	0	0
5:00 PM	4	0	3	9	16	5:00 PM	1	0	0	0	1	5:00 PM	0	0	0	0	0
5:05 PM	4	0	3	11	18	5:05 PM	0	0	0	0	0	5:05 PM	0	0	0	0	0
5:10 PM	2	0	4	5	11	5:10 PM	0	0	0	0	0	5:10 PM	0	0	0	0	0
5:15 PM	1	0	2	7	10	5:15 PM	0	0	0	0	0	5:15 PM	0	0	0	0	0
5:20 PM	8	0	0	6	14	5:20 PM	0	0	0	0	0	5:20 PM	0	0	0	0	0
5:25 PM	6	0	1	3	10	5:25 PM	0	0	0	0	0	5:25 PM	0	0	0	0	0
5:30 PM	3	0	2	5	10	5:30 PM	0	0	0	0	0	5:30 PM	0	0	0	0	0
5:35 PM	7	0	3	5	15	5:35 PM	0	0	0	0	0	5:35 PM	0	0	0	0	0
5:40 PM	3	0	5	3	11	5:40 PM	0	0	1	0	1	5:40 PM	0	0	0	0	0
5:45 PM	6	0	0	8	14	5:45 PM	0	0	0	0	0	5:45 PM	0	0	0	0	0
5:50 PM	0	0	1	4	5	5:50 PM	0	0	0	0	0	5:50 PM	0	1	0	0	1
5:55 PM	5	0	5	7	17	5:55 PM	0	0	0	0	0	5:55 PM	0	0	0	0	0
Count Total	139	0	65	188	392	Count Total	1	0	5	2	8	Count Total	0	2	0	4	6
Peak Hour	84	0	37	116	237	Peak Hour	1	0	3	1	5	Peak Hour	0	0	0	3	3

ALL TRAFFIC DATA SERVICES
(303) 216-2439
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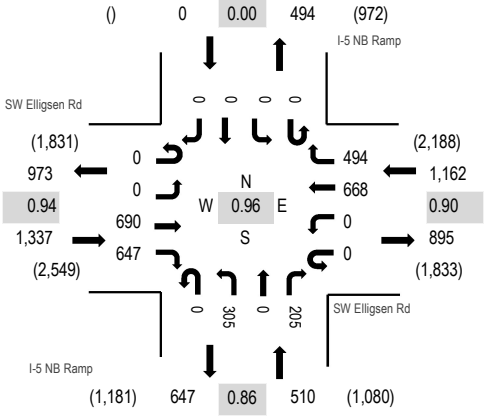
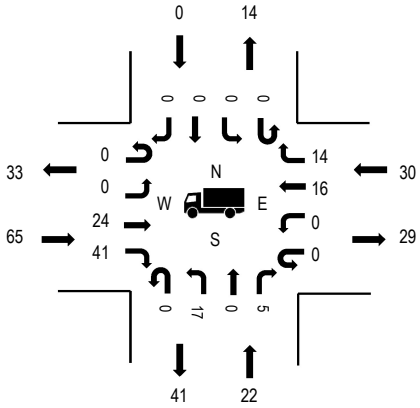
Location: 5 I-5 NB Ramp & SW Elligsen Rd PM
Date: Tuesday, September 21, 2021
Study Peak Hour: 04:10 PM - 05:10 PM
Peak 15-Minutes in Study Peak Hour: 04:35 PM - 04:50 PM

Study Peak Hour (for all study intersections)

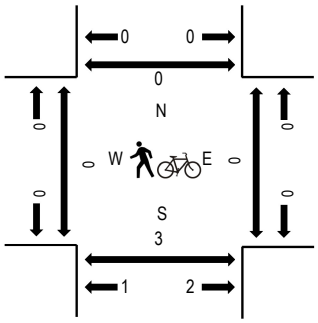
Motorized Vehicles



Heavy Vehicles



Pedestrians/Bicycles in Crosswalk



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	4.9%	0.94
WB	2.6%	0.90
NB	4.3%	0.86
SB	0.0%	0.00
All	3.9%	0.96

Traffic Counts - Motorized Vehicles

Interval Start Time	SW Elligsen Rd Eastbound				SW Elligsen Rd Westbound				I-5 NB Ramp Northbound				I-5 NB Ramp Southbound					Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total	
4:00 PM	0	0	56	60	0	0	49	48	0	24	0	23	0	0	0	0	260	3,018
4:05 PM	0	0	58	71	0	0	47	43	0	26	0	33	0	0	0	0	278	2,998
4:10 PM	0	0	45	63	0	0	60	34	0	24	0	25	0	0	0	0	251	3,009
4:15 PM	0	0	58	70	0	0	65	49	0	40	0	20	0	0	0	0	302	3,015
4:20 PM	0	0	46	56	0	0	43	22	0	19	0	21	0	0	0	0	207	2,950
4:25 PM	0	0	59	44	0	0	39	44	0	20	0	13	0	0	0	0	219	2,981
4:30 PM	0	0	64	44	0	0	53	47	0	23	0	16	0	0	0	0	247	2,974
4:35 PM	0	0	57	67	0	0	63	42	0	29	0	14	0	0	0	0	272	2,972
4:40 PM	0	0	60	48	0	0	53	41	0	25	0	20	0	0	0	0	247	2,932
4:45 PM	0	0	66	59	0	0	63	40	0	17	0	18	0	0	0	0	263	2,931
4:50 PM	0	0	66	37	0	0	52	31	0	24	0	17	0	0	0	0	227	2,890
4:55 PM	0	0	54	49	0	0	57	42	0	24	0	19	0	0	0	0	245	2,838
5:00 PM	0	0	66	43	0	0	51	43	0	31	0	6	0	0	0	0	240	2,799
5:05 PM	0	0	49	67	0	0	69	59	0	29	0	16	0	0	0	0	289	
5:10 PM	0	0	57	57	0	0	54	55	0	21	0	13	0	0	0	0	257	
5:15 PM	0	0	52	42	0	0	46	43	0	26	0	28	0	0	0	0	237	
5:20 PM	0	0	50	43	0	0	59	38	0	25	0	23	0	0	0	0	238	
5:25 PM	0	0	56	39	0	0	41	39	0	20	0	17	0	0	0	0	212	
5:30 PM	0	0	54	43	0	0	54	34	0	36	0	24	0	0	0	0	245	
5:35 PM	0	0	53	42	0	0	49	41	0	32	0	15	0	0	0	0	232	
5:40 PM	0	0	79	42	0	0	42	32	0	29	0	22	0	0	0	0	246	
5:45 PM	0	0	60	31	0	0	36	42	0	24	0	29	0	0	0	0	222	
5:50 PM	0	0	50	34	0	0	26	31	0	25	0	9	0	0	0	0	175	
5:55 PM	0	0	53	30	0	0	45	32	0	22	0	24	0	0	0	0	206	
Count Total	0	0	1,368	1,181	0	0	1,216	972	0	615	0	465	0	0	0	0	5,817	
Peak Hour	0	0	690	647	0	0	668	494	0	305	0	205	0	0	0	0	3,009	

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles on Crosswalk

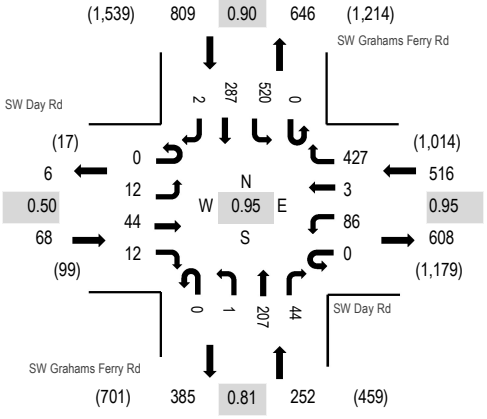
Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
4:00 PM	6	6	2	0	14	4:00 PM	0	0	1	0	1	4:00 PM	0	0	0	0	0
4:05 PM	2	2	2	0	6	4:05 PM	0	0	0	0	0	4:05 PM	0	1	0	0	1
4:10 PM	6	3	4	0	13	4:10 PM	0	0	0	0	0	4:10 PM	0	0	0	0	0
4:15 PM	8	2	3	0	13	4:15 PM	0	0	0	0	0	4:15 PM	0	0	0	0	0
4:20 PM	4	3	3	0	10	4:20 PM	0	0	0	0	0	4:20 PM	0	0	0	0	0
4:25 PM	3	3	2	0	8	4:25 PM	0	0	0	0	0	4:25 PM	0	2	0	0	2
4:30 PM	5	3	4	0	12	4:30 PM	0	0	1	0	1	4:30 PM	0	0	0	0	0
4:35 PM	6	0	2	0	8	4:35 PM	0	0	0	0	0	4:35 PM	0	0	0	0	0
4:40 PM	7	1	1	0	9	4:40 PM	0	0	0	0	0	4:40 PM	0	0	0	0	0
4:45 PM	4	4	3	0	11	4:45 PM	0	0	0	0	0	4:45 PM	0	0	0	0	0
4:50 PM	5	1	1	0	7	4:50 PM	0	0	0	0	0	4:50 PM	0	0	0	0	0
4:55 PM	7	0	5	0	12	4:55 PM	0	0	0	0	0	4:55 PM	0	1	0	0	1
5:00 PM	3	1	2	0	6	5:00 PM	1	0	0	0	1	5:00 PM	0	0	0	0	0
5:05 PM	7	1	0	0	8	5:05 PM	0	0	0	0	0	5:05 PM	0	0	0	0	0
5:10 PM	1	5	0	0	6	5:10 PM	0	0	0	0	0	5:10 PM	0	0	0	0	0
5:15 PM	1	1	2	0	4	5:15 PM	0	0	0	0	0	5:15 PM	0	0	0	0	0
5:20 PM	5	0	0	0	5	5:20 PM	0	0	0	0	0	5:20 PM	0	0	0	0	0
5:25 PM	4	1	1	0	6	5:25 PM	0	0	0	0	0	5:25 PM	0	0	0	0	0
5:30 PM	2	1	0	0	3	5:30 PM	0	0	0	0	0	5:30 PM	0	0	0	0	0
5:35 PM	5	2	2	0	9	5:35 PM	0	0	0	0	0	5:35 PM	0	0	0	0	0
5:40 PM	3	3	1	0	7	5:40 PM	0	0	0	0	0	5:40 PM	0	0	0	0	0
5:45 PM	3	2	0	0	5	5:45 PM	0	0	0	0	0	5:45 PM	0	1	0	0	1
5:50 PM	1	1	0	0	2	5:50 PM	0	0	0	0	0	5:50 PM	0	0	0	0	0
5:55 PM	3	3	3	0	9	5:55 PM	0	0	1	0	1	5:55 PM	0	0	0	0	0
Count Total	101	49	43	0	193	Count Total	1	0	3	0	4	Count Total	0	5	0	0	5
Peak Hour	65	22	30	0	117	Peak Hour	1	0	1	0	2	Peak Hour	0	3	0	0	3

ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

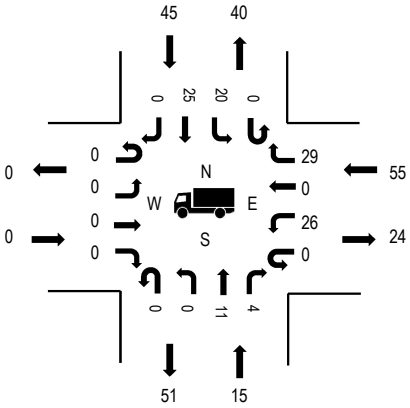
Location: 1 SW Grahams Ferry Rd & SW Day Rd PM
Date: Wednesday, September 22, 2021
Peak Hour: 04:05 PM - 05:05 PM
Peak 15-Minutes: 04:10 PM - 04:25 PM

Peak Hour

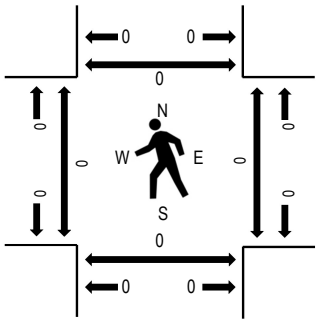
Motorized Vehicles



Heavy Vehicles



Pedestrians



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	0.0%	0.50
WB	10.7%	0.95
NB	6.0%	0.81
SB	5.6%	0.90
All	7.0%	0.95

Traffic Counts - Motorized Vehicles

Interval Start Time	SW Day Rd Eastbound				SW Day Rd Westbound				SW Grahams Ferry Rd Northbound				SW Grahams Ferry Rd Southbound					Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total	
4:00 PM	0	0	14	0	0	5	0	45	0	0	12	3	0	33	19	0	131	1,639
4:05 PM	0	3	10	2	0	9	0	39	0	0	13	3	0	27	19	1	126	1,645
4:10 PM	0	3	7	2	0	4	0	29	0	0	16	0	0	53	27	0	141	1,634
4:15 PM	0	1	3	1	0	9	0	49	0	0	20	5	0	44	23	0	155	1,624
4:20 PM	0	1	2	1	0	9	1	35	0	0	17	4	0	45	21	0	136	1,607
4:25 PM	0	1	0	0	0	8	0	27	0	0	20	5	0	44	30	0	135	1,623
4:30 PM	0	2	6	1	0	5	0	38	0	0	14	6	0	41	20	1	134	1,615
4:35 PM	0	1	5	1	0	5	0	28	0	0	17	4	0	41	25	0	127	1,607
4:40 PM	0	0	5	0	0	10	1	42	0	0	21	2	0	45	26	0	152	1,601
4:45 PM	0	0	0	2	0	9	0	27	0	0	29	6	0	46	18	0	137	1,556
4:50 PM	0	0	2	2	0	3	1	37	0	0	18	3	0	43	23	0	132	1,523
4:55 PM	0	0	4	0	0	11	0	42	0	0	11	2	0	37	26	0	133	1,508
5:00 PM	0	0	0	0	0	4	0	34	0	1	11	4	0	54	29	0	137	1,472
5:05 PM	0	0	0	0	0	3	0	39	0	0	14	4	0	34	21	0	115	
5:10 PM	0	0	0	0	0	5	0	37	0	0	13	6	0	45	25	0	131	
5:15 PM	0	0	3	0	1	6	2	26	0	0	15	7	0	56	22	0	138	
5:20 PM	0	0	2	0	0	5	0	38	0	0	11	10	0	52	34	0	152	
5:25 PM	0	0	2	0	0	7	1	44	0	1	11	5	0	36	20	0	127	
5:30 PM	0	0	3	0	0	3	0	38	0	0	13	7	0	38	24	0	126	
5:35 PM	0	0	2	1	0	8	2	33	0	0	8	4	0	39	24	0	121	
5:40 PM	0	0	2	0	0	4	1	29	0	0	16	5	0	36	14	0	107	
5:45 PM	0	0	0	0	0	6	0	31	0	1	14	2	0	32	18	0	104	
5:50 PM	0	0	1	0	0	5	3	39	0	0	6	2	0	43	18	0	117	
5:55 PM	0	0	1	0	0	7	0	25	0	0	11	6	0	35	12	0	97	
Count Total	0	12	74	13	1	150	12	851	0	3	351	105	0	999	538	2	3,111	
Peak Hour	0	12	44	12	0	86	3	427	0	1	207	44	0	520	287	2	1,645	

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles on Crosswalk

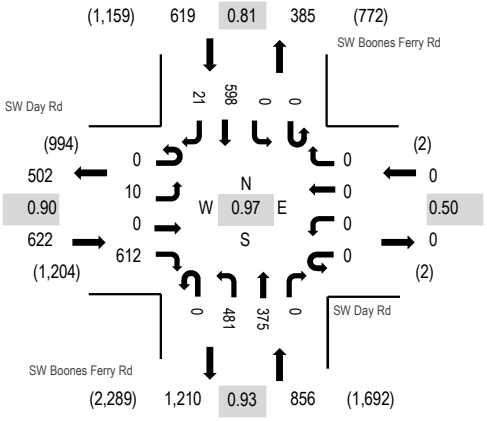
Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
4:00 PM	0	2	10	8	20	4:00 PM	0	0	0	0	0	4:00 PM	0	0	0	0	0
4:05 PM	0	0	3	6	9	4:05 PM	0	0	0	0	0	4:05 PM	0	0	0	0	0
4:10 PM	0	3	3	2	8	4:10 PM	0	0	0	0	0	4:10 PM	0	0	0	0	0
4:15 PM	0	0	3	3	6	4:15 PM	0	0	0	0	0	4:15 PM	0	0	0	0	0
4:20 PM	0	1	4	2	7	4:20 PM	0	0	0	0	0	4:20 PM	0	0	0	0	0
4:25 PM	0	2	3	5	10	4:25 PM	0	0	0	0	0	4:25 PM	0	0	0	0	0
4:30 PM	0	1	6	1	8	4:30 PM	0	0	0	1	1	4:30 PM	0	0	0	0	0
4:35 PM	0	2	4	4	10	4:35 PM	0	0	0	1	1	4:35 PM	0	0	0	0	0
4:40 PM	0	1	5	8	14	4:40 PM	0	0	0	0	0	4:40 PM	0	0	0	0	0
4:45 PM	0	1	6	5	12	4:45 PM	0	0	0	0	0	4:45 PM	0	0	0	0	0
4:50 PM	0	2	3	5	10	4:50 PM	0	0	0	1	1	4:50 PM	0	0	0	0	0
4:55 PM	0	1	11	2	14	4:55 PM	0	0	0	0	0	4:55 PM	0	0	0	0	0
5:00 PM	0	1	4	2	7	5:00 PM	0	0	0	0	0	5:00 PM	0	0	0	0	0
5:05 PM	0	1	3	1	5	5:05 PM	0	0	0	0	0	5:05 PM	0	0	0	0	0
5:10 PM	0	0	3	4	7	5:10 PM	0	0	0	0	0	5:10 PM	0	0	0	0	0
5:15 PM	0	0	0	2	2	5:15 PM	0	0	0	0	0	5:15 PM	0	0	0	0	0
5:20 PM	0	0	3	2	5	5:20 PM	0	0	0	0	0	5:20 PM	0	0	0	0	0
5:25 PM	0	0	5	4	9	5:25 PM	0	0	0	0	0	5:25 PM	0	0	0	0	0
5:30 PM	0	1	1	0	2	5:30 PM	0	0	0	0	0	5:30 PM	0	0	0	0	0
5:35 PM	0	0	0	1	1	5:35 PM	0	0	0	0	0	5:35 PM	0	0	0	0	0
5:40 PM	0	1	3	1	5	5:40 PM	0	0	0	0	0	5:40 PM	0	0	0	0	0
5:45 PM	0	0	2	3	5	5:45 PM	0	0	0	0	0	5:45 PM	0	0	0	0	0
5:50 PM	0	1	1	3	5	5:50 PM	0	0	0	0	0	5:50 PM	0	0	0	0	0
5:55 PM	0	2	2	4	8	5:55 PM	0	0	0	0	0	5:55 PM	0	0	0	0	0
Count Total	0	23	88	78	189	Count Total	0	0	0	3	3	Count Total	0	0	0	0	0
Peak Hour	0	15	55	45	115	Peak Hour	0	0	0	3	3	Peak Hour	0	0	0	0	0

ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

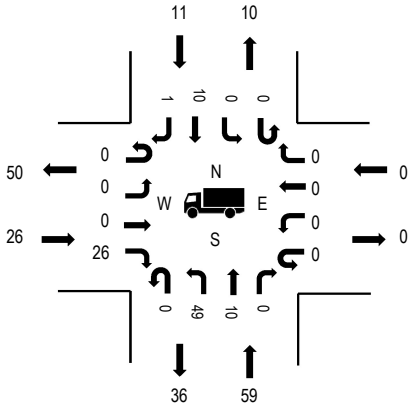
Location: 2 SW Boones Ferry Rd & SW Day Rd PM
Date: Wednesday, September 22, 2021
Peak Hour: 04:00 PM - 05:00 PM
Peak 15-Minutes: 04:05 PM - 04:20 PM

Peak Hour

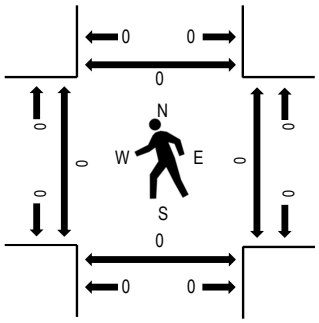
Motorized Vehicles



Heavy Vehicles



Pedestrians



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	4.2%	0.90
WB	0.0%	0.50
NB	6.9%	0.93
SB	1.8%	0.81
All	4.6%	0.97

Traffic Counts - Motorized Vehicles

Interval Start Time	SW Day Rd Eastbound				SW Day Rd Westbound				SW Boones Ferry Rd Northbound				SW Boones Ferry Rd Southbound					Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total	
4:00 PM	0	0	0	62	0	0	0	0	0	31	25	0	0	0	39	2	159	2,097
4:05 PM	0	1	0	47	0	0	0	0	0	49	31	0	0	0	52	3	183	2,085
4:10 PM	0	1	0	50	0	0	0	0	0	40	30	0	0	0	58	1	180	2,062
4:15 PM	0	1	0	40	0	0	0	0	0	32	28	0	0	0	74	3	178	2,054
4:20 PM	0	0	0	57	0	0	0	0	0	47	34	0	0	0	42	1	181	2,055
4:25 PM	0	2	0	53	0	0	0	0	0	35	39	0	0	0	38	3	170	2,040
4:30 PM	0	2	0	63	0	0	0	0	0	36	24	0	0	0	36	1	162	2,069
4:35 PM	0	1	0	50	0	0	0	0	0	44	38	0	0	0	44	1	178	2,064
4:40 PM	0	0	0	52	0	0	0	0	0	42	30	0	0	0	43	3	170	2,064
4:45 PM	0	1	0	48	0	0	0	0	0	37	33	0	0	0	55	0	174	2,041
4:50 PM	0	1	0	42	0	0	0	0	0	50	34	0	0	0	57	1	185	2,030
4:55 PM	0	0	0	48	0	0	0	0	0	38	29	0	0	0	60	2	177	1,986
5:00 PM	0	1	0	57	0	0	0	0	0	46	19	0	0	0	24	0	147	1,960
5:05 PM	0	0	0	39	0	0	0	0	0	43	35	0	0	0	38	5	160	
5:10 PM	0	0	0	55	0	0	1	0	0	44	28	1	0	0	41	2	172	
5:15 PM	0	1	0	61	0	0	0	0	0	31	31	0	0	0	55	0	179	
5:20 PM	0	4	0	43	0	0	0	0	0	32	26	0	0	0	59	2	166	
5:25 PM	0	2	0	57	0	0	0	0	0	54	38	0	0	0	46	2	199	
5:30 PM	0	0	0	43	0	0	0	0	0	34	35	0	0	0	43	2	157	
5:35 PM	0	2	0	45	0	0	0	0	0	37	37	0	0	0	53	4	178	
5:40 PM	0	1	0	49	0	0	0	0	0	33	22	0	0	0	42	0	147	
5:45 PM	0	4	0	30	0	0	0	0	0	52	30	0	0	0	46	1	163	
5:50 PM	0	2	0	44	0	0	0	0	1	30	38	0	0	0	24	2	141	
5:55 PM	0	3	0	39	0	0	0	1	0	32	27	0	0	1	45	3	151	
Count Total	0	30	0	1,174	0	0	1	1	1	949	741	1	0	1	1,114	44	4,057	
Peak Hour	0	10	0	612	0	0	0	0	0	481	375	0	0	0	598	21	2,097	

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles on Crosswalk

Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
4:00 PM	5	3	0	3	11	4:00 PM	0	0	0	0	0	4:00 PM	0	0	0	0	0
4:05 PM	2	4	0	1	7	4:05 PM	0	0	0	0	0	4:05 PM	0	0	0	0	0
4:10 PM	0	1	0	2	3	4:10 PM	0	0	0	0	0	4:10 PM	0	0	0	0	0
4:15 PM	1	4	0	1	6	4:15 PM	0	0	0	0	0	4:15 PM	0	0	0	0	0
4:20 PM	0	4	0	3	7	4:20 PM	0	0	0	0	0	4:20 PM	0	0	0	0	0
4:25 PM	3	6	0	0	9	4:25 PM	0	0	0	0	0	4:25 PM	0	0	0	0	0
4:30 PM	1	6	0	0	7	4:30 PM	0	2	0	0	2	4:30 PM	0	0	0	0	0
4:35 PM	0	3	0	0	3	4:35 PM	0	0	0	0	0	4:35 PM	0	0	1	0	1
4:40 PM	5	11	0	0	16	4:40 PM	0	2	0	0	2	4:40 PM	0	0	0	0	0
4:45 PM	4	2	0	0	6	4:45 PM	0	0	0	0	0	4:45 PM	0	0	0	0	0
4:50 PM	3	7	0	1	11	4:50 PM	0	0	0	0	0	4:50 PM	0	0	0	0	0
4:55 PM	2	8	0	0	10	4:55 PM	0	0	0	0	0	4:55 PM	0	0	0	0	0
5:00 PM	2	2	0	0	4	5:00 PM	0	1	0	0	1	5:00 PM	0	0	0	0	0
5:05 PM	1	4	0	1	6	5:05 PM	0	0	0	0	0	5:05 PM	0	0	0	0	0
5:10 PM	1	1	0	0	2	5:10 PM	0	0	0	0	0	5:10 PM	0	0	0	0	0
5:15 PM	1	4	0	1	6	5:15 PM	0	1	0	0	1	5:15 PM	0	0	0	0	0
5:20 PM	1	4	0	1	6	5:20 PM	0	0	0	1	1	5:20 PM	0	0	0	0	0
5:25 PM	2	7	0	1	10	5:25 PM	0	0	0	0	0	5:25 PM	0	0	0	0	0
5:30 PM	1	2	0	1	4	5:30 PM	1	0	0	1	2	5:30 PM	0	0	0	0	0
5:35 PM	1	3	0	0	4	5:35 PM	0	1	0	0	1	5:35 PM	0	0	0	0	0
5:40 PM	1	4	0	0	5	5:40 PM	0	0	0	1	1	5:40 PM	1	0	0	0	1
5:45 PM	1	1	0	2	4	5:45 PM	0	0	0	0	0	5:45 PM	0	0	0	0	0
5:50 PM	2	6	0	0	8	5:50 PM	0	0	0	0	0	5:50 PM	0	0	0	0	0
5:55 PM	4	2	0	1	7	5:55 PM	0	0	0	1	1	5:55 PM	0	0	0	0	0
Count Total	44	99	0	19	162	Count Total	1	7	0	4	12	Count Total	1	0	1	0	2
Peak Hour	26	59	0	11	96	Peak Hour	0	4	0	0	4	Peak Hour	0	0	1	0	1

ALL TRAFFIC DATA SERVICES
(303) 216-2439
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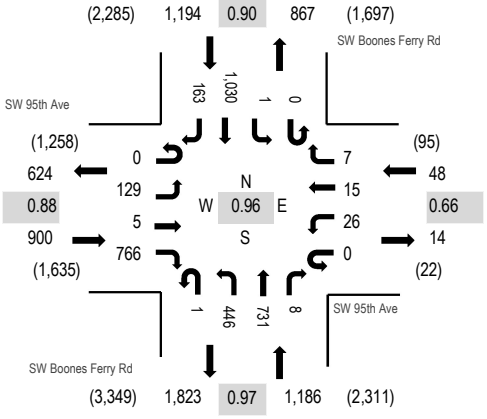
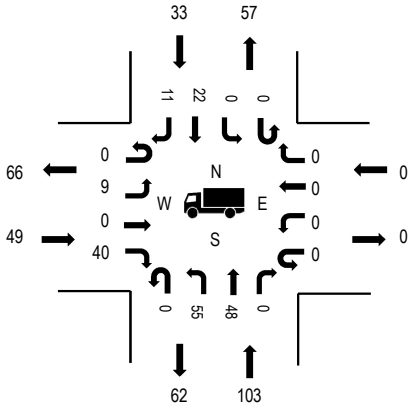
Location: 3 SW Boones Ferry Rd & SW 95th Ave PM
Date: Wednesday, September 22, 2021
Peak Hour: 04:05 PM - 05:05 PM
Peak 15-Minutes: 04:05 PM - 04:20 PM

Peak Hour

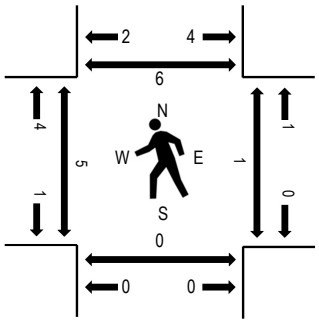
Motorized Vehicles



Heavy Vehicles



Pedestrians



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	5.4%	0.88
WB	0.0%	0.66
NB	8.7%	0.97
SB	2.8%	0.90
All	5.6%	0.96

Traffic Counts - Motorized Vehicles

Interval Start Time	SW 95th Ave Eastbound				SW 95th Ave Westbound				SW Boones Ferry Rd Northbound				SW Boones Ferry Rd Southbound					Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total	
4:00 PM	0	7	0	51	0	3	1	0	0	37	50	0	0	0	92	9	250	3,320
4:05 PM	0	16	3	75	0	1	4	0	0	47	58	0	0	0	74	19	297	3,328
4:10 PM	0	16	0	81	0	3	2	1	0	35	62	3	0	0	91	11	305	3,313
4:15 PM	0	7	0	50	0	1	2	0	0	40	60	0	0	0	87	20	267	3,266
4:20 PM	0	7	0	43	0	1	0	0	0	30	71	2	0	1	110	15	280	3,262
4:25 PM	0	10	0	52	0	4	0	0	0	35	66	0	0	0	77	17	261	3,242
4:30 PM	0	11	0	84	0	3	2	2	0	37	42	1	0	0	90	12	284	3,265
4:35 PM	0	10	0	76	0	1	0	2	0	47	77	0	0	0	83	5	301	3,205
4:40 PM	0	12	1	64	0	3	1	0	0	34	53	0	0	0	85	13	266	3,160
4:45 PM	0	11	0	68	0	1	1	0	0	19	64	1	0	0	90	10	265	3,138
4:50 PM	0	16	0	53	0	2	1	0	0	42	71	0	0	0	78	10	273	3,114
4:55 PM	0	9	0	57	0	3	1	0	1	38	58	1	0	0	87	16	271	3,058
5:00 PM	0	4	1	63	0	3	1	2	0	42	49	0	0	0	78	15	258	3,006
5:05 PM	0	24	1	71	0	5	2	2	0	29	56	1	0	0	78	13	282	
5:10 PM	0	16	0	63	0	4	4	0	0	34	47	2	0	0	77	11	258	
5:15 PM	0	9	0	53	0	4	0	0	0	38	56	1	0	0	84	18	263	
5:20 PM	0	21	0	52	0	2	5	0	0	34	51	0	0	0	81	14	260	
5:25 PM	0	13	0	41	0	3	0	1	0	37	73	0	0	0	96	20	284	
5:30 PM	0	9	0	40	0	0	0	1	0	33	50	2	0	0	76	13	224	
5:35 PM	0	7	0	44	0	1	0	1	0	38	65	0	0	0	83	17	256	
5:40 PM	0	7	0	45	0	3	0	0	0	41	51	0	0	0	83	14	244	
5:45 PM	0	17	0	39	0	1	0	0	1	49	64	0	0	0	59	11	241	
5:50 PM	0	15	0	44	0	3	0	0	0	45	44	0	0	0	53	13	217	
5:55 PM	0	18	0	28	0	1	0	0	0	40	55	1	0	0	62	14	219	
Count Total	0	292	6	1,337	0	56	27	12	2	901	1,393	15	0	1	1,954	330	6,326	
Peak Hour	0	129	5	766	0	26	15	7	1	446	731	8	0	1	1,030	163	3,328	

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles on Crosswalk

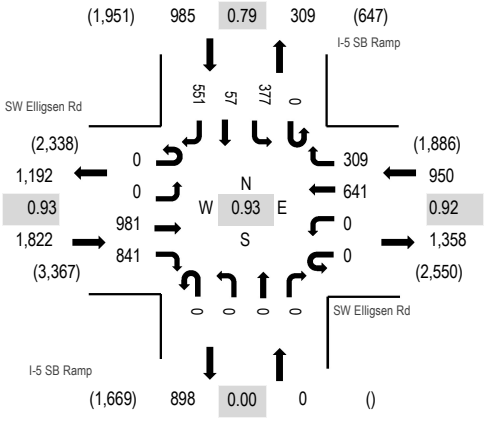
Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
4:00 PM	4	7	1	8	20	4:00 PM	0	0	0	0	0	4:00 PM	1	0	0	0	1
4:05 PM	5	4	0	4	13	4:05 PM	0	0	0	0	0	4:05 PM	0	0	0	0	0
4:10 PM	2	10	0	1	13	4:10 PM	0	0	0	0	0	4:10 PM	0	0	0	0	0
4:15 PM	4	11	0	1	16	4:15 PM	0	0	0	0	0	4:15 PM	1	0	0	0	1
4:20 PM	4	8	0	3	15	4:20 PM	0	0	0	0	0	4:20 PM	0	0	0	1	1
4:25 PM	5	6	0	3	14	4:25 PM	0	0	0	0	0	4:25 PM	0	0	1	2	3
4:30 PM	10	9	0	1	20	4:30 PM	2	0	0	0	2	4:30 PM	1	0	0	1	2
4:35 PM	3	11	0	0	14	4:35 PM	0	0	0	0	0	4:35 PM	2	0	0	0	2
4:40 PM	6	11	0	4	21	4:40 PM	1	0	0	0	1	4:40 PM	0	0	0	1	1
4:45 PM	3	4	0	6	13	4:45 PM	0	0	0	0	0	4:45 PM	1	0	0	1	2
4:50 PM	6	12	0	1	19	4:50 PM	0	0	0	0	0	4:50 PM	0	0	0	0	0
4:55 PM	1	12	0	6	19	4:55 PM	0	1	0	0	1	4:55 PM	0	0	0	0	0
5:00 PM	0	5	0	3	8	5:00 PM	0	0	0	0	0	5:00 PM	1	0	0	0	1
5:05 PM	3	6	0	2	11	5:05 PM	0	0	0	0	0	5:05 PM	0	0	0	0	0
5:10 PM	4	6	0	0	10	5:10 PM	0	0	0	0	0	5:10 PM	0	0	0	0	0
5:15 PM	0	8	0	2	10	5:15 PM	1	0	0	0	1	5:15 PM	0	0	0	0	0
5:20 PM	4	13	0	0	17	5:20 PM	0	0	0	1	1	5:20 PM	0	0	0	0	0
5:25 PM	5	5	0	3	13	5:25 PM	0	0	0	0	0	5:25 PM	0	0	0	0	0
5:30 PM	5	3	0	2	10	5:30 PM	1	0	0	0	1	5:30 PM	0	0	0	0	0
5:35 PM	4	9	0	2	15	5:35 PM	0	0	0	0	0	5:35 PM	0	0	0	0	0
5:40 PM	5	5	1	1	12	5:40 PM	0	0	0	0	0	5:40 PM	0	0	0	0	0
5:45 PM	6	5	0	2	13	5:45 PM	0	0	0	0	0	5:45 PM	0	0	0	0	0
5:50 PM	6	8	0	2	16	5:50 PM	0	0	0	0	0	5:50 PM	0	0	0	1	1
5:55 PM	4	2	0	5	11	5:55 PM	0	0	0	0	0	5:55 PM	0	0	0	0	0
Count Total	99	180	2	62	343	Count Total	5	1	0	1	7	Count Total	7	0	1	7	15
Peak Hour	49	103	0	33	185	Peak Hour	3	1	0	0	4	Peak Hour	6	0	1	6	13

ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

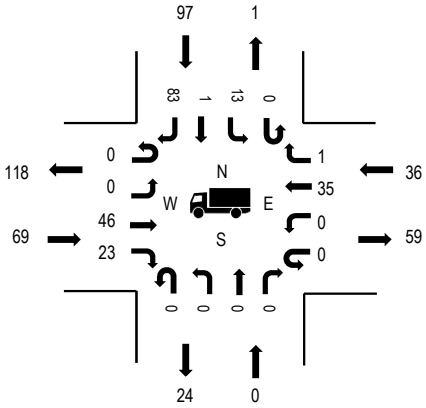
Location: 4 I-5 SB Ramp & SW Elligsen Rd PM
Date: Wednesday, September 22, 2021
Peak Hour: 04:00 PM - 05:00 PM
Peak 15-Minutes: 04:00 PM - 04:15 PM

Peak Hour

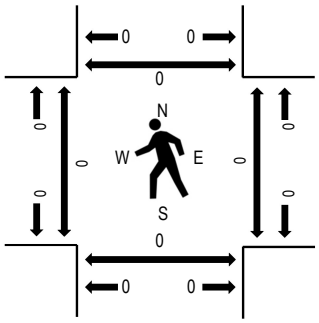
Motorized Vehicles



Heavy Vehicles



Pedestrians



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	3.8%	0.93
WB	3.8%	0.92
NB	0.0%	0.00
SB	9.8%	0.79
All	5.4%	0.93

Traffic Counts - Motorized Vehicles

Interval Start Time	SW Elligsen Rd Eastbound				SW Elligsen Rd Westbound				I-5 SB Ramp Northbound				I-5 SB Ramp Southbound					Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total	
4:00 PM	0	0	74	72	0	0	41	26	0	0	0	0	0	47	8	53	321	3,757
4:05 PM	0	0	92	65	0	0	48	29	0	0	0	0	0	46	10	56	346	3,746
4:10 PM	0	0	97	77	0	0	55	23	0	0	0	0	0	37	13	43	345	3,709
4:15 PM	0	0	65	74	0	0	54	20	0	0	0	0	0	40	5	45	303	3,652
4:20 PM	0	0	76	71	0	0	60	31	0	0	0	0	0	24	8	50	320	3,655
4:25 PM	0	0	67	68	0	0	67	32	0	0	0	0	0	25	6	42	307	3,601
4:30 PM	0	0	108	61	0	0	50	28	0	0	0	0	0	34	0	37	318	3,622
4:35 PM	0	0	86	72	0	0	56	31	0	0	0	0	0	13	0	47	305	3,585
4:40 PM	0	0	86	78	0	0	40	31	0	0	0	0	0	25	1	54	315	3,573
4:45 PM	0	0	75	73	0	0	59	17	0	0	0	0	0	31	1	32	288	3,553
4:50 PM	0	0	71	63	0	0	53	23	0	0	0	0	0	32	3	54	299	3,538
4:55 PM	0	0	84	67	0	0	58	18	0	0	0	0	0	23	2	38	290	3,483
5:00 PM	0	0	78	75	0	0	48	31	0	0	0	0	0	26	6	46	310	3,447
5:05 PM	0	0	85	67	0	0	51	33	0	0	0	0	0	31	2	40	309	
5:10 PM	0	0	87	58	0	0	48	35	0	0	0	0	0	21	3	36	288	
5:15 PM	0	0	75	65	0	0	55	53	0	0	0	0	0	22	0	36	306	
5:20 PM	0	0	65	59	0	0	49	24	0	0	0	0	0	31	0	38	266	
5:25 PM	0	0	76	74	0	0	54	29	0	0	0	0	0	35	5	55	328	
5:30 PM	0	0	65	54	0	0	42	30	0	0	0	0	0	30	6	54	281	
5:35 PM	0	0	69	66	0	0	68	26	0	0	0	0	0	20	7	37	293	
5:40 PM	0	0	72	57	0	0	45	29	0	0	0	0	0	33	10	49	295	
5:45 PM	0	0	54	50	0	0	56	19	0	0	0	0	0	32	6	56	273	
5:50 PM	0	0	53	47	0	0	38	15	0	0	0	0	0	33	9	49	244	
5:55 PM	0	0	54	40	0	0	44	14	0	0	0	0	0	45	5	52	254	
Count Total	0	0	1,814	1,553	0	0	1,239	647	0	0	0	0	0	736	116	1,099	7,204	
Peak Hour	0	0	981	841	0	0	641	309	0	0	0	0	0	377	57	551	3,757	

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles on Crosswalk

Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
4:00 PM	9	0	2	6	17	4:00 PM	0	0	0	0	0	4:00 PM	0	0	0	0	0
4:05 PM	10	0	2	6	18	4:05 PM	0	0	0	0	0	4:05 PM	0	0	0	0	0
4:10 PM	2	0	3	8	13	4:10 PM	0	0	0	0	0	4:10 PM	0	0	0	0	0
4:15 PM	2	0	6	10	18	4:15 PM	0	0	0	0	0	4:15 PM	0	0	0	0	0
4:20 PM	5	0	1	6	12	4:20 PM	0	0	0	0	0	4:20 PM	0	0	0	0	0
4:25 PM	6	0	3	7	16	4:25 PM	0	0	0	0	0	4:25 PM	0	0	0	0	0
4:30 PM	6	0	4	7	17	4:30 PM	0	0	0	0	0	4:30 PM	0	0	0	0	0
4:35 PM	1	0	1	9	11	4:35 PM	0	0	0	0	0	4:35 PM	0	0	0	0	0
4:40 PM	10	0	4	11	25	4:40 PM	0	0	0	0	0	4:40 PM	0	0	0	0	0
4:45 PM	7	0	1	7	15	4:45 PM	0	0	0	0	0	4:45 PM	0	0	0	0	0
4:50 PM	5	0	2	12	19	4:50 PM	0	0	0	0	0	4:50 PM	0	0	0	0	0
4:55 PM	6	0	7	8	21	4:55 PM	0	0	1	0	1	4:55 PM	0	0	0	1	1
5:00 PM	4	0	1	7	12	5:00 PM	0	0	0	0	0	5:00 PM	0	0	0	0	0
5:05 PM	2	0	3	3	8	5:05 PM	0	0	0	0	0	5:05 PM	0	0	0	0	0
5:10 PM	4	0	2	7	13	5:10 PM	0	0	0	0	0	5:10 PM	0	0	0	0	0
5:15 PM	0	0	2	6	8	5:15 PM	0	0	0	0	0	5:15 PM	0	0	0	0	0
5:20 PM	3	0	4	10	17	5:20 PM	0	0	0	0	0	5:20 PM	0	0	0	0	0
5:25 PM	7	0	2	4	13	5:25 PM	0	0	0	0	0	5:25 PM	0	0	0	0	0
5:30 PM	4	0	2	5	11	5:30 PM	0	0	0	0	0	5:30 PM	0	0	0	0	0
5:35 PM	4	0	5	5	14	5:35 PM	0	0	0	0	0	5:35 PM	0	0	0	0	0
5:40 PM	7	0	2	2	11	5:40 PM	0	0	0	0	0	5:40 PM	0	0	0	0	0
5:45 PM	7	0	1	6	14	5:45 PM	0	0	0	0	0	5:45 PM	0	0	0	0	0
5:50 PM	9	0	3	7	19	5:50 PM	0	0	0	0	0	5:50 PM	0	0	0	0	0
5:55 PM	5	0	3	7	15	5:55 PM	0	0	0	0	0	5:55 PM	0	0	0	0	0
Count Total	125	0	66	166	357	Count Total	0	0	1	0	1	Count Total	0	0	0	1	1
Peak Hour	69	0	36	97	202	Peak Hour	0	0	1	0	1	Peak Hour	0	0	0	1	1

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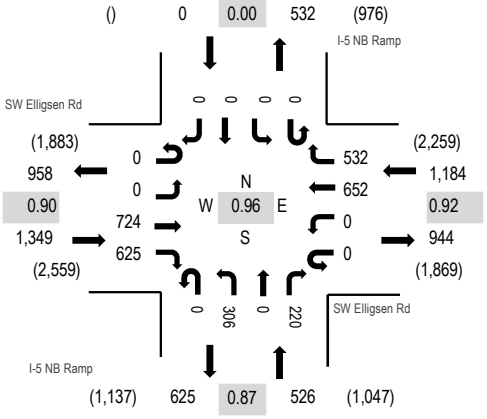
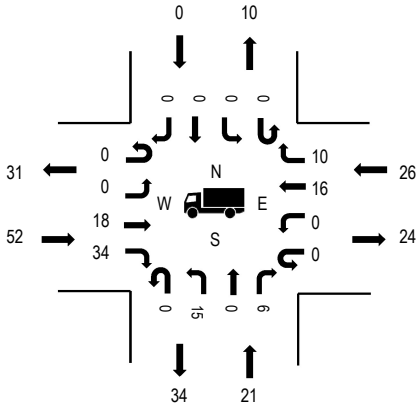
Location: 5 I-5 NB Ramp & SW Elligsen Rd PM
Date: Wednesday, September 22, 2021
Peak Hour: 04:05 PM - 05:05 PM
Peak 15-Minutes: 04:05 PM - 04:20 PM

Peak Hour

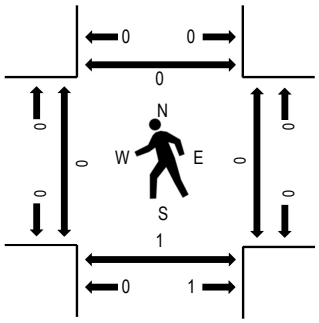
Motorized Vehicles



Heavy Vehicles



Pedestrians



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	3.9%	0.90
WB	2.2%	0.92
NB	4.0%	0.87
SB	0.0%	0.00
All	3.2%	0.96

Traffic Counts - Motorized Vehicles

Interval Start Time	SW Elligsen Rd Eastbound				SW Elligsen Rd Westbound				I-5 NB Ramp Northbound				I-5 NB Ramp Southbound					Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total	
4:00 PM	0	0	76	41	0	0	48	36	0	18	0	18	0	0	0	0	237	3,045
4:05 PM	0	0	76	54	0	0	51	49	0	25	0	21	0	0	0	0	276	3,059
4:10 PM	0	0	58	73	0	0	58	46	0	19	0	16	0	0	0	0	270	3,051
4:15 PM	0	0	70	43	0	0	49	47	0	23	0	16	0	0	0	0	248	3,023
4:20 PM	0	0	60	51	0	0	64	44	0	29	0	16	0	0	0	0	264	3,027
4:25 PM	0	0	53	40	0	0	62	39	0	37	0	22	0	0	0	0	253	3,006
4:30 PM	0	0	64	62	0	0	51	43	0	27	0	30	0	0	0	0	277	3,015
4:35 PM	0	0	42	65	0	0	65	46	0	23	0	17	0	0	0	0	258	2,977
4:40 PM	0	0	53	57	0	0	46	37	0	25	0	13	0	0	0	0	231	2,959
4:45 PM	0	0	59	43	0	0	48	39	0	27	0	17	0	0	0	0	233	2,971
4:50 PM	0	0	74	39	0	0	50	52	0	25	0	21	0	0	0	0	261	2,936
4:55 PM	0	0	58	52	0	0	48	38	0	28	0	13	0	0	0	0	237	2,862
5:00 PM	0	0	57	46	0	0	60	52	0	18	0	18	0	0	0	0	251	2,820
5:05 PM	0	0	58	61	0	0	66	48	0	19	0	16	0	0	0	0	268	
5:10 PM	0	0	52	49	0	0	61	42	0	21	0	17	0	0	0	0	242	
5:15 PM	0	0	51	39	0	0	72	33	0	38	0	19	0	0	0	0	252	
5:20 PM	0	0	59	41	0	0	48	42	0	25	0	28	0	0	0	0	243	
5:25 PM	0	0	66	54	0	0	64	37	0	18	0	23	0	0	0	0	262	
5:30 PM	0	0	63	40	0	0	50	49	0	23	0	14	0	0	0	0	239	
5:35 PM	0	0	48	41	0	0	53	42	0	41	0	15	0	0	0	0	240	
5:40 PM	0	0	67	42	0	0	51	37	0	23	0	23	0	0	0	0	243	
5:45 PM	0	0	47	28	0	0	51	27	0	24	0	21	0	0	0	0	198	
5:50 PM	0	0	55	40	0	0	37	22	0	16	0	17	0	0	0	0	187	
5:55 PM	0	0	56	36	0	0	30	29	0	28	0	16	0	0	0	0	195	
Count Total	0	0	1,422	1,137	0	0	1,283	976	0	600	0	447	0	0	0	0	5,865	
Peak Hour	0	0	724	625	0	0	652	532	0	306	0	220	0	0	0	0	3,059	

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles on Crosswalk

Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
4:00 PM	7	1	2	0	10	4:00 PM	1	0	0	0	1	4:00 PM	0	0	0	0	0
4:05 PM	4	2	1	0	7	4:05 PM	0	0	0	0	0	4:05 PM	0	0	0	0	0
4:10 PM	2	2	2	0	6	4:10 PM	0	0	0	0	0	4:10 PM	0	0	0	0	0
4:15 PM	3	3	1	0	7	4:15 PM	0	0	0	0	0	4:15 PM	0	0	0	0	0
4:20 PM	7	2	5	0	14	4:20 PM	0	0	0	0	0	4:20 PM	0	0	0	0	0
4:25 PM	4	2	2	0	8	4:25 PM	0	0	0	0	0	4:25 PM	0	0	0	0	0
4:30 PM	7	2	3	0	12	4:30 PM	0	0	0	0	0	4:30 PM	0	0	0	0	0
4:35 PM	2	1	2	0	5	4:35 PM	0	0	0	0	0	4:35 PM	0	0	0	0	0
4:40 PM	6	0	4	0	10	4:40 PM	0	0	0	0	0	4:40 PM	0	0	0	0	0
4:45 PM	6	0	0	0	6	4:45 PM	0	0	0	0	0	4:45 PM	0	0	0	0	0
4:50 PM	6	2	2	0	10	4:50 PM	0	0	0	0	0	4:50 PM	0	1	0	0	1
4:55 PM	4	5	2	0	11	4:55 PM	0	0	0	0	0	4:55 PM	0	0	0	0	0
5:00 PM	1	0	2	0	3	5:00 PM	0	0	0	0	0	5:00 PM	0	0	0	0	0
5:05 PM	4	3	1	0	8	5:05 PM	0	0	0	0	0	5:05 PM	0	0	0	0	0
5:10 PM	3	0	1	0	4	5:10 PM	0	0	0	0	0	5:10 PM	0	0	0	0	0
5:15 PM	1	4	1	0	6	5:15 PM	0	0	0	0	0	5:15 PM	0	1	0	0	1
5:20 PM	2	4	1	0	7	5:20 PM	0	0	0	0	0	5:20 PM	0	0	0	0	0
5:25 PM	4	2	0	0	6	5:25 PM	0	0	1	0	1	5:25 PM	0	0	0	0	0
5:30 PM	7	1	2	0	10	5:30 PM	0	0	0	0	0	5:30 PM	0	0	0	0	0
5:35 PM	5	3	3	0	11	5:35 PM	0	0	0	0	0	5:35 PM	0	0	0	0	0
5:40 PM	4	2	1	0	7	5:40 PM	0	0	0	0	0	5:40 PM	0	0	0	0	0
5:45 PM	3	1	1	0	5	5:45 PM	0	0	0	0	0	5:45 PM	0	0	0	0	0
5:50 PM	4	2	2	0	8	5:50 PM	0	0	0	0	0	5:50 PM	0	0	0	0	0
5:55 PM	3	2	5	0	10	5:55 PM	0	0	0	0	0	5:55 PM	0	0	0	0	0
Count Total	99	46	46	0	191	Count Total	1	0	1	0	2	Count Total	0	2	0	0	2
Peak Hour	52	21	26	0	99	Peak Hour	0	0	0	0	0	Peak Hour	0	1	0	0	1

APPENDIX B

HCM REPORT – EXISTING CONDITIONS

Intersection	
Int Delay, s/veh	0

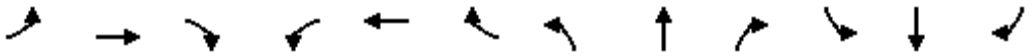
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	603	0	0	541	0	0
Future Vol, veh/h	603	0	0	541	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	670	0	0	601	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	670	0	1271	670
Stage 1	-	-	-	-	670	-
Stage 2	-	-	-	-	601	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	930	-	187	460
Stage 1	-	-	-	-	512	-
Stage 2	-	-	-	-	551	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	930	-	187	460
Mov Cap-2 Maneuver	-	-	-	-	327	-
Stage 1	-	-	-	-	512	-
Stage 2	-	-	-	-	551	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	930	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

HCM 6th Signalized Intersection Summary
2: Boones Ferry Road & Day Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	13	0	590	0	0	0	518	369	0	0	590	23
Future Volume (veh/h)	13	0	590	0	0	0	518	369	0	0	590	23
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1841	1900	1900	1900	1752	1841	1900	1900	1870	1811
Adj Flow Rate, veh/h	14	0	579	0	0	0	540	384	0	0	615	22
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	4	0	0	0	10	4	0	0	2	6
Cap, veh/h	137	0	921	0	90	0	1757	1613	0	2	1033	37
Arrive On Green	0.05	0.00	0.05	0.00	0.00	0.00	0.91	1.00	0.00	0.00	0.30	0.30
Sat Flow, veh/h	1440	0	1560	0	1900	0	3237	1841	0	1810	3497	125
Grp Volume(v), veh/h	14	0	579	0	0	0	540	384	0	0	312	325
Grp Sat Flow(s),veh/h/ln	1440	0	1560	0	1900	0	1618	1841	0	1810	1777	1845
Q Serve(g_s), s	1.0	0.0	0.0	0.0	0.0	0.0	2.3	0.0	0.0	0.0	15.8	15.8
Cycle Q Clear(g_c), s	1.0	0.0	0.0	0.0	0.0	0.0	2.3	0.0	0.0	0.0	15.8	15.8
Prop In Lane	1.00		1.00	0.00		0.00	1.00		0.00	1.00		0.07
Lane Grp Cap(c), veh/h	137	0	921	0	90	0	1757	1613	0	2	525	545
V/C Ratio(X)	0.10	0.00	0.63	0.00	0.00	0.00	0.31	0.24	0.00	0.00	0.60	0.60
Avail Cap(c_a), veh/h	288	0	1085	0	290	0	1757	1613	0	69	525	545
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.67	1.67	1.67	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	0.00	0.96	0.96	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	48.1	0.0	14.0	0.0	0.0	0.0	2.3	0.0	0.0	0.0	31.6	31.6
Incr Delay (d2), s/veh	0.3	0.0	0.9	0.0	0.0	0.0	0.1	0.3	0.0	0.0	4.9	4.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	8.6	0.0	0.0	0.0	0.6	0.1	0.0	0.0	7.3	7.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	48.4	0.0	14.9	0.0	0.0	0.0	2.4	0.3	0.0	0.0	36.5	36.4
LnGrp LOS	D	A	B	A	A	A	A	A	A	A	D	D
Approach Vol, veh/h		593			0			924			637	
Approach Delay, s/veh		15.7			0.0			1.6			36.5	
Approach LOS		B						A			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	0.0	96.0		9.0	61.0	35.0		9.0				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	4.0	73.0		16.0	46.0	31.0		16.0				
Max Q Clear Time (g_c+I1), s	0.0	2.0		3.0	4.3	17.8		0.0				
Green Ext Time (p_c), s	0.0	2.5		2.0	2.1	3.1		0.0				

Intersection Summary			
HCM 6th Ctrl Delay		15.8	
HCM 6th LOS		B	

HCM 6th Signalized Intersection Summary
3: Boones Ferry Road & 95th Avenue

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	146	3	760	28	15	6	446	743	8	1	1032	164
Future Volume (veh/h)	146	3	760	28	15	6	446	743	8	1	1032	164
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.96	1.00		0.96	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1796	1900	1841	1900	1900	1900	1693	1781	1900	1900	1856	1781
Adj Flow Rate, veh/h	152	3	760	29	16	1	465	774	7	1	1075	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	7	0	4	0	0	0	14	8	0	0	3	8
Cap, veh/h	301	5	1210	116	311	19	850	2029	18	164	1444	
Arrive On Green	0.18	0.18	0.18	0.18	0.18	0.18	0.54	1.00	1.00	0.09	0.41	0.00
Sat Flow, veh/h	1324	26	2637	714	1765	110	3127	3436	31	1810	3526	1510
Grp Volume(v), veh/h	155	0	760	29	0	17	465	381	400	1	1075	0
Grp Sat Flow(s),veh/h/ln	1350	0	1319	714	0	1875	1564	1692	1775	1810	1763	1510
Q Serve(g_s), s	10.8	0.0	0.0	4.2	0.0	0.8	10.1	0.0	0.0	0.1	27.2	0.0
Cycle Q Clear(g_c), s	11.6	0.0	0.0	15.7	0.0	0.8	10.1	0.0	0.0	0.1	27.2	0.0
Prop In Lane	0.98		1.00	1.00		0.06	1.00		0.02	1.00		1.00
Lane Grp Cap(c), veh/h	305	0	1210	116	0	330	850	999	1048	164	1444	
V/C Ratio(X)	0.51	0.00	0.63	0.25	0.00	0.05	0.55	0.38	0.38	0.01	0.74	
Avail Cap(c_a), veh/h	380	0	1349	153	0	429	850	999	1048	164	1444	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.73	0.73	0.73	0.77	0.77	0.00
Uniform Delay (d), s/veh	40.8	0.0	22.2	47.8	0.0	36.0	19.8	0.0	0.0	43.4	26.3	0.0
Incr Delay (d2), s/veh	1.0	0.0	0.7	0.8	0.0	0.0	0.5	0.8	0.8	0.0	2.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	0.0	6.8	0.8	0.0	0.4	3.0	0.2	0.2	0.0	11.4	0.0
Unsig. Movement Delay, s/veh												15.50
LnGrp Delay(d),s/veh	41.8	0.0	22.8	48.6	0.0	36.0	20.3	0.8	0.8	43.4	29.1	15.5
LnGrp LOS	D	A	C	D	A	D	C	A	A	D	C	B
Approach Vol, veh/h		915			46			1246			1173	A
Approach Delay, s/veh		26.0			43.9			8.1			28.0	
Approach LOS		C			D			A			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	13.5	48.0		23.5	14.5	67.0		23.5
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0
Max Green Setting (Gmax), s	23.0	43.0		24.0	4.0	62.0		24.0
Max Q Clear Time (g_c+I1), s	12.1	29.2		17.7	2.1	2.0		13.6
Green Ext Time (p_c), s	1.7	4.7		0.1	0.0	8.9		3.0

Intersection Summary	
HCM 6th Ctrl Delay	20.3
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

User approved changes to right turn type.

Unsignalized Delay for [SBR] is included in calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	981	839	0	639	312	0	0	0	373	52	558
Future Volume (veh/h)	0	981	839	0	639	312	0	0	0	373	52	558
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1826	1841	0	1826	1870				1841	1856	1663
Adj Flow Rate, veh/h	0	1044	0	0	680	0				436	0	538
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94				0.94	0.94	0.94
Percent Heavy Veh, %	0	5	4	0	5	2				4	3	16
Cap, veh/h	0	1697		0	1697					1457	0	577
Arrive On Green	0.00	0.98	0.00	0.00	0.98	0.00				0.42	0.00	0.42
Sat Flow, veh/h	0	3561	1560	0	3561	1585				3506	0	1389
Grp Volume(v), veh/h	0	1044	0	0	680	0				436	0	538
Grp Sat Flow(s),veh/h/ln	0	1735	1560	0	1735	1585				1753	0	1389
Q Serve(g_s), s	0.0	1.7	0.0	0.0	0.7	0.0				8.7	0.0	38.8
Cycle Q Clear(g_c), s	0.0	1.7	0.0	0.0	0.7	0.0				8.7	0.0	38.8
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1697		0	1697					1457	0	577
V/C Ratio(X)	0.00	0.62		0.00	0.40					0.30	0.00	0.93
Avail Cap(c_a), veh/h	0	1697		0	1697					1803	0	714
HCM Platoon Ratio	1.00	2.00	2.00	1.00	2.00	2.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.68	0.00	0.00	0.93	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	0.6	0.0	0.0	0.6	0.0				20.5	0.0	29.3
Incr Delay (d2), s/veh	0.0	1.1	0.0	0.0	0.7	0.0				0.1	0.0	16.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.5	0.0	0.0	0.3	0.0				3.4	0.0	14.4
Unsig. Movement Delay, s/veh			1.20			0.30						
LnGrp Delay(d),s/veh	0.0	1.7	1.2	0.0	1.2	0.3				20.5	0.0	45.3
LnGrp LOS	A	A	A	A	A	A				C	A	D
Approach Vol, veh/h		1937	A		1012	A					974	
Approach Delay, s/veh		1.5			0.9						34.2	
Approach LOS		A			A						C	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		56.4		48.6		56.4
Change Period (Y+Rc), s		5.0		5.0		5.0
Max Green Setting (Gmax), s		41.0		54.0		41.0
Max Q Clear Time (g_c+I1), s		3.7		40.8		2.7
Green Ext Time (p_c), s		9.9		2.9		5.6

Intersection Summary		
HCM 6th Ctrl Delay		9.5
HCM 6th LOS		A

Notes

User approved volume balancing among the lanes for turning movement.
User approved changes to right turn type.
Unsignalized Delay for [EBR, WBR] is included in calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↱		↑↑	↱	↰↰		↱			
Traffic Volume (veh/h)	0	707	647	0	650	508	301	0	230	0	0	0
Future Volume (veh/h)	0	707	647	0	650	508	301	0	230	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	0	1856	1811	0	1870	1870	1811	0	1841			
Adj Flow Rate, veh/h	0	752	0	0	691	0	320	0	0			
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94			
Percent Heavy Veh, %	0	3	6	0	2	2	6	0	4			
Cap, veh/h	0	2780		0	2802		405	0				
Arrive On Green	0.00	1.00	0.00	0.00	0.79	0.00	0.12	0.00	0.00			
Sat Flow, veh/h	0	3618	1535	0	3647	1585	3346	0	1560			
Grp Volume(v), veh/h	0	752	0	0	691	0	320	0	0			
Grp Sat Flow(s),veh/h/ln	0	1763	1535	0	1777	1585	1673	0	1560			
Q Serve(g_s), s	0.0	0.0	0.0	0.0	5.4	0.0	9.8	0.0	0.0			
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	5.4	0.0	9.8	0.0	0.0			
Prop In Lane	0.00		1.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	2780		0	2802		405	0				
V/C Ratio(X)	0.00	0.27		0.00	0.25		0.79	0.00				
Avail Cap(c_a), veh/h	0	2780		0	2802		1291	0				
HCM Platoon Ratio	1.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	0.67	0.00	0.00	1.00	0.00	1.00	0.00	0.00			
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	2.9	0.0	44.8	0.0	0.0			
Incr Delay (d2), s/veh	0.0	0.2	0.0	0.0	0.2	0.0	2.2	0.0	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	0.1	0.0	0.0	1.4	0.0	4.0	0.0	0.0			
Unsig. Movement Delay, s/veh			0.80			0.60			42.30			
LnGrp Delay(d),s/veh	0.0	0.2	0.8	0.0	3.1	0.6	47.0	0.0	42.3			
LnGrp LOS	A	A	A	A	A	A	D	A	D			
Approach Vol, veh/h		1440	A		1231	A		416	A			
Approach Delay, s/veh		0.5			2.0			45.9				
Approach LOS		A			A			D				

Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		87.8				87.8		17.2				
Change Period (Y+Rc), s		5.0				5.0		4.5				
Max Green Setting (Gmax), s		55.0				55.0		40.5				
Max Q Clear Time (g_c+I1), s		2.0				7.4		11.8				
Green Ext Time (p_c), s		6.6				5.8		1.0				

Intersection Summary												
HCM 6th Ctrl Delay			7.2									
HCM 6th LOS			A									

Notes

Unsignalized Delay for [NBR, EBR, WBR] is included in calculations of the approach delay and intersection delay.

ID	Software/Method	Intersection	Control Type	LOS	Delay	V/C Ratio
2	Synchro HCM 6th Signal	Boones Ferry Road & Day Rd	Signal	B	16	0.65
3	Synchro HCM 6th Signal	Boones Ferry Road & 95th Avenue	Signal	C	20	0.69
4	Synchro HCM 6th Signal	I-5 SB On Ramp/I-5 SB Off Ramp & Boon	Signal	A	10	0.75
5	Synchro HCM 6th Signal	I-5 NB Off-Ramp/I-5 NB On-Ramp & Ellig	Signal	A	7	0.33

APPENDIX C

STAGE II LIST

Updated by D. Pauly 09.21.2021

Stage II Approved

Project	Land Use	Status	Size	Total PM Peak Trips	Trip Allocation Percentage		Net New (Primary + Diverted) PM Peak Hour Trips not yet active		
					Internal	Pass-By	In	Out	Total
Hydro-Temp: Recent agreement with the City, the project is vested and so are the traffic trips	Office/Flex-Space	Not built	60.8 KSF				44	46	90
Mercedes Benz (Phase 2)	Auto Dealership	Not built					20	26	46
Shredding Systems (SQFT does not including paint canopy and another canopy)	Industrial/Commercial	Under construction	66.8 KSF				20	46	66
Town Center Ph III *and trip dedication to Miller Paint store Uses marked with "*" have not been built and PM peak hr trip sum exceeds remaining vested trip level by 2 trips. It has yet to be determined how to allocate trips between remaining buildings.*	*High Turnover Restaurant (Pad 1)	Not built	7.5 KSF				24	17	47*
	Remaining Approved Total								47
Wilsonville Road Business Park Phase II	Phase 2 - office (2-story building on west parcel)	Partially Built	21.7 KSF				15	71	86
Frog Pond-Stafford Meadows (Phase 2 and 3a of 10/18 study)	Residential	Partially Built, 24 homes built and occupied	46 units				12	10	22
Frog Pond-Frog Pond Meadows (Phase 3B, 4A, 4B of 10/18 Study)	Residential	Partially Built, 3 homes built and occupied	74 units				44	27	71
Frog Pond Ridge	Residential	ruction, no homes buil	71 units				43	28	71
Frog Pond-Morgan Farm	Residential	Partially Built, 38 homes built and occupied	80 units				28	14	42
Fir Avenue Commons	Residential	Partially Built, 2 homes built and occupied	10 units				6	2	8
Magnolia Townhomes	Residential	Under construction	6 units				3	2	5
Aspen Meadows II	Residential	Under construction, no homes sold and occupied	5 units				2	3	5
Canyon Creek III	Residential	Approved	5 units (traffic study was for 11)				2	3	5
Coffee Creek Logistics	Industrial/Commercial	Under construction	115K				16	41	57

Stage II Approved – Villebois

Project	Phase	Status	Land Use					Total PM Peak Trips	Trip Allocation Percentage		Net New (Primary + Diverted) PM Peak Hour Trips not yet active		
			SF	Town.	Apt.	Retail	School		Internal	Pass-By	In	Out	Total
North (Entirety)	Residential	Partially built, 364 homes sold and occupied	466								65	37	102
Central	Residential	Partially Built, 735 homes (102 single family, 319 condo/row homes, 365 apartments) occupied	102	391	365	8.5 KSF					30	13	43
FOR REFERENCE SAP EAST			537	42									
FOR REFERENCE SAP SOUTH (Includes PDP 7 Grande Poin			560										

Pending Projects for Which Traffic Analysis has been completed (except Villebois)

Project	Land Use	Status	Size	Total PM Peak T	Trip Allocation Percentage			Net New (Primary) PM Peak Hour Trips		
					Internal	Pass-By	Diverted	In	Out	Total
PW Complex on Boberg	Public	under review	15,800 office, 17,900 warehouse					11	39	50
DAS North Valley Complex	Public/Industria	under review	174,700 sf					5	15	20
Frog Pond Crossing								19	9	28
Boones Ferry Gas Station/Conve	Commercail	under review	3,460 sf store, 12 g	240		134		53	53	106

APPENDIX D

HCM REPORT – EXISTNG + PROJECT

Intersection	
Int Delay, s/veh	0.3

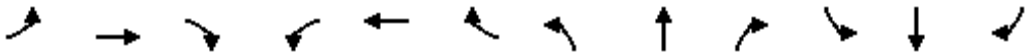
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	603	3	5	541	7	13
Future Vol, veh/h	603	3	5	541	7	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	670	3	6	601	8	14

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	673	0	1285	672
Stage 1	-	-	-	-	672	-
Stage 2	-	-	-	-	613	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	927	-	183	459
Stage 1	-	-	-	-	511	-
Stage 2	-	-	-	-	544	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	927	-	182	459
Mov Cap-2 Maneuver	-	-	-	-	323	-
Stage 1	-	-	-	-	511	-
Stage 2	-	-	-	-	541	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	14.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	400	-	-	927	-
HCM Lane V/C Ratio	0.056	-	-	0.006	-
HCM Control Delay (s)	14.5	-	-	8.9	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0	-

HCM 6th Signalized Intersection Summary
2: Boones Ferry Road & Day Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	0	601	0	0	0	522	369	0	0	590	24
Future Volume (veh/h)	15	0	601	0	0	0	522	369	0	0	590	24
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1841	1900	1900	1900	1752	1841	1900	1900	1870	1811
Adj Flow Rate, veh/h	16	0	590	0	0	0	544	384	0	0	615	23
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	4	0	0	0	10	4	0	0	2	6
Cap, veh/h	140	0	936	0	94	0	1782	1610	0	2	997	37
Arrive On Green	0.05	0.00	0.05	0.00	0.00	0.00	0.92	1.00	0.00	0.00	0.29	0.29
Sat Flow, veh/h	1440	0	1560	0	1900	0	3237	1841	0	1810	3491	130
Grp Volume(v), veh/h	16	0	590	0	0	0	544	384	0	0	313	325
Grp Sat Flow(s),veh/h/ln	1440	0	1560	0	1900	0	1618	1841	0	1810	1777	1844
Q Serve(g_s), s	1.1	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0	16.0	16.1
Cycle Q Clear(g_c), s	1.1	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0	16.0	16.1
Prop In Lane	1.00		1.00	0.00		0.00	1.00		0.00	1.00		0.07
Lane Grp Cap(c), veh/h	140	0	936	0	94	0	1782	1610	0	2	508	527
V/C Ratio(X)	0.11	0.00	0.63	0.00	0.00	0.00	0.31	0.24	0.00	0.00	0.62	0.62
Avail Cap(c_a), veh/h	288	0	1097	0	290	0	1782	1610	0	69	508	527
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.67	1.67	1.67	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	0.00	0.95	0.95	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	48.0	0.0	13.5	0.0	0.0	0.0	2.0	0.0	0.0	0.0	32.5	32.5
Incr Delay (d2), s/veh	0.4	0.0	0.9	0.0	0.0	0.0	0.1	0.3	0.0	0.0	5.5	5.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	8.6	0.0	0.0	0.0	0.5	0.1	0.0	0.0	7.5	7.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	48.3	0.0	14.4	0.0	0.0	0.0	2.1	0.3	0.0	0.0	38.0	37.9
LnGrp LOS	D	A	B	A	A	A	A	A	A	A	D	D
Approach Vol, veh/h		606			0			928			638	
Approach Delay, s/veh		15.3			0.0			1.4			37.9	
Approach LOS		B						A			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	0.0	95.8		9.2	61.8	34.0		9.2				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	4.0	73.0		16.0	47.0	30.0		16.0				
Max Q Clear Time (g_c+I1), s	0.0	2.0		3.1	4.0	18.1		0.0				
Green Ext Time (p_c), s	0.0	2.5		2.1	2.1	3.0		0.0				

Intersection Summary												
HCM 6th Ctrl Delay			16.0									
HCM 6th LOS			B									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	146	3	760	28	15	6	446	747	8	1	1043	164
Future Volume (veh/h)	146	3	760	28	15	6	446	747	8	1	1043	164
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.96	1.00		0.96	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1796	1900	1841	1900	1900	1900	1693	1781	1900	1900	1856	1781
Adj Flow Rate, veh/h	152	3	761	29	16	1	465	778	7	1	1086	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	7	0	4	0	0	0	14	8	0	0	3	8
Cap, veh/h	301	5	1210	116	311	19	849	2029	18	164	1444	
Arrive On Green	0.18	0.18	0.18	0.18	0.18	0.18	0.54	1.00	1.00	0.09	0.41	0.00
Sat Flow, veh/h	1324	26	2637	713	1765	110	3127	3436	31	1810	3526	1510
Grp Volume(v), veh/h	155	0	761	29	0	17	465	383	402	1	1086	0
Grp Sat Flow(s),veh/h/ln	1350	0	1319	713	0	1875	1564	1692	1775	1810	1763	1510
Q Serve(g_s), s	10.8	0.0	0.0	4.2	0.0	0.8	10.1	0.0	0.0	0.1	27.6	0.0
Cycle Q Clear(g_c), s	11.6	0.0	0.0	15.7	0.0	0.8	10.1	0.0	0.0	0.1	27.6	0.0
Prop In Lane	0.98		1.00	1.00		0.06	1.00		0.02	1.00		1.00
Lane Grp Cap(c), veh/h	305	0	1210	116	0	330	849	999	1048	164	1444	
V/C Ratio(X)	0.51	0.00	0.63	0.25	0.00	0.05	0.55	0.38	0.38	0.01	0.75	
Avail Cap(c_a), veh/h	380	0	1349	153	0	429	849	999	1048	164	1444	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.73	0.73	0.73	0.77	0.77	0.00
Uniform Delay (d), s/veh	40.8	0.0	22.2	47.8	0.0	36.0	19.8	0.0	0.0	43.4	26.5	0.0
Incr Delay (d2), s/veh	1.0	0.0	0.7	0.8	0.0	0.0	0.5	0.8	0.8	0.0	2.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	0.0	6.8	0.8	0.0	0.4	3.0	0.2	0.2	0.0	11.6	0.0
Unsig. Movement Delay, s/veh												15.50
LnGrp Delay(d),s/veh	41.8	0.0	22.8	48.6	0.0	36.0	20.3	0.8	0.8	43.4	29.3	15.5
LnGrp LOS	D	A	C	D	A	D	C	A	A	D	C	B
Approach Vol, veh/h		916			46			1250			1184	A
Approach Delay, s/veh		26.0			43.9			8.1			28.2	
Approach LOS		C			D			A			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	13.5	48.0		23.5	14.5	67.0		23.5
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0
Max Green Setting (Gmax), s	23.0	43.0		24.0	4.0	62.0		24.0
Max Q Clear Time (g_c+I1), s	12.1	29.6		17.7	2.1	2.0		13.6
Green Ext Time (p_c), s	1.7	4.7		0.1	0.0	9.0		3.0

Intersection Summary		
HCM 6th Ctrl Delay		20.4
HCM 6th LOS		C

Notes

User approved pedestrian interval to be less than phase max green.
User approved changes to right turn type.
Unsignalized Delay for [SBR] is included in calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↱		↑↑	↱				↰	↰	↱
Traffic Volume (veh/h)	0	989	842	0	640	312	0	0	0	373	52	561
Future Volume (veh/h)	0	989	842	0	640	312	0	0	0	373	52	561
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1826	1841	0	1826	1870				1841	1856	1663
Adj Flow Rate, veh/h	0	1052	0	0	681	0				436	0	542
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94				0.94	0.94	0.94
Percent Heavy Veh, %	0	5	4	0	5	2				4	3	16
Cap, veh/h	0	1688		0	1688					1467	0	581
Arrive On Green	0.00	0.97	0.00	0.00	0.97	0.00				0.42	0.00	0.42
Sat Flow, veh/h	0	3561	1560	0	3561	1585				3506	0	1389
Grp Volume(v), veh/h	0	1052	0	0	681	0				436	0	542
Grp Sat Flow(s),veh/h/ln	0	1735	1560	0	1735	1585				1753	0	1389
Q Serve(g_s), s	0.0	2.2	0.0	0.0	0.9	0.0				8.7	0.0	39.1
Cycle Q Clear(g_c), s	0.0	2.2	0.0	0.0	0.9	0.0				8.7	0.0	39.1
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1688		0	1688					1467	0	581
V/C Ratio(X)	0.00	0.62		0.00	0.40					0.30	0.00	0.93
Avail Cap(c_a), veh/h	0	1688		0	1688					1803	0	715
HCM Platoon Ratio	1.00	2.00	2.00	1.00	2.00	2.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.67	0.00	0.00	0.93	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	0.8	0.0	0.0	0.7	0.0				20.3	0.0	29.1
Incr Delay (d2), s/veh	0.0	1.2	0.0	0.0	0.7	0.0				0.1	0.0	16.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.6	0.0	0.0	0.4	0.0				3.3	0.0	14.5
Unsig. Movement Delay, s/veh			1.20			0.30						
LnGrp Delay(d),s/veh	0.0	1.9	1.2	0.0	1.4	0.3				20.4	0.0	45.4
LnGrp LOS	A	A	A	A	A	A				C	A	D
Approach Vol, veh/h		1948	A		1013	A					978	
Approach Delay, s/veh		1.6			1.0						34.2	
Approach LOS		A			A						C	

Timer - Assigned Phs	2	4	6
Phs Duration (G+Y+Rc), s	56.1	48.9	56.1
Change Period (Y+Rc), s	5.0	5.0	5.0
Max Green Setting (Gmax), s	41.0	54.0	41.0
Max Q Clear Time (g_c+I1), s	4.2	41.1	2.9
Green Ext Time (p_c), s	9.9	2.8	5.6

Intersection Summary	
HCM 6th Ctrl Delay	9.6
HCM 6th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.
User approved changes to right turn type.
Unsignalized Delay for [EBR, WBR] is included in calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↱		↑↑	↱	↰↰		↱			
Traffic Volume (veh/h)	0	708	654	0	650	508	302	0	230	0	0	0
Future Volume (veh/h)	0	708	654	0	650	508	302	0	230	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	0	1856	1811	0	1870	1870	1811	0	1841			
Adj Flow Rate, veh/h	0	753	0	0	691	0	321	0	0			
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94			
Percent Heavy Veh, %	0	3	6	0	2	2	6	0	4			
Cap, veh/h	0	2779		0	2801		406	0				
Arrive On Green	0.00	1.00	0.00	0.00	0.79	0.00	0.12	0.00	0.00			
Sat Flow, veh/h	0	3618	1535	0	3647	1585	3346	0	1560			
Grp Volume(v), veh/h	0	753	0	0	691	0	321	0	0			
Grp Sat Flow(s),veh/h/ln	0	1763	1535	0	1777	1585	1673	0	1560			
Q Serve(g_s), s	0.0	0.0	0.0	0.0	5.4	0.0	9.8	0.0	0.0			
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	5.4	0.0	9.8	0.0	0.0			
Prop In Lane	0.00		1.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	2779		0	2801		406	0				
V/C Ratio(X)	0.00	0.27		0.00	0.25		0.79	0.00				
Avail Cap(c_a), veh/h	0	2779		0	2801		1291	0				
HCM Platoon Ratio	1.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	0.66	0.00	0.00	1.00	0.00	1.00	0.00	0.00			
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	2.9	0.0	44.8	0.0	0.0			
Incr Delay (d2), s/veh	0.0	0.2	0.0	0.0	0.2	0.0	2.2	0.0	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	0.1	0.0	0.0	1.4	0.0	4.0	0.0	0.0			
Unsig. Movement Delay, s/veh			0.80			0.60			42.30			
LnGrp Delay(d),s/veh	0.0	0.2	0.8	0.0	3.1	0.6	47.0	0.0	42.3			
LnGrp LOS	A	A	A	A	A	A	D	A	D			
Approach Vol, veh/h		1449	A		1231	A		418	A			
Approach Delay, s/veh		0.5			2.0			45.9				
Approach LOS		A			A			D				

Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		87.8				87.8		17.2				
Change Period (Y+Rc), s		5.0				5.0		4.5				
Max Green Setting (Gmax), s		55.0				55.0		40.5				
Max Q Clear Time (g_c+I1), s		2.0				7.4		11.8				
Green Ext Time (p_c), s		6.6				5.8		1.0				

Intersection Summary												
HCM 6th Ctrl Delay			7.2									
HCM 6th LOS			A									

Notes

Unsignalized Delay for [NBR, EBR, WBR] is included in calculations of the approach delay and intersection delay.

ID	Software/Method	Intersection	Control Type	LOS	Delay	V/C Ratio
2	Synchro HCM 6th Signal	Boones Ferry Road & Day Rd	Signal	B	16	0.66
3	Synchro HCM 6th Signal	Boones Ferry Road & 95th Avenue	Signal	C	20	0.7
4	Synchro HCM 6th Signal	I-5 SB On Ramp/I-5 SB Off Ramp & Boon	Signal	A	10	0.76
5	Synchro HCM 6th Signal	I-5 NB Off-Ramp/I-5 NB On-Ramp & Ellig	Signal	A	7	0.33

APPENDIX E

HCM REPORT – EXISTNG + STAGE II

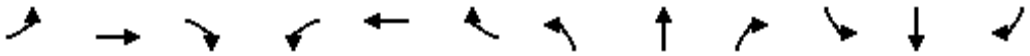
Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	603	0	0	541	0	0
Future Vol, veh/h	603	0	0	541	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	670	0	0	601	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	670	0	1271	670
Stage 1	-	-	-	-	670	-
Stage 2	-	-	-	-	601	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	930	-	187	460
Stage 1	-	-	-	-	512	-
Stage 2	-	-	-	-	551	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	930	-	187	460
Mov Cap-2 Maneuver	-	-	-	-	327	-
Stage 1	-	-	-	-	512	-
Stage 2	-	-	-	-	551	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	930	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	13	0	590	0	0	0	518	375	0	0	593	23
Future Volume (veh/h)	13	0	590	0	0	0	518	375	0	0	593	23
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1841	1900	1900	1900	1752	1841	1900	1900	1870	1811
Adj Flow Rate, veh/h	14	0	579	0	0	0	540	391	0	0	618	22
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	4	0	0	0	10	4	0	0	2	6
Cap, veh/h	137	0	921	0	90	0	1757	1613	0	2	1033	37
Arrive On Green	0.05	0.00	0.05	0.00	0.00	0.00	0.91	1.00	0.00	0.00	0.30	0.30
Sat Flow, veh/h	1440	0	1560	0	1900	0	3237	1841	0	1810	3498	124
Grp Volume(v), veh/h	14	0	579	0	0	0	540	391	0	0	314	326
Grp Sat Flow(s),veh/h/ln	1440	0	1560	0	1900	0	1618	1841	0	1810	1777	1846
Q Serve(g_s), s	1.0	0.0	0.0	0.0	0.0	0.0	2.3	0.0	0.0	0.0	15.9	15.9
Cycle Q Clear(g_c), s	1.0	0.0	0.0	0.0	0.0	0.0	2.3	0.0	0.0	0.0	15.9	15.9
Prop In Lane	1.00		1.00	0.00		0.00	1.00		0.00	1.00		0.07
Lane Grp Cap(c), veh/h	137	0	921	0	90	0	1757	1613	0	2	525	545
V/C Ratio(X)	0.10	0.00	0.63	0.00	0.00	0.00	0.31	0.24	0.00	0.00	0.60	0.60
Avail Cap(c_a), veh/h	288	0	1085	0	290	0	1757	1613	0	69	525	545
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.67	1.67	1.67	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	0.00	0.95	0.95	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	48.1	0.0	14.0	0.0	0.0	0.0	2.3	0.0	0.0	0.0	31.7	31.7
Incr Delay (d2), s/veh	0.3	0.0	0.9	0.0	0.0	0.0	0.1	0.3	0.0	0.0	5.0	4.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	8.6	0.0	0.0	0.0	0.6	0.2	0.0	0.0	7.4	7.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	48.4	0.0	14.9	0.0	0.0	0.0	2.4	0.3	0.0	0.0	36.6	36.5
LnGrp LOS	D	A	B	A	A	A	A	A	A	A	D	D
Approach Vol, veh/h		593			0			931			640	
Approach Delay, s/veh		15.7			0.0			1.6			36.6	
Approach LOS		B						A			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	0.0	96.0		9.0	61.0	35.0		9.0				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	4.0	73.0		16.0	46.0	31.0		16.0				
Max Q Clear Time (g_c+I1), s	0.0	2.0		3.0	4.3	17.9		0.0				
Green Ext Time (p_c), s	0.0	2.6		2.0	2.1	3.1		0.0				

Intersection Summary			
HCM 6th Ctrl Delay		15.8	
HCM 6th LOS		B	

HCM 6th Signalized Intersection Summary
3: Boones Ferry Road & 95th Avenue

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	150	3	796	28	15	6	475	745	8	1	1033	166
Future Volume (veh/h)	150	3	796	28	15	6	475	745	8	1	1033	166
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.96	1.00		0.97	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1796	1900	1841	1900	1900	1900	1693	1781	1900	1900	1856	1781
Adj Flow Rate, veh/h	156	3	800	29	16	1	495	776	7	1	1076	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	7	0	4	0	0	0	14	8	0	0	3	8
Cap, veh/h	306	5	1236	115	317	20	868	2029	18	158	1410	
Arrive On Green	0.18	0.18	0.18	0.18	0.18	0.18	0.56	1.00	1.00	0.09	0.40	0.00
Sat Flow, veh/h	1326	25	2638	687	1765	110	3127	3436	31	1810	3526	1510
Grp Volume(v), veh/h	159	0	800	29	0	17	495	382	401	1	1076	0
Grp Sat Flow(s),veh/h/ln	1351	0	1319	687	0	1875	1564	1692	1775	1810	1763	1510
Q Serve(g_s), s	11.1	0.0	0.0	4.3	0.0	0.8	10.8	0.0	0.0	0.1	27.7	0.0
Cycle Q Clear(g_c), s	11.8	0.0	0.0	16.1	0.0	0.8	10.8	0.0	0.0	0.1	27.7	0.0
Prop In Lane	0.98		1.00	1.00		0.06	1.00		0.02	1.00		1.00
Lane Grp Cap(c), veh/h	310	0	1236	115	0	337	868	999	1048	158	1410	
V/C Ratio(X)	0.51	0.00	0.65	0.25	0.00	0.05	0.57	0.38	0.38	0.01	0.76	
Avail Cap(c_a), veh/h	380	0	1365	148	0	429	868	999	1048	158	1410	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.70	0.70	0.70	0.77	0.77	0.00
Uniform Delay (d), s/veh	40.6	0.0	21.8	47.7	0.0	35.7	19.3	0.0	0.0	43.8	27.2	0.0
Incr Delay (d2), s/veh	1.0	0.0	0.8	0.9	0.0	0.0	0.6	0.8	0.7	0.0	3.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	0.0	7.2	0.8	0.0	0.4	3.1	0.2	0.2	0.0	11.7	0.0
Unsig. Movement Delay, s/veh												15.50
LnGrp Delay(d),s/veh	41.5	0.0	22.6	48.6	0.0	35.7	19.9	0.8	0.7	43.8	30.3	15.5
LnGrp LOS	D	A	C	D	A	D	B	A	A	D	C	B
Approach Vol, veh/h		959			46			1278			1175	A
Approach Delay, s/veh		25.8			43.8			8.2			29.1	
Approach LOS		C			D			A			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	14.2	47.0		23.8	14.2	67.0		23.8
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0
Max Green Setting (Gmax), s	24.0	42.0		24.0	4.0	62.0		24.0
Max Q Clear Time (g_c+I1), s	12.8	29.7		18.1	2.1	2.0		13.8
Green Ext Time (p_c), s	1.8	4.4		0.1	0.0	9.0		3.1

Intersection Summary	
HCM 6th Ctrl Delay	20.6
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.
User approved changes to right turn type.
Unsignalized Delay for [SBR] is included in calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↱		↑↑	↱				↰	↰	↱
Traffic Volume (veh/h)	0	1016	841	0	644	317	0	0	0	416	52	584
Future Volume (veh/h)	0	1016	841	0	644	317	0	0	0	416	52	584
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1826	1841	0	1826	1870				1841	1856	1663
Adj Flow Rate, veh/h	0	1081	0	0	685	0				482	0	566
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94				0.94	0.94	0.94
Percent Heavy Veh, %	0	5	4	0	5	2				4	3	16
Cap, veh/h	0	1629		0	1629					1525	0	605
Arrive On Green	0.00	0.94	0.00	0.00	0.94	0.00				0.44	0.00	0.44
Sat Flow, veh/h	0	3561	1560	0	3561	1585				3506	0	1389
Grp Volume(v), veh/h	0	1081	0	0	685	0				482	0	566
Grp Sat Flow(s),veh/h/ln	0	1735	1560	0	1735	1585				1753	0	1389
Q Serve(g_s), s	0.0	5.3	0.0	0.0	2.1	0.0				9.5	0.0	40.8
Cycle Q Clear(g_c), s	0.0	5.3	0.0	0.0	2.1	0.0				9.5	0.0	40.8
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1629		0	1629					1525	0	605
V/C Ratio(X)	0.00	0.66		0.00	0.42					0.32	0.00	0.94
Avail Cap(c_a), veh/h	0	1629		0	1629					1803	0	715
HCM Platoon Ratio	1.00	2.00	2.00	1.00	2.00	2.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.66	0.00	0.00	0.93	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	1.8	0.0	0.0	1.8	0.0				19.4	0.0	28.3
Incr Delay (d2), s/veh	0.0	1.4	0.0	0.0	0.7	0.0				0.1	0.0	17.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.1	0.0	0.0	0.7	0.0				3.6	0.0	15.3
Unsig. Movement Delay, s/veh			1.20			0.30						
LnGrp Delay(d),s/veh	0.0	3.3	1.2	0.0	2.5	0.3				19.5	0.0	45.7
LnGrp LOS	A	A	A	A	A	A				B	A	D
Approach Vol, veh/h		1976	A		1022	A					1048	
Approach Delay, s/veh		2.3			1.8						33.6	
Approach LOS		A			A						C	

Timer - Assigned Phs	2	4	6
Phs Duration (G+Y+Rc), s	54.3	50.7	54.3
Change Period (Y+Rc), s	5.0	5.0	5.0
Max Green Setting (Gmax), s	41.0	54.0	41.0
Max Q Clear Time (g_c+I1), s	7.3	42.8	4.1
Green Ext Time (p_c), s	10.1	2.9	5.6

Intersection Summary	
HCM 6th Ctrl Delay	10.3
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.
User approved changes to right turn type.
Unsignalized Delay for [EBR, WBR] is included in calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↱		↑↑	↱	↰↰		↱			
Traffic Volume (veh/h)	0	755	677	0	659	508	302	0	234	0	0	0
Future Volume (veh/h)	0	755	677	0	659	508	302	0	234	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	0	1856	1811	0	1870	1870	1811	0	1841			
Adj Flow Rate, veh/h	0	803	0	0	701	0	321	0	0			
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94			
Percent Heavy Veh, %	0	3	6	0	2	2	6	0	4			
Cap, veh/h	0	2779		0	2801		406	0				
Arrive On Green	0.00	1.00	0.00	0.00	0.79	0.00	0.12	0.00	0.00			
Sat Flow, veh/h	0	3618	1535	0	3647	1585	3346	0	1560			
Grp Volume(v), veh/h	0	803	0	0	701	0	321	0	0			
Grp Sat Flow(s),veh/h/ln	0	1763	1535	0	1777	1585	1673	0	1560			
Q Serve(g_s), s	0.0	0.0	0.0	0.0	5.5	0.0	9.8	0.0	0.0			
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	5.5	0.0	9.8	0.0	0.0			
Prop In Lane	0.00		1.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	2779		0	2801		406	0				
V/C Ratio(X)	0.00	0.29		0.00	0.25		0.79	0.00				
Avail Cap(c_a), veh/h	0	2779		0	2801		1259	0				
HCM Platoon Ratio	1.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	0.64	0.00	0.00	1.00	0.00	1.00	0.00	0.00			
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	2.9	0.0	44.8	0.0	0.0			
Incr Delay (d2), s/veh	0.0	0.2	0.0	0.0	0.2	0.0	2.2	0.0	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	0.1	0.0	0.0	1.4	0.0	4.0	0.0	0.0			
Unsig. Movement Delay, s/veh			0.80			0.60			42.30			
LnGrp Delay(d),s/veh	0.0	0.2	0.8	0.0	3.1	0.6	47.0	0.0	42.3			
LnGrp LOS	A	A	A	A	A	A	D	A	D			
Approach Vol, veh/h		1523	A		1241	A		435	A			
Approach Delay, s/veh		0.5			2.0			45.8				
Approach LOS		A			A			D				

Timer - Assigned Phs	2			6		8		
Phs Duration (G+Y+Rc), s	87.8			87.8		17.2		
Change Period (Y+Rc), s	5.0			5.0		4.5		
Max Green Setting (Gmax), s	56.0			56.0		39.5		
Max Q Clear Time (g_c+I1), s	2.0			7.5		11.8		
Green Ext Time (p_c), s	7.2			5.9		1.0		

Intersection Summary								
HCM 6th Ctrl Delay		7.2						
HCM 6th LOS		A						

Notes

Unsignalized Delay for [NBR, EBR, WBR] is included in calculations of the approach delay and intersection delay.

ID	Software/Method	Intersection	Control Type	LOS	Delay	V/C Ratio
2	Synchro HCM 6th Signal	Boones Ferry Road & Day Rd	Signal	B	16	0.66
3	Synchro HCM 6th Signal	Boones Ferry Road & 95th Avenue	Signal	C	21	0.71
4	Synchro HCM 6th Signal	I-5 SB On Ramp/I-5 SB Off Ramp & Boon	Signal	B	10	0.79
5	Synchro HCM 6th Signal	I-5 NB Off-Ramp/I-5 NB On-Ramp & Ellig	Signal	A	7	0.35

APPENDIX F

HCM REPORT – EXISTNG + PROJECT + STAGE II

Intersection	
Int Delay, s/veh	0.3

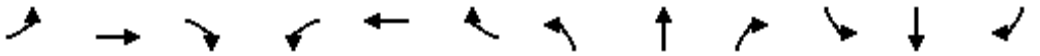
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	603	3	5	541	7	13
Future Vol, veh/h	603	3	5	541	7	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	670	3	6	601	8	14

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	673	0	1285	672
Stage 1	-	-	-	-	672	-
Stage 2	-	-	-	-	613	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	927	-	183	459
Stage 1	-	-	-	-	511	-
Stage 2	-	-	-	-	544	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	927	-	182	459
Mov Cap-2 Maneuver	-	-	-	-	323	-
Stage 1	-	-	-	-	511	-
Stage 2	-	-	-	-	541	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	14.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	400	-	-	927	-
HCM Lane V/C Ratio	0.056	-	-	0.006	-
HCM Control Delay (s)	14.5	-	-	8.9	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0	-

HCM 6th Signalized Intersection Summary
2: Boones Ferry Road & Day Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	0	601	0	0	0	522	375	0	0	593	24
Future Volume (veh/h)	15	0	601	0	0	0	522	375	0	0	593	24
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1841	1900	1900	1900	1752	1841	1900	1900	1870	1811
Adj Flow Rate, veh/h	16	0	590	0	0	0	544	391	0	0	618	23
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	4	0	0	0	10	4	0	0	2	6
Cap, veh/h	140	0	936	0	94	0	1782	1610	0	2	998	37
Arrive On Green	0.05	0.00	0.05	0.00	0.00	0.00	0.92	1.00	0.00	0.00	0.29	0.29
Sat Flow, veh/h	1440	0	1560	0	1900	0	3237	1841	0	1810	3491	130
Grp Volume(v), veh/h	16	0	590	0	0	0	544	391	0	0	314	327
Grp Sat Flow(s),veh/h/ln	1440	0	1560	0	1900	0	1618	1841	0	1810	1777	1844
Q Serve(g_s), s	1.1	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0	16.1	16.1
Cycle Q Clear(g_c), s	1.1	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0	16.1	16.1
Prop In Lane	1.00		1.00	0.00		0.00	1.00		0.00	1.00		0.07
Lane Grp Cap(c), veh/h	140	0	936	0	94	0	1782	1610	0	2	508	527
V/C Ratio(X)	0.11	0.00	0.63	0.00	0.00	0.00	0.31	0.24	0.00	0.00	0.62	0.62
Avail Cap(c_a), veh/h	288	0	1097	0	290	0	1782	1610	0	69	508	527
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.67	1.67	1.67	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	0.00	0.95	0.95	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	48.0	0.0	13.5	0.0	0.0	0.0	2.0	0.0	0.0	0.0	32.5	32.6
Incr Delay (d2), s/veh	0.4	0.0	0.9	0.0	0.0	0.0	0.1	0.3	0.0	0.0	5.6	5.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	8.6	0.0	0.0	0.0	0.5	0.2	0.0	0.0	7.6	7.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	48.3	0.0	14.4	0.0	0.0	0.0	2.1	0.3	0.0	0.0	38.1	38.0
LnGrp LOS	D	A	B	A	A	A	A	A	A	A	D	D
Approach Vol, veh/h		606			0			935			641	
Approach Delay, s/veh		15.3			0.0			1.3			38.0	
Approach LOS		B						A			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	0.0	95.8		9.2	61.8	34.0		9.2				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	4.0	73.0		16.0	47.0	30.0		16.0				
Max Q Clear Time (g_c+I1), s	0.0	2.0		3.1	4.0	18.1		0.0				
Green Ext Time (p_c), s	0.0	2.6		2.1	2.1	3.0		0.0				

Intersection Summary			
HCM 6th Ctrl Delay		16.0	
HCM 6th LOS		B	

HCM 6th Signalized Intersection Summary
3: Boones Ferry Road & 95th Avenue

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	150	3	796	28	15	6	475	749	8	1	1044	166
Future Volume (veh/h)	150	3	796	28	15	6	475	749	8	1	1044	166
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.96	1.00		0.96	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1796	1900	1841	1900	1900	1900	1693	1781	1900	1900	1856	1781
Adj Flow Rate, veh/h	156	3	798	29	16	1	495	780	7	1	1088	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	7	0	4	0	0	0	14	8	0	0	3	8
Cap, veh/h	306	5	1210	115	317	20	839	2029	18	158	1444	
Arrive On Green	0.18	0.18	0.18	0.18	0.18	0.18	0.54	1.00	1.00	0.09	0.41	0.00
Sat Flow, veh/h	1326	25	2638	689	1765	110	3127	3437	31	1810	3526	1510
Grp Volume(v), veh/h	159	0	798	29	0	17	495	384	403	1	1088	0
Grp Sat Flow(s),veh/h/ln	1351	0	1319	689	0	1875	1564	1692	1775	1810	1763	1510
Q Serve(g_s), s	11.1	0.0	0.0	4.3	0.0	0.8	11.3	0.0	0.0	0.1	27.7	0.0
Cycle Q Clear(g_c), s	11.8	0.0	0.0	16.1	0.0	0.8	11.3	0.0	0.0	0.1	27.7	0.0
Prop In Lane	0.98		1.00	1.00		0.06	1.00		0.02	1.00		1.00
Lane Grp Cap(c), veh/h	310	0	1210	115	0	337	839	999	1048	158	1444	
V/C Ratio(X)	0.51	0.00	0.66	0.25	0.00	0.05	0.59	0.38	0.38	0.01	0.75	
Avail Cap(c_a), veh/h	380	0	1339	148	0	429	839	999	1048	158	1444	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.70	0.70	0.70	0.76	0.76	0.00
Uniform Delay (d), s/veh	40.6	0.0	22.6	47.7	0.0	35.7	20.4	0.0	0.0	43.8	26.5	0.0
Incr Delay (d2), s/veh	1.0	0.0	0.9	0.9	0.0	0.0	0.8	0.8	0.7	0.0	2.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	0.0	7.3	0.8	0.0	0.4	3.3	0.2	0.2	0.0	11.7	0.0
Unsig. Movement Delay, s/veh												15.50
LnGrp Delay(d),s/veh	41.5	0.0	23.5	48.6	0.0	35.7	21.2	0.8	0.7	43.8	29.3	15.5
LnGrp LOS	D	A	C	D	A	D	C	A	A	D	C	B
Approach Vol, veh/h		957			46			1282			1188	A
Approach Delay, s/veh		26.5			43.8			8.7			28.2	
Approach LOS		C			D			A			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	13.2	48.0		23.8	14.2	67.0		23.8
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0
Max Green Setting (Gmax), s	23.0	43.0		24.0	4.0	62.0		24.0
Max Q Clear Time (g_c+I1), s	13.3	29.7		18.1	2.1	2.0		13.8
Green Ext Time (p_c), s	1.7	4.7		0.1	0.0	9.0		3.1

Intersection Summary	
HCM 6th Ctrl Delay	20.7
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

User approved changes to right turn type.

Unsignalized Delay for [SBR] is included in calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↱		↑↑	↱				↰	↰	↱
Traffic Volume (veh/h)	0	1024	844	0	645	317	0	0	0	416	52	587
Future Volume (veh/h)	0	1024	844	0	645	317	0	0	0	416	52	587
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1826	1841	0	1826	1870				1841	1856	1663
Adj Flow Rate, veh/h	0	1089	0	0	686	0				482	0	569
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94				0.94	0.94	0.94
Percent Heavy Veh, %	0	5	4	0	5	2				4	3	16
Cap, veh/h	0	1623		0	1623					1532	0	607
Arrive On Green	0.00	0.94	0.00	0.00	0.94	0.00				0.44	0.00	0.44
Sat Flow, veh/h	0	3561	1560	0	3561	1585				3506	0	1389
Grp Volume(v), veh/h	0	1089	0	0	686	0				482	0	569
Grp Sat Flow(s),veh/h/ln	0	1735	1560	0	1735	1585				1753	0	1389
Q Serve(g_s), s	0.0	5.7	0.0	0.0	2.2	0.0				9.4	0.0	41.0
Cycle Q Clear(g_c), s	0.0	5.7	0.0	0.0	2.2	0.0				9.4	0.0	41.0
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1623		0	1623					1532	0	607
V/C Ratio(X)	0.00	0.67		0.00	0.42					0.31	0.00	0.94
Avail Cap(c_a), veh/h	0	1623		0	1623					1803	0	715
HCM Platoon Ratio	1.00	2.00	2.00	1.00	2.00	2.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.65	0.00	0.00	0.93	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	2.0	0.0	0.0	1.9	0.0				19.3	0.0	28.2
Incr Delay (d2), s/veh	0.0	1.5	0.0	0.0	0.8	0.0				0.1	0.0	17.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.2	0.0	0.0	0.7	0.0				3.6	0.0	15.4
Unsig. Movement Delay, s/veh			1.20			0.30						
LnGrp Delay(d),s/veh	0.0	3.4	1.2	0.0	2.6	0.3				19.4	0.0	45.8
LnGrp LOS	A	A	A	A	A	A				B	A	D
Approach Vol, veh/h		1987	A		1023	A					1051	
Approach Delay, s/veh		2.4			1.9						33.7	
Approach LOS		A			A						C	

Timer - Assigned Phs	2	4	6
Phs Duration (G+Y+Rc), s	54.1	50.9	54.1
Change Period (Y+Rc), s	5.0	5.0	5.0
Max Green Setting (Gmax), s	41.0	54.0	41.0
Max Q Clear Time (g_c+I1), s	7.7	43.0	4.2
Green Ext Time (p_c), s	10.2	2.9	5.7

Intersection Summary	
HCM 6th Ctrl Delay	10.4
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.
User approved changes to right turn type.
Unsignalized Delay for [EBR, WBR] is included in calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↱		↑↑	↱	↰↰		↱			
Traffic Volume (veh/h)	0	756	684	0	659	508	303	0	234	0	0	0
Future Volume (veh/h)	0	756	684	0	659	508	303	0	234	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	0	1856	1811	0	1870	1870	1811	0	1841			
Adj Flow Rate, veh/h	0	804	0	0	701	0	322	0	0			
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94			
Percent Heavy Veh, %	0	3	6	0	2	2	6	0	4			
Cap, veh/h	0	2778		0	2800		407	0				
Arrive On Green	0.00	1.00	0.00	0.00	0.79	0.00	0.12	0.00	0.00			
Sat Flow, veh/h	0	3618	1535	0	3647	1585	3346	0	1560			
Grp Volume(v), veh/h	0	804	0	0	701	0	322	0	0			
Grp Sat Flow(s),veh/h/ln	0	1763	1535	0	1777	1585	1673	0	1560			
Q Serve(g_s), s	0.0	0.0	0.0	0.0	5.5	0.0	9.8	0.0	0.0			
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	5.5	0.0	9.8	0.0	0.0			
Prop In Lane	0.00		1.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	2778		0	2800		407	0				
V/C Ratio(X)	0.00	0.29		0.00	0.25		0.79	0.00				
Avail Cap(c_a), veh/h	0	2778		0	2800		1259	0				
HCM Platoon Ratio	1.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	0.63	0.00	0.00	1.00	0.00	1.00	0.00	0.00			
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	2.9	0.0	44.8	0.0	0.0			
Incr Delay (d2), s/veh	0.0	0.2	0.0	0.0	0.2	0.0	2.2	0.0	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	0.1	0.0	0.0	1.4	0.0	4.1	0.0	0.0			
Unsig. Movement Delay, s/veh			0.80			0.60			42.30			
LnGrp Delay(d),s/veh	0.0	0.2	0.8	0.0	3.2	0.6	47.0	0.0	42.3			
LnGrp LOS	A	A	A	A	A	A	D	A	D			
Approach Vol, veh/h		1532	A		1241	A		437	A			
Approach Delay, s/veh		0.5			2.0			45.7				
Approach LOS		A			A			D				

Timer - Assigned Phs	2			6		8		
Phs Duration (G+Y+Rc), s	87.7			87.7		17.3		
Change Period (Y+Rc), s	5.0			5.0		4.5		
Max Green Setting (Gmax), s	56.0			56.0		39.5		
Max Q Clear Time (g_c+I1), s	2.0			7.5		11.8		
Green Ext Time (p_c), s	7.2			5.9		1.0		

Intersection Summary		
HCM 6th Ctrl Delay	7.2	
HCM 6th LOS	A	

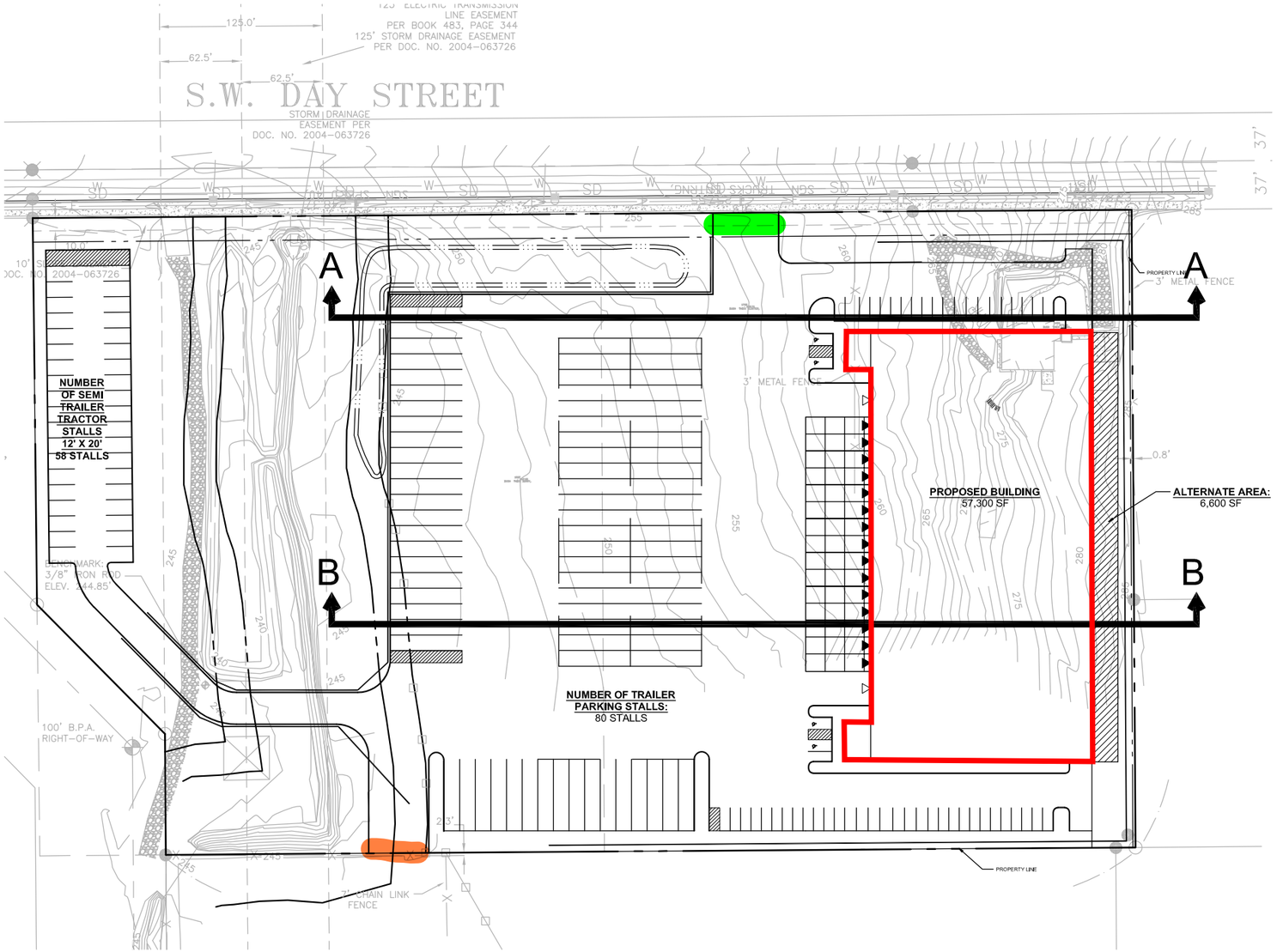
Notes

Unsignalized Delay for [NBR, EBR, WBR] is included in calculations of the approach delay and intersection delay.

ID	Software/Method	Intersection	Control Type	LOS	Delay	V/C Ratio
2	Synchro HCM 6th Signal	Boones Ferry Road & Day Rd	Signal	B	16	0.67
3	Synchro HCM 6th Signal	Boones Ferry Road & 95th Avenue	Signal	C	21	0.71
4	Synchro HCM 6th Signal	I-5 SB On Ramp/I-5 SB Off Ramp & Boon	Signal	B	10	0.79
5	Synchro HCM 6th Signal	I-5 NB Off-Ramp/I-5 NB On-Ramp & Ellig	Signal	A	7	0.35

APPENDIX G

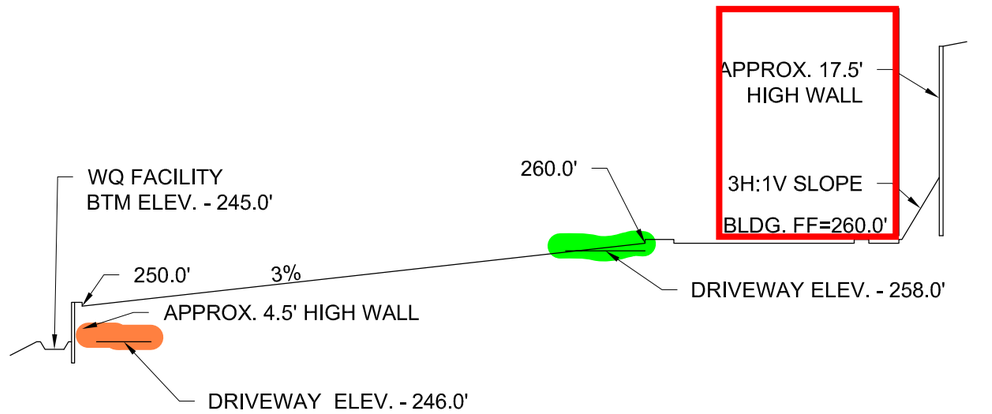
SITE PLAN



SITE PLAN - SCALE =1"-100'

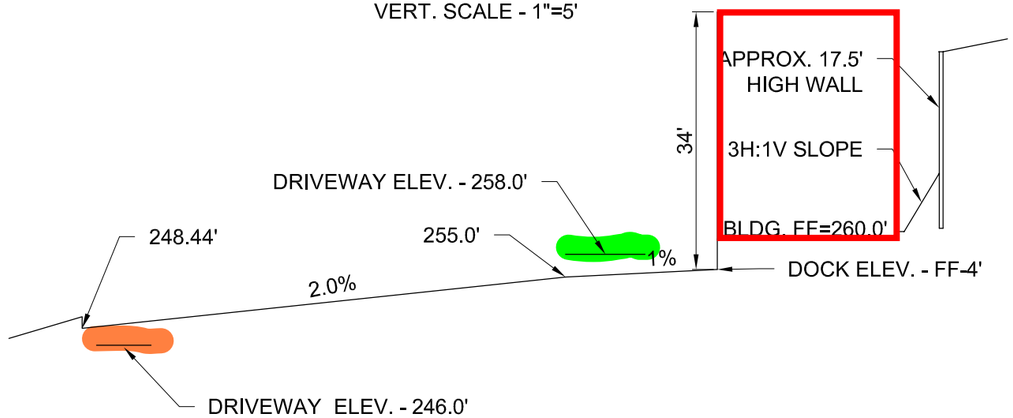
100 0 50 100 200 400

(IN FEET)
1 inch = 100 ft.



SECTION A-A

HORIZ. SCALE - 1"=100'
VERT. SCALE - 1"=5'



SECTION B-B

HORIZ. SCALE - 1"=100'
VERT. SCALE - 1"=5'

SITE DATA TABLE

DOCK DOORS	15
DRIVE UP DOORS	2
TRAILER STALLS	80
SEMI TRAILER TRACTOR STALLS	38
PARKING STALLS	56 TOTAL
ACCESSIBLE	4
BUILDING AREA	57,300 SF
ADDITIONAL AREA	6,600 SF

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Lee D. Leighton

From: Pepper, Amy <apepper@ci.wilsonville.or.us>
Sent: Friday, June 10, 2022 5:11 PM
To: Lee D. Leighton; Bradford, Philip
Cc: Scott Moore; Adam Goldberg; Igor Nichiporchik; Vlad Tkach; Janet T. Jones; Breezy Rinehart-Young; Greg Mino
Subject: RE: Delta Logistics (DB22-0007 et al) - Building SF increase and TIA

Lee ~

I consulted with DKS. The proposed change results in approximately 5 additional PM peak trips. The intersections have adequate capacity and a new TIA is not needed.

Have a great weekend!

Amy

From: Lee D. Leighton <LLeighton@mcknze.com>
Sent: Tuesday, June 7, 2022 1:54 PM
To: Pepper, Amy <apepper@ci.wilsonville.or.us>; Bradford, Philip <pbradford@ci.wilsonville.or.us>
Cc: Scott Moore <SMoore@mcknze.com>; Adam Goldberg <AGoldberg@mcknze.com>; Igor Nichiporchik <igor@deltagov.com>; Vlad Tkach <vlad@deltagov.com>; Janet T. Jones <JTJ@mcknze.com>; Breezy Rinehart-Young <BRinehart@mcknze.com>; Greg Mino <GMino@mcknze.com>
Subject: Delta Logistics (DB22-0007 et al) - Building SF increase and TIA

[This email originated outside of the City of Wilsonville]

Hi Amy, Hi Philip:

We are currently in the process of responding to guidance from City staff in the notice of incomplete application for the Delta Logistics Annex project on SW Day Road (DB22-0007 et al).

In that context, it has come to our attention that the TIA prepared by DIKS used an assumed building size of 56,100 SF, but two changes have occurred that affect the building size figure:

1. The submitted plans include a building that is 2,016 SF larger, at 58,116 SF, and
2. The owner has asked us to design two interior mezzanine structures as possible future expansions.

As a result, we anticipate that this ultimate configuration will be in our revised land use submittal:

Proposed building SF:		58,116 SF (of which NW Office is 2,437 SF and SW Office is 2,037 SF)
Additional Mezzanines:	NW	2,196 SF
	SW	1,833 SF

Revised Total Building SF: **62,145 SF**

The resulting SF figure represents a 10.8% increase in the building's proposed overall floor area relative to the anticipated building area in the TIA. We think it makes sense to ask DKS to comment on whether this change will affect the conclusions of their February 2022 TIA for the project. Based on the results of their Table 5: Future Intersection Operations, we think it unlikely that any study intersection's performance will be significantly affected by the change:

FUTURE INTERSECTION OPERATIONS

An analysis of the future intersection operations was performed at the study intersections for each future scenario. Intersection operations were analyzed for the PM peak hour using Highway Capacity Manual (HCM) 6th Edition methodology.[9] The volume to capacity (v/c) ratio, delay, and level of service (LOS) of each study intersection are listed in Table 5.

TABLE 5: FUTURE INTERSECTION OPERATIONS

INTERSECTION	OPERATING STANDARD/ MOBILITY TARGET	EXISTING + PROJECT			EXISTING + STAGE II			EXISTING + STAGE II + PROJECT		
		V/C	DELAY	LOS	V/C	DELAY	LOS	V/C	DELAY	LOS
SIGNALIZED										
BOONES FERRY RD/ DAY RD	LOS D (City)	0.66	16.0	B	0.66	15.8	B	0.67	16.0	B
BOONES FERRY RD/ 95TH AVE	LOS D (City)	0.70	20.4	C	0.71	20.6	C	0.71	20.7	C
I-5 SOUTHBOUND RAMPS/ ELLIGSEN RD	v/c ≤ 0.99 (ODOT)	0.76	9.6	A	0.79	10.3	B	0.79	10.4	B
I-5 NORTHBOUND RAMPS/ ELLIGSEN RD	v/c ≤ 0.99 (ODOT)	0.33	7.2	A	0.35	7.2	A	0.35	7.2	A
TWO-WAY STOP- CONTROLLED										
SITE ACCESS/ DAY RD	LOS D (City)	0.06	14.5	A/B	-	-	-	0.06	14.5	A/B

SIGNALIZED INTERSECTION:
Delay = Average Intersection Delay (secs)
v/c = Total Volume-to-Capacity Ratio
LOS = Total Level of Service

TWO-WAY STOP CONTROLLED INTERSECTION:
Delay = Critical Movement Delay (secs)
v/c = Critical Movement Volume-to-Capacity Ratio
LOS = Critical Levels of Service (Major/Minor Road)

As shown, all study intersections are expected to meet the City's operating standard under all future analysis scenarios. HCM reports are provided in the appendix.

(DKS TIA report at p. 14)

Please consider and reply to let us know what action is needed to take note of this change.

Thank you,

~Lee

Lee Leighton, AICP | he/him/his
Land Use Planning
D 971.346.3727 E lleighton@mcknze.com

MACKENZIE.
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From: Adam Goldberg <AGoldberg@mcknze.com>
Sent: Wednesday, June 1, 2022 9:43 AM
To: Lee D. Leighton <LLeighton@mcknze.com>
Cc: Scott Moore <SMoore@mcknze.com>
Subject: Office Areas - Delta Logistics Wilsonville

Lee,

Below are the areas for current and future office build-outs for Delta:

- NW Office: 2,437sf
- NW Mezzanine: 2,196sf
- Future SW Office: 2,037sf
- Future SW Mezzanine: 1,833sf
- **Total Office Area: 8,503sf**

Let me know if you need anything else for this matter.

Thanks,

Adam Goldberg
Architect
AIA, NCARB
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DISCLAIMER

REPORT OF GEOTECHNICAL ENGINEERING SERVICES

Delta Logistics Day Road Annex
SW Day Road
Wilsonville, Oregon

For
Delta Logistics, Inc.
June 30, 2021

Project: DeltaLog-1-01

NV5

City of Wilsonville
Exhibit B1 (Part 3) DB22-0007

June 30, 2021

Delta Logistics, Inc.
9835 Commerce Circle
Wilsonville, OR 97070

Attention: Igor Nichiporchik

Report of Geotechnical Engineering Services
Delta Logistics Day Road Annex
SW Day Road
Wilsonville, Oregon
Project: DeltaLog-1-01

NV5 is pleased to present this report of geotechnical engineering services for the proposed Delta Logistics Day Road Annex project located along SW Day Road between SW Grahams Ferry Road and SW Boones Ferry Road in Wilsonville, Oregon. Our services were provided in general conformance with our proposal dated May 17, 2021.

We appreciate the opportunity to be of continued service to you. Please call if you have questions regarding this report.

Sincerely,

NV5

Brett A. Shipton, P.E., G.E.
Principal Engineer

cc: Lee Leighton, Mackenzie (via email only)

BAS:kt
Attachments
One copy submitted (via email only)
Document ID: DeltaLog-1-01-063021-geor.docx
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EXECUTIVE SUMMARY

- Shallow basalt bedrock was encountered in the explorations, which will be difficult to excavate. Specialized excavation techniques such as controlled blasting and ripping may be required to make the planned site cuts
- The proposed building can be supported on spread footings that bear on basalt or the native soil.
- The silt overburden soil will require moisture conditioning if it is to be used as structural fill.
- Measured infiltration rates are extremely low and on-site stormwater infiltration is not feasible.
- Seismic forces on the building can be computed assuming seismic Site Class B as described in the SOSSC.
- The excavated basalt bedrock can be crushed and processed and re-used as structural fill or aggregate base if it meets gradation requirements.

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ACRONYMS AND ABBREVIATIONS

AC	asphalt concrete
ACP	asphalt concrete pavement
ASTM	American Society for Testing and Materials
BGS	below ground surface
CRB	Columbia River Basalt
FHWA	Federal Highway Administration
g	gravitational acceleration (32.2 feet/second^2)
H:V	horizontal to vertical
MCE	maximum considered earthquake
OSHA	Occupational Safety and Health Administration
OSSC	Oregon Standard Specifications for Construction (2021)
pcf	pounds per cubic foot
PG	performance grade
psf	pounds per square foot
psi	pounds per square inch
RQD	rock quality designation
SOSSC	State of Oregon Structural Specialty Code
SPT	standard penetration test
USGS	U.S. Geological Survey

1.0 INTRODUCTION

NV5 is pleased to submit this report of geotechnical engineering services for the proposed Delta Logistics Day Road Annex project. The site is located along SW Day Road between SW Grahams Ferry Road and SW Boones Ferry Road in Wilsonville, Oregon. The subject property includes Tax Lots 600 and 601 of Washington County Tax Map 3S102B, which collectively encompass 9.13 acres.

The site location is shown relative to surrounding features on Figure 1. Existing conditions and the proposed site layout (overlay) are shown on Figure 2. Acronyms and abbreviations used herein are defined above, immediately following the Table of Contents.

2.0 PROJECT UNDERSTANDING

The proposed development includes construction of a new logistics center with a building footprint of 57,300 square feet on the eastern portion of the site. We understand the new building will be of concrete tilt-up construction. A concrete loading dock apron is planned along the western perimeter of the proposed building. The center portion of the site will be paved with AC for drive lanes and parking spaces. A detached parking lot located on the western portion of the site is also being considered at this time. A 125-foot-wide drainage easement runs north to south through the property with its centerline approximately 150 feet from the western property boundary.

Foundation loads of the proposed building were not provided at the time of this report. Based on our experience with similar structures, we anticipate maximum column and wall loads will be less than 200 kips and 5 kips per lineal foot, respectively. In addition, we have assumed maximum floor loads of 300 psf. Cuts and fills are expected to be 18 and 5 feet, respectively. An approximately 18-foot-tall retaining wall will support a cut along the site's eastern perimeter and an approximately 5-foot-tall retaining wall will support fill along a storm drainage easement in the western portion of the site.

3.0 PURPOSE AND SCOPE

The purpose of our services was to provide geotechnical engineering recommendations for use in design and construction of the proposed logistics center. Specifically, we completed the following scope of services:

- Reviewed readily available, published geologic data and our in-house files for existing information on subsurface conditions in the site vicinity.
- Coordinated and managed the field explorations, including private and public utility locates and scheduling subcontractors and NV5 staff.
- Conducted a geotechnical subsurface investigation at the site that included the following:
  - Three borings to depths between 15 and 22.5 feet BGS
  - Nine test pits to depths of between 3 and 12 feet BGS
- Conducted two infiltration tests in a test pit at depths of 2 and 3.5 feet BGS.
- Conducted two dynamic cone penetrometer tests in test pits for use in pavement design.

- Collected geotechnical soil samples from the explorations for laboratory testing and maintained a log of encountered soil, rock, and groundwater conditions in the explorations.
- Conducted a laboratory testing program, including the following tests:
  - Four moisture content determinations in general accordance with ASTM D2216
  - One particle-size analyses in general accordance with ASTM D1140
  - Three unconfined compression tests in general accordance with ASTM D2166
- Provided recommendations for site preparation, grading and drainage, stripping depths, fill type for imported material, compaction criteria, trench excavation and backfill, use of on-site soil, and wet weather earthwork.
- Provided recommendations for design and construction of shallow spread foundations, including allowable design bearing pressure, minimum footing depth and width, passive resistance capacity, and coefficient of friction.
- Provided recommendations for preparation of floor slab subgrade.
- Provided design criteria recommendations for retaining walls, including lateral earth pressures, backfill, compaction, and drainage.
- Evaluated the rippability of the basalt bedrock encountered in the explorations.
- Provided recommendations for managing groundwater conditions that may affect the performance of structures.
- Provided recommendations for the construction of AC pavement for on-site access roads and parking areas, including subbase, base course, and AC paving thickness.
- Provided recommendations for subsurface drainage of foundations and roadways, as necessary.
- Provided seismic coefficients in accordance with the SOSSC.
- Documented our findings, conclusions, and recommendations in this report.

4.0 SITE CONDITIONS

4.1 GEOLOGIC CONDITIONS

The site is located in the Tualatin Basin of the Puget Sound-Willamette Valley physiographic province, a tectonically active lowland located along the convergent Cascadia margin. The Tualatin Basin is formed between the uplifted Coast Ranges to the west, the Chehalem Mountains to the south, and the Tualatin Mountains to the north and east. The Tualatin Mountains have been uplifted along northwesterly oriented faults, including the steeply dipping Portland Hills fault located along the eastern flank of the mountains.

The near-surface geologic unit mapped at the site is the fine-grained facies of the Missoula flood deposits. The unit consists of unconsolidated silt and sand deposited by catastrophic floods associated with the sudden release of waters from glacial Lake Missoula during the late Pleistocene (15,500 and 12,500 years ago) (Madin, 1990).

Underlying the Quaternary flood deposits, we encountered basalt bedrock representing the Miocene CRBs, emplaced approximately 17 million to 6 million years ago in the Portland area (Madin, 1990). The CRBs consist of thick flows of basalt and are exposed in the Tualatin Mountains and in the mountains southwest of the site, including Cooper Mountain and Bull Mountain.

4.2 SURFACE CONDITIONS

The site is located along SW Day Road between SW Grahams Ferry Road and SW Boones Ferry Road in Wilsonville, Oregon. The subject property includes Tax Lots 600 and 601 of Washington County Tax Map 3S102B, which collectively encompass 9.13 acres. The site is undeveloped, except for a residence located on the northeastern property corner. The site slopes down from east to west, with the eastern end of the site at an elevation of 285 feet and the western end at an elevation of approximately 240 feet. The slope is steeper toward the east with a gradient of between 10 and 15 percent. Vegetation at the site includes grass, shrubbery, and trees.

4.3 SUBSURFACE CONDITIONS

Subsurface conditions were explored by drilling three borings (B-1 through B-3) to depths between 15 and 22.5 feet BGS and excavating nine test pits (TP-1 through TP-9) to depths between 3 and 12 feet BGS. The locations of the explorations are shown on Figure 2. The exploration logs and laboratory test results are presented in the Appendix.

Subsurface conditions encountered in our explorations consists of a thin mantle of silt underlain by basalt bedrock to the maximum depth explored. The following sections provide a detailed description of the geologic units encountered.

4.3.1 Silt

In general, we observed a mantel of medium stiff to stiff silt with varying proportions of sand that extends to depths between approximately 1 foot and 7 feet BGS, except boring B-2 where silt was not observed. Laboratory testing indicates that the silt had moisture contents ranging from 21 to 26 percent at the time of our explorations.

4.3.2 Weathered Basalt

Weathered basalt that consists of clayey and silty gravel, cobbles, and boulders underlies the silt at depths between 1 foot and 7 feet BGS. All of the test pits were terminated in this unit where they encountered practical refusal. Laboratory testing indicates that the weathered basalt layer had a moisture content of 11 percent at the time of our explorations.

4.3.3 Basalt

Competent basalt was encountered to the maximum depths explored in borings B-2 and B-3. In general, the basalt consists of soft (R2) to hard (R4) basalt. The basalt exhibits varying degrees of weathering from fresh to decomposed. A siltstone interflow was encountered in boring B-3 between depths of 14.6 and 15.6 feet BGS. The siltstone interflow is very soft (R1) and moderately weathered.

4.3.4 Groundwater

Groundwater was not encountered during our explorations, except for moderate seepage in TP-8 at a depth of 8 feet BGS. Groundwater may perch on the basalt bedrock during the wet season or prolonged periods of wet weather. The depth to groundwater may fluctuate in response to seasonal changes, prolonged rainfall, changes in surface topography, and other factors not observed in this study.

4.4 INFILTRATION TESTING

We conducted two infiltration tests in test pit TP-5 at depths of 2 and 3.5 feet BGS. The infiltration testing procedures are described in the Appendix, and the results of the infiltration testing are presented in Table 1.

Table 1. Infiltration Testing Summary

Location	Depth (feet BGS)	Observed Infiltration Rate[1] (inches per hour)	Test Method	Soil Type at Test Depth
TP-5	2	1.5	Standpipe	Silt
TP-5	3.5	0	Open Pit	Weathered Basalt

1. Infiltration rate measured in the field

4.5 GEOLOGIC HAZARDS

4.5.1 Liquefaction

Liquefaction is caused by a rapid increase in pore water pressure that reduces the effective stress between soil particles to near zero. Granular soil, which relies on interparticle friction for strength, is susceptible to liquefaction until the excess pore pressures can dissipate. In general, loose, saturated sand soil with low silt and clay content is the most susceptible to liquefaction. Silty soil with low plasticity is moderately susceptible to liquefaction under relatively higher levels of ground shaking. Based on the subsurface conditions encountered in the explorations, liquefaction is not a hazard at the site.

4.5.2 Lateral Spreading

Lateral spreading is a liquefaction-related seismic hazard. Areas subject to lateral spreading are typically gently sloping or flat sites underlain by liquefiable sediment adjacent to an open face, such as a riverbank. Since liquefaction is not a hazard at the site, lateral spreading is also not considered a site hazard.

4.5.3 Fault Surface Rupture

There are no mapped faults reported beneath this site by the USGS Quaternary Fault and Fold Database of the United States. Consequently, it is our opinion that the probability of surface fault rupture beneath the site is low.

5.0 DESIGN RECOMMENDATIONS

5.1 GENERAL

The following sections provide our design recommendations for the project. All site preparation and structural fill should be prepared as recommended in the “Construction” section.

5.2 SHALLOW FOUNDATIONS

In our opinion, the proposed building can be supported on conventional spread footings founded on the basalt bedrock or native silt.

5.2.1 Bearing Capacity

Continuous wall and isolated spread footings should be at least 18 and 24 inches wide, respectively. The bottom of exterior footings should be at least 18 inches below the lowest adjacent exterior grade. The bottom of interior footings should be established at least 12 inches below the base of the slab.

Footings bearing on basalt bedrock can be sized assuming an allowable bearing pressure of 15,000 psf. Footings bearing on the overburden fine-grained soil should be sized assuming an allowable bearing pressure equal to 3,000 psf. These are net values; the weight of the footing and overlying backfill can be ignored in calculating footing sizes. The recommended allowable bearing pressure applies to the total of dead plus long-term live loads and may be increased by one-third for short-term loads such as those resulting from wind or seismic forces.

5.2.2 Resistance to Sliding

Lateral loads on footings can be resisted by passive earth pressure on the sides of structures and by friction on the base of footings. Our analysis indicates the available passive earth pressure for footings confined by native soil or structural fill is 350 pcf modeled as an equivalent fluid pressure. If the footings are confined by basalt bedrock, this value can be increase to 750 pcf. Adjacent floor slabs, pavement, or the upper 12-inch depth of adjacent, unpaved areas should not be considered when calculating passive resistance. To rely on passive resistance, a minimum of 10 feet of horizontal clearance must exist between the face of the footings and any adjacent down slopes. For footings that bear on granular pads as described above, a coefficient of friction equal to 0.5 may be used when calculating resistance to sliding for footings bearing on basalt or crushed rock; this should be reduced to 0.35 for footings bearing on the native silt.

5.2.3 Settlement

Total foundation settlement should be less than 0.25 inch; a differential settlement of 0.25 inch should be assumed between similarly loaded footings. A total settlement of 1 inch should be assumed for footings that bear on silt, with a differential of 0.5 inch between similarly loaded footings.

5.2.4 Subgrade Observation

All footing and floor slab subgrade should be observed by a representative of NV5 to evaluate the bearing conditions. Observations should also confirm that all loose or soft material, organic material, unsuitable fill, prior topsoil zones, and softened subgrades (if present) have been removed. Localized over-excavation of footing subgrade may be required to remove deleterious material.

5.3 SEISMIC DESIGN CONSIDERATIONS

5.3.1 Seismic Design Parameters

Based on the results of our subsurface explorations, the seismic design coefficients consistent with Site Class B can be used for design. These coefficients are presented in Table 2.

Table 2. Seismic Design Parameters

Seismic Design Parameter	Short Period (T_s = 0.2 second)	1 Second Period (T_1 = 1.0 second)
MCE Spectral Acceleration	S_s = 0.827 g	S_1 = 0.385 g
Site Class	B	
Site Coefficient	F_a = 0.9	F_v = 0.8
Adjusted Spectral Acceleration	S_{MS} = 0.744 g	S_{M1} = 0.308 g
Design Spectral Response Acceleration Parameters	S_{DS} = 0.496 g	S_{D1} = 0.205 g

5.4 FLOOR SLABS

Slabs should be reinforced according to their proposed use and per the structural engineer's recommendations. Slabs on grade may be designed assuming a modulus of subgrade reaction, k, of 600 psi per inch, if they bear on basalt. This value should be decreased 150 psi per inch if the floor slab bears on the overburden silty soil. To aid as a capillary break, we recommend a 6-inch-thick layer of floor slab base rock be placed and compacted over the prepared subgrade. The floor slab base rock should meet the requirements in the "Structural Fill" section and be compacted to at least 95 percent of ASTM D1557.

The near-surface native soil is primarily fine grained and will tend to maintain a high moisture content. In areas where moisture-sensitive floor slab and flooring will be installed, installation of a vapor barrier is warranted in order to reduce the potential for moisture transmission through and efflorescence growth on the slab and flooring. In addition, flooring manufacturers often require vapor barriers to protect flooring and flooring adhesives and will warrant their product only if a vapor barrier is installed according to their recommendations. Selection and design of an appropriate vapor barrier should be a collaborative effort with members of the design team.

5.5 RETAINING WALLS

We have provided recommendations for retaining walls that retain soil and basalt bedrock. Our recommendations are based on the following assumptions: (1) the walls are less than 20 feet in height, (2) adequate drainage is provided behind the retaining wall to prevent lateral earth pressures from developing, and (3) the ground surface behind the retaining wall is flatter than 4H:1V. Re-evaluation of our recommendations will be required if the retaining wall design criteria for the project varies from these assumptions.

Lateral earth pressures can be computed using Figure 3. Seismic earth pressures can be calculated assuming a uniformly distributed load equal to force equal to 7H pounds per linear foot of wall where the wall retains soil, where H is the wall height. The seismic force should be applied as a distributed load with the centroid located at 0.6H from the wall base. Footings for retaining walls should be designed as recommended for shallow foundations.

If other surcharges are located within a horizontal distance of twice the height of the wall from the back of the wall, additional pressures will need to be incorporated in the wall design. Figure 4 can be used to compute surcharge induced lateral earth pressures.

5.6 DRAINAGE

5.6.1 Temporary

During mass grading at the site, the contractor should be made responsible for temporary drainage of surface water as necessary to prevent standing water and/or erosion at the working surface. During rough and finished grading of the site, the contractor should keep all pads and subgrade free of ponding water.

5.6.2 Surface

Where possible, the finished ground surface around the building should be sloped away from the structure at a minimum 2 percent gradient for a distance of at least 5 feet. Downspouts or roof scuppers should discharge into a storm drain system that carries the collected water to an appropriate stormwater system. Trapped planter areas should not be created adjacent to the building without providing means for positive drainage (e.g., swales or catch basins).

5.6.3 Subsurface

Assuming the site grades around the building will be sloped as discussed previously, it is our opinion that perimeter footing drains will not be required around the proposed building.

5.6.4 Infiltration

In our opinion, infiltration of stormwater is not feasible due the shallow impermeable bedrock.

5.7 PAVEMENT

5.7.1 Pavement Design

Pavement should be installed on competent subgrade or new engineered fills prepared in conformance with the recommendation in this report. Our pavement recommendations are based on the following assumptions:

- Reliability of 80 percent and standard deviation of 0.45
- Pavement design life of 20 years
- Initial and terminal serviceability indices of 4.2 and 2.5, respectively
- Structural coefficients of 0.42 and 0.10 for new AC and new base rock, respectively
- Subgrade resilient modulus of 3,500 psi for silt and 45,000 psi for basalt
- New base rock resilient modulus of 20,000 psi
- New base rock drainage coefficient of 1.0
- The subgrade below pavement areas is evaluated by proof rolling and prepared as recommended in this report

We do not have specific information on the frequency of vehicles expected at the site; however, we have assumed a breakdown on the type of vehicles likely to be used. We have assumed traffic will consist of passenger cars in light traffic areas and a mixture of cars and trucks elsewhere. The truck traffic is assumed to be single tractor-trailers evenly distributed between FHWA Classes 8, 9, and 10.

If any of these assumptions are incorrect, our office should be contacted with the appropriate information so that the pavement designs can be revised.

Our pavement design recommendations assuming between 0 and 50 trucks per day are presented in Tables 3 and 4. If projected truck traffic exceeds 50 or truck axle weights are projected to exceed street legal values, our office should be contacted to provide revised pavement design thicknesses.

Table 3. Recommended Pavement Sections on Bedrock

Traffic Levels	Trucks per Day	ESALs	AC (inches)	Base Rock (inches)
Car Traffic Only	0	10,000	2.5	4.0
Truck Area	10	100,000	3.0	4.0
Truck Area	25	240,000	3.5	4.0
Truck Area	50	475,000	4.0	4.0

Table 4. Recommended Pavement Sections on Soil Subgrade

Traffic Levels	Trucks per Day	ESALs	AC (inches)	Base Rock (inches)
Car Traffic Only	0	10,000	2.5	8.0
Truck Area	10	100,000	4.0	13.5
Truck Area	25	240,000	4.5	16.0
Truck Area	50	475,000	5.0	18.0

All thicknesses in Tables 3 and 4 are intended to be the minimum acceptable. Design of the recommended pavement section is based on the assumption that construction will be completed during an extended period of dry weather. Wet weather construction could require an increased thickness of base rock where the pavement is constructed on soil subgrade.

Construction traffic should be limited to non-building, unpaved portions of the site or haul roads. Construction traffic should not be allowed on new pavement. If construction traffic is to be allowed on newly constructed road sections, an allowance for this additional traffic will need to be made in the design pavement section.

6.0 CONSTRUCTION

6.1 SITE PREPARATION

6.1.1 Demolition

Demolition includes complete removal of the existing buildings, retaining walls, pavement, concrete curbs, abandoned utilities, and any subsurface elements within 5 feet of areas to receive new pavement, buildings, retaining walls, or engineered fills. Demolished material should be transported off site for disposal. In general, this material will not be suitable for re-use

as engineered fill. However, concrete, pavement, and base rock material may be recycled in accordance with the requirements set forth by the project jurisdiction and the recommendations provided in the "Structural Fill" section.

Excavations remaining from removing basements, foundations, utilities, and other subsurface elements should be backfilled with structural fill where these are below planned site grades. The base of the excavations should be excavated to expose firm subgrade before filling. The sides of the excavations should be cut into firm material and sloped a minimum of 1½H:1V. Utility lines abandoned under new structural components should be completely removed and backfilled with structural fill or grouted full if left in place. Soft or disturbed soil encountered during demolition should be removed and replaced with structural fill.

Considerable subgrade damage can occur during demolition activities and we recommend that the subgrade protection measures discussed in the "Construction Considerations" section be implemented.

6.1.2 Grubbing and Stripping

Trees and shrubs should be removed from fill areas. In addition, root balls should be grubbed out to the depth of the roots, which could exceed 3 feet BGS. Depending on the methods used to remove root balls, considerable disturbance and loosening of the subgrade could occur during site grubbing. We recommend that soil disturbed during grubbing operations be removed to expose firm, undisturbed subgrade. The resulting excavations should be backfilled with structural fill.

The existing root zone in landscaped areas should be stripped and removed from all fill areas. The actual stripping depth should be based on field observations at the time of construction. Stripped material should be transported off site for disposal or used in landscaped areas.

6.1.3 Subgrade Evaluation

Upon completion of stripping and subgrade stabilization, and prior to the placement of fill or pavement, the exposed subgrade should be evaluated by proof rolling. The subgrade should be proof rolled with a fully loaded dump truck or similarly heavy, rubber tire construction equipment to identify soft, loose, or unsuitable areas. A member of our geotechnical staff should observe proof rolling to evaluate yielding of the ground surface. During wet weather, subgrade evaluation should be performed by probing with a foundation probe rather than proof rolling. Areas that appear soft or loose should be improved in accordance with subsequent sections.

6.2 CONSTRUCTION CONSIDERATIONS

The fine-grained soil present on this site is easily disturbed, but the bedrock is less sensitive to disturbance. Where the subgrade consists of soil, site preparation, utility trench work, and excavation can create extensive soft areas and significant repair costs can result. Earthwork planning, regardless of the time of year, should include considerations for minimizing subgrade disturbance.

6.3 PERMANENT SLOPES

Permanent cut and fill slopes should not exceed 2H:1V in soil and ¾H:1H in competent bedrock. The face of bedrock slopes should be scaled to remove loose rock fragments from the face. Access roads and pavement should be located at least 5 feet from the top of cut and fill slopes. The setback should be increased to 10 feet for buildings. The slopes should be planted with appropriate vegetation to provide protection against erosion as soon as possible after grading. Surface water runoff should be collected and directed away from slopes to prevent water from running down the face of the slope.

6.4 EXCAVATION

6.4.1 Excavation and Shoring

The site soil should be readily excavatable with conventional grading equipment. Bedrock may require ripping and or blasting. Temporary excavation sidewalls should stand vertical to a depth of approximately 4 feet, provided groundwater seepage does not occur. Deeper excavations will require shoring or need to be sloped. Shoring will still be required in bedrock to protect worker safety from rockfall. Temporary soil slopes should be no steeper than 1.5H:1V and rock slopes no steeper than ¾H:1V. All loose rock fragments should be removed from the excavation sidewalls before workers are allowed to enter the excavation.

6.4.2 Trench Dewatering

Based on the results of our explorations, major dewatering is not anticipated for the project. If perched groundwater is present, dewatering may be required to maintain dry working conditions. Pumping from sumps located within the trench will likely be effective in removing water resulting from seepage.

6.4.3 Safety

All excavations should be made in accordance with applicable OSHA requirements and regulations of the state, county, and local jurisdiction. While this report describes certain approaches to excavation and dewatering, the contract documents should specify that the contractor is responsible for selecting excavation and dewatering methods, monitoring the excavations for safety, and providing shoring (as required) to protect personnel and adjacent structural elements.

6.5 MATERIALS

6.5.1 Structural Fill

6.5.1.1 General

Fill should be placed on subgrade that has been prepared in conformance with the “Site Preparation” section. A variety of material may be used as structural fill at the site. However, all material used as structural fill should be free of organic material or other unsuitable material. A brief characterization of some of the acceptable materials and our recommendations for their use as structural fill are provided below.

6.5.1.2 On-Site Material

Basalt excavated from the site can be processed and re-used as structural fill. The gradation and compaction requirements will depend on its and intended use. The soil at the site should be suitable for use as general structural fill, provided it is properly moisture conditioned and free of

debris, organic material, and particles over 6 inches in diameter. Moisture conditioning (drying) will likely be required to use on-site fine-grained soil for structural fill. Accordingly, extended dry weather will be required to adequately condition and place the soil as structural fill and, given the site constraints, will possibly not be feasible. It will be difficult, if not impossible, to adequately compact on-site soil during the rainy season or during prolonged periods of rainfall. When used as structural fill, native soil should be placed in lifts with a maximum uncompacted thickness of 8 inches and compacted to not less than 92 percent of the maximum dry density, as determined by ASTM D1557.

6.5.1.3 Processed Native and Imported Granular Material

Processed native basalt and imported granular material used as structural fill should be pit- or quarry-run rock, crushed rock, or crushed gravel and sand. The imported granular material should also be angular and fairly well graded between coarse and fine material, should have less than 5 percent fines by dry weight passing the U.S. Standard No. 200 sieve, and should have at least two mechanically fractured faces. Imported granular material should be placed in lifts with a maximum uncompacted thickness of 12 inches and compacted to not less than 95 percent of the maximum dry density, as determined by ASTM D1557. During the wet season or when wet subgrade conditions exists, the initial lift should be approximately 18 inches in uncompacted thickness and should be compacted by rolling with a smooth-drum roller without using vibratory action.

6.5.1.4 Stabilization Material

Stabilization material used in staging or haul road areas or in trenches should consist of 4- or 6-inch-minus pit- or quarry-run rock, crushed rock, or crushed gravel and sand. The material should have a maximum particle size of 6 inches, should have less than 5 percent by dry weight passing the U.S. Standard No. 4 sieve, and should have at least two mechanically fractured faces. The material should be free of organic material and other deleterious material. Stabilization material should be placed in lifts between 12 and 24 inches thick and compacted to a firm condition.

6.5.1.5 Trench Backfill

Trench backfill placed beneath, adjacent to, and for at least 12 inches above utility lines (i.e., the pipe zone) should consist of durable, well-graded granular material with a maximum particle size of 1½ inches, should have less than 7 percent fines by dry weight, and should have at least two mechanically fractured faces. The pipe zone backfill should be compacted to at least 90 percent of the maximum dry density, as determined by ASTM D1557, or as required by the pipe manufacturer or local building department.

Within roadway alignments, the remainder of the trench backfill up to the subgrade elevation should consist of durable, well-graded granular material with a maximum particle size of 2½ inches, should have less than 7 percent fines by dry weight, and should have at least two mechanically fractured faces. This material should be compacted to at least 92 percent of the maximum dry density, as determined by ASTM D1557, or as required by the pipe manufacturer or local building department. The upper 3 feet of the trench backfill should be compacted to at least 95 percent of the maximum dry density, as determined by ASTM D1557.

Outside of structural improvement areas (e.g., roadway alignments or building pads), trench backfill placed above the pipe zone may consist of general fill material that is free of organic material and material over 6 inches in diameter. This general trench backfill should be compacted to at least 90 percent of the maximum dry density, as determined by ASTM D1557, or as required by the pipe manufacturer or local building department.

6.5.1.6 Drain Rock

Drain rock should consist of angular, granular material with a maximum particle size of 2 inches. The material should be free of roots, organic material, and other unsuitable material; should have less than 2 percent by dry weight passing the U.S. Standard No. 200 sieve (washed analysis); and should have at least two mechanically fractured faces. Drain rock should be compacted to a well-keyed, firm condition.

6.5.1.7 Aggregate Base Rock

Imported granular material used as base rock for building floor slabs and pavement should consist of ¾- or 1½-inch-minus material (depending on the application). In addition, the aggregate should have less than 5 percent by dry weight passing the U.S. Standard No. 200 sieve and have at least two mechanically fractured faces. The aggregate base should be compacted to not less than 95 percent of the maximum dry density, as determined by ASTM D1557.

6.5.1.8 Retaining Wall Select Backfill

Backfill material placed behind retaining walls and extending a horizontal distance of ½H, where H is the height of the retaining wall, should consist of imported granular material as described above and should have less than 7 percent fines by dry weight and have at least two mechanically fractured faces. We recommend the wall backfill be separated from general fill, native soil, and/or topsoil using a geotextile fabric that meets the specifications provided below for drainage geotextiles.

The wall backfill should be compacted to a minimum of 95 percent of the maximum dry density, as determined by ASTM D1557. However, backfill located within a horizontal distance of 3 feet from a retaining wall should only be compacted to approximately 90 percent of the maximum dry density, as determined by ASTM D1557. Backfill placed within 3 feet of the wall should be compacted in lifts less than 6 inches thick using hand-operated tamping equipment (such as a jumping jack or vibratory plate compactor). If flatwork (sidewalks or pavement) will be placed atop the wall backfill, we recommend the upper 2 feet of material be compacted to 95 percent of the maximum dry density, as determined by ASTM D1557.

6.5.2 Geotextile Fabric

6.5.2.1 Subgrade Geotextile

Subgrade geotextile should conform to OSSC Table 02320-4 and OSSC 00350 (Geosynthetic Installation). A minimum initial aggregate base lift of 6 inches is required over geotextiles. All drainage aggregate and stabilization material should be underlain by a subgrade geotextile.

6.5.2.2 Drainage Geotextile

Drainage geotextile should conform to Type 2 material of OSSC Table 02320-1 and OSSC 00350 (Geosynthetic Installation). A minimum initial aggregate base lift of 6 inches is required over geotextiles.

6.5.3 Conventional Pavement Material Requirements

The AC should be Level 3, ½-inch, dense ACP as described in OSSC 00744 (Asphalt Concrete Pavement) and compacted to 91 percent of the specific gravity of the mix, as determined by ASTM D2041. Minimum and maximum lift thicknesses for ½-inch, dense ACP are 2 and 3 inches, respectively. ACP should be placed at the minimum ground surface temperatures described in OSSC 00744.40 (Season and Temperature Limitations). Asphalt binder should be performance graded and conform to PG 64-22.

The crushed base rock should consist of ¾- or 1½-inch-minus material meeting the requirements in OSSC 00641 (Aggregate Subbase, Base, and Shoulders), with the exception that the crushed base rock should have less than 5 percent by dry weight passing the U.S. Standard No. 200 sieve. The crushed base rock should be compacted to at least 95 percent of the maximum dry density, as determined by ASTM D1557.

6.5.3.1 Cold Weather Paving Considerations

In general, AC paving is not recommended during the cold weather (temperatures less than 40 degrees Fahrenheit). Compacting under these conditions can result in low compaction and premature pavement distress.

Each AC mix design has a recommended compaction temperature range that is specific for the particular AC binder used. In colder temperatures, it is more difficult to maintain the temperature of the AC mix as it can lose heat while stored in the delivery truck, as it is placed, and in the time between placement and compaction. In Oregon, the AC surface temperature during paving should be at least 40 degrees Fahrenheit for lift thickness greater than 2.5 inches and at least 50 degrees Fahrenheit for lift thickness between 2 and 2.5 inches.

If paving activities must take place during cold-weather construction as defined above, the project team should be consulted and a site meeting should be held to discuss ways to lessen low compaction risks.

6.6 EROSION CONTROL

The site soil is susceptible to erosion; therefore, erosion control measures should be carefully planned and in place before construction begins. Surface water runoff should be collected and directed away from slopes to prevent water from running down the slope face. Erosion control measures (such as straw bales, sediment fences, and temporary detention and settling basins) should be used in accordance with local and state ordinances.

7.0 OBSERVATION OF CONSTRUCTION

Satisfactory foundation and earthwork performance depends to a large degree on quality of construction. Sufficient observation of the contractor's activities is a key part of determining that the work is completed in accordance with the construction drawings and specifications. Subsurface conditions observed during construction should be compared with those encountered during the subsurface exploration. Recognition of changed conditions often requires experience; therefore, qualified personnel should visit the site with sufficient frequency to detect if subsurface conditions change significantly from those anticipated.

We recommend NV5 be retained to observe earthwork activities, including stripping, proof rolling of the subgrade and repair of soft areas, footing subgrade and granular pad preparation, final proof rolling of the pavement subgrade and base rock, and AC placement and compaction, and performing laboratory compaction and field moisture-density tests.

8.0 LIMITATIONS

We have prepared this report for use by Delta Logistics, Inc. and members of the design and construction team for the proposed development. The data and report can be used for estimating purposes, but our report, conclusions, and interpretations should not be construed as a warranty of the subsurface conditions and are not applicable to other sites.

Soil explorations indicate soil conditions only at specific locations and only to the depths penetrated. They do not necessarily reflect soil strata or water level variations that may exist between exploration locations. If subsurface conditions differing from those described are noted during the course of excavation and construction, re-evaluation will be necessary.

The site development plans and design details were conceptual at the time this report was prepared. When the design has been finalized and if there are changes in the site grades or location, configuration, design loads, or type of construction, the conclusions and recommendations presented may not be applicable. If design changes are made, we should be retained to review our conclusions and recommendations and to provide a written evaluation or modification.

The scope of our services does not include services related to construction safety precautions, and our recommendations are not intended to direct the contractor's methods, techniques, sequences, or procedures, except as specifically described in this report for consideration in design.

Within the limitations of scope, schedule, and budget, our services have been executed in accordance with the generally accepted practices in this area at the time this report was prepared. No warranty or other conditions, express or implied, should be understood.

♦ ♦ ♦

We appreciate the opportunity to be of continued service to you. Please call if you have questions concerning this report or if we can provide additional services.

Sincerely,

NV5

Brett A. Shipton, P.E., G.E.
Principal Engineer

FIGURES

NV5	DELTALOG-1-01	**VICINITY MAP**	
	JUNE 2021	DELTA LOGISTICS DAY ROAD ANNEX WILSONVILLE, OR	**FIGURE** 1

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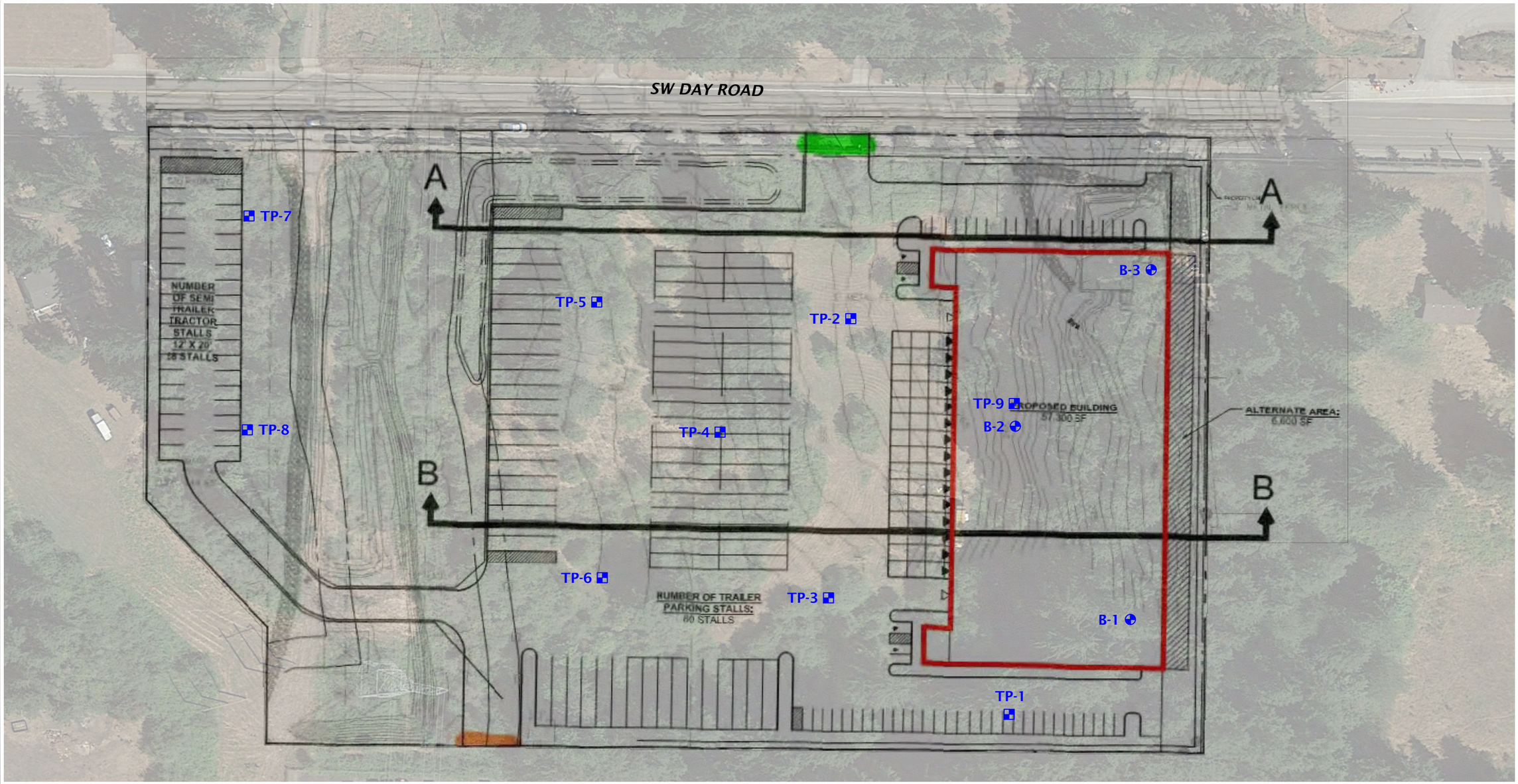
File Name: J:\A-D\DeltaLog\DeltaLog-1\DeltaLog-1-01\Figures\CAD\DeltaLog-1-01-VM01.dwg | Layout: FIGURE 1



LEGEND:

B-1	BORING
TP-1	TEST PIT

N

0 80 160

(SCALE IN FEET)

NOTES:

1. SITE PLAN BASED ON IMAGE OF SHEET SITE PLAN - OPTION 3B DATED MARCH 15, 2021 PREPARED BY MACKENZIE.
2. AERIAL PHOTOGRAPH OBTAINED FROM GOOGLE EARTH PRO JUNE 21, 2021.

SITE PLAN

DELTA LOGISTICS DAY ROAD ANNEX
WILSONVILLE, OR

FIGURE 2

DELTALOG-1-01

JUNE 2021

NV5

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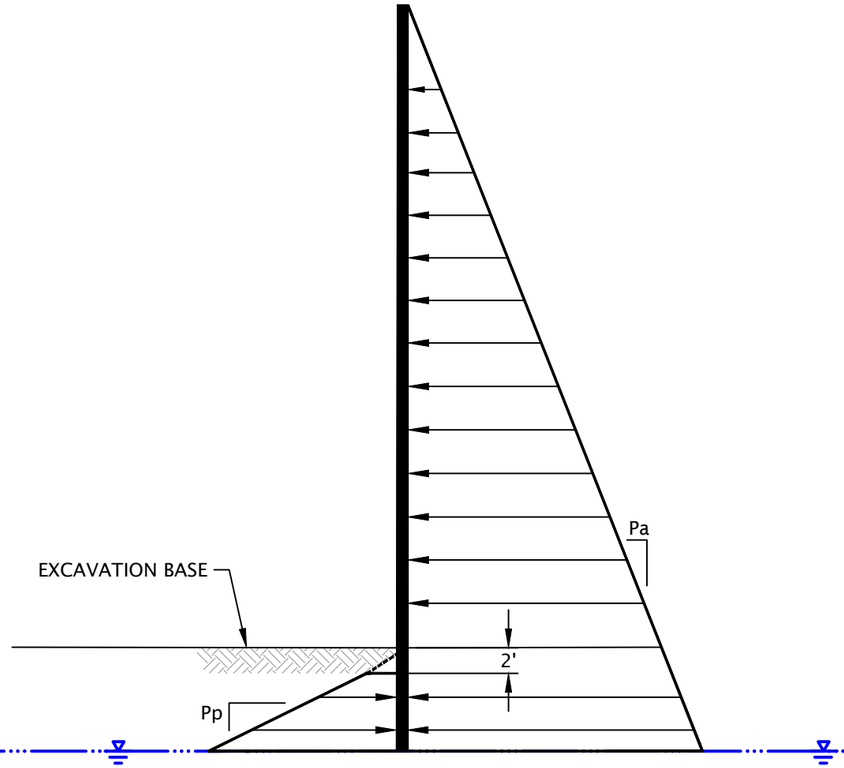
File Name: J:\A-D\DeltaLog\DeltaLog-1\DeltaLog-1-01\Figures\CAD\DeltaLog-1-01-SP01.dwg | Layout: FIGURE 2

DRAFT

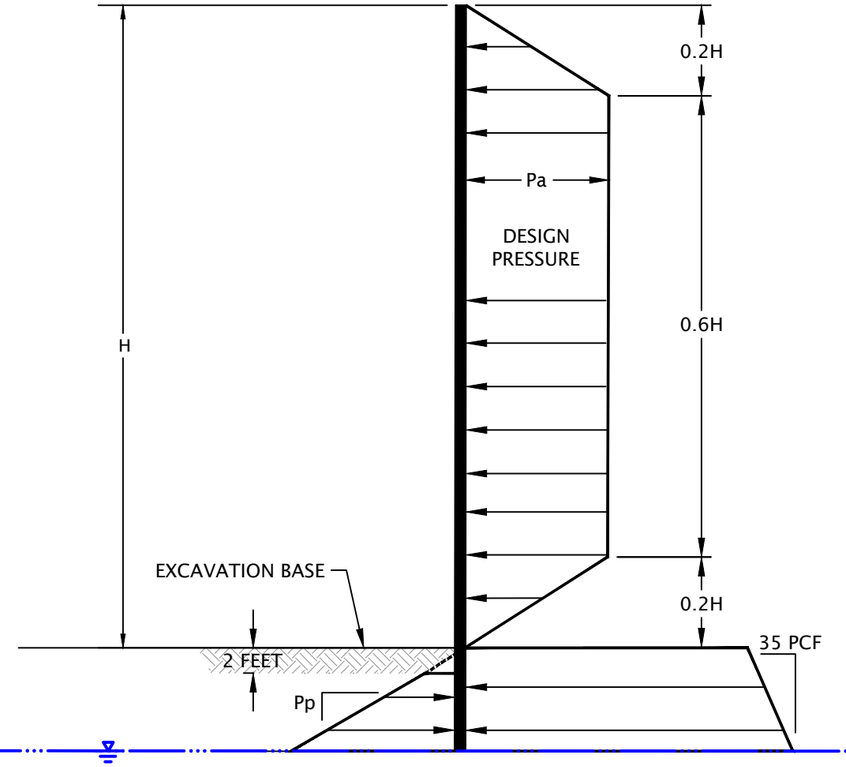
RECOMMENDED DESIGN PARAMETERS FOR CANTILEVERED WALL



EXPLANATION:
Pa = 35 PCF FOR SOIL OR STRUCTURAL FILL ABOVE WATER TABLE
Pa = 15 PCF FOR BASALT ABOVE WATER TABLE
Pp = 350 PCF FOR SOIL ABOVE WATER TABLE
Pp = 850 PCF FOR BASALT ABOVE WATER TABLE

NOTES:
1. FIGURE DOES NOT INCLUDE SURCHARGE OR SEISMIC LOADS.
2. LATERAL EARTH PRESSURE ASSUMES WATER WILL BE MAINTAINED BELOW THE BASE OF THE EXCAVATION.
3. THE LATERAL EARTH PRESSURES ARE UNFACTORED.
4. PASSIVE PRESSURE RESISTANCE SHOULD BE NEGLECTED 2 FEET BELOW THE BOTTOM OF THE EXCAVATION.
5. REFER TO THE GEOTECHNICAL REPORT FOR APPROPRIATE GROUNDWATER ELEVATION.
6. ACTIVE EARTH PRESSURE ASSUMES RETAINING WALL IS FREE TO ROTATE SLIGHTLY AROUND THE BASE.

RECOMMENDED DESIGN PARAMETERS FOR BRACED WALL



EXPLANATION:
Pa = 25 PCF FOR SOIL OR STRUCTURAL FILL ABOVE WATER TABLE
Pa = 12 PCF FOR BASALT ABOVE WATER TABLE
Pp = 350 PCF FOR SOIL ABOVE WATER TABLE
Pp = 850 PCF FOR BASALT ABOVE WATER TABLE

NOTES:
1. FIGURE DOES NOT INCLUDE SURCHARGE OR SEISMIC LOADS.
2. TIEBACKS SHOULD BE LOCKED OFF AT 100 PERCENT OF DESIGN LOAD.
3. THE LATERAL EARTH PRESSURES ARE UNFACTORED.
4. PASSIVE PRESSURE RESISTANCE SHOULD BE NEGLECTED 2 FEET BELOW THE BOTTOM OF THE EXCAVATION.
5. REFER TO THE GEOTECHNICAL REPORT FOR APPROPRIATE GROUNDWATER ELEVATION.
6. ASSUMES RETAINING WALL IS BRACED AT MORE THAN ONE LOCATION.

CANTILEVERED AND BRACED WALLS DESIGN CRITERIA

FIGURE 3

DELTA LOGISTICS DAY ROAD ANNEX
WILSONVILLE, OR

DELTALOG-1-01

JUNE 2021

NV5

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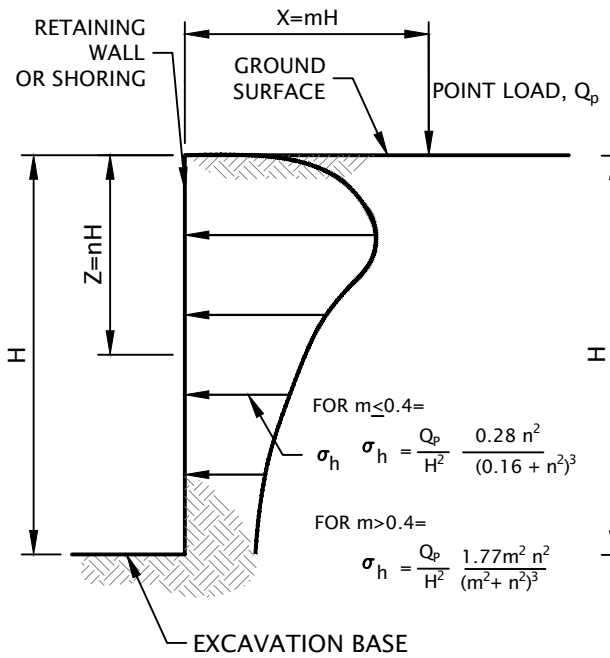
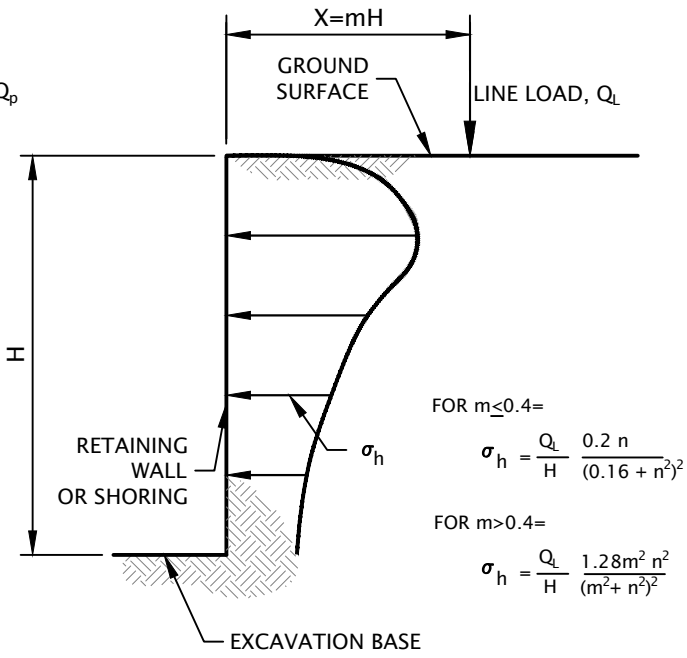
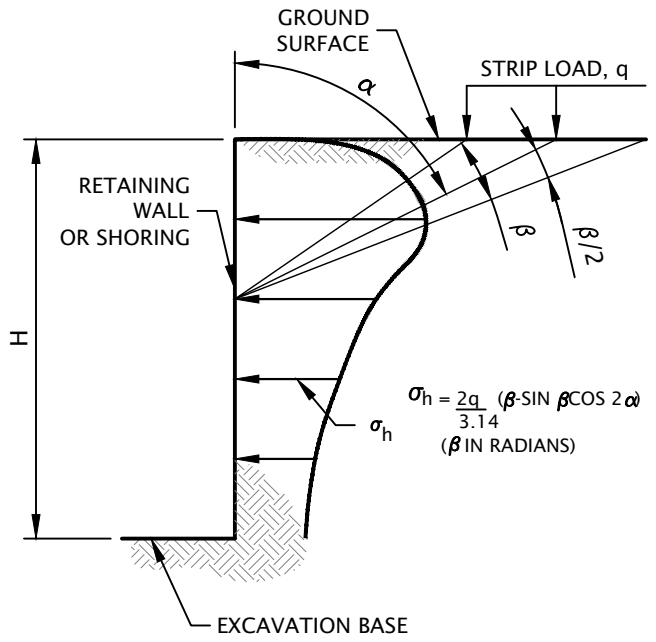
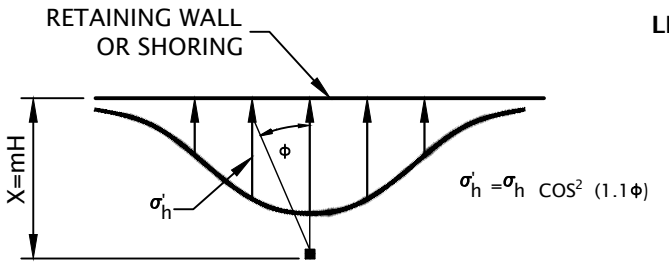








DISTRIBUTION OF HORIZONTAL PRESSURES

VERTICAL POINT LOAD

LINE LOAD PARALLEL TO WALL

STRIP LOAD PARALLEL TO WALL

NOT TO SCALE

NOTES:

1. FIGURE SHOULD BE USED IN CONJUNCTION WITH REPORT TEXT.
2. THESE GUIDELINES APPLY TO RIGID WALLS WITH POISSON'S RATIO ASSUMED TO BE 0.5 FOR BACKFILL MATERIALS.
3. LATERAL PRESSURES FROM ANY COMBINATION OF ABOVE LOADS MAY BE DETERMINED BY THE PRINCIPLE OF SUPERPOSITION.

DRAFT

NV5

DELTALOG-1-01	**SURCHARGE-INDUCED LATERAL EARTH PRESSURES**	
JUNE 2021	DELTA LOGISTICS DAY ROAD ANNEX WILSONVILLE, OR	**FIGURE 4**

APPENDIX

APPENDIX

FIELD EXPLORATIONS

GENERAL

Subsurface conditions were explored by drilling three borings (B-1 through B-3) to depths between 15 and 22.5 feet BGS and excavating nine test pits (TP-1 through TP-9). Drilling services were provided by Western States Soil Conservation, Inc. of Hubbard, Oregon, using mud rotary drilling methods and HQ core drilling techniques. Excavation services were provided by Dan J. Fischer Excavating, Inc. of Forest Grove, Oregon. All explorations were observed by a qualified member of NV5's staff. The approximate exploration locations are shown on Figure 2.

The exploration locations were determined by pacing from existing site features and should be considered accurate to the degree implied by the methods used.

SOIL AND ROCK SAMPLING

We collected representative samples of the various soils encountered during drilling for geotechnical laboratory testing. Samples were collected from the borings using 1½-inch-inside-diameter, split-spoon SPT samplers in general accordance with ASTM D1586. The samplers were driven into the soil with a 140-pound automatic trip hammer free-falling 30 inches. The samplers were driven a total distance of 18 inches. The number of blows required to drive the sampler the final 12 inches is recorded on the exploration logs, unless otherwise noted. The average efficiency of the automatic SPT hammer used by Western States Soil Conservation, Inc. was 82.2 percent. The calibration testing results are presented at the end of this appendix.

Rock was cored continuously using HQ core drilling methods in general accordance with ASTM D2113-99. Percent core recovery and RQD are noted on the exploration logs. The RQD is defined as the total length of all the intact core sections over 4 inches in length divided by the total length of the core run.

Representative grab samples of the soil observed in the test pits were collected from the walls or base of the test pits using the excavator bucket.

Sampling methods and intervals are shown on the exploration logs.

SOIL AND ROCK CLASSIFICATION

The soil and rock samples were classified in the field in accordance with the "Exploration Key" (Table A-1), "Soil Classification System" (Table A-2), and "Rock Classification System" (Table A-3), which are presented in this appendix. The exploration logs indicate the depths at which the soil characteristics change, although the change could be gradual. If the change occurred between sample locations, the depth was interpreted. Classifications are shown on the exploration logs.

INFILTRATION TESTING

Infiltration testing was conducted test pit TP-5 at depths of 2 and 3.5 feet BGS. The infiltration test at a depth of 2 feet BGS was conducted using the falling head method in a 6-inch-diameter standpipe under a head of approximately 14 inches. An open pit technique was used to conduct the test at a depth of 3.5 feet BGS under a head of 14 inches.

LABORATORY TESTING

We visually examined soil samples collected from the explorations to confirm field classifications. We also performed the following laboratory tests to evaluate the engineering properties of the soil.

MOISTURE CONTENT

We tested the natural moisture content of select soil samples in general accordance with ASTM D2216. The test results are presented in this appendix.

PARTICLE-SIZE ANALYSIS

We determined the fines content of a select soil sample in general accordance with ASTM D1140. The test results are presented in this appendix.

UNCONFINED COMPRESSION TESTS

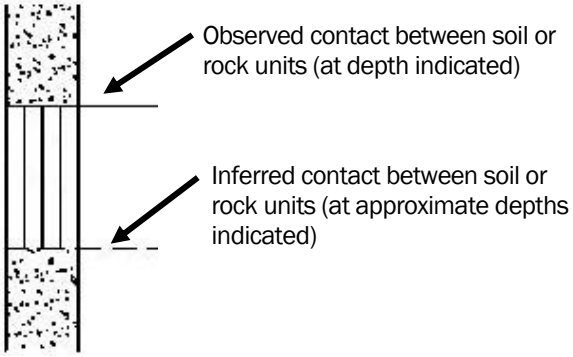
Unconfined compressive strength testing was conducted on several samples from the rock cores. The testing was completed in accordance with ASTM D2938 The test results are summarized in the table below.

Unconfined Compression Test Results

Boring	Depth (feet BGS)	Unconfined Compressive Strength (psi)
B-2	9.6	12,722
B-3	6.3	11,818
B-3	21	7,898

SYMBOL	SAMPLING DESCRIPTION
	Location of sample collected in general accordance with ASTM D1586 using Standard Penetration Test (SPT) with recovery
	Location of sample collected using thin-wall Shelby tube or Geoprobe® sampler in general accordance with ASTM D1587 with recovery
	Location of sample collected using Dames & Moore sampler and 300-pound hammer or pushed with recovery
	Location of sample collected using Dames & Moore sampler and 140-pound hammer or pushed with recovery
	Location of sample collected using 3-inch-outside diameter California split-spoon sampler and 140-pound hammer with recovery
	Location of grab sample
	Rock coring interval
	Water level during drilling
	Water level taken on date shown

Graphic Log of Soil and Rock Types



GEOTECHNICAL TESTING EXPLANATIONS

ATT	Atterberg Limits	P	Pushed Sample
CBR	California Bearing Ratio	PP	Pocket Penetrometer
CON	Consolidation	P200	Percent Passing U.S. Standard No. 200 Sieve
DD	Dry Density		
DS	Direct Shear	RES	Resilient Modulus
HYD	Hydrometer Gradation	SIEV	Sieve Gradation
MC	Moisture Content	TOR	Torvane
MD	Moisture-Density Relationship	UC	Unconfined Compressive Strength
NP	Non-Plastic	VS	Vane Shear
OC	Organic Content	kPa	Kilopascal

ENVIRONMENTAL TESTING EXPLANATIONS

CA	Sample Submitted for Chemical Analysis	ND	Not Detected
P	Pushed Sample	NS	No Visible Sheen
PID	Photoionization Detector Headspace Analysis	SS	Slight Sheen
		MS	Moderate Sheen
ppm	Parts per Million	HS	Heavy Sheen

RELATIVE DENSITY - COARSE-GRAINED SOIL

Relative Density	Standard Penetration Test (SPT) Resistance	Dames & Moore Sampler (140-pound hammer)	Dames & Moore Sampler (300-pound hammer)
Very loose	0 – 4	0 – 11	0 – 4
Loose	4 – 10	11 – 26	4 – 10
Medium dense	10 – 30	26 – 74	10 – 30
Dense	30 – 50	74 – 120	30 – 47
Very dense	More than 50	More than 120	More than 47

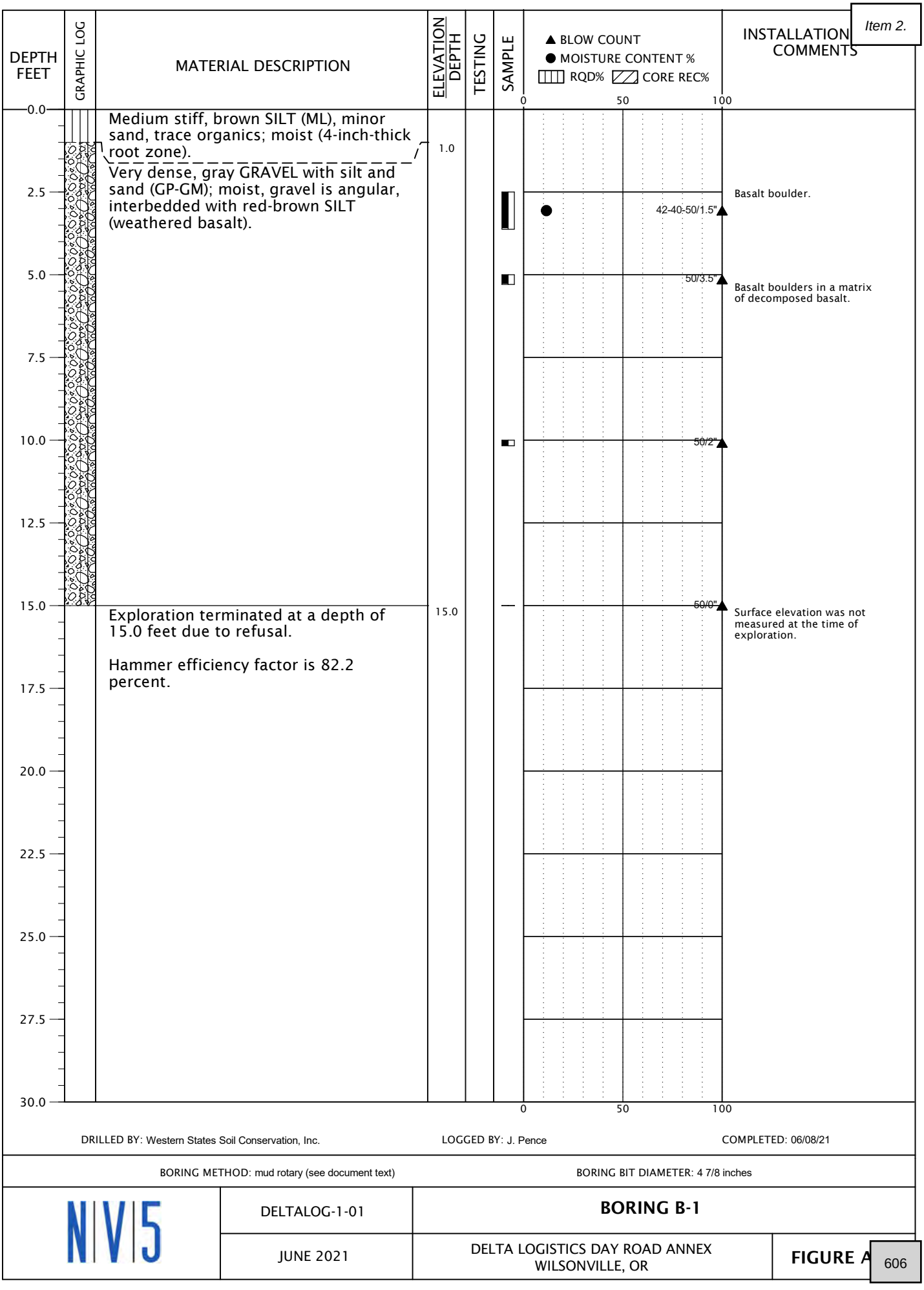
CONSISTENCY - FINE-GRAINED SOIL

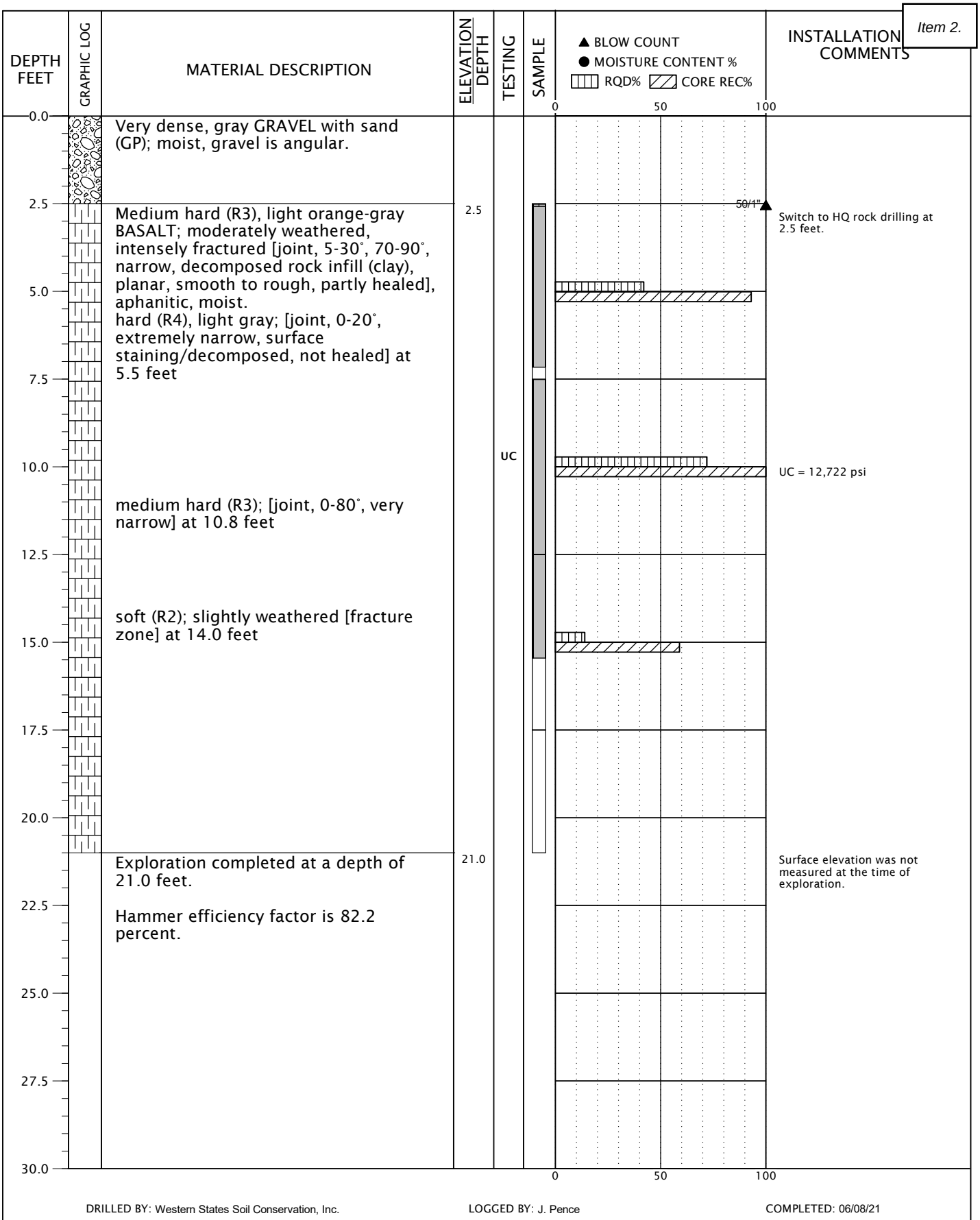
Consistency	Standard Penetration Test (SPT) Resistance	Dames & Moore Sampler (140-pound hammer)	Dames & Moore Sampler (300-pound hammer)	Unconfined Compressive Strength (tsf)
Very soft	Less than 2	Less than 3	Less than 2	Less than 0.25
Soft	2 – 4	3 – 6	2 – 5	0.25 – 0.50
Medium stiff	4 – 8	6 – 12	5 – 9	0.50 – 1.0
Stiff	8 – 15	12 – 25	9 – 19	1.0 – 2.0
Very stiff	15 – 30	25 – 65	19 – 31	2.0 – 4.0
Hard	More than 30	More than 65	More than 31	More than 4.0

PRIMARY SOIL DIVISIONS			GROUP SYMBOL	GROUP NAME
COARSE-GRAINED SOIL (more than 50% retained on No. 200 sieve)	GRAVEL (more than 50% of coarse fraction retained on No. 4 sieve)	CLEAN GRAVEL (< 5% fines)	GW or GP	GRAVEL
		GRAVEL WITH FINES (≥ 5% and ≤ 12% fines)	GW-GM or GP-GM	GRAVEL with silt
			GW-GC or GP-GC	GRAVEL with clay
		GRAVEL WITH FINES (> 12% fines)	GM	silty GRAVEL
			GC	clayey GRAVEL
			GC-GM	silty, clayey GRAVEL
	SAND (50% or more of coarse fraction passing No. 4 sieve)	CLEAN SAND (<5% fines)	SW or SP	SAND
		SAND WITH FINES (≥ 5% and ≤ 12% fines)	SW-SM or SP-SM	SAND with silt
			SW-SC or SP-SC	SAND with clay
		SAND WITH FINES (> 12% fines)	SM	silty SAND
			SC	clayey SAND
			SC-SM	silty, clayey SAND
FINE-GRAINED SOIL (50% or more passing No. 200 sieve)	SILT AND CLAY	Liquid limit less than 50	ML	SILT
			CL	CLAY
			CL-ML	silty CLAY
			OL	ORGANIC SILT or ORGANIC CLAY
		Liquid limit 50 or greater	MH	SILT
			CH	CLAY
			OH	ORGANIC SILT or ORGANIC CLAY
HIGHLY ORGANIC SOIL			PT	PEAT

MOISTURE CLASSIFICATION		ADDITIONAL CONSTITUENTS					
		Secondary granular components or other materials such as organics, man-made debris, etc.					
			Silt and Clay In:			Sand and Gravel In:	
Term	Field Test	Percent	Fine-Grained Soil	Coarse-Grained Soil	Percent	Fine-Grained Soil	Coarse-Grained Soil
dry	very low moisture, dry to touch						
moist	damp, without visible moisture	< 5	trace	trace	< 5	trace	trace
		5 – 12	minor	with	5 – 15	minor	minor
wet	visible free water, usually saturated	> 12	some	silty/clayey	15 – 30	with	with
					> 30	sandy/gravelly	Indicate %

HARDNESS	DESCRIPTION
Extremely soft (R0)	Indented by thumbnail
Very soft (R1)	Can be peeled by pocket knife or scratched with finger nail
Soft (R2)	Can be peeled by a pocket knife with difficulty
Medium hard (R3)	Can be scratched by knife or pick
Hard (R4)	Can be scratched with knife or pick only with difficulty
Very hard (R5)	Cannot be scratched with knife or sharp pick
WEATHERING	**DESCRIPTION**
Decomposed	Rock mass is completely decomposed
Predominantly decomposed	Rock mass is more than 50% decomposed
Moderately weathered	Rock mass is decomposed locally
Slightly weathered	Rock mass is generally fresh
Fresh	No discoloration in rock fabric
JOINT SPACING	**DESCRIPTION**
Very close	Less than 2 inches
Close	2 inches to 1 foot
Moderate close	1 foot to 3 feet
Wide	3 feet to 10 feet
Very wide	Greater than 10 feet
FRACTURING	**FRACTURE SPACING**
Very intensely fractured	Chips and fragments with a few scattered short core lengths
Intensely fractured	0.1 foot to 0.3 foot with scattered fragments intervals
Moderately fractured	0.3 foot to 1 foot with most lengths 0.6 foot
Slightly fractured	1 foot to 3 feet
Very slightly fractured	Greater than 3 feet
Unfractured	No fractures
HEALING	**DESCRIPTION**
Not healed	Discontinuity surface, fractured zone, sheared material or filling not re-cemented
Partly healed	Less than 50% of fractured or sheared material
Moderately healed	Greater than 50% of fractured or sheared material
Totally healed	All fragments bonded


DEPTH FEET
GRAPHIC LOG
MATERIAL DESCRIPTION
ELEVATION DEPTH
TESTING
SAMPLE
▲ BLOW COUNT
● MOISTURE CONTENT %
RQD% CORE REC%
0
50
100
INSTALLATION COMMENTS
0.0
2.5
5.0
7.5
10.0
12.5
15.0
17.5
20.0
22.5
25.0
27.5
30.0
Medium stiff, brown SILT (ML), minor sand, trace organics; moist (4-inch-thick root zone).
1.0
Very dense, gray GRAVEL with silt and sand (GP-GM); moist, gravel is angular, interbedded with red-brown SILT (weathered basalt).
Basalt boulder.
42-40-50/1.5"
50/3.5"
Basalt boulders in a matrix of decomposed basalt.
50/2"
50/0"
Surface elevation was not measured at the time of exploration.
Exploration terminated at a depth of 15.0 feet due to refusal.
15.0
Hammer efficiency factor is 82.2 percent.
DRILLED BY: Western States Soil Conservation, Inc.
LOGGED BY: J. Pence
COMPLETED: 06/08/21
BORING METHOD: mud rotary (see document text)
BORING BIT DIAMETER: 4 7/8 inches
N|V|5
DELTALOG-1-01
BORING B-1
JUNE 2021
DELTA LOGISTICS DAY ROAD ANNEX
WILSONVILLE, OR
FIGURE A
606
BORING LOG - NV5 - 1 PER PAGE DELTALOG-1-01-B1_3-TP1_9.GPJ GDI_NV5.GDT PRINT DATE: 6/30/21:KT



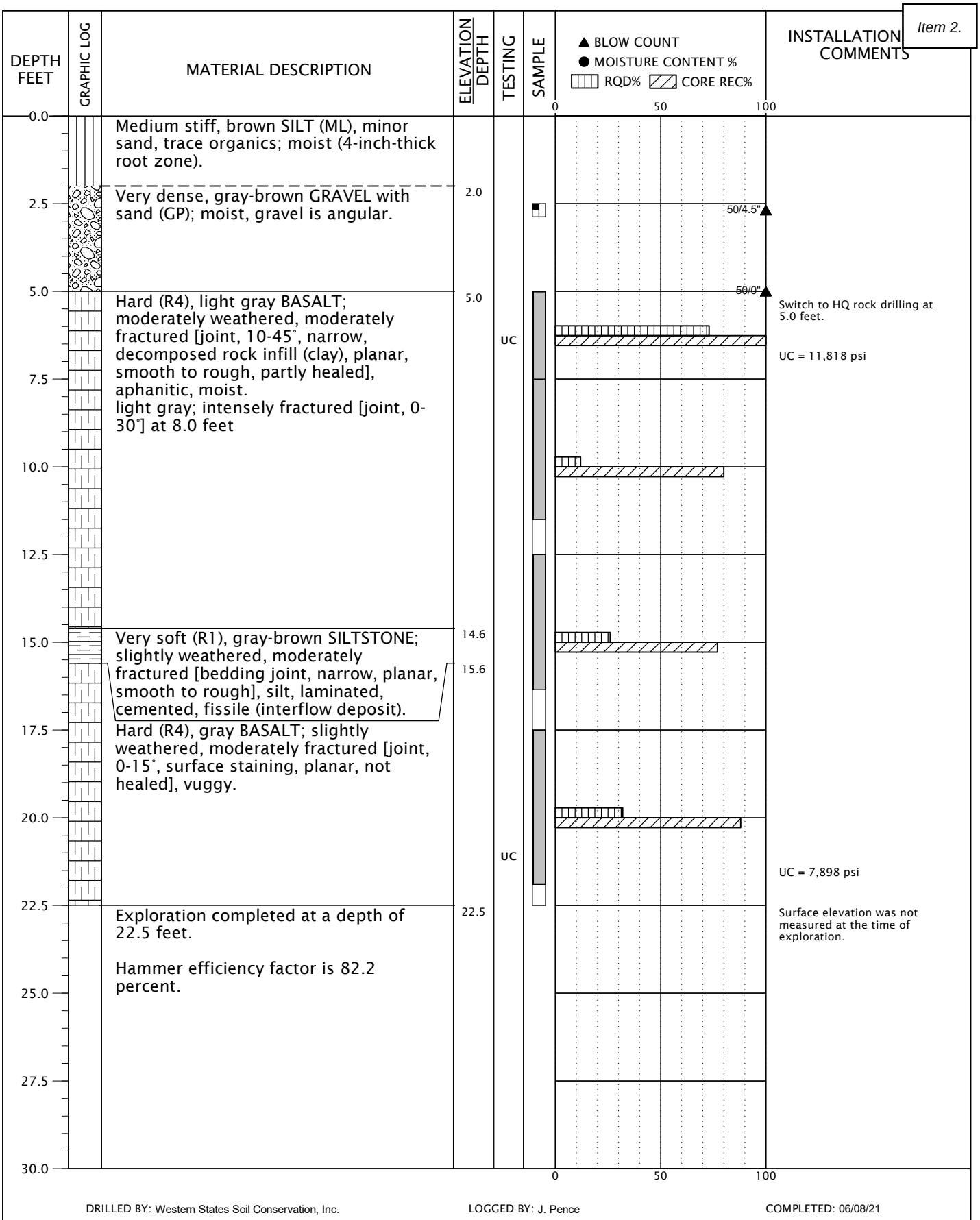
DRILLED BY: Western States Soil Conservation, Inc. LOGGED BY: J. Pence COMPLETED: 06/08/21

BORING METHOD: mud rotary and HQ core drilling (see document text) BORING BIT DIAMETER: 4 7/8 inches

N|V|5	DELTALOG-1-01	**BORING B-2**
	JUNE 2021	DELTA LOGISTICS DAY ROAD ANNEX WILSONVILLE, OR

FIGURE A

BORING LOG - NV5 - 1 PER PAGE DELTALOG-1-01-B1_3-TP1_9.GPJ GDI_NV5.GDT PRINT DATE: 6/30/21:KT



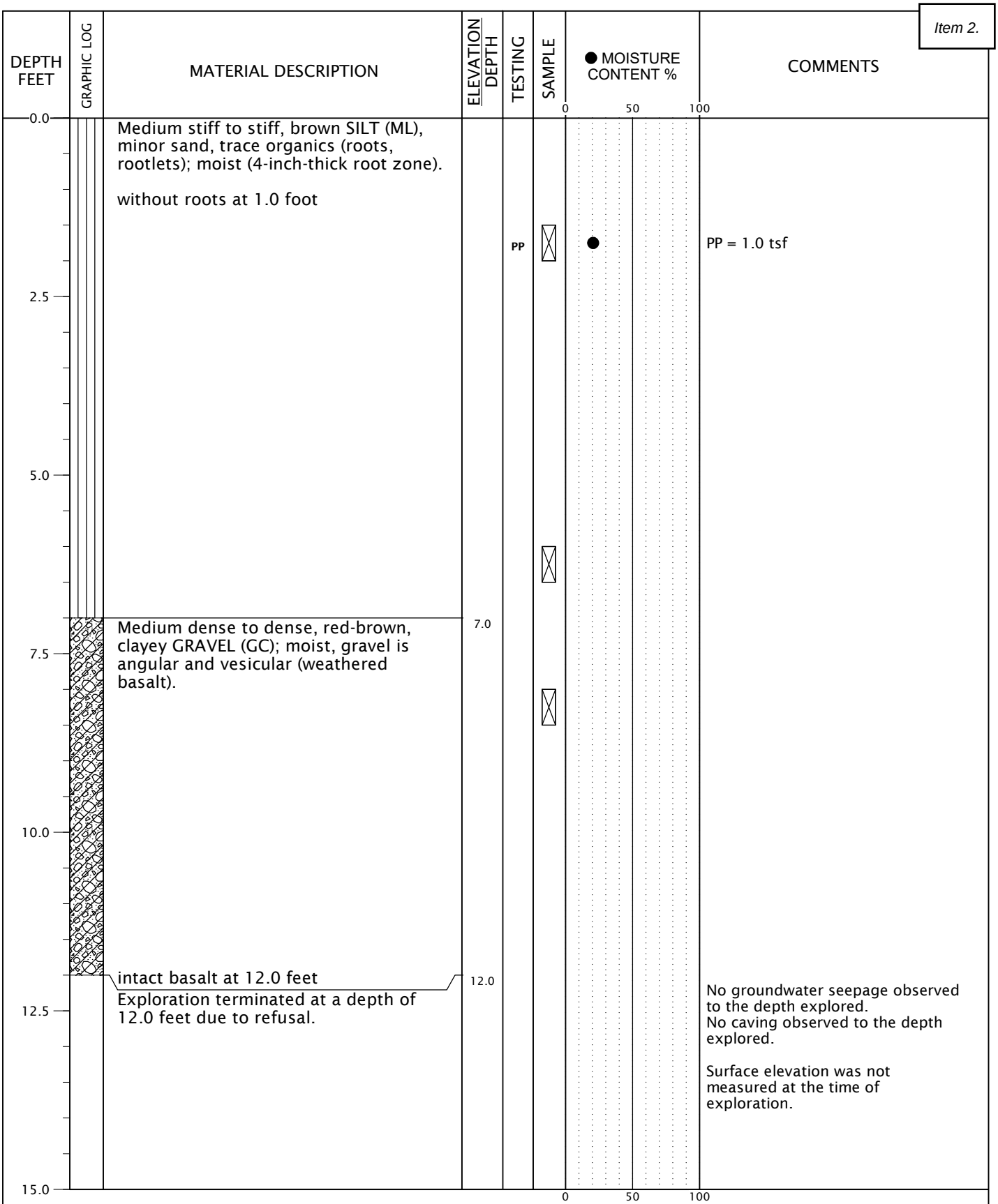
DRILLED BY: Western States Soil Conservation, Inc. LOGGED BY: J. Pence COMPLETED: 06/08/21

BORING METHOD: mud rotary and HQ core drilling (see document text) BORING BIT DIAMETER: 4 7/8 inches

N|V|5	DELTALOG-1-01	**BORING B-3**
	JUNE 2021	DELTA LOGISTICS DAY ROAD ANNEX WILSONVILLE, OR

FIGURE A

BORING LOG - NV5 - 1 PER PAGE DELTALOG-1-01-B1_3-TP1_9.GPJ GDI_NV5.GDT PRINT DATE: 6/30/21:KT



EXCAVATED BY: Dan J. Fischer Excavating, Inc.

LOGGED BY: J. Pence

COMPLETED: 06/07/21

EXCAVATION METHOD: backhoe (see document text)

N|V|5	DELTALOG-1-01	**TEST PIT TP-1**
	JUNE 2021	DELTA LOGISTICS DAY ROAD ANNEX WILSONVILLE, OR

FIGURE A

TEST PIT LOG - NV5 - 1 PER PAGE DELTALOG-1-01-B1_3-TP1_9.GPJ GDI_NV5.GDT PRINT DATE: 6/30/21 :KT

DEPTH FEET	MATERIAL DESCRIPTION	ELEVATION / DEPTH	TESTING	SAMPLE	MOISTURE CONTENT % (0 50 100)	COMMENTS
0.0	Medium stiff, brown SILT (ML), minor sand, trace organics; moist, sand is fine (4-inch-thick root zone).					
2.5			PP	☒		PP = 1.5 tsf
5.0	intact gray basalt at 5.0 feet Exploration terminated at a depth of 5.0 feet due to refusal.	5.0				No groundwater seepage observed to the depth explored. No caving observed to the depth explored. Surface elevation was not measured at the time of exploration.
7.5						
10.0						
12.5						
15.0						

EXCAVATED BY: Dan J. Fischer Excavating, Inc. LOGGED BY: J. Pence COMPLETED: 06/07/21

EXCAVATION METHOD: backhoe (see document text)

NV5

DELTALOG-1-01

TEST PIT TP-2

JUNE 2021

DELTA LOGISTICS DAY ROAD ANNEX
WILSONVILLE, OR

FIGURE A

TEST PIT LOG - NV5 - 1 PER PAGE DELTALOG-1-01-B1_3-TP1_9.GPJ GDI_NV5.GDT PRINT DATE: 6/30/21 :KT

DEPTH FEET	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION / DEPTH	TESTING	SAMPLE	● MOISTURE CONTENT % (0 50 100)	COMMENTS
0.0		Medium stiff, brown SILT (ML), minor sand, trace organics; moist (3-inch-thick root zone).		PP			PP = 13.5 tsf
		Medium dense to dense, red-brown, clayey GRAVEL (GC); moist, gravel is angular (weathered basalt).	2.0				
2.5							
		intact gray basalt at 4.0 feet	4.0				
		Exploration terminated at a depth of 4.0 feet due to refusal.					No groundwater seepage observed to the depth explored. No caving observed to the depth explored. Surface elevation was not measured at the time of exploration.
5.0							
7.5							
10.0							
12.5							
15.0							

EXCAVATED BY: Dan J. Fischer Excavating, Inc. LOGGED BY: J. Pence COMPLETED: 06/07/21

EXCAVATION METHOD: backhoe (see document text)

TEST PIT LOG - NV5 - 1 PER PAGE DELTALOG-1-01-B1_3-TP1_9.GPJ GDI_NV5.GDT PRINT DATE: 6/30/21 :KT

NV5

DELTALOG-1-01

TEST PIT TP-3

JUNE 2021

DELTA LOGISTICS DAY ROAD ANNEX
WILSONVILLE, OR

FIGURE A

DEPTH FEET	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION / DEPTH	TESTING	SAMPLE	MOISTURE CONTENT % (0 50 100)	COMMENTS
0.0		Medium stiff to stiff, brown SILT (ML), minor sand, trace organics; moist (4-inch-thick root zone).		PP			PP = 1.0 tsf Basalt becomes more intact with depth.
2.5		Medium dense to dense, red-brown, clayey GRAVEL (GC); moist, gravel is angular and vesicular (weathered basalt).	2.0				
5.0		Exploration terminated at a depth of 5.0 feet due to refusal.	5.0				No groundwater seepage observed to the depth explored. No caving observed to the depth explored. Surface elevation was not measured at the time of exploration.
7.5							
10.0							
12.5							
15.0							

EXCAVATED BY: Dan J. Fischer Excavating, Inc. LOGGED BY: J. Pence COMPLETED: 06/07/21

EXCAVATION METHOD: backhoe (see document text)

NV5	DELTALOG-1-01	**TEST PIT TP-4**
	JUNE 2021	DELTA LOGISTICS DAY ROAD ANNEX WILSONVILLE, OR

FIGURE A

TEST PIT LOG - NV5 - 1 PER PAGE DELTALOG-1-01-B1_3-TP1_9.GPJ GDI_NV5.GDT PRINT DATE: 6/30/21 :KT

DEPTH FEET	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION / DEPTH	TESTING	SAMPLE	● MOISTURE CONTENT % (0 50 100)	COMMENTS
0.0		Medium stiff to stiff, brown SILT (ML), minor sand, trace organics; moist (4-inch-thick root zone).					
2.5				P200 PP	⊠	●	Infiltration test at 2.0 feet. P200 = 86% PP = 1.0 tsf
		Medium dense to dense, red-brown, clayey GRAVEL (GC); moist, gravel is angular and vesicular (weathered basalt).	3.0		⊠		Infiltration test at 3.5 feet.
		Exploration terminated at a depth of 3.5 feet due to refusal.	3.5				No groundwater seepage observed to the depth explored. No caving observed to the depth explored. Surface elevation was not measured at the time of exploration.
5.0							
7.5							
10.0							
12.5							
15.0							

EXCAVATED BY: Dan J. Fischer Excavating, Inc. LOGGED BY: J. Pence COMPLETED: 06/07/21

EXCAVATION METHOD: backhoe (see document text)

N|V|5	DELTALOG-1-01	**TEST PIT TP-5**
	JUNE 2021	DELTA LOGISTICS DAY ROAD ANNEX WILSONVILLE, OR

FIGURE A

TEST PIT LOG - NV5 - 1 PER PAGE DELTALOG-1-01-B1_3-TP1_9.GPJ GDI_NV5.GDT PRINT DATE: 6/30/21 :KT

DEPTH FEET	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION / DEPTH	TESTING	SAMPLE	● MOISTURE CONTENT % (0 50 100)	COMMENTS
0.0		GRAVEL - **FILL**.					
		Medium stiff to stiff, brown SILT (ML), minor sand, trace organics (roots); moist.	0.5				
		without roots at 1.0 foot		PP			PP = 1.0 tsf
2.5		Medium dense to dense, gray GRAVEL with sand (GP); dry to moist, gravel is angular (weathered basalt).	3.0				
		intact gray basalt at 4.0 feet	3.5				No groundwater seepage observed to the depth explored. No caving observed to the depth explored.
		Exploration terminated at a depth of 3.5 feet due to refusal.					Surface elevation was not measured at the time of exploration.
5.0							
7.5							
10.0							
12.5							
15.0							

EXCAVATED BY: Dan J. Fischer Excavating, Inc. LOGGED BY: J. Pence COMPLETED: 06/07/21

EXCAVATION METHOD: backhoe (see document text)

N|V|5	DELTALOG-1-01	**TEST PIT TP-6**
	JUNE 2021	DELTA LOGISTICS DAY ROAD ANNEX WILSONVILLE, OR

FIGURE A

TEST PIT LOG - NV5 - 1 PER PAGE DELTALOG-1-01-B1_3-TP1_9.GPJ GDI_NV5.GDT PRINT DATE: 6/30/21 :KT

DEPTH FEET	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION / DEPTH	TESTING	SAMPLE	MOISTURE CONTENT % (0 – 50 – 100)	COMMENTS
0.0		Medium stiff, brown SILT with sand (ML), trace organics (roots, rootlets); moist, sand is fine (4-inch-thick root zone).					
		without roots at 2.0 feet					
2.5		Medium dense to dense, brown-gray, silty GRAVEL (GM), minor sand; moist (weathered basalt).	2.5				
		intact gray basalt at 4.0 feet	4.0				
		Exploration terminated at a depth of 4.0 feet due to refusal.					No groundwater seepage observed to the depth explored. No caving observed to the depth explored. Surface elevation was not measured at the time of exploration.
5.0							
7.5							
10.0							
12.5							
15.0							

EXCAVATED BY: Dan J. Fischer Excavating, Inc. LOGGED BY: J. Pence COMPLETED: 06/07/21

EXCAVATION METHOD: backhoe (see document text)

TEST PIT LOG - NV5 - 1 PER PAGE DELTALOG-1-01-B1_3-TP1_9.GPJ GDI_NV5.GDT PRINT DATE: 6/30/21 :KT

NV5

DELTALOG-1-01

TEST PIT TP-7

JUNE 2021

DELTA LOGISTICS DAY ROAD ANNEX
WILSONVILLE, OR

FIGURE A-

DEPTH FEET	MATERIAL DESCRIPTION	ELEVATION / DEPTH	TESTING	SAMPLE	MOISTURE CONTENT % (0 – 50 – 100)	COMMENTS
0.0	Medium stiff, brown SILT (ML), minor sand, trace organics (roots); moist (4-inch-thick root zone).		PP			PP = 0.75 tsf
	without roots at 2.0 feet					
2.5			PP			PP = 1.5 tsf
	Dense, red-brown, silty GRAVEL (GM), minor sand; moist, gravel is angular (weathered basalt).	4.0				
5.0						
	Dense, gray GRAVEL (GP), minor sand, trace silt; moist, gravel is angular (weathered basalt).	6.0				
7.5						Moderate groundwater seepage observed at 8.0 feet.
	intact gray basalt at 8.5 feet	8.5				No caving observed to the depth explored.
	Exploration terminated at a depth of 8.5 feet due to refusal.					Surface elevation was not measured at the time of exploration.
10.0						
12.5						
15.0						

EXCAVATED BY: Dan J. Fischer Excavating, Inc. LOGGED BY: J. Pence COMPLETED: 06/07/21

EXCAVATION METHOD: backhoe (see document text)

NV5

DELTALOG-1-01

TEST PIT TP-8

JUNE 2021

DELTA LOGISTICS DAY ROAD ANNEX
WILSONVILLE, OR

FIGURE A-

TEST PIT LOG - NV5 - 1 PER PAGE DELTALOG-1-01-B1_3-TP1_9.GPJ GDI_NV5.GDT PRINT DATE: 6/30/21 :KT

DEPTH FEET	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION / DEPTH	TESTING	SAMPLE	● MOISTURE CONTENT % (0 – 50 – 100)	COMMENTS
0.0		Medium stiff, brown SILT (ML), minor sand, trace organics (roots, rootlets); moist (4-inch-thick root zone).					
2.5		basalt at 3.0 feet	3.0				
		Exploration terminated at a depth of 3.0 feet due to refusal.					No groundwater seepage observed to the depth explored. No caving observed to the depth explored. Surface elevation was not measured at the time of exploration.
5.0							
7.5							
10.0							
12.5							
15.0							

EXCAVATED BY: Dan J. Fischer Excavating, Inc. LOGGED BY: J. Pence COMPLETED: 06/07/21

EXCAVATION METHOD: backhoe (see document text)

NV5

DELTALOG-1-01

TEST PIT TP-9

JUNE 2021

DELTA LOGISTICS DAY ROAD ANNEX
WILSONVILLE, OR

FIGURE A-

TEST PIT LOG - NV5 - 1 PER PAGE DELTALOG-1-01-B1_3-TP1_9.GPJ GDI_NV5.GDT PRINT DATE: 6/30/21 :KT

SAMPLE INFORMATION			MOISTURE CONTENT (PERCENT)	DRY DENSITY (PCF)	SIEVE			ATTERBERG LIMITS		
EXPLORATION NUMBER	SAMPLE DEPTH (FEET)	ELEVATION (FEET)			GRAVEL (PERCENT)	SAND (PERCENT)	P200 (PERCENT)	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX
B-1	2.5		11							
TP-1	1.5		21							
TP-5	2.0		21				86			
TP-7	1.0		26							

BORING B-2, CORE RUN 1, 2.5 TO 7.5 FEET BGS.

BORING B-2, CORE RUN 2, 7.5 TO 12.5 FEET BGS.

BORING B-2, CORE RUN 3, 12.5 TO 17.5 FEET BGS.

BORING B-3, CORE RUN 1, 5 TO 7.5 FEET BGS.

BORING B-3, CORE RUN 2, 7.5 TO 12.5 FEET BGS.

BORING B-3, CORE RUN 3, 12.5 TO 17.5 FEET BGS.

BORING B-3, CORE RUN 4, 17.5 TO 22.5 FEET BGS.

Pile Dynamics, Inc.
SPT Analyzer Results

RIG #8
PDA-S Ver. 2018.30 - Printed: 4/15/2020

Summary of SPT Test Results

Project: WSSC-8-05, Test Date: 4/13/2020

EMX: Maximum Energy — ETR: Energy Transfer Ratio - Rated

Start Depth ft	Final Depth ft	N Value	N60 Value	Average EMX ft-lb	Average ETR %
15.00	16.50	**8**	**10**	291.65	83.3
17.50	19.00	**15**	**20**	278.80	79.7
20.00	21.50	**18**	**24**	290.63	83.0
22.50	24.00	**15**	**20**	304.84	87.1
25.00	26.50	**11**	**15**	269.66	77.0
			Overall Average Values:	287.84	82.2
			Standard Deviation:	38.44	11.0
			Overall Maximum Value:	327.58	93.6
			Overall Minimum Value:	0.10	0.0

ADDENDUM TRANSMITTAL

To:	Igor Nichiporchik	From:	Jeff Tucker and Brett Shipton
Company:	Delta Logistics, Inc.	Date:	November 19, 2021
Address:	9835 Commerce Circle Wilsonville, OR 97070		

cc:	Lee Leighton, Mackenzie (via email only)

Project No.:	DeltaLog-1-01
RE:	Delta Logistics Day Road Annex

Original File Name	Date	Document Title
DeltaLog-1-01-063021-geor	6/30/21	Report of Geotechnical Engineering Services; Delta Logistics Day Road Annex; SW Day Road; Wilsonville, Oregon

Addendum Number	Date	Description
1	11/19/21	Preliminary Soil Nail Wall Design (attached)

sn

Attachment

One copy submitted (via email only)

Document ID: DeltaLog-1-01-111921-geoat-1.docx

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November 19, 2021

Delta Logistics, Inc.
9835 Commerce Circle
Wilsonville, OR 97070

Attention: Igor Nichiporchik

Addendum 1
Preliminary Soil Nail Wall Design
Delta Logistics Day Road Annex
SW Day Road
Wilsonville, Oregon
Project: DeltaLog-1-01

INTRODUCTION

NV5 is pleased to provide this addendum to our geotechnical report for the Delta Logistics Day Road Annex project located along SW Day Road between SW Grahams Ferry Road and SW Boones Ferry Road in Wilsonville, Oregon.[1]

SOIL NAIL WALL

A soil nail wall is proposed to support the cut along the eastern property line for the project. The soil in this area will include overburden silt underlain by variably weathered and decomposed basalt rock. The proposed soil nail wall is 18 feet tall. We expect that the shotcrete will be approximately 9 inches thick.

Our analysis of the wall in this area primarily focused on global stability but also evaluated the preliminary nail spacing for the wall. The soil nail wall design parameters used in our analysis are summarized in Table 1. The soil parameters were based on our prior services at the site.

[1] NV5, 2021. *Report of Geotechnical Engineering Services; Delta Logistics Day Road Annex; SW Day Road; Wilsonville, Oregon,* dated June 30, 2021. Project: DeltaLog-1-01

Table 1. Soil Nail Wall Design Parameters

Material	Soil Unit Weight (pcf)	Soil Cohesion Static (psf)	Soil Cohesion Seismic (psf)	Soil Friction Static (degrees)	Soil Friction Seismic (degrees)	Ultimate Bond Strength (psf)
Silt	110	0	0	29	29	1,300
Soft to Hard Basalt	150	0	0	45	45	7,500

pcf: pounds per cubic foot
psf: pounds per square foot

We used the computer program SnailPlus 2021 to perform AASHTO load and resistance factor design analyses for the soil nail wall using the soil parameters summarized in Table 1. Our analysis assumes the wall is battered at an inclination of 1H:10V with horizontal and vertical soil nail spacings of 4 feet and soil nail lengths of 8 feet. The results of our analysis are presented in the Attachment. We recommend that final design be included in a bidder-design submittal.

The ultimate pullout resistance used in design is based on published values by Federal Highway Administration (FHWA) and AASHTO and should be considered preliminary. We recommend that verification pullout tests on sacrificial anchors be performed to establish that anchor lengths and capacities are consistent with the contractor's chosen method of installation. We recommend a minimum of two verification tests be performed in each anticipated soil type. Performance tests should be performed to 200 percent of the design load and in accordance with the guidelines provided in Publication No. FHWA-NHI-14-007, and the minimum length of soil or rock nails should be 8 feet to assure grouting of the entire bonded length and to provide sufficient ground cover above the anchorage zone.

In addition to verification pullout tests, proof testing should be performed on a minimum of 5 percent of the production nails in each nail row or a minimum of one nail per row. The locations shall be designated by the engineer. Proof testing should be performed in accordance with the guidelines provided in Publication No. FHWA-NHI-14-007.

We recommend that soil nail walls be constructed with sheet drains behind the walls to attain minimum drainage coverage of 30 to 50 percent. If water seepage is encountered during wall construction, we recommend 100 percent drainage coverage of the water seepage zone. The drainage pipe should be sloped and routed to drain toward a suitable discharge.

We recommend that all soil nails include the appropriate corrosion protection for permanent walls as required by county and city agencies. During installation, centralizers must be used to ensure a minimum thickness of grout completely covers the nail. Centralizers should be installed at a maximum spacing of 8 feet and a minimum distance of 1.5 feet from both ends of the nails.

LIMITATIONS

We have prepared this addendum for use by Delta Logistics, Inc. and members of the design and construction teams for the proposed soil nail wall. The data and addendum can be used for bidding or estimating purposes, but our addendum, conclusions, and interpretations should not be construed as warranty of the subsurface conditions and are not applicable to other nearby building sites.

Explorations indicate soil conditions only at specific locations and only to the depths penetrated. They do not necessarily reflect soil strata or water level variations that may exist between exploration locations. If subsurface conditions differing from those described are noted during the course of excavation and construction, re-evaluation will be necessary.

If there are changes in the site grades or location, configuration, design loads, or type of construction, the conclusions and recommendations presented may not be applicable. If design changes are made, we request that we be retained to review our conclusions and recommendations and to provide a written modification or verification.

The scope does not include services related to construction safety precautions, and our recommendations are not intended to direct the contractor's methods, techniques, sequences, or procedures, except as specifically described in this addendum for consideration in design.

Within the limitations of scope, schedule, and budget, our services have been executed in accordance with generally accepted practices in this area at the time this addendum was prepared. No warranty, express or implied, should be understood.

♦ ♦ ♦

We appreciate the opportunity to be of service to you. Please call if you have questions concerning this addendum or if we can provide additional services.

Sincerely,

NV5

Jeffery D. Tucker, P.E., G.E.
Principal Engineer

Brett A. Shipton, P.E., G.E.
Principal Engineer

cc: Lee Leighton, Mackenzie (via email only)

JDT:BAS:sn
Attachments
One copy submitted (via email only)
Document ID: DeltaLog-1-01-111921-geoa-1.docx
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ATTACHMENT

ATTACHMENT

PRELIMINARY SOIL NAIL WALL ANALYSIS

This attachment provides the output of our preliminary soil nail wall analysis.

SnailPlus 2021: Report Output

Copyright@2009 - 2020 Deep Excavation LLC: www.deepexcavation.com A program for the evaluation of soil nail walls. Deep Excavation LLC, Astoria, New York, www.deepexcavation.com

Project: Delta Logistics - Soil Nail Wall

Company: NV5
Prepared by engineer: JDT
File number: 1
Time: 10/28/2021 5:09:04 PM

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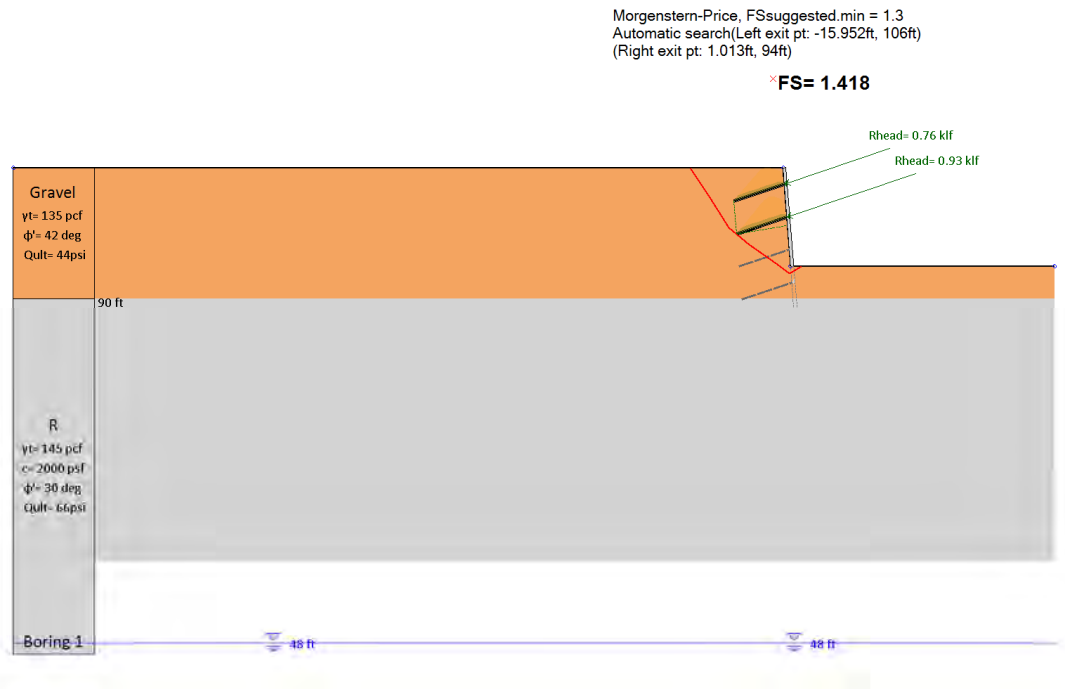
File: C:\Users\jtucker\Documents\1.5H-1V slope - batter.SNLP

Quick analysis summary for design section: Base model

Base model



Stage	Calculation	FS	Fmax.Nails	Fmax.Nails	Fmax.Mob	STR Check	STR Check	STR Chec	Max.	Min.
Section	Status	Slope	(k)	Head (k)	(k)	Nails	Plates	Facing	Reinf.	Reinf.
Exc. 98ft	Calculated	1.561	3.58	2.52	2.84	0.109	0.105	0.054	No	Yes
Exc. 94ft	Calculated	1.418	5.29	3.73	4.87	0.161	0.153	0.078	No	Yes
Exc. 90ft	Calculated	1.766	6.76	4.77	6.27	0.205	0.195	0.099	No	Yes
Final stage	Calculated	1.921	6.76	4.77	6.27	0.205	0.195	0.099	No	Yes

Fmax Nails = Maximum axial nail force in analysis.
Fmax Nail@head = Maximum axial nail force at facing (To).
Fmax.Mob = Maximum mob axial nail force from To/Tmax ratio Clouterre (Tmax)

STR Nails= Stress check for nails, Design load/Design Capacity (maintain below 1 for good design).
STR Plates= Stress check for nail plates (punching and bending).
STR Facing= Stress check for facing, Design load/Design Capacity.

Table: Analysis summary for all stages, Part 1

Stage	Analyzed	FS min	FS req. code	Type	Xc (ft)	Zc (ft)	R (ft)	Active (deg)	Passive (deg)
Exc. 98ft	Yes	1.561	1.3	Automatic	Auto	Auto	N/A	N/A	N/A
Exc. 94ft	Yes	1.418	1.3	Automatic	Auto	Auto	N/A	N/A	N/A
Exc. 90ft	Yes	1.766	1.3	Automatic	Auto	Auto	N/A	N/A	N/A
Final stage	Yes	1.921	1.5	Automatic	Auto	Auto	N/A	N/A	N/A

Table: Analysis summary for all stages, Part 2

Point 1	Point 2	Crack (ft)	Design Appro	Design Case	Nail force (k)	Nail check	Support Mre	Wall Mres(k-	MEQ seismic(
xL (-17.8 to -	xR (-1 to 1.5)	N/A		Service Facto	30.16	0.109	N/A	N/A	N/A
xL (-25.8 to -	xR (-0.6 to 1.	N/A		Service Facto	28.79	0.161	N/A	N/A	N/A
xL (-33.8 to -	xR (-0.2 to 2.	N/A		Service Facto	27.72	0.205	N/A	N/A	N/A
xL (-37.8 to -	xR (0 to 2.5)	N/A		Service Facto	32.92	0.172	N/A	N/A	N/A

Table: Basic analysis assumptions last stage

Stage conditions	Permanent structure long term
Min required FS	1.5
Method	Morgenstern-Price
Nail methods	Available shear
Surface search	Automatic
Left limits	-37.8ft to -2ft
Right limits	0ft to 2.5ft
Number of points	5
Min. slice width	3ft
Tolerance	1%
Force Tolerance	10%
Initial FS0	1
MP interslice factor m	1
MP interslice factor v	1
MP initial Lamda.0	0
Soil nail analysis	Same settings on all nails
Nail stability	External-Internal
Nail shear	Ignored
FS on nail STR strength	1.8
FS on nail pullout	2
FS on facing bending	1.5
FS on facing punching	1.5
FS on bolts	1.7
FS on bearing	3

Table: Nails & max mobilized head forces

Name	Nail	α	x	El.	Lfix	Lfree	Space	Fhead	Fhead
-	Section	deg	(ft)	(ft)	(ft)	(ft)	(ft)	(k/ft)	(k)
N0	0: N1	15	-1.6	104	8	0	4	1.0089	4.04
N1	0: N1	15	-1.2	100	8	0	4	1.0089	4.04
N2	0: N1	15	-0.8	96	8	0	4	1.192	4.77
N3	0: N1	15	-0.4	92	8	0	4	0.753	3.01

Fhead= Mobilized force at nail head (facing), determined from pressures at facing.

Table: Surface point coordinates for last stage

Point	x (ft)	El. (ft)
1	-120	106
2	-1.8	106
3	0	88
4	40	88

Soil type property data

Name	γtot	γdry	Φ'	c'	Su	qBond	Color
	(pcf)	(pcf)	(deg)	(psf)	(psf)	(psi)	
Gravel	135	125	42	0	N/A	44	
R	145	140	30	2000	N/A	66	

γtot = Total unit weight below water table
γdry = Bulk unit weight above water table
c' = Effective cohesion (in drained state for clays)
Φ' = Effective friction (in drained state for clays)
Su = Undrained shear strength (for clays in undrained condition)
qBond = Ultimate bond resistance for soil nails

Name: Boring 1, pos: (50, 0)

Top elev.	Soil type	OCR	Ko
106	Gravel	1	0.33
90	R	1	0.5

Slope stability assumptions: Exc. 98ft

Table: Basic analysis assumptions last stage

Stage conditions	Permanent structure long term
Min required FS	1.5
Method	Morgenstern-Price
Nail methods	Available shear
Surface search	Automatic
Left limits	-37.8ft to -2ft
Right limits	0ft to 2.5ft
Number of points	5
Min. slice width	3ft
Tolerance	1%
Force Tolerance	10%
Initial FS0	1
MP interslice factor m	1
MP interslice factor v	1
MP initial Lamda.0	0
Soil nail analysis	Same settings on all nails
Nail stability	External-Internal
Nail shear	Ignored
FS on nail STR strength	1.8
FS on nail pullout	2
FS on facing bending	1.5
FS on facing punching	1.5
FS on bolts	1.7
FS on bearing	3

Maximum number of Iterations = 100, Tolerance = 0.01%
Maximum slice width = 3 ft
Analysis performed with automatic search, with 5 points.
Left search limits: xLmin= -17.8ft, xLmax= -3.8ft
Right search limits: xRmin= -1ft, xRmax= 1.5ft
Initial search grid: DXi= 0.5ft, DYi= 0.5ft
Force tolerance: 10%
Mobilized soil nail axial force distribution calculated with back analysis for FS=1.0
  Soil nail mobilization interaction factor Imob= 0.25
  Imob= 0 means that FX.mobilized = FX.nail for FS=1.0, Imob= 1 means that FX.mobilized = FX.nail ultimate
  Minimum soil nail mobilization factor SNmin.mob = 0
  Fx.mob = Fx(FS=1.0) + Imob x (Fx.ULT -Fx(FS=1.0)) >= SNmin.mob x Fx.ULT
Global mode parameters applied for slope stability analysis.
  Soil nail stability considers both external and internal stability (punching through facing).
  Soil nail shear is ignored in the analysis.

Slope stability assumptions: Exc. 94ft

Table: Basic analysis assumptions last stage

Stage conditions	Permanent structure long term
Min required FS	1.5
Method	Morgenstern-Price
Nail methods	Available shear
Surface search	Automatic
Left limits	-37.8ft to -2ft
Right limits	0ft to 2.5ft
Number of points	5
Min. slice width	3ft
Tolerance	1%
Force Tolerance	10%
Initial FS0	1
MP interslice factor m	1
MP interslice factor v	1
MP initial Lamda.0	0
Soil nail analysis	Same settings on all nails
Nail stability	External-Internal
Nail shear	Ignored
FS on nail STR strength	1.8
FS on nail pullout	2
FS on facing bending	1.5
FS on facing punching	1.5
FS on bolts	1.7
FS on bearing	3

Maximum number of Iterations = 100, Tolerance = 0.01%
Maximum slice width = 3 ft
Analysis performed with automatic search, with 5 points.
Left search limits: xLmin= -25.8ft, xLmax= -4.8ft
Right search limits: xRmin= -0.6ft, xRmax= 1.9ft
Initial search grid: DXi= 0.5ft, DYi= 0.5ft
Force tolerance: 10%
Mobilized soil nail axial force distribution calculated with back analysis for FS=1.0
  Soil nail mobilization interaction factor Imob= 0.25
  Imob= 0 means that FX.mobilized = FX.nail for FS=1.0, Imob= 1 means that FX.mobilized = FX.nail ultimate
  Minimum soil nail mobilization factor SNmin.mob = 0
  Fx.mob = Fx(FS=1.0) + Imob x (Fx.ULT -Fx(FS=1.0)) >= SNmin.mob x Fx.ULT
Global mode parameters applied for slope stability analysis.
  Soil nail stability considers both external and internal stability (punching through facing).
  Soil nail shear is ignored in the analysis.

Slope stability assumptions: Exc. 90ft

Table: Basic analysis assumptions last stage

Stage conditions	Permanent structure long term
Min required FS	1.5
Method	Morgenstern-Price
Nail methods	Available shear
Surface search	Automatic
Left limits	-37.8ft to -2ft
Right limits	0ft to 2.5ft
Number of points	5
Min. slice width	3ft
Tolerance	1%
Force Tolerance	10%
Initial FS0	1
MP interslice factor m	1
MP interslice factor v	1
MP initial Lamda.0	0
Soil nail analysis	Same settings on all nails
Nail stability	External-Internal
Nail shear	Ignored
FS on nail STR strength	1.8
FS on nail pullout	2
FS on facing bending	1.5
FS on facing punching	1.5
FS on bolts	1.7
FS on bearing	3

Maximum number of Iterations = 100, Tolerance = 0.01%
Maximum slice width = 3 ft
Analysis performed with automatic search, with 5 points.
Left search limits: xLmin= -33.8ft, xLmax= -5.8ft
Right search limits: xRmin= -0.2ft, xRmax= 2.3ft
Initial search grid: DXi= 0.5ft, DYi= 0.5ft
Force tolerance: 10%
Mobilized soil nail axial force distribution calculated with back analysis for FS=1.0
  Soil nail mobilization interaction factor Imob= 0.25
  Imob= 0 means that FX.mobilized = FX.nail for FS=1.0, Imob= 1 means that FX.mobilized = FX.nail ultimate
  Minimum soil nail mobilization factor SNmin.mob = 0
  Fx.mob = Fx(FS=1.0) + Imob x (Fx.ULT -Fx(FS=1.0)) >= SNmin.mob x Fx.ULT
Global mode parameters applied for slope stability analysis.
  Soil nail stability considers both external and internal stability (punching through facing).
  Soil nail shear is ignored in the analysis.

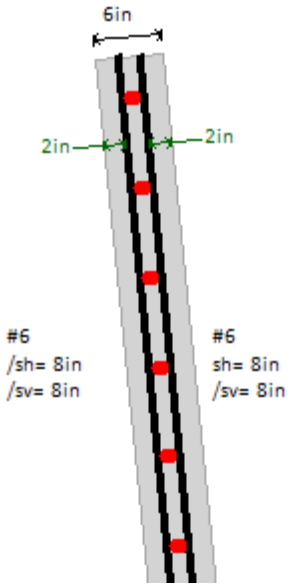
Slope stability assumptions: Final stage

Table: Basic analysis assumptions last stage

Stage conditions	Permanent structure long term
Min required FS	1.5
Method	Morgenstern-Price
Nail methods	Available shear
Surface search	Automatic
Left limits	-37.8ft to -2ft
Right limits	0ft to 2.5ft
Number of points	5
Min. slice width	3ft
Tolerance	1%
Force Tolerance	10%
Initial FS0	1
MP interslice factor m	1
MP interslice factor v	1
MP initial Lamda.0	0
Soil nail analysis	Same settings on all nails
Nail stability	External-Internal
Nail shear	Ignored
FS on nail STR strength	1.8
FS on nail pullout	2
FS on facing bending	1.5
FS on facing punching	1.5
FS on bolts	1.7
FS on bearing	3

Maximum number of Iterations = 100, Tolerance = 0.01%
Maximum slice width = 3 ft
Analysis performed with automatic search, with 5 points.
Left search limits: xLmin= -37.8ft, xLmax= -2ft
Right search limits: xRmin= 0ft, xRmax= 2.5ft
Initial search grid: DXi= 0.5ft, DYi= 0.5ft
Force tolerance: 10%
Mobilized soil nail axial force distribution calculated with back analysis for FS=1.0
  Soil nail mobilization interaction factor Imob= 0.25
  Imob= 0 means that FX.mobilized = FX.nail for FS=1.0, Imob= 1 means that FX.mobilized = FX.nail ultimate
  Minimum soil nail mobilization factor SNmin.mob = 0
  Fx.mob = Fx(FS=1.0) + Imob x (Fx.ULT -Fx(FS=1.0)) >= SNmin.mob x Fx.ULT
Global mode parameters applied for slope stability analysis.
  Soil nail stability considers both external and internal stability (punching through facing).
  Soil nail shear is ignored in the analysis.

Shotcrete facing data design section Base model



Facing Thickness D= 6in

Concrete strength Fc'= 3ksi

Rebar and mesh yield strength Fy= 60ksi

Back face hor. reinforcement (or mesh) #6@8in area a.bh=0.66 in^2/ft

Back face vertical reinforcement (or mesh) #6@8in area a.bv=0.66 in^2/ft

Front face reinforcement (if used in permanent section)

Front face hor. reinforcement (or mesh) #6@8in area a.fh=0.66 in^2/ft

Front face vertical reinforcement (or mesh) #6@8in area a.fv=0.66 in^2/ft

Stage	Active	Top El.	Bottom El.	Two stage facing	Thickness
Name	Yes/No	(ft)	(ft)	-	(in)
Exc. 98ft	Yes	106	98	N/A	6
Exc. 94ft	Yes	106	94	N/A	6
Exc. 90ft	Yes	106	90	N/A	6
Final stage	Yes	106	88	N/A	6

Soil nail input data for design section Base model

Name	Nail	α	x	El.	Lfix	Lfree	Space	Asteel	Dfix	Fy
-	Section	deg	(ft)	(ft)	(ft)	(ft)	(ft)	(in^2)	(in)	(ksi)
N0	0: N1	15	-1.6	104	8	0	4	0.79	6	75
N1	0: N1	15	-1.2	100	8	0	4	0.79	6	75
N2	0: N1	15	-0.8	96	8	0	4	0.79	6	75
N3	0: N1	15	-0.4	92	8	0	4	0.79	6	75

Header plate data

Nail Number	El. (ft)	Width (in)	Thick (in)	Fy (ksi)	D open. (in)	Studs Studs	c studs c studs	Waler Bars
N0	104	8	1.25	36	1	N/A	N/A	N/A
N1	100	8	1.25	36	1	N/A	N/A	N/A
N2	96	8	1.25	36	1	N/A	N/A	N/A
N3	92	8	1.25	36	1	N/A	N/A	N/A

SLOPE STABILITY ANALYSIS: SOIL NAIL RESULTS ALL STAGES

Soil nail results for design section: Base model

Soil nail results Stage: 0

Soil nail results available for this stage.

Critical point at x= -3.16 z= 116.8 FS= 1.561

	F	Fmax	CAP S	CAP G	Tcap G	TC1 ST	TC2	TC3	TC4	TC4 C4	ks	Po	Pu	lo	IxxCalc	SxxCal	t. loss	% STR	Mode
Nail/Uni	k	k	k	k	k	k	k	k	k	k	ksf	ksf	ksf	ft	in4	in3	in	%	Crit
0: N0	0	30.16	53.32	39.81	0	26.66	Not in	Not in	Not in	Not in	N/A	N/A	N/A	N/A	0.05	0.1	N/A	N/A	GEO
1: N1	Not ac	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2: N2	Not ac	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3: N3	Not ac	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Soil nail results Stage: 1

Soil nail results available for this stage.

Critical point at x= -3.228 z= 116.8 FS= 1.418

	F	Fmax	CAP S	CAP G	Tcap G	TC1 ST	TC2	TC3	TC4	TC4 C4	ks	Po	Pu	lo	IxxCalc	SxxCal	t. loss	% STR	Mode
Nail/Uni	k	k	k	k	k	k	k	k	k	k	ksf	ksf	ksf	ft	in4	in3	in	%	Crit
0: N0	0	25.34	53.32	39.81	0	26.66	Not in	Not in	Not in	Not in	N/A	N/A	N/A	N/A	0.05	0.1	N/A	N/A	GEO
1: N1	0	28.79	53.32	39.81	0	26.66	Not in	Not in	Not in	Not in	N/A	N/A	N/A	N/A	0.05	0.1	N/A	N/A	GEO
2: N2	Not ac	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3: N3	Not ac	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Soil nail results Stage: 2

Soil nail results available for this stage.

Critical point at x= -2.751 z= 116.8 FS= 1.766

	F	Fmax	CAP S	CAP G	Tcap G	TC1 ST	TC2	TC3	TC4	TC4 C4	ks	Po	Pu	lo	IxxCalc	SxxCal	t. loss	% STR	Mode
Nail/Uni	k	k	k	k	k	k	k	k	k	k	ksf	ksf	ksf	ft	in4	in3	in	%	Crit
0: N0	0	20.4	53.32	39.81	0	26.66	Not in	Not in	Not in	Not in	N/A	N/A	N/A	N/A	0.05	0.1	N/A	N/A	GEO
1: N1	3.82	22.55	53.32	39.81	0	26.66	Not in	Not in	Not in	Not in	N/A	N/A	N/A	N/A	0.05	0.1	N/A	N/A	GEO
2: N2	13.98	27.72	53.32	39.81	0	26.66	Not in	Not in	Not in	Not in	N/A	N/A	N/A	N/A	0.05	0.1	N/A	N/A	GEO
3: N3	Not ac	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Soil nail results Stage: 3

Soil nail results available for this stage.

Critical point at x= -5.054 z= 116.8 FS= 1.921

	F	Fmax	CAP S	CAP G	Tcap G	TC1 ST	TC2	TC3	TC4	TC4 C4	ks	Po	Pu	lo	IxxCalc	SxxCal	t. loss	% STR	Mode
Nail/Uni	k	k	k	k	k	k	k	k	k	k	ksf	ksf	ksf	ft	in4	in3	in	%	Crit
0: N0	0	32.39	53.32	39.81	0	26.66	Not in	Not in	Not in	Not in	N/A	N/A	N/A	N/A	0.05	0.1	N/A	N/A	GEO
1: N1	0	32.92	53.32	39.81	0	26.66	Not in	Not in	Not in	Not in	N/A	N/A	N/A	N/A	0.05	0.1	N/A	N/A	GEO
2: N2	0	32.92	53.32	39.81	0	26.66	Not in	Not in	Not in	Not in	N/A	N/A	N/A	N/A	0.05	0.1	N/A	N/A	GEO
3: N3	17.6	32.74	53.32	40.92	0	26.66	Not in	Not in	Not in	Not in	N/A	N/A	N/A	N/A	0.05	0.1	N/A	N/A	GEO

GENERAL SOIL NAIL DATA

Soil nails are concidered only when a slope stability analysis is performed.

TABLE DATA (major parameters)

F = Soil nail axial tension force for critical failure surface (may not be the greatest)

Fmax = Maximum soil nail tension from all analyzed critical failure surfaces

CAP STR = Tensile structural design capacity for soil nail

CAP GEO = Tensile geotechnical pull out resistance for soil nail

TcapGEO = Critical shear resistance for soil nail (min TC1, TC2, TC3, TC4)

TC1 = Structural soil nail shear resistance

TC2 = Shear resistance according to Clouterre TC2 criterion

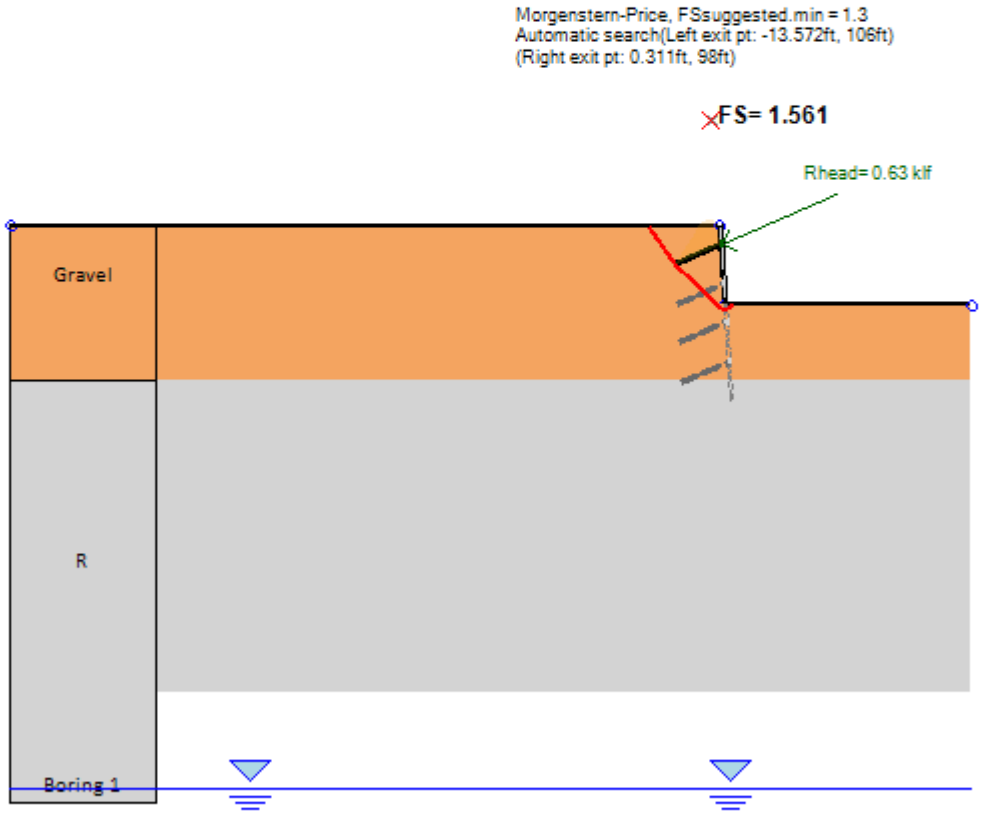
TC3 = Shear resistance according to Clouterre TC3 criterion

TC4 = Shear resistance according to Clouterre TC4 criterion

TC4 C4 = Shear resistance according to Clouterre TC4 criterion for limit equilibrium approach

kS	= Soil subgrade modulus reaction at failure surface-soil nail intersection point
Po	= Soil lateral pressure at failure surface-soil nail intersection point
Pu	= Ultimate lateral pressure at failure surface-soil nail intersection point
Lo	= Flexure length for shear calculations
IxxCalc	= Nail moment of inertia (adjusted for corrosion loss if assumed etc)
SxxCalc	= Nail section modulus (adjusted for corrosion loss if assumed)
t.loss	= Structural thickness loss (if assumed by the user)
%STR	= Structural capacity loss as a percentage (if assumed by the user)

Base model



Company: My Company Engineer: Engineer	DS: 0, Exc. 98ft	Deep Excavation LCC SnailPlus 2021
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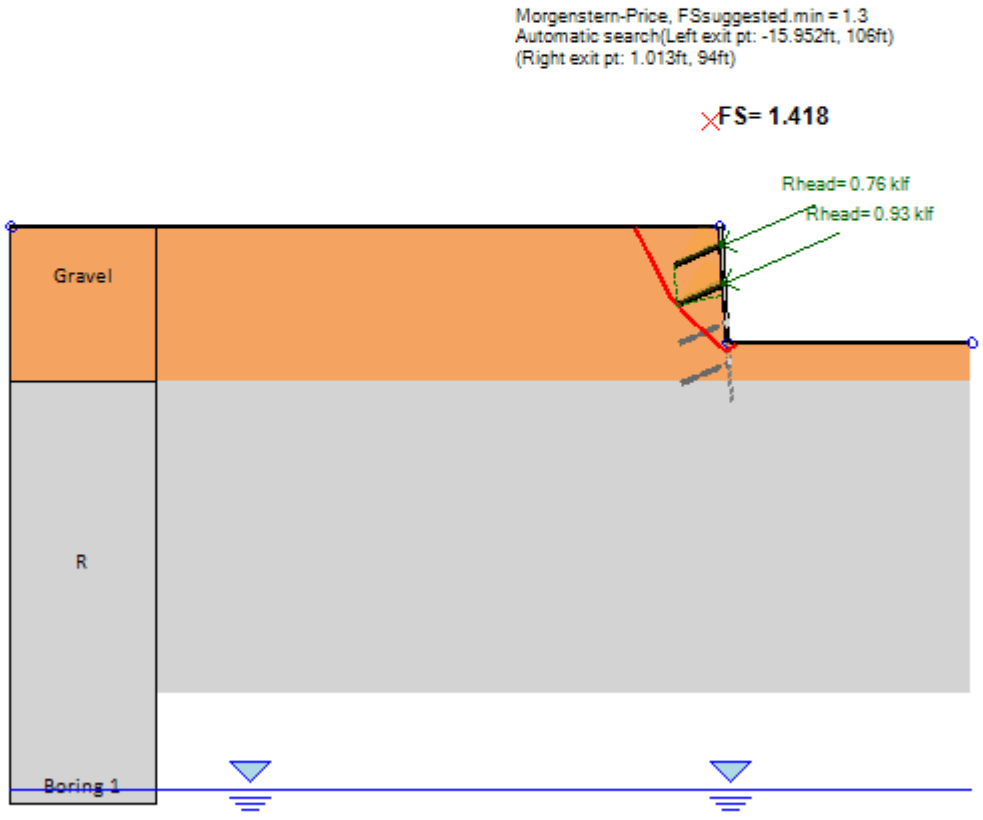
Base model



Company: My Company Engineer: Engineer	DS: 0, Exc. 94ft	Deep Excavation LCC SnailPlus 2021
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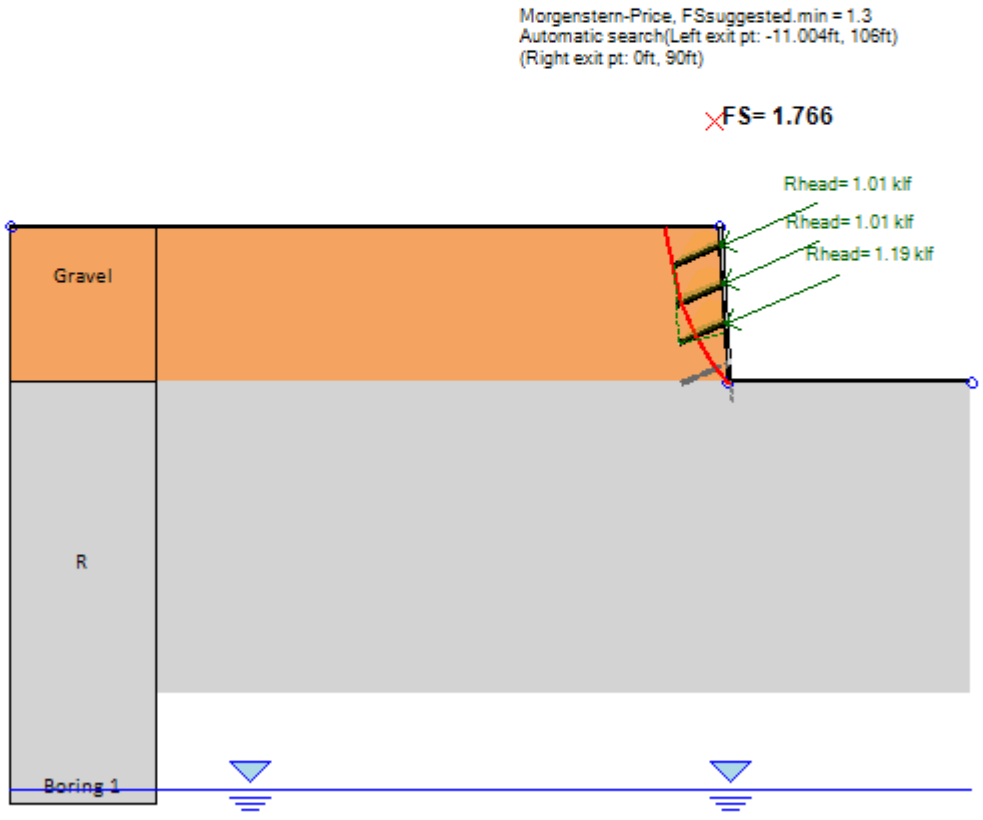
Base model



Company: My Company Engineer: Engineer	DS: 0, Exc. 90ft	Deep Excavation LCC SnailPlus 2021
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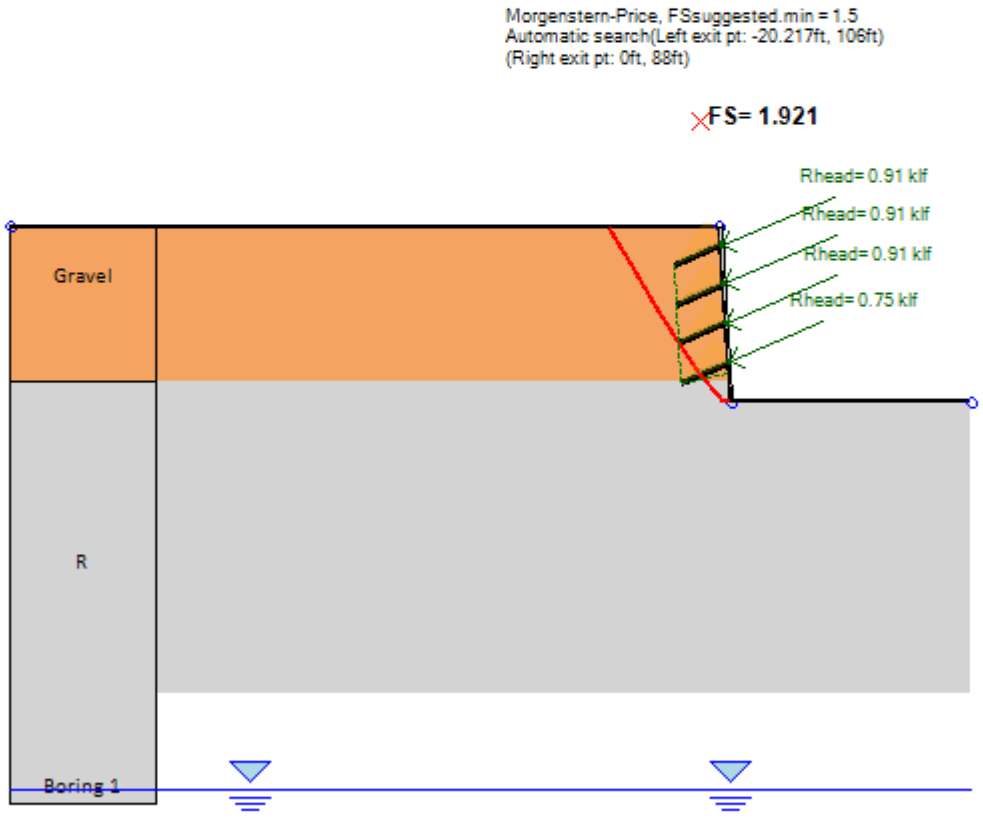
Base model



Company: My Company Engineer: Engineer	DS: 0, Final stage	Deep Excavation LCC SnailPlus 2021
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SOIL NAIL RESULTS FOR CRITICAL STAGES

Soil nail results for design section: Base model

Soil nail results (all stages) for nail: 0, N0

Soil nail at x= -1.6 ft, z= 104 ft, angle= 15 deg

Soil nail Lfree= 0 ft, Lfix= 8 ft

Nail uses structural section from tieback 0, name: N1

Nail diameter for fixed body: 6 in

Nail uses 1, strands or bars

Nail strands outer diam= 1 in

	Units	0: Exc. 98ft	1: Exc. 94ft	2: Exc. 90ft	3: Final stage
Tension	k	0	0	0	0
Max. tension stab. analysis	k	30.16	25.34	20.4	32.39
Force at head Po	k	2.52	3.03	4.04	3.64
Max. mob. force Pmax.mob	k	3.58	4.7	6.27	5.66
Tension stress check	-	0.109	0.143	0.19	0.172
Shear stress check	-	0	0	0	0
Critical stress check	-	0.109	0.143	0.19	0.172
Tension capacity STR	k	53.32	53.32	53.32	53.32
Design Tension cap GEO	k	39.81	39.81	39.81	39.81
Crit. shear GEO	k	0	0	0	0
Shear C2	k	Not included	Not included	Not included	Not included
Shear C3	k	Not included	Not included	Not included	Not included
Shear C4	k	Not included	Not included	Not included	Not included
Shear C4 LE	k	Not included	Not included	Not included	Not included
Modulus ks	ksf	N/A	N/A	N/A	N/A
Lateral pressure Po	ksf	N/A	N/A	N/A	N/A
Ult. lateral pressure Pu	ksf	N/A	N/A	N/A	N/A
Length lo	ft	N/A	N/A	N/A	N/A
IxxCalc	in4	0.05	0.05	0.05	0.05
SxxCalc	in3	0.1	0.1	0.1	0.1
Thickness loss	in	N/A	N/A	N/A	N/A
% STR loss	%	N/A	N/A	N/A	N/A
Moment on plate M	k-ft	0.434491	0.521389	0.695185	0.697331
Plate Mres	k-ft	5.46875	5.46875	5.46875	5.46875
Punching perimeter	in	47.79	47.79	47.79	47.79
Punching depth Dp	in	3.948	3.948	3.948	3.948
Punching area Ap	ft2	0.99	0.99	0.99	0.99
Ultimate punching cap PLv	k	31	31	31	31
Required factored load PLde	k	2.41	2.75	3.67	3.31
Geotechnical plate cap PLge	k	N/A	N/A	N/A	N/A
Punching ratio chek RAT.Pv		0.105	0.12	0.16	0.16
Critical	Mode	GEO	GEO	GEO	GEO

Soil nail results (all stages) for nail: 1, N1

Soil nail at x= -1.2 ft, z= 100 ft, angle= 15 deg

Soil nail Lfree= 0 ft, Lfix= 8 ft

Nail uses structural section from tieback 0, name: N1

Nail diameter for fixed body: 6 in

Nail uses 1, strands or bars

Nail strands outer diam= 1 in

	Units	1: Exc. 94ft	2: Exc. 90ft	3: Final stage
Tension	k	0	3.82	0
Max. tension stab. analysis	k	28.79	22.55	32.92
Force at head Po	k	3.73	4.04	3.64
Max. mob. force Pmax.mob	k	5.29	6.27	5.66
Tension stress check	-	0.161	0.19	0.172
Shear stress check	-	0	0	0
Critical stress check	-	0.161	0.19	0.172
Tension capacity STR	k	53.32	53.32	53.32
Design Tension cap GEO	k	39.81	39.81	39.81
Crit. shear GEO	k	0	0	0
Shear C2	k	Not included	Not included	Not included
Shear C3	k	Not included	Not included	Not included
Shear C4	k	Not included	Not included	Not included
Shear C4 LE	k	Not included	Not included	Not included
Modulus ks	ksf	N/A	N/A	N/A
Lateral pressure Po	ksf	N/A	N/A	N/A
Ult. lateral pressure Pu	ksf	N/A	N/A	N/A
Length lo	ft	N/A	N/A	N/A
IxxCalc	in4	0.05	0.05	0.05
SxxCalc	in3	0.1	0.1	0.1
Thickness loss	in	N/A	N/A	N/A
% STR loss	%	N/A	N/A	N/A
Moment on plate M	k-ft	0.642312	0.695185	0.697331
Plate Mres	k-ft	5.46875	5.46875	5.46875
Punching perimeter	in	47.79	47.79	47.79
Punching depth Dp	in	3.948	3.948	3.948
Punching area Ap	ft2	0.99	0.99	0.99
Ultimate punching cap PLv	k	31	31	31
Required factored load PLde	k	3.5	3.67	3.31
Geotechnical plate cap PLge	k	N/A	N/A	N/A
Punching ratio chek RAT.Pv		0.153	0.16	0.16
Critical	Mode	GEO	GEO	GEO

Soil nail results (all stages) for nail: 2, N2

Soil nail at x= -0.8 ft, z= 96 ft, angle= 15 deg

Soil nail Lfree= 0 ft, Lfix= 8 ft

Nail uses structural section from tieback 0, name: N1

Nail diameter for fixed body: 6 in

Nail uses 1, strands or bars

Nail strands outer diam= 1 in

	Units	2: Exc. 90ft	3: Final stage
Tension	k	13.98	0
Max. tension stab. analysis	k	27.72	32.92
Force at head Po	k	4.77	3.64
Max. mob. force Pmax.mob	k	6.76	5.66
Tension stress check	-	0.205	0.172
Shear stress check	-	0	0

Critical stress check	-	0.205	0.172
Tension capacity STR	k	53.32	53.32
Design Tension cap GEO	k	39.81	39.81
Crit. shear GEO	k	0	0
Shear C2	k	Not included	Not included
Shear C3	k	Not included	Not included
Shear C4	k	Not included	Not included
Shear C4 LE	k	Not included	Not included
Modulus ks	ksf	N/A	N/A
Lateral pressure Po	ksf	N/A	N/A
Ult. lateral pressure Pu	ksf	N/A	N/A
Length lo	ft	N/A	N/A
IxxCalc	in4	0.05	0.05
SxxCalc	in3	0.1	0.1
Thickness loss	in	N/A	N/A
% STR loss	%	N/A	N/A
Moment on plate M	k-ft	0.82134	0.697117
Plate Mres	k-ft	5.46875	5.46875
Punching perimeter	in	47.79	47.79
Punching depth Dp	in	3.948	3.948
Punching area Ap	ft2	0.99	0.99
Ultimate punching cap PLv	k	31	31
Required factored load PLde	k	4.48	3.31
Geotechnical plate cap PLge	k	N/A	N/A
Punching ratio chek RAT.Pv		0.195	0.16
Critical	Mode	GEO	GEO

Soil nail results (all stages) for nail: 3, N3

Soil nail at x= -0.4 ft, z= 92 ft, angle= 15 deg

Soil nail Lfree= 0 ft, Lfix= 8 ft

Nail uses structural section from tieback 0, name: N1

Nail diameter for fixed body: 6 in

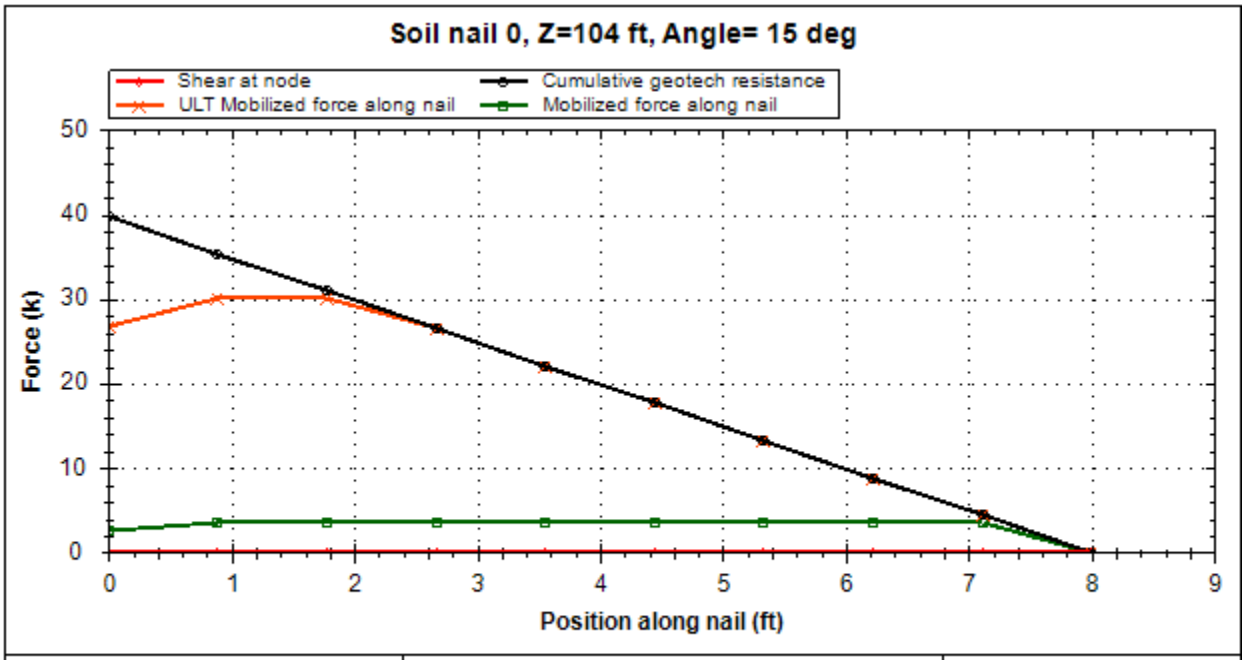
Nail uses 1, strands or bars

Nail strands outer diam= 1 in

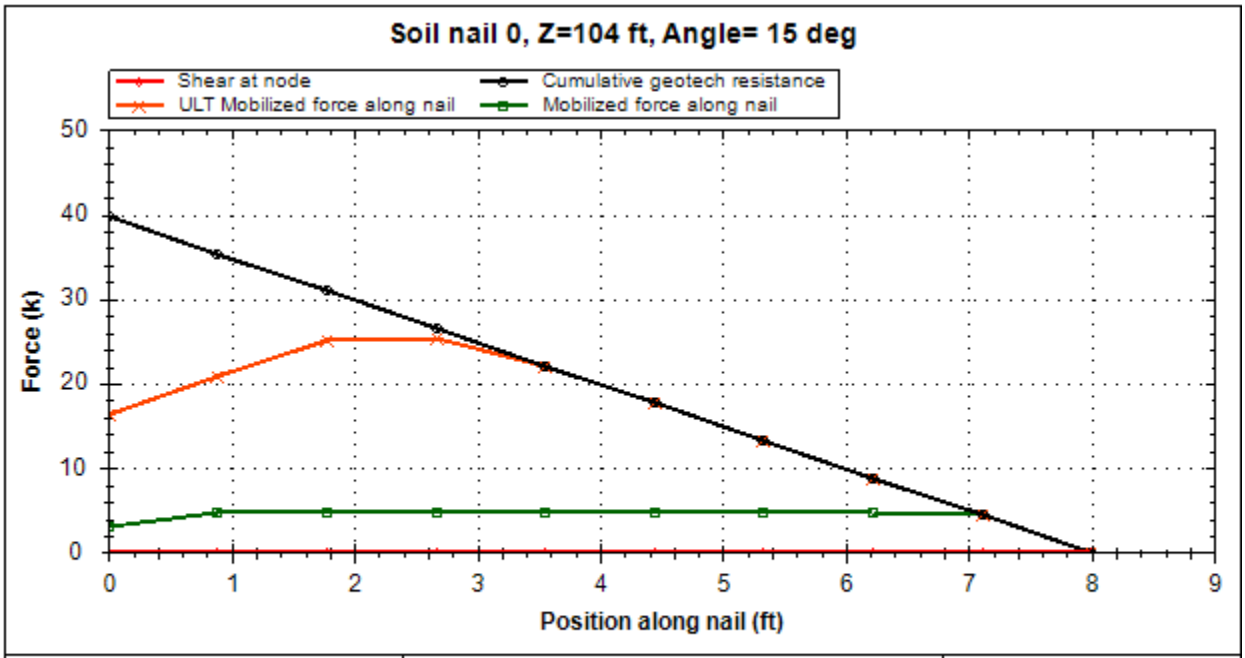
	Units	3: Final stage
Tension	k	17.6
Max. tension stab. analysis	k	32.74
Force at head Po	k	3.01
Max. mob. force Pmax.mob	k	4.68
Tension stress check	-	0.142
Shear stress check	-	0
Critical stress check	-	0.142
Tension capacity STR	k	53.32
Design Tension cap GEO	k	40.92
Crit. shear GEO	k	0
Shear C2	k	Not included
Shear C3	k	Not included
Shear C4	k	Not included
Shear C4 LE	k	Not included
Modulus ks	ksf	N/A

Lateral pressure Po	ksf	N/A
Ult. lateral pressure Pu	ksf	N/A
Length lo	ft	N/A
IxxCalc	in4	0.05
SxxCalc	in3	0.1
Thickness loss	in	N/A
% STR loss	%	N/A
Moment on plate M	k-ft	0.576551
Plate Mres	k-ft	5.46875
Punching perimeter	in	47.79
Punching depth Dp	in	3.948
Punching area Ap	ft2	0.99
Ultimate punching cap PLv	k	31
Required factored load PLde	k	2.74
Geotechnical plate cap PLge	k	N/A
Punching ratio chek RAT.Pv		0.133
Critical	Mode	GEO

Soil nail result graphs.



Company: My Company Engineer: Engineer	DS: 0 Stage: 0 Soil nail 0 results	Deep Excavation LCC SnailPlus 2021
C:\Users\jtucker\Documents\1.5H-1V slope - batter.SNLP		10/28/2021



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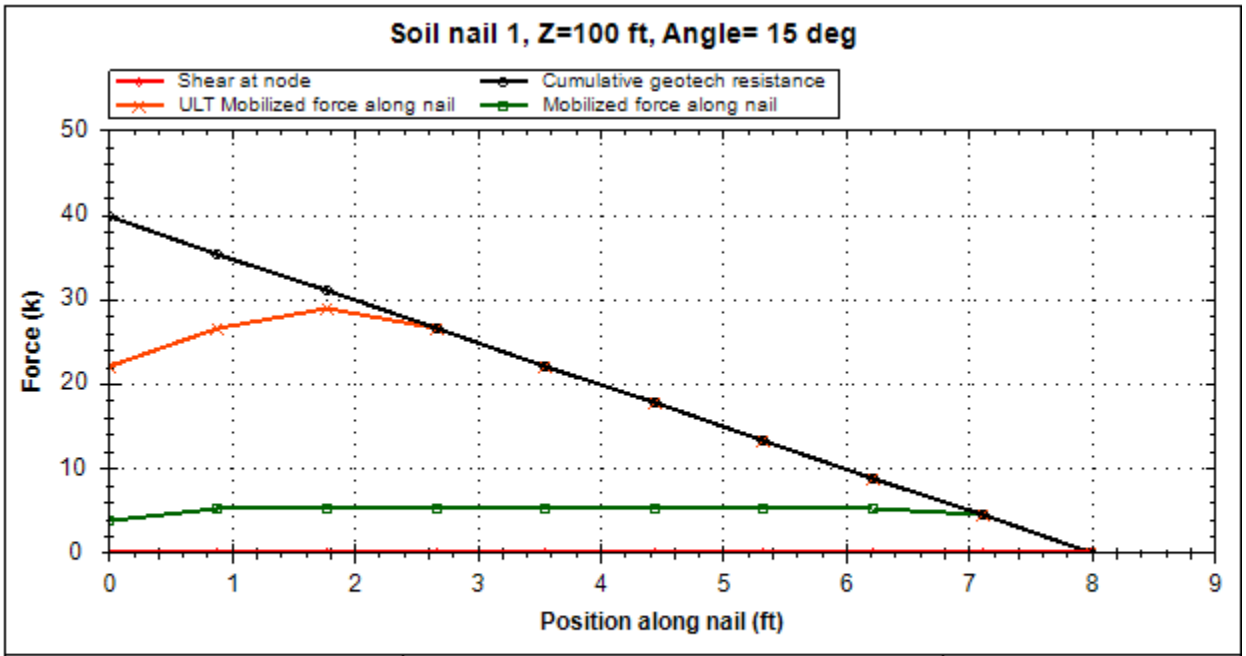
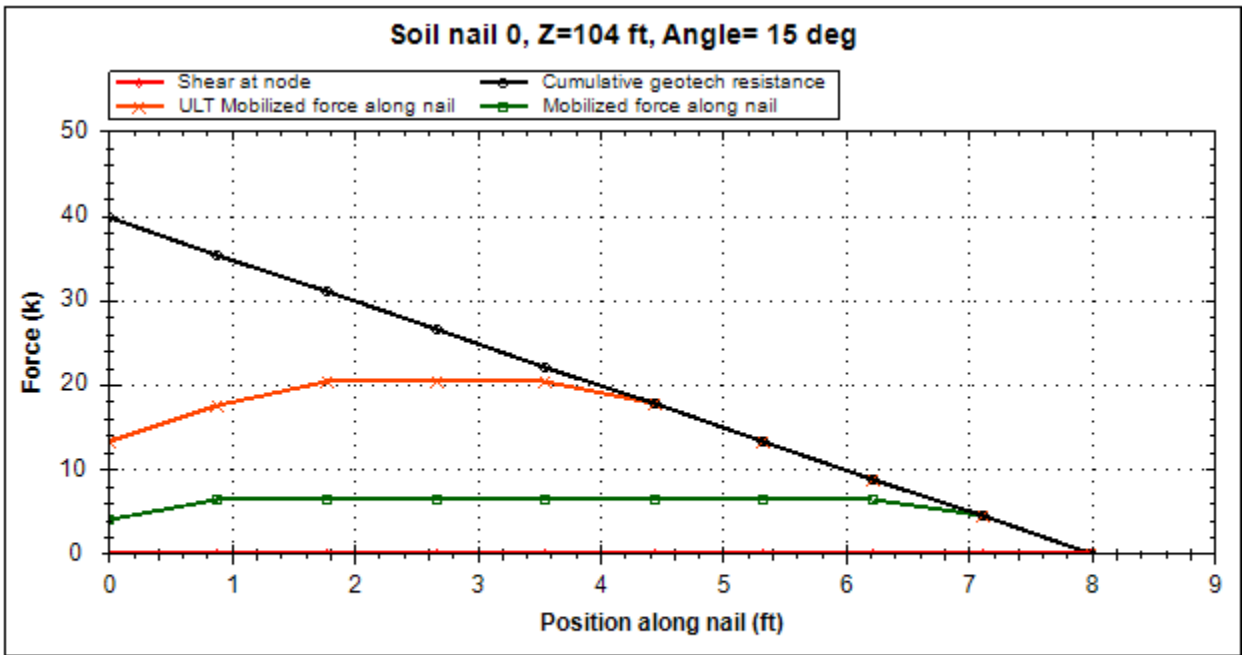


Company: My Company Engineer: Engineer	DS: 0 Stage: 1 Soil nail 1 results	Deep Excavation LCC SnailPlus 2021
C:\Users\jtucker\Documents\1.5H-1V slope - batter.SNLP		10/28/2021



Company: My Company Engineer: Engineer	DS: 0 Stage: 2 Soil nail 0 results	Deep Excavation LCC SnailPlus 2021
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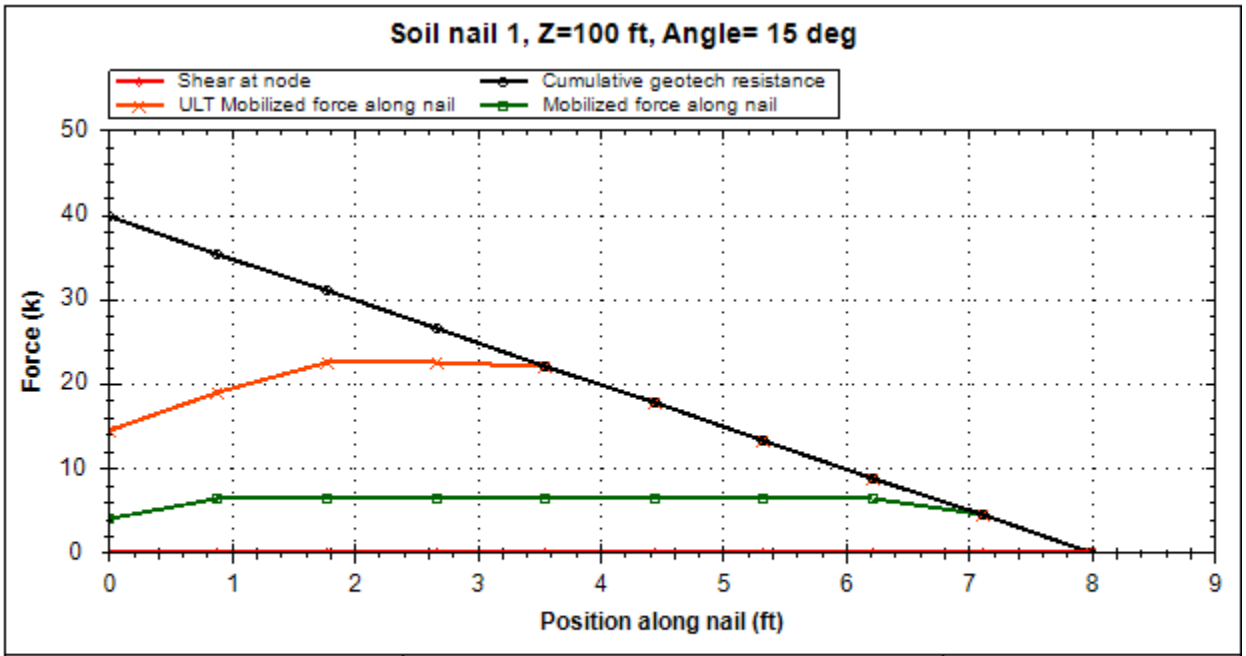
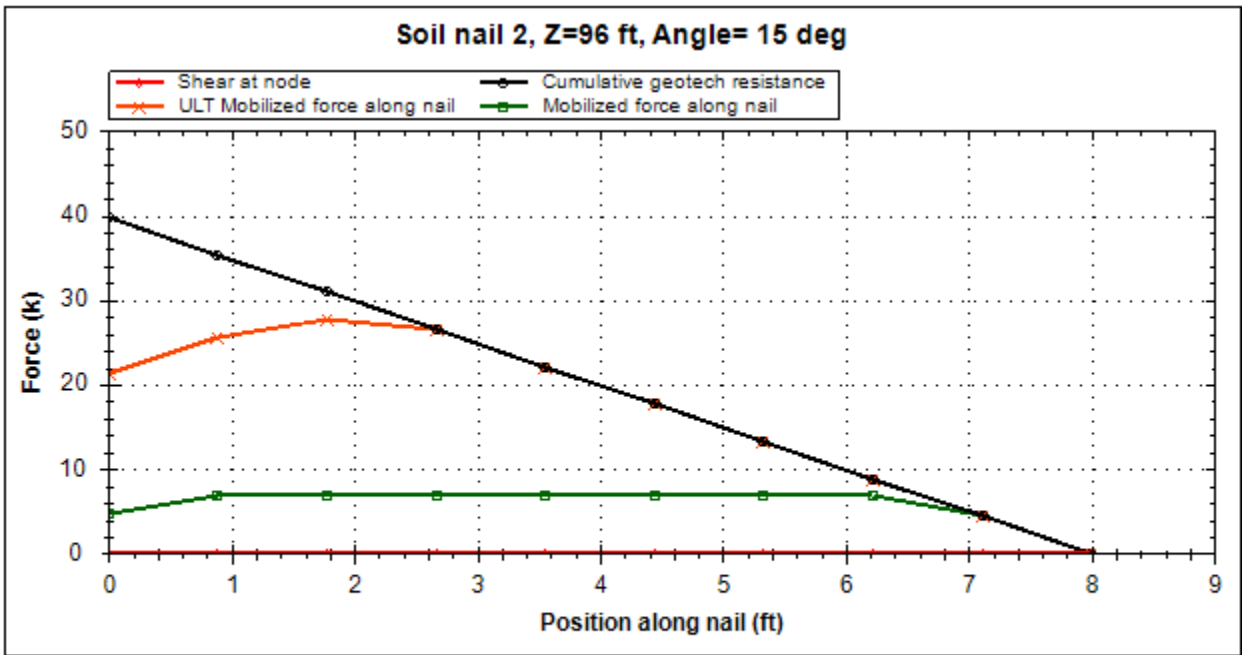


Company: My Company Engineer: Engineer	DS: 0 Stage: 2 Soil nail 1 results	Deep Excavation LCC SnailPlus 2021
C:\Users\jtucker\Documents\1.5H-1V slope - batter.SNLP		10/28/2021



Company: My Company Engineer: Engineer	DS: 0 Stage: 2 Soil nail 2 results	Deep Excavation LCC SnailPlus 2021
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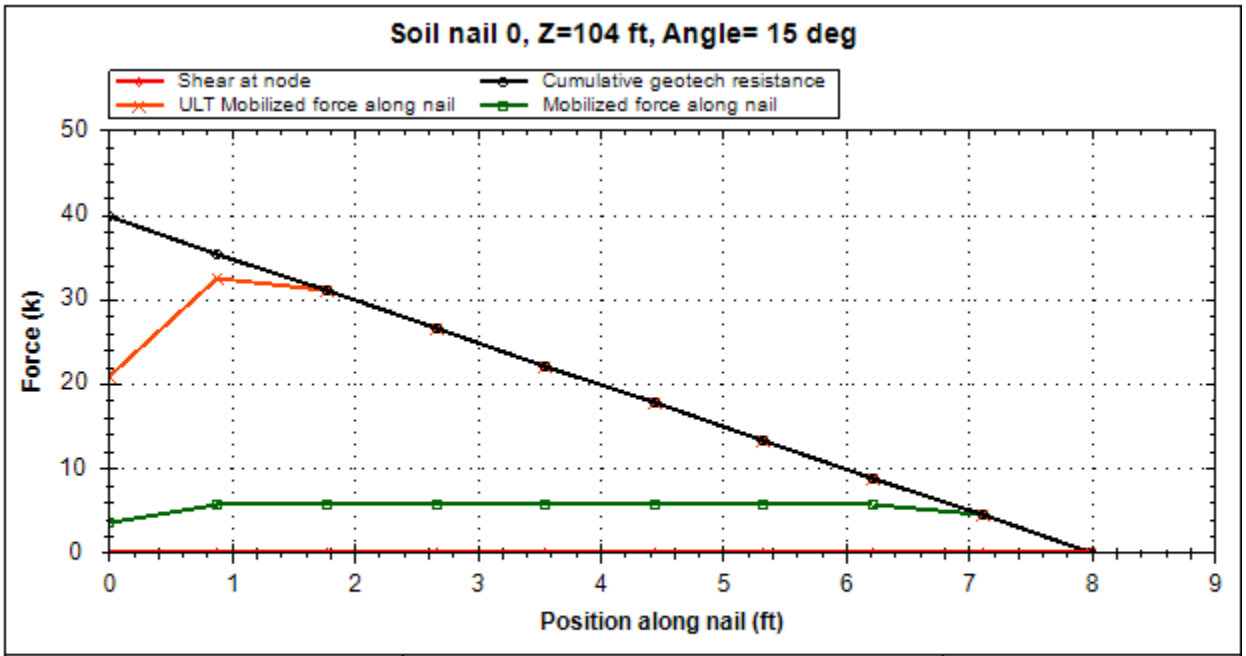

Company: My Company Engineer: Engineer	DS: 0 Stage: 3 Soil nail 0 results	Deep Excavation LCC SnailPlus 2021
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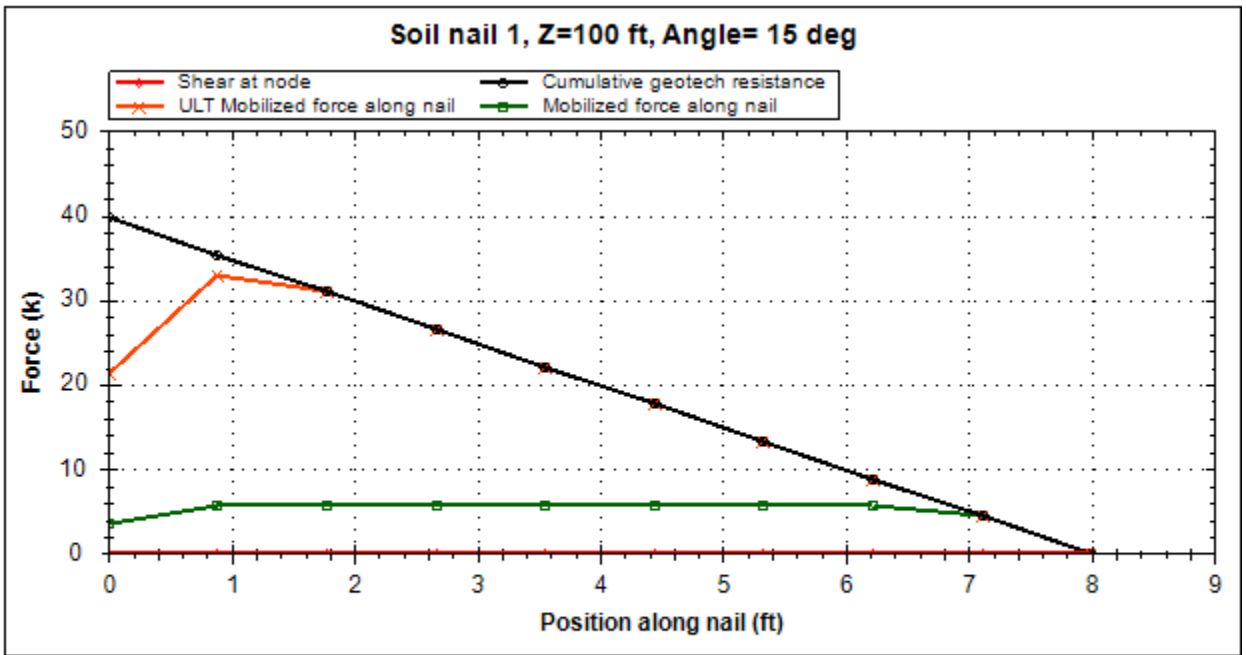
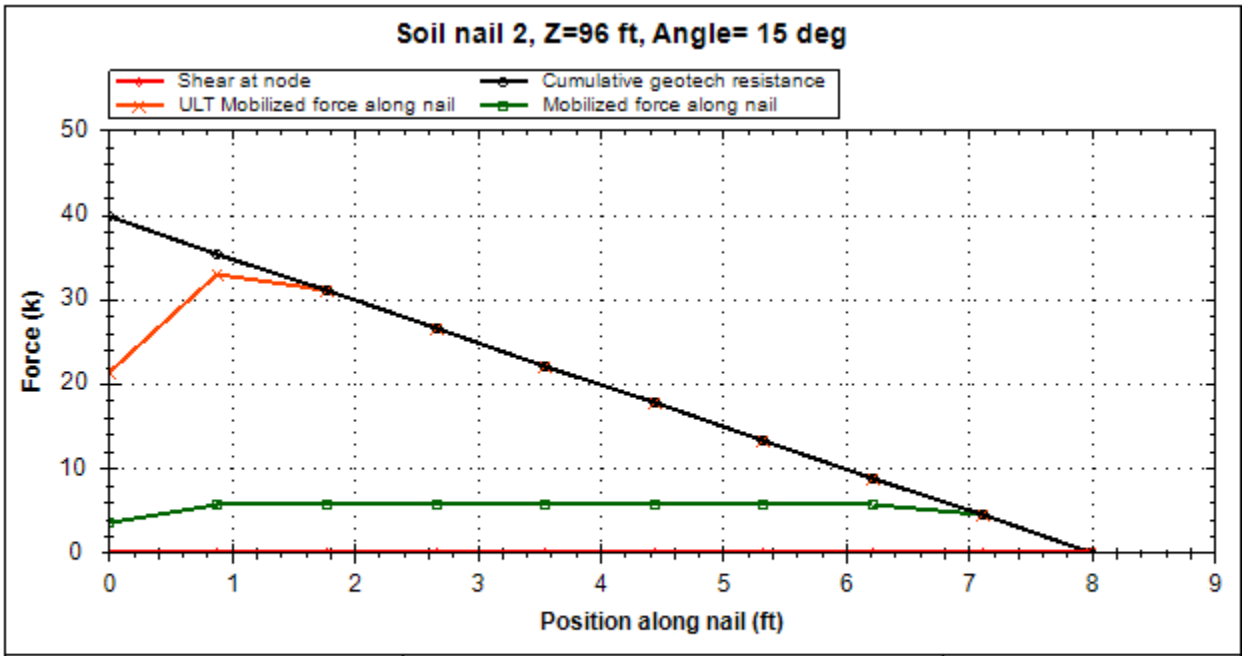
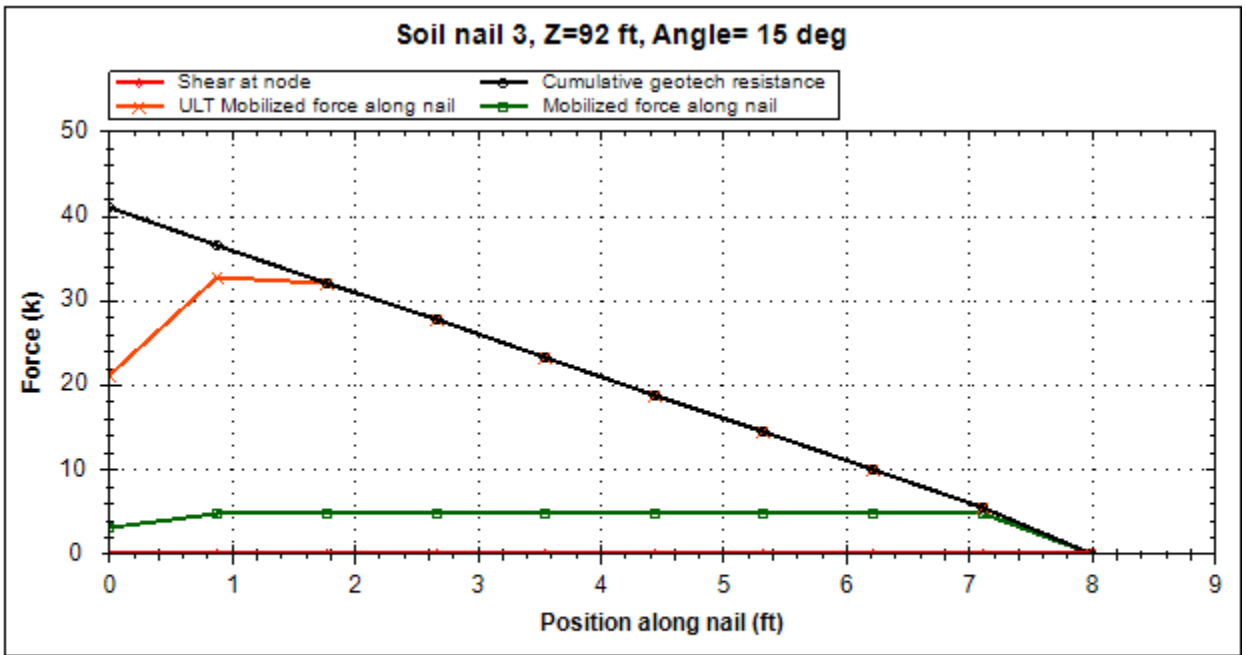


Company: My Company Engineer: Engineer	DS: 0 Stage: 3 Soil nail 1 results	Deep Excavation LCC SnailPlus 2021
C:\Users\jtucker\Documents\1.5H-1V slope - batter.SNLP		10/28/2021



Company: My Company Engineer: Engineer	DS: 0 Stage: 3 Soil nail 2 results	Deep Excavation LCC SnailPlus 2021
C:\Users\jtucker\Documents\1.5H-1V slope - batter.SNLP		10/28/2021



Company: My Company Engineer: Engineer	DS: 0 Stage: 3 Soil nail 3 results	Deep Excavation LCC SnailPlus 2021
C:\Users\jtucker\Documents\1.5H-1V slope - batter.SNLP		10/28/2021

MACKENZIE.

EXPIRES: 12/31/24

STORMWATER DRAINAGE REPORT

To
City of Wilsonville

For
Delta Logistics

Dated
April 8, 2022
(Revised June 10, 2022)
(Revised October 6, 2022)
(Revised November 15, 2022)

Project Number
2200502.04

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Soil Conditions 2
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III. Analysis 6
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Water Quality 6
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ATTACHMENTS

Appendix A – Drainage Management Area Map – Public
Appendix B – Basin Map – Private
Appendix C – WES BMP Sizing Tool – Public
Appendix D – Hydrographs – Private
Appendix E – Conveyance Calculations and Basin Map
Appendix F – Natural Resource Assessment Report
Appendix G – Geotechnical Report
Appendix H – Coffee Creek Stormwater Study (June 2019)

I. SITE OVERVIEW AND DESCRIPTION

This report documents the stormwater management calculations and design by Mackenzie to manage stormwater runoff and provide water quality treatment for the proposed Delta Logistics project. The proposed development (referred to as the "project site" or "site" throughout the report) is located south of SW Day Road, west of Boones Ferry Road, and north of the existing Delta Logistics site in Wilsonville, Oregon; refer to Figure 1.

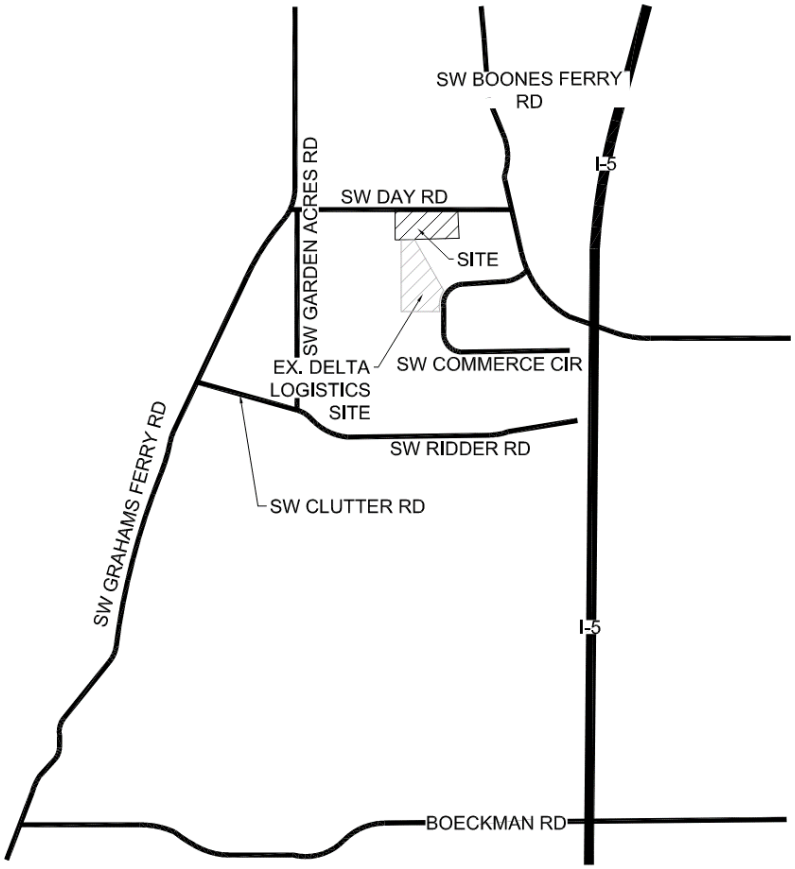


Figure 1: Vicinity Map

Existing Conditions

The existing property is bounded to the north by SW Day Road and to the east and west by other existing properties, and the south side border is split by the existing Delta Logistics site and adjacent neighbor site owned and occupied by others.

The site is currently undeveloped, except for a residential home that has recently been demolished. The site slopes down from the east to west at a gradient between 10 and 15%. The site is vegetated with grass, shrubbery, and trees. A 100-foot BPA right-of-way (ROW) is located in the southwest corner adjacent to the 125-foot easement.

A natural resource area, known as Tapman Creek, splits the site running north and south. From the Natural Resource Assessment report (see Appendix):

"Tapman Creek, a tributary to Seely Ditch and the Willamette River, flowed from double 36-inch diameter culverts under SW Day Road, south through the western portion of the site and into a culvert at the southwestern site corner. A compensatory wetland mitigation (CWM) site was located just west of and parallel to the creek. The CWM site was constructed to mitigate for the widening of SW Day Road and replacement of a single culvert with the existing 88-foot-long double culverts at Tapman Creek (DSL #25201-FP; Corps #2002-00173). Both of these features are within the 125-foot powerline/storm drainage easement."

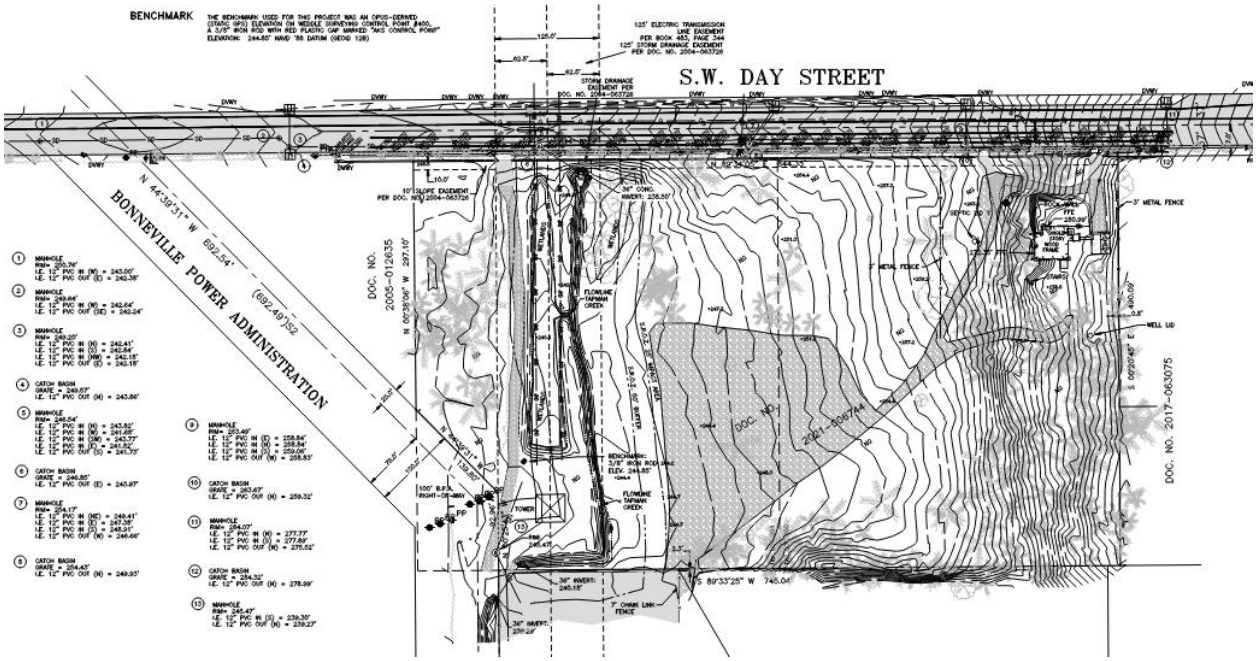


Figure 2: Existing Conditions Survey

Soil Conditions

Per the Geotechnical report, subsurface conditions encountered during in-field explorations consists of a thin mantle of silt underlain by basalt bedrock. See Geotechnical Report in Appendix.

Per the USDA Web Soil Survey, the existing soil is primarily a variety of silty and loamy soils. See Figure 3 for their locations across the site. The site has soils identified as Hydrologic Soil Groups B, C, and D for the purposes of relating to the Discharge Management Area (DMA) Soil Group in the BMP Sizing Tool.

Figure 3: Web Soil Survey Map

Proposed Improvements

The property will be developed for industrial use. The project will construct an approximately 58,118 SF (footprint) warehouse building with integral truck docks (approximately 15 docks), circulation drive aisles and parking, an exterior trash enclosure, associated utility services to the building and site, and landscaping.

SW Day Road will be required to be partially improved to half of the full future 5 lane arterial street section with bike lanes and separate pedestrian sidewalk. Public street frontage improvements will be provided along SW Day Road and will be developed following public standards. Stormwater runoff from SW Day Road will be treated with public facilities.

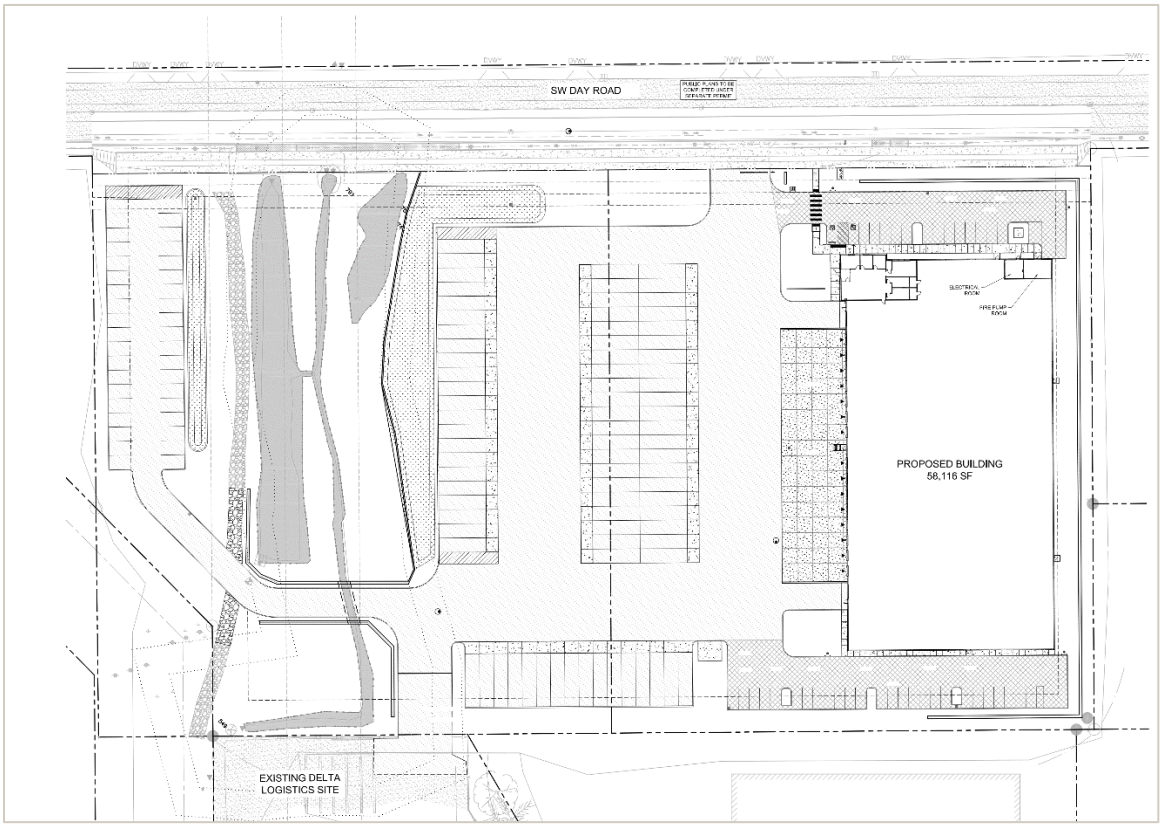


Figure 4: Site Plan

Refer to the Appendix for a map of the Drainage Management Areas (DMA) that provide a breakdown of impervious and pervious areas within each DMA.

The proposed grading mimics the predevelopment grading with the southwest corner of the site being the low spot with runoff generally draining toward Tapman Creek and in to one of two Rain Gardens on site.

This project followed the City of Wilsonville's 2015 Stormwater Management Manual (SWMM) for water quality and flow control requirements. Since the project replaces more than 500 SF of impervious area, it is subject to follow the requirements outlined in the 2015 SWMM.

II. BASIS OF DESIGN

The Basis of Design for Stormwater Quality and Flow Control, as determined by the City of Wilsonville's 2015 Stormwater and Surface Water Design Standards, section 3 of the Public Works Standards, is as follows:

1. Use of LID facilities to the Maximum Extent Practicable.
2. A factor of safety of 2 shall be applied to open pit falling head infiltration test rates, and the maximum design infiltration rate is 20 inches per hour.
3. Water quality facilities shall be designed to capture and treat 80% of the average annual runoff volume to the Maximum Extent Practicable (MEP) with the goal of 70% total suspended soils (TSS) removal. In this context, MEP means less effective treatment may not be substituted when it is practicable to provide more effective treatment. This treatment volume equates to a design storm of 1.0 inch over 24 hours.
   A. Treatment calculations shall be carried out using the Unit Hydrograph method.
4. The duration of peak flow rates from post-development conditions shall be less than or equal to the duration of peak flow rates from pre-development conditions for all peak flows between 42% of the 2-year storm peak flow rate up to the 10-year peak flow rate.
   A. The BMP Sizing Tool incorporated these flow control requirements to size stormwater facilities.
5. Onsite detention of the 100-year design storm is assumed to mitigate any potential downstream impact from this development.

III. ANALYSIS

Methodology

Infiltration tests conducted on-site by the Geotechnical engineer observed infiltration rates of the native soils to be 1.5 inches per hour or less. At TP-5, the infiltration rates at 2 feet BGS were observed to be 1.5 inches/hour, and at 3 feet BGS was observed to be 0 inches/hour. With other bores conducted on-site, refusal of bore was met at 3.5 feet BGS (TP-5, Rain Garden 2) and 4 feet BGS (TP-7, Rain Garden 1). Furthermore, subsurface conditions encountered during in-field explorations consists of a thin mantle of silt underlain by basalt bedrock. With those results, the Geotechnical engineer concluded the measured infiltration rates are extremely low and on-site stormwater infiltration is not feasible. Therefore, the stormwater management strategy was unable to utilize infiltration as a mitigation method. Stormwater will be treated and detained on-site prior to overflowing to the wetland/Tapman Creek. The stormwater facilities are installed on fill with a retaining wall directly adjacent to the west to protect the SROZ area and on-site wetlands.

Downstream Analysis

According to Section 4.4.1 of the City's Stormwater Master Plan (SWMP): "Day Road South to Stafford Business Park has poor drainage and is prone to flooding. Basalt Creek overtops its banks during moderate storm events, flooding the parking lot along the western side of the Commerce Circle Business Park. Some segments of Basalt Creek in this vicinity have negative slopes, preventing flooding from occurring downstream. Negative channel slopes in various sections along the channel in this segment are believed to contribute to the flooding in this area." A Coffee Creek Stormwater Facility Study conducted by AKS in June 2019 also identified the (2) – 36" stormwater pipes which conveys water just north of SW Ridder Road, also have limited capacity and are a constraint on the system.

Since there is a known limitation in the downstream conveyance system, additional stormwater detention volume was provided to mitigate this development's impact to the downstream system. See Flow Control section below.

Water Quality

To meet the goals of the Low Impact Development, rain gardens have been selected as the proposed BMP to provide water quality treatment for this private site. The stormwater rain gardens are situated on the site at strategic location to capture the runoff with minimal use of structures and piping. This treatment volume equates to a design storm of 1.0 inch over 24 hours.

Basins 1 through 15 are treated through Rain Garden 1. Basin 16 is treated in Rain Garden 2. Basin 17 is treated using proprietary stormwater management facilities, StormFilter by Contech.

The area of Basin 17 is 0.079 AC. Using the City's water quality storm event and the ration equation calculation Q=ciA the flow required to be treated is 32.0 GPM.

$$Q = ciA = 0.9\left(1.0\frac{in}{hr}\right)(0.079AC) = 0.071\ cfs$$

$$0.071\ cfs\ \times 448.83\frac{GPM}{cfs} = 32.0\ GPM$$

A single 27" StormFilter can treat 22.0 GPM. For Basin 17, two (2)-27" StormFilters in a steel catch basin will provide treatment for 44.0 GPM. This is adequate treatment.

Stormwater management compliance of the conditioned offsite frontage improvements is met through the proposed implementation of Stormwater Planters (Filtration + Orifice Control) located at select locations within the curbside planter strip of the roadway cross section.

Flow Control

Additional flow control measures are being implemented with this project due to limited downstream capacity to prevent adverse downstream impacts. Section 301.5.02 of the City's 2015 Stormwater and Surface Water Standards outlines Computational Methods allowed by the city to analyze existing, and to design proposed drainage systems and related facilities. Calculations for storm run-off and detentions were based on the SBUH, Type 1A rainfall distribution using the 24-hour precipitation isopluvials provided in Table 3.3.

Figure 6: Table 3.3 Rainfall Distribution

Recurrence Intervals (years)	Total Precipitation Depth (inches)
2	2.50
5	3.00
10	3.45
25	3.90
50	4.25
100	4.5

Rain Garden 1 and Rain Garden 2 have capacity to detain and provide flow control for the post-developed peak flow rate to match or release water at a slower rate than the pre-developed peak flow rate up to the 100-year storm event.

Figure 7: Rain Garden 1 Elevations and Flow Rates

	Elevation	Pre-Developed Flow rate (cfs)	Post-Developed Flow rate (cfs)
Pond Bottom	295.94	--	--
WQ	247.67	0.021	0.004
2-year	248.52	0.625	0.625

5-year	248.90	1.105	0.909
10-year	249.20	1.589	1.044
25-year	249.50	2.110	1.159
100-year	249.93	2.851	1.301
Top of Pond	250.27	--	--

Figure 8: Rain Garden 2 Elevations and Flow Rates			
	Elevation	**Pre-Developed Flowrate (cfs)**	**Post-Developed Flowrate (cfs)**
Pond Bottom	244.79	--	--
WQ	245.04	0.009	0.001
2-year	245.33	0.298	0.180
5-year	245.78	0.475	0.373
10-year	245.66	0.682	0.547
25-year	245.83	0.906	0.674
100-year	246.02	1.224	0.792
Top of Pond	247.07	--	--

Rain Garden 1 and 2 are sized to provide flow control for stormwater for the entire site as to not adversely affect the downstream conveyance system, including over-detaining, to account for the area of Basin 17 that drains to the private property to the south.

See Appendix D of this report for Hydrographs.

Conveyance

The proposed underground storm drainage system for this project has been designed to collect and convey the runoff from a 25-year storm event per the City of Wilsonville 2015 Stormwater & Surface Water Design & Construction Standards.

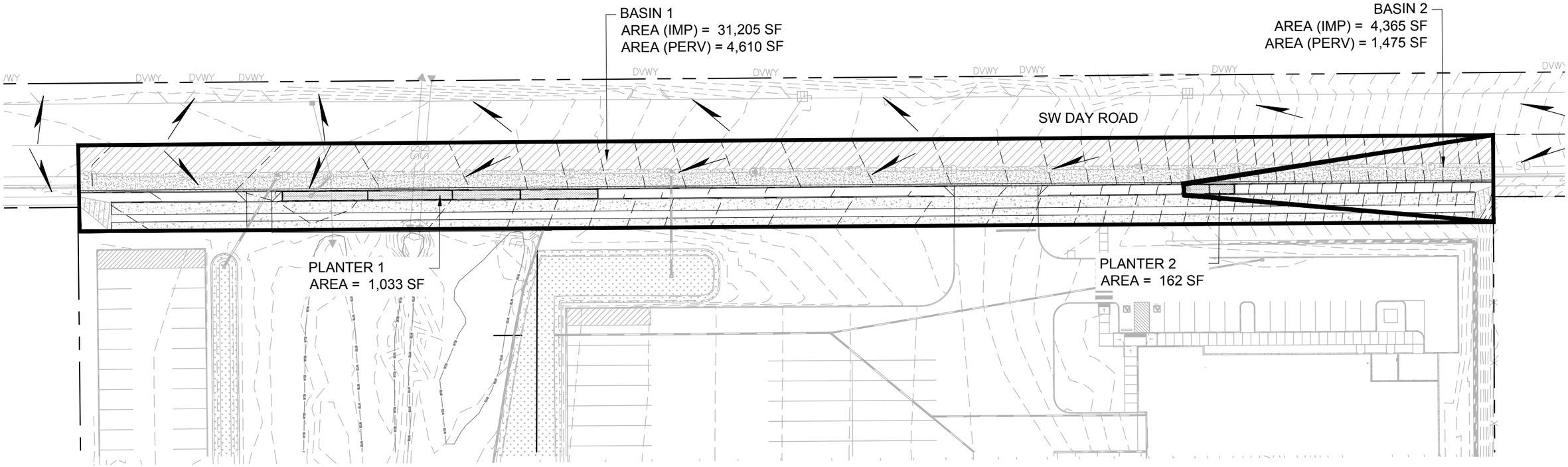
Conveyance of the runoff from the conditioned offsite frontage improvements is managed by capturing the roadway runoff in the Stormwater Planters, which then overflow to the existing storm system in the

roadway, ultimately discharging through culverts into Tapman Creek directly abutting the roadway cross section to the south.

Emergency overland flow for any storm larger than the 25-year event has been described in the Proposed Improvement section of this report.

APPENDIX A

DRAINAGE MANAGEMENT AREA MAP – PUBLIC



DELTA LOGISTICS
BASIN MAP (OFFSITE)

MARCH 14, 2022
Job # 2200502.00

SCALE: 1"=60'
0 30 60

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APPENDIX B

BASIN MAP

SW DAY ROAD

CB1

RAIN GARDEN 1
AREA = 12446 SF

RAIN GARDEN 2
AREA = 3498 SF

CURB BREAK 1
CURB BREAK 2
CURB BREAK 3
CURB BREAK 4
CURB BREAK 5
CURB BREAK 6
CURB BREAK 7
CURB BREAK 8
CURB BREAK 9
CURB BREAK 10

BASIN 1
AREA = 11740 SF

BASIN 2
AREA = 19162 SF

BASIN 3
AREA = 21298 SF

BASIN 4
AREA = 16416 SF

BASIN 5
AREA = 20338 SF

BASIN 6
AREA = 19035 SF

BASIN 7
AREA = 34356 SF

BASIN 8
AREA = 7984 SF

BASIN 9
AREA = 5902 SF

BASIN 10
AREA = 11163 SF

BASIN 11
AREA = 8980 SF

BASIN 12
AREA = 9097 SF

BASIN 13
AREA = 9099 SF

BASIN 14
AREA = 9012 SF

BASIN 15
AREA = 10763 SF

BASIN 16
AREA = 16770 SF

BASIN 16
AREA = 5063 SF

BASIN 17
AREA = 7179 SF

RD1
RD2
RD3
RD4
RD5
RD6

CB2
CB3

1
2
3
4
5
6
7

0+00
1+00
2+00
3+00
4+00
5+00
6+00
7+00

3+99.42
0+73.42

DELTA LOGISTICS
BASIN MAP

NOVEMBER 15, 2022
Job # 2200502.00

SCALE: 1"=60'
0 30 60

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APPENDIX C

WES BMP SIZING TOOL REPORT – PUBLIC

WES BMP Sizing Software Version 1.6.0.2, May 2018

WES BMP Sizing Report

Project Information

Project Name	2200502.00 Delta Logistics - Day Road Frontage Improvements
Project Type	Industrial
Location	
Stormwater Management Area	1195
Project Applicant	
Jurisdiction	OutofDistrict

Drainage Management Area

Name	Area (sq-ft)	Pre-Project Cover	Post-Project Cover	DMA Soil Type	BMP
Planter 1 Impervious	31,205	Grass	ConventionalConcrete	D	Planter 1
Planter 2 Impervious	4,365	Grass	ConventionalConcrete	D	Planter 2
Planter 1 Pervious	4,610	Grass	LandscapeDsoil	D	Planter 1
Planter 2 Pervious	1,475	Grass	LandscapeDsoil	D	Planter 2

LID Facility Sizing Details

LID ID	Design Criteria	BMP Type	Facility Soil Type	Minimum Area (sq-ft)	Planned Areas (sq-ft)	Orifice Diameter (in)
Planter 1	FlowControlAndTreatment	Stormwater Planter - Filtration	D1	1,033.0	1,033.0	2.1
Planter 2	FlowControlAndTreatment	Stormwater Planter - Filtration	D1	161.9	162.0	0.9

Pond Sizing Details

1. FCWQT = Flow control and water quality treatment, WQT = Water quality treatment only

2. Depth is measured from the bottom of the facility and includes the three feet of media (drain rock, separation layer and growing media).

3. Maximum volume of the facility. Includes the volume occupied by the media at the bottom of the facility.

4. Maximum water storage volume of the facility. Includes water storage in the three feet of soil media assuming a

40 percent porosity.

APPENDIX D

HYDROGRAPH RESULTS

Hydraflow Table of Contents

1 - Year

Summary Report **1**
Hydrograph Reports **2**
Hydrograph No. 1, SBUH Runoff, Pre Rain Garden 1 2
Hydrograph No. 2, SBUH Runoff, Post Rain Garden 1 3
Hydrograph No. 3, SBUH Runoff, Pre Rain Garden 2 4
Hydrograph No. 4, SBUH Runoff, Post Rain Garden 2 5
Hydrograph No. 5, Reservoir, Rain Garden 1 6
Pond Report - Rain Garden 1 7
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Pond Report - Rain Garden 1 9

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Hydrograph Reports **11**
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Hydrograph No. 2, SBUH Runoff, Post Rain Garden 1 12
Hydrograph No. 3, SBUH Runoff, Pre Rain Garden 2 13
Hydrograph No. 4, SBUH Runoff, Post Rain Garden 2 14
Hydrograph No. 5, Reservoir, Rain Garden 1 15
Hydrograph No. 6, Reservoir, Rain Garden 2 16

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Hydrograph Reports **18**
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Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021

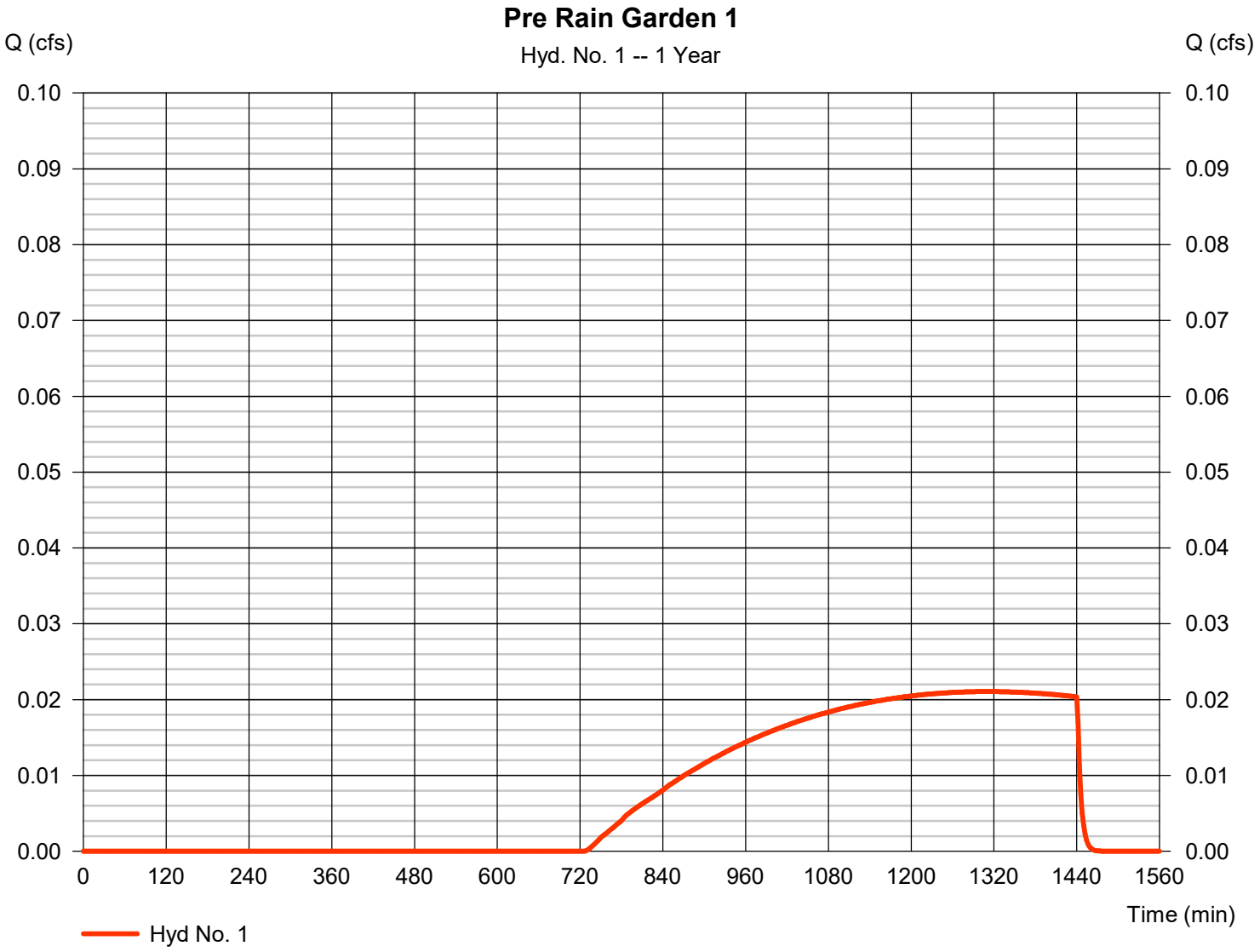
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SBUH Runoff	0.021	2	1310	679	------	------	------	Pre Rain Garden 1
2	SBUH Runoff	0.727	2	478	11,282	------	------	------	Post Rain Garden 1
3	SBUH Runoff	0.009	2	1310	292	------	------	------	Pre Rain Garden 2
4	SBUH Runoff	0.016	2	1168	675	------	------	------	Post Rain Garden 2
5	Reservoir	0.004	2	1442	17	2	247.67	7,492	Rain Garden 1
6	Reservoir	0.000	2	n/a	0	5	245.94	16.6	Rain Garden 2

Hydrograph Report

Hyd. No. 1

Pre Rain Garden 1

Hydrograph type	= SBUH Runoff	Peak discharge	= 0.021 cfs
Storm frequency	= 1 yrs	Time to peak	= 1310 min
Time interval	= 2 min	Hyd. volume	= 679 cuft
Drainage area	= 6.170 ac	Curve number	= 75
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 1.00 in	Distribution	= Type IA
Storm duration	= 24 hrs	Shape factor	= n/a



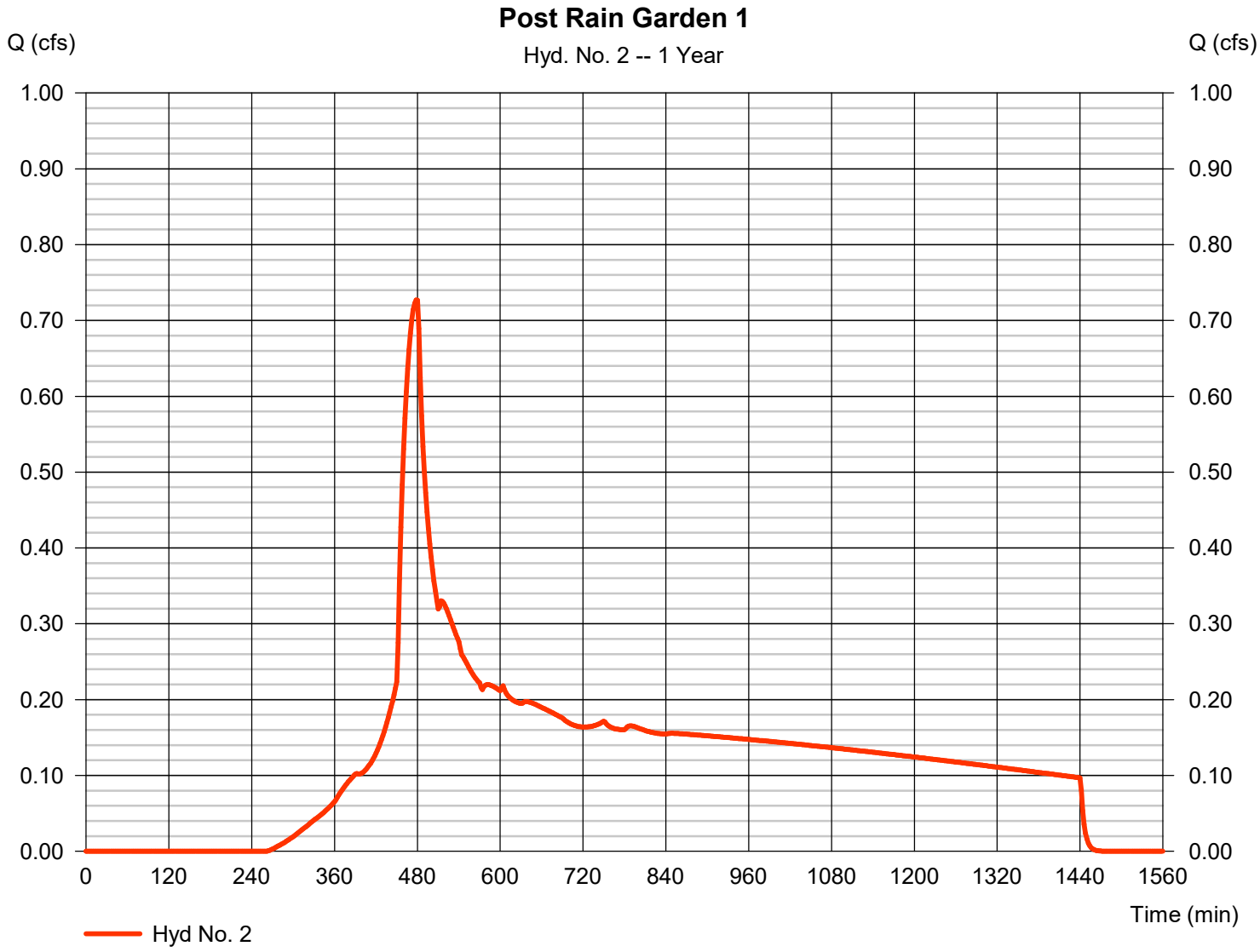
Hydrograph Report

Hyd. No. 2

Post Rain Garden 1

Hydrograph type	= SBUH Runoff	Peak discharge	= 0.727 cfs
Storm frequency	= 1 yrs	Time to peak	= 478 min
Time interval	= 2 min	Hyd. volume	= 11,282 cuft
Drainage area	= 6.170 ac	Curve number	= 94*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 1.00 in	Distribution	= Type IA
Storm duration	= 24 hrs	Shape factor	= n/a

* Composite (Area/CN) = [(3.920 x 98) + (0.910 x 72) + (1.336 x 98)] / 6.170



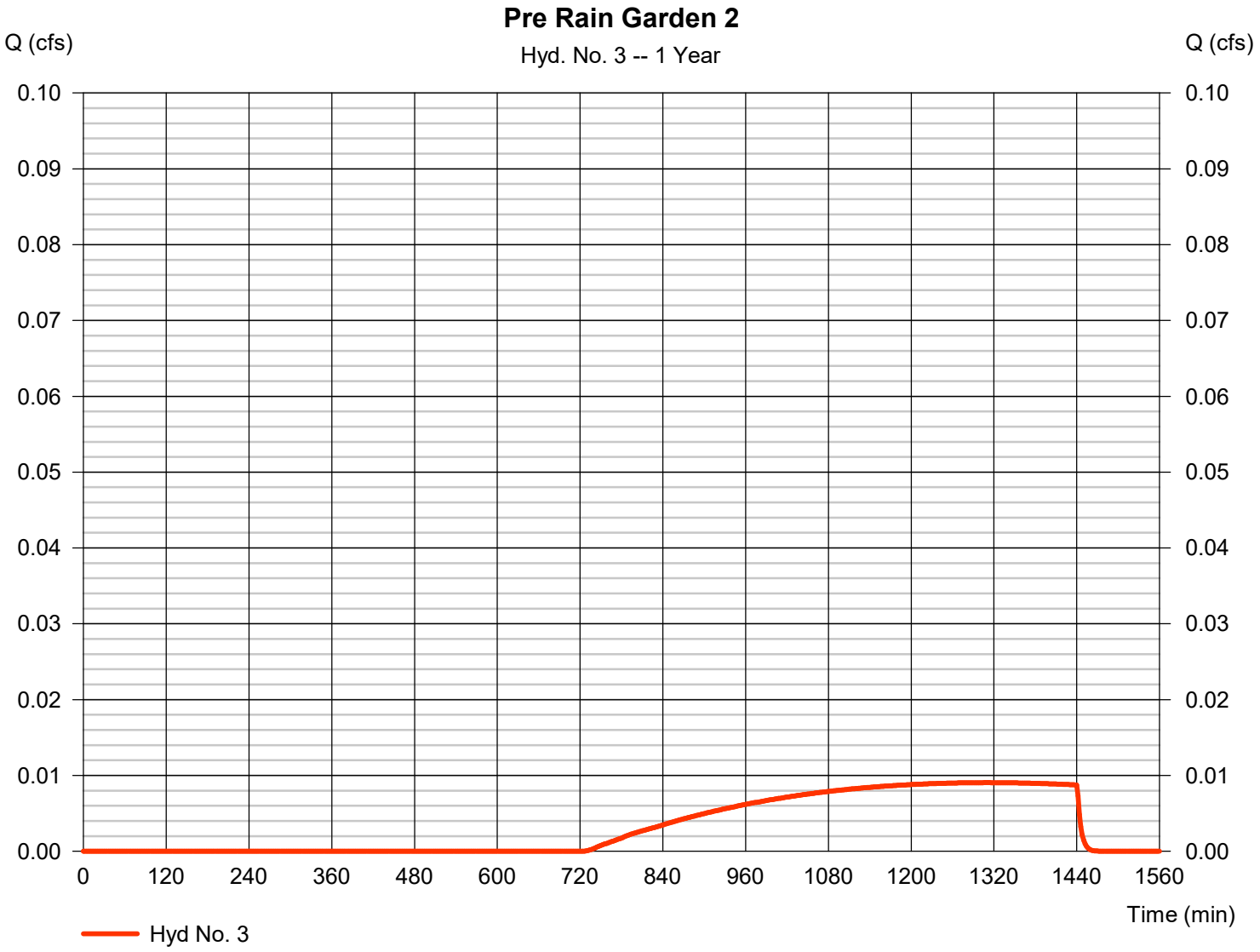
Hydrograph Report

Hyd. No. 3

Pre Rain Garden 2

Hydrograph type	= SBUH Runoff	Peak discharge	= 0.009 cfs
Storm frequency	= 1 yrs	Time to peak	= 1310 min
Time interval	= 2 min	Hyd. volume	= 292 cuft
Drainage area	= 2.650 ac	Curve number	= 75*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 1.00 in	Distribution	= Type IA
Storm duration	= 24 hrs	Shape factor	= n/a

* Composite (Area/CN) = [(0.500 x 98) + (2.140 x 70)] / 2.650



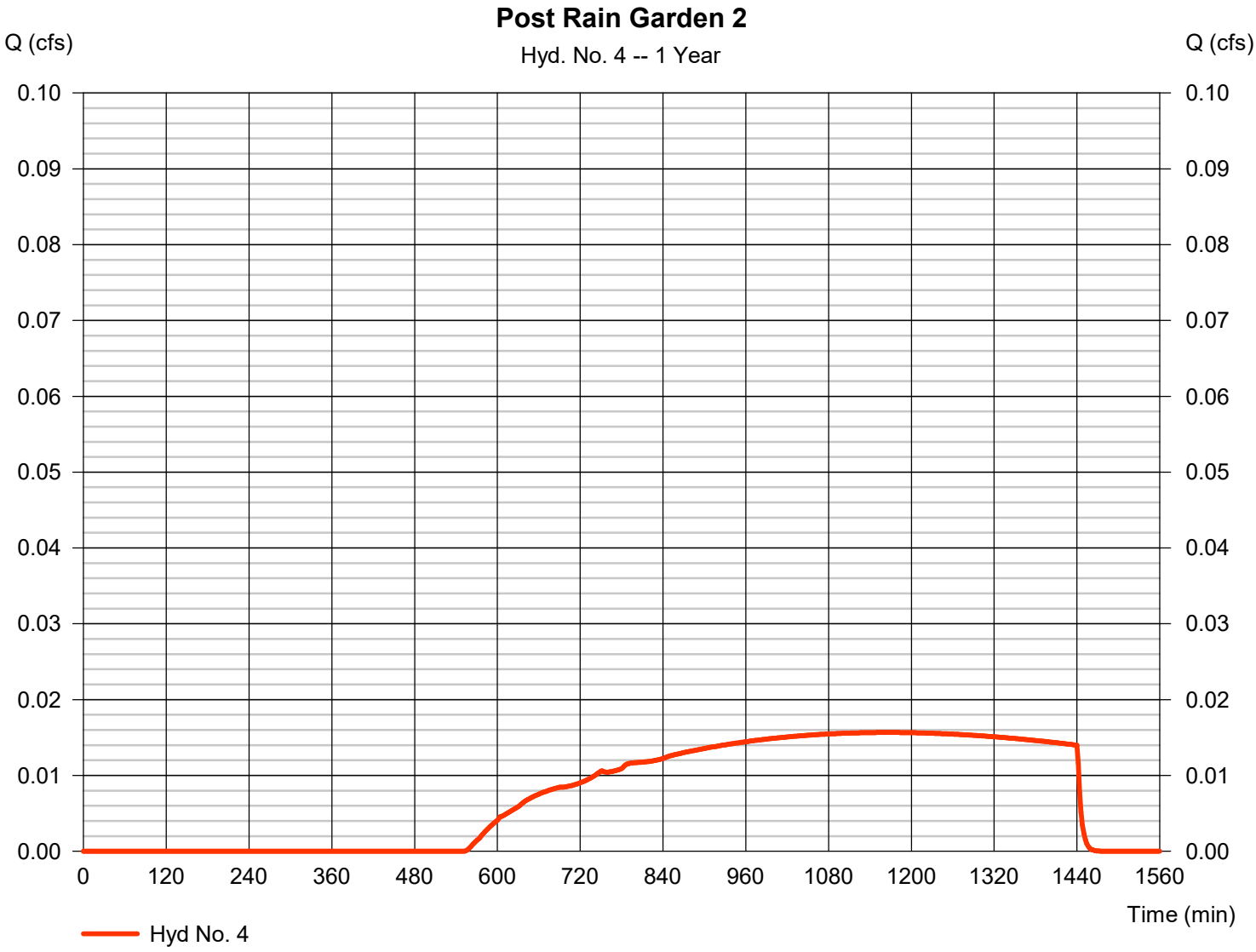
Hydrograph Report

Hyd. No. 4

Post Rain Garden 2

Hydrograph type	= SBUH Runoff	Peak discharge	= 0.016 cfs
Storm frequency	= 1 yrs	Time to peak	= 1168 min
Time interval	= 2 min	Hyd. volume	= 675 cuft
Drainage area	= 2.650 ac	Curve number	= 79*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 1.00 in	Distribution	= Type IA
Storm duration	= 24 hrs	Shape factor	= n/a

* Composite (Area/CN) = [(0.510 x 98) + (2.140 x 75)] / 2.650



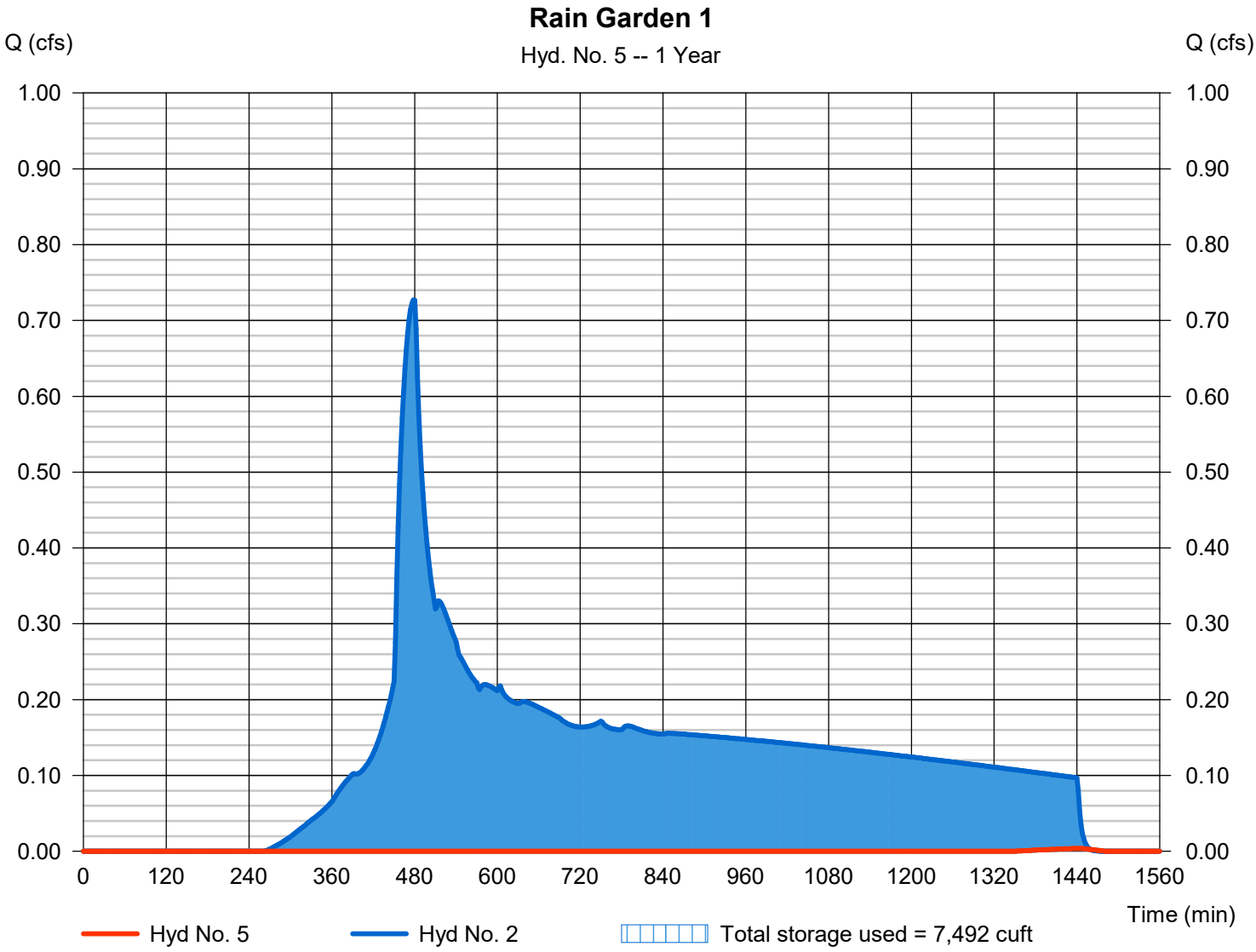
Hydrograph Report

Hyd. No. 5

Rain Garden 1

Hydrograph type	=	Reservoir	Peak discharge	=	0.004 cfs
Storm frequency	=	1 yrs	Time to peak	=	1442 min
Time interval	=	2 min	Hyd. volume	=	17 cuft
Inflow hyd. No.	=	2 - Post Rain Garden 1	Max. Elevation	=	247.67 ft
Reservoir name	=	Rain Garden 1	Max. Storage	=	7,492 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Pond Report

Pond No. 1 - Rain Garden 1

Pond Data

Contours -User-defined contour areas. Conic method used for volume calculation. Begining Elevation = 245.94 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	245.94	2,004	0	0
1.00	246.94	4,689	3,252	3,252
2.00	247.94	7,070	5,838	9,091
3.00	248.94	9,517	8,262	17,353
4.00	249.94	12,046	10,756	28,109
4.33	250.27	12,687	4,080	32,189

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 5.50	3.00	0.00	0.00
Span (in)	= 5.50	3.00	0.00	0.00
No. Barrels	= 1	1	0	0
Invert El. (ft)	= 247.67	248.52	0.00	0.00
Length (ft)	= 20.00	20.00	0.00	0.00
Slope (%)	= 2.00	2.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

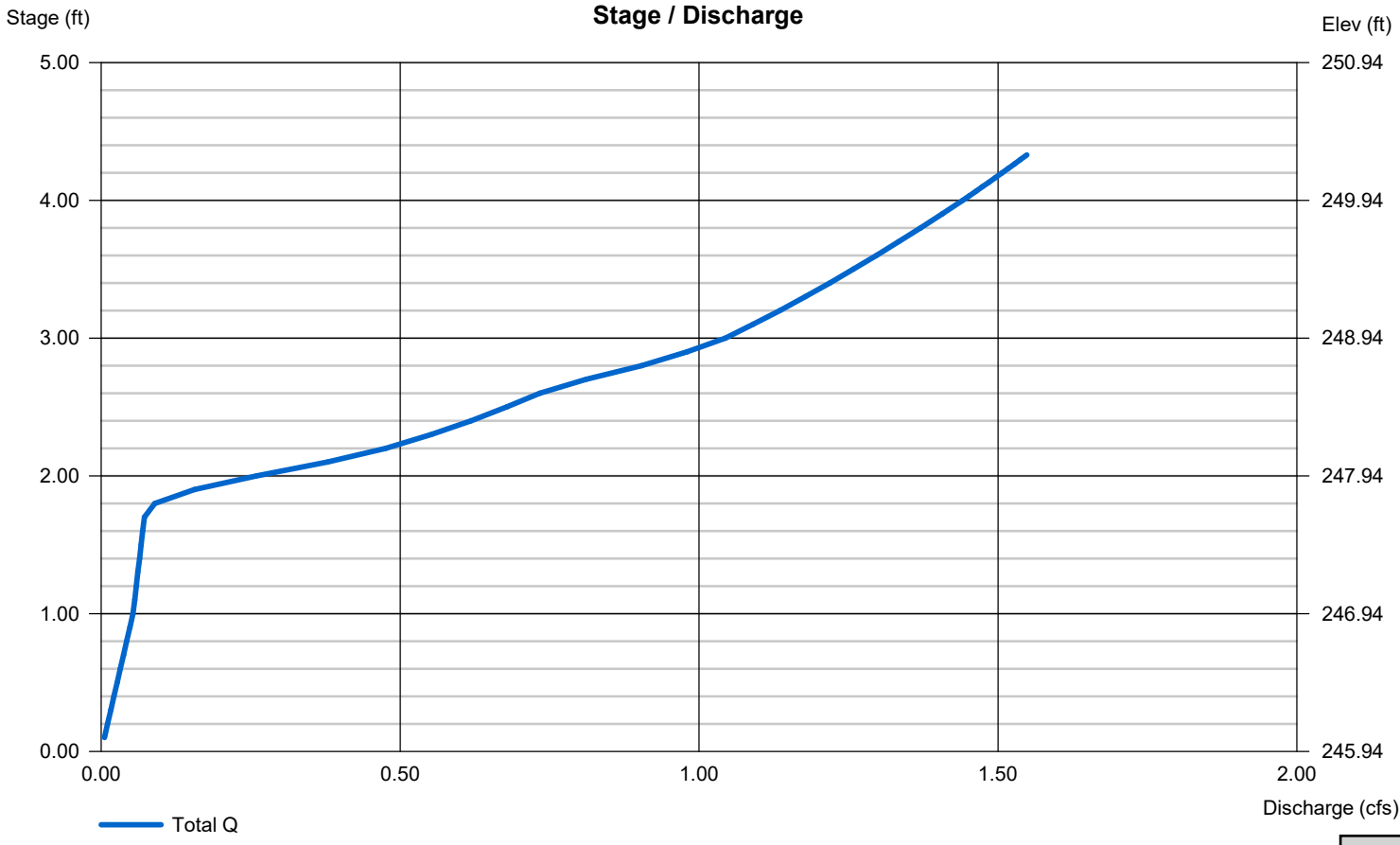
Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	Inactive	0.00	0.00	0.00
Crest El. (ft)	= 104.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= 1	---	---	---
Multi-Stage	= No	No	No	No

Exfil.(in/hr) = 0.490 (by Contour)

TW Elev. (ft) = 0.00

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).



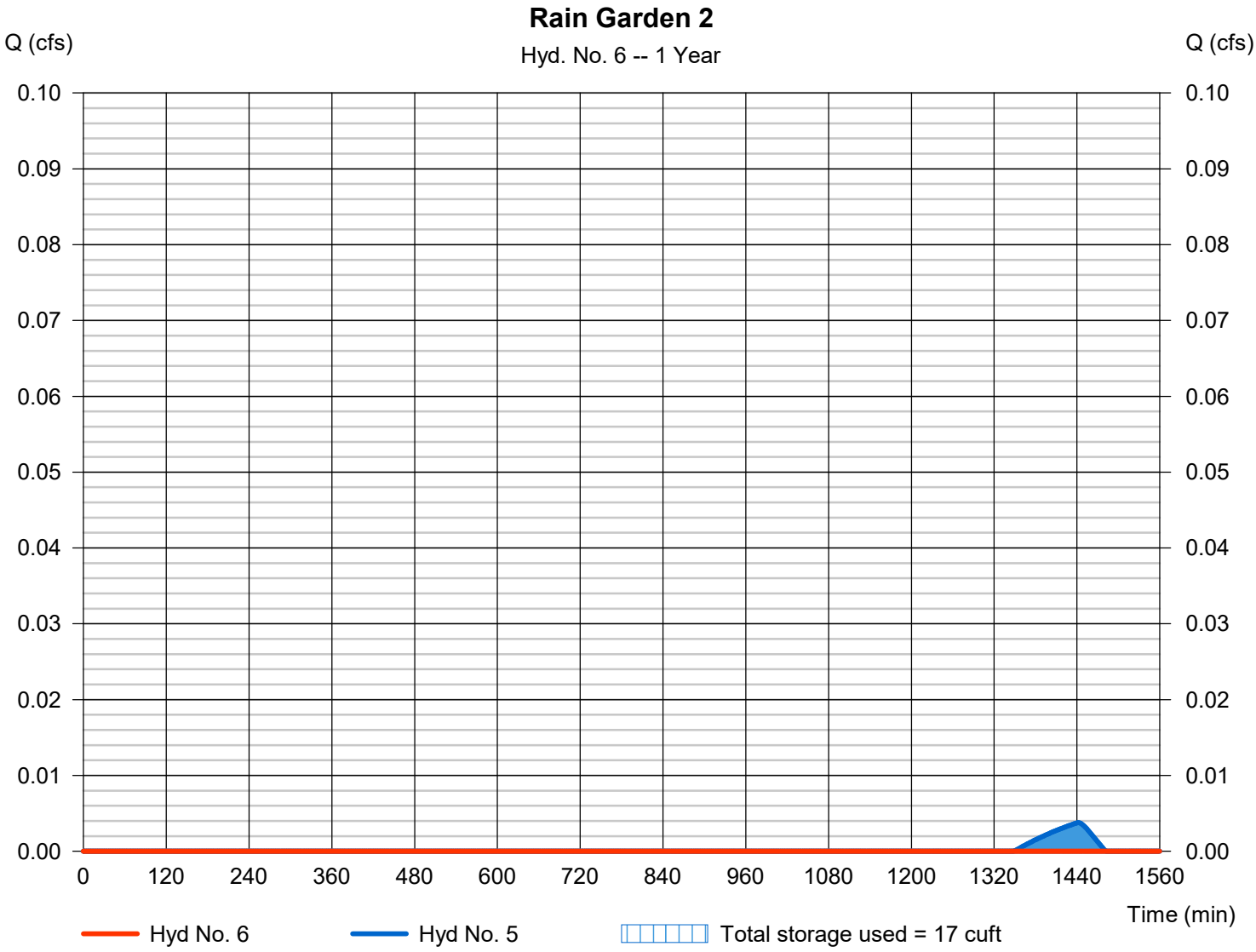
Hydrograph Report

Hyd. No. 6

Rain Garden 2

Hydrograph type	= Reservoir	Peak discharge	= 0.000 cfs
Storm frequency	= 1 yrs	Time to peak	= n/a
Time interval	= 2 min	Hyd. volume	= 0 cuft
Inflow hyd. No.	= 5 - Rain Garden 1	Max. Elevation	= 245.94 ft
Reservoir name	= Rain Garden 1	Max. Storage	= 17 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Pond Report

Pond No. 1 - Rain Garden 1

Pond Data

Contours -User-defined contour areas. Conic method used for volume calculation. Begining Elevation = 245.94 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	245.94	2,004	0	0
1.00	246.94	4,689	3,252	3,252
2.00	247.94	7,070	5,838	9,091
3.00	248.94	9,517	8,262	17,353
4.00	249.94	12,046	10,756	28,109
4.33	250.27	12,687	4,080	32,189

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 5.50	3.00	0.00	0.00
Span (in)	= 5.50	3.00	0.00	0.00
No. Barrels	= 1	1	0	0
Invert El. (ft)	= 247.67	248.52	0.00	0.00
Length (ft)	= 20.00	20.00	0.00	0.00
Slope (%)	= 2.00	2.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

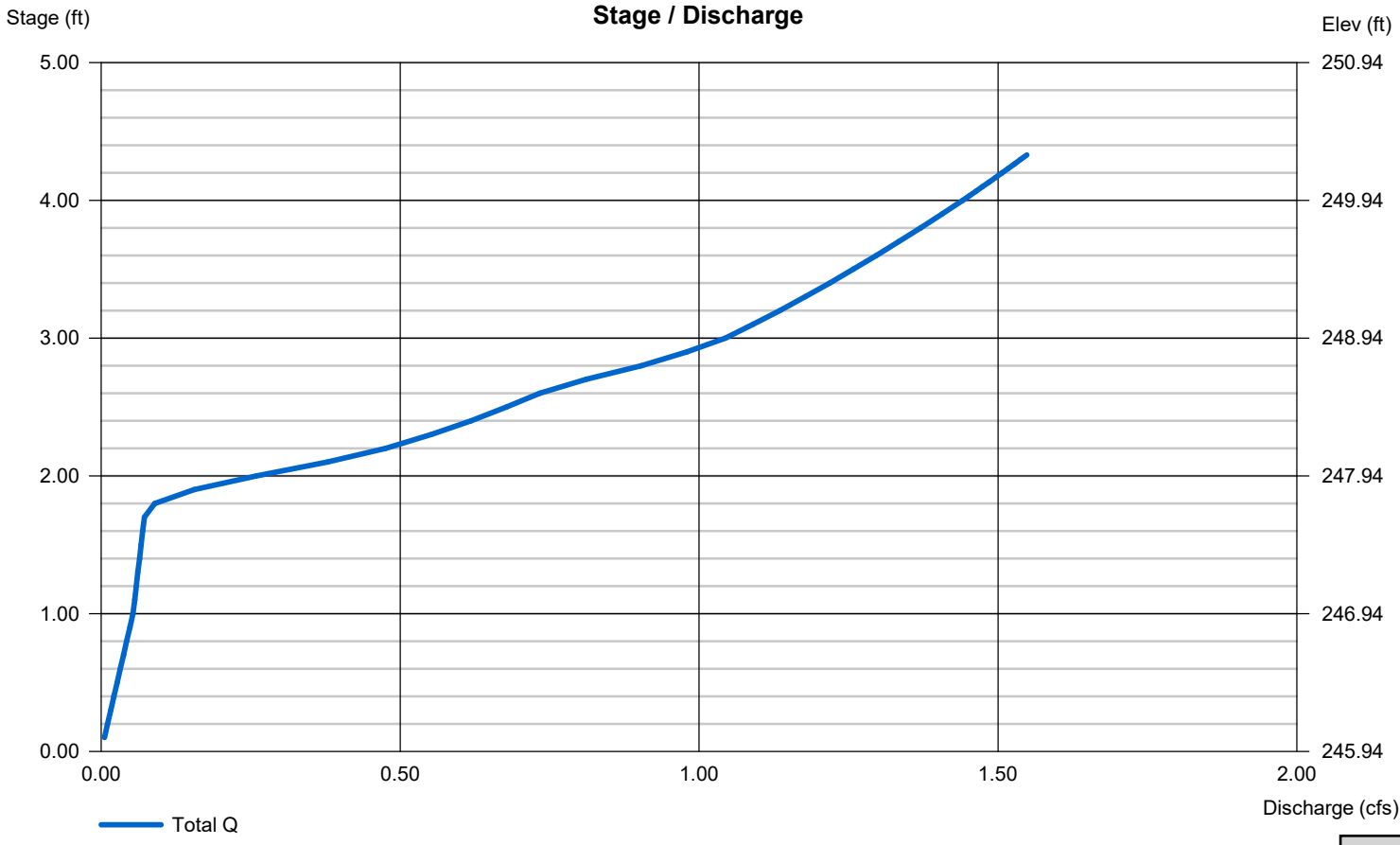
Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	Inactive	0.00	0.00	0.00
Crest El. (ft)	= 104.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= 1	---	---	---
Multi-Stage	= No	No	No	No

Exfil.(in/hr) = 0.490 (by Contour)

TW Elev. (ft) = 0.00

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021

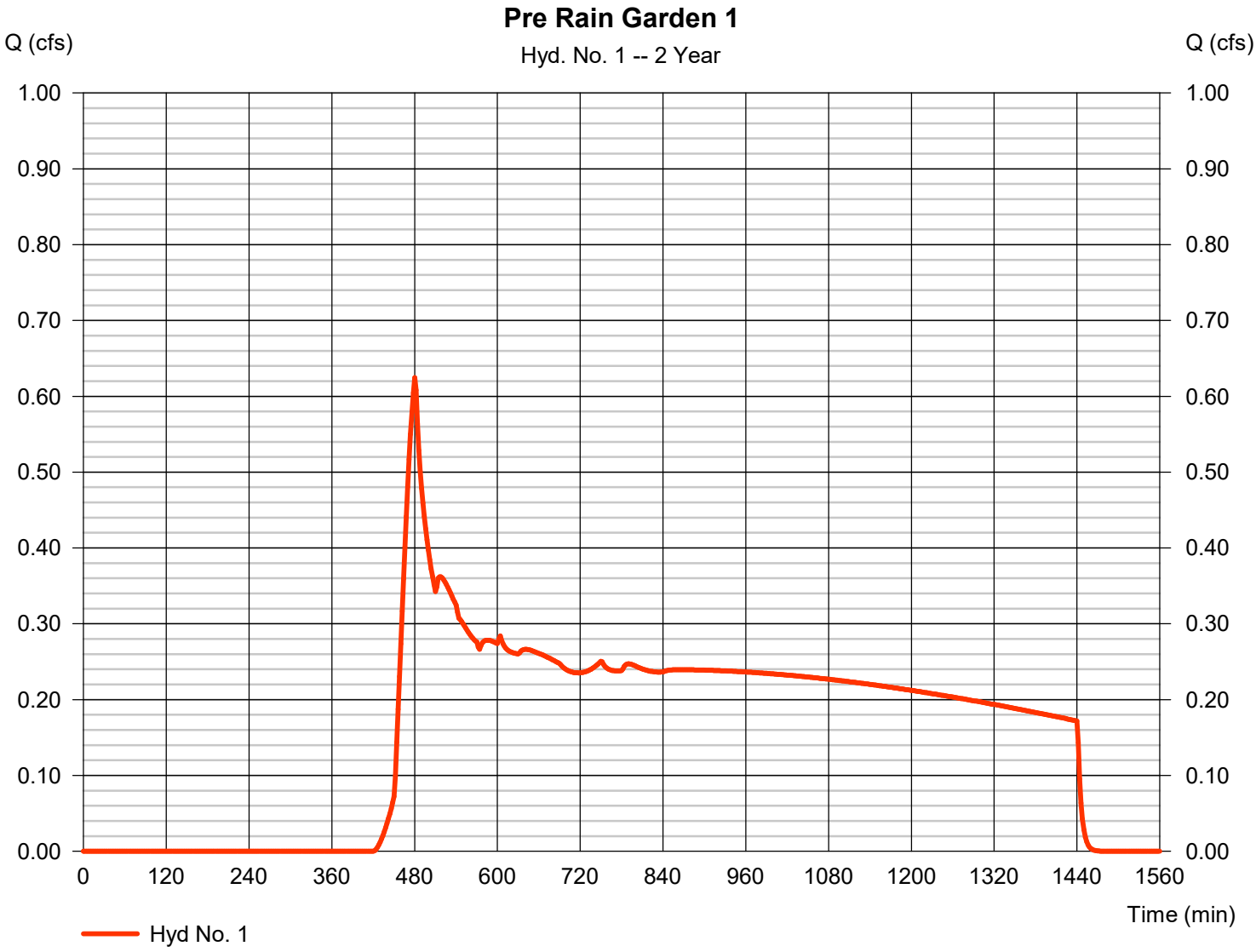
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SBUH Runoff	0.625	2	480	14,570	------	------	------	Pre Rain Garden 1
2	SBUH Runoff	2.975	2	476	41,869	------	------	------	Post Rain Garden 1
3	SBUH Runoff	0.268	2	480	6,258	------	------	------	Pre Rain Garden 2
4	SBUH Runoff	0.427	2	480	8,056	------	------	------	Post Rain Garden 2
5	Reservoir	0.625	2	606	27,458	2	248.52	13,867	Rain Garden 1
6	Reservoir	0.362	2	988	14,240	5	248.11	10,501	Rain Garden 2

Hydrograph Report

Hyd. No. 1

Pre Rain Garden 1

Hydrograph type	= SBUH Runoff	Peak discharge	= 0.625 cfs
Storm frequency	= 2 yrs	Time to peak	= 480 min
Time interval	= 2 min	Hyd. volume	= 14,570 cuft
Drainage area	= 6.170 ac	Curve number	= 75
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 2.50 in	Distribution	= Type IA
Storm duration	= 24 hrs	Shape factor	= n/a



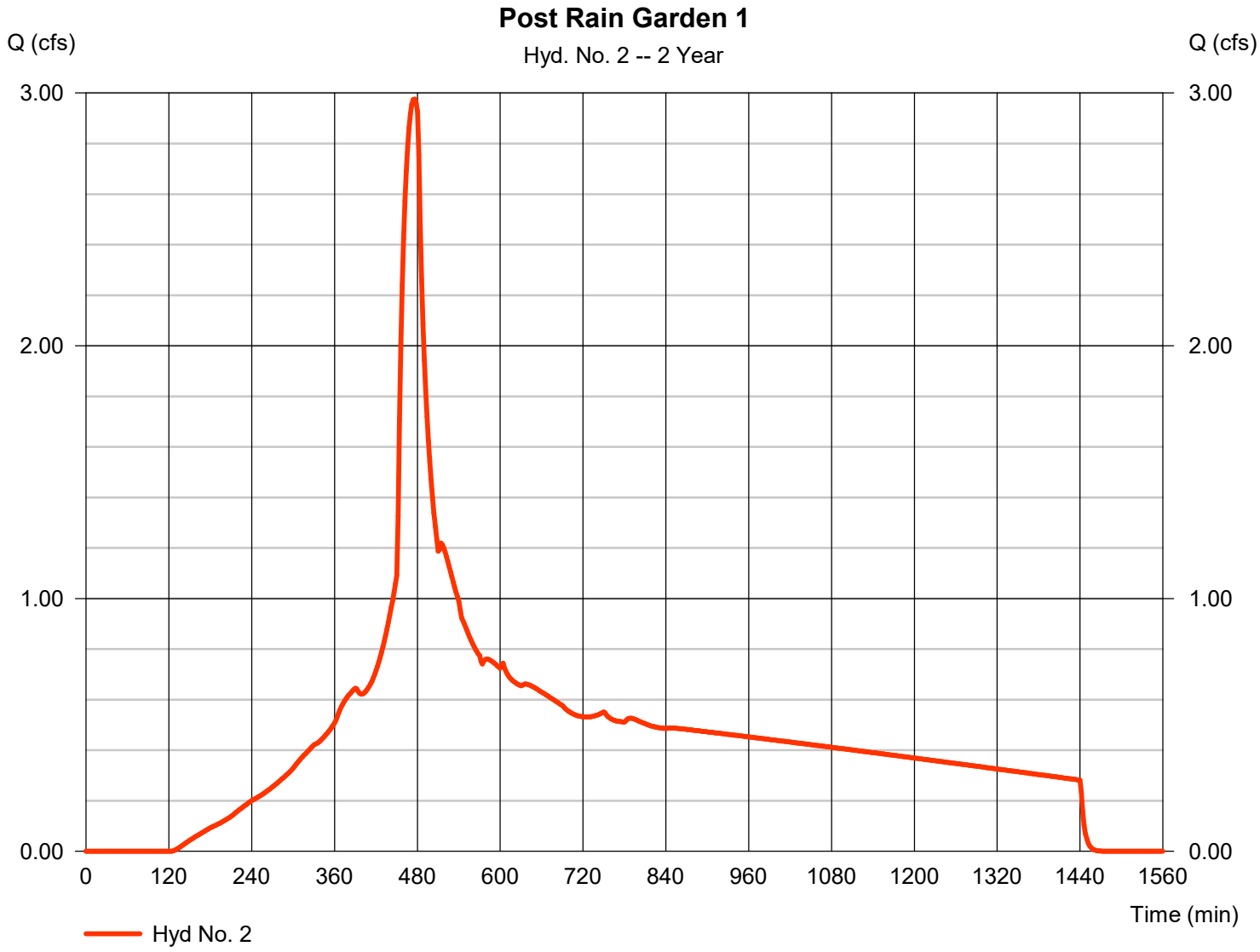
Hydrograph Report

Hyd. No. 2

Post Rain Garden 1

Hydrograph type	= SBUH Runoff	Peak discharge	= 2.975 cfs
Storm frequency	= 2 yrs	Time to peak	= 476 min
Time interval	= 2 min	Hyd. volume	= 41,869 cuft
Drainage area	= 6.170 ac	Curve number	= 94*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 2.50 in	Distribution	= Type IA
Storm duration	= 24 hrs	Shape factor	= n/a

* Composite (Area/CN) = [(3.920 x 98) + (0.910 x 72) + (1.336 x 98)] / 6.170



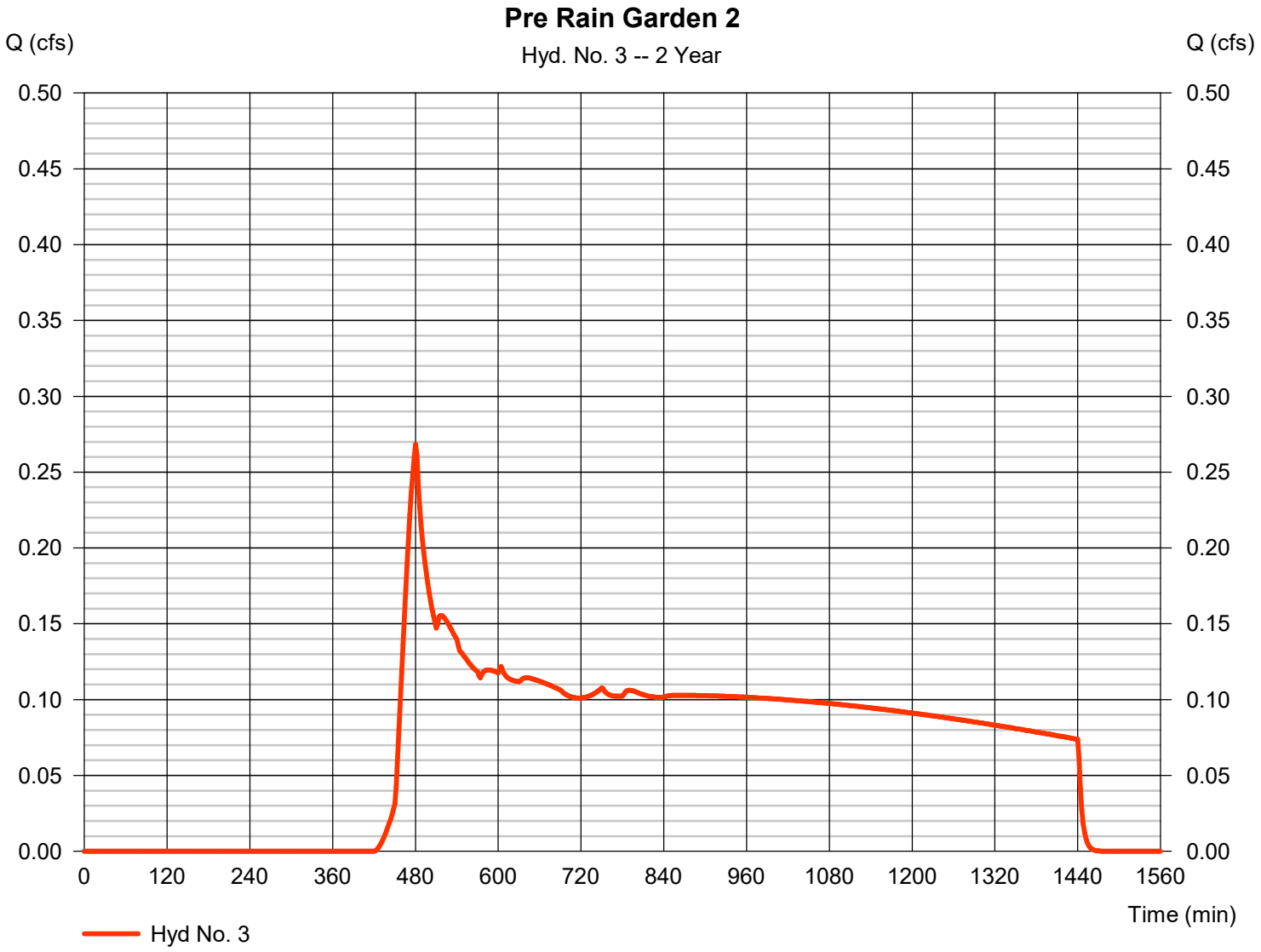
Hydrograph Report

Hyd. No. 3

Pre Rain Garden 2

Hydrograph type	= SBUH Runoff	Peak discharge	= 0.268 cfs
Storm frequency	= 2 yrs	Time to peak	= 480 min
Time interval	= 2 min	Hyd. volume	= 6,258 cuft
Drainage area	= 2.650 ac	Curve number	= 75*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 2.50 in	Distribution	= Type IA
Storm duration	= 24 hrs	Shape factor	= n/a

* Composite (Area/CN) = [(0.500 x 98) + (2.140 x 70)] / 2.650



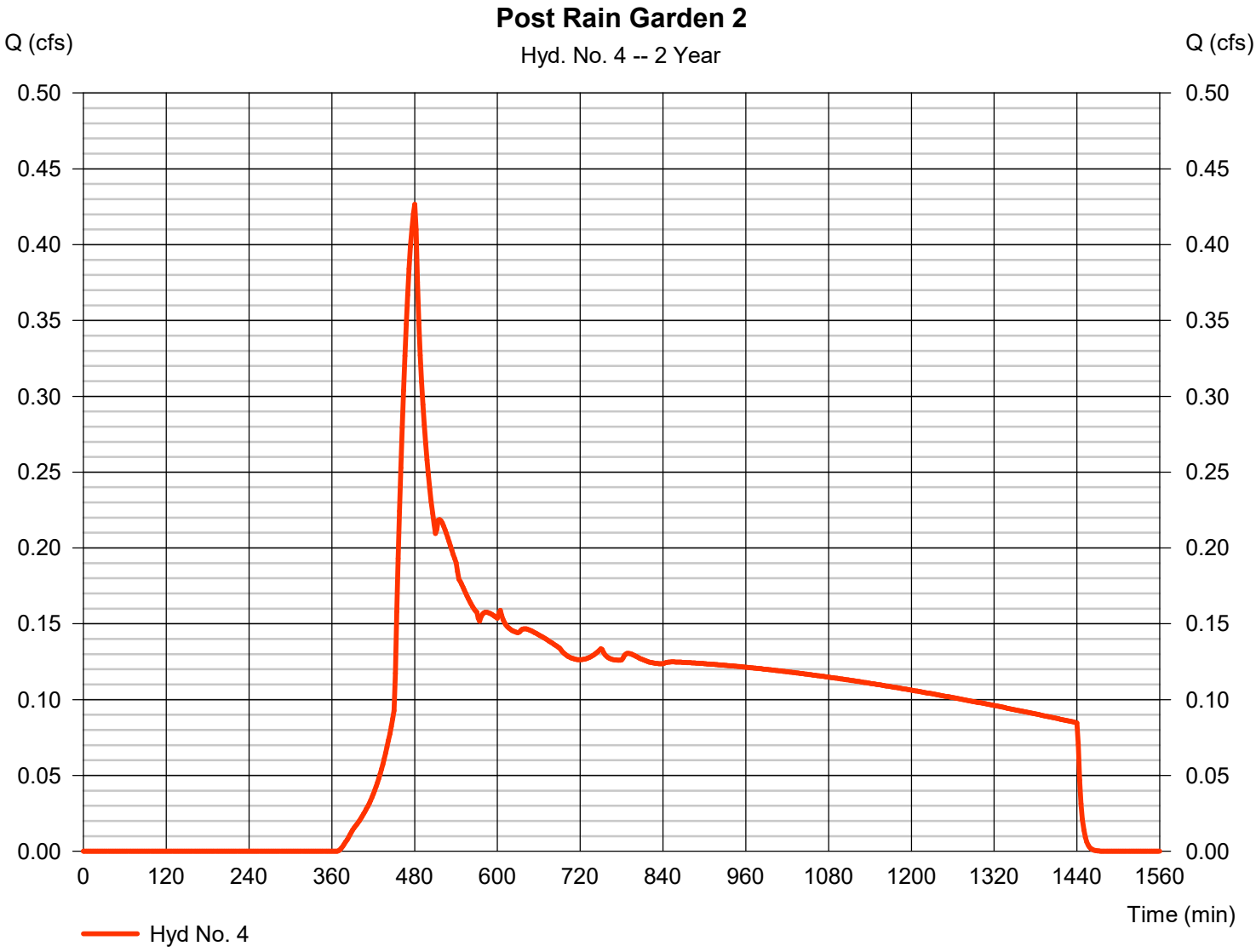
Hydrograph Report

Hyd. No. 4

Post Rain Garden 2

Hydrograph type	= SBUH Runoff	Peak discharge	= 0.427 cfs
Storm frequency	= 2 yrs	Time to peak	= 480 min
Time interval	= 2 min	Hyd. volume	= 8,056 cuft
Drainage area	= 2.650 ac	Curve number	= 79*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 2.50 in	Distribution	= Type IA
Storm duration	= 24 hrs	Shape factor	= n/a

* Composite (Area/CN) = [(0.510 x 98) + (2.140 x 75)] / 2.650



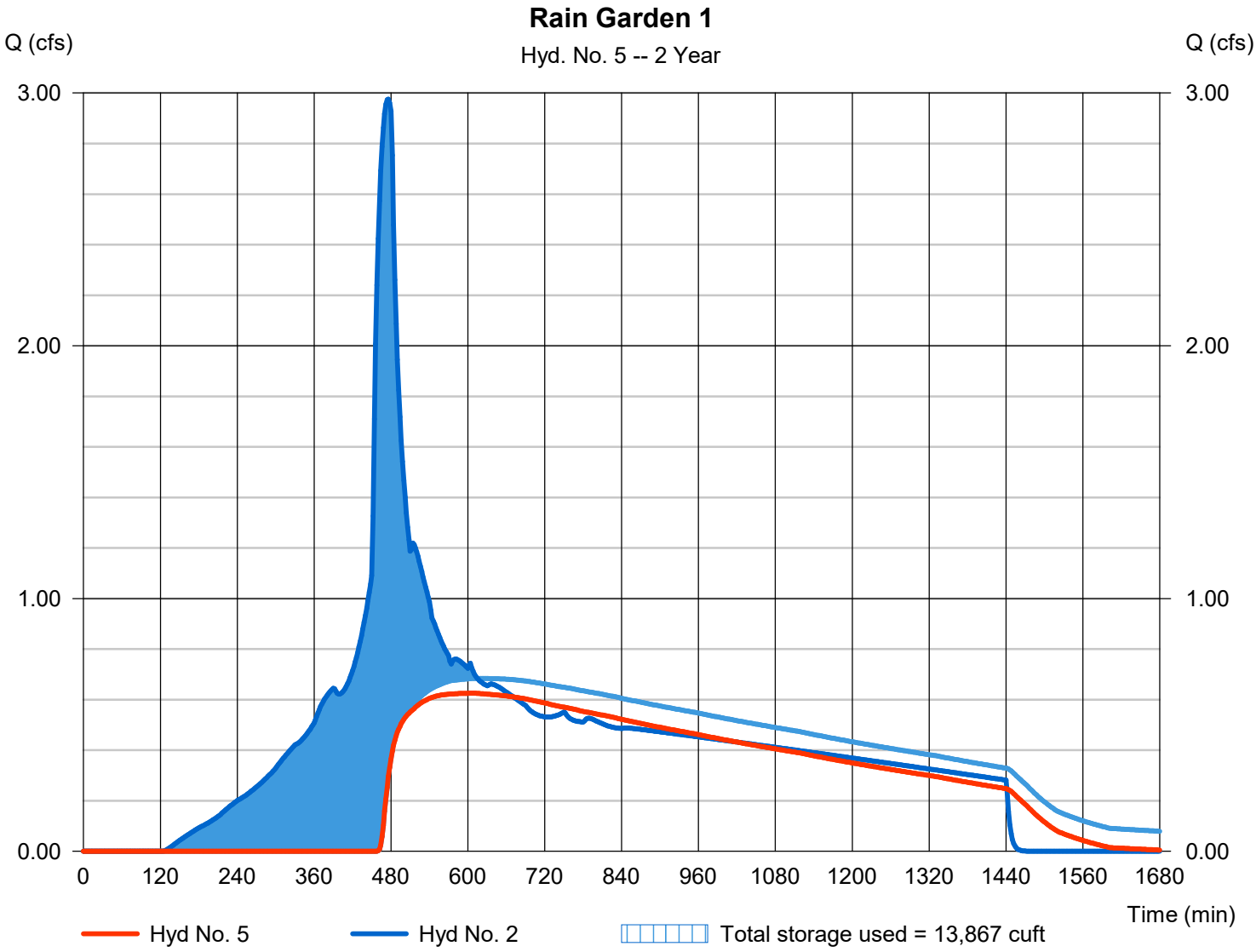
Hydrograph Report

Hyd. No. 5

Rain Garden 1

Hydrograph type	=	Reservoir	Peak discharge	=	0.625 cfs
Storm frequency	=	2 yrs	Time to peak	=	606 min
Time interval	=	2 min	Hyd. volume	=	27,458 cuft
Inflow hyd. No.	=	2 - Post Rain Garden 1	Max. Elevation	=	248.52 ft
Reservoir name	=	Rain Garden 1	Max. Storage	=	13,867 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



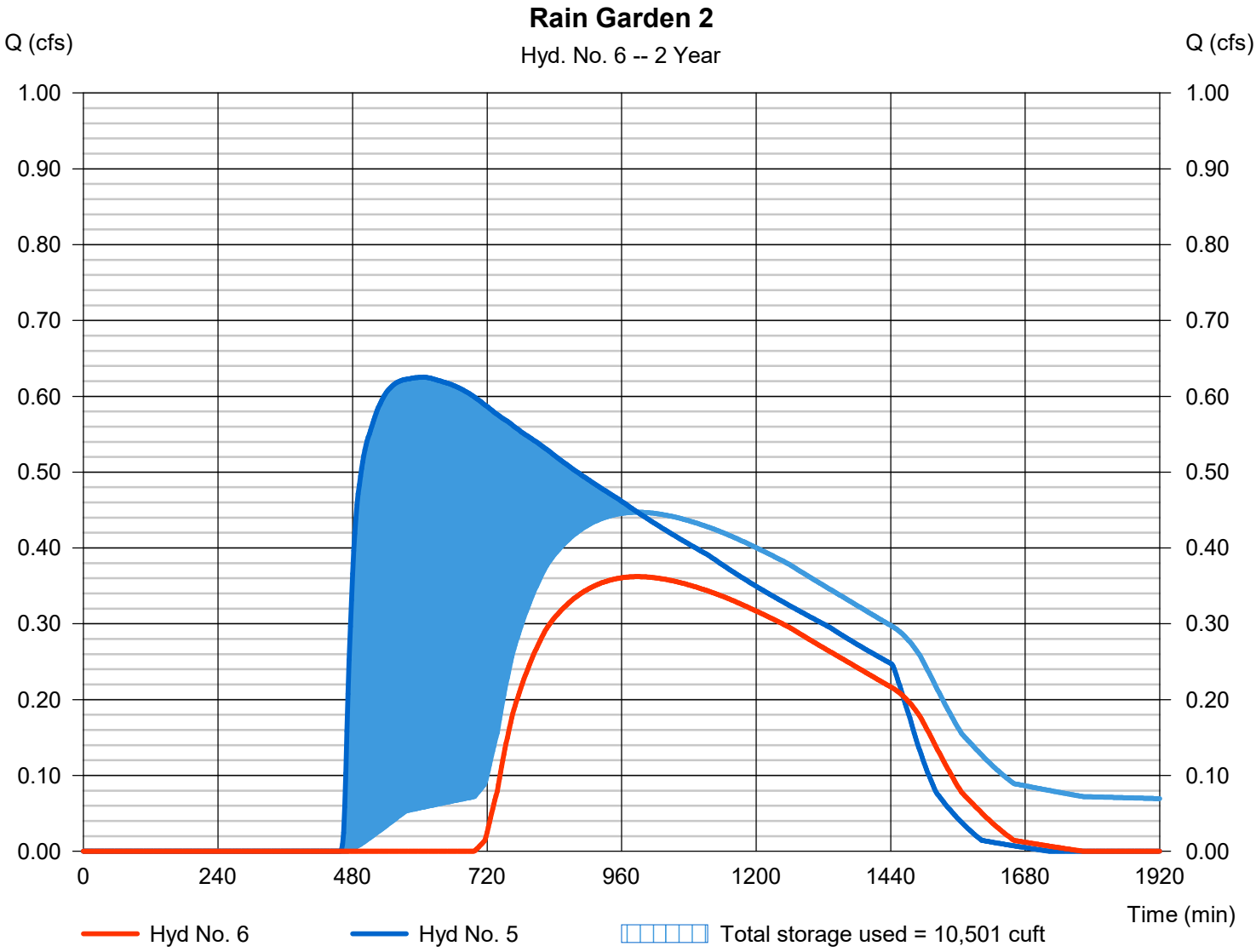
Hydrograph Report

Hyd. No. 6

Rain Garden 2

Hydrograph type	=	Reservoir	Peak discharge	=	0.362 cfs
Storm frequency	=	2 yrs	Time to peak	=	988 min
Time interval	=	2 min	Hyd. volume	=	14,240 cuft
Inflow hyd. No.	=	5 - Rain Garden 1	Max. Elevation	=	248.11 ft
Reservoir name	=	Rain Garden 1	Max. Storage	=	10,501 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021

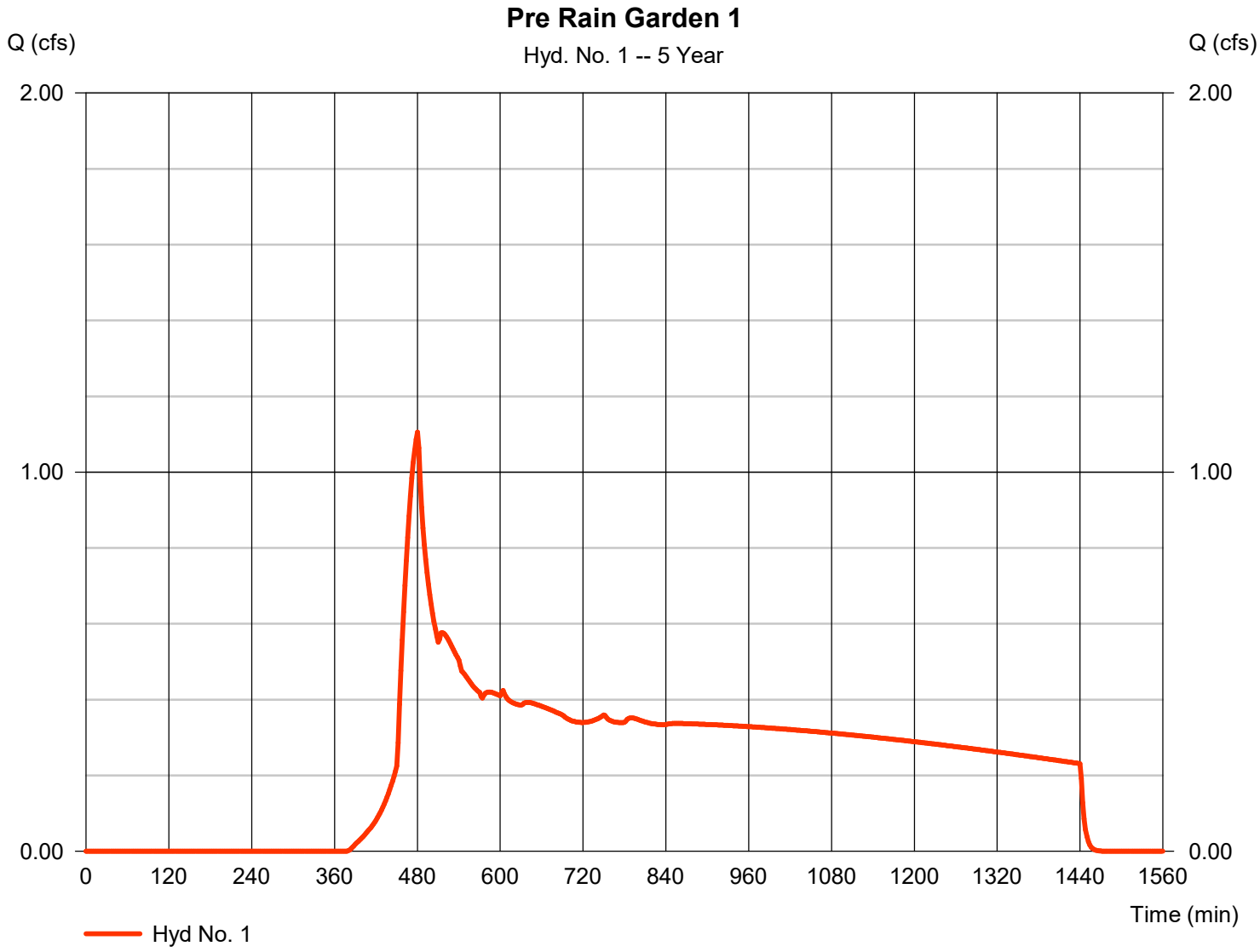
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SBUH Runoff	1.105	2	480	21,519	------	------	------	Pre Rain Garden 1
2	SBUH Runoff	3.752	2	474	52,635	------	------	------	Post Rain Garden 1
3	SBUH Runoff	0.475	2	480	9,242	------	------	------	Pre Rain Garden 2
4	SBUH Runoff	0.667	2	480	11,432	------	------	------	Post Rain Garden 2
5	Reservoir	0.909	2	560	37,540	2	248.90	16,990	Rain Garden 1
6	Reservoir	0.507	2	938	23,637	5	248.31	12,135	Rain Garden 2

Hydrograph Report

Hyd. No. 1

Pre Rain Garden 1

Hydrograph type	= SBUH Runoff	Peak discharge	= 1.105 cfs
Storm frequency	= 5 yrs	Time to peak	= 480 min
Time interval	= 2 min	Hyd. volume	= 21,519 cuft
Drainage area	= 6.170 ac	Curve number	= 75
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 3.00 in	Distribution	= Type IA
Storm duration	= 24 hrs	Shape factor	= n/a



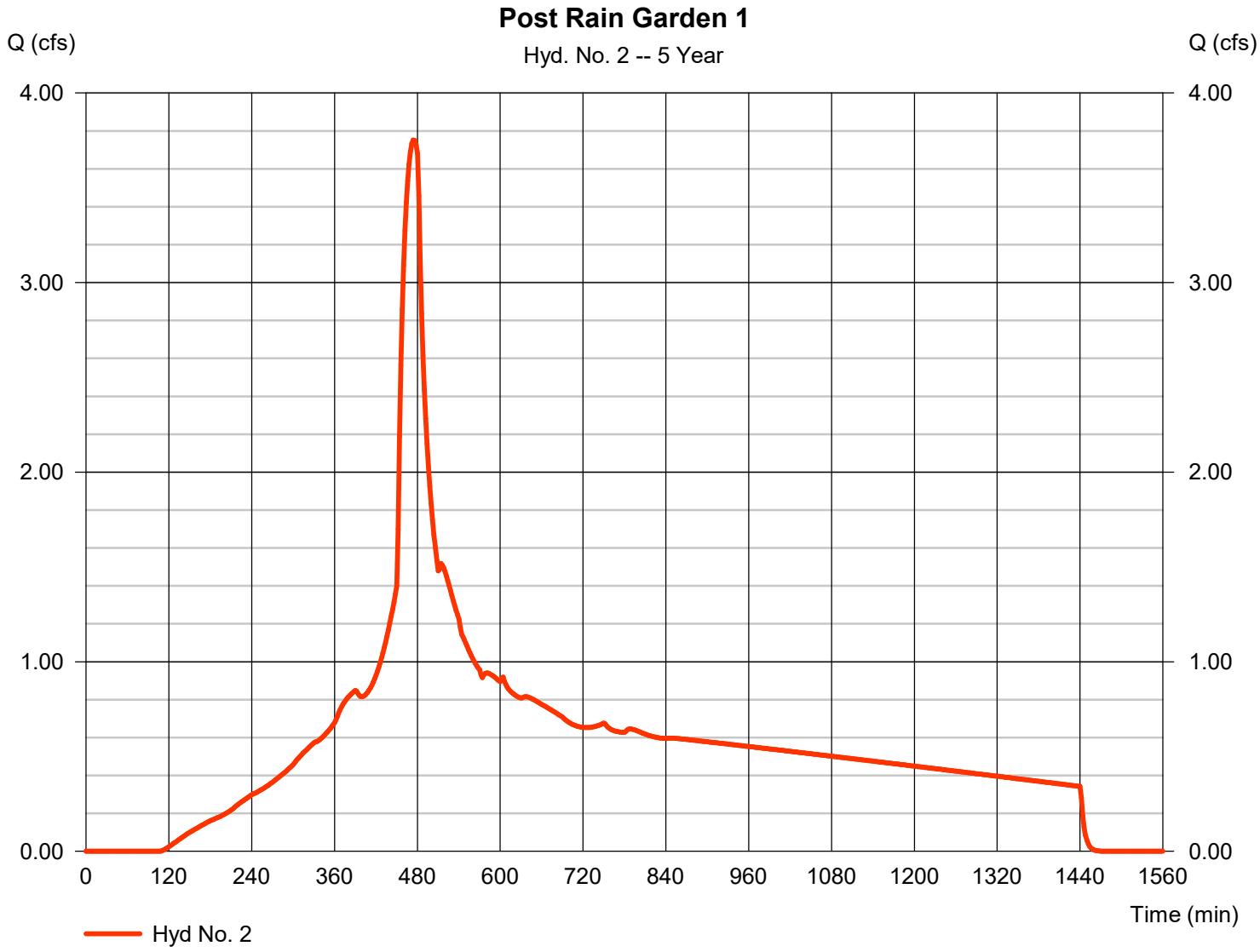
Hydrograph Report

Hyd. No. 2

Post Rain Garden 1

Hydrograph type	= SBUH Runoff	Peak discharge	= 3.752 cfs
Storm frequency	= 5 yrs	Time to peak	= 474 min
Time interval	= 2 min	Hyd. volume	= 52,635 cuft
Drainage area	= 6.170 ac	Curve number	= 94*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 3.00 in	Distribution	= Type IA
Storm duration	= 24 hrs	Shape factor	= n/a

* Composite (Area/CN) = [(3.920 x 98) + (0.910 x 72) + (1.336 x 98)] / 6.170



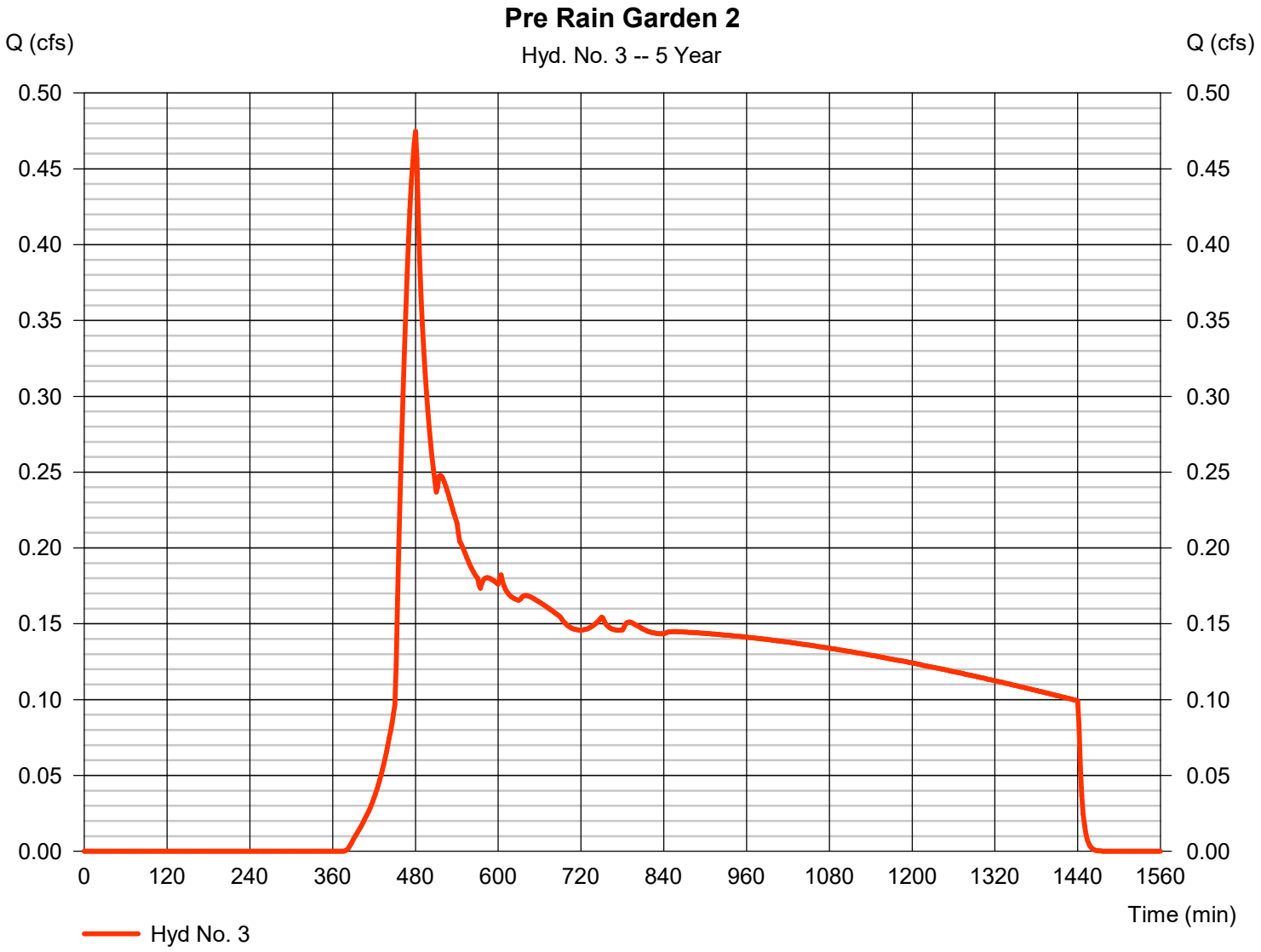
Hydrograph Report

Hyd. No. 3

Pre Rain Garden 2

Hydrograph type	= SBUH Runoff	Peak discharge	= 0.475 cfs
Storm frequency	= 5 yrs	Time to peak	= 480 min
Time interval	= 2 min	Hyd. volume	= 9,242 cuft
Drainage area	= 2.650 ac	Curve number	= 75*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 3.00 in	Distribution	= Type IA
Storm duration	= 24 hrs	Shape factor	= n/a

* Composite (Area/CN) = [(0.500 x 98) + (2.140 x 70)] / 2.650



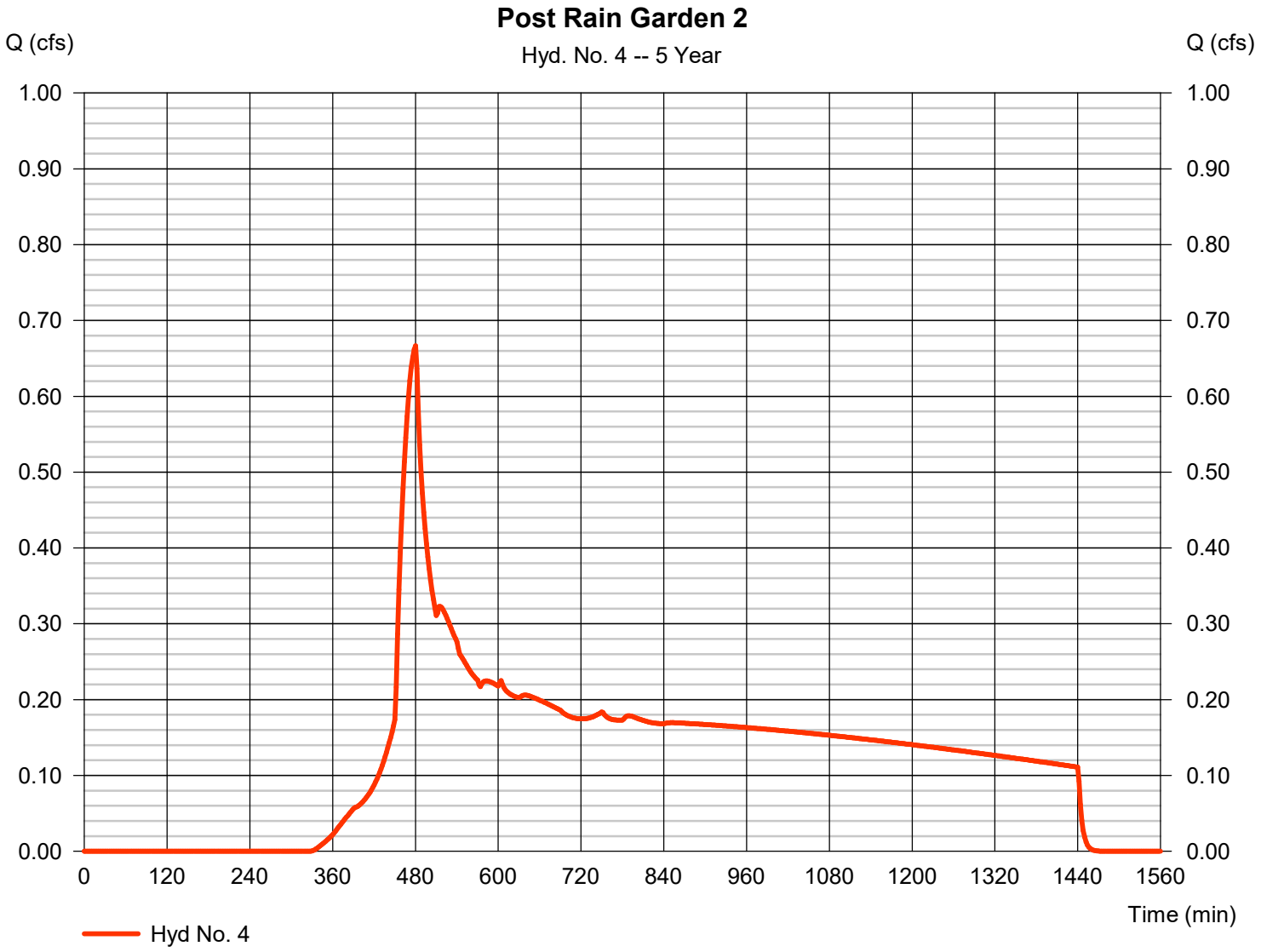
Hydrograph Report

Hyd. No. 4

Post Rain Garden 2

Hydrograph type	=	SBUH Runoff	Peak discharge	=	0.667 cfs
Storm frequency	=	5 yrs	Time to peak	=	480 min
Time interval	=	2 min	Hyd. volume	=	11,432 cuft
Drainage area	=	2.650 ac	Curve number	=	79*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	5.00 min
Total precip.	=	3.00 in	Distribution	=	Type IA
Storm duration	=	24 hrs	Shape factor	=	n/a

* Composite (Area/CN) = [(0.510 x 98) + (2.140 x 75)] / 2.650



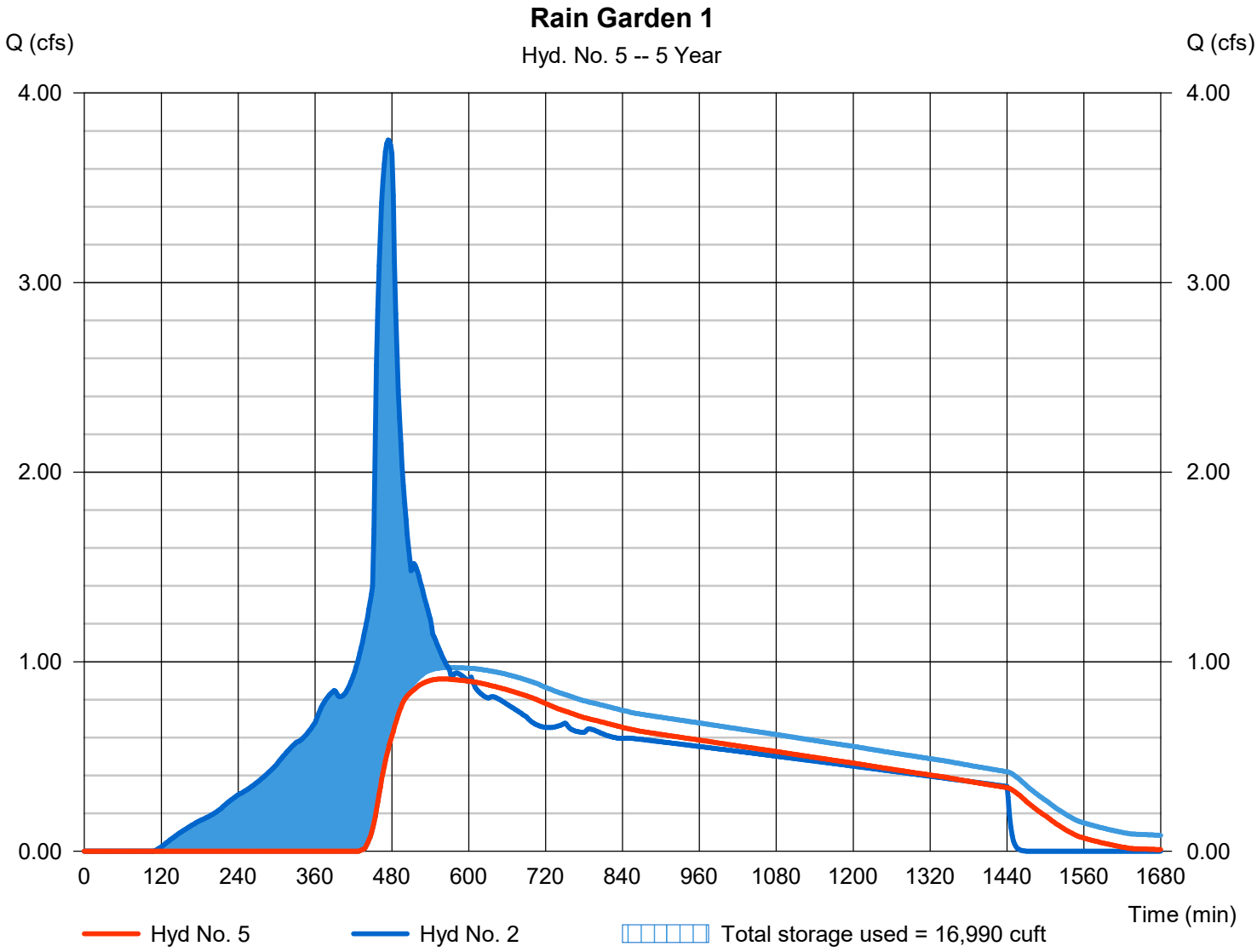
Hydrograph Report

Hyd. No. 5

Rain Garden 1

Hydrograph type	=	Reservoir	Peak discharge	=	0.909 cfs
Storm frequency	=	5 yrs	Time to peak	=	560 min
Time interval	=	2 min	Hyd. volume	=	37,540 cuft
Inflow hyd. No.	=	2 - Post Rain Garden 1	Max. Elevation	=	248.90 ft
Reservoir name	=	Rain Garden 1	Max. Storage	=	16,990 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



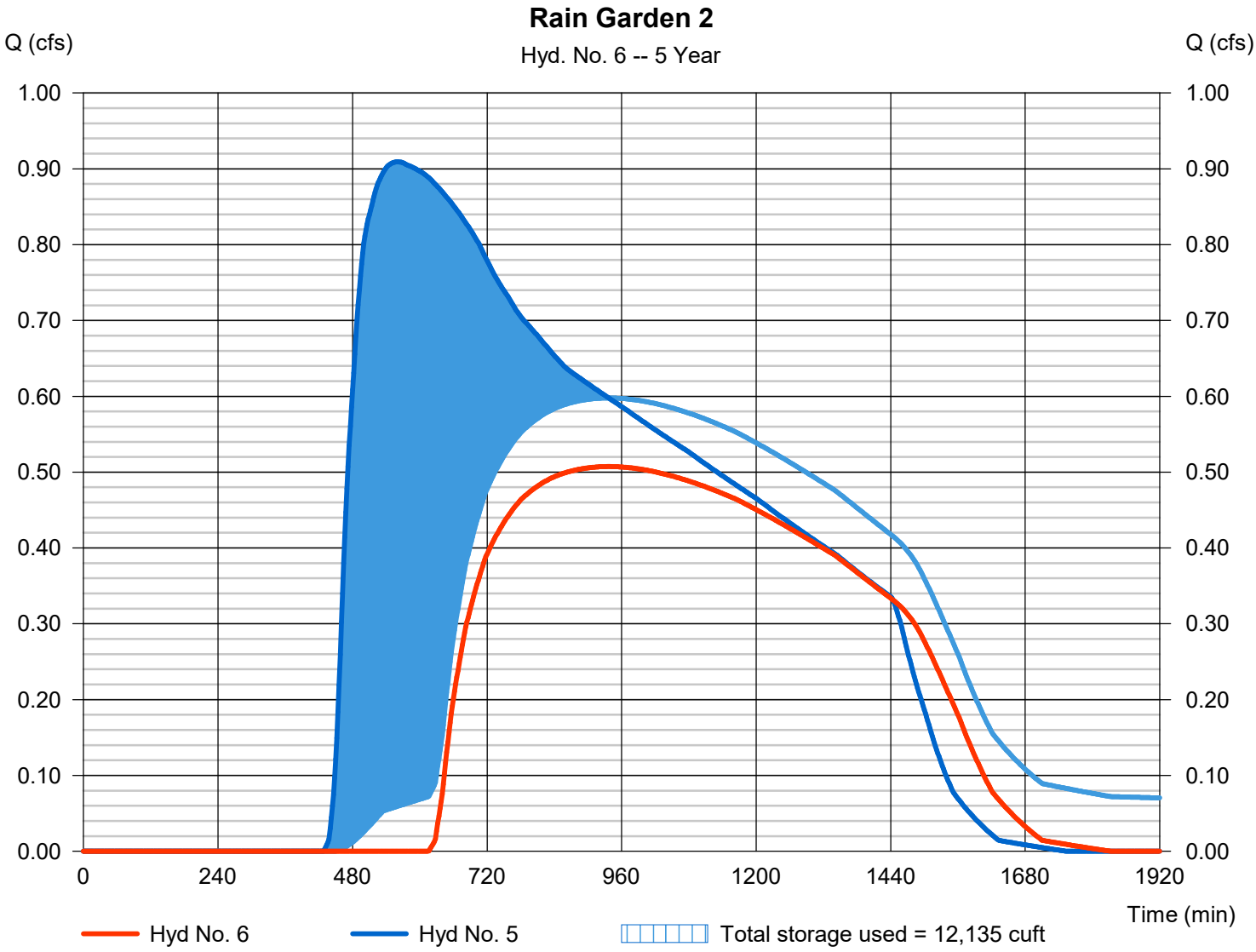
Hydrograph Report

Hyd. No. 6

Rain Garden 2

Hydrograph type	=	Reservoir	Peak discharge	=	0.507 cfs
Storm frequency	=	5 yrs	Time to peak	=	938 min
Time interval	=	2 min	Hyd. volume	=	23,637 cuft
Inflow hyd. No.	=	5 - Rain Garden 1	Max. Elevation	=	248.31 ft
Reservoir name	=	Rain Garden 1	Max. Storage	=	12,135 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021

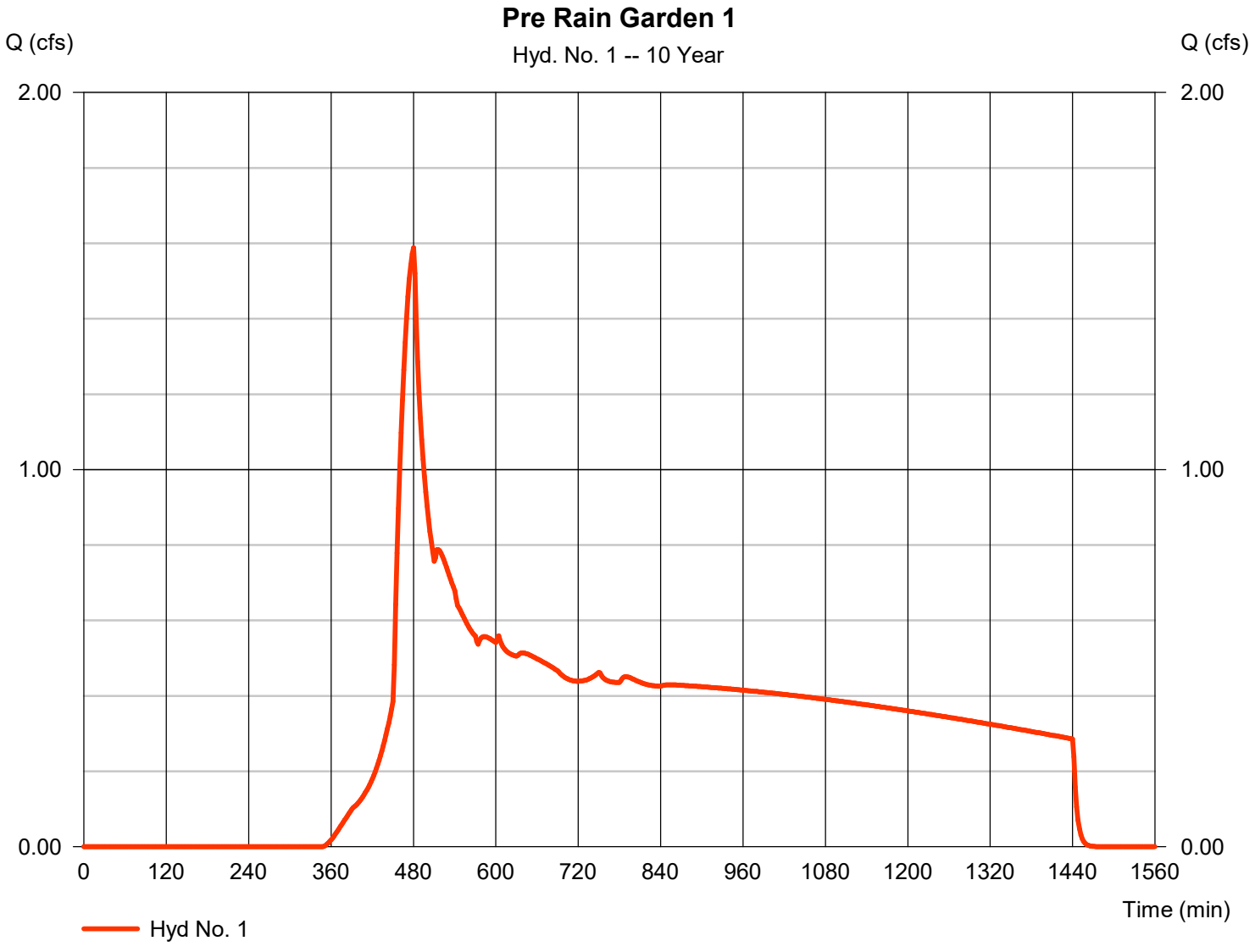
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SBUH Runoff	1.589	2	480	28,367	------	------	------	Pre Rain Garden 1
2	SBUH Runoff	4.451	2	474	62,419	------	------	------	Post Rain Garden 1
3	SBUH Runoff	0.682	2	480	12,183	------	------	------	Pre Rain Garden 2
4	SBUH Runoff	0.901	2	480	14,691	------	------	------	Post Rain Garden 2
5	Reservoir	1.044	2	564	46,682	2	249.20	20,129	Rain Garden 1
6	Reservoir	0.661	2	910	32,124	5	248.57	14,319	Rain Garden 2

Hydrograph Report

Hyd. No. 1

Pre Rain Garden 1

Hydrograph type	= SBUH Runoff	Peak discharge	= 1.589 cfs
Storm frequency	= 10 yrs	Time to peak	= 480 min
Time interval	= 2 min	Hyd. volume	= 28,367 cuft
Drainage area	= 6.170 ac	Curve number	= 75
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 3.45 in	Distribution	= Type IA
Storm duration	= 24 hrs	Shape factor	= n/a



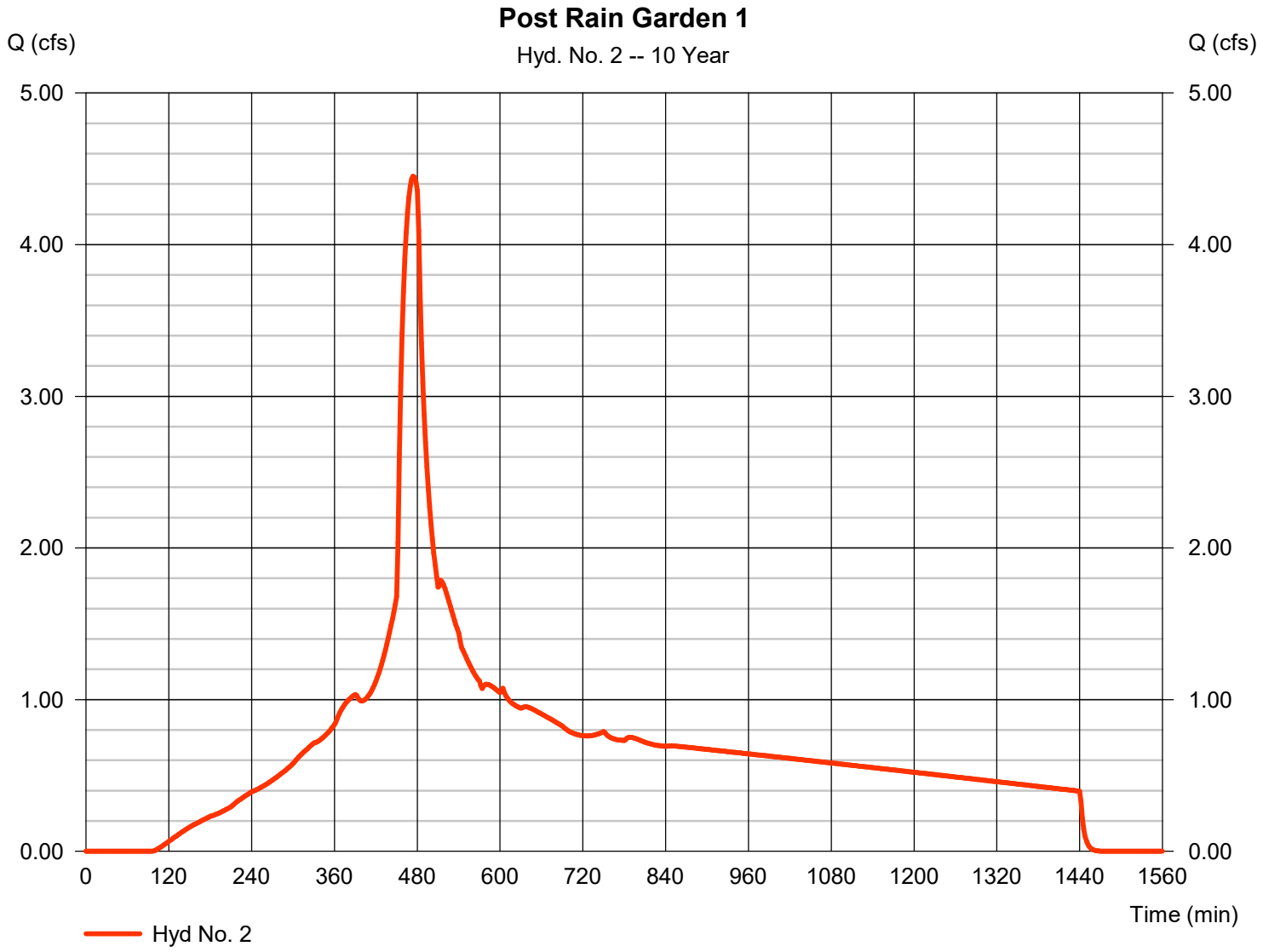
Hydrograph Report

Hyd. No. 2

Post Rain Garden 1

Hydrograph type	= SBUH Runoff	Peak discharge	= 4.451 cfs
Storm frequency	= 10 yrs	Time to peak	= 474 min
Time interval	= 2 min	Hyd. volume	= 62,419 cuft
Drainage area	= 6.170 ac	Curve number	= 94*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 3.45 in	Distribution	= Type IA
Storm duration	= 24 hrs	Shape factor	= n/a

* Composite (Area/CN) = [(3.920 x 98) + (0.910 x 72) + (1.336 x 98)] / 6.170



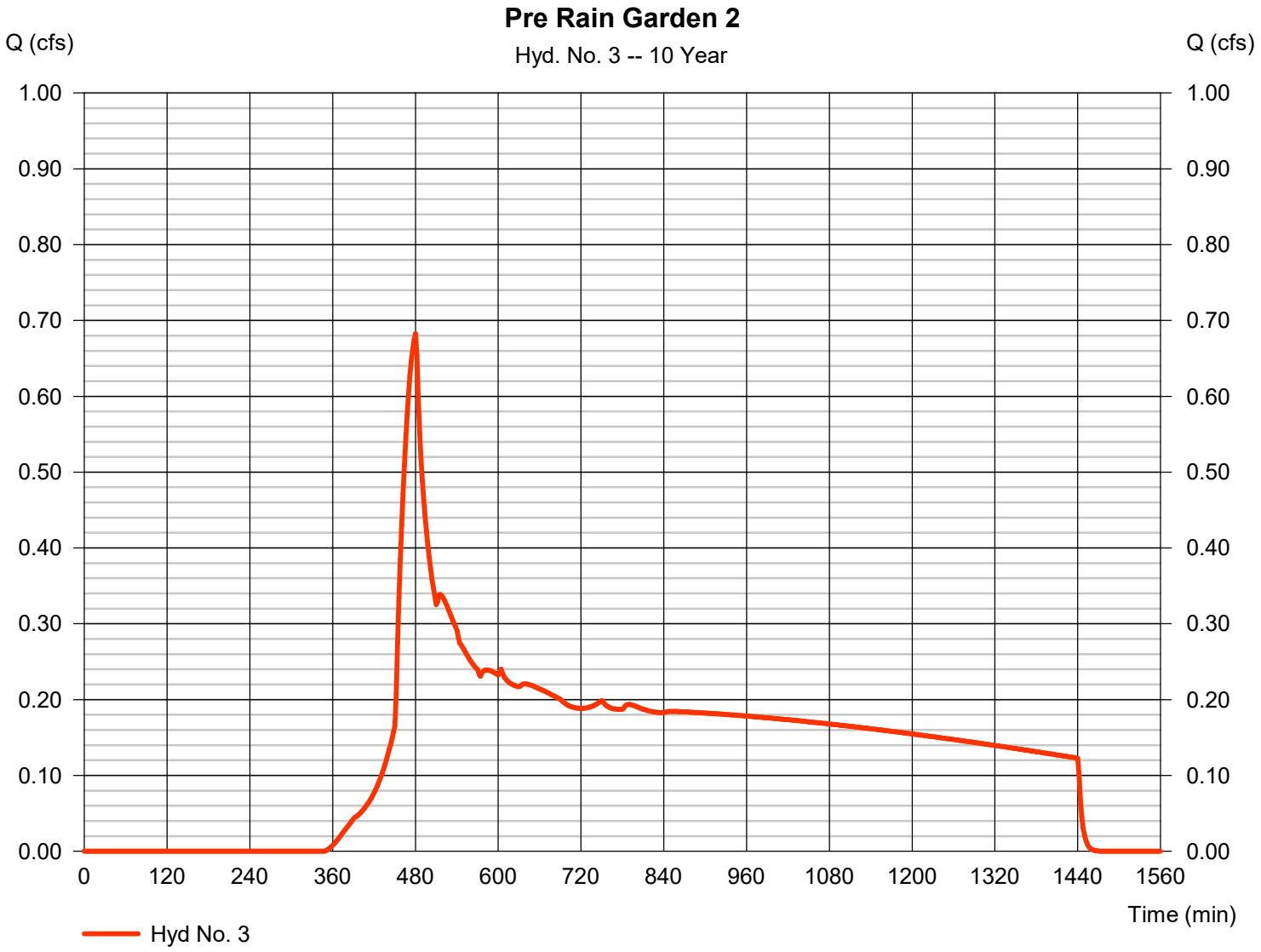
Hydrograph Report

Hyd. No. 3

Pre Rain Garden 2

Hydrograph type	= SBUH Runoff	Peak discharge	= 0.682 cfs
Storm frequency	= 10 yrs	Time to peak	= 480 min
Time interval	= 2 min	Hyd. volume	= 12,183 cuft
Drainage area	= 2.650 ac	Curve number	= 75*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 3.45 in	Distribution	= Type IA
Storm duration	= 24 hrs	Shape factor	= n/a

* Composite (Area/CN) = [(0.500 x 98) + (2.140 x 70)] / 2.650



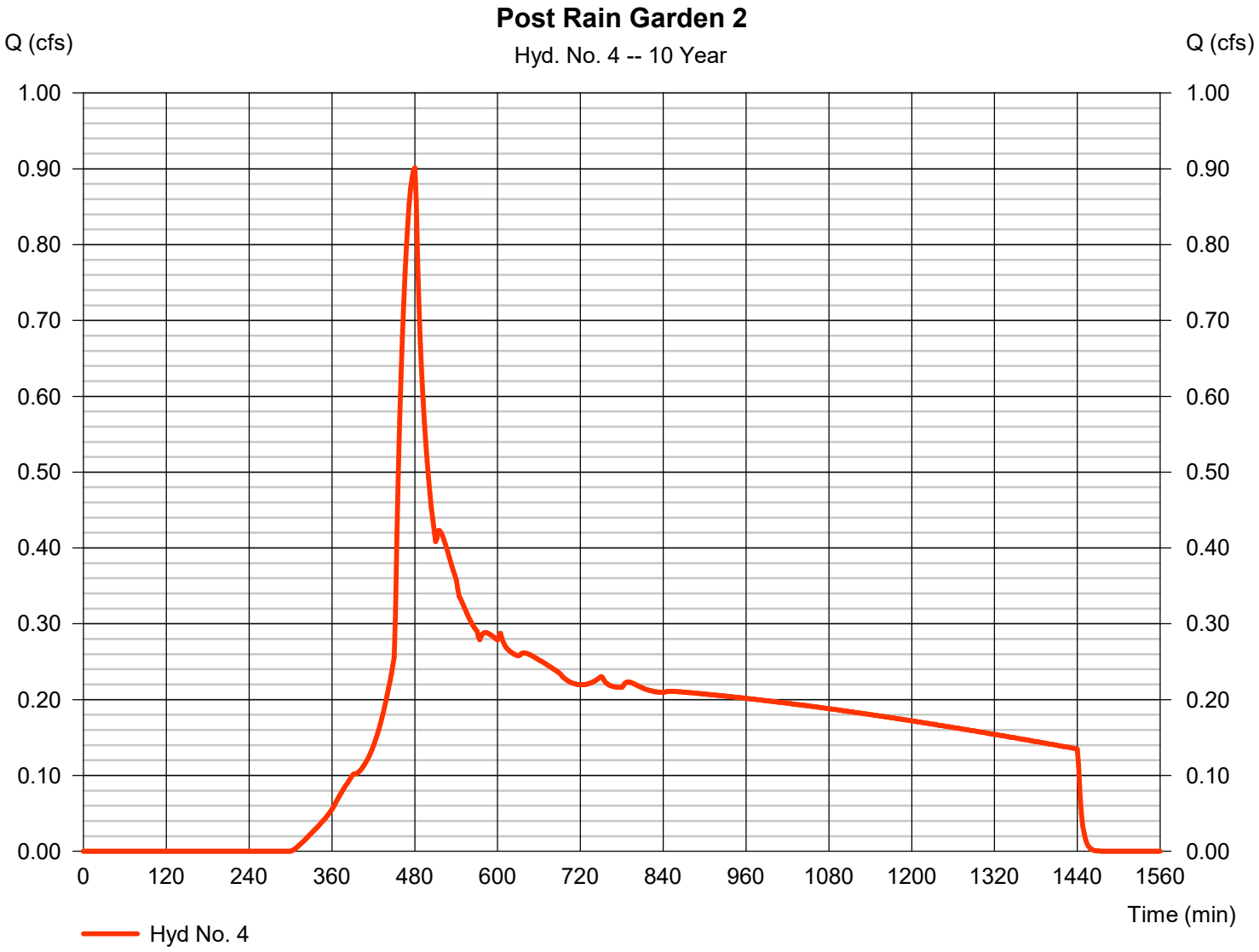
Hydrograph Report

Hyd. No. 4

Post Rain Garden 2

Hydrograph type	= SBUH Runoff	Peak discharge	= 0.901 cfs
Storm frequency	= 10 yrs	Time to peak	= 480 min
Time interval	= 2 min	Hyd. volume	= 14,691 cuft
Drainage area	= 2.650 ac	Curve number	= 79*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 3.45 in	Distribution	= Type IA
Storm duration	= 24 hrs	Shape factor	= n/a

* Composite (Area/CN) = [(0.510 x 98) + (2.140 x 75)] / 2.650



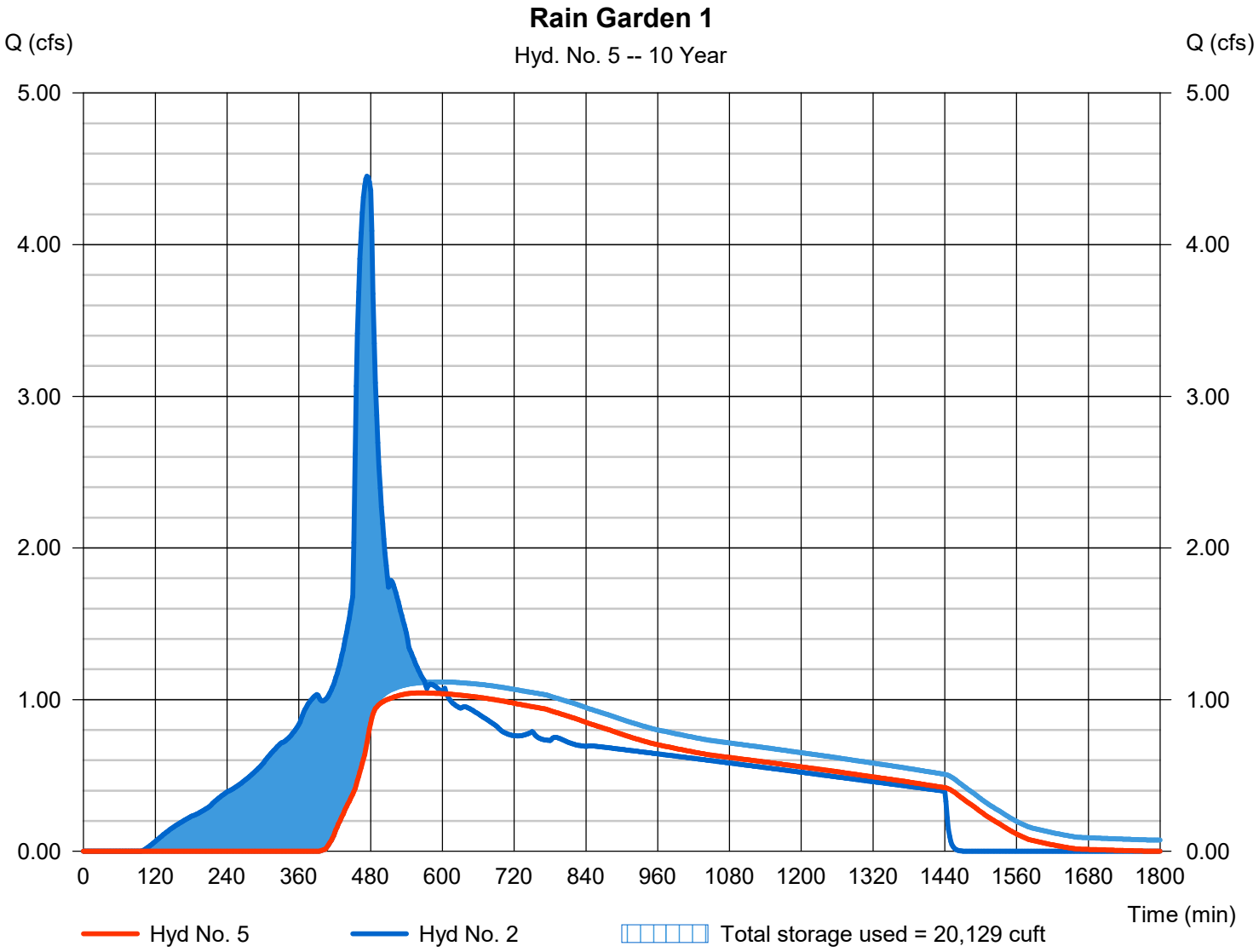
Hydrograph Report

Hyd. No. 5

Rain Garden 1

Hydrograph type	=	Reservoir	Peak discharge	=	1.044 cfs
Storm frequency	=	10 yrs	Time to peak	=	564 min
Time interval	=	2 min	Hyd. volume	=	46,682 cuft
Inflow hyd. No.	=	2 - Post Rain Garden 1	Max. Elevation	=	249.20 ft
Reservoir name	=	Rain Garden 1	Max. Storage	=	20,129 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



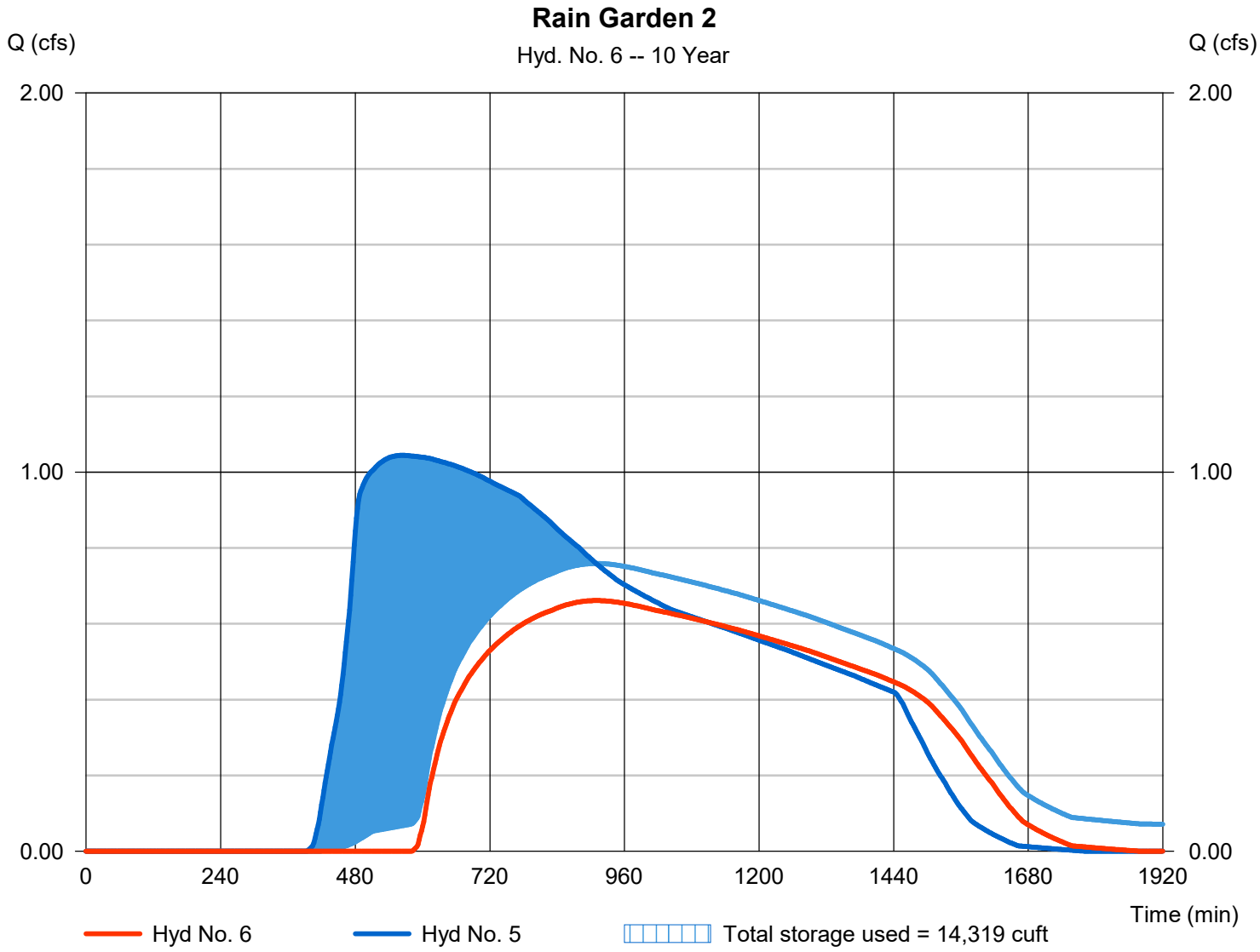
Hydrograph Report

Hyd. No. 6

Rain Garden 2

Hydrograph type	=	Reservoir	Peak discharge	=	0.661 cfs
Storm frequency	=	10 yrs	Time to peak	=	910 min
Time interval	=	2 min	Hyd. volume	=	32,124 cuft
Inflow hyd. No.	=	5 - Rain Garden 1	Max. Elevation	=	248.57 ft
Reservoir name	=	Rain Garden 1	Max. Storage	=	14,319 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021

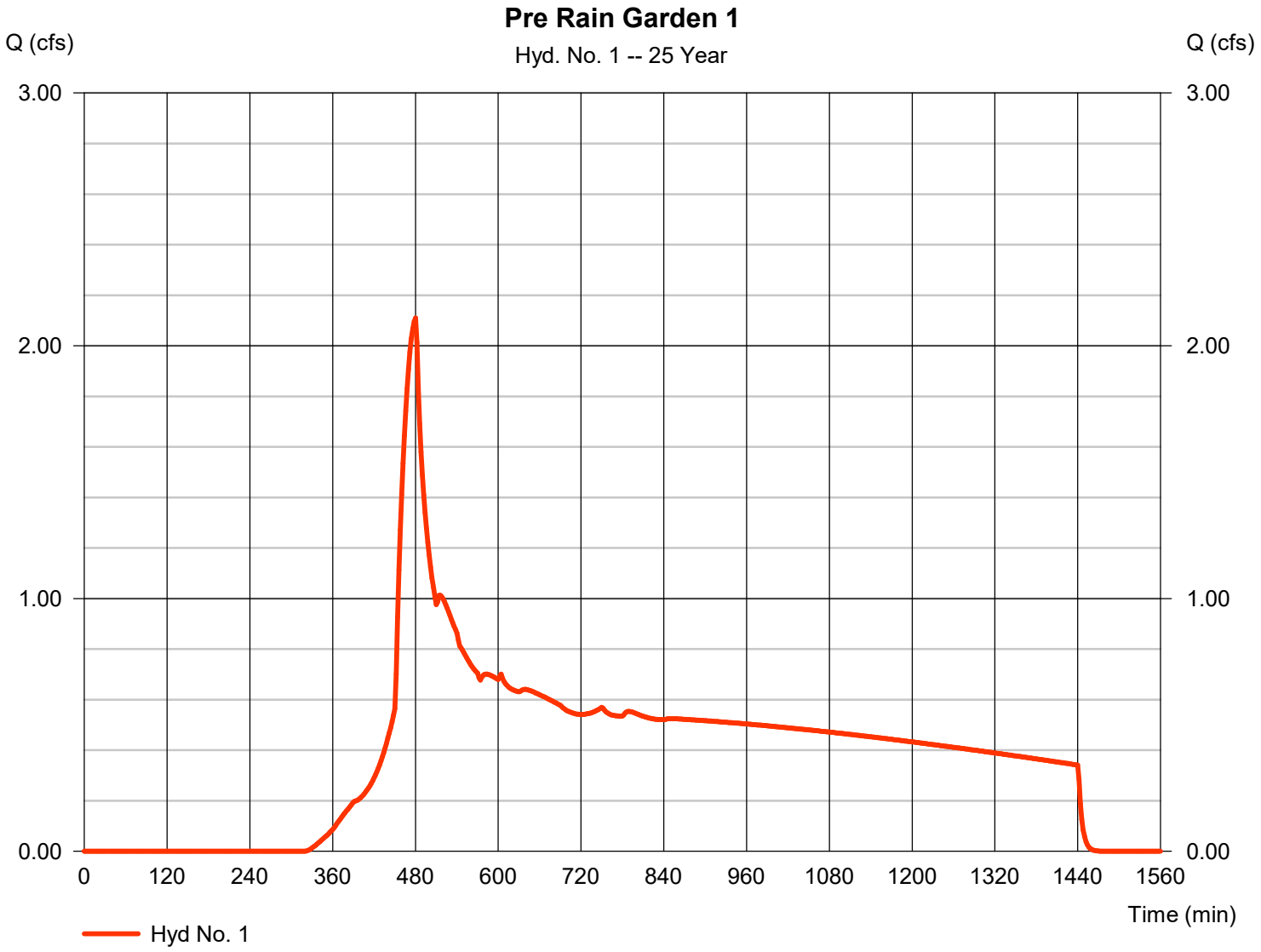
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SBUH Runoff	2.110	2	480	35,657	------	------	------	Pre Rain Garden 1
2	SBUH Runoff	5.148	2	474	72,262	------	------	------	Post Rain Garden 1
3	SBUH Runoff	0.906	2	480	15,315	------	------	------	Pre Rain Garden 2
4	SBUH Runoff	1.149	2	480	18,110	------	------	------	Post Rain Garden 2
5	Reservoir	1.159	2	570	55,851	2	249.50	23,427	Rain Garden 1
6	Reservoir	0.824	2	950	40,670	5	248.77	15,950	Rain Garden 2

Hydrograph Report

Hyd. No. 1

Pre Rain Garden 1

Hydrograph type	=	SBUH Runoff	Peak discharge	=	2.110 cfs
Storm frequency	=	25 yrs	Time to peak	=	480 min
Time interval	=	2 min	Hyd. volume	=	35,657 cuft
Drainage area	=	6.170 ac	Curve number	=	75
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	5.00 min
Total precip.	=	3.90 in	Distribution	=	Type IA
Storm duration	=	24 hrs	Shape factor	=	n/a



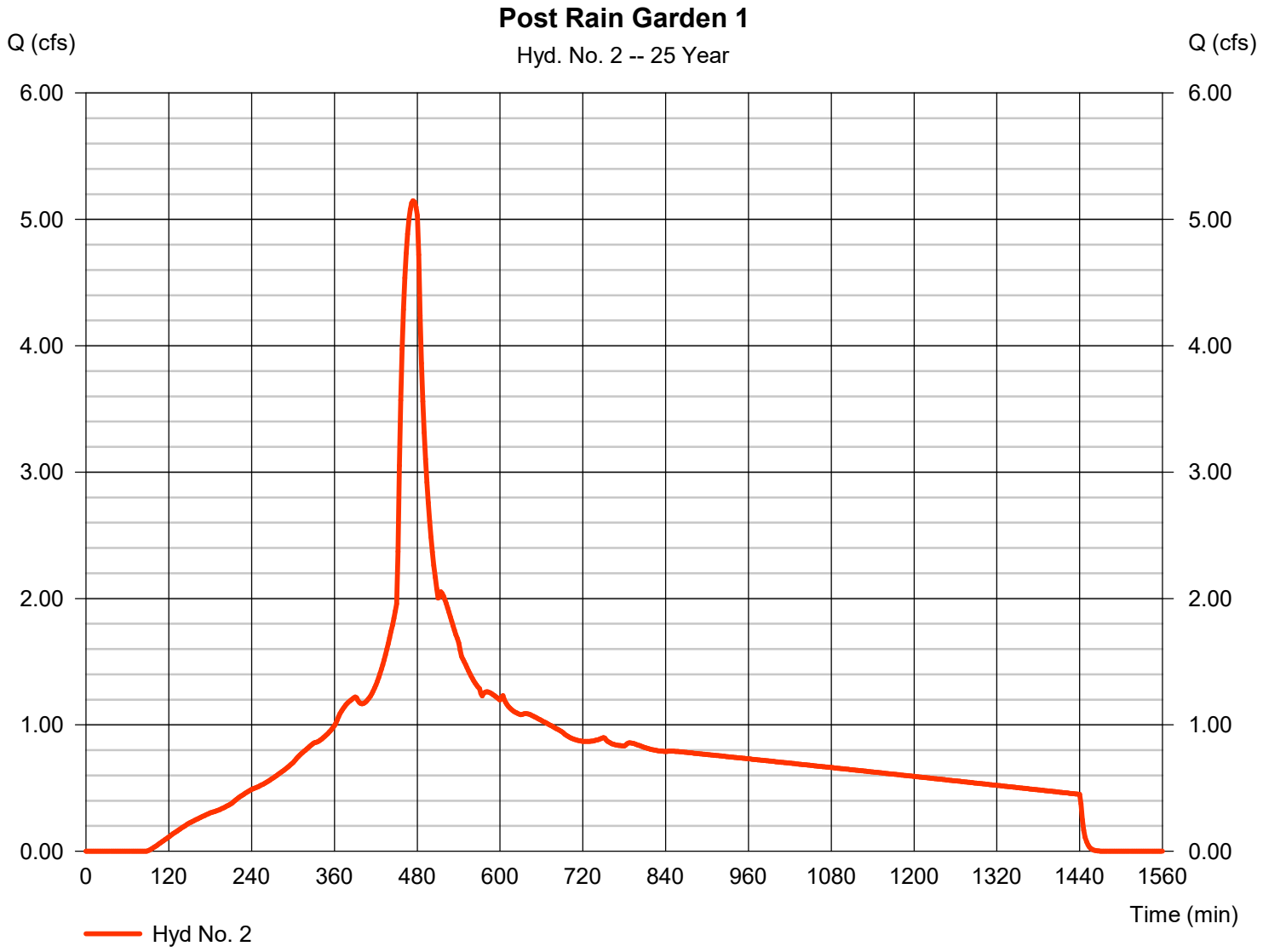
Hydrograph Report

Hyd. No. 2

Post Rain Garden 1

Hydrograph type	=	SBUH Runoff	Peak discharge	=	5.148 cfs
Storm frequency	=	25 yrs	Time to peak	=	474 min
Time interval	=	2 min	Hyd. volume	=	72,262 cuft
Drainage area	=	6.170 ac	Curve number	=	94*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	5.00 min
Total precip.	=	3.90 in	Distribution	=	Type IA
Storm duration	=	24 hrs	Shape factor	=	n/a

* Composite (Area/CN) = [(3.920 x 98) + (0.910 x 72) + (1.336 x 98)] / 6.170



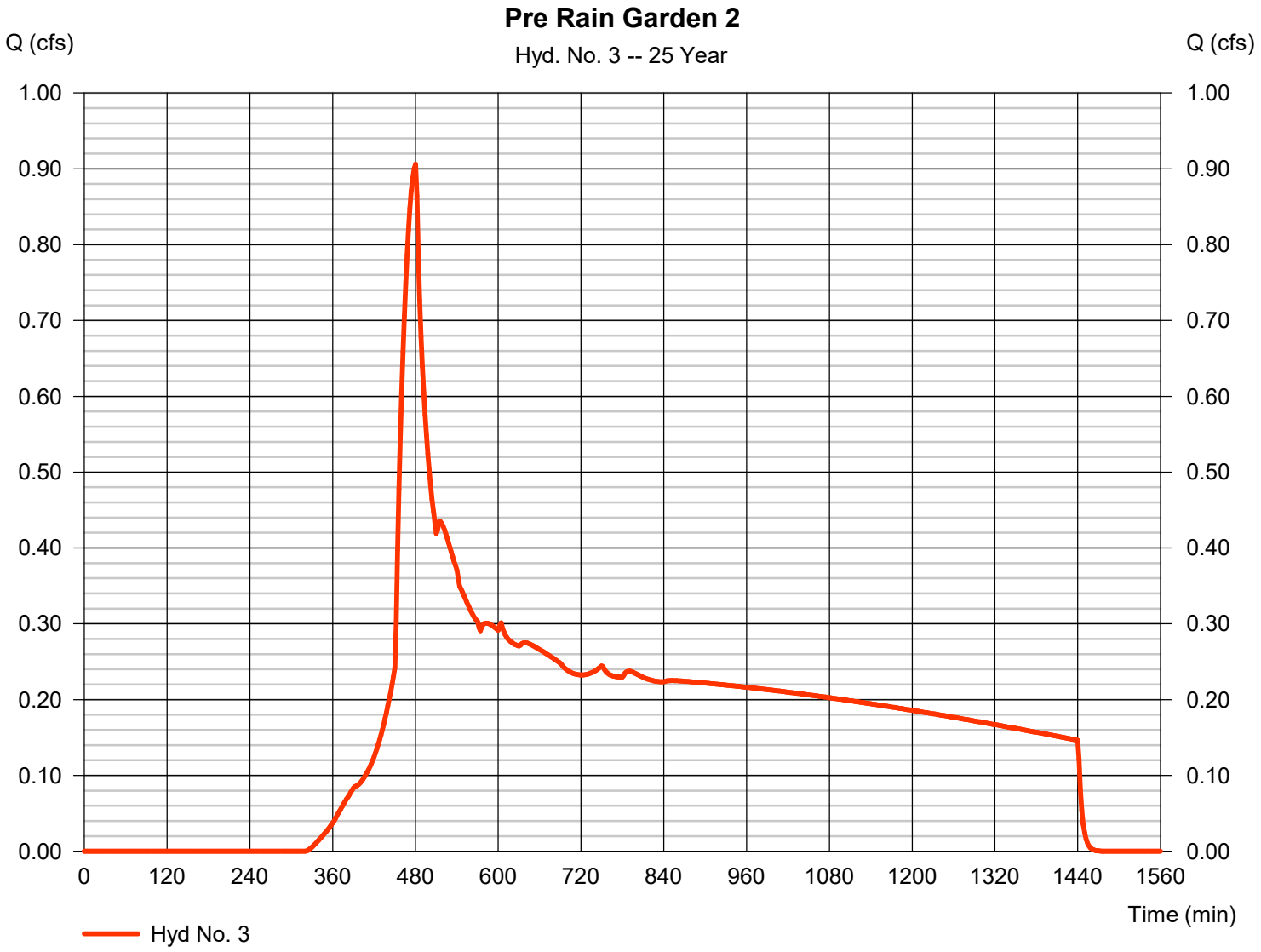
Hydrograph Report

Hyd. No. 3

Pre Rain Garden 2

Hydrograph type	= SBUH Runoff	Peak discharge	= 0.906 cfs
Storm frequency	= 25 yrs	Time to peak	= 480 min
Time interval	= 2 min	Hyd. volume	= 15,315 cuft
Drainage area	= 2.650 ac	Curve number	= 75*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 3.90 in	Distribution	= Type IA
Storm duration	= 24 hrs	Shape factor	= n/a

* Composite (Area/CN) = [(0.500 x 98) + (2.140 x 70)] / 2.650



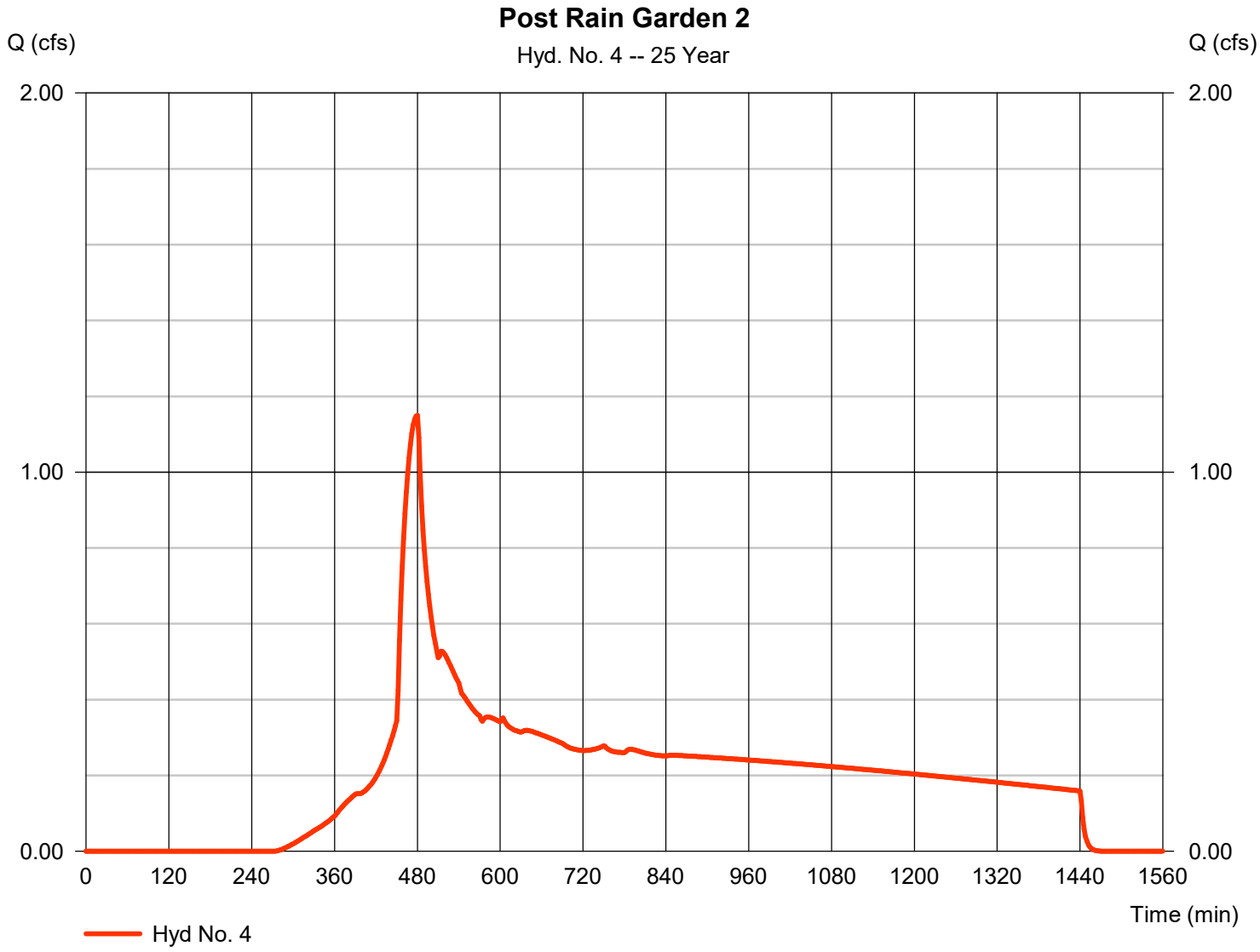
Hydrograph Report

Hyd. No. 4

Post Rain Garden 2

Hydrograph type	= SBUH Runoff	Peak discharge	= 1.149 cfs
Storm frequency	= 25 yrs	Time to peak	= 480 min
Time interval	= 2 min	Hyd. volume	= 18,110 cuft
Drainage area	= 2.650 ac	Curve number	= 79*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 3.90 in	Distribution	= Type IA
Storm duration	= 24 hrs	Shape factor	= n/a

* Composite (Area/CN) = [(0.510 x 98) + (2.140 x 75)] / 2.650



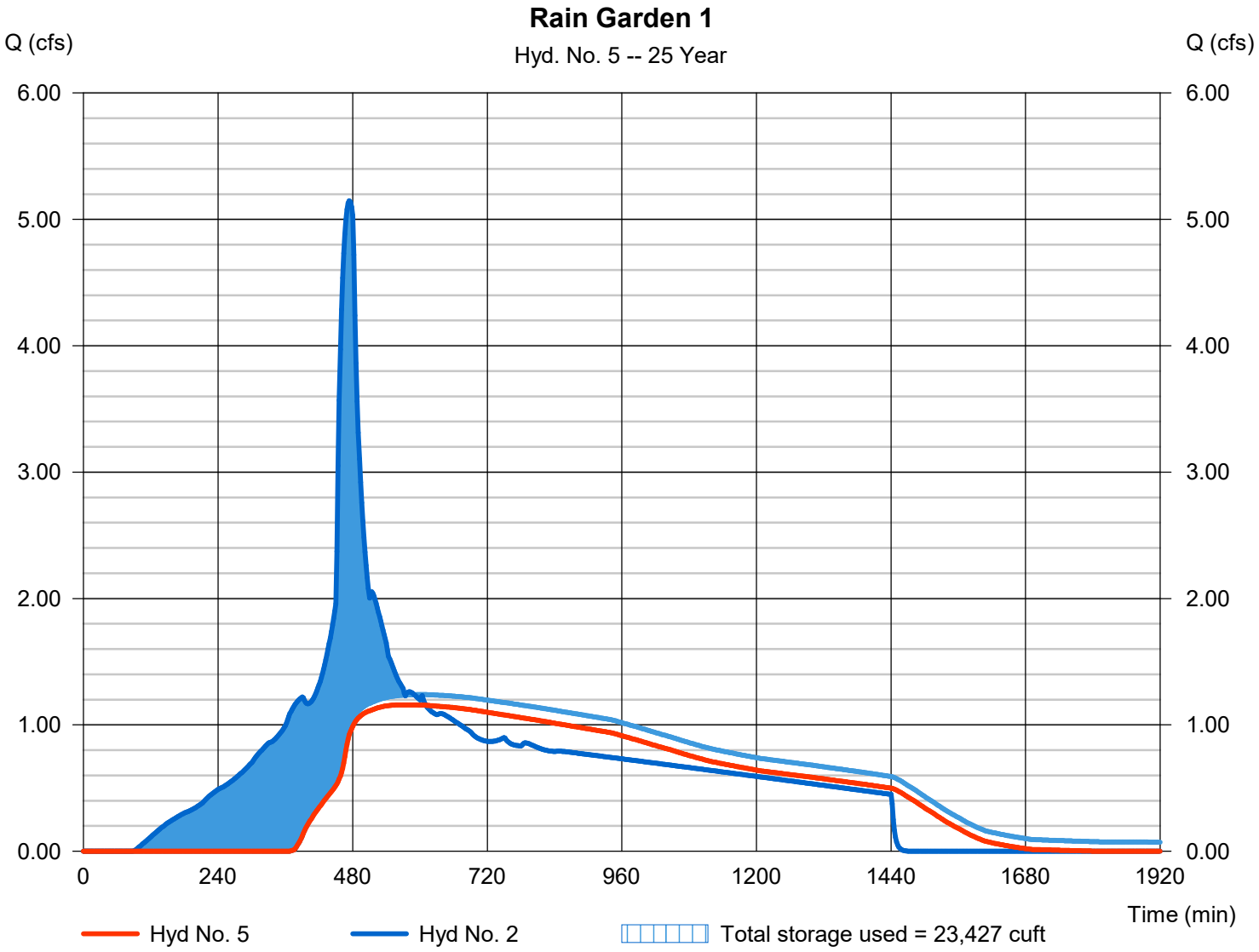
Hydrograph Report

Hyd. No. 5

Rain Garden 1

Hydrograph type	=	Reservoir	Peak discharge	=	1.159 cfs
Storm frequency	=	25 yrs	Time to peak	=	570 min
Time interval	=	2 min	Hyd. volume	=	55,851 cuft
Inflow hyd. No.	=	2 - Post Rain Garden 1	Max. Elevation	=	249.50 ft
Reservoir name	=	Rain Garden 1	Max. Storage	=	23,427 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



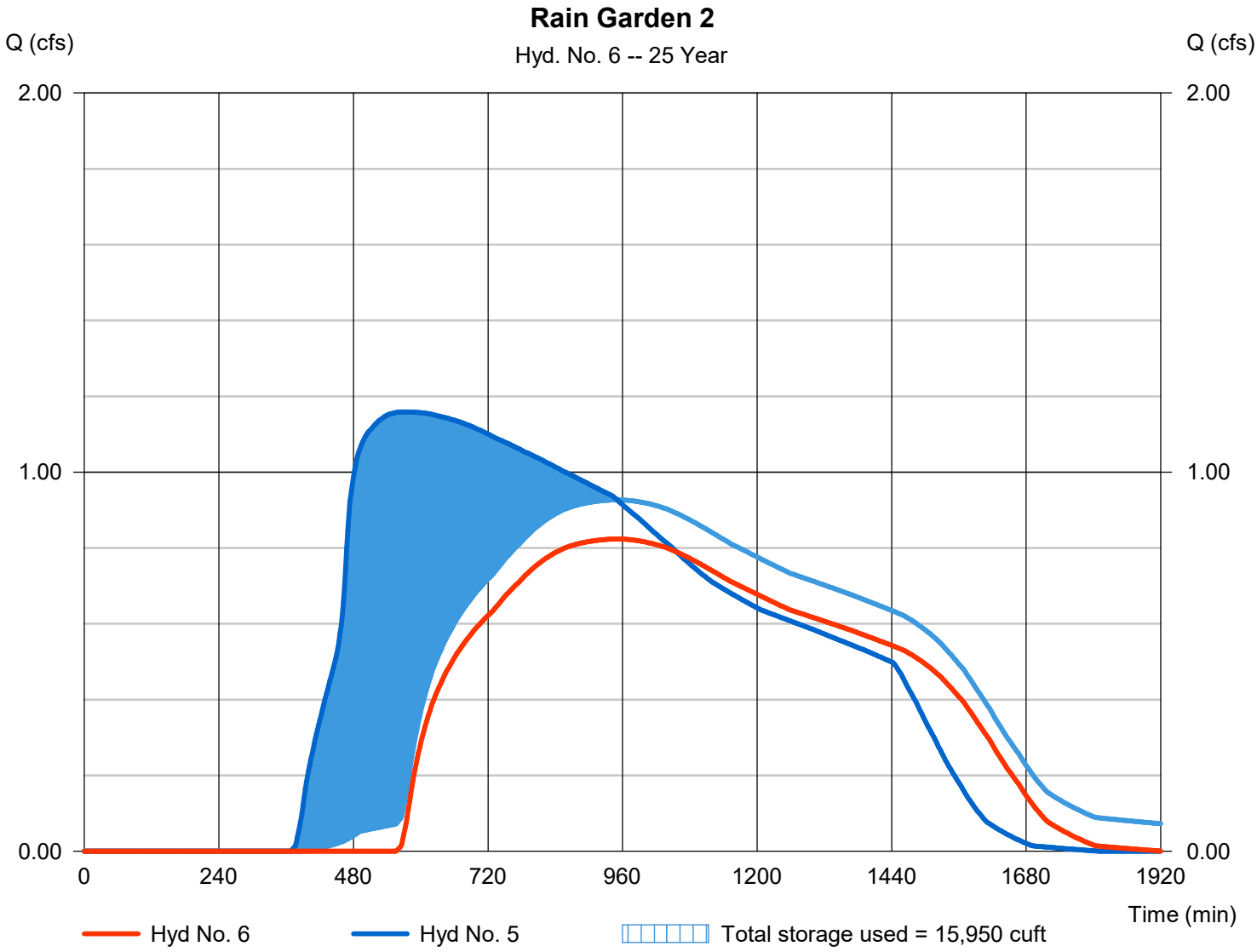
Hydrograph Report

Hyd. No. 6

Rain Garden 2

Hydrograph type	=	Reservoir	Peak discharge	=	0.824 cfs
Storm frequency	=	25 yrs	Time to peak	=	950 min
Time interval	=	2 min	Hyd. volume	=	40,670 cuft
Inflow hyd. No.	=	5 - Rain Garden 1	Max. Elevation	=	248.77 ft
Reservoir name	=	Rain Garden 1	Max. Storage	=	15,950 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021

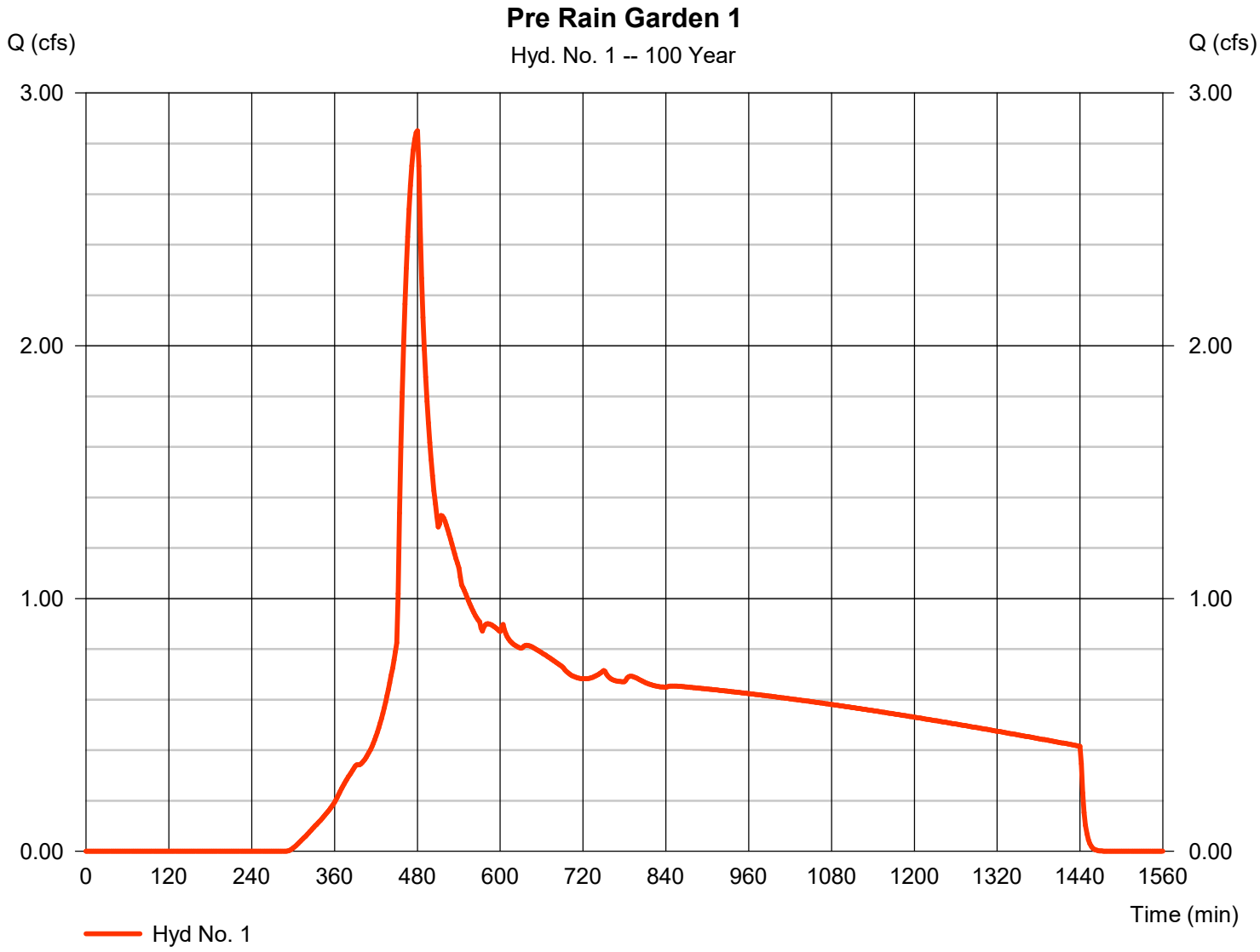
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SBUH Runoff	2.851	2	480	45,923	------	------	------	Pre Rain Garden 1
2	SBUH Runoff	6.073	2	474	85,453	------	------	------	Post Rain Garden 1
3	SBUH Runoff	1.224	2	480	19,724	------	------	------	Pre Rain Garden 2
4	SBUH Runoff	1.498	2	478	22,860	------	------	------	Post Rain Garden 2
5	Reservoir	1.301	2	592	68,094	2	249.93	27,981	Rain Garden 1
6	Reservoir	0.953	2	988	52,100	5	248.98	17,778	Rain Garden 2

Hydrograph Report

Hyd. No. 1

Pre Rain Garden 1

Hydrograph type	= SBUH Runoff	Peak discharge	= 2.851 cfs
Storm frequency	= 100 yrs	Time to peak	= 480 min
Time interval	= 2 min	Hyd. volume	= 45,923 cuft
Drainage area	= 6.170 ac	Curve number	= 75
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 4.50 in	Distribution	= Type IA
Storm duration	= 24 hrs	Shape factor	= n/a



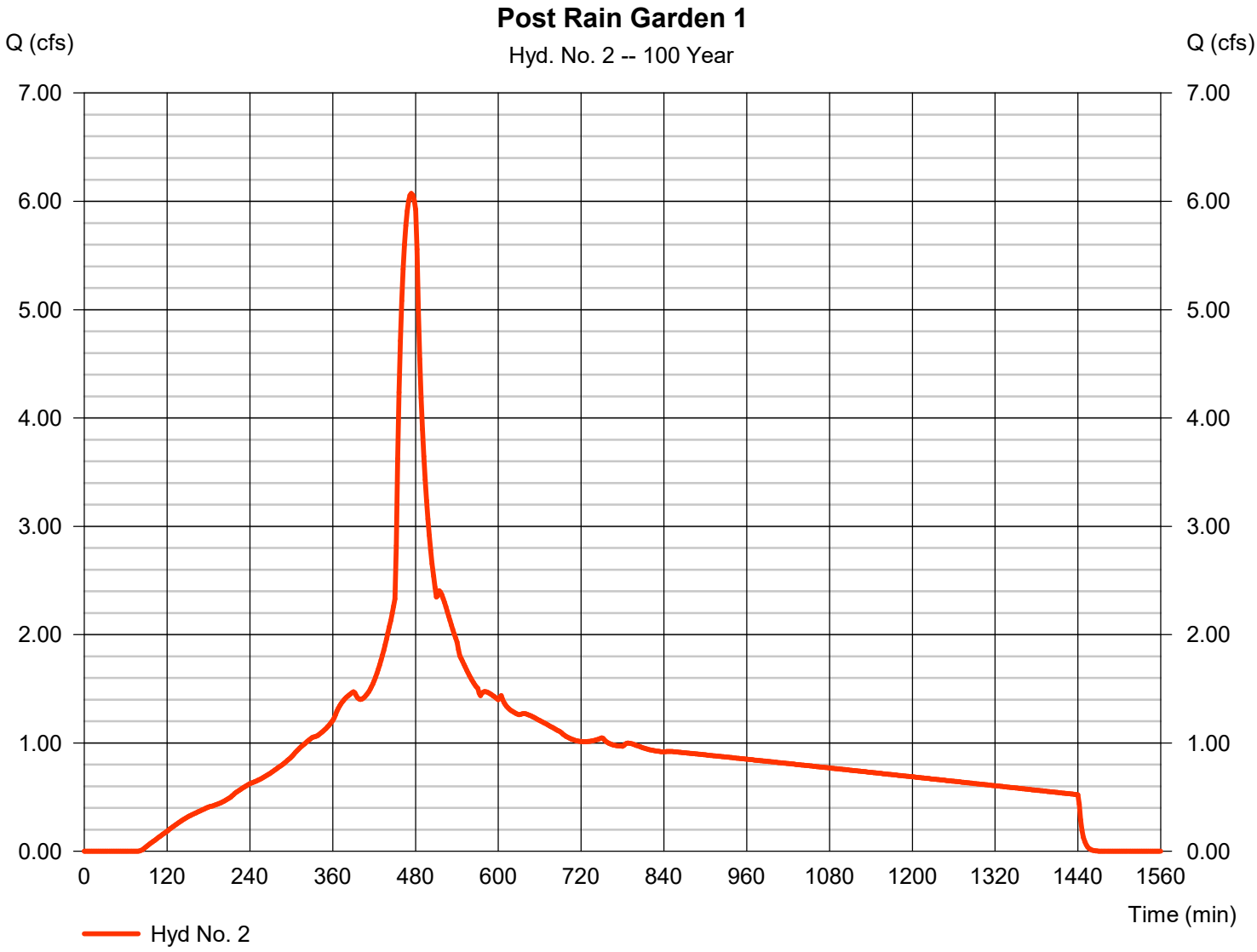
Hydrograph Report

Hyd. No. 2

Post Rain Garden 1

Hydrograph type	= SBUH Runoff	Peak discharge	= 6.073 cfs
Storm frequency	= 100 yrs	Time to peak	= 474 min
Time interval	= 2 min	Hyd. volume	= 85,453 cuft
Drainage area	= 6.170 ac	Curve number	= 94*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 4.50 in	Distribution	= Type IA
Storm duration	= 24 hrs	Shape factor	= n/a

* Composite (Area/CN) = [(3.920 x 98) + (0.910 x 72) + (1.336 x 98)] / 6.170



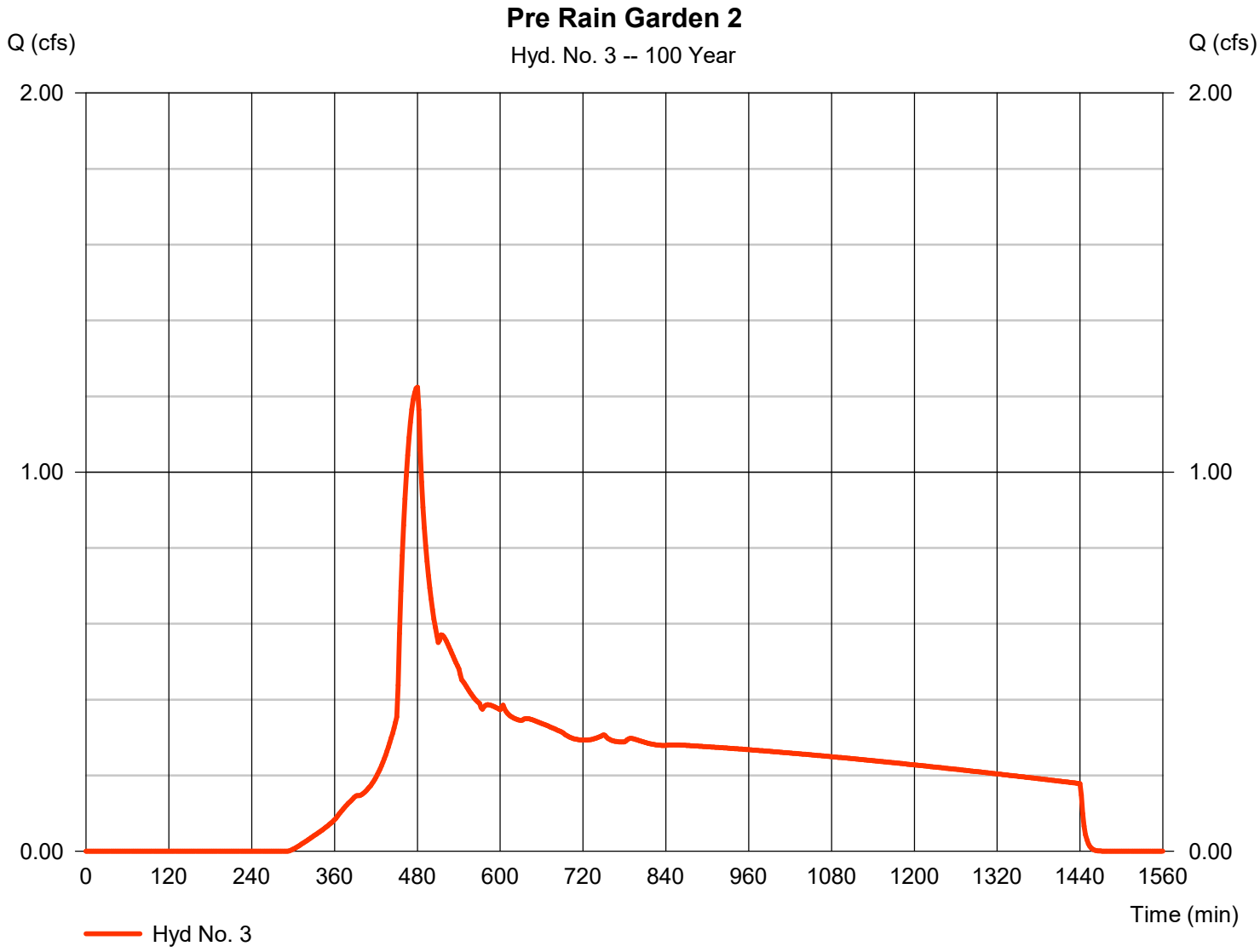
Hydrograph Report

Hyd. No. 3

Pre Rain Garden 2

Hydrograph type	= SBUH Runoff	Peak discharge	= 1.224 cfs
Storm frequency	= 100 yrs	Time to peak	= 480 min
Time interval	= 2 min	Hyd. volume	= 19,724 cuft
Drainage area	= 2.650 ac	Curve number	= 75*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 4.50 in	Distribution	= Type IA
Storm duration	= 24 hrs	Shape factor	= n/a

* Composite (Area/CN) = [(0.500 x 98) + (2.140 x 70)] / 2.650



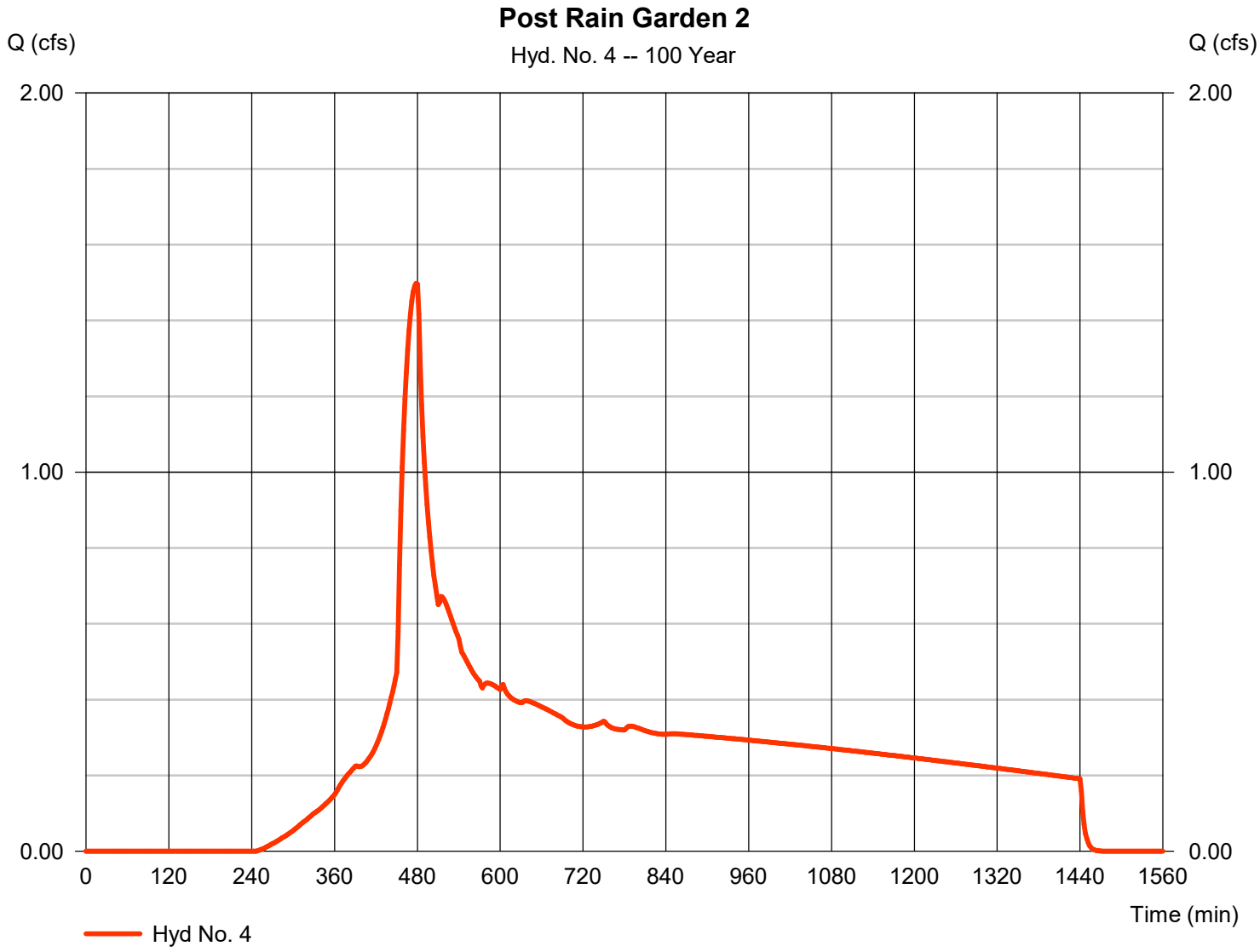
Hydrograph Report

Hyd. No. 4

Post Rain Garden 2

Hydrograph type	= SBUH Runoff	Peak discharge	= 1.498 cfs
Storm frequency	= 100 yrs	Time to peak	= 478 min
Time interval	= 2 min	Hyd. volume	= 22,860 cuft
Drainage area	= 2.650 ac	Curve number	= 79*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 4.50 in	Distribution	= Type IA
Storm duration	= 24 hrs	Shape factor	= n/a

* Composite (Area/CN) = [(0.510 x 98) + (2.140 x 75)] / 2.650



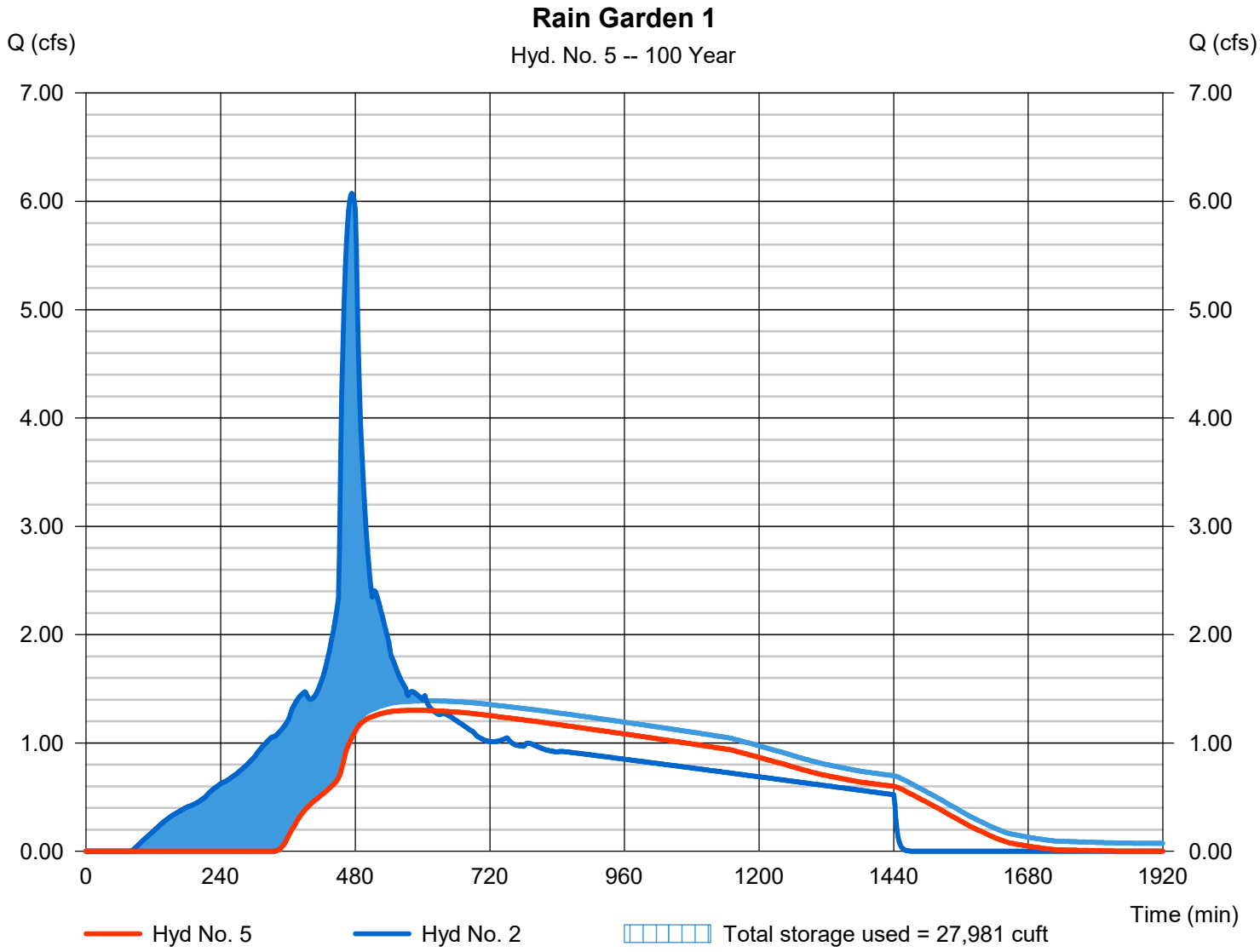
Hydrograph Report

Hyd. No. 5

Rain Garden 1

Hydrograph type	=	Reservoir	Peak discharge	=	1.301 cfs
Storm frequency	=	100 yrs	Time to peak	=	592 min
Time interval	=	2 min	Hyd. volume	=	68,094 cuft
Inflow hyd. No.	=	2 - Post Rain Garden 1	Max. Elevation	=	249.93 ft
Reservoir name	=	Rain Garden 1	Max. Storage	=	27,981 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



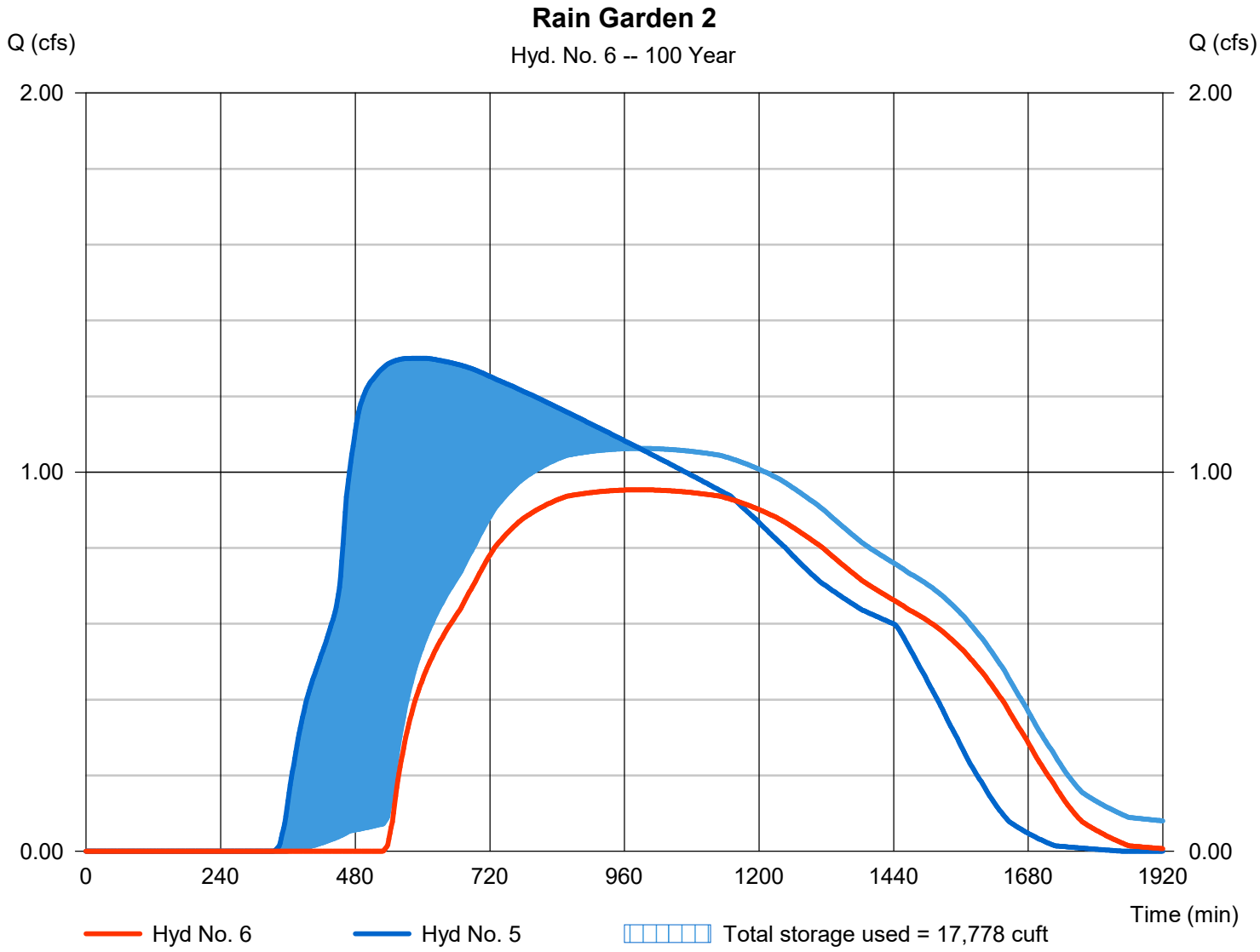
Hydrograph Report

Hyd. No. 6

Rain Garden 2

Hydrograph type	=	Reservoir	Peak discharge	=	0.953 cfs
Storm frequency	=	100 yrs	Time to peak	=	988 min
Time interval	=	2 min	Hyd. volume	=	52,100 cuft
Inflow hyd. No.	=	5 - Rain Garden 1	Max. Elevation	=	248.98 ft
Reservoir name	=	Rain Garden 1	Max. Storage	=	17,778 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



APPENDIX E

CONVEYANCE CALCULATIONS

Project name:		**Delta Logisitics**											**Project number:**		**2200502.00**			
25 year/24-hour storm event																		
By:	AOC		Checked:	BMR				RD = Roof Drain					MH = Manhole					
Date:	11/23/2021		Date:	4/8/2022				CI = Curb Inlet					WQ = Water Quality					
n =	0.013							AD= Area Drain					O/W = Oil Water Separator					

Pipe Link	Drainage Basin	Time of Concentration (min)	Total Time(min)	25-yr Storm Intensity(in/hr)	Incr. Area(Ac)	Coef. Of Runoff	Incr. Equiv.(CxA)	Total Equiv. Area	**Runoff (cfs)**	Slope(%)	Diameter (in)	Pipe Area (sf)	Hydraulic Radius^2/3	**Capacity (cfs)**	Velocity at Design Flow (fps)	Runoff/Capacity (ratio)	Length(ft)	Incr. Time(min)
	CB1	5.00	5.00	3.40	0.270	0.9	0.24	0.24	**0.82**	1.17	8	0.349	0.303	**1.30**	3.91	0.63	261	1.11
	RD1	5.00	5.00	3.40	0.256	0.9	0.23	0.23	**0.78**	1.00	8	0.349	0.303	**1.20**	3.63	0.65	128	0.59
	RD2	5.00	5.00	3.40	0.206	0.9	0.19	0.19	**0.63**	1.50	8	0.349	0.303	**1.47**	4.02	0.43	146	0.61
1	RD1+RD2		5.61	3.40				0.42	**1.42**	0.50	10	0.545	0.351	**1.54**	3.17	0.92	79	0.42
2	CB1 + 1		6.72	3.40				0.66	**2.24**	2.50	10	0.545	0.351	**3.45**	6.66	0.65	170	0.43
	CB2	5.00	5.00	3.40	0.183	0.9	0.16	0.16	**0.56**	1.00	6	0.196	0.250	**0.56**	2.85	1.00	187	1.10
	CB3	5.00	5.00	3.40	0.135	0.9	0.12	0.12	**0.41**	0.60	6	0.196	0.250	**0.43**	2.48	0.96	44	0.30
3	CB2+CB3		6.10	3.40				0.29	**0.98**	0.50	10	0.545	0.351	**1.54**	2.96	0.63	61	0.34
	RD6	5.00	5.00	3.40	0.247	0.9	0.22	0.22	**0.76**	1.00	8	0.349	0.303	**1.20**	3.60	0.63	129	0.60
4	RD6 + 3		6.69	3.40				0.51	**1.73**	1.31	10	0.545	0.351	**2.50**	4.89	0.69	72	0.25
	RD3	5.00	5.00	3.40	0.209	0.9	0.19	0.19	**0.64**	0.50	8	0.349	0.303	**0.85**	2.65	0.75	56	0.35
	RD4	5.00	5.00	3.40	0.209	0.9	0.19	0.19	**0.64**	2.81	8	0.349	0.303	**2.02**	5.08	0.32	10	0.03
5	RD3+RD4		5.35	3.40				0.38	**1.28**	0.50	10	0.545	0.351	**1.54**	3.13	0.83	52	0.28
	RD5	5.00	5.00	3.40	0.207	0.9	0.19	0.19	**0.63**	5.41	8	0.349	0.303	**2.80**	6.42	0.23	10	0.03
6	RD5 + 5		5.63	3.40				0.56	**1.91**	1.57	10	0.545	0.351	**2.73**	5.36	0.70	170	0.53
7	4 + 6		7.22	3.40				1.07	**3.64**	1.66	12	0.785	0.397	**4.57**	6.39	0.80	221	0.58
	CB4	5.00	5.00	3.40	0.109	0.9	0.10	0.10	**0.33**	0.76	6	0.196	0.250	**0.49**	2.64	0.68	58	0.37

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DESIGN DRIVEN | CLIENT FOCUSED

Project Number: 2200502
Project Name: Delta Logistics
Engineer: Breezy Rinehart
Date: 4/8/2022

Project City: Wilsonville, OR
Latitude:
Longitude:

NOAA Precipitation Atlas Data

Storm Frequency	2 yr	2 yr	100 yr	100 yr
Storm Duration	6 hr	24 hr	6 hr	24 hr
Precipitation (in)				

Precipitation Intensity-Duration-Frequency (IDF) Data (in/hr)

Time (min)	Return Period (yr)					
	2	5	10	25	50	100
5	1.90	2.50	3.00	3.40	4.00	4.50
10	1.90	2.50	3.00	3.40	4.00	4.50
15	1.30	1.70	2.20	2.50	3.00	3.50
20	1.10	1.40	1.80	2.10	2.50	2.90
25	0.90	1.20	1.50	1.80	2.10	2.40
30	0.75	0.95	1.20	1.40	1.65	1.90
35	0.60	0.75	1.00	1.15	1.30	1.60
40	0.55	0.70	0.85	1.00	1.15	1.35
45	0.45	0.55	0.70	0.82	0.95	1.10
50	0.40	0.45	0.55	0.67	0.75	0.90
60	0.35	0.40	0.50	0.60	0.70	0.85

Note: IDF values for the site are based on City of Wilsonvilles precipitation records presented in the City of Wilsonville's Stormwater & Surface Water Design & Construction Standards Section 3 - Public Works Standards Manual (2015).

APPENDIX F

NATURAL RESOURCE ASSESSMENT REPORT

SCHOTT & ASSOCIATES
Ecologists & Wetlands Specialists
21018 NE Hwy 99E • P.O. Box 589 • Aurora, OR 97002 • (503) 678-6007 • FAX: (503) 678-6011

NATURAL RESOURCE ASSESSMENT REPORT FOR

9710 SW Day Road

T3S, R1W, Section 2B, Tax Lot 600 & 601
Wilsonville, Washington County, Oregon

Prepared for

Vladmir Tkach & Igor Nichiporchik
Delta Logistics
9835 SW Commerce Circle
Wilsonville, Oregon 97070

Prepared by

Kim Biafora
of
Schott & Associates, Inc.

Date:

January 2022

Project #: 2739

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Introduction

Schott & Associates (S&A) was contracted to conduct a natural resource assessment for the proposed project site located at 9710 SW Day Road, Wilsonville, Washington County, OR (T3S, R1W, Section 2B, Tax Lot 600 & 601; Figure 1). The site features natural resources including streams, wetlands, and associated riparian corridors and Impact Areas that are subject to City of Wilsonville's Significant Resource Overlay Zone (SROZ) Ordinance (Section 4.139.00 of the Wilsonville Planning and Land Development Code). This report is intended to fulfil the requirements of SROZ Map Verification pursuant to Section 4.139.06(.01)(B-H) and a standard Significant Resource Impact Report (SRIR) pursuant to Section 4.139.06(0.02)(D)(1). Wetland delineation has been approved by the Oregon Department of State Lands (DSL; WD#2021-0556; Appendix H).

Statement of Qualifications

Schott & Associates has over 30 years of experience in environmental consultation and project permitting. S&A staff is composed of well qualified and experienced individuals. All have been through wetland delineation training and are proficient in performing wetland delineations and habitat assessments. Kim Biafora was assigned to manage this project and performed project coordination, fieldwork, and report and map production.

Kim Biafora is a wetland scientist and GIS analyst who joined Schott & Associates in April 2018. She received her Bachelor's degree from Portland State University in Environmental Science and Management. Kim contributes 10 years of experience in wetland delineation and reporting, permitting, habitat assessment and mapping, data collection and analysis, and GIS applications to the company. Kim has worked largely in the lower Columbia River region and has a foundation in Pacific Northwest ecology with expertise in lowland and montane rainforest, and tidal estuarine and freshwater wetland habitats. She is versed in general ecological survey and data analysis methods, as well as protocols specific to wetland delineation and functions assessment, habitat mapping and assessment and mitigation site monitoring. She is familiar with wetland/habitat ordinance and permitting requirements for many local jurisdictions throughout Oregon and Washington, as well as state and federal wetland regulation.

Site Description

The project site consisted of the entirety of tax lots 600 and 601. This site featured a single-family residence in the northeastern section and a graveled area and access road in the southern and central portion. An unimproved access road and associated 125-foot electric transmission line and storm drainage easement cut south across the western portion of the site from SW Day Road to a transmission tower located in the southwestern site corner. A 100-foot BPA right-of-way (ROW) is located in the southwest corner adjacent to the 125-foot utility easement (refer to Appendix B for topographic survey). The remainder of the site was undeveloped and generally vegetated by Douglas-fir (*Psuedotsuga menziesii*) forest in the eastern and western portions and English hawthorn (*Crataegus monogyna*)/Himalayan blackberry (*Rubus armeniacus*) shrubland in the central portion (refer to Appendix C for tree survey).

Site topography included a west-facing hillslope in the eastern portion which flattened out in the central portion and remained fairly level in the western portion. Tapman Creek, a tributary to Seely Ditch and the Willamette River, flowed from double 36-inch diameter culverts under SW Day Road, south through the western portion of the site and into a culvert at the southwestern site corner. A compensatory wetland mitigation (CWM) site was located just west of and parallel to the creek. The CWM site was constructed to mitigate for the widening of SW Day Road and replacement of a single culvert with the existing 88-foot-long double culverts at Tapman Creek (DSL #25201-FP; Corps #2002-00173). Both of these features are within the 125-foot utility easement.

The site was surrounded by commercial development to the north and south and rural residential development to the east and west. At the time of assessment, the site was zoned for 20-acre future development (Washington County zoning designation FD-20). According to the Wilsonville SROZ map, significant natural resources are mapped on the site (Appendix D).

Methods

Prior to visiting the site, the following existing data and information was reviewed:

- Washington County InterMap (http://washims.co.washington.or.us/InterMap/)
- U.S. Fish and Wildlife Service (UFWS) National Wetland Inventory (NWI) and Oregon Department of Forestry (ODF) mapping
- Metro Title 3 lands mapping
- U.S. Department of Agriculture (USDA) NRCS gridded Soil Survey Geographic (gSSURGO) database for Washington County
- Google Earth aerial photographs from the time period between 1994 and 2019
- Oregon Department of Geology and Mineral Industries (DOGAMI) LiDAR data

Schott & Associates initially visited the site October 23, 2019. Follow-up fieldwork was performed on September 1, 2021 to document any changes since 2019 fieldwork. Data on vegetation, hydrology, and soils were collected according to methods described in the *Corps Wetland Delineation Manual* (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Delineation Manual: Western Mountains, Valleys, and Coast (Version 2)* (Environmental Laboratory 2010). Nineteen sample plots were established throughout the site to locate the boundaries of wetlands. Plant indicator status was determined using the 2018 National Wetland Plant List (Corps 2018). Onsite streams were delineated via the ordinary high-water mark (OHWM) as indicated by top of bank, wrack or scour lines, change in vegetation communities, or gage elevation where applicable.

All identified wetlands and waters are classified according to the USFWS *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et al. 1979) and the *Guidebook for Hydrogeomorphic (HGM)-based Assessment of Oregon Wetland and*

Riparian Sites (DSL 2001). A wetland delineation report was prepared and submitted to DSL. The report received DSL concurrence in December 2021 (Appendix H).

Wetland functional analysis was conducted according to the Oregon Freshwater Wetlands Assessment Methodology (OFWAM) per section 4.139.06(.02)(D)(3)(c).

Application and width of Vegetated Corridors were determined based on water type, flow period, drainage basin, and adjacent slopes according to Table NR-1 of Section 4.139.00. Water type and flow period were determined based on a combination of field observations, available data and information, and guidance from state and federal agencies. Drainage basins were delineated using topography data available from the Oregon Department of Geology and Mineral Industries (DOGAMI) LiDAR data. Adjacent slopes were measured at a minimum of three slope cross-sections established perpendicular to the water feature spaced at no more than 100-foot increments using a combination of field measurements and topographical survey data. Vegetated corridor width in areas where the slopes are equal to or greater than 25% gradient are extended to 50 feet beyond the break in slope, up to 200 feet from the edge of the water resource for primary protected water features and 50 feet for secondary protected water features.

The composition, structure, and condition of Vegetated Corridors were assessed at representative sample points established in each community type. Wildlife habitat assessment of Vegetated Corridors was conducted according to Metro's 2001 Wildlife Habitat Assessment Methodology.

Ground-level photographs were collected to document site conditions (Appendix E).

Results

Physical Analysis

Five soil series were mapped within the study site boundary according to the USDA NRCS soil survey for Washington County. Saum silt loam at slopes from 2-20% was mapped in the eastern, southern, and much of the northern site margins. The Saum series consists of very deep, well drained soils that formed in colluvium and residuum from the Columbia River Basalt Group and occurs on summits and side slopes in areas affected by mass movement. This series is nonhydric and not subject to flooding or ponding. Quatama loam at slopes of 0-30% was mapped over a small area along the northern site margin. The Quatama series consists of very deep, moderately well-drained soils that formed from stratified glaciolacustrine deposits from the Missoula Floods and occurs on terrace steps and risers. This series is predominantly nonhydric (4% hydric inclusions) and not subject to flooding or ponding. Salem gravelly silt loam at slopes of 0-12% was mapped in the western site margin. The Salem series is a very deep, well-drained soil that formed from loamy alluvium over sandy and gravelly alluvium and occurs on stream terraces. This series is nonhydric and not subject to flooding or ponding. Briedwell stony silt loam at slopes of 0-20% was mapped in the central portion of the site. The Briedwell series consists of very deep, well drained soils that formed in mixed alluvium and occurs on stream terraces. This series is nonhydric and not subject to flooding or ponding.

Wapato silty clay loam at slopes of 0-3% was mapped through the western portion of the site in the area corresponding with the location of Tapman Creek and the CWM site. The Wapato series consists of very deep, poorly drained soils that formed in loamy mixed alluvium and occur on floodplains and basins. This series is predominantly hydric (92% hydric inclusions) and subject to frequent flooding and ponding.

Wetlands and Waters

Two wetlands and one wetland drainage (Tapman Creek) were identified within the study site; Wetlands 1 and 2 totaled 0.33 acre and Tapman Creek totaled 0.10 acre on site. Wetland, sample plots, and photo point locations are shown on Figure 2.

Tapman Creek: Tapman Creek was a wetland drainage which originated on the site from a pair of culverts installed under SW Day Road and drained south through the western portion of the study site between Wetlands 1 and 2 (described below). At the southern boundary, the creek turned sharply west and drained into a collapsed metal culvert. The creek featured a defined bed and bank and was identified as a creek by ODF; however, this study classified it as a wetland drainage based on the presence of hydric soils and vegetation throughout its length onsite. The boundary was mapped based on top of bank, scour, and paired plots and covered 0.10 acre onsite. At the approximate center, Tapman Creek connected with Wetland 1 (CWM site). The channel was 5-10 feet wide and approximately 3-4 feet deep with steep, incised banks featuring some erosion and undercutting. The channel has likely been artificially deepened and rerouted along its southern reach at some point. It was almost entirely vegetated along its length with reed canarygrass (*Phalaris arundinacea*; FACW), water parsley (*Oenanthe sarmentosa*; OBL), creeping buttercup (*Ranunculus repens*; FAC), and Himalayan blackberry (FAC). Riparian vegetation included Oregon ash (*Fraxinus latifolia*; FACW), English hawthorn (FAC), Himalayan blackberry, serviceberry (*Amelanchier alnifolia*; FACU), snowberry (*Symphoricarpos albus*; FACU), English ivy (*Hedera helix*; FACU), and trailing blackberry (*Rubus ursinus*; FACU), According to ODF stream mapping, Tapman Creek is a small, seasonal, fish-bearing tributary to Seely Ditch located approximately two miles south of the site. It drains a basin of approximately 400 acres. The drainage was assessed as a riverine flow-through HGM class with a Cowardin class of seasonally flooded, palustrine emergent (PEMC). It meets the definition of a Primary Protected Water Feature according to Table NR-1 of Section 4.139.00.

The soil sample met the Corps hydric soil indicator for redox dark surface. Soils were black in matrix color with common to many yellow-red redoximorphic concentrations occurring as soft masses and pore linings. Soil texture was silty clay loam. Corps wetland hydrological indicators observed included sparsely vegetated concave surface, water-stained leaves, sediment deposits, FAC-neutral test, and geomorphic position. No surface water was present during October 2019 or September 2021 fieldwork and a seasonal flow period was assumed.

Wetland 1: Wetland 1 consisted of the CWM site constructed in 2002 and covered 0.26 acre. The wetland was sustained by seasonal flows conducted south under SW Day Road through a culvert as well as high flows from Tapman Creek. The CWM site was

excavated from hydric soils to increase stormwater capacity and alleviate downstream flooding of Tapman Creek. According to the CWM plan, the northern portion of the CWM site (0.1 acre) was designed as a water quality facility and the remaining 0.25 acre was to serve as mitigation. The CWM site was planted with Pacific willow (*Salix lasiandra*; FACW), spiraea (*Spiraea douglasii*; FACW), black hawthorn (*Crataegus douglasii*; FAC), Nootka rose (*Rosa nutkana*; FAC), slough sedge (*Carex obnupta*; OBL), spreading rush (*Juncus patens*; FACW), and red fescue (*Festuca rubra*; FAC). The wetland featured steep, well-defined banks that were graded at a 3:1 slope. It connected with Tapman Creek in the approximate center of the wetland, though this connection does not appear part of the original design. Additionally, a pipe outlet was present in the southwestern portion of the wetland, that isn't shown on site design plan. It is unknown whether this pipe serves as an overflow pipe or discharges into the wetland.

The wetland was assessed as a depressional outflow HGM class and an excavated, seasonally flooded palustrine scrub-shrub (PSSCx) Cowardin class. Vegetation included a patchy canopy of Oregon ash with a dense understory of Pacific willow, Scouler's willow (*Salix scouleriana;* FAC), Sitka willow (*S. sitchensis*; FACW), spiraea, Nootka rose, Himalayan blackberry, reed canarygrass, and soft rush (*Juncus effusus*; FACW). The northern portion of the wetland featured more shrub and tree cover while the southern portion featured more herbaceous cover. This wetland does not meet the definition of a primary or secondary protected water resource according to Table NR-1.

The soil samples met the Corps hydric soil indicator for redox dark surface. Soils were black (10 YR 2/1) to very dark gray (10 YR 3/1) in matrix color with common to many yellow-red redoximorphic concentrations occurring as soft masses. Soil texture was silty clay loam. Corps wetland hydrological indicators including high water table and soil saturation were observed during October 2019 fieldwork.

Wetland 2: Wetland 2 occupied a broad, very shallow depression to the east of Tapman Creek and covered 0.07 acre. It appeared to have no inlet or outlet and was likely hydrologically sustained by high groundwater and impounded precipitation and possibly received overbank flooding from Tapman Creek during very high flow events. The wetland was assessed as a flats HGM class and a seasonally flooded palustrine forested (PFOC) Cowardin class. Vegetation consisted of an Oregon ash stand with a sparse understory of Nootka rose, English hawthorn, Himalayan blackberry, and spiraea. This wetland does not meet the definition of a primary or secondary protected water resource according to Table NR-1.

The soil samples met the Corps hydric soil indicator for redox dark surface. Soils were black in matrix color with common to many yellow-red redoximorphic concentrations occurring as soft masses and pore linings. Soil texture was silty clay loam. Corps wetland hydrological indicators observed included oxidized rhizospheres along living roots, geomorphic position, and FAC-neutral test.

Vegetated Corridors

According to Table NR-1, the Vegetated Corridor applied to primary protected water features (Tapman Creek, an intermittent stream draining more than 100 acres) has a base width of 50 feet. The base width can extend up to 200 feet in cases where the adjacent slope gradient is greater than or equal to 25%. Slope gradients adjacent to Tapman Creek varied from 2-4%. Thus, the Vegetated Corridor applied to the creek was 50 feet wide and totaled 0.99 acre (43,189 sq. ft) onsite. The Vegetated Corridor boundary is coincident with the Goal 5 safe harbor boundary according to the standards within the Oregon Administrative Rule OAR 660-023-990(5). This rule accords all streams with average annual stream flow less than 1,000 cubic feet per second a 50-foot riparian corridor. The Vegetated Corridor and safe harbor boundary are shown in Figure 2.

Vegetation in the onsite Vegetated Corridor was dominated by nonnative vegetation including English hawthorn, Himalayan blackberry, orchardgrass (*Dactylis glomerata*), creeping bentgrass (*Agrostis stolonifera*), tall fescue (*Schedonorus arundinaceus*), hairy cat's ear (*Hypochaeris radicata*), wild carrot (*Daucus carota*), oxeye daisy (*Leucanthemum vulgare*), and dovefoot geranium (*Geranium molle*). A few Oregon ash trees were present within the Vegetated Corridor, as well as in Wetlands 1 and 2 as described above.

Impact Areas

Impact Areas consist of the 25 ft. wide band adjacent to the outer 50 ft. Vegetated Corridor boundary. The Impact Area featured a utility maintenance access road west of the Vegetated Corridor and mixed shrubs east of the Vegetated Corridor. Vegetation included English hawthorn, Himalayan blackberry, and Nootka rose with nonnative turfgrasses and weedy forbs. Impact Areas onsite totaled 0.51 acre (22,332 sq. ft.)

Ecological Analysis

Wetlands

Wetlands were assessed based on evaluation criteria in the Oregon Freshwater Wetlands Assessment Methodology (OFWAM). OFWAM evaluates wildlife habitat, fish habitat, water quality, and hydrologic control functions. A summary of functional analysis is presented in Table 1 below. OFWAM assessment forms are included as Appendix F.

Table 1. Wetland Functional Analysis Summary

Function	**Tapman Creek**	**Wetland 1**	**Wetland 2**
Wildlife Habitat	Habitat for some species	Habitat for some species	Habitat for some species
Fish Habitat	Impacted/degraded	Impacted/degraded	N/A
Water Quality	Intact	Intact	None
Hydrologic Control	Impacted/degraded	Impacted/degraded	Impacted/degraded

Tapman creek provides some wildlife habitat based on its surface water connection to other wetlands, presence of vegetative buffer greater than 25 feet, and unimpacted water

quality in upstream reaches; however, it lacks diversity of habitat and vegetation structure and is surrounded by developed land uses. Fish habitat function was assessed as impacted/degraded based on the modified character of the channel, low cover of stream shading by riparian vegetation, developed surroundings, and lack of fish access. Water quality function was assessed as intact based on a surface water hydrological source, flooding or ponding during a portion of the growing season, high cover of wetland vegetation, and surrounding developed uses. Hydrological control function was assessed as impacted/degraded as the stream is not within a 100-year floodplain or closed basin, is dominated by emergent vegetation, and has an upstream forested/natural area land use.

Wetland 1 provides some wildlife habitat based on the presence of multiple habitat types, woody vegetation, surface water connection to other wetlands, vegetative buffer, and unimpacted water quality in upstream reaches; however, it is less than 0.5 acre in size and is surrounded by developed uses. Fish habitat function was assessed as impacted/degraded based on developed surroundings and lack of fish access. Water quality function was assessed as intact based on a surface water hydrological source, flooding or ponding during a portion of the growing season, high cover of wetland vegetation, and surrounding developed uses. Hydrological control function was assessed as impacted/degraded as the wetland is not within a 100-year floodplain or closed basin, has minor outlet restriction, and has an upstream forested/natural area land use.

Wetland 2 provides some wildlife habitat based on the presence of woody vegetation, waterbodies within one mile, vegetative buffer, and unimpacted water quality in upstream reaches; however, it features low habitat interspersion, is less than 0.5 acre in size, and is surrounded by developed uses. Fish habitat function was assessed as not present due to lack of surface water and fish access. Water quality function was assessed as not present based on a ground water hydrological source, lack of flooding or ponding during the growing season, small size, lack of connected wetlands, and lack of water quality impairments in upstream reaches Hydrological control function was assessed as impacted/degraded as the wetland is not within a 100-year floodplain or closed basin, has no evidence of flooding or ponding during the growing season, and has an upstream forested/natural area land use.

Wildlife Habitat

Wildlife habitat in riparian/Vegetated Corridors was assessed according to Metro's 2001 Wildlife Habitat Assessment (WHA) Methodology. The assessment evaluates wildlife habitat diversity (food, cover, water sources), water quality protection, ecological integrity (disturbance), connectivity, and uniqueness. Riparian/Vegetated Corridors were generally vegetated by invasive species including Himalayan blackberry, English hawthorn, nonnative grasses, and weedy forbs along with some native Oregon ash, Scouler's willow, Nootka rose, spiraea, snowberry, and trailing blackberry cover.

Based on WHA results, overall wildlife habitat value provided onsite was moderate to low. The results are summarized in Table 2 and discussed below. The WHA form is included as Appendix G.

Table 2. Wildlife Habitat Assessment Scores

Parameter	Component	Score/Total	Rating
Habitat Diversity	Water	15/28	Moderate
	Food	10/24	Moderate
	Cover	14/28	Moderate
Ecological Integrity	Physical Disturbance	1/4	Low
	Human Disturbance	2/4	Moderate
Connectivity			Low
Uniqueness		0/4	Low

Habitat diversity scored moderate based on the presence of a seasonal stream/wetlands, limited food sources with a short season, and primarily shrub cover. Habitat features generally favored small mammals and passerine birds common to urban and suburban areas. Ecological integrity scored low-moderate based on the dominance of invasive species within the vegetation community, low tree cover, and developed surrounding land use but infrequent direct human use. Connectivity was scored low due to the developed surrounding land use, busy adjacent road corridor, and piping of the stream as it enters and exits the site. Uniqueness was scored low due to a lack of rare, threatened, or sensitive plant or wildlife species, rare habitat types, scenic value, or educational potential.

Riparian Corridor Condition

Riparian corridor condition was assessed as generally moderate. Little large woody debris was present in or adjacent to the stream as few trees grow in the riparian area or could be recruited from offsite areas since Tapman Creek is conducted onsite via culverts. Some shading is present in the northern portion of the site where larger woody shrubs (willow) or trees occur, but as Himalayan blackberry generally dominates the riparian vegetation community, there is little overhanging vegetation to provide stream shading. Erosion and sediment control is provided by dense growth of invasive reed canarygrass, which dominates the creek channel. Some erosion and scour was evident within the stream channel, but was not significant. The well-vegetated riparian buffer provides good water quality protection as demonstrated by the OFWAM functional analysis of Tapman Creek. Due to channelization and the constrained nature of the creek, little floodplain connectivity is evident, though some minor overbank flooding may occur during very high-water events. Habitat onsite is connected with larger, intact, high-quality wetland/stream and forested upland habitat to the north of the site across SW Day Road; however, the habitat onsite is poorer quality, disturbed by utility maintenance, and cut off from the habitat to the north by the high-traffic road. South of the site, the area is developed for commercial and utility use and no habitat functions are present.

Proposed Plan

The proposed project consists of the expansion of the transportation company to the south (Delta Logistics) and includes the construction of a large warehouse in the eastern portion

of the site with parking and truck trailer storage in the central and western portions of the property. Crossing of Tapman Creek is required to access the western portion of the property. Construction of direct access from SW Day Road to the western portion of the site is prohibited by the City for the purpose of achieving preferred access spacing. Widening and improvements along the property's frontage of SW Day Road is also required by the City as a condition of project approval. The site plan has been designed to avoid encroachments to the stream and wetland and minimize encroachments to the Vegetated Corridor while meeting those City goals. The site plan also positions vegetated water quality treatment facilities as a buffer between the proposed development and remaining SROZ area. Areas of proposed encroachment are vegetated entirely by invasive species and contain no tree canopy. The site plan included in Appendix A. The development design implements the following habitat friendly development practices:

- Incorporates stormwater management in road rights-of-way
- Disconnects downspouts from roofs and directs the flow to vegetated water qualify facility
- Minimizes the number of stream crossings and places crossing perpendicular to stream channel
- Uses a bridge crossing rather than culverts
- Uses native vegetation throughout the development
- Locates landscaping adjacent to SROZ
- Reduces light spill-off into SROZ areas from development
- Preserves and maintains existing trees and tree canopy coverage, and plans trees, where appropriate to maximize future tree canopy coverage

Prior to any site clearing, grading or construction, the SROZ area shall be staked, and fenced per approved plan. During construction, the SROZ area shall remain fenced and undisturbed except as allowed by an approved development permit.

Proposed Encroachments

Encroachments are proposed to the Vegetated Corridor and Impact Area. Encroachments will occur in the northern portion of the Vegetated Corridor for the City required widening of SW Day Rd and in the southern portion for the Tapman Creek crossing. These areas are vegetated entirely by invasive species including Himalayan blackberry and reed canarygrass. No trees or native species will be removed as a result of construction. Encroachments will occur on both sides of the creek for the road crossing and along the eastern portion of the Impact Area for the road widening, creek crossing, and construction of a vegetated water quality and stormwater detention facility. No encroachments to Tapman Creek or the wetlands are proposed. No trees will be removed from the SROZ. Development activity has been limited to the Impact Area where practical except where necessary to widen SW Day Road and cross Tapman Creek to access the western portion of the site. Encroachments are summarized in Table 3 below

Table 3. Encroachment Summary

SROZ	Total Area	Encroachment (sq. ft.)	Remaining Area
Vegetated corridor	43,189	10,300	32,889
Impact area	22,332	14,500	7,332
TOTAL	65,521	23,300	42,222

Proposed encroachments will reduce the overall area of Vegetated Corridor by 10,300 sq. ft.; however, the impact to the overall functions and values of the water resources and riparian corridor is expected to be minimal since it will be left largely intact and the encroachment area is currently low functioning and dominated with nonnative species. The encroachments are proposed at the margins of the site adjacent to or in the vicinity of existing development. The elements with existing moderate function will not be affected. The proposed vegetated stormwater quality facilities located to the east and west of the remaining Vegetated Corridor will operate as a buffer to the SROZ area by intercepting and treating stormwater runoff before it reaches the area. The mitigation plan described below has been developed to improve the existing function of the riparian corridor and offset any potential impacts.

Mitigation and Enhancement Plan

The mitigation plan was developed with guidance from Wilsonville Development Code Section 4.139.06(.02)(E)(1)(b) and Table NR-4. Section 4.139.06(.02)(E)(1)(b) requires native trees and shrubs to be planted at a minimum rate of five (5) trees and twenty-five (25) shrubs per every 500 sq.ft. of disturbance area. For a disturbance area of 10,300 sq. ft., planting at this rate amounts to 103 trees and 515 shrubs. Table NR-4 prescribes a ratio of mitigation area to disturbance area based on the existing function of the site and proposed function of the site. Based on the functional assessment of the vegetated corridor/riparian corridor described above, both the impact site and mitigation site have low-to-moderate natural resource function based on low canopy cover, high invasive species cover, proximity to developed land uses, channelization of Tapman Creek, and fragmented connectivity to other habitats. The proposed mitigation plan is expected to provide ecological uplift and increase wildlife habitat, ecological integrity, and water quality protection functions as shown in Table 4 below. The prescribed mitigation ratio was determined as 2.5:1.

Table 4. Natural Resource Enhancement Mitigation Ratios

Function	Mitigation Site/Impact Site Existing Function	Mitigation Site Proposed Function	Change
Wildlife Habitat	Moderate	High	Increase

Ecological Integrity	Low	Moderate	Increase
Connectivity	Low	Low	None
Water Quality Protection	Moderate	High	Increase
Uniqueness	Low	Low	None
Ratio per Table NR-4			**2.5:1**
Proposed Mitigation Ratio			**3.2:1**

The proposed mitigation plan will enhance the remaining vegetated corridor/riparian area east of the existing access road which is assessed as low-to-moderate in natural resource function with low canopy cover and high nonnative species cover. The enhancement activities involve removal of invasive species and planting of native trees, shrubs, and herbs over 32,863 sq. ft of SROZ area. As much of the SROZ west of Wetland 1 is located within the utility ROW, tree planting will be limited to areas outside of the easements. Trees will be planted at the higher end of the required density (8 ft. on center) in this area to compensate for the lack of tree planting within the utility ROW. A total of 134 trees and 1,643 shrubs are proposed to be planted. Bare ground shall be planted or seeded with native grasses or herbs. The proposed mitigation plan far exceeds the planting numbers prescribed by 4.139.06(.02)(E)(1)(b) and results in a mitigation ratio of 3.2:1 exceeding the ratio prescribed by Table NR-4.

Planting Plan

The planting plan is proposed for the 32,863 sq. ft. of vegetated/riparian corridor and is shown on Figure 3. As the planting site is adjacent to a stream and wetlands, a riparian community was selected. The forest community will include 134 trees and 430 shrubs planted over 8,600 sq. ft. outside of the utility ROW. The shrub community will include 1,213 shrubs over 24,263 sq. ft. inside of the utility ROW. The planting palette is listed in Table 5 below. The species selected are appropriate to proposed site conditions. All bare ground within the enhancement area will be seeded with ProTime 400 or equivalent at a rate to achieve 100% aerial cover.

Table 5. Planting Palette for Vegetated Corridor Enhancement Area (32,863 ft²)

Species	**Category**	**Minimum Size***	**Spacing**	**Quantity**
Riparian Forest Community (outside the ROW): 8,600 sq. ft.				
Oregon ash *Fraxinus latifolia*	Tree	2 gal.	8'OC	37
Scouler's willow *Salix scouleriana*	Tree	2 gal. or bare root	8'OC	37
Western redcedar Thuja plicata	Tree	2 gal. or bare root	8'OC	60
Redosier dogwood *Cornus stolonifera*	Shrub	1 gal. or bare root	5'OC cluster	86
Red elderberry *Sambucus racemosa*	Shrub	1 gal. or bare root	5'OC cluster	86

Snowberry *Symphoricarpos albus*	Shrub	1 gal. or bare root	5'OC cluster	86
Salmonberry *Rubus spectabilis*	Shrub	1 gal. or bare root	5'OC cluster	86
Swamp rose *Rosa pisocarpa*	Shrub	1 gal. or bare root	5'OC cluster	86
Riparian Shrub Community (inside the ROW): 24,263 sq. ft.				
Redosier dogwood *Cornus stolonifera*	Shrub	1 gal. or bare root	5'OC cluster	200
Red elderberry *Sambucus racemosa*	Shrub	1 gal. or bare root	5'OC cluster	200
Snowberry *Symphoricarpos albus*	Shrub	1 gal. or bare root	5'OC cluster	213
Salmonberry *Rubus spectabilis*	Shrub	1 gal. or bare root	5'OC cluster	200
Swamp rose *Rosa pisocarpa*	Shrub	1 gal. or bare root	5'OC cluster	200
Indian plum *Oemleria cerasiformis*	Shrub	1 gal. or bare root	5'OC cluster	200
ProTime 402*	herb		25 lbs/acre	17.5 lbs

*Native riparian mix includes blue wildrye (*Elymus glaucus*), meadow barley (*Hordeum brachyantherum*), and tufted hairgrass (*Deschampsia cespitosa*)

The mitigation planting plan was designed according Section 4.139.07(.02)(E) and shall meet the following:

- The planting plan shall be implemented prior to or at the same time as the impact activity is conducted
- All trees, shrubs and ground cover shall be native vegetation.
- Trees and shrubs shall be at least one-gallon in size and shall be at least twelve (12) inches in height.
- Trees shall be planted between eight (8) and twelve (12) feet on center, and shrubs shall be planted between four (4) and five (5) feet on center, or clustered in single species groups of no more than four (4) plants, with each cluster planted between eight (8) and ten (10) feet on center. When planting near existing trees, the drip line of the existing tree shall be the starting point for plant spacing measurements
- Shrubs shall consist of at least two (2) different species. If five (5) trees or more are planted, then no more than fifty (50) percent of the trees may be of the same genus.
- Invasive non-native or noxious vegetation shall be removed within the mitigation area prior to planting and shall be removed or controlled for five (5) years following the date that the mitigation planting is completed.

- Mulch shall be applied around new plantings at a minimum of three inches in depth and eighteen inches in diameter. Browse protection shall be installed on trees and shrubs. Mulching and browse protection shall be maintained during the two-year plant establishment period.
- Trees and shrubs that die shall be replaced in kind to the extent necessary to ensure that a minimum of eighty (80) percent of the trees and shrubs initially required shall remain alive on the fifth anniversary of the date that the mitigation planting is completed

Mitigation Goals and Performance Standards

The mitigation site goal is as follows:

Enhance 32,890 sq. ft. of vegetated corridor to improve riparian corridor, water quality protection, ecological integrity and wildlife habitat functions by removing invasive species and maintaining a native, woody-dominated plant community.

Performance standards are based on Metro's Title 3 water quality performance standards to protect and improve water quality and protect the functions and values of Water Quality Resource Areas (Metro 2018). This plan's performance standards for forest and/or shrub dominated areas and shall consist of the following:

1. Establishment of permanent monitoring locations during the first annual monitoring.
2. Cover of native herbaceous species is at least 60%
3. Cover of invasive species is no more than 10%. After the site has matured to the stage when desirable canopy species reach 50% cover, the cover of invasive species may increase but may not exceed 30%.
4. Bare substrate represents no more than 20% cover
5. Density of woody vegetation is at least 1,600 live trees or shrubs per acre OR the cover of native woody vegetation on site is at least 50%. Native volunteer species may be included in the cover or density estimate.
6. By Year 3 and thereafter, at least 6 different native species must be present. To qualify, a species must have at least 5% average cover in the habitat class and occur in at least 10% of the plots sampled
7. By Year 5, a minimum of eighty (80) percent of the trees and shrubs initially required shall remain alive

Maintenance and Monitoring

Monitoring will occur annually over a 5-year monitoring period to assess condition of plantings, irrigation, mulch etc. Monitoring will be conducted by qualified personnel during peak growing season (July-August). Annual monitoring reports will be provided to the Planning Director for review by December of each monitoring year. The report shall contain, at a minimum, photographs from established photo points, quantitative measure of success criteria, including plant survival and vigor. The Year 1 annual report shall be submitted one year following mitigation action implementation. The final annual

report (Year 5 report) shall document successful satisfaction of mitigation goals, as per the stated performance standards

The applicant will be responsible for coordinating ongoing maintenance and management. If the ownership of the mitigation site property changes, the new owners will have the continued responsibilities Maintenance activities including mulching, weed removal, herbivory control, and supplemental planting will be conducted by a qualified contractor at least twice per growing season and once prior to the growing season or more frequently as indicated by monitoring results. Any failed plants will be replaced in-kind with the cause of loss (wildlife damage, poor plant stock, drought, weed overgrowth, etc.) documented and additional maintenance done to address the cause of loss and ensure future plant survival.

Summary and Conclusions

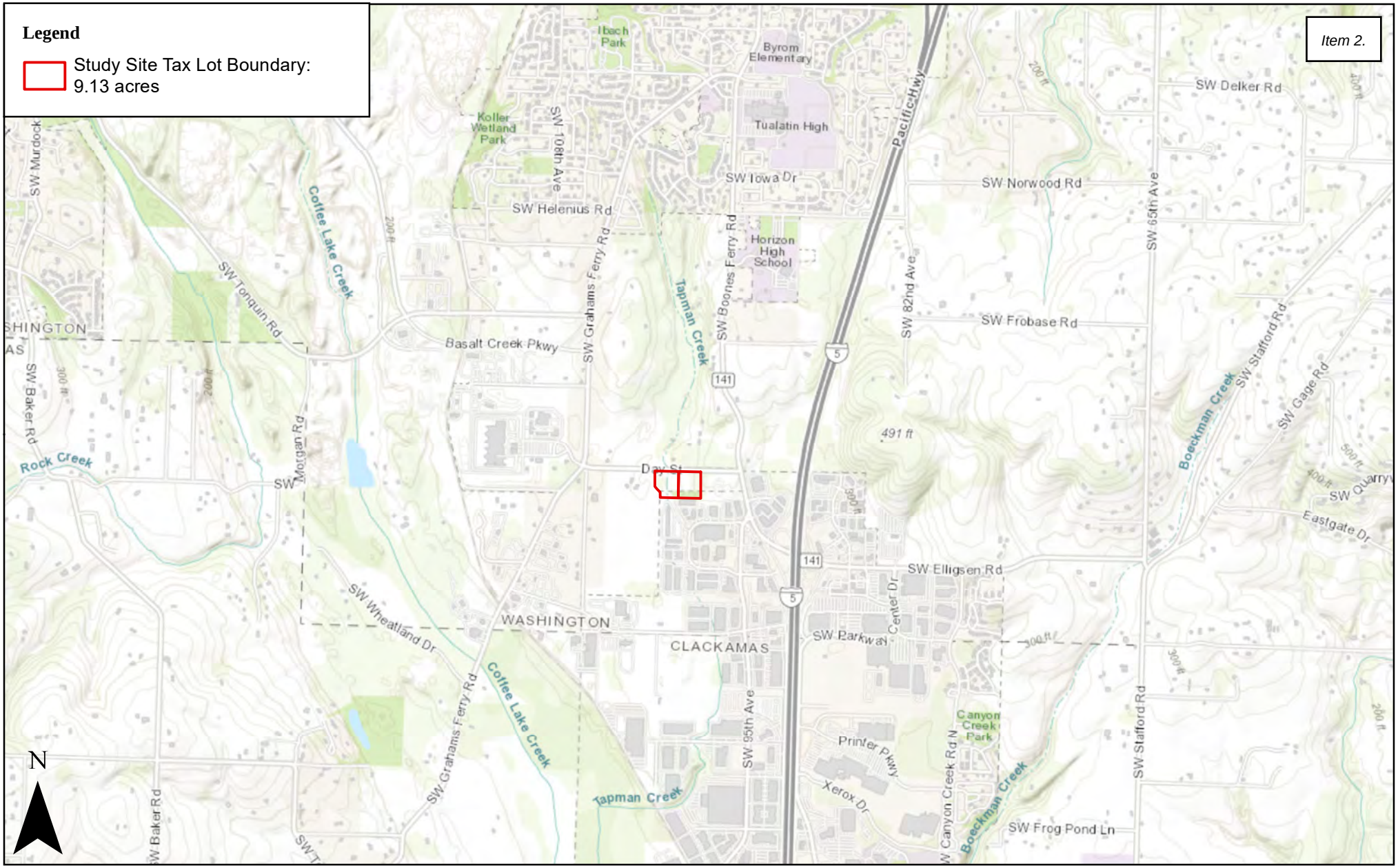
In summary, the applicant (Delta Logistics) proposes a commercial development on a property located at 9710 SW Day Road (T3S, R1W, Section 2B, Tax Lot 600 & 601).

- The property features SROZ area in the western portion including wetlands (0.33 acre), Tapman Creek (0.10 acre), and associated Vegetated Corridor (43,189 sq. ft) and Impact Areas (22,332 sq. ft.).
- The proposed design maximizes use of the site while minimizing adverse impacts to natural resources and incorporates several habitat friendly development practices. No encroachments to onsite wetlands or waters are proposed and no trees will be removed from the SROZ.
- Encroachments to Vegetated Corridor (10,300 sq. ft.) and Impact Areas (14,500 sq. ft.) are proposed due to City-required widening and improvements along the property's frontage of SW Day Road and to access the west side of Tapman Creek. Accessing the western portion of the property from SW Day Road is prohibited by the City, leaving a stream crossing as the only option to utilize this valuable area.
    - The existing Vegetated Corridor/riparian corridor conditions were assessed as low-to-moderate in function with high invasive species cover and low tree canopy cover. These areas are within a utility easement and are historically disturbed.
    - The specific areas of the of the SROZ proposed for encroachment (particularly along SW Day Road) are low-functioning and vegetated entirely by invasive or nonnative species (primarily Himalayan blackberry and reed canarygrass) and lack tree cover.
    - The proposed encroachments are not expected to affect the overall functions of the riparian/Vegetated Corridor as the preponderance of the SROZ will remain intact and the elements with existing moderate function will not be affected. Vegetated water quality treatment facilities are positioned between the remaining SROZ area and the development and will serve as a buffer by intercepting and treating stormwater runoff. The encroachments are proposed at the margins of the site adjacent to or

in the vicinity of existing development. A mitigation plan has been developed to offset any potential impacts to natural resources.

- The Mitigation and Enhancement Plan provides functional uplift to the remaining onsite riparian/Vegetated Corridor. The Plan will enhance 32,863 sq. ft. of riparian/Vegetated Corridor and provide benefits that exceed the mitigation recommendations of the SROZ regulation.
    - A total of 134 trees and 1,643 shrubs are proposed to be planted. Bare ground shall be planted or seeded with native grasses or herbs
    - Trees will be planted at the higher end of the required density (8 ft. on center) outside the ROW to compensate for the lack of tree planting within the utility ROW.
    - The proposed mitigation plan far exceeds the planting numbers prescribed by 4.139.06(.02)(E)(1)(b) and results in a mitigation ratio of 3.2:1 exceeding the ratio prescribed by Table NR-4.
    - While the overall area of the riparian/Vegetated Corridor will be smaller, wildlife habitat, ecological integrity, and water quality protection functions will substantially improve through removal of widespread invasive species and establishment of native forest and shrub communities.
    - Connectivity and uniqueness functions will remain the same.

FIGURE 1: PROJECT VICINITY MAP



Date: 9/9/2021

Data Source: ESRI, 2021; Washington County Intermap, 2021

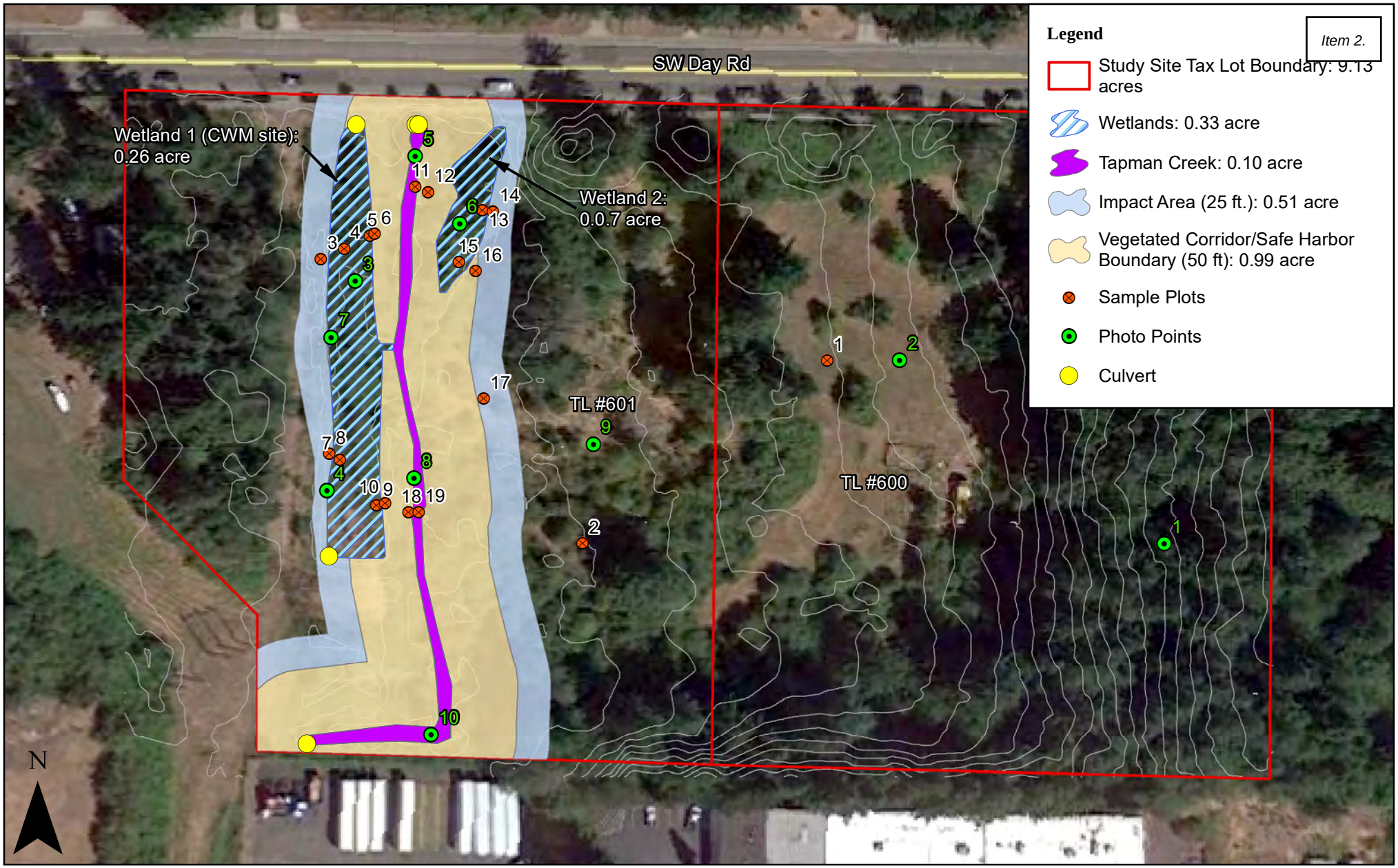
Figure 1. Location Map

SCHOTT & ASSOCIATES, Inc.

SW Day Road Project Site: S&A #2739

0 1,000 2,000 746 et

FIGURE 2: EXISTING CONDITIONS – SIGNIFICANT RESOURCE OVERLAY ZONE



Date: 1/11/2022

Data Source: Google Earth, 2021; Washington County Intermap, 2021; DOGAMI, 2014

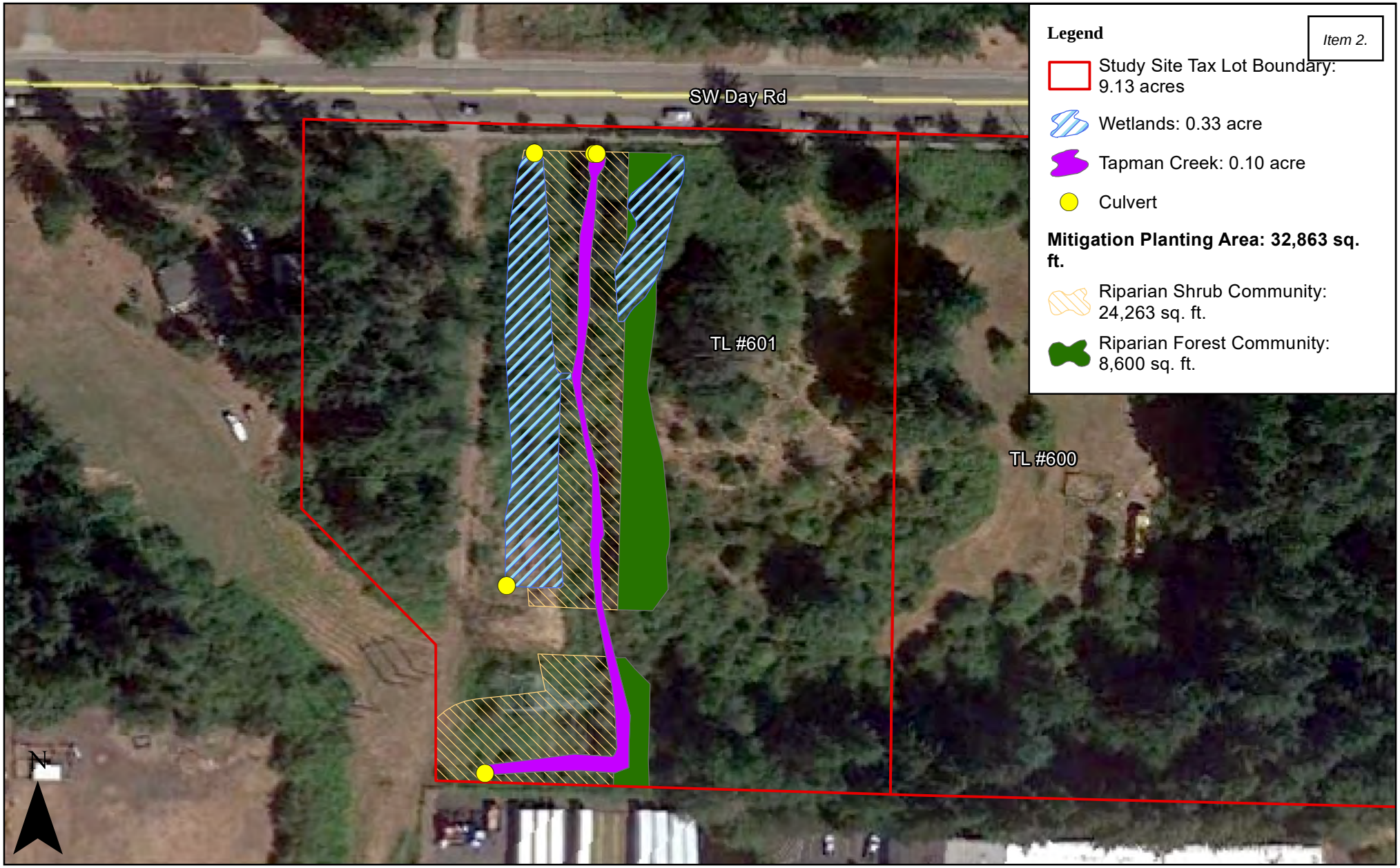
Figure 2. Existing Conditions - Significant Resources Overlay Zone

SW Day Road Project Site: S&A #2739

0 50 100 748 et

SCHOTT & ASSOCIATES, Inc.

FIGURE 3: MITIGATION PLANTING AREA



Date: 1/11/2022

Data Source: Google Earth, 2021;
Washington County Intermap, 2021

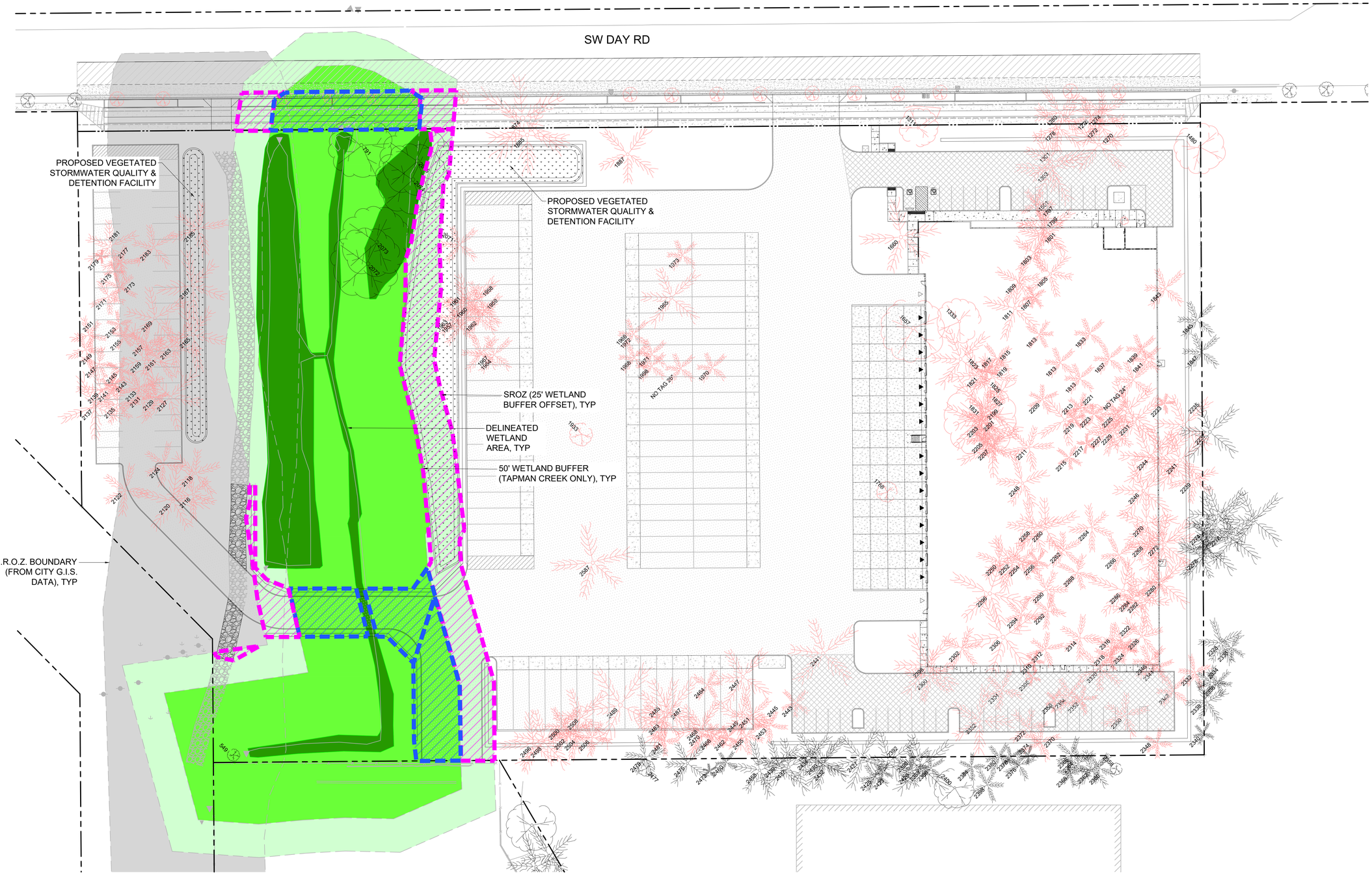
Figure 3. Mitigation Planting Area

SW Day Road Project Site: S&A #2739

0 50 100 750 et

SCHOTT & ASSOCIATES, Inc.

APPENDIX A: SITE PLAN



1 - WETLANDS IMPACT EXHIBIT

30 0 15 30 60 120 1:1

(IN FEET)
1 inch = 30 ft.

		DAY ROAD WIDENING		GENERAL SITEWORK		CREEK BRIDGING & SEMI-TRACTOR STORAGE		
IMPACT AREA	ESTABLISHMENT	TEMPORARY	PERMANENT	TEMPORARY	PERMANENT	TEMPORARY	PERMANENT	TOTALS
WETLAND, SQ FT	DELINEATED	0	0	0	0	0	0	**0**
WETLAND BUFFER, SQ FT	50' DELINEATION OFFSET	0	3,200	0	3,300	0	3,800	**10,300**
SROZ, SQ FT	25' OFFSET FROM BUFFER	0	1,500	0	11,500	0	1,500	**14,500**
TREES (IN SROZ), EA	SURVEY	-	0	-	0	-	0	**0**
TREES (NON-SROZ), EA	SURVEY	-	4	-	174	-	33	**211**

STREET TREES NOT TABULATED & WILL BE REPLACED

Architecture ▪ Interiors
Planning ▪ Engineering

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Vancouver, WA
360.695.7879
Seattle, WA
206.749.9993
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DESIGN DRIVEN | CLIENT FOCUSED

Client

DELTA LOGISTICS
9835 SW COMMERCE CIRCLE
WILSONVILLE, OR
97070

Project

DELTA LOGISTICS SITE EXPANSION FRONTAGE MPROVEMENTS
9710 SW DAY RD.
CITY OF WILSONVILLE, OR

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REVISION SCHEDULE

Delta	Issued As	Issue Date
-	ISSUED	11/30/2021
-	ISSUED	12/02/2021
-	ISSUED	12/15/2021
-	ISSUED	01/18/2022

SHEET TITLE:
WETLANDS IMPACT EXHIBIT

DRAWN BY: CME

CHECKED BY: GIM

SHEET

JOB NO. **2200502.04**

DESIGN DEVELOPMENT SET 12/17/21

220050200\DRAWINGS\CIVIL\EXHIBIT\502-WETLAND IMPACT.DWG GIM 01/18/22 09:29 1:30.00

APPENDIX B. TOPOGRAPHIC SURVEY

TOPOGRAPHIC SURVEY

9710 SW DAY ROAD

LOCATED IN THE SW 1/4 AND THE NW 1/4
SECTION 2, T.3S., R.1W., W.M.
WASHINGTON COUNTY, OREGON

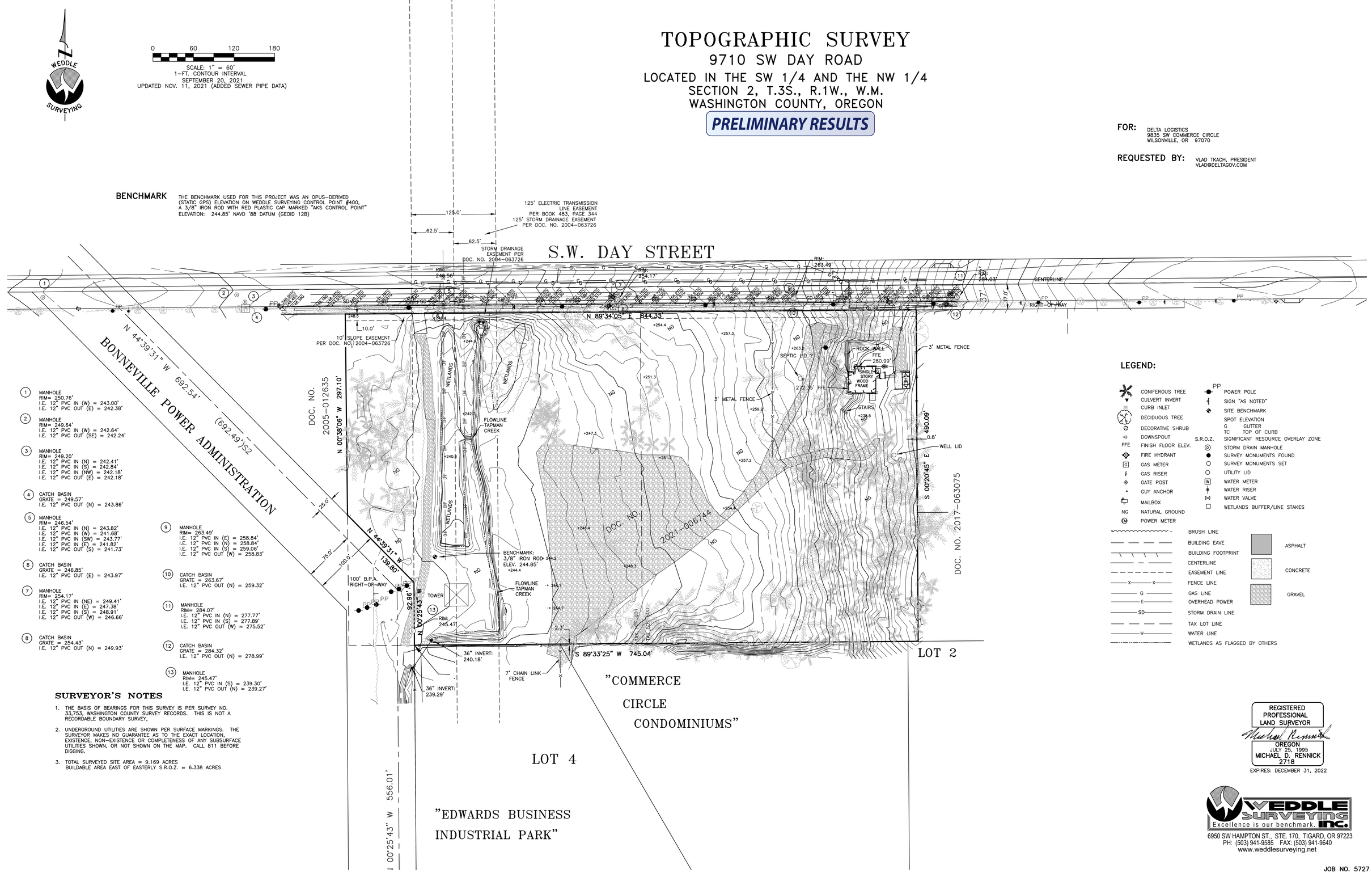
PRELIMINARY RESULTS

0 60 120 180
SCALE: 1" = 60'
1-FT. CONTOUR INTERVAL
SEPTEMBER 20, 2021
UPDATED NOV. 11, 2021 (ADDED SEWER PIPE DATA)

FOR: DELTA LOGISTICS
9835 SW COMMERCE CIRCLE
WILSONVILLE, OR 97070

REQUESTED BY: VLAD TKACH, PRESIDENT
VLAD@DELTAGOV.COM

BENCHMARK THE BENCHMARK USED FOR THIS PROJECT WAS AN OPUS-DERIVED (STATIC GPS) ELEVATION ON WEDDLE SURVEYING CONTROL POINT #400, A 3/8" IRON ROD WITH RED PLASTIC CAP MARKED "AKS CONTROL POINT"
ELEVATION: 244.85' NAVD '88 DATUM (GEOID 12B)



1. MANHOLE
RIM= 250.76'
I.E. 12" PVC IN (W) = 243.00'
I.E. 12" PVC OUT (E) = 242.38'

2. MANHOLE
RIM= 249.64'
I.E. 12" PVC IN (W) = 242.64'
I.E. 12" PVC OUT (SE) = 242.24'

3. MANHOLE
RIM= 249.20'
I.E. 12" PVC IN (N) = 242.41'
I.E. 12" PVC IN (S) = 242.84'
I.E. 12" PVC IN (NW) = 242.18'
I.E. 12" PVC OUT (E) = 242.18'

4. CATCH BASIN
GRATE = 249.57'
I.E. 12" PVC OUT (N) = 243.86'

5. MANHOLE
RIM= 246.54'
I.E. 12" PVC IN (N) = 243.82'
I.E. 12" PVC IN (W) = 241.68'
I.E. 12" PVC IN (SW) = 243.77'
I.E. 12" PVC IN (E) = 241.82'
I.E. 12" PVC OUT (S) = 241.73'

6. CATCH BASIN
GRATE = 246.85'
I.E. 12" PVC OUT (E) = 243.97'

7. MANHOLE
RIM= 254.17'
I.E. 12" PVC IN (NE) = 249.41'
I.E. 12" PVC IN (E) = 247.38'
I.E. 12" PVC IN (S) = 248.91'
I.E. 12" PVC OUT (W) = 246.66'

8. CATCH BASIN
GRATE = 254.43'
I.E. 12" PVC OUT (N) = 249.93'

9. MANHOLE
RIM= 263.49'
I.E. 12" PVC IN (E) = 258.84'
I.E. 12" PVC IN (N) = 258.84'
I.E. 12" PVC IN (S) = 259.06'
I.E. 12" PVC OUT (W) = 258.83'

10. CATCH BASIN
GRATE = 263.67'
I.E. 12" PVC OUT (N) = 259.32'

11. MANHOLE
RIM= 284.07'
I.E. 12" PVC IN (N) = 277.77'
I.E. 12" PVC IN (S) = 277.89'
I.E. 12" PVC OUT (W) = 275.52'

12. CATCH BASIN
GRATE = 284.32'
I.E. 12" PVC OUT (N) = 278.99'

13. MANHOLE
RIM= 245.47'
I.E. 12" PVC IN (S) = 239.30'
I.E. 12" PVC OUT (N) = 239.27'

SURVEYOR'S NOTES

1. THE BASIS OF BEARINGS FOR THIS SURVEY IS PER SURVEY NO. 33,753, WASHINGTON COUNTY SURVEY RECORDS. THIS IS NOT A RECORDABLE BOUNDARY SURVEY.
2. UNDERGROUND UTILITIES ARE SHOWN PER SURFACE MARKINGS. THE SURVEYOR MAKES NO GUARANTEE AS TO THE EXACT LOCATION, EXISTENCE, NON-EXISTENCE OR COMPLETENESS OF ANY SUBSURFACE UTILITIES SHOWN, OR NOT SHOWN ON THE MAP. CALL 811 BEFORE DIGGING.
3. TOTAL SURVEYED SITE AREA = 9.169 ACRES
BUILDABLE AREA EAST OF EASTERLY S.R.O.Z. = 6.338 ACRES

LEGEND:

- CONIFEROUS TREE
- CULVERT INVERT
- CURB INLET
- DECIDUOUS TREE
- DECORATIVE SHRUB
- DOWNSPOUT
- FFE FINISH FLOOR ELEV.
- FIRE HYDRANT
- G GAS METER
- GAS RISER
- GATE POST
- GUY ANCHOR
- MAILBOX
- NG NATURAL GROUND
- PM POWER METER
- PP POWER POLE
- SIGN "AS NOTED"
- SITE BENCHMARK
- SPOT ELEVATION
- G GUTTER
- TC TOP OF CURB
- S.R.O.Z. SIGNIFICANT RESOURCE OVERLAY ZONE
- STORM DRAIN MANHOLE
- SURVEY MONUMENTS FOUND
- SURVEY MONUMENTS SET
- UTILITY LID
- W WATER METER
- WATER RISER
- WATER VALVE
- WETLANDS BUFFER/LINE STAKES

- BRUSH LINE
- BUILDING EAVE
- BUILDING FOOTPRINT
- CENTERLINE
- EASEMENT LINE
- FENCE LINE
- G GAS LINE
- E OVERHEAD POWER
- SD STORM DRAIN LINE
- TAX LOT LINE
- W WATER LINE
- WETLANDS AS FLAGGED BY OTHERS

ASPHALT
CONCRETE
GRAVEL

REGISTERED PROFESSIONAL LAND SURVEYOR
OREGON
JULY 25, 1995
MICHAEL D. RENNICK
2718
EXPIRES: DECEMBER 31, 2022

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JOB NO. 5727

APPENDIX C. TREE SURVEY

Tree No.	Common Name	Scientific Name	DBH[1]	C-Rad[2]	Condition[3]	Structure	Comments	Not On Property	Treatment	Mitigation[4]
549	English hawthorn	*Crataegus monogyna*	5	2.5	Fair	Fair	Multiple stems		tbd	tbd
791	Willow	*Salix sp.*	20	10	Poor	Very Poor	Data visually collected due to inaccessible area		tbd	tbd
874	Douglas-fir	*Pseudotsuga menziesii*	36	18	Good	Fair	Broken limbs at base		tbd	tbd
1270	Douglas-fir	*Pseudotsuga menziesii*	47	23.5	Fair	Fair	Co-dominant stem with included bark, broken limbs in crown		tbd	tbd
1272	Douglas-fir	*Pseudotsuga menziesii*	41	20.5	Good	Good			tbd	tbd
1274	Douglas-fir	*Pseudotsuga menziesii*	33	16.5	Good	Fair	Wood pecker damage at base		tbd	tbd
1276	Douglas-fir	*Pseudotsuga menziesii*	28	14	Fair	Fair	Thin crown		tbd	tbd
1278	Douglas-fir	*Pseudotsuga menziesii*	31	15.5	Fair	Fair	Thin crown, sap sucker damage at base		tbd	tbd
1280	Douglas-fir	*Pseudotsuga menziesii*	43	21.5	Good	Good			tbd	tbd
1301	Douglas-fir	*Pseudotsuga menziesii*	40	20	Good	Good			tbd	tbd
1303	Douglas-fir	*Pseudotsuga menziesii*	50	25	Fair	Poor	Weeping crack at 12', decay with sloughing bark at base		tbd	tbd
1311	sweet cherry	*Prunus avium*	20	10	Very Poor	Very Poor	Tree in heavy decline		tbd	tbd
1333			Tree not present				Tree not present		tbd	tbd
1480	sweet cherry	*Prunus avium*	8	4	Fair	Poor	Data visually collected	x	tbd	tbd
1501	Douglas-fir	*Pseudotsuga menziesii*	30	15	Good	Good			tbd	tbd
1657			Tree not present				Tree not present		tbd	tbd
1660	Douglas-fir	*Pseudotsuga menziesii*	39	19.5	Fair	Fair	Broken limbs at base, thin crown		tbd	tbd
1766			Tree not present				Tree not present		tbd	tbd
1797	Douglas-fir	*Pseudotsuga menziesii*	49	24.5	Fair	Fair	Wood pecker damage at base		tbd	tbd
1799	Douglas-fir	*Pseudotsuga menziesii*	44	22	Fair	Fair	Co-dominant stem with included bark		tbd	tbd
1801	Douglas-fir	*Pseudotsuga menziesii*	44	22	Fair	Fair	Co-dominant stem with included bark, cracks and wood pecker holes at base		tbd	tbd
1803	Douglas-fir	*Pseudotsuga menziesii*	23	11.5	Fair	Fair	Thin crown, excavation in root zone		tbd	tbd
1805	Douglas-fir	*Pseudotsuga menziesii*	33	16.5	Fair	Fair	Buried root flare		tbd	tbd
1807	Douglas-fir	*Pseudotsuga menziesii*	26	13	Good	Good			tbd	tbd
1809	Douglas-fir	*Pseudotsuga menziesii*	41	20.5	Fair	Fair	Torsion cracks at base, excavation in root zone		tbd	tbd

Tree No.	Common Name	Scientific Name	DBH[1]	C-Rad[2]	Condition[3]	Structure	Comments	Not On Property	Treatment	Mitigation[4]
1811	Douglas-fir	*Pseudotsuga menziesii*	49	24.5	Fair	Fair	Torsion cracks in stem, wood pecker damage at base		tbd	tbd
1813	Douglas-fir	*Pseudotsuga menziesii*	25	12.5	Fair	Fair	Thin crown, bark damage at base		tbd	tbd
1815	Douglas-fir	*Pseudotsuga menziesii*	22	11	Good	Fair	Crack with good response growth at base		tbd	tbd
1817	Douglas-fir	*Pseudotsuga menziesii*	13	6.5	Dead	Dead			tbd	tbd
1819	Douglas-fir	*Pseudotsuga menziesii*	20	10	Good	Good			tbd	tbd
1821	Douglas-fir	*Pseudotsuga menziesii*	18	9	Fair	Fair	Contorted stem at 25’		tbd	tbd
1821.1	Douglas-fir	*Pseudotsuga menziesii*	24	12	Good	Fair	Swelling at base where other tree was removed		tbd	tbd
1821.2	Douglas-fir	*Pseudotsuga menziesii*	16	8	Fair	Fair	Contorted stem at 15’, bark damage at base		tbd	tbd
1823			Tree not present				Tree not present		tbd	tbd
1825			Tree not present				Tree not present		tbd	tbd
1827			Tree not present				Tree not present		tbd	tbd
1831			Tree not present				Tree not present		tbd	tbd
1833	Douglas-fir	*Pseudotsuga menziesii*	31	15.5	Good	Good			tbd	tbd
1835	Douglas-fir	*Pseudotsuga menziesii*	34	17	Fair	Fair	Thin crown		tbd	tbd
1837	Douglas-fir	*Pseudotsuga menziesii*	28	14	Good	Fair	Excavation in root zone		tbd	tbd
1839	Douglas-fir	*Pseudotsuga menziesii*	23	11.5	Fair	Fair	Thin crown		tbd	tbd
1841	Douglas-fir	*Pseudotsuga menziesii*	33	16.5	Good	Fair	Holes in trunk at base		tbd	tbd
1843	Douglas-fir	*Pseudotsuga menziesii*	51	25.5	Fair	Fair	Thin crown		tbd	tbd
1845	Douglas-fir	*Pseudotsuga menziesii*	48	24	Fair	Fair	Thin crown, dead limbs in crown		tbd	tbd
1847	Douglas-fir	*Pseudotsuga menziesii*	22	11	Fair	Fair	Thin crown, bark damage at base		tbd	tbd
1849	Douglas-fir	*Pseudotsuga menziesii*	26	13	Good	Good			tbd	tbd
1885	Douglas-fir	*Pseudotsuga menziesii*	23	11.5	Good	Fair	Broken limbs at base		tbd	tbd
1887	Douglas-fir	*Pseudotsuga menziesii*	38	19	Good	Fair	Broken limbs at base		tbd	tbd
1933			Tree not present				Tree not present		tbd	tbd
1957	Douglas-fir	*Pseudotsuga menziesii*	23	11.5	Dead	Dead			tbd	tbd
1958	Douglas-fir	*Pseudotsuga menziesii*	27	13.5	Dead	Dead			tbd	tbd
1959	Douglas-fir	*Pseudotsuga menziesii*	21	10.5	Dead	Dead			tbd	tbd
1960	Douglas-fir	*Pseudotsuga menziesii*	14	7	Poor	Poor	Thin crown, dead top		tbd	tbd

Tree No.	Common Name	Scientific Name	DBH[1]	C-Rad[2]	Condition[3]	Structure	Comments	Not On Property	Treatment	Mitigation[4]
1961	Douglas-fir	*Pseudotsuga menziesii*	17	8.5	Dead	Dead			tbd	tbd
1962	Douglas-fir	*Pseudotsuga menziesii*	22	11	Dead	Dead			tbd	tbd
1963	Douglas-fir	*Pseudotsuga menziesii*	27	13.5	Poor	Poor	Dead top		tbd	tbd
1964	Douglas-fir	*Pseudotsuga menziesii*	26	13	Poor	Poor	Tree in decline		tbd	tbd
1965	Douglas-fir	*Pseudotsuga menziesii*	26	13	Fair	Fair	Thin crown		tbd	tbd
1966	Douglas-fir	*Pseudotsuga menziesii*	26	13	Fair	Fair	Thin crown		tbd	tbd
1967	Douglas-fir	*Pseudotsuga menziesii*	26	13	Fair	Good	Epicormic growth on limbs		tbd	tbd
1968	Douglas-fir	*Pseudotsuga menziesii*	31	15.5	Good	Fair	Broken limbs at base		tbd	tbd
1969	Douglas-fir	*Pseudotsuga menziesii*	28	14	Good	Fair	Broken limbs at base		tbd	tbd
1970	Douglas-fir	*Pseudotsuga menziesii*	31	15.5	Fair	Fair	Thin crown		tbd	tbd
1971	Douglas-fir	*Pseudotsuga menziesii*	22	11	Fair	Fair	Thin crown		tbd	tbd
1972	Douglas-fir	*Pseudotsuga menziesii*	24	12	Fair	Fair	Thin crown		tbd	tbd
1973	Douglas-fir	*Pseudotsuga menziesii*	51	25.5	Fair	Fair	Broken limbs at base, over extended limbs		tbd	tbd
2071	Douglas-fir	*Pseudotsuga menziesii*	31	15.5	Good	Fair	Bark damage at base, ivy at base		tbd	tbd
2072	Oregon ash	*Fraxinus latifolia*	11	5.5	Poor	Poor	Contorted stem, thin crown		tbd	tbd
2073	Willow	*Salix sp.*	14	7	Dead	Dead			tbd	tbd
2074	Oregon ash	*Fraxinus latifolia*	20	10	Poor	Poor	Dead limbs in crown, over extended limbs		tbd	tbd
2075	Oregon ash	*Fraxinus latifolia*	14	7	Fair	Poor	One failed stem at base, decay at base, heavy lean		tbd	tbd
2116	Douglas-fir	*Pseudotsuga menziesii*	21	10.5	Dead	Dead			tbd	tbd
2118	Douglas-fir	*Pseudotsuga menziesii*	24	12	Dead	Dead			tbd	tbd
2120	Douglas-fir	*Pseudotsuga menziesii*	32	16	Poor	Poor	Dead top		tbd	tbd
2122	Douglas-fir	*Pseudotsuga menziesii*	32	16	Fair	Fair	Thin crown, bark damage at base		tbd	tbd
2124	Douglas-fir	*Pseudotsuga menziesii*	17	8.5	Fair	Fair	Bark damage at base, ivy in crown		tbd	tbd
2127	Douglas-fir	*Pseudotsuga menziesii*	33	16.5	Good	Fair	Bark damage at base		tbd	tbd
2129	Douglas-fir	*Pseudotsuga menziesii*	18	9	Very Poor	Very Poor	Dead top		tbd	tbd
2131	Douglas-fir	*Pseudotsuga menziesii*	16	8	Poor	Poor	Ivy in crown, thin crown		tbd	tbd
2133	Douglas-fir	*Pseudotsuga menziesii*	15	7.5	Fair	Fair	Ivy in crown		tbd	tbd
2135	Douglas-fir	*Pseudotsuga menziesii*	15	7.5	Fair	Fair	Thin crown, ivy covering base		tbd	tbd
2137	Douglas-fir	*Pseudotsuga menziesii*	30	15	Fair	Good	Bark damage at base		tbd	tbd
2139	Douglas-fir	*Pseudotsuga menziesii*	37	18.5	Good	Good			tbd	tbd
2141	Douglas-fir	*Pseudotsuga menziesii*	19	9.5	Fair	Fair	Co-dominant stem with included bark at bas, fruiting body at base		tbd	tbd
2143	Douglas-fir	*Pseudotsuga menziesii*	16	8	Dead	Dead			tbd	tbd
2145	Douglas-fir	*Pseudotsuga menziesii*	26	13	Fair	Fair	Thin crown		tbd	tbd
2147	Douglas-fir	*Pseudotsuga menziesii*	15	7.5	Fair	Fair	Thin crown		tbd	tbd
2149	Douglas-fir	*Pseudotsuga menziesii*	24	12	Fair	Poor	Thin crown, contorted stem, ivy covering base		tbd	tbd
2151	Douglas-fir	*Pseudotsuga menziesii*	29	14.5	Poor	Poor	Thin crown, ivy covering stem		tbd	tbd

Tree No.	Common Name	Scientific Name	DBH[1]	C-Rad[2]	Condition[3]	Structure	Comments	Not On Property	Treatment	Mitigation[4]
2153	Douglas-fir	*Pseudotsuga menziesii*	15	7.5	Dead	Dead			tbd	tbd
2155	Douglas-fir	*Pseudotsuga menziesii*	12	6	Fair	Fair	Ivy covering base		tbd	tbd
2157	Douglas-fir	*Pseudotsuga menziesii*	19	9.5	Dead	Dead			tbd	tbd
2159	Douglas-fir	*Pseudotsuga menziesii*	32	16	Good	Fair	Ivy covering base		tbd	tbd
2161	Douglas-fir	*Pseudotsuga menziesii*	16	8	Dead	Dead			tbd	tbd
2163	Douglas-fir	*Pseudotsuga menziesii*	24	12	Fair	Fair	Thin crown		tbd	tbd
2165	Douglas-fir	*Pseudotsuga menziesii*	26	13	Dead	Dead			tbd	tbd
2167	Douglas-fir	*Pseudotsuga menziesii*	34	17	Fair	Fair	Bark damage at base, thin crown		tbd	tbd
2169	Douglas-fir	*Pseudotsuga menziesii*	28	14	Poor	Fair	Thin crown		tbd	tbd
2171	Douglas-fir	*Pseudotsuga menziesii*	22	11	Fair	Fair	Thin crown, ivy covering base, bark damage at base		tbd	tbd
2173	Douglas-fir	*Pseudotsuga menziesii*	21	10.5	Very Poor	Very Poor	Tree in heavy decline		tbd	tbd
2175	Douglas-fir	*Pseudotsuga menziesii*	26	13	Dead	Dead			tbd	tbd
2177	Douglas-fir	*Pseudotsuga menziesii*	24	12	Very Poor	Very Poor	Tree in heavy decline		tbd	tbd
2179	Douglas-fir	*Pseudotsuga menziesii*	15	7.5	Dead	Dead			tbd	tbd
2181	Douglas-fir	*Pseudotsuga menziesii*	21	10.5	Dead	Dead			tbd	tbd
2183	Douglas-fir	*Pseudotsuga menziesii*	24	12	Dead	Dead			tbd	tbd
2185	Douglas-fir	*Pseudotsuga menziesii*	23	11.5	Poor	Very Poor	Tree previously topped		tbd	tbd
2199	Douglas-fir	Pseudotsuga menziesii	30	15	Good	Fair	Limb with included bark at 25', bark damage at base		tbd	tbd
2201	Douglas-fir	*Pseudotsuga menziesii*	14	7	Good	Poor	Co-dominant stem at base, heavy lean		tbd	tbd
2203	Douglas-fir	*Pseudotsuga menziesii*	27	13.5	Good	Fair	Co-dominant stem at base		tbd	tbd
2205	Douglas-fir	*Pseudotsuga menziesii*	29	14.5	Good	Fair	Bark damage at base		tbd	tbd
2207	Douglas-fir	*Pseudotsuga menziesii*	26	13	Good	Good			tbd	tbd
2209	Douglas-fir	*Pseudotsuga menziesii*	19	9.5	Fair	Fair	Thin crown, bark damage at base		tbd	tbd
2211	Douglas-fir	*Pseudotsuga menziesii*	42	21	Fair	Poor	Thin crown, decay at base		tbd	tbd
2213	Douglas-fir	*Pseudotsuga menziesii*	24	12	Poor	Fair	Thin crown		tbd	tbd
2215	Douglas-fir	*Pseudotsuga menziesii*	17	8.5	Fair	Fair	Bark damage at base		tbd	tbd
2217	Douglas-fir	*Pseudotsuga menziesii*	27	13.5	Fair	Fair	Pistol butt stem, thin crown		tbd	tbd
2219	Douglas-fir	*Pseudotsuga menziesii*	16	8	Fair	Fair	Thin crown		tbd	tbd
2221	Douglas-fir	*Pseudotsuga menziesii*	16	8	Good	Good			tbd	tbd
2223	Douglas-fir	*Pseudotsuga menziesii*	12	6	Fair	Fair	Thin crown		tbd	tbd
2225	Douglas-fir	*Pseudotsuga menziesii*	23	11.5	Poor	Poor	Sloughing bark at base, thin crown		tbd	tbd
2227	Douglas-fir	*Pseudotsuga menziesii*	25	12.5	Good	Good			tbd	tbd
2229	Douglas-fir	*Pseudotsuga menziesii*	13	6.5	Fair	Fair	Thin crown		tbd	tbd
2231	Douglas-fir	*Pseudotsuga menziesii*	22	11	Poor	Poor	Red ring rot fruiting bodies on stem		tbd	tbd

Tree No.	Common Name	Scientific Name	DBH[1]	C-Rad[2]	Condition[3]	Structure	Comments	Not On Property	Treatment	Mitigation[4]
2233	Douglas-fir	*Pseudotsuga menziesii*	21	10.5	Poor	Poor	Bark damage at base, thin crown, decay at base		tbd	tbd
2235	Douglas-fir	*Pseudotsuga menziesii*	38	19	Fair	Fair	Thin crown, excavation in root zone		tbd	tbd
2237	Douglas-fir	*Pseudotsuga menziesii*	32	16	Fair	Fair	Data visually collected	x	tbd	tbd
2239	Douglas-fir	*Pseudotsuga menziesii*	35	17.5	Fair	Poor	Insect damage at base, thin crown		tbd	tbd
2241	Douglas-fir	*Pseudotsuga menziesii*	25	12.5	Poor	Poor	Bark damage at base, thin crown		tbd	tbd
2241.1	Douglas-fir	*Pseudotsuga menziesii*	14	7	Dead	Dead			tbd	tbd
2244	Douglas-fir	*Pseudotsuga menziesii*	29	14.5	Fair	Fair	Thin crown, decay at base		tbd	tbd
2246	Douglas-fir	*Pseudotsuga menziesii*	28	14	Fair	Fair	Thin crown		tbd	tbd
2248	Douglas-fir	*Pseudotsuga menziesii*	47	23.5	Good	Good			tbd	tbd
2250	Douglas-fir	*Pseudotsuga menziesii*	23	11.5	Fair	Fair	Decay at base, thin crown, barbed wire in base		tbd	tbd
2252	Douglas-fir	*Pseudotsuga menziesii*	14	7	Fair	Fair	Thin crown, soil around base		tbd	tbd
2254	Douglas-fir	*Pseudotsuga menziesii*	14	7	Fair	Fair	Thin crown		tbd	tbd
2256	Douglas-fir	Pseudotsuga menziesii	16	8	Fair	Fair	Thin crown		tbd	tbd
2258	Douglas-fir	*Pseudotsuga menziesii*	23	11.5	Good	Poor	Excavation in root zone, bark damage at base		tbd	tbd
2260	Douglas-fir	Pseudotsuga menziesii	16	8	Fair	Fair	Bark damage at base, thin crown		tbd	tbd
2262	Douglas-fir	*Pseudotsuga menziesii*	26	13	Fair	Fair	Contorted stem, thin crown		tbd	tbd
2264	Douglas-fir	*Pseudotsuga menziesii*	13	6.5	Poor	Poor	Contorted top, bark damage at base, thin crown		tbd	tbd
2266	Douglas-fir	*Pseudotsuga menziesii*	11	5.5	Fair	Fair	Thin crown, rock piled at base		tbd	tbd
2268	Douglas-fir	*Pseudotsuga menziesii*	26	13	Poor	Poor	Thin crown, ivy at base		tbd	tbd
2270	Douglas-fir	*Pseudotsuga menziesii*	32	16	Poor	Poor	Decay at base		tbd	tbd
2272	Douglas-fir	*Pseudotsuga menziesii*	46	23	Fair	Fair	Old wound with decay at base, thin crown		tbd	tbd
2274	Douglas-fir	*Pseudotsuga menziesii*	16	8	Good	Good	Data visually collected	x	tbd	tbd
2276	Douglas-fir	*Pseudotsuga menziesii*	17	8.5	Good	Good	Data visually collected	x	tbd	tbd
2278	Douglas-fir	*Pseudotsuga menziesii*	14	7	Poor	Poor	Thin crown, bark damage at base, appears to be on edge of property line		tbd	tbd
2280	Douglas-fir	*Pseudotsuga menziesii*	32	16	Poor	Fair	Decay at base, thin crown		tbd	tbd
2282	Douglas-fir	*Pseudotsuga menziesii*	31	15.5	Poor	Poor	Decay at base, thin crown		tbd	tbd
2284	Douglas-fir	*Pseudotsuga menziesii*	20	10	Poor	Poor	Decay at base		tbd	tbd
2286	Douglas-fir	*Pseudotsuga menziesii*	33	16.5	Fair	Fair	Thin crown		tbd	tbd
2288	Douglas-fir	*Pseudotsuga menziesii*	32	16	Fair	Fair	Thin crown		tbd	tbd
2290	Douglas-fir	*Pseudotsuga menziesii*	17	8.5	Very Poor	Very Poor	Dead top		tbd	tbd
2292	Douglas-fir	*Pseudotsuga menziesii*	18	9	Fair	Fair	Ivy covering base, thin crown		tbd	tbd
2294	Douglas-fir	*Pseudotsuga menziesii*	31	15.5	Poor	Poor	Decay at base, ivy covering base		tbd	tbd
2296	Douglas-fir	*Pseudotsuga menziesii*	41	20.5	Fair	Poor	Decay at base, thin crown		tbd	tbd

Tree No.	Common Name	Scientific Name	DBH[1]	C-Rad[2]	Condition[3]	Structure	Comments	Not On Property	Treatment	Mitigation[4]
2298	Douglas-fir	*Pseudotsuga menziesii*	39	19.5	Fair	Fair	Thin crown		tbd	tbd
2300	Douglas-fir	*Pseudotsuga menziesii*	16	8	Fair	Fair	Thin crown		tbd	tbd
2302	Douglas-fir	*Pseudotsuga menziesii*	16	8	Poor	Poor	Decay in stem at 20', thin crown		tbd	tbd
2304	Douglas-fir	*Pseudotsuga menziesii*	24	12	Good	Fair	Fence in base		tbd	tbd
2306	Douglas-fir	*Pseudotsuga menziesii*	54	27	Fair	Fair	Broken limb at base, thin crown		tbd	tbd
2308	Douglas-fir	*Pseudotsuga menziesii*	18	9	Fair	Fair	Thin crown		tbd	tbd
2310	Douglas-fir	*Pseudotsuga menziesii*	13	6.5	Fair	Fair	Thin crown		tbd	tbd
2312	Douglas-fir	*Pseudotsuga menziesii*	14	7	Poor	Poor	Thin crown		tbd	tbd
2314	Douglas-fir	*Pseudotsuga menziesii*	16	8	Poor	Poor	Thin crown		tbd	tbd
2316	Douglas-fir	*Pseudotsuga menziesii*	25	12.5	Fair	Fair	Ivy covering base		tbd	tbd
2318	Douglas-fir	*Pseudotsuga menziesii*	24	12	Fair	Fair	Ivy covering base		tbd	tbd
2320	Douglas-fir	*Pseudotsuga menziesii*	39	19.5	Good	Fair	Pistol butt		tbd	tbd
2322	Douglas-fir	*Pseudotsuga menziesii*	23	11.5	Fair	Fair	Ivy covering base		tbd	tbd
2324	Douglas-fir	*Pseudotsuga menziesii*	23	11.5	Fair	Fair	Ivy covering base		tbd	tbd
2326	Douglas-fir	*Pseudotsuga menziesii*	15	7.5	Fair	Fair	Ivy growing on stem		tbd	tbd
2328	Douglas-fir	*Pseudotsuga menziesii*	20	10	Good	Good	Data visually collected	x	tbd	tbd
2330	Douglas-fir	*Pseudotsuga menziesii*	16	8	Poor	Poor	Data visually collected	x	tbd	tbd
2332	Douglas-fir	*Pseudotsuga menziesii*	25	12.5	Good	Good			tbd	tbd
2334	Douglas-fir	*Pseudotsuga menziesii*	18	9	Fair	Fair	Data visually collected	x	tbd	tbd
2336	Douglas-fir	*Pseudotsuga menziesii*	18	9	Fair	Fair	Data visually collected	x	tbd	tbd
2338	Douglas-fir	*Pseudotsuga menziesii*	32	16	Good	Good	Data visually collected	x	tbd	tbd
2340	Douglas-fir	*Pseudotsuga menziesii*	22	11	Good	Fair	Bark damage on roots, appears to be on edge of property line		tbd	tbd
2342	Douglas-fir	*Pseudotsuga menziesii*	25	12.5	Fair	Fair	Thin crown		tbd	tbd
2344	Douglas-fir	*Pseudotsuga menziesii*	16	8	Fair	Fair	Thin crown		tbd	tbd
2346	Douglas-fir	*Pseudotsuga menziesii*	14	7	Fair	Poor	Decay in stem, bark damage at base		tbd	tbd
2348	Douglas-fir	*Pseudotsuga menziesii*	25	12.5	Poor	Poor	Decay in stem, thin crown		tbd	tbd
2350	Douglas-fir	*Pseudotsuga menziesii*	39	19.5	Good	Good			tbd	tbd
2352	Douglas-fir	*Pseudotsuga menziesii*	18	9	Poor	Poor	Exposed roots, thin crown		tbd	tbd
2354	Douglas-fir	*Pseudotsuga menziesii*	19	9.5	Fair	Fair	Thin crown		tbd	tbd
2356	Douglas-fir	*Pseudotsuga menziesii*	23	11.5	Good	Good			tbd	tbd
2358	Pacific madrone	*Arbutus menziesii*	18	9	Poor	Fair	Data visually collected	x	tbd	tbd
2360	Douglas-fir	*Pseudotsuga menziesii*	20	10	Good	Good	Data visually collected	x	tbd	tbd
2362	Douglas-fir	*Pseudotsuga menziesii*	16	8	Good	Fair	Data visually collected	x	tbd	tbd
2364	Douglas-fir	*Pseudotsuga menziesii*	27	13.5	Fair	Good	Data visually collected	x	tbd	tbd
2366	Douglas-fir	*Pseudotsuga menziesii*	13	6.5	Poor	Fair	Thin crown, appears to be on edge of property line		tbd	tbd
2368	Douglas-fir	*Pseudotsuga menziesii*	22	11	Good	Good	Data visually collected	x	tbd	tbd
2370	Douglas-fir	*Pseudotsuga menziesii*	21	10.5	Fair	Good	Thin crown		tbd	tbd
2372	Douglas-fir	*Pseudotsuga menziesii*	26	13	Good	Good			tbd	tbd

Tree No.	Common Name	Scientific Name	DBH[1]	C-Rad[2]	Condition[3]	Structure	Comments	Not On Property	Treatment	Mitigation[4]
2374	Douglas-fir	*Pseudotsuga menziesii*	12	6	Good	Good	Appears to be on edge of property line		tbd	tbd
2376	Douglas-fir	*Pseudotsuga menziesii*	34	17	Good	Good	Data visually collected	x	tbd	tbd
2378	Douglas-fir	*Pseudotsuga menziesii*	14	7	Good	Fair	Data visually collected	x	tbd	tbd
2380	Douglas-fir	*Pseudotsuga menziesii*	25	12.5	Fair	Good	Data visually collected	x	tbd	tbd
2382	Douglas-fir	*Pseudotsuga menziesii*	36	18	Poor	Fair	Ivy covering base, thin crown		tbd	tbd
2384	Douglas-fir	*Pseudotsuga menziesii*	25	12.5	Poor	Poor	Data visually collected	x	tbd	tbd
2386	Douglas-fir	*Pseudotsuga menziesii*	22	11	Good	Good	Data visually collected	x	tbd	tbd
2388	Douglas-fir	*Pseudotsuga menziesii*	25	12.5	Poor	Poor	Data visually collected	x	tbd	tbd
2390	Douglas-fir	*Pseudotsuga menziesii*	36	18	Fair	Fair	Data visually collected	x	tbd	tbd
2392	Douglas-fir	*Pseudotsuga menziesii*	36	18	Fair	Good	Data visually collected	x	tbd	tbd
2398	Douglas-fir	*Pseudotsuga menziesii*	17	8.5	Good	Good	Data visually collected	x	tbd	tbd
2400	bigleaf maple	*Acer macrophyllum*	10	5	Good	Fair	Data visually collected	x	tbd	tbd
2420	Douglas-fir	*Pseudotsuga menziesii*	14	7	Fair	Poor	Data visually collected	x	tbd	tbd
2423	Douglas-fir	*Pseudotsuga menziesii*	28	14	Good	Fair	Data visually collected	x	tbd	tbd
2425	Douglas-fir	*Pseudotsuga menziesii*	10	5	Poor	Poor	Data visually collected	x	tbd	tbd
2427	Douglas-fir	*Pseudotsuga menziesii*	32	16	Fair	Good	Data visually collected	x	tbd	tbd
2430	Douglas-fir	*Pseudotsuga menziesii*	17	8.5	Good	Fair	Data visually collected	x	tbd	tbd
2432	Douglas-fir	*Pseudotsuga menziesii*	27	13.5	Good	Fair	Data visually collected	x	tbd	tbd
2434	Douglas-fir	*Pseudotsuga menziesii*	21	10.5	Fair	Fair	Fence in base, thin crown, appears to be on edge of property line		tbd	tbd
2437	Douglas-fir	*Pseudotsuga menziesii*	28	14	Good	Fair	Data visually collected	x	tbd	tbd
2439	Douglas-fir	*Pseudotsuga menziesii*	16	8	Good	Good	Data visually collected	x	tbd	tbd
2441	Douglas-fir	*Pseudotsuga menziesii*	28	14	Fair	Fair	Thin crown		tbd	tbd
2443	Douglas-fir	*Pseudotsuga menziesii*	20	10	Fair	Fair	Thin crown, bark damage at base		tbd	tbd
2445	Douglas-fir	*Pseudotsuga menziesii*	20	10	Fair	Fair	Thin crown		tbd	tbd
2447	Douglas-fir	*Pseudotsuga menziesii*	13	6.5	Good	Fair	Bark damage at base		tbd	tbd
2449	Douglas-fir	*Pseudotsuga menziesii*	22	11	Fair	Fair	Thin crown		tbd	tbd
2451	Douglas-fir	*Pseudotsuga menziesii*	28	14	Fair	Poor	Wood pecker damage at base, thin crown, decay at base		tbd	tbd
2453	Douglas-fir	*Pseudotsuga menziesii*	12	6	Fair	Fair	Thin crown		tbd	tbd
2455	Douglas-fir	*Pseudotsuga menziesii*	18	9	Poor	Poor	Red ring rot, thin crown		tbd	tbd
2458	Douglas-fir	*Pseudotsuga menziesii*	25	12.5	Good	Good	Data visually collected	x	tbd	tbd
2460	Douglas-fir	*Pseudotsuga menziesii*	18	9	Good	Good	Data visually collected	x	tbd	tbd
2462	Douglas-fir	*Pseudotsuga menziesii*	12	6	Fair	Fair	Thin crown		tbd	tbd
2464	Douglas-fir	*Pseudotsuga menziesii*	14	7	Poor	Poor	Broken top, decay in stem		tbd	tbd
2466	Douglas-fir	*Pseudotsuga menziesii*	10	5	Fair	Fair	Thin crown		tbd	tbd
2468	Douglas-fir	*Pseudotsuga menziesii*	23	11.5	Fair	Fair	Co-dominant stem with included bark		tbd	tbd
2470	Douglas-fir	*Pseudotsuga menziesii*	23	11.5	Fair	Fair	Co-dominant stem with included bark, ivy covering stem		tbd	tbd

Tree No.	Common Name	Scientific Name	DBH[1]	C-Rad[2]	Condition[3]	Structure	Comments	Not On Property	Treatment	Mitigation[4]
2472	Douglas-fir	*Pseudotsuga menziesii*	10	5	Good	Fair	Data visually collected	x	tbd	tbd
2475	Douglas-fir	*Pseudotsuga menziesii*	40	20	Good	Good	Data visually collected	x	tbd	tbd
2477	Oregon white oak	*Quercus garryana*	12	6	Fair	Fair	Data visually collected	x	tbd	tbd
2479	Douglas-fir	*Pseudotsuga menziesii*	26	13	Fair	Fair	Thin crown, fence in base		tbd	tbd
2481	Douglas-fir	*Pseudotsuga menziesii*	16	8	Fair	Fair	Thin crown		tbd	tbd
2483	Douglas-fir	*Pseudotsuga menziesii*	18	9	Good	Good			tbd	tbd
2485	Douglas-fir	*Pseudotsuga menziesii*	14	7	Fair	Fair	Bark damage at base		tbd	tbd
2487	Douglas-fir	*Pseudotsuga menziesii*	26	13	Poor	Poor	Broken limbs in crown, thin crown		tbd	tbd
2489	Douglas-fir	*Pseudotsuga menziesii*	33	16.5	Poor	Poor	Thin crown		tbd	tbd
2496	Douglas-fir	*Pseudotsuga menziesii*	24	12	Fair	Fair	Thin crown		tbd	tbd
2498	Douglas-fir	*Pseudotsuga menziesii*	27	13.5	Fair	Fair	Co-dominant stem with included bark, thin crown		tbd	tbd
2500	Douglas-fir	*Pseudotsuga menziesii*	19	9.5	Dead	Dead			tbd	tbd
2502	Douglas-fir	*Pseudotsuga menziesii*	24	12	Good	Good			tbd	tbd
2504	Douglas-fir	*Pseudotsuga menziesii*	16	8	Fair	Fair	Thin crown		tbd	tbd
2506	Douglas-fir	*Pseudotsuga menziesii*	20	10	Fair	Fair	Bark damage at base, thin crown		tbd	tbd
2508	Douglas-fir	*Pseudotsuga menziesii*	24	12	Poor	Fair	Thin crown		tbd	tbd
2587	Douglas-fir	*Pseudotsuga menziesii*	36	18	Fair	Poor	Co-dominant stem with included bark		tbd	tbd

[1]**DBH** is the trunk diameter in inches measured per International Society of Arboriculture (ISA) standards.

[2]**C-Rad** is the approximate crown radius in feet.

[3]**Condition and Structure** ratings range from dead, very poor, poor, fair, to good.

[4]**Mitigation** is recommended for the removal of trees over 6-inch DBH. Trees that are less than 6-inch DBH are not recommended for mitigation.

DRAFT

TREE SURVEY

9710 SW DAY ROAD

LOCATED IN THE SW 1/4 AND THE NW 1/4
SECTION 2, T.3S., R.1W., W.M.
WASHINGTON COUNTY, OREGON

REQUESTED BY:

LEE LEIGHTON (MACKENZIE)

FOR: DELTA LOGISTICS
9835 SW COMMERCE CIRCLE
WILSONVILLE, OR 97070

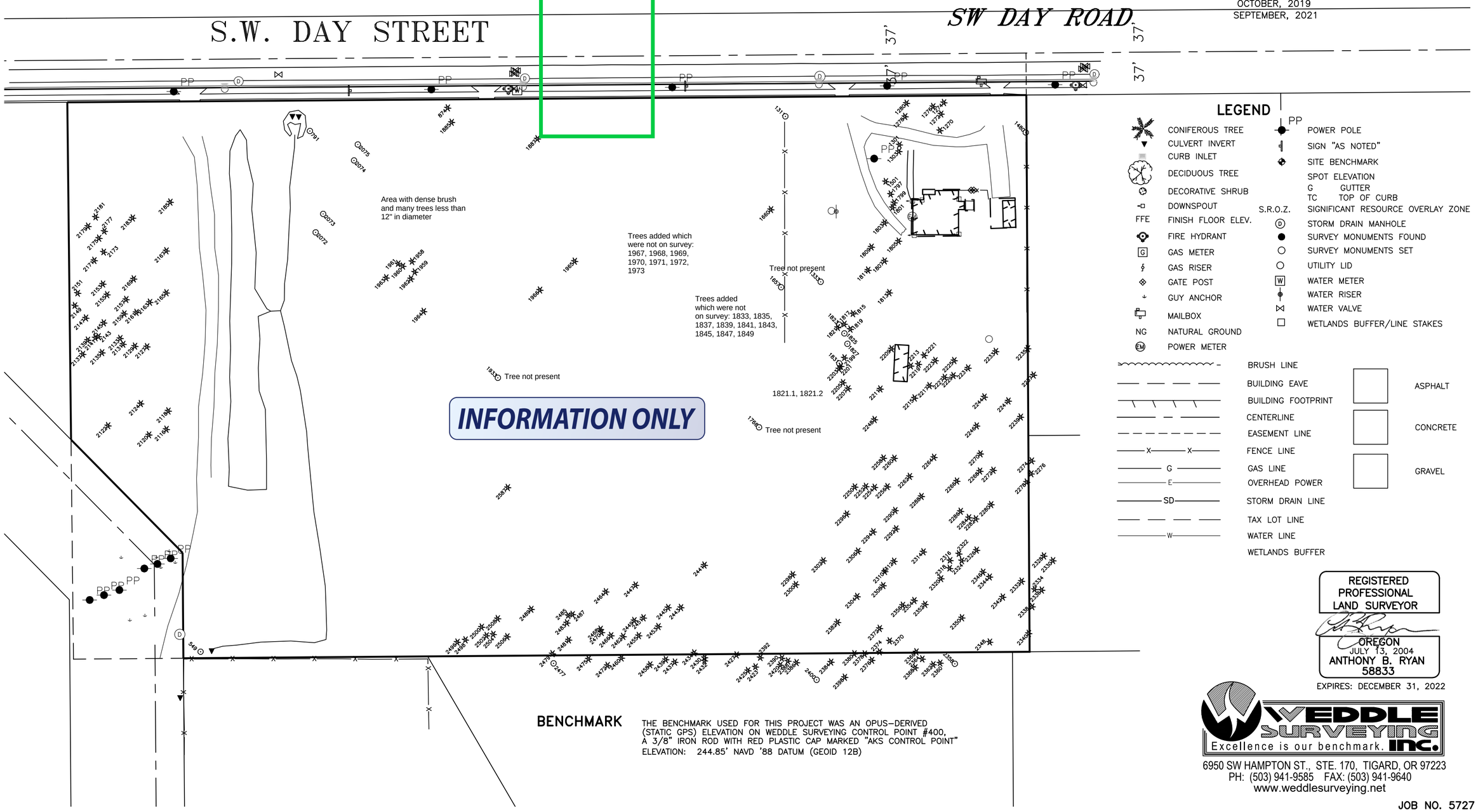
WEDDLE SURVEYING

SURVEYOR'S NOTES

1. THE BASIS OF BEARINGS FOR THIS SURVEY IS PER SURVEY NO. 29,223, WASHINGTON COUNTY SURVEY RECORDS. THIS IS NOT A RECORDABLE BOUNDARY SURVEY, A RECORD OF SURVEY IS IN PROGRESS.
2. UNDERGROUND UTILITIES ARE SHOWN PER SURFACE MARKINGS. THE SURVEYOR MAKES NO GUARANTEE AS TO THE EXACT LOCATION, EXISTENCE, NON-EXISTENCE OR COMPLETENESS OF ANY SUBSURFACE UTILITIES SHOWN, OR NOT SHOWN ON THE MAP. CALL 811 BEFORE DIGGING.
3. TOTAL SURVEYED SITE AREA = 9.169 ACRES
BUILDABLE AREA EAST OF EASTERLY S.R.O.Z. = 6.338 ACRES
4. DUE TO THE DENSE, OVERGROWN NATURE OF VEGETATION ON SITE, NOT ALL TREES WERE MAPPED AND A 3-D SURFACE OVER THE ENTIRE SITE WAS NOT OBTAINABLE.

0 60 120 180

SCALE: 1" = 60'
OCTOBER, 2019
SEPTEMBER, 2021



LEGEND

	CONIFEROUS TREE	PP	POWER POLE
	CULVERT INVERT		SIGN "AS NOTED"
	CURB INLET		SITE BENCHMARK
	DECIDUOUS TREE		SPOT ELEVATION
	DECORATIVE SHRUB	G	GUTTER
	DOWNSPOUT	TC	TOP OF CURB
FFE	FINISH FLOOR ELEV.	S.R.O.Z.	SIGNIFICANT RESOURCE OVERLAY ZONE
	FIRE HYDRANT	D	STORM DRAIN MANHOLE
G	GAS METER		SURVEY MONUMENTS FOUND
	GAS RISER		SURVEY MONUMENTS SET
	GATE POST		UTILITY LID
	GUY ANCHOR	W	WATER METER
	MAILBOX		WATER RISER
NG	NATURAL GROUND		WATER VALVE
EM	POWER METER		WETLANDS BUFFER/LINE STAKES

	BRUSH LINE		ASPHALT
	BUILDING EAVE		CONCRETE
	BUILDING FOOTPRINT		GRAVEL
	CENTERLINE		
	EASEMENT LINE		
X X	FENCE LINE		
G	GAS LINE		
E	OVERHEAD POWER		
SD	STORM DRAIN LINE		
	TAX LOT LINE		
W	WATER LINE		
	WETLANDS BUFFER		

BENCHMARK

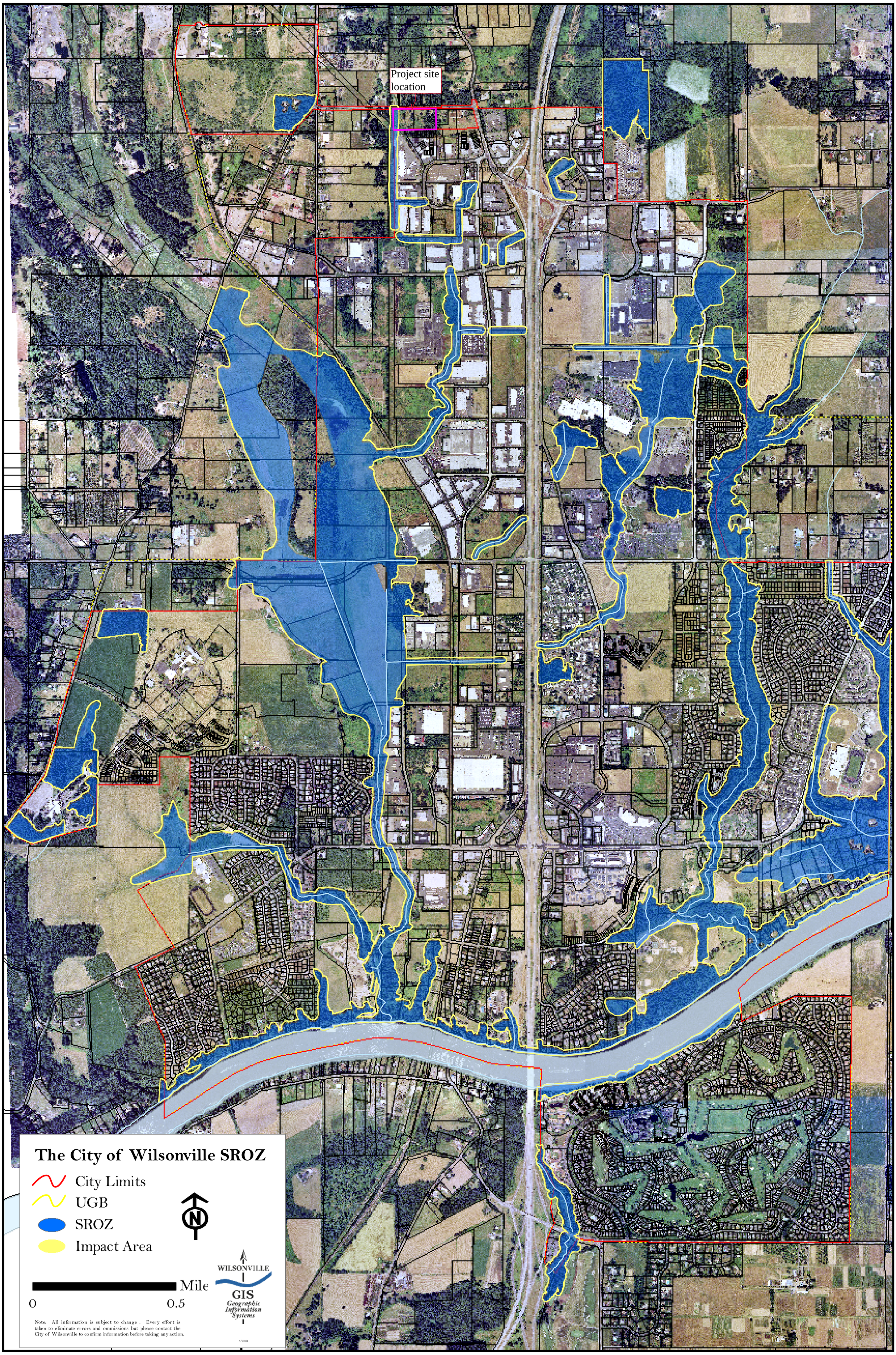
THE BENCHMARK USED FOR THIS PROJECT WAS AN OPUS-DERIVED (STATIC GPS) ELEVATION ON WEDDLE SURVEYING CONTROL POINT #400, A 3/8" IRON ROD WITH RED PLASTIC CAP MARKED "AKS CONTROL POINT"
ELEVATION: 244.85' NAVD '88 DATUM (GEOID 12B)

REGISTERED PROFESSIONAL LAND SURVEYOR
OREGON
JULY 13, 2004
ANTHONY B. RYAN
58833
EXPIRES: DECEMBER 31, 2022

WEDDLE SURVEYING INC.
Excellence is our benchmark.
6950 SW HAMPTON ST., STE. 170, TIGARD, OR 97223
PH: (503) 941-9585 FAX: (503) 941-9640
www.weddlesurveying.net

JOB NO. 5727

APPENDIX D. WILSONVILLE SIGNIFICANT RESOURCE OVERLAY ZONE MAP


Project site location
3S102DB00302
31W
The City of Wilsonville SROZ
City Limits
UGB
SROZ
Impact Area
N
0
0.5
Mile
WILSONVILLE
GIS
Geographic Information Systems
Note: All information is subject to change . Every effort is taken to eliminate errors and ommissions but please contact the City of Wilsonville to confirm information before taking any action.
5/2007

APPENDIX E. GROUND LEVEL PHOTOGRAPHS

Photo Point 1. From forested hillside in the eastern portion of the site facing north (photo date: 10/23/2019).

Photo Point 1. From forested hillside in the eastern portion of the site facing east (photo date: 10/23/2019).

Photo Point 1. From forested hillside in the eastern portion of the site facing south (photo date: 10/23/2019).

Photo Point 1. From forested hillside in the eastern portion of the site facing west (photo date: 10/23/2019).

Photo Point 2. From the bottom of the hill in the central portion of the site facing north (photo date: 10/23/2019).

Photo Point 2. From the bottom of the hill in the central portion of the site facing east (photo date: 10/23/2019).

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P.O. Box 589
Aurora, OR. 97002
503.678.6007

Photo Point 2. From the bottom of the hill in the central portion of the site facing south (photo date: 10/23/2019).

Photo Point 2. From the bottom of the hill in the central portion of the site facing west (photo date: 10/23/2019).

Photo Point 3. From the northern portion of Wetland 1 (CWM site) facing north toward wetland area (photo date: 10/23/2019).

Photo Point 3. From the northern portion of Wetland 1 (CWM site) facing east toward wetland boundary (photo date: 10/23/2019).

Photo Point 3. From the northern portion of Wetland 1 (CWM site) facing south toward wetland area (photo date: 10/23/2019).

Photo Point 3. From the northern portion of Wetland 1 (CWM site) facing west toward wetland boundary (photo date: 10/23/2019).

Photo Point 4. From the southern portion of Wetland 1 (CWM site) facing north along wetland boundary at toe of slope (photo date: 10/23/2019).

Photo Point 4. From Wetland 1 (CWM site) facing east toward wetland area (photo date: 10/23/2019).

Photo Point 4. From the southern portion of Wetland 1 (CWM site) facing south along wetland boundary at toe of slope (photo date: 10/23/2019).

Photo Point 4. From Wetland 1 (CWM site) facing west toward access road and upland forest area (photo date: 10/23/2019).

Photo Point 5. From the northern portion of Tapman Creek (wetland drainage) facing north toward double culverts (photo date: 10/23/2019).

Photo Point 5. From the northern portion of Tapman Creek (wetland drainage) facing east toward drainage bank (photo date: 10/23/2019).

Photo Point 5. From the northern portion of Tapman Creek (wetland drainage) facing south, downslope (photo date: 10/23/2019).

Photo Point 5. From the northern portion of Tapman Creek (wetland drainage) facing west toward drainage bank (photo date: 10/23/2019).

Photo Point 6. From Wetland 2 facing north toward wetland area (photo date: 10/23/2019).

Photo Point 6. From Wetland 2 facing east toward wetland boundary (photo date: 10/23/2019).

Photo Point 6. From Wetland 2 facing south toward wetland area (photo date: 10/23/2019).

Photo Point 6. From Wetland 2 facing west toward wetland boundary (photo date: 10/23/2019).

Photo Point 7. From the top of bank of the CWM site (Wetland 1) facing south (photo date: 9/1/2021).

Photo Point 7. From the top of bank of the CWM site (Wetland 1) facing north (photo date: 9/1/2021).

Photo Point 7. From the top of bank of the CWM site (Wetland 1) facing west (photo date: 9/1/2021).

Photo Point 8. From the top of bank of Tapman Creek (wetland drainage) in the central portion facing north, upslope (photo date: 9/1/2021).

Photo Point 8. From the top of bank of Tapman Creek (wetland drainage) in the central portion facing east across the drainage (photo date: 9/1/2021).

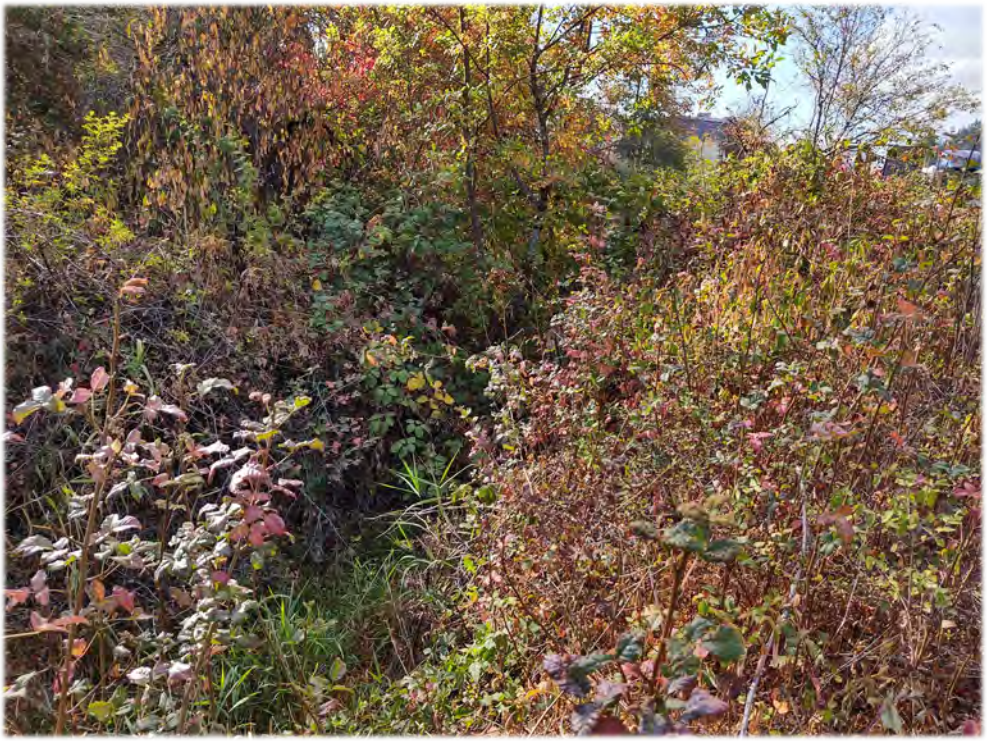

Photo Point 8. From the top of bank of Tapman Creek (wetland drainage) in the central portion facing south, downslope (photo date: 9/1/2021).

Photo Point 8. From the top of bank of Tapman Creek (wetland drainage) in the central portion facing west toward CWM site (Wetland 1) (photo date: 9/1/2021).

Photo Point 9. From the recently graveled area facing west (photo date: 9/1/2021).

Photo Point 9. From the recently graveled area facing north (photo date: 9/1/2021).

Photo Point 9. From the recently graveled area facing east (photo date: 9/1/2021).

Photo Point 9. From the recently graveled area facing south (photo date: 9/1/2021).

Photo Point 10. From the southern end of Tapman Creek facing west (photo date: 9/1/2021).

Photo Point 10. From the southern end of Tapman Creek facing east (photo date: 9/1/2021).

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APPENDIX F. OFWAM FORMS

OREGON FRESHWATER WETLAND ASSESSMENT METHODOLOGY (OFWAM)
ASSESSMENT QUESTIONS

Wetland 1

Wildlife Habitat (WH)

1. How many Cowardin wetland classes are present (include vertical strata ≥20% cover)?
   a. 2 or more b. 1 with >5 plant species c. 1 w/ ≤5 plant species
2. What is the dominant wetland vegetation cover type?
   a. Woody vegetation b. Emergent vegetation and ponding, or open water only
   c. Emergent vegetation or wet meadow
3. What is the degree of Cowardin class interspersion for the wetland being observed (Fig. 3)?
   a. High b. Moderate c. Low
4. How many acres of unvegetated open water are present?
   a. More than 1 acre b. Between 0.5 and 1 acre c. Less than 0.5 acre
5. How is the wetland connected to another body of water, such as a stream, lake or pond (F. 2)?
   a. The wetland is connected by surface water to another body of water
   b. No surface water connection exists, but other bodies of water lie within 1 mile
   c. No surface water connection exits, and no other bodies of water lie within 1 mile
6. How is the wetland connected to other wetlands?
   a. Connected to other wetlands within a 3-mile radius by a perennial or intermittent stream, irrigation or drainage ditch, culvert, canal or lake
   b. Not connected by surface water, but other unconnected wetlands lie within a 3-mile radius
   c. Not connected to other wetlands by surface waters, and no other unconnected wetlands lie within a 3-mile radius
7. What is the water quality condition of stream reaches in the watershed upstream of the wetland or adjacent to the wetland?
   a. No upstream or adjacent reached are listed as *water quality limited*, and all upstream or adjacent reaches are listed as *no problem* (or no data available) for nonpoint source pollutants
   b. One or more upstream or adjacent reaches are listed in *moderate* water quality condition for nonpoint source pollutants
   c. One or more upstream or adjacent reaches are listed as *water quality limited* or in *severe* water quality condition for nonpoint source pollutants
8. What is the dominant existing land use within 500 feet of the wetland's edge?
   a. Exclusive Forest Use or Open Space b. Agriculture c. Developed uses
9b. What percent of the wetland's edge is bordered by a vegetative buffer at least 25 feet wide?
   a. Greater than 40% b. Between 10 and 40% c. Less than 10%
   Is it 50 feet wide or wider? yes___ no___ notes:

Wildlife Habitat Assessment Criteria	
The wetland provides *diverse* wildlife habitat if:	At least four questions are answered "a," and no more than one is answered "c."
The wetland provides *habitat for some species* if:	Answers do not satisfy the above- or below-listed criteria.
The wetland's wildlife habitat function is *lost or not present* if:	All questions are answered "c."

Fish Habitat (FH)

Part A - Streams

1. What percentage of the stream is shaded by stream-side (riparian) vegetation?
   a. More than 75% b. Between 50 and 75% c. Less than 50%
2. What is the physical character of the stream channel?
   a. The stream is in a natural channel, or modified portions of the stream are returning to a natural channel
   b. Only portions of the stream channel are modified
   c. The stream is extensively modified or confined in a non-vegetated channel or pipe
3. What percentage of the entire stream contains instream structures such as large woody debris, floating submerged vegetation, large rocks or boulders?
   a. More than 25% b. Between 10 and 25% c. Less than 10%
4. What is the water quality condition of stream reaches in the watershed upstream of the wetland or adjacent to the wetland (= WH7)?
   a. No upstream or adjacent reached are listed as *water quality limited*, and all upstream or adjacent reaches are listed as *no problem* (or no data available) for nonpoint source pollutants
   b. One or more upstream or adjacent reaches are listed in *moderate* water quality condition for nonpoint source pollutants
   c. One or more upstream or adjacent reaches are listed as *water quality limited* or in *severe* water quality condition for nonpoint source pollutants
5. What is the dominant existing land use within 500 feet of the wetland's edge (= WH8)?
   a. Exclusive Forest Use or Open Space b. Agriculture c. Developed uses
6. Are fish present in a stream, lake or pond associated with the wetland?
   a. Salmon, trout or sensitive species are present at some time during the year
   b. Species not covered in "a" are present at some time during the year
   c. No species are present at any time during the year

Part B - Lakes and Ponds

1. Does the lake or pond contain areas of both deep and shallow water?
   a. Yes b. Cannot be determined. c. No
2. What percentage of the wetland complex contains cover objects such as submerged logs, floating or submerged vegetation, large rocks or boulders?
   a. More than 25% b. Between 10 and 75% c. Less than 10%
3. What percentage of the shoreline is shaded at the water's edge by forested or scrub-shrub vegetation?
   a. 60% or more b. Between 20 and 59% c. Less than 20%
4. What is the water quality condition of stream reaches in the watershed upstream of the wetland or adjacent to the wetland (= WH7)?
   a. No upstream or adjacent reached are listed as *water quality limited*, and all upstream or adjacent reaches are listed as *no problem* (or no data available) for nonpoint source pollutants
   b. One or more upstream or adjacent reaches are listed in *moderate* water quality condition for nonpoint source pollutants
   c. One or more upstream or adjacent reaches are listed as *water quality limited* or in *severe* water quality condition for nonpoint source pollutants
5. What is the dominant existing land use within 500 feet of the wetland's edge (= WH8)?
   a. Exclusive Forest Use or Open Space b. Agriculture c. Developed uses
6. Are fish in a stream, lake or pond associated with the wetland?
   a. Salmon, trout or sensitive species are present at some time during the year
   b. Species not covered in "a" are present at some time during the year

c. No species are present at any time during the year

Fish Habitat Assessment Criteria	
The wetland's fish habitat function is *intact* if:	Three or more questions are answered "a," and no more than one is answered "c."
The wetlands's fish habitat function is *impacted or degraded* if:	Answers do not satisfy the above- or below-listed criteria.
The wetlands's fish habitat function is *lost or not present* if:	All questions are answered "c."

Water Quality (Pollutant Removal; WQ)

1. What is the wetland's primary source of water?
   a. Surface flow, including streams and ditches b. Precipitation or sheet flow
   c. Groundwater, including seeps and springs
2. Is there evidence of flooding or ponding during a portion of the growing season?
   a. Yes b. Unable to determine or not applicable c. No
3. What is the degree of wetland vegetation cover?
   a. High (>60%; OW<40%) b. Moderate (~60%; OW=40%) c. Low (<60%; OW>40%)
4. What is the wetland's area in acres?
   a. >5 acres
   b. Between 0.5 acre and 5 acres; or <0.5 acres and the wetland is connected to other wetlands within a 3-mile radius by a perennial or intermittent stream, irrigation or drainage ditch, canal or lake
   c. <0.5 acre, and the wetland is not connected to other wetlands within a 3-mile radius by a perennial or intermittent stream, irrigation or drainage ditch, canal or lake
5. What is the dominant, existing land use within 500 feet of the wetland's edge (opposite WH8)?
   a. Developed uses b. Agriculture c. Exclusive Forest Use or Open Space
6. What is the water quality condition of stream reaches in the watershed upstream of the wetland or adjacent to the wetland (opposite WH7)?
   a. One or more upstream or adjacent reaches are listed as *water quality limited* or in *severe* water quality condition for nonpoint source pollutants
   b. One or more upstream or adjacent reaches are listed in *moderate* water quality condition for nonpoint source pollutants
   c. No upstream or adjacent reached are listed as *water quality limited*, and all upstream or adjacent reaches are listed as *no problem* (or no data available) for nonpoint source pollutants

Water Quality Assessment Criteria	
A wetland's water-quality function is *intact* if:	Four or more questions are answered "a."
A wetland's water-quality function is *impacted or degraded* if:	Answers do not satisfy the above- or below-listed criteria.
A wetlands's water-quality function is *lost or not present* if:	Four or more questions are answered "c."

Hydrologic Control (Flood Control & Water Supply; HC)

1. Is all or part of the wetland located within the 100-year floodplain or within an enclosed basin?
   a. Yes b. No
2. Is there evidence of flooding or ponding during a portion of the growing season?
   a. Yes b. Unable to determine or not applicable c. No
3. What is the wetland's area in acres?
   a. >5 acres b. Between 0.5 and 5 acres c. <0.5 acre
4. Is waterflow out of the wetland restricted (eg., beaver dam, concrete structure, undersized culvert)?
   a. Yes, the outlet is restricted or the wetland has not outlet
   b. Minor restrictions slow down the water (i.e., undersized culvert)
   c. No the outlet has unrestricted flow
5. What is the dominant wetland vegetation cover type (=WH2)?
   a. Woody vegetation
   b. Emergent vegetation and ponding, or open water only
   c. Emergent vegetation or wet meadow
6. What is the dominant existing land use within 500 feet of the wetland <u>on the downstream or down-slope edge of the wetland</u>?
   a. Developed uses b. Agriculture c. Exclusive Forest Use or Open Space
7. What is the dominant land use in the watershed upstream from the assessment area?
   a. Urban or Urbanizing b. Agriculture c. Forested or Natural Area

Hydrologic Control Assessment Criteria	
A wetland's hydrologic control function is *intact* if:	Four or more questions are answered "a."
A wetland's hydrologic control function is *impacted of degraded* if:	Answers do not satisfy the above- or below-listed criteria.
A wetland's hydrologic control function is *lost or not present* if:	Four or more questions are answered "c."

OFWAM FUNCTION SUMMARY

WH: Some habitat

FH: Impacted or degraded

WQ: Intact

HC: Impacted or degraded

OREGON FRESHWATER WETLAND ASSESSMENT METHODOLOGY (OFWAM)
ASSESSMENT QUESTIONS

Wetland 2

Wildlife Habitat (WH)

1. How many Cowardin wetland classes are present (include vertical strata ≥20% cover)?
   a. 2 or more b. 1 with >5 plant species c. 1 w/ ≤5 plant species
2. What is the dominant wetland vegetation cover type?
   a. Woody vegetation b. Emergent vegetation and ponding, or open water only
   c. Emergent vegetation or wet meadow
3. What is the degree of Cowardin class interspersion for the wetland being observed (Fig. 3)?
   a. High b. Moderate c. Low
4. How many acres of unvegetated open water are present?
   a. More than 1 acre b. Between 0.5 and 1 acre c. Less than 0.5 acre
5. How is the wetland connected to another body of water, such as a stream, lake or pond (F. 2)?
   a. The wetland is connected by surface water to another body of water
   b. No surface water connection exists, but other bodies of water lie within 1 mile
   c. No surface water connection exits, and no other bodies of water lie within 1 mile
6. How is the wetland connected to other wetlands?
   a. Connected to other wetlands within a 3-mile radius by a perennial or intermittent stream, irrigation or drainage ditch, culvert, canal or lake
   b. Not connected by surface water, but other unconnected wetlands lie within a 3-mile radius
   c. Not connected to other wetlands by surface waters, and no other unconnected wetlands lie within a 3-mile radius
7. What is the water quality condition of stream reaches in the watershed upstream of the wetland or adjacent to the wetland?
   a. No upstream or adjacent reached are listed as *water quality limited*, and all upstream or adjacent reaches are listed as *no problem* (or no data available) for nonpoint source pollutants
   b. One or more upstream or adjacent reaches are listed in *moderate* water quality condition for nonpoint source pollutants
   c. One or more upstream or adjacent reaches are listed as *water quality limited* or in *severe* water quality condition for nonpoint source pollutants
8. What is the dominant existing land use within 500 feet of the wetland's edge?
   a. Exclusive Forest Use or Open Space b. Agriculture c. Developed uses
9b. What percent of the wetland's edge is bordered by a vegetative buffer at least 25 feet wide?
   a. Greater than 40% b. Between 10 and 40% c. Less than 10%
   Is it 50 feet wide or wider? yes___ no___ notes:

Wildlife Habitat Assessment Criteria	
The wetland provides *diverse* wildlife habitat if:	At least four questions are answered "a," and no more than one is answered "c."
The wetland provides *habitat for some species* if:	Answers do not satisfy the above- or below-listed criteria.
The wetland's wildlife habitat function is *lost or not present* if:	All questions are answered "c."

Fish Habitat (FH)

Part A - Streams

1. What percentage of the stream is shaded by stream-side (riparian) vegetation?
   a. More than 75% b. Between 50 and 75% c. Less than 50%
2. What is the physical character of the stream channel?
   a. The stream is in a natural channel, or modified portions of the stream are returning to a natural channel
   b. Only portions of the stream channel are modified
   c. The stream is extensively modified or confined in a non-vegetated channel or pipe
3. What percentage of the entire stream contains instream structures such as large woody debris, floating submerged vegetation, large rocks or boulders?
   a. More than 25% b. Between 10 and 25% c. Less than 10%
4. What is the water quality condition of stream reaches in the watershed upstream of the wetland or adjacent to the wetland (= WH7)?
   a. No upstream or adjacent reached are listed as *water quality limited*, and all upstream or adjacent reaches are listed as *no problem* (or no data available) for nonpoint source pollutants
   b. One or more upstream or adjacent reaches are listed in *moderate* water quality condition for nonpoint source pollutants
   c. One or more upstream or adjacent reaches are listed as *water quality limited* or in *severe* water quality condition for nonpoint source pollutants
5. What is the dominant existing land use within 500 feet of the wetland's edge (= WH8)?
   a. Exclusive Forest Use or Open Space b. Agriculture c. Developed uses
6. Are fish present in a stream, lake or pond associated with the wetland?
   a. Salmon, trout or sensitive species are present at some time during the year
   b. Species not covered in "a" are present at some time during the year
   c. No species are present at any time during the year

Part B - Lakes and Ponds

1. Does the lake or pond contain areas of both deep and shallow water?
   a. Yes b. Cannot be determined. c. No
2. What percentage of the wetland complex contains cover objects such as submerged logs, floating or submerged vegetation, large rocks or boulders?
   a. More than 25% b. Between 10 and 75% c. Less than 10%
3. What percentage of the shoreline is shaded at the water's edge by forested or scrub-shrub vegetation?
   a. 60% or more b. Between 20 and 59% c. Less than 20%
4 What is the water quality condition of stream reaches in the watershed upstream of the wetland or adjacent to the wetland (= WH7)?
   a. No upstream or adjacent reached are listed as *water quality limited*, and all upstream or adjacent reaches are listed as *no problem* (or no data available) for nonpoint source pollutants
   b. One or more upstream or adjacent reaches are listed in *moderate* water quality condition for nonpoint source pollutants
   c. One or more upstream or adjacent reaches are listed as *water quality limited* or in *severe* water quality condition for nonpoint source pollutants
5. What is the dominant existing land use within 500 feet of the wetland's edge (= WH8)?
   a. Exclusive Forest Use or Open Space b. Agriculture c. Developed uses
6. Are fish in a stream, lake or pond associated with the wetland?
   a. Salmon, trout or sensitive species are present at some time during the year
   b. Species not covered in "a" are present at some time during the year

c. No species are present at any time during the year

Fish Habitat Assessment Criteria	
The wetland's fish habitat function is *intact* if:	Three or more questions are answered "a," and no more than one is answered "c."
The wetlands's fish habitat function is *impacted or degraded* if:	Answers do not satisfy the above- or below-listed criteria.
The wetlands's fish habitat function is *lost or not present* if:	All questions are answered "c."

Water Quality (Pollutant Removal; WQ)

1. What is the wetland's primary source of water?
   a. Surface flow, including streams and ditches b. Precipitation or sheet flow
   c. Groundwater, including seeps and springs
2. Is there evidence of flooding or ponding during a portion of the growing season?
   a. Yes b. Unable to determine or not applicable c. No
3. What is the degree of wetland vegetation cover?
   a. High (>60%; OW<40%) b. Moderate (~60%; OW=40%) c. Low (<60%; OW>40%)
4. What is the wetland's area in acres?
   a. >5 acres
   b. Between 0.5 acre and 5 acres; or <0.5 acres and the wetland is connected to other wetlands within a 3-mile radius by a perennial or intermittent stream, irrigation or drainage ditch, canal or lake
   c. <0.5 acre, and the wetland is not connected to other wetlands within a 3-mile radius by a perennial or intermittent stream, irrigation or drainage ditch, canal or lake
5. What is the dominant, existing land use within 500 feet of the wetland's edge (opposite WH8)?
   a. Developed uses b. Agriculture c. Exclusive Forest Use or Open Space
6. What is the water quality condition of stream reaches in the watershed upstream of the wetland or adjacent to the wetland (opposite WH7)?
   a. One or more upstream or adjacent reaches are listed as *water quality limited* or in *severe* water quality condition for nonpoint source pollutants
   b. One or more upstream or adjacent reaches are listed in *moderate* water quality condition for nonpoint source pollutants
   c. No upstream or adjacent reached are listed as *water quality limited*, and all upstream or adjacent reaches are listed as *no problem* (or no data available) for nonpoint source pollutants

Water Quality Assessment Criteria	
A wetland's water-quality function is *intact* if:	Four or more questions are answered "a."
A wetland's water-quality function is *impacted or degraded* if:	Answers do not satisfy the above- or below-listed criteria.
A wetlands's water-quality function is *lost or not present* if:	Four or more questions are answered "c."

Hydrologic Control (Flood Control & Water Supply; HC)

1. Is all or part of the wetland located within the 100-year floodplain or within an enclosed basin?
   a. Yes b. No
2. Is there evidence of flooding or ponding during a portion of the growing season?
   a. Yes b. Unable to determine or not applicable c. No
3. What is the wetland's area in acres?
   a. >5 acres b. Between 0.5 and 5 acres c. <0.5 acre
4. Is waterflow out of the wetland restricted (eg., beaver dam, concrete structure, undersized culvert)?
   a. Yes, the outlet is restricted or the wetland has not outlet
   b. Minor restrictions slow down the water (i.e., undersized culvert)
   c. No the outlet has unrestricted flow
5. What is the dominant wetland vegetation cover type (=WH2)?
   a. Woody vegetation
   b. Emergent vegetation and ponding, or open water only
   c. Emergent vegetation or wet meadow
6. What is the dominant existing land use within 500 feet of the wetland <u>on the downstream or down-slope edge of the wetland</u>?
   a. Developed uses b. Agriculture c. Exclusive Forest Use or Open Space
7. What is the dominant land use in the watershed upstream from the assessment area?
   a. Urban or Urbanizing b. Agriculture c. Forested or Natural Area

Hydrologic Control Assessment Criteria	
A wetland's hydrologic control function is *intact* if:	Four or more questions are answered "a."
A wetland's hydrologic control function is *impacted of degraded* if:	Answers do not satisfy the above- or below-listed criteria.
A wetland's hydrologic control function is *lost or not present* if:	Four or more questions are answered "c."

OFWAM FUNCTION SUMMARY

WH: Some habitat

FH: Not present

WQ: Lost

HC: Impacted or degraded

OREGON FRESHWATER WETLAND ASSESSMENT METHODOLOGY (OFWAM)
ASSESSMENT QUESTIONS

Wetland Tapman Creek

Wildlife Habitat (WH)

1. How many Cowardin wetland classes are present (include vertical strata ≥20% cover)?
   a. 2 or more b. 1 with >5 plant species c. 1 w/ ≤5 plant species
2. What is the dominant wetland vegetation cover type?
   a. Woody vegetation b. Emergent vegetation and ponding, or open water only
   c. Emergent vegetation or wet meadow
3. What is the degree of Cowardin class interspersion for the wetland being observed (Fig. 3)?
   a. High b. Moderate c. Low
4. How many acres of unvegetated open water are present?
   a. More than 1 acre b. Between 0.5 and 1 acre c. Less than 0.5 acre
5. How is the wetland connected to another body of water, such as a stream, lake or pond (F. 2)?
   a. The wetland is connected by surface water to another body of water
   b. No surface water connection exists, but other bodies of water lie within 1 mile
   c. No surface water connection exits, and no other bodies of water lie within 1 mile
6. How is the wetland connected to other wetlands?
   a. Connected to other wetlands within a 3-mile radius by a perennial or intermittent stream, irrigation or drainage ditch, culvert, canal or lake
   b. Not connected by surface water, but other unconnected wetlands lie within a 3-mile radius
   c. Not connected to other wetlands by surface waters, and no other unconnected wetlands lie within a 3-mile radius
7. What is the water quality condition of stream reaches in the watershed upstream of the wetland or adjacent to the wetland?
   a. No upstream or adjacent reached are listed as *water quality limited*, and all upstream or adjacent reaches are listed as *no problem* (or no data available) for nonpoint source pollutants
   b. One or more upstream or adjacent reaches are listed in *moderate* water quality condition for nonpoint source pollutants
   c. One or more upstream or adjacent reaches are listed as *water quality limited* or in *severe* water quality condition for nonpoint source pollutants
8. What is the dominant existing land use within 500 feet of the wetland's edge?
   a. Exclusive Forest Use or Open Space b. Agriculture c. Developed uses
9b. What percent of the wetland's edge is bordered by a vegetative buffer at least 25 feet wide?
   a. Greater than 40% b. Between 10 and 40% c. Less than 10%
   Is it 50 feet wide or wider? yes___ no__ notes:

Wildlife Habitat Assessment Criteria	
The wetland provides *diverse* wildlife habitat if:	At least four questions are answered "a," and no more than one is answered "c."
The wetland provides *habitat for some species* if:	Answers do not satisfy the above- or below-listed criteria.
The wetland's wildlife habitat function is *lost or not present* if:	All questions are answered "c."

Fish Habitat (FH)

Part A - Streams

1. What percentage of the stream is shaded by stream-side (riparian) vegetation?
   a. More than 75% b. Between 50 and 75% c. Less than 50%
2. What is the physical character of the stream channel?
   a. The stream is in a natural channel, or modified portions of the stream are returning to a natural channel
   b. Only portions of the stream channel are modified
   c. The stream is extensively modified or confined in a non-vegetated channel or pipe
3. What percentage of the entire stream contains instream structures such as large woody debris, floating submerged vegetation, large rocks or boulders?
   a. More than 25% b. Between 10 and 25% c. Less than 10%
4. What is the water quality condition of stream reaches in the watershed upstream of the wetland or adjacent to the wetland (= WH7)?
   a. No upstream or adjacent reached are listed as *water quality limited*, and all upstream or adjacent reaches are listed as *no problem* (or no data available) for nonpoint source pollutants
   b. One or more upstream or adjacent reaches are listed in *moderate* water quality condition for nonpoint source pollutants
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5. What is the dominant existing land use within 500 feet of the wetland's edge (= WH8)?
   a. Exclusive Forest Use or Open Space b. Agriculture c. Developed uses
6. Are fish present in a stream, lake or pond associated with the wetland?
   a. Salmon, trout or sensitive species are present at some time during the year
   b. Species not covered in "a" are present at some time during the year
   c. No species are present at any time during the year

Part B - Lakes and Ponds

1. Does the lake or pond contain areas of both deep and shallow water?
   a. Yes b. Cannot be determined. c. No
2. What percentage of the wetland complex contains cover objects such as submerged logs, floating or submerged vegetation, large rocks or boulders?
   a. More than 25% b. Between 10 and 75% c. Less than 10%
3. What percentage of the shoreline is shaded at the water's edge by forested or scrub-shrub vegetation?
   a. 60% or more b. Between 20 and 59% c. Less than 20%
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5. What is the dominant existing land use within 500 feet of the wetland's edge (= WH8)?
   a. Exclusive Forest Use or Open Space b. Agriculture c. Developed uses
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   b. Species not covered in "a" are present at some time during the year

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Fish Habitat Assessment Criteria	
The wetland's fish habitat function is *intact* if:	Three or more questions are answered "a," and no more than one is answered "c."
The wetlands's fish habitat function is *impacted or degraded* if:	Answers do not satisfy the above- or below-listed criteria.
The wetlands's fish habitat function is *lost or not present* if:	All questions are answered "c."

Water Quality (Pollutant Removal; WQ)

1. What is the wetland's primary source of water?
   a. Surface flow, including streams and ditches b. Precipitation or sheet flow
   c. Groundwater, including seeps and springs
2. Is there evidence of flooding or ponding during a portion of the growing season?
   a. Yes b. Unable to determine or not applicable c. No
3. What is the degree of wetland vegetation cover?
   a. High (>60%; OW<40%) b. Moderate (~60%; OW=40%) c. Low (<60%; OW>40%)
4. What is the wetland's area in acres?
   a. >5 acres
   b. Between 0.5 acre and 5 acres; or <0.5 acres and the wetland is connected to other wetlands within a 3-mile radius by a perennial or intermittent stream, irrigation or drainage ditch, canal or lake
   c. <0.5 acre, and the wetland is not connected to other wetlands within a 3-mile radius by a perennial or intermittent stream, irrigation or drainage ditch, canal or lake
5. What is the dominant, existing land use within 500 feet of the wetland's edge (opposite WH8)?
   a. Developed uses b. Agriculture c. Exclusive Forest Use or Open Space
6. What is the water quality condition of stream reaches in the watershed upstream of the wetland or adjacent to the wetland (opposite WH7)?
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Water Quality Assessment Criteria	
A wetland's water-quality function is *intact* if:	Four or more questions are answered "a."
A wetland's water-quality function is *impacted or degraded* if:	Answers do not satisfy the above- or below-listed criteria.
A wetlands's water-quality function is *lost or not present* if:	Four or more questions are answered "c."

Hydrologic Control (Flood Control & Water Supply; HC)

1. Is all or part of the wetland located within the 100-year floodplain or within an enclosed basin?
   a. Yes b. No
2. Is there evidence of flooding or ponding during a portion of the growing season?
   a. Yes b. Unable to determine or not applicable c. No
3. What is the wetland's area in acres?
   a. >5 acres b. Between 0.5 and 5 acres c. <0.5 acre
4. Is waterflow out of the wetland restricted (eg., beaver dam, concrete structure, undersized culvert)?
   a. Yes, the outlet is restricted or the wetland has not outlet
   b. Minor restrictions slow down the water (i.e., undersized culvert)
   c. No the outlet has unrestricted flow
5. What is the dominant wetland vegetation cover type (=WH2)?
   a. Woody vegetation
   b. Emergent vegetation and ponding, or open water only
   c. Emergent vegetation or wet meadow
6. What is the dominant existing land use within 500 feet of the wetland <u>on the downstream or down-slope edge of the wetland</u>?
   a. Developed uses b. Agriculture c. Exclusive Forest Use or Open Space
7. What is the dominant land use in the watershed upstream from the assessment area?
   a. Urban or Urbanizing b. Agriculture c. Forested or Natural Area

Hydrologic Control Assessment Criteria	
A wetland's hydrologic control function is *intact* if:	Four or more questions are answered "a."
A wetland's hydrologic control function is *impacted of degraded* if:	Answers do not satisfy the above- or below-listed criteria.
A wetland's hydrologic control function is *lost or not present* if:	Four or more questions are answered "c."

OFWAM FUNCTION SUMMARY

WH: Some habitat

FH: Not present

WQ: Lost

HC: Impacted or degraded

APPENDIX G. HABITAT ASSESSMENT FORM

Component		Degree	Score	Comments
WATER	Quantity and Seasonality	None Seasonal Perennial 0……4……8	4	Small seasonal wetland/streams present
	Quality	Stagnant Seasonally Flushed Continually Flushed 0……3……6	3	Wetlands seasonally inundated and sloped
	Proximity to Cover	None Nearby Immediately adjacent 0……3……6	4	Dense blackberry thicket proximal to wetland. Cover for small wildlife only
	Diversity (Streams, Ponds, Wetlands)	One Two Three 2……4……8	4	2 water types present
	WATER TOTAL		15	
FOOD	Variety	Low Medium High 0……4……8	2	Blackberry and hawthorn berries only major food source
	Quality and Seasonality	None Limited Year around 0……4……8	2	Short berry season
	Proximity to Cover	None Nearby Immediately adjacent 0……4……8	6	Blackberry thicket provides cover for small wildlife only. Forest cover nearby offers cover for larger
	FOOD TOTAL		10	
COVER	Structural Diversity	Low Medium High 0……4……8	4	Mostly shrub, some trees
	Variety	Low Medium High 0……4……8	4	Mostly shrub, some trees
	Nesting	Low Medium High 0……2……4	2	
	Escape	Low Medium High 0……2……4	2	
	Seasonality	None Limited Year around 0……2……4	2	
	COVER TOTAL		14	

ADDITIONAL VALUE				
DISTURBANCE	PHYSICAL	Permanent Temporary Undisturbed 0…….2…….4	1	invasive species dominant, little natural tree cover
	HUMAN	High Medium Low 0…….2…….4	2	Surrounded by developed uses
HABITAT INTERSPERSION		Low Medium High 0…….3…….6	3	
UNIQUE FEATURES 0-4		Wildlife _____ Rarity of Habitat _____ Flora _____ Type_____ Scenic _____ Educational _____ Potential _____ Potential _____	0	none

APPENDIX H: DSL CONCURRENCE LETTER: WD2021-0556

Oregon
Kate Brown, Governor

Department of State Lands
775 Summer Street NE, Suite 100
Salem, OR 97301-1279
(503) 986-5200
FAX (503) 378-4844
www.oregon.gov/dsl

State Land Board

Kate Brown
Governor

Shemia Fagan
Secretary of State

Tobias Read
State Treasurer

December 2, 2021

Delta Logistics, Inc.
Attn: Vladimir Tkach
9835 SW Commerce Circle
Wilsonville, OR 97070

Re: WD # 2021-0556 **Approved**
Wetland Delineation Report for SW Day Road
Washington County; T3S R1W S02B TLs 600 and 601; RGL # 1793
City of Sherwood Local Wetlands Inventory Wetland 3.03

Dear Vladimir Tkach:

The Department of State Lands has reviewed the wetland delineation report prepared by Schott and Associates for the site referenced above. Based upon the information presented in the report, and additional information submitted upon request, we concur with the wetland and waterway boundaries as mapped in Figures 6A and 6B of the report. Please replace all copies of the preliminary wetland maps with these final Department-approved maps.

Within the study area, 2 wetlands (Wetland 1 and 2, totaling approximately 0.33 acres) and Tapman Creek were identified. The wetlands and creek are subject to the permit requirements of the state Removal-Fill Law. Normally, a state permit is required for cumulative fill or annual excavation of 50 cubic yards or more in wetlands or below the ordinary high-water line (OHWL) of the waterway (or the 2-year recurrence interval flood elevation if OHWL cannot be determined). However, Wetland 1 is a compensatory wetland mitigation (CWM) area (RGL # 1793). Any impact within a CWM area may require a state permit.

This concurrence is for purposes of the state Removal-Fill Law only. We recommend that you attach a copy of this concurrence letter to any subsequent state permit application to speed application review. Federal, other state agencies or local permit requirements may apply as well. The U.S. Army Corps of Engineers will determine jurisdiction under the Clean Water Act, which may require submittal of a complete Wetland Delineation Report.

Please be advised that state law establishes a preference for avoidance of wetland impacts. Because measures to avoid and minimize wetland impacts may include reconfiguring parcel layout and size or development design, we recommend that you work with Department staff on appropriate site design before completing the city or county land use approval process.

This concurrence is based on information provided to the agency. The jurisdictional determination is valid for five years from the date of this letter unless new information necessitates a revision. Circumstances under which the Department may change a determination are found in OAR 141-090-0045 (available on our web site or upon request). In addition, laws enacted by the legislature and/or rules adopted by the Department may result in a change in jurisdiction; individuals and applicants are subject to the regulations that are in effect at the time of the removal-fill activity or complete permit application. The applicant, landowner, or agent may submit a request for reconsideration of this determination in writing within six months of the date of this letter.

Thank you for having the site evaluated. If you have any questions, please contact the Jurisdiction Coordinator for Washington County, Chris Stevenson, PWS, at (503) 986-5246.

Sincerely,

Peter Ryan, SPWS
Aquatic Resource Specialist

Enclosures

ec: Kim Biafora, Schott and Associates
City of Sherwood Planning Department
Danielle Erb, Corps of Engineers
Michael De Blasi, DSL
Lindsey Obermiller, Clean Water Services

WETLAND DELINEATION / DETERMINATION REPORT COVER FORM

Fully completed and signed report cover forms and applicable fees are required before report review timelines are initiated by the Department of State Lands. Make checks payable to the Oregon Department of State Lands. To pay fees by credit card, go online at: https://apps.oregon.gov/DSL/EPS/program?key=4.

Attach this completed and signed form to the front of an unbound report or include a hard copy with a digital version (single PDF file of the report cover form and report, minimum 300 dpi resolution) and submit to: **Oregon Department of State Lands, 775 Summer Street NE, Suite 100, Salem, OR 97301-1279.** A single PDF of the completed cover from and report may be e-mailed to: **Wetland_Delineation@dsl.state.or.us**. For submittal of PDF files larger than 10 MB, e-mail DSL instructions on how to access the file from your ftp or other file sharing website.

Contact and Authorization Information

☐ Applicant ☒ Owner Name, Firm and Address:
Vladimir Tkach/ Delta Logistics, Inc.
9835 SW Commerce Cir,
Wilsonville, OR 97070

Business phone # 800-595-3077
Mobile phone # (optional)
E-mail: Vlad@deltagov.com

☐ Authorized Legal Agent, Name and Address (if different):

Business phone #
Mobile phone # (optional)
E-mail:

I either own the property described below or I have legal authority to allow access to the property. I authorize the Department to access the property for the purpose of confirming the information in the report, after prior notification to the primary contact.

Typed/Printed Name: Vladimir Tkach **Signature:** _____

Date: 09/27/2021 Special instructions regarding site access: ____

Project and Site Information

Project Name: SW Day Road

Latitude: 45.339611° Longitude: -122.778340°
decimal degree - centroid of site or start & end points of linear project

Proposed Use:
Trailer parking/storage

Tax Map # 3S102B
Tax Lot(s) 600, 601

Tax Map #
Tax Lot(s)

Project Street Address (or other descriptive location):
9710 SW Day Rd

Township 3S Range 1W Section 2B QQ NW/SE

Use separate sheet for additional tax and location information

City: Wilsonville County: Washington

Waterway: Tapman Creek River Mile: 6

Wetland Delineation Information

Wetland Consultant Name, Firm and Address:
Kim Biafora
Schott & Associates
PO Box 589
Aurora, OR 97002

Phone # (503) 678-6028
Mobile phone # (if applicable)
E-mail: kim@schottandassociates.com

The information and conclusions on this form and in the attached report are true and correct to the best of my knowledge.

Consultant Signature: Kim Biafora Date: 10/7/2021

Primary Contact for report review and site access is ☐ Consultant ☐ Applicant/Owner ☐ Authorized Agent

Wetland/Waters Present? ☒ Yes ☐ No Study Area size: 9.13 Total Wetland Acreage: 0.33

Check Applicable Boxes Below

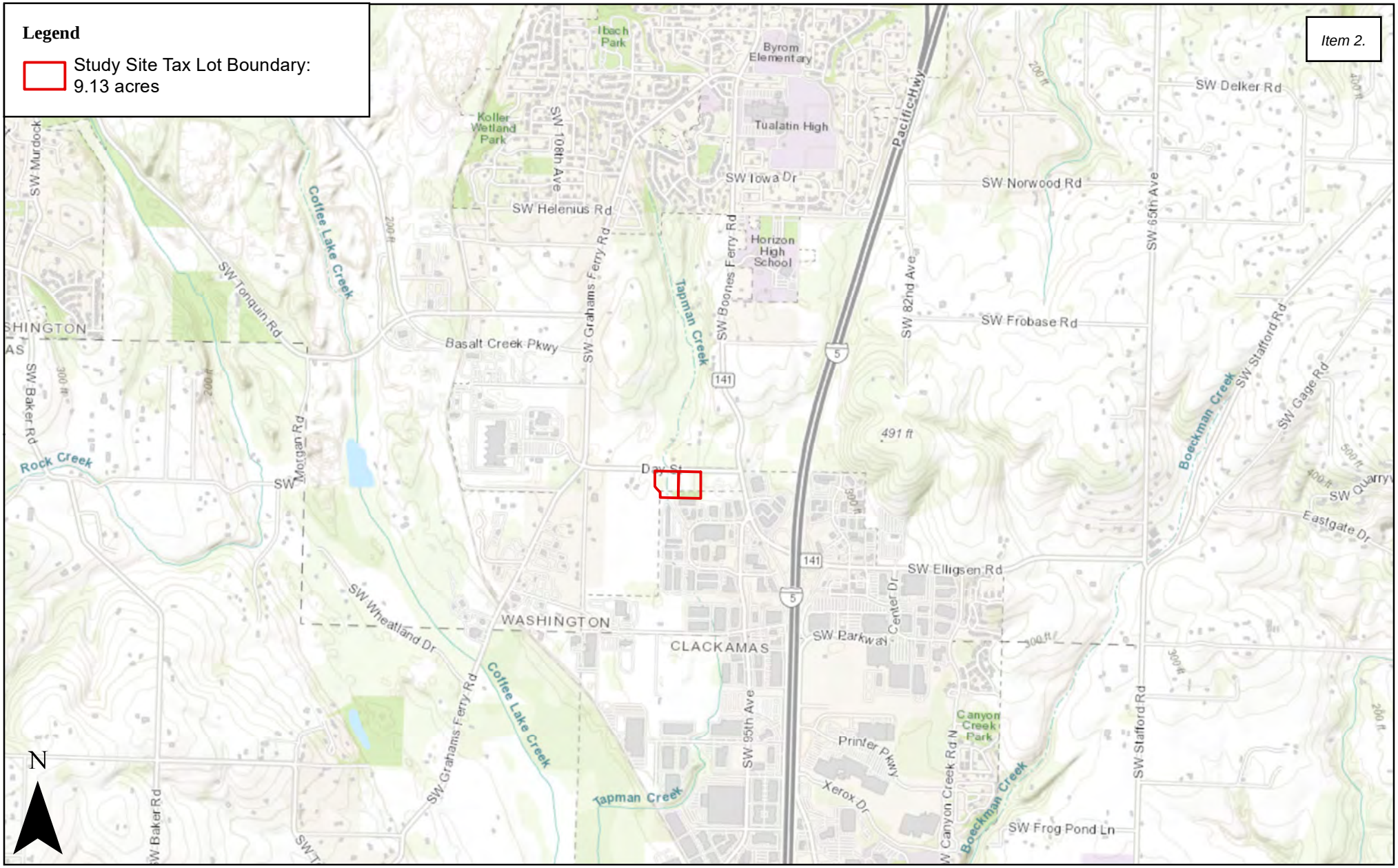
☐ R-F permit application submitted
☒ Mitigation bank site
☐ EFSC/ODOE Proj. Mgr: ____
☐ Wetland restoration/enhancement project (not mitigation)
☒ Previous delineation/application on parcel
If known, previous DSL # 25201-FP

☐ Fee payment submitted $ ____
☐ Resubmittal of rejected report ($100)
☐ Request for Reissuance. See eligibility criteria. (no fee)
DSL # ____ Expiration date____
☐ LWI shows wetlands or waters on parcel
Wetland ID code ____

For Office Use Only

DSL Reviewer: _____ Fee Paid Date: ____/____/____ DSL WD # _____

Date Delineation Received: ___/___/___ Scanned: ☐ Electronic: ☐ DSL App.# _____



Date: 9/9/2021

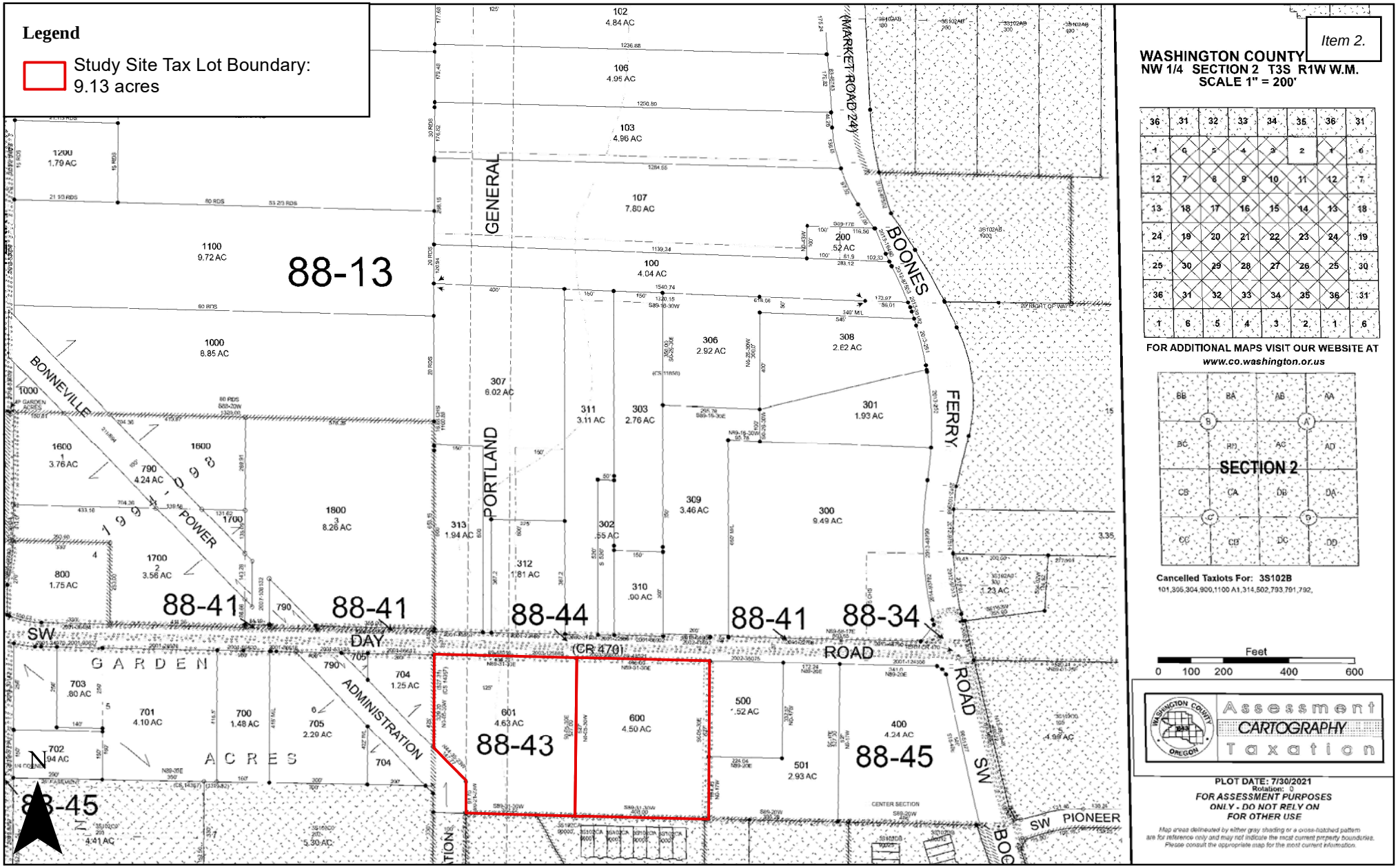
Data Source: ESRI, 2021; Washington County Intermap, 2021

Figure 1. Location Map

SCHOTT & ASSOCIATES, Inc.

SW Day Road Project Site: S&A #2739

0 1,000 2,000 807 et



Date: 9/9/2021

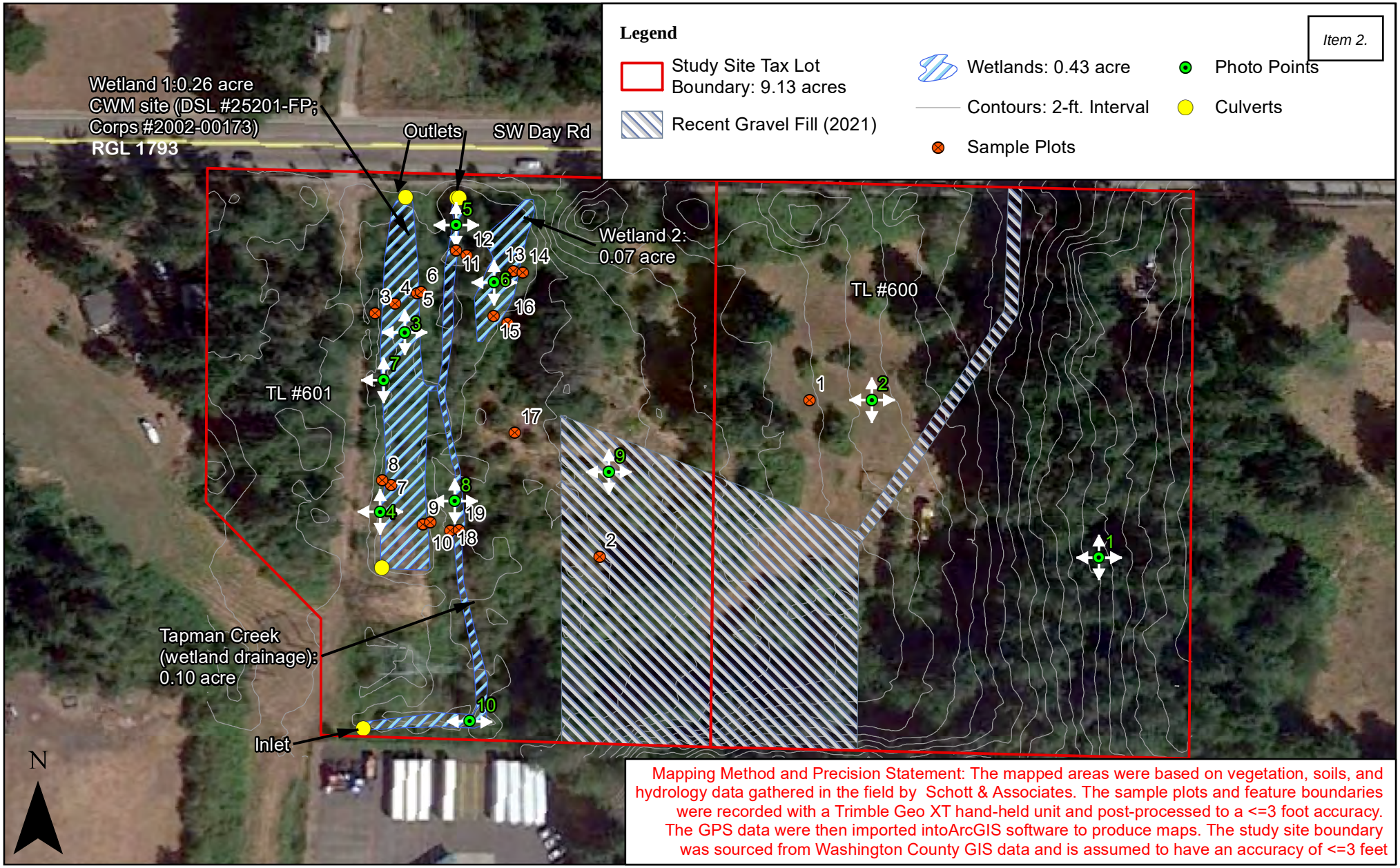
Data Source: Washington County Intermap, 2021

Figure 2. Washington County Tax Map-3S102B

SW Day Road Project Site: S&A #2739

0 200 400 808 et

SCHOTT & ASSOCIATES, Inc.



Mapping Method and Precision Statement: The mapped areas were based on vegetation, soils, and hydrology data gathered in the field by Schott & Associates. The sample plots and feature boundaries were recorded with a Trimble Geo XT hand-held unit and post-processed to a <=3 foot accuracy. The GPS data were then imported intoArcGIS software to produce maps. The study site boundary was sourced from Washington County GIS data and is assumed to have an accuracy of <=3 feet

Date: 11/29/2021

Data Source: ESRI, 2021; Washington County Intermap, 2021; DOGAMI, 2014

DSL WD # 2021-0556
Approval Issued 12/2/2021
Approval Expires 12/2/2026

Figure 6a. Wetland Delineation Map - Overview

SCHOTT & ASSOCIATES, Inc.

SW Day Road Road Project Site: S&A #2739

0 50 100 809 et

Mapping Method and Precision Statement: The mapped areas were recorded utilizing a Trimble Geo 7X hand-held unit and post-processed to a <= 3 foot accuracy. The GPS data were then imported into ArcGIS software to produce maps. The study site boundary was sourced from the Washington County GIS Department and is assumed to have an accuracy of <=3 feet.

Date: 11/29/2021

Data Source: ESRI, 2021; Marion County GIS Dept, 2021; DOGAMI, 2014

DSL WD # 2021-0556
Approval Issued 12/2/2021
Approval Expires 12/2/2026

Figure 6b. Wetland Delineation Map - Detail

SW Day Road Project Site: S&A # 2739

SCHOTT & ASSOCIATES, Inc.

0 30 60 810 ft

APPENDIX G

GEOTECHNICAL REPORT

REPORT OF GEOTECHNICAL ENGINEERING SERVICES

Delta Logistics Day Road Annex
SW Day Road
Wilsonville, Oregon

For
Delta Logistics, Inc.
June 30, 2021

Project: DeltaLog-1-01

NV5

June 30, 2021

Delta Logistics, Inc.
9835 Commerce Circle
Wilsonville, OR 97070

Attention: Igor Nichiporchik

Report of Geotechnical Engineering Services
Delta Logistics Day Road Annex
SW Day Road
Wilsonville, Oregon
Project: DeltaLog-1-01

NV5 is pleased to present this report of geotechnical engineering services for the proposed Delta Logistics Day Road Annex project located along SW Day Road between SW Grahams Ferry Road and SW Boones Ferry Road in Wilsonville, Oregon. Our services were provided in general conformance with our proposal dated May 17, 2021.

We appreciate the opportunity to be of continued service to you. Please call if you have questions regarding this report.

Sincerely,

NV5

Brett A. Shipton, P.E., G.E.
Principal Engineer

cc: Lee Leighton, Mackenzie (via email only)

BAS:kt
Attachments
One copy submitted (via email only)
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EXECUTIVE SUMMARY

- Shallow basalt bedrock was encountered in the explorations, which will be difficult to excavate. Specialized excavation techniques such as controlled blasting and ripping may be required to make the planned site cuts
- The proposed building can be supported on spread footings that bear on basalt or the native soil.
- The silt overburden soil will require moisture conditioning if it is to be used as structural fill.
- Measured infiltration rates are extremely low and on-site stormwater infiltration is not feasible.
- Seismic forces on the building can be computed assuming seismic Site Class B as described in the SOSSC.
- The excavated basalt bedrock can be crushed and processed and re-used as structural fill or aggregate base if it meets gradation requirements.

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ACRONYMS AND ABBREVIATIONS

AC	asphalt concrete
ACP	asphalt concrete pavement
ASTM	American Society for Testing and Materials
BGS	below ground surface
CRB	Columbia River Basalt
FHWA	Federal Highway Administration
g	gravitational acceleration (32.2 feet/second^2)
H:V	horizontal to vertical
MCE	maximum considered earthquake
OSHA	Occupational Safety and Health Administration
OSSC	Oregon Standard Specifications for Construction (2021)
pcf	pounds per cubic foot
PG	performance grade
psf	pounds per square foot
psi	pounds per square inch
RQD	rock quality designation
SOSSC	State of Oregon Structural Specialty Code
SPT	standard penetration test
USGS	U.S. Geological Survey

1.0 INTRODUCTION

NV5 is pleased to submit this report of geotechnical engineering services for the proposed Delta Logistics Day Road Annex project. The site is located along SW Day Road between SW Grahams Ferry Road and SW Boones Ferry Road in Wilsonville, Oregon. The subject property includes Tax Lots 600 and 601 of Washington County Tax Map 3S102B, which collectively encompass 9.13 acres.

The site location is shown relative to surrounding features on Figure 1. Existing conditions and the proposed site layout (overlay) are shown on Figure 2. Acronyms and abbreviations used herein are defined above, immediately following the Table of Contents.

2.0 PROJECT UNDERSTANDING

The proposed development includes construction of a new logistics center with a building footprint of 57,300 square feet on the eastern portion of the site. We understand the new building will be of concrete tilt-up construction. A concrete loading dock apron is planned along the western perimeter of the proposed building. The center portion of the site will be paved with AC for drive lanes and parking spaces. A detached parking lot located on the western portion of the site is also being considered at this time. A 125-foot-wide drainage easement runs north to south through the property with its centerline approximately 150 feet from the western property boundary.

Foundation loads of the proposed building were not provided at the time of this report. Based on our experience with similar structures, we anticipate maximum column and wall loads will be less than 200 kips and 5 kips per lineal foot, respectively. In addition, we have assumed maximum floor loads of 300 psf. Cuts and fills are expected to be 18 and 5 feet, respectively. An approximately 18-foot-tall retaining wall will support a cut along the site's eastern perimeter and an approximately 5-foot-tall retaining wall will support fill along a storm drainage easement in the western portion of the site.

3.0 PURPOSE AND SCOPE

The purpose of our services was to provide geotechnical engineering recommendations for use in design and construction of the proposed logistics center. Specifically, we completed the following scope of services:

- Reviewed readily available, published geologic data and our in-house files for existing information on subsurface conditions in the site vicinity.
- Coordinated and managed the field explorations, including private and public utility locates and scheduling subcontractors and NV5 staff.
- Conducted a geotechnical subsurface investigation at the site that included the following:
  - Three borings to depths between 15 and 22.5 feet BGS
  - Nine test pits to depths of between 3 and 12 feet BGS
- Conducted two infiltration tests in a test pit at depths of 2 and 3.5 feet BGS.
- Conducted two dynamic cone penetrometer tests in test pits for use in pavement design.

- Collected geotechnical soil samples from the explorations for laboratory testing and maintained a log of encountered soil, rock, and groundwater conditions in the explorations.
- Conducted a laboratory testing program, including the following tests:
  - Four moisture content determinations in general accordance with ASTM D2216
  - One particle-size analyses in general accordance with ASTM D1140
  - Three unconfined compression tests in general accordance with ASTM D2166
- Provided recommendations for site preparation, grading and drainage, stripping depths, fill type for imported material, compaction criteria, trench excavation and backfill, use of on-site soil, and wet weather earthwork.
- Provided recommendations for design and construction of shallow spread foundations, including allowable design bearing pressure, minimum footing depth and width, passive resistance capacity, and coefficient of friction.
- Provided recommendations for preparation of floor slab subgrade.
- Provided design criteria recommendations for retaining walls, including lateral earth pressures, backfill, compaction, and drainage.
- Evaluated the rippability of the basalt bedrock encountered in the explorations.
- Provided recommendations for managing groundwater conditions that may affect the performance of structures.
- Provided recommendations for the construction of AC pavement for on-site access roads and parking areas, including subbase, base course, and AC paving thickness.
- Provided recommendations for subsurface drainage of foundations and roadways, as necessary.
- Provided seismic coefficients in accordance with the SOSSC.
- Documented our findings, conclusions, and recommendations in this report.

4.0 SITE CONDITIONS

4.1 GEOLOGIC CONDITIONS

The site is located in the Tualatin Basin of the Puget Sound-Willamette Valley physiographic province, a tectonically active lowland located along the convergent Cascadia margin. The Tualatin Basin is formed between the uplifted Coast Ranges to the west, the Chehalem Mountains to the south, and the Tualatin Mountains to the north and east. The Tualatin Mountains have been uplifted along northwesterly oriented faults, including the steeply dipping Portland Hills fault located along the eastern flank of the mountains.

The near-surface geologic unit mapped at the site is the fine-grained facies of the Missoula flood deposits. The unit consists of unconsolidated silt and sand deposited by catastrophic floods associated with the sudden release of waters from glacial Lake Missoula during the late Pleistocene (15,500 and 12,500 years ago) (Madin, 1990).

Underlying the Quaternary flood deposits, we encountered basalt bedrock representing the Miocene CRBs, emplaced approximately 17 million to 6 million years ago in the Portland area (Madin, 1990). The CRBs consist of thick flows of basalt and are exposed in the Tualatin Mountains and in the mountains southwest of the site, including Cooper Mountain and Bull Mountain.

4.2 SURFACE CONDITIONS

The site is located along SW Day Road between SW Grahams Ferry Road and SW Boones Ferry Road in Wilsonville, Oregon. The subject property includes Tax Lots 600 and 601 of Washington County Tax Map 3S102B, which collectively encompass 9.13 acres. The site is undeveloped, except for a residence located on the northeastern property corner. The site slopes down from east to west, with the eastern end of the site at an elevation of 285 feet and the western end at an elevation of approximately 240 feet. The slope is steeper toward the east with a gradient of between 10 and 15 percent. Vegetation at the site includes grass, shrubbery, and trees.

4.3 SUBSURFACE CONDITIONS

Subsurface conditions were explored by drilling three borings (B-1 through B-3) to depths between 15 and 22.5 feet BGS and excavating nine test pits (TP-1 through TP-9) to depths between 3 and 12 feet BGS. The locations of the explorations are shown on Figure 2. The exploration logs and laboratory test results are presented in the Appendix.

Subsurface conditions encountered in our explorations consists of a thin mantle of silt underlain by basalt bedrock to the maximum depth explored. The following sections provide a detailed description of the geologic units encountered.

4.3.1 Silt

In general, we observed a mantel of medium stiff to stiff silt with varying proportions of sand that extends to depths between approximately 1 foot and 7 feet BGS, except boring B-2 where silt was not observed. Laboratory testing indicates that the silt had moisture contents ranging from 21 to 26 percent at the time of our explorations.

4.3.2 Weathered Basalt

Weathered basalt that consists of clayey and silty gravel, cobbles, and boulders underlies the silt at depths between 1 foot and 7 feet BGS. All of the test pits were terminated in this unit where they encountered practical refusal. Laboratory testing indicates that the weathered basalt layer had a moisture content of 11 percent at the time of our explorations.

4.3.3 Basalt

Competent basalt was encountered to the maximum depths explored in borings B-2 and B-3. In general, the basalt consists of soft (R2) to hard (R4) basalt. The basalt exhibits varying degrees of weathering from fresh to decomposed. A siltstone interflow was encountered in boring B-3 between depths of 14.6 and 15.6 feet BGS. The siltstone interflow is very soft (R1) and moderately weathered.

4.3.4 Groundwater

Groundwater was not encountered during our explorations, except for moderate seepage in TP-8 at a depth of 8 feet BGS. Groundwater may perch on the basalt bedrock during the wet season or prolonged periods of wet weather. The depth to groundwater may fluctuate in response to seasonal changes, prolonged rainfall, changes in surface topography, and other factors not observed in this study.

4.4 INFILTRATION TESTING

We conducted two infiltration tests in test pit TP-5 at depths of 2 and 3.5 feet BGS. The infiltration testing procedures are described in the Appendix, and the results of the infiltration testing are presented in Table 1.

Table 1. Infiltration Testing Summary

Location	Depth (feet BGS)	Observed Infiltration Rate[1] (inches per hour)	Test Method	Soil Type at Test Depth
TP-5	2	1.5	Standpipe	Silt
TP-5	3.5	0	Open Pit	Weathered Basalt

1. Infiltration rate measured in the field

4.5 GEOLOGIC HAZARDS

4.5.1 Liquefaction

Liquefaction is caused by a rapid increase in pore water pressure that reduces the effective stress between soil particles to near zero. Granular soil, which relies on interparticle friction for strength, is susceptible to liquefaction until the excess pore pressures can dissipate. In general, loose, saturated sand soil with low silt and clay content is the most susceptible to liquefaction. Silty soil with low plasticity is moderately susceptible to liquefaction under relatively higher levels of ground shaking. Based on the subsurface conditions encountered in the explorations, liquefaction is not a hazard at the site.

4.5.2 Lateral Spreading

Lateral spreading is a liquefaction-related seismic hazard. Areas subject to lateral spreading are typically gently sloping or flat sites underlain by liquefiable sediment adjacent to an open face, such as a riverbank. Since liquefaction is not a hazard at the site, lateral spreading is also not considered a site hazard.

4.5.3 Fault Surface Rupture

There are no mapped faults reported beneath this site by the USGS Quaternary Fault and Fold Database of the United States. Consequently, it is our opinion that the probability of surface fault rupture beneath the site is low.

5.0 DESIGN RECOMMENDATIONS

5.1 GENERAL

The following sections provide our design recommendations for the project. All site preparation and structural fill should be prepared as recommended in the “Construction” section.

5.2 SHALLOW FOUNDATIONS

In our opinion, the proposed building can be supported on conventional spread footings founded on the basalt bedrock or native silt.

5.2.1 Bearing Capacity

Continuous wall and isolated spread footings should be at least 18 and 24 inches wide, respectively. The bottom of exterior footings should be at least 18 inches below the lowest adjacent exterior grade. The bottom of interior footings should be established at least 12 inches below the base of the slab.

Footings bearing on basalt bedrock can be sized assuming an allowable bearing pressure of 15,000 psf. Footings bearing on the overburden fine-grained soil should be sized assuming an allowable bearing pressure equal to 3,000 psf. These are net values; the weight of the footing and overlying backfill can be ignored in calculating footing sizes. The recommended allowable bearing pressure applies to the total of dead plus long-term live loads and may be increased by one-third for short-term loads such as those resulting from wind or seismic forces.

5.2.2 Resistance to Sliding

Lateral loads on footings can be resisted by passive earth pressure on the sides of structures and by friction on the base of footings. Our analysis indicates the available passive earth pressure for footings confined by native soil or structural fill is 350 pcf modeled as an equivalent fluid pressure. If the footings are confined by basalt bedrock, this value can be increase to 750 pcf. Adjacent floor slabs, pavement, or the upper 12-inch depth of adjacent, unpaved areas should not be considered when calculating passive resistance. To rely on passive resistance, a minimum of 10 feet of horizontal clearance must exist between the face of the footings and any adjacent down slopes. For footings that bear on granular pads as described above, a coefficient of friction equal to 0.5 may be used when calculating resistance to sliding for footings bearing on basalt or crushed rock; this should be reduced to 0.35 for footings bearing on the native silt.

5.2.3 Settlement

Total foundation settlement should be less than 0.25 inch; a differential settlement of 0.25 inch should be assumed between similarly loaded footings. A total settlement of 1 inch should be assumed for footings that bear on silt, with a differential of 0.5 inch between similarly loaded footings.

5.2.4 Subgrade Observation

All footing and floor slab subgrade should be observed by a representative of NV5 to evaluate the bearing conditions. Observations should also confirm that all loose or soft material, organic material, unsuitable fill, prior topsoil zones, and softened subgrades (if present) have been removed. Localized over-excavation of footing subgrade may be required to remove deleterious material.

5.3 SEISMIC DESIGN CONSIDERATIONS

5.3.1 Seismic Design Parameters

Based on the results of our subsurface explorations, the seismic design coefficients consistent with Site Class B can be used for design. These coefficients are presented in Table 2.

Table 2. Seismic Design Parameters

Seismic Design Parameter	Short Period (T_s = 0.2 second)	1 Second Period (T_1 = 1.0 second)
MCE Spectral Acceleration	S_s = 0.827 g	S_1 = 0.385 g
Site Class	B	
Site Coefficient	F_a = 0.9	F_v = 0.8
Adjusted Spectral Acceleration	S_{MS} = 0.744 g	S_{M1} = 0.308 g
Design Spectral Response Acceleration Parameters	S_{DS} = 0.496 g	S_{D1} = 0.205 g

5.4 FLOOR SLABS

Slabs should be reinforced according to their proposed use and per the structural engineer's recommendations. Slabs on grade may be designed assuming a modulus of subgrade reaction, k, of 600 psi per inch, if they bear on basalt. This value should be decreased 150 psi per inch if the floor slab bears on the overburden silty soil. To aid as a capillary break, we recommend a 6-inch-thick layer of floor slab base rock be placed and compacted over the prepared subgrade. The floor slab base rock should meet the requirements in the "Structural Fill" section and be compacted to at least 95 percent of ASTM D1557.

The near-surface native soil is primarily fine grained and will tend to maintain a high moisture content. In areas where moisture-sensitive floor slab and flooring will be installed, installation of a vapor barrier is warranted in order to reduce the potential for moisture transmission through and efflorescence growth on the slab and flooring. In addition, flooring manufacturers often require vapor barriers to protect flooring and flooring adhesives and will warrant their product only if a vapor barrier is installed according to their recommendations. Selection and design of an appropriate vapor barrier should be a collaborative effort with members of the design team.

5.5 RETAINING WALLS

We have provided recommendations for retaining walls that retain soil and basalt bedrock. Our recommendations are based on the following assumptions: (1) the walls are less than 20 feet in height, (2) adequate drainage is provided behind the retaining wall to prevent lateral earth pressures from developing, and (3) the ground surface behind the retaining wall is flatter than 4H:1V. Re-evaluation of our recommendations will be required if the retaining wall design criteria for the project varies from these assumptions.

Lateral earth pressures can be computed using Figure 3. Seismic earth pressures can be calculated assuming a uniformly distributed load equal to force equal to 7H pounds per linear foot of wall where the wall retains soil, where H is the wall height. The seismic force should be applied as a distributed load with the centroid located at 0.6H from the wall base. Footings for retaining walls should be designed as recommended for shallow foundations.

If other surcharges are located within a horizontal distance of twice the height of the wall from the back of the wall, additional pressures will need to be incorporated in the wall design. Figure 4 can be used to compute surcharge induced lateral earth pressures.

5.6 DRAINAGE

5.6.1 Temporary

During mass grading at the site, the contractor should be made responsible for temporary drainage of surface water as necessary to prevent standing water and/or erosion at the working surface. During rough and finished grading of the site, the contractor should keep all pads and subgrade free of ponding water.

5.6.2 Surface

Where possible, the finished ground surface around the building should be sloped away from the structure at a minimum 2 percent gradient for a distance of at least 5 feet. Downspouts or roof scuppers should discharge into a storm drain system that carries the collected water to an appropriate stormwater system. Trapped planter areas should not be created adjacent to the building without providing means for positive drainage (e.g., swales or catch basins).

5.6.3 Subsurface

Assuming the site grades around the building will be sloped as discussed previously, it is our opinion that perimeter footing drains will not be required around the proposed building.

5.6.4 Infiltration

In our opinion, infiltration of stormwater is not feasible due the shallow impermeable bedrock.

5.7 PAVEMENT

5.7.1 Pavement Design

Pavement should be installed on competent subgrade or new engineered fills prepared in conformance with the recommendation in this report. Our pavement recommendations are based on the following assumptions:

- Reliability of 80 percent and standard deviation of 0.45
- Pavement design life of 20 years
- Initial and terminal serviceability indices of 4.2 and 2.5, respectively
- Structural coefficients of 0.42 and 0.10 for new AC and new base rock, respectively
- Subgrade resilient modulus of 3,500 psi for silt and 45,000 psi for basalt
- New base rock resilient modulus of 20,000 psi
- New base rock drainage coefficient of 1.0
- The subgrade below pavement areas is evaluated by proof rolling and prepared as recommended in this report

We do not have specific information on the frequency of vehicles expected at the site; however, we have assumed a breakdown on the type of vehicles likely to be used. We have assumed traffic will consist of passenger cars in light traffic areas and a mixture of cars and trucks elsewhere. The truck traffic is assumed to be single tractor-trailers evenly distributed between FHWA Classes 8, 9, and 10.

If any of these assumptions are incorrect, our office should be contacted with the appropriate information so that the pavement designs can be revised.

Our pavement design recommendations assuming between 0 and 50 trucks per day are presented in Tables 3 and 4. If projected truck traffic exceeds 50 or truck axle weights are projected to exceed street legal values, our office should be contacted to provide revised pavement design thicknesses.

Table 3. Recommended Pavement Sections on Bedrock

Traffic Levels	Trucks per Day	ESALs	AC (inches)	Base Rock (inches)
Car Traffic Only	0	10,000	2.5	4.0
Truck Area	10	100,000	3.0	4.0
Truck Area	25	240,000	3.5	4.0
Truck Area	50	475,000	4.0	4.0

Table 4. Recommended Pavement Sections on Soil Subgrade

Traffic Levels	Trucks per Day	ESALs	AC (inches)	Base Rock (inches)
Car Traffic Only	0	10,000	2.5	8.0
Truck Area	10	100,000	4.0	13.5
Truck Area	25	240,000	4.5	16.0
Truck Area	50	475,000	5.0	18.0

All thicknesses in Tables 3 and 4 are intended to be the minimum acceptable. Design of the recommended pavement section is based on the assumption that construction will be completed during an extended period of dry weather. Wet weather construction could require an increased thickness of base rock where the pavement is constructed on soil subgrade.

Construction traffic should be limited to non-building, unpaved portions of the site or haul roads. Construction traffic should not be allowed on new pavement. If construction traffic is to be allowed on newly constructed road sections, an allowance for this additional traffic will need to be made in the design pavement section.

6.0 CONSTRUCTION

6.1 SITE PREPARATION

6.1.1 Demolition

Demolition includes complete removal of the existing buildings, retaining walls, pavement, concrete curbs, abandoned utilities, and any subsurface elements within 5 feet of areas to receive new pavement, buildings, retaining walls, or engineered fills. Demolished material should be transported off site for disposal. In general, this material will not be suitable for re-use

as engineered fill. However, concrete, pavement, and base rock material may be recycled in accordance with the requirements set forth by the project jurisdiction and the recommendations provided in the "Structural Fill" section.

Excavations remaining from removing basements, foundations, utilities, and other subsurface elements should be backfilled with structural fill where these are below planned site grades. The base of the excavations should be excavated to expose firm subgrade before filling. The sides of the excavations should be cut into firm material and sloped a minimum of 1½H:1V. Utility lines abandoned under new structural components should be completely removed and backfilled with structural fill or grouted full if left in place. Soft or disturbed soil encountered during demolition should be removed and replaced with structural fill.

Considerable subgrade damage can occur during demolition activities and we recommend that the subgrade protection measures discussed in the "Construction Considerations" section be implemented.

6.1.2 Grubbing and Stripping

Trees and shrubs should be removed from fill areas. In addition, root balls should be grubbed out to the depth of the roots, which could exceed 3 feet BGS. Depending on the methods used to remove root balls, considerable disturbance and loosening of the subgrade could occur during site grubbing. We recommend that soil disturbed during grubbing operations be removed to expose firm, undisturbed subgrade. The resulting excavations should be backfilled with structural fill.

The existing root zone in landscaped areas should be stripped and removed from all fill areas. The actual stripping depth should be based on field observations at the time of construction. Stripped material should be transported off site for disposal or used in landscaped areas.

6.1.3 Subgrade Evaluation

Upon completion of stripping and subgrade stabilization, and prior to the placement of fill or pavement, the exposed subgrade should be evaluated by proof rolling. The subgrade should be proof rolled with a fully loaded dump truck or similarly heavy, rubber tire construction equipment to identify soft, loose, or unsuitable areas. A member of our geotechnical staff should observe proof rolling to evaluate yielding of the ground surface. During wet weather, subgrade evaluation should be performed by probing with a foundation probe rather than proof rolling. Areas that appear soft or loose should be improved in accordance with subsequent sections.

6.2 CONSTRUCTION CONSIDERATIONS

The fine-grained soil present on this site is easily disturbed, but the bedrock is less sensitive to disturbance. Where the subgrade consists of soil, site preparation, utility trench work, and excavation can create extensive soft areas and significant repair costs can result. Earthwork planning, regardless of the time of year, should include considerations for minimizing subgrade disturbance.

6.3 PERMANENT SLOPES

Permanent cut and fill slopes should not exceed 2H:1V in soil and ¾H:1H in competent bedrock. The face of bedrock slopes should be scaled to remove loose rock fragments from the face. Access roads and pavement should be located at least 5 feet from the top of cut and fill slopes. The setback should be increased to 10 feet for buildings. The slopes should be planted with appropriate vegetation to provide protection against erosion as soon as possible after grading. Surface water runoff should be collected and directed away from slopes to prevent water from running down the face of the slope.

6.4 EXCAVATION

6.4.1 Excavation and Shoring

The site soil should be readily excavatable with conventional grading equipment. Bedrock may require ripping and or blasting. Temporary excavation sidewalls should stand vertical to a depth of approximately 4 feet, provided groundwater seepage does not occur. Deeper excavations will require shoring or need to be sloped. Shoring will still be required in bedrock to protect worker safety from rockfall. Temporary soil slopes should be no steeper than 1.5H:1V and rock slopes no steeper than ¾H:1V. All loose rock fragments should be removed from the excavation sidewalls before workers are allowed to enter the excavation.

6.4.2 Trench Dewatering

Based on the results of our explorations, major dewatering is not anticipated for the project. If perched groundwater is present, dewatering may be required to maintain dry working conditions. Pumping from sumps located within the trench will likely be effective in removing water resulting from seepage.

6.4.3 Safety

All excavations should be made in accordance with applicable OSHA requirements and regulations of the state, county, and local jurisdiction. While this report describes certain approaches to excavation and dewatering, the contract documents should specify that the contractor is responsible for selecting excavation and dewatering methods, monitoring the excavations for safety, and providing shoring (as required) to protect personnel and adjacent structural elements.

6.5 MATERIALS

6.5.1 Structural Fill

6.5.1.1 General

Fill should be placed on subgrade that has been prepared in conformance with the “Site Preparation” section. A variety of material may be used as structural fill at the site. However, all material used as structural fill should be free of organic material or other unsuitable material. A brief characterization of some of the acceptable materials and our recommendations for their use as structural fill are provided below.

6.5.1.2 On-Site Material

Basalt excavated from the site can be processed and re-used as structural fill. The gradation and compaction requirements will depend on its and intended use. The soil at the site should be suitable for use as general structural fill, provided it is properly moisture conditioned and free of

debris, organic material, and particles over 6 inches in diameter. Moisture conditioning (drying) will likely be required to use on-site fine-grained soil for structural fill. Accordingly, extended dry weather will be required to adequately condition and place the soil as structural fill and, given the site constraints, will possibly not be feasible. It will be difficult, if not impossible, to adequately compact on-site soil during the rainy season or during prolonged periods of rainfall. When used as structural fill, native soil should be placed in lifts with a maximum uncompacted thickness of 8 inches and compacted to not less than 92 percent of the maximum dry density, as determined by ASTM D1557.

6.5.1.3 Processed Native and Imported Granular Material

Processed native basalt and imported granular material used as structural fill should be pit- or quarry-run rock, crushed rock, or crushed gravel and sand. The imported granular material should also be angular and fairly well graded between coarse and fine material, should have less than 5 percent fines by dry weight passing the U.S. Standard No. 200 sieve, and should have at least two mechanically fractured faces. Imported granular material should be placed in lifts with a maximum uncompacted thickness of 12 inches and compacted to not less than 95 percent of the maximum dry density, as determined by ASTM D1557. During the wet season or when wet subgrade conditions exists, the initial lift should be approximately 18 inches in uncompacted thickness and should be compacted by rolling with a smooth-drum roller without using vibratory action.

6.5.1.4 Stabilization Material

Stabilization material used in staging or haul road areas or in trenches should consist of 4- or 6-inch-minus pit- or quarry-run rock, crushed rock, or crushed gravel and sand. The material should have a maximum particle size of 6 inches, should have less than 5 percent by dry weight passing the U.S. Standard No. 4 sieve, and should have at least two mechanically fractured faces. The material should be free of organic material and other deleterious material. Stabilization material should be placed in lifts between 12 and 24 inches thick and compacted to a firm condition.

6.5.1.5 Trench Backfill

Trench backfill placed beneath, adjacent to, and for at least 12 inches above utility lines (i.e., the pipe zone) should consist of durable, well-graded granular material with a maximum particle size of 1½ inches, should have less than 7 percent fines by dry weight, and should have at least two mechanically fractured faces. The pipe zone backfill should be compacted to at least 90 percent of the maximum dry density, as determined by ASTM D1557, or as required by the pipe manufacturer or local building department.

Within roadway alignments, the remainder of the trench backfill up to the subgrade elevation should consist of durable, well-graded granular material with a maximum particle size of 2½ inches, should have less than 7 percent fines by dry weight, and should have at least two mechanically fractured faces. This material should be compacted to at least 92 percent of the maximum dry density, as determined by ASTM D1557, or as required by the pipe manufacturer or local building department. The upper 3 feet of the trench backfill should be compacted to at least 95 percent of the maximum dry density, as determined by ASTM D1557.

Outside of structural improvement areas (e.g., roadway alignments or building pads), trench backfill placed above the pipe zone may consist of general fill material that is free of organic material and material over 6 inches in diameter. This general trench backfill should be compacted to at least 90 percent of the maximum dry density, as determined by ASTM D1557, or as required by the pipe manufacturer or local building department.

6.5.1.6 Drain Rock

Drain rock should consist of angular, granular material with a maximum particle size of 2 inches. The material should be free of roots, organic material, and other unsuitable material; should have less than 2 percent by dry weight passing the U.S. Standard No. 200 sieve (washed analysis); and should have at least two mechanically fractured faces. Drain rock should be compacted to a well-keyed, firm condition.

6.5.1.7 Aggregate Base Rock

Imported granular material used as base rock for building floor slabs and pavement should consist of ¾- or 1½-inch-minus material (depending on the application). In addition, the aggregate should have less than 5 percent by dry weight passing the U.S. Standard No. 200 sieve and have at least two mechanically fractured faces. The aggregate base should be compacted to not less than 95 percent of the maximum dry density, as determined by ASTM D1557.

6.5.1.8 Retaining Wall Select Backfill

Backfill material placed behind retaining walls and extending a horizontal distance of ½H, where H is the height of the retaining wall, should consist of imported granular material as described above and should have less than 7 percent fines by dry weight and have at least two mechanically fractured faces. We recommend the wall backfill be separated from general fill, native soil, and/or topsoil using a geotextile fabric that meets the specifications provided below for drainage geotextiles.

The wall backfill should be compacted to a minimum of 95 percent of the maximum dry density, as determined by ASTM D1557. However, backfill located within a horizontal distance of 3 feet from a retaining wall should only be compacted to approximately 90 percent of the maximum dry density, as determined by ASTM D1557. Backfill placed within 3 feet of the wall should be compacted in lifts less than 6 inches thick using hand-operated tamping equipment (such as a jumping jack or vibratory plate compactor). If flatwork (sidewalks or pavement) will be placed atop the wall backfill, we recommend the upper 2 feet of material be compacted to 95 percent of the maximum dry density, as determined by ASTM D1557.

6.5.2 Geotextile Fabric

6.5.2.1 Subgrade Geotextile

Subgrade geotextile should conform to OSSC Table 02320-4 and OSSC 00350 (Geosynthetic Installation). A minimum initial aggregate base lift of 6 inches is required over geotextiles. All drainage aggregate and stabilization material should be underlain by a subgrade geotextile.

6.5.2.2 Drainage Geotextile

Drainage geotextile should conform to Type 2 material of OSSC Table 02320-1 and OSSC 00350 (Geosynthetic Installation). A minimum initial aggregate base lift of 6 inches is required over geotextiles.

6.5.3 Conventional Pavement Material Requirements

The AC should be Level 3, ½-inch, dense ACP as described in OSSC 00744 (Asphalt Concrete Pavement) and compacted to 91 percent of the specific gravity of the mix, as determined by ASTM D2041. Minimum and maximum lift thicknesses for ½-inch, dense ACP are 2 and 3 inches, respectively. ACP should be placed at the minimum ground surface temperatures described in OSSC 00744.40 (Season and Temperature Limitations). Asphalt binder should be performance graded and conform to PG 64-22.

The crushed base rock should consist of ¾- or 1½-inch-minus material meeting the requirements in OSSC 00641 (Aggregate Subbase, Base, and Shoulders), with the exception that the crushed base rock should have less than 5 percent by dry weight passing the U.S. Standard No. 200 sieve. The crushed base rock should be compacted to at least 95 percent of the maximum dry density, as determined by ASTM D1557.

6.5.3.1 Cold Weather Paving Considerations

In general, AC paving is not recommended during the cold weather (temperatures less than 40 degrees Fahrenheit). Compacting under these conditions can result in low compaction and premature pavement distress.

Each AC mix design has a recommended compaction temperature range that is specific for the particular AC binder used. In colder temperatures, it is more difficult to maintain the temperature of the AC mix as it can lose heat while stored in the delivery truck, as it is placed, and in the time between placement and compaction. In Oregon, the AC surface temperature during paving should be at least 40 degrees Fahrenheit for lift thickness greater than 2.5 inches and at least 50 degrees Fahrenheit for lift thickness between 2 and 2.5 inches.

If paving activities must take place during cold-weather construction as defined above, the project team should be consulted and a site meeting should be held to discuss ways to lessen low compaction risks.

6.6 EROSION CONTROL

The site soil is susceptible to erosion; therefore, erosion control measures should be carefully planned and in place before construction begins. Surface water runoff should be collected and directed away from slopes to prevent water from running down the slope face. Erosion control measures (such as straw bales, sediment fences, and temporary detention and settling basins) should be used in accordance with local and state ordinances.

7.0 OBSERVATION OF CONSTRUCTION

Satisfactory foundation and earthwork performance depends to a large degree on quality of construction. Sufficient observation of the contractor's activities is a key part of determining that the work is completed in accordance with the construction drawings and specifications. Subsurface conditions observed during construction should be compared with those encountered during the subsurface exploration. Recognition of changed conditions often requires experience; therefore, qualified personnel should visit the site with sufficient frequency to detect if subsurface conditions change significantly from those anticipated.

We recommend NV5 be retained to observe earthwork activities, including stripping, proof rolling of the subgrade and repair of soft areas, footing subgrade and granular pad preparation, final proof rolling of the pavement subgrade and base rock, and AC placement and compaction, and performing laboratory compaction and field moisture-density tests.

8.0 LIMITATIONS

We have prepared this report for use by Delta Logistics, Inc. and members of the design and construction team for the proposed development. The data and report can be used for estimating purposes, but our report, conclusions, and interpretations should not be construed as a warranty of the subsurface conditions and are not applicable to other sites.

Soil explorations indicate soil conditions only at specific locations and only to the depths penetrated. They do not necessarily reflect soil strata or water level variations that may exist between exploration locations. If subsurface conditions differing from those described are noted during the course of excavation and construction, re-evaluation will be necessary.

The site development plans and design details were conceptual at the time this report was prepared. When the design has been finalized and if there are changes in the site grades or location, configuration, design loads, or type of construction, the conclusions and recommendations presented may not be applicable. If design changes are made, we should be retained to review our conclusions and recommendations and to provide a written evaluation or modification.

The scope of our services does not include services related to construction safety precautions, and our recommendations are not intended to direct the contractor's methods, techniques, sequences, or procedures, except as specifically described in this report for consideration in design.

Within the limitations of scope, schedule, and budget, our services have been executed in accordance with the generally accepted practices in this area at the time this report was prepared. No warranty or other conditions, express or implied, should be understood.

♦ ♦ ♦

We appreciate the opportunity to be of continued service to you. Please call if you have questions concerning this report or if we can provide additional services.

Sincerely,

NV5

Brett A. Shipton, P.E., G.E.
Principal Engineer

FIGURES

NV5	DELTALOG-1-01	**VICINITY MAP**	
	JUNE 2021	DELTA LOGISTICS DAY ROAD ANNEX WILSONVILLE, OR	**FIGURE** 1

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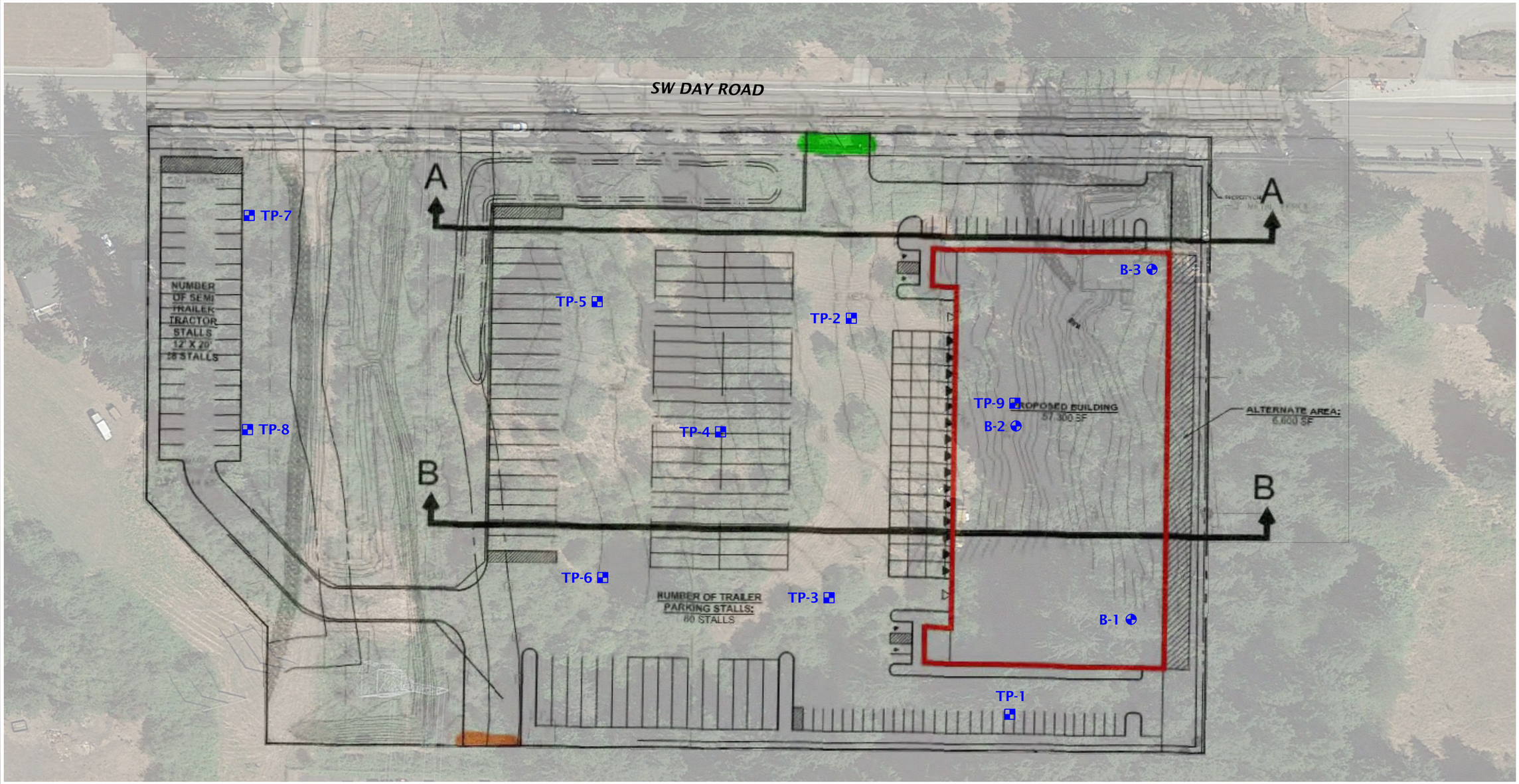
File Name: J:\A-D\DeltaLog\DeltaLog-1\DeltaLog-1-01\Figures\CAD\DeltaLog-1-01-VM01.dwg | Layout: FIGURE 1



LEGEND:

B-1	BORING
TP-1	TEST PIT

N

0 80 160

(SCALE IN FEET)

NOTES:

1. SITE PLAN BASED ON IMAGE OF SHEET SITE PLAN - OPTION 3B DATED MARCH 15, 2021 PREPARED BY MACKENZIE.
2. AERIAL PHOTOGRAPH OBTAINED FROM GOOGLE EARTH PRO JUNE 21, 2021.

SITE PLAN

DELTA LOGISTICS DAY ROAD ANNEX
WILSONVILLE, OR

FIGURE 2

DELTALOG-1-01

JUNE 2021

NV5

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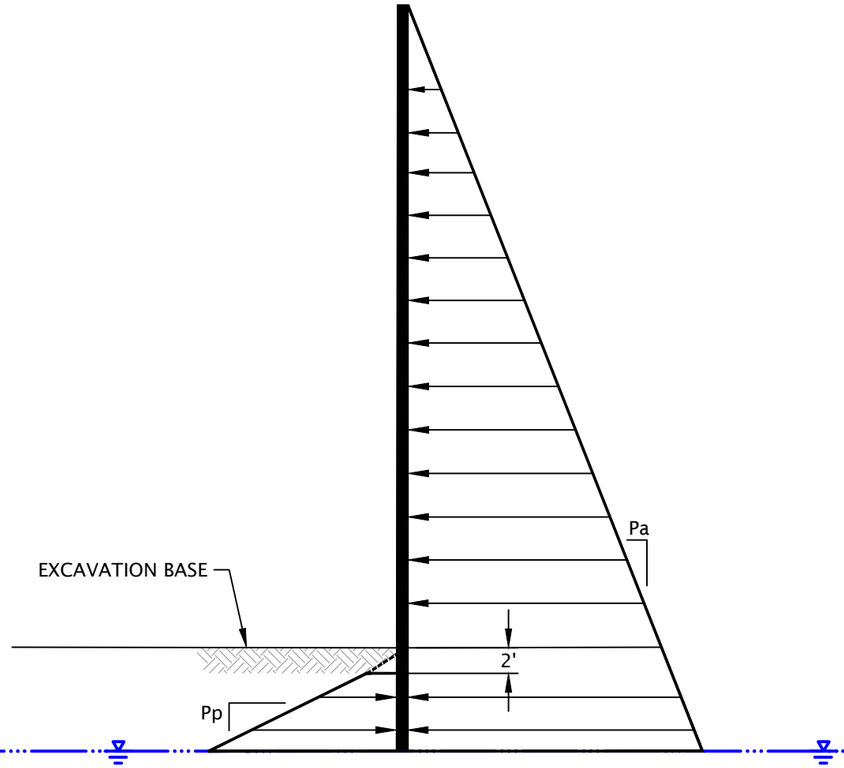
DRAFT

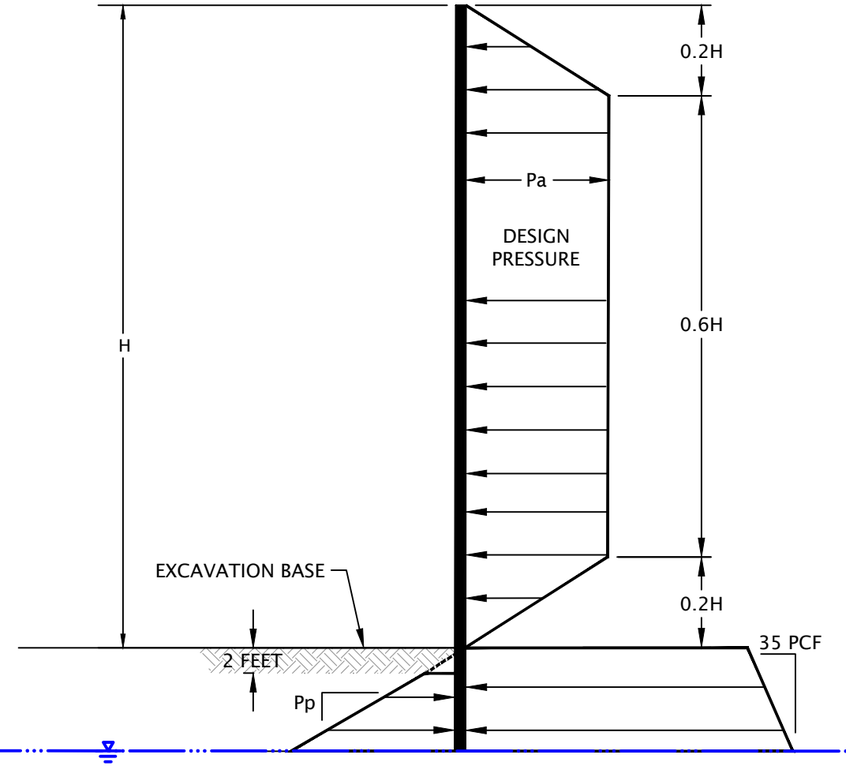
RECOMMENDED DESIGN PARAMETERS FOR CANTILEVERED WALL



EXPLANATION:
Pa = 35 PCF FOR SOIL OR STRUCTURAL FILL ABOVE WATER TABLE
Pa = 15 PCF FOR BASALT ABOVE WATER TABLE
Pp = 350 PCF FOR SOIL ABOVE WATER TABLE
Pp = 850 PCF FOR BASALT ABOVE WATER TABLE

NOTES:
1. FIGURE DOES NOT INCLUDE SURCHARGE OR SEISMIC LOADS.
2. LATERAL EARTH PRESSURE ASSUMES WATER WILL BE MAINTAINED BELOW THE BASE OF THE EXCAVATION.
3. THE LATERAL EARTH PRESSURES ARE UNFACTORED.
4. PASSIVE PRESSURE RESISTANCE SHOULD BE NEGLECTED 2 FEET BELOW THE BOTTOM OF THE EXCAVATION.
5. REFER TO THE GEOTECHNICAL REPORT FOR APPROPRIATE GROUNDWATER ELEVATION.
6. ACTIVE EARTH PRESSURE ASSUMES RETAINING WALL IS FREE TO ROTATE SLIGHTLY AROUND THE BASE.

RECOMMENDED DESIGN PARAMETERS FOR BRACED WALL



EXPLANATION:
Pa = 25 PCF FOR SOIL OR STRUCTURAL FILL ABOVE WATER TABLE
Pa = 12 PCF FOR BASALT ABOVE WATER TABLE
Pp = 350 PCF FOR SOIL ABOVE WATER TABLE
Pp = 850 PCF FOR BASALT ABOVE WATER TABLE

NOTES:
1. FIGURE DOES NOT INCLUDE SURCHARGE OR SEISMIC LOADS.
2. TIEBACKS SHOULD BE LOCKED OFF AT 100 PERCENT OF DESIGN LOAD.
3. THE LATERAL EARTH PRESSURES ARE UNFACTORED.
4. PASSIVE PRESSURE RESISTANCE SHOULD BE NEGLECTED 2 FEET BELOW THE BOTTOM OF THE EXCAVATION.
5. REFER TO THE GEOTECHNICAL REPORT FOR APPROPRIATE GROUNDWATER ELEVATION.
6. ASSUMES RETAINING WALL IS BRACED AT MORE THAN ONE LOCATION.

CANTILEVERED AND BRACED WALLS DESIGN CRITERIA

FIGURE 3

DELTA LOGISTICS DAY ROAD ANNEX
WILSONVILLE, OR

DELTALOG-1-01

JUNE 2021

NV5

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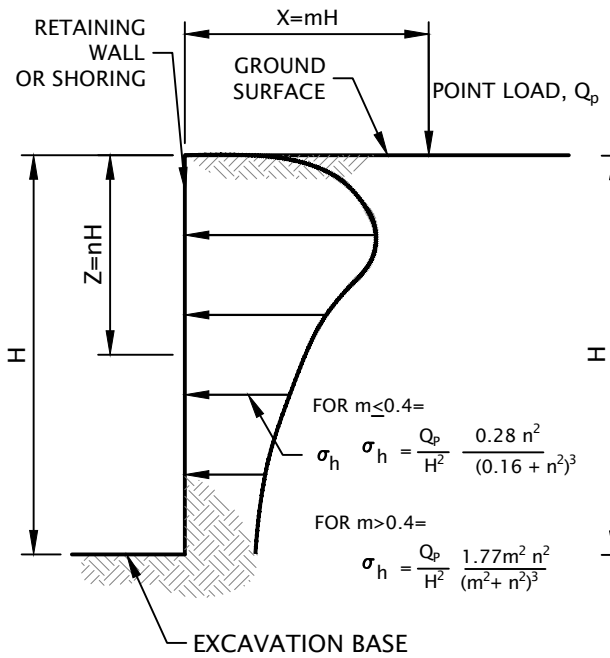
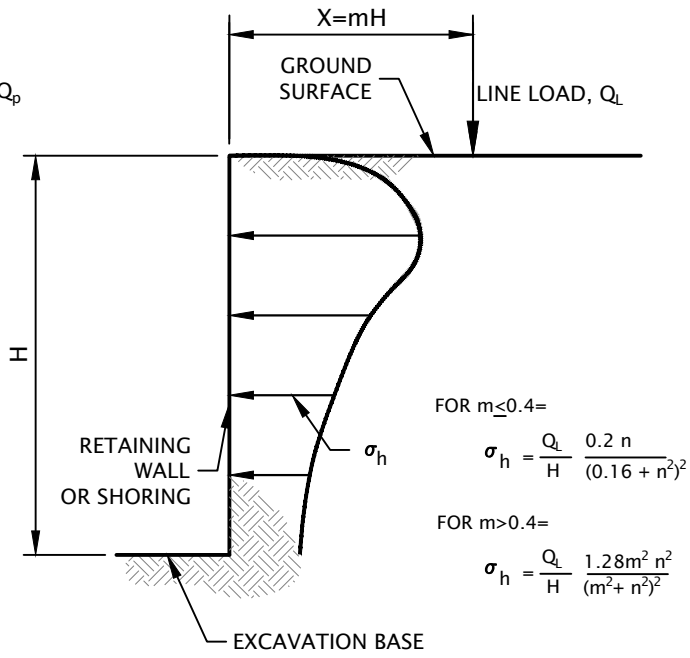
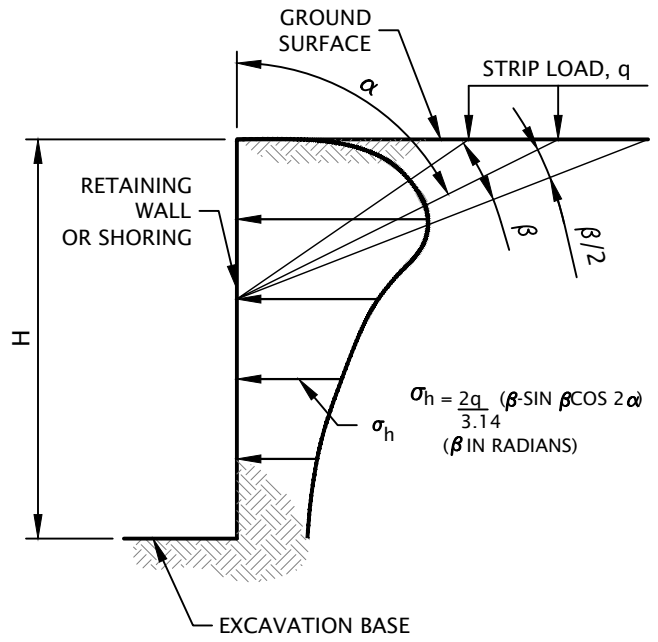
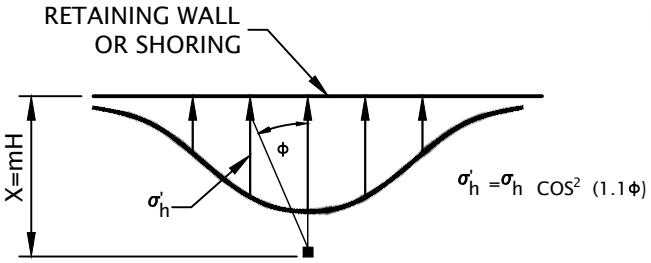








DISTRIBUTION OF HORIZONTAL PRESSURES

VERTICAL POINT LOAD

LINE LOAD PARALLEL TO WALL

STRIP LOAD PARALLEL TO WALL

NOT TO SCALE

NOTES:

1. FIGURE SHOULD BE USED IN CONJUNCTION WITH REPORT TEXT.
2. THESE GUIDELINES APPLY TO RIGID WALLS WITH POISSON'S RATIO ASSUMED TO BE 0.5 FOR BACKFILL MATERIALS.
3. LATERAL PRESSURES FROM ANY COMBINATION OF ABOVE LOADS MAY BE DETERMINED BY THE PRINCIPLE OF SUPERPOSITION.

DRAFT

NV5

DELTALOG-1-01	**SURCHARGE-INDUCED LATERAL EARTH PRESSURES**	
JUNE 2021	DELTA LOGISTICS DAY ROAD ANNEX WILSONVILLE, OR	**FIGURE 4**

APPENDIX

APPENDIX

FIELD EXPLORATIONS

GENERAL

Subsurface conditions were explored by drilling three borings (B-1 through B-3) to depths between 15 and 22.5 feet BGS and excavating nine test pits (TP-1 through TP-9). Drilling services were provided by Western States Soil Conservation, Inc. of Hubbard, Oregon, using mud rotary drilling methods and HQ core drilling techniques. Excavation services were provided by Dan J. Fischer Excavating, Inc. of Forest Grove, Oregon. All explorations were observed by a qualified member of NV5's staff. The approximate exploration locations are shown on Figure 2.

The exploration locations were determined by pacing from existing site features and should be considered accurate to the degree implied by the methods used.

SOIL AND ROCK SAMPLING

We collected representative samples of the various soils encountered during drilling for geotechnical laboratory testing. Samples were collected from the borings using 1½-inch-inside-diameter, split-spoon SPT samplers in general accordance with ASTM D1586. The samplers were driven into the soil with a 140-pound automatic trip hammer free-falling 30 inches. The samplers were driven a total distance of 18 inches. The number of blows required to drive the sampler the final 12 inches is recorded on the exploration logs, unless otherwise noted. The average efficiency of the automatic SPT hammer used by Western States Soil Conservation, Inc. was 82.2 percent. The calibration testing results are presented at the end of this appendix.

Rock was cored continuously using HQ core drilling methods in general accordance with ASTM D2113-99. Percent core recovery and RQD are noted on the exploration logs. The RQD is defined as the total length of all the intact core sections over 4 inches in length divided by the total length of the core run.

Representative grab samples of the soil observed in the test pits were collected from the walls or base of the test pits using the excavator bucket.

Sampling methods and intervals are shown on the exploration logs.

SOIL AND ROCK CLASSIFICATION

The soil and rock samples were classified in the field in accordance with the "Exploration Key" (Table A-1), "Soil Classification System" (Table A-2), and "Rock Classification System" (Table A-3), which are presented in this appendix. The exploration logs indicate the depths at which the soil characteristics change, although the change could be gradual. If the change occurred between sample locations, the depth was interpreted. Classifications are shown on the exploration logs.

INFILTRATION TESTING

Infiltration testing was conducted test pit TP-5 at depths of 2 and 3.5 feet BGS. The infiltration test at a depth of 2 feet BGS was conducted using the falling head method in a 6-inch-diameter standpipe under a head of approximately 14 inches. An open pit technique was used to conduct the test at a depth of 3.5 feet BGS under a head of 14 inches.

LABORATORY TESTING

We visually examined soil samples collected from the explorations to confirm field classifications. We also performed the following laboratory tests to evaluate the engineering properties of the soil.

MOISTURE CONTENT

We tested the natural moisture content of select soil samples in general accordance with ASTM D2216. The test results are presented in this appendix.

PARTICLE-SIZE ANALYSIS

We determined the fines content of a select soil sample in general accordance with ASTM D1140. The test results are presented in this appendix.

UNCONFINED COMPRESSION TESTS

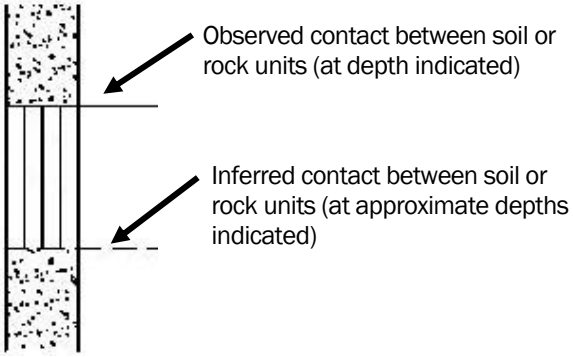
Unconfined compressive strength testing was conducted on several samples from the rock cores. The testing was completed in accordance with ASTM D2938 The test results are summarized in the table below.

Unconfined Compression Test Results

Boring	Depth (feet BGS)	Unconfined Compressive Strength (psi)
B-2	9.6	12,722
B-3	6.3	11,818
B-3	21	7,898

SYMBOL	SAMPLING DESCRIPTION
	Location of sample collected in general accordance with ASTM D1586 using Standard Penetration Test (SPT) with recovery
	Location of sample collected using thin-wall Shelby tube or Geoprobe® sampler in general accordance with ASTM D1587 with recovery
	Location of sample collected using Dames & Moore sampler and 300-pound hammer or pushed with recovery
	Location of sample collected using Dames & Moore sampler and 140-pound hammer or pushed with recovery
	Location of sample collected using 3-inch-outside diameter California split-spoon sampler and 140-pound hammer with recovery
	Location of grab sample
	Rock coring interval
	Water level during drilling
	Water level taken on date shown

Graphic Log of Soil and Rock Types



GEOTECHNICAL TESTING EXPLANATIONS

ATT	Atterberg Limits	P	Pushed Sample
CBR	California Bearing Ratio	PP	Pocket Penetrometer
CON	Consolidation	P200	Percent Passing U.S. Standard No. 200 Sieve
DD	Dry Density		
DS	Direct Shear	RES	Resilient Modulus
HYD	Hydrometer Gradation	SIEV	Sieve Gradation
MC	Moisture Content	TOR	Torvane
MD	Moisture-Density Relationship	UC	Unconfined Compressive Strength
NP	Non-Plastic	VS	Vane Shear
OC	Organic Content	kPa	Kilopascal

ENVIRONMENTAL TESTING EXPLANATIONS

CA	Sample Submitted for Chemical Analysis	ND	Not Detected
P	Pushed Sample	NS	No Visible Sheen
PID	Photoionization Detector Headspace Analysis	SS	Slight Sheen
		MS	Moderate Sheen
ppm	Parts per Million	HS	Heavy Sheen

RELATIVE DENSITY - COARSE-GRAINED SOIL

Relative Density	Standard Penetration Test (SPT) Resistance	Dames & Moore Sampler (140-pound hammer)	Dames & Moore Sampler (300-pound hammer)
Very loose	0 – 4	0 – 11	0 – 4
Loose	4 – 10	11 – 26	4 – 10
Medium dense	10 – 30	26 – 74	10 – 30
Dense	30 – 50	74 – 120	30 – 47
Very dense	More than 50	More than 120	More than 47

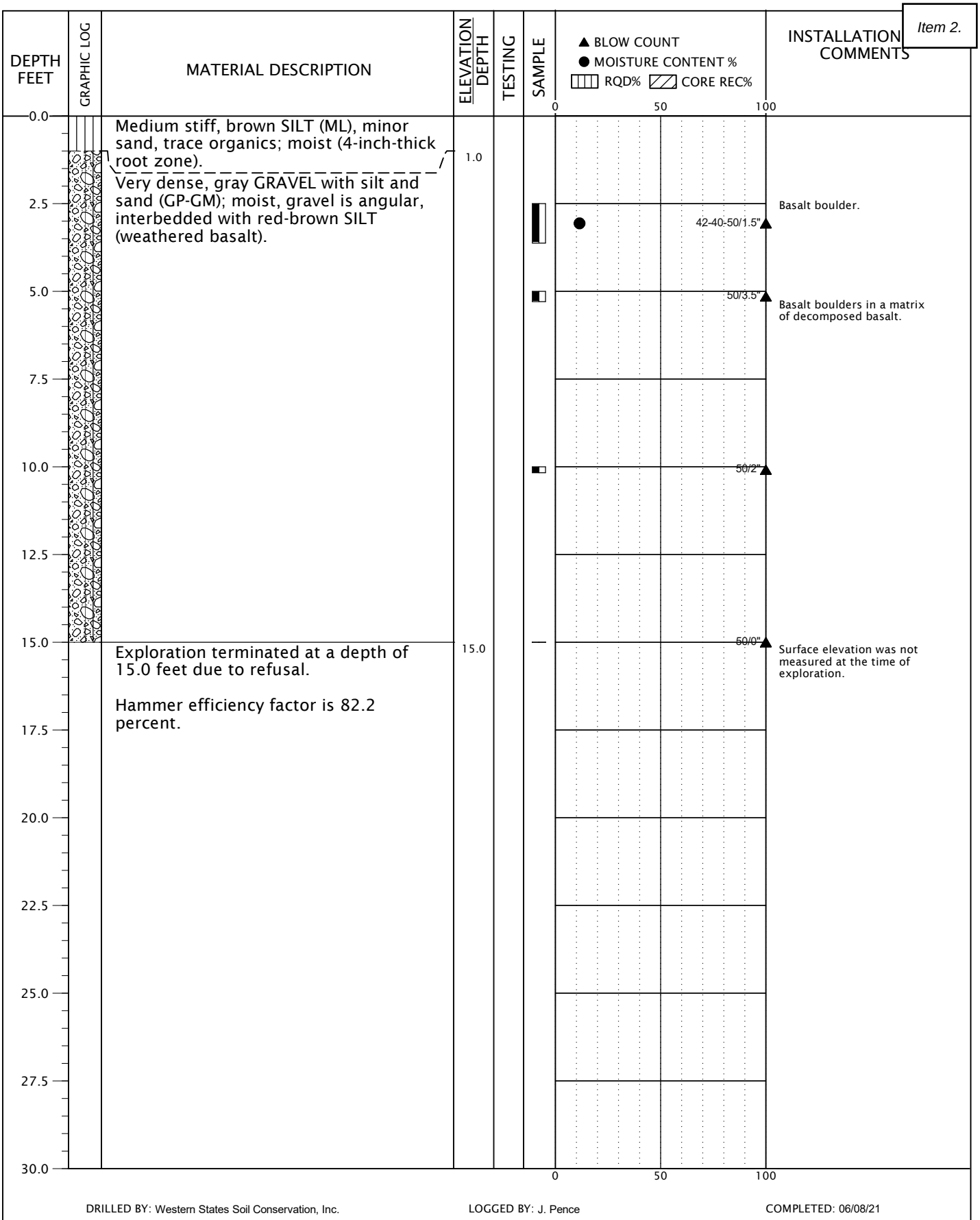
CONSISTENCY - FINE-GRAINED SOIL

Consistency	Standard Penetration Test (SPT) Resistance	Dames & Moore Sampler (140-pound hammer)	Dames & Moore Sampler (300-pound hammer)	Unconfined Compressive Strength (tsf)
Very soft	Less than 2	Less than 3	Less than 2	Less than 0.25
Soft	2 – 4	3 – 6	2 – 5	0.25 – 0.50
Medium stiff	4 – 8	6 – 12	5 – 9	0.50 – 1.0
Stiff	8 – 15	12 – 25	9 – 19	1.0 – 2.0
Very stiff	15 – 30	25 – 65	19 – 31	2.0 – 4.0
Hard	More than 30	More than 65	More than 31	More than 4.0

PRIMARY SOIL DIVISIONS			GROUP SYMBOL	GROUP NAME
COARSE-GRAINED SOIL (more than 50% retained on No. 200 sieve)	GRAVEL (more than 50% of coarse fraction retained on No. 4 sieve)	CLEAN GRAVEL (< 5% fines)	GW or GP	GRAVEL
		GRAVEL WITH FINES (≥ 5% and ≤ 12% fines)	GW-GM or GP-GM	GRAVEL with silt
			GW-GC or GP-GC	GRAVEL with clay
		GRAVEL WITH FINES (> 12% fines)	GM	silty GRAVEL
			GC	clayey GRAVEL
			GC-GM	silty, clayey GRAVEL
	SAND (50% or more of coarse fraction passing No. 4 sieve)	CLEAN SAND (<5% fines)	SW or SP	SAND
		SAND WITH FINES (≥ 5% and ≤ 12% fines)	SW-SM or SP-SM	SAND with silt
			SW-SC or SP-SC	SAND with clay
		SAND WITH FINES (> 12% fines)	SM	silty SAND
			SC	clayey SAND
			SC-SM	silty, clayey SAND
FINE-GRAINED SOIL (50% or more passing No. 200 sieve)	SILT AND CLAY	Liquid limit less than 50	ML	SILT
			CL	CLAY
			CL-ML	silty CLAY
			OL	ORGANIC SILT or ORGANIC CLAY
		Liquid limit 50 or greater	MH	SILT
			CH	CLAY
			OH	ORGANIC SILT or ORGANIC CLAY
HIGHLY ORGANIC SOIL			PT	PEAT

MOISTURE CLASSIFICATION		ADDITIONAL CONSTITUENTS					
		Secondary granular components or other materials such as organics, man-made debris, etc.					
			Silt and Clay In:			Sand and Gravel In:	
Term	Field Test	Percent	Fine-Grained Soil	Coarse-Grained Soil	Percent	Fine-Grained Soil	Coarse-Grained Soil
dry	very low moisture, dry to touch						
moist	damp, without visible moisture	< 5	trace	trace	< 5	trace	trace
		5 – 12	minor	with	5 – 15	minor	minor
wet	visible free water, usually saturated	> 12	some	silty/clayey	15 – 30	with	with
					> 30	sandy/gravelly	Indicate %

HARDNESS	DESCRIPTION
Extremely soft (R0)	Indented by thumbnail
Very soft (R1)	Can be peeled by pocket knife or scratched with finger nail
Soft (R2)	Can be peeled by a pocket knife with difficulty
Medium hard (R3)	Can be scratched by knife or pick
Hard (R4)	Can be scratched with knife or pick only with difficulty
Very hard (R5)	Cannot be scratched with knife or sharp pick
WEATHERING	**DESCRIPTION**
Decomposed	Rock mass is completely decomposed
Predominantly decomposed	Rock mass is more than 50% decomposed
Moderately weathered	Rock mass is decomposed locally
Slightly weathered	Rock mass is generally fresh
Fresh	No discoloration in rock fabric
JOINT SPACING	**DESCRIPTION**
Very close	Less than 2 inches
Close	2 inches to 1 foot
Moderate close	1 foot to 3 feet
Wide	3 feet to 10 feet
Very wide	Greater than 10 feet
FRACTURING	**FRACTURE SPACING**
Very intensely fractured	Chips and fragments with a few scattered short core lengths
Intensely fractured	0.1 foot to 0.3 foot with scattered fragments intervals
Moderately fractured	0.3 foot to 1 foot with most lengths 0.6 foot
Slightly fractured	1 foot to 3 feet
Very slightly fractured	Greater than 3 feet
Unfractured	No fractures
HEALING	**DESCRIPTION**
Not healed	Discontinuity surface, fractured zone, sheared material or filling not re-cemented
Partly healed	Less than 50% of fractured or sheared material
Moderately healed	Greater than 50% of fractured or sheared material
Totally healed	All fragments bonded



DRILLED BY: Western States Soil Conservation, Inc.

LOGGED BY: J. Pence

COMPLETED: 06/08/21

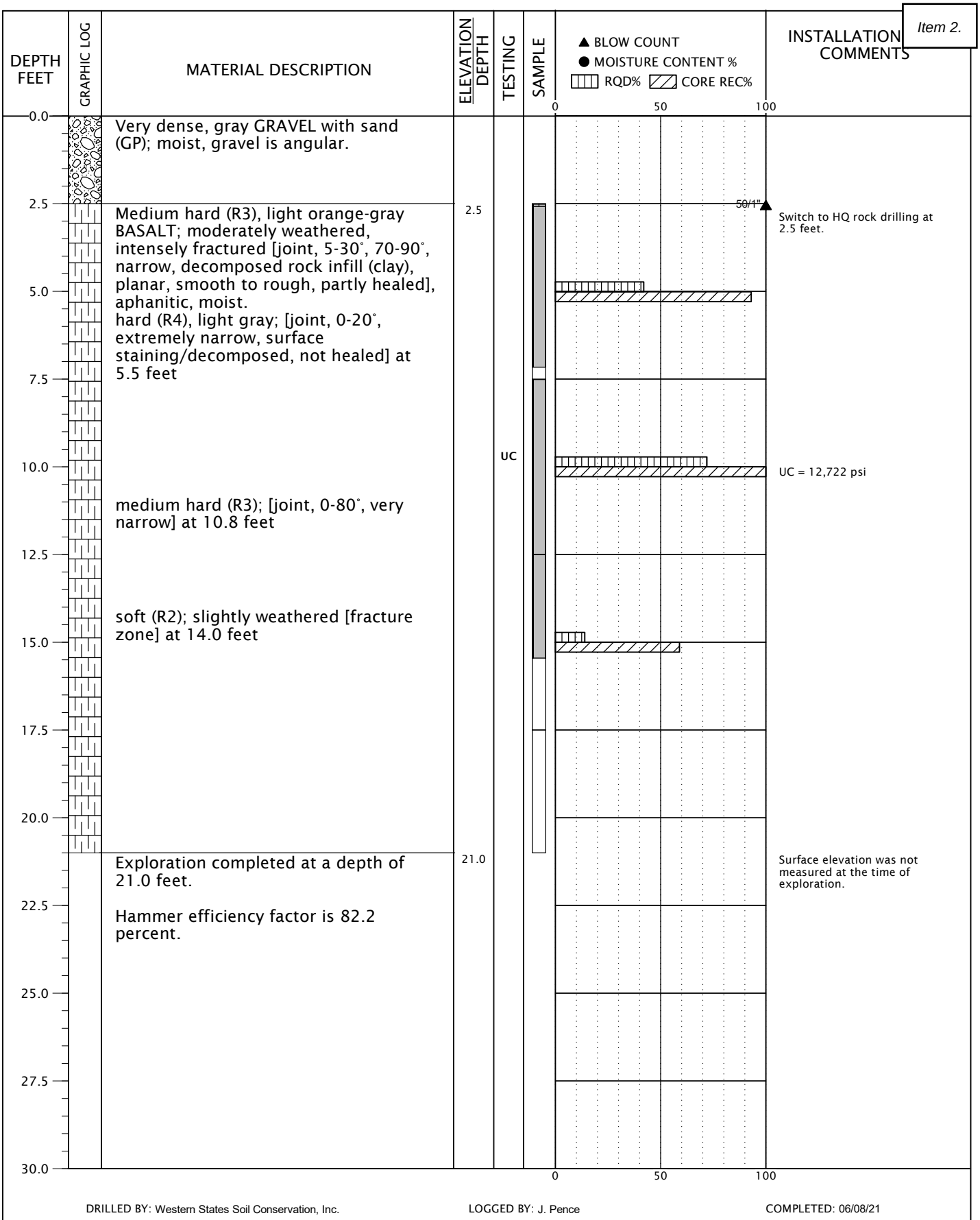
BORING METHOD: mud rotary (see document text)

BORING BIT DIAMETER: 4 7/8 inches

N|V|5	DELTALOG-1-01	**BORING B-1**
	JUNE 2021	DELTA LOGISTICS DAY ROAD ANNEX WILSONVILLE, OR

FIGURE A

BORING LOG - NV5 - 1 PER PAGE DELTALOG-1-01-B1_3-TP1_9.GPJ GDI_NV5.GDT PRINT DATE: 6/30/21:KT



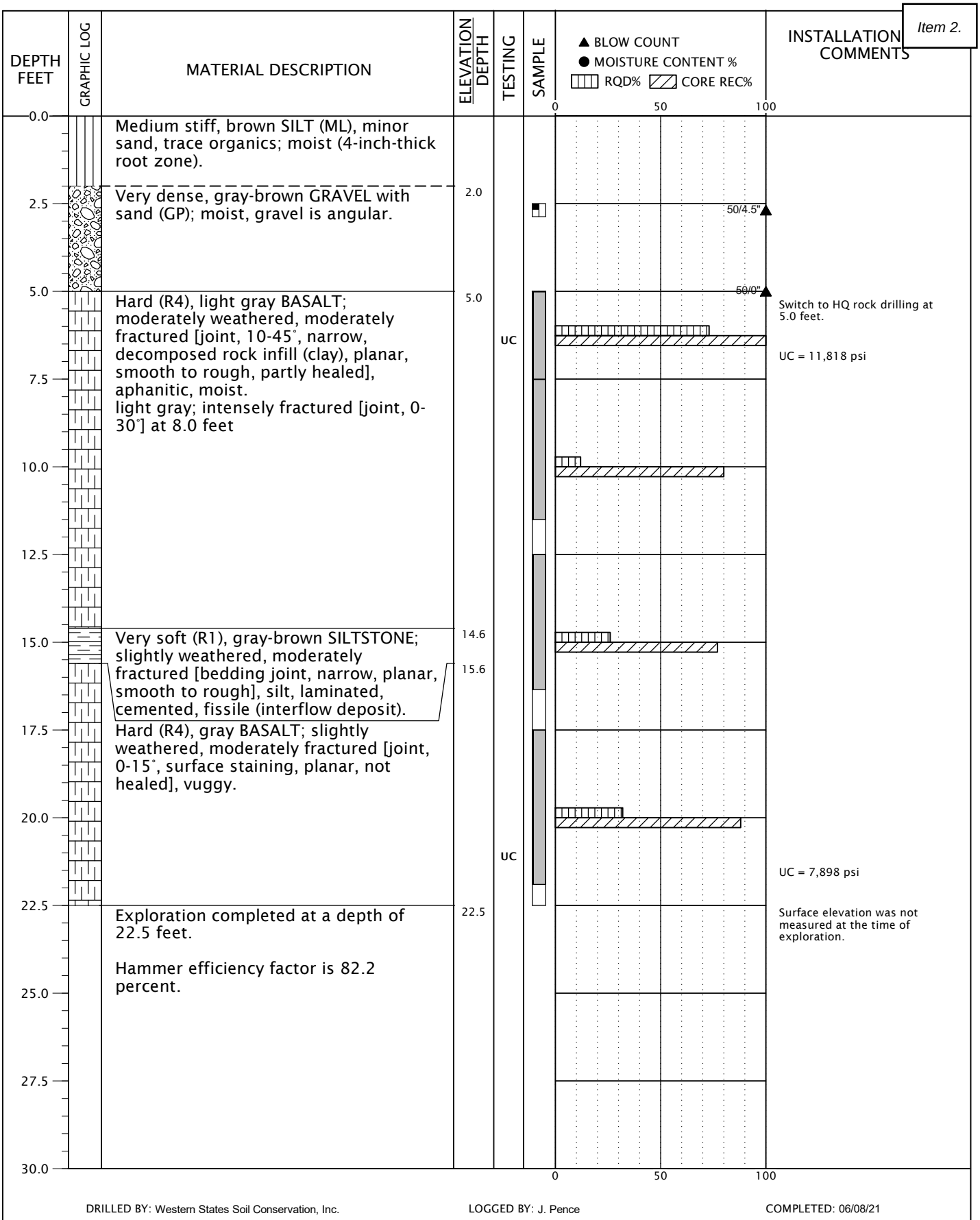
DRILLED BY: Western States Soil Conservation, Inc. LOGGED BY: J. Pence COMPLETED: 06/08/21

BORING METHOD: mud rotary and HQ core drilling (see document text) BORING BIT DIAMETER: 4 7/8 inches

N|V|5	DELTALOG-1-01	**BORING B-2**
	JUNE 2021	DELTA LOGISTICS DAY ROAD ANNEX WILSONVILLE, OR

FIGURE A

BORING LOG - NV5 - 1 PER PAGE DELTALOG-1-01-B1_3-TP1_9.GPJ GDI_NV5.GDT PRINT DATE: 6/30/21:KT



DRILLED BY: Western States Soil Conservation, Inc. LOGGED BY: J. Pence COMPLETED: 06/08/21

BORING METHOD: mud rotary and HQ core drilling (see document text) BORING BIT DIAMETER: 4 7/8 inches

N|V|5	DELTALOG-1-01	**BORING B-3**
	JUNE 2021	DELTA LOGISTICS DAY ROAD ANNEX WILSONVILLE, OR

FIGURE A

BORING LOG - NV5 - 1 PER PAGE DELTALOG-1-01-B1_3-TP1_9.GPJ GDI_NV5.GDT PRINT DATE: 6/30/21:KT

DEPTH FEET	MATERIAL DESCRIPTION	ELEVATION / DEPTH	TESTING	SAMPLE	MOISTURE CONTENT % (0 – 50 – 100)	COMMENTS
0.0	Medium stiff to stiff, brown SILT (ML), minor sand, trace organics (roots, rootlets); moist (4-inch-thick root zone). without roots at 1.0 foot		PP		●	PP = 1.0 tsf
2.5						
5.0						
7.5	Medium dense to dense, red-brown, clayey GRAVEL (GC); moist, gravel is angular and vesicular (weathered basalt).	7.0				
10.0						
12.5	intact basalt at 12.0 feet Exploration terminated at a depth of 12.0 feet due to refusal.	12.0				No groundwater seepage observed to the depth explored. No caving observed to the depth explored. Surface elevation was not measured at the time of exploration.
15.0						

EXCAVATED BY: Dan J. Fischer Excavating, Inc. LOGGED BY: J. Pence COMPLETED: 06/07/21

EXCAVATION METHOD: backhoe (see document text)

TEST PIT LOG - NV5 - 1 PER PAGE DELTALOG-1-01-B1_3-TP1_9.GPJ GDI_NV5.GDT PRINT DATE: 6/30/21 :KT

NV5

DELTALOG-1-01

TEST PIT TP-1

JUNE 2021

DELTA LOGISTICS DAY ROAD ANNEX
WILSONVILLE, OR

FIGURE A

DEPTH FEET	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION / DEPTH	TESTING	SAMPLE	● MOISTURE CONTENT % (0 50 100)	COMMENTS
0.0		Medium stiff, brown SILT (ML), minor sand, trace organics; moist, sand is fine (4-inch-thick root zone).					
2.5				PP	☒		PP = 1.5 tsf
5.0		intact gray basalt at 5.0 feet Exploration terminated at a depth of 5.0 feet due to refusal.	5.0				No groundwater seepage observed to the depth explored. No caving observed to the depth explored. Surface elevation was not measured at the time of exploration.
7.5							
10.0							
12.5							
15.0							

EXCAVATED BY: Dan J. Fischer Excavating, Inc. LOGGED BY: J. Pence COMPLETED: 06/07/21

EXCAVATION METHOD: backhoe (see document text)

NV5	DELTALOG-1-01	**TEST PIT TP-2**
	JUNE 2021	DELTA LOGISTICS DAY ROAD ANNEX WILSONVILLE, OR

FIGURE A

TEST PIT LOG - NV5 - 1 PER PAGE DELTALOG-1-01-B1_3-TP1_9.GPJ GDI_NV5.GDT PRINT DATE: 6/30/21 :KT

DEPTH FEET	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION / DEPTH	TESTING	SAMPLE	● MOISTURE CONTENT % (0 50 100)	COMMENTS
0.0		Medium stiff, brown SILT (ML), minor sand, trace organics; moist (3-inch-thick root zone).		PP			PP = 13.5 tsf
		Medium dense to dense, red-brown, clayey GRAVEL (GC); moist, gravel is angular (weathered basalt).	2.0				
2.5							
		intact gray basalt at 4.0 feet	4.0				
		Exploration terminated at a depth of 4.0 feet due to refusal.					No groundwater seepage observed to the depth explored. No caving observed to the depth explored. Surface elevation was not measured at the time of exploration.
5.0							
7.5							
10.0							
12.5							
15.0							

EXCAVATED BY: Dan J. Fischer Excavating, Inc. LOGGED BY: J. Pence COMPLETED: 06/07/21

EXCAVATION METHOD: backhoe (see document text)

NV5

DELTALOG-1-01

TEST PIT TP-3

JUNE 2021

DELTA LOGISTICS DAY ROAD ANNEX
WILSONVILLE, OR

FIGURE A

TEST PIT LOG - NV5 - 1 PER PAGE DELTALOG-1-01-B1_3-TP1_9.GPJ GDI_NV5.GDT PRINT DATE: 6/30/21 :KT

DEPTH FEET	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION / DEPTH	TESTING	SAMPLE	MOISTURE CONTENT % (0 50 100)	COMMENTS
0.0		Medium stiff to stiff, brown SILT (ML), minor sand, trace organics; moist (4-inch-thick root zone).		PP			PP = 1.0 tsf Basalt becomes more intact with depth.
2.5		Medium dense to dense, red-brown, clayey GRAVEL (GC); moist, gravel is angular and vesicular (weathered basalt).	2.0				
5.0		Exploration terminated at a depth of 5.0 feet due to refusal.	5.0				No groundwater seepage observed to the depth explored. No caving observed to the depth explored. Surface elevation was not measured at the time of exploration.
7.5							
10.0							
12.5							
15.0							

EXCAVATED BY: Dan J. Fischer Excavating, Inc. LOGGED BY: J. Pence COMPLETED: 06/07/21

EXCAVATION METHOD: backhoe (see document text)

NV5

DELTALOG-1-01

TEST PIT TP-4

JUNE 2021

DELTA LOGISTICS DAY ROAD ANNEX
WILSONVILLE, OR

FIGURE A

TEST PIT LOG - NV5 - 1 PER PAGE DELTALOG-1-01-B1_3-TP1_9.GPJ GDI_NV5.GDT PRINT DATE: 6/30/21 :KT

DEPTH FEET	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION / DEPTH	TESTING	SAMPLE	● MOISTURE CONTENT % (0 50 100)	COMMENTS
0.0		Medium stiff to stiff, brown SILT (ML), minor sand, trace organics; moist (4-inch-thick root zone).					
2.5				P200 PP		●	Infiltration test at 2.0 feet. P200 = 86% PP = 1.0 tsf
		Medium dense to dense, red-brown, clayey GRAVEL (GC); moist, gravel is angular and vesicular (weathered basalt).	3.0				Infiltration test at 3.5 feet.
		Exploration terminated at a depth of 3.5 feet due to refusal.	3.5				No groundwater seepage observed to the depth explored. No caving observed to the depth explored. Surface elevation was not measured at the time of exploration.
5.0							
7.5							
10.0							
12.5							
15.0						0 50 100	

EXCAVATED BY: Dan J. Fischer Excavating, Inc. LOGGED BY: J. Pence COMPLETED: 06/07/21

EXCAVATION METHOD: backhoe (see document text)

N|V|5	DELTALOG-1-01	**TEST PIT TP-5**
	JUNE 2021	DELTA LOGISTICS DAY ROAD ANNEX WILSONVILLE, OR

FIGURE A

TEST PIT LOG - NV5 - 1 PER PAGE DELTALOG-1-01-B1_3-TP1_9.GPJ GDI_NV5.GDT PRINT DATE: 6/30/21 :KT

DEPTH FEET	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION / DEPTH	TESTING	SAMPLE	● MOISTURE CONTENT % (0 – 50 – 100)	COMMENTS
0.0		GRAVEL - **FILL**.					
		Medium stiff to stiff, brown SILT (ML), minor sand, trace organics (roots); moist.	0.5				
		without roots at 1.0 foot		PP			PP = 1.0 tsf
2.5							
		Medium dense to dense, gray GRAVEL with sand (GP); dry to moist, gravel is angular (weathered basalt).	3.0				
		intact gray basalt at 4.0 feet	3.5				No groundwater seepage observed to the depth explored. No caving observed to the depth explored.
		Exploration terminated at a depth of 3.5 feet due to refusal.					Surface elevation was not measured at the time of exploration.
5.0							
7.5							
10.0							
12.5							
15.0							

EXCAVATED BY: Dan J. Fischer Excavating, Inc. LOGGED BY: J. Pence COMPLETED: 06/07/21

EXCAVATION METHOD: backhoe (see document text)

NV5

DELTALOG-1-01

TEST PIT TP-6

JUNE 2021

DELTA LOGISTICS DAY ROAD ANNEX
WILSONVILLE, OR

FIGURE A

TEST PIT LOG - NV5 - 1 PER PAGE DELTALOG-1-01-B1_3-TP1_9.GPJ GDI_NV5.GDT PRINT DATE: 6/30/21 :KT

DEPTH FEET	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION DEPTH	TESTING	SAMPLE	● MOISTURE CONTENT % (0 50 100)	COMMENTS
0.0		Medium stiff, brown SILT with sand (ML), trace organics (roots, rootlets); moist, sand is fine (4-inch-thick root zone).					
		without roots at 2.0 feet					
2.5		Medium dense to dense, brown-gray, silty GRAVEL (GM), minor sand; moist (weathered basalt).	2.5				
		intact gray basalt at 4.0 feet	4.0				
		Exploration terminated at a depth of 4.0 feet due to refusal.					No groundwater seepage observed to the depth explored. No caving observed to the depth explored. Surface elevation was not measured at the time of exploration.
5.0							
7.5							
10.0							
12.5							
15.0							

EXCAVATED BY: Dan J. Fischer Excavating, Inc. LOGGED BY: J. Pence COMPLETED: 06/07/21

EXCAVATION METHOD: backhoe (see document text)

TEST PIT LOG - NV5 - 1 PER PAGE DELTALOG-1-01-B1_3-TP1_9.GPJ GDI_NV5.GDT PRINT DATE: 6/30/21 :KT

NV5

DELTALOG-1-01

TEST PIT TP-7

JUNE 2021

DELTA LOGISTICS DAY ROAD ANNEX
WILSONVILLE, OR

FIGURE A-

DEPTH FEET	MATERIAL DESCRIPTION	ELEVATION / DEPTH	TESTING	SAMPLE	MOISTURE CONTENT % (0 – 50 – 100)	COMMENTS
0.0	Medium stiff, brown SILT (ML), minor sand, trace organics (roots); moist (4-inch-thick root zone).		PP			PP = 0.75 tsf
	without roots at 2.0 feet					
2.5			PP			PP = 1.5 tsf
	Dense, red-brown, silty GRAVEL (GM), minor sand; moist, gravel is angular (weathered basalt).	4.0				
5.0						
	Dense, gray GRAVEL (GP), minor sand, trace silt; moist, gravel is angular (weathered basalt).	6.0				
7.5						Moderate groundwater seepage observed at 8.0 feet.
	intact gray basalt at 8.5 feet	8.5				No caving observed to the depth explored.
	Exploration terminated at a depth of 8.5 feet due to refusal.					Surface elevation was not measured at the time of exploration.
10.0						
12.5						
15.0						

EXCAVATED BY: Dan J. Fischer Excavating, Inc. LOGGED BY: J. Pence COMPLETED: 06/07/21

EXCAVATION METHOD: backhoe (see document text)

NV5

DELTALOG-1-01

TEST PIT TP-8

JUNE 2021

DELTA LOGISTICS DAY ROAD ANNEX
WILSONVILLE, OR

FIGURE A-

TEST PIT LOG - NV5 - 1 PER PAGE DELTALOG-1-01-B1_3-TP1_9.GPJ GDI_NV5.GDT PRINT DATE: 6/30/21 :KT

DEPTH FEET	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION / DEPTH	TESTING	SAMPLE	● MOISTURE CONTENT % (0 – 50 – 100)	COMMENTS
0.0		Medium stiff, brown SILT (ML), minor sand, trace organics (roots, rootlets); moist (4-inch-thick root zone).					
2.5		basalt at 3.0 feet	3.0				
		Exploration terminated at a depth of 3.0 feet due to refusal.					No groundwater seepage observed to the depth explored. No caving observed to the depth explored. Surface elevation was not measured at the time of exploration.
5.0							
7.5							
10.0							
12.5							
15.0							

EXCAVATED BY: Dan J. Fischer Excavating, Inc. LOGGED BY: J. Pence COMPLETED: 06/07/21

EXCAVATION METHOD: backhoe (see document text)

N|V|5	DELTALOG-1-01	**TEST PIT TP-9**
	JUNE 2021	DELTA LOGISTICS DAY ROAD ANNEX WILSONVILLE, OR

FIGURE A-

TEST PIT LOG - NV5 - 1 PER PAGE DELTALOG-1-01-B1_3-TP1_9.GPJ GDI_NV5.GDT PRINT DATE: 6/30/21 :KT

SAMPLE INFORMATION			MOISTURE CONTENT (PERCENT)	DRY DENSITY (PCF)	SIEVE			ATTERBERG LIMITS		
EXPLORATION NUMBER	SAMPLE DEPTH (FEET)	ELEVATION (FEET)			GRAVEL (PERCENT)	SAND (PERCENT)	P200 (PERCENT)	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX
B-1	2.5		11							
TP-1	1.5		21							
TP-5	2.0		21				86			
TP-7	1.0		26							

BORING B-2, CORE RUN 1, 2.5 TO 7.5 FEET BGS.

BORING B-2, CORE RUN 2, 7.5 TO 12.5 FEET BGS.

BORING B-2, CORE RUN 3, 12.5 TO 17.5 FEET BGS.

BORING B-3, CORE RUN 1, 5 TO 7.5 FEET BGS.

BORING B-3, CORE RUN 2, 7.5 TO 12.5 FEET BGS.

BORING B-3, CORE RUN 3, 12.5 TO 17.5 FEET BGS.

BORING B-3, CORE RUN 4, 17.5 TO 22.5 FEET BGS.

Pile Dynamics, Inc.
SPT Analyzer Results

RIG #8
PDA-S Ver. 2018.30 - Printed: 4/15/2020

Summary of SPT Test Results

Project: WSSC-8-05, Test Date: 4/13/2020

EMX: Maximum Energy — ETR: Energy Transfer Ratio - Rated

Start Depth ft	Final Depth ft	N Value	N60 Value	Average EMX ft-lb	Average ETR %
15.00	16.50	**8**	**10**	291.65	83.3
17.50	19.00	**15**	**20**	278.80	79.7
20.00	21.50	**18**	**24**	290.63	83.0
22.50	24.00	**15**	**20**	304.84	87.1
25.00	26.50	**11**	**15**	269.66	77.0
			Overall Average Values:	287.84	82.2
			Standard Deviation:	38.44	11.0
			Overall Maximum Value:	327.58	93.6
			Overall Minimum Value:	0.10	0.0

APPENDIX H

COFFEE CREEK STROMWATER STUDY (JUNE 2019)

Coffee Creek Stormwater Facility Study
Wilsonville, Oregon

Facility Siting Alternatives Report

Date: June 2019

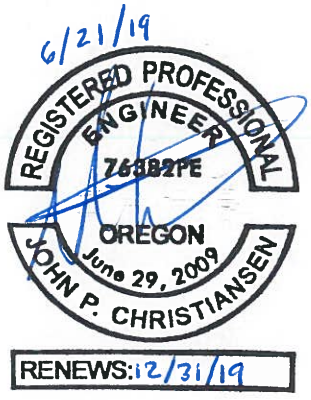
Client: City of Wilsonville – Engineering Division
29799 SW Town Center Loop East
Wilsonville, OR 97070

City Job Number: 7060

Engineering Contact: John Christiansen, PE
(503) 563-6151 | johnc@aks-eng.com

Engineering Firm: AKS Engineering & Forestry, LLC
12965 SW Herman Road
Suite 100
Tualatin, OR 97062

AKS Job Number: 7076



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www.aks-eng.com

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APPENDIX C: Profile Along Existing Channel
APPENDIX D: Preliminary Stormwater Report

Supplemental Information

1. Basis of Design Report
2. Wetlands/Waters Desktop Review
3. Cultural Resources Reconnaissance Survey
4. Preliminary Geotechnical Desktop Study
5. Hazardous Materials Corridor Assessment (HMCS)

Facility Siting Alternatives Report

COFFEE CREEK STORMWATER FACILITY STUDY
WILSONVILLE, OREGON

1.0 Introduction

The City of Wilsonville's 2012 Stormwater Master Plan (SWMP) identifies the Coffee Creek Industrial Area as an existing problem area due to its poor drainage and its tendency to flood during moderate storm events. Basalt Creek (also referred to as Tapman Creek), which has been constructed into channels and culverts, overtops its banks and floods the adjacent parking area on the west side of the Commerce Circle Business Park, beginning at the 2-year, 24-hour storm event. The creek has negative slopes in this area that contribute to flooding while also preventing flooding from occurring downstream (2012 SWMP 6.6.1).

Commerce Circle was identified in the 2012 SWMP as one of four general areas to experience flooding. The 2012 SWMP states that the area "is known to flood, and the parking lots in the development were originally designed to flood and provide additional detention volume. Therefore, some flooding is to be expected in this area. Portions of the open channel system have a reverse slope, contributing to the predicted and observed flooding. The reverse slope has not been removed so as to avoid moving the flooding to a downstream location."

The Coffee Creek Regional Stormwater Facility Project (Project) is intended to meet the following goals for this portion of Basalt Creek:

1. Functional
2. Maintainable
3. Uplifted habitat

The 2012 SWMP includes the capital improvement project (CIP) Channel Project – Commerce Circle (CLC-3) as a recommended project, which is the basis of design for this project. More information about the basis of design can be found in the Basis of Design Report included as Supplemental Information to this report.

This report summarizes and describes the tasks completed for the pre-design effort for this project.

2.0 Project Location

This project is located to the west and south of the Commerce Circle industrial area and follows Basalt Creek in a straightened, incised channel between SW Day Road to the north, and SW Ridder Road to the south. Approximately 1,050 acres of surrounding drainage area contributes stormwater runoff to the system. This drainage area is shown on Figure 2 in the Basis of Design Report, included as Supplemental Information to this report.

3.0 Data Gathering and Concept Development

3.1 DOCUMENT REVIEW

To get an accurate understanding of the existing site conditions, AKS first reviewed relevant documents provided by the City, including the 2007 Coffee Creek Master Plan; 2012 SWMP; the documents used in the creation of the 2012 SWMP such as the CIP CLC-3 and InfoSWMM model; and the 2018 Draft Basalt Creek Concept Plan. A more detailed review of these documents can be found in the attached Basis of Design Report included as Supplemental Information to this report.

AKS analyzed the drainage basin and subbasins contributing stormwater runoff to the project site using DOGAMI LIDAR topography and stormwater GIS data provided by the City. This phase also included site visits by AKS' engineering team, natural resources team, and survey team, as well as Shannon & Wilson's geotechnical and environmental teams and Willamette Cultural Resources Associates.

In January 2019, AKS utilized drone technology to collect high-resolution imagery of the project area. This imagery was processed with survey-grade ground control to create an orthomosaic and elevation data of the site. This was especially useful for confirming areas of suspected ponding and digitally locating utility poles, as they were not a part of the preliminary topographic survey. While the resolution and accuracy of the data is quite high, there are inherent limitations to a photogrammetric workflow. Heavy shadowing, dense vegetation and surface water obstruct the visibility of the terrain in the imagery and therefore impede the creation of any derived elevation data. To confirm accuracy and reliability, the AKS drone topography was cross-referenced with the DOGAMI LIDAR and was found to be precise.

In addition to the drone survey and DOGAMI LIDAR analysis, a preliminary topographic survey took place in January 2019. The preliminary topographic survey included only critical elements, such as the culvert inlets and select channel cross-sections, to supplement the DOGAMI LIDAR. This survey effort was limited to the level of detail needed to validate the viability of CIP CLC-3. A more comprehensive topographic survey, including a tree survey, will need to be completed for construction-level drawings.

3.2 NATURAL RESOURCES DESKTOP REVIEW

As part of the Wetlands/Waters Desktop Review, AKS' natural resources department reviewed previous wetland delineation concurrences and visited the site in February 2019 to confirm the presence and absence of wetland conditions in the study area. The study confirmed that much of the project area is wetlands and/or jurisdictional waters.

The complete Wetlands/Waters Desktop Review is included as Supplemental Information to this report.

3.3 GEOTECHNICAL DESKTOP INVESTIGATION

Shannon & Wilson provided preliminary geotechnical services for this project. They reviewed borehole logs in the vicinity of the project and recommended that no excavation be proposed within 15 feet of any existing utility poles. Shannon & Wilson also noted that the Bonneville Power Administration (BPA) will need to be asked to review any proposed work in the vicinity and that the BPA should be the ultimate authority on proposed excavations adjacent to their utility poles.

More detailed information about the geotechnical study can be found in the Preliminary Geotechnical Desktop Study included as Supplemental Information to this report.

3.4 HAZARDOUS MATERIALS CORRIDOR ASSESSMENT (HMCA)

Shannon & Wilson provided the HMCA for this project. They found four Environmental Conditions (ECs) that exist for the Project Corridor and recommend a Phase II ESA be performed along the proposed channel alignment.

More detailed information about the Environmental Conditions and Shannon & Wilson's recommendations can be found in the HMCA included as Supplemental Information to this report.

3.5 CULTURAL RESOURCES DESKTOP REVIEW

Willamette Cultural Resources Associates provided cultural resources services for this project and identified the undeveloped portions of the study area as having a moderate to high probability for precontact archaeological resources based on proximity to Tapman Creek. Willamette Cultural Resources Associates recommends these areas receive a systematic pedestrian survey and shovel probing.

More detailed information about the cultural resources study can be found in the Cultural Resources Reconnaissance Survey included as Supplemental Information to this report.

3.6 LAND USE

The project limits extend through properties located within and outside of the Wilsonville City limits. For the segments outside city limits, Washington County is the authority having jurisdiction on land use matters. Construction of the improvements would require either annexation of the affected properties into Wilsonville or obtaining land use approval from Washington County. Given that the project could potentially affect five properties outside of City limits, pursuing land use approval for the improvements under County review, rather than annexation, is likely the most efficient path for permitting. All affected properties are zoned Future Development 20-acre District (FD-20) as defined by the Washington County Community Development Code. The project would likely be reviewed under a Type III procedure as a Public Utility in accordance with Section 308-4.8 of the Washington County CDC. If the City wishes to obtain fee simple ownership of the land within the open channel portions of the project, then a series of property line adjustments and partitions may be required. Land use requirements for properties within City limits should be reviewed internally with City of Wilsonville Planning staff. Each of the proposed channel improvement options will require similar procedures for land use entitlement; therefore, land use process is not considered a factor in the siting study.

3.7 SITE CONSTRAINTS

Several constraints were noted during the data gathering and concept development stage that guided the final conceptual plans. These constraints are described below.

3.7.1 Utility Poles and Towers

The project area runs north to south, mostly along a BPA easement, and includes areas along a Portland General Electric (PGE) easement. As such, there are many utility poles and towers along the project corridor.

The BPA utility poles have an excavation setback that is described in Shannon & Wilson's Preliminary Geotechnical Desktop Study, attached to this report. There is currently maintenance access to these poles along a dirt and gravel road, and access to these poles must remain.

The new channel design must take into consideration the access road and utility pole/tower setbacks.

3.7.2 Limited Pipe Capacity

Just north of SW Ridder Road, Basalt Creek (Tapman Creek) enters two 36-inch stormwater pipes that run beneath the access drive and parking lot for Tax Lot 500, Tax Map 3S102CD. These two 36-inch stormwater pipes have limited capacity and are a constraint on the system.

3.7.3 Reverse Slope and Flat Topography

Some sections of Basalt Creek (Tapman Creek) have reverse slope in the project area, as shown in the existing profile attached in an appendix to this report. For the purposes of this analysis, the reverse slope is proposed to be corrected.

The channel restoration is proposed to extend approximately 3,300-linear feet between the southern outlet of the SW Day Road culverts and the 36-inch pipes beneath the parking area of Tax Lot 500, Tax Map 3S102CD. The elevation difference through this segment is only ±1.1 feet with a slope of 0.0003 (0.03%). Correcting the reverse grade in this area creates a nearly flat creek channel and floodplain.

3.7.4 The Willamette Water Supply Program:

Section PLM_1.3 of the Willamette Water Supply Program is proposed within SW Ridder Road. Construction is currently estimated to occur between 2020 and 2022. Coordination with the entities involved in this project may be required if improvements within SW Ridder Road are selected (e.g. Option B).

3.7.5 New Kinsman Road Extension

The Coffee Creek Industrial Area Infrastructure Analysis, dated 2011, indicates plans for a new road directly adjacent to the project site.

Originally this was considered a potential constraint that would need to be taken into consideration during final design of the new channel. After discussions with the City, it was determined that this planned roadway is no longer being considered for construction and is no longer a potential constraint.

3.8 HYDROLOGIC AND HYDRAULIC MODEL

Once data was sufficiently gathered and analyzed, AKS adjusted the City's existing InfoSWMM model to estimate the capacity that proposed design elements of CLC-3 would have on the system. Modeling the 25-year storm, it was apparent that the proposed design of CLC-3 was incapable of reducing flood levels in the channel and that more would need to be done to reduce flooding within the industrial area.

The Facility Siting Concepts were developed with the goal of maximizing conveyance and capacity while considering the project constraints.

4.0 Facility Siting Concepts: Option A and Option B

The designs for Options A and B are described in this section. Plans, profiles, and cross-sections are attached to this report.

4.1 OPTION A AND OPTION B

Beginning in the north at SW Day Road (STA 44+00), Option A and Option B are identical up to the point that they veer apart at approximately station 14+50, at which point Option A continues east, along the existing channel, while Option B splits to the south. These differences will be described below.

To maximize conveyance, both options include removing negative slopes and culverts that are constraints on the system. The slope is limited to about 0.03%, with the vertical elevation fall, from the SW Day Road culvert to the stormwater pipes beneath Tax Lot 500, Tax Map 3S102CD, only being ±1.1 foot, over a horizontal distance of ±3,000 feet.

The primary channel is designed with a 5-foot wide bottom that is 1-foot to 6-feet deep, on average. To maximize storage and capacity, the channel is widened at elevation 223.0 to create a floodplain, where feasible. Side slopes are designed at 2:1 to minimize the excavation footprint. In some locations, structural earth walls (see detail, Sheet 7 of the Facility Siting Concepts) are proposed to further minimize the project footprint and to avoid constraints such as existing utility poles.

Open-bottom or box culverts are proposed to provide access to the existing utility poles while also maximizing conveyance. The existing maintenance road will be relocated to allow for the excavation of the channel and floodplain.

In two locations, there is not enough width in the original project area to construct a new channel while also meeting the excavation setbacks. In these locations, the restored channel is proposed on neighboring agricultural properties to the west. To limit the disturbance footprint in these areas, structural earth walls are proposed, similar to the detail on Sheet 7 of the Facility Siting Concepts sheets attached to this report. These walls will be vegetated.

Maintenance access will be preserved by relocating a gravel access road and utilizing open-bottom or box culverts for channel crossings.

Both options include a detention pond for additional storage capacity on Tax Lots 704 and 790, Tax Map 3S102B, adjacent to SW Day Road. The bottom elevation of this pond is designed at 223.0, equal to the floodplain designed in the channel portion of the project. The side slopes are designed at 4:1. The detention pond will be connected to the existing detention pond and channel with an open-bottom or box culvert beneath the existing maintenance road.

4.2 OPTION A

Option A continues east at approximately station 14+50, through an existing wetland. To minimize the excavation footprint in this area, from approximately station 14+50 through station 12+50, structural earth walls are proposed to allow for steeper slopes, designed at 0.25:1.

The channel will continue to the two existing 36-inch stormwater pipes that are located beneath the parking lot of Tax Lot 500, Tax Map 3S102CD, within a City stormwater easement. To increase conveyance, a third 36-inch stormwater pipe is proposed to be constructed parallel to the two existing pipes, within the existing parking lot. If space allows, the existing easement will be used although it is likely that the City will require an easement extension.

4.3 OPTION B

Option B veers south from Option A at approximately station 14+50, through a proposed channel on Tax Lot 600, Tax Map 3S102CD. To minimize the footprint necessary to create a positive slope to SW Ridder Road, the channel does not include floodplain. The channel side slopes are designed at 2:1.

At the southern terminus of this channel, the creek will be piped in two parallel 42-inch stormwater pipes installed in the north lane of SW Ridder Road. Two 42-inch pipes were chosen to convey the same amount of water as the potential three 36-inch pipes proposed in Option A. These pipes will connect to the existing western 48-inch culvert beneath SW Ridder Road. A concrete vault is proposed to make this connection. The existing 12-inch stormwater pipe and existing manholes in SW Ridder Road will be removed.

The two existing 36-inch stormwater pipes that are located beneath the parking lot of Tax Lot 500, Tax Map 3S102CD, will remain in place to convey stormwater from Commerce Circle.

As stated earlier in this report, the future Willamette Water Supply Program is proposed to be installed in SW Ridder Road. Coordination with the entities involved with this pipeline project will be necessary.

4.4 OPTIONAL DESIGN ELEMENTS

For modeling and cost estimating purposes, Options A and B were broken down further to allow a more detailed look at the effects of some of the design elements, notably the detention pond and the additional 36-inch pipe beneath Tax Lot 500, Tax Map 3S102CD. Breaking these options down to smaller elements allowed for a better understanding of where the costs were receiving the most benefits for the project goals.

The model for Option A was evaluated with: neither the detention pond nor the additional 36-inch pipe (A-1); with one of each of those elements separately (A-2 and A-3); and with both the detention pond and the additional 36-inch pipe included (A-4).

The model for Option B was evaluated without the detention pond (B-1), and with the detention pond (B-2).

These six options are summarized in the table below.

Table 1: Summary of Options and Design Elements

Option	Additional 36-inch Pipe	Detention Pond
A-1	No	No
A-2	No	Yes
A-3	Yes	No
A-4	Yes	Yes
B-1	n/a	No
B-2	n/a	Yes

4.5 MODELING RESULTS

The elevation of the parking lot on the west side of Tax Lot 400, Tax Map 3S102CA was used as a baseline flood elevation for the modeling study. This elevation was determined to be 226.5 and the peak hydraulic grade line (HGL) of the adjacent proposed channel improvements was used as a determining factor in the final recommendations.

More information about the HGL can be found in the attached Preliminary Stormwater Report.

4.6 100-YEAR STORM

4.6.1 Modeling Update

The Facility Siting Concepts, modeling results, and recommendations were presented to the City in May 2019. The City requested AKS to add the 100-yr storm to the modeling to determine how adjacent properties would be affected by the channel improvements.

The cross-sections of each modeled conduit were refined and expanded to include a wider surface area for more accurate modeling results. The model was then run for the 100-year storm model under existing development conditions and calculated the HGL along each conduit for Options A-3 and B-1. Option A-4 was run only to determine an estimated HGL for the detention pond.

Finished floor elevations (FFE) were estimated using DOGAMI Bare Earth LIDAR topography (2014), aerial photography, and photographs from AKS site visits. Loading docks were estimated at 4.0 feet above existing ground, where applicable.

Once the HGL of each conduit was determined by the updated model, the Facility Siting Concepts (Appendix A) were updated to include the 100-year and 25-year flood storage areas.

4.6.2 Results

Both Options A-3 and B-1 were studied and compared. Both options result in flooding on private properties during the 100-year storm, with the HGL for Option B-1 between 0.3 and 0.5 feet lower than the HGL for Option A-3.

The results of the modeling updates indicate that in a few locations the 100-year storm event will have flood waters abutting existing buildings. However, due to the locations of loading docks, the HGL of the 100-year storm did not rise to the level of the FFEs of the existing buildings. In the worst-case scenario, the HGL rises to approximately 2.4 feet below FFE. This scenario occurs on Tax Lot 500, Tax Map 3S102CD at 9685 SW Ridder Road. A cross-section (Cross-Section F) in this location can be found on Sheet 14 of the Facility Siting Concepts (Appendix A).

As part of this analysis, the existing detention pond adjacent to SW Ridder Road, on the north side, was also analyzed. The results indicate that the existing culverts beneath SW Ridder Road are adequately sized to convey the 100-year storm and dissipate any ponding of water in the detention pond.

4.7 LONG-TERM MAINTENANCE CONSIDERATIONS

The long-term maintenance of the new channel, culverts, and stormwater pipes would be mostly limited to the City's regular maintenance of the stormwater system. Visual inspections of the creek channel and culverts are recommended to determine if there is any erosion of the channel or blockages. Planting maintenance will be ongoing for the first few years.

5.0 Cost Estimates

Cost estimates have been prepared for both Concepts Option A and Option B and the additional elements (detention pond and additional 36-inch stormwater pipe). These are included as an attachment to this report and summarized in the table below. Note: Property acquisition is not included.

Table 2: Engineers Estimate Total

Facility Siting Concept	Estimate
A-1	$3.0 million
A-2	$5.2 million
A-3	$3.2 million
A-4	$5.4 million
B-1	$4.4 million
B-2	$6.5 million

6.0 Evaluation of Alternatives

In addition to cost, we analyzed six non-financial criteria to determine the recommended option: property impacts, public impacts, environmental impacts, risk/constructability, operations and maintenance, and conveyance improvement. The criteria can be described as follows:

Property Impacts
The anticipated impact to private property, including requiring easements or property acquisition, and construction impacts.

Public Impacts
The anticipated disruption to traffic on neighboring streets during construction.

Environmental Impacts
The anticipated amount of work in environmental, cultural resource, or hazardous materials areas that could impact project schedule or cost, and the potential for impacts to the land use permitting schedule and costs.

Risk/Constructability
The difficulty level of construction and anticipated risk of discovering unknowns. The depth and/or difficulty of excavations, haul-off, construction access, dewatering, proximity to adjacent utilities, and road/sidewalk repair were all taken into consideration.

Operations and Maintenance
The anticipated operations and maintenance that will be required, including access to manholes, pipes, and the proposed channel, as well as the level of planting maintenance that will be required.

Conveyance Improvement
The anticipated improvement the proposed elements will have on conveyance and reduced flood risk.

Cost
In addition to the non-financial criteria, the estimated costs were weighed against the anticipated benefit to the project goals.

7.0 Conclusion and Recommendations

Option A-3
Based on the studies of the six different options (A-1, A-2, A-3, A-4, B-1, and B-2) described earlier in this report, AKS recommends Option A-3 for further consideration.

In addition to the channel improvements, Option A-3 includes the additional 36” pipe beneath Tax Lot 500, Tax Map 3S102CD but does not include the detention pond.

This option maximizes conveyance while minimizing cost and non-financial impacts. It is anticipated to convey the existing 25-year event when analyzing the hydraulic grade line adjacent to the industrial area parking lot (Tax Lot 400, Tax Map 3S102CA).

Additional 36" Pipe beneath Tax Lot 500, Tax Map 3S102CD
We recommend including this element in the design due to the relatively low cost and large positive impact on conveyance. The two existing 36" stormwater pipes are constraints on the system and are anticipated to cause flooding even with the reverse grade of the existing channel removed.

Detention Pond
The detention pond would be more efficiently sited as part of CLC-1, north of SW Day Road. In its currently proposed location, the amount of excavation needed to obtain the depth required is much larger than the estimated capacity of the pond. Specifically, it would require over 36,000 cubic yards of excavation and haul-off, while only providing approximately 7,500 cubic yards of storage. This is caused by the higher elevations in the western portion of the site, where there is almost 15 feet of cut required to construct the facility.

Options B-1 and B-2
While Options B-1 and B-2 would provide greater conveyance and lessen the flood risk, these options may be too costly considering the property acquisition through BPA property, as well as coordination with the entities responsible for the Willamette Water Supply Program proposed in SW Ridder Road.

Facility Siting Alternatives Report, Appendix A:
Facility Siting Concepts

FACILITY SITING CONCEPTS NARRATIVE DESCRIPTION

THE GOAL OF THIS PROJECT IS TO ADDRESS FLOODING THAT OCCURS DURING EXISTING STORM EVENTS AND IS PREDICTED DURING FUTURE STORM EVENTS (BEGINNING AT THE 2-YEAR, 24-HOUR STORM EVENT), AND TO RESTORE AND ENHANCE AN EXISTING STRAIGHTENED, INCISED CHANNEL. THE CHANNEL HAS NEGATIVE SLOPES IN SOME AREAS WHICH CONTRIBUTE TO FLOODING.

THIS PLAN SET AND NARRATIVE DESCRIBES TWO OPTIONS THAT ARE DESIGNED TO MAXIMIZE CONVEYANCE AND CAPACITY WITHIN THE PROJECT AREA: OPTION A, AND OPTION B.

OPTION A AND OPTION B

BEGINNING IN THE NORTH AT SW DAY ROAD (STA 44+00), OPTION A AND OPTION B ARE IDENTICAL UP TO THE POINT THAT THEY VEER APART AT APPROXIMATELY STATION 14+50, AT WHICH POINT OPTION A CONTINUES EAST, ALONG THE EXISTING CHANNEL, WHILE OPTION B SPLITS TO THE SOUTH. THESE DIFFERENCES WILL BE DESCRIBED BELOW.

TO MAXIMIZE CONVEYANCE, BOTH OPTIONS INCLUDE REMOVING NEGATIVE SLOPES AND CULVERTS THAT ARE CONSTRAINTS ON THE SYSTEM. THE SLOPE IS LIMITED TO ABOUT 0.03%, WITH THE VERTICAL ELEVATION FALL, FROM THE SW DAY ROAD CULVERT TO THE STORMWATER PIPES BENEATH TAXLOT 3S102CD00400, ONLY BEING ±1.1 FOOT, OVER A HORIZONTAL DISTANCE OF ±3,000 FEET.

TO MAXIMIZE STORAGE AND CAPACITY, THE CHANNEL IS WIDENED AT ELEVATION 223.0 TO CREATE A FLOODPLAIN. SIDE SLOPES ARE DESIGNED AT 2:1 TO MINIMIZE THE EXCAVATION FOOTPRINT. IN SOME LOCATIONS, STRUCTURED EARTH WALLS ARE PROPOSED TO FURTHER MINIMIZE THE PROJECT FOOTPRINT AND TO AVOID CONSTRAINTS SUCH AS EXISTING UTILITY POLES.

BOX CULVERTS ARE PROPOSED TO PROVIDE ACCESS TO THE EXISTING UTILITY POLES WHILE ALSO MAXIMIZING CONVEYANCE. THE EXISTING MAINTENANCE ROAD WILL BE RELOCATED TO ALLOW FOR THE EXCAVATION OF THE CHANNEL AND FLOODPLAIN.

BOTH OPTIONS INCLUDE A DETENTION POND ON TAXLOTS 3S102B000704 AND 3S102B000790, ADJACENT TO SW DAY ROAD, FOR ADDITIONAL STORAGE CAPACITY. THE BOTTOM ELEVATION OF THIS POND IS DESIGNED AT 223.0, EQUAL TO THE FLOODPLAIN DESIGNED IN THE CHANNEL PORTION OF THE PROJECT. THE SIDE SLOPES ARE DESIGNED AT 4:1. THE DETENTION POND WILL BE CONNECTED TO THE EXISTING DETENTION POND AND CHANNEL WITH A BOX CULVERT BENEATH THE EXISTING MAINTENANCE ROAD.

OPTION A

OPTION A CONTINUES EAST AT APPROXIMATELY STATION 14+50, THROUGH AN EXISTING WETLAND. TO MINIMIZE THE EXCAVATION FOOTPRINT IN THIS AREA, STRUCTURAL EARTH WALLS ARE PROPOSED TO ALLOW FOR STEEPER SLOPES, DESIGNED AT 0.25:1.

THE CHANNEL WILL CONTINUE TO TWO EXISTING 36" STORM PIPES THAT ARE INSTALLED BENEATH THE PARKING LOT OF TAXLOT 3S102CD00500. TO INCREASE CONVEYANCE, A THIRD 36" STORM PIPE IS PROPOSED TO BE CONSTRUCTED PARALLEL TO THE TWO EXISTING PIPES, WITHIN THE EXISTING PARKING LOT.

OPTION B

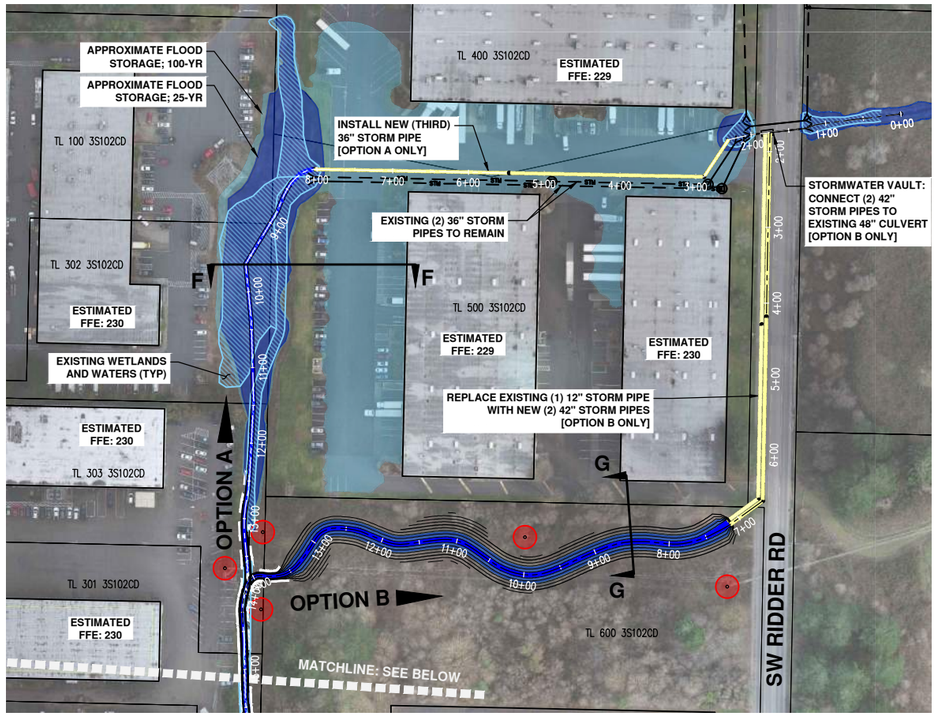
OPTION B VEERS SOUTH FROM OPTION A AT APPROXIMATELY STATION 14+50, THROUGH A PROPOSED CHANNEL ON TAXLOT 3S102CD00600. TO MINIMIZE THE FOOTPRINT NECESSARY TO CREATE A POSITIVE SLOPE TO SW RIDDER ROAD, THE CHANNEL DOES NOT INCLUDE FLOODPLAIN. THE CHANNEL SIDE SLOPES ARE DESIGNED AT 2:1.

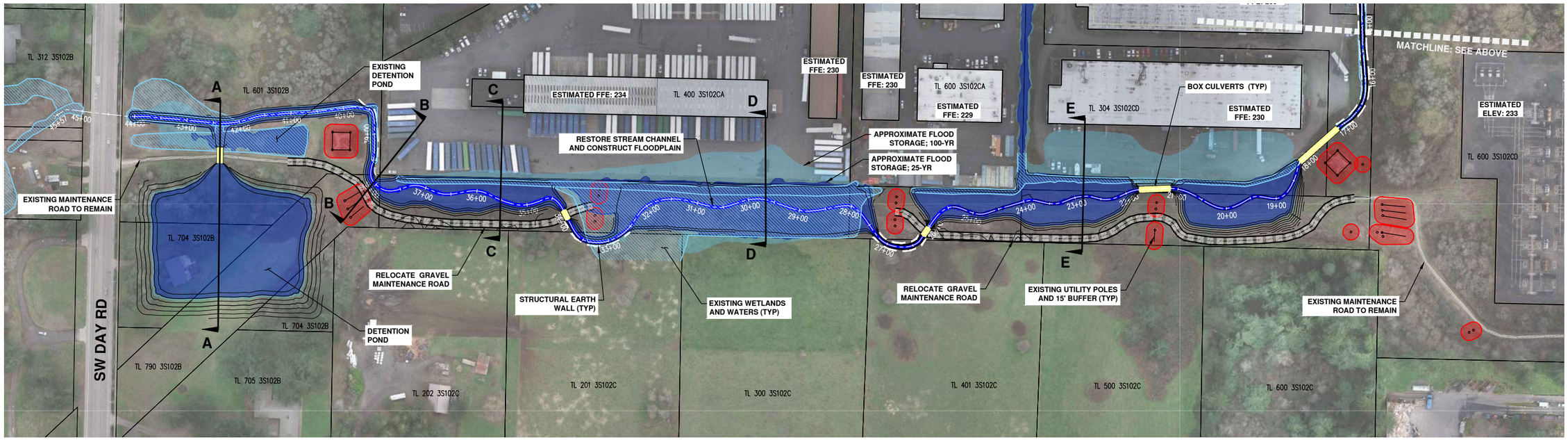
AT THE SOUTHERN TERMINUS OF THIS CHANNEL, THE CREEK WILL BE PIPED IN TWO PARALLEL 42" STORM PIPES INSTALLED IN THE NORTH LANE OF SW RIDDER ROAD. THESE PIPES WILL CONNECT TO THE EXISTING WESTERN 48" CULVERT BENEATH SW RIDDER ROAD. A CONCRETE VAULT IS PROPOSED TO MAKE THIS CONNECTION. THE EXISTING 12" STORM PIPE AND EXISTING MANHOLES IN SW RIDDER ROAD WILL BE REMOVED.

THE FUTURE WILLAMETTE WATER SUPPLY PROGRAM PIPELINE IS PROPOSED TO BE INSTALLED IN SW RIDDER ROAD. COORDINATION WITH THE ENTITIES INVOLVED WITH THIS PIPELINE PROJECT WILL BE NECESSARY.

NOTES:

1. FLOOD STORAGE ELEVATIONS FOR THE 25-YR AND 100-YR STORMS ARE BASED ON MODELING RESULTS FOR OPTIONS A-3 AND B-1, DESCRIBED IN THE FACILITY SITING ALTERNATIVES REPORT NARRATIVE.
2. DETENTION POND FLOOD STORAGE ELEVATIONS FOR THE 25-YR AND 100-YR STORMS ARE BASED ON MODELING RESULTS FOR OPTION A-4, DESCRIBED IN THE FACILITY SITING ALTERNATIVES REPORT NARRATIVE.





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JANUARY, 2019

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COFFEE CREEK STORMWATER FACILITY
WILSONVILLE OREGON

FACILITY SITING CONCEPTS OPTIONS A & B OVERVIEW

DESIGNED BY:	SRR
DRAWN BY:	SRR
MANAGED BY:	JPC
CHECKED BY:	JPC

DATE: 06/20/19

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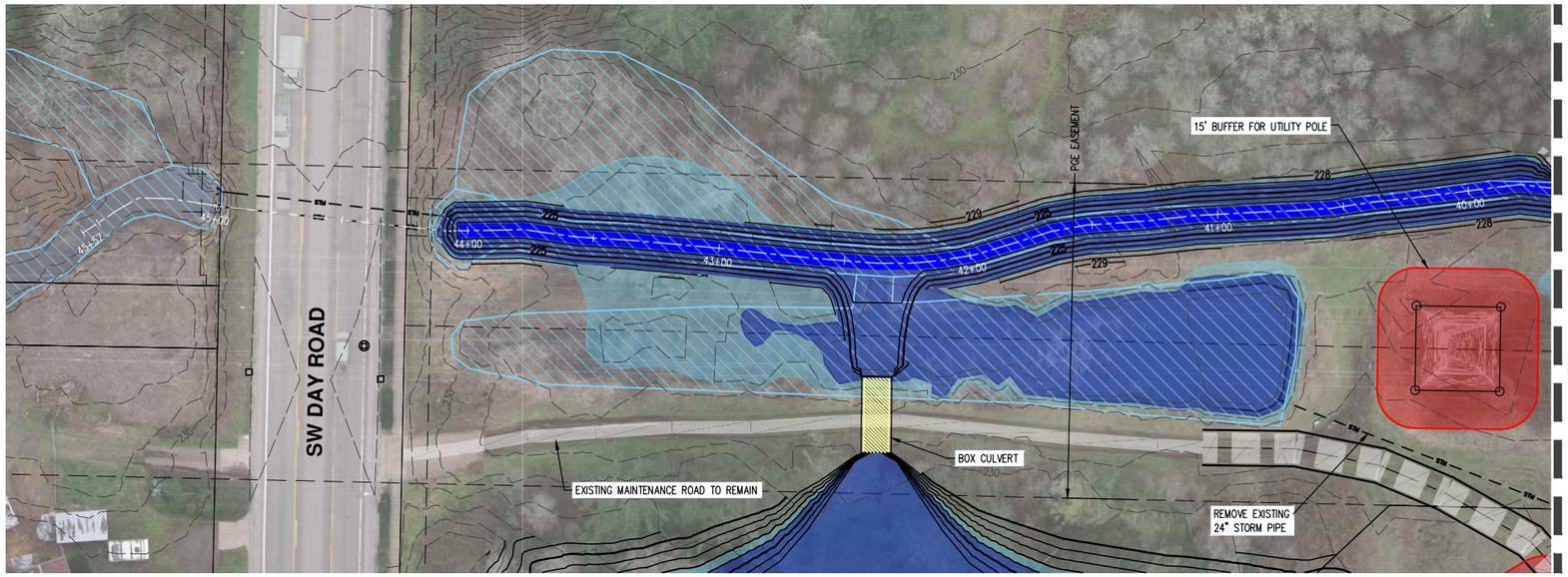

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- PROPOSED CHANNEL
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- APPROXIMATE FLOOD STORAGE; 100-YR
- STRUCTURAL EARTH WALL
- EXISTING UTILITY POLES AND 15' BUFFER

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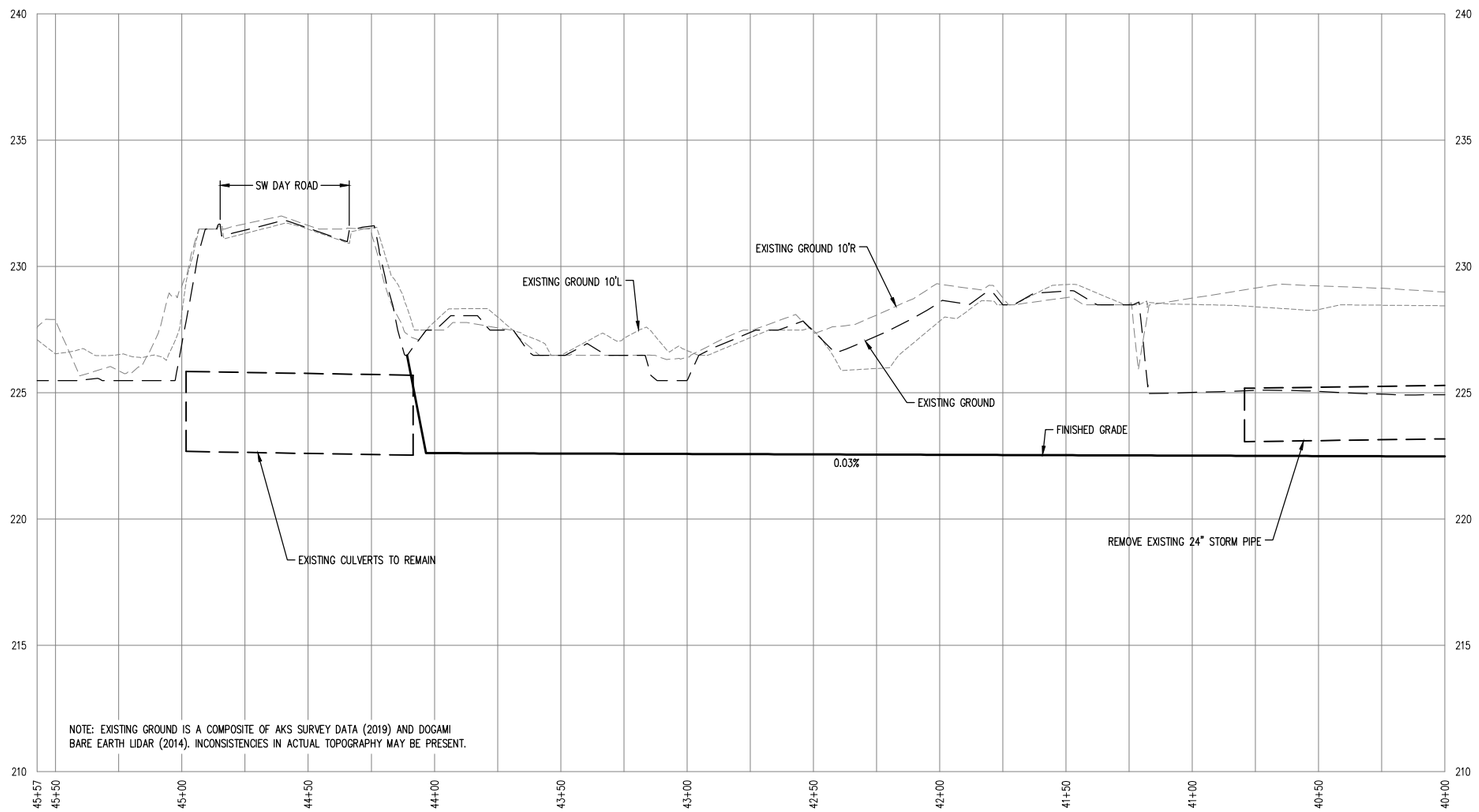
OPTIONS A & B



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PLAN AND PROFILE
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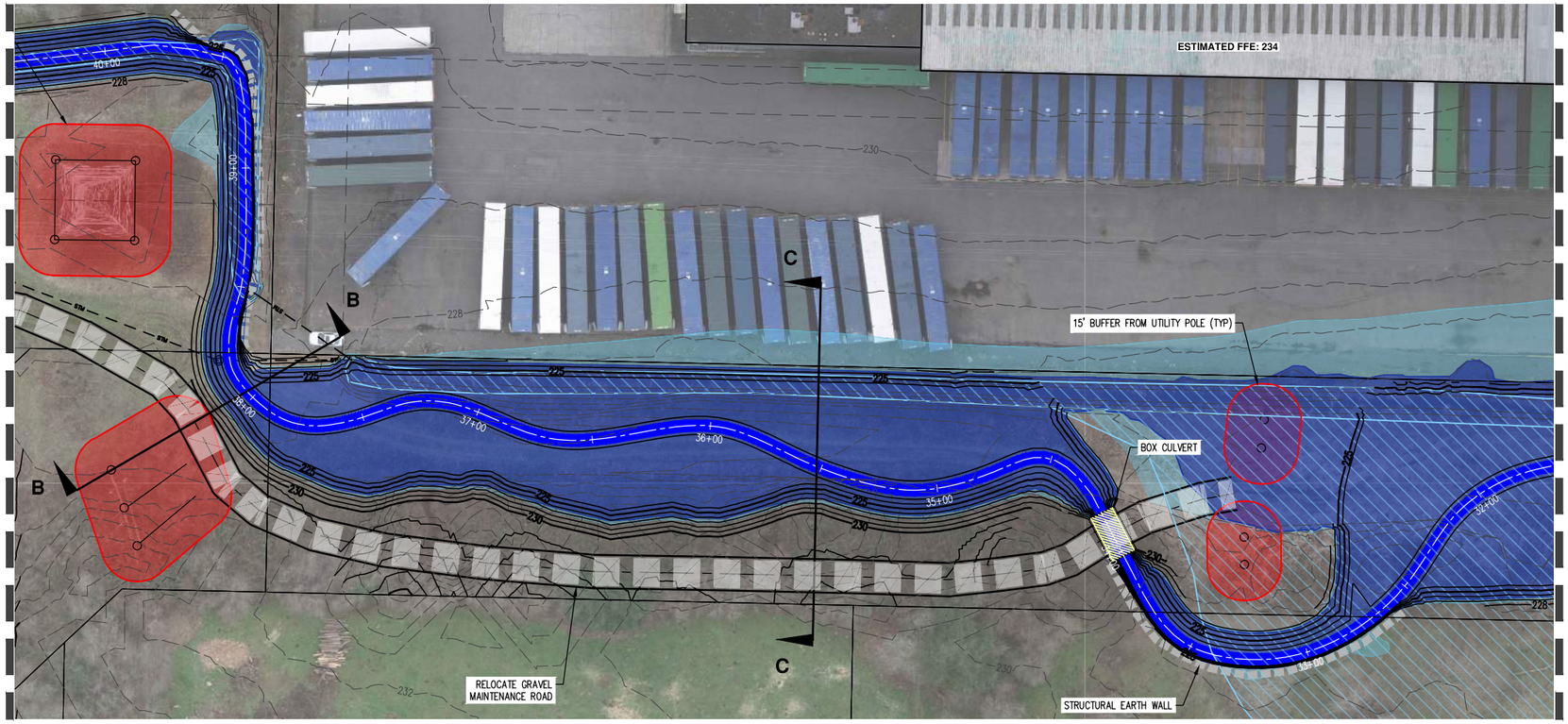

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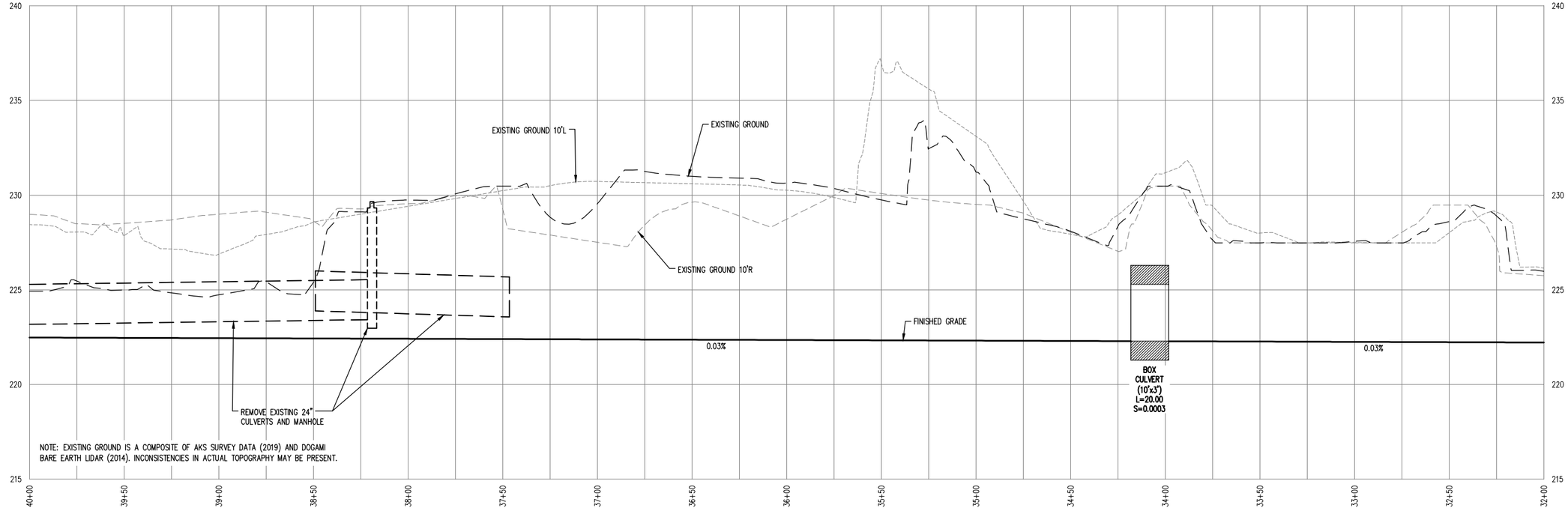

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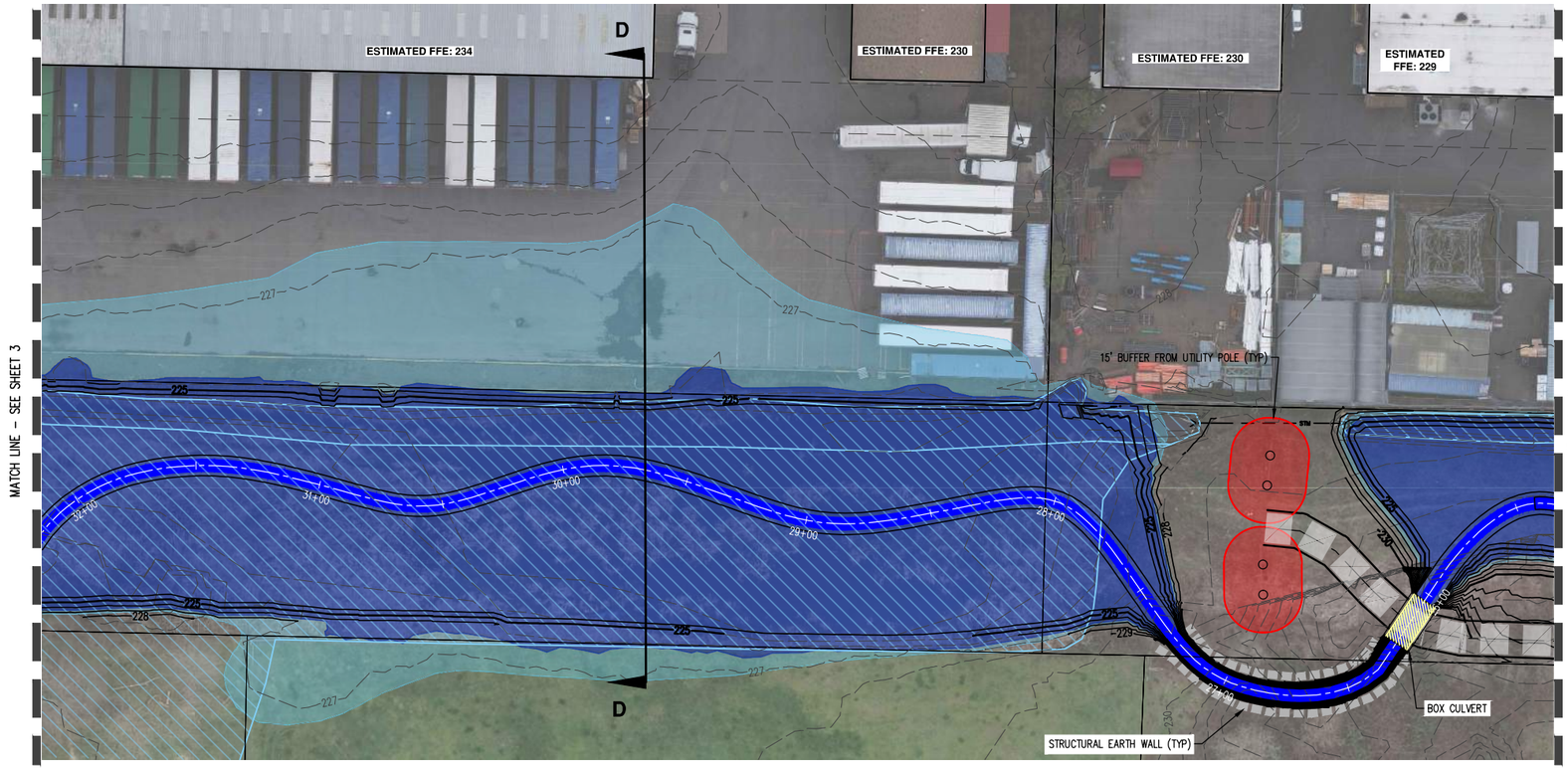

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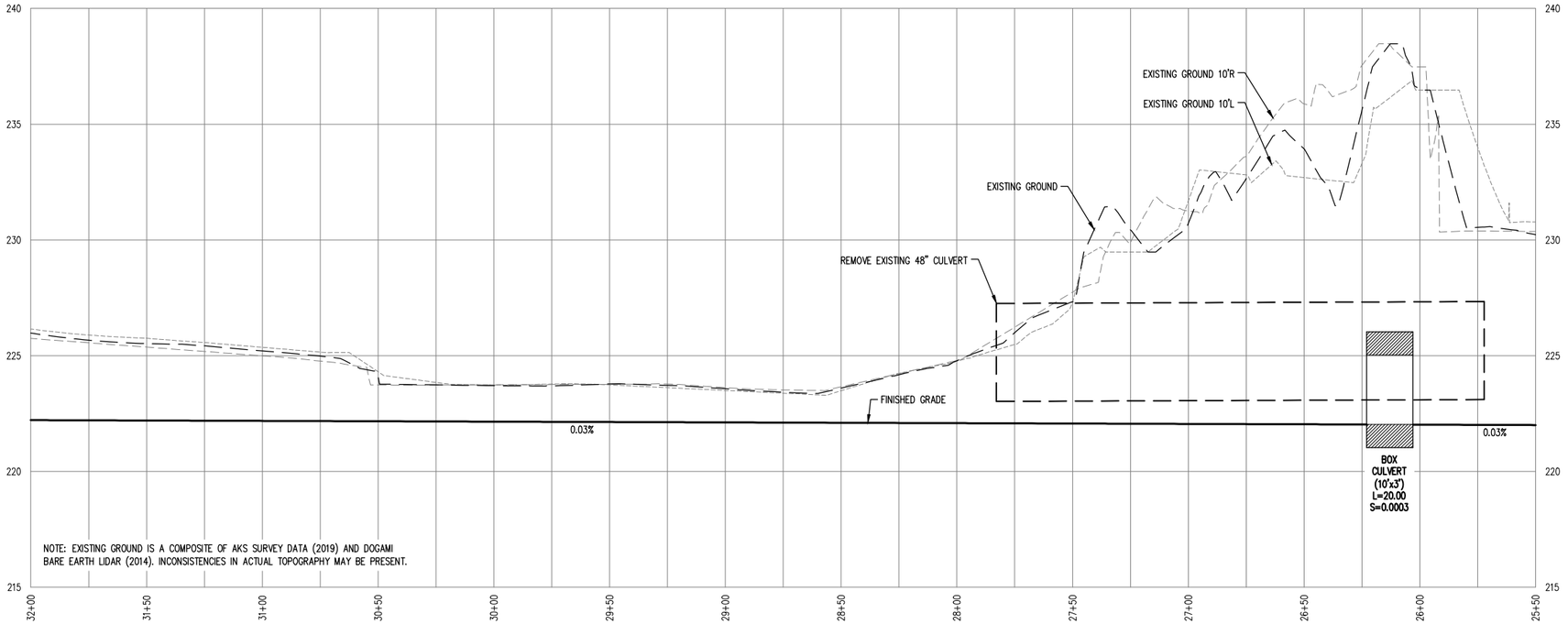

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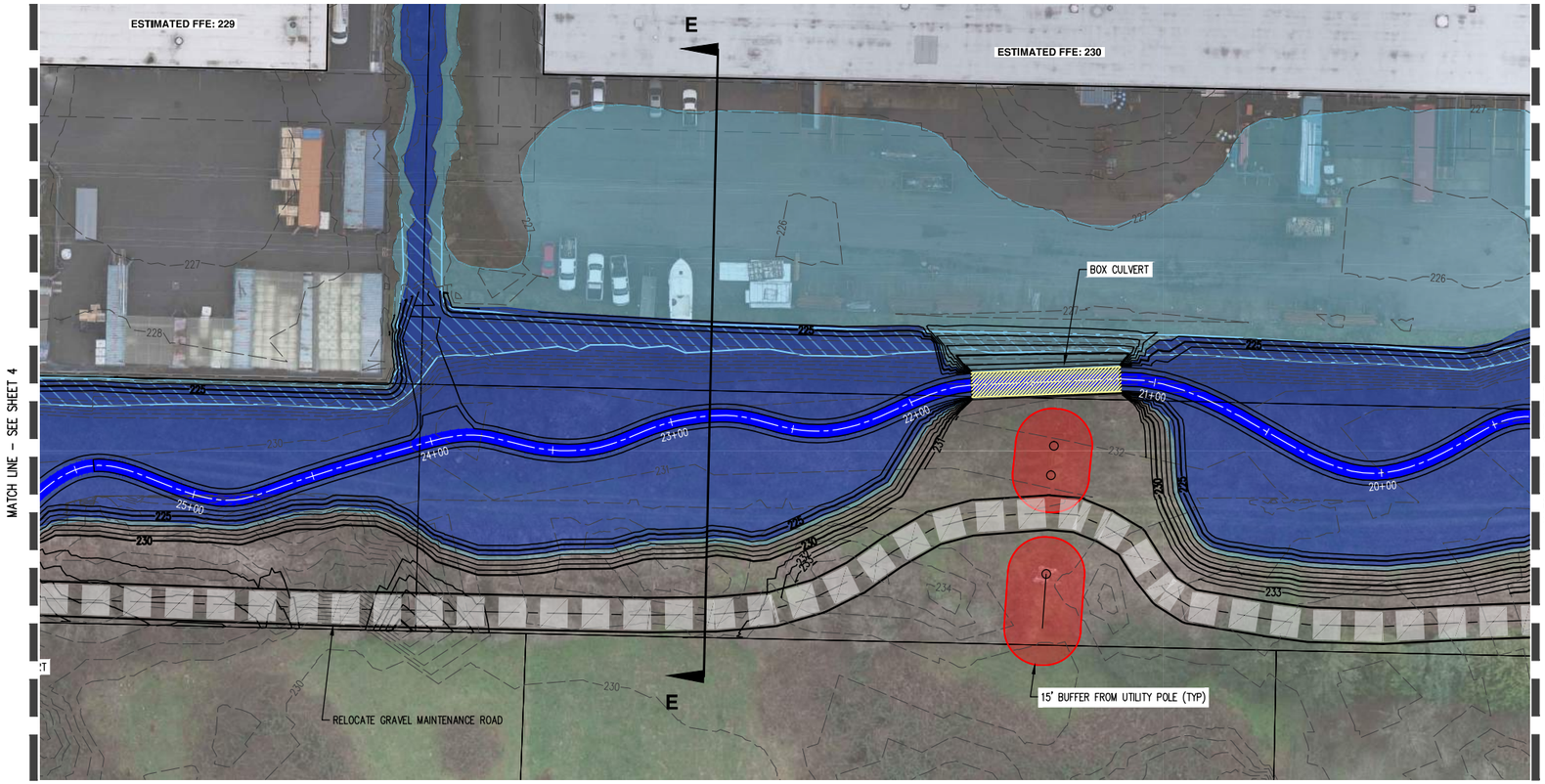

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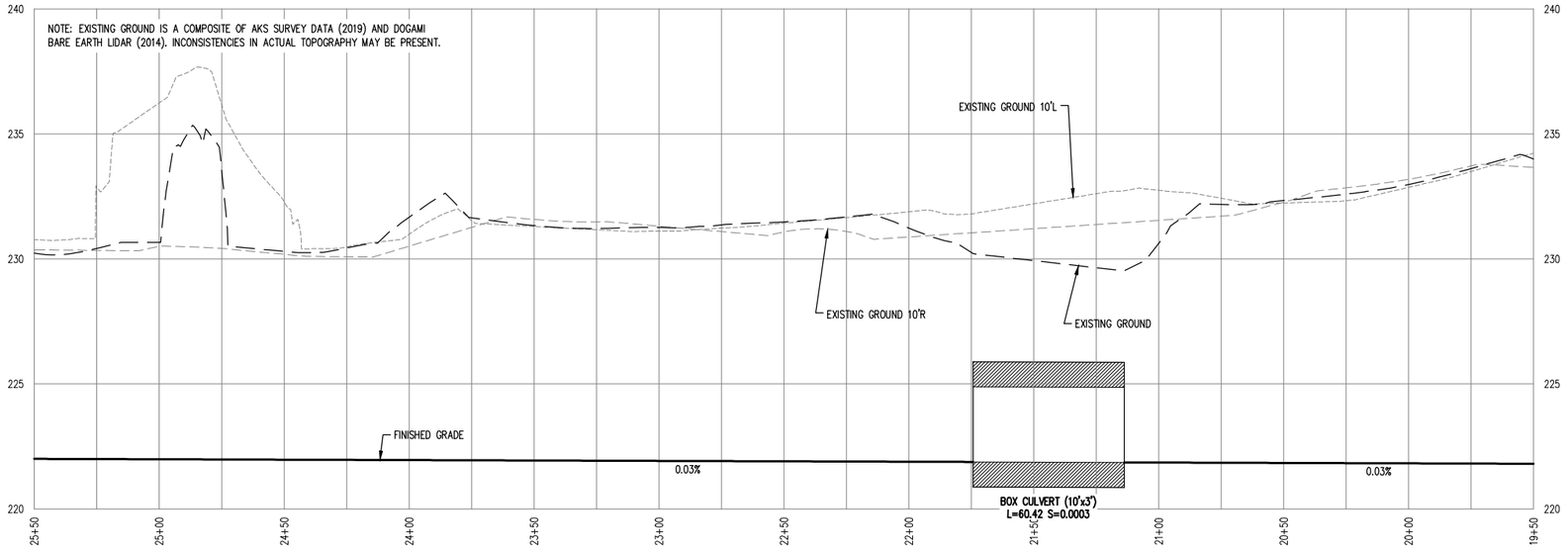

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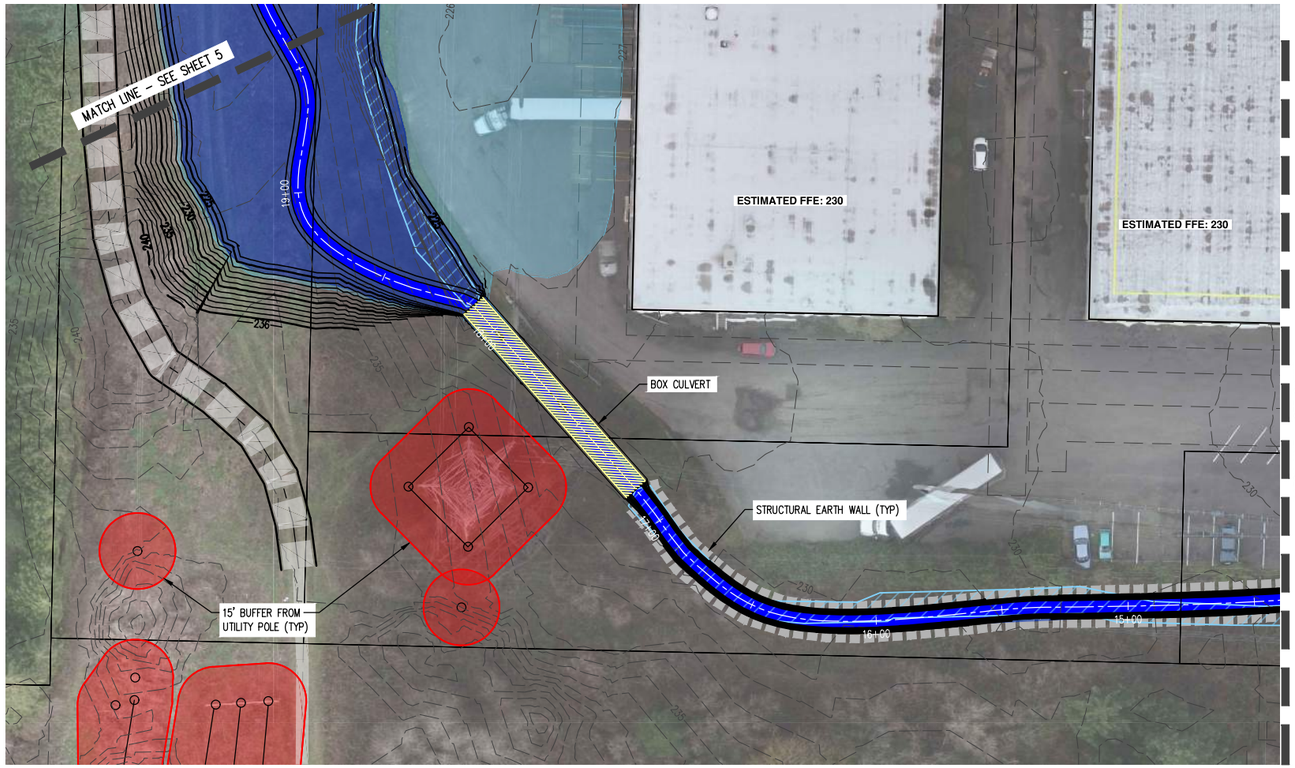

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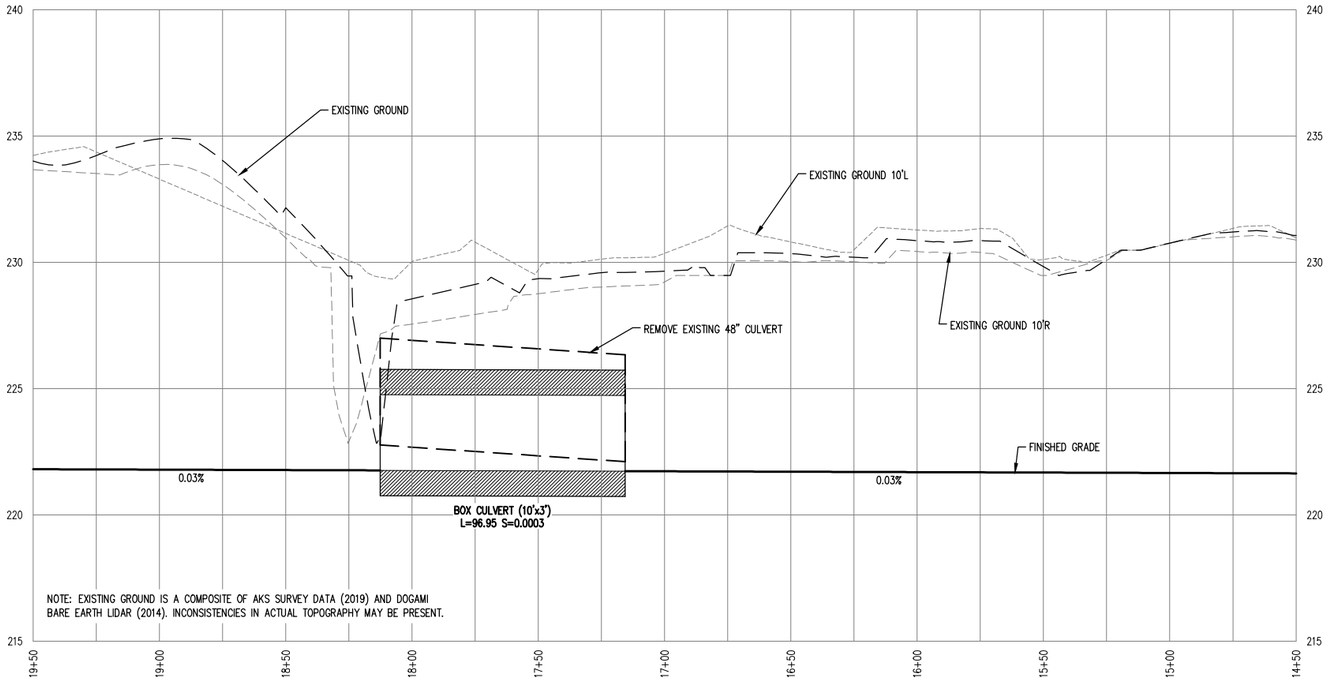

ALIGNMENT A & B PROFILE 14+50 – 19+50

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PLAN AND PROFILE
STA 13+00 - 19+50

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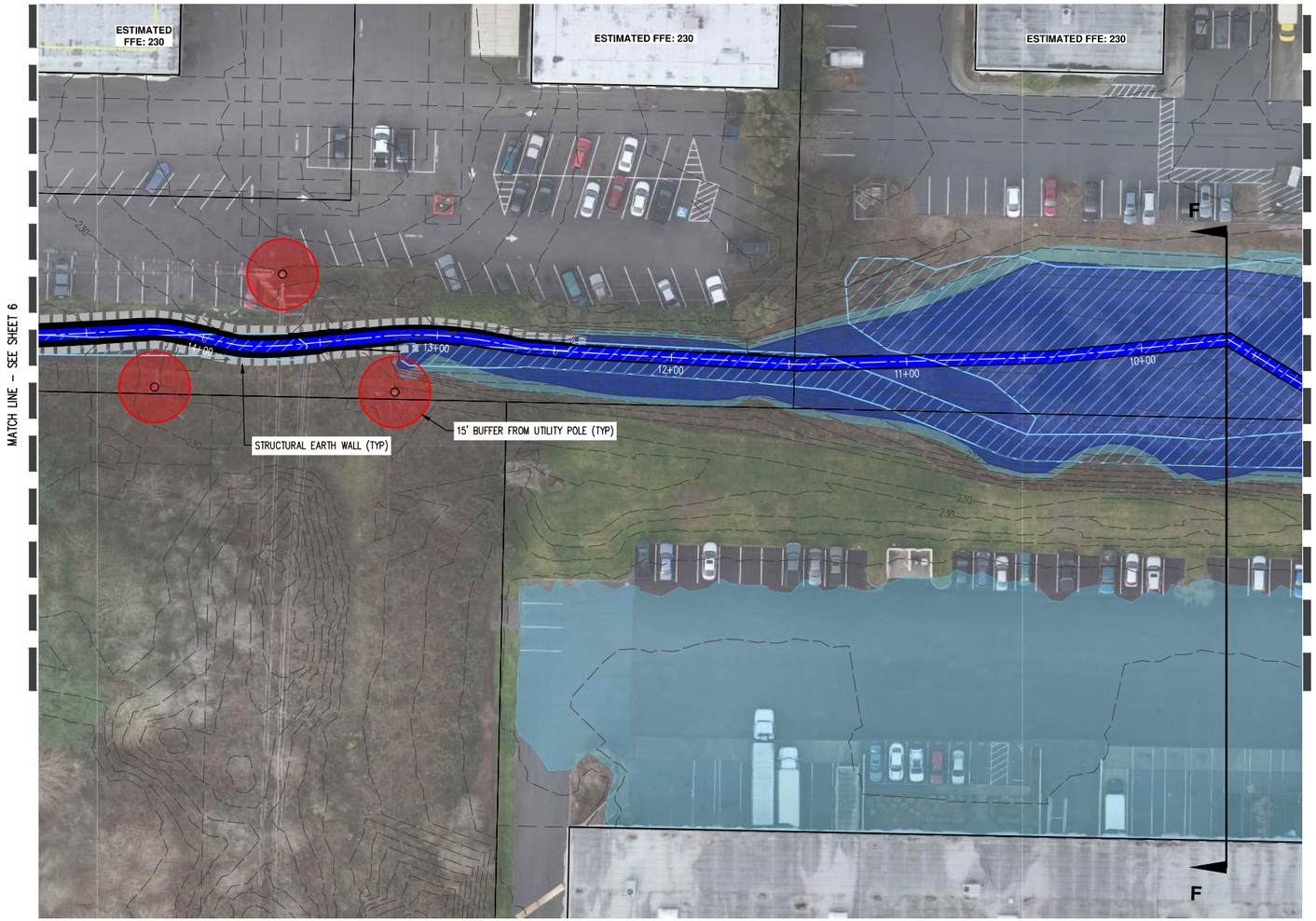

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- EXISTING UTILITY POLES AND 15' BUFFER

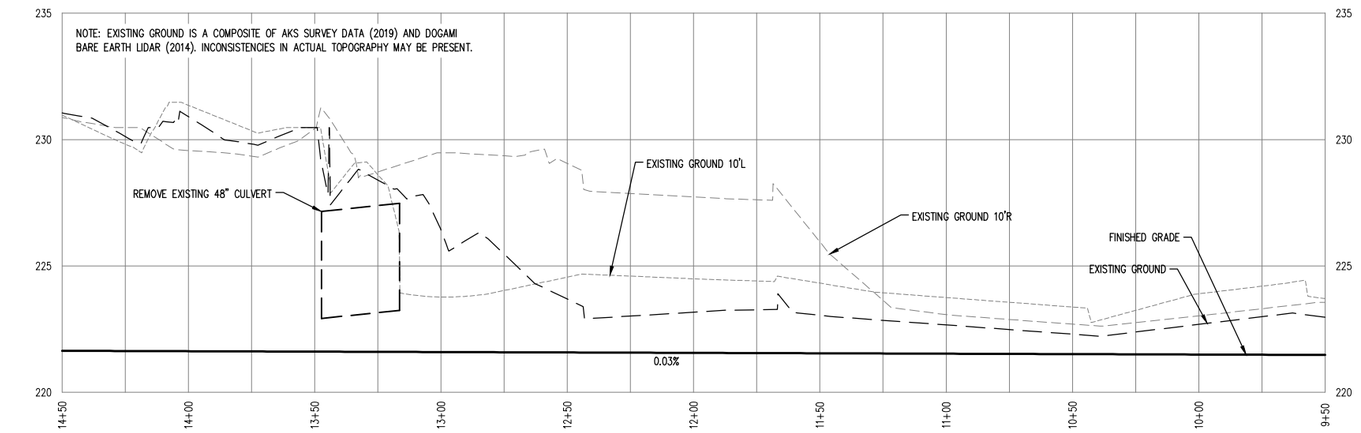
N

SCALE: 1"= 30 FEET

30 0 6 15 30

ORIGINAL PAGE SIZE: 22" x 34"

OPTION A



ALIGNMENT A PROFILE 9+50 – 14+50

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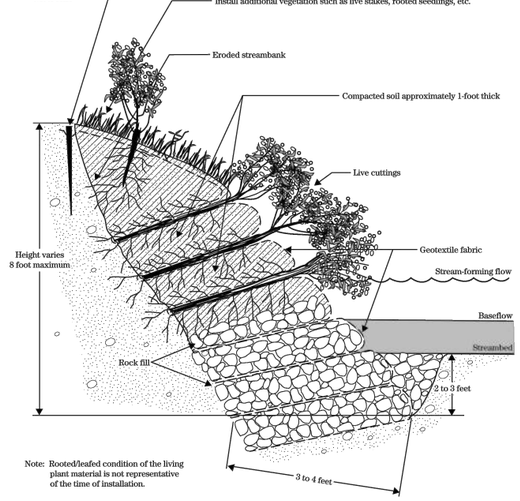

STRUCTURAL EARTH WALL

N.T.S.

SOURCE:
TUTTLE, RONALD W. AND RICHARD D. WENBERG. ENGINEERING FIELD HANDBOOK; CHAPTER 16, STREAMBANK AND SHORELINE PROTECTION. WASHINGTON, D.C.: U.S. DEPT. OF AGRICULTURE, NATURAL RESOURCES CONSERVATION SERVICE, 1996.
HTTPS://DIRECTIVES.SC.EGOV.USDA.GOV/OPENNONWEBCONTENT.ASPX?CONTENT=17553.WBA

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COFFEE CREEK STORMWATER FACILITY
WILSONVILLE OREGON

FACILITY SITING CONCEPTS
PLAN AND PROFILE
STA 9+50 - 14+50

DESIGNED BY:	SRR
DRAWN BY:	GMB
MANAGED BY:	JPC
CHECKED BY:	JPC
DATE: 06/20/19	

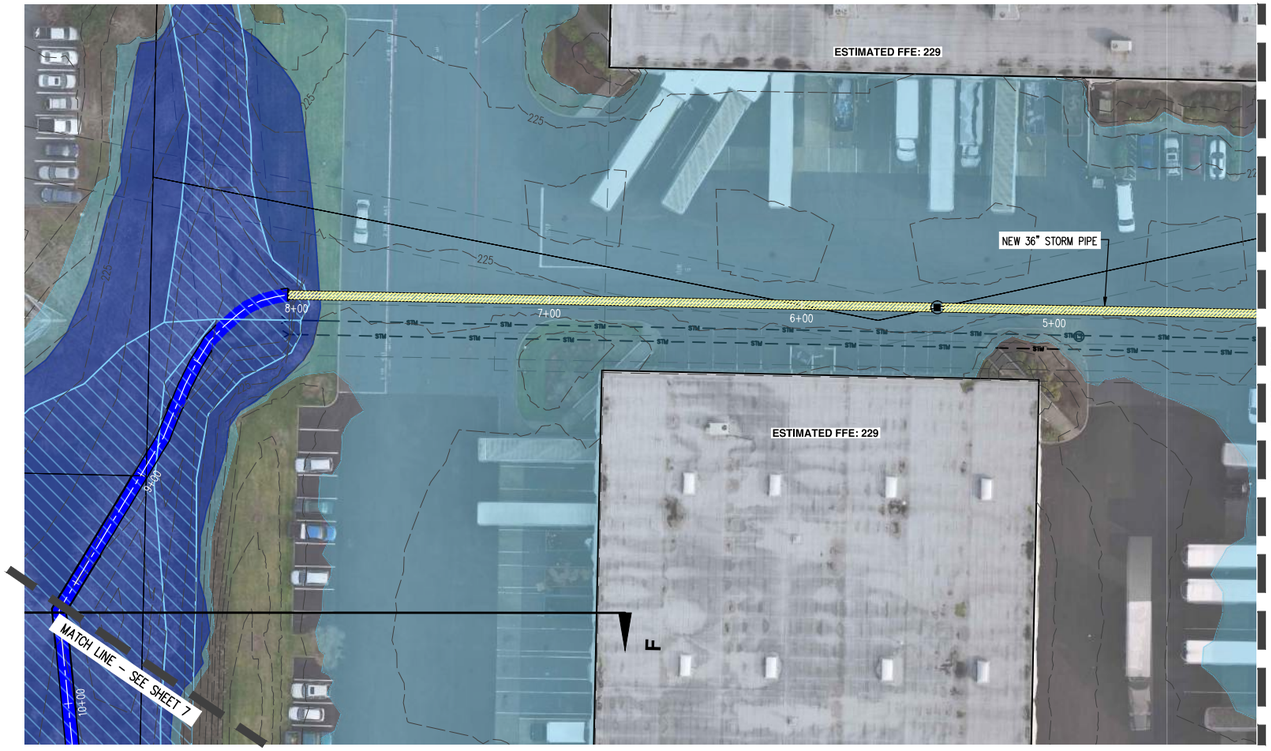
NOT FOR CONSTRUCTION

REVISIONS

JOB NUMBER
7076

SHEET
882

AKS DRAWING FILE: 7076 PLAN & PROFILE A ALIGNMENT.DWG | LAYOUT: SHEET 7



N

SCALE: 1"= 30 FEET

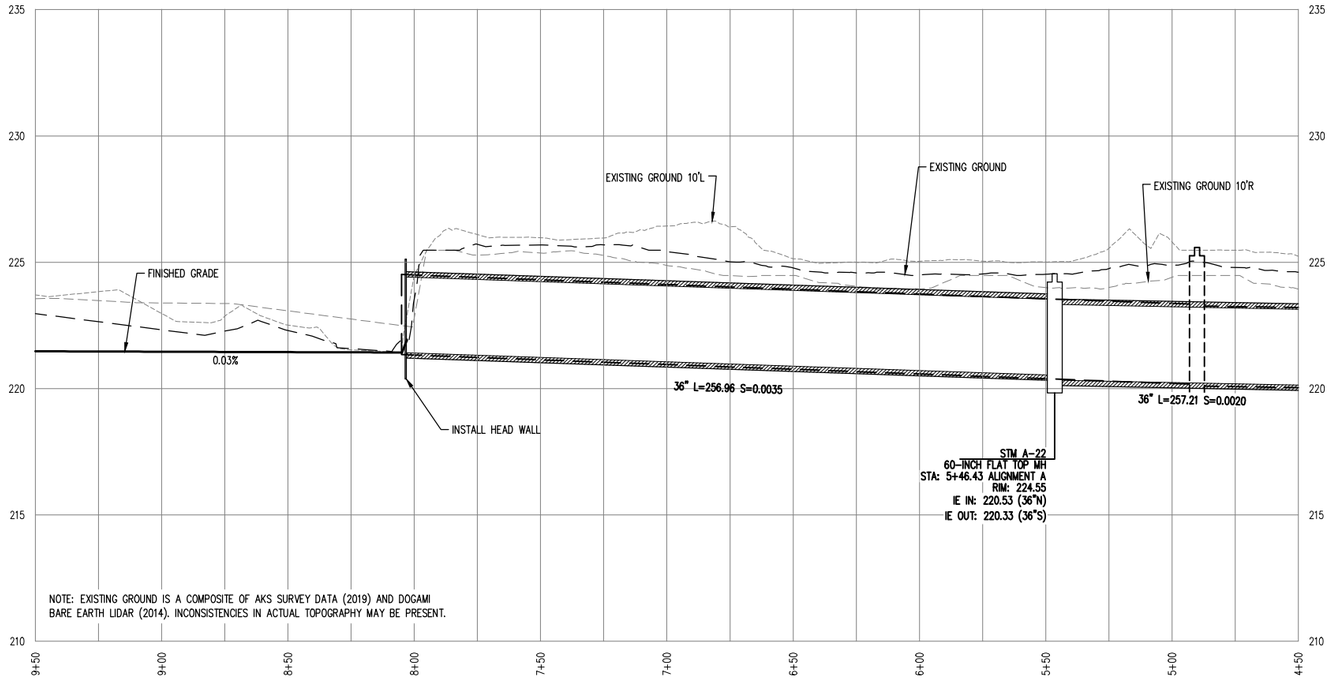
30 0 6 15 30

ORIGINAL PAGE SIZE: 22" x 34"

OPTION A

LEGEND

- EXISTING STORM LINE — STM
- FINISHED GOUND CONTOUR (1') — 170
- FINISHED GROUND CONTOUR (5') — 170
- EXISTING GROUND CONTOUR (1') — 170
- EXISTING GROUND CONTOUR (5') — 170
- PROPOSED STORM LINE/CULVERT
- EXISTING WETLANDS AND WATERS
- PROPOSED CHANNEL
- APPROXIMATE FLOOD STORAGE; 25-YR STORM
- APPROXIMATE FLOOD STORAGE; 100-YR
- STRUCTURAL EARTH WALL
- EXISTING UTILITY POLES AND 15' BUFFER



ALIGNMENT A PROFILE 4+50 – 9+50

HOR: 1"= 30'

VERT: 1"= 3'

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FACILITY SITING CONCEPTS PLAN AND PROFILE STA 4+50 - 9+50

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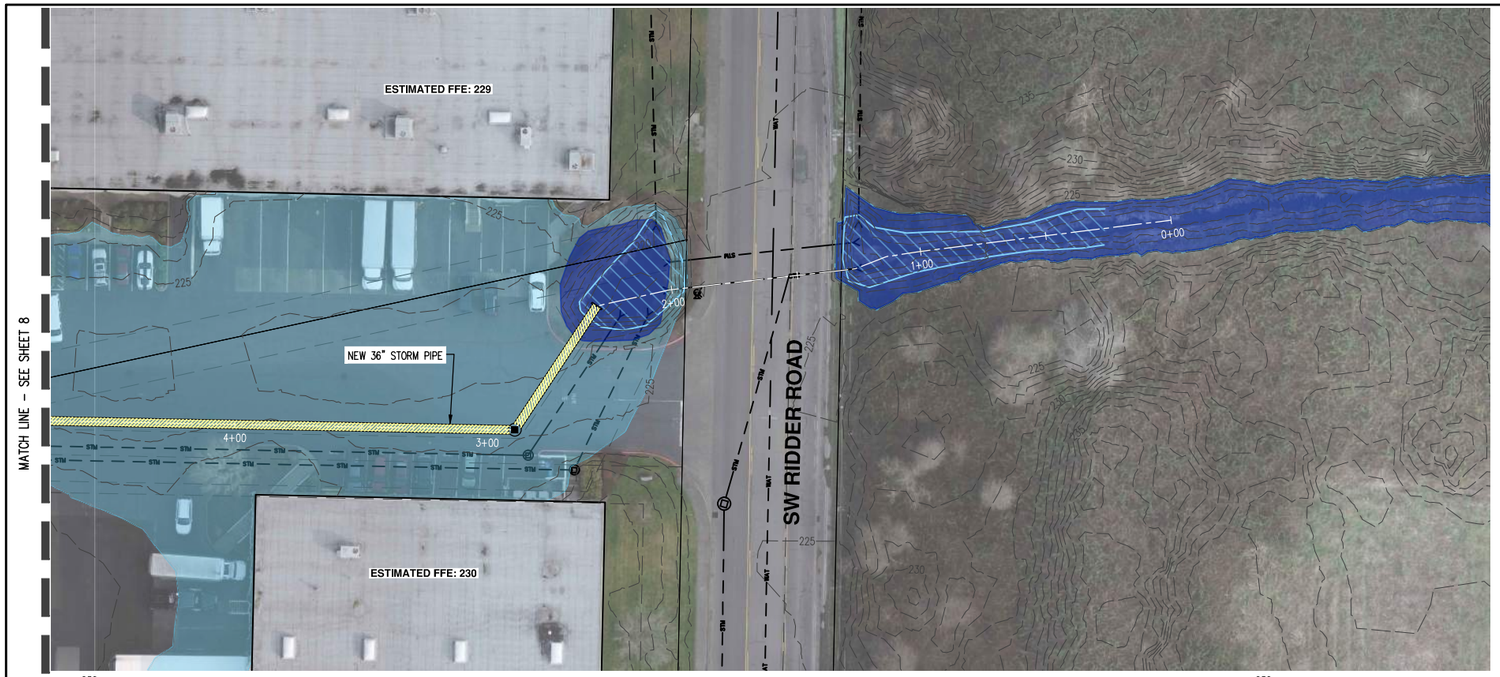
REVISIONS

JOB NUMBER 7076

SHEET 883

AKS DRAWING FILE: 7076 PLAN & PROFILE A ALIGNMENT.DWG | LAYOUT: SHEET 8



SCALE: 1"= 30 FEET

30 0 6 15 30

ORIGINAL PAGE SIZE: 22" x 34"

OPTION A

LEGEND

- EXISTING STORM LINE — STM
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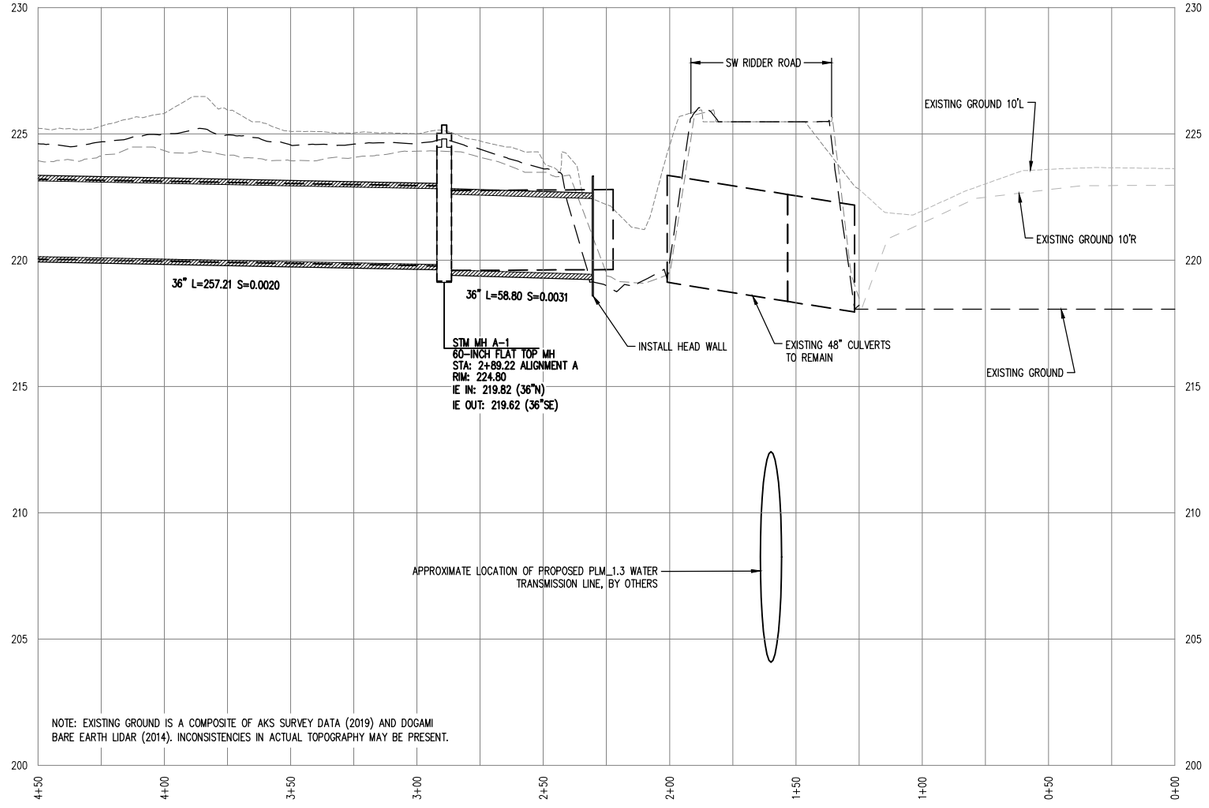

ALIGNMENT A PROFILE 0+00 – 4+50

HOR: 1"= 30'

VERT: 1"= 3'

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WILSONVILLE OREGON

FACILITY SITING CONCEPTS PLAN AND PROFILE STA 0+00 - 4+50

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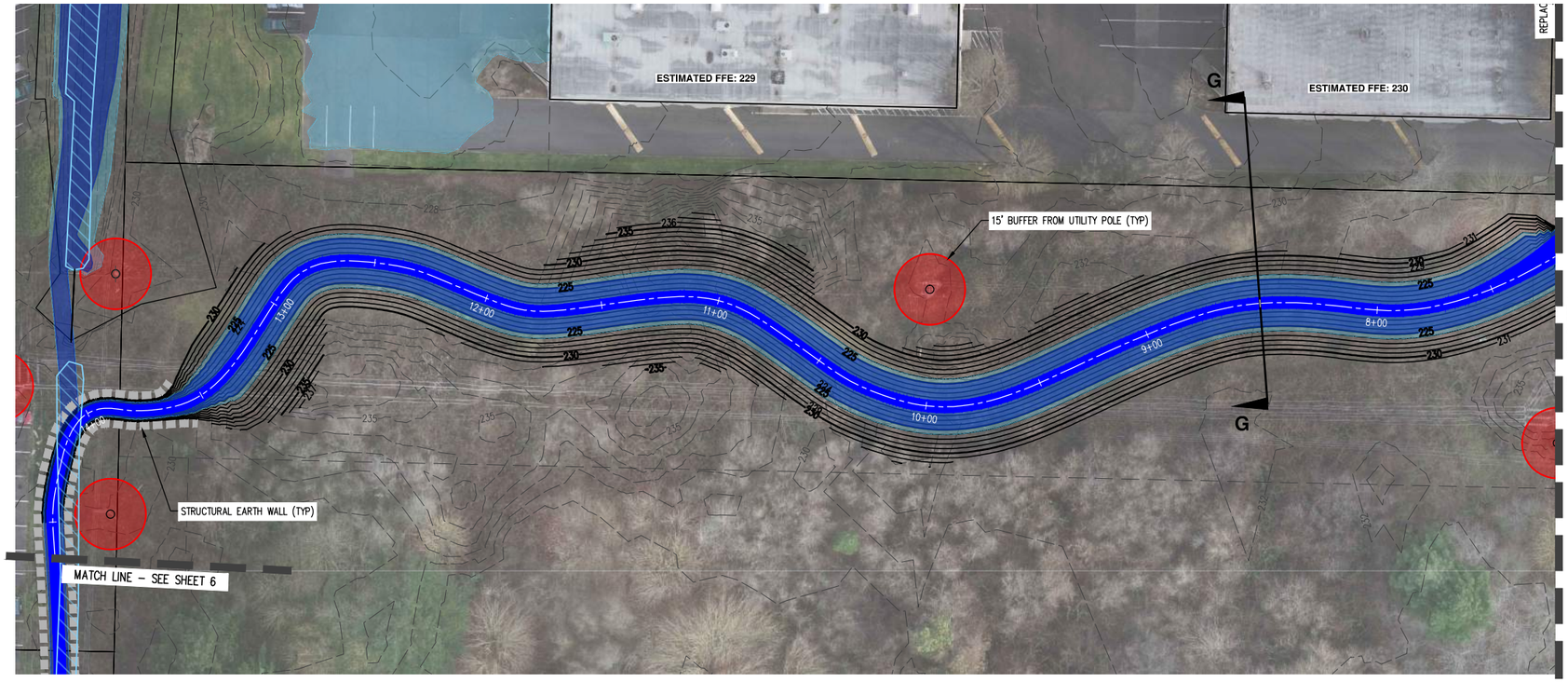
REVISIONS

JOB NUMBER 7076

SHEET 884

AKS DRAWING FILE: 7076 PLAN & PROFILE A ALIGNMENT.DWG | LAYOUT: SHEET 9



LEGEND

- EXISTING STORM LINE — STM
- FINISHED GOUND CONTOUR (1') — 170
- FINISHED GROUND CONTOUR (5') — 170
- EXISTING GROUND CONTOUR (1') — 170
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- PROPOSED CHANNEL
- APPROXIMATE FLOOD STORAGE; 25-YR STORM
- APPROXIMATE FLOOD STORAGE; 100-YR
- STRUCTURAL EARTH WALL
- EXISTING UTILITY POLES AND 15' BUFFER

N

SCALE: 1" = 30 FEET

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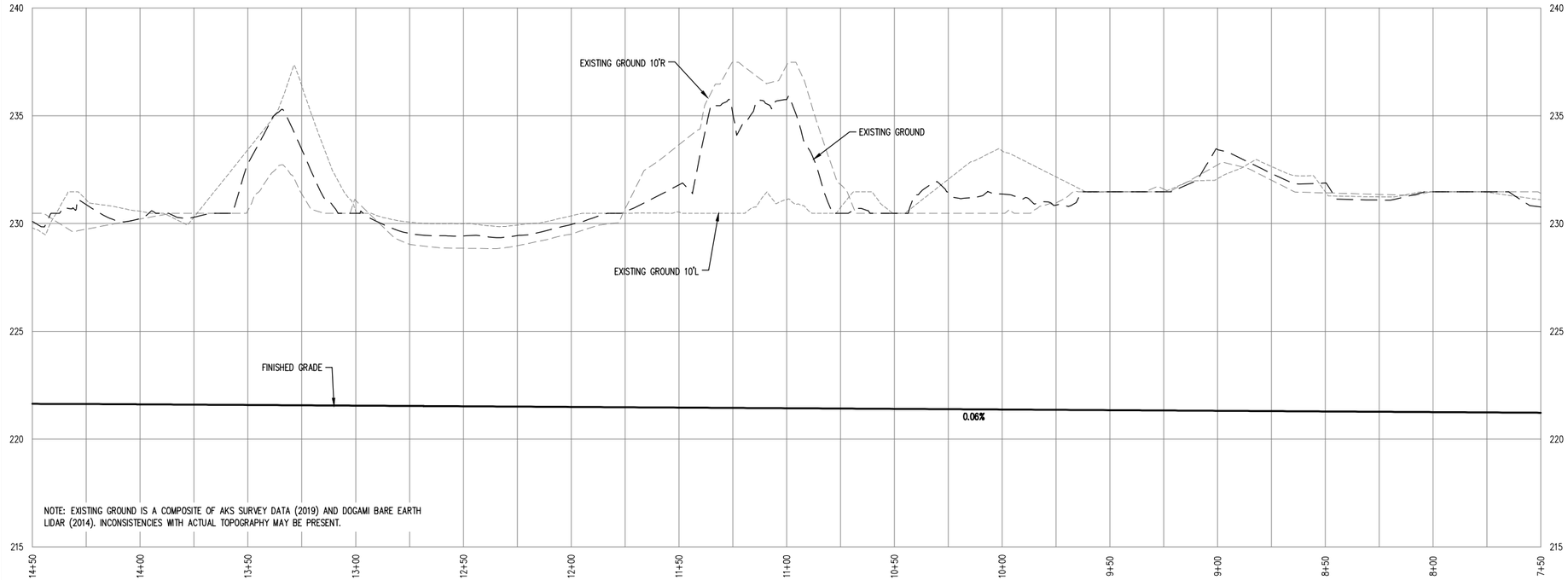
ORIGINAL PAGE SIZE: 22" x 34"

OPTION B



ALIGNMENT B PROFILE 7+50 – 14+50

HOR: 1"= 30'

VERT: 1"= 3'

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PLAN AND PROFILE
STA 7+50 - 14+50

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JOB NUMBER
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SHEET
10

AKS DRAWING FILE: 7076 PLAN & PROFILE B ALIGNMENT.DWG | LAYOUT: SHEET 10

LEGEND

- EXISTING STORM LINE
- FINISHED GOUND CONTOUR (1')
- FINISHED GROUND CONTOUR (5')
- EXISTING GROUND CONTOUR (1')
- EXISTING GROUND CONTOUR (5')
- PROPOSED STORM LINE/CULVERT
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- STRUCTURAL EARTH WALL
- EXISTING UTILITY POLES AND 15' BUFFER

N

SCALE: 1"= 30 FEET

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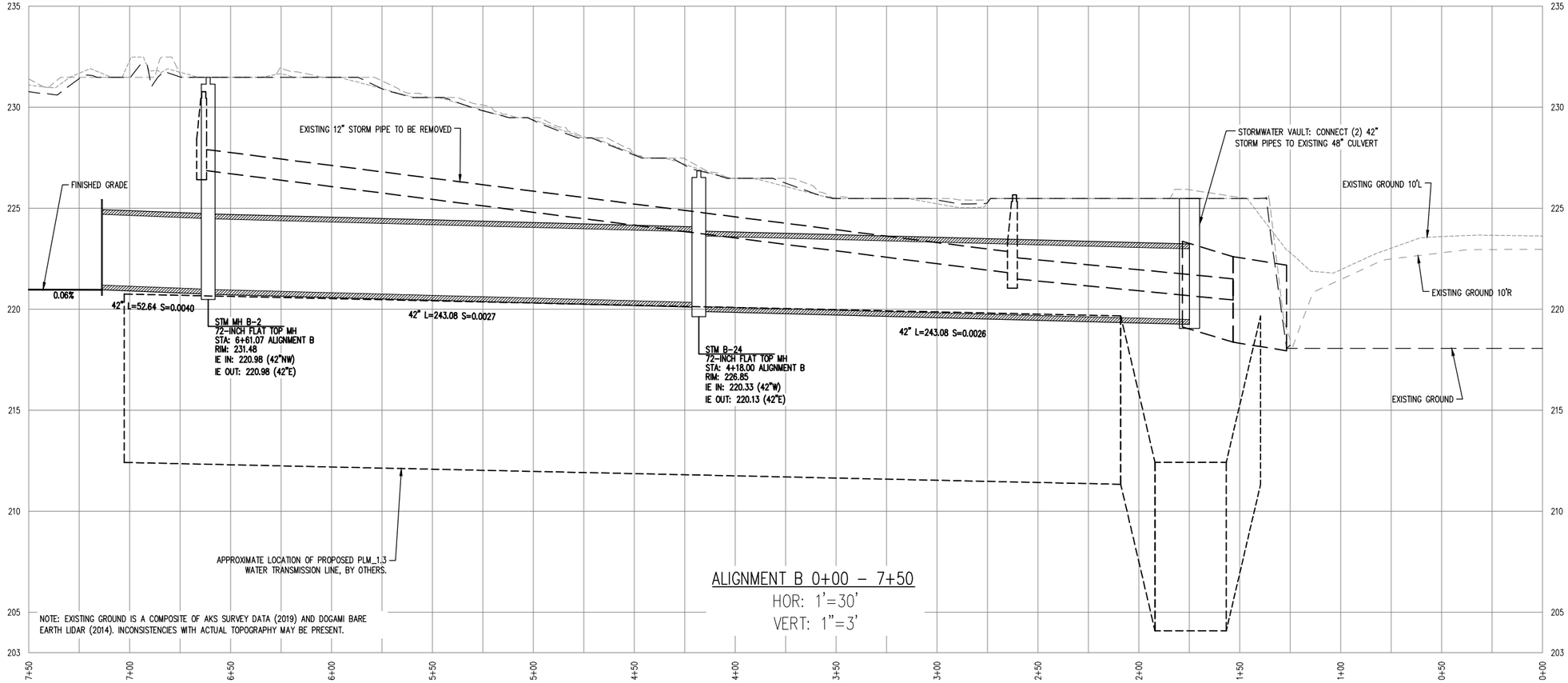
ORIGINAL PAGE SIZE: 22" x 34"

OPTION B



ALIGNMENT B 0+00 – 7+50

HOR: 1'=30'

VERT: 1"=3'

NOTE: EXISTING GROUND IS A COMPOSITE OF AKS SURVEY DATA (2019) AND DOGAMI BARE EARTH LIDAR (2014). INCONSISTENCIES WITH ACTUAL TOPOGRAPHY MAY BE PRESENT.

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COFFEE CREEK STORMWATER FACILITY

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FACILITY SITING CONCEPTS PLAN AND PROFILE STA 0+00 - 7+50

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REVISIONS

JOB NUMBER 7076

SHEET 11

AKS DRAWING FILE: 7076 PLAN & PROFILE B ALIGNMENT.DWG | LAYOUT: SHEET 11

LEGEND

- EXISTING STORM LINE — STM
- FINISHED GOUND CONTOUR (1') — 170
- FINISHED GROUND CONTOUR (5') — 170
- EXISTING GROUND CONTOUR (1') — 170
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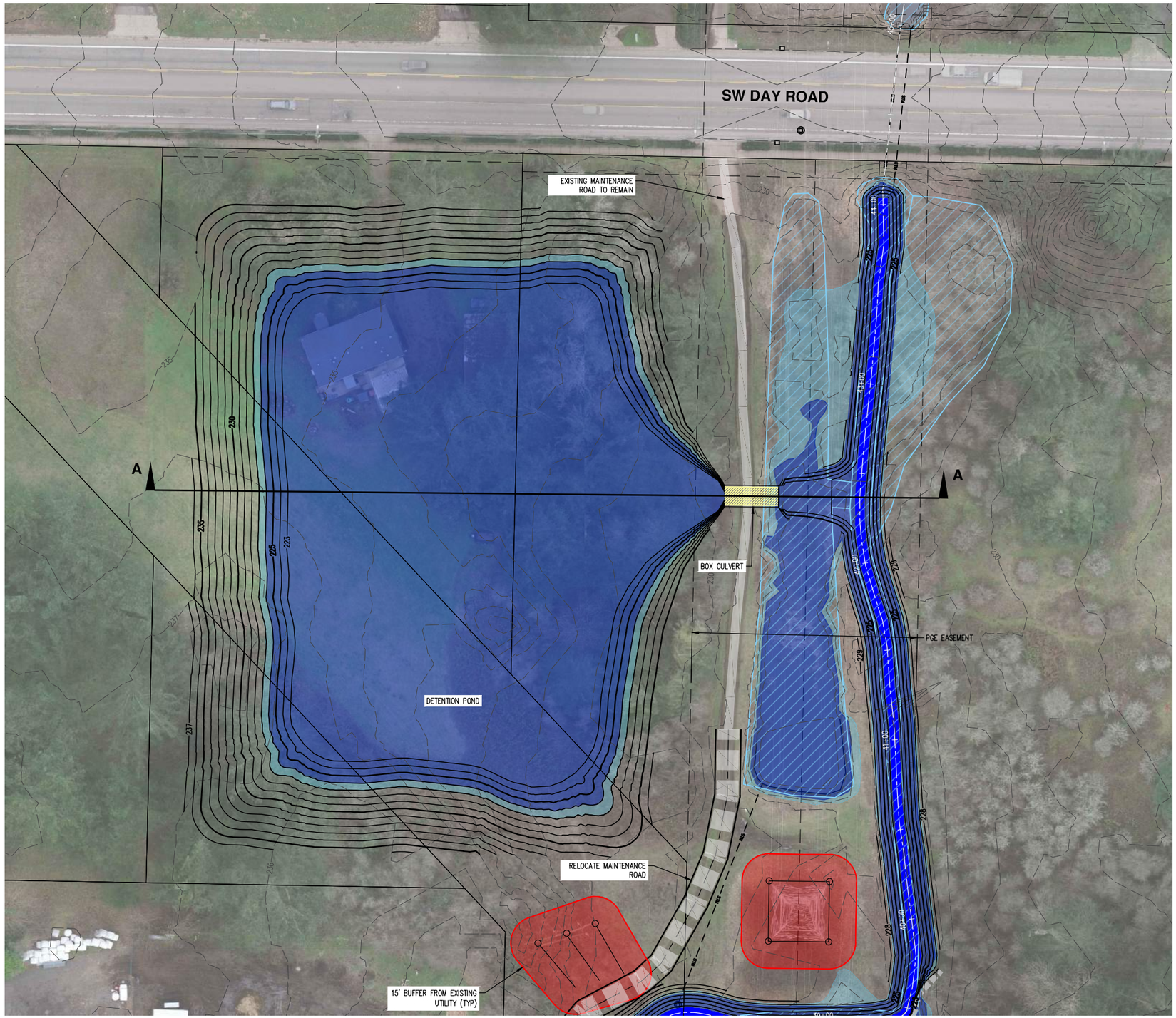

OPTIONS A & B

N

SCALE: 1"= 30 FEET

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ORIGINAL PAGE SIZE: 22" x 34"

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COFFEE CREEK STORMWATER FACILITY
WILSONVILLE OREGON

FACILITY SITING CONCEPTS
DETENTION POND

DESIGNED BY:	SRR
DRAWN BY:	GMB
MANAGED BY:	JPC
CHECKED BY:	JPC

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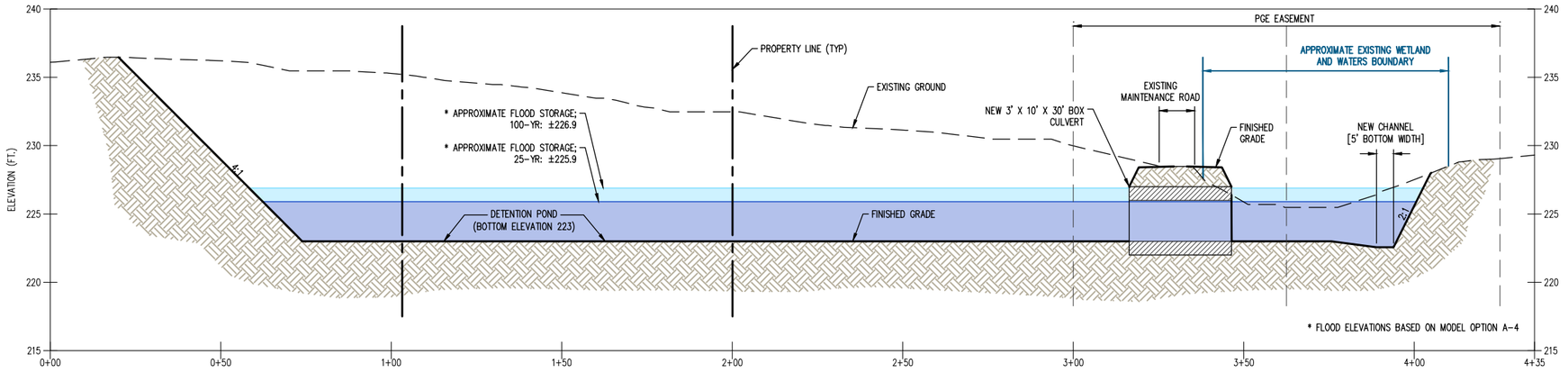
REVISIONS

JOB NUMBER 7076

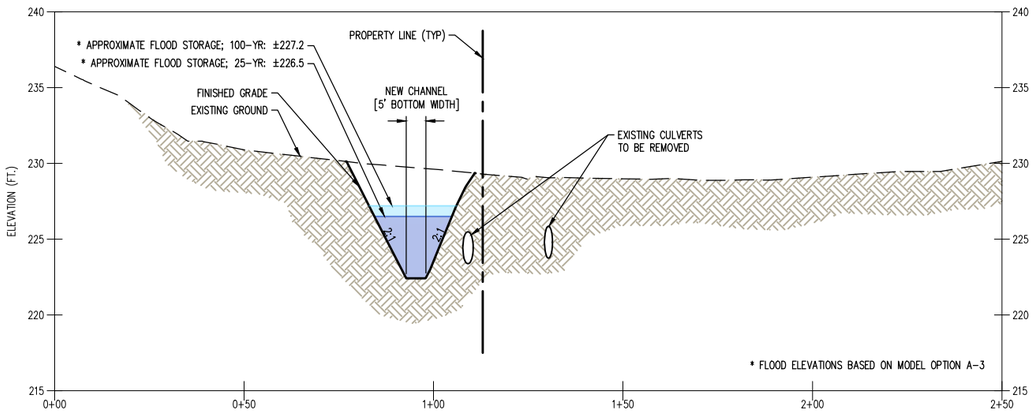
SHEET 12

AKS DRAWING FILE: 7076 PLAN & PROFILE A ALIGNMENT.DWG | LAYOUT: SHEET 12

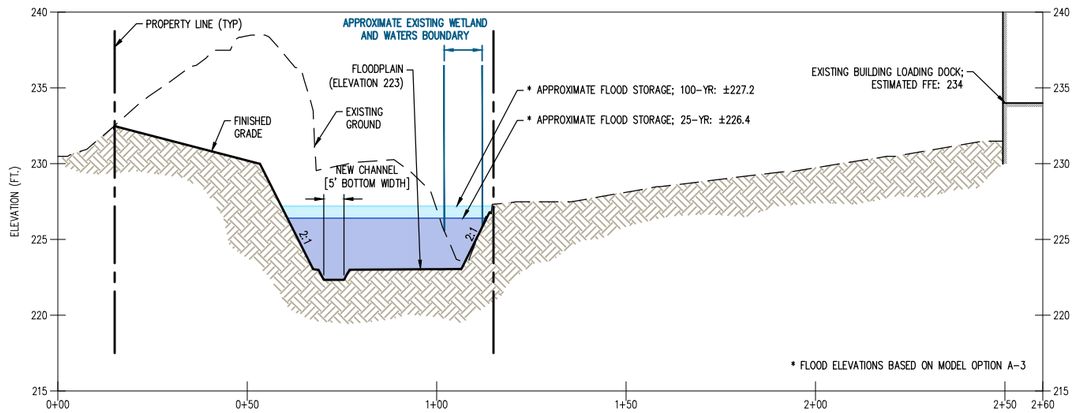


CROSS-SECTION A
Hor. Scale: 1"= 20'
Vert. Scale: 1"= 5'

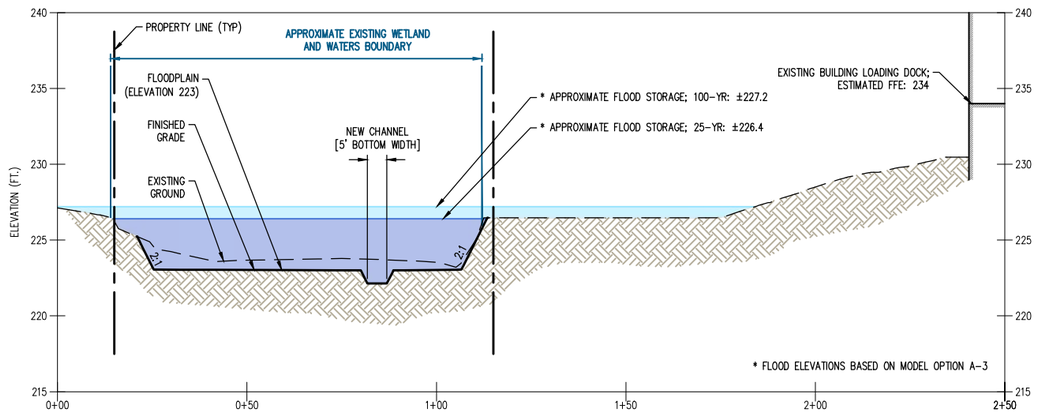
NOTE: EXISTING GROUND IS A COMPOSITE OF AKS SURVEY DATA (2019) AND DOGAMI BARE EARTH LIDAR (2014). INCONSISTENCIES WITH ACTUAL TOPOGRAPHY MAY BE PRESENT.



CROSS-SECTION B
Hor. Scale: 1"= 20'
Vert. Scale: 1"= 5'



CROSS-SECTION C
Hor. Scale: 1"= 20'
Vert. Scale: 1"= 5'



CROSS-SECTION D
Hor. Scale: 1"= 20'
Vert. Scale: 1"= 5'

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COFFEE CREEK STORMWATER FACILITY
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FACILITY SITING CONCEPTS CROSS-SECTIONS

DESIGNED BY:	SRR
DRAWN BY:	SRR
MANAGED BY:	JPC
CHECKED BY:	JPC
DATE: 06/20/19	

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REVISIONS

JOB NUMBER
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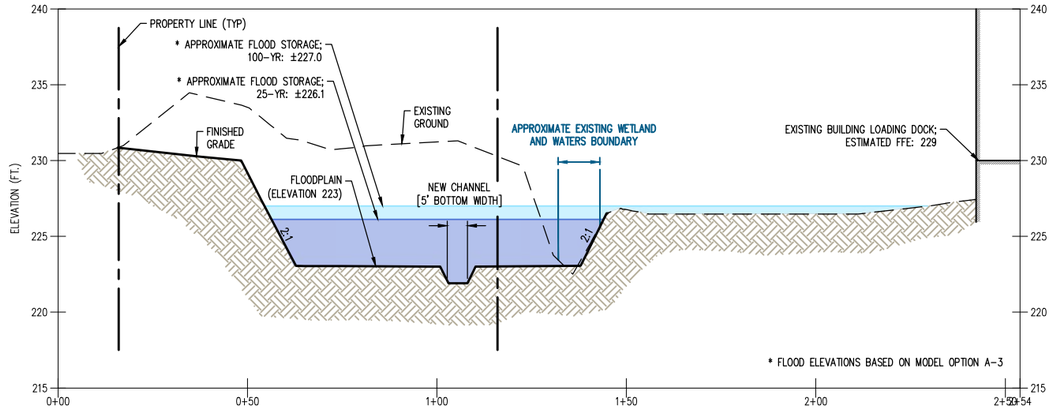
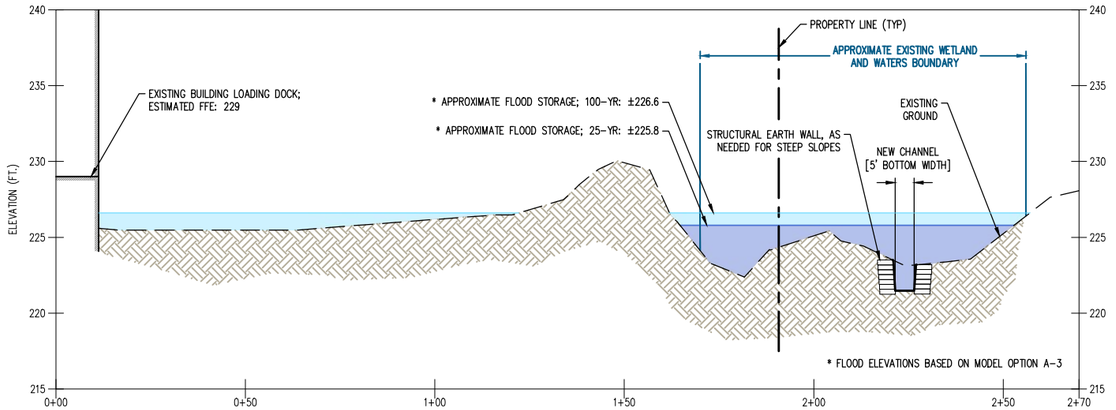
SHEET
13

AKS DRAWING FILE: 7076 XSEC.DWG | LAYOUT: SHEET 13 - SECTIONS 20 SCALE

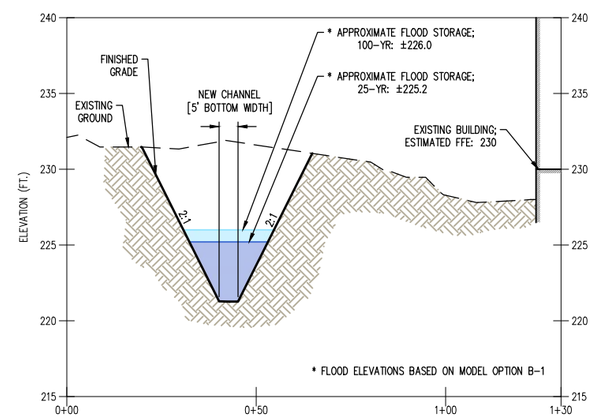


CROSS-SECTION E
Hor. Scale: 1"= 20'
Vert. Scale: 1"= 5'

NOTE: EXISTING GROUND IS A COMPOSITE OF AKS SURVEY DATA (2019) AND DOGAMI BARE EARTH LIDAR (2014). INCONSISTENCIES WITH ACTUAL TOPOGRAPHY MAY BE PRESENT.



CROSS-SECTION F
Hor. Scale: 1"= 20'
Vert. Scale: 1"= 5'



CROSS-SECTION G
Hor. Scale: 1"= 20'
Vert. Scale: 1"= 5'

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COFFEE CREEK STORMWATER FACILITY
WILSONVILLE OREGON

FACILITY SITING CONCEPTS CROSS-SECTIONS

DESIGNED BY:	SRR
DRAWN BY:	SRR
MANAGED BY:	JPC
CHECKED BY:	JPC

DATE: 06/20/19

NOT FOR CONSTRUCTION

REVISIONS

JOB NUMBER
7076

SHEET
14

AKS DRAWING FILE: 7076 XSEC.DWG | LAYOUT: SHEET 14 - SECTIONS 20 SCALE

Facility Siting Alternatives Report, Appendix B:
Cost Estimates

Engineer's Estimate
Estimate By: SRR
Checked By: JPC

Date: 04/26/20

Coffee Creek Stormwater Facility Study
Engineer's Estimate - Siting Concept

Est By: SRR
Checked: JPC

OPTION A - Channel

Item No.	Spec. Section	Description	Unit	Unit Price	Qty	Total
1		Mobilization	LS	$177,000	1	$177,000
2		Erosion And Sediment Control	ACRE	$12,000	5.7	$68,400
3		Removal of Structures and Obstructions	LS	$20,000	1	$20,000
4		Clearing and Grubbing	ACRE	$5,000	5.7	$28,500
5		General Excavation	CY	$10	26,500	$265,000
6		Haul-off	CY	$20	26,500	$530,000
7		Fine Grading	SQYD	$1	27,600	$27,600
8		Structural Earth Wall	SQFT	$10	16,900	$169,000
9		Jute Mat	SQYD	$1	4,950	$4,950
10		Streambed Cobble	TON	$70	900	$63,000
11		Loose Riprap, Class 50	CY	$120	125	$15,000
13		Planting and Seeding	ACRE	$100,000	3.2	$320,000
14		Plant Establishment Period	ACRE	$6,500	3.2	$20,800
15		Temporary Irrigation System	ACRE	$13,000	3.2	$41,600
16		Aggregate Base and Shoulders (3/4" minus) [Maintenance Road, 8" Thick]	TON	$46	1,100	$50,600
17		Open Bottom Culvert (10x3)	LF	$2,600.00	200	$520,000
					Subtotal =	**$2,321,450**
					Contingency (30%) =	**$696,435**
					OPTION A - Channel TOTAL =	**$3,017,885**

OPTION A - Pipe

Item No.	Spec. Section	Description	Unit	Unit Price	Qty	Total
1		Sawcut	LF	$1	1,070	$1,070
2		36" Storm Pipe	LF	$190	575	$109,250
3		60" Flat Top Manhole	EA	$15,000	2	$30,000
4		Riprap Outfall	EA	$1,500	1	$1,500
5		Trench Patch (4" thick)	SY	$70	475	$33,250
					Subtotal =	**$175,070**
					Contingency (30%) =	**$52,521**
					OPTION A - Pipe TOTAL =	**$227,591**

Pond

Item No.	Spec. Section	Description	Unit	Unit Price	Qty	Total
1		Mobilization	LS	$145,000	1	$145,000
2		Erosion And Sediment Control	ACRE	$12,000	2.8	$33,600
3		Clearing and Grubbing	ACRE	$10,000	2.8	$28,000
4		General Excavation	CY	$10	36,100	$361,000
5		Haul-off	CY	$20	36,100	$722,000
6		Fine Grading	SQYD	$1	10,700	$10,700
7		Loose Riprap, Class 50	CY	$120	40	$4,800
8		Planting and Seeding	ACRE	$100,000	2.2	$220,000
9		Plant Establishment Period	ACRE	$6,500	2.2	$14,300
10		Temporary Irrigation	ACRE	$13,000	2.2	$28,600
11		Open Bottom Culvert (10x3)	LF	$2,600	30	$78,000
					Subtotal =	**$1,646,000**
					Contingency (30%) =	**$493,800**
					Pond TOTAL =	**$2,139,800**

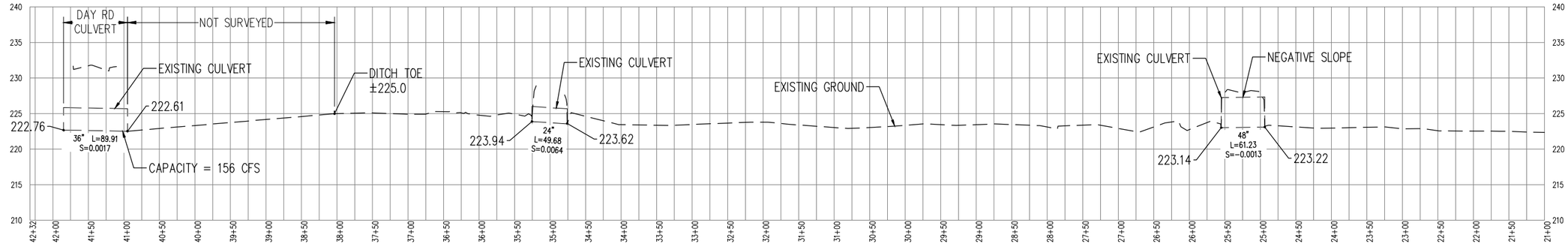
OPTION B - Channel/Pipe

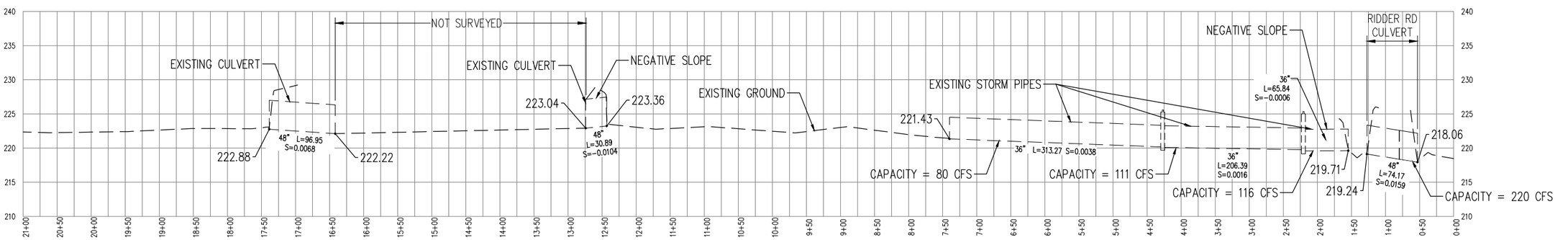
Item No.	Spec. Section	Description	Unit	Unit Price	Qty	Total
1		Mobilization	LS	$274,000	1	$274,000
2		Erosion And Sediment Control	ACRE	$12,000	6.5	$78,000
3		Removal of Structures and Obstructions	LS	$30,000	1	$30,000
4		Clearing and Grubbing	ACRE	$5,000	6.5	$32,500
5		General Excavation	CY	$10	33,000	$330,000
6		Haul-off	CY	$20	33,000	$660,000
7		Fine Grading	SQYD	$1	31,500	$31,500
8		Structural Earth Wall	SQFT	$10	15,000	$150,000
9		Jute Mat	SQYD	$1	7,850	$7,850
10		Streambed Cobble	TON	$70	930	$65,100
11		Loose Riprap, Class 50	CY	$120	145	$17,400
12		Planting and Seeding	ACRE	$100,000	3.8	$380,000
13		Plant Establishment Period	ACRE	$6,500	3.8	$24,700
14		Temporary Irrigation System	ACRE	$13,000	3.8	$49,400
15		Sawcut	LF	$1	1,030	$1,030
16		42" Storm Pipe	LF	$452	1,080	$488,160
17		72" Flat Top Manhole	EA	$18,000	4	$72,000
18		Tie into Existing Culvert (SW Ridder Road)	LS	$15,000	1	$15,000
19		Pre-cast Stormwater Vault	EA	$25,000	1	$25,000
20		Trench Patch (8" thick)	SY	$110	700	$77,000
21		Aggregate Base and Shoulders (3/4" minus) [Maintenance Road, 8" Thick]	TON	$46	1,100	$50,600
22		Open Bottom Culvert (10x3)	LF	$2,600	200	$520,000
					Subtotal =	**$3,379,240**
					Contingency (30%) =	**$1,013,772**
					OPTION B - Channel TOTAL =	**$4,393,012**

Assumptions

1. This estimate was developed for the purpose of comparing two design alternatives and may not be inclusive of all work necessary to install the improvements.
2. The unit prices shown are based on engineering experience and do not represent actual contractor bids. Actual contractor bids may vary significantly.
3. Units that are in L.F., S.F., or S.Y. are based on 1-dimensional (linear) or 2-dimensional (horizontal plan) measurements. Units are not 3-dimensional (slope) measurements.
4. This estimate does not include:
    - City, County, State, or Federal Permit Fees
    - Consulting Services
    - Hard Rock/Boulder Excavation
5. Volumes and quantities listed are approximate.
6. This estimate does not include items not specifically listed.
7. This estimate is based on Concept Level Plans (Not Final Approved Construction Plans).
8. All items, quantities, volumes, etc. listed are based on “in-place” measurements.
9. All items listed include materials and installation.
10. Estimate is based on 2019 dry weather construction.
11. Grading volumes and quantities shown in this estimate are subject to significant change pending final engineering design requirements.
12. Estimates are intended for Client’s general project feasibility purposes only. Actual contractor bids may vary significantly.
13. All costs assume dry weather construction.

Facility Siting Alternatives Report, Appendix C:
Profile Along Existing Channel





PROFILE ALONG EXISTING CHANNEL

HOR: 1"=200'

VERT: 1"=20'

AKS ENGINEERING & FORESTRY, LLC
3052 NW MERCHANT WY STE 100
BEND, OR 97703
P: 541.317.8429
aks-eng.com

ENGINEERING · SURVEYING · NATURAL RESOURCES
FORESTRY · PLANNING · LANDSCAPE ARCHITECTURE

COFFEE CREEK STORMWATER FACILITY

WILSONVILLE OREGON

PROFILE ALONG EXISTING CHANNEL

DESIGNED BY:	SRR
DRAWN BY:	GMB
MANAGED BY:	JPC
CHECKED BY:	JPC

DATE: 04/23/19

REVISIONS

JOB NUMBER 7076

SHEET 896

AKS DRAWING FILE: 7076 CPPES.DWG | LAYOUT: LAYOUT2

Facility Siting Alternatives Report, Appendix D:
Preliminary Stormwater Report

Coffee Creek Stormwater Facility Study
Wilsonville, Oregon

Preliminary Stormwater Report

Date:	June 2019
Client:	City of Wilsonville – Engineering Division 29799 SW Town Center Loop East Wilsonville, OR 97070
Engineering Contact:	John Christiansen, PE (503) 563-6151 | johnc@aks-eng.com
Engineering Firm:	AKS Engineering & Forestry, LLC 12965 SW Herman Road Suite 100 Tualatin, OR 97062
AKS Job Number:	7076

AKS ENGINEERING & FORESTRY
www.aks-eng.com

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3.2 STORMWATER QUALITY 1
4.0 Design Methodology 1
5.0 Design Parameters 1
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6.1 PROPOSED STORMWATER CONDUIT SIZING 2
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APPENDIX B: HYDRAULIC GRADE LINE PROFILES AT PEAK EXISTING 100-YEAR FOR OPTIONS A-3 & B-1

Preliminary Stormwater Report
COFFEE CREEK STORMWATER FACILITY STUDY
WILSONVILLE, OREGON

1.0 Purpose of Report
This report advances the design of capital improvement project (CIP) *CLC-3: Channel Project – Commerce Circle* using the parameters set forth in the Basis of Design Report, dated March 2019.

The purpose of this report is to analyze the effects of the design concepts developed during the Stormwater Analysis phase of the project on the existing stormwater conveyance system; document the criteria, methodology, and informational sources used to design the stormwater improvements; and present the results of the preliminary hydraulic analysis.

2.0 Project Location/Description
This project is located to the west and south of the Commerce Circle industrial area and follows Basalt Creek in a straightened, incised channel between SW Day Road to the north, and SW Ridder Road to the south. Approximately 1,050 acres of surrounding drainage area contributes stormwater runoff to the system. This drainage area is shown on Figure 2 in the Basis of Design Report.

The goal of the project is to address flooding that occurs during existing storm events and that is predicted during future storm events (beginning at the 2-year, 24-hour storm event), and to restore and enhance an existing straightened, incised channel. The channel has negative slopes in some areas which contribute to flooding.

3.0 Regulatory Design Criteria
3.1 STORMWATER QUANTITY
This project is intended to address a conveyance and capacity constraint and does not specifically address water quantity management for future development.

3.2 STORMWATER QUALITY
This project is intended to address a conveyance and capacity constraint and does not specifically address water quality management. The conveyance improvements may have water quality benefits.

4.0 Design Methodology
As described in the 2012 Stormwater Management Plan (SWMP), the Green-Ampt method was used to estimate runoff and infiltration in the InfoSWMM model. The Green-Ampt method calculates infiltration of stormwater into soils using antecedent moisture conditions (initial moisture deficit), water depth, and the hydraulic conductivity of the soil. The values of these three parameters were based on soil types in the City of Wilsonville. A more detailed description of this methodology, as well as a table of Green-Ampt Infiltration Parameters by Soil Type, can be found in the Basis of Design Report.

AKS ran the model using the infiltration parameters matching those from the 2012 SWMP InfoSWMM model.

5.0 Design Parameters
For input and analysis purposes, the following hydrologic parameters were included for each subbasin in the InfoSWMM model:

- Subbasin name or number
- Subbasin (acres)
- Impervious surface percentage (percent)
- Average ground slope (percent)
- Subbasin width (feet)
- Manning's roughness coefficient for impervious areas
- Manning's roughness coefficient for pervious areas
- Depression storage for impervious areas (inches)
- Depression storage for pervious areas (inches)
- Green-Ampt soil infiltration parameters: initial moisture deficit of soil, hydraulic conductivity of soil, and suction head at the wetting front

The 2012 SWMP provides a description for each user-defined hydrologic parameter entered into the InfoSWMM model. These parameters were used for scenarios modeled for this project as well. Detailed descriptions can be found in the Basis of Design Report.

5.1 DESIGN STORMS

The 2012 SWMP lists rainfall in inches for the 24-hour design storms. These rainfall amounts are listed in *Table 1* and were used for the models developed in this project.

Table 1: 24-Hour Design Storms for the City of Wilsonville

Storm Event	Rainfall (inches)
2-year	2.50
5-year	3.00
10-year	3.45
25-year	3.90
50-year	4.25
100-year	4.50

6.0 Stormwater Analyses

6.1 PROPOSED STORMWATER CONDUIT SIZING

The proposed stormwater system will be sized using Manning's equation to maximize conveyance of the peak flows from the 25-year storm event under the existing site constraints.

6.2 ELEVATION OF ADJACENT INDUSTRIAL AREA PARKING LOT

As one of the goals of the project is to address flooding that occurs in the Commerce Circle Industrial Area, the elevation of flooding needed to be determined. Based on LIDAR topography and the preliminary topographic survey conducted by AKS, the lowest elevation adjacent to the project site is approximately 226.50 feet. This elevation was used a baseline flood elevation to determine the effectiveness of the conceptual designs. The industrial area parking lot on Tax Lot 400, Tax Map 3S102CA was studied specifically.

6.3 MODEL RESULTS

The model results can be summarized by studying the hydraulic grade line (HGL) of the system, specifically in the area adjacent to the parking lot that has seen the most flooding, along the west side of Tax Lot 400, Tax Map 3S102CA. The model was run for the existing 10-year, 25-year, and 50-year events,

and the HGL elevations of the adjacent channel section were calculated for each of the six conceptual designs described in the Facility Siting Alternatives Report. The HGL elevations were then compared with elevation 226.50 and plotted on the graph below.

For reference, the Summary of Options and Design Elements is provided below. See the Facility Siting Alternatives Report for more detail about the six design options.

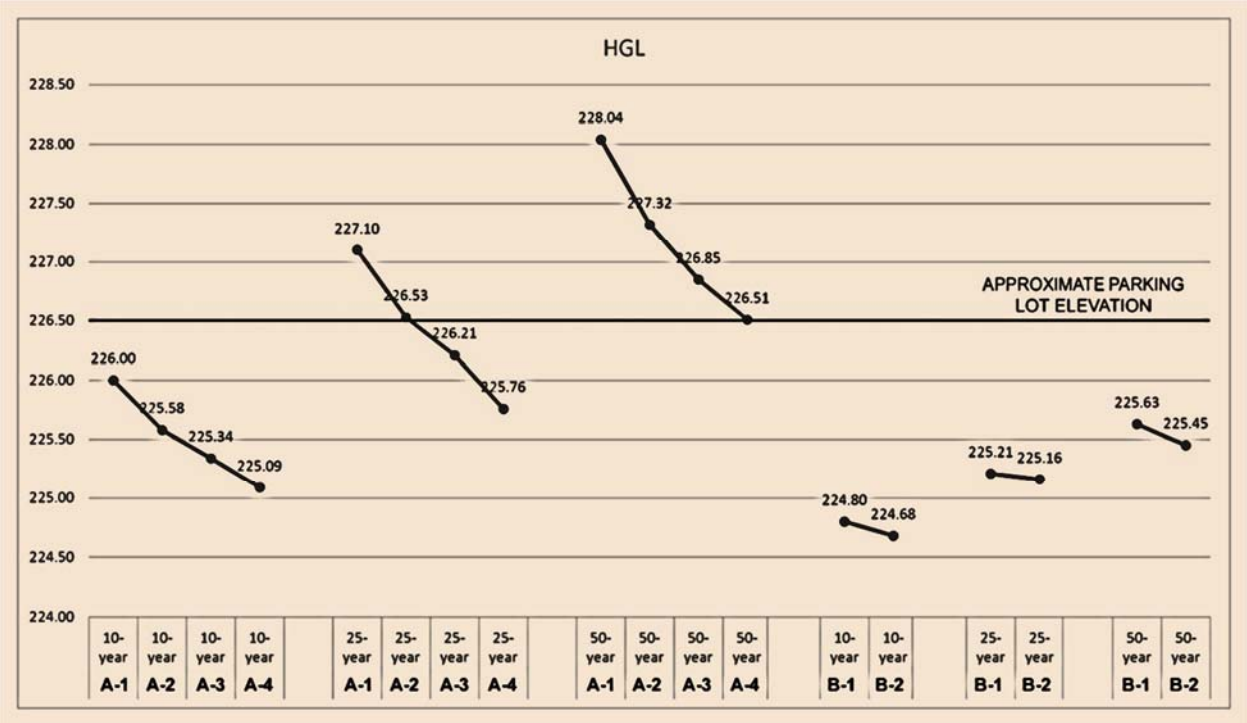


Table 2: Summary of Options and Design Elements

Option	Additional 36-inch Pipe	Detention Pond
A-1	No	No
A-2	No	Yes
A-3	Yes	No
A-4	Yes	Yes
B-1	n/a	No
B-2	n/a	Yes

6.4 HYDRAULIC GRADE LINE PROFILES

The full HGL Profiles were run for the 25-year storm event and each of the six options, beginning upstream at SW Day Road and ending at the channel south of SW Ridder Road. These are provided as an attachment to this report.

Following the presentation of the Facility Siting Concepts, modeling results, and recommendations to the City in May 2019, AKS updated the model to include wider conduit cross-sections that represent existing flood plain above the proposed channel improvements. This approach allowed a more realistic

look at the potential effects on existing buildings a 100-year storm would have. The 100-year storm HGL Profiles are provided in the appendix of this report.

6.5 DOWNSTREAM IMPACTS

As described in the Basis of Design Report, the intent of this project is to increase conveyance capacity and provide storage of stormwater runoff, reducing the flooding that occurs in the Commerce Circle Industrial Area. As stated in the 2012 SWMP, the current conveyance channel has negative slopes that prevent the occurrence of flooding downstream. The 2012 SWMP states that this reverse slope has not been removed in order to avoid moving the flooding to a downstream location (2012 SWMP 6.6.1).

Modeling results for the existing City model and Option A-3 were compared downstream from SW Ridder Road to the Coffee Lake Wetlands to determine if the channel improvements would result in increased flooding potential downstream of SW Ridder Road. The modeling shows that immediately south of SW Ridder Road, the HGL raises approximately 1.2 feet post-improvements; however, this flood level remains within the defined channel south of SW Ridder Road.

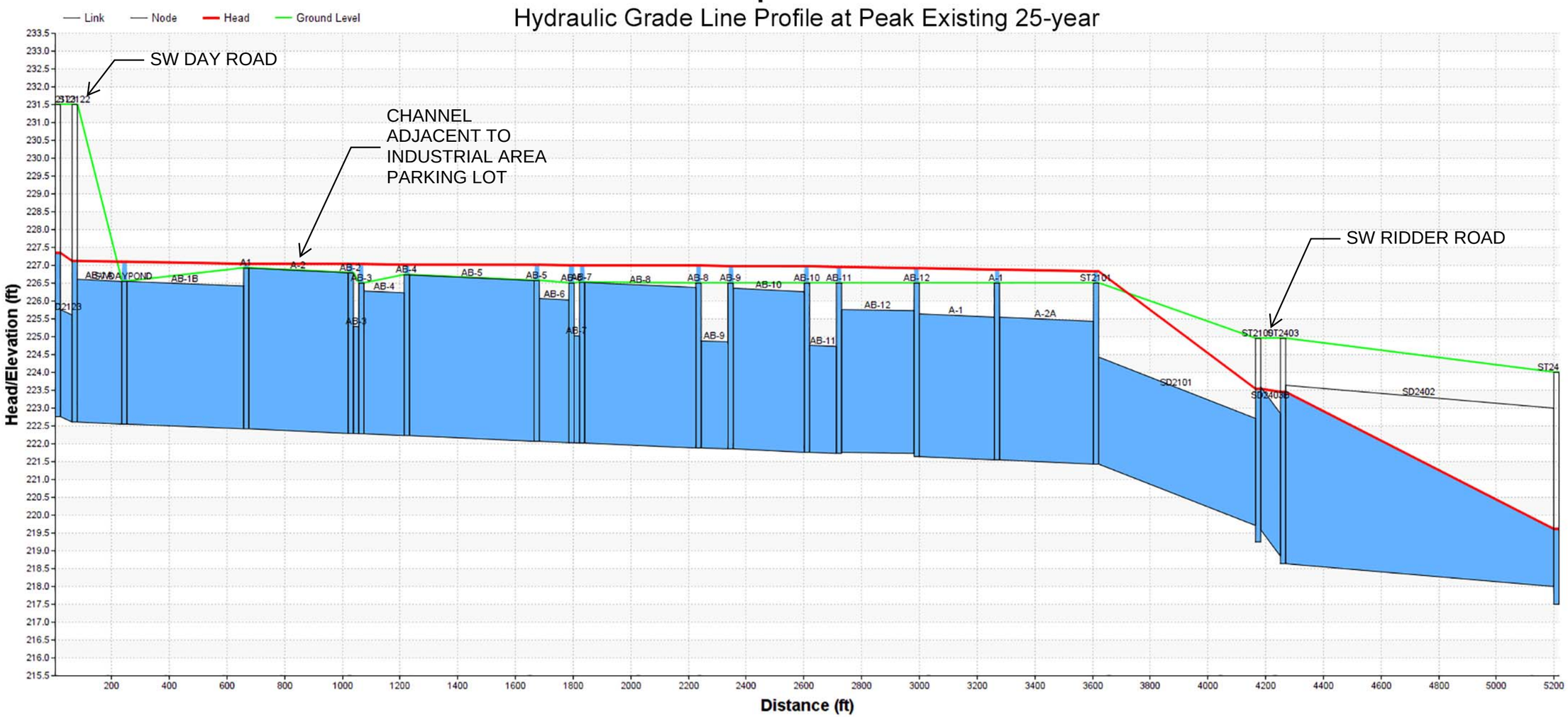
Further downstream, the HGL is lower post-improvements than existing conditions by approximately 0.1-0.2 feet. This remains consistent in both the 25-year storm and 100-year storm scenarios.

The final design recommendations for this project include removing the reverse grade and providing storage capacity.

Appendix A: Hydraulic Grade Line Profiles at Peak Existing 25-year

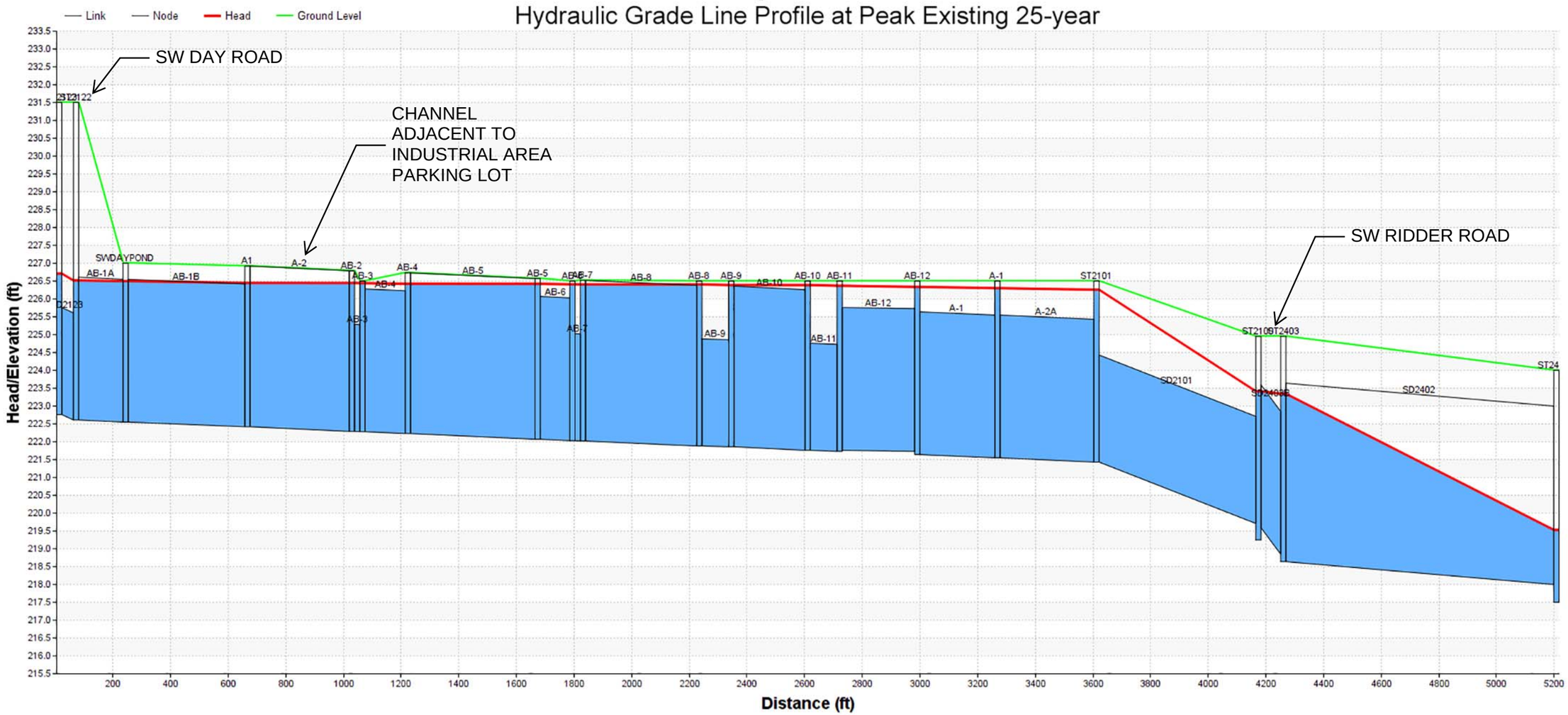
Option A-1

Hydraulic Grade Line Profile at Peak Existing 25-year



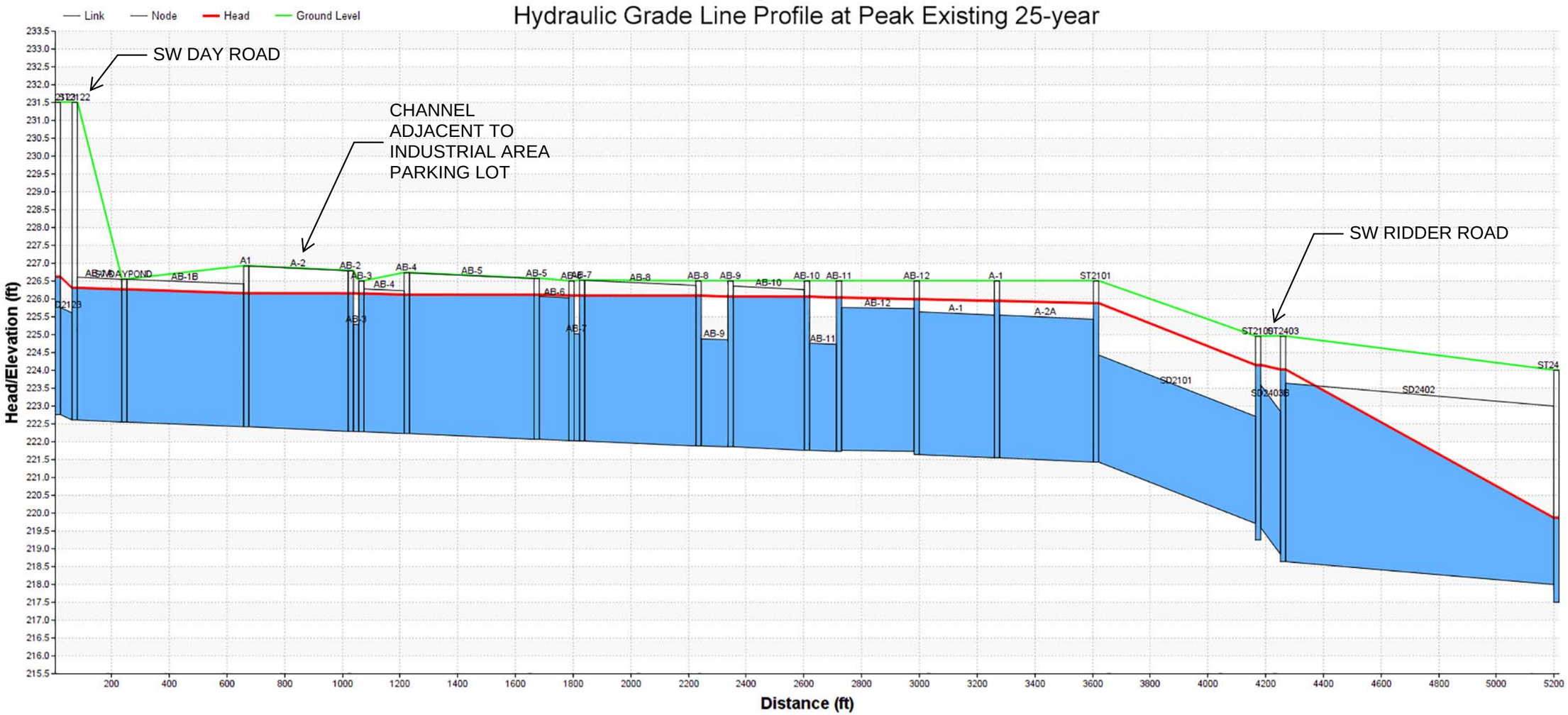
Option A-2

Hydraulic Grade Line Profile at Peak Existing 25-year



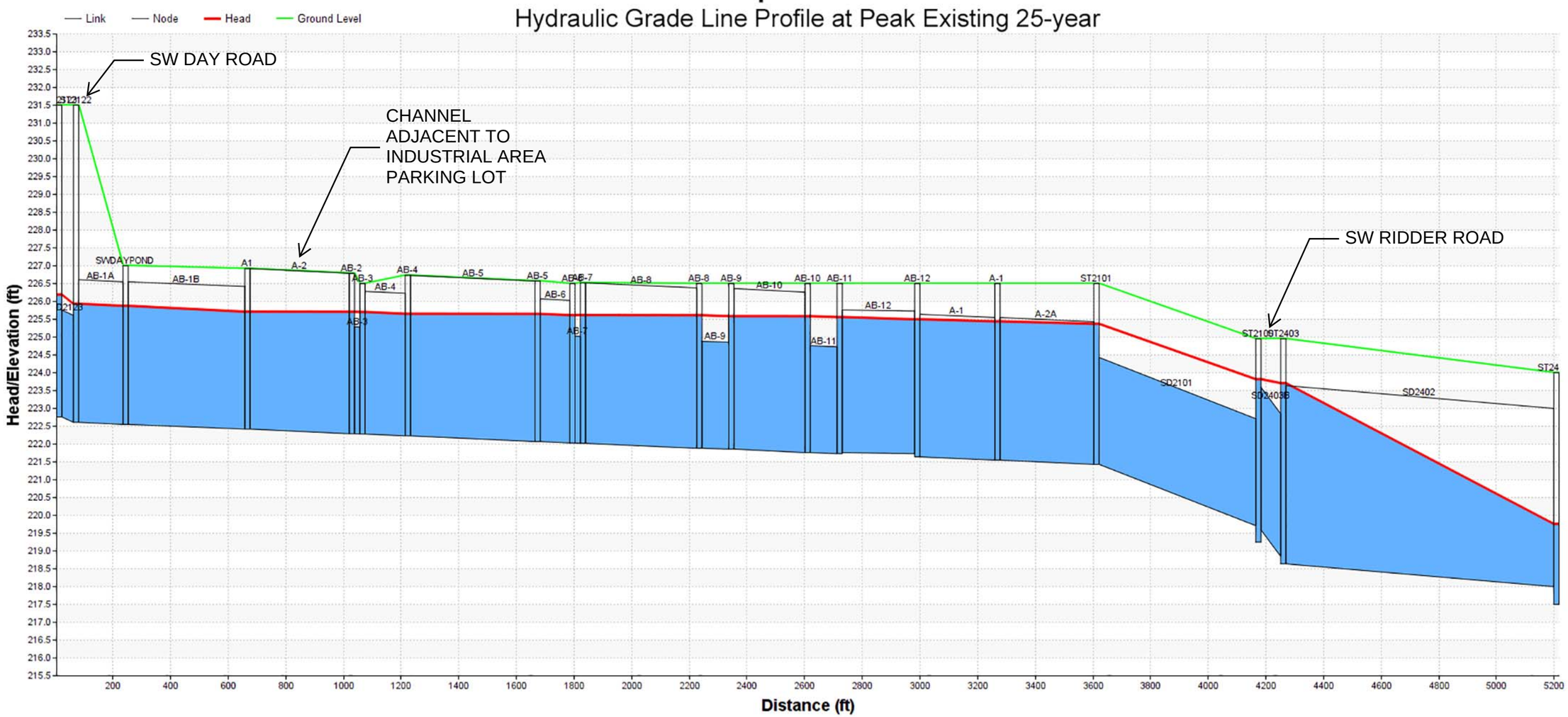
Option A-3

Hydraulic Grade Line Profile at Peak Existing 25-year



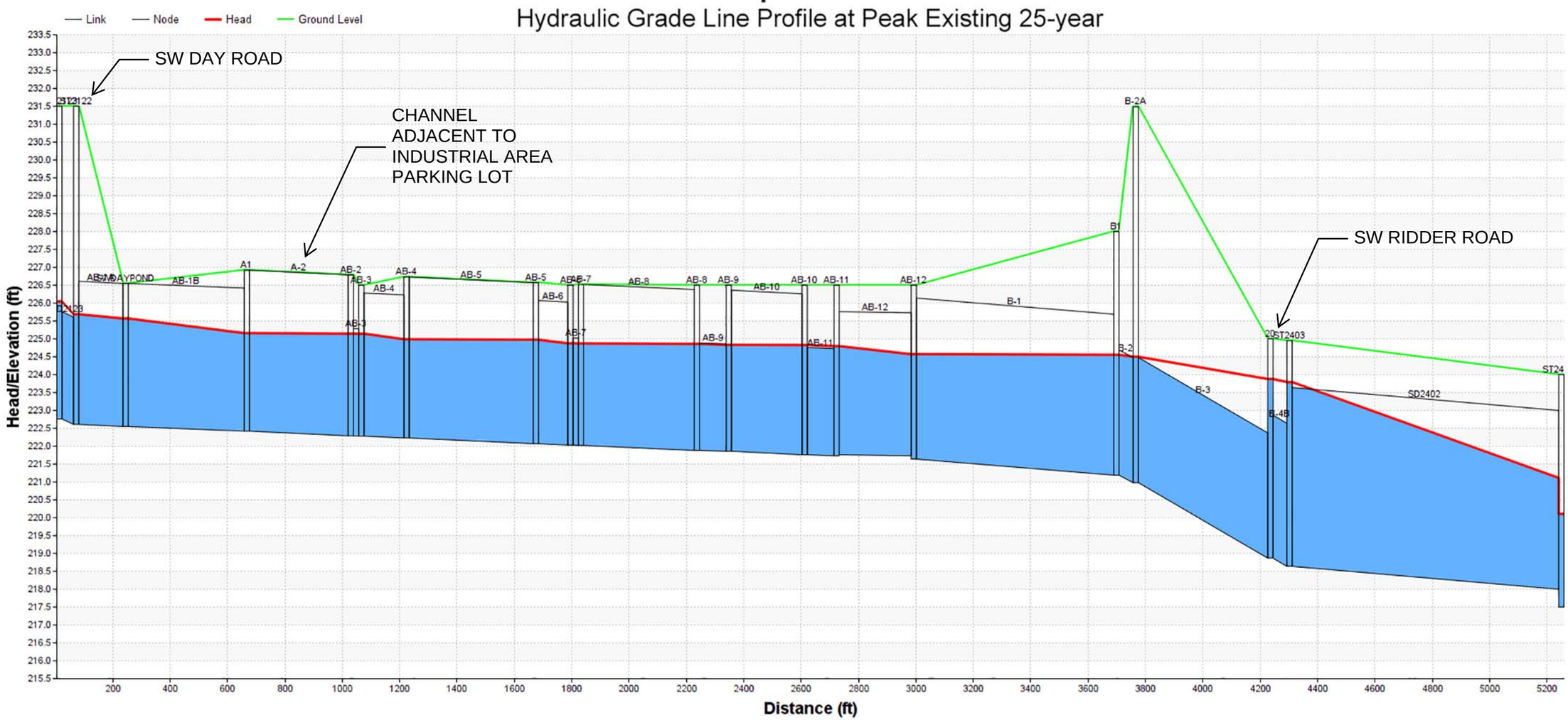
Option A-4

Hydraulic Grade Line Profile at Peak Existing 25-year



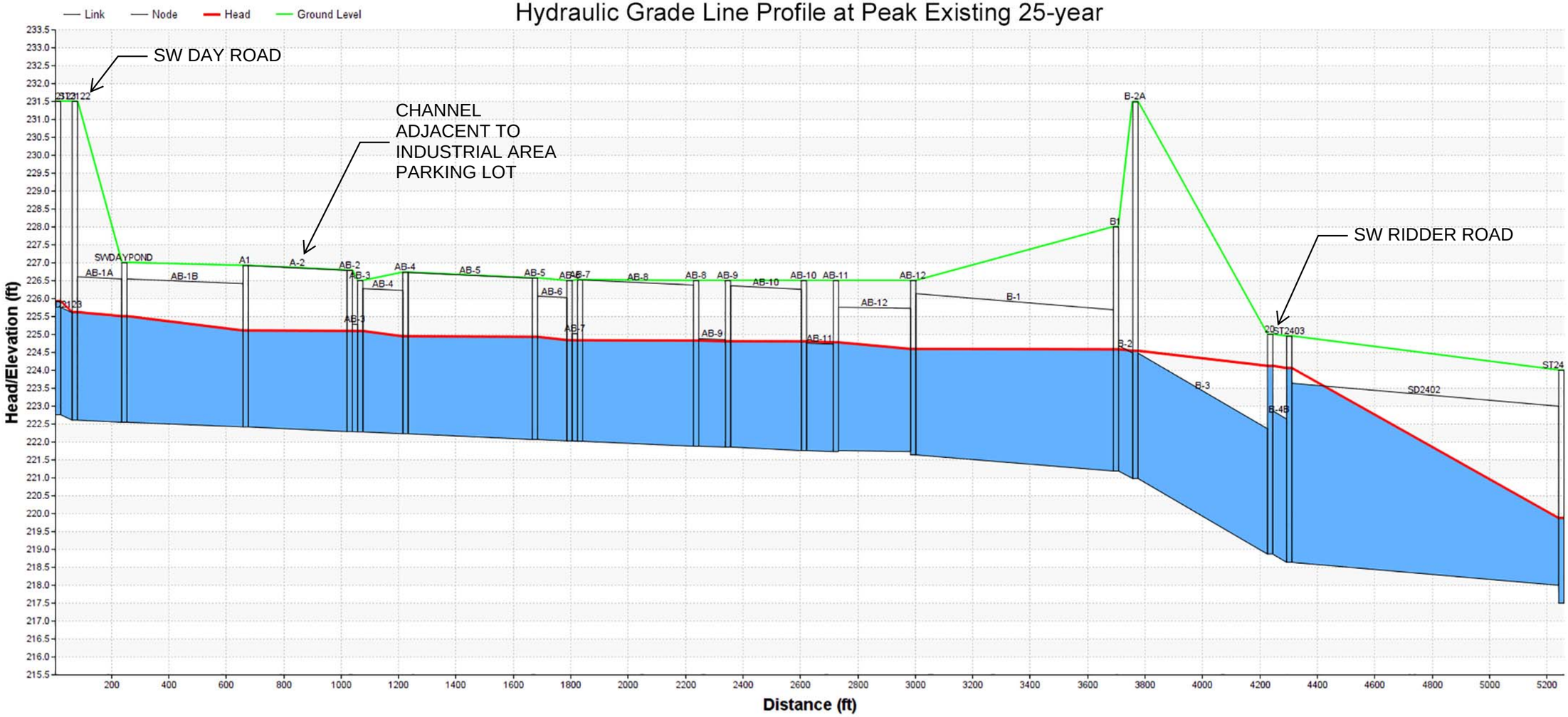
Option B-1

Hydraulic Grade Line Profile at Peak Existing 25-year



Option B-2

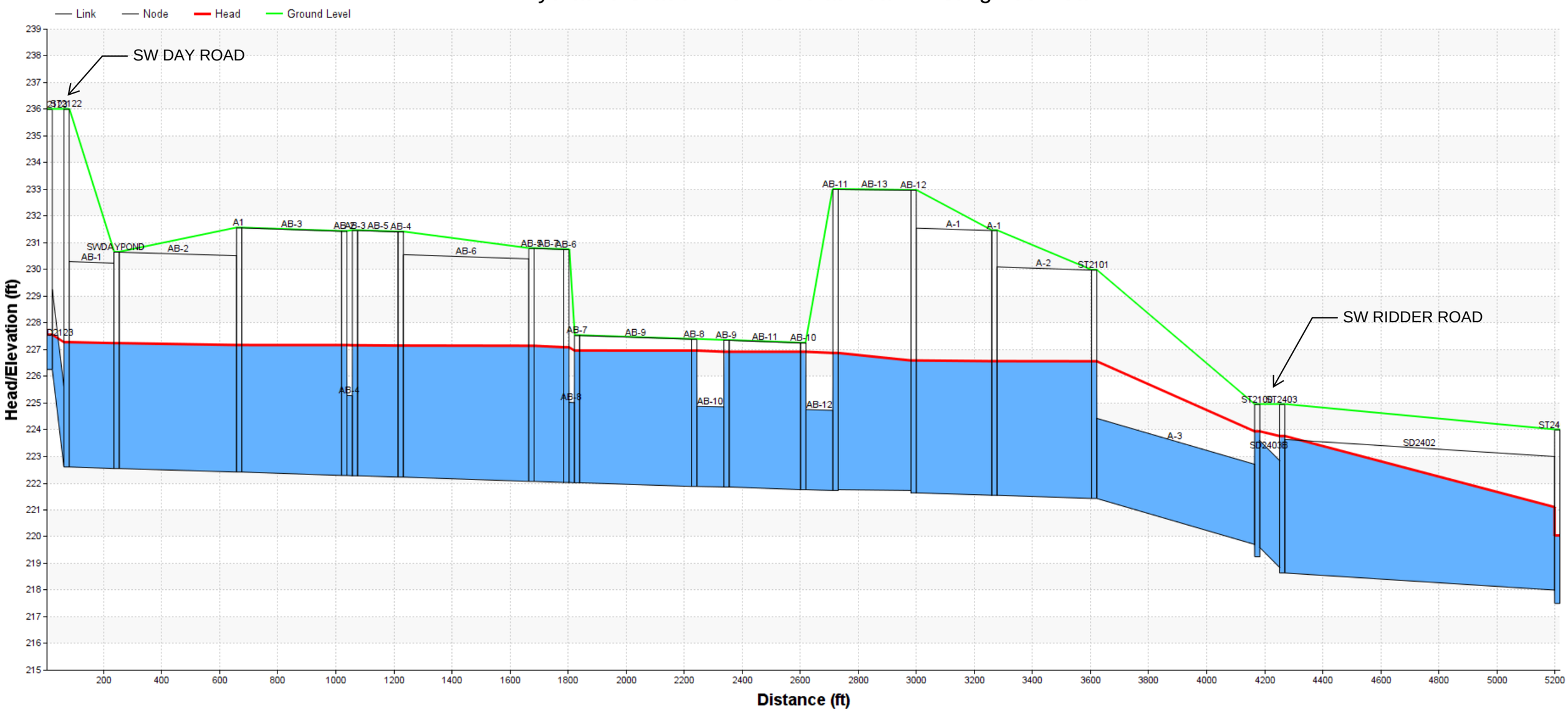
Hydraulic Grade Line Profile at Peak Existing 25-year



Appendix B: Hydraulic Grade Line Profiles at Peak Existing 100-year (Options A-3 & B-1)

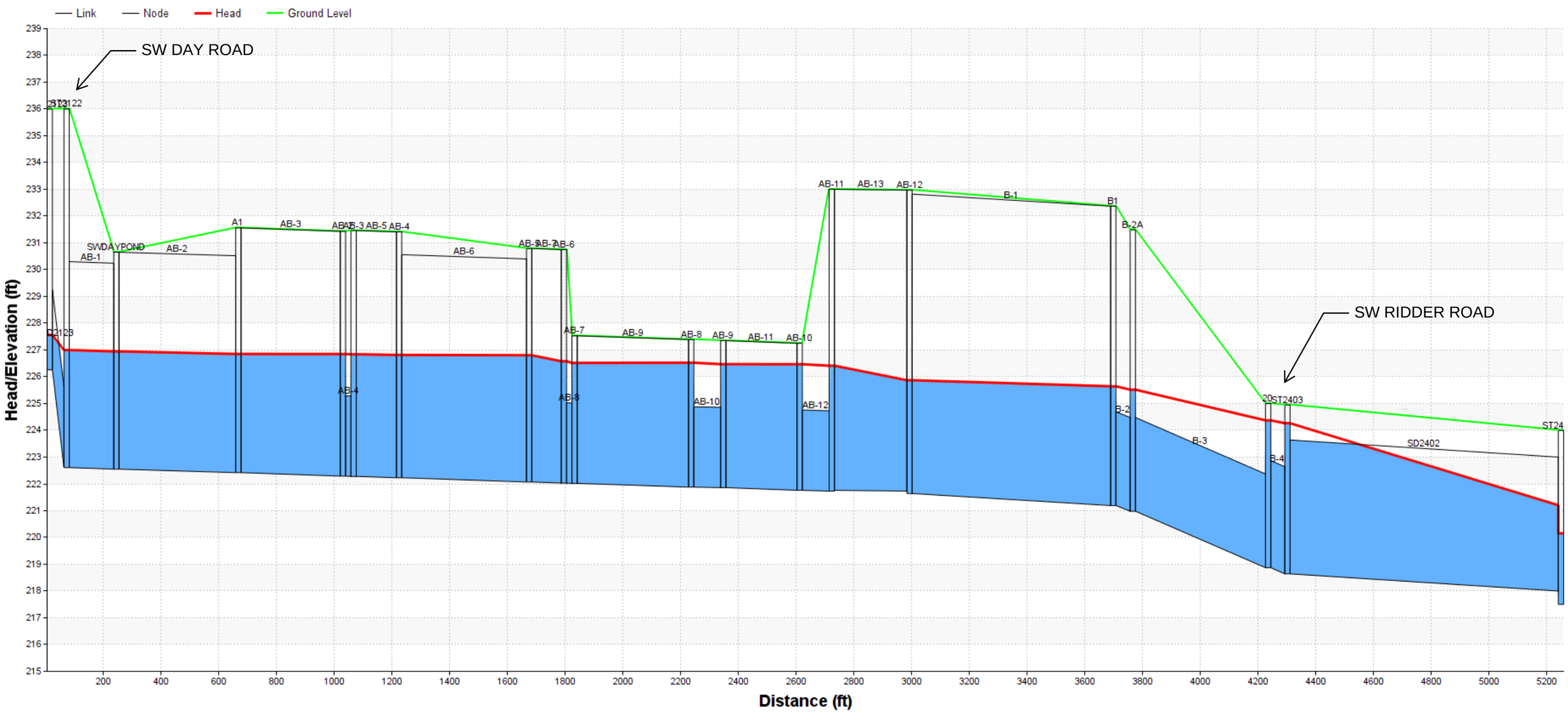
Option A-3

Hydraulic Grade Line Profile at Peak Existing 100-Year



Option B-1

Hydraulic Grade Line Profile at Peak Existing 100-Year



Lee D. Leighton

From: Lee D. Leighton
Sent: Thursday, March 31, 2022 3:52 PM
To: Smith,Darin L (BPA) - TERR-CHEMAWA
Cc: Scott Moore; Breezy Rinehart-Young; Greg Mino
Subject: RE: Introduction: Delta Logistics Wilsonville Annex/ZC

Hi Darin. Thank you for your prompt research and the map you provided below.

No work is proposed outside Delta Logistics's fee ownership, which is to say the fee-owned BPA corridor to its west will not be affected.

We will coordinate with PGE regarding improvements and activities within the PGE easement area.

Thank you,

~Lee

Lee Leighton, AICP | he/him/his
Land Use Planning
D 971.346.3727 E lleighton@mcknze.com

Mackenzie Email Disclaimer

MACKENZIE.

From: Smith,Darin L (BPA) - TERR-CHEMAWA <dxsmith@bpa.gov>
Sent: Thursday, March 31, 2022 1:37 PM
To: Lee D. Leighton <LLeighton@mcknze.com>
Subject: RE: Introduction: Delta Logistics Wilsonville Annex/ZC

The corridor is fee owned, BPA owns this corner as you see in light purple, the lines going North and South are PGE and you will need to coordinate with them. If you are applying to use any of our fee owned right of way that may take a year or so due to environmental etc. If you can stay out of our fee owned you do not need to submit application

City of Wilsonville
Exhibit B1 (Part 4) DB22-0007
914

From: Lee D. Leighton <LLeighton@mcknze.com>
Sent: Thursday, March 31, 2022 12:51 PM
To: Smith,Darin L (BPA) - TERR-CHEMAWA <dxsmith@bpa.gov>
Subject: [EXTERNAL] RE: Introduction: Delta Logistics Wilsonville Annex/ZC

Hi Darrin, please reply with forms and instructions so we can get our dialogue started, thanks!

~Lee

Lee Leighton, AICP | he/him/his
Land Use Planning
D 971.346.3727 E lleighton@mcknze.com

Mackenzie Email Disclaimer

MACKENZIE.

From: Lee D. Leighton
Sent: Thursday, March 31, 2022 9:47 AM
To: Darin Smith <dxsmith@bpa.gov>
Subject: Introduction: Delta Logistics Wilsonville Annex/ZC

Hi Darin, this concerns property at 9710 SW Day Road (3S1 02B 00600) and the parcel to the west of it (3S1 02B 00601).

Please provide form(s) and instructions to work with BPA on the plan.

Thank you!

~Lee

Lee Leighton, AICP | he/him/his
Land Use Planning
D 971.346.3727 E lleighton@mcknze.com

MACKENZIE.
ARCHITECTURE ▪ INTERIORS ▪ STRUCTURAL, CIVIL, AND TRAFFIC ENGINEERING
LAND USE AND TRANSPORTATION PLANNING ▪ LANDSCAPE ARCHITECTURE

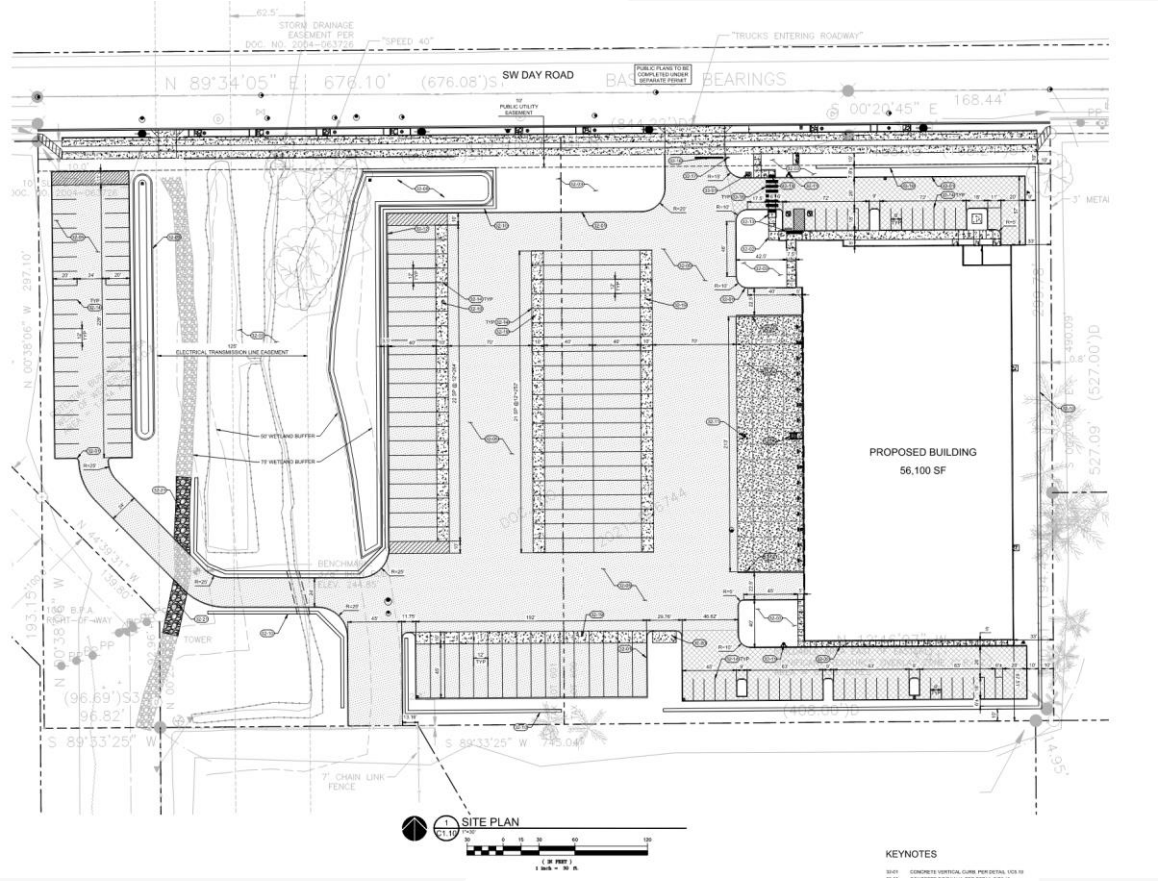
https://mackenzie.inc | Portland, OR | Vancouver, WA | Seattle, WA
Mackenzie Email Disclaimer

Delta Logistics

Access on SW Day Road

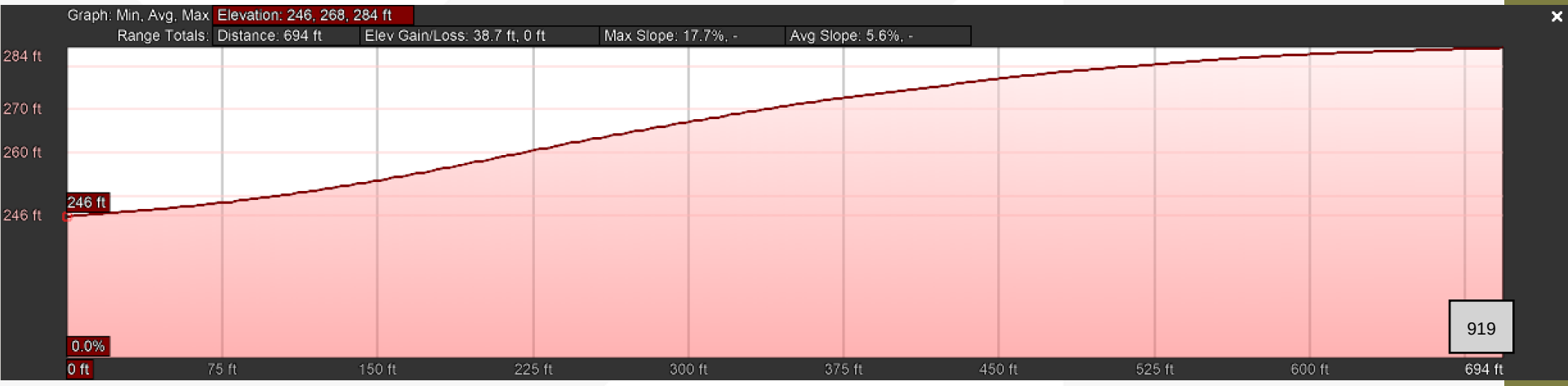
Proposed Access on SW Day Road

- Proposed access approximately 1,000 feet west of Boones Ferry Road.



Grade

- Approximately 5% grade to the east



Sight Distance Requirements/Recommendations

- Grade adjustments made for SW Day Road, per AASHTO recommendations for trucks.
- Sight distance requirements/recommendations greater to east due to grade.

SIGHT DISTANCE RECOMMENDATIONS AND REQUIREMENTS TO THE EAST ON SW DAY ROAD					
Driveway Location	**Design Speed**	**Grade**	**Design Vehicle**	**Recommended ISD (feet)**	**Required SSD (feet)**
Proposed Driveway	35 mph	5%	Passenger	465	270
			Combination Truck	680	
City's Recommended Shared Driveway		3%	Passenger	445	260
			Combination Truck	660	
Alternative Access for Adjacent Property		0%	Passenger	415	250
			Combination Truck	630	
Alternative Shared Access for Adjacent Properties		0%	Passenger	415	250
			Combination Truck	630	

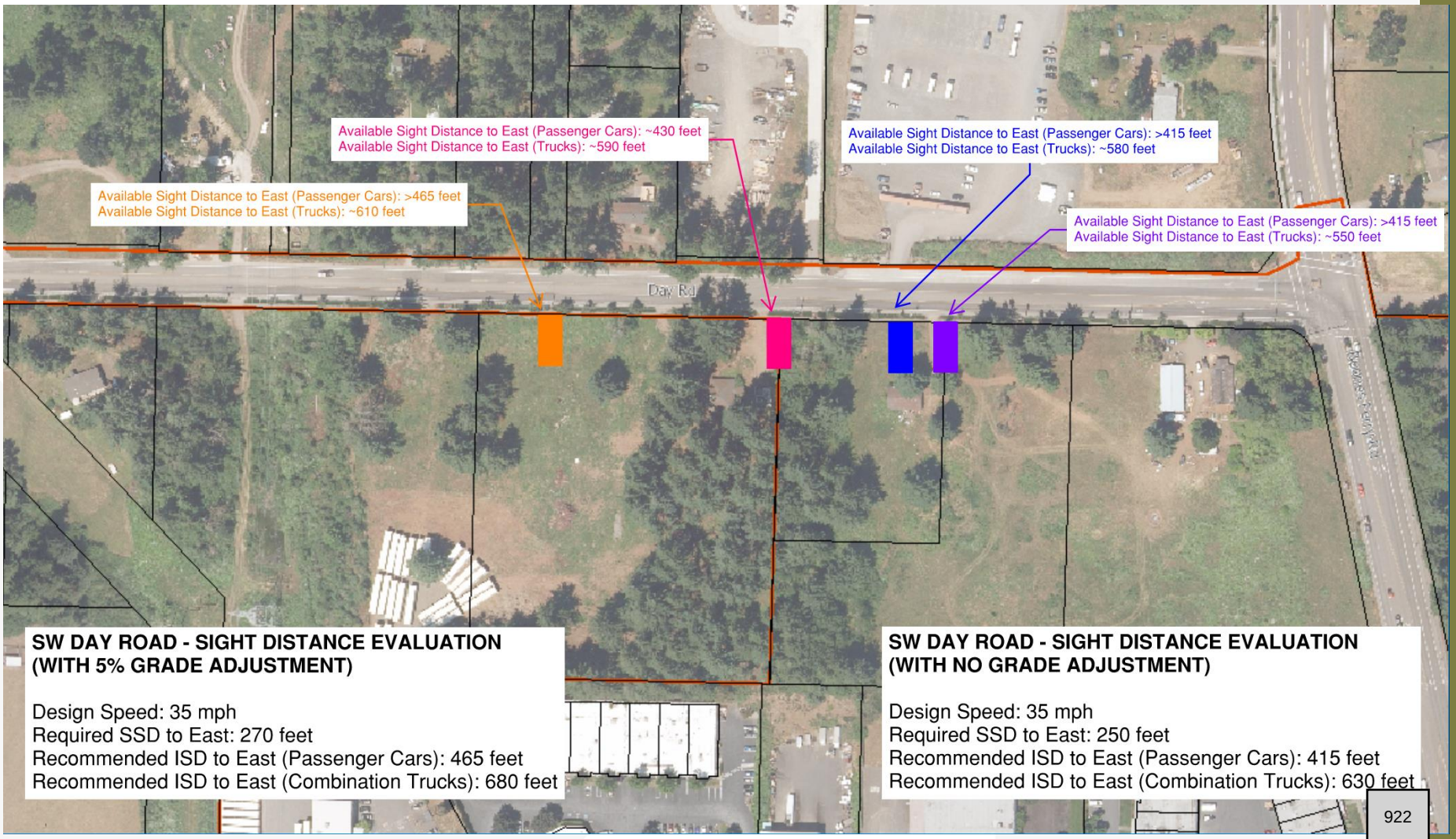
Field Verification

- Sight distance for passenger cars met.
- Adequate stopping sight distance available.

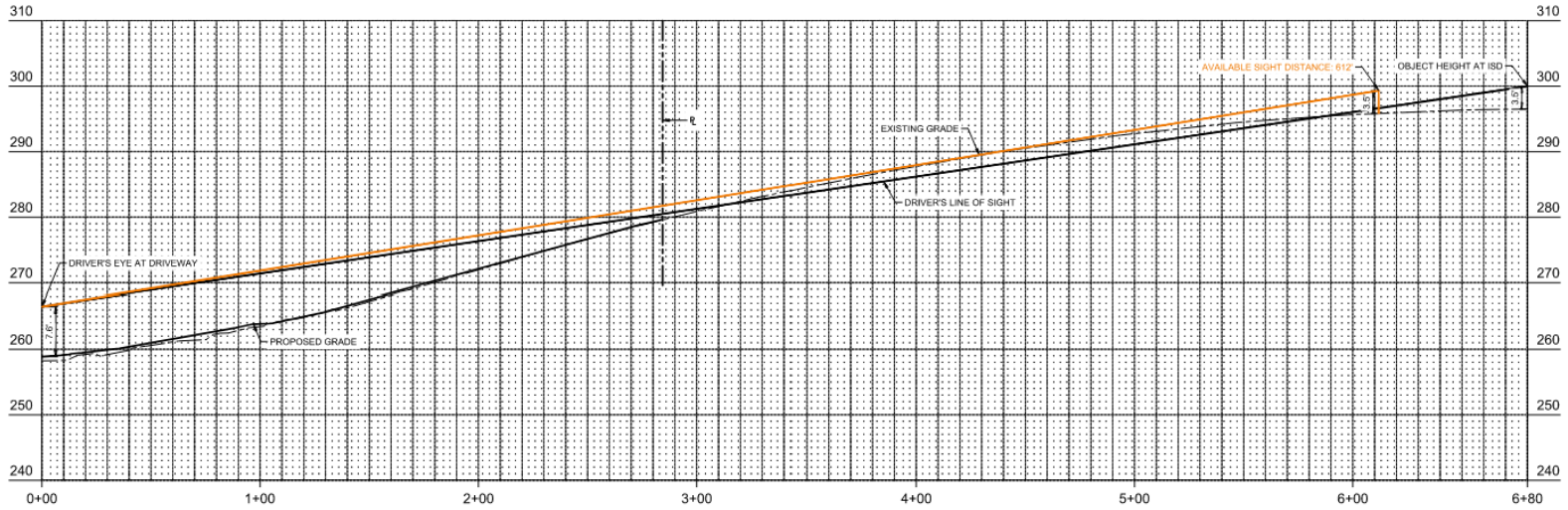
Sight distance to west on SW Day Road

Sight distance to east on SW Day Road

Alternative Driveway Review

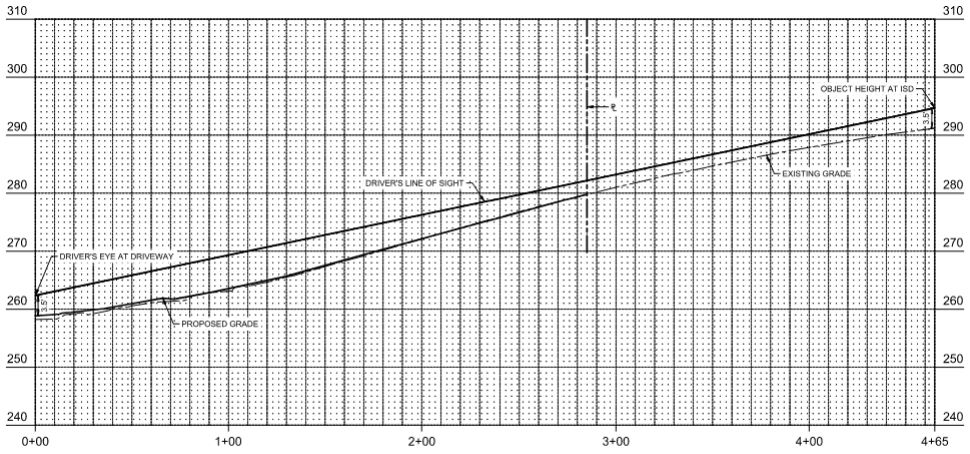


Proposed Driveway Location



2 - ISD PROFILE: COMBINATION TRUCK - EAST

HORIZONTAL SCALE: 1"=30'
VERTICAL SCALE: 1"=10'



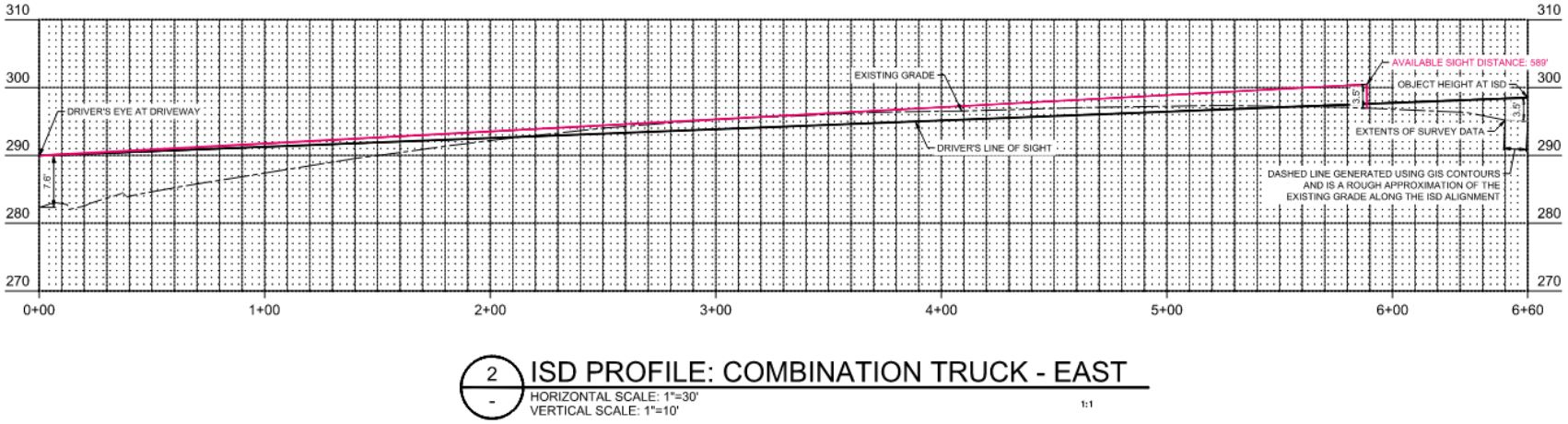
4 - ISD PROFILE: PASSENGER CAR - EAST

HORIZONTAL SCALE: 1"=30'
VERTICAL SCALE: 1"=10'

Available sight distance to east (trucks): ~610 feet

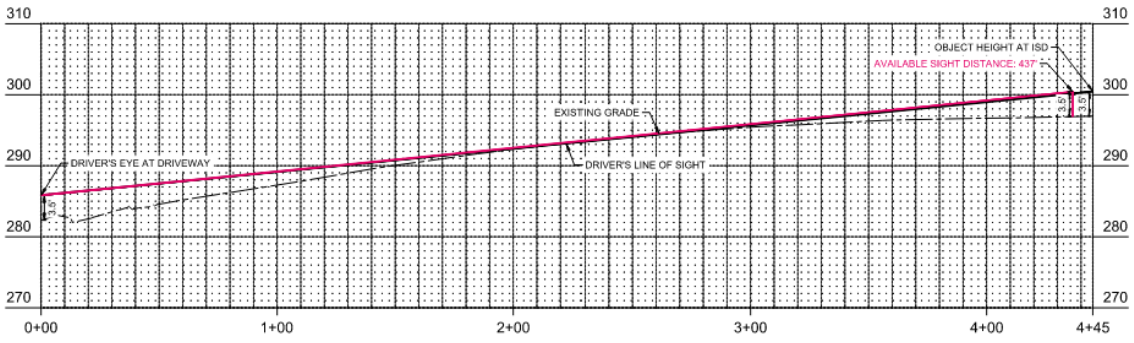
More than 465’ available sight distance to east for passenger cars.

City's Recommended Shared Driveway Location



2 - ISD PROFILE: COMBINATION TRUCK - EAST
HORIZONTAL SCALE: 1"=30'
VERTICAL SCALE: 1"=10'

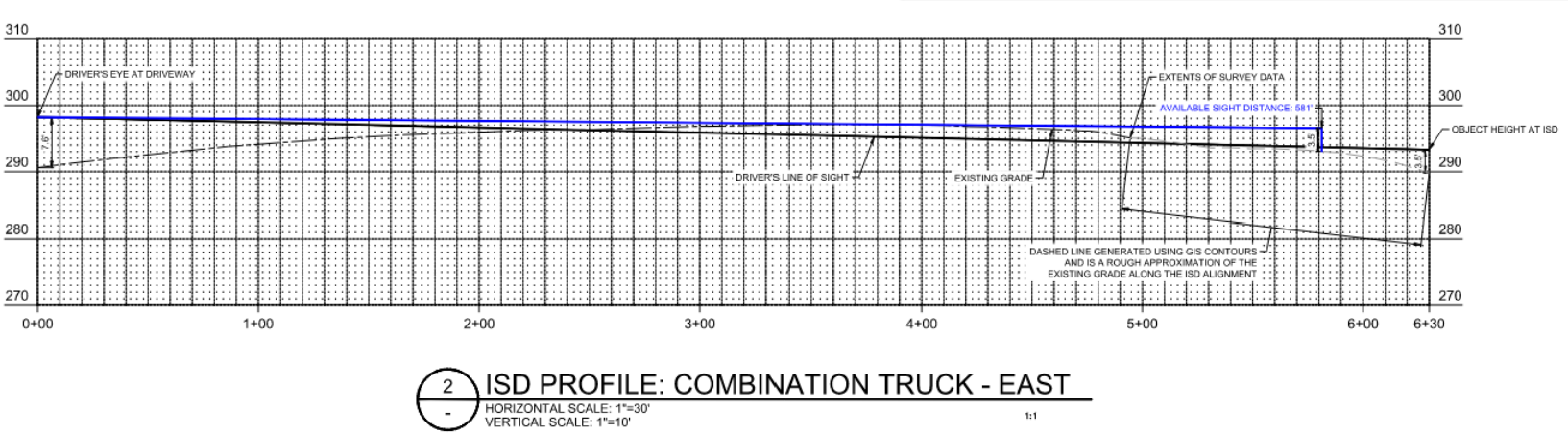
Available sight distance to east (trucks): ~590 feet



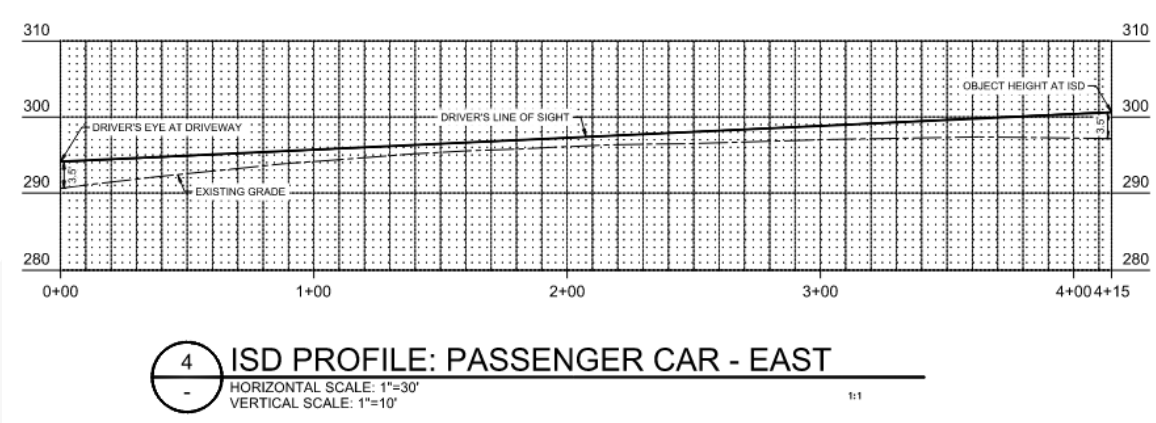
4 - ISD PROFILE: PASSENGER CAR - EAST
HORIZONTAL SCALE: 1"=30'
VERTICAL SCALE: 1"=10'

Available sight distance to east (cars): ~440 feet

Alternative Access Location for Adjacent Property

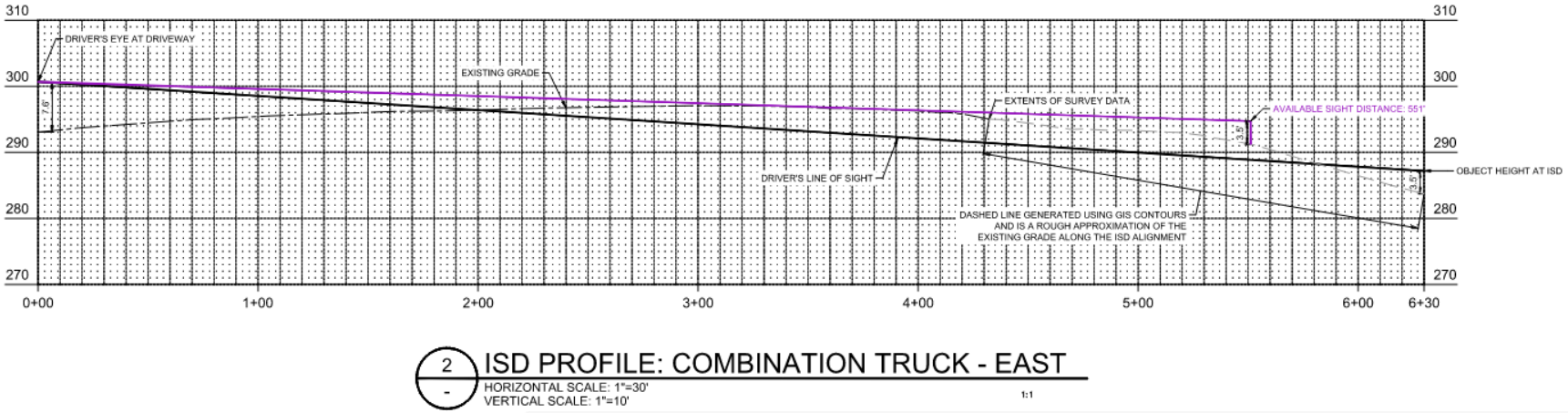


Available sight distance to east (trucks): ~580 feet

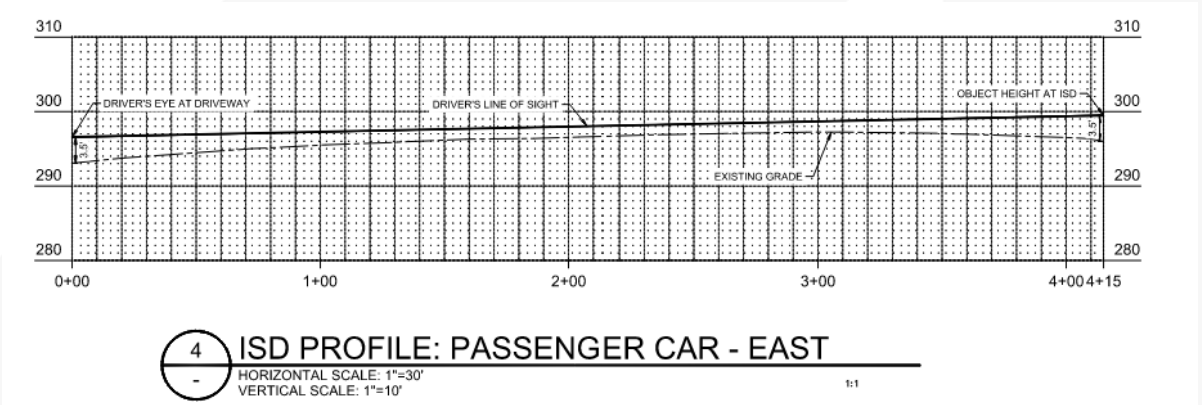


Available sight distance to east (cars): ~480 feet

Alternative Shared Access Location for Adjacent Properties



Available sight distance to east (trucks): ~550 feet



Available sight distance to east (cars): ~460 feet

Conclusions

- Proposed Delta Logistics driveway and Alternative Access for Adjacent Property meet recommended ISD to the east (based on design speed of 35 mph).
- All locations meet SSD (based on design speed of 35 mph).

	Proposed Driveway	City's Recommended Shared Driveway	Alternative Access for Adjacent Property	Alternative Shared Access for Adjacent Properties
Recommended ISD to East (Passenger Cars/Trucks)	465'/680'	445'/660'	415'/630'	415'/630'
Available Sight Distance to East (Passenger Cars/Trucks)	>465'/~610'	~430'/~590'	>415'/~580'	>415'/~550'
ISD Deficiency	Met/~70'	~15'/~70'	Met/~50'	Met/~80'
Required SSD to East	270'	260'	250'	250'
Sight Distance Met?	SSD: Met ISD (PC): Met ISD (Trucks): Not Met	SSD: Met ISD (PC): Not Met ISD (Trucks): Not Met	SSD: Met ISD (PC): Met ISD (Trucks): Not Met	SSD: Met ISD (PC): Met ISD (Trucks): Not Met

Recommendations

- Provide access to Delta Logistics site from proposed location.
- Provide future access to adjacent lot from alternative location.
  - Location opposite existing driveway to north offers best sight lines.
  - Location closest to Boones Ferry offers opportunity for shared access.

Lee D. Leighton

From: Janet T. Jones
Sent: Thursday, June 23, 2022 10:45 AM
To: Greg Mino; Lee D. Leighton; Breezy Rinehart-Young
Subject: RE: Delta Logistics Annex Day Road Access Discussion
Attachments: 73c4e23b-f087-4209-aa62-7bcb83883175.png

Greg,

You should be able to post the proposed signs below the stop sign. No need to include a whole new post and drivers will have full visibility to this if included with the stop sign. Based on this guidance from the MUTCD we should be clear to group these signs.

Guidance:
04 *Signs should be located on the right-hand side of the roadway where they are easily recognized and understood by road users. Sigı supplementary to signs in the normal locations, except as otherwise provided in this Manual.*

05 *Signs should be individually installed on separate posts or mountings except where:*

A. One sign supplements another;
B. Route or directional signs are grouped to clarify information to motorists;
C. Regulatory signs that do not conflict with each other are grouped, such as turn prohibition signs posted with one way signs or a p
D. Street name signs are posted with a stop or yield sign.

Here's an example where you would replace the prohibition time periods with the “TRUCK” plaque.

Janet Jones, PE | she/her/hers
Associate | Transportation Engineering
D 971.346.3741 E jjones@mcknze.com

MACKENZIE.
Mackenzie Email Disclaimer

From: Greg Mino <GMino@mcknze.com>
Sent: Tuesday, June 21, 2022 7:01 PM
To: Janet T. Jones <JTJ@mcknze.com>; Lee D. Leighton <LLeighton@mcknze.com>; Breezy Rinehart-Young

<BRinehart@mcknze.com>
Subject: FW: Delta Logistics Annex Day Road Access Discussion

Hi Janet – nice work, this is a big win! I would love some traffic engineering advice on where exactly these signs should be placed. More specifically to understand whether we capture them on the onsite or offsite plans. Would you please?

Thanks!

Greg Mino, PE
Senior Associate | Civil Engineer
D 971.346.3702 E gmino@mcknze.com

MACKENZIE.

From: Pepper, Amy <apepper@ci.wilsonville.or.us>
Sent: Tuesday, June 21, 2022 3:58 PM
To: Janet T. Jones <JTJ@mcknze.com>
Cc: Lee D. Leighton <LLeighton@mcknze.com>; Scott Moore <SMoore@mcknze.com>; Brent Ahrend <BAhrend@mcknze.com>; Sid Hariharan <SHariharan@mcknze.com>; Adam Goldberg <AGoldberg@mcknze.com>; Aaron Carpenter <ACarpenter@mcknze.com>; Igor Nichiporchik <igor@deltagov.com>; Garrett H. Stephenson <gstephenson@schwabe.com>; Greg Mino <GMino@mcknze.com>
Subject: RE: Delta Logistics Annex Day Road Access Discussion

Janet ~

Sorry for the delayed response on this. The City would be accepting of Option 2 – Signage with the condition that in the future the City may modify the access as needed to ensure the long-term safety along the corridor (I'll be working with our legal department on exact language).

Please let me know if you have any questions about this.

Amy

From: Janet T. Jones <JTJ@mcknze.com>
Sent: Tuesday, June 7, 2022 8:14 AM
To: Pepper, Amy <apepper@ci.wilsonville.or.us>
Cc: Lee D. Leighton <LLeighton@mcknze.com>; Scott Moore <SMoore@mcknze.com>; Brent Ahrend <BAhrend@mcknze.com>; Sid Hariharan <SHariharan@mcknze.com>; Adam Goldberg <AGoldberg@mcknze.com>; Aaron Carpenter <ACarpenter@mcknze.com>; Igor Nichiporchik <igor@deltagov.com>; Garrett H. Stephenson <gstephenson@schwabe.com>; Greg Mino <GMino@mcknze.com>
Subject: RE: Delta Logistics Annex Day Road Access Discussion

[This email originated outside of the City of Wilsonville]

Amy,

We understand that the City has no ability to enforce the use of Day Road by Delta Logistics at peak times and we understand the need to prohibit left turns onto SW Day Road to maintain safety, consistent with our review of limited sight distance availability for trucks to the east from the proposed site access location.

We have reviewed two options to limit left turns for trucks at this location: 1) construction of a median within the proposed driveway to limit left turns out while allowing all other movements; or 2) signage prohibiting left turns for trucks onto SW Day Road from the site.

Option 1 – Driveway Median

Our review shows the median option has a significant impact on the more vulnerable pedestrian and bicyclist population. Truck turn simulations for a WB-67 design vehicle show a much wider driveway apron would be required with a driveway median, increasing the conflict area between vehicles and pedestrians/bicyclists. This design would require a 70' radius for exiting trucks resulting in an approximately 143' wide driveway apron while providing only a 3-foot refuge in the median for pedestrians in the future. This is subpar to the preferred 8-foot refuge that is recommended by the FHWA and leaves approximately 100' of non-refuge area for pedestrians. Providing the additional 5 feet recommended in the median would result in an approximately 148' wide driveway apron with about 100' of non-refuge area.

Not only would this design require a very wide driveway apron that has adverse safety implications on pedestrians and bicyclists, but the median geometry may not be adequate in physically restricting left turns onto SW Day Road. A turn-restricting median for this industrial driveway is not appropriate and may compromise the safety of pedestrians and bicyclists.

Option 2 – No Left Turns Signage

Our sight distance review concluded there was limited sight distance to the east for combination trucks. Adequate sight distance is expected for passenger vehicles to the east. Therefore, a left-turn restriction onto SW Day Road should be limited to trucks only. Signage to indicate left turns are prohibited for trucks onto SW Day Road would be an alternative to Option 1 which would not require such a wide driveway apron, and therefore would not have an adverse impact on the safety of pedestrians and bicyclists. Compliance with this signage would likely be high for this particular site because there is a single user and alternative access is available to Commerce Circle. Delta Logistics has confirmed there will be few trips, if any, that will travel to and from the west on SW Day Road.

This design option has no adverse impact on pedestrians and bicyclists, and does not unnecessarily limit left turns for passenger vehicles. Prohibiting left turns for trucks can be achieved by using MUTCD sign R3-2 in conjunction with MUTCD placard M4-4.

If you agree with our recommendation to proceed with Option 2 to limit left turns onto SW Day Road for trucks we will revise our drawings to include the recommended signage.

Thank you,

Janet Jones, PE | she/her/hers
Associate | Transportation Engineering
D 971.346.3741 E jjones@mcknze.com

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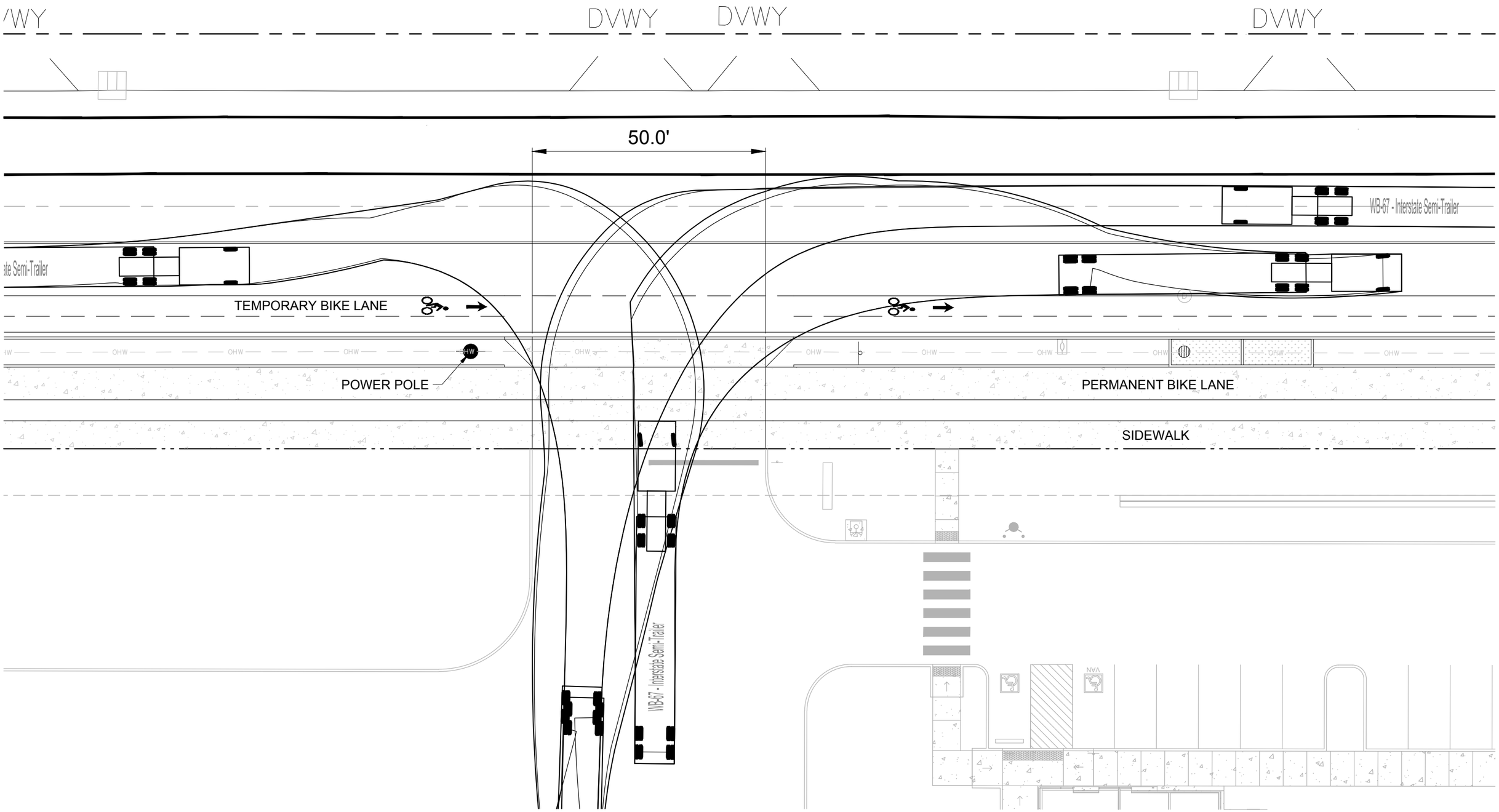
Mackenzie Email Disclaimer



Delta Logistics

Driveway Truck Turns

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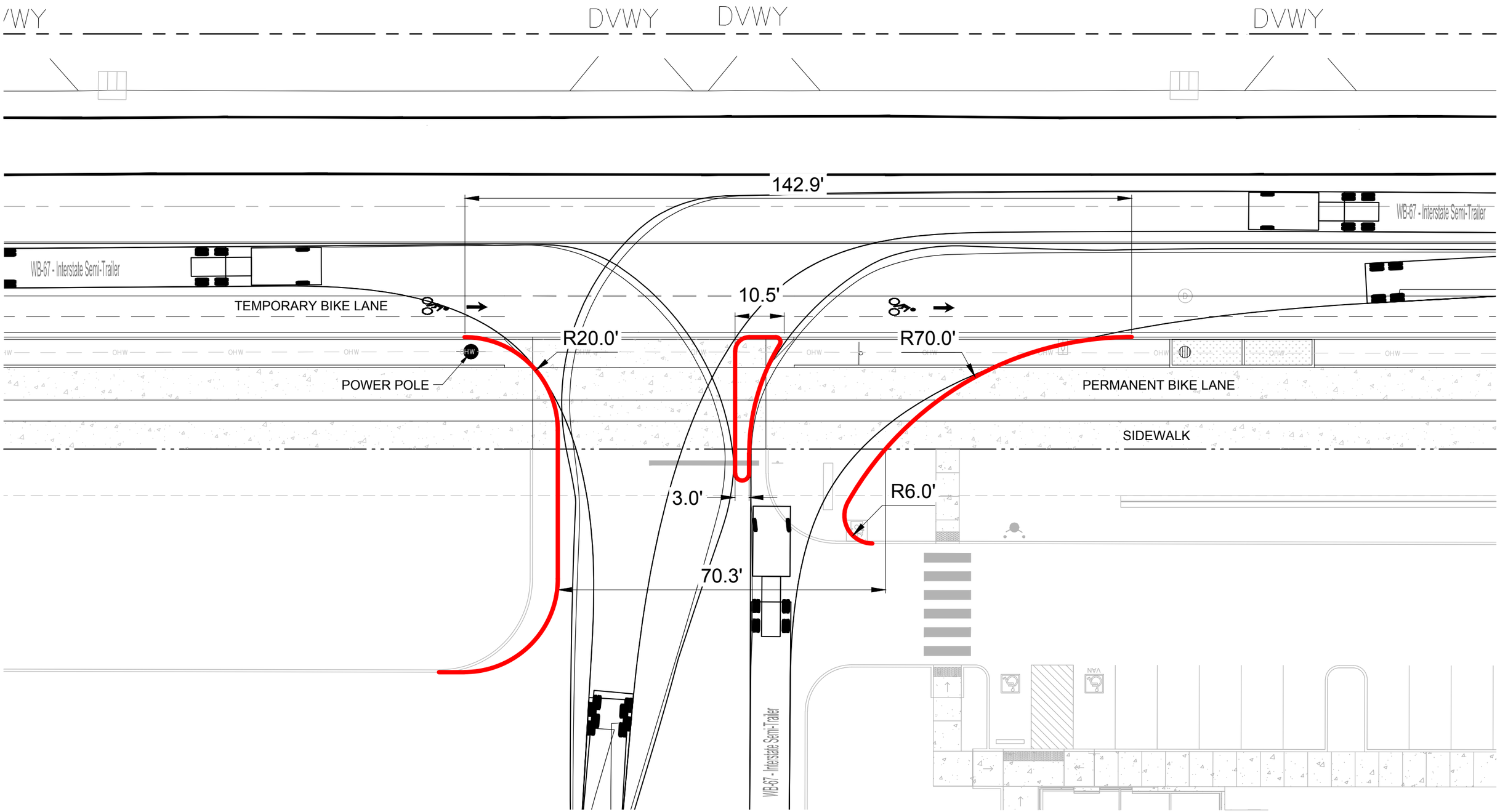
06.02.22



Delta Logistics

Prohibited Left Turn Driveway

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06.02.22

From: Pepper, Amy <apepper@ci.wilsonville.or.us>
Sent: Monday, February 14, 2022 3:30 PM
To: Janet T. Jones <JTJ@mcknze.com>; Lee D. Leighton <LLeighton@mcknze.com>; Scott Moore <SMoore@mcknze.com>; Brent Ahrend <BAhrend@mcknze.com>; Sid Hariharan <SHariharan@mcknze.com>; Adam Goldberg <AGoldberg@mcknze.com>; Aaron Carpenter <ACarpenter@mcknze.com>; Igor Nichiporchik <igor@deltagov.com>; Garrett H. Stephenson <gstephenson@schwabe.com>; Greg Mino <GMino@mcknze.com>
Subject: RE: Delta Logistics Annex Day Road Access Discussion

Janet ~

Please see the attached final TIA for Delta Logistics.

If you have any questions, please let me know.

Amy

From: Pepper, Amy
Sent: Thursday, February 10, 2022 7:43 AM
To: 'Janet T. Jones' <JTJ@mcknze.com>; Lee D. Leighton <LLeighton@mcknze.com>; Scott Moore <SMoore@mcknze.com>; Brent Ahrend <BAhrend@mcknze.com>; Sid Hariharan <SHariharan@mcknze.com>; Adam Goldberg <AGoldberg@mcknze.com>; Aaron Carpenter <ACarpenter@mcknze.com>; Igor Nichiporchik <igor@deltagov.com>; Garrett H. Stephenson <gstephenson@schwabe.com>; Greg Mino <GMino@mcknze.com>
Cc: Palmer, Matt <palmer@ci.wilsonville.or.us>; Jenna Bogert <jenna.bogert@dksassociates.com>; Scott Mansur <smm@dksassociates.com>
Subject: RE: Delta Logistics Annex Day Road Access Discussion

Janet ~

DKS is finalizing the traffic study with the recommendation to approve the proposed driveway location, recognizing that it is not the most ideal, but the best option at this time.

I'll forward you the final study when it is complete.

Amy

From: Janet T. Jones <JTJ@mcknze.com>
Sent: Wednesday, February 9, 2022 7:29 PM
To: Pepper, Amy <apepper@ci.wilsonville.or.us>; Lee D. Leighton <LLeighton@mcknze.com>; Scott Moore <SMoore@mcknze.com>; Brent Ahrend <BAhrend@mcknze.com>; Sid Hariharan <SHariharan@mcknze.com>; Adam Goldberg <AGoldberg@mcknze.com>; Aaron Carpenter <ACarpenter@mcknze.com>; Igor Nichiporchik <igor@deltagov.com>; Garrett H. Stephenson <gstephenson@schwabe.com>; Greg Mino <GMino@mcknze.com>
Cc: Palmer, Matt <palmer@ci.wilsonville.or.us>; Jenna Bogert <jenna.bogert@dksassociates.com>; Scott Mansur <smm@dksassociates.com>
Subject: RE: Delta Logistics Annex Day Road Access Discussion

[This email originated outside of the City of Wilsonville]

Hi Amy,

Just following up on this to see if you or DKS has any questions we can answer. We appreciate your review of this a resolution on this matter is important for the project schedule.

Thank you,

Janet Jones, PE | she/her/hers
Associate | Transportation Engineering
D 971.346.3741 E jjones@mcknze.com

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Mackenzie Email Disclaimer

From: Janet T. Jones
Sent: Wednesday, February 2, 2022 10:35 AM
To: Pepper, Amy <apepper@ci.wilsonville.or.us>; Lee D. Leighton <LLeighton@mcknze.com>; Scott Moore <SMoore@mcknze.com>; Brent Ahrend <BAhrend@mcknze.com>; Sid Hariharan <SHariharan@mcknze.com>; Adam Goldberg <AGoldberg@mcknze.com>; Aaron Carpenter <ACarpenter@mcknze.com>; Igor Nichiporchik <igor@deltagov.com>; Garrett H. Stephenson <gstephenson@schwabe.com>; Greg Mino <GMino@mcknze.com>
Cc: Palmer, Matt <palmer@ci.wilsonville.or.us>; Jenna Bogert <jenna.bogert@dksassociates.com>; Scott Mansur <smm@dksassociates.com>
Subject: RE: Delta Logistics Annex Day Road Access Discussion

Hi Amy,

Attached is a new slide deck that presents the driveway evaluation on SW Day Road based on a design speed of 35 mph. The conclusions remain the same: there are better sight lines for the Delta property at the proposed location versus the City's recommended location.

A minor change is that it would appear the sight distance recommendation for passenger cars is met at the alternative shared access for adjacent properties location assuming a design speed of 35 mph where it was not previously met with the 40 mph design speed. However, the sight distance for passenger cars should be met for both design speeds at this location as the roadway is relatively flat nearing the signal at Boones Ferry Road, as verified in the field. Overall, these alternative access locations for adjacent properties to the east have better sight lines than the City's recommended driveway location.

We are happy to answer any more questions you may have.

Thank you,

Janet Jones, PE | she/her/hers
Associate | Transportation Engineering
D 971.346.3741 E jjones@mcknze.com

MACKENZIE.
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From: Pepper, Amy <apepper@ci.wilsonville.or.us>
Sent: Tuesday, January 18, 2022 2:24 PM
To: Janet T. Jones <JTJ@mcknze.com>; Lee D. Leighton <LLeighton@mcknze.com>; Scott Moore <SMoore@mcknze.com>; Brent Ahrend <BAhrend@mcknze.com>; Sid Hariharan <SHariharan@mcknze.com>; Adam

Goldberg <AGoldberg@mcknze.com>; Aaron Carpenter <ACarpenter@mcknze.com>; Igor Nichiporchik <igor@deltagov.com>; Garrett H. Stephenson <gstephenson@schwabe.com>; Greg Mino <GMino@mcknze.com>
Cc: Palmer, Matt <palmer@ci.wilsonville.or.us>; Jenna Bogert <jenna.bogert@dksassociates.com>; Scott Mansur <smm@dksassociates.com>
Subject: RE: Delta Logistics Annex Day Road Access Discussion

Thank you for providing additional information about the Day Road access location for the proposed Delta Logistics Annex. As you are likely aware, the City has pursued reducing the speed limit along Day Road to 35 mph in the past and that has been denied. The state legislature changed the rules that may allow the City to pursue a speed reduction again. To be able to fully evaluate the impacts to this project, will the project team please evaluate the proposed driveway locations based upon a speed limit of 35 mph? Once we have this data, the City should be able to provide a more definitive answer about the preferred driveway location.

Please let me know if you have any questions about this request.

Thanks!

Amy

REPUBLIC SERVICES
10295 Southwest Ridder Road Wilsonville, OR 97070
o 503.570.0626 f 503.582.9507 republicservices.com

December 17, 2021

Aaron Carpenter

Re: McKenzie Architecture
9710 SW Day Rd.
Sherwood, OR 97140

Dear Aaron,

Thank you, for sending us the preliminary site plans for this proposed development in Sherwood OR.

My Company: Republic Services of Clackamas and Washington Counties has the franchise agreement to service this area with Washington County. We will provide complete commercial waste removal and recycling services as needed on a weekly basis for this location

We have reviewed your design plan site access and flow pattern and determined that it is adequate for our trucks to navigate the site and service the trash and recycle enclosure.

The trash and recycle enclosure will not have a roof and no vertical overhead obstructions. Your enclosure dimensions of 20' Ft. wide X 10'Ft. deep with two swinging gates that open a minimum of 120 degrees and are equipped with wind pins to secure gates in the closed and open positions will accommodate the storage and access of our equipment. The transition from the enclosure to the driveway is level with a smooth transition with no obstructions.

Thanks Aaron, for your help and concerns for our services prior to this project being developed.

Sincerely,

Kelly Herrod
Operations Supervisor
Republic Services Inc.

Luminaire Schedule						
Symbol	**Qty**	**Label**	**Description**	**LLF**	**Lum. Watts**	**Lumens per Fixture**
	2	IAHP1A1xxxFDx50xxT4-BLS QP	ISON LED Area Light High Performance Gen 1, 75W, 13000 Lumens, 5000K, Type IV	0.935	75.118	11963
	19	LSWF1A1UNV - 3000LM 5000K	Lumen Select Wall Pack Full -cutoff, 120-277V, 3000lm, 24W, 80CRI, 5000K	0.935	24	3072
	13	IAHP1A1xxxFDx50xxT4-BLS	ISON LED Area Light High Performance Gen 1, 75W, 13000 Lumens, 5000K, Type IV	0.935	75.118	11963

Calculation Summary							
Label	**CalcType**	**Units**	**Avg**	**Max**	**Min**	**Avg/Min**	**Max/Min**
Parking Lot	**Illuminance**	**Fc**	**1.47**	**33.3**	**0.0**	**N.A.**	**N.A.**

Summary

IMPORTANT

1.) Presentation plans only. Not for construction use.

(1) GENERAL NOTES
CONFIDENTIAL INFORMATION Please Note: This data is based upon certain specific assumed reflectances and characteristics of the proposed environment. Any deviation from these reflectances or assumed characteristics may affect the actual performance of the luminaries. Based on the factors, Orion Energy Systems, Inc. can not guarantee these results.

2) NO OBJECTS CONSIDERED IN CALCULATIONS UNLESS OTHERWISE NOTED ON THE PRINT.

3) STANDARD REFLECTION VALUES
CEILING: .8
WALLS: .5
FLOOR: .2
RACKING: .5

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Wilsonville, OR
P1303500

DRAWING	DATE	DRAWN BY	REVIEWED BY
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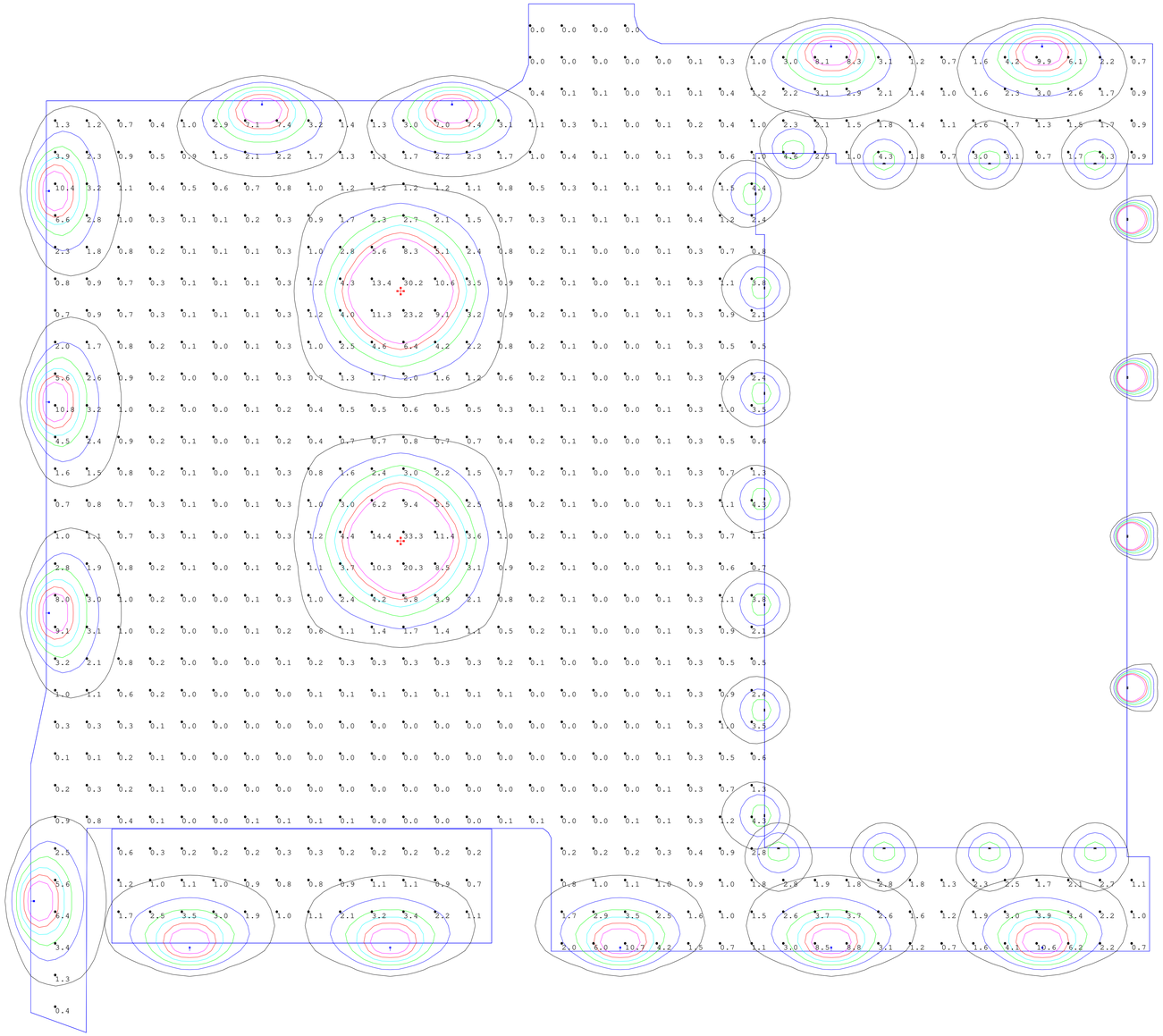
REV 1	3/09/2023	JG	



Interior Layout

IMPORTANT

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WALLS: .5
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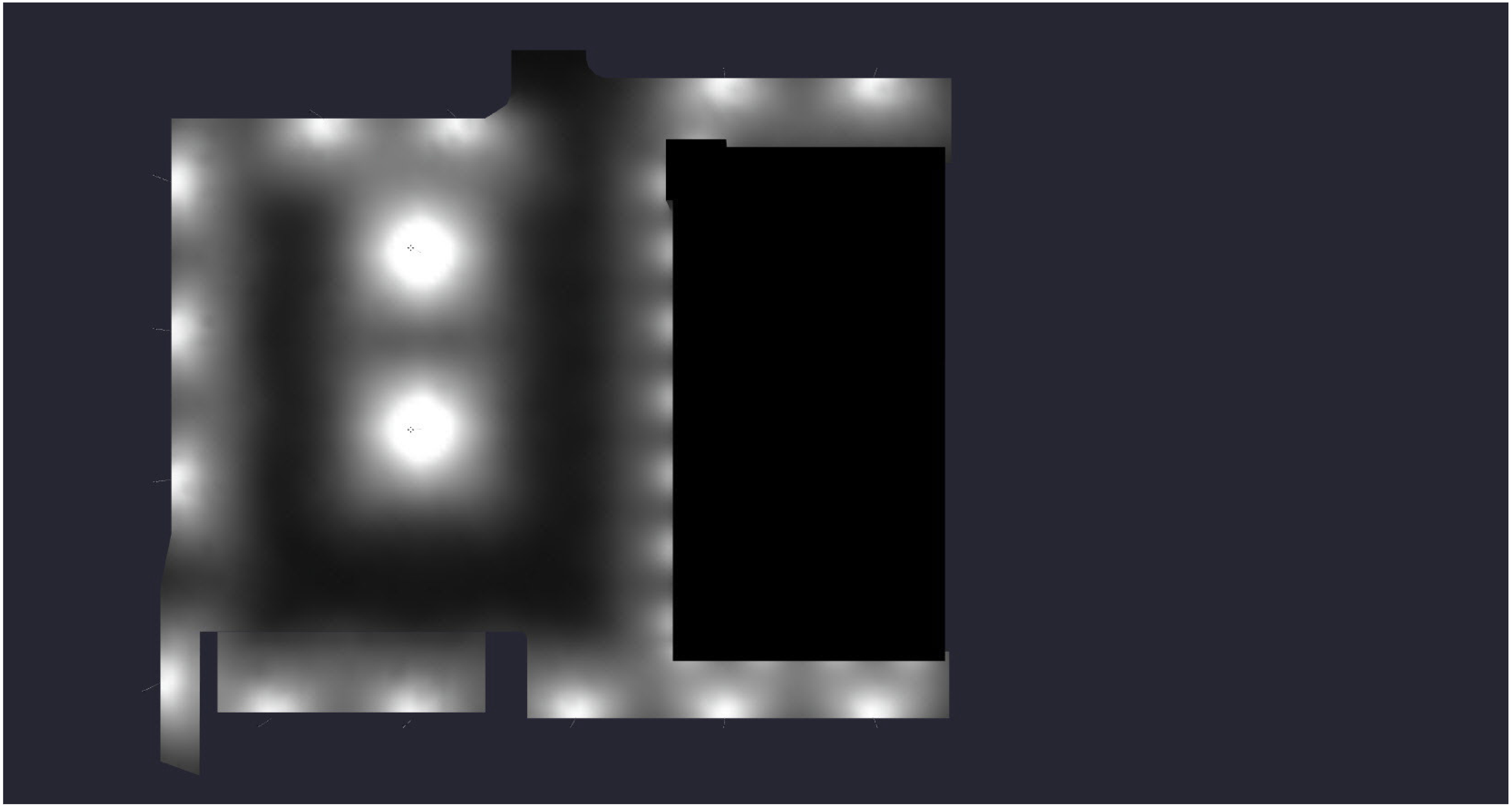
REV 0	3/29/2022	JG	
REV 1	3/09/2023	JG	



Rendering

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REV 0	3/29/2022	JG	
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Luminaire Schedule						
Symbol	**Qty**	**Label**	**Description**	**LLF**	**Lum. Watts**	**Lumens per Fixture**
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	19	LSWF1A1UNV - 3000LM 5000K	Lumen Select Wall Pack Full -cutoff, 120-277V, 3000lm, 24W, 80CRI, 5000K	0.935	24	3072
	18	IAHP1A1xxxFDx50xxT4-BLS	ISON LED Area Light High Performance Gen 1, 75W, 13000 Lumens, 5000K, Type IV	0.935	75.118	11963

Calculation Summary							
Label	**CalcType**	**Units**	**Avg**	**Max**	**Min**	**Avg/Min**	**Max/Min**
Parking Lot	**Illuminance**	**Fc**	**1.46**	**33.3**	**0.0**	**N.A.**	**N.A.**

Summary

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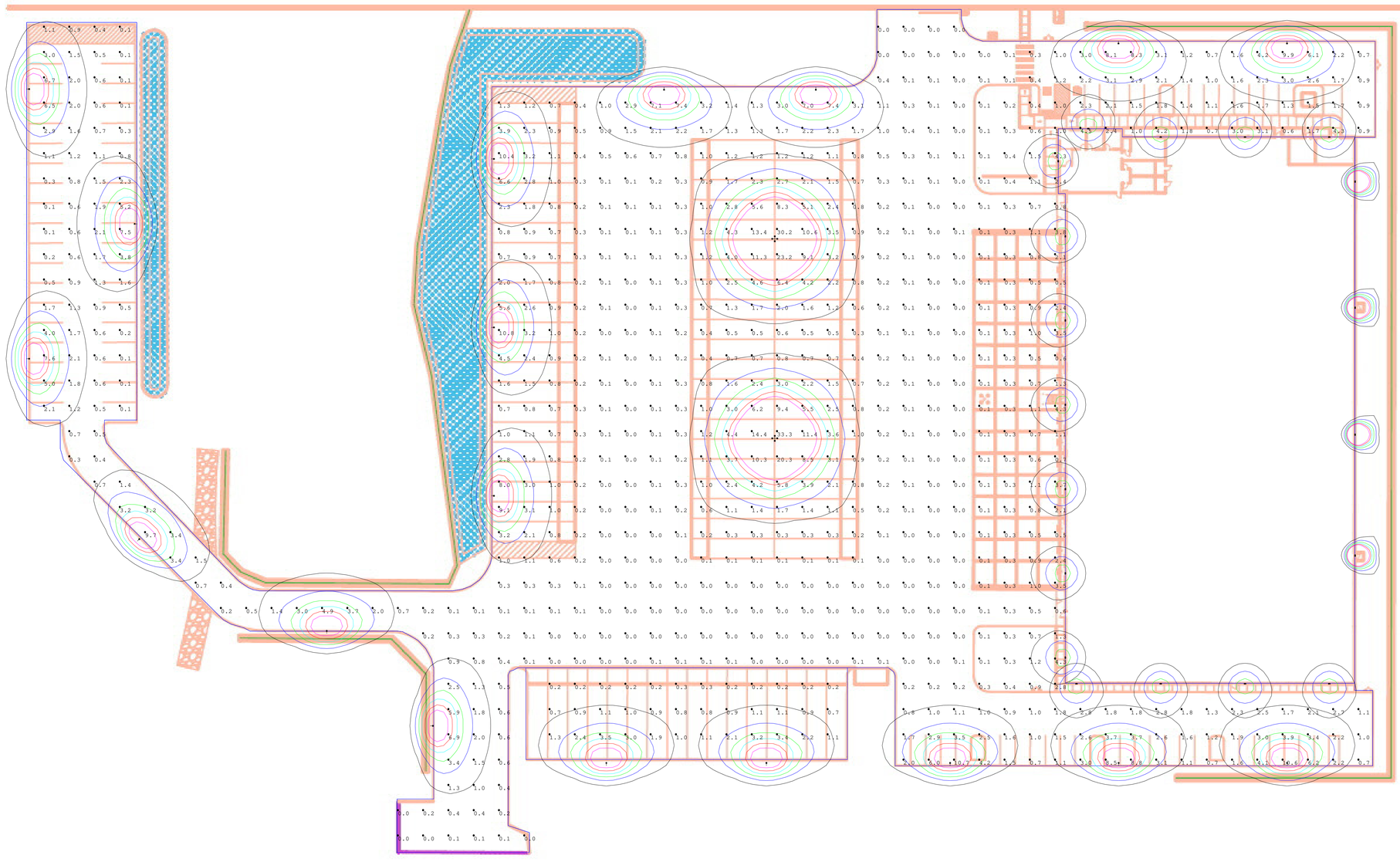
REV 0	3/29/2020	JG	



Interior Layout

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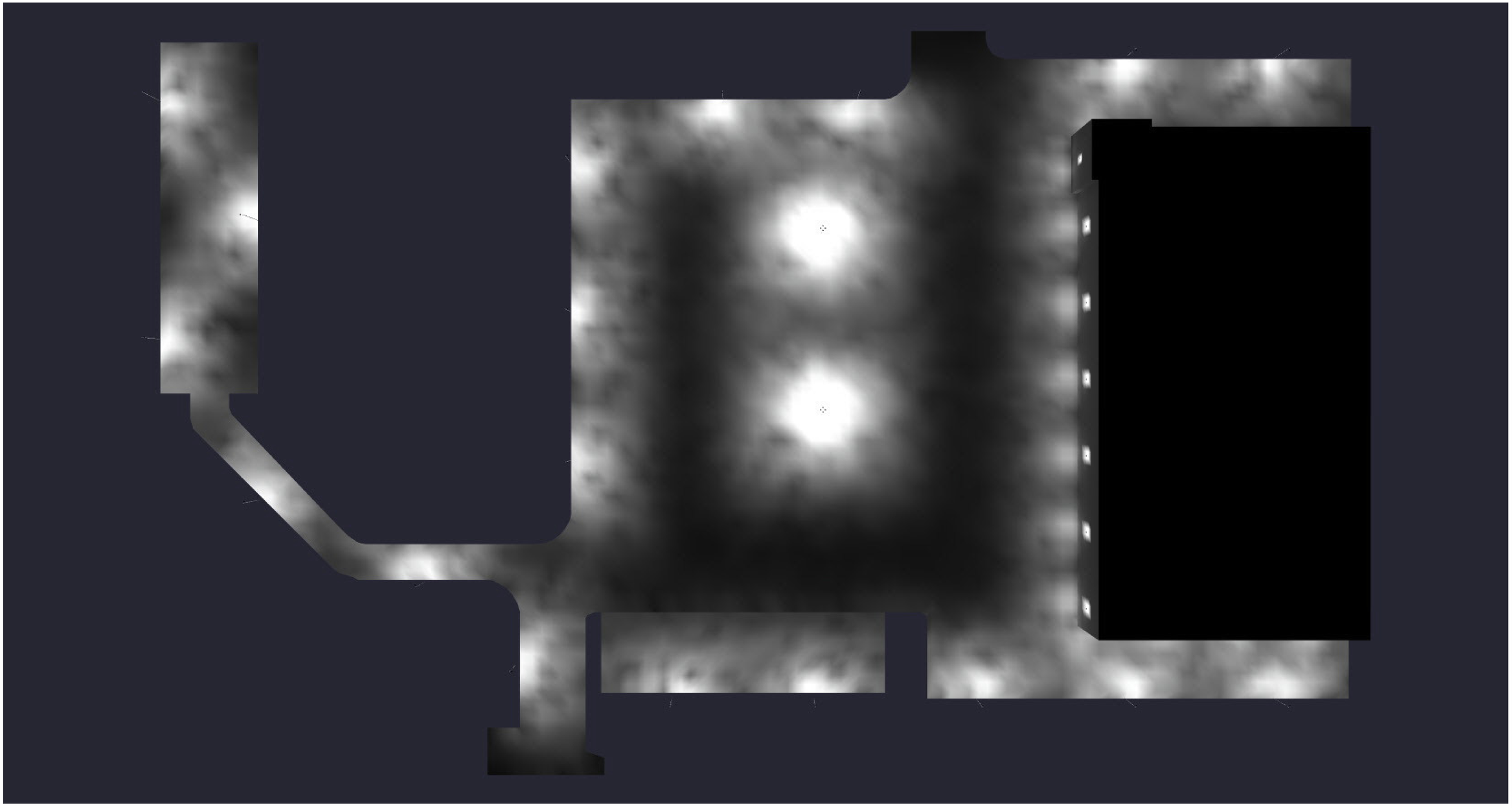
REV 0	3/29/2020	JG	



Rendering

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Wilsonville, OR
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REV 0	3/29/2020	JG	

LSWF1

Applications
Full cutoff light output is ideal for exterior walls, entrance ways, pathways and steps. The HARRIS LSWF1 delivers energy savings and reduced maintenance costs and ideally replace any existing traditional style HID wall packs with similar look and size. It is the ultimate flexible wall pack fixture with lumen output and color temperature selection at the point of installation.

LSWF1A1UNVFD8CSBR-SP

FIELD ADJUSTABLE WATTAGE/LIGHT OUTPUT AND CCT

Features

- Die-cast aluminum housing with UV stabilized powder coat finish for harsh outdoor environments. Bronze fixture housing color is standard. Black and white fixture housing colors available.
- UV resistant polycarbonate lens
- Two fixture sizes with selectable power/lumens between 3,000-18,000 lumen outputs provide flexibility to adjust in the field
- 80 CRI minimum; CCT selectable between 3000K, 4000K or 5000K
- Latest generation of LED technology enables fixture to run at lower wattages resulting in additional energy savings
- Meets full cutoff requirements at 90° horizontal
- Battery back up option available (90 minutes; A1 lumen package only)
- Integrated photocell standard
- PIR and Microwave sensor options

Electrical

- Available in 120v-277v
- 0-10v Continuous Dimming
- Power Factor >0.90
- Total Harmonic Distortion < 20%
- 10kV/5kA Surge Protection Standard

Ambient Operating Range

See ambient operating table on page 2

Fixture Certifications & Listings

- cUL/cULus Listed
- UL Wet Listed
- DesignLights Consortium™ Premium qualified luminaire
- Visit the DLC QPL for listed models

Lumen Maintenance

See lumen maintenance table on page 2

Warranty

See Orion's Product Limited Warranty for more details and information

c UL us

UL WET RATED

DLC QPL LISTED PREMIUM

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LSWF1

Performance Information, 277v, ≥80 CRI[2]

Nominal Lumen Code	Wattage	3000K		4000K		5000K		Input Current
		Actual Lumens	LPW	Actual Lumens	LPW	Actual Lumens	LPW	
A1	24w	2,995lm	125	3,102lm	129	3,059lm	128	0.2A
	30w	3,555lm	118	3,682lm	123	3,631lm	121	0.24A
	40w	4,782lm	120	4,953lm	124	4,885lm	122	0.35A
B1	45w	6,013lm	134	6,768lm	150	6,674lm	148	0.37A
	54w	7,237lm	134	8,146lm	151	8,033lm	149	0.46A
	70w	8,779lm	125	9,881lm	141	9,745lm	139	0.59A
	80w	9,657lm	121	10,870lm	136	10,719lm	134	0.66A
C1	83w	11,480lm	138	11,890lm	143	11,726lm	141	0.69A
	111w	14,614lm	132	15,137lm	136	14,928lm	134	0.93A
	150w	18,421lm	123	19,080lm	127	18,816lm	125	1.21A

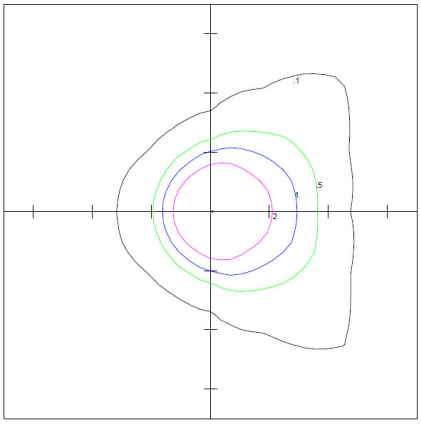
Lumen Maintenance

Nominal Lumen Code	Nominal Lumens	Calculated Lumen Maintenance		
		L70	L80	L90
A1	3,000/4,000/5,000	372,000	228,000	101,000
B1	6,000/7,000/9,000/10,000	372,000	228,000	101,000
C1	12,000/15,000/18,000	372,000	228,000	101,000

Photometrics

Visit orionlighting.com to obtain all .IES files

C1 850



Distance are in Units of Mounting Height
Mounting Height 30'
Max. Calculated Value: 8.09 FC

Ambient Operating Temperatures[4,5]

Nominal Lumen Code	Standard Range
All Lumen Packages	-40°C to 50°C (-40°F to 122°F)

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HARRIS LUMEN SELECT WALL PACK, FULL CUTOFF, GEN

LSWF1

Ordering Information Example (NOTE: No dashes or spaces unless noted below)

Series	Nominal Lumen Code	Voltage	Driver Type	CRI; Color Temp	Fixture Colors	Fixture Options	Packaging Options
LSWF1	C1	UNV	FD	8CS	BR	(blank)	-SP

Ordering Information

Series	Nominal Lumen Code[1]	Voltage	Driver Type	CRI; Color Temp	Fixture Colors	Fixture Options	Packaging Options
LSWF1= HARRIS LED Lumen Selectable Wall pack, Full Cutoff, Gen 1	**A1**= Lumen Selectable 3,000 lm/ 4,000 lm/ 5,000 lm **B1**= Lumen Selectable 6,000 lm/ 7,000 lm/ 9,000 lm/ 10,000 lm **C1**= Lumen Selectable 12,000 lm/ 15,000 lm/ 18,000 lm	**UNV**= 120v-277v	**FD**= Factory Wired for Dimming Applications	**8CS**= 80CRI; Color Selectable 3000K/ 4000K / 5000K	**BR**= Bronze **BL**= Black* **WH**= White* *Note: These fixture colors are special order and have longer lead times	**(Blank)**= No Options **BB**= Battery Back Up*[4] *Note: Available with **A1** model only	**-SP**= Single Pack

Fixture Options (Field Installed)

Sensor Options[5]	
EXT-LSW-MS	Microwave Sensor
EXT-LSW-PIR	PIR Sensor
EXT-LSW-RC	Sensor Remote Control

Microwave Sensor (EXT-LSW-MS)

PIR Sensor (EXT-LSW-PIR)

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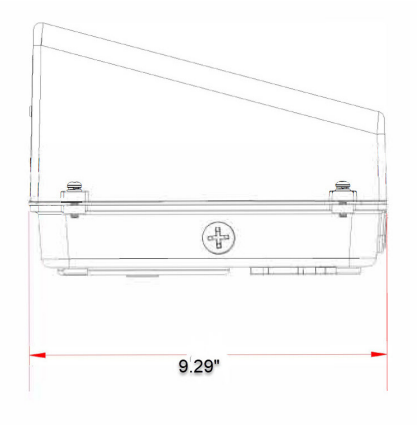
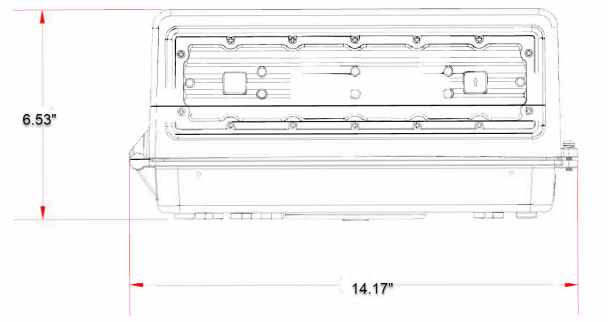
Physical Information[3]

Nominal Lumen Code	Height	Width	Depth	Weight
A1/B1	9.29"	14.17"	6.53"	7.50lbs.
C1	9.29"	14.17"	9.65"	11.20lbs.

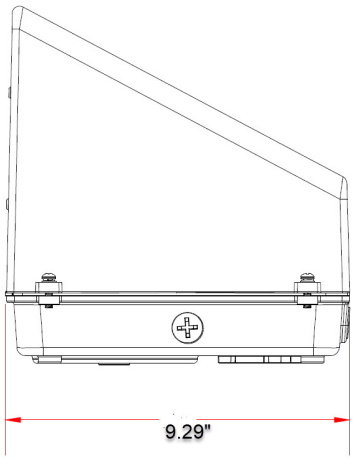
A1/B1 Height



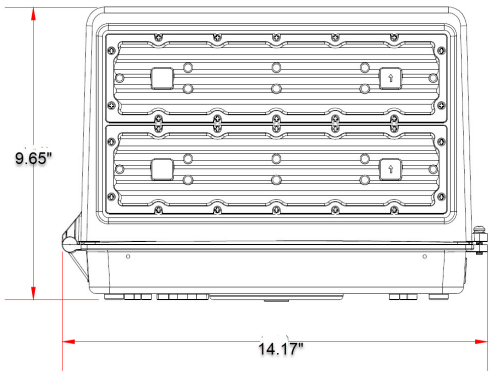
A1/B1 Width and Depth



C1 Height



C1 Width and Depth



Additional Specification Information

[1] For actual lumens, see performance table

[2] Actual performance may vary by up to ±10% of values listed; facility factors and fixture options can affect performance values.

[3] Weight will vary based on option selection

[4] Ambient operating temperature range for battery back up is -20°C to 50°C [-4°F to 122°F]

[5] Ambient operating temperature for sensors only go down to -30°C [-22°F]

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IAHP1

Applications
The ISON IAHP1 industry leading lumen per watt performance maximizes energy savings and leads to the lowest total cost of ownership for exterior lighting. The ISON Area Light High Performance provides uniform distribution for area and site lighting in retail, commercial, and residential applications including driveways and parking areas. Replaces up to 1200W HID high intensity discharge fixtures.

IAHP1C1UNVFD740BLT3-SP

Features

- Multiple light distribution options
- Precision engineered lens made of optical grade polycarbonate for maximum light intensity
- Tool-less access to electrical components for field maintenance and installation
- Three low-profile fixture sizes available in eight lumen packages
- Anti-corrosion stainless steel hardware
- Heavy duty die-cast aluminum housing comes standard in bronze. Black and white fixture housing available
- Multiple mounting options
- 10kV/6kA Surge Protection standard. Additional surge protection available
- Light shield kit options
- Photo control and occupancy sensor options
- Fixture ships ready for field installation of photocell option
- Various IoT Control Solutions are available to deploy with the IAHP1

Electrical

- Available in 120v-277v, and 277v-480v 3phase
- Full Dimming (0-10v) fixtures are standard
- Power Factor >.90
- 10kV/6kA Surge Protection standard
- Optional 12v DC auxiliary power provided with 7-pin NEMA receptacle

Ambient Operating Range

See page 3 for ambient operating temperature range table

Fixture Certification & Listings

- UL/cUL Listed for Wet Locations
- RoHS Compliant Components
- IK10 Impact Rating
- Fixture with Sensor is IP66 Rated
- Fixture is IP67 Rated
- 3.0 G Vibration load rating per ANSI C136.31
- Title 24 Compliancy when using optional sensor
- DesignLights Consortium premium qualified product
- Visit the DLC QPL for listed models
- Dark Sky Approved. 3000K CCT

Lumen Maintenance

Up to 150,000 hours of operation. See Lumen Maintenance Table on page 3

Warranty

Orion ISON class LED fixtures are covered by a five-year limited warranty. Accessories and individual components are covered by separate OEM supplier warranties

c UL us | UL WET RATED | IP66 IP67 | IK10 Rated | RoHs Compliant Components | ida DARK SKY APPROVED | TITLE 24 COMPLIANT | 3G Vibration Rating | DLC QPL LISTED PREMIUM

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IAHP1

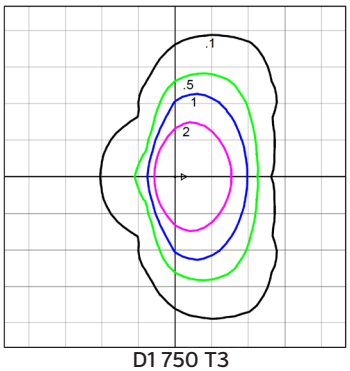
Performance Information, 277v, ≥70 CRI, 4000K[2]

	Type V				Type IV				Type III				
Nominal Lumen Code	Actual Lumens	Wattage	LPW	BUG Rating	Actual Lumens	Wattage	LPW	BUG Rating	Actual Lumens	Wattage	LPW	BUG Rating	Input Current
A1	13,464lm	75w	180	B4-U0-G2	12,618lm	75w	169	B3-U0-G2	12,918lm	74w	174	B3-U0-G2	0.27A
B1	19,833lm	114w	175	B4-U0-G2	18,676lm	113w	165	B3-U0-G3	19,048lm	113w	168	B3-U0-G3	0.41A
C1	24,485lm	144w	170	B5-U0-G3	23,028lm	144w	160	B3-U0-G3	23,640lm	143w	166	B3-U0-G3	0.52A
D1	32,222lm	179w	180	B5-U0-G4	30,546lm	179w	170	B3-U0-G4	31,781lm	180w	176	B4-U0-G3	0.65A
E1	35,295lm	200w	175	B5-U0-G4	33,395lm	201w	166	B3-U0-G4	34,107lm	198w	172	B4-U0-G4	0.72A
F1	39,567lm	229w	173	B5-U0-G4	37,640lm	229w	163	B4-U0-G4	38,544lm	228w	169	B4-U0-G4	0.83A
G1	50,551lm	301w	168	B5-U0-G5	47,055lm	296w	159	B4-U0-G5	49,233lm	300w	164	B4-U0-G4	1.09A
H1	65,034lm	410w	159	B5-U0-G5	61,365lm	411w	149	B4-U0-G5	62,490lm	412w	152	B4-U0-G5	1.48A

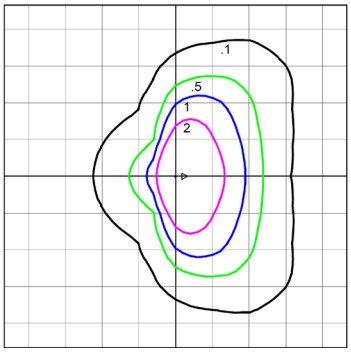
Performance Information, 277v, ≥80 CRI, 4000K[2]

	Type V				Type IV				Type III				
Nominal Lumen Code	Actual Lumens	Wattage	LPW	BUG Rating	Actual Lumens	Wattage	LPW	BUG Rating	Actual Lumens	Wattage	LPW	BUG Rating	Input Current
A1	12,630lm	76w	165	B4-U0-G2	12,122lm	76w	159	B3-U0-G2	12,587lm	76w	165	B3-U0-G2	0.27A
B1	18,252lm	111w	164	B4-U0-G2	17,518lm	111w	158	B3-U0-G3	18,190lm	111w	164	B3-U0-G3	0.40A
C1	22,186lm	139w	160	B5-U0-G3	21,294lm	139w	153	B3-U0-G3	22,111lm	139w	159	B3-U0-G3	0.50A
D1	29,516lm	176w	168	B5-U0-G4	28,329lm	176w	161	B3-U0-G4	29,416lm	176w	167	B4-U0-G3	0.63A
E1	32,875lm	191w	172	B5-U0-G4	31,554lm	191w	165	B3-U0-G4	32,765lm	191w	171	B4-U0-G4	0.69A
F1	37,219lm	221w	169	B5-U0-G4	35,723lm	221w	162	B4-U0-G4	37,094lm	221w	168	B4-U0-G4	0.80A
G1	49,402lm	288w	171	B5-U0-G5	47,416lm	288w	164	B4-U0-G5	49,236lm	288w	171	B4-U0-G4	1.04A
H1	64,890lm	400w	162	B5-U0-G5	62,281lm	400w	156	B4-U0-G5	64,671lm	400w	162	B4-U0-G5	1.45A

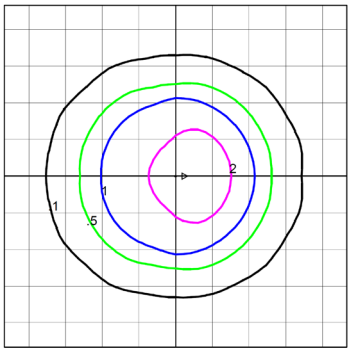
ISO FOOTCANDLE PLOTS



D1 750 T3
Distance are in Units of Mounting Height
Mounting Height 30'
Maximum Calculated Value: 8.90 Fc



D1 750 T4
Distance are in Units of Mounting Height
Mounting Height 30'
Maximum Calculated Value: 8.54 Fc



D1 750 T5
Distance are in Units of Mounting Height
Mounting Height 30'
Maximum Calculated Value: 3.12 Fc

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IAHP1

Lumen Maintenance

Series	Nominal Lumen Code	Nominal Lumens	Operating Temperature	Calculated Lumen Maintenance		
				L70	L80	L90
IAHP1	A1	13,000	25°C	153,000	95,000	45,000
			50°C	153,000	95,000	45,000
IAHP1	B1	19,000	25°C	153,000	95,000	45,000
			50°C	153,000	95,000	45,000
IAHP1	C1	23,000	25°C	150,000	95,000	45,000
			50°C	135,000	85.000	40,000
IAHP1	D1	31,000	25°C	150,000	95,000	45,000
			50°C	150,000	95,000	45,000
IAHP1	E1	34,000	25°C	153,000	95,000	45,000
			50°C	153,000	95,000	45,000
IAHP1	F1	38,000	25°C	153,000	97,000	45,000
			50°C	148,000	93,000	45,000
IAHP1	G1	48,000	25°C	153,000	97,000	45,000
			50°C	127,000	80,000	38,000
IAHP1	H1	63,000	25°C	153,000	96,000	45,000
			45°C	120,000	75,000	40,000

Fixture Dimensions and Physical Information

Lumen Code	Length	Height	Width	Weight[3]	EPA (side) Using Slipfitter
A1/B1/C1	16.50"	2.20"	10.60"	9.00 lbs	.32 ft²
D1/E1/F1	20.30"	2.20"	13.70"	13.00 lbs	.36 ft²
G1/H1	23.00"	3.00"	14.10"	22.00 lbs	.50 ft²

Ambient Operating Temperature Range[9]

Lumen Code	Standard Operating Ambient Temperature Range
A1/B1/C1/D1/E1/F1/G1	-40°C to 50°C (-40°F to 122°F)
H1	-40°C to 45°C (-40°F to 113°F)

A1/B1/C1

D1/E1/F1

G1/H1

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IAHP1

Ordering Information Example (NOTE: No dashes or spaces unless noted below)

Series	Nominal Lumen Code	Voltage	Driver Type	CRI; Color Temp	Fixture Color	Light Distribution	Options	Packaging Options
IAHP1	C1	UNV	FD	740	BL	T5	(blank)	-SP

Ordering Information

Series	Nominal Lumen Code[1]	Voltage	Driver Type	CRI; Color Temp	Fixture Color	Light Distribution	Options*	Packaging Options
IAHP1= ISON LED Area Light High Performance, Gen 1	**A1**= 13,000lm **B1**= 19,000lm **C1**= 23,000lm **D1**= 31,000lm **E1**= 34,000lm **F1**= 38,000lm **G1**= 48,000lm[8] **H1**= 63,000lm[8]	**UNV**= 120v-277v **HMV**= 277v-480v	**FD**= Full Dimming	**730**= 70CRI; 3000K[6] **740**= 70CRI; 4000K **750**= 70CRI; 5000K **830**= 80CRI; 3000K[6] **840**= 80CRI; 4000K **850**= 80CRI; 5000K	**BR**= Bronze **BL**= Black[6] **WH**= White[6]	**T5**= Type V **T4**= Type IV **T3**= Type III	**(Blank)**= No Option **TS2**= 20kV/10kA Surge Protection **7R01**= 3/5/7-Pin Universal NEMA Receptacle[7]* **7R02**= 7 Pin NEMA Receptacle (with 12v power source)[7]* **WBxx**= PIR Occupancy Sensor, HIGH/LOW/OFF, 0-10V Dimming, Switching Photocell, Bluetooth, Mobile App Programmable, 360°[4,5,7,8] **EN2**= Enlighted Connected Lighting Sensor: Network Lighting Control Component, PIR Occupancy Sensor, Daylight Harvesting, High End Trim, Dimming Modes, Luminaire Level Lighting Control, Wireless Zones, Modified IEEE 802.15.4.1, BLE Radio, Temperature Sensor, Scene Control, Demand Response, Data Collection, BMS Integration, Cloud Access[7,8,9]** **EN3**= Enlighted IoT: All Features of **EN2** - PLUS access to Apps: Space Management, Asset Tracking, and Contact Tracing Apps[7,8,9]**	**-SP**= Single Pack

***Note**: Universal NEMA 7-Pin receptacle used. See Page 5 for Photocell options.
****Note**: For IoT cloud based and network systems See Page 5.

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IAHP1

Accessories (Sold Separately - Field Installed)

Mounting Options	
EXT-IAHP-SFT-001	Bronze Slip-fitter, 2-3/8" Tenons
EXT-IAHP-YKS-001	Bronze Yoke Mount, A1/B1/C1
EXT-IAHP-YKM-001	Bronze Yoke Mount, D1/E1/F1
EXT-IAHP-YKL-001	Bronze Yoke Mount, G1/H1
EXT-IAHP-TRN-001	Bronze Trunnion Mount, 5.5" Square Pole
EXT-IAHP-ADJ-001[6]	Bronze Adjustable Arm, 4" Square Pole
EXT-IAHP-UPM-001	Bronze Universal Pole Mount 3" Square or 4" Round Pole Kit
EXT-IAHP-UPM5-001	Bronze Universal Pole Mount 3" Square or 5" Round Pole Kit
EXT-IAHP-UPM6-001	Bronze Universal Pole Mount 3" Square or 6" Round Pole Kit
EXT-IAHP-SLM-001[6]	Bronze Slide and Lock, 3" Square or 3-4" Round Pole
EXT-IAHP-WMA-001[6]	Bronze Adjustable Wall Mount Arm Kit
Light Shield Options	
EXT-IAHP-BLS-001	Bronze Back Light Shield, Small, A1/B1/C1
EXT-IAHP-FLS-001	Bronze Back and Sides Light Shields, Small, A1/B1/C1
EXT-IAHP-BLM-001	Bronze Back Light Shield, Medium, D1/E1/F1
EXT-IAHP-FLM-001	Bronze Back and Sides Light Shields, Medium, D1/E1/F1
EXT-IAHP-BLL-001	Bronze Back Light Shield, Large, G1/H1
EXT-IAHP-FLL-001	Bronze Back and Sides Light Shields, Large, G1/H1
Note: To order a fixture bracket or Light Shield in Black change "**001**" to "**002**", or for White change "**001**" to "**003**". Example: EXT-IAHP-SFT-002	

Control Options*	
EXT-IAHP-PE3-001	Twist-lock Photocell On/Off Daylight Sensing Only, 120-277v
EXT-IAHP-PE3-002	Twist-lock Photocell On/Off Daylight Sensing Only, 347v
EXT-IAHP-PE3-003	Twist-lock Photocell On/Off Daylight Sensing Only, 480v
EXT-IAHP-SHC-001	Shorting Cap
Note: When ordering field installed control options, **7R01** or **7R02** needs to be selected in the factory ordering information on Page 4.	

IoT Wireless Control Solutions*	
FYBR	IoT 7-Pin Intelligent Photocell Control System
NEDAP	IoT 7-Pin Smart Photocell Control System
Enlighted (EN2/EN3)	IoT Sensor Based Control System
***Note: Systems require additional hardware and software to function for connectivity to local/building and cloud based systems. For more information contact your Orion Representative about special order information, quoting and commissioning.**	

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IAHP1

Accessories (Field Installed)

Slipfitter
(EXT-IAHP-SFT-001)

Yoke Mount
(EXT-IAHP-YKS/YKM/YKL-001)

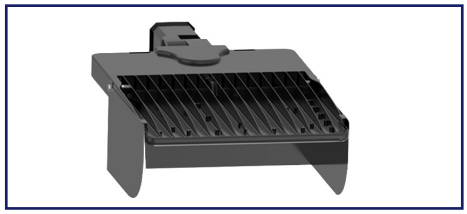
Trunnion Mount
(EXT-IAHP-TRN-001)

Adjustable Arm Mount[6]
(EXT-IAHP-ADJ-001)

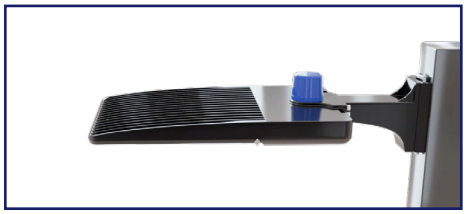
Universal Pole Mount Kit
(EXT-IAHP-UPMx-001)

Slide and Lock Mount[6]
(EXT-IAHP-SLM-001)

Adjustable Wall Mount Arm Kit[6]
(EXT-IAHP-WMA-001)



Light Shield
(EXT-IAHP-FLx-001)



Photocell
(EXT-IAHP-PE3-00x)

Fixture Options (Factory Installed)

Motion Sensor
(WBxx)

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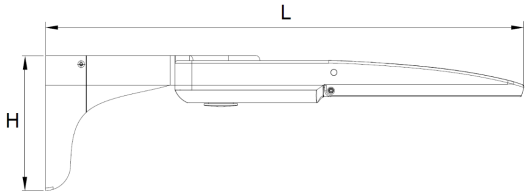
IAHP1

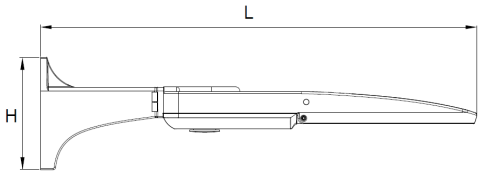
Fixture with Mounting Dimensions and Physical Information

Slide and Lock Mount (EXT-IAHP-SLM)



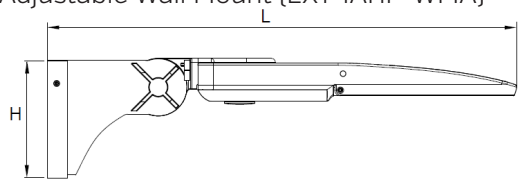
Lumen Code	Length	Height	Width	Weight	EPA (side @ 0°)
A1/B1/C1	22.68"	6.53"	11.00"	12 lbs	.33 ft²
D1/E1/F1	26.38"	6.53"	14.00"	16 lbs	.37 ft²
G1/H1	28.19"	6.53"	14.00"	25 lbs	.51 ft²
Note: This mounting kit can adapt to 3"-4" round or min. 3" square pole					

Universal Pole Mount (EXT-IAHP-UPM)



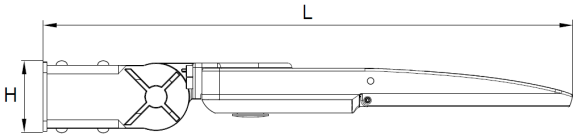
Lumen Code	Length	Height	Width	Weight	EPA (side @ 0°)
A1/B1/C1	23.31"	6.70"	11.00"	13 lbs	.38 ft²
D1/E1/F1	27.01"	6.70"	14.00"	17 lbs	.31 ft²
G1/H1	28.82"	6.70"	14.00"	26 lbs	.56 ft²
Note: This mounting kit can adapt to 4"/5"/6" round or min. 3" square pole.					

Adjustable Arm Mount (EXT-IAHP-ADJ)
Adjustable Wall Mount (EXT-IAHP-WMA)



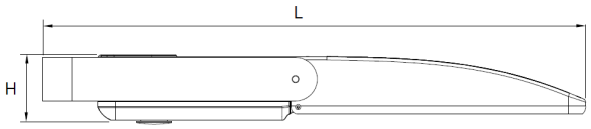
Lumen Code	Length	Height	Width	Weight	EPA (side @ 0°)
A1/B1/C1	25.20"	6.40"	11.00"	11.5 lbs	.40 ft²
D1/E1/F1	28.03"	6.40"	14.00"	15.5 lbs	.44 ft²
G1/H1	30.71"	6.40"	14.00"	24.5 lbs	.58 ft²
Note: The arm mount (EXT-IAHP-ADJ) can only adapt to min. 4" square pole.					

Slipfitter Mount (EXT-IAHP-SFT)



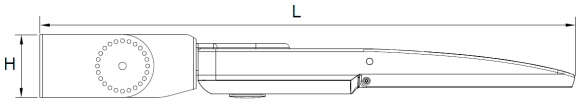
Lumen Code	Length	Height	Width	Weight	EPA (side @ 0°)
A1/B1/C1	23.62"	3.07"	11.00"	11.5 lbs	.32 ft²
D1/E1/F1	27.32"	3.07"	14.00"	15.5 lbs	.36 ft²
G1/H1	29.13"	3.07"	14.00"	24.5 lbs	.50 ft²
Note: This slipfitter can adapt to 2-3/8" tenons.					

Yoke Mount (EXT-IAHP-YKx)



Lumen Code	Length	Height	Width	Weight	EPA (side @ 0°)
A1/B1/C1	18.83"	2.20"	11.00"	11.5 lbs	.42 ft²
D1/E1/F1	21.94"	2.20"	14.00"	15.5 lbs	.35 ft²
G1/H1	24.55"	3.00"	14.00"	24.5 lbs	.51 ft²

Trunnion Mount (EXT-IAHP-TRN)



Lumen Code	Length	Height	Width	Weight	EPA (side @ 0°)
A1/B1/C1	23.44"	2.80"	11.00"	12.5 lbs	.32 ft²
D1/E1/F1	27.16"	2.80"	14.00"	16.5 lbs	.36 ft²
G1/H1	28.98"	3.30"	14.00"	25.5 lbs	.50 ft²
Note: This mounting kit can adapt to min. 5.5" base.					

Additional Specification Information

[1] For actual lumens, see performance table

[2] Actual performance may vary by up to ±10% of values listed; facility factors and fixture options can affect performance values. Values test results, and performance tables are based on an open area application at 277v

[3] Weight will vary based on option selection

[4] For more information about these options go to our controls landing page

[5] "**xx**" in part number is a place holder for lens height of sensor. Either "20" or "40" can be included at the end of the part number to replace the "**xx**" placeholder

[6] Special order option, lead times vary

[7] **WBxx** and **ENx** cannot be used with **7R01** and **7R02** receptacles

[8] **H1** and **G1** lumen packages are not compatible with **WBxx** or **ENx** sensor options

[9] **ENx** is limited to -35ºC (-31ºF) environments

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FIRE CODE / LAND USE / BUILDING REVIEW APPLICATION

Tualatin Valley Fire & Rescue

North Operating Center
11945 SW 70th Avenue
Tigard, OR 97223
Phone: 503-649-8577

South Operating Center
8445 SW Elligsen Rd
Wilsonville, OR 97070
Phone: 503-649-8577

REV 6-30-20

Project Information

Applicant Name: Mackenzie ATTN: Lee Leighton
Address: 1515 SE Water Avenue, STE 100
Phone: 971.346.3727
Email: lleighton@mcknze.com
Site Address: 9710 SW Day Road
City: Wilsonville / Washington County
Map & Tax Lot #: 3S102B 0600, 0601
Business Name: Delta Logistics, LLC
Land Use/Building Jurisdiction: Wilsonville
Land Use/ Building Permit # Pending

Choose from: Beaverton, Tigard, Newberg, Tualatin, North Plains, West Linn, Wilsonville, Sherwood, Rivergrove, Durham, King City, Washington County, Clackamas County, Multnomah County, Yamhill County

Project Description

Annexation, Zone Map Amendment, Planned Development Stage I & II, Site Design Review and related development applications for a 56,100 sf single-building speculative industrial development consistent with the Coffee Creek Industrial Area Plan.

Permit/Review Type (check one):

- ☒ Land Use / Building Review - Service Provider Permit
- ☐ Emergency Radio Responder Coverage Install/Test
- ☐ LPG Tank (Greater than 2,000 gallons)
- ☐ Flammable or Combustible Liquid Tank Installation (Greater than 1,000 gallons)
  - * Exception: Underground Storage Tanks (UST) are deferred to DEQ for regulation.
- ☐ Explosives Blasting (Blasting plan is required)
- ☐ Exterior Toxic, Pyrophoric or Corrosive Gas Installation (in excess of 810 cu.ft.)
- ☐ Tents or Temporary Membrane Structures (in excess of 10,000 square feet)
- ☐ Temporary Haunted House or similar
- ☐ OLCC Cannabis Extraction License Review
- ☐ Ceremonial Fire or Bonfire (For gathering, ceremony or other assembly)

For Fire Marshal's Office Use Only

TVFR Permit # 2022-0008
Permit Type: SPP-COW
Submittal Date: 1/19/2022
Assigned To: DFM Arn
Due Date: 1/26/2022
Fees Due: Ø
Fees Paid: Ø

Approval/Inspection Conditions

(For Fire Marshal's Office Use Only)

This section is for application approval only

0480 — 1/26/22
Fire Marshal or Designee — Date

Conditions: See attached Fire Service Plans.

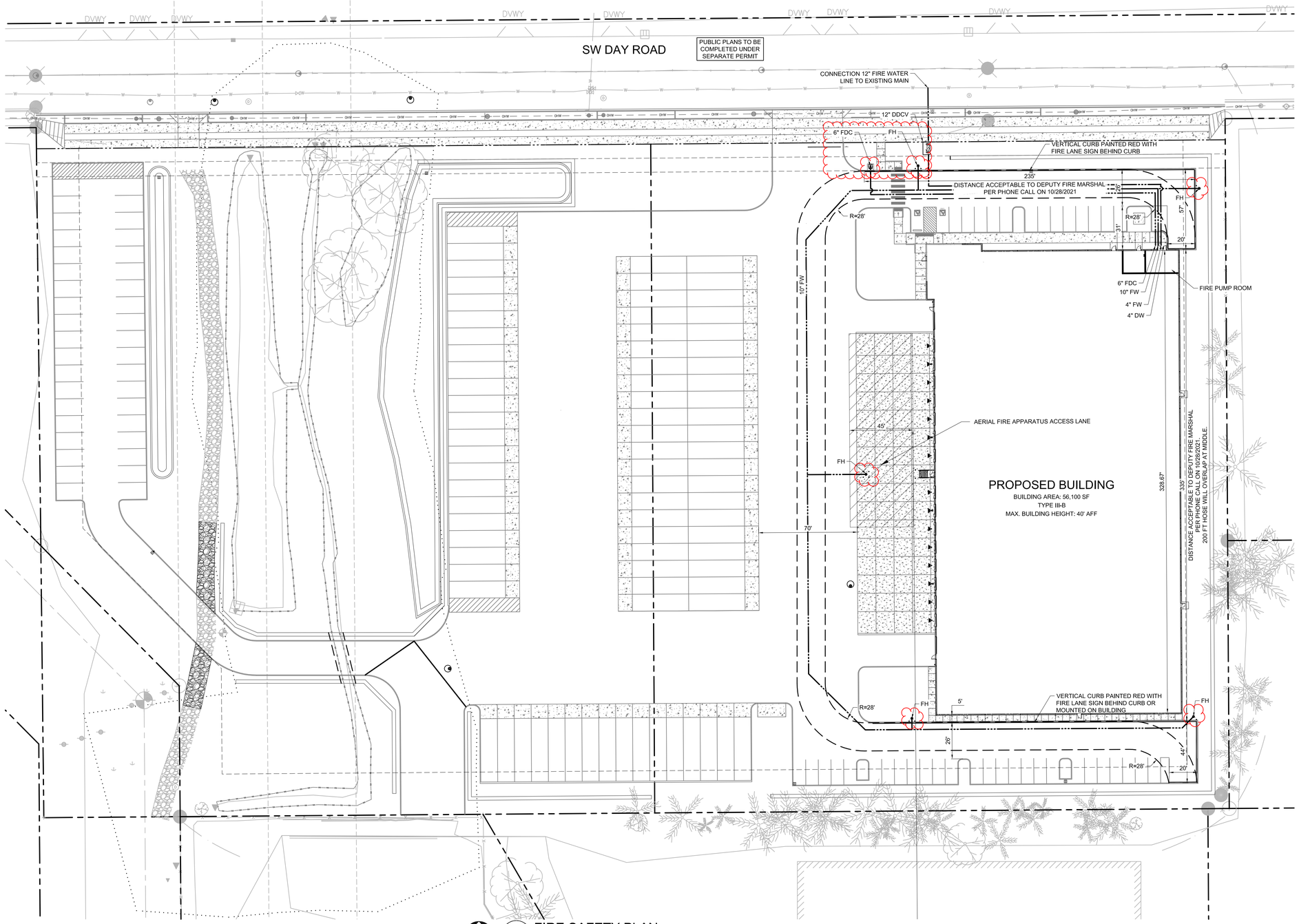
See Attached Conditions: ☐ Yes ☐ No

Site Inspection Required: ☒ Yes ☐ No

This section used when site inspection is required

Inspection Comments:

Final TVFR Approval Signature & Emp ID — Date



1 C3.11 FIRE SAFETY PLAN

1"=30'

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

THE SURVEY INFORMATION SHOWN AS A BACKGROUND SCREEN ON THIS SHEET IS SHOWN FOR REFERENCE ONLY AND IS BASED ON A SURVEY BY: WEDGLE SURVEYING, INC. DATE: 12/05/21

TVF&R Tualatin Valley Fire & Rescue

APPROVED PLANS

APPROVAL OF PLANS IS NOT AN APPROVAL OF OMISSIONS OR OVERSIGHTS.

Deputy Fire Marshal II

TVF&R Permit # 2022-0008

FD Notes:

Building will be required to test for a Emergency Responder Radio Coverage or opt into our Mobile Emergency Radio program (MERRC). If the MERRC option is chosen, fees will need to be paid to TVF&R prior to the issuance of a Building Permit OFC 510.

Fire Lane markings to be determined OFC 503.3.

Fire department final inspection required OFC 107.2.

Item 2.

Architecture ▪ Interiors
Planning ▪ Engineering

Portland, OR
503.224.9560
Vancouver, WA
360.695.7879
Seattle, WA
206.749.9993
www.mcknze.com

MACKENZIE.
DESIGN DRIVEN | CLIENT FOCUSED

Client

DELTA LOGISTICS
9835 SW COMMERCE CIRCLE
WILSONVILLE, OR 97070

Project

DELTA LOGISTICS SITE EXPANSION
9710 SW DAY RD.
CITY OF WILSONVILLE, OR

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REVISION SCHEDULE

Delta	Issued As	Issue Date

SHEET TITLE:
FIRE SAFETY PLAN

DRAWN BY: BMR

CHECKED BY: BMR, GIM

SHEET
C3.11

JOB NO. **2200502.04**

DESIGN DEVELOPMENT SET 12/17/21

220050200\DRAWINGS\CIVIL\50204-C3.11-FIRE SAFETY PLAN.DWG BMR 01/12/22 10:47 1:30

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DELTA LOGISTICS
9710

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MACKENZIE.

DESIGN DRIVEN I CLIENT FOCUSED

NE CORNER PERSPECTIVE

NORTH FACADE ENLARGEMENT

STOREFRONT:
CLEAR ANODIZED
ALUMINUM

CANOPY:
PAINTED STEEL CANOPY
(P-3)

GLAZING:
VISTACOOL PACIFICA
+ SOLARBAN 60

PAINTED CONCRETE/
CONCRETE REVEALS

DOCK DOORS:
FACTORY FINISH WHITE

PERFORATED METAL PANELS AT SCREEN WALL AND BUILDING BASE (SEE ATTACHED PRODUCT INFO)

Zinc Gray
SR:0.35 E:0.86 SRI:37
RGB: 100 97 93

P-4	P-1	P-2	P-3
SW 7006	**SW 7667**	**SW 7670**	**SW 7674**
Color Name: **EXTRA WHITE** RGB **238/239/234**	Color Name: **ZIRCON** RGB **202/201/198**	Color Name: **GRAY SHINGLE** RGB **148/147/146**	Color Name: **PEPPERCORN** RGB **88/88/88**
Light Accent	**Body**	**Trim** Large accent areas	**Dark Accent** Building base, unfinished metals, handrails, dock plates

Delta Logistics - Wilsonville

MATERIALS BOARD | 07.26.22

Protected by Morin A Kingspan Group Company WARRANTY

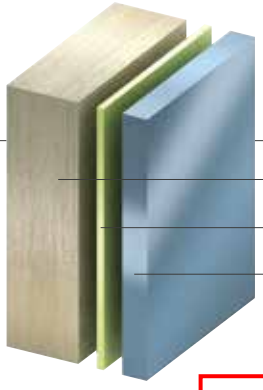
Metal Wall & Roof Systems
North America

Architectural Metal Wall & Roof Systems Color Options

Our range of color options provide you with the most durable surfaces and longest warranties, with custom color matching available there are unlimited design options available.

Morin®
A Kingspan Group Company

Color Options



Standard Colors

Fluropon® PVDF – Kynar500®

Formulated with 70% Kynar 500® proprietary resin, Fluropon® is a premium fluoropolymer coating. Factory applied and baked on, it provides excellent adhesion and flexibility properties with aluminum, HDG steel or Galvalume® components.

Regal White
SR:0.70 E:0.86 SRI:85
RGB: 205 208 207

Ascot White
SR:0.69 E:0.85 SRI:83
RGB: 205 207 207

Bone White
SR:0.69 E:0.84 SRI:83
RGB: 212 210 198

Sandstone
SR:0.61 E:0.85 SRI:72
RGB: 184 180 166

Dove Gray
SR:0.47 E:0.86 SRI:53
RGB: 143 145 144

Zinc Gray
SR:0.35 E:0.86 SRI:37
RGB: 100 97 93

Chromium Gray
SR:0.56 E:0.86 SRI:65
RGB: 166 166 164

Surrey Beige
SR:0.48 E:0.86 SRI:54
RGB: 154 139 121

Sierra Tan
SR:0.38 E:0.85 SRI:40
RGB: 145 129 115

Parchment
SR:0.53 E:0.85 SRI:61
RGB: 154 148 136

Antique Bronze
SR:0.43 E:0.86 SRI:48
RGB: 127 119 109

Spartan Bronze
SR:0.31 E:0.85 SRI:31
RGB: 71 65 59

Dark Bronze
SR:0.27 E:0.85 SRI:26
RGB: 55 51 50

Redwood
SR:0.38 E:0.86 SRI:41
RGB: 116 69 63

Colonial Red
SR:0.32 E:0.86 SRI:33
RGB: 87 51 50

Patina Green
SR:0.41 E:0.84 SRI:44
RGB: 106 113 98

Evergreen
SR:0.26 E:0.85 SRI:24
RGB: 56 70 62

Slate Blue
SR:0.28 E:0.85 SRI:27
RGB: 75 103 115

Bristol Black
SR:0.26 E:0.86 SRI:25
RGB: 45 43 42

Blue Gray
SR:0.27 E:0.85 SRI:26
RGB: 59 61 62

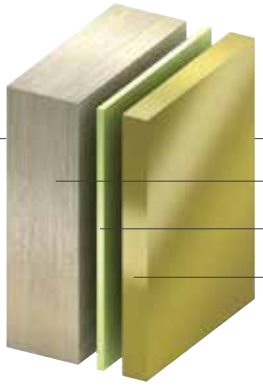
Regal Blue
SR:0.26 E:0.85 SRI:24
RGB: 43 68 87

To find out more and to see the complete range, visit: www.morincorp.com

Premium Colors – Mica

Fluropon® Classic II PVDF

2-Coat Fluropon® Classic II PVDF is a premium fluoropolymer coating containing 70% Kyner 500® proprietary resin that achieves a pearlescent appearance. This two coat system is a cost-effective alternative to metallic systems requiring clear coat.



Silversmith
SR:0.53 E:0.79 SRI:59
RGB: 161 163 161

Champagne Bronze
SR:0.44 E:0.78 SRI:46
RGB: 149 139 130

Champagne Pearl
SR:0.48 E:0.81 SRI:53
RGB: 166 156 148

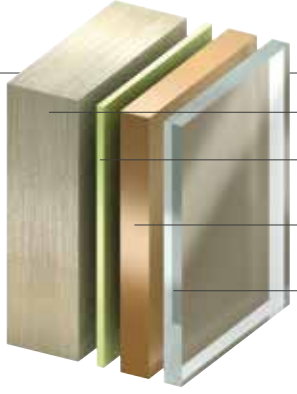
Weathered Zinc
SR:0.33 E:0.84 SRI:33
RGB: 99 105 106

Copper Penny
SR:0.48 E:0.84 SRI:54
RGB: 156 108 77

Premium Colors – Metallic

Fluropon® Classic PVDF

3-Coat Fluropon® Classic PVDF is a premium fluoropolymer coating containing 70% Kynar 500® proprietary resin and a special metallic effect. Due to its outstanding color retention and resistance to ultraviolet radiation, it is the preferred choice among architects and metal building manufactures.



Medium Gray
SR:0.36 E:0.85 SRI:38
RGB: 105 106 106

Seafoam Green
SR:0.49 E:0.87 SRI:56
RGB: 158 168 165

Champagne Gold
SR:0.51 E:0.85 SRI:58
RGB: 155 153 148

Bright Silver
SR:0.57 E:0.81 SRI:65
RGB: 163 164 164

Custom Color Matching Available

Morin makes it easy to add protection and visual distinction to your next project. Our state-of-the-art color and paint facility can achieve virtually any tint, shade or finish to your specifications, quickly and accurately. To get started, contact our experienced sales representatives today for details.

To find out more and to see the complete range, visit: www.morincorp.com

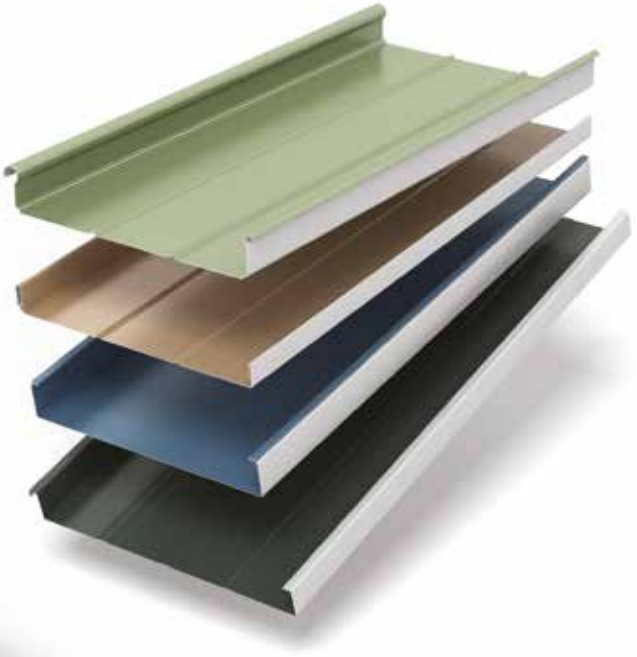
Innovative Design Solutions

The Morin story goes well beyond the panels. We thrive in helping customers bring their most challenging design ideas to life. Beyond panels we offer a complete suite of metal finishes including perforations, corners, coordinated louvers and fasteners and custom extrusions for a complete look.

The Industry's Most Versatile Single Element Metal Wall and Roof Panels

We offer over 100 wall and roof panel options with a wide range of panels with unique profiles including over 30 integrated panels. Our Matrix, Integrity and Pulse series of panels all have interlocking joinery and can be easily integrated.

Morin Systems provide for a complete, finished, custom fabricated look. Rounded or miter corners, extrusions, foam backers and custom cut components will make for a more professional looking, longer lasting job.



We know we are just one part of many in a project, we want to make our part look its best and have all the tools available from design to installation for you.

To find out more and to see the complete range, visit: www.morincorp.com

Design Options

Morin can supply all the elements you need to create a totally unique design for your building.

Design options include:

- **Perforartions**
  Air flow, sun screen, sound reduction or security. We have 6 standard patterns or we can produce custom repeat patterns.
- **Curving**
  We can fibricate and ship crimp and stretch curving, or for larger panels we roll form on-site and bend to order.
- **Louvers**
  Morin profile matching louvers are designed to blend with adjacent panels in material and finish. Get that finished look and we can design panels that conceal the louver location.
- **Mitred Corners**
  Miterseam corners can be supplied at various angles and lengths to suit a multitude of design options, fabricated from the same materials as the adjacent panels.
- **Matching fasteners**
  Fasteners with custom color matching to assure your panel installation is punch list free.
- **Extrusions**
  Extruded aluminum trim can be furnished for panel systems up to 3" deep.

The Complete Solution

Let us help guide you through the process. From material selection to installation, we can help with the technical files as well as all the components needed for a finished project.

Morin has technical support available from start to finish. We are there to help you through every phase of building from technical CAD support to on-site installation.

We have on-site technical staff to help with drawings, design, cost-effective construction application and technical designs for complicated projects. We also offer on-site installation guidance and support from our expertly trained knowledgeable team.

Our nationwide sales network and in-house technical service teams provide innovative solutions for today's progressive architecture. Visit www.morincorp.com for access to profiles, specifications, AutoCAD details, load span charts and technical manuals.

Morin's knowledgeable sales staff provides AIA/CES approved seminars on single element architectural metal wall and roof systems.

To find out more and to see the complete range, visit: www.morincorp.com

Contact Details

USA

HQ / East
685 Middle Street | Bristol
CT 06010

T: 1-800-640-9501

West
10707 Commerce Way | Fontana
CA 92337

T: 1-800-700-6140

South
1975 Eidson Drive | DeLand
FL 32724

T: 1-800-640-9501

www.morincorp.com

Morin proudly partners with Sherwin-Williams® paints to provide Sherwin-Williams' cool color palette – high-performance, sustainable finishes with many green benefits.

When applied to a roof, these select hues are able to contribute to several LEED® credits, including Sustainable Sites (SS) Credit: Heat Island Reduction.

These hues are intended to reduce heat islands (thermal gradient differences between developed and undeveloped areas) to minimize impact on microclimates and human and wildlife habitat.

As required by LEED's Sustainable Sites (SS) Credit, Sherwin-Williams' cool color palette is ENERGY STAR compliant, specifying highly reflective and high-emissivity roofing (emissivity of at least 0.9 when tested in accordance with ASTM 408) for a minimum of 75% of the roof surface.

SHERWIN-WILLIAMS®
Coil Coatings

For the product offering in other markets please contact your local sales representative or visit www.morincorp.com

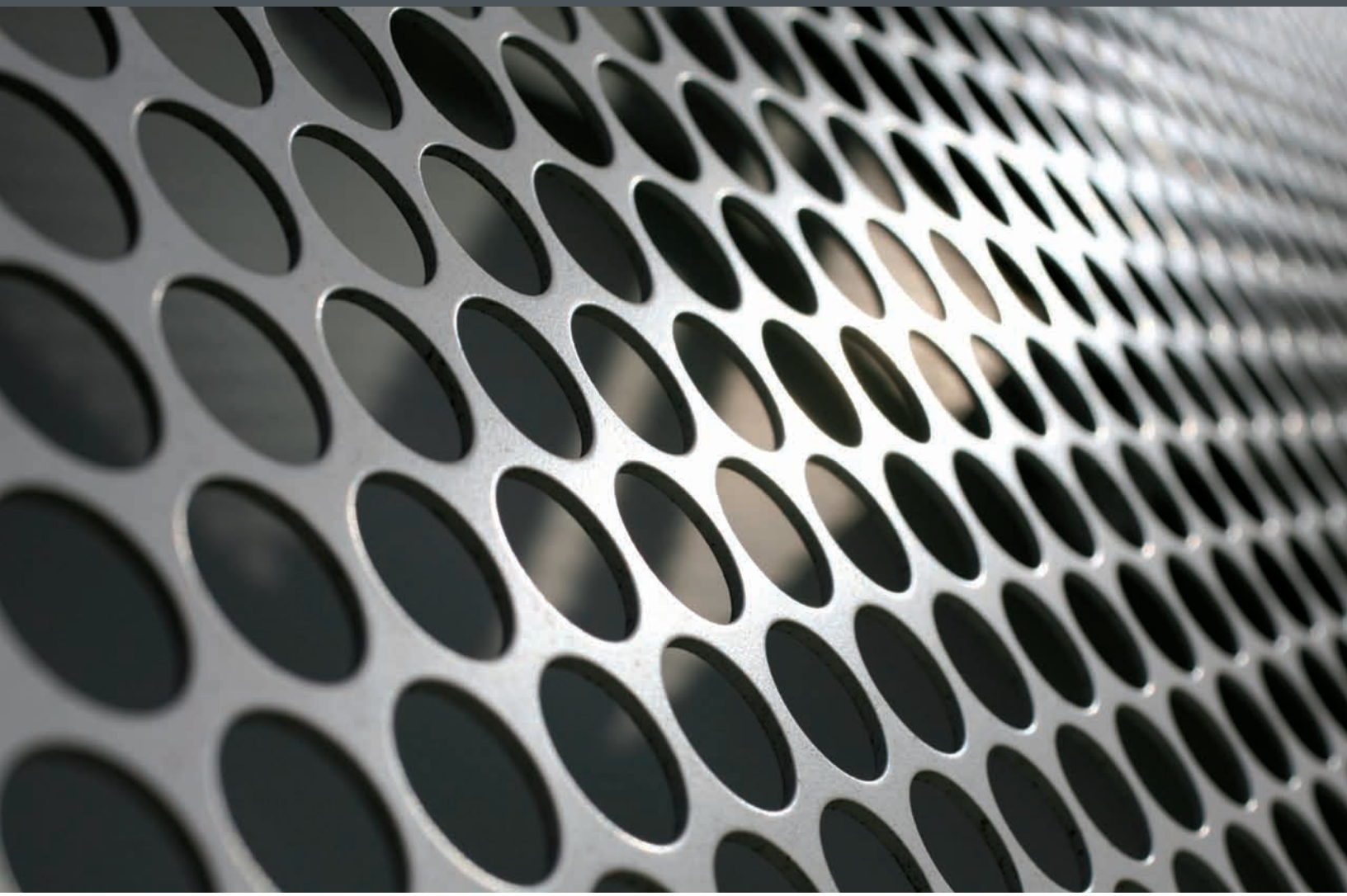
Care has been taken to ensure that the contents of this publication are accurate, but Morin Corporation does not accept responsibility for errors or for information that is found to be misleading. Suggestions for, or description of, the end use or application of products or methods of working are for information only and Morin Corporation accepts no liability in respect thereof.

Morin®
A Kingspan Group Company

01/2021

Perforated Panels

ARCHITECTURAL METAL WALL & ROOF SYSTEMS

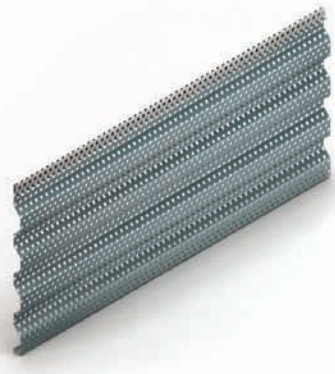


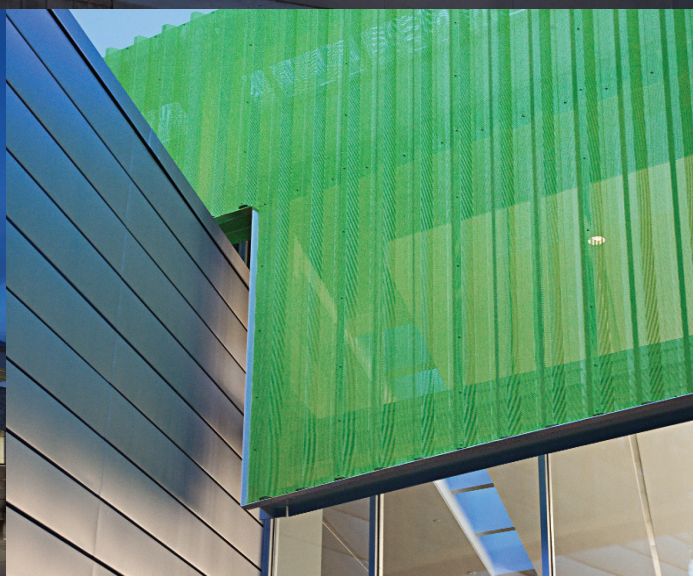
Morin

A Kingspan Group Company

Morin's exterior perforated panels are attractive, functional and economical. The many architectural applications include passive solar shading, control of light and sound pollution, security screening in parking garages and stair towers or to simply obscure roof top mechanical equipment.

Project: Carlsbad High School
Location: Carlsbad, CA
Architect: Perkins + Will, Los Angeles, CA
Products: Matrix Panel, MX 1.0, .040 Aluminum, perforated 23% open area in three separate patterns
Colors: Seafoam Green and Weathered Zinc Mica finish





Project: Anacostia Library
Location: Washington, DC
Architect: The Freelon Group with
R. McGhee & Associates Durham, NC
Products: MR-36 profile with perforation pattern
1/8" Diameter holes X1/4" staggered spacing
Color: Inchworm Green, Fluropon finish

A-12 profile
.040 Aluminum,
Color: Silversmith, Mica finish

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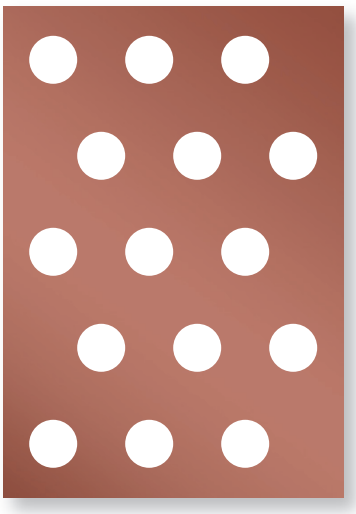
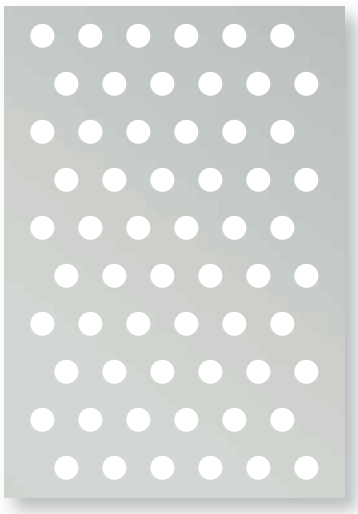
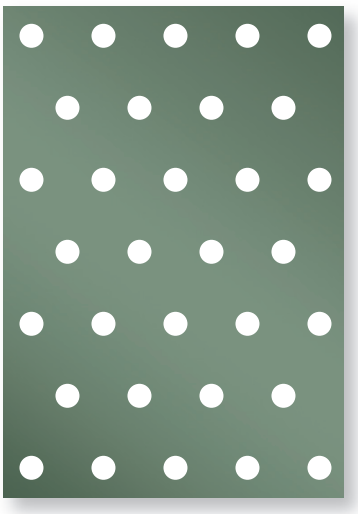


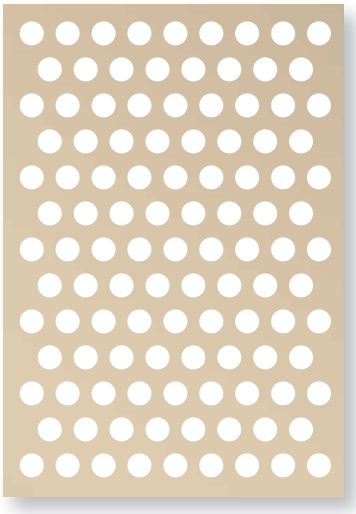
1/4" Hole, 1/2" Spacing
23% open area



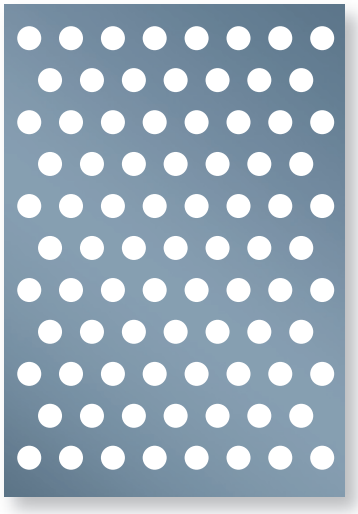
1/8" Hole, 1/4" Spacing
23% open area



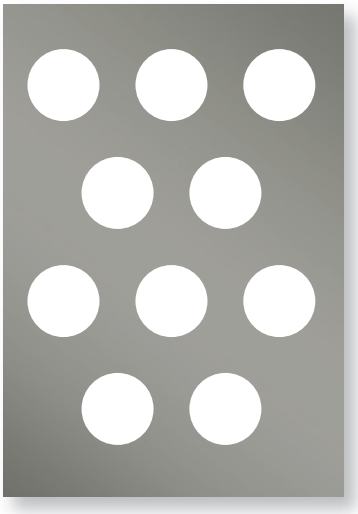
1/8" Hole, 3/8" Spacing
10% open area



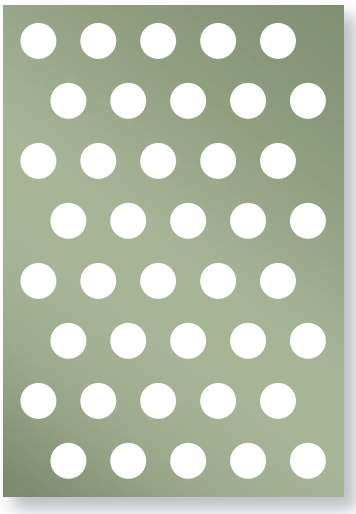
1/8" Hole, 3/16" Spacing
40% open area



1/8" Hole, 7/32" Spacing
30% open area



3/8" Hole, 9/16" Spacing
40% open area



3/16" Hole, 5/16" Spacing
33% open area

Perforated Panel Options

Available Profiles: All Morin panel profiles are available for perforating

Available Materials:
Aluminum: .040, .050, .063
Stainless Steel: 22 and 20 gauge
Cor-Ten: 22, 20 and 18 gauge
Galvalume painted steel 22, 20 and 18 gauge (Interior Application Only)

Available Finishes:
1.0 mil PVDF (Kynar 500 / Hylar 5000)
1.0 mil Mica Finish
1.5 mil Metallic Finish

Note: Painted finishes are typically applied to both sides of a perforated panel. Architect can select different colors for side A and side B at additional cost.

Project: M3 Engineering
Location: Tuscan, AZ
Product: C29
Colors: Copper Penny Mica finish

Morin

A Kingspan Group Company

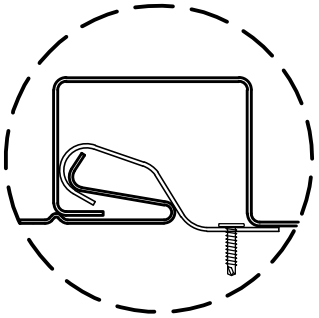
East / HQ 685 Middle Street, Bristol, CT 06010, 1-800-640-9501
West 10707 Commerce Way, Fontana, CA 92337, 1-800-700-6140
South 726 Summerhill Drive, Deland, FL 32724, 1-800-640-9501

www.morincorp.com

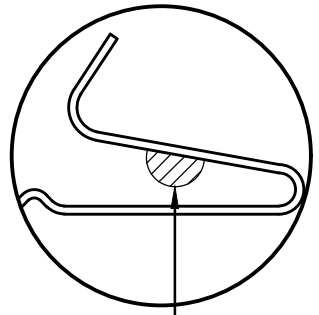
Morin supplies warranties covering material only. A painted finish warranty is not available on perforated panels regardless of base metal. Items not made by Morin such as sealants, fiberglass panels and fasteners carry no warranty, either expressed or implied. Please refer to the appropriate manufacturer and their product data sheets.

No metal panel manufacturer can guarantee the total elimination of oil canning, specific to light gauge cold formed metal. Be assured that we at Morin take every precaution during the selection of material and production of the metal panels to effectively minimize the effects of oil canning. Other factors contributing to oil canning can be improper installation and misalignment of the structural steel, even within the AISC standards. Oil canning from these conditions is not sufficient cause for automatic rejection of the material.

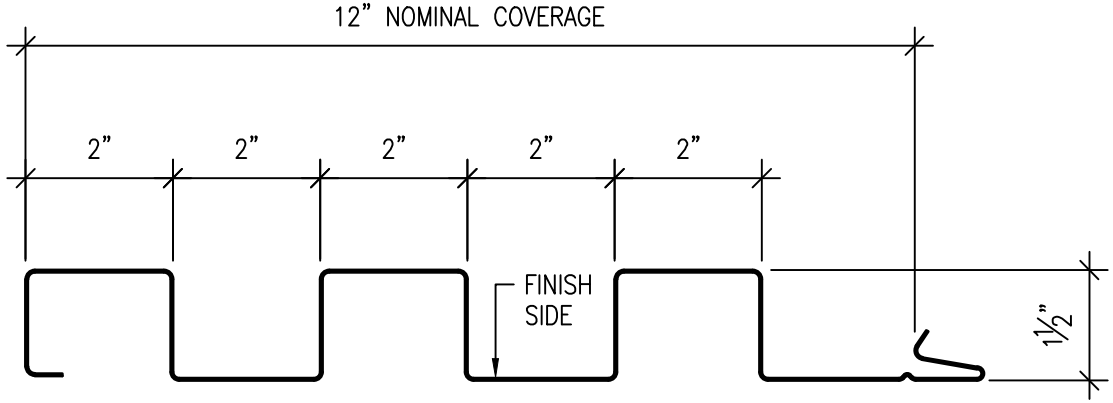
The information contained in this brochure and in the accompanying typical detail sheets is thought to be reliable and correct, but is subject to change without notice. Morin assumes no responsibility for engineering or design of any structure or sub-structure, whether such structure contains products manufactured by Morin or not. Typical details are meant to show the products of the seller in a manner which is representative of the way in which they are installed. It is the responsibility of the buyer or his or her architect or engineer to verify that any product is suitable for the conditions and use intended and that the products are compatible with any other material.

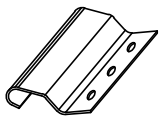


CLIP ENGAGEMENT



OPTIONAL FACTORY SEALANT
(BUTYL PLACEMENT)



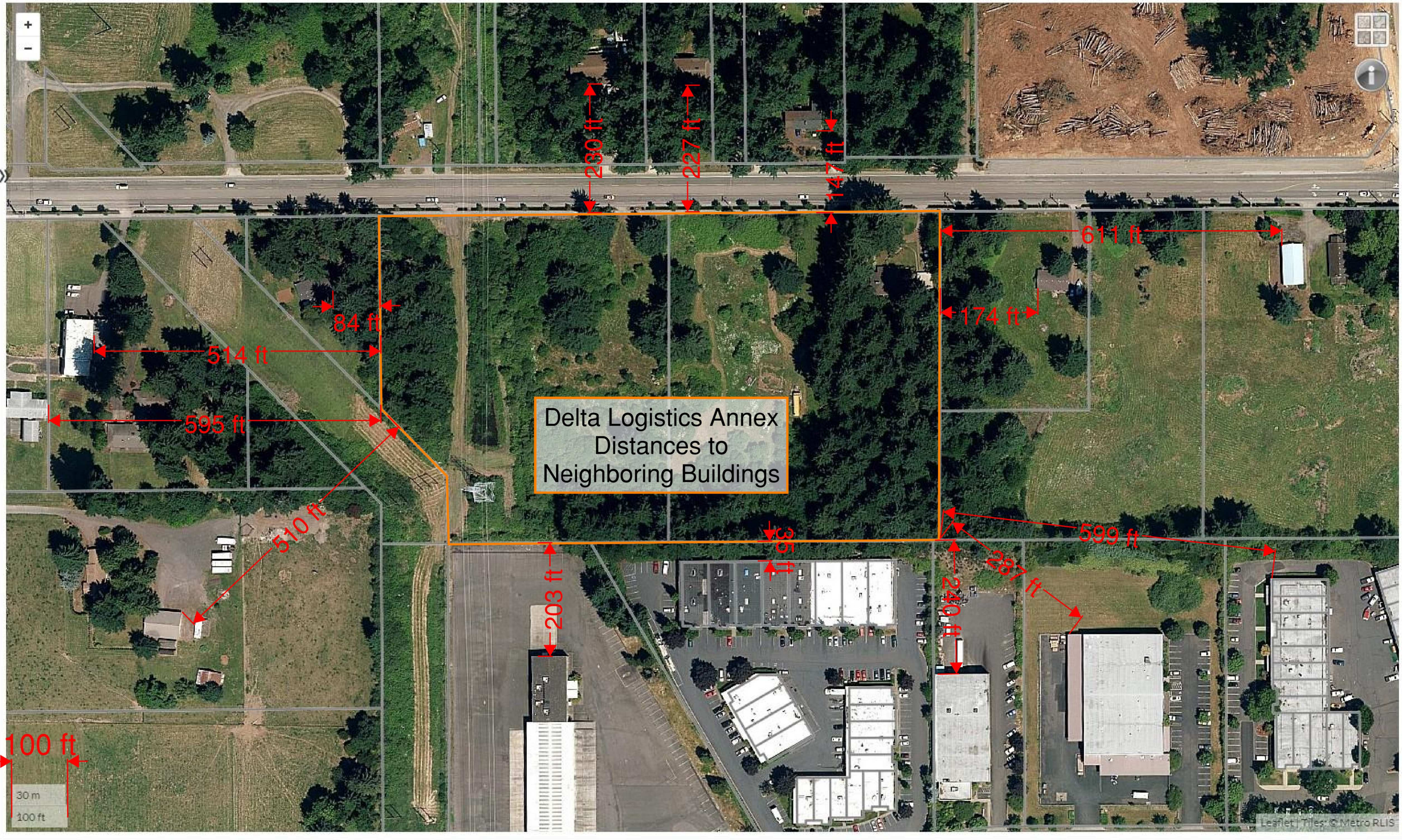


MATRIX SERIES CLIP
GALVANIZED OR STAINLESS STEEL

NOTES:
1. ALL DIMENSIONS ARE NOMINAL. PANEL PROFILES MAY NOT BE TO SCALE.
2. DIMENSIONS AND ANGLES MAY VARY SLIGHTLY BETWEEN GAUGES.
3. THE CUSTOMER IS RESPONSIBLE FOR ALL INFORMATION ON THIS DOCUMENT.

Morin A Kingspan Group Company	**APPROVED BY:** DATE:	JOB NO.:	MX 1.0
	CUSTOMER:	JOB NAME:	
	COLOR: GAUGE:	SMOOTH ☐ EMBOSSED ☐ PERF. ☐	P.N: M100
	BACKSIDE EXPOSED: YES ☐ NO ☐	**INSTALLATION:** HORIZ. ☐ VERT. ☐ OTHER ☐	REV.: 10/201
	BACKSIDE COLOR:	FACTORY CAULK: YES ☐ NO ☐	

SW DAY ROAD
SW COMMERCE CIRCLE
Northwest Geotech, Inc., Northwest Testing, Inc
Tapman Creek
Oregon Child Development Coalition
Platt Electric Supply
Delta Logistics
Slicks Big Time BBQ
Wilsonville Carpet & Tile
The Human Bean
Carl's Jr
Chevron
Holiday Inn Portland- I-5 S (Wilsonville), an IHG
The Harver Company
Rockmore International
Pearl Bakery
OptiMIM
Google Earth
1985
lat 45.337611° lon -122.774085° elev 231 ft eye alt 3304 ft


Delta Logistics Annex
Distances to
Neighboring Buildings
230 ft
227 ft
147 ft
84 ft
514 ft
595 ft
510 ft
203 ft
93 ft
611 ft
174 ft
599 ft
287 ft
240 ft
100 ft
30 m
100 ft
Leaflet | Tiles: © Metro RLIS

10653

1

ELECTRIC TRANSMISSION LINE EASEMENT

KNOW ALL MEN BY THESE PRESENTS, That Paul E. Doty and Grace E. Doty, husband and wife (hereinafter called "the Grantors," whether one or more than one), for and in consideration of the payment of the sum of Ten and No/100ths Dollars ($10.00), the receipt of which is hereby acknowledged, hereby grant, sell and convey to Portland General Electric Company, an Oregon Corporation, (hereinafter called "the Grantee"), its successors and assigns, a perpetual easement and right of way over, upon and across the following described parcel of land situated in Washington County, Oregon, being a strip of land 125 feet in width, extending 62.5 feet on each side of a center line more particularly described as follows:

Approved As To Description
R. E. Rutherford Engr.

Beginning at a point in the north line of that certain tract of land in Section 2, Township 3 South, Range 1 West of the Willamette Meridian conveyed to Paul E. and Grace E. Doty by deed recorded in Book 397, Page 679, Washington County Deed Records, said point being S. 00° 17'E. 75.3 feet and N. 89°20'E. 162.50 feet from the Northwest corner of the northeast quarter of the Southwest quarter of said Section 2; running thence S. 0°17'40" E. parallel to and 62.5 feet East of the Bonneville Power Administration's right-of-way for a distance of 1819.0 feet; thence N. 89°45'20" E. parallel to and 62.5 feet North of the Bonneville Power Administration's right-of-way for a distance of 2373.3 feet to the west line of the R. H. Baldock Freeway, State Highway, all as shown on Drawing No. EB 5042 attached hereto which by reference thereto is made a part hereof.

The easement and right-of-way is further described as being 125 feet in width and that the east-west lay of said easement abuts and adjoins the existing Bonneville Power Administration's transmission right-of-way and Oregon City Substation on the north and the north-south lay of said easement abuts and adjoins the existing Bonneville Power Administration transmission right-of-way on the east.

TO HAVE AND TO HOLD the above-described easement and right-of-way unto the Grantee, its successors and assigns, except as otherwise restricted herein, together with the present right to top, limb or fell all growing and dead trees and snags (said trees and snags hereinafter collectively called "danger trees") located on land owned by the Grantors, adjacent to the above-described right-of-way, which danger trees will be determined by the Grantee.

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In addition the Grantee shall have the future right to top, limb or fell all growing and dead trees and snags which shall in Grantee's estimation become danger trees in the future. In the event that Grantee exercises such future danger tree rights Grantee shall pay the owner of said future danger trees, their market value on the day they are cut, such payment to be made within a reasonable time after they have been so cut.

Said easement and right-of-way shall be for the following purposes, namely: the perpetual right to enter upon and to erect, maintain, repair, rebuild, operate and patrol electric power transmission lines, structures and appurtenant signal lines, including the right to erect such poles, towers, transmission structures, wires, cables, supports and appurtenances as are necessary thereto, together with the present and future right to clear said right-of-way and keep the same clear of brush, timber and fire hazards, including the right to restrict the growth of trees and brush on said right-of-way by the use of chemical sprays, provided, however, that pasture or cultivated lands shall not be sprayed and that fire hazards shall not be interpreted to include any growing crops other than non-nursery stock, trees and brush. Provided, however, that the said easement and right-of-way is for the exclusive and sole use of the Grantee and/or its successors or assigns standing in the Grantee's place and stead. Joint use of said easement and right-of-way by the Grantee and other persons, parties or entities is prohibited, except as otherwise stated herein.

Except for the rights herein granted by this easement to the Grantees its successor and assigns, the grantors reserve and except to themselves, their heirs and assigns, the sole and exclusive ownership and use of all lands within the said right-of-way which includes but is not limited to the cultivation of all land under and around the Grantee's present and future lines and structures, together with but not limited to the use, ownership and maintenance of private and public roadways, driveways and parking areas, except Grantors, their heirs and assigns shall not build or erect any structure that will exceed fourteen (14) feet in height, and said structure and use shall comply with all duly recognized and required safety regulations, and such ownership and use shall not interfere with the expressed easement of the Grantee.

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Except as otherwise agreed herein, with the exception of nursery stock and marketable timber, title to all brush, non-marketable timber, or structures existing upon the right-of-way shall vest immediately in the Grantee. All future danger trees cut pursuant to the terms hereof shall remain the property of the Grantor up to the date of their cutting, whereupon the Grantee shall thereafter remove same from the premises within a reasonable time and at Grantee's sole expense unless otherwise agreed.

It is hereby agreed that the purchase price named herein shall be accepted by the Grantors as full compensation for all damages incidental to the exercise of said easement rights except:

(a) Damage occasioned through the damage, destruction or necessary removal of present and future nursery stock owned by the Grantors, their lessees, heirs or assigns, in and about said easement and right-of-way.

(b) Damage arising by way of the Grantees extending guys, anchors, structures, lines or any other of Grantee's property or rights beyond the easement and right-of-way as stated herein.

(c) Damage to danger trees in the ownership of the Grantor, his heirs, assigns or lessees.

(d) Damage suffered by the Grantors, his lessees, heirs and assigns upon their property or property interests, exclusive of the rights given Grantee herein, through negligent or intentional act or acts of omission by the Grantee, its successors, assigns, agents and servants.

The Grantee shall purchase any and all nursery stock that is damaged, destroyed or by necessity requires removal by reason of the Grantee's exercise of said easements. The Grantors and the Grantee shall jointly determine the nursery stock which, of necessity, requires removal and purchase. If the Grantors and the Grantee cannot jointly determine the nursery stock which, of necessity, requires removal, they shall select a disinterested qualified arbitrator to make such determination. If the

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Grantors and the Grantee cannot agree within five (5) days upon such arbitrator, then the presiding Judge of the Circuit Court for the County of Washington shall make the appointment. The decision of the arbitrator shall be final. The cost of such nursery stock will be determined in the same manner and method as is presently used by the Oregon State Highway Commission in similar circumstances whereby the Grantors shall cause such stock to be fully inventoried and itemized and such inventory presented to the Grantee for approval and payment within ninety (90) days from the taking or damage of such stock.

The Grantors agree to allow the Grantee reasonable use of the existing private roadway now within the composite area owned by the Grantors and running from Boones Ferry Road, across the Grantor's land and to the subject right-of-way, however, only for that period of time during the initial construction and erection of the Grantee's transmission structures and related activity. The Grantors make no representation or warranties of the fitness of such roadway, and the Grantee takes the use thereof as it finds it. The said Grantee's use will not interfere with the Grantor's present use and the Grantee will maintain and restore the said roadway to a condition equal to that in which it is found within a reasonable time after completion of the initial construction.

It the Grantee, its successors and assigns, shall fail to use said right-of-way for the purposes above mentioned for a continuous period of five years after construction of said power lines, then and in that event this right-of-way and easement shall terminate and all rights and privileges granted hereunder shall revert to the Grantors, their heirs and assigns, and the Grantee, its successors and assigns shall remove all property existing within said easement and right-of-way by virtue of said activities of the Grantee, its successors and assigns.

The Grantors hereby warrant that they are possessed of a marketable title to the property covered by this easement, and have the right to grant the same.

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The Grantors, for themselves and their heirs and assigns, covenant to and with the Grantee, its successors and assigns, that the Grantee, its successors and assigns, shall peaceably enjoy the rights and privileges herein granted.

IN WITNESS WHEREOF, the Grantors have caused this easement to be executed this 22nd day of July, 1963.

Paul E. Doty (SEAL)
(Paul E. Doty)

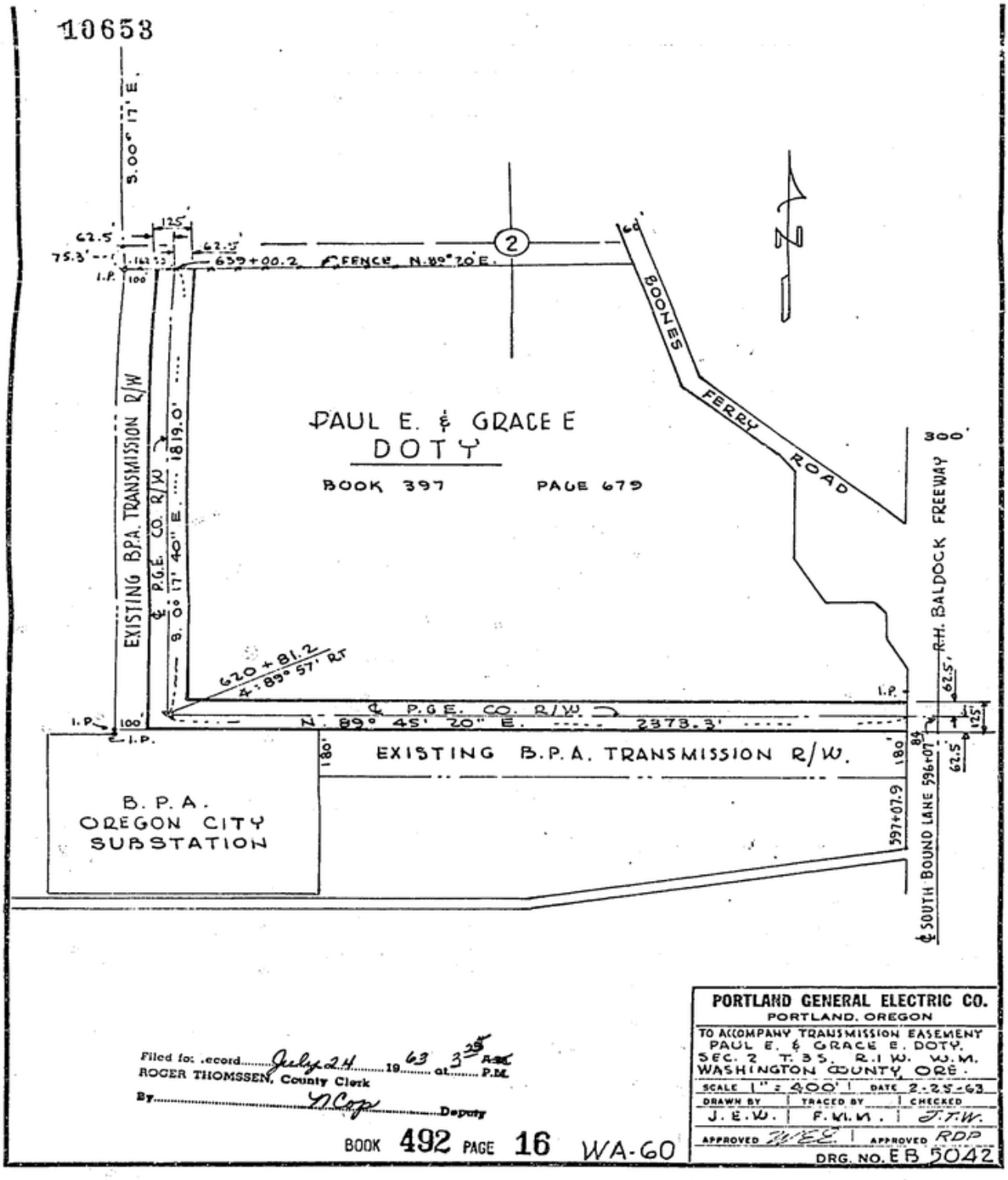
Grace E. Doty (SEAL)
(Grace E. Doty)

STATE OF OREGON)
) ss.
County of Washington)

On this 22nd day of July, 1963, before me, the undersigned, a Notary Public in and for said County and State, personally appeared Grace E. Doty and Paul E. Doty to me known to be the individuals described in and who executed the foregoing instrument, and acknowledged that they executed the same freely and voluntarily.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed my notarial seal this, the day and year in this instrument first written.

Notary Public for Oregon
My Commission Expires: 12-11-63



Filed for record July 24 1963 at 3:35 P.M.
ROGER THOMSSEN, County Clerk
By ..... Deputy

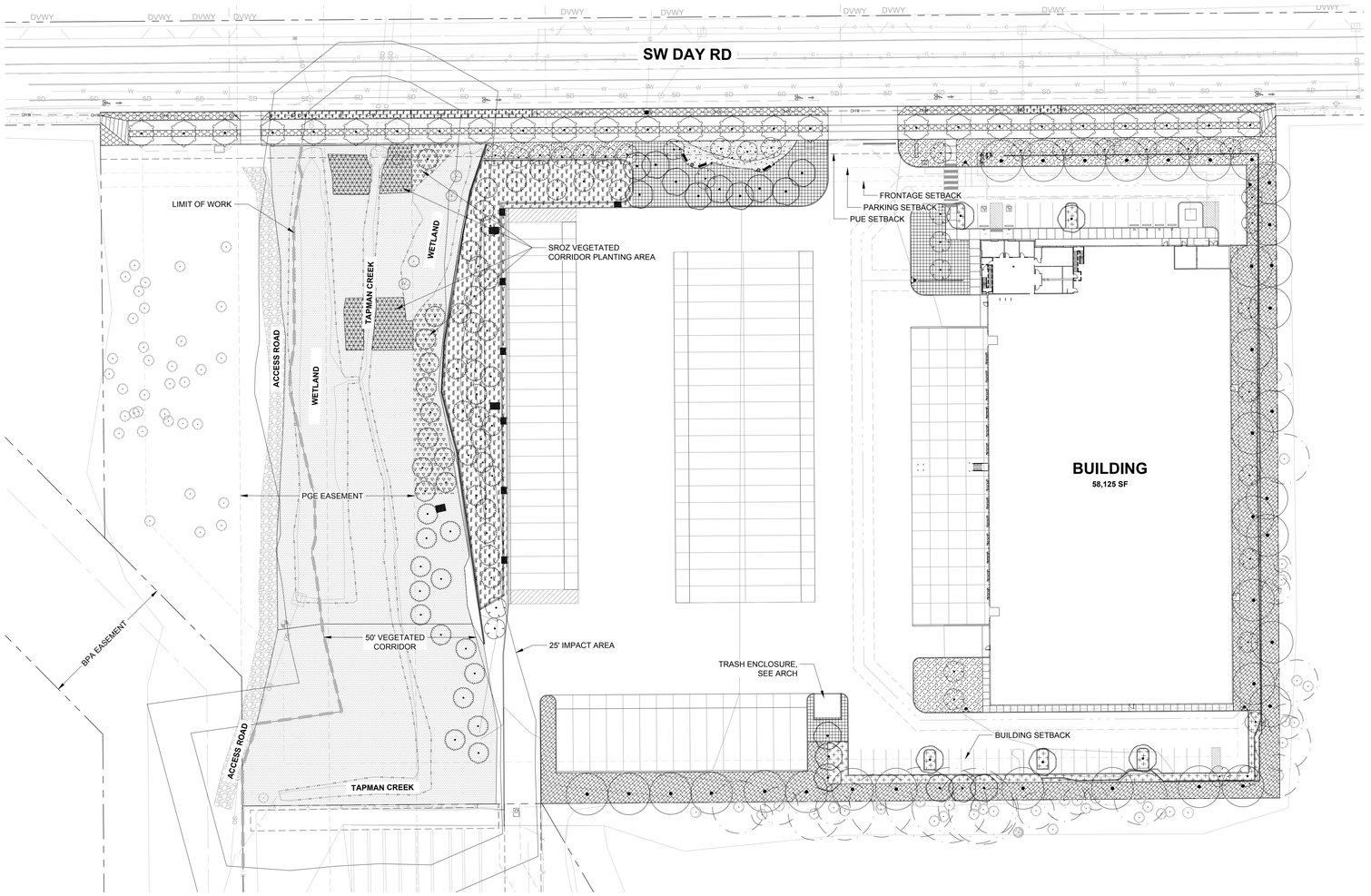
BOOK 492 PAGE 16 WA-60

PORTLAND GENERAL ELECTRIC CO.
PORTLAND, OREGON

TO ACCOMPANY TRANSMISSION EASEMENT
PAUL E. & GRACE E. DOTY.
SEC. 2 T. 3 S. R. 1 W. W.M.
WASHINGTON COUNTY, ORE.

SCALE 1" = 400'	DATE 2-25-63	
DRAWN BY	TRACED BY	CHECKED
J. E. W.	F. W. M.	J. T. W.
APPROVED JWEE	APPROVED RDP	

DRG. NO. EB 5042



1 L0.01 **ZONING COMPLIANCE PLAN**

40 0 20 40 80 160

(IN FEET)

1 inch = 40 ft.

ZONING COMPLIANCE LEGEND

PRIMARY TREE
2" CAL MIN
FRAXINUS PENNSYLVANICA 'MARSHALL'S SEEDLESS' / MARSHALL'S SEEDLESS GREEN ASH
PSEUDOTSUGA MENZIESII / DOUGLAS FIR
QUERCUS GARRYANA / OREGON WHITE OAK
THUJA PLICATA / WESTERN RED CEDAR
ZELKOVA SERRATA 'GREEN VASE' / GREEN VASE SAWLEAF ZELKOVA

SECONDARY TREE
1.75" – 2" CAL MIN
CALOCEDRUS DECURRENS / INCENSE CEDAR
TILIA TOMENTOSA 'STERLING' / STERLING SILVER LINDEN
ULMUS X 'FRONTIER' / FRONTIER ELM

ACCENT TREE
1.75" CAL MIN
ACER RUBRUM 'BOWHALL' / BOWHALL RED MAPLE
AMELANCHIER ALNIFOLIA 'AUTUMN BRILLIANCE' / SERVICEBERRY
SINGLE STEM
CORNUS KOUSA X NUTTALLII 'KN4-43' / STARLIGHT KOUSA DOGWOOD

STREET TREE
2" CAL MIN.
ACER GRANDIDENTATUM 'SCHMIDT' TM / ROCKY MOUNTAIN GLOW MAPLE
CORNUS KOUSA 'MILKY WAY' / MILKY WAY KOUSA DOGWOOD
PARROTIA PERSICA 'INOE'S RUBY VASE' TM / RUBY VASE PERSIAN PARROTIA

STORMWATER TREE
CORNUS X 'EDDIE'S WHITE WONDER' / EDDIE'S WHITE WONDER DOGWOOD
FRAXINUS LATIFOLIA / OREGON ASH
FRAXINUS LATIFOLIA / OREGON ASH
PSEUDOTSUGA MENZIESII / DOUGLAS FIR
RHAMNUS PURSHIANA / CASCARA BUCKTHORN

HIGH SCREEN STANDARD
–

LOW SCREEN STANDARD
–

PARKING LANDSCAPE
–

STORMWATER
–

GEN LANDSCAPE REQ
–

STREET PLANTING
–

WAYSIDE
–

VEGETATION PROTECTION AREA
–

ZONING COMPLIANCE

JURISDICTION	WILSONVILLE, OR
STORMWATER	CITY OF WILSONVILLE

SECTION 4.155(.03)
B. OFF-STREET PARKING LANDSCAPE REQS
PARKING AREAS OVER 650 SF, EXCLUDING ACCESS AREAS, LOADING OR DELIVERY AREAS, SHALL BE LANDSCAPED TO 10% MIN. 1 TREE PER 8 STALLS AND ISLANDS SHALL BE AT LEAST 8 FT WIDE.

TOTAL PARKING AREA	19,884 SF
PARKING LANDSCAPE (10% MIN)	3,160 SF (15.9%)
STALLS	41 STALLS
TREES (1 PER 8 STALLS = 6 TREES)	6 TREES
ISLANDS (8 FT WIDTH MIN)	8 WIDTH

SECTION 4.176(.02)
C. GENERAL LANDSCAPING STANDARD
WHERE LANDSCAPE IS GREATER THAN 30 FT DEEP, PROVIDE 1 TREE PER 800 SF AND 2 HIGH SHRUBS OR 3 LOW SHRUBS PER 400 SF.

SW DAY ROAD EAST PARKING LOT PERIMETER	
LANDSCAPE AREA	4,770 SF
TREES (1 PER 800 SF = 6 TREES)	8 TREES
LOW SHRUBS (3 PER 400 SF = 36 SHRUBS)	151 SHRUBS
SW DAY ROAD PERIMETER	
LANDSCAPE AREA	1,112 SF
TREES (1 PER 800 SF = 2 TREES)	7 TREES
LOW SHRUBS (3 PER 400 SF = 15 SHRUBS)	88 SHRUBS
SOUTH SIDE OF LOADING DOCKS	
LANDSCAPE AREA	1,906 SF
TREES (1 PER 800 SF = 3 TREES)	2 TREES
LOW SHRUBS (3 PER 400 SF = 15 SHRUBS)	21 SHRUBS

D. LOW SCREEN LANDSCAPING STANDARD
ONE TREE PER 30 LF, 3-FT HT EVERGREEN HEDGE, AND GROUNDCOVER TO FULL COVERAGE. A 3-FT HIGH MASONRY WALL OR BERM MAY REPLACE THE SHRUBS.

EAST AND SOUTH PERIMETER	
PERIMETER	986 LF
TREES (1 PER 30 LF = 33 TREES)	40 TREES
SHRUBS (EVERGREEN)	3 FT HT

E. LOW BERM LANDSCAPING STANDARD
STANDARD NOT FEASIBLE ALONG SW DAY ROAD.

F. HIGH SCREEN LANDSCAPING STANDARD

WAYSIDE PERIMETER	127 LF
TREES (1 PER 30 LF = 5 TREES)	12 TREES
HEDGE (EVERGREEN)	6 FT HT
GROUNDCOVER	FULL COVERAGE
LOADING DOCKS	42 LF
TREES (1 PER 30 LF = 2 TREES)	3 TREES
ARCHITECTURAL SCREEN WALL	16 FT H X 32 FT W
GROUNDCOVER	FULL COVERAGE
TRASH ENCLOSURE	20 LF
TREES (1 PER 30 LF = 1 TREE)	1 TREE
HEDGE (EVERGREEN)	6 FT HT
GROUNDCOVER	FULL COVERAGE

SECTION 4.176(.03)

LANDSCAPE AREA	
TOTAL DEVELOPMENT AREA	336,851 SF (7.7 AC)
LANDSCAPE (15% MIN)	117,433 SF (34.8%)

SECTION 4.176(.04)
BUFFERING AND SCREENING

SITE ZONING	INDUSTRIAL
ADJACENT ZONING	INDUSTRIAL
OUTDOOR STORAGE	NONE
SITE ZONING	INDUSTRIAL
FENCE	NONE
ADDITIONAL SCREENING	N/A

SECTION 4.176(.06)
A. SHRUBS AND GROUNDCOVER

SHRUBS (2 GAL MIN)	2 GAL MIN
3 YEAR GROUND COVERAGE (80% MIN)	80% MIN
TURF OR LAWN (10% MAX)	0%

B. TREES

DECIDUOUS (2-INCH CAL, 10 FT HT MIN)	2-INCH CAL, 10 FT HT
EVERGREEN (12 FT HT MIN)	12 FT HT

C. LARGER PLANT MATERIAL
PROPOSED DEVELOPMENT IS GREATER THAN 50,000 SF IN FOOTPRINT AREA / LARGER THAN 24-FEET IN HT AT MATURITY TREES WILL BE AT LEAST 50% THE HT OF THE BUILDING. DECIDUOUS TREES SHALL BE AT LEAST 10-FEET TALL AND 2-INCH CALIPER. EVERGREEN TREES MUST BE AT LEAST 12-FEET IN HT LARGER PLANT MATERIAL HAS BEEN PROVIDED ALONG THE FRONTAGE.

BUILDING HT	40 FT
SHORTEST MATURE TREE HT (50% OF BLDG HT MIN)	40 FT (100%)
DECIDUOUS TREES (10 FT HT, 2-INCH CAL AT INSTALL)	YES
EVERGREEN TREES (12 FT HT AT INSTALL)	YES

D. STREET TREES
ARTERIAL TREES SHALL BE 3-INCH CALIPER. STREET TREES SPECIES IS SHORT ENOUGH FOR OVERHEAD ELECTRICAL WIRES AND TOLERANT OF WET SOIL.

E. PLANT SPECIES
THE LANDSCAPE CONSISTS OF EXISTING LANDSCAPING AND/OR NATIVE VEGETATION TO BE PROTECTED AND MAINTAINED DURING CONSTRUCTION AND NATIVE AND DROUGHT TOLERANT PLANT MATERIAL. PLANT MATERIAL PROVIDED HAS BEEN CROSS-REFERENCED WITH THE CITY FTS LIST OF PROHIBITED PLANT MATERIALS.

F. TREE CREDITS
SEE TREE PLAN SHEET L0.03. NONE REQUESTED.

SECTION 4.176(.07)
INSTALLATION AND MAINTENANCE
SEE PLANTING NOTES THIS SHEET. PLANT MATERIAL REQUIRED BY CODE SHALL BE CONTINUOUSLY MAINTAINED BY OWNER AND REPLACED IN KIND WITHIN ONE GROWN SEASON IF DEAD.

IRRIGATION
SEE IRRIGATION NOTES THIS SHEET. PERMANENT SYSTEM TO BE DESIGN BUILD.

SECTION 4.176(.09)
PLANT MATERIAL LIST
SEE PLANT SCHEDULE ON SHEET L0.02.

CONDITION OF EXISTING PLANTINGS
ALL VEGETATION IS PROPOSED FOR REMOVAL, OTHER THAN THAT WITHIN THE SIGNIFICANT RESOURCE OVERLAY ZONE. SEE ARBORIST REPORT FOR CONDITION OF EXISTING TREES TO REMAIN.

WATER USAGE	
WATER USE CATEGORY	C
WAYSIDE AREA (8 TO 13 ACRES)	NATIVE/DROUGHT TOLERANT

COFFEE CREEK DESIGN GUIDELINES

WAYSIDE ON ADDRESSING STREET	
WAYSIDE AREA (8 TO 13 ACRES, 600 SF MIN.)	736 SF PROVIDED
BUFFER DEPTH ON 3 SIDES (20 FT MIN)	20-30 LF PROVIDED
AMENITIES	
SEATING (1 LF PER 40 SF OF WAYSIDE = 18 LF)	18 LF SEATING
PAVED WALKING SURFACE (5 FT MIN)	7 FT WIDTH

SHEET INDEX

L0.01	GENERAL LANDSCAPE NOTES
L0.02	PLANT SCHEDULES AND STORMWATER NOTES
L0.03	TREE REMOVAL PLAN
L0.04	TREE MITIGATION PLAN
L0.05	VEGETATED CORRIDOR ENHANCEMENT PLANTING PLAN
L1.10	PLANTING PLAN - WEST
L1.11	PLANTING PLAN - EAST
L1.20	IRRIGATION PLAN - WEST
L1.21	IRRIGATION PLAN - EAST
L5.10	PLANTING DETAILS
L5.11	IRRIGATION DETAILS

TABLE OF ABBREVIATIONS

ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE	MAX	MAXIMUM
		MIN	MINIMUM
B&B	BALL AND BURLAP	MIX	MIXTURE
CAL	CALIPER	NTS	NOT TO SCALE
CONC	CONCRETE	OC	ON CENTER
DEG	DEGREE	POC	POINT OF CONNECTION
DIA/Ø	DIAMETER	PVC	POLY VINYL CHLORIDE
DWGS	DRAWING	SCH	SCHEDULE
ELL	ELBOW	SF	SQUARE FOOT
EQ	EQUAL	SPEC	SPECIFICATION
FT	FEET/FOOT	TYP	TYPICAL
GAL	GALLON	X	TIMES
GALV	GALVANIZED		
H/HT	HEIGHT		

LANDSCAPE NOTES

GENERAL

1. CONTRACTOR SHALL CONFIRM ALL EXISTING CONDITIONS PRIOR TO COMMENCING WORK.
2. CALL BEFORE YOU DIG. CONTRACTOR SHALL VERIFY INVERT ELEVATIONS OF ALL UNDERGROUND UTILITIES AND NOTIFY LANDSCAPE ARCHITECT IF THERE ARE ANY DISCREPANCIES WITH PLANTING ROOT ZONES. TO REQUEST LOCATES FOR PROPOSED EXCAVATION CALL 1-800-332-2344 (OR 811) IN OREGON.
3. NOTIFY THE OWNER OR OWNER'S REPRESENTATIVE OF ANY DISCREPANCIES OR CONFLICTS WITH EXISTING CONDITIONS PRIOR TO COMMENCEMENT OF ANY WORK.
4. LOCATION OF EXISTING TREES SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO COMMENCEMENT OF WORK.
5. DAMAGE TO EXISTING CONCRETE CURB, ASPHALT PAVING, OR OTHER STRUCTURE SHALL BE REPAIRED OR REPLACED TO PRE CONSTRUCTION CONDITIONS.
6. CONTRACTOR SHALL COORDINATE WITH THE OWNER ANY DISRUPTION TO VEHICULAR CIRCULATION PRIOR TO COMMENCEMENT OF ANY WORK.

PLANTING

1. ALL EXISTING TREES, PLANTS, AND ROOTS SHALL BE PROTECTED FROM DAMAGE FROM ANY CONSTRUCTION PREPARATION, REMOVAL OR INSTALLATION ACTIVITIES WITHIN AND ADJACENT TO PROJECT LIMITS.
2. SHRUBS ADJACENT TO PARKING AREAS SHALL BE PLANTED 2 FT MINIMUM AWAY FROM THE BACK OF CURB. SHRUBS AND GROUNDCOVER ALONG OTHER PAVEMENT EDGES SHALL BE PLANTED A MINIMUM OF ONE HALF THEIR ON CENTER SPACING AWAY FROM PAVEMENT EDGE.
3. ALL PLANT MATERIAL SHALL BE HEALTHY NURSERY STOCK, WELL BRANCHED AND ROOTED, FULL FOLIAGE, FREE FROM INSECTS, DISEASES, WEEDS, WEED ROT, INJURIES AND DEFECTS WITH NO LESS THAN MINIMUMS SPECIFIED IN AMERICAN STANDARDS FOR NURSERY STOCK, ANSI Z60.1-2004.
4. TREES IN THE RIGHT OF WAY SHALL BE TALL ENOUGH TO BE LIMBED UP TO AT LEAST 8 FT ABOVE DRIVE SURFACE GRADE WHILE MAINTAINING ENOUGH BRANCHES TO SUPPORT HEALTHY GROWTH.
5. DO NOT PLANT TREES ABOVE WATERLINES, UTILITIES, OR OTHER UNDERGROUND PIPING.
6. IF DISTURBANCE IS NECESSARY AROUND EXISTING TREES, CONTRACTOR SHALL PROTECT THE CROWN AND ALL WORK WITHIN THE TREE DRIPZONE SHALL BE LIMITED TO THE USE OF HAND TOOLS AND MANUAL EQUIPMENT ONLY.
7. REPLACE, REPAIR AND RESTORE DISTURBED LANDSCAPE AREAS DUE TO GRADING, TRENCHING OR OTHER REASONS TO PRE-CONSTRUCTION CONDITION AND PROVIDE MATERIAL APPROVED BY THE OWNER AND OWNER'S REPRESENTATIVE.
8. EXISTING AREAS PROPOSED FOR NEW PLANT MATERIAL SHALL BE CLEARED AND LEGALLY DISPOSED UNLESS SO NOTED.
9. A SOILS ANALYSIS, BY AN INDEPENDENT SOILS TESTING LABORATORY RECOGNIZED BY THE STATE DEPARTMENT OF AGRICULTURE, SHALL BE USED TO RECOMMEND AN APPROPRIATE PLANTING SOIL AND/OR SPECIFIED SOIL AMENDMENTS.
10. TOPSOIL SHALL BE AMENDED AS RECOMMENDED BY AN INDEPENDENT SOILS TESTING LABORATORY AND AS OUTLINED IN THE SPECIFICATION.
11. ALL LANDSCAPED AREAS SHALL BE COVERED BY A LAYER OF ORGANIC MULCH TO A MINIMUM DEPTH OF 2-INCHES.

IRRIGATION

1. UNLESS OTHERWISE INDICATED, ALL NEW LANDSCAPE AREAS TO BE IRRIGATED WITH A FULLY AUTOMATIC UNDERGROUND IRRIGATION SYSTEM. PROVIDE LOOP SYSTEM FOR OPTIMUM EFFICIENCY.
2. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS (IRRIGATION PLANS) TO LANDSCAPE ARCHITECT PRIOR TO CONSTRUCTION. DRAWINGS TO INDICATE HEAD TYPE, GALLONS PER MINUTE, LATERAL LINES, AND BE AT MINIMUM SCALE OF 1"=20'
3. CONTRACTOR TO DETERMINE STATIC WATER PRESSURE AT THE P.O.C. PRIOR TO PREPARING SHOP DRAWINGS.
4. CONTRACTOR SHALL ESTABLISH MINIMUM PRESSURE AND MAXIMUM DEMAND REQUIREMENTS FOR IRRIGATION SYSTEM DESIGN, AND PROVIDE INFORMATION IN AN IRRIGATION SCHEDULE.
5. IRRIGATION SYSTEM AS DESIGNED AND INSTALLED SHALL PERFORM WITHIN THE TOLERANCES AND SPECIFICATIONS OF THE SPECIFIED MANUFACTURERS.
6. SYSTEM SHALL BE DESIGNED TO SUPPLY MANUFACTURER'S SPECIFIED MINIMUM OPERATING PRESSURE TO FARTHEST EMITTER FROM WATER METER.
7. SYSTEM SHALL PROVIDE HEAD TO HEAD COVERAGE WITHOUT OVERSPRAY ONTO BUILDING, FENCES, SIDEWALKS, PARKING AREAS, OR OTHER NON-VEGETATED SURFACES.
8. ALL IRRIGATION PIPE MATERIAL AND INSTALLATION SHALL CONFORM TO APPLICABLE CODE FOR PIPING AND COMPONENT REQUIREMENTS.
9. PROVIDE SLEEVING AT ALL AREAS WHERE PIPE TRAVELS UNDER CONCRETE OR HARD SURFACING.
10. VALVES SHALL BE WIRED AND INSTALLED PER MANUFACTURER'S RECOMMENDED INSTALLATION PROCEDURES AND CONNECTED TO THE IRRIGATION CONTROLLER.
11. REFER TO CIVIL DETAILS AND DETAILS ON L5.11 FOR POINT OF CONNECTION AND BACKFLOW PREVENTION INFORMATION.
12. MAINLINE LAYOUT IS DIAGRAMMATIC ONLY.
13. CONTROLLER TO BE MOUNTED WITHIN BUILDING INTERIOR. GENERAL CONTRACTOR TO COORDINATE LOCATION WITH OWNER'S REPRESENTATIVE.
14. ZONE THE FOLLOWING AREAS SEPARATELY: TEMPORARY AREAS, PERMANENT LANDSCAPE AREAS, AND TREES.
15. QUICK COUPLERS TO BE PLACED EVERY 300 LINEAR FEET MAX.
16. IRRIGATION SHALL BE WINTERIZED THROUGH LOW PRESSURE, HIGH VOLUME AIR BLOWOUT CONNECTION THROUGH QUICK COUPLER.
17. THE SYSTEM SHALL BE GRAVITY DRAINED. THE CONTRACTOR SHALL PROVIDE APPROPRIATE MANUAL DRAINS AT LOW POINTS.

Item 2.

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REVISION SCHEDULE

Delta	Issued As	Issue Date

GENERAL LANDSCAPE NOTES

City of Wilsonville
Exhibit B1 (Part 5) DB22-0007

SHEET
L0.01

JOB NO. **2200502.00**

982

DEVELOPMENT REVIEW SET - 04/11/2023

STORMWATER FACILITY PLANT SCHEDULES

PER CITY OF WILSONVILLE STORMWATER AND SURFACE WATER DESIGN & CONSTRUCTION STANDARDS - SECTION 3 - PUBLIC WORKS STANDARDS (2015)

LANDSCAPE PLAN FACILITY AREA CALCULATIONS INCLUDE TOP OF FREEBOARD. CIVIL PLAN FACILITY AREA CALCULATIONS REPORT TO TOP OF OVERFLOW INLET, EXCLUDING THE 4" FREEBOARD.

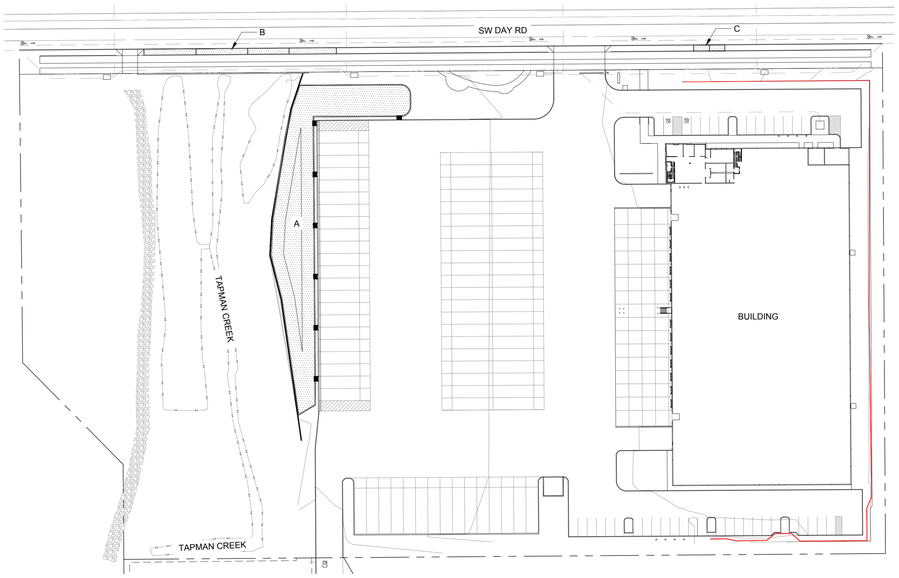
PROVIDE AT LEAST 50% EVERGREEN PLANTS AND AT LEAST 2 SPECIES OF HERBACEOUS AND SMALL SHRUBS/GROUNDCOVER PLANT COMMUNITIES.

MOIST (ZONE A) VEGETATION TYPE	QUANTITY	SIZE
GROUNDCOVER PLANTS	115/100 SF	#1 CONTAINER
SMALL SHRUBS	3/100 SF	#1 CONTAINER
LARGE SHRUBS / SMALL TREES	4/100 SF	30" HEIGHT

DRY (ZONE B) VEGETATION TYPE	QUANTITY	SIZE
GROUNDCOVER PLANTS	115/100 SF	#1 CONTAINER
SMALL SHRUBS	3/100 SF	#1 CONTAINER
LARGE SHRUBS / SMALL TREES	4/100 SF	30" HEIGHT
TREE (DECIDUOUS) OR	1/100 SF	1" CALIPER
TREE (EVERGREEN)	1/100 SF	6' HEIGHT

PLANT LIST				FACILITY A (PRIVATE)	
PLANT NAME	SIZE	SPACING	EVER-GREEN	ZONE A	ZONE B
				9,299 SF	3,454 SF
REQUIRED GROUND COVER PLANTS (115 PER 100 SF)				10,693	3,972
ARCTOSTAPHYLOS UVA-URSI / KINNIKINNICK	#1	12" OC	YES		2,000
CAREX DENSA / DENSE SEDGE	#1	12" OC	YES	3,500	
CAREX OBNUPTA / SLOUGH SEDGE	#1	12" OC	YES	3,500	
JUNCUS PATENS / SPREADING RUSH	#1	12" OC	YES	3,693	1,972
REQUIRED SMALL SHRUBS (3 PER 100 SF)				279	104
CORNUS SERCIA / RED TWIG DOGWOOD	#2	AS SHOWN	NO	10	
MAHONIA AQUIFOLIUM / OREGON GRAPE	#2	AS SHOWN	YES	150	2
PHYSOCARPUS CAPITATUS / PACIFIC NINEBARK	#2	AS SHOWN	NO		
ROSA PISOCARPA	#2	AS SHOWN	NO	121	14
SYMPHORICARPOS ALBUS / SNOWBERRY	#1	AS SHOWN	NO		114
REQUIRED LARGE SHRUBS / SMALL TREES (4 PER 100 SF)				372	138
HOLODISCUS DISCOLOR / OCEANSPRAY	30" HT	AS SHOWN	NO	66	28
RIBES SANGUINEUM / RED FLOWERING CURRANT	30" HT	AS SHOWN	NO	73	10
RUBUS SPECTABILIS / SALMONBERRY	30" HT	AS SHOWN	NO	10	10
SPIREA DOUGLASII / WESTERN SPIREA	30" HT	AS SHOWN	NO	223	66
REQUIRED TREES (1 PER 100 SF)				0	33
CORNUS NUTTALII / EDDIE'S WHITE WONDER DOGWOOD	2" CAL	AS SHOWN	NO	12	
FRAXINUS LATIFOLIA / OREGON ASH	2" CAL	AS SHOWN	NO		
RHAMNUS PURSHIANA	2" CAL	AS SHOWN	NO	22	
TOTAL PLANTS IN FACILITY				28,753	
TOTAL EVERGREEN PLANTS				10,889	
% EVERGREEN IN FACILITY				37.9%	

PLANT LIST				FACILITIES B-C (PUBLIC)	
PLANT NAME	SIZE	SPACING	EVER-GREEN	B ZONE A	C ZONE A
				1,025 SF	162 SF
REQUIRED GROUND COVER PLANTS (115 PER 100 SF)				1,179	187
CAREX DENSA / DENSE SEDGE	#1	12" OC	YES	786	93
JUNCUS PATENS / SPREADING RUSH	#1	12" OC	YES	393	94
REQUIRED SMALL SHRUBS (3 PER 100 SF)				31	5
SPIREA B. 'TOR' / BIRCHLEAF SPIREA	#1	AS SHOWN	NO	15	2
SYMPHORICARPOS ALBUS / COMMON WHITE SNOWBERRY	#1	AS SHOWN	NO	20	3
REQUIRED SMALL SHRUB IN LIEU OF LARGE SHRUB (4 PER 100 SF)				41	7
SPIREA B. 'TOR' / BIRCHLEAF SPIREA	#1	AS SHOWN	NO	47	7
TOTAL PLANTS IN FACILITY				1,252	199
TOTAL EVERGREEN PLANTS				1,179	187
% EVERGREEN IN FACILITY				94.2%	93.9%



STORMWATER KEY MAP
SCALE: NTS

STORMWATER FACILITY PLANTING NOTES

1. PLANTING SCHEDULE: CONTAINERIZED STOCK SHALL BE INSTALLED ONLY FROM FEBRUARY 1 THROUGH MAY 1 AND OCTOBER 1 THROUGH NOVEMBER 15. BARE ROOT STOCK SHALL BE INSTALLED ONLY FROM DECEMBER 15 THROUGH APRIL 15. SEEDING SHALL OCCUR ONLY BETWEEN MARCH 1 THROUGH MAY 15 AND SEPTEMBER 1 THROUGH OCTOBER 15.
2. EROSION CONTROL: GRADING, SOIL PREPARATION, AND SEEDING SHALL BE PERFORMED DURING OPTIMAL WEATHER CONDITIONS AND AT LOW FLOW LEVELS TO MINIMIZE SEDIMENT IMPACTS. BIODEGRADABLE FABRICS SUCH AS BURLAP MAY BE USED TO SECURE PLANT PLUGS IN PLACE AND TO DISCOURAGE FLOATING UPON INUNDATION. NO PLASTIC MESH THAT CAN ENTANGLE WILDLIFE IS PERMITTED.
3. GROWING MEDIUM INSTALLATION:
   - 3.1. PROTECT GROWING MEDIUM FROM ALL SOURCES OF CONTAMINATION, INCLUDING WEED SEEDS, WHILE AT THE SUPPLIER, IN CONVEYANCE, AND AT THE PROJECT SITE.
   - 3.2. PLACE MEDIUM IN LOOSE LIFTS, NOT TO EXCEED 8-INCHES AND EACH LIFT SHALL BE COMPACTED WITH A WATER-FILLED LANDSCAPE ROLLER. THE MATERIAL SHALL NOT OTHERWISE BE MECHANICALLY COMPACTED.
   - 3.3. WEATHER PERMITTING, PLANTS SHALL BE INSTALLED AS SOON AS POSSIBLE AFTER PLACING AND GRADING THE GROWING MEDIUM IN ORDER TO MINIMIZE EROSION AND FURTHER COMPACTION.
   - 3.4. TEMPORARY EROSION CONTROL MEASURES ARE REQUIRED UNTIL PERMANENT STABILIZATION MEASURES ARE FUNCTIONAL, INCLUDING PROTECTION OF OVERFLOW STRUCTURES.
   - 3.5. IN ALL CASES, THE FACILITY MUST BE PROTECTED FROM FOOT AND EQUIPMENT TRAFFIC THAT IS UNRELATED TO THE CONSTRUCTION OF THE FACILITY. TEMPORARY FENCING OR WALKWAYS SHOULD BE INSTALLED AS NEEDED TO KEEP WORKERS, PEDESTRIANS, AND EQUIPMENT OUT OF THE FACILITY. UNDER NO CIRCUMSTANCES SHOULD MATERIALS AND EQUIPMENT BE STORED IN THE FACILITY.
   - 3.6. STORMWATER MANAGEMENT FACILITIES SHALL BE KEPT CLEAN AND SHALL NOT BE USED AS EROSION AND SEDIMENT CONTROL STRUCTURES DURING CONSTRUCTION.
   - 3.7. PLACEMENT OF THE GROWING MEDIUM WILL NOT BE ALLOWED WHEN THE GROUND IS FROZEN OR SATURATED OR WHEN THE WEATHER IS DETERMINED TO BE TOO WET.
4. MULCHING FOR STORMWATER FACILITIES SHALL BE PER SECTION A.3.7. USE OF MULCH IN FREQUENTLY INUNDATED AREAS SHALL BE LIMITIED TO AVOID ANY POSSIBLE WATER QUALITY IMPACTS INCLUDING THE LEACHING OF TANNINS AND NUTRIENTS, ANFD THE MIGRATION OF MULCH INTO WATER WAYS. MULCHES SHALL BE STABLE AND INERT MATTER OF SUFFICIENT MASS AND DENSITY THAT IT WILL NOT FLOAT IN STANDARD FLOWS, MULCH COVER SHOULD BE MAINTAINED THROUGHOUT THE LIFE OF THE FACILITY WITH MINIMUM THICKNESS OF 2-INCHES IN DEPTH.
5. PLANT PROTECTION FROM WILDLIFE: DEPENDING ON SITE CONDITIONS, APPROPRIATE MEASURES SHALL BE TAKEN TO LIMIT WILDLIFE-RELATED DAMAGE. IF BEAVERS OR NUTRIA ARE PRESENT, PROTECT THE MAIN STEM OF ALL TREES WITHIN 100' OF THE EDGE OF WATER WITH 36" OF WIRE MESH.
6. FERTILIZER SHOULD GENERALLY BE AVOIDED IN STORMWATER FACILITIES. FERTILIZE ALL PLANTS DURING ESTABLISHMENT AS NEEDED WITH SLOW RELEASE, ORGANIC (LOW YIELD) MATERIAL.
7. IRRIGATION: A CITY APPROVED IRRIGATION SYSTEM MAY BE USED DURING THE 2-YEAR ESTABLISHMENT PERIOD. WATERING SHALL BE AT A RATE TO MAINTAIN ALL PLANTINGS IN A HEALTHY THRIVING CONDITION DURING ESTABLISHMENT. OTHER IRRIGATION TECHNIQUES, SUCH AS DEEP WATERING, MAY BE ALLOWED WITH PRIOR APPROVAL BY THE CITY'S AUTHORIZED REPRESENTATIVE.
8. MAINTENANCE: CHECK FOR WEEDS REGULARLY. CHECK MULCH REGULARLY AND MAINTAIN EVEN COVERAGE. REPLANT BARE PATCHES AS NECESSARY TO COMPLY WITH THE FACILITY'S COVERAGE REQUIREMENTS AND MAINTENANCE PLAN. IMPLEMENT ALL OF THE REQUIRED MAINTENANCE ACTIVITIES LISTED IN THE CITY OF WILSONVILLE VEGETATED STORMWATER MANAGEMENT FACILITY DETAILS.

PLANT SCHEDULE

ACCENT TREES	BOTANICAL / COMMON NAME	SIZE	
	ACER RUBRUM 'BOWHALL' BOWHALL RED MAPLE	2" CAL. B&B	
	AMELANCHIER ALNIFOLIA 'AUTUMN BRILLIANCE' SERVICEBERRY SINGLE STEM	2" CAL. B&B	
	CORNUS KOUSA X NUTTALLII 'KN4-43' STARLIGHT KOUSA DOGWOOD	2" CAL. B&B	
PRIMARY TREES	BOTANICAL / COMMON NAME	SIZE	
	FRAXINUS PENNSYLVANICA 'MARSHALL'S SEEDLESS' MARSHALL'S SEEDLESS GREEN ASH	2" CAL. B&B	
	PSEUDOTSUGA MENZIESII DOUGLAS FIR	12' HT. MIN. B&B	
	QUERCUS GARRYANA OREGON WHITE OAK	2" CAL. B&B	
	THUJA PLICATA WESTERN RED CEDAR	12' HT. MIN. B&B	
SECONDARY TREES	BOTANICAL / COMMON NAME	SIZE	
	CALOCEDRUS DECURRENS INCENSE CEDAR	12' HT. MIN. B&B	
	TILIA TOMENTOSA 'STERLING' STERLING SILVER LINDEN	2" CAL. B&B	
STORMWATER TREES	BOTANICAL / COMMON NAME	SIZE	
	CORNUS X 'EDDIE'S WHITE WONDER' EDDIE'S WHITE WONDER DOGWOOD	2" CAL. B&B	
	FRAXINUS LATIFOLIA OREGON ASH	2" CAL. B&B	
	RHAMNUS PURSHIANA CASCARA BUCKTHORN	2" CAL., B&B	
STREET TREES	BOTANICAL / COMMON NAME	SIZE	
	ACER GRANDIDENTATUM 'SCHMIDT' TM ROCKY MOUNTAIN GLOW MAPLE	3" CAL. B&B	
	CORNUS KOUSA 'MILKY WAY' MILKY WAY KOUSA DOGWOOD	3" CAL. B&B	
	PARROTIA PERSICA 'INGE'S RUBY VASE' TM RUBY VASE PERSIAN PARROTIA	3" CAL. B&B	
SHRUBS	BOTANICAL / COMMON NAME	SIZE	SPACING
	ACER CIRCINATUM 'PACIFIC FIRE' PACIFIC FIRE VINE MAPLE	5' HT. MIN.	60" o.c.
	ARBUTUS UNEDO 'COMPACTA' DWARF STRAWBERRY TREE	5 GAL.	72" o.c.
	CORNUS SERICEA 'KELSEYI' KELSEYI DWARF REDTWIG DOGWOOD	2 GAL.	24" o.c.
	DEUTZIA GRACILIS 'NIKKO' SLENDER DEUTZIA (3' H X 5' W)	2 GAL.	48" o.c.
	GAULTHERIA SHALLON SALAL	2 GAL.	36" o.c.
	MAHONIA AQUIFOLIUM OREGON GRAPE	5 GAL.	60" o.c.
	MAHONIA AQUIFOLIUM 'COMPACTA' COMPACT OREGON GRAPE	2 GAL.	36" o.c.
	MYRICA CALIFORNICA PACIFIC WAX MYRTLE	2 GAL.	72" o.c.
	RIBES SANGUINEUM RED FLOWERING CURRANT	2 GAL.	48" o.c.
	SPIRAEA BETULIFOLIA 'TOR' BIRCHLEAF SPIREA MATURE (3' X 3')	2 GAL.	30" o.c.
	SYMPHORICARPOS ALBUS COMMON WHITE SNOWBERRY	2 GAL.	36" o.c.
	VACCINIUM OVATUM EVERGREEN HUCKLEBERRY	2 GAL.	60" o.c.
	VACCINIUM OVATUM 'SCARLET OVATION' SCARLET OVATION EVERGREEN HUCKLEBERRY	2 GAL.	36" o.c.
	MATURE (3' X 3')	2 GAL.	36" o.c.
	VIBURNUM DAVIDII DAVID VIBURNUM (3' H X 3' W)	2 GAL.	36" o.c.
	VIBURNUM TINUS 'SPRING BOUQUET' SPRING BOUQUET LAURUSTINUS MATURE (6'H X 4'W)	2 GAL.	48" o.c.
PERENNIALS	BOTANICAL / COMMON NAME	SIZE	SPACING
	ACHILLEA MILLIFOLIUM 'ALABASTER' ALABASTER YARROW	1 GAL.	18" o.c.
	ASTER SUBSPICATUS DOUGLAS ASTER	1 GAL.	24" o.c.
	POLYSTICHUM MUNITUM WESTERN SWORD FERN	1 GAL.	24" o.c.
	PTERIDIUM AQUILINUM WESTERN BRACKENFERN	1 GAL.	24" o.c.
	SALVIA X SUPERBA 'CARADONNA' CARADONNA SAGE	1 GAL.	24" o.c.
STORMWATER SHRUBS	BOTANICAL / COMMON NAME	SIZE	SPACING
	CORNUS SERICEA RED TWIG DOGWOOD	2 GAL.	48" o.c.
	HOLODISCUS DISCOLOR OCEAN-SPRAY	2 GAL.	48" o.c.
	MAHONIA AQUIFOLIUM OREGON GRAPE	2 GAL.	36" o.c.
	RIBES SANGUINEUM RED FLOWERING CURRANT	2 GAL.	48" o.c.
	ROSA PISOCARPA CLUSTERED WILD ROSE	2 GAL.	36" o.c.
	RUBUS SPECTABILIS SALMONBERRY	2 GAL.	50" o.c.
	SPIRAEA BETULIFOLIA 'TOR' TOR BIRCHLEAF SPIREA	2 GAL.	30" o.c.
	SPIRAEA DOUGLASII WESTERN SPIREA (3-4' H X 3' W) NATIVE	2 GAL.	48" o.c.
	SYMPHORICARPOS ALBUS COMMON WHITE SNOWBERRY	2 GAL.	36" o.c.
GROUND COVERS	BOTANICAL / COMMON NAME	SIZE	SPACING
	ARCTOSTAPHYLOS UVA-URSI KINNIKINNICK	1 GAL.	24" o.c.
	BOUTELOUA GRACILIS 'BLONDE AMBITION' BLONDE AMBITION BLUE GRAMA	1 GAL.	24" o.c.
	CRUSHED GRAVEL QUARTER-TEN	---	
	FESTUCA OCCIDENTALIS WESTERN FESCUE GRASS	1 GAL.	18" o.c.
	GERANIUM X CANTABRIGIENSE 'BIOKOVO' BIOKOVO CRANESBILL	1 GAL.	24" o.c.
	MAHONIA REPENS CREEPING MAHONIA	1 GAL.	24" o.c.
	PROTIME 402 NATIVE RIPARIAN MIX PROTIME SEEDS	1 LB / 1000 SF	
	SEED MIX NATIVE POLLINATOR MEADOW MIX SUNMARK SEEDS	1 LB / 1000 SF	
	SEED MIX NATIVE UPLANDS MEADOW MIX SUNMARK SEEDS	1 LB / 1000 SF	
STORMWATER PLANTING	BOTANICAL / COMMON NAME	SIZE	SPACING
	CAREX DENSA DENSE SEDGE	1 GAL.	
	JUNCUS PATENS CALIFORNIA GRAY RUSH	1 GAL.	

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REVISION SCHEDULE

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PLANT SCHEDULES AND STORMWATER NOTES

SHEET
L0.02

JOB NO. 2200502.00

983

DEVELOPMENT REVIEW SET - 04/11/2023

L0.02 JWT 10/06/22 11:22 1:0.08

TREE PROTECTION NOTES

SEE G0.01 FOR PROJECT ARBORIST CONTACT INFORMATION.

1. PROTECTION FENCING: ESTABLISH TREE PROTECTION FENCING IN THE LOCATIONS SHOWN. THE INTENT OF THE TREE PROTECTION FENCING IS TO PROTECT THE MINIMUM ROOT PROTECTION ZONES DETAILED IN FIGURE 1. NOTE THAT THE TREE PROTECTION FENCING MAY BE MOVED TO ALLOW CONSTRUCTION ACCESS TO THE SIDE OF THE PROPOSED BUILDING FOLLOWING APPROVAL BY THE PROJECT ARBORIST.
2. DIRECTIONAL FELLING - FELL THE TREES TO BE REMOVED AWAY FROM THE TREES TO BE RETAINED SO THEY DO NOT CONTACT OR OTHERWISE DAMAGE THE TRUNKS OR BRANCHES OF THE RETAINED TREES. NO VEHICLES OR HEAVY EQUIPMENT SHOULD BE PERMITTED WITHIN THE TREE PROTECTION ZONES DURING TREE REMOVAL OPERATIONS.
3. STUMP REMOVAL - THE STUMPS OF THE TREES TO BE REMOVED FROM WITHIN THE TREE PROTECTION ZONES SHALL BE RETAINED OR CAREFULLY STUMP GROUND SO AS NOT TO DISTURB THE ROOT SYSTEMS OF THE RETAINED TREES.
4. PERIODIC RISK ASSESSMENTS: CONDUCT RISK ASSESSMENTS PERIODICALLY THROUGHOUT CONSTRUCTION TO DOCUMENT WHETHER TREES ARE ADAPTING TO THE NEW SITE CONDITIONS AND RISKS ARE MITIGATED APPROPRIATELY WITH CITY APPROVAL. THE RETAINED TREES WERE PREVIOUSLY PROTECTED WITHIN A STAND OF SURROUNDING TREES. THE REMOVAL OF ADJACENT TREES WILL EXPOSE THE RETAINED TREES TO CHANGES IN WIND FORCES WHICH WILL INCREASE THEIR RISK OF WINDTHROW. THE PROJECT ARBORIST SHALL CONDUCT A TREE RISK ASSESSMENT IMMEDIATELY FOLLOWING SITE CLEARING TO IDENTIFY TREES THAT POSE SIGNIFICANT RISKS. FOR TREES THAT POSE SIGNIFICANT RISKS, CONSULT PROJECT ARBORIST FOR RETENTION STRATEGIES, SUCH AS PRUNING OR SNAG CREATION. ANY RECOMMENDED TREE REMOVAL OR SNAG CREATION REQUIRES REVIEW AND APPROVAL OF THE CITY OF WILSONVILLE.
5. CONSTRUCTION ACCESS: WHEN ACCESSING THE SIDES OF THE BUILDING IN THE MODIFIED TREE PROTECTION ZONE, SOIL COMPACTION PREVENTION SUCH AS THE PLACEMENT OF STEEL PLATES IS REQUIRED TO PROTECT THE ROOT ZONES OF THE ADJACENT TREES.
6. ONSITE SUPERVISION OF PROJECT ARBORIST: THE PROJECT ARBORIST SHALL BE ONSITE TO OVERSEE THE RETAINING WALL EXCAVATION AND FOUNDATION CONSTRUCTION WITHIN AND ADJACENT TO THE TREE PROTECTION ZONES OF TREES PERIMETER TREES.
7. PROTECT CROWNS OF TREES: THE CROWNS OF THE TREES MAY EXTEND BEYOND THE TREE PROTECTION FENCING. CARE WILL NEED TO BE TAKEN TO NOT CONTACT OR OTHERWISE DAMAGE THE CROWNS OF THE TREES DURING CONSTRUCTION ACTIVITIES. ANY REQUIRED PRUNING SHALL BE COMPLETED BY AN ISA CERTIFIED ARBORIST CONSISTENT WITH ANSI A300 PRUNING STANDARDS AS DIRECTED BY THE PROJECT ARBORIST.
8. SEDIMENT FENCING: SEDIMENT FENCING SHALL BE INSTALLED OUTSIDE THE PROTECTION ZONES OF THE TREES TO BE RETAINED TO MINIMIZE ROOT DISTURBANCES. IF EROSION CONTROL IS REQUIRED INSIDE THE ROOT ZONES, STRAW WATTLES SHALL BE USED ON THE SOIL SURFACE.

BEFORE CONSTRUCTION BEGINS

1. NOTIFY ALL CONTRACTORS OF TREE PROTECTION PROCEDURES. FOR SUCCESSFUL TREE PROTECTION ON A CONSTRUCTION SITE, ALL CONTRACTORS MUST KNOW AND UNDERSTAND THE GOALS OF TREE PROTECTION.
   a. HOLD A TREE PROTECTION MEETING WITH ALL CONTRACTORS TO EXPLAIN THE GOALS OF TREE PROTECTION.
   b. HAVE ALL CONTRACTORS SIGN MEMORANDA OF UNDERSTANDING REGARDING THE GOALS OF TREE PROTECTION. THE MEMORANDA SHOULD INCLUDE A PENALTY FOR VIOLATING THE TREE PROTECTION PLAN. THE PENALTY SHOULD EQUAL THE RESULTING FINES ISSUED BY THE LOCAL JURISDICTION PLUS THE APPRAISED VALUE OF THE TREE(S) WITHIN THE VIOLATED TREE PROTECTION ZONE PER THE CURRENT TRUNK FORMULA METHOD AS OUTLINED IN THE CURRENT EDITION OF THE 'GUILD FOR PLANT APPRAISAL' BY THE COUNCIL OF TREE AND LANDSCAPE APPRAISERS. THE PENALTY SHOULD BE PAID TO THE OWNER OF THE PROPERTY.
2. FENCING
   a. TREE PROTECTION FENCING MAY BE SET AS SHOWN ON THE TREE PLAN.
   b. THE FENCING SHOULD BE PUT IN PLACE BEFORE THE GROUND IS CLEARED TO PROTECT THE TREES AND THE SOIL AROUND THE TREE FROM DISTURBANCES.
   c. FENCING SHOULD CONSIST OF 4-FOOT HIGH STEEL FENCING ON CONCRETE BLOCKS OR OTHER ANCHORING DEVICES, OR 4-FOOT METAL FENCING SECURED TO THE GROUND WITH 6-FOOT METAL POSTS TO PREVENT IT FROM BEING MOVED BY CONTRACTORS, SAGGING, OR FALLING DOWN.
   d. FENCING SHOULD REMAIN IN THE POSITION THAT IS ESTABLISHED BY THE PROJECT ARBORIST AND NOT BE MOVED WITHOUT APPROVAL FROM THE PROJECT ARBORIST UNTIL FINAL PROJECT APPROVAL.
2. SIGNAGE
   a. ALL TREE PROTECTION FENCING SHOULD HAVE SIGNAGE AS FOLLOWS SO THAT ALL CONTRACTORS UNDERSTAND THE PURPOSE OF THE FENCING:

TREE PROTECTION ZONE

DO NOT REMOVE OR ADJUST THE LOCATION OF THIS TREE PROTECTION FENCING. UNAUTHORIZED ENCROACHMENT MAY RESULT IN FINES.

Please contact the project arborist if alterations to the location of the tree protection fencing are necessary.

Project Arborist: Teregan & Associates, Inc. (503) 697-1975

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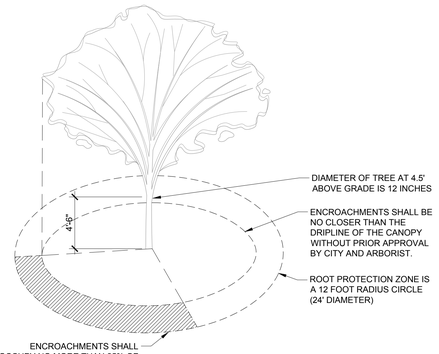
   b. SIGNAGE SHOULD BE PLACED EVERY 75-FEET OR LESS.

DURING CONSTRUCTION

1. PROTECTION GUIDELINES WITHIN THE TREE PROTECTION ZONES:
   a. NO NEW BUILDINGS; GRADE CHANGES OR CUT AND FILL, DURING OR AFTER CONSTRUCTION; NEW IMPERVIOUS SURFACES; OR UTILITY OR DRAINAGE FILED PLACEMENT SHOULD BE ALLOWED WITHIN THE TREE PROTECTION ZONES.
   b. NO TRAFFIC SHOULD BE ALLOWED WITHIN THE TREE PROTECTION ZONES. THIS INCLUDES BUT IS NOT LIMITED TO VEHICLE, HEAVY EQUIPMENT, OR EVEN REPEATED FOOT TRAFFIC.
   c. NO STORAGE OF MATERIALS INCLUDING BUT NOT LIMITED TO SOIL, ON STRUCTION MATERIALS, OR WASTE FROM THE SITE SHOULD BE PERMITTED WITHIN THE TREE PROTECTION ZONES. WASTE INCLUDES BUT IS NOT LIMITED TO CONCRETE WASH OUT, GASOLINE, DIESEL, PAINT, CLEANER, THINNERS, ETC.
   d. CONSTRUCTION TRAILERS SHOULD NOT BE PARKED/PLACED WITHIN THE TREE PROTECTION ZONES.
   e. NO VEHICLES SHOULD BE ALLOWED TO PARK WITHIN THE TREE PROTECTION ZONES.
   f. NO OTHER ACTIVITIES SHOULD BE ALLOWED THAT WILL CAUSE SOIL COMPACTIONS WITHIN THE TREE PROTECTION ZONES.
2. THE TREES SHOULD BE PROTECTED FROM ANY CUTTING, SKINNING, OR BREAKING OF BRANCHES, TRUNKS OR WOODY ROOTS.
3. THE PROJECT ARBORIST SHOULD BE NOTIFIED PRIOR TO THE CUTTING OF WOODY ROOTS FROM TREES THAT ARE TO BE RETAINED TO EVALUATE AND OVERSEE THE PROPER CUTTING OF ROOTS WITH SHARP CUTTING TOOLS. CUT ROOTS SHOULD BE IMMEDIATELY COVERED WITH SOIL OR MULCH TO PREVENT THEM FROM DRYING OUT.
4. TREES THAT HAVE WOODY ROOTS CUT SHOULD BE PROVIDED SUPPLEMENTAL WATER DURING THE SUMMER MONTHS.
5. ANY NECESSARY PASSAGE OF UTILITIES WITHIN THE TREE PROTECTION ZONES SHOULD BE BY MEANS OF TUNNELING UNDER WOODY ROOTS BY HAND DIGGING OR BORING WITH OVERSIGHT BY THE PROJECT ARBORIST.
6. ANY DEVIATION FROM THE RECOMMENDATIONS IN THIS SECTION SHOULD RECEIVE PRIOR APPROVAL FROM THE PROJECT ARBORIST.

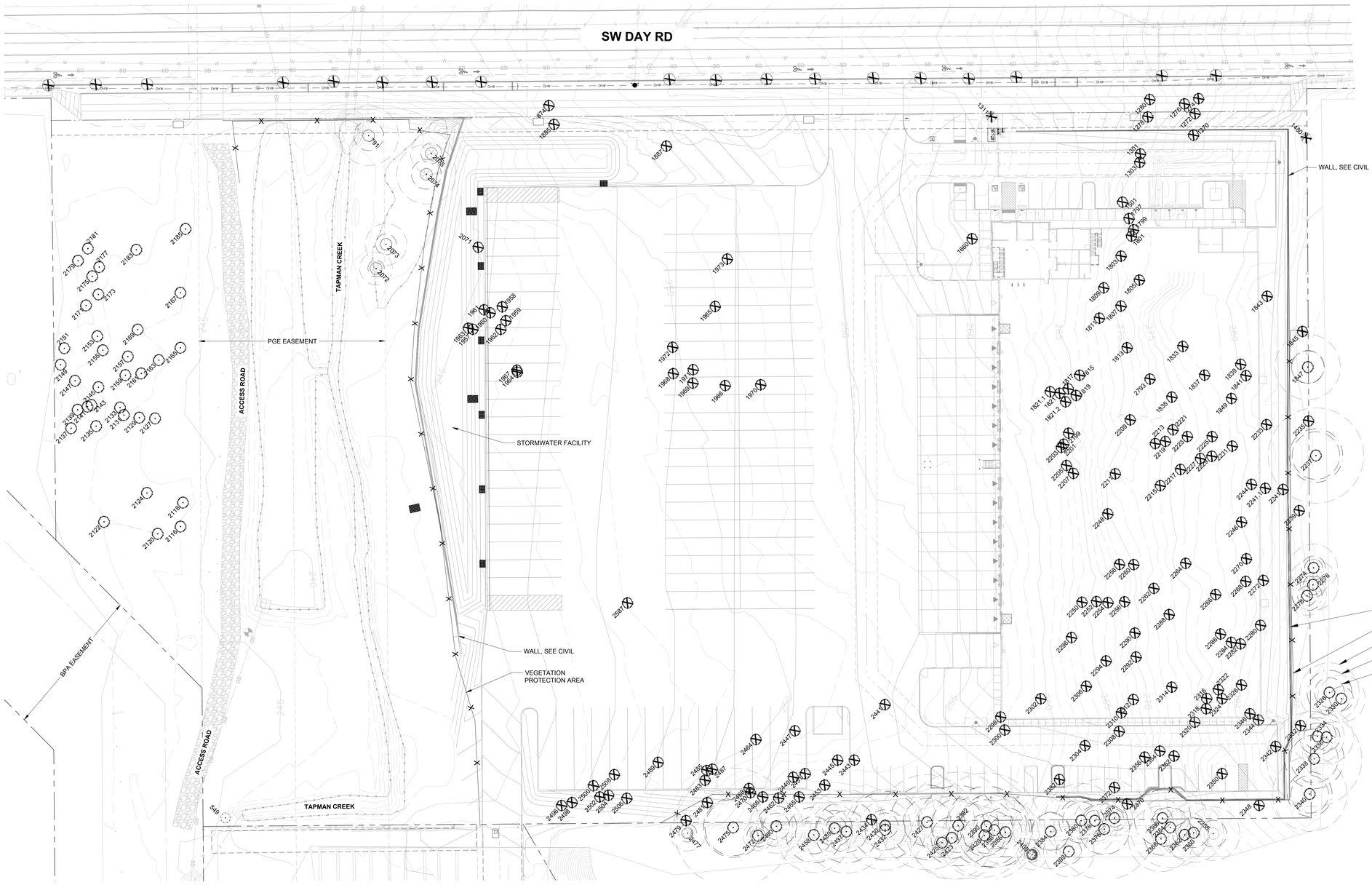
AFTER CONSTRUCTION

1. CAREFULLY LANDSCAPE THE AREAS WITHIN THE TREE PROTECTION ZONES. DO NOT ALLOW TRENCHING FOR IRRIGATION OR OTHER UTILITIES WITHIN THE TREE PROTECTION ZONES.
2. CAREFULLY PLANT NEW PLANTS WITHIN THE TREE PROTECTION ZONES. AVOID CUTTING THE WOODY ROOTS OF TREES THAT ARE RETAINED.
3. DO NOT INSTALL PERMANENT IRRIGATION WITHIN THE TREE PROTECTION ZONES UNLESS IT IS DRIP IRRIGATION TO SUPPORT A SPECIFIC PLANTING OR THE IRRIGATION IS APPROVED BY THE PROJECT ARBORIST.
4. PROVIDE ADEQUATE DRAINAGE WITHIN THE TREE PROTECTION ZONES AND DO NOT ALTER SOIL HYDROLOGY SIGNIFICANTLY FROM EXISTING CONDITIONS FOR THE TREES TO BE RETAINED.
5. PROVIDE FOR THE ONGOING INSPECTION AND TREATMENT OF INSECT AND DISEASE POPULATIONS THAT CAN DAMAGE THE RETAINED TREES AND PLANTS.
6. THE RETAINED TREES MAY NEED TO BE FERTILIZED IF RECOMMENDED BY THE PROJECT ARBORIST.
7. ANY DEVIATION FROM THE RECOMMENDATIONS IN THIS SECTION SHOULD RECEIVE PRIOR APPROVAL FROM THE PROJECT ARBORIST.



1 ROOT PROTECTION ZONE

SCALE: NTS



1 L0.03 TREE REMOVAL PLAN

30 0 15 30 60 120

(IN FEET)

1 inch = 30 ft.

TREE DATA

ALL TREES (257 TREES)	QTY	RETAIN	REMOVE	MITIGATION
ON SITE < 6" DBH	200	46	154	154
PUBLIC < 6" DBH	21	0	21	21
OFF SITE < 6" DBH	36	36	0	0
TOTAL	257	82	175	175

TREE INVENTORY - ON SITE AND PUBLIC

EXISTING	BOTANICAL / COMMON NAME	QTY
	DOUGLAS FIR TO REMOVE	155
	DOUGLAS FIR TO REMAIN	40
	ENGLISH HAWTHORN TO REMAIN	1
	OREGON ASH TO REMAIN	3
	STREET TREES TO REMOVE	18
	SWEET CHERRY TO REMOVE	2
	WILLOW TO REMAIN	2

TREE INVENTORY - OFF SITE PRIVATE

EXISTING	BOTANICAL / COMMON NAME	QTY
	BIGLEAF MAPLE TO REMAIN	1
	DOUGLAS FIR TO REMAIN	33
	OREGON WHITE OAK TO REMAIN	1
	PACIFIC MADRONE TO REMAIN	1

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Project

DELTA LOGISTICS SITE EXPANSION

9710 SW DAY RD.
CITY OF WILSONVILLE, OR

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REVISION SCHEDULE

Delta	Issued As	Issue Date

TREE REMOVAL PLAN

SHEET

L0.03

JOB NO. 2200502.00

984

DEVELOPMENT REVIEW SET - 04/11/2023

MITIGATION REQUIREMENTS

REPLACE LIVING TREES 6-INCH IN DBH OR LARGER WITH A 2-INCH CALIPER TREE OR LARGER OF SIMILAR MATURE CANOPY SIZE AND STRUCTURE.

TOTAL TREES REQUIRING MITIGATION	**175**
TOTAL 2" CAL. TREES IN PLAN	**175**
TOTAL TREES REQUIRING FEE IN LIEU	**0**

TREE CREDITS (SECTION 4.176.06.F)

DBH IS 18-24"	3 TREE CREDITS
DBH IS 25-31"	4 TREE CREDITS
DBH IS 32" OR GREATER	5 TREE CREDITS

FOR FULL LIST OF TREES TO BE REMOVED SEE EXHIBIT D ARBORIST'S REPORT.

TREES TO BE RETAINED		DBH	CREDITS	CONDITION
549	CRATAEGUS MONOGYNA	5"	0	FAIR
791	WILLOW / SALIX	20"	0	POOR
1847	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	22"	0	FAIR
2072	OREGON ASH / FRAXINUS LATIFOLIA	11"	0	POOR
2073	WILLOW / SALIX	14"	0	DEAD
2074	OREGON ASH / FRAXINUS LATIFOLIA	20"	0	POOR
2075	OREGON ASH / FRAXINUS LATIFOLIA	14"	0	FAIR
2116	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	21"	0	DEAD
2118	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	24"	0	DEAD
2120	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	32"	0	POOR
2122	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	32"	5	FAIR
2124	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	17"	0	FAIR
2127	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	33"	5	GOOD
2129	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	18"	0	VERY POOR
2131	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	16"	0	POOR
2133	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	15"	0	FAIR
2135	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	15"	0	FAIR
2137	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	30"	4	FAIR
2139	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	37"	5	GOOD
2141	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	19"	3	FAIR
2143	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	16"	0	DEAD
2145	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	26"	4	FAIR
2147	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	15"	0	FAIR
2149	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	24"	3	FAIR
2151	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	29"	0	POOR
2153	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	15"	0	DEAD
2155	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	12"	0	FAIR
2157	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	19"	0	DEAD
2159	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	32"	5	GOOD
2161	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	16"	0	DEAD
2163	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	24"	3	FAIR
2165	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	26"	0	DEAD
2167	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	34"	5	FAIR
2169	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	28"	4	POOR
2171	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	22"	3	FAIR
2173	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	21"	0	VERY POOR
2175	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	26"	0	DEAD
2177	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	24"	0	VERY POOR
2179	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	15"	0	DEAD
2181	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	21"	0	DEAD
2183	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	24"	0	DEAD
2185	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	23"	3	POOR
2278	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	14"	0	POOR
2340	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	22"	3	GOOD
2366	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	13"	0	POOR
2374	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	12"	0	GOOD

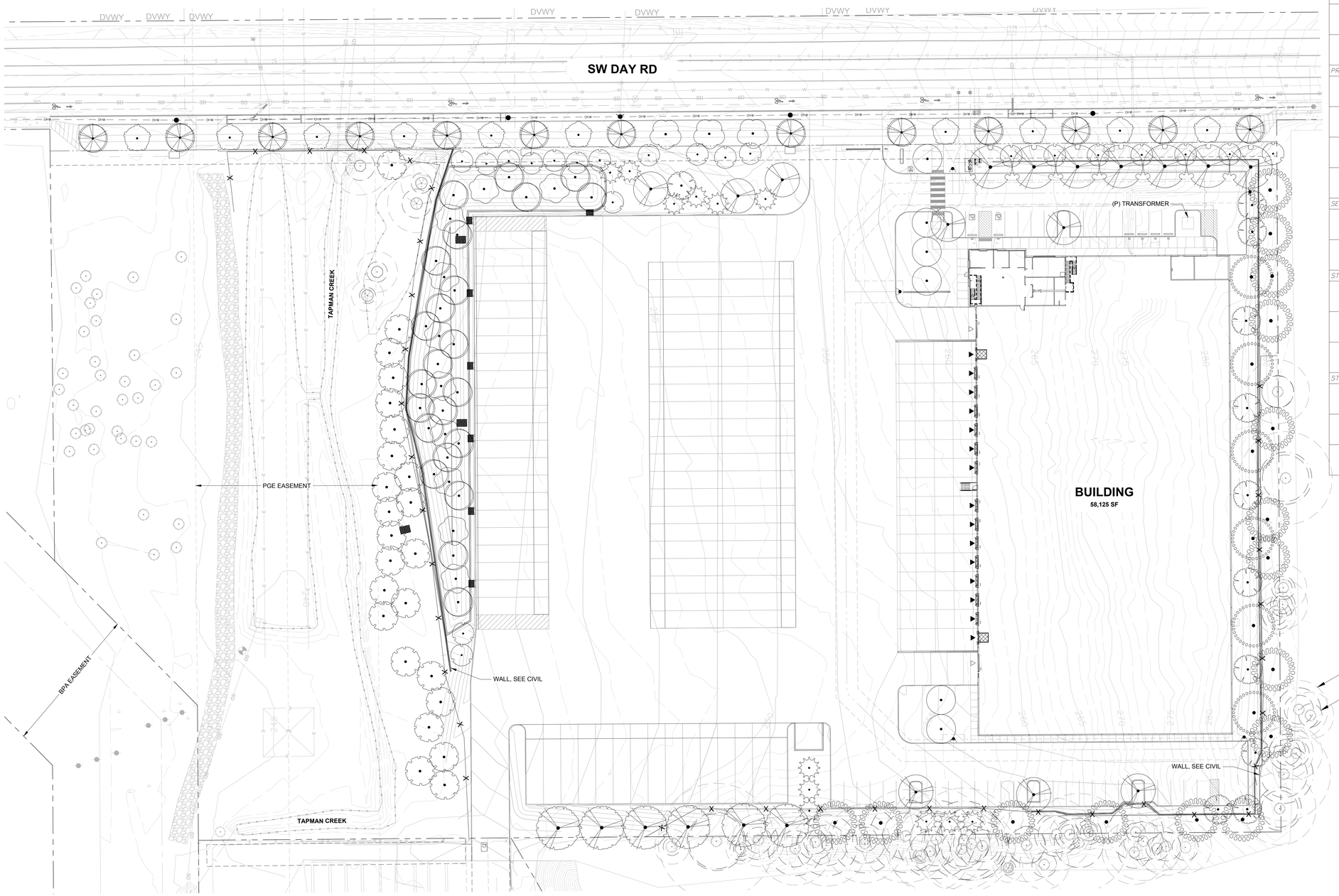
TOTAL TREE CREDITS **55 TREES**

EXISTING TREE INVENTORY

EXISTING	BOTANICAL / COMMON NAME	QTY
	DOUGLAS FIR TO REMAIN	40
	ENGLISH HAWTHORN TO REMAIN	1
	OREGON ASH TO REMAIN	3
	WILLOW TO REMAIN	2

PROPOSED TREES

ACCENT TREES	QTY	BOTANICAL / COMMON NAME
	6	ACER RUBRUM 'BOWHALL' BOWHALL RED MAPLE
	21	AMELANCHIER ALNIFOLIA 'AUTUMN BRILLIANCE' SERVICEBERRY
	11	CORNUS KOUSA X NUTTALLII 'KN4-43' STARLIGHT KOUSA DOGWOOD
PRIMARY TREES	**QTY**	**BOTANICAL / COMMON NAME**
	7	FRAXINUS PENNSYLVANICA 'MARSHALL'S SEEDLESS' MARSHALL'S SEEDLESS GREEN ASH
	15	PSEUDOTSUGA MENZIESII DOUGLAS FIR
	6	QUERCUS GARRYANA OREGON WHITE OAK
	6	THUJA PLICATA WESTERN RED CEDAR
SECONDARY TREES	**QTY**	**BOTANICAL / COMMON NAME**
	12	CALOCEDRUS DECURRENS INCENSE CEDAR
	8	TILIA TOMENTOSA 'STERLING' STERLING SILVER LINDEN
STORMWATER TREES	**QTY**	**BOTANICAL / COMMON NAME**
	10	CORNUS X 'EDDIE'S WHITE WONDER' EDDIE'S WHITE WONDER DOGWOOD
	24	FRAXINUS LATIFOLIA OREGON ASH
	23	RHAMNUS PURSHIANA CASCARA BUCKTHORN
STREET TREES	**QTY**	**BOTANICAL / COMMON NAME**
	13	ACER GRANDIDENTATUM 'SCHMIDT' TM ROCKY MOUNTAIN GLOW MAPLE
	3	CORNUS KOUSA 'MILKY WAY' MILKY WAY KOUSA DOGWOOD
	10	PARROTIA PERSICA 'INGE'S RUBY VASE' TM RUBY VASE PERSIAN PARROTIA



NOTE

1. OFFSITE TREES IMPACTED BY ONSITE IMPROVEMENT ON ADJACENT PRIVATE PROPERTY ARE RECOMMENDED FOR REMOVAL AND MITIGATION CONTINGENT UPON APPROVAL OF ADJACENT PROPERTY OWNER.

1 L0.04 TREE MITIGATION PLAN

30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.

Item 2.

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REVISION SCHEDULE

Delta	Issued As	Issue Date

TREE MITIGATION PLAN

SHEET
L0.04

JOB NO. **2200502.00**

DEVELOPMENT REVIEW SET - 04/11/2023

MITIGATION PLANTING NOTES

NOTES PER EXHIBIT C NATURAL RESOURCE ASSESSMENT FOR 9710 SW DAY ROAD PREPARED BY SCHOTT AND ASSOCIATES (2022) AND AMENDED BY MACKENZIE (2023) TO REFLECT SITE PLAN CHANGES RESULTING IN LESS ENCROACHMENT ON THE VEGETATED CORRIDOR AND IMPACT AREA.

SITE PREPARATION
PRIOR TO ANY SITE CLEARING, GRADING OR CONSTRUCTION, THE SROZ AREA SHALL BE STAKED, AND FENCED PER APPROVED PLAN. DURING CONSTRUCTION, THE SROZ AREA SHALL REMAIN FENCED AND UNDISTURBED EXCEPT AS ALLOWED BY AN APPROVED DEVELOPMENT PERMIT.

PROPOSED ENCROACHMENTS
ENCROACHMENTS ARE PROPOSED TO THE VEGETATED CORRIDOR AND IMPACT AREA.

- ENCROACHMENTS WILL OCCUR IN THE NORTHERN PORTION OF THE VEGETATED CORRIDOR FOR THE CITY REQUIRED WIDENING OF SW DAY RD AND IN THE SOUTHERN PORTION FOR THE TAPMAN CREEK CROSSING. THESE AREAS ARE VEGETATED ENTIRELY BY INVASIVE SPECIES INCLUDING HIMALAYAN BLACKBERRY AND REED CANARY GRASS. NO TREES OR NATIVE SPECIES WILL BE REMOVED AS A RESULT OF CONSTRUCTION.
- ENCROACHMENT WITHIN THE IMPACT AREAS WILL OCCUR ON THE EAST SIDE OF THE CREEK FOR THE CONSTRUCTION OF A VEGETATED WATER QUALITY AND STORMWATER DETENTION FACILITY. NO ENCROACHMENTS TO TAPMAN CREEK OR THE WETLANDS ARE PROPOSED. NO TREES WILL BE REMOVED FROM THE SROZ.
- DEVELOPMENT ACTIVITY HAS BEEN LIMITED TO THE IMPACT AREA WHERE PRACTICAL EXCEPT WHERE NECESSARY TO WIDEN SW DAY ROAD.

MITGATION PLANTING
THE MITIGATION PLANTING PLAN WAS DESIGNED ACCORDING SECTION 4.139.07(.02)(E) AND SHALL MEET THE FOLLOWING:

- THE PLANTING PLAN SHALL BE IMPLEMENTED PRIOR TO OR AT THE SAME TIME AS THE IMPACT ACTIVITY IS CONDUCTED.
- ALL TREES, SHRUBS AND GROUND COVER SHALL BE NATIVE VEGETATION.
- TREES AND SHRUBS SHALL BE AT LEAST ONE-GALLON IN SIZE AND SHALL BE AT LEAST TWELVE (12) INCHES IN HEIGHT.
- 2-GALLON TREES SHALL BE PLANTED BETWEEN EIGHT (8) AND TWELVE (12) FEET ON CENTER, AND SHRUBS SHALL BE PLANTED BETWEEN FOUR (4) AND FIVE (5) FEET ON CENTER, OR CLUSTERED IN SINGLE SPECIES GROUPS OF NO MORE THAN FOUR (4) PLANTS, WITH EACH CLUSTER PLANTED BETWEEN EIGHT (8) AND TEN (10) FEET ON CENTER. WHEN PLANTING NEAR EXISTING TREES, THE DRIP LINE OF THE EXISTING TREE SHALL BE THE STARTING POINT FOR PLANT SPACING MEASUREMENTS.
- SHRUBS SHALL CONSIST OF AT LEAST TWO (2) DIFFERENT SPECIES. IF FIVE (5) TREES OR MORE ARE PLANTED, THEN NO MORE THAN FIFTY (50) PERCENT OF THE TREES MAY BE OF THE SAME GENUS.
- INVASIVE NON-NATIVE OR NOXIOUS VEGETATION SHALL BE REMOVED WITHIN THE MITIGATION AREA PRIOR TO PLANTING AND SHALL BE REMOVED OR CONTROLLED FOR FIVE (5) YEARS FOLLOWING THE DATE THAT THE MITIGATION PLANTING IS COMPLETED.

MITIGATION GOALS AND PERFORMANCE STANDARDS

THE MITIGATION SITE GOAL IS AS FOLLOWS:

ENHANCE 32,890 SF OF VEGETATED CORRIDOR TO IMPROVE RIPARIAN CORRIDOR, WATER QUALITY PROTECTION, ECOLOGICAL INTEGRITY AND WILDLIFE HABITAT FUNCTIONS BY REMOVING INVASIVE SPECIES AND MAINTAINING A NATIVE, WOODY-DOMINATED PLANT COMMUNITY.

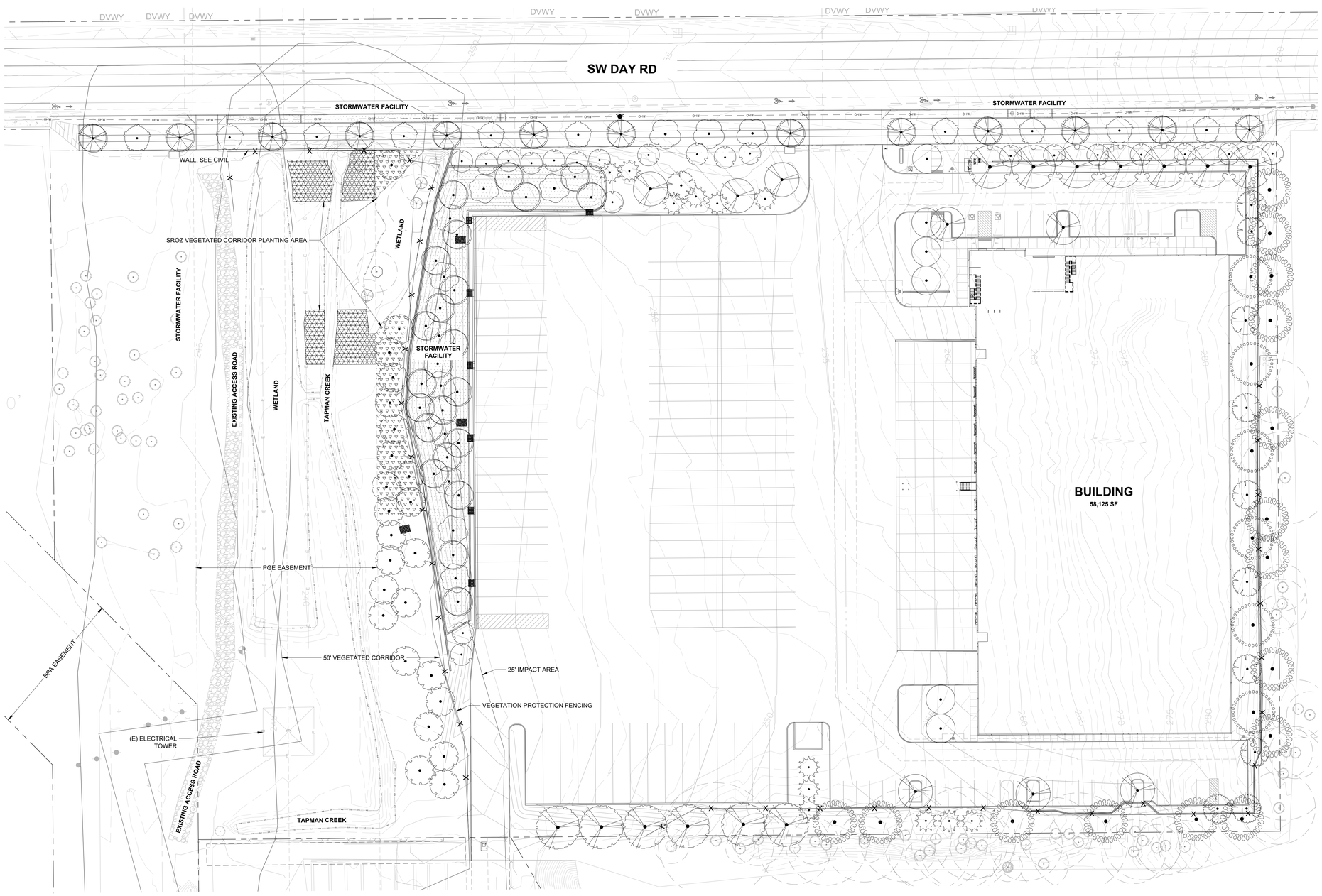
PERFORMANCE STANDARDS ARE BASED ON METRO'S TITLE 3 WATER QUALITY PERFORMANCE STANDARDS TO PROTECT AND IMPROVE WATER QUALITY AND PROTECT THE FUNCTIONS AND VALUES OF WATER QUALITY RESOURCE AREAS (METRO 2018). THIS PLAN'S PERFORMANCE STANDARDS FOR FOREST AND/OR SHRUB DOMINATED AREAS AND SHALL CONSIST OF THE FOLLOWING:

1. ESTABLISHMENT OF PERMANENT MONITORING LOCATIONS DURING THE FIRST ANNUAL MONITORING.
2. COVER OF NATIVE HERBACEOUS SPECIES IS AT LEAST 60%.
3. COVER OF INVASIVE SPECIES IS NO MORE THAN 10%. AFTER THE SITE HAS MATURED TO THE STAGE WHEN DESIRABLE CANOPY SPECIES REACH 50% COVER, THE COVER OF INVASIVE SPECIES MAY INCREASE BUT MAY NOT EXCEED 30%.
4. BARE SUBSTRATE REPRESENTS NO MORE THAN 20% COVER.
5. DENSITY OF WOODY VEGETATION IS AT LEAST 1,600 LIVE TREES OR SHRUBS PER ACRE OR THE COVER OF NATIVE WOODY VEGETATION ON SITE IS AT LEAST 50%. NATIVE VOLUNTEER SPECIES MAY BE INCLUDED IN THE COVER OR DENSITY ESTIMATE.
6. BY YEAR 3 AND THEREAFTER, AT LEAST 6 DIFFERENT NATIVE SPECIES MUST BE PRESENT. TO QUALIFY, A SPECIES MUST HAVE AT LEAST 5% AVERAGE COVER IN THE HABITAT CLASS AND OCCUR IN AT LEAST 10% OF THE PLOTS SAMPLED.
7. BY YEAR 5, A MINIMUM OF EIGHTY (80) PERCENT OF THE TREES AND SHRUBS INITIALLY REQUIRED SHALL REMAIN ALIVE.

MAINTENANCE AND MONITORING

MONITORING WILL OCCUR ANNUALLY OVER A 5-YEAR MONITORING PERIOD TO ASSESS CONDITION OF PLANTINGS, IRRIGATION, MULCH ETC. MONITORING WILL BE CONDUCTED BY QUALIFIED PERSONNEL DURING PEAK GROWING SEASON (JULY-AUGUST). ANNUAL MONITORING REPORTS WILL BE PROVIDED TO THE PLANNING DIRECTOR FOR REVIEW BY DECEMBER OF EACH MONITORING YEAR. THE REPORT SHALL CONTAIN, AT A MINIMUM, PHOTOGRAPHS FROM ESTABLISHED PHOTO POINTS, QUANTITATIVE MEASURE OF SUCCESS CRITERIA, INCLUDING PLANT SURVIVAL AND VIGOR. THE YEAR 1 ANNUAL REPORT SHALL BE SUBMITTED ONE YEAR FOLLOWING MITIGATION ACTION IMPLEMENTATION. THE FINAL ANNUAL REPORT (YEAR 5 REPORT) SHALL DOCUMENT SUCCESSFUL SATISFACTION OF MITIGATION GOALS, AS PER THE STATED PERFORMANCE STANDARDS.

THE APPLICANT WILL BE RESPONSIBLE FOR COORDINATING ONGOING MAINTENANCE AND MANAGEMENT. IF THE OWNERSHIP OF THE MITIGATION SITE PROPERTY CHANGES, THE NEW OWNERS WILL HAVE THE CONTINUED RESPONSIBILITIES MAINTENANCE ACTIVITIES INCLUDING MULCHING, WEED REMOVAL, HERBIVORY CONTROL, AND SUPPLEMENTAL PLANTING WILL BE CONDUCTED BY A QUALIFIED CONTRACTOR AT LEAST TWICE PER GROWING SEASON AND ONCE PRIOR TO THE GROWING SEASON OR MORE FREQUENTLY AS INDICATED BY MONITORING RESULTS. ANY FAILED PLANTS WILL BE REPLACED IN-KIND WITH THE CAUSE OF LOSS (WILDLIFE DAMAGE, POOR PLANT STOCK, DROUGHT, WEED OVERGROWTH, ETC.) DOCUMENTED AND ADDITIONAL MAINTENANCE DONE TO ADDRESS THE CAUSE OF LOSS AND ENSURE FUTURE PLANT SURVIVAL.



1 / L0.05 TREE MITIGATION PLAN

30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.

SROZ ENCROACHMENT MITIGATION TABLE

	ENCROACHMENT	MITIGATION RATE		
VEGETATED CORRIDOR	1,850 SF	3.2:1 6,305 SF	RIPARIAN FOREST COMMUNITY RIPARIAN SHRUB COMMUNITY	3,360 SF 2,945 SF
IMPACT AREA	9,833.70 SF	N/A		

MITIGATION PLANT SCHEDULE PER SRIR

RIPARIAN FOREST COMMUNITY: 3,360 SF					
SPECIES	TYPE	MIN SIZE*	SPACING	QTY	TOTAL
OREGON ASH *FRAXINUS LATIFOLIA*	TREE	2-INCH CAL	15 FT OC	11	
SCOULER FTS WILLOW *SALIX SCOULERIANA*	TREE	2 GAL OR BARE ROOT	8 FT OC	31	
WESTERN REDCEDAR *THUJA PLICATA*	TREE	2 GAL OR BARE ROOT	8 FT OC	31	73 TREES
REDOSIER DOGWOOD *CORNUS STOLONIFERA*	SHRUB	1 GAL OR BARE ROOT	5 FT OC CLUSTER	30	
RED ELDERBERRY *SAMBUCUS RACEMOSA*	SHRUB	1 GAL OR BARE ROOT	5 FT OC CLUSTER	30	
SNOWBERRY *SYMPHORICARPOS ALBUS*	SHRUB	1 GAL OR BARE ROOT	5 FT OC CLUSTER	30	
SALMONBERRY *RUBUS SPECTABILIS*	SHRUB	1 GAL OR BARE ROOT	5 FT OC CLUSTER	14	
SWAMP ROSE *ROSA PISOCARPA*	SHRUB	1 GAL OR BARE ROOT	5 FT OC CLUSTER	30	
RIPARIAN SHRUB COMMUNITY : 2,945 SF					
SPECIES	TYPE	MIN SIZE*	SPACING	QTY	
REDOSIER DOGWOOD *CORNUS STOLONIFERA*	SHRUB	1 GAL OR BARE ROOT	5 FT OC CLUSTER	15	
RED ELDERBERRY *SAMBUCUS RACEMOSA*	SHRUB	1 GAL OR BARE ROOT	5 FT OC CLUSTER	30	
SNOWBERRY *SYMPHORICARPOS ALBUS*	SHRUB	1 GAL OR BARE ROOT	5 FT OC CLUSTER	15	
SALMONBERRY *RUBUS SPECTABILIS*	SHRUB	1 GAL OR BARE ROOT	5 FT OC CLUSTER	10	
SWAMP ROSE *ROSA PISOCARPA*	SHRUB	1 GAL OR BARE ROOT	5 FT OC CLUSTER	17	
INDIAN PLUM *OEMLERIA CERASIFORMIS*	SHRUB	1 GAL OR BARE ROOT	5 FT OC CLUSTER	30	251 SHRUBS
PROTIME 402*	HERB	25 LBS PER ACRE		1.7 LBS	

*NATIVE RIPARIAN MIX INCLUDES BLUE WILDRYE (ELYMUS GLAUCUS), MEADOW BARLEY (HORDEUM BRACHYANTHERUM), AND TUFTED HAIRGRASS (DESCHAMPSIA CESPITOSA)

PROPOSED PLANT LIST (REMAINDER OF SITE)

IN COMPLIANCE WITH THE MITIGATION REQUIREMENTS, NATIVE AND DROUGHT TOLERANT VEGETATION IS USED THROUGHOUT THE SITE.

PLANT NAME	NATIVE STATUS
ACCENT TREES	
ACER RUBRUM 'BOWHALL'	
AMELANCHIER ALNIFOLIA 'AUTUMN BRILLIANCE'	NATIVE CULTIVAR
CORNUS KOUSA X NUTTALLII 'KN4-43'	NATIVE CULTIVAR
PRIMARY TREES	
FRAXINUS PENNSYLVANICA 'MARSHALL'S SEEDLESS'	
PSEUDOTSUGA MENZIESII	NATIVE
QUERCUS GARRYANA	NATIVE
THUJA PLICATA	NATIVE
SECONDARY TREES	
CALOCEDRUS DECURRENS	NATIVE
TILIA TOMENTOSA 'STERLING'	
STORMWATER TREES	
CORNUS X 'EDDIE'S WHITE WONDER'	NATIVE CULTIVAR
FRAXINUS LATIFOLIA	NATIVE
RHAMNUS PURSHIANA	NATIVE
STREET TREES	
ACER GRANDIDENTATUM 'SCHMIDT' TM	
CORNUS KOUSA 'MILKY WAY'	
PARROTIA PERSICA 'INGE'S RUBY VASE' TM	
SHRUBS	
ACER CIRCINATUM 'PACIFIC FIRE'	NATIVE CULTIVAR
ARBUTUS UNEDO 'COMPACTA'	
CORNUS SERICEA 'KELSEYI'	NATIVE CULTIVAR
DEUTZIA GRACILIS 'NIKKO'	
GAULTHERIA SHALLON	NATIVE
MAHONIA AQUIFOLIUM	NATIVE
MAHONIA AQUIFOLIUM 'COMPACTA'	NATIVE CULTIVAR
MYRICA CALIFORNICA	NATIVE
RIBES SANGUINEUM	NATIVE
SPIRAEA BETULIFOLIA 'TOR'	NATIVE CULTIVAR
SYMPHORICARPOS ALBUS	NATIVE
VACCINIUM OVATUM	NATIVE
VACCINIUM OVATUM 'SCARLET OVATION'	NATIVE CULTIVAR
VIBURNUM DAVIDII	
VIBURNUM TINUS 'SPRING BOUQUET'	
PERENNIALS	
ACHILLEA MILLIFOLIUM 'ALABASTER'	NATIVE CULTIVAR
ASTER SUBSPICATUS	NATIVE
POLYSTICHUM MUNITUM	NATIVE
PTERIDIUM AQUILINUM	NATIVE
SALVIA X SUPERBA 'CARADONNA'	
STORMWATER SHRUBS	
CORNUS SERICEA	NATIVE
HOLODISCUS DISCOLOR	NATIVE
MAHONIA AQUIFOLIUM	NATIVE
RIBES SANGUINEUM	NATIVE
ROSA PISOCARPA	NATIVE
RUBUS SPECTABILIS	NATIVE
SPIRAEA BETULIFOLIA 'TOR'	NATIVE CULTIVAR
SPIRAEA DOUGLASII	NATIVE
SYMPHORICARPOS ALBUS	NATIVE
GROUND COVERS	
ARCTOSTAPHYLOS UVA-URSI	NATIVE
BOUTELOUA GRACILIS 'BLONDE AMBITION'	
CRUSHED GRAVEL	
FESTUCA OCCIDENTALIS	NATIVE
GERANIUM X CANTABRIGIENSE 'BIOKOVO'	
MAHONIA REPENS	NATIVE
PROTIME 402 NATIVE RIPARIAN MIX	NATIVE
SEED MIX NATIVE POLLINATOR MEADOW MIX	NATIVE
SEED MIX NATIVE UPLANDS MEADOW MIX	
STORMWATER PLANTING	
CAREX DENSA	NATIVE
JUNCUS PATENS	NATIVE

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Delta	Issued As	Issue Date

VEGETATED CORRIDOR ENHANCEMENT PLANTING PLAN

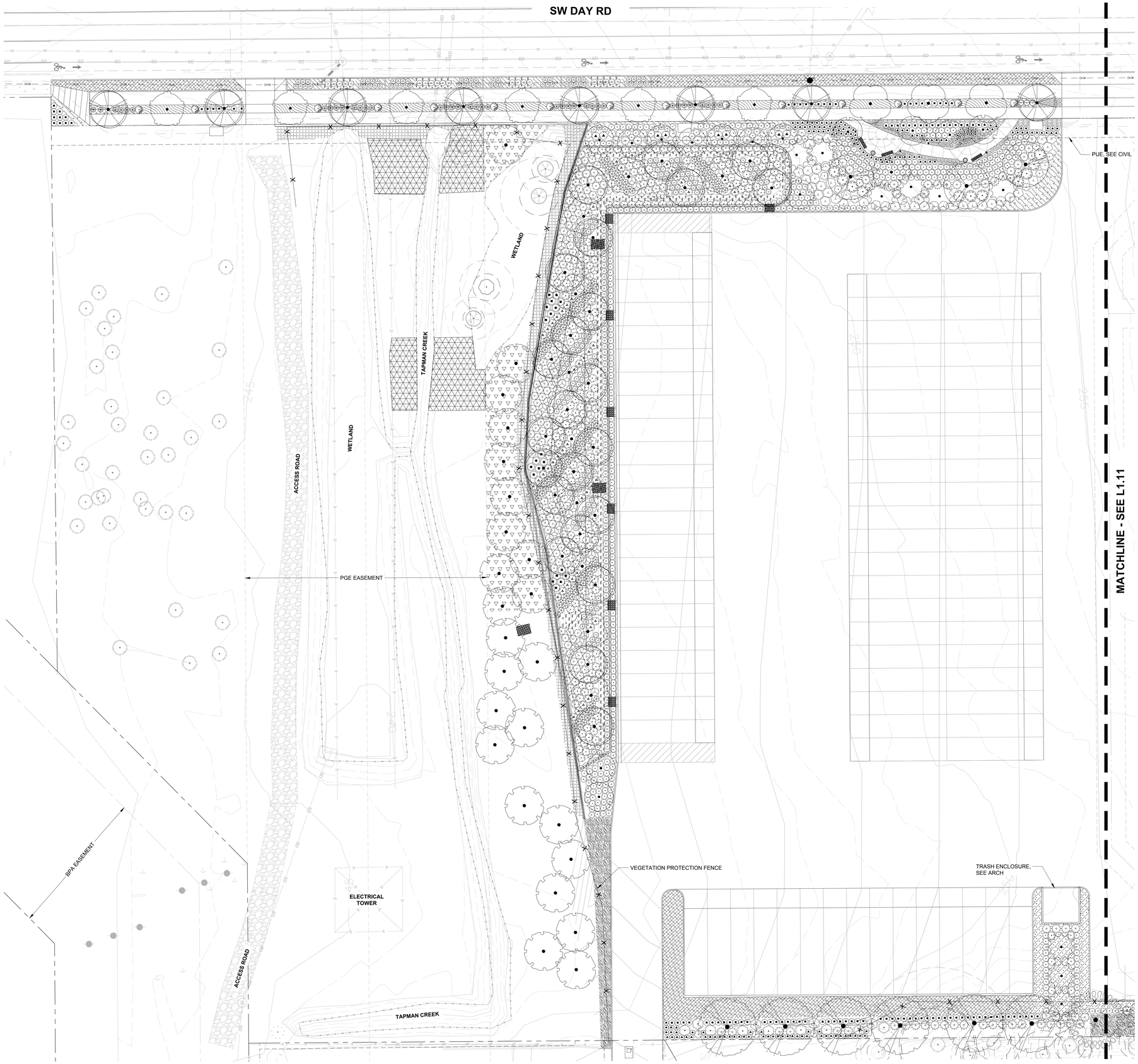
SHEET
L0.05

JOB NO. **2200502.00**

986

DEVELOPMENT REVIEW SET - 04/11/2023

L0.05 NRF 04/11/23 14:23 1:0.08



1 L1.10 PLANTING PLAN WEST

20 0 10 20 40 80

(IN FEET)

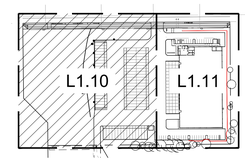
1 inch = 20 ft.

PLANT KEY LEGEND

ACCENT TREES	BOTANICAL / COMMON NAME
	AMELANCHIER ALNIFOLIA 'AUTUMN BRILLIANCE' SERVICEBERRY
	CORNUS KOUSA X NUTTALLII 'KN4-43' STARLIGHT KOUSA DOGWOOD
PRIMARY TREES	BOTANICAL / COMMON NAME
	PSEUDOTSUGA MENZIESII DOUGLAS FIR
	QUERCUS GARRYANA OREGON WHITE OAK
SECONDARY TREES	BOTANICAL / COMMON NAME
	CALOCEDRUS DECURRENS INCENSE CEDAR
	TILIA TOMENTOSA 'STERLING' STERLING SILVER LINDEN
STORMWATER TREES	BOTANICAL / COMMON NAME
	CORNUS X 'EDDIE'S WHITE WONDER' EDDIE'S WHITE WONDER DOGWOOD
	FRAXINUS LATIFOLIA OREGON ASH
	RHAMNUS PURSHIANA CASCARA BUCKTHORN
STREET TREES	BOTANICAL / COMMON NAME
	ACER GRANDIDENTATUM 'SCHMIDT' TM ROCKY MOUNTAIN GLOW MAPLE
	CORNUS KOUSA 'MILKY WAY' MILKY WAY KOUSA DOGWOOD
	PARROTIA PERSICA 'INGE'S RUBY VASE' TM RUBY VASE PERSIAN PARROTIA
SHRUBS	BOTANICAL / COMMON NAME
	ARBUTUS UNEDO 'COMPACTA' DWARF STRAWBERRY TREE
	CORNUS SERICEA 'KELSEYI' KELSEYI DWARF REDTWIG DOGWOOD
	DEUTZIA GRACILIS 'NIKKO' SLENDER DEUTZIA
	GAULTHERIA SHALLON SALAL
	MAHONIA AQUIFOLIUM OREGON GRAPE
	MAHONIA AQUIFOLIUM 'COMPACTA' COMPACT OREGON GRAPE
	MYRICA CALIFORNICA PACIFIC WAX MYRTLE
	RIBES SANGUINEUM RED FLOWERING CURRANT
	SPIRAEA BETULIFOLIA 'TOR' BIRCHLEAF SPIREA
	SYMPHORICARPOS ALBUS COMMON WHITE SNOWBERRY
	VACCINIUM OVATUM EVERGREEN HUCKLEBERRY
	VACCINIUM OVATUM 'SCARLET OVATION' SCARLET OVATION EVERGREEN HUCKLEBERRY
	VIBURNIUM DAVIDII DAVID VIBURNUM
	VIBURNIUM TINUS 'SPRING BOUQUET' SPRING BOUQUET LAURUSTINUS
PERENNIALS	BOTANICAL / COMMON NAME
	ACHILLEA MILLIFOLIUM 'ALABASTER' ALABASTER YARROW
	ASTER SUBSPICATUS DOUGLAS ASTER
	POLYSTICHUM MUNITUM WESTERN SWORD FERN
	PTERIDIUM AQUILINUM WESTERN BRACKENFERN
STORMWATER SHRUBS	BOTANICAL / COMMON NAME
	CORNUS SERICEA RED TWIG DOGWOOD
	HOLODISCUS DISCOLOR OCEAN-SPRAY
	MAHONIA AQUIFOLIUM OREGON GRAPE
	RIBES SANGUINEUM RED FLOWERING CURRANT
	ROSA PISOCARPA CLUSTERED WILD ROSE
	RUBUS SPECTABILIS SALMONBERRY
	SPIRAEA BETULIFOLIA 'TOR' TOR BIRCHLEAF SPIREA
	SPIRAEA DOUGLASII WESTERN SPIREA
	SYMPHORICARPOS ALBUS COMMON WHITE SNOWBERRY
GROUND COVERS	BOTANICAL / COMMON NAME
	ARCTOSTAPHYLOS UVA-URSI KINNIKINNICK
	BOUTELOUA GRACILIS 'BLONDE AMBITION' BLONDE AMBITION BLUE GRAMA
	FESTUCA OCCIDENTALIS WESTERN FESCUE GRASS
	MAHONIA REPENS CREEPING MAHONIA
	PROTIME 402 NATIVE RIPARIAN MIX PROTIME SEEDS
	SEED MIX NATIVE POLLINATOR MEADOW MIX SUNMARK SEEDS
STORMWATER PLANTING	BOTANICAL / COMMON NAME
	CAREX DENSA DENSE SEDGE
	JUNCUS PATENS CALIFORNIA GRAY RUSH

REFERENCE NOTES

1. PLANT SIZE, SPACING, AND QUANTITY. SEE PLANT SCHEDULE L0.02
2. PROPOSED UTILITY BOX. AVOID PLANTING WITHIN DEFINED ACCESS ZONE.
3. COORDINATE SHRUB LAYOUT WITH EXISTING UTILITIES, REPORT CONFLICTS TO LANDSCAPE ARCHITECT.



KEY MAP
SCALE: NTS

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REVISION SCHEDULE

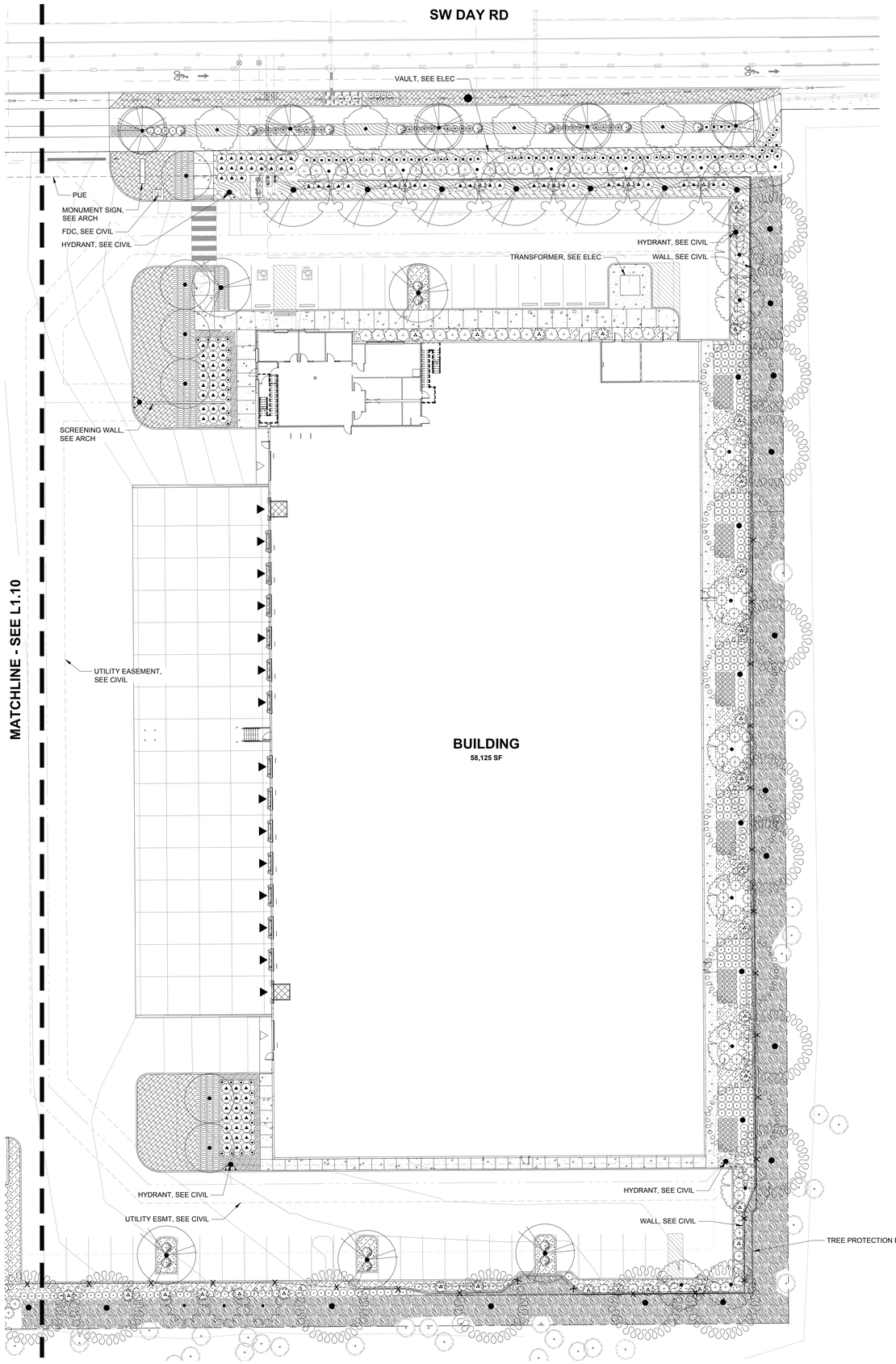
Delta	Issued As	Issue Date

PLANTING PLAN - WEST

SHEET
L1.10

JOB NO. 2200502.00

L1.10 AEZ 06/02/22 10:27 1:0.08



1 L1.11 PLANTING PLAN EAST

20 0 10 20 40 80

(IN FEET)

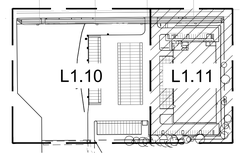
1 inch = 20 ft.

PLANT KEY LEGEND

ACCENT TREES	BOTANICAL / COMMON NAME
	ACER RUBRUM 'BOWHALL' BOWHALL RED MAPLE
	AMELANCHIER ALNIFOLIA 'AUTUMN BRILLIANCE' SERVICEBERRY
	CORNUS KOUSA X NUTTALLII 'KN4-43' STARLIGHT KOUSA DOGWOOD
PRIMARY TREES	BOTANICAL / COMMON NAME
	FRAXINUS PENNSYLVANICA 'MARSHALL'S SEEDLESS' MARSHALL'S SEEDLESS GREEN ASH
	PSEUDOTSUGA MENZIESII DOUGLAS FIR
	THUJA PLICATA WESTERN RED CEDAR
SECONDARY TREES	BOTANICAL / COMMON NAME
	CALOCEDRUS DECURRENS INCENSE CEDAR
	TILIA TOMENTOSA 'STERLING' STERLING SILVER LINDEN
STREET TREES	BOTANICAL / COMMON NAME
	ACER GRANDIDENTATUM 'SCHMIDT' TM ROCKY MOUNTAIN GLOW MAPLE
	PARROTIA PERSICA 'INGE'S RUBY VASE' TM RUBY VASE PERSIAN PARROTIA
SHRUBS	BOTANICAL / COMMON NAME
	ACER CIRCINATUM 'PACIFIC FIRE' PACIFIC FIRE VINE MAPLE
	ARBUTUS UNEDO 'COMPACTA' DWARF STRAWBERRY TREE
	CORNUS SERICEA 'KELSEYI' KELSEYI DWARF REDTWIG DOGWOOD
	DEUTZIA GRACILIS 'NIKKO' SLENDER DEUTZIA
	GAULTHERIA SHALLON SALAL
	MAHONIA AQUIFOLIUM OREGON GRAPE
	MAHONIA AQUIFOLIUM 'COMPACTA' COMPACT OREGON GRAPE
	SPIRAEA BETULIFOLIA 'TOR' BIRCHLEAF SPIREA
	SYMPHORICARPOS ALBUS COMMON WHITE SNOWBERRY
	VACCINIUM OVATUM EVERGREEN HUCKLEBERRY
	VIBURNUM DAVIDII DAVID VIBURNUM
	VIBURNUM TINUS 'SPRING BOUQUET' SPRING BOUQUET LAURUSTINUS
PERENNIALS	BOTANICAL / COMMON NAME
	POLYSTICHUM MUNITUM WESTERN SWORD FERN
	SALVIA X SUPERBA 'CARADONNA' CARADONNA SAGE
STORMWATER SHRUBS	BOTANICAL / COMMON NAME
	SPIRAEA BETULIFOLIA 'TOR' TOR BIRCHLEAF SPIREA
	SYMPHORICARPOS ALBUS COMMON WHITE SNOWBERRY
GROUND COVERS	BOTANICAL / COMMON NAME
	ARCTOSTAPHYLOS UVA-URSI KINNIKINNICK
	BOUTELOUA GRACILIS 'BLONDE AMBITION' BLONDE AMBITION BLUE GRAMA
	CRUSHED GRAVEL QUARTER-TEN
	FESTUCA OCCIDENTALIS WESTERN FESCUE GRASS
	GERANIUM X CANTABRIGIENSE 'BIOKOVO' BIOKOVO CRANESBILL
	MAHONIA REPENS CREEPING MAHONIA
	SEED MIX NATIVE POLLINATOR MEADOW MIX SUNMARK SEEDS
	SEED MIX NATIVE UPLANDS MEADOW MIX SUNMARK SEEDS
STORMWATER PLANTING	BOTANICAL / COMMON NAME

REFERENCE NOTES

1. PLANT SIZE, SPACING, AND QUANTITY, SEE PLANT SCHEDULE L0.02
2. PROPOSED UTILITY BOX. AVOID PLANTING WITHIN DEFINED ACCESS ZONE.
3. COORDINATE SHRUB LAYOUT WITH EXISTING UTILITIES, REPORT CONFLICTS TO LANDSCAPE ARCHITECT.



KEY MAP

SCALE: NTS

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REVISION SCHEDULE

Delta	Issued As	Issue Date

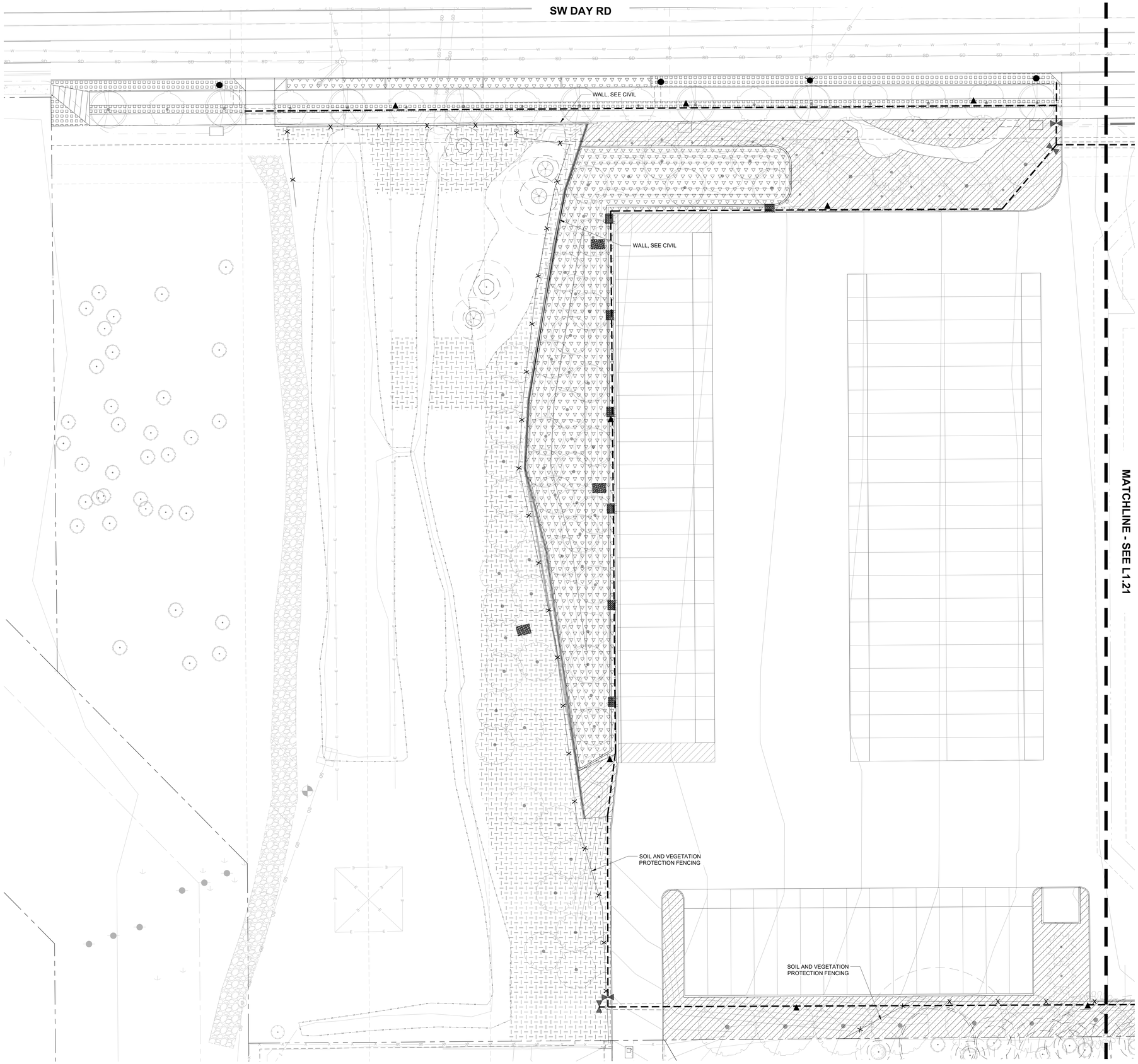
PLANTING PLAN - EAST

SHEET

L1.11

JOB NO. 2200502.00

988



1 L1.20 IRRIGATION PLAN WEST

20 0 10 20 40 80

(IN FEET)

1 inch = 20 ft.

IRRIGATION LEGEND

POC	POINT OF CONNECTION, INCLUDE DOUBLE CHECK BACKFLOW PREVENTOR, MASTER VALVE AND FLOW SENSOR - SEE DETAIL ON L5.11
C	IRRIGATION CONTROLLER
	GATE VALVE
	QUICK COUPLER AT 150' (INTERVALS MAX)
	MAINLINE SLEEVE- DIAMETER AT LEAST TWICE DIAMETER OF PIPE BEING SLEEVED
	MAINLINE-SCHEDULE 40 PVC
	SHRUB AND GROUNDCOVER DRIP AREA
	SHRUB AND GROUNDCOVER SPRAY AREA
	STORMWATER AREA - ZONE SEPARATELY
	LAWN AREA - ZONE SEPARATELY
	TEMPORARY IRRIGATED AREA - ZONE SEPARATELY
	RIGHT-OF-WAY - ZONE SEPARATELY
	MEADOW AREA - ZONE SEPARATELY

REFERENCE NOTES

1. CAREFULLY EXCAVATE IRRIGATION TRENCHES IN VICINITY OF EXISTING TREES. SEE TREE PROTECTION NOTES L0.03 AND IN EXHIBIT D ARBORIST REPORT.

KEY MAP
SCALE: NTS

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REVISION SCHEDULE

Delta	Issued As	Issue Date
1	LAND USE	2/20/2023

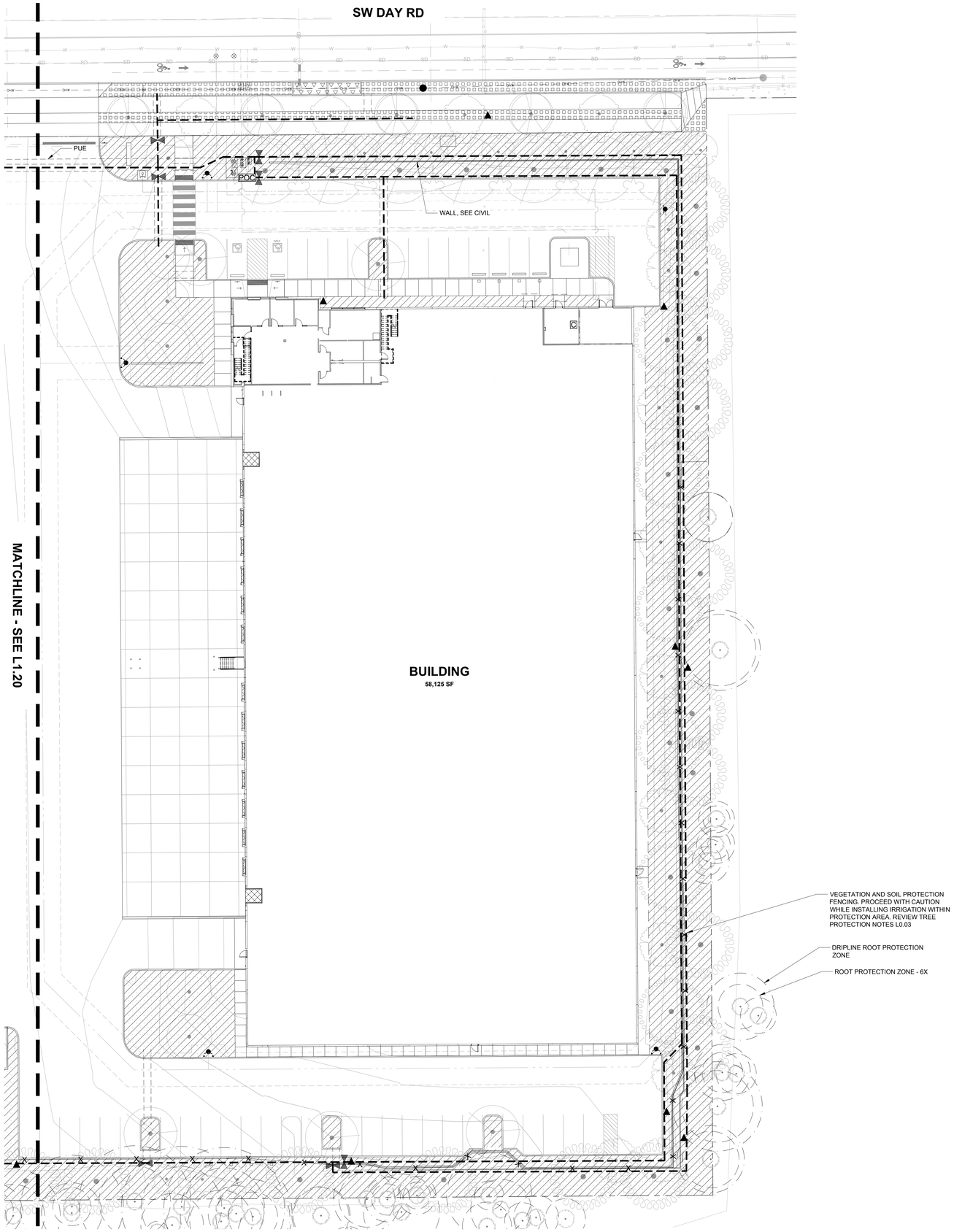
IRRIGATION PLAN - WEST

SHEET
L1.20

JOB NO. **2200502.00**

DEVELOPMENT REVIEW SET - 04/11/2023

L1.20 NRF 02/21/23 09:56 1:0.08



1 L1.21 IRRIGATION PLAN EAST

20 0 10 20 40 80

(IN FEET)

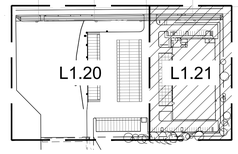
1 inch = 20 ft.

IRRIGATIONLEGEND

POC	POINT OF CONNECTION, INCLUDE DOUBLE CHECK BACKFLOW PREVENTOR, MASTER VALVE AND FLOW SENSOR - SEE DETAIL ON L5.11
C	IRRIGATION CONTROLLER
	GATE VALVE
	QUICK COUPLER AT 150' (INTERVALS MAX)
	MAINLINE SLEEVE- DIAMETER AT LEAST TWICE DIAMETER OF PIPE BEING SLEEVED
	MAINLINE-SCHEDULE 40 PVC
	SHRUB AND GROUNDCOVER DRIP AREA
	SHRUB AND GROUNDCOVER SPRAY AREA
	STORMWATER AREA - ZONE SEPARATELY
	LAWN AREA - ZONE SEPARATELY
	TEMPORARY IRRIGATED AREA - ZONE SEPARATELY
	RIGHT-OF-WAY - ZONE SEPARATELY
	MEADOW AREA - ZONE SEPARATELY

REFERENCE NOTES

1. CAREFULLY EXCAVATE IRRIGATION TRENCHES IN VICINITY OF EXISTING TREES. SEE TREE PROTECTION NOTES L0.03 AND IN EXHIBIT D ARBORIST REPORT.



KEY MAP
SCALE: NTS

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REVISION SCHEDULE

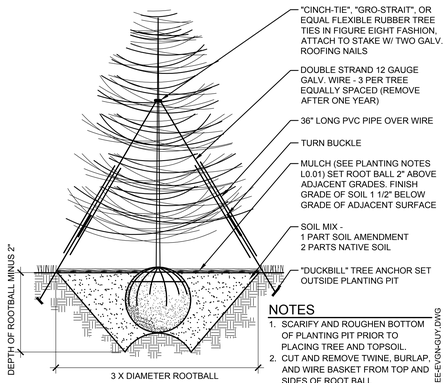
Delta	Issued As	Issue Date
1	LAND USE	2/20/2023

IRRIGATION PLAN - EAST

SHEET
L1.21

JOB NO. 2200502.00

L1.21 NRF 02/21/23 21:37 1:0.08



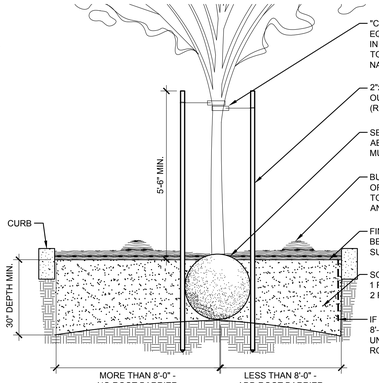
NOTES

1. SCARIFY AND ROUGHEN BOTTOM OF PLANTING PIT PRIOR TO PLACING TREE AND TOPSOIL.
2. CUT AND REMOVE TWINE, BURLAP AND WIRE BASKET FROM TOP AND SIDES OF ROOT BALL

LS-DETL-TREE-EVGN-GUY.DWG

1 EVERGREEN TREE PLANTING DETAIL

SCALE: NTS

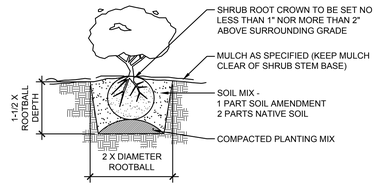


2 DECIDUOUS TREE PLANTING DETAIL

SCALE: NTS

NOTES

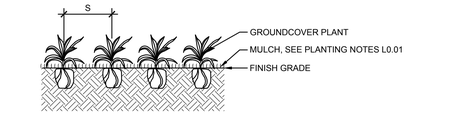
1. PLANT ALL TREES AT LEAST 32 INCHES FROM THE END OF HEAD-IN PARKING SPACES TO PREVENT DAMAGE FROM CAR OVERHANGS.
2. ALL ROOTS MUST BE COMPLETELY COVERED. BACKFILL SHOULD BE THOROUGHLY WATERED AS IT IS PLACED AROUND THE ROOTS.
3. SCARIFY AND ROUGHEN BOTTOM OF PLANTING PIT PRIOR TO PLACING TREE AND TOPSOIL. SLOPE BOTTOM TO DRAIN TO SIDES.
4. THE ENTIRE WIDTH OF THE PLANTING ISLAND SHALL CONTAIN ONLY SOIL/COMPOST PLANTING MIX AND BE FREE OF ALL DEBRIS INCLUDING GARBAGE, CONCRETE, GRAVEL OR OTHER FOREIGN MATERIALS.
5. ALL TREES SHALL CONFORM TO MOST RECENT ANSI Z60.1 AMERICAN STANDARD FOR NURSERY STOCK. FIRST LIMBS OF DECIDUOUS TREES IN PARKING LOTS AND ALONG STREETS AND SIDEWALKS SHALL BE 5 FEET ABOVE GROUND OR HIGHER.
6. EXCAVATE HOLE INTO PREPARED SOIL TO ONE INCH LESS THAN HEIGHT OF ROOTBALL AND TWO TIMES THE WIDTH OF THE ROOTBALL. TAMP BOTTOM OF PIT UNDER ROOTBALL THOROUGHLY TO KEEP TREE FROM SETTLING. BUTTRESS AT THE BOTTOM OF THE PIT NO LESS THAN THREE FEET WIDE IF NEEDED TO REINFORCE LATERAL SUPPORT.
7. DO NOT DAMAGE THE ROOTBALL WHEN PLANTING. REMOVE ALL WIRE, STRING AND BURLAP FROM TOP AND SIDES OF ROOTBALL ONLY AFTER PLACING IN THE HOLE.
8. SET TREE STRAIGHT ON TAMPED SOIL.
9. BACKFILL HOLE WITH APPROVED PLANTING MEDIUM MIX TO HALF DEPTH. TAMP SOIL TO STABILIZE ROOTBALL. FINISH BACKFILLING AND TAMP AGAIN.
10. STAKE TREES OUTSIDE OF ROOTBALL AND PARALLEL TO PLANTING ISLAND CURBS WITH TREE STAKES. USE ONE INCH HEAVY CHAINLOCK TREE TIES OR SIMILAR. REMOVE AFTER ONE YEAR.
11. WATER IMMEDIATELY AND THOROUGHLY, TWICE PER WEEK DURING THE FIRST MONTH, THEN ONCE PER WEEK THROUGH THE REMAINDER OF THE DRY SEASON. WATER A MINIMUM OF ONCE PER MONTH DURING THE SECOND SUMMER SEASON.
12. ALL PLANTING BEDS CONTAINING TREES AND SHRUBS AND SURFACE DRAINAGE SHALL BE PREPARED SIMILAR TO THIS LANDSCAPE TREE PLANTING AND DRAINAGE DETAIL.



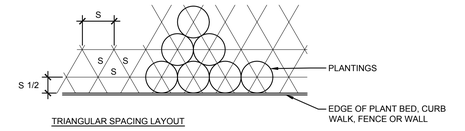
LS-DETL-SHRB.DWG

3 SHRUB PLANTING

SCALE: NTS



PLANTING SECTION



TRIANGULAR SPACING LAYOUT

NOTES

1. TILL SOIL SO THAT THERE ARE NO CLODS OR CLUMPS LARGER THAN 1 1/2" DIAMETER

LS-DETL-GCVR.DWG

4 GROUNDCOVER PLANTING

SCALE: NTS

TREE PROTECTION MEASURES

UNLESS OTHERWISE INDICATED FOR REMOVAL ALL TREES SHALL RECEIVE PROTECTIVE MEASURES FOR THE DURATION OF THE PROJECT IN ACCORDANCE WITH THE CITY REQUIREMENTS.

6' HIGH MINIMUM CHAIN-LINK FENCING, SHALL BE ERECTED AND MAINTAINED. FENCING SHALL BE INSTALLED AS INDICATED ON THIS PLAN. IN AREAS WHERE ROOT ZONE ENCROACHMENT IS UNAVOIDABLE ADJUSTMENTS OF FENCING LOCATION SHALL BE COORDINATED WITH A CERTIFIED ARBORIST PRIOR TO START OF WORK.

NO ACTIVITY MAY BE CONDUCTED WITHIN ANY DESIGNATED TREE PROTECTION AREA INCLUDING BUT NOT LIMITED TO PARKING EQUIPMENT, PLACING SOLVENTS, STORING MATERIALS AND SOIL DEPOSITS, DUMPING CONCRETE WASHOUT, OR OTHER DEBRIS, OR ANY EXCAVATION OR COMPACTION WORK.

DURING CONSTRUCTION NO OBJECTS SHALL BE ATTACHED TO ANY TREE DESIGNATED TO BE RETAINED AND PROTECTED.

FENCE SHALL REMAIN IN PLACE UNTIL THE COMPLETION OF CONSTRUCTION ACTIVITIES. MOVEMENT OR REMOVAL OF THE FENCE REQUIRES APPROVAL BY THE ARBORIST AND/OR THE CITY'S AUTHORIZED REPRESENTATIVE.

EXCAVATION / TRENCHING AROUND TREES

PROPOSED TRENCHING AND EXCAVATION AROUND TREES SHALL BE COORDINATED WITH CONSULTING ARBORIST.

WHERE TRENCHING IS REQUIRED WITHIN CRITICAL ROOT ZONE, TUNNEL UNDER OR AROUND ROOTS BY HAND DIGGING OR BORING. DO NOT CUT MAIN LATERAL ROOTS OR TAP ROOTS. CLEANLY CUT/SEVER SMALLER ROOTS. RELOCATE ROOTS IN BACKFILL AREAS WHEREVER POSSIBLE.

DO NOT ALLOW EXPOSED ROOTS TO DRY OUT BEFORE PERMANENT BACKFILL IS PLACED, PROVIDE TEMPORARY EARTH COVER, OR PACK WITH PEAT MOSS AND WRAP WITH BURLAP. WATER AND MAINTAIN IN MOIST CONDITION UNTIL RELOCATED AND COVERED WITH BACKFILL.

5 TREE PROTECTION

SCALE: NTS

SECTION VIEW

PLAN VIEW

NOTES

1. INSTALL ROOT BARRIER PER MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS.
2. INSTALL ROOT BARRIER WHERE CENTER OF ROOT BALL IS WITHIN 8' OF PAVEMENT.

URBAN TREE FOUNDATION © 2014
OPEN SOURCE FREE TO USE

6 ROOT BARRIER DETAIL

SCALE: NTS

NOTES

1. PROTECT MATERIAL FROM CONTAMINATION.
2. DO NOT HAUL OR PLACE MATERIAL WHEN THE WEATHER IS TOO WET OR THE GROUND IS FROZEN OR SATURATED AS DETERMINED BY THE OWNER'S REPRESENTATIVE.
3. PLACE MATERIAL IN LOOSE LIFTS, 8 INCHES MAX. AND COMPACT WITH A WATER-FILLED LANDSCAPE ROLLER. DO NOT OTHERWISE MECHANICALLY COMPACT THE MATERIAL.
4. INSTALL PLANT MATERIAL AS SOON AS POSSIBLE AFTER PLACING AND GRADING THE SOIL TO MINIMIZE EROSION AND COMPACTION.
5. TEMPORARY EROSION CONTROL MEASURES ARE REQUIRED UNTIL PERMANENT STABILIZATION MEASURES ARE FUNCTIONAL.
6. PROTECT THE INSTALLED MATERIAL FROM FOOT OR EQUIPMENT TRAFFIC AND SURFACE WATER RUNOFF. INSTALL TEMPORARY FENCING OR WALKWAYS AS NEEDED TO KEEP WORKS, PEDESTRIANS, AND EQUIPMENT OUT OF THE AREA. UNDER NO CIRCUMSTANCES SHOULD MATERIALS AND EQUIPMENT BE STORED ON TOP OF THE INSTALLATION AREA.

LS-DETL-PLNT-SOIL-STMW+BES.DWG

7 SOIL PREP. AT STORMWATER

SCALE: NTS

NOTES

1. REMOVE ALL ROCK, DEBRIS AND OTHER FOREIGN MATTER OVER 1" IN DIAMETER FROM TOP 12" OF SOIL.
2. RIP AND TILL SUBGRADE TO 6" DEEP (MIN.) PRIOR TO INSTALLING TOPSOIL AND TILL INTERFACE OF SUBGRADE AND TOPSOIL.
3. TILL TOPSOIL AND SOIL AMENDMENTS TO A MIN. 12" DEPTH.
4. SUBMIT SAMPLE OF MULCH & TOPSOIL FOR ACCEPTANCE PRIOR TO PLACEMENT.

LS-DETL-PLNT-SOIL.DWG

8 SOIL PREPARATION

SCALE: NTS

Architecture ▪ Interiors
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DELTA LOGISTICS

9835 SW COMMERCE CIRCLE
WILSONVILLE, OR 97070

Project

DELTA LOGISTICS SITE EXPANSION

9710 SW DAY RD.
CITY OF WILSONVILLE, OR

PRELIMINARY NOT FOR CONSTRUCTION

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REVISION SCHEDULE

Delta	Issued As	Issue Date

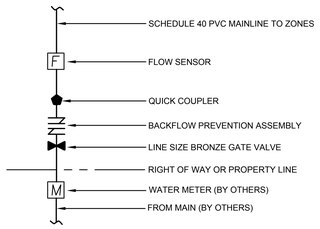
PLANTING DETAILS

SHEET

L5.10

JOB NO. **2200502.00**

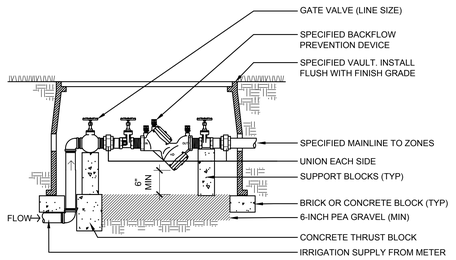
DEVELOPMENT REVIEW SET - 04/11/2023



LI-DETL-GEN-POC.DWG

1 POINT OF CONNECTION

SCALE: NTS



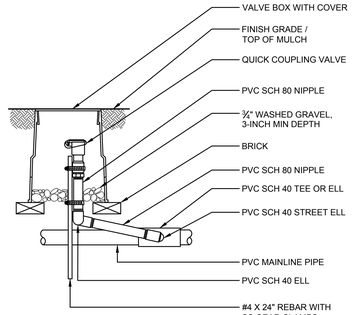
NOTE:
INSTALL BACKFLOW PREVENTOR PER CODE AND REQUIREMENTS OF PREVAILING JURISDICTIONS.

LI-DETL-VALV-DCHK.DWG

2 DOUBLE CHECK VALVE

BACKFLOW PREVENTOR (BELOW GRADE)

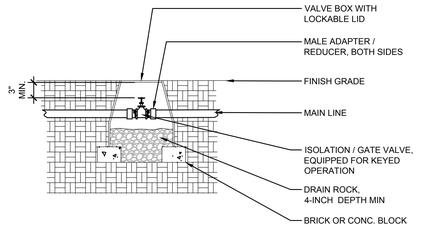
SCALE: NTS



LI-DETL-VALV-QCUP.DWG

3 QUICK COUPLER VALVE

SCALE: NTS



NOTES:
1. SCH 80 ADAPTER AND FITTINGS TO BE SAME SIZE AS ISOLATION VALVE

LI-DETL-06-VALV-GATE-ISOL.DWG

4 ISOLATION / GATE VALVE

SCALE: NTS

SECTION AT PAVING

SECTION AT WALLS

MIN DEPTH OF PIPE	
MAINLINE	18"
LATERAL AT PAVING	14"
AT DRIVING SURFACE	24"

NOTES:
1. SLEEVES TO BE TWICE DIAMETER OF LINE OR LINES PASSING THROUGH.
2. EXTEND IRRIGATION SLEEVE 6-INCHES BEYOND EDGE OF PAVING, EACH SIDE.
3. INSTALL SLEEVES AT SAME TIME AS WALL OR PAVING INSTALLATION.
4. INSTALL PIPE IN SLEEVE BEFORE BACKFILLING AND CAP BOTH ENDS WITHOUT GLUE.

LI-DETL-GEN-SLEEVE.DWG

5 IRRIGATION SLEEVES

SCALE: NTS

NOTES:
1. SNAKE ALL PVC PIPING IN TRENCHING
2. TIE LOOSE 3 FT LOOP IN ALL IRRIGATION WIRING AT CHANGES IN DIRECTION GREATER THAN 30 DEGREES. UNTIE AFTER ALL CONNECTIONS HAVE BEEN MADE.
3. WHERE ELECTRICAL WIRING DOES NOT SHARE COMMON TRENCH, OVER EXCAVATE TRENCH 2 INCHES MIN AND BACKFILL WITH SPECIFIED BEDDING MATERIAL.
4. LOCATE ALL WIRING NOT IN COMMON TRENCHES ACCURATELY ON RECORD DRAWINGS.

LI-DETL-GEN-TRENCH.DWG

6 IRRIGATION TRENCHING (TYP)

SCALE: NTS

LI-DETL-HEAD-SPRAY-MT.DWG

7 MULTI-TRAJECTORY SPRAY HEAD

DETAIL-SUBTITLE

SCALE: NTS

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REVISION SCHEDULE		
Delta	Issued As	Issue Date

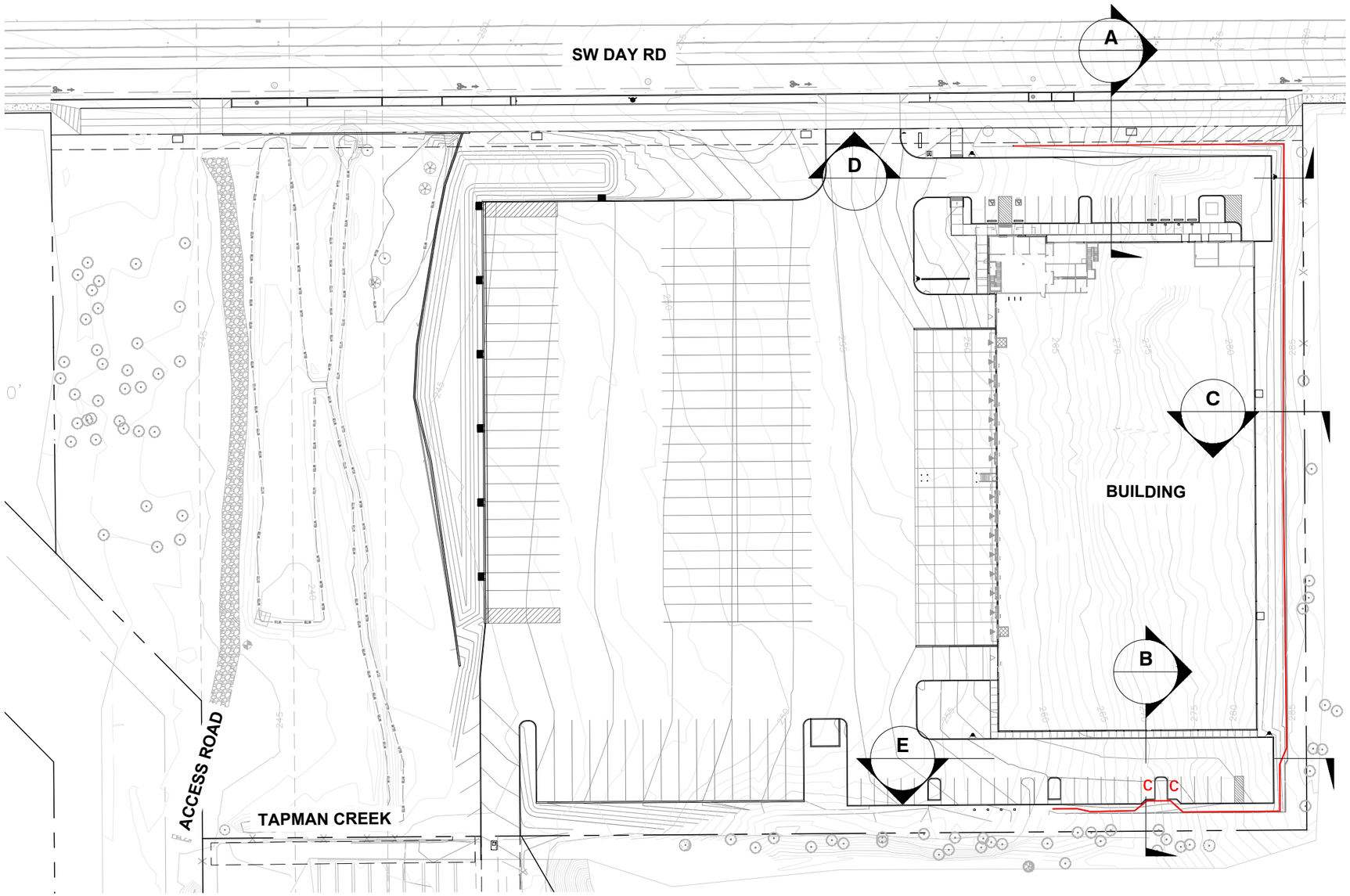
IRRIGATION DETAILS

SHEET

L5.11

JOB NO. **2200502.00**

DEVELOPMENT REVIEW SET - 04/11/2023



80 0 40 80 160 320

(IN FEET)

1 inch = 80 ft.

Delta Logistics
BTS Site Expansion
04.11.2023

Section Key Plan

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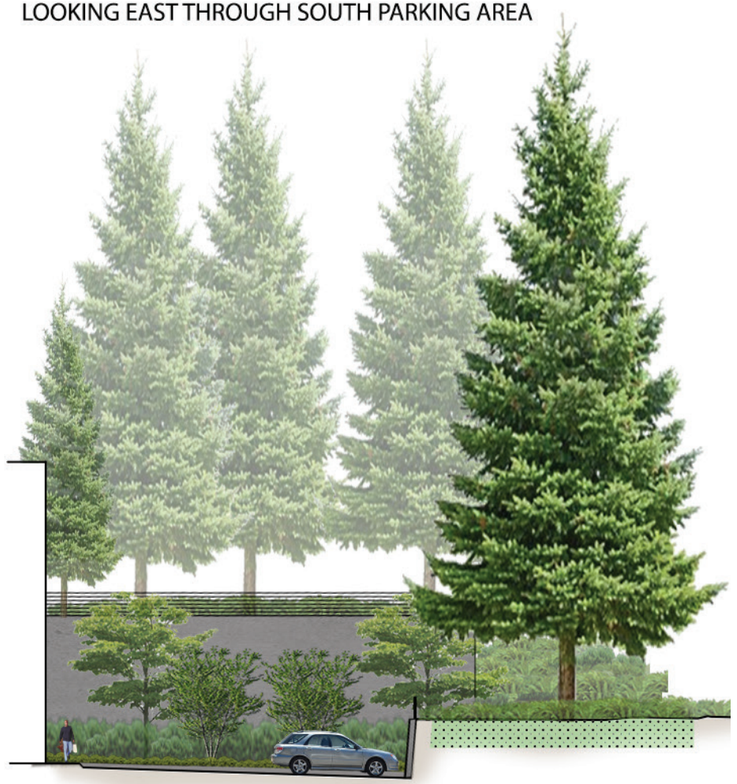
SECTION A - 5 years
LOOKING EAST THROUGH NORTH PARKING AREA

SECTION B - 5 years
LOOKING EAST THROUGH SOUTH PARKING AREA

SECTION A - 20 years
LOOKING EAST THROUGH NORTH PARKING AREA



SECTION B - 20 years
LOOKING EAST THROUGH SOUTH PARKING AREA

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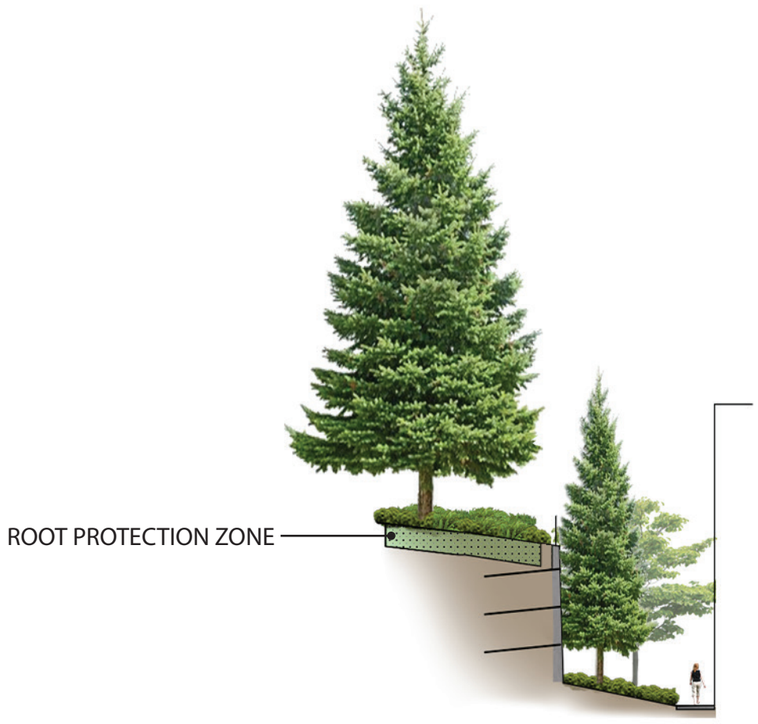
SECTION C - 5 years
LOOKING SOUTH THROUGH CORRIDOR BEHIND PROPOSED BUILDING



SECTION C - 20 years
LOOKING SOUTH THROUGH CORRIDOR BEHIND PROPOSED BUILDING

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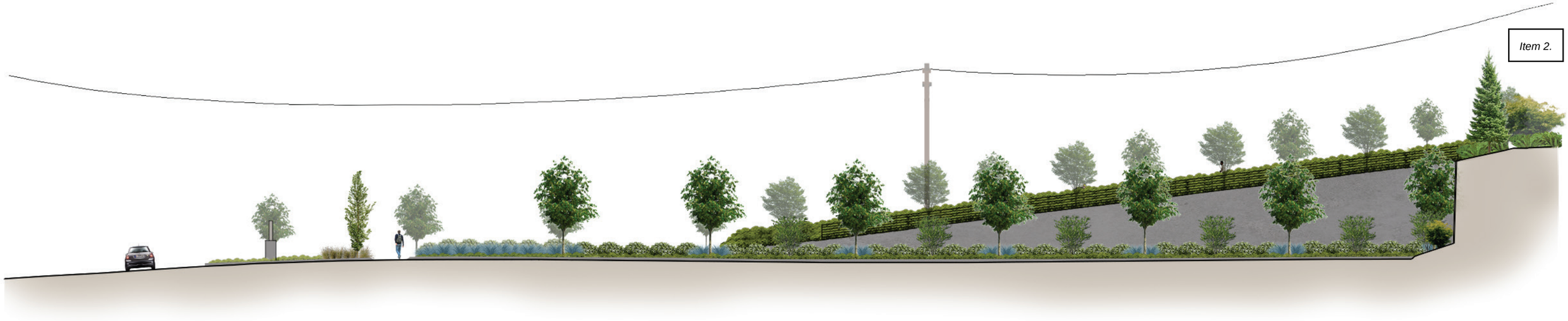

SECTION D - 5 years
LOOKING NORTH TOWARDS SW DAY RD

SECTION D - 20 years
LOOKING NORTH TOWARDS SW DAY RD

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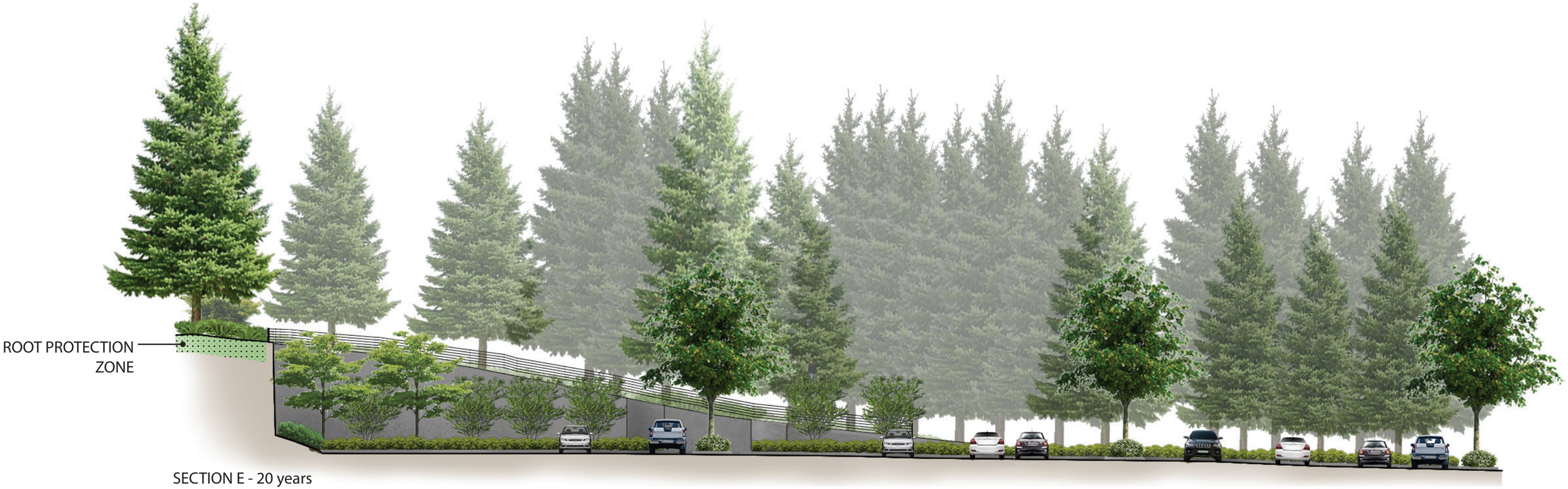
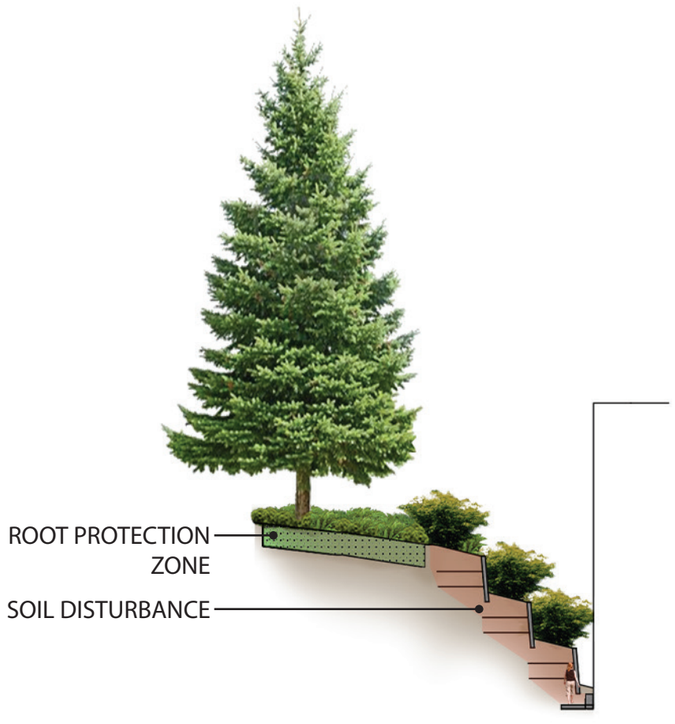
SECTION E - 5 years
LOOKING SOUTH TOWARDS SOUTH PROPERTY LINE



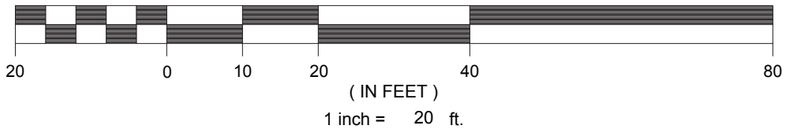
SECTION E - 20 years
LOOKING SOUTH TOWARDS SOUTH PROPERTY LINE

SECTION C - Option 1
PROPOSED WAIVER USING SOIL NAIL WALL



SECTION C - Option 2
D.R. MODIFICATION, NO WAIVER,
4.8' WALLS WITH 5' OFFSETS

SECTION C - Option 3
SOIL NAIL WALL WITH 24" LANDSCAPE SEAT
WALL AT BASE



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TERAGAN & ASSOCIATES, INC.
ARBORICULTURAL CONSULTANTS

April 10, 2023

Lee Leighton AICP
Mackenzie
1515 SE Water Ave., Suite 100
Portland, OR 97214

Re: Tree Protection Standards in Development Situations for the Project at 9710 SW Day Rd., Wilsonville, Oregon

I was asked to discuss the needed tree protection measures for the Delta Logistics project at 9710 SW Day Rd. Wilsonville, Oregon.

The tree inventory that was initially done indicated the possible tree protection zone at 6 times the diameter on one side of the trees as well as 12 times the trees' main stem diameter (as measured 4.5' above the ground) on three other sides of each of the trees. Most jurisdictions will waive the need for an arborist tree plan if a developer or property owner can show demonstrate a tree protection zone that stays 12 times the tree diameter away from the tree's center on three sides of the tree and at least 6 times the diameter of the tree on one side of the tree.

The Wilsonville code defines the dripline as the extent of the area that requires protection, unless an arborist creates a tree plan indicating the required tree protection area that will adequately protect the tree(s) from undue long-term harm.

As the project arborist, I have assessed the condition of the trees that are to remain and be protected during construction and feel that encroachment up to 6 times the tree diameter on one side of the trees will be adequate in preventing long term impacts from construction trauma on the trees as long as 12 times the tree diameters are protected on the other three sides of the trees.

On this project, along the south property line, there will be no future development of the property to the south as the property is already developed and is not likely to be redeveloped in a time frame where the project's trees won't have the opportunity to adapt should encroachment come within the dripline of the trees.

Along the east property line, there is a property to the east that is likely to be developed in the future so the ability to guarantee that the tree protection areas will be equal to 12 times the tree diameters to the east of those trees cannot be guaranteed by the applicant for this development; however, the City has the opportunity to ensure their protection through its required land use review and approval procedures. The extent of the driplines to the west was measured by me recently, and the designers have been able to adjust the position of the proposed retaining wall to protect those trees to the edge of the driplines. In addition, the City may condition that the project arborist is to be on site to observe construction activity, guide any root pruning if roots do extend beyond the dripline and document the presence and/or absence of roots from the trees that are to be retained. We are protecting the root zone as indicated by the extent of the trees' dripline by

adjusting the wall location on the project side of the property line to allow the neighbor flexibility for future development on their side.

The parameters of the site consist of boulders where the trees are growing that are to be retained. Roots tend to form deeper along the edges of the boulders and not extend laterally as they would normally in most typical soils in our region.

Along the south side where the driplines do extend beyond the edges of the planned parking lot to the west of the point where the retaining wall ends (meets grade), there is to be fill. Although fill over the roots of the trees may lead to root decline, it will occur over time allowing the trees to adapt to the new growing conditions gradually as long as the fill does not encroach within 6 times the diameter of the tree.

I find that the designers of this project have provided tree protection areas that are greater than needed given the site parameters and that the conditions on the site will allow for encroachment within the planned tree protection areas if needed as long as observation and review by this project arborist is completed.

Please call if you have any questions/concerns regarding the information in this report.

Sincerely,

Terrence P. Flanagan
ISA Board Certified Master Arborist PN-0120BMTL
ISA Tree Risk Assessment Qualified
P: 503.697.1975 | E:terry@teragan.com

Enclosures:

Appendix 1: Certification of Performance
Appendix 2: Assumptions and Limiting Conditions
Appendix 3: Tree Protection Specifications

Appendix 1: Certification of Performance

I, Terrence P. Flanagan, certify:

- That a representative of Teragan & Associates, Inc., has inspected the tree(s) and/or the property referred to in this report. The extent of the evaluation is stated in the attached report.
- Teragan & Associates, Inc. has no current or prospective interest in the vegetation of the property that is the subject of this report, and Teragan & Associates, Inc. has no personal interest or bias with respect to the parties involved.
- That Teragan & Associates, Inc.'s compensation is not contingent upon the reporting of a predetermined conclusion that favors the cause of the client or any other party, or upon the results of the assessment, the attainment of stipulated results, or the occurrence of any subsequent events.
- That the analysis, opinions, and conclusions that were developed as part of this report have been prepared according to commonly accepted arboricultural practices.
- That a Board-Certified Master Arborist has overseen the gathering of data.

Appendix 2: Assumptions and Limiting Conditions

- Any legal description provided to the consultant is assumed to be correct. Teragan and Associates, Inc. checked the species identification and tree diameters in the field.
- It is assumed that this property is not in violation of any codes, statutes, ordinances, or other governmental regulations.
- The consultant is not responsible for information gathered from others involved in various activities pertaining to this project. Care has been taken to obtain information from reliable sources.
- Loss or alteration of any part of this delivered report invalidates the entire report.
- The drawings and information contained in this report may not be to scale and are intended to be used as display points of reference only.
- The consultants' role is only to make recommendations. Inaction on the part of those receiving the report is not the responsibility of the consultant.
- This report is to certify the trees that are on site, their size and condition and create a tree plan. Tree plans are to include the measurements necessary to protect trees that are to be retained during the construction process.

Appendix 3: Tree Protection Specifications

It is critical that the following steps be taken to ensure that they are retained and protected. This section is a template for all tree protection plans so aspects, such as tree removals, will not apply to this project.

Before Construction Begins

1. **Complete tree removals within the tree protection area.**
    a. Prior to construction, allow tree removal within the tree protection area to occur.
        i. The project arborist shall oversee the removal of any trees within the tree protection zones *if* they require use of heavy equipment. Ideally, no heavy/mechanized equipment should be used to remove trees or their debris within the tree protection zones.
    b. Prior to construction, allow any pruning of tree branches that may need to occur.
    c. Install tree protection fencing immediately following the removal of trees within the tree protection area (see 3 below). Tree protection fencing shall be installed after removals to ensure:
        i. Tree removals are performed safely.
        ii. Tree protection fencing is not accidentally or intentionally moved.
2. **Notify all contractors of the tree protection procedures.** For successful tree protection on a construction site, all contractors must know and understand the goals of tree protection. It can only take one mistake with a misplaced trench or other action to destroy the future of a tree.
    a. Hold a Tree Protection meeting with all contractors to fully explain the goals of tree protection.
    b. Have all subcontractors sign memoranda of understanding regarding the goals of tree protection. Memoranda to include penalty for violating tree protection plan. Penalty to equal appraised value of tree(s) within the violated tree protection zone per the current Trunk Formula Method as outlined by the Council of Tree & Landscape Appraisers current edition of the *Guide for Plant Appraisal*.
3. **Fencing.**
    a. Establish fencing around each tree or grove of trees to be retained as shown on the Tree Protection Plan.
    b. The fencing is to be put in place before the ground is cleared to protect the trees and the soil around the trees from any disturbance at all. Exception is if trees are to be removed that are located within the tree protection zones, they should be removed prior to installing the tree protection fencing without the use of mechanized wheeled or tracked equipment being allowed to operate within the identified tree protection area.
    c. Fencing is to be placed at the edge of the root protection zone as shown on the Tree Protection Plan. Root protection zones are established by the project arborist based on the needs of the site and the tree to be protected.
    d. Protection fencing consisting of a minimum 4-foot-high metal fence, secured with 6-foot metal posts shall be established at the edge of the root protection zone and permissible encroachment area on the development site.
    e. Fencing is to remain in the position that is established by the project arborist and not to be moved without written permission from the city or issuance of the final certificate of occupancy (4.620.10.01D)

4. **Signage**
    a. All tree protection fencing should have signage as follows in addition to signage provided by the city so that all contractors understand the purpose of the fencing:

> **TREE PROTECTION ZONE**
>
> **DO NOT REMOVE OR ADJUST THIS FENCING. THE FENCE LOCATIONS ARE APPROVED TO PROTECT VEGETATION & TREES.**
>
> NOTE: Moving these fences is a civil violation and may result in fines.
>
> Please contact the Code Enforcement Specialist and project arborist. If alterations to the approved location of the protection fencing is needed.
> Project Arborist: Teragan & Associates Inc
> 503-697-1975 info@teragan.com

    b. Signage should be placed so as to be visible from all sides of a tree protection area and spaced every 75 feet.

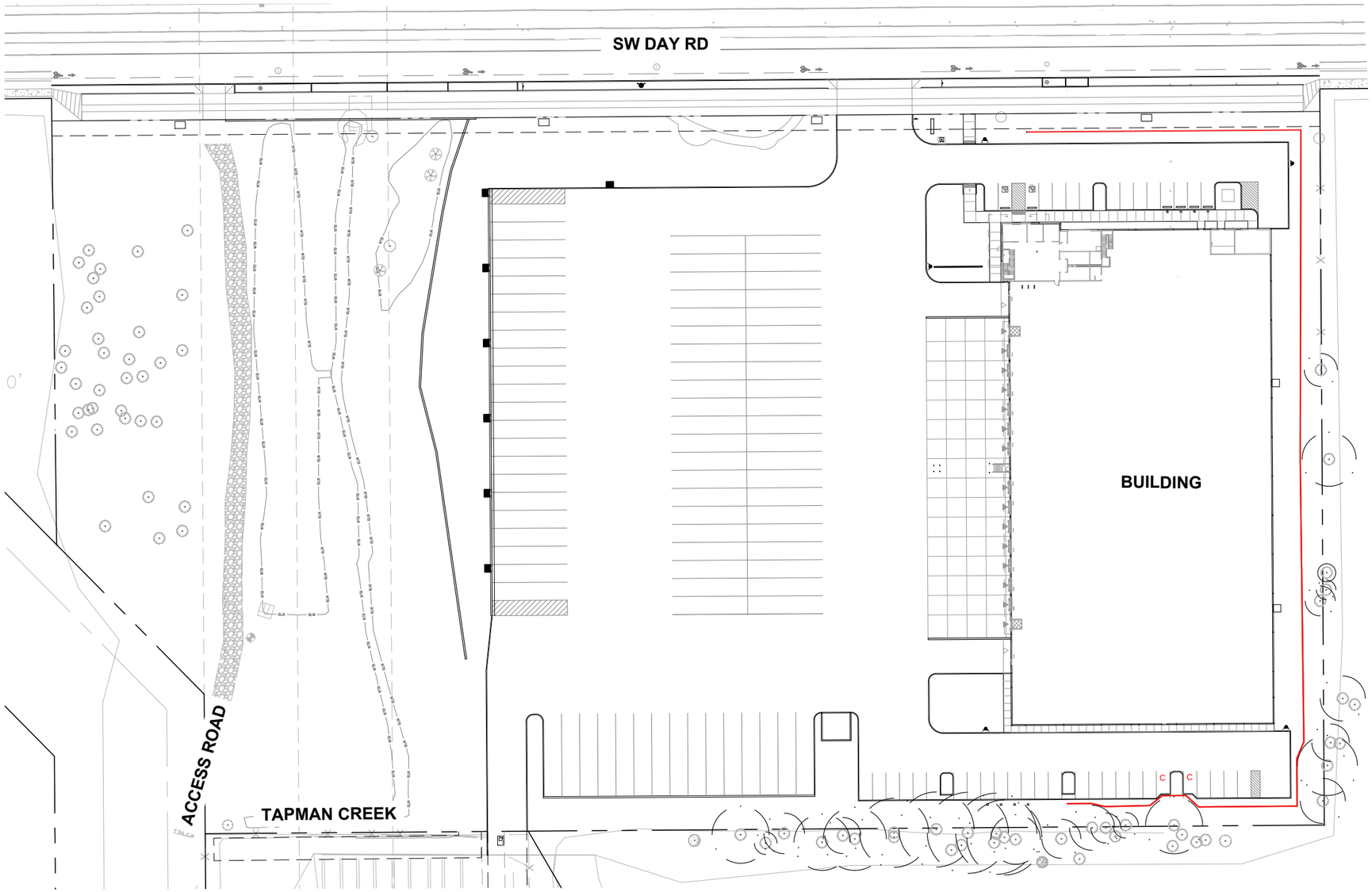
During Construction

1. **Protection guidelines within the Root Protection Zone**
    a. No traffic shall be allowed within the root protection zone. No vehicle, heavy equipment, or even repeated foot traffic.
    b. No storage of materials including but not limited to soil, construction material, or waste from the site.
        i. Waste includes but is not limited to concrete wash out, gasoline, diesel, paint, cleaner, thinners, etc.
    c. Construction trailers are not to be parked / placed within the root protection zone without written clearance from the project arborist.
    d. No vehicles shall be allowed to park within the root protection areas.
    e. No activity shall be allowed that will cause soil compaction within the root protection zone.
2. **Tree protection.** Retained trees shall be protected from any cutting, skinning, or breaking of branches, trunks, or roots.
3. **Root pruning.** Any roots that are to be cut from existing trees that are to be retained, the project consulting arborist shall be notified to evaluate, document, and oversee the proper cutting of roots with sharp cutting tools. Cut roots are to be immediately covered with soil or mulch to prevent them from drying out.
4. **Grade changes**. No grade change should be allowed within the root protection zone.
5. **Root protection zone changes.** Any necessary deviation of the root protection zone shall be cleared by the project consulting arborist in writing.
6. **Utilities**. Any necessary passage of utilities through the root protection zone shall be by means of tunneling under roots by hand digging or boring.
7. **Re-inspection of fencing.** Tree protection fencing is subject to inspection by the city. The project arborist highly recommends monthly inspections of tree protection fencing to ensure compliance with the permit and protection of the trees.

After Construction

1. Fences are to remain standing until the completion of the project.
2. Carefully landscape around the tree. Do not allow trenching within the root protection zone which still exists even though the tree protection fencing has been removed for landscape installation. Carefully plant new plants within the root protection zone. Avoid cutting the roots of the existing trees.

3. Do not plan for irrigation within the root protection zone of existing trees unless it is drip irrigation for a specific planting or cleared by the project arborist.
4. Provide for or ensure that adequate drainage will occur around the retained trees.
5. Pruning of the trees should be completed as one of the steps of the landscaping process before the final placement of trees, shrubs, ground covers, mulch, or turf.
6. Provide for inspection and treatment of insect and disease populations that can damage the retained trees and plants.
7. Trees that are retained may need to be fertilized as called for by project arborist after final inspection.



80 0 40 80 160 320

(IN FEET)

1 inch = 80 ft.

Delta Logistics
BTS Site Expansion
04.11.2023

Wall Alignment

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April 11, 2023

City of Wilsonville
Attention: Cindy Luxhoj
29799 SW Town Center Loop E
Wilsonville, OR 97070

Re: **Delta Logistics Annex [DB22-0007 et al.]**
Supplemental Evidence: Coffee Creek Pattern Book Compliance, Tree Root Zone Protection
Project Number 2200502.00

Dear Ms. Luxhoj:

Thank you to you and all the Wilsonville staff who have provided guidance for the completion and refinement of the Delta Logistics Design Review and associated land use permit applications.

This letter provides recommended supplemental findings to support the Waiver 1 request to allow construction of a single, tall cut retaining wall in the eastern part of the site.

Also submitted with this letter, identified as Exhibit V of the applicant's submittal materials, are the following additional exhibits (Exhibits A-Q were attached to the submittal of the revised February 2023 Plan and/or prior materials):

R. Updated Tree Plan sheet(s) with Drip Line dimensions for off-site trees near the eastern/southern retaining wall.
S. Section/Elevation figures – views of retaining wall configuration and proposed plantings.
T. Arborist's Report supplement.
U. Conceptual plan for horizontal realignment of retaining wall to protect root zones.

Waiver 1 – Consistency with Intent of the Coffee Creek DOD Pattern Book

Of the two Waivers requested from specific Code standards, Waiver 1 is to allow linear segments of retaining walls that are taller than 4' and do not incorporate 5' horizontal offsets. Waiver 1 is eligible for approval under the Guidelines in the Coffee Creek Industrial Design Overlay District Pattern Book, pursuant to WDO Section 4.134(.08)B: [1]

[1] Waiver 2 is a request to provide limited employee vehicle parking between the proposed building and SW Day Road (an Addressing Street). It is subject to the additional evidence requirements of WDO Section 4.134(.08)A, which are addressed in the applicant's submitted narrative report. Waiver 2 does not affect the physical form of the proposed parking, which complies with setbacks, landscaping, lighting, and the numeric limits in the development standards; it only affects who will be allowed to use it (specifically, allowing a larger allotment of the allowed spaces to be used by on-site employees). Because the physical parking configuration complies with the development standards and the Waiver only affects utilization of the spaces, detailed findings with respect to the form-based guidelines in the Patten Book would be redundant.

WDO 4.134(.08) Waivers. The Development Review Board may waive standards as listed in Section 4.134 (.11), consistent with the provisions of Section 4.118 (.03).

…

A. In addition to meeting the purposes and objectives of Section 4.140, any waivers granted in the Coffee Creek DOD must be found to be consistent with the intent of the Coffee Creek DOD Pattern Book.

The applicant's narrative/findings report provides detailed responses to 4.140.B.1 through 8, which are not reproduced here. Please refer to that report for those findings.

Responding to guidance from Wilsonville staff, the applicant's design team has prepared the following additional information to explain how the proposed development plan, including, in particular, the proposed retaining wall configuration for which Waiver 1 is needed, is *consistent with the intent of the Coffee Creek DOD Pattern Book.*

Site Analysis/Context

The need for retaining walls has come to attention in the context of the applicant's proposed development plan; however, the reasons extensive site grading is necessary are primarily due to the physical characteristics of the site itself, when compared to the practical needs of the "typically permitted" uses the City's Planned Development – Regionally Significant Industrial Area (PD-RSIA) designation of the property it is intended to support. The following site characteristics make it impractical to develop the site for its intended use, comparable to recent approved developments on other parcels in the Coffee Creek area, without the use of retaining walls that differ from the height limits and horizontal offset standards in WDO Section 4.134(11.)/Table CC-3/5 Grading and Retaining Walls (maximum height of 4' or 4.8' with modification, and 5' horizontal offsets between retaining walls exceeding 50 linear feet in length).

- **Significant Natural Resource Overlay Zone (SROZ) Area:** Tapman Creek flows from north to south through the site, with a required 50' vegetated corridor (protective buffer) on both sides of the wetland resource. The applicant has retained a field biologist to identify resource boundaries and provide recommendations for plantings within the resource area and protective buffers. The low-lying western portion of the property is dominated by this designated significant natural resource feature.
- **Constrained East-West Dimension:** The larger part of the property's upland developable area is located east of the Tapman creek corridor. Measuring between the east property boundary and the eastern edge of the 50' vegetated corridor around the Tapman Creek wetland, the developable area's east-west dimension varies between about 555' and 600'.
- **Slope:** The portion of the site east of the protected Tapman Creek riparian corridor has grade elevation of about 244' at the west (along the Tapman Creek 50' buffer edge) and about 285' along the east property boundary. Over the approximately 575' east-west width, that 41' vertical difference results in an overall cross-slope of about 7.1%. By contrast, large-floor industrial buildings generally require flat floors (zero percent slope) with egress or fire/emergency access doors at multiple locations around the perimeter. Additionally, site operational areas for semi-truck and trailer circulation should not exceed cross-slope of 3%. In this context, creating a pad area capable of supporting industrial use at scale requires cutting into the uphill side of the site and filling on the downhill side, to form a sufficiently level platform area of adequate size.
- **Grade Transition along Street Frontage:** Along the north frontage of the eastern development area described above, SW Day Road's centerline elevation transitions from about elevation 249' at the west to about 280' near the northeast property corner. Additionally, the centerline slope is steeper in the eastern part of the segment,

and there is an apex vertical curve east of the subject property that limits sight distance to the east. For these reasons, site design needs to identify a building finish floor elevation and site contouring that allow the site driveway to be located at a safe location along the SW Day Road property frontage (i.e., far enough west to provide adequate sight distances for vehicular movements at the driveway).

Design Responses to Site Characteristics

The site features described above complicate the effort to design for industrial use while satisfying all the standards in Chapter 4.134, Coffee Creek Industrial Design Overlay District.

Applicable Provisions of the Coffee Creek DOD Pattern Book

Based on review of the Intent Statements and Design Guidelines (DGs) in the Coffee Creek Industrial Design Overlay District Pattern Book, the applicant has prepared the following responses discussing consistency with the Intent Statements and, where appropriate, particulars regarding specific DGs to the extent they are relevant to the Waiver 1 request.

Section A | Street Design and Connectivity

Intent Statement *– Streets do much more than provide access to buildings, blocks, parcels, and sites. Streets are the primary generators of urban form and their design determines the quality of the public realm and the character of our neighborhoods and cities. The Form-based Code sets standards for streets as well as standards for development of sites, parcels, and buildings. In the Form-based Code, the Regulating Plan establishes an overall framework for access and mobility in the Coffee Creek Industrial Area by building upon those roads that already exist. Existing rural roads and new streets will become the major streets of Coffee Creek and will set the character for its development. The Regulating Plan sets forth only a rough framework for new development with standards for Connection Spacing that are appropriate to the large scale of industrial development, and to ensure that connectivity to, and through, all sites is supported. The Form-based Code sets minimum standards for connectivity, and establishes a hierarchy of Addressing Streets, Supporting Streets, and Through Connections. The nature of many of these connections, their function, and their typology is flexible so that their ultimate design can be a reflection of their unique context. Supporting Streets and Through Connections should work together to provide a complete network that serves people getting around no matter what form of transportation they use. It is not necessary for every connection to serve everyone, but the network should make it possible to get to, through and around parcels and the district.*

Addressing Streets – Addressing Streets are the structural framework of the street network in Coffee Creek. They link Supporting Streets and Through Connections to each other and to the larger community of Wilsonville. In addition to this essential network role, Addressing Streets are the front doors for all development in Coffee Creek. They define the quality of the public realm and create the first impression of Coffee Creek for new visitors. Where new development includes planning and construction of an Addressing Street, the design must reinforce the distinctive regional landscape and support the intent of high-quality urban design for the public realm with a park-like atmosphere.

DESIGN GUIDELINES - 2. ADDRESSING STREETS
2.1 Park-like character – Design Addressing Streets to establish and support a park-like character of the public realm. Addressing Streets shall provide continuous sidewalks on both sides of the street that protect the pedestrian with a planting strip landscaped with shade trees. Addressing Streets may also include a planted central median.

2.3 Prominent address – Design Addressing Streets to serve as the "front door" or "address" for new buildings and development. New Addressing Streets shall include sidewalks on both sides that provide safe, continuous access for pedestrians to all abutting sections of the primary street network of Addressing Streets. Unless interrupted by another Addressing Street or a Supporting Street, the sidewalks shall be protected by a continuous landscape strip planted with shade trees.

2.4 Enclosed public realm – Orient building massing, form, architecture, and programmatic function along Addressing Streets to help define the public realm, create a distinctive enclosure of the public realm, and support the sense of place in Coffee Creek.
Response: The subject property has frontage on SW Day Road, which is an Addressing Street but also a designated Arterial. In addition to widening the public right-of-way, constructing the paved roadway to full future width, and providing both a bike path and sidewalk separated by landscape strips within the right-of-way, the applicant's proposed site plan provides street trees, dense site landscaping, and a wayside along the street frontage. Although the Pattern Book indicates that on-street parallel parking can be appropriate for Addressing Streets, SW Day Road is not suitable for parallel parking because having vehicles stop in the travel lane and make reversing movements to parallel park is inconsistent with its function as a designated Arterial Street.

Along the eastern part of the street frontage, the slope of the curb line, sidewalk, and bike path are determined by the street's centerline profile, which steepens as the roadway climbs to the east. The primary effect of the proposed site excavation and grading will be to lower the eastern portion of the property, allowing the building to appear to be embedded into the west-facing hillside, where Douglas fir trees are the dominant tree species. This will tend to visually integrate the building into the topography of the area: rather than standing alone, popping up exposed within a flat surrounding area, the size and scale of the building will visually tend to merge with the rising hillside contour of the site and the tree community – consisting of both retained trees and new replacement tree plantings that will grow in over time – at the east side (back) of the building.

As the Day Road street frontage climbs proceeding to the east, the flat elevation of the building's finish floor and the northern parking area beside it will become progressively lower in relation to street level. As a result, for motorists, cyclists and pedestrians traveling along SW Day Road, the parking area on the north side of the building will be mostly obscured from view by the combination of landscape plantings along the street edge, canopies of trees planted at grade along the base of the inner side of the cut retaining wall (the wall faces the interior of the site – its face can scarcely even be seen from the public right-of-way), and the lower relative elevation of the building and the parking area. The resulting visual impression will be of a building set back from the street edge, integrated into the site's landform, and separated from the public realm by tiers of green trees within a narrow canyon-like feature. Similarly, tree plantings at the back of the building, between the building and the retaining wall near the east property boundary, will create a green landscaped corridor within a narrow valley running perpendicular to the street. As the planted trees' canopies mature, any visual gap will grow less and less noticeable over time.

The vertical grade difference between street and site is greatest at the eastern boundary, but at roughly the mid-point of the development area's street frontage, site- and street grades will align at the driveway. To provide access for pedestrians, an ADA-compliant path to the main entrance will go through the landscape area just east of the driveway. Both passenger vehicles and trucks will use the driveway, with paths diverging just within the site: visitors in passenger vehicles will turn east to park by the main entrance, but trucks and employees will go straight or turn right and proceed to the site's operational areas. Cyclists will have the option to ride into the site by way of the driveway or use the pedestrian path as an alternative route. The driveway thus becomes the focal point that frames the dominant view into

the site from SW Day Road, making the main entrance at the northwest building corner the primary visual element and helping people clearly identify where to park and enter the building.

Just west of the driveway, the proposed wayside will provide an attractive landscaped area along the street edge for use by pedestrians and by employees who work within the building. Additional perimeter tree and shrub plantings along the street frontage will screen the site and create a dense, naturalistic landscape character along the remainder of the street edge. Just west of the proposed development area, passers-by will enjoy views into the protected Tapman Creek SROZ corridor. The adjacent rain garden for stormwater treatment and detention will be planted with native species plants to complement the vegetated corridor (buffer) along the protected creek and contribute to habitat values.

The proposed retaining wall configuration involves a wall taller than the standards allow; however, for the reasons discussed above, the overall design helps to integrate the building into the existing landform and creates a strong visual and functional relationship between the street and the main entrance. This overall approach is consistent with the intent to prioritize the Addressing Street as the priority orientation for the principal visual and functional connections to buildings' main entrances.

Section B | District-Wide Site Planning and Landscaping

Intent Statement *– The impact of the Ice Age floods on the Willamette Valley defies the imagination. The cataclysmic effects of the Missoula Floods created the modern-day landscape that includes Coffee Lake Wetlands and Coffee Lake Creek. These remnants of the geologic events of 12,000 years ago and the landscape that has emerged since that time are authentic elements that establish our sense of place and contribute to creating a distinctive image and identity that is unique to the City of Wilsonville. In Coffee Creek, the oak savanna is the most distinctive and significant landscape feature visible today that emerged as a result of the Missoula Floods. The effects of settlement have diminished the extent of this oak forest and groves of fir trees are now a distinctive part of the skyline. There may well be elements of the floods still to be discovered; the glacial erratics of the Willamette Valley were scattered here as the ice rafts that they arrived with melted.*

The City's commitment to preserving and enhancing the heritage of this distinctive landscape is reflected in several of the patterns and guidelines. At the scale of the district, the City expects development to promote visual and physical connections from the industrial district to the Coffee Lake Creek Natural Area and the future Tonquin Ice Age Trail.

The themes that express the unique character, quality, and culture of Coffee Creek are still emerging as the district becomes fully integrated with the larger, more established city. Existing stands of Douglas Fir acknowledge both the city's status as a Tree City USA and its commitment to maintaining its natural beauty. The city is also home to three water features by the celebrated Pacific Northwest landscape architect Bob Murase: water features are strongly encouraged as part of the Coffee Creek Industrial Master Plan.

Within the Coffee Creek Industrial Area the design of individual buildings should be linked by unifying elements. The public realm of Addressing Streets provides unity to the district by establishing a pastoral character of place with the regular planting of street trees, sidewalks, and front yard setbacks. Trees help to define place, and enhance the public realm by giving context and scale to the Coffee Creek Industrial Area.

Improving existing and providing new pedestrian and bicycle connections to and through natural areas strengthens the sense of place by developing the character of place.

Gateways reinforce a sense of arrival or departure and mark the transition from one precinct of the city to another.
Response: The site's existing conditions compel a designer to prioritize competing goals and weigh impacts on site features when preparing a plan for industrial development and use:

- The City has designated Tapman Creek as a Significant Resource Overlay Zone (SROZ) corridor. It is the dominant feature of the western portion of the property, although there is some upland area in the northwest corner of the site that is also outside the SROZ.
- The design team has treated the Tapman Creek corridor as the primary natural resource feature of the site, keeping proposed development outside 50' wide vegetated corridor areas on both sides of the creek.
- The design includes native plant species in the proposed rain garden (for on-site storm water quality treatment and detention) adjacent to the Tapman Creek vegetate corridor, effectively widening the buffer between the creek and the developed area.
- Ideally, the creek corridor would be suitable for planting of large canopy trees; however, due to existing power lines (both Bonneville Power Administration and Portland General Electric), only shrubs can be planted within most of the on-site SROZ.
- Existing trees within the site are predominantly Douglas fir, and they are located mainly on the west-facing hillside in the eastern part of the site.
- As explained above in the *Street Design and Connectivity* section response, substantial regrading is necessary to flatten the site's usable area. This cannot be accomplished without removing existing trees within the proposed development area; however, the proposal will configure post-development site areas to support successful replanting and establishment of large trees, including Douglas firs, to restore the dominant tree canopy character at perimeter locations.
- Specifically, the proposed single tall retaining wall at the eastern perimeter of the site provides a relatively wide flat area between the back of the building and the base of the wall, which is wide enough to support planting of large canopy trees at grade. Specifically, the proposed planting plan (L-Series sheets in Exhibit B) includes replacement planting of Douglas firs within the property within the space between the top of the retaining wall and the property boundary, and planting of western red cedars and smaller Kousa dogwoods in the low area between the rear wall of the building and the retaining wall. Over a number of years, the Douglas fir and western red cedar trees can grow up to be taller than the proposed building, thereby re-forming the visual impression of a consolidated grove of coniferous trees along the property's eastern boundary.
- The applicant's design team has explored alternative configurations for retaining walls that would break the change in elevation into two or three shorter walls with 5' offsets, in an effort to comply with two specific development standards in *WDO Chapter 4.134(11.)/Table CC-3/5. Grading and Retaining Walls*: The *Maximum Height* standard (4' or 4.8' with Design Review Modification) and the *Retaining Wall Design* standard (requiring retaining walls longer than 50' to "*introduce a 5-foot, minimum horizontal offset to reduce their apparent mass*").
  - A compliant wall could be achieved by constructing three 4.8' high walls separated by 5' lateral offsets with a 4-to-1 grade slope (4' of horizontal distance for each 1' of vertical elevation change) between them; however, this configuration would not provide any surface with soil conditions capable of supporting the root zones of large trees, such as the proposed western red cedars, because their root growth would exceed the available space between the walls and ultimately compromise the integrity of the retaining walls themselves. As a result, plantings would need to be limited to shrubs and small shade trees. (See section diagrams in Exhibit S for a visual comparison of the three concepts.)

- Assuming a different Waiver approval, a wall theoretically closer to compliance could incorporate a tall upper retaining wall with a low planter wall at a seating height, 30" or less, in the foreground area between it and the east wall of the building. The lower wall could not be high enough to require geotechnical fabric for support stabilization, because tree roots would compromise it over time. This alternative configuration, illustrated as Section C Option 3 in Exhibit S, could support root zones for planting of large trees in the terrace area. The terrace would make the wall appear a bit shorter by raising the point where the bottom of the wall meets grade; however, it also splits the area behind the building into two tiers: one at the building's finish floor elevation, where fire access doors are located, and a slightly elevated terrace beyond that.
- Because the proposed single tall retaining wall can be constructed using soil nails for its support, no over-excavation into the root zones of trees near the perimeter of the site is necessary. Additionally, large trees can be planted both at the top elevation and at grade in the resulting wider space between the base of the wall and the back of the building, because their long-term root growth will not compromise the wall's structure or capacity.
- Finally, a further complication of using divided, offset walls would be that the resulting terrace(s) between the walls would be difficult to maintain because there are no good locations where a ramp could be built to allow access by maintenance workers and equipment. For walls exceeding 30" (2.5') above grade, safety railings or fences could be needed at each level due to the difference in vertical height and potential fall hazard. While the single tall retaining wall will also require a safety rail or fence at the top, the part of the property at the top of the wall can be accessed at grade from the SW Day Road frontage to perform maintenance.

- The position and the construction method of the proposed retaining wall has been determined in consultation with the project's Geotechnical Engineer and Arborist to ensure that effects on the root zones of existing trees will not compromise the trees' survival. Specifically, no excavation is proposed within the critical root zone (i.e., within a radius six times each tree's diameter at breast height (dbh)), and outside that critical root zone excavation will occur on only one of four sides (e.g., north, east, south, and west). The Arborist's report supplement (see Exhibit T) explains in greater detail how this best-practice methodology has been applied in this proposal. Tree protection fencing locations and specific instructions for construction management, including observation by the arborist during construction in specific areas, are based on the measured dripline radii of the trees to be protected.

To summarize, the requested Waiver – to allow construction of a single tall retaining wall, consistent with the proposed excavation in the eastern part of the site – is consistent with the intent of the Pattern Book because (1) it allows the building to occupy the eastern part of the site, allowing the site plan to prioritize protection and enhancement of the Tapman Creek corridor at the west, and (2) it provides soil conditions in the eastern part of the site that are suitable for planting, establishment, and long-term survival of large trees including western red cedars and Douglas firs in perimeter areas. While other possible wall retaining configurations could achieve the necessary grade difference in the area behind the building, they cannot provide root zone areas capable of supporting the replanting of western red cedars, Douglas firs, or other large trees to establish and sustain the desired naturalistic character.

Wilsonville Development Ordinance 4.134(.08)A, quoted above, requires findings that Waiver 1 is *consistent with the **intent** of the Coffee Creek DOD Pattern Book*. Additionally, however, because the retaining wall configuration and site

landscaping plan are integral to the overall development plan, the applicant includes the following specific response statements to address the Guidelines for District-Wide Site Planning and Landscaping in more detail:

Guidelines

1. THE NATURAL LANDSCAPE

1.1 Water flow to Coffee Lake Creek – Design landscapes to acknowledge the Ice Age heritage of Coffee Creek by orienting patterns of new landscape plantings reflecting the natural flows of water from the industrial district to Coffee Lake Creek.
Response: The proposed site plan conveys surface drainage to a rain garden adjacent to the east side of the Tapman Creek SROZ corridor. That feature, planted with native plant species, provides storm water quality treatment as well as detention before releasing storm water into Tapman Creek, the natural drainageway. This system design is consistent with the natural flow of water within the site (as well as accommodating through-flows coming from the north, across SW Day Road).

1.2 Natural landscape as visual unifier – Use the unifying elements of the natural landscape to visually connect and functionally integrate the industrial district.
Response: The proposed single, tall retaining wall is an element of a proposed site plan that prioritizes protection and visibility of the Tapman Creek SROZ corridor, consistent with incorporating the principal natural landscape feature into the visual character of the industrial district.

1.3 Naturalistic landscape, native planting – Promote a landscape that supports ecological function and habitat by using native species in a naturalized manner.
Response: The proposed single, tall retaining wall is an element of a proposed site plan that prioritizes protection and visibility of the Tapman Creek SROZ corridor, including planting of native plant materials in areas adjacent to Tapman Creek.

1.4 Access to nature – Pedestrian and bicycle connection is critical and incorporating public connections through large-scale industrial sites is encouraged. Access connections to the creek, natural areas, and greenway trails should be clearly marked and provide safe and convenient passage.
Response: The proposed single, tall retaining wall is an element of a proposed site plan that prioritizes protection and visibility of the Tapman Creek SROZ corridor, consistent with its identification in the Transportation System Plan as a corridor for a north-south pedestrian and bicycle connection on both sides of SW Day Road.

1.5 Ice Age artifacts – Identify, preserve, and enhance any Ice Age elements found on site, such as erratics the foreign boulders carried to the site on ice rafts as elements that influence site design and development.
Response: Site investigations, including topographic survey, geotechnical investigation, and field biological assessment/delineation of Tapman Creek and associated wetlands, have produced no surface indication of Ice Age elements within the subject property. Subsurface geotechnical sampling indicates the presence of substantial basaltic rock formations, which could potentially include one or more boulders or possibly glacial erratics within the eastern part of the site, where excavation is proposed. In case one or more such objects are unearthed whose size will allow them to be incorporated within a proposed on-site landscape area, the applicant requests approval from the DRB to work with staff to make minor changes in the landscape planting plan to achieve that objective without necessitating a Design Review Modification or Amendment.

1.6 Tree preservation within setbacks – Whether individually or in groves of native species, preserve trees within the setbacks of the development, particularly when they occur within the setback of an Addressing Street, or a Supporting Street that serves as the development's primary access street.
Response: As discussed above, the site grading necessary to produce a flat operational area within the site and make the necessary grade transition to the sloping profile of SW Day Road along the street frontage complicates efforts to conserve existing trees, particularly along the street frontage and in the eastern portion of the property. The applicant's plan for replanting will re-establish tree specimens including large conifers that can grow in place to establish the desired landscape character.

1.7 Informal park-like landscaping – The park-like character of the design of the Addressing Streets should be complemented by landscaping around buildings, parking lots, and open space that reflects the informal, natural, and original landscape that preceded development and persists in places across the site.
Response: Tree plantings in the eastern part of the property will include Douglas firs near the property boundary, at the top of the retaining wall, and a combination of western red cedars and smaller, deciduous Kousa dogwoods at the base of the retaining wall. These plantings will create an insular, shady corridor behind the building that will be consistent with the pre-development character, which was dominated by Douglas fir trees.

2. SPECIAL LANDSCAPE FEATURES

2.1 City of Wilsonville themes – Integrate the themes related to the City of Wilsonville as unifying elements in the conceptual design for new development, and into the landscape design.
Response: The development plan of incorporating the tall, single retaining wall provides protection and enhancement of the Tapman Creek corridor, which contributes to the naturalistic theme associated with intended Coffee Creek development.

2.2 Existing tree groves at points of access – Incorporate elements such as existing stands of native trees to emphasize points of site access and/ or building access.
Response: Unfortunately, in this case, there is not a stand of existing native trees that could be conserved at a location proximate to the limited area along the frontage suitable for driveway access on SW Day Road. Instead, the proposed development plan incorporates replacement plantings, including large conifers that can grow in place to establish the desired character on a sustainable basis for the future.

2.3 Water features – Integrate fountains and water features to emphasize important places, such as parcel access, building entries, and employee amenities.
Response: As noted above, the Tapman Creek riparian corridor is the primary natural resource feature within the site. The proposed development plan will provide views into the Tapman Creek corridor from points along the SW Day Road frontage (the public realm) as well as from points within the site, including the wayside located west of the proposed driveway. The intersection of SW Day Road and the Tapman Creek corridor, which is associated with an identified north-south pedestrian-bicycle path in the Transportation System Plan, is an important place in the greater context of the Coffee Creek Regulating Plan. In this instance, it is preferable to emphasize that public-realm juncture and separate it from the private driveway and entrance to the building, located farther to the east.

2.4 Selective use of non-native plants – Non-native, ornamental plants, shrubs, and trees should be used sparingly and strategically as elements that accent special elements of the site or building, such as entries.

Response: The applicant's planting plan specifies some non-native shrubs and ground covers at selected locations including entrances to the site and the building, and within parking islands. The remainder of the site is to be planted with native plant material.

2.5 Intentional aesthetic use of industrial materials – Integrate the materials of industry at an industrial scale. This guideline may be accomplished by designing buildings, enclosures, and retaining walls with the simple, natural, unembellished materials common to industry. Use unfinished steel, raw aluminum, and plain concrete as the finish materials for the construction of site and building elements.
Response: The proposed development incorporates an industrial metal screen material both on the building and in a landscape area adjacent to the main entrance, which helps to visually screen the truck dock area to its south; however, that use of materials is not germane to the proposed retaining wall configuration.

3. STRENGTHEN GATEWAYS

3.1 Coffee Creek gateways – Design gateway locations to promote a sense of place and to reinforce the distinct identity of Coffee Creek. This guideline may be accomplished by placing new buildings strategically at areas that define boundaries and edges to create gateways in conjunction with other buildings or with significant landscape features.

3.2 Buildings as gateway markers – Develop gateway buildings at strategic intersections.

3.3 Monument signs – Use freestanding monument signs to mark gateways.

3.4 Iconic elements – Install iconic elements within the right-of-way, such as signs, monuments, or art, that help identify a specific address as a district-wide or site-specific gateway to Coffee Creek.
Response: The subject property is not identified as a gateway location; however, as noted above, the SW Day Road/Tapman Creek intersection is the intersection of an Arterial Street and a north-south pedestrian-bicycle path identified in the Transportation System Plan.

Section C | Site Design

Intent Statement | Access and mobility *– Access and mobility are essential elements of successful industrial development. We tend to think of tractor-trailer rigs as essential to industry, and they are, but equally essential to industry is an educated work force that can get to their shifts with a full range of transportation options: options that offer employees real choices that include driving alone, but also support and encourage transit, walking, and biking.*

Automobile and freight access from Addressing Streets and Supporting Streets to a parcel should be obvious, clear, simple, and safe. Parcel access provides an opportunity to create a gateway and reinforce a strong sense of place.

Bicycle and pedestrian access to a parcel from Addressing Streets and Supporting Streets can also reinforce the sense of place in Coffee Creek. Bicycle and pedestrian access from an Addressing Street to a parcel should be convenient, direct, and complete. Cyclists and walkers should be able to clearly perceive their ultimate destination from the Addressing Street.

Access and mobility are for all people. The pedestrian system is successful only when all people can conveniently reach their destinations. Universal and equitable barrier-free design is most successful when designed and developed systematically from initial site design through final building design and construction.

Response: The proposed development plan, including the Waiver 1 proposal to use a single, tall retaining wall at the east, positions the driveway at a suitable horizontal and vertical location for level access to SW Day Road with sufficient sight distances, and provides a separate ADA-accessible path between the public sidewalk and the main building entrance, located just a few feet east of the driveway.

The proposed configuration brings the driveway, the pedestrian path, and the main building entrance as close together as it is feasible to do while achieving the grade transitions that are necessary between the sloping street and the level area within the industrial site itself. Upon entering the driveway, the driver of a vehicle or a truck immediately has visual clues indicating where to proceed: vehicles turn left to enter the parking area adjacent to the main building entrance, and trucks either proceed straight ahead to the docking apron area or turn right to enter the trailer storage area.

To provide pedestrian safety, the proposed pedestrian path alignment between the public sidewalk and the main building entrance is completely segregated from truck circulation routing within the site. A pedestrian on the sidewalk near the driveway will be able to see and proceed to the pedestrian walkway, located 34' east of the driveway, and directly aligned with the plaza at the building entrance. The walkway alignment satisfies maximum slope requirements for accessibility; it is separated from the driveway by landscaping and a striped crossing of the passenger vehicle drive aisle is provided. (See Sheet C1.10 in Exhibit B.)

An approaching cyclist can choose whether to ride directly into the driveway (if no conflicting movement is occurring as they approach), or alternatively enter the driveway and then proceed to the pedestrian walkway by way of the sidewalk just east of the driveway.

Intent Statement | Parking Design *– Surface parking is permitted in the front yard setback for development along Addressing Streets with limitations. Surface parking lots are limited in scale and designated for short-term parking for visitors, people with disabilities, and deliveries. The design guidelines are intended to establish the character for surface parking lots in a manner that supports the City's goals for pedestrian convenience, comfort, and safety. Ensure that the parking lot landscape is planned, installed, and maintained to promote the informal design character associated with each landscape frontage type.*
Response: The proposed development plan of incorporating the proposed single, tall retaining wall at the east, is consistent with the Parking Design intent to limit the scale and visual prominence of surface parking lots. The surface parking area on the north side of the building – adjacent to the main entrance, between the building and SW Day Road – will be at a lower elevation than the road surface as it, along with the bike path and sidewalk, climbs to the east. Being at a depressed relative elevation reduces the visual prominence of the parking area, and the proposed on-site plantings – adjacent to the sidewalk on the high side of the cut retaining wall as well as in the landscape area at the foot of the wall – will create a tree canopy that further screens the parking area (as well as the building) as seen from SW Day Road.

Intent Statement | Design that Contributes to the Site *– Minimize site grading to preserve the natural character of the site. Contoured slopes are generally preferred to the installation of retaining walls. Where retaining walls are necessary to support site development, ensure that they facilitate surface drainage, limit soil erosion, and avoid increasing instability of native soils. Integrate retaining walls with other site design features, such as stairs, ramps, and planters wherever possible.*

To the extent possible, site development should maintain and enhance natural drainage patterns. Incorporate features for the storage, cleaning, transport, and re-infiltration of stormwater into site design and landscaping. Stormwater facilities such as swales should be designed to reinforce the natural quality and visual continuity of the landscape at the scale of the site and the district.

Trees help to define place. Whether individually, or in groves of native species, trees enhance the public realm by giving context and scale to the Coffee Creek Industrial Area. Landscape planting in front, side, and rear yards and as screening for parking lots, service drives, and service enclosures gives form and defines the public realm and parcels. Landscape design, installation, and maintenance helps to define the Coffee Creek Industrial District and to diminish the large scale of industrial buildings. Landscaping also helps direct people to building entries. The native plant materials are climate adaptive, have low water and maintenance requirements, and visually blend with adjacent, undisturbed landscapes. Native trees should be preserved and employed as the visual anchors of new landscapes.

Industrial building types typically need extensive, relatively flat surfaces for buildings, parking lots, service yards, access lanes, and truck maneuvering areas. It may still be possible to fit a multistory building into the terrain of Coffee Creek. Integrating buildings with their sites is strongly encouraged.

Landscape that Contributes to the Building – Building designs should acknowledge and respect the natural character of their sites. The Coffee Creek Industrial Area has a strong character that derives from context, topography, and native vegetation. New site development, landscaping, and building design can reinforce this distinctive character.

Provide a consistent and high-quality environment for the Coffee Creek Industrial Area by obscuring views of loading areas, work yards, above-grade utilities and services, and recycling and refuse areas from Addressing Streets, Supporting Streets and Through Connections. Whenever possible, group utilities and services to minimize visual clutter.

The primary building entry is a significant element of building design in Coffee Creek. The design guidelines recommend that the primary entrance for all buildings front on an Addressing Street. This is not a requirement of the Form-based Code; an entrance on a Supporting Street or Through Connection is acceptable provided the entry is clearly visible from the Addressing Street and a clear public route to the entry is provided. Emphasize the importance of the primary building entry with glass, canopies, signage, public art, landscaping, and lighting.
Response: The intent statement for Design that Contributes to the Site leads by expressing a preference for site design that avoids or minimizes the use of retaining walls, but it immediately adds, "Where retaining walls are necessary to support site development, ensure that they facilitate surface drainage, limit soil erosion, and avoid increasing instability of native soils. Integrate retaining walls with other site design features, such as stairs, ramps, and planters wherever possible." The applicant understands this direction to mean that large retaining walls are not prohibited, and that, where used in a site development plan, they should not be allowed to cause bad impacts such as disrupting surface drainage or causing soil erosion, or to become a dominant visual feature as viewed from the public realm or from points where people will circulate within the site itself.

The proposed site plan reduces the steepness of site's west-facing slope, but it does not seek to flatten it entirely – doing that would require even taller retaining walls on both the east (cut) and west (fill) sides of the site. Instead, the building is oriented lengthwise on the north-south axis, so the east-west width necessary to provide a flat floor is the shorter dimension. West of the building, site grading will slope downhill to the west at a cross slope of 3% or less, making the site compatible with maneuvering of semi tractor-trailer trucks, an essential function for the proposed industrial use of the property.

The resulting overall west-facing slope maintains the existing drainage condition (i.e., flowing to the west toward Tapman Creek), but the development plan provides storm water quality treatment and detention in a rain garden located at the northwest perimeter of the development area, adjacent to the Tapman Creek SROZ corridor. Stormwater runoff from the building roof and paved surfaces will flow to and through that rain garden, meeting the City's stormwater management

requirements, before being released into Tapman Creek, the natural drainageway. Significantly, in addition to meeting the stormwater quality treatment requirement, the rain garden's design provides storm runoff detention (slowing the rate of outfall to match pre-development site conditions) for storms including a "100-year" design storm event (i.e., a storm with a 1% chance of occurring in a given year).

To mitigate for tree removal necessitated by industrial use of the site, as well as to provide immediate screening and, over time, re-establish an evergreen-tree dominated character similar to the existing conditions, the applicant's planting plan uses multi-tiered tree plantings at site perimeter locations:

North Property Boundary (SW Day Road frontage):

- See the Sections A and D illustrations in Exhibit S, submitted with these supplemental findings.
- Street trees within the public right-of-way (in the strip between the bike path and the sidewalk).
- On-site trees in the parking lot perimeter landscape strip at the bottom of the proposed cut retaining wall that wraps around the east side of the site.

East and South Property Boundaries:

- See the Sections B, C, and E illustrations in Exhibit S, submitted with these supplemental findings.
- The proposed cut retaining wall is designed for construction using the soil-nail stabilization technique, which does not require over-excavation that could affect critical root zones of existing trees where they may extend into the subject property. Soil nail installation will be performed under the supervision of the project arborist to minimize potential for damage to the roots of established trees.
- The alignment of the cut retaining wall in the eastern part of the site is designed to avoid or minimize potential root damage within the critical root zones of existing Douglas fir trees on neighboring properties. At several locations, the applicant's design team has specifically adjusted the proposed alignment in collaboration with the project Arborist. (See Exhibit U.)
- In addition to positioning the retaining wall to avoid compromising the root zones of off-site trees, the applicant proposes to replant Douglas fir trees within the property between the top of the retaining wall and the property boundary. The undisturbed soil conditions will be capable of supporting root growth consistent with long-term growth and survival of these specimens. (See Section C, option 1 in Exhibit S.)
- The single, tall retaining wall also makes it possible to plant trees behind the building, near the base of the wall. A combination of large evergreen/conifer (western red cedar) and smaller deciduous (Kousa dogwood) trees is proposed within the corridor; the corridor width will vary between approximately 15' and 20' wide at the base, because the wall position will be adjusted to provide root zone protection for trees on neighboring properties.
- Significantly, alternative configurations for the eastern segment of the proposed retaining wall would not enable replanting of trees at a comparable number or mature size of trees. In Exhibit S, Section C options 1, 2, and 3 provide comparative illustrations for alternative possible retaining wall configurations:
    - Option 1 depicts the applicant's proposed configuration. The soil-nail anchoring technology allows the wall to be located at the edge of the trees' critical root zones (shaded area just below surface at the base of the tree) and supported by nails that are inserted primarily below the typical depth of the root zone. Trees can be planted in the area at the top of the wall, as well as within the corridor behind the building, near the base of the wall. (Trees are depicted at mature height/canopy size, or a typical 20-year growth interval after

planting.) To perform maintenance, the top-of-wall area can be accessed at grade from the SW Day Road street frontage, and the lower area can be accessed from within the site's parking areas at both the north and south.

- Option 2 shows an attempt to achieve the required vertical difference using a configuration that would not require a Waiver (i.e., 4.8' high walls (with a Design Review Modification) with 5' horizontal offsets at a 4:1 grade slope between them). Retaining walls of this type require over-excavation for installation of geotechnical fabric for anchoring, so the top-level wall must be located farther from the trees' root zones to avoid potential structural failure risk due to root growth. The resulting lateral width necessary to achieve the vertical transition cannot be made to fit within the 33' setback between the building and the east property boundary; in the figure, you can see that the lowest wall would be too close to the building wall to fit the swing-out of the required fire-access doors along the east wall. To construct this configuration, the building would need to be shifted to the west, but for multiple reasons discussed above, such a shift would be problematic with respect to overall site grading as well as matching grade at an appropriate driveway access location on SW Day Road. The small terraces formed by the series of retaining walls would not be suitable for tree planting due to the limited soil area and the risk of root-growth damage to layers of geotechnical fabric necessary for anchoring, so plantings near the top of each retaining wall would have to be limited to shrubs and groundcovers. Additionally, maintenance of the resulting narrow terraces would be difficult because there is no location where grade-level access can be achieved to the middle tiers.
- Option 3 shows an attempt to achieve the required vertical difference using a two-wall configuration that would also require a Waiver, i.e., approximately 10' high walls with 5' horizontal offsets at a 4:1 grade slope between them. As in the case of Option 2, retaining walls of this type require over-excavation for installation of geotechnical fabric for anchoring, so the top-level wall must be located farther from the trees' root zones to avoid potential structural failure risk due to root growth. This configuration could achieve the vertical transition within the 33' setback between the building and the east property boundary while accommodating the swing-out of the required fire-access doors along the east wall. However, as in the case of Option 2, plantings would have to be limited to shrubs and groundcovers because the small terrace formed between the two retaining walls, as well as the area at the top of the wall, would not be suitable for tree planting due to the limited soil area and the risk of root-growth damage to layers of geotechnical fabric necessary for anchoring. Additionally, maintenance of the resulting narrow terrace would be difficult because there is no location where grade-level access can be achieved to the middle tier.
- Based on this comparative analysis, the proposed single, tall retaining wall concept provides the best opportunity to re-establish and sustain the kind of naturalistic character desired by the Coffee Creek Pattern Book, consistent with the intent statement for Design that Contributes to the Site.

- The proposed tree plantings will soften the appearance of the corridor behind the building, as well as provide shade and seasonal change in the area's appearance.
- Views of the cut retaining wall from the public realm, SW Day Road, are quite limited. Because the cut retaining wall faces away from SW Day Road at the north, it cannot be seen from the public right-of-way. The cut retaining wall at the east (behind the building) is below grade relative to the street level, and it will be screened by the canopies of the proposed tree plantings at the street edge and within the corridor behind the building, at both the top and bottom of the wall. The retaining wall at the south will be mostly concealed behind the building itself, except the lower segment as it extends west of the building until it matches grade and terminates.

- For visitors within the site, the canopies of trees, as well as shrubs and ground covers, will soften the appearance of the proposed cut retaining wall surfaces. See Exhibit S for illustrations characterizing the appearance of the retaining wall surface and plantings as they will appear from points within the site.

Over time, particularly as the new Douglas fir and western red cedar trees mature in the eastern perimeter planting areas of the site, their canopies will grow taller and broader until they visually fill much of the gap between the proposed building and the remaining Douglas firs to the east on the neighboring property to the east. (There are also established Douglas firs on neighboring properties to the south, but the distance to the building will be larger because of the proposed a parking area on the south side of the building.) The relative sizes of the proposed trees in proportion to the building, a person, and typical existing neighboring trees, are characterized in the 5-year and 20-year illustrations for Sections A and D in Exhibit S.

The overall perceptual effect will be to make the building appear to emerge from the west-facing forested hillside topography on the south side of SW Day Road. The main entrance to the building, with transparent window and door glazing and a canopy that wraps around the building corner, faces the street at the building's northwest corner. That feature, which will be prominently visible from SW Day Road at the driveway and the pedestrian walkway, will mark the visual transition between the western edge of the (re-established) forested hillside grove surrounding the building on its north, east, and south sides, and the active human-use area necessary to meet the economic development goals of the Coffee Creek Industrial District.

For the above reasons, the proposed development plan, including Waiver 1 to allow a single, large cut retaining wall in the eastern part of the property, is consistent with the intent statement for ***Design that Contributes to the Site***.

Section D | Building Design

Intent Statement *– Building massing and the architectural expression of building design elements define the scale, quality, and character of the built environment. The design guidelines for buildings focus on the following elements:*
• Prominent building entrance visible from an Addressing Street
• Overall building mass and bulk
• Composition of building elevations
• Roof forms
• Materials and colors
• Sustainable building design

The massive size, enormous bulk, and large surface areas of many industrial buildings represent design challenges and opportunities. Not all of the buildings developed in the Coffee Creek will be warehouses or factories. Some will be office buildings or industrial hybrid buildings that incorporate office, research, assembly, manufacturing, distribution or warehousing. Buildings designed to support industrial or warehouse functions should have strong, simple forms and use windows and doors to create visual interest. Office buildings may have more varied forms that emphasize windows into, and views from, the office floors. While methods for reducing building bulk, mass, and scale will differ, the design for all buildings should consider architectural techniques that reduce their perceived scale along streets and adjacent to public spaces and help them blend into the district-wide landscape context for the aesthetic benefit of motorists, bicyclists, and pedestrians.

Interaction between the private enterprise inside of a building and the public contributes to the vitality of the streets in the Coffee Creek Industrial Area. Transparency in front façade of buildings adds a subtle message that behavior in the public

realm is being observed which contributes to the overall safety of the neighborhood. When passersby can sense activity that occurs inside of a building, they get a sense of people participating in their community.

Many types of businesses incorporate programmatic functions that require and benefit from daylighting. These functions include dining areas, lobbies, lounges, fitness centers, waiting rooms, conference rooms, lunch/break rooms, as well as related outdoor seating areas. Placing these types of rooms within view of Addressing and Supporting Streets and Through Connections enhances safety of the public realm and creates a sense of connection.

Every address, business, and destination in Coffee Creek deserves a good entrance. Every destination is ultimately reached on foot, so making every building entrance clearly visible and fully accessible is fundamental. The intent of the design guidelines is that every primary entrance of every building will contribute to the quality and vitality of the public realm by creating a clear sense of entry.
Response: As discussed in the section above, the proposed building is located in the eastern part of the site, including partial excavation into the hillside, to make the building appear to emerge from the west-facing forested hillside topography on the south side of SW Day Road. The building's prominent main entrance will face the street, providing transparent window and door glazing and a protective canopy for pedestrians that wraps around the northwest building corner and makes the transition between the building and the adjacent outdoor entry plaza and pedestrian walkway from SW Day Road. The main entrance plaza and entrance, which will be prominently visible from SW Day Road at the driveway and the pedestrian walkway, will mark the visual transition between the western edge of the (re-established) forested hillside grove surrounding the building on its north, east and south sides, and the active human-use area necessary to meet the economic development goals of the Coffee Creek Industrial District.

The proposed site plan, including Waiver request #1 to allow a single, tall retaining wall, supports the proposed design of the building, which locates the glazed main entrance close to the Addressing Street, with good vehicular, pedestrian, and bicycle access, and clear way-finding cues for visitors as they enter the site. The proposal is consistent with the intent of the Building Design section of the Coffee Creek Pattern Book.

Response Summary: Based on the above analysis, the proposed configuration, including the Waiver 1 request for a single, tall retaining wall, is consistent with the Intent Statements in the *Pattern Book – Design Guidelines for Coffee Creek Industrial Design Overlay District.*

Comparison with Other Coffee Creek Projects Involving Waiver Approvals

The need for retaining walls has come to attention in the context of the applicant's development plan; however, the reasons extensive site grading is necessary are due to the physical characteristics of the site itself, when compared to the practical needs of the "typically permitted" uses the City's Planned Development – Regionally Significant Industrial Area designation of the property is intended to support. It may be helpful to gauge how this proposal, including the Waiver #1 request, compares to other recently approved projects in the Coffee Creek Industrial District.

"Typically Permitted" Uses in the PD-RSIA Zone

The purpose statement of the PD-RSIA Zone specifically emphasizes ***protect[ing] industrially zoned lands for industrial uses, primarily in those areas near significant transportation facilities for the movement of freight***. The PD-RSIA Zone standards also explicitly limit the allowed size of any Service Commercial, Office, or Retail uses (per § 4.135.5(.03)I.1 through 4) to 3,000 square feet (SF) per building or 20,000 SF per multi-building development.

Section 4.135.5. – Planned Development Industrial—Regionally Significant Industrial Area.
[emphasis added]

(.01) Purpose. The purpose of the PDI-RSIA Zone is to provide opportunities for regionally significant industrial operations along with a limited and appropriate range of related and compatible uses; to provide the flexibility to accommodate the changing nature of industrial employment centers, ***to protect industrially zoned lands for industrial uses, primarily in those areas near significant transportation facilities for the movement of freight*** *and to facilitate the redevelopment of under-utilized industrial sites.*

(.02) The PDI-RSIA Zone shall be governed by Section 4.140, Planned Development Regulations, and as otherwise set forth in this Code.

(.03) Uses that are typically permitted:

A. Wholesale houses, storage units, and warehouses.
B. Laboratories, storage buildings, warehouses, and cold storage plants.
C. Assembly of electrical equipment, including the manufacture of small parts.
D. The light manufacturing, simple compounding or processing packaging, assembling and/or treatment of products, cosmetics, drugs, and food products, unless such use is inconsistent with air pollution, excess noise, or water pollution standards.
E. Office Complexes-Technology (as defined in Section 4.001).
F. Experimental, film or testing laboratories.
G. Storage and distribution of grain, livestock feed, provided dust and smell is effectively controlled.
H. Motor vehicle service facilities complementary or incidental to permitted uses.
I. Any use allowed in a PDC Zone or any other light industrial uses provided that any such use is compatible with industrial use and is planned and developed in a manner consistent with the purposes and objectives of Sections 4.130 to 4.140 and is subject to the following criteria:
    1. Service Commercial (defined as professional services that cater to daily customers such as financial, insurance, real estate, legal, medical or dental offices) shall not exceed 3,000 square feet of floor space in a single building or 20,000 square feet of combined floor area within a multiple building development.
    2. Office Use (as defined in Section 4.001) shall not exceed 20 percent of total floor area within a project site.
    3. Retail uses not to exceed 3,000 square feet of indoor and outdoor sales, service, or inventory storage area for a single building or 20,000 square feet of indoor and outdoor sales, service or inventory storage area for multiple buildings.
    4. Combined uses under I.1 and 3. Above shall not exceed a total of 3,000 square feet of floor area in a single building or 20,000 square feet of combined floor area within a multi-building development.
J. Residential uses shall not exceed ten percent of total floor area.
K. Accessory uses, buildings and structures customarily incidental to any of the aforesaid principal permitted uses.
L. Temporary buildings or structures for uses incidental to construction work, which buildings or structures shall be removed upon completion or abandonment of the construction work.
M. Expansion of a building, structure or use approved prior to October 25, 2004 of up to 20 percent additional floor area and/or ten percent additional land area.

N. Other similar uses which in the judgment of the Planning Director are consistent with the purpose of the PDI-RSIA Zone.

The subject property is located close to the North Wilsonville Interstate 5 interchange, making it a prime example of a site whose location is suitable for warehousing and distribution use, consistent with Section 4.135.5(.03)A.

Table 1 summarizes characteristics of the scale and intensity of recently approved industrial development projects in the Coffee Creek area, for comparison to the Delta Logistics application:

Table 1. Approved Projects in Coffee Creek Industrial District

Applicant	Casefile	Acres	Building SF	Floor Area Ratio (FAR)	Dock Doors
Panattoni Development	DB20-0019	5.85	110,366	0.43	19
Black Creek Group/Ares	DB21-0085	8.12	148,279	0.42	20
Delta Logistics (Proposed)	DB22-0009	7.73[2] (of 9.17)	62,107	0.18 (0.16)	13

Significantly, the proposed grading and retaining walls at the Delta Logistics site will enable it to accommodate a building that is considerably smaller than either of the other two approved development projects' buildings, on a piece of property that is larger than either of the other two.

Based on the above findings, the applicant respectfully requests approval of the development application, including the Waiver 1 request.

Sincerely,

Lee Leighton, AICP
Project Planner IV

Enclosure(s): Exhibit R – Updated Tree Plan sheet(s) with Drip Line dimensions for off-site trees near the eastern/southern retaining wall
Exhibit S – Section/Elevation figures – views of retaining wall configuration and proposed plantings
Exhibit T – Arborist's Report supplement
Exhibit U – Conceptual plan for horizontal realignment of retaining wall to protect root zone

[2] The development area east of the Tapman Creek wetland corridor and its protective buffer contains 7.73 of the site's total 9.17 acres.

c: Igor Nichiporchik – Delta Logistics
Terry Flanagan – Teragan
Kim Carpenter – Schott and Associates
Brett Shipton – NV5
Scott Moore, Breezy Rinehart-Young, Greg Mino, Nicole Ferreira, Adam Goldberg – Mackenzie

DELTA LOGISTICS
9710 SW DAY RD.
WILSONVILLE, OR

PERMIT SET - MARCH 10, 2023

OWNER

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GENERAL CONTRACTOR

BUILT ENVIRONMENTS NW
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TO BE DETERMINED
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SITE INFORMATION

ADDRESS: 9710 SW DAY RD.
CITY OF WILSONVILLE, OR

REFER TO CIVIL PLANS FOR ADDITIONAL SITE INFORMATION

BUILDING INFORMATION

AREA	SQUARE FEET
BUILDING	58,116 SF
FLOOR 1	
WAREHOUSE	55,569 SF
OFFICE	2,437 SF
OFFICE (F)	(2,037 SF)
FLOOR 2:	
STORAGE	2,196 SF
STORAGE (F)	1,833 SF

GEOTECHNICAL REPORT

SEE APPENDIX ONE IN THE SPECIFICATION BOOK FOR GEOTECHNICAL REPORT DATED 6/30/2021 AND ADDENDUM #1 DATED 11/19/2021

PERMITS

- BUILDING: #
- EARLY GRADING: #
- DEMOLITION: #

DEFERRED SUBMITTALS

- DESIGN BUILD STAIRS
- OPEN WEB METAL JOIST & GIRDERS
- STOREFRONT SYSTEM AND ATTACHMENT
- BUCKLING - RESTRAINED BRACE & CONNECTION
- MECHANICAL
- ELECTRICAL
- PLUMBING
- FIRE PROTECTION

SEPARATE PERMITS

- DESIGN BUILD FIRE SPRINKLER
- DESIGN BUILD FIRE ALARM
- MECHANICAL
- ELECTRICAL
- PLUMBING
- PUBLIC WORKS
- UNDERGROUND FIRE LINES
- EMERGENCY RESPONSE RADIO COVERAGE (ERRC)
- FIRE PUMP (INSTALLED PER NFPA 20)
- DIESEL FUEL TANK (PER 2019 OFC CHPTER 57 & NFPA 30). INCLUDE FUEL FILL PLAN
- KNOXBOX
- WAREHOUSE RACKING
- WAREHOUSE EQUIPMENT AND ATTACHMENT

NOTES:

1. DESIGN BUILDERS ARE FULLY RESPONSIBLE FOR THE DESIGN OF THESE SYSTEMS / COMPONENTS. THESE SYSTEMS / COMPONENTS SHOWN ON DOCUMENTS ARE SCHEMATIC ONLY. THEY ARE NOT INTENDED TO REPRESENT FINAL / CODE COMPLIANT DESIGN. PROVIDE DESIGN DOCUMENT SUBMITTAL TO MACKENZIE FOR REVIEW PRIOR TO SUBMITTAL TO CITY OF WILSONVILLE, OREGON.

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G0.02	PROJECT GENERAL NOTES, SYMBOLS, AND ABBREVIATIONS
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C1.10	SITE PLAN
C1.20	GRADING PLAN
C1.21	GRADING CROSS SECTIONS
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C1.30	UTILITY PLAN
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R0.04	DETAILS
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R1.10	PLAN AND PROFILE
R1.20	PLAN ENLARGEMENTS
R1.30	UTILITY PLAN
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R1.50	STREET LIGHTING AND PHOTOMETRICS PLAN

LANDSCAPE DRAWINGS

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L0.03	TREE REMOVAL PLAN
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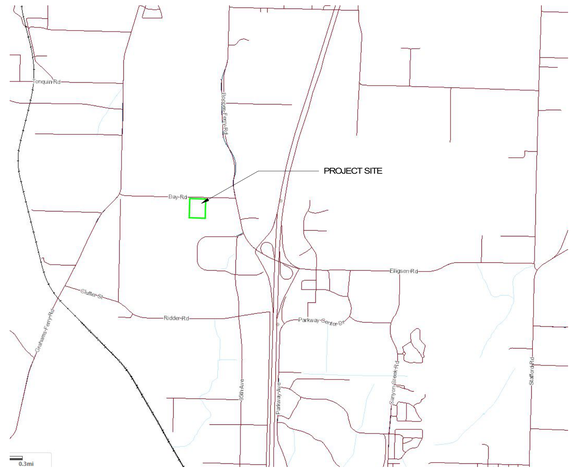
1 G0.01 BUILDING PERSPECTIVE



2 G0.01 VICINITY MAP
NTS

Architecture ▪ Interiors
Planning ▪ Engineering

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Client

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CITY OF WILSONVILLE, OR

REGISTERED ARCHITECT
SCOTT J. MOORE
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STATE OF OREGON

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REVISION SCHEDULE

Delta	Issued As	Issue Date

SHEET TITLE:
TITLE SHEET AND DRAWING INDEX

City of Wilsonville
Exhibit B2 DB22-0007

SHEET

G0.01

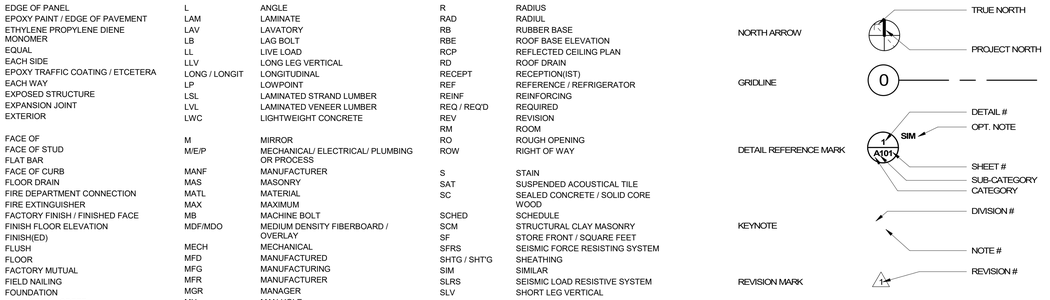
JOB NO. **2200502.00**

DEVELOPMENT REVIEW SET 04/24/23

STANDARD ABBREVIATIONS

@	AT
AB	ANCHOR BOLT
AC	ASPHALTIC CONCRETE
ACI	AMERICAN CONCRETE INSTITUTE
ADA	AMERICANS WITH DISIBILITIES ACT
ADD'L	ADDITIONAL
ADJ	ADJACENT/ ADJUSTABLE
AESS	ARCHITECTURALLY EXPOSED STRUCTURAL STEEL
AFF	ABOVE FINISH FLOOR
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
AL / ALUM	ALUMINUM
ALT	ALTERNATE
APPROX	APPROXIMATE
ARCH	ARCHITECT(URAL)
ATR	ALL-THREAD ROD
B/	BOTTOM OF
BATT	BATTEN INSULATION
BD	BOARD
BLD / BLDG	BUILDING
BLK	BLOCK
BLKG	BLOCKING
BM	BENCHMARK / BEAM
BN	BOUNDARY NAIL
BOT / BOTT	BOTTOM
BRG	BEARING
BSMT	BASEMENT
BTWN	BETWEEN
BUR	BUILT UP ROOFING
CAB	CABINET
CB	CATCH BASIN
CDF	CONTROLLED DENSITY FILL
CIP	CAST IRON
CJ	CONTROL JOINT
CL /℄	CENTERLINE
CLNG	CEILING
CLR	CLEAR
CMP	CORRUGATED METAL PIPE
CMU	CONCRETE MASONRY UNIT
CNTR	CENTER
CO	CLEAN OUT
COL	COLUMN
CONC	CONCRETE
CONF	CONFERENCE
CONN	CONNECTION
CONN	CONNECTION
CONST	CONSTRUCTION
CONT	CONTINUOUS
CONTR	CONTRACTOR
COORD	COORDINATE
CORR	CORRUGAT(ED) (ION)
CPT	CARPET
CRC	CHEMICAL RESISTANT COATING
CSK	COUNTERSINK
CSP	CONCRETE SEWER PIPE
CTOP	COUNTERTOP
CTR / CNTR	CENTER
CW	CONCRETE WALL
d	PENNY(NAILS)
DBA	DEFORMED BAR ANCHOR
DBL	DOUBLE
DC	DEMAND CRITICAL WELD
DET / DTL	DETAIL
DET/DTL	DETAIL
DF	DRINKING FOUNTAIN / DOUGLAS FIR
DIA / ø	DIAMETER
DIAPH	DIAPHRAGM
DIM	DIMENSION
DL	DEAD LOAD
DN	DOWN
DP	DEEP
DR	DOOR
DS	DOWN SPOUT
DWG	DRAWING
DWLS	DOWELS
(E) / EXIST	EXISTING
E/	EDGE OF
EA	EACH
EF	EACH FACE
EIFS	EXTERIOR INSULATION FINISH SYSTEM
ELECT	ELECTRICAL
ELEV	ELEVATION
EN	EDGE NAIL
ENGR	ENGINEER
EOP	EDGE OF PANEL
EP	EPOXY PAINT / EDGE OF PAVEMENT
EPDM	ETHYLENE PROPYLENE DIENE MONOMER
EQ	EQUAL
ES	EACH SIDE
ETC	EPOXY TRAFFIC COATING / ETCETERA
EW	EACH WAY
EXP	EXPOSED STRUCTURE
EXP JT / EJ	EXPANSION JOINT
EXT	EXTERIOR
F/	FACE OF
F/STUD	FACE OF STUD
FB	FLAT BAR
FC	FACE OF CURB
FD	FLOOR DRAIN
FDC	FIRE DEPARTMENT CONNECTION
FE	FIRE EXTINGUISHER
FF	FACTORY FINISH / FINISHED FACE
FFE	FINISH FLOOR ELEVATION
FIN	FINISH(ED)
FL	FLUSH
FLR	FLOOR
FM	FACTORY MUTUAL
FN	FIELD NAILING
FND	FOUNDATION
FOC	FACE OF CONCRETE
FOF	FACE OF FINISH
FOIC	FURNISH BY OWNER INSTALL BY CONTRACTOR
FOM	FACE OF MASONRY
FOS	FACE OF STUD
FOW	FACE OF WALL
FS	FAR SIDE
FT	FEET/FOOT FIRE TREATED
FTG	FOOTING
GA	GAUGE
GALV	GALVANIZED
GEN	GENERAL
GLB	GLULAM BEAM
GLZ	GLAZING
GR	GRADE
GRD	GRID ONLY
GSA	U.S. GENERAL SERVICES ADMINISTRATION
GYP BD	GYPSUM BOARD
HB	HOSE BIB
HC	HOLLOW CORE / HANDICAP
HCM	HOLLOW CLAY MASONRY
HDPE	HIGH DENSITY POLYETHELENE
HDR	HEADER
HDWR	HARDWARE
HGR	HANGER
HL	HALF LITE
HM	HOLLOW METAL
HMK	HOLLOW METAL KNOCKDOWN
HMW	HOLLOW METAL WELDED
HORIZ	HORIZONTAL
HR(S)	HOUR(S)
HS	HEADED STUD
HSB	HIGH STRENGTH BOLT
HSS	HOLLOW STRUCTURAL STEEL
HTG	HEATING
HVAC	HEATING, VENTILATION AND AIR CONDITIONING
HWS	HEADED WELD STUD
IBC	INTERNATIONAL BUILDING CODE
ID	INSIDE DIAMETER
IE	INVERT ELEVATION
IF	INSIDE FACE
IFC	INTERNATIONAL FIRE CODE
IMC	INTERNATIONAL MECHANCIAL CODE
INFO	INFORMATION
INSP	INSPECTION / INSPECTOR
INSUL	INSULATION
INT	INTERIOR
IPC	INTERNATIONAL PLUMBING CODE
JNT	JOINT
JST	JOIST
K	KIPS
KSF	KIPS PER SQUARE FOOT
KSI	KIPS PER SQUARE INCH
L	ANGLE
LAM	LAMINATE
LAV	LAVATORY
LB	LAG BOLT
LL	LIVE LOAD
LLV	LONG LEG VERTICAL
LONG / LONGIT	LONGITUDINAL
LP	LOWPOINT
LSL	LAMINATED STRAND LUMBER
LVL	LAMINATED VENEER LUMBER
LWC	LIGHTWEIGHT CONCRETE
M	MIRROR
M/E/P	MECHANICAL/ ELECTRICAL/ PLUMBING OR PROCESS
MANF	MANUFACTURER
MAS	MASONRY
MATL	MATERIAL
MAX	MAXIMUM
MB	MACHINE BOLT
MDF/MDO	MEDIUM DENSITY FIBERBOARD / OVERLAY
MECH	MECHANICAL
MFD	MANUFACTURED
MFG	MANUFACTURING
MFR	MANUFACTURER
MGR	MANAGER
MH	MAN HOLE
MIN	MINIMUM
MISC	MISCELLANEOUS
MK	MARK
MLP	METAL LINEAR PANEL
MO	MASONRY OPENING
MOD BIT	MODIFIED BITUMINOUS
MP	METAL PANEL
MTL	METAL
(N)	NEW
NFPA	NATIONAL FIRE PROTECTION AGENCY
NIC	NOT IN CONTRACT
NO. / #	NUMBER
NOM	NOMINAL
NR	NON RATED
NS	NEAR SIDE
NTE	NOT TO EXCEED
NTS	NOT TO SCALE
O/A	OVERALL
OC	ON CENTER
OD	OUTSIDE DIAMETER
OFCI	OWNER FURNISHED, CONTRACTOR INSTALLED
OFOI	OWNER FURNISHED, OWNER INSTALLED
OH	OPPOSITE HAND
OHD	OVERHEAD DOOR
OPNG	OPENING
OPP	OPPOSITE
OSF / O/FACE	OUTSIDE FACE
OSSC	OREGON STRUCTURAL SPECIALTY CODE
OTS	OPEN TO STRUCTURE
P	PAINT
P-LAM	PLASTIC LAMINATE
P.E.	PROFFESSIONAL ENGINEER
PB	PARTICLE BOARD
PDA / PAF	POWDER DRIVEN ANCHORS/POWDER ACTUATED FASTENER
PJ	PANEL JOINT
PL / P̲L̲	PLATE
PLB	PARALLAM BEAM
PLMB	PLUMBING
PLY / PLYWD	PLYWOOD
PNL	PANEL
PR	PAIR
PS	POUR STRIP
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PSL	PARALLEL STRAND LUMBER
PT	PRESSURE TREATED / PORCELAIN TILE
PVC	POLY VINYL CHLORIDE
PVMT	PAVEMENT
R	RADIUS
RAD	RADIUL
RB	RUBBER BASE
RBE	ROOF BASE ELEVATION
RCP	REFLECTED CEILING PLAN
RD	ROOF DRAIN
RECEPT	RECEPTION(IST)
REF	REFERENCE / REFRIGERATOR
REINF	REINFORCING
REQ / REQ'D	REQUIRED
REV	REVISION
RM	ROOM
RO	ROUGH OPENING
ROW	RIGHT OF WAY
S	STAIN
SAT	SUSPENDED ACOUSTICAL TILE
SC	SEALED CONCRETE / SOLID CORE WOOD
SCHED	SCHEDULE
SCM	STRUCTURAL CLAY MASONRY
SF	STORE FRONT / SQUARE FEET
SFRS	SEISMIC FORCE RESISTING SYSTEM
SHTG / SHT'G	SHEATHING
SIM	SIMILAR
SLRS	SEISMIC LOAD RESISTIVE SYSTEM
SLV	SHORT LEG VERTICAL
SMS	SHEET METAL SCREW
SOG	SLAB ON GRADE
SP	SPACE(D)(S)
SPEC(S)	SPECIFICATION(S)
SQ	SQUARE
SS	STAINLESS STEEL / SOLID SURFACE
ST	STONE
STA PT	STATION POINT
STAGG	STAGGERED
STD	STANDARD
STIFF	STIFFENER
STL	STEEL
STRUCT	STRUCTURAL
SUSP	SUSPENDED
SV	SHEET VINYL
T	TEMPERED
T&B	TOP AND BOTTOM
T/	TOP OF
TC	TOP OF CURB
TEMP	TEMPERATURE / TEMPORARY
THK	THICK / THICKNESS
TL	TOTAL LOAD
TN	TOE NAIL
TO	TOP OF
TOF	TOP OF FOOTING
TOS	TOP OF STEEL
TOW	TOP OF WALL
TPO	THERMOPLASTIC POLYOLEFIN
TRANS / TRANSV	TRANSVERSE
TS	TUBE STEEL
TYP	TYPICAL
U/S	UNDERSIDE
UC	UNDER COUNTER
UL	UNDER WRITERS LABORATORIES
UNO / UON	UNLESS NOTED OTHERWISE
USG	UNITED STATES GYPSUM
VCT	VINYL COMPOSITION TILE
VERT	VERTICAL
VEST	VESTIBULE
VFY	VERIFY
VIF	VERIFY IN FIELD
VP	VISION PANEL
W/	WITH
W/CRC	COATING WITH CHEMICAL RESISTANCE
W/O	WITHOUT
WB	WOOD BASE
WC	WATER CLOSET / WALL COVERING
WD	WOOD
WF	WIDE FLANGE BEAM
WH	WATER HEATER
WP	WATER PROOF / WOOD PANELING / WORK POINT
WR	WATER RESISTANT
WRGB	WATER RESISTANT GYPSUM BOARD
WS	WATER STOP / WELDED STUD
WWF	WELDED WIRE FABRIC
WWR	WELDED WIRE MESH

SYMBOLS AND REFERENCES



PROJECT GENERAL NOTES

A. THE DRAWINGS LOCATE PRODUCTS, SURFACES, AND MATERIALS AND THE NOTES CONVEY DESIGN INTENT. THE PROJECT INTENT IS TO PROVIDE FOR A COMPLETE, WORKING SYSTEM.
B. ALL WORKMANSHIP AND MATERIALS SHALL CONFORM TO THE LATEST ADOPTED BUILDING CODE EDITION, AND TO CONDITIONS AND SPECIFICATIONS OF ALL GOVERNING AUTHORITIES.
C. VERIFY AND CONFIRM ALL CONDITIONS, DIMENSIONS, AND LAYOUT INFORMATION PRIOR TO START OF CONSTRUCTION. NOTIFY MACKENZIE OF ANY DISCREPANCIES PRIOR TO START OF WORK. ANY CORRECTION WORK REQUIRED AS A RESULT OF NOT REPORTING SUCH DISCREPANCIES SHALL BE PERFORMED AT NO ADDITIONAL COST TO THE OWNER.
D. CONTRACTOR AND SUBCONTRACTORS SHALL CAREFULLY EXAMINE THE SITE AND THE CONSTRUCTION DOCUMENTS OF THE ENTIRE WORK. INCONSISTENCIES IN THE PLANS OR SPECIFICATIONS SHALL BE CALLED TO THE ATTENTION OF MACKENZIE.
E. REFER TO ENLARGED PLANS AND ELEVATIONS WHERE INDICATED FOR ADDITIONAL INFORMATION. ENLARGED PLANS TAKE PRECEDENCE OVER PLANS OF SMALLER SCALE, AND DETAILS TAKE PRECEDENCE OVER PLANS. IN THE CASE OF A CONFLICT, THE HIGHEST COST OPTION SHOULD BE PRICED.
F. DETAIL REFERENCES SHALL BE APPLIED TO ALL INSTANCES WHERE THE SAME CONDITIONS OCCUR, UNLESS NOTED OTHERWISE.
G. THE TERMS "ABOVE FINISH FLOOR" (AFF) AND "FINISH FLOOR ELEVATION" (FFE) REFER TO FINAL FINISHED FLOOR ELEVATION, WHETHER BUILT-UP SLAB, COMPOSITE DECK, OR RAISED ACCESS FLOOR.
H. DO NOT SCALE DRAWINGS.
I. CUTTING AND DRILLING OF STRUCTURAL MEMBERS NOT DETAILED REQUIRES THE WRITTEN PERMISSION OF THE STRUCTURAL ENGINEER OF RECORD.
J. FINISH FLOOR ELEVATION OF 0'-0" = 252.5' AS INDICATED ON CIVIL DRAWINGS.
K. SAVE AND RECYCLE DEMOLITION DEBRIS AS APPLICABLE. ALL DEMOLISHED OR REMOVED EXISTING MATERIAL SHALL BE LEGALLY DISPOSED. COORDINATE WITH THE CITY OF WILSONVILLE REQUIREMENTS FOR RECYCLING/RE-USE OF DEMOLITION DEBRIS.
L. THE CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE RESULTING FROM THEIR WORK. THE CONTRACTOR WILL COORDINATE CLEAN UP OF ALL AREAS AFFECTED BY DUST OR ANY MATERIALS, BOTH DURING CONSTRUCTION AND UPON COMPLETION OF THE PROJECT, INCLUDING THE INSIDE OF ALL WINDOWS AS NECESSARY SO THAT THE SPACE IS READY FOR OCCUPANCY BY TENANT.
M. ALL DESIGN-BUILD ITEMS, SYSTEMS, AND ELEMENTS ARE TO BE SUBMITTED FOR REVIEW AND APPROVED BY MACKENZIE.
N. EXISTING MATERIAL NOTED TO BE RETURNED TO THE OWNER SHALL BE SAFELY STORED AND PROTECTED UNTIL IT IS REMOVED FROM THE SITE BY THE OWNER

Item 2.

Architecture ▪ Interiors
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SHEET TITLE:
PROJECT GENERAL NOTES, SYMBOLS, AND ABBREVIATIONS

SHEET
G0.02

JOB NO. **2200502.00**

BUILDING INFORMATION

SITE AREA: SEE CIVIL
BUILDING FOOTPRINT: 58,125 SF
BUILDING AREA: 60,274 SF

BUILDING CODE DATA

BASED ON THE 2019 OREGON STRUCTURAL SPECIALTY CODE

GENERAL CODE ANALYSIS:

CONSTRUCTION TYPE: III-B, TWO STORIES

FIRE PROTECTION:
AUTOMATIC FIRE SPRINKLER SYSTEM THROUGHOUT (ESFR)
BUILDING IS DESIGNED WITH AN ESFR SPRINKLERED SYSTEM FOR CLASS I-IV NON ENCAPSULATED COMMODITIES PER NFPA 13. SEE FIRE PROTECTION SPECIFICATIONS. FIRE PUMP IS PROPOSED.

OCCUPANCIES:
B AND S-1
- BASED ON NON SPERATED USE PER 508.3

AREA	GROSS SQUARE FEET
BUILDING	62,107 SF (INCLUDING FUTURE STORAGE)
FLOOR 1:	
WAREHOUSE	55,638 SF
OFFICE	2,487 SF
FLOOR 2:	
STORAGE	2,149 SF
FUTURE STORAGE	(1,833 SF)

BUILDING HEIGHT AND STORIES (TABLES 504.3 AND 504.4):

ALLOWABLE: 75'-0" / 3 STORIES
PROVIDED: 46'-6" / 2 STORIES

ALLOWABLE BUILDING AREA (TABLE 506.2)):

S-1: 70,000 SF
B: 19,000 SF

BUILDING FIRE RESISTIVE REQUIREMENTS (SEE SECTION 601):

STRUCTURAL FRAME:	NR
BEARING WALLS - EXTERIOR:	NR
BEARING WALLS - INTERIOR:	NR
NON-BEARING WALLS - EXTERIOR:	NR
NON-BEARING WALLS - INTERIOR:	NR
FLOOR:	NR
ROOF:	NR
SHAFTS (707.3.1)	NONE
STAIRS (1019.1)	NONE
ELECTRICAL ROOM (Table 509)	NR
FIRE PUMP ROOM (913.2.1.1)	1-HR FIRE BARRIER

ELECTRICAL ROOM REQUIREMENTS PER 509 INCEDENTAL USES TABLE 509 ELECTRICAL INSTALLATIONS AND TRANSFORMERS REQUIREMENTS REFERENCES SEPARATION AND/OR PROTECTION PER ELECTRICAL CODE SECTIONS 110.26-110.34 AND 450.8-450.48. PER ELECTRICAL DRAWINGS TRANSFORMER VAULTS ARE LOCATED AT EXTERIOR AND NOT WITHING THE ELECTRICAL ROOM. PER ELECTRICAL DRAWINGS DRY-TYPE TRANSFORMERS INSTALLED INDOORS ARE LESS THE 112.5 KVA AND DOES NOT REQUIRE TO BE LOCATED IN A ROOM WITH RATED CONSTRUCTION PER OESC 450.21.A.

ELECTRICAL ROOM WILL NOT HOUSE BATTERY STORAGE

FIRE BARRIERS SHALL MEET ALL CONTINUITY REQUIREMENTS PER 707.5.

PENETRATIONS THROUGH FIRE BARRIER WALLS SHALL MEET ALL REQUIREMENTS PER SECTION 714 AS WELL AS FIRE RESISTANCE RATED WALLS TO MEET FIRE STOPPING PER SPECIFICATION 07 84 00 .

FIRE BARRIERS SHALL MEET ALL DUCT AND AIR TRANSFER OPENING REQUIREMENTS PER 707.10

FIRE SEPARATION DISTANCE (TABLE 602):

III-B	NORTH	EAST	SOUTH	WEST
WAREHOUSE	100'	33'	104'	635'

- FULLY SPRINKLERED ESFR FIRE SYSTEM
- PORTABLE FIRE EXTINGUISHERS SHALL BE PROVIDED THROUGHOUT BASED ON 2019 OREGON FIRE CODE

DOORS (SECTION 1010)
RATED, SIZED, AND HARDWARE PROVIDED TO MEET SECTION 1010 - SEE INDIVIDUAL FLOOR PLANS AND SPECIFICATIONS.

- PROVIDE PANIC HARDWARE AT ELECTRICAL ROOM (1010.1.9)

MEANS OF EGRESS ILLUMINATION (SECTION 1008)

ILLUMINATION SHALL BE PROVIDED IN THE MEANS OF EGRESS IN ACCORDANCE WITH SECTION 1008.2. UNDER EMERGENCY POWER, MEANS OF EGRESS ILLUMINATION SHALL COMPLY WITH SECTION 1008.3.

FIRE PROTECTION - CHAPTER 9

BASED ON 2019 OREGON FIRE CODE
OFC SECTION 509.1

ROOMS CONTAINING CONTROLS FOR AIR CONTAINING SYSTEMS, SPRINKLER RISERS AND VALVES, OR OTHER FIRE DETECTION, SUPPRESSION OR CONTROL ELEMENTS SHALL BE IDENTIFIED FOR THE USE OF THE FIRE DEPARTMENT.

SIGNS REQUIRED TO IDENTIFY FIRE PROTECTION EQUIPMENT AND EQUIPMENT LOCATIONS TO BE APPROVED BY THE FIRE CODE OFFICIAL.

WHERE REQUIRED AND APPROVED BY THE FIRE CODE OFFICIAL UTILITIES ARE TO BE LEGIBLY MARKED TO IDENTITY THE JANITOR SPACE IT SERVES.

PENETRATIONS THROUGH FIRE RESISTANCE RATED WALLS SHALL MEET ALL REQUIREMENTS PER SECTION 714 AS WELL AS FIRE RESISTANCE RATED WALLS TO MEET FIRE STOPPING PER SPECIFICATION 07 84 00

SECTION 903 - AUTOMATIC SPRINKLER SYSTEMS
FULLY SPRINKLERED NFPA-13 ESFR FIRE SYSTEM

SECTION 906 PORTABLE FIRE EXTINGUISHERS
PROVIDE (1) FIRE EXTINGUISHER WITH RATING OF NOT LESS THAN 2-A:10-B:C FOR EACH 3,000 SF OF FLOOR AREA. TRAVEL FROM ANY PORTION OF BUILDING NOT TO EXCEED 75'. FIRE EXTINGUISHERS LOCATED WITH OFFICE AREA TO BE SEMI-RECESSED CABINETS.

OFC APPENDIX D FIRE APPARATUS ACCESS ROADS
SEE SHEET C1.00 FOR AERIAL FIRE APPARATUS ACCESS.

OFC CHAPTER 32 - HIGH-PILED COMBUSTIBLE STORAGE
BUILDING IS DESIGNED TO ACCOMMODATE HIGH PILED STORAGE TYPE I-IV UNENCAPSULTED COMMODITIES UP TO 36' HIGH-PILED STORAGE PER OFC TABLE 3206.2

- AN AUTOMATIC SPRINKLER SYSTEM IS PROVIDED IN ACCORDANCE WITH OFC SECTION 3206.4
- FIRE DETECTION SYSTEM IS NOT REQUIRED PER TABLE 3206.2
- BUILDING ACCESS IS PROVIDED PER OFC SECTION 3206.6
- SMOKE AND HEAT REMOVAL IS REQUIRED PER TABLE 3260.6 FOOTNOTE I: AUTOMATIC FIRE-EXTINGUISHING SYSTEM PROVIDED IN ACCORDANCE WITH OFC 3207 AND 3208
- MAX PILE DIMENSIONS - 120' LONG x 40' HIGH
- MAX PILE VOUME - 400,000 CUBIC FEET

MEANS OF EGRESS

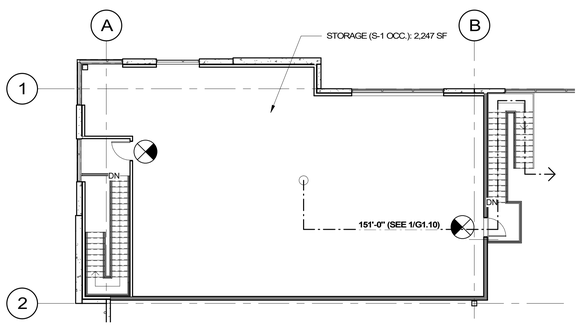
SECTION 1008 - MEANS OF EGRESS ILLUMINATION
- PROVIDE MEANS OF EGRESS ILLUMINATION AT A MINIMUM OF ONE *FOOT* CANDLE AT PATH OF EGRESS TO MEET SECTION 1008. EXTEND 5'-0" OUTSIDE EGRESS DOORS.
- WAREHOUSE/ OFFICE PROVIDE
  - EMERGENCY POWER FOR MIN 90 MINUTES. (BATTERY BACK-UP)
  - AVERAGE INITIAL ILLUMINATION OF 1 FOOT-CANDLE(11 LUX)
  - MAXIMUM UNIFORMITY RATIO OF 40 : 1
  - SEE FLOOR PLANS FOR PATH

SECTION 1010 - DOORS, GATES AND TURNSTILES
- EXTERIOR DOORS SIZED AND HARDWARE PROVIDED TO MEET SECTION. SEE FLOOR PLAN AND DOOR HARDWARE. ALL DOOR HARDWARE TO COMPLY WITH ADA REQUIREMENTS. SEE SPECS.
- THRESHOLDS TO COMPLY WITH 1010.1.7
- HARDWARE ON DOORS REQUIRED TO BE ACCESSIBLE SHALL COMPLY WITH 1008.1.9.1
- HARDWARE HEIGHT TO COMPLY WITH 1010.1.9.2
- LOCKS AND LATCHES TO COMPLY 1010.1.9.4
- BOLT LOCKS ARE NOT PERMITTED UNLESS MEETING 1010.1.9.5 EXCEPTIONS
- THE UNLATCHING OF ANY DOOR OR LEAF SHALL COMPLY 1010.1.9.6

SECTION 1013 - EXIT SIGNS
- PROVIDE EXIT SIGNAGE TO MEET SECTION 1013.1.

SECTION 1017 - EXIT ACCESS
- EXIT ACCESS TRAVEL DISTANCE PER TABLE 1017.2
  1. S-1 (SPRINKLERED): 250'
  2. B (WITHOUT SPRINKLERS): 200'

SECTION 1028 - EXIT DISCHARGE
- ALL EXITS DISCHARGE AT GROUND LEVEL



2 / G1.10 CODE PLAN - SECOND FLOOR
1" = 10'-0"

GENERAL NOTES

A. THIS SHEET IS MEANT FOR CODE REVIEW PURPOSES ONLY.
B. SEE SHEET A1.10 FOR ADDITIONAL PLAN INFORMATION.
C. EMERGENCY LIGHTING ALONG THE EGRESS PATH SHALL NOT BE LESS THAN 1 FOOTCANDLE AT THE FLOOR LEVEL AT ALL POINTS ALONG THE EGRESS PATH. A MAXIMUM-TO-MINIMUM ILLUMINATION UNIFORMITY RATIO OF 40:1 SHALL NOT BE EXCEEDED TO MEET ALL REQUIREMENTS OF SECTION 1008.
D. SECTION 1010.1.1 REQUIRES A CLEAR DOOR WIDTH OF 32". ALL PROVIDED DOORS COMPLY.

GOVERNING CODES

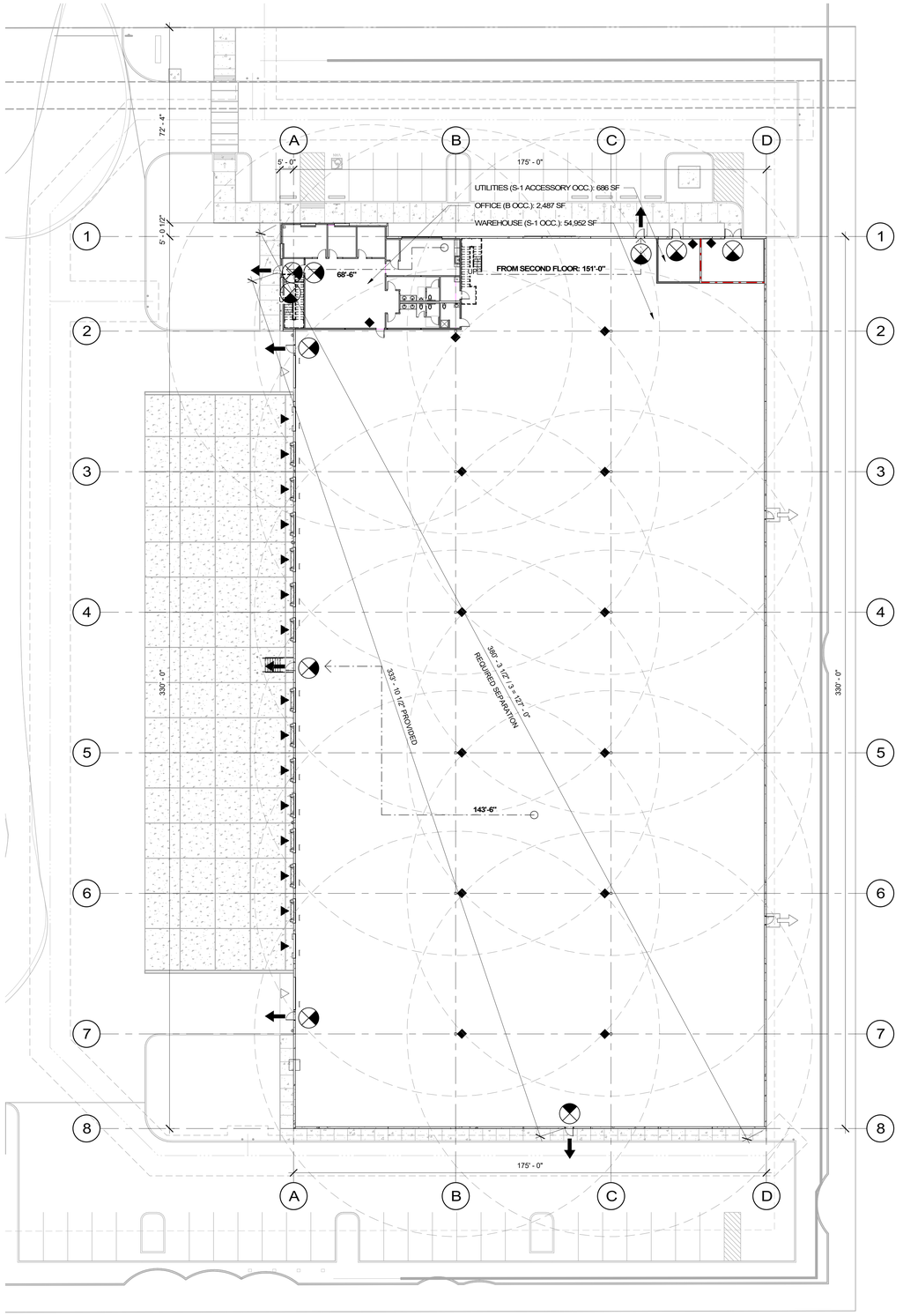
2019 OREGON STRUCTURAL SPECIALTY CODE
2021 OREGON ENERGY EFFICIENCY CODE
2019 OREGON MECHANICAL SPECIALTY CODE
2021 OREGON ELECTRICAL SPECIALTY CODE
2021 OREGON PLUMBING SPECIALTY CODE
2019 OREGON FIRE CODE
ICC A117.1-2009 ACCESSIBILITY

LEGEND

DOCK HIGH OVERHEAD DOOR
DRIVE IN OVERHEAD DOOR
FIRE EXTINGUISHER LOCATION (75' CLEARANCE RADIUS). GC TO COORDINATE FINAL QUANTITIES & LOCATIONS WITH FIRE MARSHAL
EXIT (W/ OCCUPANT LOAD) 21
FIRE ACCESS DOOR
PROVIDE EMERGENCY ILLUMINATED EXIT SIGNS PER THESE LOCATIONS
MAXIMUM TRAVEL DISTANCE

WALL TYPES

CONCRETE TILT PANEL - SEE STRUCTURAL ELEVATIONS FOR THICKNESSES
1HR RATED WALL PER 11/A5.20
FULL HEIGHT WALL PER 12/A5.20
STICK-PIN INSULATION 10/A5.20
INTERIOR PARTITION PER 13/15/A5.20



1 / G1.10 CODE PLAN - FIRST FLOOR
1" = 20'-0"

OCCUPANCY					WATER CLOSETS				LAVATORIES				DRINKING FOUNTAINS	
USE	OCCUPANCY TYPE	LOAD FACTOR 1004.1.2	AREA	OCCUPANCY LOAD	RATIO	MEN'S WATER CLOSETS	WOMEN'S WATER CLOSETS	UNISEX WATER CLOSETS	RATIO	MEN'S LAVATORIES	WOMEN'S LAVATORIES	UNISEX LAVATORIES	RATIO	RATIO
OFFICE	B		2,443.00	60	1 PER 25 ≤ 50, 1 PER 50 REMAINDER	1.20	1.20	-	1 PER 40 ≤ 80, 1 PER 80 REMAINDER	0.75	0.75	-	N/A	-
OFFICE (150LOAD FACTOR)		150	1,693.00	12										
OFFICE (15 LOAD FACTOR)		15	590.00	40										
STORAGE	S-1	300	2,149.00	8										
WAREHOUSE	S-1	500	55,682.00	112	1 PER 100	0.56	0.56	-	1 PER 100	0.56	0.56	-	N/A	-
SUBTOTALS						1.76	1.76	-		1.31	1.31	-	-	-
REQUIRED TOTALS			60,274.00			2	2	-		2	2	-	-	-
PROVIDED						2	2	1		2	2	1		-

CODE SECTION	OCCUPANCY				1005			1006.2.1		1006.2.1		1017		1006	
USE	OCCUPANCY TYPE (CHAP. 3)	LOAD FACTOR 1004.1.2	AREA	OCCUPANT LOAD (1004.1.1)	EGRESS WIDTH FACTOR	EGRESS WIDTH	WIDTH PROVIDED	COMMON PATH REQUIRED	COMMON PATH PROVIDED	MIN. EXIT DISTANCE	EXIT DISTANCE PROVIDED	MAX TRAVEL DISTANCE	TRAVEL DISTANCE PROVIDED	EXITS REQUIRED	EXITS PROVIDED
BUSINESS AREAS	B	150	1,853	13	0.2	3"		100'-0"	44'-0"	32'-4"	64'-8"			1	2
100 VESTIBULE			100												
101 OPEN OFFICE			1,040									200'-0"	84'-6"		
107 WOMENS			175												
106 MENS			175												
108 JAN.			55												
109 W/C			58												
103 OFFICE			125												
104 OFFICE			125												
UNCONCENTRATED	B	15	590	40	0.2	8"		100'-0"	44'-0"	N/A	N/A			1	1
105 BREAK			315												
105A DATA			40												
102 CONFERENCE			235												
WAREHOUSE	S-1	500	54,985	110	0.2	22"		100'-0"	N/A	211'-4"		250'-0"	143'-6"	2	5
001 WAREHOUSE			54,985												
STORAGE	S-1	300	2,846	10	0.2	2"		100'-0"	N/A	211'-4"					
002 ELECTRICAL			280												
005 FIRE PUMP			417												
200 STORAGE			2,149									250'-0"	151'-0"	2	2
BUILDING TOTAL			60,274	163		33"	216"								

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Client

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WILSONVILLE, OR 97070

Project

DELTA LOGISTICS
9710 SW DAY RD.
CITY OF WILSONVILLE, OR

REGISTERED ARCHITECT
SCOTT J. MOORE
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REVISION SCHEDULE

Delta	Issued As	Issue Date
A	REV 1	7/26/22

SHEET TITLE:
CODE ANALYSIS

SHEET
G1.10

JOB NO. **2200502.00**

DEVELOPMENT REVIEW SET 04/24/23
Autodesk Docs://Delta Logistics Wilsonville Annex-ZC/502 Delta Logistics-B.rvt 3/7/2023 3:23:36 PM
1027
As indicated

COMcheck Software Version COMcheckWeb

Envelope Compliance Certificate

Project Information

Energy Code:	90.1 (2019) Standard
Project Title:	Delta Logistics - Wilsonville
Location:	Wilsonville, Oregon
Climate Zone:	4c
Project Type:	New Construction
Vertical Glazing / Wall Area:	5%
Skylight / Roof Area	1%
Performance Sim. Specs:	EnergyPlus 8.1.0.009 (EPW: USA_OR_Portland.Intl.AP.726980_TMY3.epw)

Construction Site:
9710 SW Day Road
Wilsonville, Oregon 97070

Owner/Agent:
Igor Nichiporchik
Delta Logistics
9835 SW Commerce Circle
Wilsonville, Oregon 97070
503-665-2200
igor@deltagov.com

Designer/Contractor:
Adam Goldberg
Mackenzie
1515 SE Water Ave, Suite 100
Portland, Oregon 97214
8476481232
agoldberg@mcknze.com

Building Area	Floor Area
1-Warehouse and Utilities (Warehouse) : Semiheated	55638
2-Office and Storage (Office) : Nonresidential	4636

Envelope Assemblies

Assembly	Gross Area or Perimeter	Cavity R-Value	Cont. R-Value	Proposed U-Factor	Budget U-Factor[a]
Roof: Insulation Entirely Above Deck, [Bldg. Use 1 - Warehouse and Utilities]	55682	---	20.0	0.048	0.093
Skylight: Metal Frame: Plastic, with Curb, Perf. Specs.: Product ID N/A, SHGC 0.35, VT 0.64, [Bldg. Use 1 - Warehouse and Utilities] (b)	576	---	---	0.450	0.750
Roof: Insulation Entirely Above Deck, [Bldg. Use 2 - Office and Storage]	2443	---	20.0	0.048	0.032
OFFICE SLAB: Unheated Slab-On-Grade, [Bldg. Use 2 - Office and Storage] (c)	112	---	---	0.730	0.520
WAREHOUSE SLAB: Unheated Slab-On-Grade, [Bldg. Use 1 - Warehouse and Utilities] (c)	911	---	---	0.730	0.730
NORTH					
TILT WALL - (furring at office) NORTH: Solid Concrete, 12in. Thickness, Normal Density, Furring: Metal, [Bldg. Use 2 - Office and Storage]	394	13.0	0.0	0.138	0.104
Window: Metal Frame: Fixed, Perf. Specs.: Product ID N/A, SHGC 0.40, VT 0.50, [Bldg. Use 2 - Office and Storage] (b)	140	---	---	0.450	0.360
TILT WALL - (stickpin at office): Solid Concrete, 10in. Thickness, Normal Density, Furring: None, [Bldg. Use 2 - Office and Storage]	952	---	13.0	0.067	0.104
Window: Metal Frame: Fixed, Perf. Specs.: Product ID N/A, SHGC 0.40, VT 0.50, [Bldg. Use 2 - Office and Storage] (b)	224	---	---	0.450	0.360
TILT WALL - NORTH: Solid Concrete, 8in. Thickness, Normal Density, Furring: None, [Bldg. Use 1 - Warehouse and Utilities]	2637	---	0.0	0.740	0.580
Man Door: Insulated Metal, Swinging, [Bldg. Use 1 - Warehouse and Utilities]	21	---	---	0.130	0.370

Assembly	Gross Area or Perimeter	Cavity R-Value	Cont. R-Value	Proposed U-Factor	Budget U-Factor[a]
Window: Metal Frame: Fixed, Perf. Specs.: Product ID N/A, SHGC 0.40, VT 0.50, [Bldg. Use 1 - Warehouse and Utilities] (b)	315	---	---	0.450	0.500
TILT WALL - (furring at office) NORTH: Solid Concrete, 8in. Thickness, Normal Density, Furring: Metal, [Bldg. Use 2 - Office and Storage]	295	13.0	0.0	0.142	0.104
Window: Metal Frame: Fixed, Perf. Specs.: Product ID N/A, SHGC 0.40, VT 0.50, [Bldg. Use 2 - Office and Storage] (b)	97	---	---	0.450	0.360
TILT WALL - (stickpin at office) NORTH: Solid Concrete, 8in. Thickness, Normal Density, Furring: None, [Bldg. Use 2 - Office and Storage]	706	---	13.0	0.068	0.104
Window: Metal Frame: Fixed, Perf. Specs.: Product ID N/A, SHGC 0.40, VT 0.50, [Bldg. Use 2 - Office and Storage] (b)	105	---	---	0.450	0.360
TILT WALL - (furring at riser) NORTH: Solid Concrete, 8in. Thickness, Normal Density, Furring: Metal, [Bldg. Use 1 - Warehouse and Utilities]	453	13.0	0.0	0.142	0.580
Door: Insulated Metal, Swinging, [Bldg. Use 1 - Warehouse and Utilities]	63	---	---	0.130	0.370
Ext. Wall: Solid Concrete, 8in. Thickness, Normal Density, Furring: None, [Bldg. Use 1 - Warehouse and Utilities]	1037	---	13.0	0.068	0.580
EAST					
TILT WALL (furring at riser) - EAST: Solid Concrete, 8in. Thickness, Normal Density, Furring: Metal, [Bldg. Use 1 - Warehouse and Utilities]	160	13.0	0.0	0.142	0.580
TILT WALL (stickpin at riser) - EAST: Solid Concrete, 8in. Thickness, Normal Density, Furring: None, [Bldg. Use 1 - Warehouse and Utilities]	429	---	13.0	0.068	0.580
TILT WALL - EAST: Solid Concrete, 8in. Thickness, Normal Density, Furring: None, [Bldg. Use 1 - Warehouse and Utilities]	11516	---	0.0	0.740	0.580
Man Door: Insulated Metal, Swinging, [Bldg. Use 1 - Warehouse and Utilities]	42	---	---	0.130	0.370
SOUTH					
TILT WALL - SOUTH: Solid Concrete, 8in. Thickness, Normal Density, Furring: None, [Bldg. Use 1 - Warehouse and Utilities]	6071	---	0.0	0.740	0.580
Man Door: Insulated Metal, Swinging, [Bldg. Use 1 - Warehouse and Utilities]	21	---	---	0.130	0.370
Window: Metal Frame: Fixed, Perf. Specs.: Product ID N/A, SHGC 0.40, VT 0.50, [Bldg. Use 1 - Warehouse and Utilities] (b)	525	---	---	0.450	0.500
WEST					
TILT WALL - WEST: Solid Concrete, 8in. Thickness, Normal Density, Furring: None, [Bldg. Use 1 - Warehouse and Utilities]	9747	---	0.0	0.740	0.580
Window: Metal Frame: Fixed, Perf. Specs.: Product ID N/A, SHGC 0.40, VT 0.50, [Bldg. Use 1 - Warehouse and Utilities] (b)	148	---	---	0.450	0.500
Man Door: Insulated Metal, Swinging, [Bldg. Use 1 - Warehouse and Utilities]	63	---	---	0.130	0.370
Roll-Up Door: Insulated Metal, Non-Swinging, [Bldg. Use 1 - Warehouse and Utilities]	1686	---	---	0.130	0.360
TILT WALL - (furring office) WEST: Solid Concrete, 12in. Thickness, Normal Density, Furring: Metal, [Bldg. Use 2 - Office and Storage]	438	13.0	0.0	0.138	0.104
Window: Metal Frame: Fixed, Perf. Specs.: Product ID N/A, SHGC 0.40, VT 0.50, [Bldg. Use 2 - Office and Storage] (b)	141	---	---	0.450	0.360
TILT WALL - (stickpin at office) WEST: Solid Concrete, 10in. Thickness, Normal Density, Furring: None, [Bldg. Use 2 - Office and Storage]	1006	---	13.0	0.067	0.104
Window: Metal Frame: Fixed, Perf. Specs.: Product ID N/A, SHGC 0.40, VT 0.50, [Bldg. Use 2 - Office and Storage] (b)	225	---	---	0.450	0.360

(a) Budget U-factors are used for software baseline calculations ONLY, and are not code requirements.
(b) Fenestration product performance must be certified in accordance with NFRC and requires supporting documentation.
(c) Slab-On-Grade proposed and budget U-factors shown in table are F-factors.

Envelope PASSES: Design 1% better than code

Envelope Compliance Statement

Compliance Statement: The proposed envelope design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed envelope systems have been designed to meet the 90.1 (2019) Standard requirements in COMcheck Version COMcheckWeb and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

Adam Goldberg - Project Architect (Name - Title) | Signature | 1/17/2023 (Date)

Item 2.

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Project

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REVISION SCHEDULE

Delta	Issued As	Issue Date

SHEET TITLE:
ENERGY CODE COMPLIANCE

SHEET
G1.11

JOB NO. **2200502.00**

DEVELOPMENT REVIEW SET 04/24/23
Autodesk Docs://Delta Logistics Wilsonville Annex-ZC/502 Delta Logistics-B.rvt 3/7/2023 3:23:38 PM

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GENERAL NOTES

1. ALL WORK SHALL CONFORM TO THE CURRENT STANDARD SPECIFICATIONS AND REQUIREMENTS OF THE AUTHORITIES HAVING JURISDICTION AND THE CURRENT AMERICAN PUBLIC WORKS ASSOCIATION STANDARDS FOR PUBLIC WORKS CONSTRUCTION
2. THE SURVEY INFORMATION SHOWN AS A BACKGROUND SCREEN IS BASED ON A SURVEY BY OTHERS AND IS SHOWN FOR REFERENCE ONLY. CONTRACTOR TO VERIFY ALL EXISTING CONDITIONS WITH ITS OWN RESOURCES PRIOR TO START OF ANY CONSTRUCTION
3. CONTRACTOR MUST COMPLY WITH LOCAL AND STATE REQUIREMENTS TO NOTIFY ALL UTILITY COMPANIES FOR LINE LOCATIONS SEVENTY-TWO (72) HOURS (MINIMUM) PRIOR TO START OF WORK. DAMAGE TO UTILITIES SHALL BE CORRECTED AT THE CONTRACTOR'S EXPENSE
4. CONTRACTOR SHALL ADJUST ALL STRUCTURES IMPACTED BY CONSTRUCTION IMPROVEMENTS TO NEW FINISH GRADES
5. REQUEST BY THE CONTRACTOR FOR CHANGES TO THE PLANS MUST BE APPROVED BY THE ENGINEER.
6. ALL WORK WITHIN THE PUBLIC RIGHT-OF-WAY REQUIRES A PUBLIC WORKS PERMIT
7. CONTRACTOR SHALL PROVIDE THE ENGINEER OF RECORD WITH AS-BUILT PLANS AT LEAST 2 WEEKS PRIOR TO REQUESTING AGENCY SIGN OFF ON PERMITS FOR OCCUPANCY
8. CONTRACTOR SHALL PERFORM ALL THE WORK SHOWN ON THE DRAWINGS AND ALL INCIDENTAL WORK NECESSARY TO COMPLETE THE PROJECT

SITE DEMOLITION NOTES

1. COMPLY WITH ALL APPLICABLE CODES AND REGULATIONS FOR DEMOLITION OPERATIONS AND SAFETY OF ADJACENT STRUCTURES AND THE PUBLIC
2. INSTALL EROSION CONTROL MEASURES AND TEMPORARY FENCING PRIOR TO ANY DEMOLITION ACTIVITIES
3. MITIGATE DUST POLLUTION DUE TO DEMOLITION ACTIVITIES
4. PROTECT ALL EXISTING STRUCTURES, UTILITIES, LANDSCAPE AND OTHER ELEMENTS THAT ARE NOT DESIGNATED FOR REMOVAL. ANY DAMAGE TO EXISTING IMPROVEMENTS NOT DESIGNATED FOR REMOVAL SHALL BE REPAIRED/REPLACED AT THE CONTRACTOR'S EXPENSE
5. DO NOT BEGIN REMOVAL UNTIL ITEMS TO BE SALVAGED OR RELOCATED HAVE BEEN REMOVED AS NOTED. IF REMOVED GRAVEL OR PAVEMENT MATERIALS ARE TO BE RECYCLED OR REUSED, PREVENT CONTAMINATION OF THESE MATERIALS FROM TOPSOIL OR OTHER DELETERIOUS MATERIAL
6. CONTRACTOR SHALL COORDINATE DEMOLITION WORK WITH AFFECTED UTILITY COMPANIES, OBTAIN ALL REQUIRED PERMITS, NOTIFY THEM PRIOR TO STARTING WORK, AND COMPLY WITH THEIR REQUIREMENTS. ADDITIONAL REMOVALS MAY BE REQUIRED BY THE AUTHORITIES HAVING JURISDICTION AND THE CONTRACTOR SHALL CONFIRM ACCORDINGLY PRIOR TO BID. ACCURATELY RECORD ACTUAL LOCATIONS OF CAPPED AND ACTIVE UTILITIES FOR AS-BUILT PURPOSES AND SUPPLY TO OWNER AND ARCHITECT/ENGINEER OF RECORD
7. DEMOLISH AND REMOVE ALL NON-BUILDING SITE STRUCTURES AND ASSOCIATED FEATURES (APPURTENANCES) AS SHOWN. WITHIN AREA OF NEW CONSTRUCTION, REMOVE DESIGNATED WALLS AND FOOTINGS TO 2 FEET MINIMUM BELOW FINISHED GRADE. DEMOLISH ALL PAVED AREAS DESIGNATED FOR REMOVAL DOWN TO NATIVE SUBGRADE
8. ALL VEGETATION AND DELETERIOUS MATERIALS WITHIN THE LIMITS OF WORK SHALL BE STRIPPED AND REMOVED FROM THE SITE PRIOR TO GRADING WORK UNLESS NOTED OTHERWISE (E.G. PROTECTED TREES)
9. IF HAZARDOUS MATERIALS ARE DISCOVERED DURING DEMOLITION, STOP WORK AND IMMEDIATELY NOTIFY THE OWNER AND ARCHITECT/ENGINEER OF RECORD

GRADING NOTES

1. ROUGH GRADING: ROUGH GRADE TO ALLOW FOR DEPTH OF BUILDING SLABS, PAVEMENTS, BASE COURSES, AND TOPSOIL PER DETAILS AND SPECIFICATIONS
2. FINISH GRADING: BRING ALL FINISH GRADES TO LEVELS INDICATED. WHERE GRADES ARE NOT OTHERWISE INDICATED, HARDSCAPE FINISH GRADES ARE TO BE THE SAME AS ADJACENT SIDEWALKS, CURBS, OR THE OBVIOUS GRADE OF ADJACENT STRUCTURE. SOFTSCAPE GRADES (INCLUDING ADDITIONAL DEPTH OF TOPSOIL) SHALL BE SET 6 INCHES BELOW BUILDING FINISHED FLOORS WHERE ABUTTING BUILDINGS, 1-2 INCHES WHERE ABUTTING WALKWAYS OR CURBS, OR MATCHING OTHER SOFTSCAPE GRADES. GRADE TO UNIFORM LEVELS OR SLOPES BETWEEN POINTS WHERE GRADES ARE GIVEN. ROUND OFF SURFACES, AVOID ABRUPT CHANGES IN LEVELS. AT COMPLETION OF JOB AND AFTER BACKFILLING BY OTHER TRADES HAS BEEN COMPLETED, REFILL AND COMPACT AREAS WHICH HAVE SETTLED OR ERODED TO BRING TO FINAL GRADES
3. EXCAVATION: EXCAVATE FOR SLABS, PAVING, AND OTHER IMPROVEMENTS TO SIZES AND LEVELS SHOWN OR REQUIRED. ALLOW FOR FORM CLEARANCE AND FOR PROPER COMPACTION OF REQUIRED BACKFILLING MATERIAL. DAMAGE TO UTILITIES SHALL BE CORRECTED AT THE CONTRACTOR'S EXPENSE
4. EFFECTIVE EROSION PREVENTION AND SEDIMENT CONTROL IS REQUIRED. EROSION CONTROL DEVICES MUST BE INSTALLED AND MAINTAINED MEETING THE LOCAL AGENCY AND STATE AGENCY REQUIREMENTS. THE AUTHORITIES HAVING JURISDICTION MAY, AT ANY TIME, ORDER CORRECTIVE ACTION AND STOPPAGE OF WORK TO ACCOMPLISH EFFECTIVE EROSION CONTROL
5. DRAINAGE SHALL BE CONTROLLED WITHIN THE WORK SITE AND SHALL BE ROUTED SO THAT ADJACENT PRIVATE PROPERTY, PUBLIC PROPERTY, AND THE RECEIVING SYSTEM ARE NOT ADVERSELY IMPACTED. THE ENGINEER AND/OR AUTHORITIES HAVING JURISDICTION MAY, AT ANY TIME, ORDER CORRECTIVE ACTION AND STOPPAGE OF WORK TO ACCOMPLISH EFFECTIVE DRAINAGE CONTROL
6. SITE TOPSOIL STOCKPILED DURING CONSTRUCTION AND USED FOR LANDSCAPING SHALL BE APPROVED BY THE LANDSCAPE ARCHITECT
7. CONTRACTOR TO REVIEW AND CONFIRM GRADES AT JOIN POINTS, SUCH AS AT DAYLIGHT LIMITS AND BUILDING ENTRANCES, PRIOR TO CONSTRUCTION
8. ACCESSIBLE PARKING SPACES AND LOADING ZONES SHALL BE CONSTRUCTED AT 2% MAXIMUM SLOPE IN ALL DIRECTIONS
9. PEDESTRIAN SIDEWALK CONNECTIONS BETWEEN PUBLIC R.O.W. AND BUILDING ENTRANCES SHALL BE CONSTRUCTED AT AND 2% MAXIMUM CROSS SLOPE AND 5% MAXIMUM LONGITUDINAL SLOPE (8.33% FOR DESIGNATED RAMPS)

UTILITY NOTES

1. ALL WORK SHALL CONFORM TO THE CURRENT EDITIONS OF THE STATE PLUMBING AND BUILDING CODES WITH LOCAL AMENDMENTS AS APPLICABLE ALONG WITH ANY ADDITIONAL REQUIREMENTS OF THE AUTHORITIES HAVING JURISDICTION.
2. THE WORKING DRAWINGS ARE GENERALLY DIAGRAMMATIC. THEY DO NOT SHOW EVERY OFFSET, BEND OR ELBOW REQUIRED FOR INSTALLATION IN THE SPACE PROVIDED. THEY DO NOT SHOW EVERY DIMENSION, COMPONENT PIECE, SECTION, JOINT OR FITTING REQUIRED TO COMPLETE THE PROJECT. ALL LOCATIONS FOR WORK SHALL BE CHECKED AND COORDINATED WITH EXISTING CONDITIONS IN THE FIELD BEFORE BEGINNING CONSTRUCTION. EXISTING UNDERGROUND UTILITIES WITHIN THE LIMITS OF EXCAVATION SHALL BE VERIFIED AS TO CONDITION, SIZE AND LOCATION BY UNCOVERING (POTHOLING), PROVIDING SUCH IS PERMITTED BY THE AUTHORITIES HAVING JURISDICTION, BEFORE BEGINNING CONSTRUCTION. CONTRACTOR TO NOTIFY ENGINEER IF THERE ARE ANY DISCREPANCIES.
3. NOT ALL REQUIRED CLEANOUTS ARE SHOWN ON THE PLANS. PROVIDE CLEANOUTS PER DETAIL XX/CX.XX AS REQUIRED BY THE AUTHORITIES HAVING JURISDICTION AND THE CURRENT EDITION OF THE STATE PLUMBING CODE (E.G. UNIFORM PLUMBING CODE CHAPTER 7, SECTIONS 707 AND 719, AND CHAPTER 11, SECTION 1101.13).
4. ALL SANITARY AND STORM PIPING IS DESIGNED USING CONCENTRIC PIPE TO PIPE AND WYE FITTINGS, UNLESS OTHERWISE NOTED
5. ALL DOWNSPOUT LEADERS TO BE 6 INCHES AT 2.0% MINIMUM UNLESS NOTED OTHERWISE
6. IF APPLICABLE, PROVIDE 2 INCH PVC DRAIN LINE FROM DOMESTIC WATER METER VAULT AND BACKFLOW PREVENTER VAULT TO THE DOUBLE DETECTOR CHECK VALVE (FIRE) VAULT. PROVIDE 1/3 HP SUMP PUMP AT BASE OF FIRE VAULT AND INSTALL 2 INCH PVC DRAIN LINE WITH BACKFLOW VALVE FROM SUMP PUMP TO DAYLIGHT AT NEAREST CURB. FURNISH 3/4 INCH DIAMETER CONDUIT FROM BUILDING ELECTRICAL ROOM TO FIRE VAULT FOR SUMP PUMP ELECTRICAL SERVICE. NOTE: COORDINATE WITH FIRE PROTECTION CONTRACTOR FOR FLOW SENSOR INSTALLATION AND CONDUIT REQUIREMENTS
7. PREFABRICATED PLUMBING PRODUCTS USED SHALL BE LISTED ON THE IAPMO R&T PRODUCT LISTING DIRECTORY (pld.iapmo.org). ALL SUBMITTALS FOR REVIEW SHALL BE ACCOMPANIED BY MANUFACTURER'S LITERATURE CLEARLY STATING THIS CERTIFICATION AND/OR THE PRODUCT LISTING CERTIFICATE FROM THE IAPMO DIRECTORY WEBSITE
8. IF APPLICABLE, CONTRACTOR TO PROVIDE POWER TO IRRIGATION CONTROLLER. SEE LANDSCAPE PLANS AND SPECIFICATIONS
9. SEE BUILDING PLUMBING DRAWINGS FOR PIPING WITHIN THE BUILDING AND UP TO 5 FEET OUTSIDE THE BUILDING, INCLUDING ANY FOUNDATION DRAINAGE PIPING
10. CONTRACTOR TO MAINTAIN MINIMUM 3 FEET OF COVER OVER ALL UTILITY PIPING AND CONDUITS, UNLESS NOTED OTHERWISE
11. WHERE CONNECTING TO AN EXISTING PIPE, AND PRIOR TO ORDERING MATERIALS, THE CONTRACTOR SHALL EXPOSE THE EXISTING PIPE TO VERIFY THE LOCATION, SIZE, AND ELEVATION. NOTIFY ENGINEER OF ANY DISCREPANCIES
12. CONTRACTOR SHALL SCOPE ALL PRIVATE ONSITE GRAVITY SYSTEM LINES THAT ARE BEING CONNECTED TO FOR PROPOSED SERVICE. SCOPING SHALL OCCUR A MINIMUM OF 72 HOURS PRIOR TO CONSTRUCTION AND THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY OF ANY DISCREPANCIES WITH AS-BUILT RECORDS/SURVEY FINDINGS OR IF THE EXISTING UTILITIES ARE DAMAGED OR SHOW SIGNS OF SIGNIFICANT DETERIORATION. CONTRACTOR SHALL PROVIDE THE ENGINEER WITH VIDEO RECORDS, ALONG WITH A SKETCH IF THE LOCATIONS DIFFER FROM AS-BUILT PLANS OR SURVEY FINDINGS
13. PRODUCT MATERIAL SUBMITTALS FOR REVIEW BY THE ENGINEER SHALL BE ACCOMPANIED BY A MANUFACTURER'S CERTIFICATION THAT THE PRODUCT IS CAPABLE OF MEETING PERFORMANCE EXPECTATIONS (I.E. - WATERTIGHT, MINIMUM/MAXIMUM BURIAL, PREVENTION OF GROUNDWATER INTRUSION, ETC.) BASED ON THEIR REVIEW OF THE PROJECT PLANS. IN THE ABSENCE OF A MANUFACTURER'S CERTIFICATION, THE GENERAL CONTRACTOR'S REVIEW STAMP SHALL CONSTITUTE THAT THEY HAVE PERFORMED THE NECESSARY REVIEW TO CERTIFY THE PRODUCT'S CONFORMANCE TO PROJECT SPECIFICATIONS AND GENERAL EXPECTATIONS
14. PIPE LENGTHS SHOWN ON PLANS ARE TWO DIMENSIONAL AND MEASURED FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE
15. MANHOLE RIM ELEVATIONS SHOWN ON PLANS REFERENCE THE CENTER OF THE STRUCTURE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RECONCILING LIDS/GRATES/ETC TO THE SLOPES OF THE SITE GRADING
16. MANHOLE OR VAULT RIM ELEVATIONS SHALL BE SET FLUSH IN PAVEMENT AREAS AND 3-4 INCHES ABOVE GRADE IN LANDSCAPE AREAS. RIMS IN PAVEMENT AREAS SHALL BE H-20 TRAFFIC RATED

EROSION CONTROL NOTES

1. HOLD A PRE-CONSTRUCTION MEETING OF PROJECT CONSTRUCTION PERSONNEL THAT INCLUDES THE LOCAL AGENCY INSPECTOR TO DISCUSS EROSION AND SEDIMENT CONTROL MEASURES AND CONSTRUCTION LIMITS
2. EROSION AND SEDIMENT CONTROL MEASURES MUST BE IN PLACE BEFORE ANY LAND IS DISTURBED AND MUST REMAIN IN PLACE AND BE MAINTAINED, REPAIRED, AND PROMPTLY IMPLEMENTED FOLLOWING PROCEDURES ESTABLISHED FOR THE DURATION OF CONSTRUCTION, INCLUDING APPROPRIATE NON-STORMWATER POLLUTION CONTROLS
3. THE EROSION CONTROL DRAWING IS FOR GENERAL GUIDANCE ONLY. THE CONTRACTOR SHALL KEEP THE PLAN CURRENT FOR ALL PHASES OF CONSTRUCTION AND MEET EROSION/SEDIMENT CONTROL REQUIREMENTS OF ALL AUTHORITIES HAVING JURISDICTION (AHJ). ALL EROSION CONTROL MEASURES SHALL CONFORM TO THE REQUIREMENTS OF THE AHJ, THE PLANS, AND THE PROJECT SPECIFICATIONS
4. CONSTRUCT EROSION CONTROL IN CONJUNCTION WITH ALL CLEARING AND GRADING ACTIVITIES, AND IN SUCH A MANNER AS TO ENSURE THAT SEDIMENT AND SEDIMENT LADEN WATER DO NOT ENTER THE DRAINAGE SYSTEM, ROADWAYS, OR VIOLATE APPLICABLE WATER STANDARDS
5. METHOD OF INSTALLATION FOR SEDIMENT FENCE SHALL NOT CAUSE DAMAGE TO VEGETATED SLOPE EXCEPT AT POINT OF INSTALLATION. SIDECAST MATERIAL SHALL BE KEPT TO A MINIMUM AND SHALL BE TO THE UPHILL SIDE OF THE SEDIMENT FENCE. THE FENCE SHALL BE INSTALLED AT LEAST 4 FEET FROM ADJACENT TREES
6. ALL EROSION CONTROL DEVICES SHALL BE EXAMINED AND REPAIRED AFTER EACH STORM OCCURRENCE, AND INLETS SHALL BE CLEANED OF SEDIMENT WHENEVER NECESSARY
7. HYDROSEED AND MULCH ALL DISTURBED AREAS UPON COMPLETION OF CONSTRUCTION OR AS DIRECTED BY THE AUTHORITIES HAVING JURISDICTION
8. THE CONTRACTOR SHALL LIMIT CONSTRUCTION TRAFFIC TO PAVED AREAS TO PREVENT AND MINIMIZE SEDIMENT TRACKING OFF-SITE. CONTRACTOR SHALL SWEEP OR VACUUM PAVED AREAS IF SEDIMENT ACCUMULATION OCCURS. DO NOT TRACK SEDIMENT TO THE PUBLIC STREET OR NEIGHBORING PROPERTIES
9. INSTALL TEMPORARY EROSION PREVENTION SUCH AS JUTE NETTING OR GEOTEXTILE ON DISTURBED AREAS STEEPER THAN 4H:1V
10. STAGING AND STOCKPILE AREAS TO BE DETERMINED BY CONTRACTOR AND ADJUSTED TO ACCOMMODATE THE PROGRESS OF CONSTRUCTION

SITE WORK NOTES

1. ALL CURB RADII TO BE 3 FEET UNLESS NOTED OTHERWISE
2. WHEREVER A PEDESTRIAN WALKING PATH IS WITHIN 36 INCHES OF A VERTICAL DROP OF 30 INCHES OR GREATER, GUARDRAIL SHALL BE INSTALLED CONFORMANT WITH THE REQUIREMENTS OF THE AUTHORITIES HAVING JURISDICTION AND THE CURRENT EDITION OF THE STATE BUILDING CODE (E.G. INTERNATIONAL BUILDING CODE, CHAPTER 10, SECTION 1015)
3. PAVEMENTS WITH DEPRESSIONS OR BIRD BATHS, UNCONTROLLED CRACKS WHICH ARE VISIBLE WITHOUT MAGNIFICATION, AND/OR BONY OR OPEN GRADED SURFACES (EXCEPTING POROUS PAVEMENTS) WILL BE CONSIDERED UNACCEPTABLE. CONTRACTOR SHALL REVIEW PAVEMENT REPAIR OR REPLACEMENT ALTERNATIVES WITH THE OWNER AND ENGINEER PRIOR TO CONDUCTING THE REPAIR WORK.

LEGEND

	EXISTING	PROPOSED
ROW LINE		
BRUSH LINE		
BUILDING EAVE		
BUILDING FOOTPRINT		
CENTERLINE		
EASEMENT LINE		
FENCE LINE	X X	
GAS LINE	G	
OVERHEAD POWER	E	
SANITARY LINE		
STORM DRAIN LINE	SD	
TAX LOT LINE		
WATER LINE	W	
DOMESTIC WATER LINE		
FIRE WATER LINE (PRIVATE)		
FIRE WATER LINE (PUBLIC)		
WETLANDS AOI		
WETLANDS BUFFER		
SROZ BOUNDARY		
CULVERT INVERT		
CURB INLET		
DECORATIVE SHRUB		
DOWNSPOUT		
CATCH BASIN		
FIRE HYDRANT		
GAS METER	G	
GAS RISER		
GATE POST		
GUY ANCHOR		
MAILBOX		
MANHOLE		
POWER METER	EM	
SIGN "AS NOTED"		
SITE BENCHMARK		
STORM DRAIN MANHOLE	D	
SURVEY MONUMENTS FOUND		
SURVEY MONUMENTS SET		
UTILITY LID		
WATER METER	W	
WATER RISE		
WATER VALVE		
WATER VAULT		
FDC		
WETLANDS BUFFER/ LINE STAKES		
POWER POLE	PP	
SDEWALK		
TREE		
WETLAND AREA		
RAIN GARDEN		

ABBREVIATIONS

TC	TOP OF CURB	WM	WATER METER
AC	ASPHALT	OH	OVERHEAD WIRE
FH	FIRE HYDRANT	SSWR	SANITARY SEWER
FG	FINISHED GRADE	MH	MANHOLE
SW	SIDEWALK ELEVATION	IE	INVERT ELEVATION
TS	TOP OF STAIR	CB	CATCH BASIN
BS	BOTTOM OF STAIR	STM	STORM
TYP	TYPICAL	RD	ROOF DRAIN
R.O.W.	RIGHT OF WAY	FF/FFE	FINISHED FLOOR ELEVATION
LS	LANDSCAPE	NG	NATURAL GROUND
SROZ	SIGNIFICANT RESOURCE OVERLAY ZONE	CL	CENTERLINE
		GPM	GALLONS PER MINUTE
CO	CLEAN OUT	FW	FIRE WATER
INV	INVERT	PWS	PUBLIC WORKS STANDARDS
RD	ROOF DRAIN		
COW	CITY OF WILSONVILLE	PUE	PUBLIC UTILITY EASEMENT
AOI	AREA OF IMPACT	ELEV	ELEVATION

Item 2.

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Client
DELTA LOGISTICS

9835 SW COMMERCE CIRCLE
WILSONVILLE, OR 97070

Project
DELTA LOGISTICS SITE EXPANSION

9710 SW DAY RD.
CITY OF WILSONVILLE, OR

REGISTERED PROFESSIONAL ENGINEER
91697
OREGON
JAN. 10, 2017
GREGORY I. MINO
EXPIRES: 12/31/24

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REVISION SCHEDULE

Delta	Issued As	Issue Date

CIVIL NOTES AND LEGEND

SHEET

C0.01

JOB NO. **2200502.00**

DEVELOPMENT REVIEW SET - 04/24/23

"2200502.00" \\GRP.MCK\PROJECTS\PROJECTS\2200502.00\DRAWINGS\CIVIL\50204-C0.01-CIVIL NOTES AND LEGEND.DWG AOC 04/24/23 15:46 1:1

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9835 SW COMMERCE CIRCLE
WILSONVILLE, OR 97070

Project
DELTA LOGISTICS SITE EXPANSION

9710 SW DAY RD.
CITY OF
WILSONVILLE, OR

TOPOGRAPHIC SURVEY

9710 SW DAY ROAD

LOCATED IN THE SW 1/4 AND THE NW 1/4
SECTION 2, T.3S., R.1W., W.M.
WASHINGTON COUNTY, OREGON

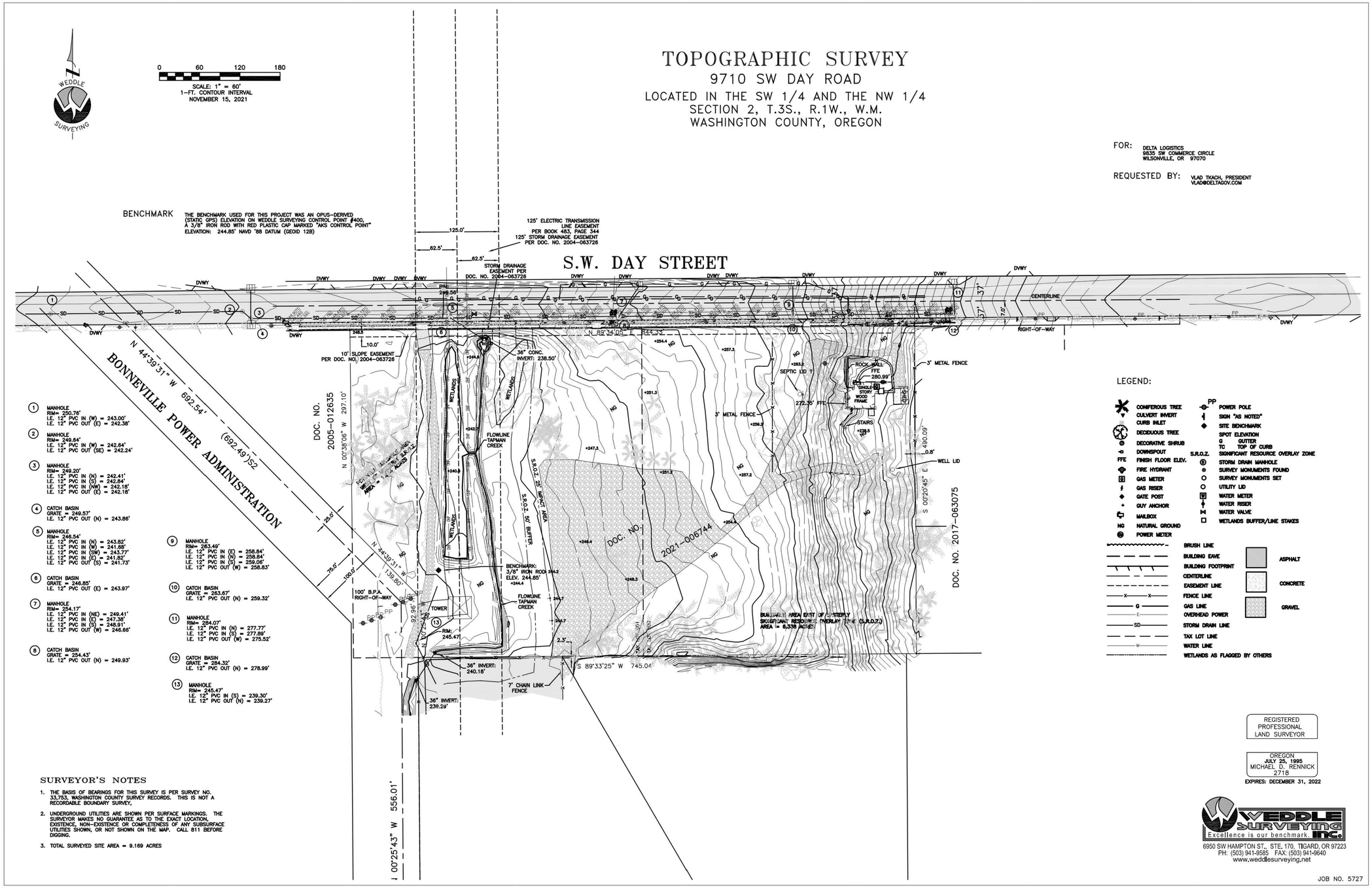
WEDDLE SURVEYING

0 60 120 180
SCALE: 1" = 60'
1-FT. CONTOUR INTERVAL
NOVEMBER 15, 2021

FOR: DELTA LOGISTICS
9835 SW COMMERCE CIRCLE
WILSONVILLE, OR 97070

REQUESTED BY: VLAD TKACH, PRESIDENT
VLAD@DELTAGOV.COM

BENCHMARK — THE BENCHMARK USED FOR THIS PROJECT WAS AN OPUS-DERIVED (STATIC GPS) ELEVATION ON WEDDLE SURVEYING CONTROL POINT #400, A 3/8" IRON ROD WITH RED PLASTIC CAP MARKED "AKS CONTROL POINT" ELEVATION: 244.85' NAVD '88 DATUM (GEOID 12B)



1. MANHOLE
RIM= 250.76'
I.E. 12" PVC IN (W) = 243.00'
I.E. 12" PVC OUT (E) = 242.38'

2. MANHOLE
RIM= 249.64'
I.E. 12" PVC IN (W) = 242.64'
I.E. 12" PVC OUT (SE) = 242.24'

3. MANHOLE
RIM= 249.20'
I.E. 12" PVC IN (N) = 242.41'
I.E. 12" PVC IN (S) = 242.84'
I.E. 12" PVC IN (NW) = 242.18'
I.E. 12" PVC OUT (E) = 242.18'

4. CATCH BASIN
GRATE = 249.57'
I.E. 12" PVC OUT (N) = 243.86'

5. MANHOLE
RIM= 246.54'
I.E. 12" PVC IN (N) = 243.82'
I.E. 12" PVC IN (W) = 241.68'
I.E. 12" PVC IN (SW) = 243.77'
I.E. 12" PVC IN (E) = 241.82'
I.E. 12" PVC OUT (S) = 241.73'

6. CATCH BASIN
GRATE = 246.85'
I.E. 12" PVC OUT (E) = 243.97'

7. MANHOLE
RIM= 254.17'
I.E. 12" PVC IN (NE) = 249.41'
I.E. 12" PVC IN (E) = 247.38'
I.E. 12" PVC IN (S) = 248.91'
I.E. 12" PVC OUT (W) = 246.66'

8. CATCH BASIN
GRATE = 254.43'
I.E. 12" PVC OUT (N) = 249.93'

9. MANHOLE
RIM= 263.49'
I.E. 12" PVC IN (E) = 258.84'
I.E. 12" PVC IN (N) = 258.84'
I.E. 12" PVC IN (S) = 259.06'
I.E. 12" PVC OUT (W) = 258.83'

10. CATCH BASIN
GRATE = 263.67'
I.E. 12" PVC OUT (N) = 259.32'

11. MANHOLE
RIM= 284.07'
I.E. 12" PVC IN (N) = 277.77'
I.E. 12" PVC IN (S) = 277.89'
I.E. 12" PVC OUT (W) = 275.52'

12. CATCH BASIN
GRATE = 284.32'
I.E. 12" PVC OUT (N) = 278.99'

13. MANHOLE
RIM= 245.47'
I.E. 12" PVC IN (S) = 239.30'
I.E. 12" PVC OUT (N) = 239.27'

LEGEND:

- CONIFEROUS TREE
- CULVERT INVERT
- CURB INLET
- DECIDUOUS TREE
- DECORATIVE SHRUB
- DOWNSPOUT
- FFE FINISH FLOOR ELEV.
- FIRE HYDRANT
- GAS METER
- GAS RISER
- GATE POST
- GUY ANCHOR
- MAILBOX
- NG NATURAL GROUND
- POWER METER
- PP POWER POLE
- SIGN "AS NOTED"
- SITE BENCHMARK
- SPOT ELEVATION
- G GUTTER
- TC TOP OF CURB
- S.R.O.Z. SIGNIFICANT RESOURCE OVERLAY ZONE
- STORM DRAIN MANHOLE
- SURVEY MONUMENTS FOUND
- SURVEY MONUMENTS SET
- UTILITY LID
- WATER METER
- WATER RISER
- WATER VALVE
- WETLANDS BUFFER/LINE STAKES
- BRUSH LINE
- BUILDING EAVE
- BUILDING FOOTPRINT
- CENTERLINE
- EASEMENT LINE
- FENCE LINE
- GAS LINE
- OVERHEAD POWER
- STORM DRAIN LINE
- TAX LOT LINE
- WATER LINE
- WETLANDS AS FLAGGED BY OTHERS
- ASPHALT
- CONCRETE
- GRAVEL

SURVEYOR'S NOTES

1. THE BASIS OF BEARINGS FOR THIS SURVEY IS PER SURVEY NO. 33,753, WASHINGTON COUNTY SURVEY RECORDS. THIS IS NOT A RECORDABLE BOUNDARY SURVEY,
2. UNDERGROUND UTILITIES ARE SHOWN PER SURFACE MARKINGS. THE SURVEYOR MAKES NO GUARANTEE AS TO THE EXACT LOCATION, EXISTENCE, NON-EXISTENCE OR COMPLETENESS OF ANY SUBSURFACE UTILITIES SHOWN, OR NOT SHOWN ON THE MAP. CALL 811 BEFORE DIGGING.
3. TOTAL SURVEYED SITE AREA = 9.169 ACRES

REGISTERED PROFESSIONAL LAND SURVEYOR
OREGON
JULY 25, 1995
MICHAEL D. RENNICK
2718
EXPIRES: DECEMBER 31, 2022

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www.weddlesurveying.net

JOB NO. 5727

REGISTERED PROFESSIONAL ENGINEER
01497
OREGON
JULY 10, 2007
GREGORY I. WINO
EXPIRES: 12/31/24

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REVISION SCHEDULE

Delta	Issued As	Issue Date

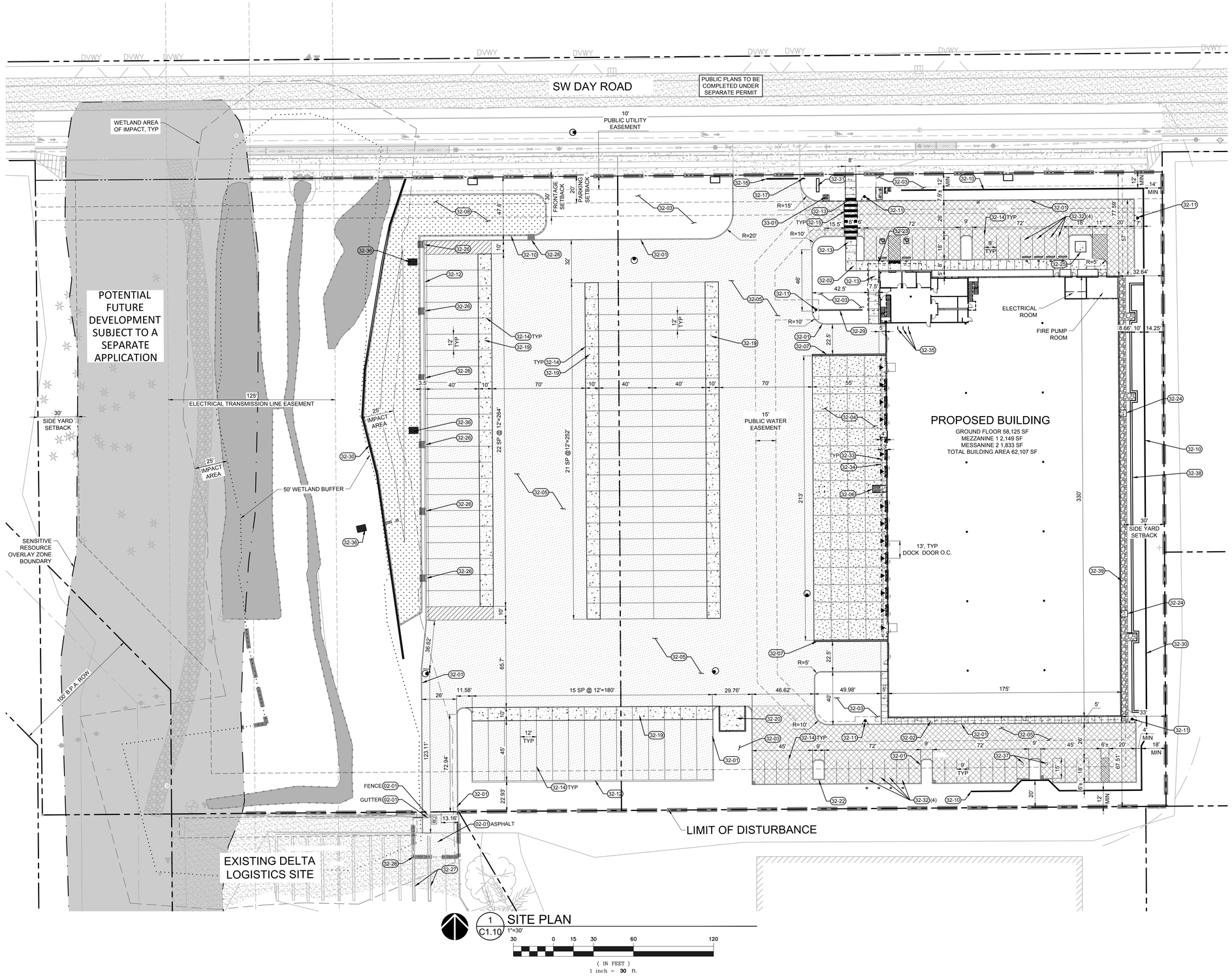
EXISTING CONDITIONS - SURVEY SHEET

SHEET
C1.01

JOB NO. **2200502.00**

DEVELOPMENT REVIEW SET - 04/24/23

"2200502.00" \\GRP.MCK\PROJECTS\PROJECTS\2200502.00\DRAWINGS\CIVIL\50204-C1.01-EX COND.DWG AOC 04/24/23 15:46 1:1



1 C1.10 SITE PLAN
1"=30'

30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.

SITE COVERAGE SUMMARY

BUILDING FOOTPRINT AREA:	58,125	SF	1.33 AC
PARKING AND PAVING AREA:	161,293	SF	3.70 AC
LANDSCAPE AREA:	117,433	SF	2.70 AC
TOTAL DEVELOPMENT AREA:	336,851	SF	7.73 AC
TOTAL SITE AREA (AFTER DEDICATION):	386,719	SF	8.88 AC

SITE PARKING SUMMARY

TRAILERS (50'X12'):	79 STALLS
PASSENGER VEHICLES (18'X9'):	39 STALLS
ACCESSIBLE STALLS:	2 STALLS
TOTAL VEHICLE STALLS:	41 STALLS

NO BIKE PARKING REQUIRED

PAVEMENT LEGEND

*PAVEMENT SECTIONS PER GEODESIGN, SEE APPENDIX IN PROJECT SPECIFICATIONS

	SECTION PER SUBSURFACE CONDITION: BEDROCK	SOIL SUBGRADE
LIGHT PAVEMENT (NO TRUCK TRAFFIC)	2.5" AC OVER 4.0" BASE ROCK	2.5" AC OVER 8.0" BASE ROCK
HEAVY TRUCK PAVEMENT: (APPROX.50 TPD)	4.0" AC OVER 4.0" BASE ROCK	5.0" AC OVER 18.0" BASE ROCK
CONCRETE SECTION:	6" PCC WITH #4 @ 24" O.C. OVER 6" OF CRUSHED ROCK BASE. SUBGRADE TO BE COMPACTED TO GEOTECHNICAL REPORT SPECIFICATIONS	

KEYNOTES

02-01	REMOVE EXISTING AS NOTED
32-01	CONCRETE VERTICAL CURB, PER DETAIL 1/C5.10
32-02	CONCRETE SIDEWALK, PER DETAIL 7/C5.10
32-03	LANDSCAPE AREA. SEE LANDSCAPE PLANS
32-04	CONCRETE TRUCK DOCK. SEE PAVEMENT LEGEND
32-05	ASPHALT PAVING AREA, SEE PAVEMENT LEGEND
32-06	DOCK STAIR, PER ARCHITECTURAL DETAIL
32-07	DOCK RETAINING WALL, PER ARCHITECTURAL DETAIL
32-08	RAIN GARDEN 1, PER DETAIL 7/C5.12
32-10	DESIGN-BUILD SOIL NAIL WALL, OR APPROVED EQUAL. SEE WALL PLAN FOR DETAILS
32-11	FIRE HYDRANT ASSEMBLY WITH BOLLARD PROTECTION. BOLLARD, PER DETAIL 2 AND 3/C5.10, SEE UTILITY PLAN FOR FIRE HYDRANT DETAILS
32-12	12" HIGH X 12" WIDE CURB AT TRUCK TRAILER PARKING STALLS, PER DETAIL 3/C5.10. ADD GUTTER WHERE FLOW LINE SLOPE IS LESS THAN 1%, PER DETAIL 9/C5.12
32-13	PERPENDICULAR CURB RAMP, PER DETAIL 12/C5.10
32-14	4" WHITE PARKING STRIPE, PER SPECIFICATIONS
32-15	12" WIDE CROSSWALK STRIPE, PER SPECIFICATIONS
32-16	12" WIDE WHITE STOP BAR STRIPE
32-17	STOP SIGN, PER DETAIL 14/C5.10
32-19	10' WIDE TRAILER LANDING GEAR STRIP. 6" PCC W/ #4 @ 24" O.C. EACH WAY OVER 4" CRUSHED ROCK BASE. SEE DETAIL 8/C5.10 FOR CONCRETE TO ASPHALT TRANSITION
32-20	19'X20' CONCRETE PAD FOR TRASH ENCLOSURE. SEE ARCHITECTURAL PLANS FOR TRASH ENCLOSURE DETAIL
32-22	3' CHANNEL, PER DETAIL 1/C5.12
32-23	PARALLEL CURB RAMP, PER DETAIL 13/C5.10
32-24	5' X 5' CONCRETE LANDING, PER DETAIL 7/C5.10
32-25	8' X 8' CONCRETE PAD FOR GENERATOR. SEE MEP PLAN
32-26	3' WIDE CURB BREAK AT 50' O.C., PER DETAIL 5/C5.10
32-27	PAINT OVER EXISTING TRAILER STALL PARKING WITH BLACK PAINT
32-28	FULL DEPTH SAW CUT, PER DETAIL 2/C5.10
32-29	SCREEN WALL, PER ARCHITECTURAL DETAIL 9/A5.10
32-30	3' HIGH GUARDRAIL TO BE EMBEDDED IN RETAINING WALL AT ALL LOCATIONS WHERE WALL HEIGHT IS GREATER THAN 30". SEE RETAINING WALL PROFILES AND DETAILS 3 AND 4/C5.12
32-31	MONUMENT SIGN. SEE LANDSCAPE PLANS FOR DETAILS
32-32	FUTURE ELECTRIC VEHICLE PARKING STALL. SEE ELECTRICAL PLANS FOR DETAILS
32-33	3' WIDE ISOLATED ROW. SEE DETAIL 12/C5.11
32-34	BUILDING CANOPY. SEE ARCHITECTURAL PLANS FOR DETAILS AND SPECIFICATIONS.
32-35	3 BIKE RACKS. SEE ARCHITECTURAL PLANS FOR DETAILS
32-36	RIP RAP AT PIPE OUTFALL, PER DETAIL 7/C5.12. SEE UTILITY PLANS FOR LOCATION
32-37	15' LONG COMPACT STALL
32-38	2' TALL SEAT WALL. SEE LANDSCAPE PLANS FOR GEOMETRY AND MATERIAL
32-39	5' WIDE GRAVEL PATH. 4" THICK 3/4"-0 CRUSHED ROCK AGGREGATE
33-01	FDC CONNECTION, PER DETAIL 16/C5.10, SEE UTILITY PLAN

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REGISTERED PROFESSIONAL ENGINEER
91497
OREGON
JAN. 10, 2014
GREGORY I. MINO
EXPIRES: 12/31/24

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REVISION SCHEDULE

Delta	Issued As	Issue Date
1	PLAN CHECK	06/10/2022
2	LAND USE	07/26/2022
3	LAND USE	11/15/2022

SITE PLAN

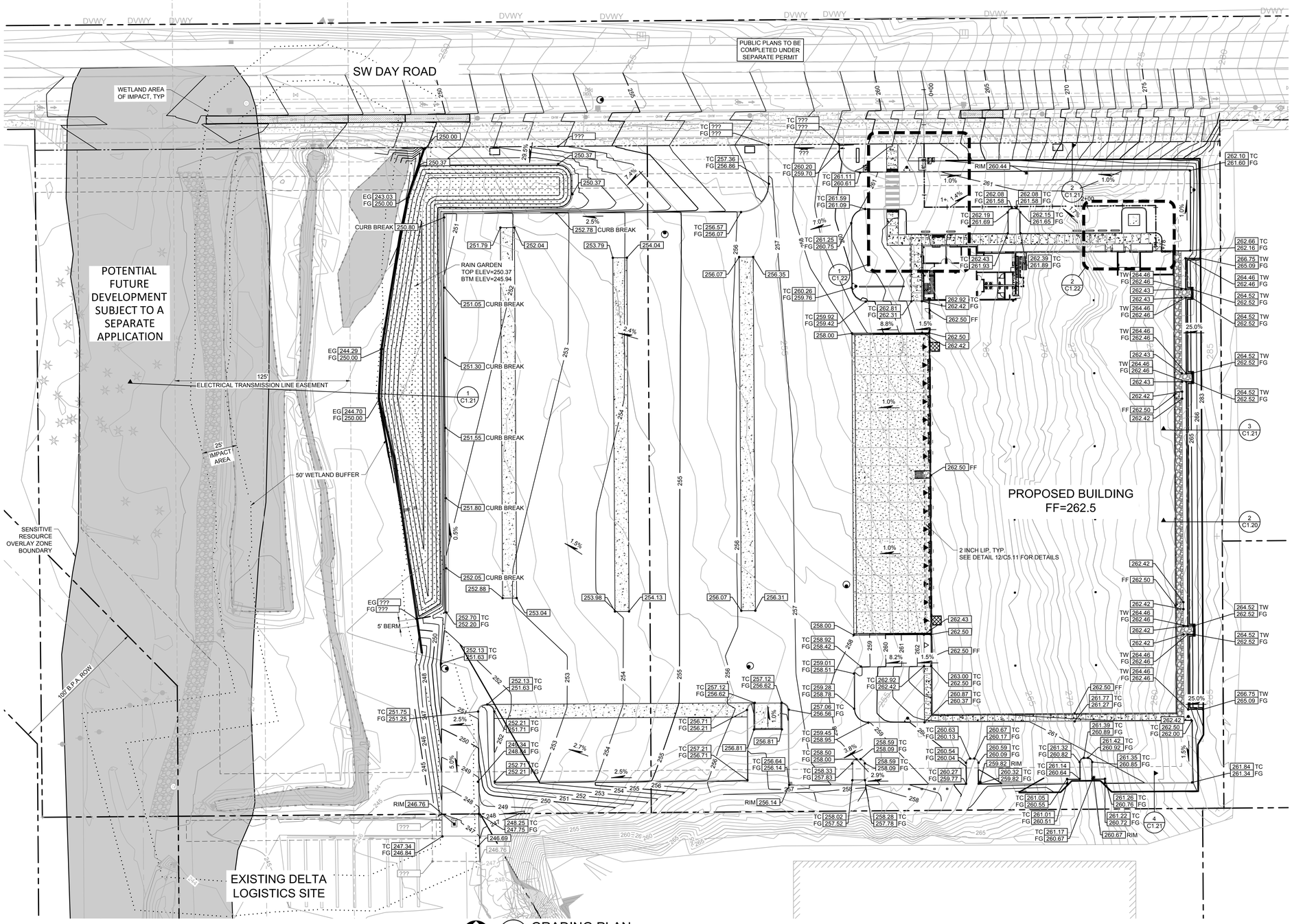
SHEET
C1.10

JOB NO. **2200502.00**

1031

THE SURVEY INFORMATION SHOWN AS A BACKGROUND SCREEN ON THIS SHEET IS SHOWN FOR REFERENCE ONLY AND IS BASED ON A SURVEY BY: HICKMAN & ASSOCIATES DATE:

DEVELOPMENT REVIEW SET - 04/24/23



1 C1.20 GRADING PLAN
1"=30'

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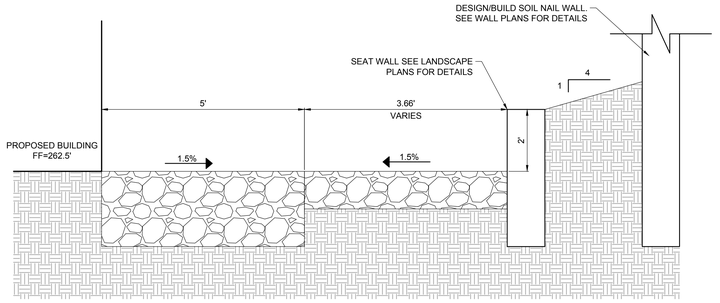
(IN FEET)
1 inch = 30 ft.



2 C1.20 WALL SECTION
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Delta	Issued As	Issue Date
1	PLAN CHECK	06/10/2022
2	LAND USE	11/15/2022

GRADING PLAN

SHEET
C1.20

JOB NO. **2200502.00**

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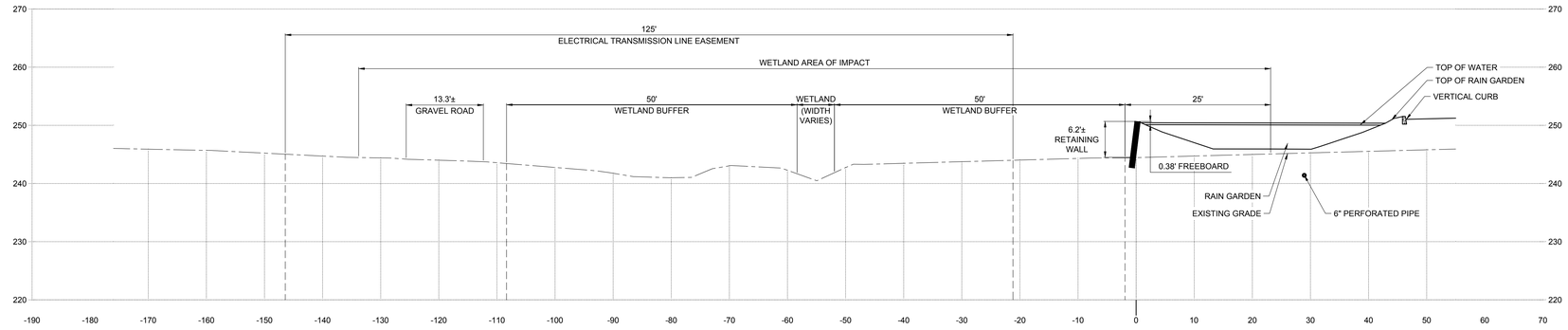

1 C1.21 CROSS SECTION - NORTHWEST WALL
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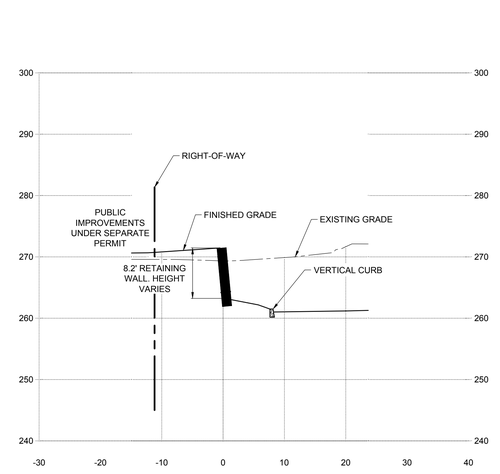
VERT. SCALE: 1"=1'



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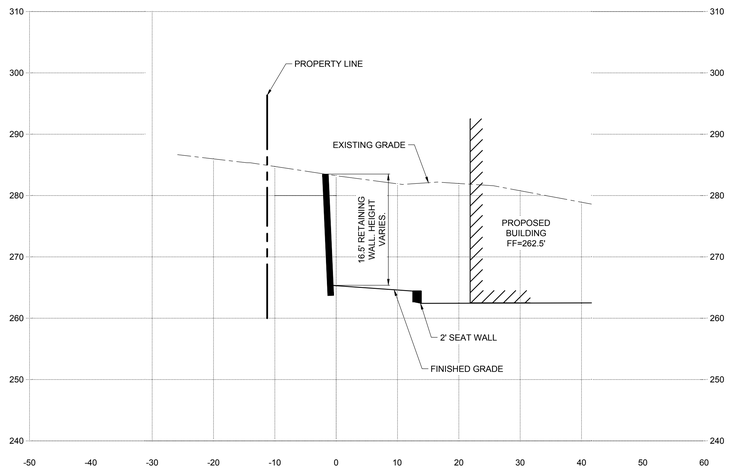
VERT. SCALE: 1"=1'



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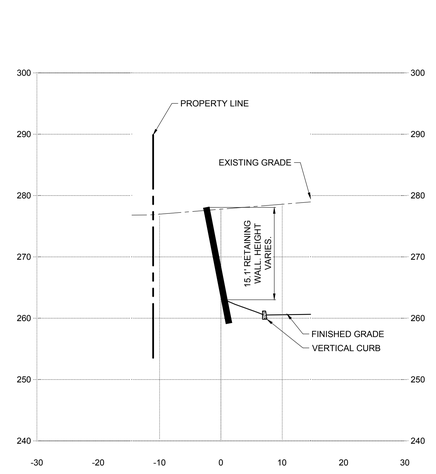
VERT. SCALE: 1"=1'



4 C1.21 CROSS SECTION 3 - EAST WALL
SCALE: 1"=10'
VERT. SCALE: 1"=1'

(IN FEET)
1 inch = **10** ft.

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01697
OREGON
JULY 10, 2015
GREGORY I. MINO
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REVISION SCHEDULE		
Delta	Issued As	Issue Date
1	PLAN CHECK	07/14/2022

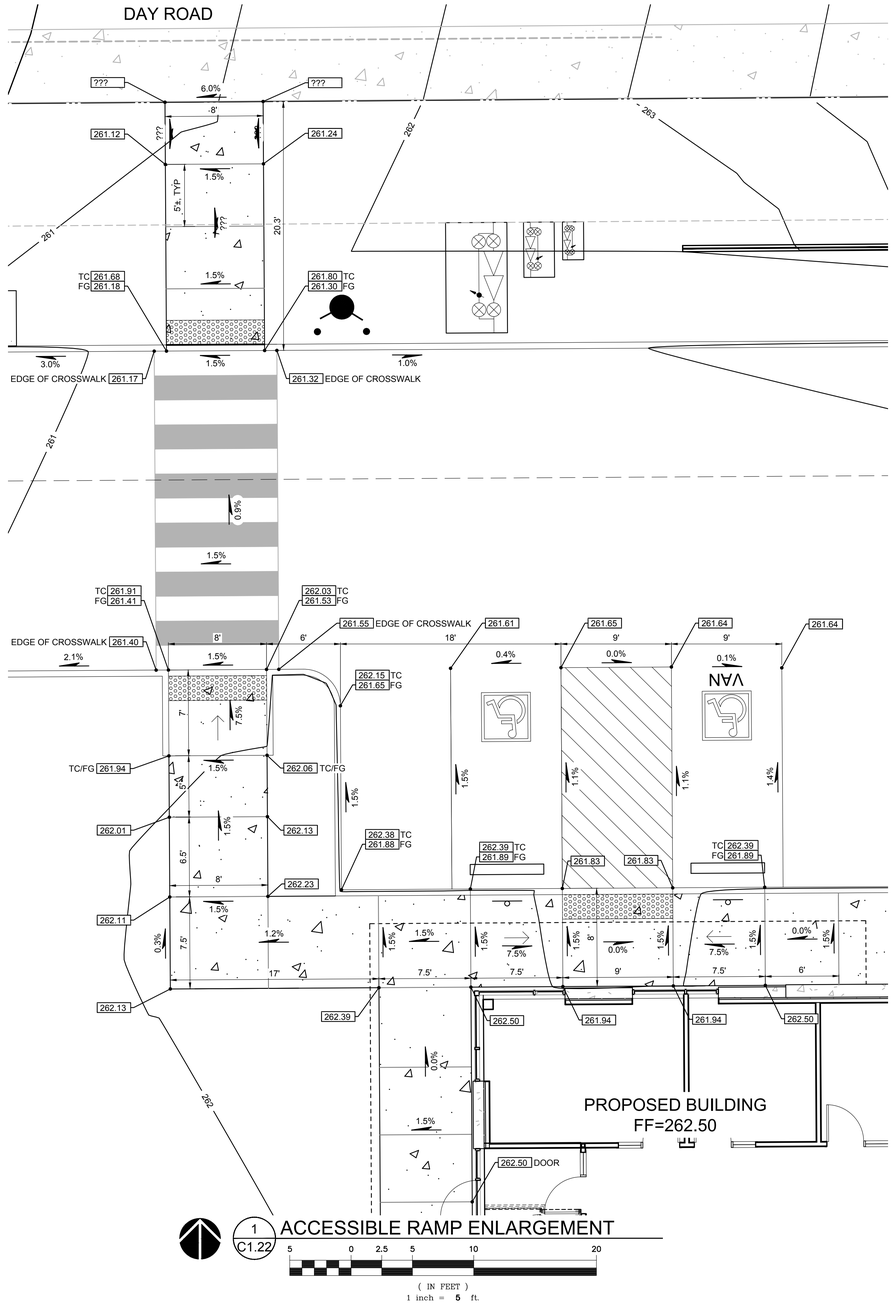
GRADING CROSS SECTIONS

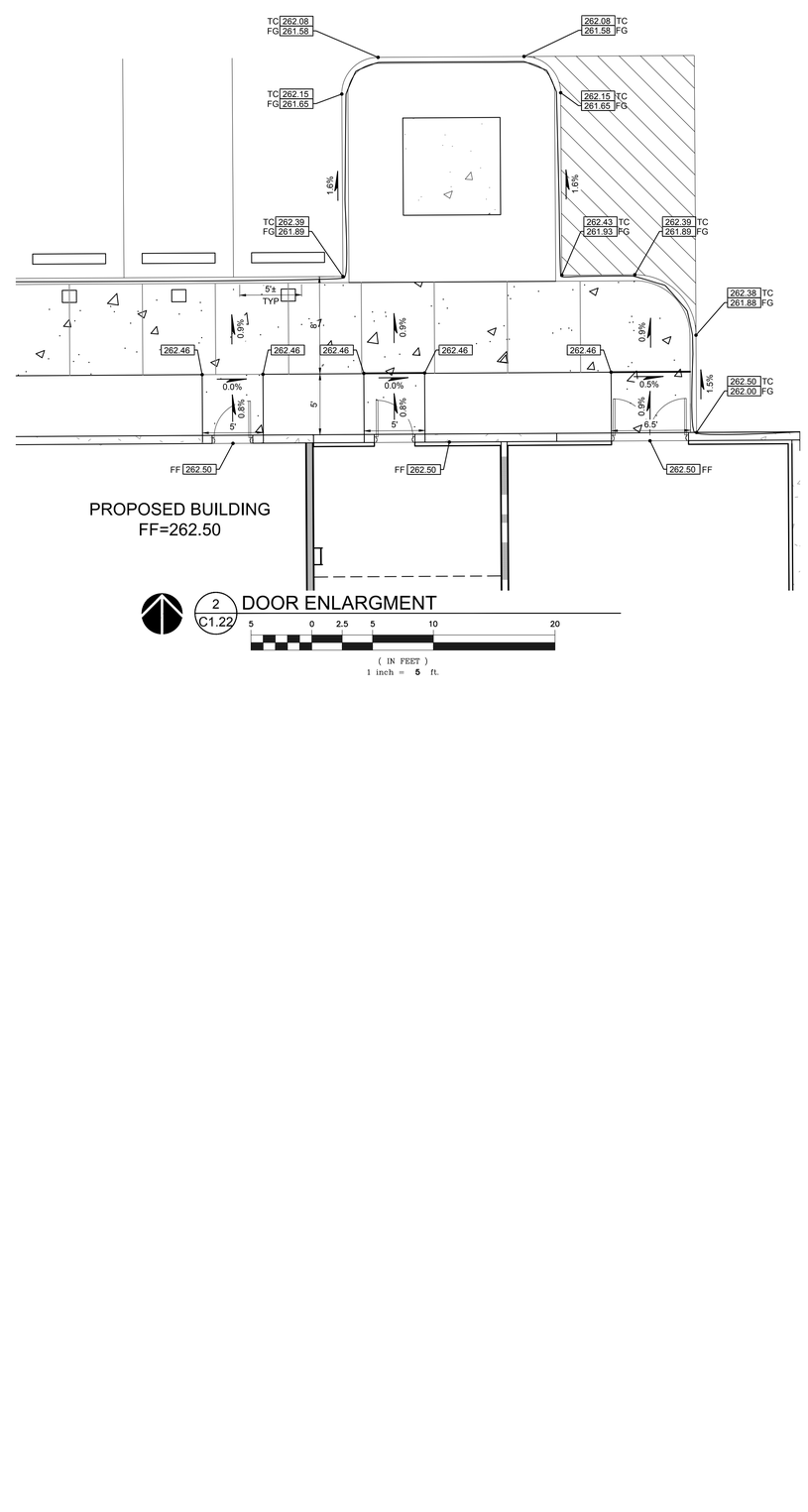
SHEET
C1.21

JOB NO. **2200502.00**

1033

DEVELOPMENT REVIEW SET - 04/24/23





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REVISION SCHEDULE

Delta	Issued As	Issue Date
1	PLAN CHECK	06/10/2022

GRADING ENLARGEMENT PLAN

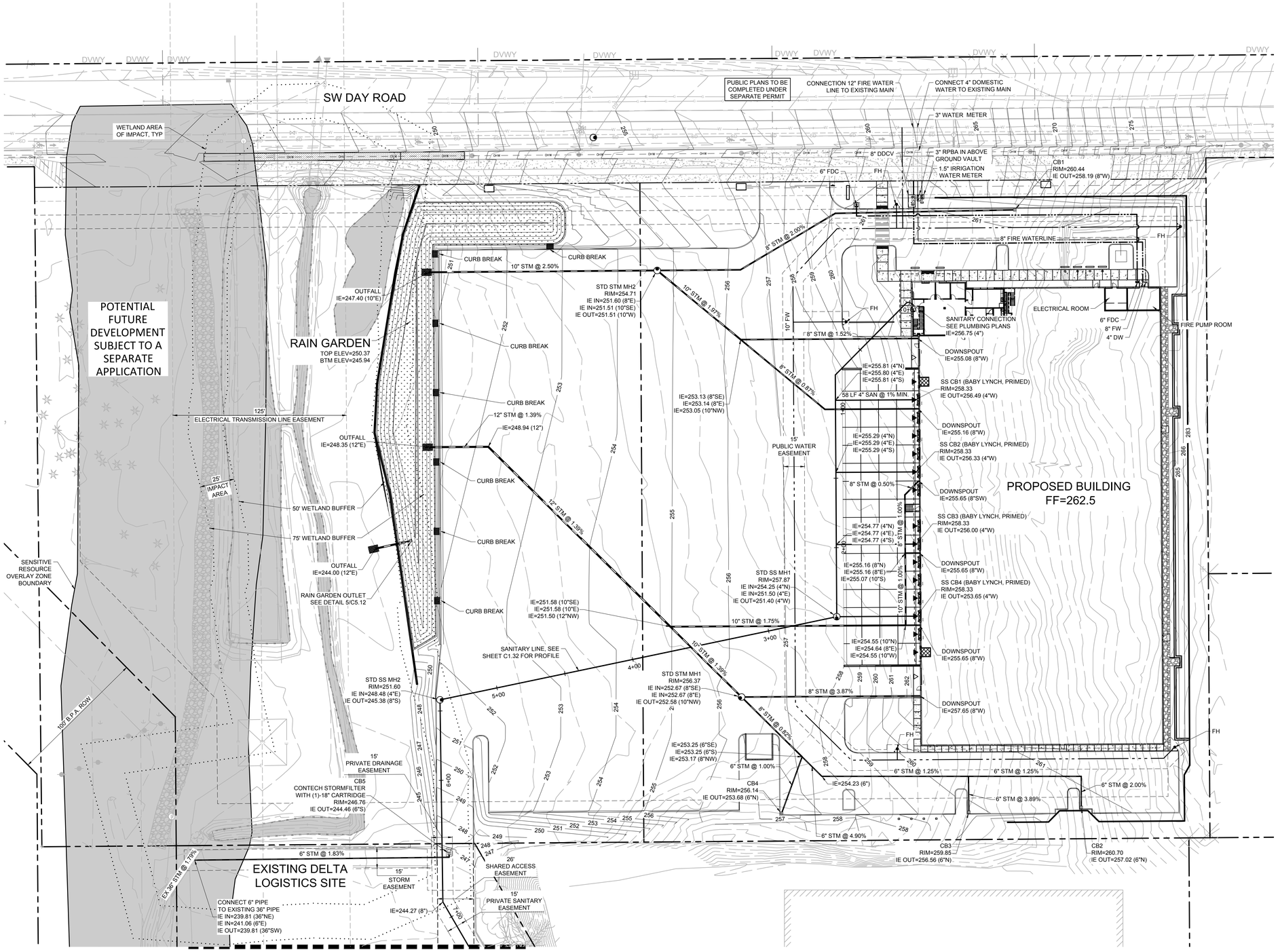
SHEET

C1.22

JOB NO. **2200502.00**

1034

DEVELOPMENT REVIEW SET - 04/24/23



1 C1.30 UTILITY PLAN

1"=30'

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

Item 2.

Architecture ▪ Interiors
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Seattle, WA
206.749.9993
www.mcknze.com

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DESIGN DRIVEN ▪ CLIENT FOCUSED

Client
DELTA LOGISTICS

9835 SW COMMERCE CIRCLE
WILSONVILLE, OR 97070

Project
DELTA LOGISTICS SITE EXPANSION

9710 SW DAY RD.
CITY OF
WILSONVILLE, OR

REGISTERED PROFESSIONAL ENGINEER
01697
OREGON
JULY 10, 2007
GREGORY I. MINO
EXPIRES: 12/31/24

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REVISION SCHEDULE

Delta	Issued As	Issue Date
1	PLAN CHECK	06/10/2022
2	LAND USE	11/15/2022

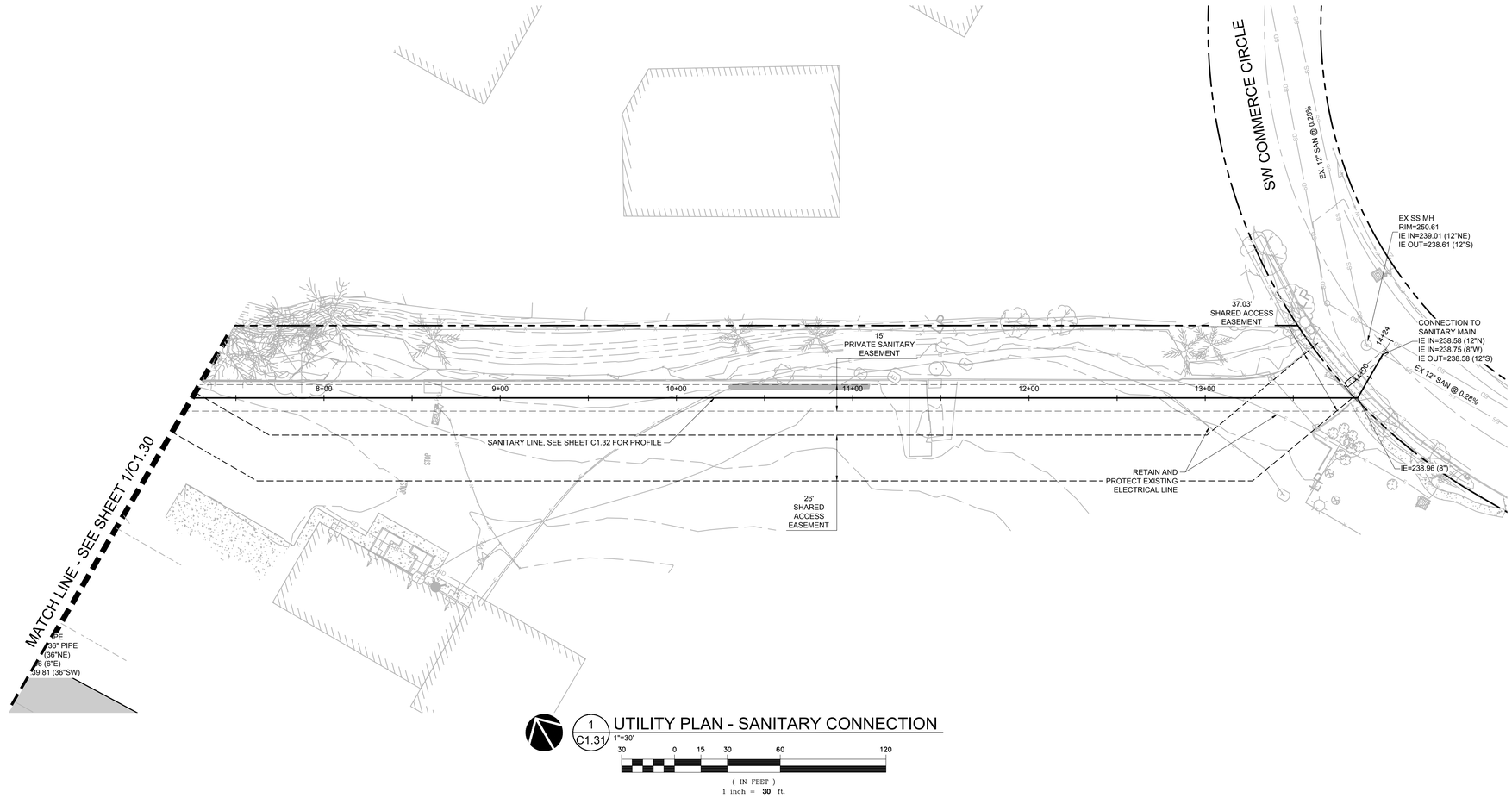
UTILITY PLAN

SHEET
C1.30

JOB NO. **2200502.00**

1035

DEVELOPMENT REVIEW SET - 04/24/23



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Client

DELTA LOGISTICS

**9835 SW COMMERCE CIRCLE
WILSONVILLE, OR 97070**

Project

DELTA LOGISTICS SITE EXPANSION

**9710 SW DAY RD.
CITY OF
WILSONVILLE, OR**

REGISTERED PROFESSIONAL ENGINEER
91097
OREGON
JAN. 10, 2014
GREGORY I. MINO

EXPIRES: 12/31/24

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REVISION SCHEDULE

Delta	Issued As	Issue Date
1	PLAN CHECK	06/10/2022
2	PLAN CHECK	11/15/2022

UTILITY PLAN - SANITARY CONNECTION

SHEET

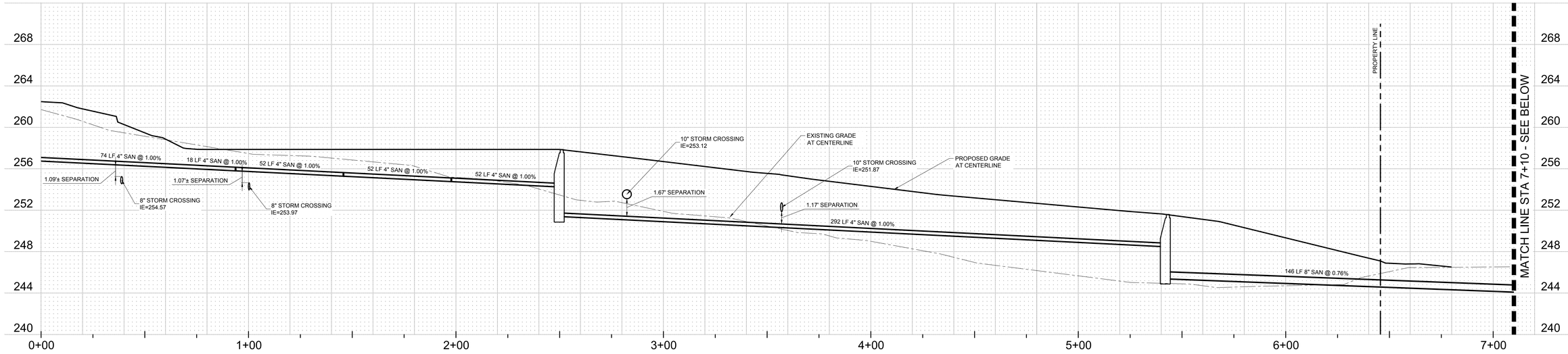
C1.31

JOB NO. **2200502.00**

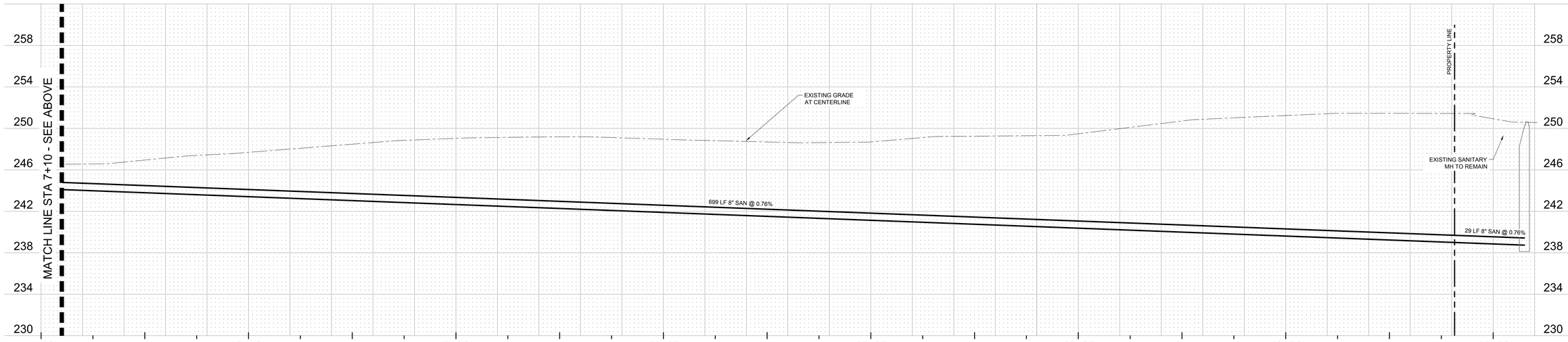
1036

DEVELOPMENT REVIEW SET - 04/24/23

*2200502.00 MCKENZIE\DESIGN\2200502.00.DWG\2200502.00-C1.31 UTILITY PLANS.DWG DWG AOC 04/24/23 15:07 1:30



1 C1.32 SANITARY PROFILE
HORZ. SCALE 1"=20'
VERT. SCALE 1"=5"



2 C1.32 SANITARY PROFILE
HORZ. SCALE 1"=20'
VERT. SCALE 1"=5"

Item 2.

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9835 SW COMMERCE
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9710 SW DAY RD.
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JAN. 10, 2014
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REVISION SCHEDULE

Delta	Issued As	Issue Date

SANITARY PROFILE

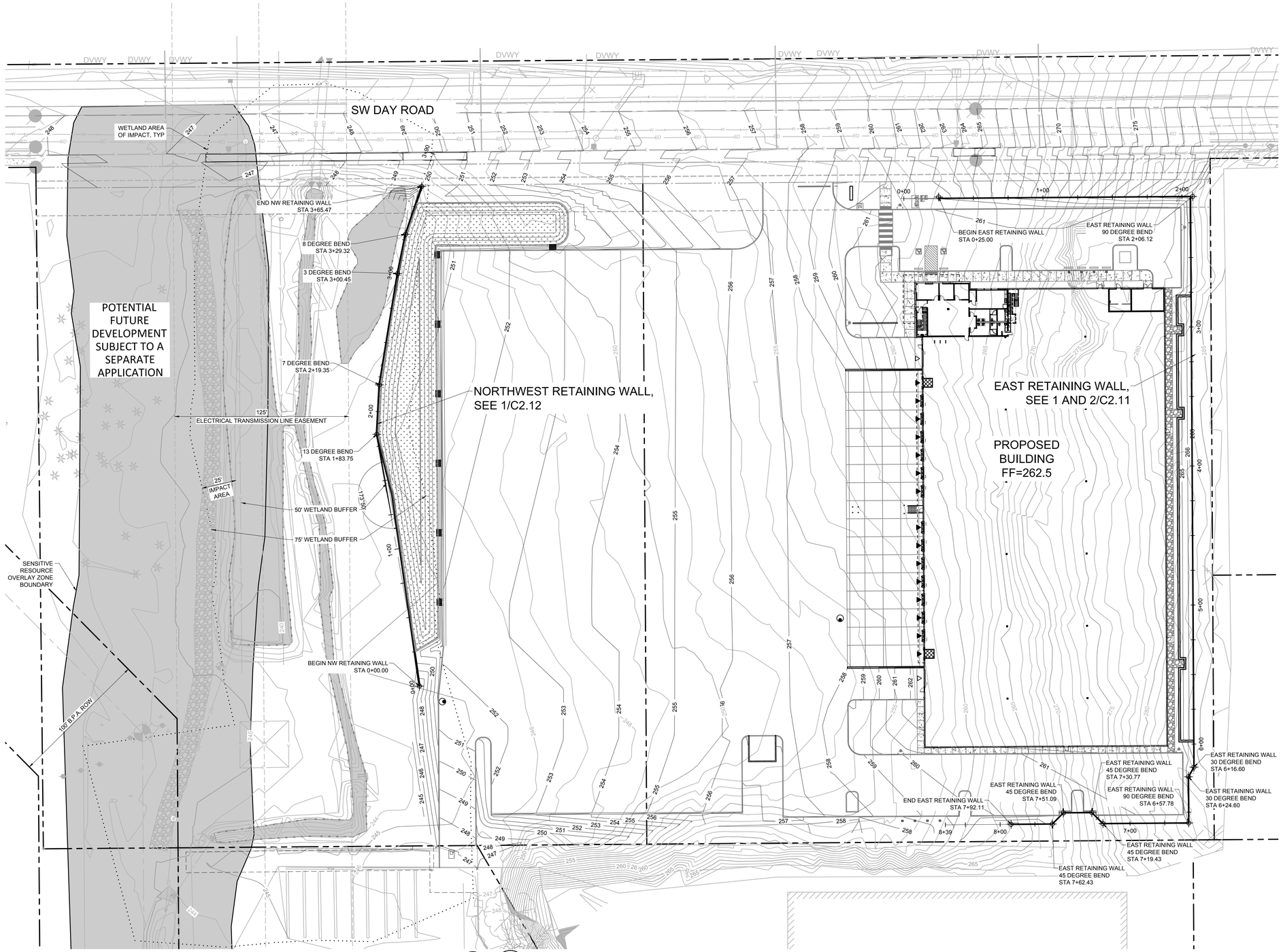
SHEET

C1.32

JOB NO. **2200502.00**

1037

DEVELOPMENT REVIEW SET - 04/24/23



1 C2.10 OVERALL SITE PLAN - RETAINING WALL

30 0 15 30 60 120

(IN FEET)
1 inch = **30** ft.

LEGEND

	EXISTING	PROPOSED
RIGHT-OF-WAY		
MAJOR CONTOUR	590	590
MINOR CONTOUR	591	591

NOTE:

WALL ELEVATIONS ARE PROVIDED FOR CONTRACTOR COORDINATION ONLY. WALL FINAL DESIGN TO BE DESIGN-BUILD. REFER TO DESIGN-BUILD PLANS FOR WALL DETAILS, BLOCK LAYOUT, REINFORCING, AND OTHER DETAILS.

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9835 SW COMMERCE CIRCLE
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Project
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9710 SW DAY RD.
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REVISION SCHEDULE

Delta	Issued As	Issue Date
1	PLAN CHECK	07/14/2022

OVERALL RETAINING WALL PLAN

SHEET
C2.10

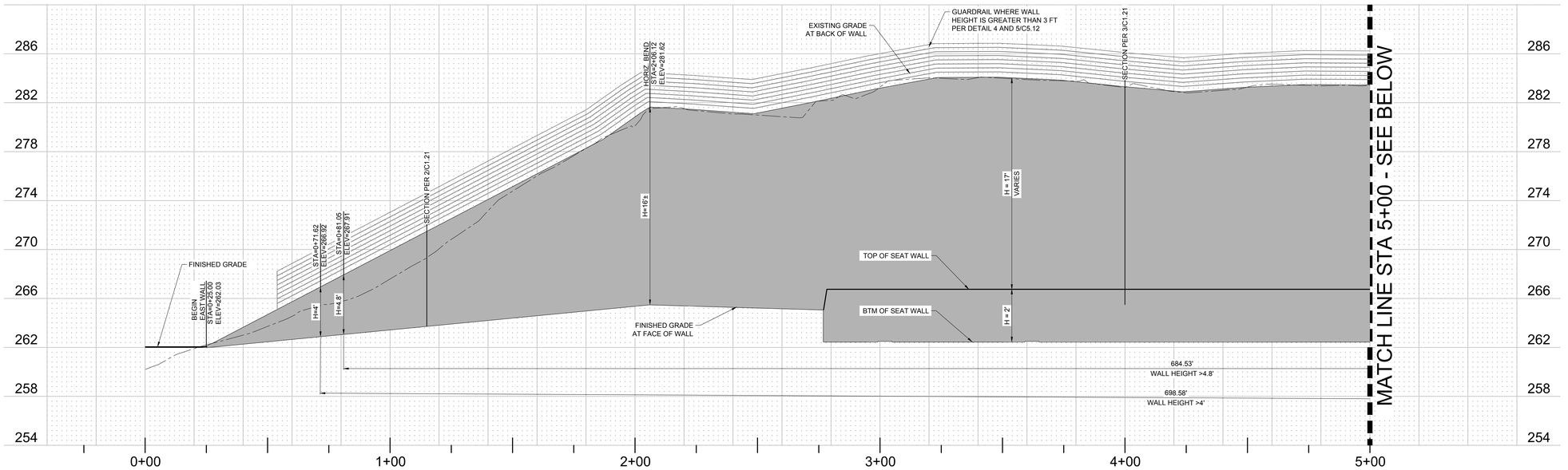
JOB NO. **2200502.00**

1038

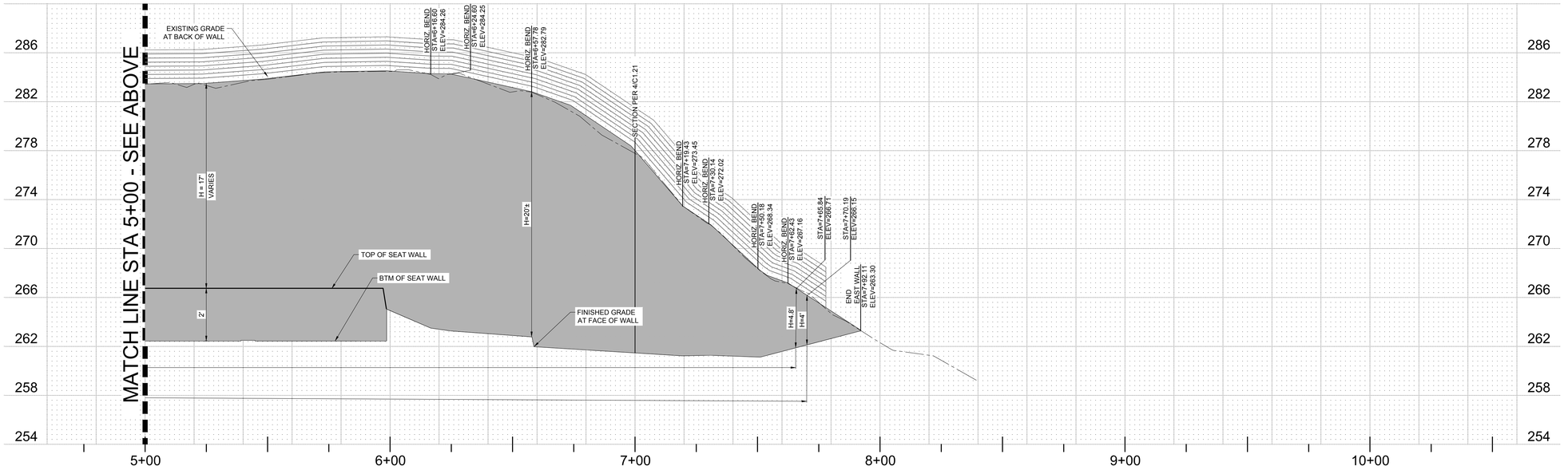
DEVELOPMENT REVIEW SET - 04/24/23

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.



1 C2.11 EAST RETAINING WALL PROFILE
HORZ. SCALE 1"=20'
VERT. SCALE 1"=5"



2 C2.11 EAST RETAINING WALL PROFILE
HORZ. SCALE 1"=20'
VERT. SCALE 1"=5"

LEGEND

	EXISTING	PROPOSED
RIGHT-OF-WAY		
MAJOR CONTOUR	590	590
MINOR CONTOUR	591	591

ABBREVIATIONS

FW	GROUND ELEVATION AT FACE OF WALL
BW	GROUND ELEVATION AT BACK OF WALL

NOTE:

WALL ELEVATIONS ARE PROVIDED FOR CONTRACTOR COORDINATION ONLY. WALL FINAL DESIGN TO BE DESIGN-BUILD. REFER TO DESIGN-BUILD PLANS FOR WALL DETAILS, BLOCK LAYOUT, REINFORCING, AND OTHER DETAILS.

DEVELOPMENT REVIEW SET - 04/24/23

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REVISION SCHEDULE

Delta	Issued As	Issue Date
1	PLAN CHECK	07/14/2022

EAST RETAINING WALL PROFILE

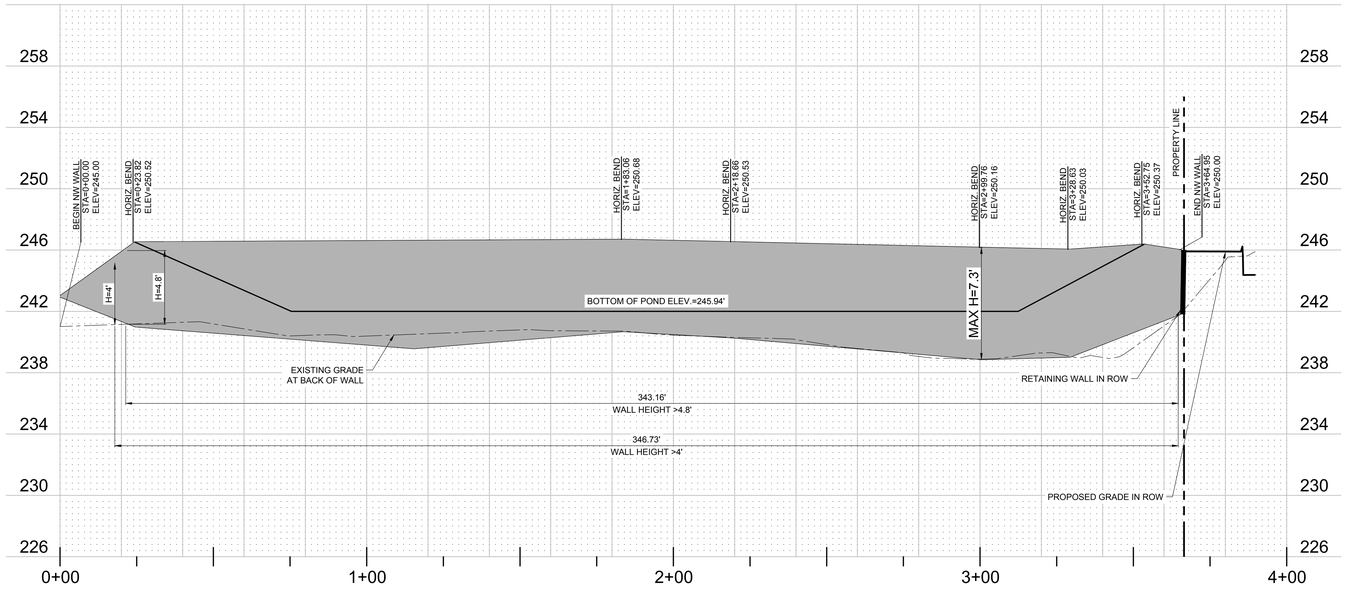
SHEET
C2.11

JOB NO. **2200502.00**

1039

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.



1 C2.12 NORTHWEST RETAINING WALL PROFILE
HORZ. SCALE 1"=20'
VERT. SCALE 1"=5"

LEGEND

	EXISTING	PROPOSED
RIGHT-OF-WAY		
MAJOR CONTOUR	590	590
MINOR CONTOUR	591	591

ABBREVIATIONS

FW	GROUND ELEVATION AT FACE OF WALL
BW	GROUND ELEVATION AT BACK OF WALL

NOTE:

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OREGON
JULY 10, 2015
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REVISION SCHEDULE

Delta	Issued As	Issue Date

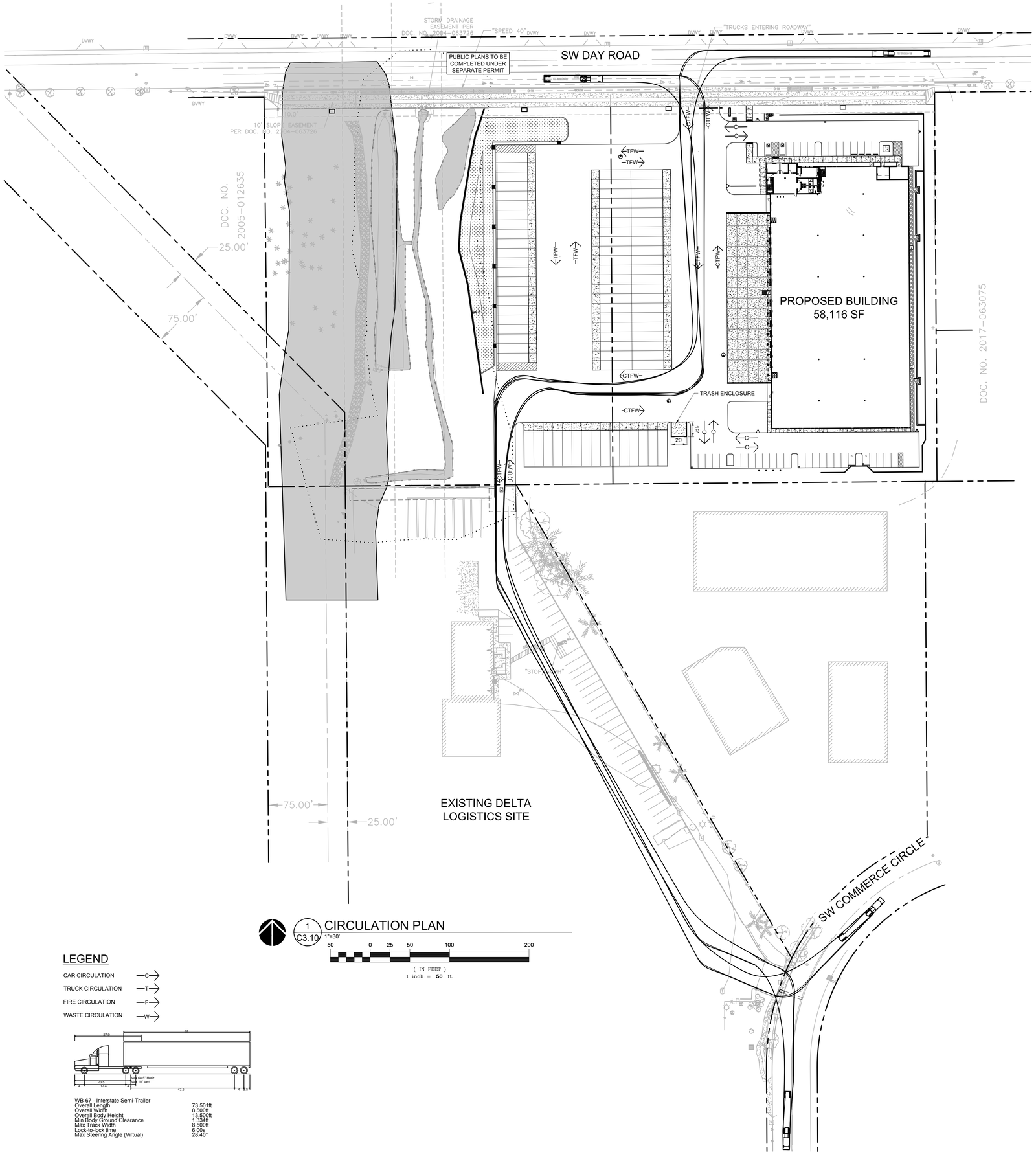
NORTHWEST RETAINING WALL PROFILES

SHEET
C2.12

JOB NO. **2200502.00**

1040

DEVELOPMENT REVIEW SET - 04/24/23



1 C3.10 CIRCULATION PLAN

1"=30'

50 0 25 50 100 200

(IN FEET)
1 inch = 50 ft.

LEGEND

CAR CIRCULATION —C→
TRUCK CIRCULATION —T→
FIRE CIRCULATION —F→
WASTE CIRCULATION —W→

WB-67 - Interstate Semi-Trailer	
Overall Length	73.501ft
Overall Width	8.500ft
Overall Body Height	13.500ft
Min Body Ground Clearance	1.334ft
Max Track Width	8.500ft
Lock-to-lock time	6.00s
Max Steering Angle (Virtual)	28.40°

THE SURVEY INFORMATION SHOWN AS A BACKGROUND SCREEN ON THIS SHEET IS SHOWN FOR REFERENCE ONLY AND IS BASED ON A SURVEY BY: HICKMAN & ASSOCIATES DATE:

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REVISION SCHEDULE		
Delta	Issued As	Issue Date
1	PLAN CHECK	06/10/2022
2	LAND USE	11/15/2022

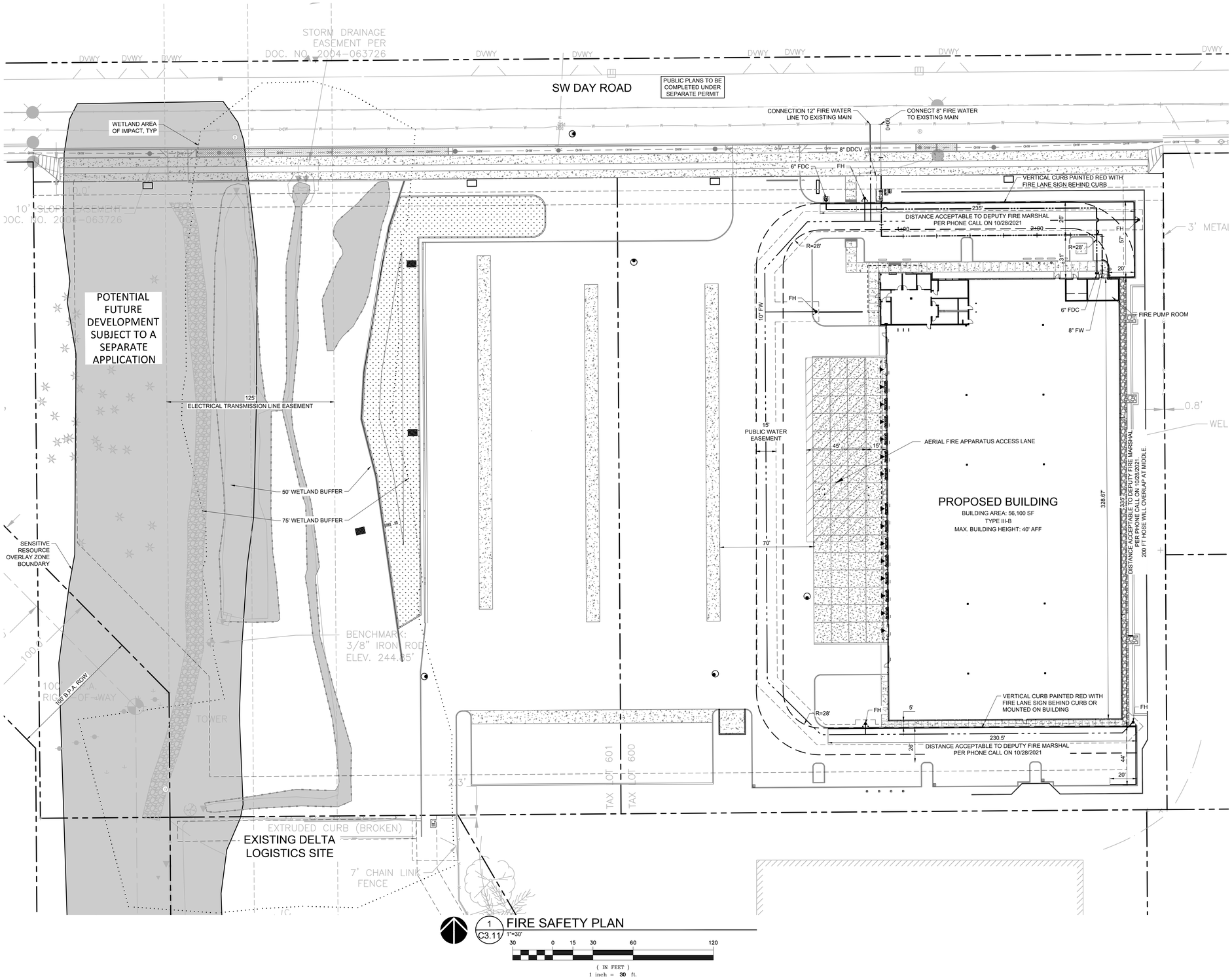
CIRCULATION PLAN

SHEET
C3.10

JOB NO. **2200502.00**

1041

DEVELOPMENT REVIEW SET - 04/24/23



1 C3.11 FIRE SAFETY PLAN

1"=30'

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

THE SURVEY INFORMATION SHOWN AS A BACKGROUND SCREEN ON THIS SHEET IS SHOWN FOR REFERENCE ONLY AND IS BASED ON A SURVEY BY: HICKMAN & ASSOCIATES DATE:

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REVISION SCHEDULE

Delta	Issued As	Issue Date
1	LAND USE	11/15/2022

FIRE SAFETY PLAN

SHEET
C3.11

JOB NO. **2200502.00**

DEVELOPMENT REVIEW SET - 04/24/23

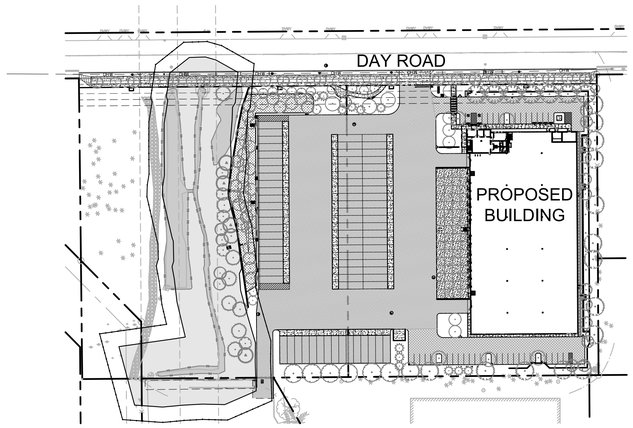
"220050200" \\GRP.MCK\PROJECTS\PROJECTS\220050200\DRAWINGS\CIVIL\50204-C3.11-FIRE SAFETY PLAN.DWG AOC 04/24/23 15:49 1:30

DELTA LOGISTICS SITE EXPANSION EROSION AND SEDIMENT CONTROL PLAN

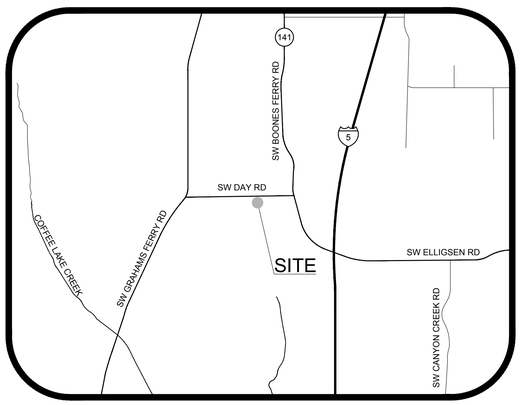
WILSONVILLE, OR

TAX LOTS 600, 601 3S102B000601, 3S102B000600

CLACKAMAS COUNTY, OREGON



SITE PLAN
1"=100' WILSONVILLE, OR



VICINITY MAP
NTS WILSONVILLE, OR

PROJECT LOCATION:

ALONG SW DAY ROAD BETWEEN
SW GRAHAMS FERRY ROAD AND
SW BOONES FERRY ROAD
WILSONVILLE, OR 97223
LATITUDE = 45°20'23"
LONGITUDE = -122°46'41"

PROPERTY DESCRIPTION:

PHYSICAL DESCRIPTION: ALONG SW DAY ROAD
BETWEEN SW GRAHAMS FERRY ROAD AND SW
BOONES FERRY ROAD
TAX LOTS: 600, 601
TOWNSHIP 3 SOUTH, RANGE 1 WEST
CLACKAMAS COUNTY, OREGON

ATTENTION EXCAVATORS:

OREGON LAW REQUIRES YOU TO FOLLOW RULES ADOPTED BY THE OREGON UTILITY NOTIFICATION CENTER. THOSE RULES ARE SET FORTH IN OAR 952-001-0010 THROUGH OAR 952-001-0090. YOU MAY OBTAIN COPIES OF THESE RULES FROM THE CENTER BY CALLING 503-232-1987. IF YOU HAVE ANY QUESTIONS ABOUT THE RULES, YOU MAY CONTACT THE CENTER. YOU MUST NOTIFY THE CENTER AT LEAST TWO BUSINESS DAYS, BEFORE COMMENCING AN EXCAVATION. CALL 503-246-6699.

GENERAL NOTE:

THIS PLAN SHOWS THE MINIMUM SUGGESTED LEVEL OF EROSION AND SEDIMENT CONTROL PROTECTION REQUIRED. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO IMPLEMENT ADDITIONAL MEASURES AS NECESSARY TO COMPLY WITH ALL PERMITS, LOCAL, AND STATE REQUIREMENTS.

CLIENT

DELTA LOGISTICS
CONTACT: IGOR NICHIPORCHIK
9835 SW COMMERCE CIR
WILSONVILLE, OR
PHONE: (503) 665-2200
IGOR@DELTAFREIGHTINC.COM

CIVIL ENGINEERING

MACKENZIE
CONTACT (PUBLIC): GREG MINO
1515 SE WATER AVE
PORTLAND, OR 97214
PHONE: (971)-346-3702
GMINO@MCKNZE.COM

CONTACT (PRIVATE): BREEZY RINEHART
1515 SE WATER AVE
PORTLAND, OR 97214
PHONE: 971-346-3761
BRINEHART@MCKNZE.COM

SURVEYOR

WEDDLE SURVEYING INC.
CONTACT: MICHAEL RENNICK
6950 SW HAMPTON ST, STE 170,
TIGARD, OR 97223
PHONE:503-941-9585
XXXX@WEDDLESURVEYING.COM

PLANNING

MACKENZIE
CONTACT: LEE LEIGHTON
1515 SE WATER AVE
PORTLAND, OR 97214
PHONE: 503-224-9560
LLEIGHTON@MCKNZE.COM

THE SURVEY INFORMATION SHOWN AS A BACKGROUND SCREEN ON THIS SHEET IS SHOWN FOR REFERENCE ONLY AND IS BASED ON A SURVEY BY: HICKMAN & ASSOCIATES DATE:

NARRATIVE DESCRIPTIONS

EXISTING SITE CONDITIONS

* UNDEVELOPED LAND

DEVELOPED CONDITIONS

*INDUSTRIAL BUILDING AND STORAGE

NATURE OF CONSTRUCTION ACTIVITY AND ESTIMATED TIME TABLE

*DEMOLITION	OCT 2022 TO NOV 2022
*CLEARING AND GRUBBING	MAR 2023 TO JUN 2023
*MASS GRADING	APR 2023 TO JULY 2023
*UTILITY INSTALLATION	JULY 2023 TO AUG 2023
*SITE CONSTRUCTION	AUG 2023 TO OCT 2023
*FINAL STABILIZATION	OCT 2023 TO NOV 2023

TOTAL SITE AREA = 386,732 SF (6.74 AC)

TOTAL DISTURBED AREA = 271,121 SF (6.22 AC)

SITE SOIL CLASSIFICATION: (FROM USGS)

5B - BRIEDWELL STONY SILT LOAM, 0 TO 7 % SLOPES
37B - QUATAMA LOAM, 3 TO 7 % SLOPES
38B - SAUM SILT LOAM, 2 TO 7 % SLOPES
38C - SAUM SILT LOAM, 7 TO 12 % SLOPES
38D - SAUM SILT LOAM, 12 TO 20 % SLOPES
43 - WAPATO SILTY CLAY LOAM
63B - SALEM GRAVELLY SILT LOAM, 0 TO 7 % SLOPES

RECEIVING WATER BODIES:

NEAREST WATER BODY: COFFEE LAKE CREEK

PERMITTEE'S SITE INSPECTOR:

COMPANY: BUILT ENVIRONMENTS NORTHWEST
INSPECTOR: PETER ZAGARYUK
PHONE:(503) 816-1219
E-MAIL: VZEXCAVATION@GMAIL.COM
CERTIFICATION: CWT21-1240, EXPIRES 05/13/2024

RATIONALE STATEMENT

A COMPREHENSIVE LIST OF AVAILABLE BEST MANAGEMENT PRACTICES (BMP) OPTIONS BASED ON DEQ's GUIDANCE MANUAL HAS BEEN REVIEWED TO COMPLETE THIS EROSION AND SEDIMENT CONTROL PLAN. SOME OF THE ABOVE LISTED BMP's WERE NOT CHOSEN BECAUSE THEY WERE DETERMINED TO NOT EFFECTIVELY MANAGE EROSION PREVENTION AND SEDIMENT CONTROL FOR THIS PROJECT BASED ON SPECIFIC SITE CONDITIONS, INCLUDING SOIL CONDITIONS TOPOGRAPHIC CONSTRAINTS, ACCESSIBILITY TO THE SITE, AND OTHER RELATED CONDITIONS, AS THE PROJECT PROGRESSES AND THERE IS A NEED TO REVISE THE ESCP PLAN, AN ACTION PLAN WILL BE SUBMITTED.

INITIAL _____

STANDARD EROSION AND SEDIMENT CONTROL PLAN DRAWING NOTES:

1. ONCE KNOWN, INCLUDE A LIST OF ALL CONTRACTORS THAT WILL ENGAGE IN CONSTRUCTION ACTIVITIES ON SITE, AND THE AREAS OF THE SITE WHERE THE CONTRACTOR(S) WILL ENGAGE IN CONSTRUCTION ACTIVITIES. REVISE THE LIST AS APPROPRIATE UNTIL PERMIT COVERAGE IS TERMINATED (SECTION 4.4.C.I). IN ADDITION, INCLUDE A LIST OF ALL PERSONNEL (BY NAME AND POSITION) THAT ARE RESPONSIBLE FOR THE DESIGN, INSTALLATION AND MAINTENANCE OF STORMWATER CONTROL MEASURES (E.G. ESCP DEVELOPER, BMP INSTALLER (SEE SECTION 4.10), AS WELL AS THEIR INDIVIDUAL RESPONSIBILITIES. (SECTION 4.4.C.II)
2. VISUAL MONITORING INSPECTION REPORTS MUST BE MADE IN ACCORDANCE WITH DEQ 1200-C PERMIT REQUIREMENTS. (SECTION 6.5)
3. INSPECTION LOGS MUST BE KEPT IN ACCORDANCE WITH DEQ'S 1200-C PERMIT REQUIREMENTS. (SECTION 6.5.G)
4. RETAIN A COPY OF THE ESCP AND ALL REVISIONS ON SITE AND MAKE IT AVAILABLE ON REQUEST TO DEQ, AGENT, OR THE LOCAL MUNICIPALITY. (SECTION 4.7)
5. THE PERMIT REGISTRANT MUST IMPLEMENT THE ESCP. FAILURE TO IMPLEMENT ANY OF THE CONTROL MEASURES OR PRACTICES DESCRIBED IN THE ESCP IS A VIOLATION OF THE PERMIT. (SECTIONS 4 AND 4.11)
6. THE ESCP MUST BE ACCURATE AND REFLECT SITE CONDITIONS. (SECTION 4.8)
7. SUBMISSION OF ALL ESCP REVISIONS IS NOT REQUIRED, SUBMITTAL OF THE ESCP REVISIONS IS ONLY UNDER SPECIFIC CONDITIONS. SUBMIT ALL NECESSARY REVISION TO DEQ OR AGENT WITHIN 10 DAYS. (SECTION 4.9)
8. SEQUENCE CLEARING AND GRADING TO THE MAXIMUM EXTENT PRACTICAL TO PREVENT EXPOSED INACTIVE AREAS FROM BECOMING A SOURCE OF EROSION. (SECTION 2.2.2)
9. CREATE SMOOTH SURFACES BETWEEN SOIL SURFACE AND EROSION AND SEDIMENT CONTROLS TO PREVENT STORMWATER FROM BYPASSING CONTROLS AND PONDING. (SECTION 2.2.3)
10. IDENTIFY, MARK, AND PROTECT (BY CONSTRUCTION FENCING OR OTHER MEANS) CRITICAL RIPARIAN AREAS AND VEGETATION INCLUDING IMPORTANT TREES AND ASSOCIATED ROOTING ZONES, AND VEGETATION AREAS TO BE PRESERVED. IDENTIFY VEGETATIVE BUFFER ZONES BETWEEN THE SITE AND SENSITIVE AREAS (E.G., WETLANDS), AND OTHER AREAS TO BE PRESERVED, ESPECIALLY IN PERIMETER AREAS. (SECTION 2.2.1)
11. PRESERVE EXISTING VEGETATION WHEN PRACTICAL AND RE-VEGETATE OPEN AREAS. RE-VEGETATE OPEN AREAS WHEN PRACTICABLE BEFORE AND AFTER GRADING OR CONSTRUCTION. IDENTIFY THE TYPE OF VEGETATIVE SEED MIX USED. (SECTION 2.2.5)
12. MAINTAIN AND DELINEATE ANY EXISTING NATURAL BUFFER WITHIN THE 50-FEET OF WATERS OF THE STATE. (SECTION 2.2.4)
13. INSTALL PERIMETER SEDIMENT CONTROL, INCLUDING STORM DRAIN INLET PROTECTION AS WELL AS ALL SEDIMENT BASINS, TRAPS, AND BARRIERS PRIOR TO LAND DISTURBANCE. (SECTIONS 2.1.3)
14. CONTROL BOTH PEAK FLOW RATES AND TOTAL STORMWATER VOLUME, TO MINIMIZE EROSION AT OUTLETS AND DOWNSTREAM CHANNELS AND STREAMBANKS. (SECTIONS 2.1.1. AND 2.2.16)
15. CONTROL SEDIMENT AS NEEDED ALONG THE SITE PERIMETER AND AT ALL OPERATIONAL INTERNAL STORM DRAIN INLETS AT ALL TIMES DURING CONSTRUCTION, BOTH INTERNALLY AND AT THE SITE BOUNDARY. (SECTIONS 2.2.6 AND 2.2.13)
16. ESTABLISH CONCRETE TRUCK AND OTHER CONCRETE EQUIPMENT WASHOUT AREAS BEFORE BEGINNING CONCRETE WORK. (SECTION 2.2.14)
17. APPLY TEMPORARY AND/OR PERMANENT SOIL STABILIZATION MEASURES IMMEDIATELY ON ALL DISTURBED AREAS AS GRADING PROGRESSES. TEMPORARY OR PERMANENT STABILIZATIONS MEASURES ARE NOT REQUIRED FOR AREAS THAT ARE INTENDED TO BE LEFT UNVEGETATED, SUCH AS DIRT ACCESS ROADS OR UTILITY POLE PADS.(SECTIONS 2.2.20 AND 2.2.21)
18. ESTABLISH MATERIAL AND WASTE STORAGE AREAS, AND OTHER NON-STORMWATER CONTROLS. (SECTION 2.3.7)
19. KEEP WASTE CONTAINER LIDS CLOSED WHEN NOT IN USE AND CLOSE LIDS AT THE END OF THE BUSINESS DAY FOR THOSE CONTAINERS THAT ARE ACTIVELY USED THROUGHOUT THE DAY. FOR WASTE CONTAINERS THAT DO NOT HAVE LIDS, PROVIDE EITHER (1) COVER (E.G., A TARP, PLASTIC SHEETING, TEMPORARY ROOF) TO PREVENT EXPOSURE OF WASTES TO PRECIPITATION, OR (2) A SIMILARLY EFFECTIVE MEANS DESIGNED TO PREVENT THE DISCHARGE OF POLLUTANTS (E.G., SECONDARY CONTAINMENT). (SECTION 2.3.7)
20. PREVENT TRACKING OF SEDIMENT ONTO PUBLIC OR PRIVATE ROADS USING BMPS SUCH AS: CONSTRUCTION ENTRANCE, GRAVELED (OR PAVED) EXITS AND PARKING AREAS, GRAVEL ALL UNPAVED ROADS LOCATED ONSITE, OR USE AN EXIT TIRE WASH. THESE BMPS MUST BE IN PLACE PRIOR TO LAND- DISTURBING ACTIVITIES. (SECTION 2.2.7)
21. WHEN TRUCKING SATURATED SOILS FROM THE SITE, EITHER USE WATER-TIGHT TRUCKS OR DRAIN LOADS ON SITE. (SECTION 2.2.7.F)
22. CONTROL PROHIBITED DISCHARGES FROM LEAVING THE CONSTRUCTION SITE, I.E., CONCRETE WASH-OUT, WASTEWATER FROM CLEANOUT OF STUCCO, PAINT AND CURING COMPOUNDS. (SECTIONS 1.5 AND 2.3.9)
23. ENSURE THAT STEEP SLOPE AREAS WHERE CONSTRUCTION ACTIVITIES ARE NOT OCCURRING ARE NOT DISTURBED. (SECTION 2.2.10)
24. PREVENT SOIL COMPACTION IN AREAS WHERE POST-CONSTRUCTION INFILTRATION FACILITIES ARE TO BE INSTALLED. (SECTION 2.2.12)
25. USE BMPS TO PREVENT OR MINIMIZE STORMWATER EXPOSURE TO POLLUTANTS FROM SPILLS; VEHICLE AND EQUIPMENT FUELING, MAINTENANCE, AND STORAGE; OTHER CLEANING AND MAINTENANCE ACTIVITIES; AND WASTE HANDLING ACTIVITIES. THESE POLLUTANTS INCLUDE FUEL, HYDRAULIC FLUID, AND OTHER OILS FROM VEHICLES AND MACHINERY, AS WELL AS DEBRIS, FERTILIZER, PESTICIDES AND HERBICIDES, PAINTS, SOLVENTS, CURING COMPOUNDS AND ADHESIVES FROM CONSTRUCTION OPERATIONS. (SECTIONS 2.2.15 AND 2.3)
26. PROVIDE PLANS FOR SEDIMENTATION BASINS THAT HAVE BEEN DESIGNED PER SECTION 2.2.17 AND STAMPED BY AN OREGON PROFESSIONAL ENGINEER. (SEE SECTION 2.2.17.A)
27. IF ENGINEERED SOILS ARE USED ON SITE, A SEDIMENTATION BASIN/IMPOUNDMENT MUST BE INSTALLED. (SEE SECTIONS 2.2.17 AND 2.2.18)
28. PROVIDE A DEWATERING PLAN FOR ACCUMULATED WATER FROM PRECIPITATION AND UNCONTAMINATED GROUNDWATER SEEPAGE DUE TO SHALLOW EXCAVATION ACTIVITIES. (SEE SECTION 2.4)
29. IMPLEMENT THE FOLLOWING BMPS WHEN APPLICABLE: WRITTEN SPILL PREVENTION AND RESPONSE PROCEDURES, EMPLOYEE TRAINING ON SPILL PREVENTION AND PROPER DISPOSAL PROCEDURES, SPILL KITS IN ALL VEHICLES, REGULAR MAINTENANCE SCHEDULE FOR VEHICLES AND MACHINERY, MATERIAL DELIVERY AND STORAGE CONTROLS, TRAINING AND SIGNAGE, AND COVERED STORAGE AREAS FOR WASTE AND SUPPLIES. (SECTION 2.3)
30. USE WATER, SOIL-BINDING AGENT OR OTHER DUST CONTROL TECHNIQUE AS NEEDED TO AVOID WIND-BLOWN SOIL. (SECTION 2.2.9)
31. THE APPLICATION RATE OF FERTILIZERS USED TO REESTABLISH VEGETATION MUST FOLLOW MANUFACTURER'S RECOMMENDATIONS TO MINIMIZE NUTRIENT RELEASES TO SURFACE WATERS. EXERCISE CAUTION WHEN USING TIME-RELEASE FERTILIZERS WITHIN ANY WATERWAY RIPARIAN ZONE. (SECTION 2.3.5)
32. IF AN ACTIVE TREATMENT SYSTEM (FOR EXAMPLE, ELECTRO-COAGULATION, FLOCCULATION, FILTRATION, ETC.) FOR SEDIMENT OR OTHER POLLUTANT REMOVAL IS EMPLOYED, SUBMIT AN OPERATION AND MAINTENANCE PLAN (INCLUDING SYSTEM SCHEMATIC, LOCATION OF SYSTEM, LOCATION OF INLET, LOCATION OF DISCHARGE, DISCHARGE DISPERSION DEVICE DESIGN, AND A SAMPLING PLAN AND FREQUENCY) BEFORE OPERATING THE TREATMENT SYSTEM. OBTAIN ENVIRONMENTAL MANAGEMENT PLAN APPROVAL FROM DEQ BEFORE OPERATING THE TREATMENT SYSTEM. OPERATE AND MAINTAIN THE TREATMENT SYSTEM ACCORDING TO MANUFACTURER'S SPECIFITATIONS. (SECTION 1.2.9)
33. TEMPORARILY STABILIZE SOILS AT THE END OF THE SHIFT BEFORE HOLIDAYS AND WEEKENDS, IF NEEDED. THE REGISTRANT IS RESPONSIBLE FOR ENSURING THAT SOILS ARE STABLE DURING RAIN EVENTS AT ALL TIMES OF THE YEAR. (SECTION 2.2)
34. AS NEEDED BASED ON WEATHER CONDITIONS, AT THE END OF EACH WORKDAY SOIL STOCKPILES MUST BE STABILIZED OR COVERED. OR OTHER BMPS MUST BE IMPLEMENTED TO PREVENT DISCHARGES TO SURFACE WATERS OR CONVEYANCE SYSTEMS LEADING TO SURFACE WATERS. (SECTION 2.2.8)
35. SEDIMENT FENCE: REMOVE TRAPPED SEDIMENT BEFORE IT REACHES ONE THIRD OF THE ABOVE GROUND FENCE HEIGHT AND BEFORE FENCE REMOVAL. (SECTION 2.1.5.B)
36. OTHER SEDIMENT BARRIERS (SUCH AS BIOBAGS): REMOVE SEDIMENT BEFORE IT REACHES TWO INCHES DEPTH ABOVE GROUND HEIGHT AND BEFORE BMP REMOVAL. (SECTION 2.1.5.C)
37. CATCH BASINS: CLEAN BEFORE RETENTION CAPACITY HAS BEEN REDUCED BY FIFTY PERCENT. SEDIMENT BASINS AND SEDIMENT TRAPS: REMOVE TRAPPED SEDIMENTS BEFORE DESIGN CAPACITY HAS BEEN REDUCED BY FIFTY PERCENT AND AT COMPLETION OF PROJECT. (SECTION 2.1.5.D)
38. WITHIN 24 HOURS, SIGNIFICANT SEDIMENT THAT HAS LEFT THE CONSTRUCTION SITE, MUST BE REMEDIATED. INVESTIGATE THE CAUSE OF THE SEDIMENT RELEASE AND IMPLEMENT STEPS TO PREVENT A RECURRENCE OF THE DISCHARGE WITHIN THE SAME 24 HOURS. ANY IN-STREAM CLEAN-UP OF SEDIMENT SHALL BE PERFORMED ACCORDING TO THE OREGON DEPARTMENT OF STATE LANDS REQUIRED TIMEFRAME. (SECTION 2.2.19.A)
39. THE INTENTIONAL WASHING OF SEDIMENT INTO STORM SEWERS OR DRAINAGE WAYS MUST NOT OCCUR. VACUUMING OR DRY SWEEPING AND MATERIAL PICKUP MUST BE USED TO CLEANUP RELEASED SEDIMENTS. (SECTION 2.2.19)
40. DOCUMENT ANY PORTION(S) OF THE SITE WHERE LAND DISTURBING ACTIVITIES HAVE PERMANENTLY CEASED OR WILL BE TEMPORARILY INACTIVE FOR 14 OR MORE CALENDAR DAYS. (SECTION 6.5.F.)
41. PROVIDE TEMPORARY STABILIZATION FOR THAT PORTION OF THE SITE WHERE CONSTRUCTION ACTIVITIES CEASE FOR 14 DAYS OR MORE WITH A COVERING OF BLOWN STRAW AND A TACKIFIER, LOOSE STRAW, OR AN ADEQUATE COVERING OF COMPOST MULCH UNTIL WORK RESUMES ON THAT PORTION OF THE SITE. (SECTION 2.2.20)
42. DO NOT REMOVE TEMPORARY SEDIMENT CONTROL PRACTICES UNTIL PERMANENT VEGETATION OR OTHER COVER OF EXPOSED AREAS IS ESTABLISHED. ONCE CONSTRUCTION IS COMPLETE AND THE SITE IS STABILIZED, ALL TEMPORARY EROSION CONTROLS AND RETAINED SOILS MUST BE REMOVED AND DISPOSED OF PROPERLY, UNLESS NEEDED FOR LONG TERM USE FOLLOWING TERMINATION OF PERMIT COVERAGE. (SECTION 2.2.21)

BMP MATRIX FOR CONSTRUCTION PHASES

REFER TO DEQ GUIDANCE MANUAL FOR A COMPREHENSIVE LIST OF AVAILABLE BMP'S.

	DEMOLTION	CLEARING	MASS GRADING	UTILITY INSTALLATION	STREET CONSTRUCTION	FINAL STABILIZATION	WET WEATHER (OCT. 1 - MAY 31ST)
EROSION PREVENTION							
PRESERVE NATURAL VEGETATION	**X	X					
GROUND COVER						X	X
HYDRAULIC APPLICATIONS							
PLASTIC SHEETING			X	X	X		X
STRAW MULCH COVER	X						X
ROCK COVER							
DUST CONTROL	X	X	X	X	X		
TEMPORARY/PERMANENT SEEDING	X		X	X	X	X	X
BUFFER ZONE	**X	X	X	X	X	X	X
OTHER:							
SEDIMENT CONTROL							
SEDIMENT FENCE (INTERIOR)	**X	**X	X	X	X	X	X
STRAW WATTLES	**X	**X	X	X	X	X	X
FILTER BERM							
INLET PROTECTION	**X	**X	X	X	X	X	X
DEWATERING				X			
SEDIMENT TRAP							
NATURAL BUFFER ENCROACHMENT	X	X	X	X	X	X	X
OTHER:							
RUNOFF CONTROL							
CONSTRUCTION ENTRANCE	**X	**X	X	X			X
PIPE SLOPE DRAIN				X			
OUTLET PROTECTION				X			
SURFACE ROUGHENING			X	X			X
CHECK DAMS		X		X			X
OTHER:							
POLLUTION PREVENTION							
PROPER SIGNAGE	X	X	X	X	X	X	X
HAZ WASTE MGMT	X	X	X	X	X	X	X
SPILL KIT ON-SITE	X	X	X	X	X	X	X
CONCRETE WASHOUT AREA	X	X	X	X	X	X	X
OTHER:							

* SIGNIFIES ADDITIONAL BMP'S REQUIRED FOR WORK WITHIN 50' OF WATER OF THE STATE.
** SIGNIFIES BMP THAT WILL BE INSTALLED PRIOR TO ANY GROUND DISTURBING ACTIVITY.

INSPECTION FREQUENCY TABLE

SITE CONDITION	MINIMUM FREQUENCY
1. ACTIVE PERIOD	ON INITIAL DATE THAT LAND DISTURBANCE ACTIVITIES COMMENCE. WITHIN 24 HOURS OF ANY STORM EVENT, INCLUDING RUNOFF FROM SNOWMELT, IS OCCURRING AND RESULTS IN DISCHARGE FROM THE SITE. AT LEAST ONCE EVERY FOURTEEN (14) DAYS, REGARDLESS OF WHETHER STORMWATER RUNOFF IS OCCURRING.
2. PRIOR TO THE SITE BECOMING INACTIVE OR IN ANTICIPATION OF SITE INACCESSIBILITY.	ONCE TO ENSURE THAT EROSION AND SEDIMENT CONTROL MEASURES ARE IN WORKING ORDER. ANY NECESSARY MAINTENANCE AND REPAIR MUST BE MADE PRIOR TO LEAVING THE SITE.
3. INACTIVE PERIODS GREATER THAN FOURTEEN (14) CONSECUTIVE CALENDAR DAYS.	THE INSPECTOR MAY REDUCE THE FREQUENCY OF INSPECTIONS IN ANY AREA OF THE SITE WHERE THE STABILIZATION STEPS IN SECTION 2.2.20 HAVE BEEN COMPLETED TO TWICE PER MONTH FOR THE FIRST MONTH, NO LESS THAN 14 CALENDAR DAYS APART, THEN ONCE PER MONTH.
4. PERIODS DURING WHICH THE SITE IS INACCESSIBLE DUE TO INCLEMENT WEATHER.	IF SAFE, ACCESSIBLE, AND PRACTICAL, INSPECTIONS MUST OCCUR DAILY AT A RELEVANT AND ACCESSIBLE DISCHARGE POINT OR DOWNSTREAM LOCATION OF THE RECEIVING WATERBODY.
5. PERIODS DURING WHICH CONSTRUCTION ACTIVITIES ARE SUSPENDED AND RUNOFF IS UNLIKELY DUE TO FROZEN CONDITIONS.	VISUAL MONITORING INSPECTIONS MAY BE TEMPORARILY SUSPENDED. IMMEDIATELY RESUME MONITORING UPON THAWING, OR WHEN WEATHER CONDITIONS MAKE DISCHARGES LIKELY.
5. PERIODS DURING WHICH CONSTRUCTION ACTIVITIES ARE CONDUCTED AND RUNOFF IS UNLIKELY DURING FROZEN CONDITIONS.	MONTHLY. RESUME MONITORING IMMEDIATELY UPON MELT, OR WHEN WEATHER CONDITIONS MAKE DISCHARGES LIKELY.

- HOLD A PRE-CONSTRUCTION MEETING OF PROJECT PERSONNEL THAT INCLUDED THE INSPECTOR TO DISCUSSION EROSION AND SEDIMENT CONTROL MEASURES AND CONSTRUCTION LIMITS
- ALL INSPECTIONS MUST BE MADE IN ACCORDANCE WITH DEQ 1200-C PERMIT REQUIREMENTS
- INSPECTION LOGS MUST BE KEPT IN ACCORDANCE WITH DEQ'S 1200-C PERMIT REQUIREMENTS
  - ** RETAIN A COPY OF THE ESCP AND ALL REVISIONS ON SITE AND MAKE IT AVAILABLE ON REQUEST TO DEQ, AGENT, OR THE LOCAL MUNICIPALITY. DURING INACTIVE PERIODS OF GREATER THAN SEVEN (7) CONSECUTIVE CALENDAR DAYS, RETAIN THE ESCP AT THE CONSTRUCTION SITE OR AT ANOTHER LOCATION.

THE PERMITTEE IS REQUIRED TO MEET ALL THE CONDITIONS OF THE 1200-C PERMIT. THIS ESCP AND GENERAL CONDITIONS HAVE BEEN DEVELOPED TO FACILITATE COMPLIANCE WITH THE 1200-C PERMIT REQUIREMENTS. IN CASES OF DISCREPANCIES OR OMISSIONS, THE 1200-C PERMIT REQUIREMENTS SUPERCEDE REQUIREMENTS OF THIS PLAN.

LOCAL AGENCY-SPECIFIC EROSION CONTROL NOTES:

1. IF VEGETATIVE SEED MIXES ARE SPECIFIED, SEEDING MUST TAKE PLACE NO LATER THAT SEPTEMBER 1; THE TYPE AND PERCENTAGES OF SEED IN THE MIX MUST BE IDENTIFIED ON THE PLANS.
2. ALL PUMPING OF SEDIMENT LADEN WATER SHALL BE DISCHARGED OVER AN UNDISTURBED, PREFERABLY VEGETATED AREA, AND THROUGH A SEDIMENT CONTROL BMP I.E. (FILTER BAG).
3. ALL EXPOSED SOILS MUST BE COVERED DURING THE WET WEATHER PERIOD, OCTOBER 01 - MAY 31.

EROSION AND SEDIMENT CONTROL PLANS SHEET INDEX

C4.00 EROSION AND SEDIMENT CONTROL COVER SHEET
C4.10 DEMOLITION ESC PLAN
C4.20 CLEARING ESC PLAN
C4.30 MASS GRADING AND STABILIZATION RUNOFF CONTROL PLAN
C4.40 UTILITY CONSTRUCTION ESC PLAN
C4.50 FOUNDATION ESC PLAN
C4.60 EROSION AND SEDIMENT CONTROL PLAN DETAILS

GENERAL PERMIT
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
STORMWATER DISCHARGE PERMIT

DATE: 09/15/2020
FILE NO. 127017
EPA NO. ORR10G282

Item 2.

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9835 SW COMMERCE CIRCLE
WILSONVILLE, OR 97070

Project
DELTA LOGISTICS SITE EXPANSION
9710 SW DAY RD.
CITY OF WILSONVILLE, OR

REGISTERED PROFESSIONAL ENGINEER
81497
OREGON
JULY 10, 2015
GREGORY I. MINO
EXPIRES: 12/31/24

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REVISION SCHEDULE

Delta	Issued As	Issue Date

EROSION AND SEDIMENT CONTROL COVER SHEET

SHEET
C4.00

JOB NO. **2200502.00**

1043

DEVELOPMENT REVIEW SET - 04/24/23

1 C4.10 ESC DEMOLITION PLAN

SCALE: 1"=30'

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

PRE-CONSTRUCTION, CLEARING, AND DEMOLITION NOTES:

1. ALL BASE ESC MEASURES (INLET PROTECTION, PERIMETER SEDIMENT CONTROL, GRAVEL CONSTRUCTION ENTRANCES, ETC) MUST BE IN PLACE, FUNCTIONAL, AND APPROVED IN AN INITIAL INSPECTION, PRIOR TO COMMENCEMENT OF CONSTRUCTION ACTIVITIES.
2. SEDIMENT BARRIERS APPROVED FOR USE INCLUDE SEDIMENT FENCE, BERMS, CONSTRUCTED OUT OF MULCH, CHIPPINGS OR OTHER SUITABLE MATERIAL, STRAW WATTLES, OR OTHER APPROVED MATERIALS.
3. SENSITIVE RESOURCES INCLUDING, BUT NOT LIMITED TO, TREES, WETLANDS, AND RIPARIAN PROTECTION AREAS SHALL BE CLEARLY DELINEATED WITH ORANGE CONSTRUCTION FENCING OR CHAIN LINK FENCING IN A MANNER THAT IS CLEARLY VISIBLE TO ANYONE IN THE AREA. NO ACTIVITIES ARE PERMITTED TO OCCUR BEYOND THE CONSTRUCTION BARRIER.
4. CONSTRUCTION ENTRANCES SHALL BE INSTALLED AT THE BEGINNING OF CONSTRUCTION AND MAINTAINED FOR THE DURATION OF THE PROJECT. ADDITIONAL MEASURES INCLUDING, BUT NOT LIMITED TO, STREET SWEEPING, AND VACUUMING, MAY BE REQUIRED TO ENSURE THAT ALL PAVED AREAS ARE KEPT CLEAN FOR THE DURATION OF THE PROJECT.
5. RUN-ON AND RUN-OFF CONTROLS SHALL BE IN PLACE AND FUNCTIONING PRIOR TO BEGINNING SUBSTANTIAL CONSTRUCTION ACTIVITIES. RUN-ON AND RUN-OFF CONTROL MEASURES INCLUDE: SLOPE DRAINS (WITH OUTLET PROTECTION), CHECK DAMS, SURFACE ROUGHENING, AND BANK STABILIZATION.
6. ADDITIONAL EROSION CONTROL MEASURES AND DETAILS CAN BE FOUND IN THE CLEAN WATER SERVICES'S CONSTRUCTION AND DESIGN STANDARDS, 2017.

THE SURVEY INFORMATION SHOWN AS A BACKGROUND SCREEN ON THIS SHEET IS SHOWN FOR REFERENCE ONLY AND IS BASED ON A SURVEY BY: HOWMAN & ASSOCIATES DATE:

Item 2.

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REVISION SCHEDULE

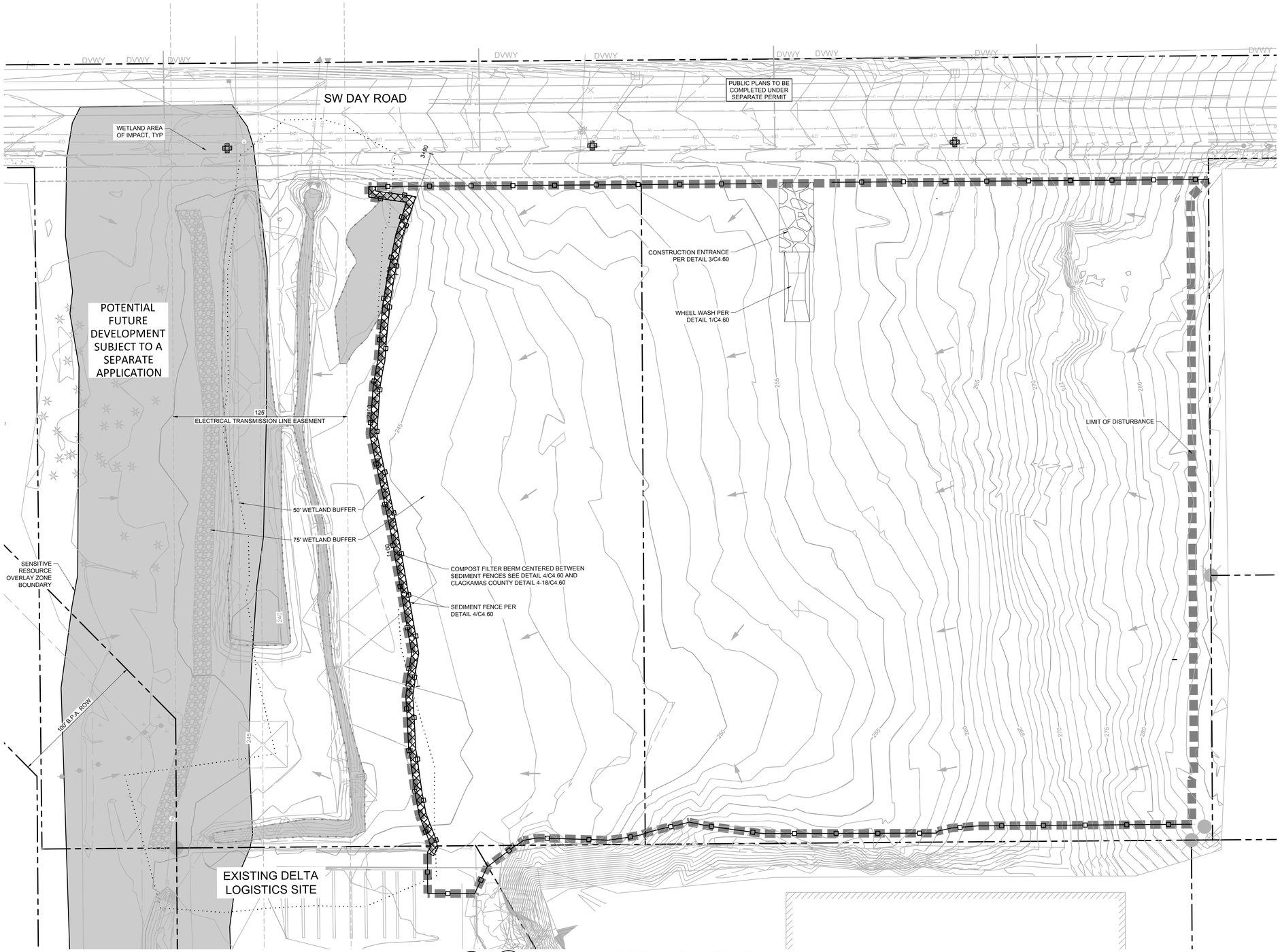
Delta	Issued As	Issue Date

DEMOLITION ESC PLAN

SHEET
C4.10

JOB NO. **2200502.00**

1044



1 C4.20 CLEARING AND DEMOLITION ESC PLAN
1"=30'

30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.

PRE-CONSTRUCTION, CLEARING, AND DEMOLITION NOTES:

1. ALL BASE ESC MEASURES (INLET PROTECTION, PERIMETER SEDIMENT CONTROL, GRAVEL CONSTRUCTION ENTRANCES, ETC) MUST BE IN PLACE, FUNCTIONAL, AND APPROVED IN AN INITIAL INSPECTION, PRIOR TO COMMENCEMENT OF CONSTRUCTION ACTIVITIES.
2. SEDIMENT BARRIERS APPROVED FOR USE INCLUDE SEDIMENT FENCE, BERMS, CONSTRUCTED OUT OF MULCH, CHIPPINGS OR OTHER SUITABLE MATERIAL, STRAW WATTLES, OR OTHER APPROVED MATERIALS.
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6. ADDITIONAL EROSION CONTROL MEASURES AND DETAILS CAN BE FOUND IN THE CLEAN WATER SERVICES'S CONSTRUCTION AND DESIGN STANDARDS, 2017.

NEAREST OFFICIAL RAIN GAUGE

WILSONVILLE TRANQUIL PARK STATION, WILSONVILLE, OREGON
ELEV:187 FT; 45.31 °N, 122.77 °W

TYPICAL WORKING HOURS

7AM - 5PM WEEKDAYS

STAGING AND STOCKPILE AREAS ARE TO BE DETERMINED BY THE CONTRACTOR AND ADJUSTED TO ACCOMMODATE THE PROGRESS OF CONSTRUCTION. THE OWNER'S EROSION CONTROL INSPECTOR SHALL BE MADE AWARE OF ALL CHANGES AND CONSULTED FOR BMP IMPLEMENTATIONS THAT MAY BE NECESSARY TO ACCOMMODATE THE SELECTED LOCATIONS.

THIS PLAN IS INTENDED TO BE ONLY A BASELINE APPROACH TO EROSION AND SEDIMENT CONTROL FOR THE PROJECT SITE. THE OWNER'S EROSION AND SEDIMENT CONTROL INSPECTOR SHALL BE RESPONSIBLE FOR INSTRUCTING THE CONTRACTOR TO ADJUST BMP'S AS NECESSARY TO PROPERLY MANAGE THE VARIOUS PHASES OF CONSTRUCTION AND ANY UNFORESEEN CONDITIONS REQUIRING DIFFERENT OR ADDITIONAL BMP'S TO MANAGE.

SEE SHEETS C4.60 FOR EROSION AND SEDIMENT CONTROL DETAILS

LEGEND

- EXISTING DRAINAGE FLOW DIRECTION
- SEDIMENT FENCE PER DETAIL 4/C4.60
- LIMIT OF DISTURBANCE
- CATCH BASIN SEDIMENT FILTER BAG PER DETAIL 2/C4.60
- WHEEL WASH PER DETAIL 1/C4.60
- GRAVEL CONSTRUCTION ENTRANCE PER DETAIL 3/C4.60
- COMPOSITE FILTER BERM PER DETAIL 7/C4.60

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REVISION SCHEDULE

Delta	Issued As	Issue Date

CLEARING AND DEMOLITION ESC PLAN

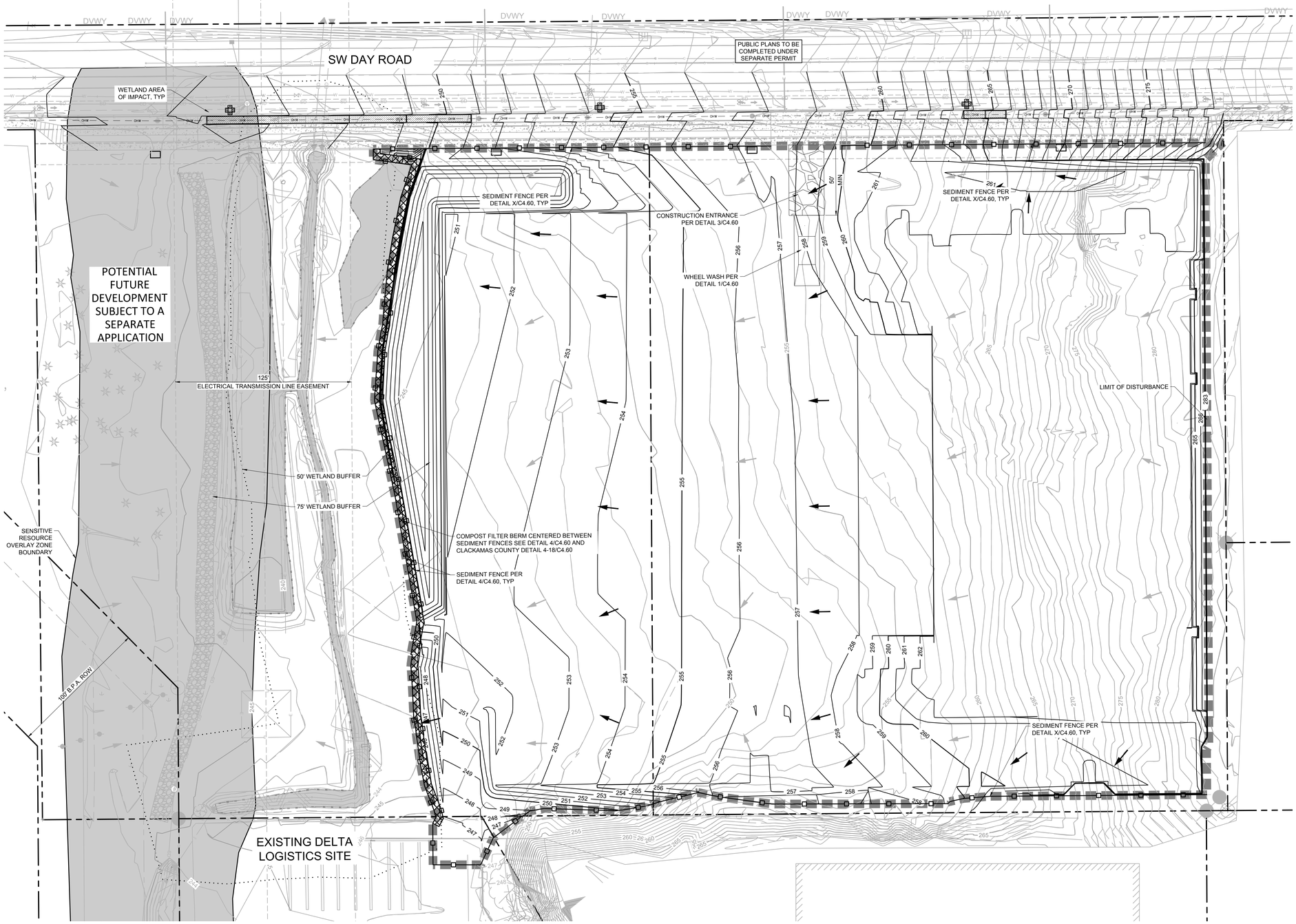
SHEET
C4.20

JOB NO. **2200502.00**

1045

DEVELOPMENT REVIEW SET - 04/24/23

2200502.00 \\GRP.MCK\PROJECTS\PROJECTS\2200502.00\DRAWINGS\CIVIL\50204-C4.20-CLEARING ESC PLAN.DWG AOC 04/24/23 15:50 1:30



EROSION CONTROL GENERAL NOTES

1. SEED USED FOR TEMPORARY OR PERMANENT SEEDING SHALL BE COMPOSED OF ONE OF THE FOLLOWING MIXTURES, UNLESS OTHERWISE AUTHORIZED.
   A. VEGETATED CORRIDOR AREAS REQUIRE NATIVE SEED MIXES. SEE RESTORATION PLAN FOR APPROPRIATE SEED MIX.
   B. DWARF GRASS MIX (MIN. 100 LB./AC.)
      1. DWARF PERENNIAL RYEGRASS (80% BY WEIGHT)
      2. CREEPING RED FESCUE (20% BY WEIGHT)
   C. STANDARD HEIGHT GRASS MIX (MIN. 100LB./AC.)
      1. ANNUAL RYEGRASS (40% BY WEIGHT)
      2. TURF-TYPE FESCUE (60% BY WEIGHT)
2. SLOPE TO RECEIVE TEMPORARY OR PERMANENT SEEDING SHALL HAVE THE SURFACE ROUGHENED BY MEANS OF TRACK-WALKING OR THE USE OF OTHER APPROVED IMPLEMENTS. SURFACE ROUGHENING IMPROVES SEED BEDDING AND REDUCES RUN-OFF VELOCITY.
3. LONG TERM SLOPE STABILIZATION MEASURES SHALL INCLUDE THE ESTABLISHMENT OF PERMANENT VEGETATIVE COVER VIA SEEDING WITH APPROVED MIX AND APPLICATION RATE.
4. TEMPORARY SLOPE STABILIZATION MEASURES SHALL INCLUDE: COVERING EXPOSED SOIL WITH PLASTIC SHEETING, STRAW MULCHING, WOOD CHIPS, OR OTHER APPROVED MEASURES.
5. STOCKPILED SOIL OR STRIPPINGS SHALL BE PLACED IN A STABLE LOCATION AND CONFIGURATION, DURING "WET WEATHER" PERIODS, STOCKPILES SHALL BE COVERED WITH PLASTIC SHEETING OR STRAW MULCH. SEDIMENT FENCE IS REQUIRED AROUND THE PERIMETER OF THE STOCKPILE.
6. EXPOSED CUT OR FILL AREAS SHALL BE STABILIZED THROUGH THE USE OF TEMPORARY SEEDING AND MULCHING, EROSION CONTROL BLANKETS OR MATS, MID-SLOPE SEDIMENT FENCES OR WATTLES, OR OTHER APPROPRIATE MEASURES. SLOPES EXCEEDING 25% MAY REQUIRE ADDITIONAL EROSION CONTROL MEASURES.
7. AREAS SUBJECT TO WIND EROSION SHALL USE APPROPRIATE DUST CONTROL MEASURES INCLUDING THE APPLICATION OF A FINE SPRAY OF WATER, PLASTIC SHEETING, STRAW MULCHING, OR OTHER APPROVED MEASURES.
8. CONSTRUCTION ENTRANCES SHALL BE INSTALLED AT THE BEGINNING OF CONSTRUCTION AND MAINTAINED FOR THE DURATION OF THE PROJECT. ADDITIONAL MEASURES INCLUDING, BUT NOT LIMITED TO, TIRE WASHES, STREET SWEEPING, AND VACUUMING MAY BE BE REQUIRED TO INSURE THAT ALL PAVED AREAS ARE KEPT CLEAN FOR THE DURATION OF THE PROJECT.
9. ACTIVE INLETS TO STORM WATER SYSTEMS SHALL BE PROTECTED THROUGH THE USE OF APPROVED INLET PROTECTION MEASURES. ALL INLET PROTECTION MEASURES ARE TO BE REGULARLY INSPECTED AND MAINTAINED AS NEEDED.
10. SATURATED MATERIALS THAT ARE HAULED OFF-SITE MUST BE TRANSPORTED IN WATER-TIGHT TRUCKS TO ELIMINATE SPILLAGE OF SEDIMENT AND SEDIMENT-LADEN WATER.
11. AN AREA SHALL BE PROVIDED FOR THE WASHING OUT OF CONCRETE TRUCKS IN A LOCATION THAT DOES NOT PROVIDE RUN-OFF THAT CAN ENTER THE STORM WATER SYSTEM. IF THE CONCRETE WASH-OUT AREA CAN NOT BE CONSTRUCTED GREATER THAN 50' FROM ANY DISCHARGE POINT, SECONDARY MEASURES SUCH AS BERMS OR TEMPORARY SETTLING PITS MAY BE REQUIRED. THE WASH-OUT SHALL BE LOCATED WITHIN SIX FEET OF TRUCK ACCESS AND BE CLEANED WHEN IT REACHES 50% OF THE CAPACITY.
12. SWEEPINGS FROM EXPOSED AGGREGATE CONCRETE SHALL NOT BE TRANSFERRED TO THE STORM WATER SYSTEM. SWEEPINGS SHALL BE PICKED UP AND DISPOSED IN THE TRASH.
13. AVOID PAVING IN WET WEATHER WHEN PAVING CHEMICALS CAN RUN-OFF INTO THE STORM WATER SYSTEM.
14. USE BMPs SUCH AS CHECK-DAMS, BERMS, AND INLET PROTECTION TO PREVENT RUN-OFF FROM REACHING DISCHARGE POINTS.
15. COVER CATCH BASINS, MANHOLES, AND OTHER DISCHARGE POINTS WHEN APPLYING SEAL COAT, TACK COAT, ETC. TO PREVENT INTRODUCING THESE MATERIALS TO THE STORM WATER SYSTEM.

MASS GRADING AND STABILIZATION RUNOFF CONTROL PLAN

1 / C4.30 — 1"=30'

30 0 15 30 60 120

(IN FEET)
1 inch = **30** ft.

SPILL KIT AND SPILL RESPONSE PROCEDURES SHALL BE KEPT IN/ON THE JOBSITE TRAILER AT ALL TIMES AND ALL FIELD PERSONNEL SHALL BE MADE AWARE

STAGING AND STOCKPILE AREAS ARE TO BE DETERMINED BY THE CONTRACTOR AND ADJUSTED TO ACCOMMODATE THE PROGRESS OF CONSTRUCTION. THE OWNER'S EROSION CONTROL INSPECTOR SHALL BE MADE AWARE OF ALL CHANGES AND CONSULTED FOR BMP IMPLEMENTATIONS THAT MAY BE NECESSARY TO ACCOMMODATE THE SELECTED LOCATIONS.

THIS PLAN IS INTENDED TO BE ONLY A BASELINE APPROACH TO EROSION AND SEDIMENT CONTROL FOR THE PROJECT SITE. THE OWNER'S EROSION AND SEDIMENT CONTROL INSPECTOR SHALL BE RESPONSIBLE FOR INSTRUCTING THE CONTRACTOR TO ADJUST BMP'S AS NECESSARY TO PROPERLY MANAGE THE VARIOUS PHASES OF CONSTRUCTION AND ANY UNFORESEEN CONDITIONS REQUIRING DIFFERENT OR ADDITIONAL BMP'S TO MANAGE.

SEE SHEETS C4.60 FOR EROSION AND SEDIMENT CONTROL DETAILS

EROSION AND SEDIMENT CONTROL BMP IMPLEMENTATION

1. ALL BASE ESC MEASURES (INLET PROTECTION, PERIMETER SEDIMENT CONTROL, GRAVEL CONSTRUCTION ENTRANCES, ETC.) MUST BE IN PLACE, FUNCTIONAL, AND APPROVED IN AN INITIAL INSPECTION, PRIOR TO COMMENCEMENT OF CONSTRUCTION ACTIVITIES.
2. ALL "SEDIMENT BARRIERS (TO BE INSTALLED AFTER GRADING)" SHALL BE INSTALLED IMMEDIATELY FOLLOWING ESTABLISHMENT OF FINISHED GRADE AS SHOWN ON THESE PLANS.
3. LONG TERM SLOPE STABILIZATION MEASURES "INCLUDING MATTING" SHALL BE IN PLACE OVER ALL EXPOSED SOILS BY OCTOBER 1.
4. THE STORM WATER FACILITY SHALL BE CONSTRUCTED PRIOR TO THE STORM WATER SYSTEM FUNCTIONING AND SITE PAVING.
5. INLET PROTECTION SHALL BE IN-PLACE IMMEDIATELY FOLLOWING PAVING ACTIVITIES.

DEWATERING NOTE

1. CONTRACTOR SHALL MONITOR DEWATERING OPERATIONS WITH DAILY INSPECTIONS DURING DEWATERING OPERATIONS.
2. DEWATERING TECHNIQUES SHALL INCLUDE A PUMP AND HOSE TO CONVEY THE DEWATERING FLOW TO APPROVED LOCATIONS. THE APPROVED LOCATIONS IS THE STORM FILTRATION BASIN.
3. DEWATERING INTO THE STORM DETENTION WATER QUALITY BASIN MAY ONLY PROCEED ONCE THE DETENTION SYSTEM INLET RIP-RAP AND OUTLET APPURTENANCES AND RIP-RAP OUTFALL ARE INSTALLED AND PERMANENT SOIL STABILIZATION IS IN PLACE
4. TRENCH AND FOUNDATION EXCAVATIONS SHALL BE PROTECTED DURING WET WEATHER FROM OVER SATURATION.
5. DEWATERING OPERATIONS LEFT OVERNIGHT SHALL BE INSPECTED IMMEDIATELY IN THE MORNING. IF DEWATERING OPERATIONS ARE LEFT IN OPERATION OVER WEEKENDS, HOLIDAYS OR MORE THAN 24 HOURS, THE CONTRACTOR SHALL PROVIDE FOR DAILY INSPECTIONS AND PROVIDE FOR INSPECTION WITHIN 2 HOURS AFTER RAIN EVENTS PRODUCING MORE THAN 0.5-INCHES IN A 24-HOUR PERIOD.

LEGEND

- EXISTING DRAINAGE FLOW DIRECTION
- PROPOSED DRAINAGE FLOW DIRECTION
- SEDIMENT FENCE PER DETAIL 4/C4.60
- LIMIT OF DISTURBANCE
- CATCH BASIN SEDIMENT FILTER BAG PER DETAIL 2/C4.60
- WHEEL WASH PER DETAIL 1/C4.60
- GRAVEL CONSTRUCTION ENTRANCE PER DETAIL 3/C4.60
- COMPOSITE FILTER BERM PER DETAIL 7/C4.60

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REVISION SCHEDULE

Delta	Issued As	Issue Date

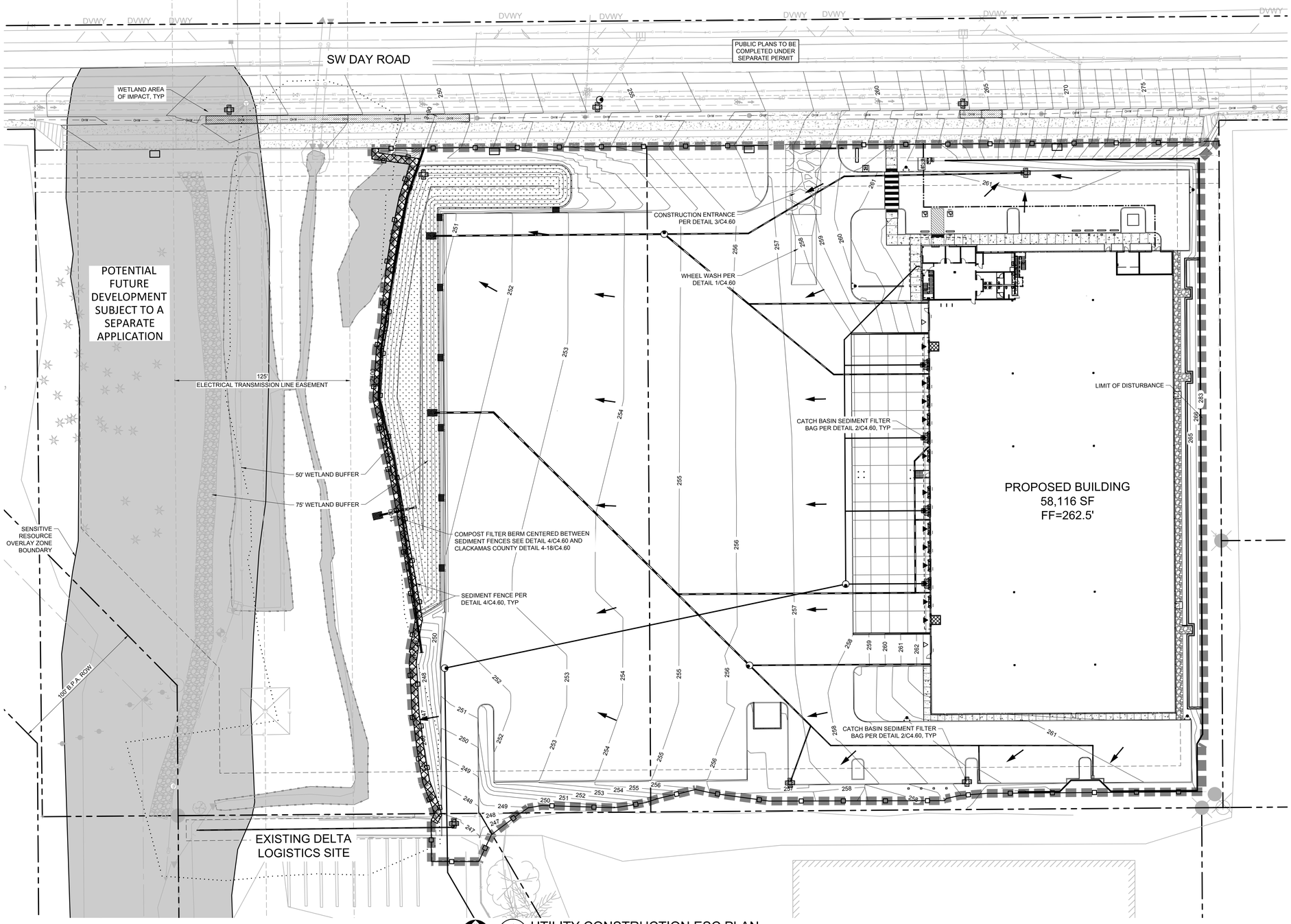
MASS GRADING AND STABILIZATION RUNOFF CONTROL PLAN

SHEET
C4.30

JOB NO. **2200502.00**

1046

DEVELOPMENT REVIEW SET - 04/24/23



1 C4.40 UTILITY CONSTRUCTION ESC PLAN

1"=30'

30 0 15 30 60 120

(IN FEET)

1 inch = **30** ft.

EROSION CONTROL GENERAL NOTES

1. SEED USED FOR TEMPORARY OR PERMANENT SEEDING SHALL BE COMPOSED OF ONE OF THE FOLLOWING MIXTURES, UNLESS OTHERWISE AUTHORIZED:
   A. VEGETATED CORRIDOR AREAS REQUIRE NATIVE SEED MIXES. SEE RESTORATION PLAN FOR APPROPRIATE SEED MIX.
   B. DWARF GRASS MIX (MIN. 100 LB./AC.)
      1. DWARF PERENNIAL RYEGRASS (80% BY WEIGHT)
      2. CREEPING RED FESCUE (20% BY WEIGHT)
   C. STANDARD HEIGHT GRASS MIX (MIN. 100LB./AC.)
      1. ANNUAL RYEGRASS (40% BY WEIGHT)
      2. TURF-TYPE FESCUE (60% BY WEIGHT)
2. SLOPE TO RECEIVE TEMPORARY OR PERMANENT SEEDING SHALL HAVE THE SURFACE ROUGHENED BY MEANS OF TRACK-WALKING OR THE USE OF OTHER APPROVED IMPLEMENTS. SURFACE ROUGHENING IMPROVES SEED BEDDING AND REDUCES RUN-OFF VELOCITY.
3. LONG TERM SLOPE STABILIZATION MEASURES SHALL INCLUDE THE ESTABLISHMENT OF PERMANENT VEGETATIVE COVER VIA SEEDING WITH APPROVED MIX AND APPLICATION RATE.
4. TEMPORARY SLOPE STABILIZATION MEASURES SHALL INCLUDE: COVERING EXPOSED SOIL WITH PLASTIC SHEETING, STRAW MULCHING, WOOD CHIPS, OR OTHER APPROVED MEASURES.
5. STOCKPILED SOIL OR STRIPPINGS SHALL BE PLACED IN A STABLE LOCATION AND CONFIGURATION. DURING "WET WEATHER" PERIODS, STOCKPILES SHALL BE COVERED WITH PLASTIC SHEETING OR STRAW MULCH. SEDIMENT FENCE IS REQUIRED AROUND THE PERIMETER OF THE STOCKPILE.
6. EXPOSED CUT OR FILL AREAS SHALL BE STABILIZED THROUGH THE USE OF TEMPORARY SEEDING AND MULCHING, EROSION CONTROL BLANKETS OR MATS, MID-SLOPE SEDIMENT FENCES OR WATTLES, OR OTHER APPROPRIATE MEASURES. SLOPES EXCEEDING 25% MAY REQUIRE ADDITIONAL EROSION CONTROL MEASURES.
7. AREAS SUBJECT TO WIND EROSION SHALL USE APPROPRIATE DUST CONTROL MEASURES INCLUDING THE APPLICATION OF A FINE SPRAY OF WATER, PLASTIC SHEETING, STRAW MULCHING, OR OTHER APPROVED MEASURES.
8. CONSTRUCTION ENTRANCES SHALL BE INSTALLED AT THE BEGINNING OF CONSTRUCTION AND MAINTAINED FOR THE DURATION OF THE PROJECT. ADDITIONAL MEASURES INCLUDING, BUT NOT LIMITED TO, TIRE WASHES, STREET SWEEPING, AND VACUUMING MAY BE BE REQUIRED TO INSURE THAT ALL PAVED AREAS ARE KEPT CLEAN FOR THE DURATION OF THE PROJECT.
9. ACTIVE INLETS TO STORM WATER SYSTEMS SHALL BE PROTECTED THROUGH THE USE OF APPROVED INLET PROTECTION MEASURES. ALL INLET PROTECTION MEASURES ARE TO BE REGULARLY INSPECTED AND MAINTAINED AS NEEDED.
10. SATURATED MATERIALS THAT ARE HAULED OFF-SITE MUST BE TRANSPORTED IN WATER-TIGHT TRUCKS TO ELIMINATE SPILLAGE OF SEDIMENT AND SEDIMENT-LADEN WATER.
11. AN AREA SHALL BE PROVIDED FOR THE WASHING OUT OF CONCRETE TRUCKS IN A LOCATION THAT DOES NOT PROVIDE RUN-OFF THAT CAN ENTER THE STORM WATER SYSTEM. IF THE CONCRETE WASH-OUT AREA CAN NOT BE CONSTRUCTED GREATER THAN 50' FROM ANY DISCHARGE POINT, SECONDARY MEASURES SUCH AS BERMS OR TEMPORARY SETTLING PITS MAY BE REQUIRED. THE WASH-OUT SHALL BE LOCATED WITHIN SIX FEET OF TRUCK ACCESS AND BE CLEANED WHEN IT REACHES 50% OF THE CAPACITY.
12. SWEEPINGS FROM EXPOSED AGGREGATE CONCRETE SHALL NOT BE TRANSFERRED TO THE STORM WATER SYSTEM. SWEEPINGS SHALL BE PICKED UP AND DISPOSED IN THE TRASH.
13. AVOID PAVING IN WET WEATHER WHEN PAVING CHEMICALS CAN RUN-OFF INTO THE STORM WATER SYSTEM.
14. USE BMPs SUCH AS CHECK-DAMS, BERMS, AND INLET PROTECTION TO PREVENT RUN-OFF FROM REACHING DISCHARGE POINTS.
15. COVER CATCH BASINS, MANHOLES, AND OTHER DISCHARGE POINTS WHEN APPLYING SEAL COAT, TACK COAT, ETC. TO PREVENT INTRODUCING THESE MATERIALS TO THE STORM WATER SYSTEM.

SPILL KIT AND SPILL RESPONSE PROCEDURES SHALL BE KEPT IN/ON THE JOBSITE TRAILER AT ALL TIMES AND ALL FIELD PERSONNEL SHALL BE MADE AWARE

STAGING AND STOCKPILE AREAS ARE TO BE DETERMINED BY THE CONTRACTOR AND ADJUSTED TO ACCOMMODATE THE PROGRESS OF CONSTRUCTION. THE OWNER'S EROSION CONTROL INSPECTOR SHALL BE MADE AWARE OF ALL CHANGES AND CONSULTED FOR BMP IMPLEMENTATIONS THAT MAY BE NECESSARY TO ACCOMMODATE THE SELECTED LOCATIONS.

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SEE SHEETS C4.60 FOR EROSION AND SEDIMENT CONTROL DETAILS

EROSION AND SEDIMENT CONTROL BMP IMPLEMENTATION

1. ALL BASE ESC MEASURES (INLET PROTECTION, PERIMETER SEDIMENT CONTROL, GRAVEL CONSTRUCTION ENTRANCES, ETC.) MUST BE IN PLACE, FUNCTIONAL, AND APPROVED IN AN INITIAL INSPECTION, PRIOR TO COMMENCEMENT OF CONSTRUCTION ACTIVITIES.
2. ALL "SEDIMENT BARRIERS (TO BE INSTALLED AFTER GRADING)" SHALL BE INSTALLED IMMEDIATELY FOLLOWING ESTABLISHMENT OF FINISHED GRADE AS SHOWN ON THESE PLANS.
3. LONG TERM SLOPE STABILIZATION MEASURES "INCLUDING MATTING" SHALL BE IN PLACE OVER ALL EXPOSED SOILS BY OCTOBER 1.
4. THE STORM WATER FACILITY SHALL BE CONSTRUCTED PRIOR TO THE STORM WATER SYSTEM FUNCTIONING AND SITE PAVING.
5. INLET PROTECTION SHALL BE IN-PLACE IMMEDIATELY FOLLOWING PAVING ACTIVITIES.

DEWATERING NOTE

1. CONTRACTOR SHALL MONITOR DEWATERING OPERATIONS WITH DAILY INSPECTIONS DURING DEWATERING OPERATIONS.
2. DEWATERING TECHNIQUES SHALL INCLUDE A PUMP AND HOSE TO CONVEY THE DEWATERING FLOW TO APPROVED LOCATIONS. THE APPROVED LOCATIONS IS THE STORM FILTRATION BASIN.
3. DEWATERING INTO THE STORM DETENTION WATER QUALITY BASIN MAY ONLY PROCEED ONCE THE DETENTION SYSTEM INLET RIP-RAP AND OUTLET APPURTENANCES AND RIP-RAP OUTFALL ARE INSTALLED AND PERMANENT SOIL STABILIZATION IS IN PLACE
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LEGEND

- EXISTING DRAINAGE FLOW DIRECTION
- PROPOSED DRAINAGE FLOW DIRECTION
- SEDIMENT FENCE PER DETAIL 4/C4.60
- LIMIT OF DISTURBANCE
- CATCH BASIN SEDIMENT FILTER BAG PER DETAIL 2/C4.60
- WHEEL WASH PER DETAIL 1/C4.60
- GRAVEL CONSTRUCTION ENTRANCE PER DETAIL 3/C4.60
- COMPOSITE FILTER BERM PER DETAIL 7/C4.60

Item 2.

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REVISION SCHEDULE

Delta	Issued As	Issue Date

UTILITY CONSTRUCTION ESC PLAN

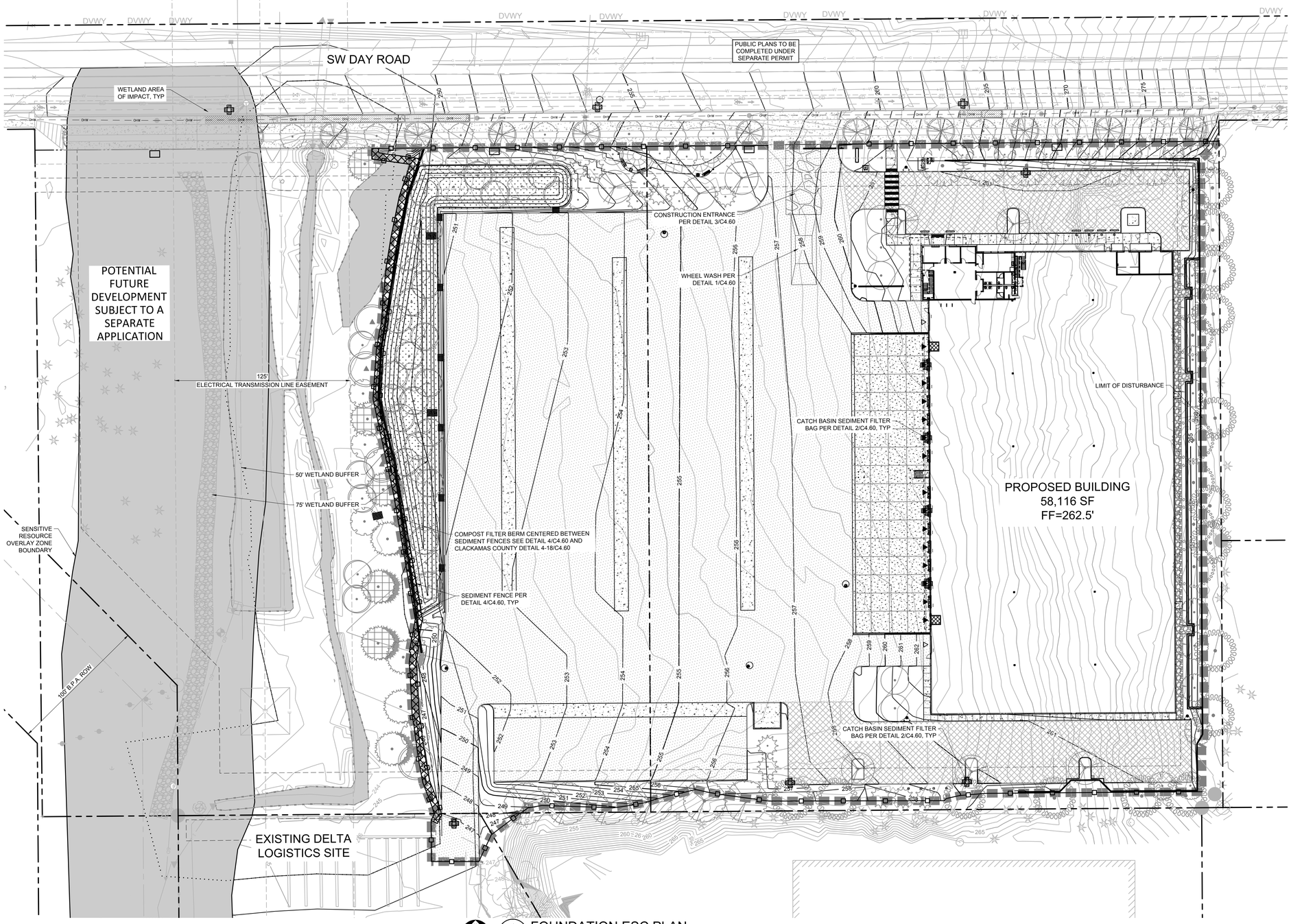
SHEET
C4.40

JOB NO. **2200502.00**

1047

DEVELOPMENT REVIEW SET - 04/24/23

"2200502.00" \\GRP.MCK\PROJECTS\PROJECTS\2200502.00\DRAWINGS\CIVIL\50204-C4.40-UTILITY CONSTRUCTION ESC PLAN.DWG AOC 04/24/23 15:51 1:30



1 C4.50 FOUNDATION ESC PLAN

1"=30'

30 0 15 30 60 120

(IN FEET)

1 inch = **30** ft.

EROSION CONTROL GENERAL NOTES

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EROSION AND SEDIMENT CONTROL BMP IMPLEMENTATION

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LEGEND

- SEDIMENT FENCE PER DETAIL 4/C4.60
- LIMIT OF DISTURBANCE
- INLET PROTECTION PER DETAIL 2/C4.60
- GRAVEL CONSTRUCTION ENTRANCE PER DETAIL 3/C4.60
- COMPOSITE FILTER BERM PER DETAIL 7/C4.60
- WHEEL WASH PER DETAIL 1/C4.60

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SEE SHEETS C4.60 FOR EROSION AND SEDIMENT CONTROL DETAILS

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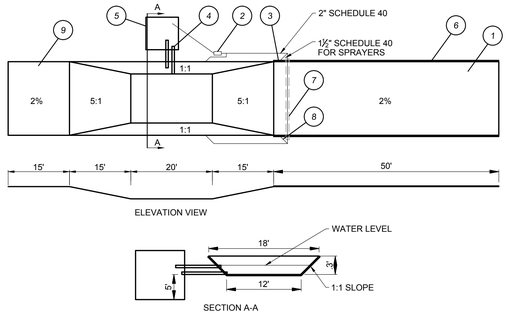
FOUNDATION ESC PLAN

SHEET
C4.50

JOB NO. **2200502.00**

1048

DEVELOPMENT REVIEW SET - 04/24/23



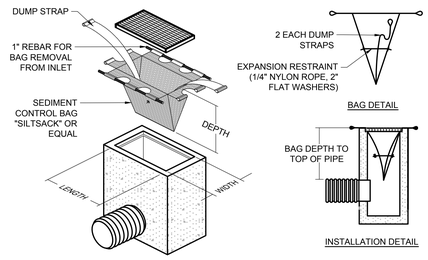
NOTES:

1. ASPHALT CONSTRUCTION ENTRANCE - 6" ASPHALT TREATED BASE(ATB).
2. 3-INCH TRASH PUMP WITH FLOATS ON THE SUCTION HOSE.
3. MIDPOINT SPRAY NOZZLES IF NEEDED.
4. 6-INCH SEWER PIPE WITH BUTTERFLY VALVES. BOTTOM ONE IS A DRAIN. LOCATE TOP PIPES INVERT ONE FOOT ABOVE BOTTOM OF WHEEL WASH.
5. 8'x8' SUMP WITH 5' OF CATCH. BUILD SO CAN BE CLEANED WITH TRACKHOE.
6. ASPHALT CURB ON THE LOW ROAD SIDE TO DIRECT WATER BACK TO THE POND.
7. 6-INCH SLEEVE UNDER ROAD.
8. BALL VALVES.
9. 15' ATB APRON TO PROTECT GROUND FROM SPLASHING WATER.

1 C4.60 WHEEL WASH

N.T.S.

WHEEL WASH

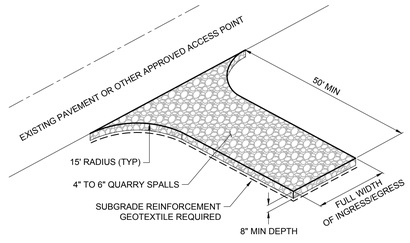


NOTES:

A. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING THE CORRECT SIZE DEVICE FOR EACH INLET
B. THE INLET SEDIMENT CONTROL DEVICE SHALL BE OF NORMAL FLOW DESIGN, 40 GAL/MIN/SF WITH NO OVERFLOWS
C. THE SEDIMENT CONTROL DEVICE SHALL BE INSPECTED DAILY BY THE CONTRACTOR AND MAINTAINED A MINIMUM OF ONCE PER MONTH AND WITHIN THE 24 HOURS FOLLOWING A STORM EVENT
D. SUBSTITUTION OF A SHEET OF FILTER FABRIC PLACED OVER THE OPENING OF THE INLET IS NOT APPROVED

2 C4.60 CATCH BASIN SEDIMENT FILTER BAG

NTS

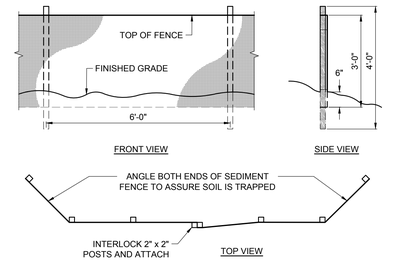


NOTES:

1. QUARRY SPALL MATERIAL SHALL BE "CLEAN" (LESS THAN 5% PASSING THE US STANDARD NO.200 SIEVE)
2. CONTRACTOR IS RESPONSIBLE FOR OBTAINING APPROVALS FROM THE AUTHORITIES HAVING JURISDICTION FOR ALTERNATES, SUCH AS A RUMBLE TRACK
3. PROTECT CONSTRUCTION ENTRANCES FROM SILTATION FROM ADJOINING BARE SOIL AREAS
4. ANY RAMPING CONSTRUCTED TO MOUNT EXISTING ROADWAY CURBING SHALL NOT IMPEDE DRAINAGE OF THE ROADWAY

3 C4.60 CONSTRUCTION ENTRANCE

NTS

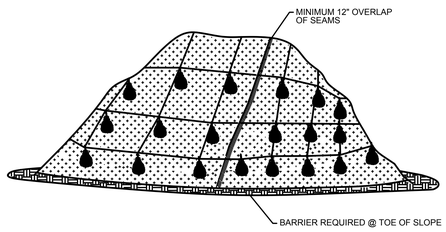


NOTES:

A. BURY BOTTOM OF FILTER FABRIC 6" MIN VERTICALLY BELOW FINISHED GRADE
B. UTILIZE 2" x 2" FIR, PINE, OR STEEL FENCE POSTS TO ANCHOR FENCING
C. ATTACH FENCING TO POSTS USING STITCHED LOOPS INSTALLED ON UPHILL SIDE OF SLOPE
D. COMPACT THE NATIVE FILL IN ALL AREAS OF FILTER FABRIC TRENCH
E. ACCUMULATED SEDIMENT CAN BE ALLOWED TO REACH NO MORE THAN ONE-THIRD OF THE SEDIMENT FENCE HEIGHT

4 C4.60 SEDIMENT FENCE

NTS



PLASTIC SHEETING

NOTES:

1. MINIMUM 12" OVERLAP OF ALL SEAMS REQUIRED.
2. BARRIER REQUIRED @ TOE OF STOCK PILE.
3. COVERING MAINTAINED TIGHTLY IN PLACE BY USING SANDBAGS OR TIRES ON ROPES WITH A MAXIMUM 10' GRID SPACING IN ALL DIRECTIONS.

5 C4.60 STOCKPILE COVER/SHEETING

NTS

TREE PROTECTION MEASURES:

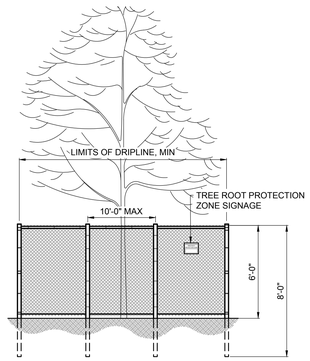
1. UNLESS OTHERWISE INDICATED FOR REMOVAL ALL TREES SHALL RECEIVE PROTECTIVE MEASURES FOR THE DURATION OF THE PROJECT IN ACCORDANCE WITH LOCAL AGENCY REQUIREMENTS.
2. 6' HIGH MINIMUM METAL CHAIN LINK FENCING SHALL BE ERECTED AND MAINTAINED. FENCING SHALL COMPLETELY SURROUND AT MINIMUM THE TREE DRIP LINE FOR EACH TREE OR GROUP OF EXISTING TREES. THE TREE DRIP LINE SHALL BE DEFINED AS A CLEARANCE ZONE OF 1 FOOT PER 1 INCH DBH (DIAMETER AT BREAST HEIGHT = 4.5 FEET ABOVE GRADE) FROM THE TREE BEING PROTECTED.
3. IN AREAS WHERE ROOT ZONE ENCROACHMENT IS UNAVOIDABLE, A CERTIFIED ARBORIST SHALL DESIGNATE THE FENCING LOCATION PRIOR TO START OF WORK.
4. NO ACTIVITY MAY BE CONDUCTED WITHIN ANY DESIGNATED TREE PROTECTION AREA, INCLUDING BUT NOT LIMITED TO PARKING EQUIPMENT, PLACING SOLVENTS, STORING MATERIALS AND SOIL DEPOSITS, DUMPING CONCRETE WASHOUT OR OTHER DEBRIS, OR ANY EXCAVATION OR COMPACTION WORK.
5. DURING CONSTRUCTION NO OBJECTS SHALL BE ATTACHED TO ANY TREE DESIGNATED TO BE RETAINED AND PROTECTED.
6. PROVIDE MULCH COVER TO A MINIMUM DEPTH OF 6", PLYWOOD, OR OTHER SIMILAR MATERIAL AT AREAS ADJOINING DESIGNATED TREE PROTECTION AREAS TO PROTECT ROOTS FROM DAMAGE CAUSED BY HEAVY EQUIPMENT. COORDINATE PLACEMENTS AND LOCATION WITH THE LANDSCAPE ARCHITECT OR A CERTIFIED ARBORIST.
7. PROTECTION FENCE SHALL BE MAINTAINED IN PLACE UNTIL REMOVAL IS AUTHORIZED BY THE AUTHORITY HAVING JURISDICTION OR UNTIL A FINAL CERTIFICATE OF OCCUPANCY IS ISSUED.

EXCAVATION/TRENCHING AROUND TREES:

1. PROPOSED TRENCHING AND EXCAVATION IN CLOSE PROXIMITY TO TREE PROTECTION ZONES MAY REQUIRE COORDINATION WITH A CERTIFIED ARBORIST. IF MAIN LATERAL OR TAP ROOTS OR ARE FOUND, STOP WORK IN THE AREA IMMEDIATELY AND CONSULT A CERTIFIED ARBORIST.
2. WHERE TRENCHING IS REQUIRED WITHIN CRITICAL ROOT ZONE, AND HAS BEEN REVIEWED AND APPROVED BY A CERTIFIED ARBORIST, TUNNEL UNDER OR AROUND ROOTS BY HAND DIGGING OR BORING. DO NOT CUT MAIN LATERAL ROOTS OR TAP ROOTS. CLEANLY CUT/SEVER SMALLER ROOTS.
3. RELOCATE ROOTS IN BACKFILL AREAS WHEREVER POSSIBLE. DO NOT ALLOW EXPOSED ROOTS TO DRY OUT BEFORE PERMANENT BACKFILL IS PLACED. PROVIDE TEMPORARY EARTH COVER OR PACK WITH PEAT MOSS AND WRAP WITH BURLAP. WATER AND MAINTAIN IN MOIST CONDITION UNTIL RELOCATED AND COVERED WITH BACKFILL.

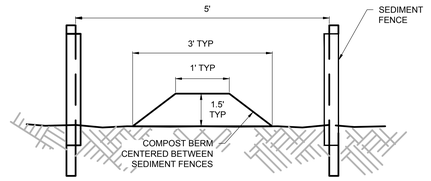
FENCING NOTES:

1. TEMPORARY FENCE SHALL BE 6' IN HEIGHT AND SET AS SHOWN ON PLANS.
2. SIGNAGE DESIGNATING THE PROTECTION ZONE AND PENALTIES FOR VIOLATIONS SHALL BE SECURED IN A PROMINENT LOCATION ON EACH PROTECTION FENCE.
3. THE AUTHORITY HAVING JURISDICTION SHALL APPROVE THE INSTALLED TREE PROTECTION FENCING PRIOR TO DEMOLITION OR CONSTRUCTION ACTIVITIES.
4. FENCE MATERIALS SHALL CONSIST OF METAL CHAIN LINK SECURED WITH 8' METAL POSTS.
5. MOVEMENT OR REMOVAL OF FENCING REQUIRES APPROVAL BY THE AUTHORITY HAVING JURISDICTION.



6 C4.60 TREE PROTECTION FENCING

NTS



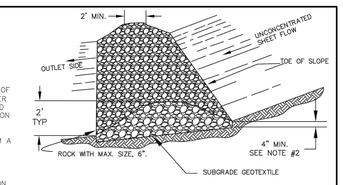
7 C4.60 COMPOST BERM AND SEDIMENT FENCE

N.T.S.

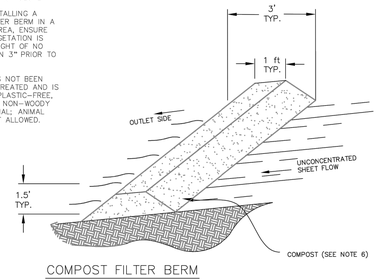
FOR FURTHER INFORMATION ON DESIGN CRITERIA SEE CHAPTER 4 OF EROSION PREVENTION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL.

NOTES:

1. DIRECT THE OUTLET SIDE OF THE ROCK/COMPOST FILTER BERMS ONTO A STABILIZED AREA, SUCH AS VEGETATION AND/OR ROCK.
2. EMBED ROCK FILTER BERM A MIN. OF 4" INTO THE EXISTING GROUND/EMBANKMENT.
3. USE ROCK FILTER BERM ON 3H:1V OR FLATTER SIDE SLOPES. WITHIN THE SAFETY CLEAR ZONE. USE 6H:1V OR FLATTER ON SIDE SLOPES.
4. PLACE COMPOST FILTER BERMS ALONG OR ON THE GROUND CONTOUR WITH THE ENDS TURNED UP SLOPE.
5. PRIOR TO INSTALLING A COMPOST FILTER BERM IN A VEGETATED AREA, ENSURE THAT THE VEGETATION IS CUT TO A HEIGHT OF NO GREATER THAN 3" PRIOR TO INSTALLATION.
6. COMPOST HAS NOT BEEN CHEMICALLY TREATED AND IS WEED-FREE, PLASTIC-FREE, DECOMPOSED, NON-WOODY PLANT MATERIAL; ANIMAL WASTE IS NOT ALLOWED.



ROCK FILTER BERM



COMPOST FILTER BERM

FILTER BERMS
ROCK/COMPOST

DRAWING NO. 4-18 REVISED 10-31-19

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Project

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CITY OF WILSONVILLE, OR

REGISTERED PROFESSIONAL ENGINEER
01697
OREGON
JULY 10, 2015
GREGORY I. MINO

EXPIRES: 12/31/24

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REVISION SCHEDULE

Delta	Issued As	Issue Date

EROSION AND SEDIMENT CONTROL PLAN DETAILS

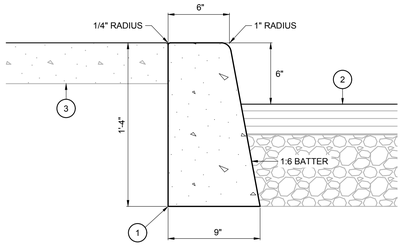
SHEET

C4.60

JOB NO. **2200502.00**

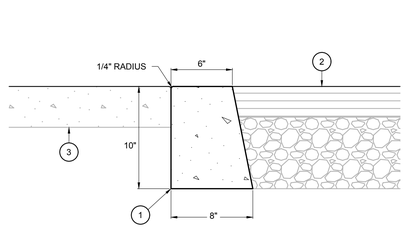
1049

DEVELOPMENT REVIEW SET - 04/24/23



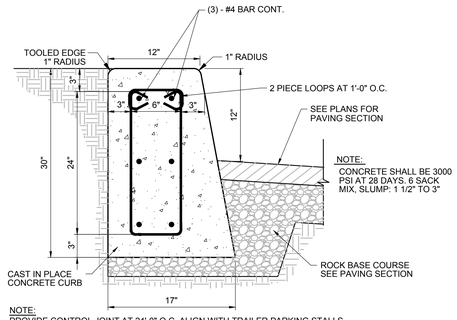
KEYNOTES:
1. CONCRETE FOR CURBING PER PROJECT SPECIFICATIONS
2. PAVEMENT SECTION PER CIVIL PLANS
3. SEE PLANS FOR IMPROVEMENTS AT BACK OF CURB. WHERE SIDEWALK OCCURS, THE SIDEWALK AND TOP OF CURB SHALL BE FLUSH. WHERE ABUTTING A PLANTER AREA, THE FINAL GRADE SHALL BE 1" MINIMUM BELOW TOP OF CURB, OR AS DIRECTED BY THE LANDSCAPE ARCHITECT

1 C5.10 VERTICAL CURB
NTS



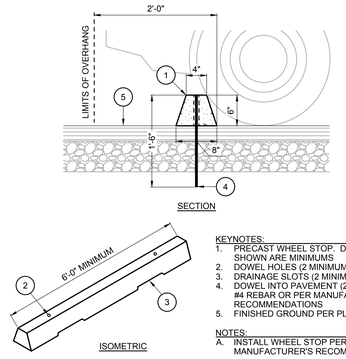
KEYNOTES:
1. CONCRETE FOR CURBING PER PROJECT SPECIFICATIONS
2. PAVEMENT SECTION PER PLANS
3. SEE PLANS FOR IMPROVEMENTS AT BACK OF CURB. WHERE SIDEWALK OCCURS, THE SIDEWALK AND TOP OF CURB SHALL BE FLUSH. WHERE ABUTTING A PLANTER AREA, THE FINAL GRADE SHALL BE 1" MINIMUM BELOW TOP OF CURB, OR AS DIRECTED BY THE LANDSCAPE ARCHITECT

2 C5.10 FLUSH CURB
NTS



NOTE:
PROVIDE CONTROL JOINT AT 24'-0" O.C. ALIGN WITH TRAILER PARKING STALLS

3 C5.10 12" X 30" REINFORCED CURB
N.T.S.

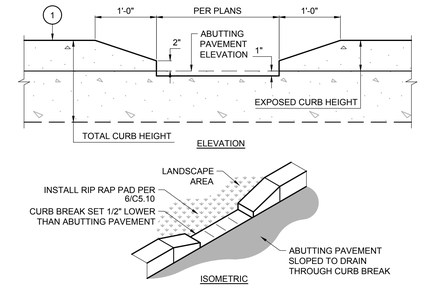


SECTION

KEYNOTES:
1. PRECAST WHEEL STOP. DIMENSIONS SHOWN ARE MINIMUMS
2. DOWEL HOLES (2 MINIMUM)
3. DRAINAGE SLOTS (2 MINIMUM)
4. DOWEL INTO PAVEMENT (2 MINIMUM). #4 REBAR OR PER MANUFACTURER'S RECOMMENDATIONS
5. FINISHED GROUND PER PLANS

NOTES:
A. INSTALL WHEEL STOP PER MANUFACTURER'S RECOMMENDATIONS

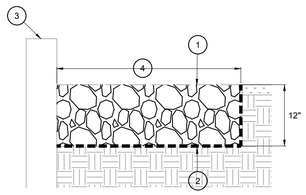
4 C5.10 PRECAST WHEEL STOP
NTS



KEYNOTES:
1. CONCRETE CURB PER 1/C5.10 . CONCRETE FOR CURBING PER PROJECT SPECIFICATIONS

NOTES:
A. IF CURBING IS REINFORCED, BEND REINFORCEMENT TO PASS UNDER CURB BREAK WHILE MAINTAINING 3" COVER ON REBAR

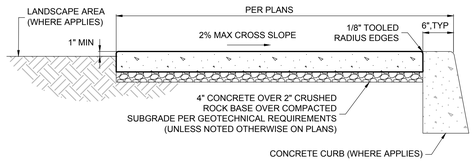
5 C5.10 CURB BREAK
NTS



KEYNOTES:
1. CRUSHED, ANGULAR, 6"-10" DIAMETER ROCK (I.E. ODOT CLASS 50 RIP RAP). TOP OF RIP RAP LAYER TO BE FLUSH WITH ADJACENT GRADE
2. WOVEN FILTER FABRIC, ENCASING ALL BUT THE TOP SURFACE OF THE AGGREGATE
3. PIPE OUTFALL OR CURB BREAK LOCATION, WIDTH/DIAMATER, AND INVERT PER PLAN. CENTER RIP RAP PAD ON PIPE OUTFALL/CURB BREAK
4. RIP RAP PAD DIMENSIONS PER PLAN. IF NONE NOTED, INSTALL TO A MINIMUM WIDTH OF 12" TO EITHER SIDE OF A CURB BREAK OR PIPE OUTFALL AND 48" LONG

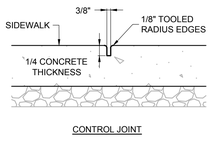
NOTES:
A. ALL FEATURES SHOWN OTHER THAN THE RIP RAP PAD ARE SHOWN FOR REFERENCE ONLY TO PROVIDE CONTEXT OF THE RIP RAP'S RELATIONSHIP TO ITS SURROUNDINGS. REFER TO THE PLANS FOR PROJECT SPECIFIC RELATIONSHIPS TO OTHER SITEWORK ELEMENTS

6 C5.10 RIP RAP PAD
NTS

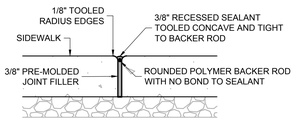


NOTES:
A. CONCRETE SIDEWALK SHALL BE BROOM FINISHED UNLESS OTHERWISE NOTED ON PLANS
B. SEE PROJECT SPECIFICATIONS FOR CONCRETE, AGGREGATE BASE, AND JOINT MATERIALS
C. WHERE SIDEWALK ABUTS CURBING, SURFACE SHALL BE FLUSH WITH TOP OF CURB UNLESS NOTED OTHERWISE ON PLANS. WHERE SIDEWALK ABUTS LANDSCAPE OR OTHER PERVIOUS AREA, GRADE SHALL BE RECESSED 1" MINIMUM OR AS OTHERWISE DICTATED BY THE LANDSCAPE ARCHITECT OR NOTED ON PROJECT PLANS
D. DO NOT USE SHINERS ON TOOLED EDGES UNLESS NOTED OTHERWISE
E. CONTROL JOINTS SHALL BE EVENLY SPACED AND LOCATED EVERY 5' MAXIMUM, WITH EXPANSION JOINTS EVERY FOURTH JOINT, OR PER PLAN. SIDEWALK JOINTS SHALL BE ALIGNED WITH CURB JOINTS OR WHERE PERPENDICULAR CURBING INTERSECTS.

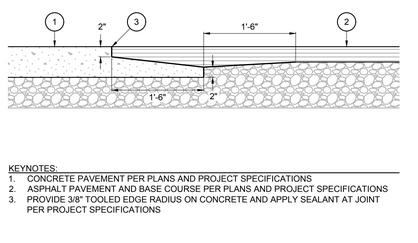
7 C5.10 CONCRETE SIDEWALK AND JOINTS
NTS



CONTROL JOINT



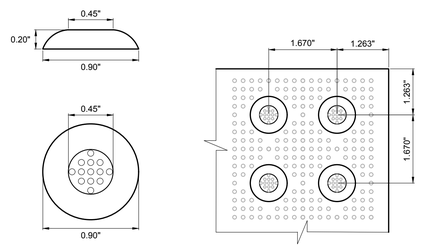
EXPANSION JOINT



KEYNOTES:
1. CONCRETE PAVEMENT PER PLANS AND PROJECT SPECIFICATIONS
2. ASPHALT PAVEMENT AND BASE COURSE PER PLANS AND PROJECT SPECIFICATIONS
3. PROVIDE 3/8" TOOLED EDGE RADIUS ON CONCRETE AND APPLY SEALANT AT JOINT PER PROJECT SPECIFICATIONS

NOTES:
A. THIS DETAIL IS NOT REQUIRED WHERE SIDEWALKS ABUT ASPHALT PAVEMENT IF PROVISIONS ARE SPECIFIED THAT PREVENT VEHICULAR ACCESS ONTO SIDEWALK

8 C5.10 ASPHALT TO CONCRETE TRANSITION
NTS

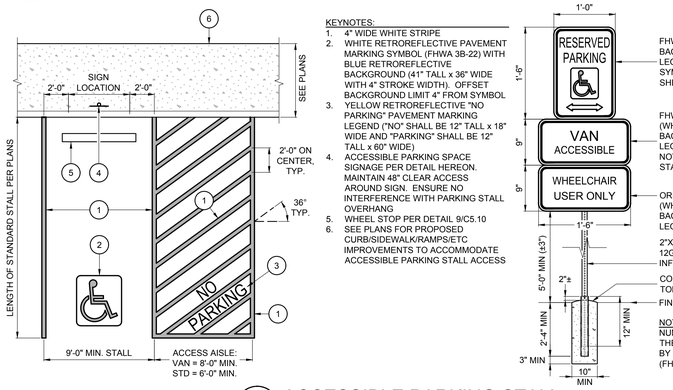


TRUNCATED DOME DETAIL

TRUNCATED DOME PANEL

NOTES:
A. PLACE TRUNCATED DOME DETECTABLE WARNING TEXTURE (OR CAST-IN-PLACE PANELS) IN THE LOWER 24" FOR THE FULL WIDTH OF THE RAMP
B. ARRANGE DOMES USING AN INLINE PATTERN AS SHOWN IN THE DETAIL ABOVE
C. COLOR OF DOME TEXTURE (OR PANELS) TO BE SAFETY YELLOW, UNLESS NOTED OTHERWISE ON PLANS
D. SURFACE APPLIED PANELS SHALL ONLY BE ALLOWED IN RETROFIT CONDITIONS AND WITH THE PRIOR APPROVAL OF THE ENGINEER

9 C5.10 TRUNCATED DOMES
NTS



KEYNOTES:
1. 4" WIDE WHITE STRIPE
2. WHITE RETROREFLECTIVE PAVEMENT MARKING SYMBOL (FHWA 3B-22) WITH BLUE RETROREFLECTIVE BACKGROUND (41" TALL x 36" WIDE WITH 4" STROKE WIDTH). OFFSET BACKGROUND LIMIT 4" FROM SYMBOL
3. YELLOW RETROREFLECTIVE "NO PARKING" PAVEMENT MARKING LEGEND ("NO" SHALL BE 12" TALL x 18" WIDE AND "PARKING" SHALL BE 12" TALL x 60" WIDE)
4. ACCESSIBLE PARKING SPACE SIGNAGE PER DETAIL HEREON. MAINTAIN 48" CLEAR ACCESS AROUND SIGN. ENSURE NO INTERFERENCE WITH PARKING STALL OVERHANG
5. WHEEL STOP PER DETAIL 9/C5.10
6. SEE PLANS FOR PROPOSED CURB/SIDEWALK/RAMPS/ETC IMPROVEMENTS TO ACCOMMODATE ACCESSIBLE PARKING STALL ACCESS

10 C5.10 ACCESSIBLE PARKING STALL
NTS

FHWA SIGN NO. R7-8
BACKGROUND: WHITE, RETRO-REFLECTIVE SHEETING
LEGEND: GREEN, RETRO-REFLECTIVE SHEETING
SYMBOL: WHITE ON BLUE, RETRO-REFLECTIVE SHEETING

FHWA SIGN NO. R7-8A
(WHERE CALLED OUT ON PLANS)
BACKGROUND: WHITE, RETRO-REFLECTIVE SHEETING
LEGEND: GREEN, RETRO-REFLECTIVE SHEETING
NOTE: ACCESS AISLE FOR SINGLE VAN ACCESSIBLE STALL TO BE LOCATED ON THE PASSENGER'S SIDE

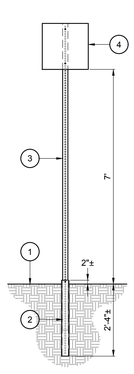
OREGON DEPT OF TRANSPORTATION SIGN NO. OR7-8C
(WHERE CALLED OUT ON PLANS)
BACKGROUND: WHITE, RETRO-REFLECTIVE SHEETING
LEGEND: GREEN, RETRO-REFLECTIVE SHEETING

2"X2" SQUARE PERFORATED GALVANIZED 12GA METAL SIGN POST. FOR FURTHER INFORMATION, SEE DETAIL

CONCRETE FOUNDATION, ROUND TOP TO SHED

FINISHED GROUND

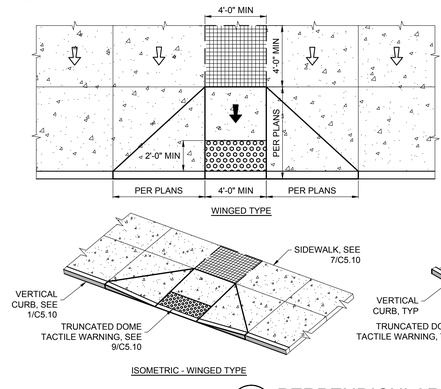
NOTE: MORE DETAIL ON THE FHWA SIGN/SYMBOL NUMBER REFERENCES HEREON MAY BE FOUND IN THE STANDARD HIGHWAY SIGNS BOOK PUBLISHED BY THE FEDERAL HIGHWAY ADMINISTRATION (FHWA), LATEST EDITION



KEYNOTES:
1. EXISTING OR FINISHED GRADE PER PLANS
2. 30" LONG, PERFORATED GALVANIZED 12GA METAL POST SLEEVE SIZED TO ACCOMMODATE 2"x2" SQUARE POST. EMBED SLEEVE SUCH THAT APPROXIMATELY 2" IS EXPOSED ABOVE GRADE TO ALLOW FOR INSTALLATION OF THE CORNER BOLT IN THE TOP HOLE
3. 2"x2" SQUARE PERFORATED GALVANIZED 12GA METAL SIGN POST (UNISTRUT TELESPAR, OR EQUAL). SIGN POST SHALL BE EMBEDDED A MINIMUM OF 12" INTO THE POST SLEEVE. CONTRACTOR TO VERIFY REQUIRED POST LENGTH PRIOR TO ORDERING
4. ATTACH SIGN TO PERFORATED POST USING A MINIMUM OF 2 DRIVE RIVETS THROUGH THE FACE OF THE SIGN. SIZE, SHAPE, AND WORDING OF SIGN PER PLANS OR SEPARATE DETAIL

NOTES:
A. SIGN POST SHALL BE PLACED SUCH THAT EDGE OF MOUNTED SIGN IS AT LEAST 24" AWAY FROM ANY ADJACENT ROADWAY

11 C5.10 SIGN POST
NTS



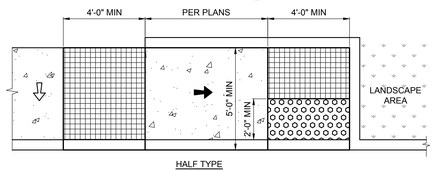
LEGEND
TURNING SPACE/LANDING MAX 2.0% FINISHED SLOPE IN ALL DIRECTIONS*

SLOPE 1.5% MAX* (MAX 2.0% FINISHED SURFACE SLOPE)

SLOPE 7.5% MAX* (MAX 8.3% FINISHED SLOPE)

*SLOPES GOVERN OVER ELEVATIONS

12 C5.10 PERPENDICULAR CURB RAMPS
NTS



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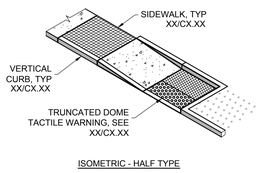


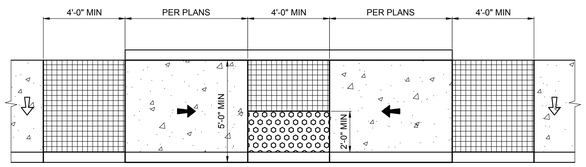
ISOMETRIC - HALF TYPE

LEGEND
TURNING SPACE/LANDING MAX 2.0% FINISHED SLOPE IN ALL DIRECTIONS*

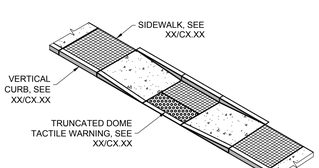
SLOPE 1.5% MAX* (MAX 2.0% FINISHED SURFACE SLOPE)

SLOPE 7.5% MAX* (MAX 8.3% FINISHED SLOPE)

*SLOPES GOVERN OVER ELEVATIONS

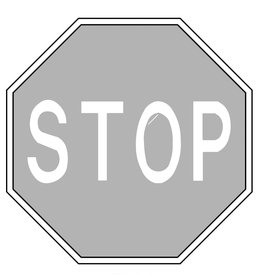


FULL TYPE



ISOMETRIC - FULL TYPE

13 C5.10 PARALLEL CURB RAMPS
NTS

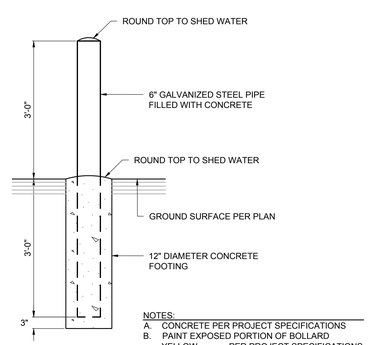


MUTCD# R1-1
LEGEND - WHITE (REFL)
BACKGROUND-RED (REFL)

NOTE: SEE DETAIL 15/C5.10 FOR INSTALLATION DETAILS

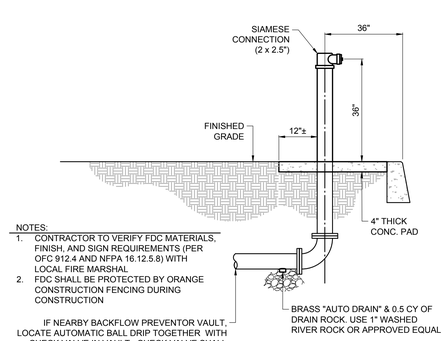
14 C5.10 STOP SIGN
N.T.S.

STOPSIGN



NOTES:
A. CONCRETE PER PROJECT SPECIFICATIONS
B. PAINT EXPOSED PORTION OF BOLLARD YELLOW PER PROJECT SPECIFICATIONS

15 C5.10 6" PIPE BOLLARD
NTS



NOTES:
1. CONTRACTOR TO VERIFY FDC MATERIALS, FINISH, AND SIGN REQUIREMENTS (PER OFC 912.4 AND NFPA 16.12.5.8) WITH LOCAL FIRE MARSHAL
2. FDC SHALL BE PROTECTED BY ORANGE CONSTRUCTION FENCING DURING CONSTRUCTION

IF NEARBY BACKFLOW PREVENTOR VAULT, LOCATE AUTOMATIC BALL DRIP TOGETHER WITH CHECK VALVE IN VAULT. CHECK VALVE SHALL OTHERWISE BE LOCATED IN THE BUILDING

16 C5.10 FIRE DEPARTMENT CONNECTION
NTS

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WILSONVILLE, OR 97070

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9710 SW DAY RD.
CITY OF WILSONVILLE, OR

REGISTERED PROFESSIONAL ENGINEER
01697
OREGON
JULY 10, 2007
GREGORY I. MINO
EXPIRES: 12/31/24

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REVISION SCHEDULE

Delta	Issued As	Issue Date

CIVIL DETAILS

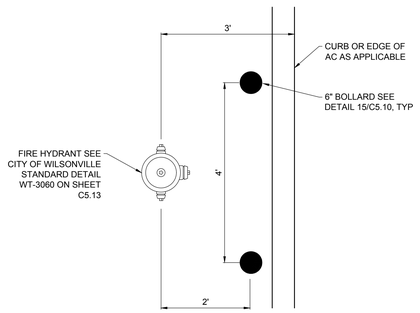
SHEET
C5.10

JOB NO. **2200502.00**

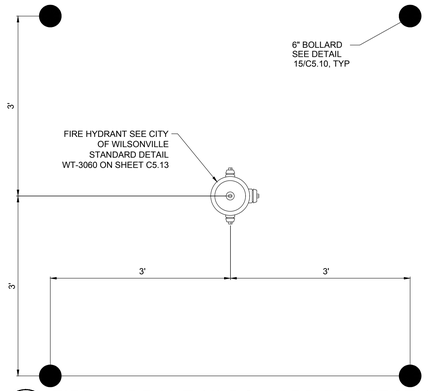
1050

DEVELOPMENT REVIEW SET - 04/24/23

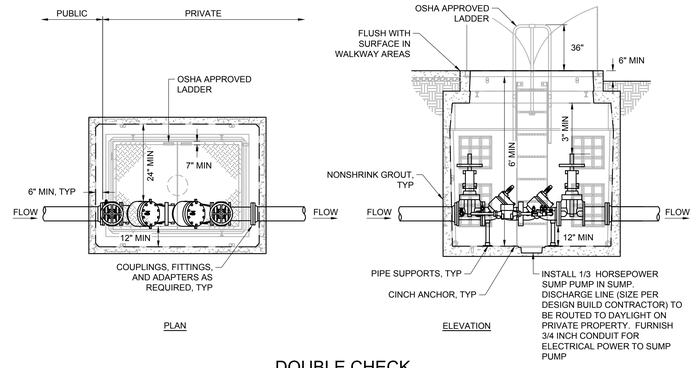
1 C5.11 NOT USED
N.T.S.



2 C5.11 FIRE HYDRANT BOLLARD PROTECTION
NTS



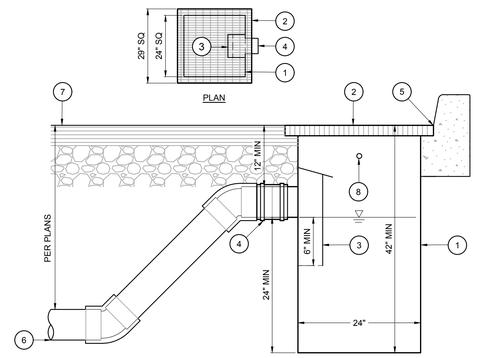
3 C5.11 FIRE HYDRANT (4) BOLLARD PROTECTION
N.T.S.
FH BOLLARD



BACKFLOW PREVENTER SHALL BE APPROVED BY THE STATE HEALTH DEPARTMENT AND PLUMBING CODE
VAULT SHALL BE PRECAST CONCRETE WITH GALVANIZED HINGED ACCESS DOORS (OLDCASTLE, OR EQUAL)
VAULT SHALL BE MECHANICALLY LOCKED AND VALVES SHALL BE PROVIDED WITH ELECTRONIC TAMPER SWITCHES

APPROXIMATE VAULT SIZES	
BACKFLOW (DIAMETER)	VAULT (OUTSIDE)
3 INCH	7'-0"(L) 4'-8" (W) 7'-0" (H)
4 INCH	7'-0"(L) 4'-8" (W) 7'-0" (H)
6 INCH	7'-9"(L) 6'-3" (W) 7'-2" (H)
8 INCH	8'-8"(L) 6'-8" (W) 8'-1" (H)
10 INCH	8'-8"(L) 6'-8" (W) 8'-1" (H)

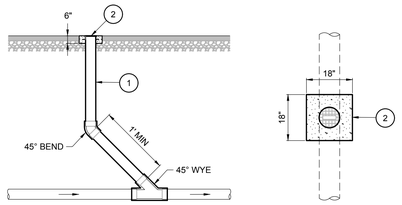
4 C5.11 DOUBLE CHECK VALVE AND VAULT (3" AND LARGER)
NTS



KEYNOTES:
1. PREFABRICATED, ASPHALT DIPPED, 10 GAUGE STEEL SUMPED CATCH BASIN WITH INTEGRAL GRATE FRAME
2. GRATE: HEAVY DUTY CAST IRON (ASTM A 48, CLASS 30B) BICYCLE SAFE
3. SEDIMENT TRAP WITH HINGED LID
4. INSTALL FLEXIBLE CLAMPED COUPLING ON INTEGRAL CATCH BASIN OUTLET. IMMEDIATELY TURN DOWN PIPING AT 45 DEGREES TO INTERSECT WITH THE SITE PIPING
5. LOCATE CATCH BASIN SUCH THAT THE EDGE OF GRATE FRAME IS INLINE WITH THE ABUTTING CURBLINE (WHERE APPLIES).
6. PIPE SIZE, INVERT, AND SLOPE PER PLANS
7. PAVING SECTION PER PLANS
8. 1/2 INCH TO 1 INCH DIAMETER WEEPHOLES, MINIMUM 1 PER SIDE. CONTRACTOR SHALL VERIFY COMPLIANCE WITH LOCAL JURISDICTION PRIOR TO PROCURING MATERIALS

NOTES:
A. ALL PRODUCTS USED SHALL BE COMPLIANT WITH BOTH THE UNIFORM AND LOCAL JURISDICTION PLUMBING CODES
B. WHERE ABUTTING CURBING, GRATE SHALL BE ORIENTED SO THAT THE ELONGATED PATTERN IS PERPENDICULAR TO THE CURB FACE

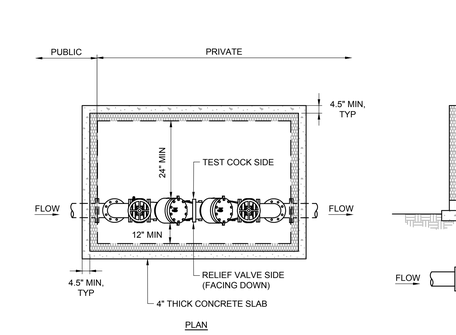
5 C5.11 STEEL CATCH BASIN
NTS



KEYNOTES:
1. CLEANOUT PIPING AND FITTINGS TO BE OF THE SAME SIZE (8" MAX) AND MATERIAL AS THE PIPING IT IS SERVING
2. CLEANOUT LID & FRAME: HEAVY DUTY CAST IRON ACCESS BOX, SCORIATED CAST IRON COVER, THREADED BRONZE PLUGS, MOUNTED IN 4,000 PSI CONCRETE COLLAR.

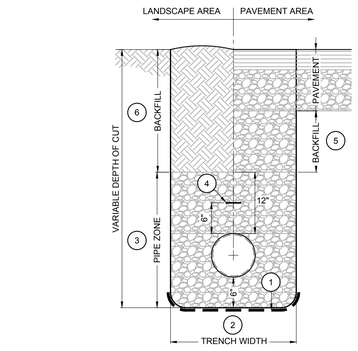
NOTES:
A. CONCRETE COLLAR MAY BE OMITTED IN LANDSCAPE AREAS. USE PLASTIC PIPE CAP AND SET 3 INCHES ABOVE GRADE

6 C5.11 CLEANOUT
NTS



BACKFLOW PREVENTER SHALL BE APPROVED BY THE STATE HEALTH DEPARTMENT AND PLUMBING CODE
ENCLOSURE SHALL BE WEATHERPROOF, INSULATED, AND HEATED (HOTBOX, OR EQUAL)

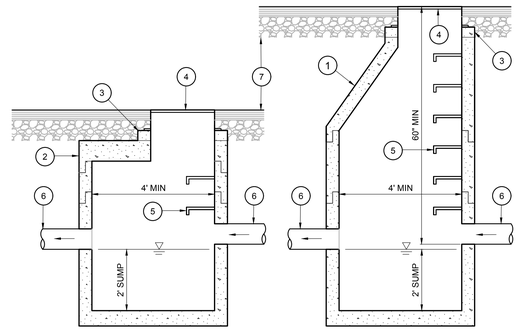
7 C5.11 REDUCED PRESSURE BACKFLOW AND ENCLOSURE (3" AND LARGER)
NTS



KEYNOTES:
1. INSTALL TRENCH STABILIZATION AS NECESSARY TO OBTAIN COMPACTION
2. TRENCH WIDTH SHALL ACCOMMODATE THE PIPE DIAMETER PLUS ONE ADDITIONAL PIPE DIAMETER ON EITHER SIDE OF THE PIPE, BUT IN NO CASE LESS THAN 6 INCHES OR MORE THAN 18 INCHES
3. PIPE ZONE TO CONSIST OF IMPORTED GRANULAR MATERIAL
4. TRACER WIRE PER PROJECT SPECIFICATIONS
5. BACKFILL IN PAVEMENT AREAS WITH IMPORTED GRANULAR MATERIAL TO PAVEMENT SUBGRADE ELEVATION
6. BACKFILL IN LANDSCAPE AREAS WITH NATIVE MATERIAL TO PLANTER SUBGRADE ELEVATION. MOUND TOP TO SHED AT 2% EACH DIRECTION

NOTES:
A. THIS DETAIL IS FOR USE ON PRIVATE PROPERTY ONLY. TRENCHING AND BACKFILL REQUIREMENTS FOR WORK IN THE PUBLIC RIGHT-OF-WAY SHALL BE COMPLIANT WITH THE STANDARDS OF THE AUTHORITY HAVING JURISDICTION
B. SEE GEOTECHNICAL REPORT AND PROJECT SPECIFICATIONS FOR RECOMMENDED MATERIALS AND FURTHER REQUIREMENTS (i.e. SIZE AND GRADATION OF GRANULAR MATERIALS, MINIMUM COMPACTION, MAXIMUM LIFT PLACEMENT, TRACER WIRE, ETC.)
C. IF GROUNDWATER IS ENCOUNTERED, CONSULT THE GEOTECHNICAL ENGINEER OF RECORD FOR ADDITIONAL RECOMMENDATIONS WITH REGARD TO TRENCHING, PIPE PLACEMENT, AND BACKFILL
D. REFER TO PROJECT SPECIFICATIONS FOR MINIMUM PIPE COVER AND ALTERNATE MATERIAL REQUIREMENTS. CONTRACTOR SHALL PREVENT CONSTRUCTION VEHICLES FROM DRIVING OVER PIPING WITH LESS THAN 12" COVER AT ANY POINT IN TIME DURING CONSTRUCTION

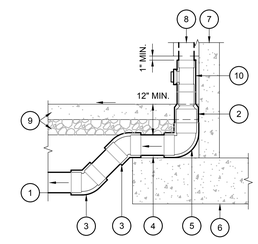
8 C5.11 UTILITY TRENCH BEDDING & BACKFILL
NTS



KEYNOTES:
1. 48" MIN DIAMETER PRECAST CONCRETE MANHOLE WITH ECCENTRIC CONE
2. 48" MIN DIAMETER PRECAST CONCRETE FLAT TOP MANHOLE (USED WHEN LESS THAN 60" AVAILABLE FROM PIPE INVERT TO RIM). CONCENTRIC LID SHALL BE USED AND STEPS SHALL BE OMITTED WHEN DEPTH FROM RIM TO INVERT IS LESS THAN 3 FEET
3. PRECAST CONCRETE GRADE RING AS REQUIRED TO ACCOMMODATE PAVING SECTION (12" TOTAL, MAX)
4. MANHOLE FRAME AND COVER PER PROJECT SPECIFICATIONS, RIM ELEVATION PER PLANS
5. 6 1/2" MIN LONG MANHOLE STEPS AT 12" ON CENTER PER PROJECT SPECIFICATIONS. LOCATE WITHIN 24" OF COVER AND FLOOR OF MANHOLE, AND A MINIMUM OF 5" FROM PRECAST SECTION JOINT
6. PIPE SIZE, INVERT, AND SLOPE PER PLANS
7. PAVING SECTION PER PLANS

NOTES:
A. MANHOLE DIAMETER SHALL BE INCREASED, IF REQUIRED, TO PROVIDE A MINIMUM OF 12" SEPARATION BETWEEN PIPE CONNECTIONS, OR WHEN ANY PIPE DIAMETER IS GREATER THAN 1/2 THE DIAMETER OF THE MANHOLE
B. MANHOLE ACCESS COVER SHALL NOT BE LOCATED DIRECTLY OVER A PIPE CONNECTION UNLESS DIRECTED OTHERWISE BY THE ENGINEER
C. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OF ALL MANHOLES FOR REVIEW AND APPROVAL BY THE ENGINEER PRIOR TO PROCURING MATERIALS
D. SELECTED MANHOLE SHALL MEET THE CRITERIA OF THE PROJECT SPECIFICATIONS AND BE INSTALLED ACCORDINGLY
E. INLET AND OUTLET PIPES CONNECTIONS SHALL BE COMPLIANT WITH PROJECT SPECIFICATIONS OR THE REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION, WHICHEVER IS MOST STRINGENT

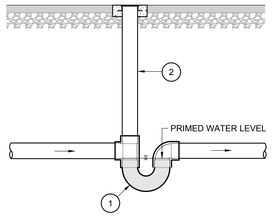
9 C5.11 STORM SEWER MANHOLES
NTS



KEYNOTES:
1. PIPE INVERT, SIZE AND SLOPE PER CIVIL PLANS
2. REDUCER AS NECESSARY TO TRANSITION BETWEEN PIPE SIZES
3. 45° ELBOW
4. SOLID GROUT AT BASE @ MINIMUM 2%
5. 90° SHORT ELBOW
6. FOOTING PER STRUCTURAL PLANS
7. BUILDING WALL PER ARCHITECTURAL PLANS
8. SEE ARCHITECTURAL PLANS FOR CONTINUATION
9. PAVING SECTION AND SLOPE PER CIVIL PLANS
10. THREADED CLEANOUT ON TEE FITTING PER UNIFORM PLUMBING CODE

NOTES:
A. ALL WORK WITHIN 5-FEET OF THE BUILDING SHALL BE INSTALLED COMPLIANT WITH THE UNIFORM PLUMBING CODE (UPC). SEE PLUMBING AND ARCHITECTURAL PLANS FOR ADDITIONAL INFORMATION

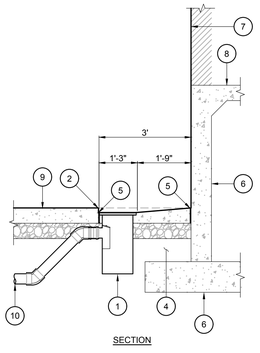
10 C5.11 DOWNSPOUT
NTS



KEYNOTES:
1. P-TRAP AND ASSOCIATED FITTINGS COMPLIANT WITH THE UNIFORM PLUMBING CODE AND PROJECT SPECIFICATIONS
2. CLEANOUT PER 6/C5.11

NOTES:
A. CONTRACTOR TO PROVIDE PRIME TO P-TRAP FROM BUILDING WATER SUPPLY

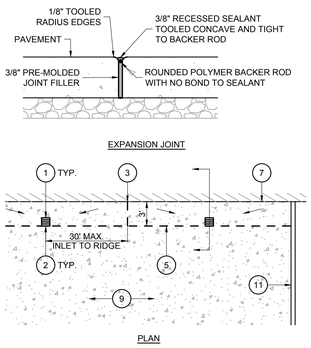
11 C5.11 P-TRAP
NTS

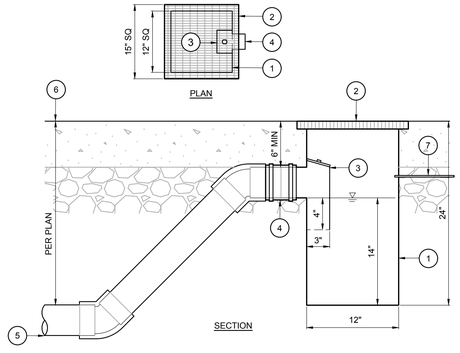


KEYNOTES:
1. PRIMED SANITARY AREA DRAIN PER 11/C5.10 [ELEVATION = FF - 4'-2"]
2. 1/8" TOOLED RADIUS EDGE [ELEVATION = FF - 4'-0"]
3. NO LIP AT RIDGE LINE [ELEVATION = FF - 4'-0"]
4. LEAVE NO VOIDS OR UNCOMPACTED MATERIAL. UTILIZE LEAN CONCRETE BACKFILL IF NECESSARY TO OBTAIN COMPACTION
5. EXPANSION JOINT PER DETAIL HEREON
6. RETAINING WALL AND FOUNDATIONS PER STRUCTURAL PLANS
7. BUILDING WALL PER ARCHITECTURAL PLANS
8. BUILDING FINISHED FLOOR, SEE ARCHITECTURAL PLANS FOR CONTINUATION
9. PAVING SECTION AND SLOPE PER PLANS
10. PIPE INVERT, SIZE AND SLOPE PER PLANS

NOTES:
A. ALL WORK WITHIN 5-FEET OF THE BUILDING SHALL BE INSTALLED COMPLIANT WITH THE UNIFORM PLUMBING CODE (UPC)
B. CONTRACTOR SHALL COORDINATE AND INSTALL WATER SUPPLY FOR PRIMING FROM BUILDING PLUMBING

12 C5.11 LOADING DOCK ISOLATION ROW
NTS





KEYNOTES:
1. PREFABRICATED, ASPHALT DIPPED, 10 GAUGE STEEL SUMPED AREA DRAIN WITH INTEGRAL GRATE FRAME
2. "HEEL-PROOF", HEAVY DUTY REMOVABLE TRAFFIC GRATE CAPABLE OF SUPPORTING H20 LOADING
3. SEDIMENT TRAP WITH BRASS SCREW CAP (NO HINGE)
4. INSTALL FLEXIBLE CLAMPED COUPLING ON INTEGRAL AREA DRAIN OUTLET. IMMEDIATELY TURN DOWN PIPING AT 45 DEGREES TO INTERSECT WITH THE SITE PIPING
5. PIPE SIZE, INVERT, AND SLOPE PER PLANS
6. PAVING SECTION PER PLANS
7. PRIMED WATER SUPPLY

NOTES:
A. ALL PRODUCTS USED SHALL BE COMPLIANT WITH BOTH THE UNIFORM AND LOCAL JURISDICTION PLUMBING CODES
B. CONTRACTOR SHALL COORDINATE AND INSTALL WATER SUPPLY FOR PRIMING FROM BUILDING PLUMBING

13 C5.11 SANITARY AREA DRAIN
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REVISION SCHEDULE		
Delta	Issued As	Issue Date
1	PLAN CHECK	06/10/2022

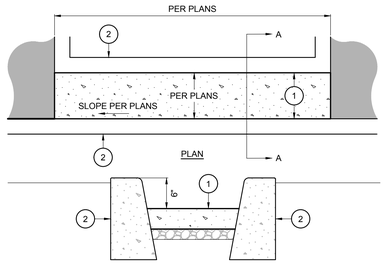
CIVIL DETAILS

SHEET
C5.11

JOB NO. **2200502.00**

DEVELOPMENT REVIEW SET - 04/24/23

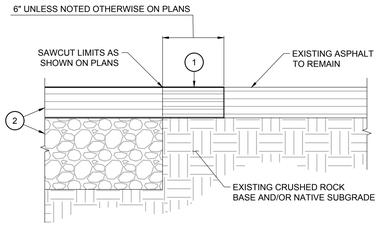
1051



KEYNOTES:
1. 4" CONCRETE OVER 2" ROCK BASE. CONCRETE AND BASE PER SPECIFICATIONS
2. CONCRETE VERTICAL CURB PER 1/C5.10

NOTES:
A. CHANNEL SLOPE TO MATCH SLOPE OF ADJACENT PAVEMENT
B. WHERE CHANNEL IS IN-LINE WITH CURB AND GUTTER, CONTINUE CROSS SECTION OF CURB AND GUTTER THROUGH LENGTH OF CHANNEL
C. SECTION MAY BE CONSTRUCTED MONOLITHICALLY

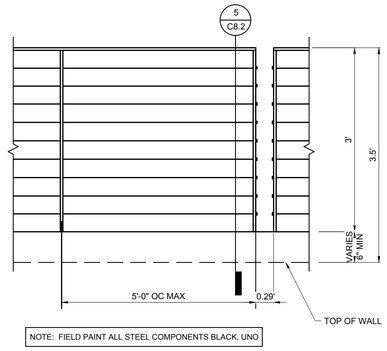
1 C5.12 CONCRETE CURB CHANNEL
NTS



KEYNOTES:
1. ADDITIONALWIDTH OF EXISTING ASPHALT PAVEMENT TO BE SAWCUT AND REMOVED BEYOND THE SAWCUT LIMITS SHOWN ON PLANS
2. PROPOSED ASPHALT PAVEMENT SECTION PER PLANS

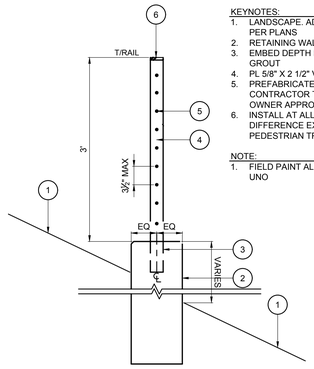
NOTES:
A. DO NOT DISTURB THE EXISTING CRUSHED ROCK BASE OR NATIVE SUBGRADE UNDER THE ADDITIONAL WIDTH OF SAWCUT OR EXISTING ASPHALT PAVEMENT
B. PAVEMENT REPLACEMENT WITHIN THE ADDITIONAL SAWCUT LIMITS SHALL MATCH EXISTING OR PROPOSED SECTION, WHICHEVER IS GREATER

2 C5.12 ASPHALT PAVEMENT SAWCUT
NTS



NOTE: FIELD PAINT ALL STEEL COMPONENTS BLACK, UNO

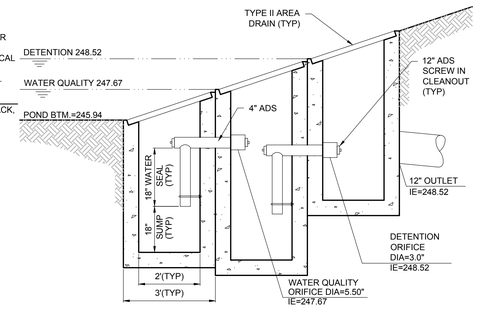
3 C5.12 GUARDRAIL ELEVATION
N.T.S.



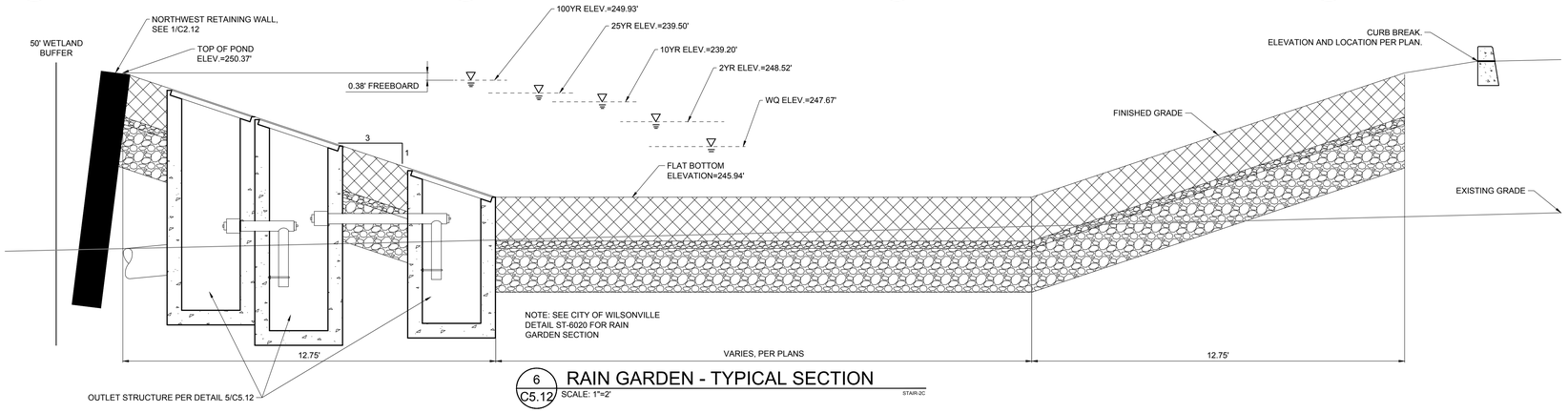
KEYNOTES:
1. LANDSCAPE. ADJACENT GRADES AND SLOPES PER PLANS
2. RETAINING WALL. HEIGHT PER PLANS.
3. EMBED DEPTH PER MANUFACTURER, SOLID GROUT
4. PL 5/8" X 2 1/2" VERTICAL SUPPORT
5. PREFABRICATED METAL GUARDRAIL CONTRACTOR TO PROVIDE SUBMITTAL FOR OWNER APPROVAL
6. INSTALL AT ALL LOCATIONS WHERE VERTICAL DIFFERENCE EXCEEDS 30" ADJACENT TO PEDESTRIAN TRAFFIC AND WHERE NOTED.

NOTE:
1. FIELD PAINT ALL STEEL COMPONENTS BLACK, UNO

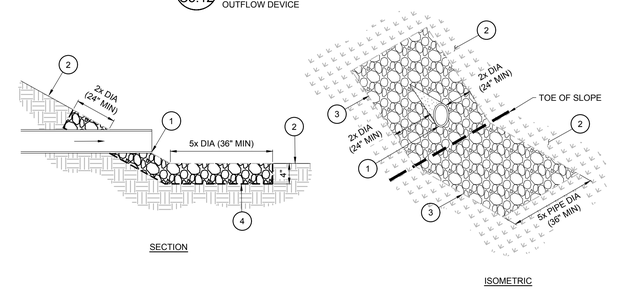
4 C5.12 GUARDRAIL SECTION - EMBED
N.T.S.
STAIR-2C



5 C5.12 RAIN GARDEN 1 OUTLET
N.T.S.
OUTFLOW DEVICE



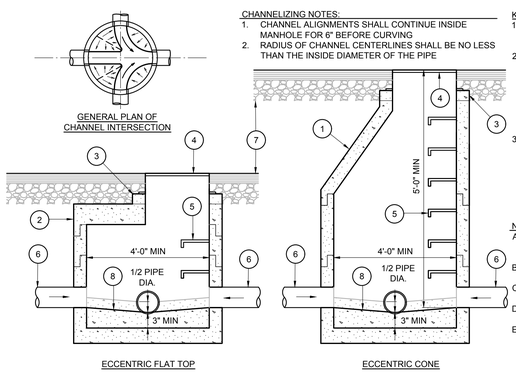
6 C5.12 RAIN GARDEN - TYPICAL SECTION
SCALE: 1"=2'
STAIR-2C



KEYNOTES:
1. PIPE SIZE AND INVERT PER PLAN. WHERE NOT NOTED, PIPE SHALL DISCHARGE 6-12" ABOVE RIP RAP FINISHED GRADE
2. FINISHED GRADE AND SLOPE PER PLAN. PLANTING PER LANDSCAPE PLANS
3. CRUSHED, ANGULAR, 6"-10" DIAMETER ROCK (I.E. ODOT CLASS 50 RIP RAP). TOP OF RIP RAP LAYER TO BE FLUSH WITH ADJACENT GRADE. IF INDICATED, DIMENSIONS OF RIP RAP SHOWN ON PLAN SHALL SUPERCEDE THOSE SHOWN ON THIS DETAIL. DIAMETER (DIA) REFERENCES REFER TO THE INSIDE DIAMETER OF THE OUTFALL PIPE
4. WOVEN FILTER FABRIC ENCASING ALL BUT THE TOP SURFACE OF THE RIP RAP

7 C5.12 PIPE OUTFALL - RIP RAP
NTS

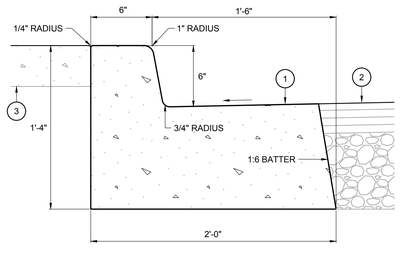
CHANNELIZING NOTES:
1. CHANNEL ALIGNMENTS SHALL CONTINUE INSIDE MANHOLE FOR 6° BEFORE CURVING
2. RADIUS OF CHANNEL CENTERLINES SHALL BE NO LESS THAN THE INSIDE DIAMETER OF THE PIPE



KEYNOTES:
1. 48" MIN DIAMETER PRECAST CONCRETE MANHOLE WITH ECCENTRIC CONE
2. 48" MIN DIAMETER PRECAST CONCRETE FLAT TOP MANHOLE (USED WHEN LESS THAN 60" AVAILABLE FROM PIPE INVERT TO RIM). CONCENTRIC LID SHALL BE USED AND STEPS SHALL BE OMITTED WHEN DEPTH FROM RIM TO INVERT IS LESS THAN 3 FEET
3. PRECAST CONCRETE GRADE RINGS AS REQUIRED TO ACCOMMODATE PAVING SECTION (12" TOTAL, MAX)
4. MANHOLE FRAME AND COVER PER PROJECT SPECIFICATIONS, RIM ELEVATION PER CIVIL PLANS
5. 6 1/2" MIN LONG MANHOLE STEPS AT 12" ON CENTER PER PROJECT SPECIFICATIONS. LOCATE WITHIN 24" OF COVER AND FLOOR OF MANHOLE, AND A MINIMUM OF 5" FROM PRECAST SECTION JOINT
6. PIPE SIZE, INVERT, AND SLOPE PER PLANS
7. PAVING SECTION PER PLANS
8. CONCRETE SHELF/CHANNEL, SLOPE 1 INCH/FOOT MINIMUM, FINE BRUSH FINISH. SHELF SHALL BE SET AT 1/2 THE PIPE DIAMETER

NOTES:
A. MANHOLE DIAMETER SHALL BE INCREASED, IF REQUIRED, TO PROVIDE A MINIMUM OF 12" SEPARATION BETWEEN PIPE CONNECTIONS, OR WHEN ANY PIPE DIAMETER IS GREATER THAN 1/2 THE DIAMETER OF THE MANHOLE
B. MANHOLE ACCESS COVER SHALL NOT BE LOCATED DIRECTLY OVER A PIPE CONNECTION UNLESS DIRECTED OTHERWISE BY THE ENGINEER
C. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OF ALL MANHOLES FOR REVIEW AND APPROVAL BY THE ENGINEER PRIOR TO PROCURING MATERIALS
D. SELECTED MANHOLE SHALL MEET THE CRITERIA OF THE PROJECT SPECIFICATIONS AND BE INSTALLED ACCORDINGLY
E. INLET AND OUTLET PIPES CONNECTIONS SHALL BE COMPLIANT WITH PROJECT SPECIFICATIONS OR THE REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION, WHICHEVER IS MOST STRINGENT

8 C5.12 SANITARY SEWER MANHOLES
NTS



KEYNOTES:
1. CONCRETE FOR CURBING PER PROJECT SPECIFICATIONS. GUTTER PAN SHALL MATCH CROSS SLOPE OF ABUTTING PAVEMENT
2. PAVEMENT SECTION PER PLANS
3. SEE PLANS FOR IMPROVEMENTS AT BACK OF CURB. WHERE SIDEWALK OCCURS, THE SIDEWALK AND TOP OF CURB SHALL BE FLUSH. WHERE ABUTTING A PLANTER AREA, THE FINAL GRADE SHALL BE 1" MINIMUM BELOW TOP OF CURB, OR AS DIRECTED BY THE LANDSCAPE ARCHITECT

9 C5.12 VERTICAL CURB AND GUTTER
NTS

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Planning ▪ Engineering

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Seattle, WA
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WILSONVILLE, OR 97070

Project
DELTA LOGISTICS SITE EXPANSION
9710 SW DAY RD.
CITY OF WILSONVILLE, OR

REGISTERED PROFESSIONAL ENGINEER
01697
OREGON
JULY 10, 2015
GREGORY I. MINO
EXPIRES: 12/31/24

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REVISION SCHEDULE

Delta	Issued As	Issue Date
1	PLAN CHECK	06/10/2022
2	LAND USE	11/15/2022

CIVIL DETAILS

SHEET
C5.12

JOB NO. **2200502.00**

DEVELOPMENT REVIEW SET - 04/24/23

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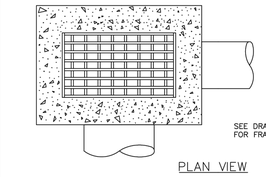
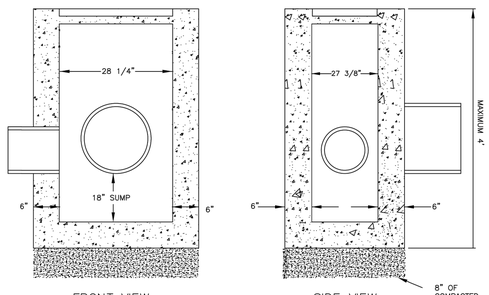


PLAN VIEW



FRONT VIEW SIDE VIEW

NOTES:
1. AREA DRAIN CONSTRUCTION IN ACCORDANCE WITH ASTM C-478.
2. 8" OF COMPACTED 3/4"-0 CRUSHED ROCK BASE MATERIAL.
3. PRECAST SHALL HAVE MINIMUM WALL THICKNESS OF 5", REINFORCEMENT TO BE REBAR MEETING ASTM A615 GRADE 60 OR WELDED WIRE MEETING ASTM A497.
4. CONCRETE SHALL ATTAIN A MIN. COMPRESSIVE STRENGTH OF 3000 PSI IN 28 DAYS.

Area Drain (Type 2)			CITY OF WILSONVILLE
DRAWING NUMBER: S-2110	DRAWN BY: SR	SCALE: N.T.S.	PUBLIC WORKS STANDARDS
FILE NAME: S-2110.DWG	APPROVED BY: NK	DATE: 6/4/14	

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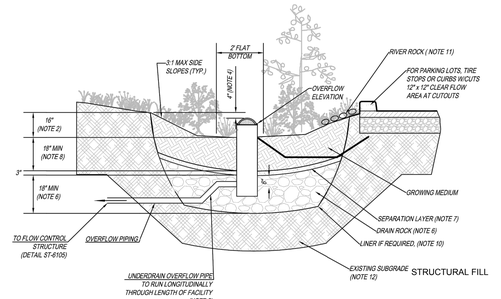
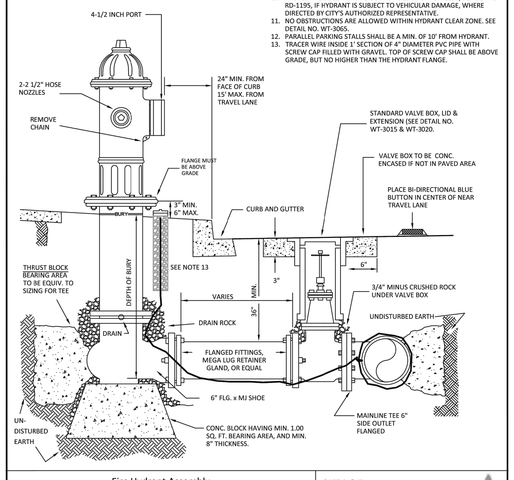


GENERAL NOTES:
1. **PROVIDE PROTECTION** FROM ALL VEHICLE TRAFFIC, EQUIPMENT STAGING, AND FOOT TRAFFIC IN PROPOSED INFILTRATION AREAS PRIOR TO, DURING AND AFTER CONSTRUCTION. UNLESS REQUIRED BY SITE CONDITIONS, UNLINED RAIN GARDENS ARE PREFERRED TO MAXIMIZE ONSITE INFILTRATION.
2. **DIMENSIONS:**
   -DEPTH OF BASIN (FROM TOP OF GROWING MEDIUM TO OVERFLOW ELEVATION); 12"
   -FLAT BOTTOM WIDTH: 2' MINIMUM
   -SIDE SLOPES OF RAIN GARDEN: 3:1 MAXIMUM
   -CENTERLINE SLOPE OF RAIN GARDEN: 0.5% OR LESS
3. **SETBACKS:**
   -FILTRATION RAIN GARDEN SHALL BE 10' FROM FOUNDATIONS AND 5' FROM PROPERTY LINES UNLESS APPROVED BY BUILDING OFFICIAL
4. **OVERFLOW:**
   -OVERFLOW REQUIRED. INLET ELEVATION SHALL ALLOW FOR 4" OF FREEBOARD, MINIMUM.
   - PROTECT FROM DEBRIS AND SEDIMENT WITH STRAINER OR GRATE.
5. **PIPING:**
   -PERFORATED UNDER-DRAIN PIPING: SHALL RUN LONGITUDINALLY THROUGH LENGTH OF FACILITY, SHALL BE ABS SCH. 40, CAST IRON, OR PVC SCH.40. MINIMUM DIAMETER IS 6". PIPING SHALL HAVE 1% GRADE AN FOLLOW THE UNIFORM PLUMBING CODE. PVC NOT ALLOWED ABOVE GROUND. WRAP UNDER-DRAIN IN FILTER FABRIC TO REDUCE TRANSPORT OF FINES. OVERFLOW PIPING: SHALL BE ABS SCH. 40, CAST IRON, OR PVC SCH. 40 AND SHALL NOT BE PERFORATED. MINIMUM DIAMETER IS 6". PIPING SHALL HAVE 1% GRADE AND FOLLOW THE UNIFORM PLUMBING CODE. PVC NOT ALLOWED ABOVE GROUND.
6. **DRAIN ROCK:**
   -SIZE: 1 1/2" to 3/4"-0 WASHED
   -DEPTH: 18" MINIMUM
7. **SEPARATION** BETWEEN DRAIN ROCK AND GROWING MEDIUM: SHALL BE A 3" LAYER OF 3/4" - 1/4" OPEN GRADED AGGREGATE.
8. **GROWING MEDIUM:**
   -DEPTH: 18" MINIMUM
   -SEE APPENDIX A FOR SPECIFICATION OR USE SAND/LOAM/COMPOST 3-WAY MIX.
   -FACILITY SURFACE AREA MAY BE REDUCED BY 25% WHEN GROWING MEDIA DEPTH IS INCREASED TO 30" OR MORE.
9. **VEGETATION:** FOLLOW LANDSCAPE PLANS OR REFER TO PLANTING REQUIREMENTS IN APPENDIX A.
10. **WATERPROOF LINER (IF REQUIRED):** SHALL BE 30 MIL PVC OR EQUIVALENT.
11. **INSTALL RIVER ROCK** SPLASH PAD OVER A NON WOVEN GEO TEXTILE FABRIC TO TRANSITION FROM INLETS TO GROWING MEDIUM. SIZE OF ROCK SHALL BE 1" - 3", 4 SQUARE FEET, 6" DEEP.
12. **SEASONAL HIGH GROUNDWATER SEPARATION:**
   -SEPARATION DISTANCE AS REQUIRED BY CITY.

Rain Garden - Filtration			CITY OF WILSONVILLE
DRAWING NUMBER: ST-6020	DRAWN BY: SR	SCALE: N.T.S.	PUBLIC WORKS STANDARDS
FILE NAME: ST-6020.DWG	APPROVED BY: NK	DATE: 4/16/18	

This Detail Drawing may not be altered or changed in any manner except by the City Engineer. It is the responsibility of the user to acquire the most current version.

NOTES:
1. APPROVED FIRE HYDRANTS;
   WATEROUS PACER OR
   MUELLER CENTURION
2. HYDRANT COLOR TO BE INDUSTRIAL ENAMEL, OIL/ALKYD, IN SAFETY YELLOW.
3. ALL FITTINGS IN CONTACT WITH CONCRETE SHALL BE WRAPPED IN PLASTIC (8 MIL MINIMUM). HYDRANT DRAIN HOLES TO REMAIN OPEN TO DRAIN ROCK AND OPERATIONAL.
4. MIN. 4 CU. FT. OF 1 1/2"-3/4" CLEAN DRAIN ROCK SHALL BE PLACED AROUND SHOE UP TO A MIN. OF 6" ABOVE DRAIN OUTLETS.
5. WHERE PLANTER STRIP EXISTS, HYDRANT SHALL BE PLACED SO FRONT PORT IS A MINIMUM OF 24" BEHIND FACE OF CURB.
6. WHERE INTEGRAL S/W & CURB EXISTS, HYD. SHALL BE PLACED 18" BACK OF SIDEWALK OR AS DIRECTED BY ENGINEER.
7. BURY OF HYDRANT SHALL BE MEASURED FROM FINISHED GRADE TO BOTTOM OF CONNECTING PIPE.
8. THRUST BLOCK AT FIRE HYDRANT TEE SHALL HAVE A MIN. 3.7 SQ. FT. BEARING AREA.
9. HYDRANT VALVE SHALL BE RESILIENT SEATED GATE VALVE IN ACCORDANCE WITH WILSONVILLE PWS SECTION 501.7.02.
10. PROTECTIVE BOLLARD IS TO BE PROVIDED AND INSTALLED, PER DETAIL RD-1195, IF HYDRANT IS SUBJECT TO VEHICULAR DAMAGE, WHERE DIRECTED BY CITY'S AUTHORIZED REPRESENTATIVE.
11. NO OBSTRUCTIONS ARE ALLOWED WITHIN HYDRANT CLEAR ZONE. SEE DETAIL NO. WT-3065.
12. PARALLEL PARKING STALLS SHALL BE A MIN. OF 10' FROM HYDRANT.
13. TRACER WIRE INSIDE 1' SECTION OF 4" DIAMETER PVC PIPE WITH SCREW CAP FILLED WITH GRAVEL. TOP OF SCREW CAP SHALL BE ABOVE GRADE, BUT NO HIGHER THAN THE HYDRANT FLANGE.



Fire Hydrant Assembly			CITY OF WILSONVILLE
DRAWING NUMBER: WT-3060	DRAWN BY: SR	SCALE: N.T.S.	PUBLIC WORKS STANDARDS
FILE NAME: WT-3060.DWG	APPROVED BY: NK	DATE: 10/19/18	

STORMFILTER STEEL CATCHBASIN DESIGN NOTES

STORMFILTER TREATMENT CAPACITY IS A FUNCTION OF THE CARTRIDGE SELECTION AND THE NUMBER OF CARTRIDGES. 1 CARTRIDGE CATCHBASIN HAS A MAXIMUM OF ONE CARTRIDGE. SYSTEM IS SHOWN WITH A 27" CARTRIDGE, AND IS ALSO AVAILABLE WITH AN 18" CARTRIDGE. STORMFILTER CATCHBASIN CONFIGURATIONS ARE AVAILABLE WITH A DRY INLET BAY FOR VECTOR CONTROL.
PEAK HYDRAULIC CAPACITY PER TABLE BELOW. IF THE SITE CONDITIONS EXCEED PEAK HYDRAULIC CAPACITY, AN UPSTREAM BYPASS STRUCTURE IS REQUIRED.

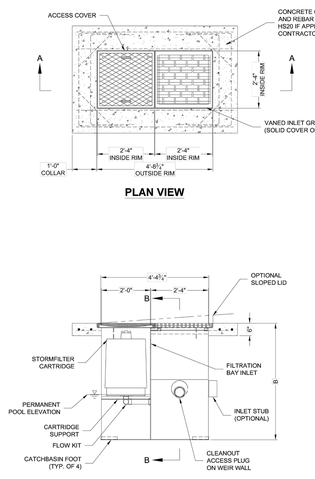
CARTRIDGE SELECTION

CARTRIDGE HEIGHT	27"			18"			18" DEEP		
RECOMMENDED HYDRAULIC DROP (Ht)	3.05'			2.3'			3.3'		
SPECIFIC FLOW RATE (gpm/sf)	2 gpm/sf	1.67* gpm/sf	1 gpm/sf	2 gpm/sf	1.67* gpm/sf	1 gpm/sf	2 gpm/sf	1.67* gpm/sf	1 gpm/sf
CARTRIDGE FLOW RATE (gpm)	22.5	18.75	11.25	15	12.53	7.5	15	12.53	7.5
PEAK HYDRAULIC CAPACITY	1.0			1.0			1.8		
INLET PERMANENT POOL LEVEL (A)	1'-0"			1'-0"			2'-0"		
OVERALL STRUCTURE HEIGHT (B)	4'-9"			3'-9"			4'-9"		

* 1.67 gpm/sf SPECIFIC FLOW RATE IS APPROVED WITH PHOSPHOSORB® (PSORB) MEDIA ONLY

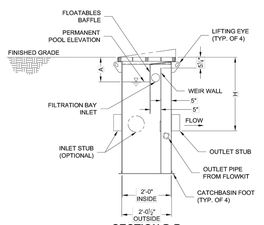
GENERAL NOTES
1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. FOR SITE SPECIFIC DRAWINGS WITH DETAILED STORMFILTER CATCHBASIN STRUCTURE DIMENSIONS AND WEIGHTS, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS LLC REPRESENTATIVE. www.contechES.com
3. STORMFILTER CATCHBASIN WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING.
4. INLET SHOULD NOT BE LOWER THAN OUTLET. INLET (IF APPLICABLE) AND OUTLET PIPING TO BE SPECIFIED BY ENGINEER AND PROVIDED BY CONTRACTOR.
5. MANUFACTURER TO APPLY A SURFACE BEAD WELD IN THE SHAPE OF THE LETTER "O" ABOVE THE OUTLET PIPE STUB ON THE EXTERIOR SURFACE OF THE STEEL SFCB.
6. STORMFILTER CATCHBASIN EQUIPPED WITH 4 INCH (APPROXIMATE) LONG STUBS FOR INLET (IF APPLICABLE) AND OUTLET PIPING. STANDARD OUTLET STUB IS 8 INCHES IN DIAMETER. MAXIMUM OUTLET STUB IS 15 INCHES IN DIAMETER. CONNECTION TO COLLECTION PIPING CAN BE MADE USING FLEXIBLE COUPLING BY CONTRACTOR.
7. STEEL STRUCTURE TO BE MANUFACTURED OF 1/4 INCH STEEL PLATE. CASTINGS SHALL MEET AASHTO M306 LOAD RATING. TO MEET HS20 LOAD RATING ON STRUCTURE, A CONCRETE COLLAR IS REQUIRED. WHEN REQUIRED, CONCRETE COLLAR WITH #4 REINFORCING BARS TO BE PROVIDED BY CONTRACTOR.
8. FILTER CARTRIDGES SHALL BE MEDIA-FILLED, PASSIVE, SIPHON ACTUATED, RADIAL FLOW, AND SELF CLEANING. RADIAL MEDIA DEPTH SHALL BE 7-INCHES. FILTER MEDIA CONTACT TIME SHALL BE AT LEAST 38 SECONDS.
9. SPECIFIC FLOW RATE IS EQUAL TO THE FILTER TREATMENT CAPACITY (gpm) DIVIDED BY THE FILTER CONTACT SURFACE AREA (sq ft).

INSTALLATION NOTES
A. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE CATCHBASIN (LIFTING CLUTCHES PROVIDED).
C. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO PROTECT CARTRIDGES FROM CONSTRUCTION-RELATED EROSION RUNOFF.



PLAN VIEW

SECTION A-A



SECTION B-B

1-CARTRIDGE CATCHBASIN STORMFILTER DATA		
STRUCTURE ID		CB4
WATER QUALITY FLOW RATE (cfs)		0.027
PEAK FLOW RATE (<1 cfs)		0.108
RETURN PERIOD OF PEAK FLOW (yrs)		10
CARTRIDGE HEIGHT (27", 18", 18" DEEP)		18"
CARTRIDGE FLOW RATE (gpm)		12.11
MEDIA TYPE (PERLITE, ZPG, PSORB)		PSORB
RIM ELEVATION		246.76'
PIPE DATA:	I.E.	DIAMETER
INLET STUB	N/A	N/A
OUTLET STUB	244.46'	6"
CONFIGURATION	OUTLET / INLET	OUTLET / INLET
SLOPED LID		NO
SOLID COVER		NO
NOTES/SPECIAL REQUIREMENTS:		

CONTECH ENGINEERED SOLUTIONS LLC	1 CARTRIDGE CATCHBASIN STORMFILTER STANDARD DETAIL
www.contechES.com 9025 Centre Pointe Dr., Suite 400, West Chester, OH 45069 800-526-3899 513-645-7000 513-645-7993 FAX	

The Stormwater Management StormFilter®
The StormFilter is one of many BMPs approved by CONTECH for use in meeting stormwater regulations. For more information on other BMPs, visit www.contechES.com or call 800-338-1122.

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Item 2.

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WILSONVILLE, OR 97070

Project
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9710 SW DAY RD.
CITY OF WILSONVILLE, OR

REGISTERED PROFESSIONAL ENGINEER
01697
OREGON
JULY 10, 2009
GREGORY I. MINO
EXPIRES: 12/31/24

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REVISION SCHEDULE		
Delta	Issued As	Issue Date

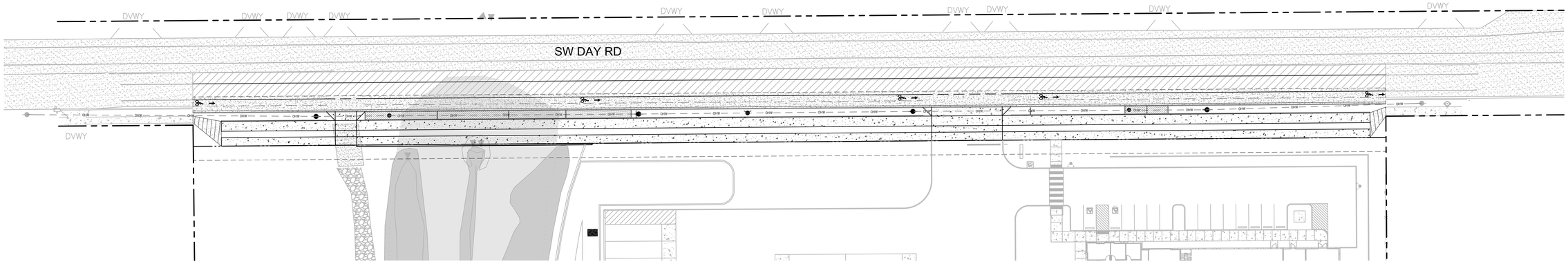
CIVIL DETAILS

SHEET
C5.13

JOB NO. **2200502.00**

DEVELOPMENT REVIEW SET - 04/24/23

DELTA LOGISTICS FRONTAGE IMPROVEMENTS
WILSONVILLE, OR



1 R0.00 SITE MAP

30 0 15 30 60 120 1:1

(IN FEET)
1 inch = 30 ft.

NOTICE TO EXCAVATORS:
ATTENTION: OREGON LAW REQUIRES YOU TO FOLLOW RULES ADOPTED BY THE OREGON UTILITY NOTIFICATION CENTER. THOSE RULES ARE SET FORTH IN OAR 952-001-0010 THROUGH OAR 952-001-0090. YOU MAY OBTAIN COPIES OF THE RULES BY CALLING THE CENTER.
(NOTE: THE TELEPHONE NUMBER FOR THE OREGON UTILITY NOTIFICATION CENTER IS (503)-232-1987).

POTENTIAL UNDERGROUND FACILITY OWNERS

Dig Safely.

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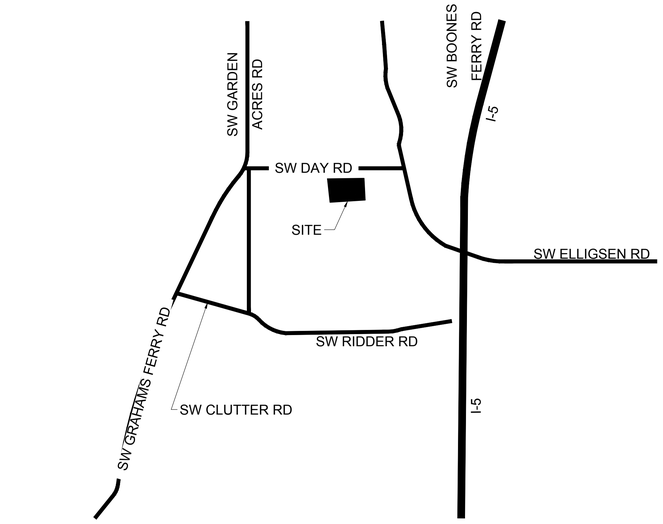
DIAL 811 or 1-800-332-2344

EMERGENCY TELEPHONE NUMBERS

NW NATURAL GAS	
M-F 7am-6pm	503-226-4211 Ext.4313
AFTER HOURS	503-226-4211
PGE	503-228-6322
COMCAST	1-800-266-2278
CITY OF WILSONVILLE	
WATER AND SEWER	503-570-1610
CENTURYLINK	1-866-421-0662
FRONTIER	
COMMUNICATIONS	1-855-801-3655



2 R0.00 VICINITY MAP
N.T.S.
1:1

APPLICANT
DELTA LOGISTICS
ATTN: VLAD TKACH
9835 SW COMMERCE CIRCLE,
WILSONVILLE, OR 97070
PH: (503) 665-2200
E-MAIL: vlad@deltagov.com

SURVEYOR
WEDDLE SURVEYING INC.
ATTN: ANTHONY RYAN
6950 SW HAMPTON ST., SUITE 170
TIGARD, OR 97223
PH: (503) 941-9585
FAX: (503) 941-9640
E-MAIL: tony@weddlesurveying.com

SITE ADDRESS
9710 SW DAY RD
SHERWOOD, OR 97140
PARCEL# 3S102B000600
#3S102B000601

BENCH MARK
THE BENCHMARK USED FOR THIS PROJECT WAS CONTROL POINT #400, A 3/8" IRON ROD WITH RED PLASTIC CAP MARKED "AKS CONTROL POINT"
ELEVATION: 244.85' NAVD '88 DATUM (GEOID 12B)

CIVIL
MACKENZIE
ATTN: GREG MINO
1515 SE WATER AVE, SUITE #100
PORTLAND, OR 97214
PH: (503) 224-9560
FAX: (503) 228-1285
E-MAIL: GIM@mcknze.com

LANDSCAPE ARCHITECT
MACKENZIE
ATTN: STEVEN TUTTLE
1515 SE WATER AVENUE, SUITE 100
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PLANNER
MACKENZIE
ATTN: LEE LEIGHTON
1515 SE WATER AVE, SUITE #100
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E-MAIL: LDL@mcknze.com

ELECTRIC SERVICE PROVIDER
PGE
ATTN: JOSE VELASCO
PH: (503) 672-5454
E-MAIL: jose.velasco@pgn.com
PROJECT #: M3228270

SHEET INDEX

Sheet Number	Sheet Title
R0.00	COVER SHEET
R0.01	NOTES, LEGEND, AND ABBREVIATIONS
R0.02	CROSS SECTIONS
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Item 2.

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Planning ▪ Engineering

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Seattle, WA
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Client

DELTA LOGISTICS
9835 SW COMMERCE CIRCLE
WILSONVILLE, OR
97070

Project

DELTA LOGISTICS SITE EXPANSION FRONTAGE MPROVEMENTS
9710 SW DAY RD.
CITY OF
WILSONVILLE, OR

REGISTERED PROFESSIONAL ENGINEER
91697
OREGON
JULY 10, 2015
GREGORY I. MINO

EXPIRES: 12/31/24

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REVISION SCHEDULE

Delta	Issued As	Issue Date

SHEET TITLE:
COVER SHEET

DRAWN BY: CME

CHECKED BY: GIM

SHEET
R0.00

JOB NO. **2200502.04**

DEVELOPMENT REVIEW SET 04/24/23

1054

GENERAL NOTES

1. ALL WORK SHALL CONFORM TO THE STANDARD SPECIFICATIONS AND THE REQUIREMENTS OF CITY OF WILSONVILLE, CITY OF WILSONVILLE PUBLIC WORKS STANDARDS-2017 AND THE CURRENT AMERICAN PUBLIC WORKS ASSOCIATION STANDARDS FOR PUBLIC WORKS CONSTRUCTION.
2. THE WORKING DRAWINGS ARE GENERALLY DIAGRAMMATIC. THEY DO NOT SHOW EVERY OFFSET, BEND OR ELBOW REQUIRED FOR INSTALLATION IN THE SPACE PROVIDED. THEY DO NOT SHOW EVERY DIMENSION, COMPONENT PIECE, SECTION, JOINT OR FITTING REQUIRED TO COMPLETE THE PROJECT. ALL LOCATIONS FOR WORK SHALL BE CHECKED AND COORDINATED WITH EXISTING CONDITIONS IN THE FIELD BEFORE BEGINNING CONSTRUCTION. EXISTING UNDERGROUND UTILITIES LAYING WITHIN THE LIMITS OF EXCAVATION SHALL BE VERIFIED AS TO CONDITION, SIZE AND LOCATION BY UNCOVERING, PROVIDING SUCH IS PERMITTED BY LOCAL PUBLIC AUTHORITIES WITH JURISDICTION, BEFORE BEGINNING CONSTRUCTION. CONTRACTOR TO NOTIFY ENGINEER IF THERE ARE ANY DISCREPANCIES.
3. EFFECTIVE EROSION CONTROL IS REQUIRED. EROSION CONTROL DEVICES MUST BE INSTALLED AND MAINTAINED TO MEET THE CITY REQUIREMENTS. THE GOVERNING JURISDICTION MAY, AT ANY TIME, ORDER CORRECTIVE ACTION AND STOPPAGE OF WORK TO ACCOMPLISH EFFECTIVE EROSION CONTROL.
4. EFFECTIVE DRAINAGE CONTROL IS REQUIRED. DRAINAGE SHALL BE CONTROLLED WITHIN THE WORK SITE AND SHALL BE ROUTED SO THAT ADJACENT PRIVATE PROPERTY, PUBLIC PROPERTY, AND THE RECEIVING SYSTEM ARE NOT ADVERSELY IMPACTED. THE GOVERNING JURISDICTION MAY, AT ANY TIME, ORDER CORRECTIVE ACTION AND STOPPAGE OF WORK TO ACCOMPLISH EFFECTIVE DRAINAGE CONTROL.
5. CONTRACTOR SHALL ADJUST ALL STRUCTURES IMPACTED BY CONSTRUCTION IMPROVEMENTS TO NEW FINISH GRADES.
6. EXCAVATION: EXCAVATE FOR SLABS, PAVING, AND OTHER IMPROVEMENTS TO SIZES AND LEVELS SHOWN OR REQUIRED. ALLOW FOR FORM CLEARANCE AND FOR PROPER COMPACTION OF REQUIRED BACKFILLING MATERIAL. EXCAVATOR(S) SHALL NOTIFY ALL UTILITY COMPANIES FOR LINE LOCATIONS SEVENTY-TWO (72) HOURS (MINIMUM) PRIOR TO START OF WORK. DAMAGE TO UTILITIES SHALL BE CORRECTED AT THE CONTRACTOR'S EXPENSE.
7. WHERE CONNECTING TO AN EXISTING PIPE, AND PRIOR TO ORDERING MATERIALS, THE CONTRACTOR SHALL EXPOSE THE END OF THE EXISTING PIPE VERIFY THE LOCATION, SIZE, AND ELEVATION. NOTIFY ENGINEER OF ANY DISCREPANCIES.

UTILITY NOTES

1. ALL WORK SHALL CONFORM TO THE REQUIREMENTS OF CITY OF WILSONVILLE, DEPARTMENT OF ENVIRONMENTAL SERVICE, AND THE CURRENT EDITION OF THE UNIFORM PLUMBING CODE AND THE INTERNATIONAL BUILDING CODE. ALL WORK WITHIN THE PUBLIC R.O.W. REQUIRES A PUBLIC WORKS PERMIT.
2. THE WORKING DRAWINGS ARE GENERALLY DIAGRAMMATIC. THEY DO NOT SHOW EVERY OFFSET, BEND OR ELBOW REQUIRED FOR INSTALLATION IN THE SPACE PROVIDED. THEY DO NOT SHOW EVERY DIMENSION, COMPONENT PIECE, SECTION, JOINT OR FITTING REQUIRED TO COMPLETE THE PROJECT. ALL LOCATIONS FOR WORK SHALL BE CHECKED AND COORDINATED WITH EXISTING CONDITIONS IN THE FIELD BEFORE BEGINNING CONSTRUCTION. EXISTING UNDERGROUND UTILITIES LAYING WITHIN THE LIMITS OF EXCAVATION SHALL BE VERIFIED AS TO CONDITION, SIZE AND LOCATION BY UNCOVERING, PROVIDING SUCH IS PERMITTED BY LOCAL PUBLIC AUTHORITIES WITH JURISDICTION, BEFORE BEGINNING CONSTRUCTION. CONTRACTOR TO NOTIFY ENGINEER IF THERE ARE ANY DISCREPANCIES.
3. PROVIDE CLEANOUTS AS REQUIRED IN THE CURRENT EDITION OF THE UNIFORM PLUMBING CODE.
4. ALL STORM PIPING IS SIZED FOR A MANNING'S "N" VALUE = 0.013 ALL STORM PIPING IS DESIGNED USING CONCENTRIC PIPE TO PIPE AND WYE FITTINGS, UNLESS OTHERWISE NOTED.
5. VERIFY LOCATION, SIZE AND DEPTH OF EXISTING UTILITIES BY POTHOLING PRIOR TO CONSTRUCTION. NOTIFY ENGINEER OF DISCREPANCIES.
6. THE SURVEY INFORMATION SHOWN AS A BACKGROUND SCREEN ON THIS SHEET IS BASED ON A SURVEY PREPARED BY WEDDLE SURVEYING, INC.
7. CONTRACTOR TO PROVIDE POWER TO IRRIGATION CONTROLLER VIA DESIGN BUILD ELECTRICAL. SEE SPECIFICATIONS AND LANDSCAPE PLANS.
8. SEE BUILDING PLUMBING DRAWINGS FOR PIPING WITHIN THE BUILDING AND UP TO 5' OUTSIDE THE BUILDING, INCLUDING ANY FOUNDATION DRAINAGE PIPING.
9. CONTRACTOR TO MAINTAIN MINIMUM 3 FT OF COVER OVER ALL WATER LINE.

GRADING NOTES

1. ROUGH GRADING: BRING ALL FINISH GRADES TO APPROXIMATE LEVELS INDICATED. WHERE GRADES ARE NOT OTHERWISE INDICATED, FINISH GRADES ARE TO BE THE SAME AS ADJACENT SIDEWALKS, CURBS, OR THE OBVIOUS GRADE OF ADJACENT STRUCTURE. GRADE TO UNIFORM LEVELS OR SLOPES BETWEEN POINTS WHERE GRADES ARE GIVEN. ROUND OFF SURFACES, AVOID ABRUPT CHANGES IN LEVELS. ROUGH GRADE TO ALLOW FOR DEPTH OF CONCRETE SLABS, WALKS, AND THEIR BASE COURSES. GRADE FOR PAVED DRIVES AND PAVED PARKING AREAS AS INDICATED AND SPECIFIED HEREIN, AND PROVIDE FOR SURFACE DRAINAGE AS SHOWN, ALLOWING FOR THICKNESS OF SURFACING MATERIAL.
   FINISH GRADING: AT COMPLETION OF JOB AND AFTER BACKFILLING BY OTHER CRAFTS HAS BEEN COMPLETED, REFILL AND COMPACT AREAS WHICH HAVE SETTLED OR ERODED TO BRING TO FINAL GRADES.
   GRADING TOLERANCES:
   ROUGH GRADE AT PAVED OR LANDSCAPED AREAS: ±0.1 FT.
   FINISH GRADE PRIOR TO PLACING FINAL SURFACING: ±0.03 FT.
2. EFFECTIVE EROSION PREVENTION AND SEDIMENT CONTROL IS REQUIRED. EROSION CONTROL DEVICES MUST BE INSTALLED AND MAINTAINED MEETING THE CITY AND DEQ REQUIREMENTS. THE GOVERNING JURISDICTION MAY, AT ANY TIME, ORDER CORRECTIVE ACTION AND STOPPAGE OF WORK TO ACCOMPLISH EFFECTIVE EROSION CONTROL.
3. EFFECTIVE DRAINAGE CONTROL IS REQUIRED. DRAINAGE SHALL BE CONTROLLED WITHIN THE WORK SITE AND SHALL BE SO ROUTED THAT ADJACENT PRIVATE PROPERTY, PUBLIC PROPERTY, AND THE RECEIVING SYSTEM ARE NOT ADVERSELY IMPACTED. THE GOVERNING JURISDICTION MAY, AT ANY TIME, ORDER CORRECTIVE ACTION AND STOPPAGE OF WORK TO ACCOMPLISH EFFECTIVE DRAINAGE CONTROL.
4. SITE TOPSOIL SHALL BE STOCKPILED DURING CONSTRUCTION AND USED FOR LANDSCAPING.
5. THE SURVEY INFORMATION SHOWN AS A BACKGROUND SCREEN ON THIS SHEET IS BASED ON A SURVEY BY NORTHWEST SURVEYING INC, AND IS SHOWN FOR REFERENCE ONLY. CONTRACTOR TO VERIFY ALL EXISTING CONDITIONS WITH HIS OWN RESOURCES PRIOR TO START OF ANY CONSTRUCTION.
6. CONTRACTOR TO COORDINATE GRADES AT ENTRANCE WITH ARCHITECTURAL PLANS PRIOR TO CONSTRUCTION.
7. 2% MAXIMUM CROSS SLOPE AT ALL ADA-COMPLIANT PARKING SPACES AND LOADING ZONES.
8. 5% MAX LONGITUDINAL SLOPE (EXCLUDING RAMPS) AT PEDESTRIAN SIDEWALK CONNECTIONS BETWEEN PUBLIC R.O.W. AND BUILDING ENTRANCES.
9. WHERE SLOPES ARE STEEPER THAN 3:1, CONTRACTOR SHALL INSTALL JUTE MATTING. SLOPE SHALL BE PREPARED TO ENSURE COMPLETE AND DIRECT CONTACT OF MATTING WITH SOIL. FOLLOW MANUFACTURER'S RECOMMENDATIONS.

LEGEND

	EXISTING	PROPOSED
CURBLINE AND GUTTER		
BRUSH LINE		
BUILDING EAVE		
BUILDING FOOTPRINT		
CENTERLINE		
EASEMENT LINE		
FENCE LINE		
GAS LINE	G	
OVERHEAD POWER	E	
STORM DRAIN LINE	SD	
PERFORATED PIPE		
PROPERTY LINE		
R.O.W. LINE		
WATER LINE	W	
WETLANDS		
WETLANDS BUFFER		
CULVER INLET/OUTLET		
CURB INLET		
DECORATIVE SHRUB		
DOWNSPOUT		
FIRE HYDRANT		
GAS METER	G	
GAS RISER		
GATE POST		
GUY ANCHOR		
MAILBOX		
POWER METER	EM	
SIGN "AS NOTED"		
SITE BENCHMARK		
STORM DRAIN MANHOLE	D	
SURVEY MONUMENTS FOUND		
SURVEY MONUMENTS SET		
UTILITY LID		
WATER METER	W	
WATER RISER		
WATER VALVE		
WATER VAULT		
WETLANDS BUFFER/ LINE STAKES		
POWER POLE	PP	
SIDEWALK		
CONFEROUS TREE		
DECIDUOUS TREE		

ABBREVIATIONS

TC	TOP OF CURB	WM	WATER METER
AC	ASPHALT	OH	OVERHEAD WIRE
FH	FIRE HYDRANT	SSWR	SANITARY SEWER
FG	FINISHED GRADE	MH	MANHOLE
SW	SIDEWALK ELEVATION	IE	INVERT ELEVATION
TS	TOP OF STAIR	CB	CATCH BASIN
BS	BOTTOM OF STAIR	STM	STORM
TYP	TYPICAL	RD	ROOF DRAIN
R.O.W.	RIGHT OF WAY	FF/FFE	FINISHED FLOOR ELEVATION
LS	LANDSCAPE	NG	NATURAL GROUND
SROZ	SIGNIFICANT RESOURCE OVERLAY ZONE	CL	CENTERLINE
		GPM	GALLONS PER MINUTE
CO	CLEAN OUT	FW	FIRE WATER
INV	INVERT	PWS	PUBLIC WORKS STANDARDS
RD	ROOF DRAIN		
COW	CITY OF WILSONVILLE	PUE	PUBLIC UTILITY EASEMENT
		ELEV	ELEVATION

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Client

DELTA LOGISTICS
9835 SW COMMERCE CIRCLE
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Project

DELTA LOGISTICS SITE EXPANSION FRONTAGE MPROVEMENTS
9710 SW DAY RD. CITY OF WILSONVILLE, OR

REGISTERED PROFESSIONAL ENGINEER
91697
OREGON
JULY 10, 2015
GREGORY I. WIND
EXPIRES: 12/31/24

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Delta	Issued As	Issue Date

SHEET TITLE:
NOTES, LEGEND, AND ABBREVIATIONS

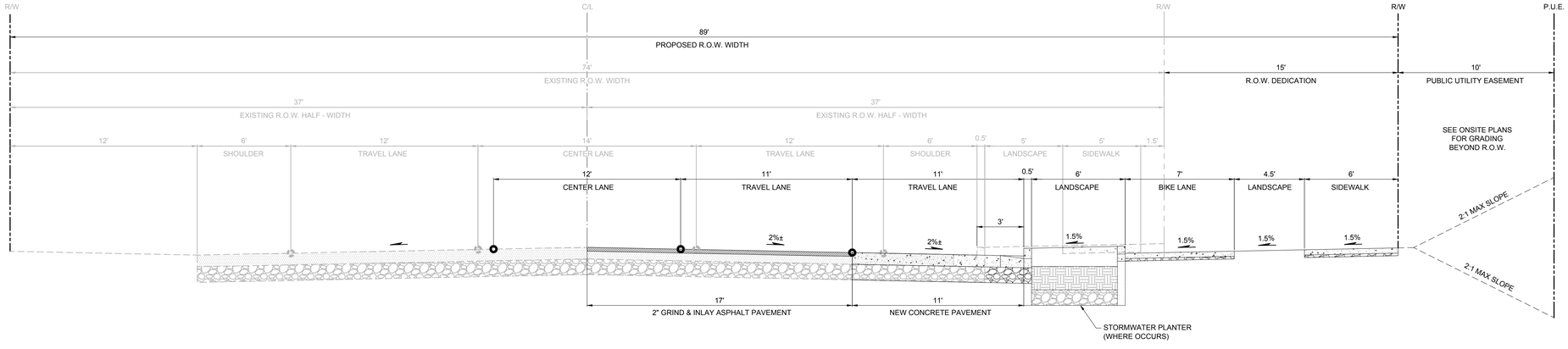
DRAWN BY: AOC, BMR

CHECKED BY: BMR, BDN

SHEET
R0.01

JOB NO. **2200502.04**

DEVELOPMENT REVIEW SET 04/24/23



1 R0.02 TYPICAL SECTION - DAY ROAD
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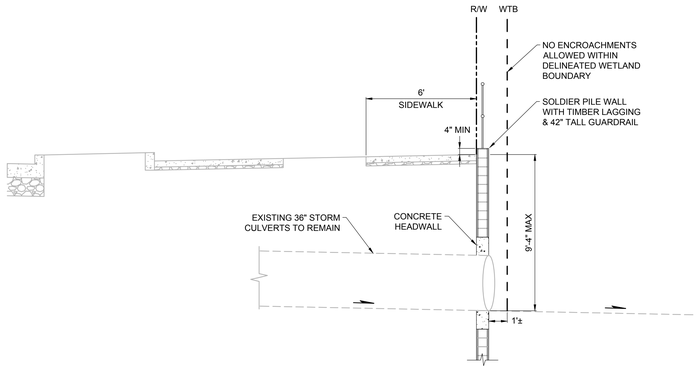

2 R0.02 CROSS SECTION - DAY ROAD (CULVERT)
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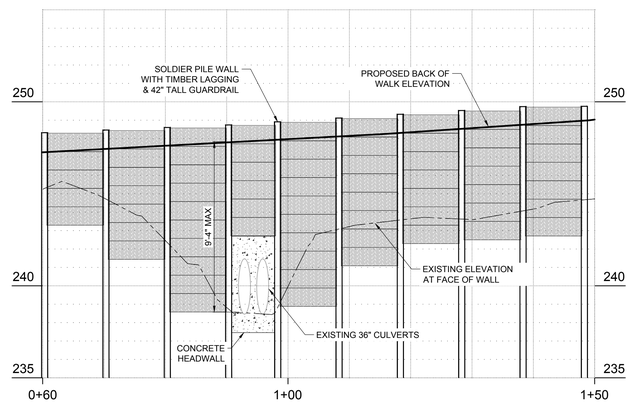

1 R0.02 ELEVATION - DAY ROAD (CULVERT)
N.T.S.

DEVELOPMENT REVIEW SET 04/24/23

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Project

DELTA LOGISTICS SITE EXPANSION FRONTAGE MPROVEMENTS
9710 SW DAY RD.
CITY OF
WILSONVILLE, OR

REGISTERED PROFESSIONAL ENGINEER
OREGON
JULY 10, 2015
GREGORY I. MINO
EXPIRES: 12/31/24

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Delta	Issued As	Issue Date

SHEET TITLE:
CROSS SECTIONS

DRAWN BY: CME

CHECKED BY: GIM

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R0.02

JOB NO. **2200502.04**

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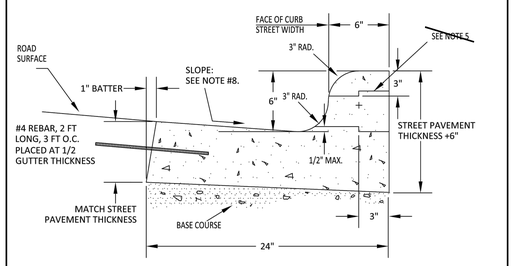

NOTES
1. NOT FOR USE ALONG MEDIANS.
2. CONCRETE SHALL BE COMMERCIAL MIX, MIN. COMPRESSIVE STRENGTH OF 3300 PSI AT 28 DAYS AND INCORPORATE MICRO-REINFORCEMENT "FIBERMESH 300" OR APPROVED EQUAL.
3. CONSTRUCTION JOINTS.
   A. SPACING TO BE NOT MORE THAN 12 FEET.
   B. JOINTS SHALL BE HAND SAWCUT, WHEN WET, THROUGH ENTIRE WIDTH AND FULL DEPTH OF CURB AND GUTTER.
4. BASE ROCK TO BE 3/4"-0 COMPACTED TO 95% OF AASHTO T-180 AND SHALL BE TO SUB GRADE, STREET STRUCTURE, OR 4" IN DEPTH, WHICHEVER IS GREATER.
5. ~~DRAINAGE BLOCK OUT~~
   ~~A. 3" I.D. PLASTIC PIPE WITH COUPLING.~~
   ~~B. DRAINAGE ACCESS THRU EXISTING CURB SHALL BE CORE DRILLED.~~
6. FOR RECONSTRUCTED CURB, DRILL CONCRETE STREET AND SET DOWELS WITH EPOXY PRIOR TO CURB INSTALLATION.
7. BASE COURSE SHALL BE THOROUGHLY WATERED IMMEDIATELY PRIOR TO PLACEMENT OF CONCRETE WHEN THE MEASURED OR FORECASTED ASCENDING AIR TEMPERATURE IS 80 DEGREES OR GREATER.
8. GUTTER PAN SHALL HAVE A NORMAL SLOPE OF 6.7% DESIGN (1" FALL OVER THE 15" GUTTER PAN), 6.0% MINIMUM, 8.0% MAXIMUM. GUTTER PAN SLOPE AT SIDEWALK RAMPS SHALL BE BETWEEN 2% AND 5% TO MATCH CROSS SLOPE OF STREET, THE FULL WIDTH OF THE SIDEWALK RAMP. THE MAXIMUM ALGEBRAIC GRADE BREAK BETWEEN THE SIDEWALK RAMP AND THE STREET CROSS SLOPE, INCLUDING THE GUTTER PAN, SHALL BE 11%. SEE SIDEWALK RAMP DETAILS RD-1110 THROUGH 1140.
8. GUTTER STAMPS ARE REQUIRED AT LOCATIONS OF ALL SERVICE AND CONDUIT CROSSINGS (SEC. 201.2.24.D). MARKINGS SHALL BE SANDBLASTED INTO CONCRETE CURBS. LETTER SHALL BE 3" IN HEIGHT AND EMBOSSED A MINIMUM OF 1/8" DEEP.

Concrete Street Curb and Gutter			CITY OF WILSONVILLE
DRAWING NUMBER: RD-1060	DRAWN BY: SR	SCALE: N.T.S.	PUBLIC WORKS STANDARDS
FILE NAME: RD-1060.DWG	APPROVED BY: NK	DATE: 3/14/18	

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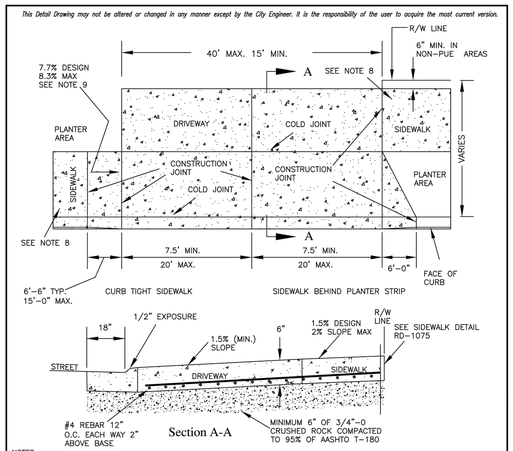

NOTES
1. DRIVEWAYS SHALL BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH "PROPOSED ACCESSIBILITY GUIDELINES FOR PEDESTRIAN FACILITIES IN THE PUBLIC RIGHT-OF-WAY" (PROWAG) JULY, 2011 EDITION.
2. CONCRETE SHALL BE COMMERCIAL MIX, MIN. COMPRESSIVE STRENGTH OF 3300 PSI AT 28 DAYS.
3. BASE COURSE SHALL BE THOROUGHLY WATERED IMMEDIATELY PRIOR TO PLACEMENT OF CONCRETE WHEN THE MEASURED OR FORECASTED ASCENDING AIR TEMPERATURE IS 80 DEGREES OR GREATER.
4. CURB JOINT SHALL BE A TROWELED JOINT WITH A MIN. 1/2" RADIUS ALONG THE BACK OF CURB.
5. CONTRACTION JOINT SPACING SHALL NOT EXCEED 12 FEET.
6. USE EXISTING CURB EXPANSION JOINT OR SAW CUT AND PLACE COLD JOINT.
7. SPACING OF 2" CONCRETE SUPPORT BLOCKS SHALL BE NO GREATER THAN 3" AND BLOCKS SHALL BE TIED TO #4 REBAR WITH WIRE.
8. SIDEWALK THICKNESS SHALL BE 6 INCHES MINIMUM, REINFORCED, AND EXTEND TO AT LEAST ONE PANEL BEYOND DRIVEWAY APRON.
9. ON STEEP SLOPES, SIDEWALK RAMPS SHALL HAVE A MAXIMUM SLOPE OF 8.3% OR MAXIMUM LENGTH OF 15 FEET CONSTRUCTED AT A CONSTANT SLOPE.
10. THE CROSS SLOPE OF THE PEDESTRIAN ACCESS ROUTE SHALL BE DESIGNED AT 1.5% AND NOT EXCEED 2%.
11. DRIVEWAYS SHALL NOT BE WIDER THAN NECESSARY TO SAFELY ACCOMMODATE PROJECTED PEAK HOUR TRIPS AND TURNING MOVEMENTS AND SHALL BE DESIGNED TO MINIMIZE PEDESTRIAN CROSSING DISTANCES.

Commercial Driveway - Type I			CITY OF WILSONVILLE
DRAWING NUMBER: RD-1095	DRAWN BY: SR	SCALE: N.T.S.	PUBLIC WORKS STANDARDS
FILE NAME: RD-1095.DWG	APPROVED BY: PN	DATE: 4/8/19	

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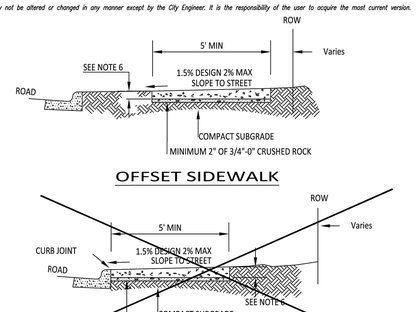

NOTES
1. SIDEWALK SHALL BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH "PROPOSED ACCESSIBILITY GUIDELINES FOR PEDESTRIAN FACILITIES IN THE PUBLIC RIGHT-OF-WAY" (PROWAG) JULY, 2011 EDITION.
2. CONCRETE SHALL BE NATURAL IN COLOR, WITH NO COLORING EITHER ADDED TO THE MIX OR APPLIED TO THE FINISH.
3. CURB TIGHT SIDEWALK MAY ONLY BE USED WITH PRIOR APPROVAL FROM THE CITY ENGINEER.
4. SIDEWALKS SHALL HAVE A LIGHT BROOM FINISH TRANSVERSE TO THE LINE OF TRAVEL AND ALL EDGES TOOL ROUNDED.
   -NEW SIDEWALK, 6 FEET OR LESS IN WIDTH, SHALL HAVE ALL EDGES 3" WIDE SHINED AFTER BROOMING
   -INFILL & REPLACEMENT SIDEWALK SHALL BE FINISHED TO MATCH THE EXISTING SIDEWALK.
5. FOR SIDEWALKS ADJACENT TO THE CURB AND POURED AT SAME TIME AS THE CURB, THE JOINT BETWEEN THEM SHALL BE A TROWELED JOINT WITH A MINIMUM 1/2" RADIUS.
6. SIDEWALK SHALL HAVE A MINIMUM THICKNESS OF 6 INCHES CONCRETE OVER 6" OF CRUSHED ROCK AT:
   - CURBTIGHT SIDEWALK AT INTERSECTION RADIUS.
   - A MINIMUM OF ONE PANEL BEYOND EDGES OF DRIVEWAYS.
   OTHERWISE SIDEWALK SHALL HAVE A MINIMUM THICKNESS OF 4" CONCRETE OVER 2" CRUSHED ROCK.
7. DRAIN BLOCKOUTS IN CURBS SHALL BE EXTENDED TO BACK OF SIDEWALK WITH 3" DIA. PLASTIC PIPE AT 2% SLOPE. CONSTRUCTION JOINT TO BE PLACED OVER PIPE.
8. CONCRETE SHALL BE COMMERCIAL MIX, MIN. COMPRESSIVE STRENGTH OF 3300 PSI AT 28 DAYS.
9. BASE ROCK SHALL BE COMPACTED TO PROVIDE A FIRM BASE FOR CONCRETE.
10. SIDEWALK PANELS SHOULD BE SQUARE AND OF CONSISTANT DIMENSION ALONG A BLOCK FACE. THE LENGTH OF A SIDEWALK PANEL SHALL BE ADJUSTED AS NECESSARY TO ALIGN WITH CURB JOINTS.
11. WIDE SIDEWALKS SHALL BE SCORED PER CITY AUTHORIZED REPRESENTATIVE.
12. BASE COURSE SHALL BE THOROUGHLY WATERED IMMEDIATELY PRIOR TO PLACEMENT OF CONCRETE WHEN THE MEASURED OR FORECASTED ASCENDING AIR TEMPERATURE IS 80 DEGREES OR GREATER.

Concrete Sidewalk			CITY OF WILSONVILLE
DRAWING NUMBER: RD-1075	DRAWN BY: SR	SCALE: N.T.S.	PUBLIC WORKS STANDARDS
FILE NAME: RD-1075.DWG	APPROVED BY: NK	DATE: 1/4/18	

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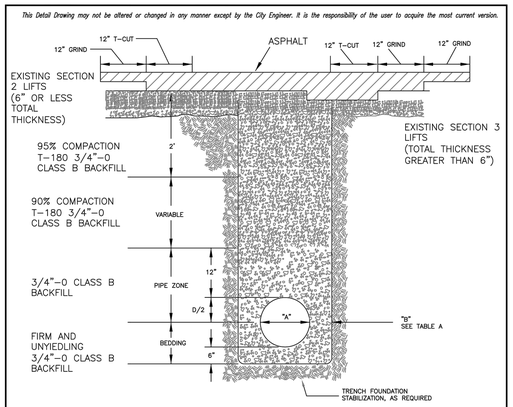

TABLE A

"A"	4"	6"	8"	10"	12"	15"	18"	21"	24"	30"	36"	42"	48"	54"	60"	66"	72"
"B"	6"	6"	6"	6"	6"	D/2	D/2	D/2	D/2	D/2	D/2	D/2	D/2	24"	24"	24"	24"

NOTES:
1. COMMERCIALLY MIXED CLSM MAY BE SUBSTITUTED FOR 3/4"-0 CLASS B BACKFILL ABOVE THE PIPE ZONE.
2. CLSM SHALL BE PLACED TO TOP OF ROAD BASE ROCK.
3. ASPHALT SHALL BE PLACED IN LIFTS NOT EXCEEDING 3" AND COMPACTED TO 92% OF RICE DENSITY
4. PIPE ZONE BACKFILL MATERIAL SHALL BE COMPACTED TO ASSURE THAT THERE ARE NO UNFILLED OR UNCOMPACTED AREAS AROUND THE PIPE.
5. IF S/W IS AGAINST CURB, FILL ROCK TO BACK OF S/W.
6. IF S/W IS NOT AGAINST CURB, FILL ROCK 2' BACK FROM CURB.
7. 12" TEE CUT TO BE MADE AFTER INSTALLATION AND COMPACTION OF CRUSHED AGGREGATE.
8. ASPHALT GRINDING TO MATCH NEW TOP LIFT THICKNESS.
9. LIFT THICKNESS MINIMUM OF 2" MAXIMUM OF 3" TO BE COORDINATED WITH CITY INSPECTOR.

Standard Backfill and Street Repair			CITY OF WILSONVILLE
DRAWING NUMBER: S-2145	DRAWN BY: SR	SCALE: N.T.S.	PUBLIC WORKS STANDARDS
FILE NAME: S-2145.dwg	APPROVED BY: NK	DATE: 6/4/14	

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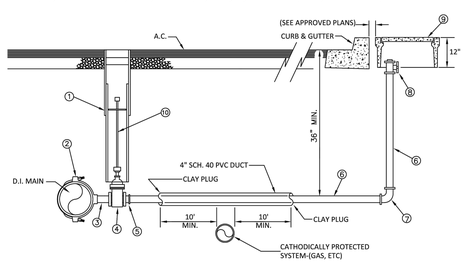

MATERIALS:
1. STANDARD VALVE BOX AND LID. SEE STANDARD DETAIL NO. WT-3020.
2. PIPE O.D. X 2" I.P.T. TEE OR STAINLESS STEEL STRAP WITH DUCTILE IRON BODY SADDLE.
3. 2" X 6" BRASS I.P.T. NIPPLE.
4. 2" I.P.T. X I.P.T. GATE VALVE (MUELLER NO. A-2360-8).
5. 2" M.I.P. X 110 COMP. STRAIGHT COUPLING MUELLER H-15428 OR FORD C84-77-Q.
6. 2" ASTM B-88 TYPE 'K' RIGID COPPER TUBING. IF SLEEVED IN A RIGID CASING USE SOFT TEMPER TYPE "K" TUBING.
7. 2" 110 COMP. X 110 COMP - 1/4 BEND MUELLER H-15526 OR FORD L84-77-Q.
8. 1 1/2"-2" 110 COMP. ANGLE METER STOP MUELLER H-14277 ONLY.
9. APPROVED BOX, COVER AND LID:
   - STANDARD: SEE DETAIL NO. WT-3050 - WT-3052.
   - TRAFFIC RATED: SEE DETAIL NO. WT-3053 - WT-3055
10. VALVE OPERATOR EXTENSION, AS NEEDED. SEE DETAIL NO. WT-3015.

NOTES:
1. SUBSTITUTES FOR ANY MATERIALS SHOWN SHALL BE APPROVED PRIOR TO CONSTRUCTION BY THE CITY WATER DEPARTMENT.
2. ALL PIPE AND STRUCTURE ZONES SHALL BE BACKFILLED USING 3/4"-0 CRUSHED AGGREGATE AND COMPACTED TO 95% MAXIMUM DENSITY AS DETERMINED BY AASHTO T-180.
3. WHEN AN ACTIVE CATHODIC PROTECTED SYSTEM IS ENCOUNTERED, SCH. 40 PVC SHALL BE INSTALLED AS SHOWN WITH CLAY PLUG.
4. METER BOX SHALL BE CENTERED OVER THE COMPLETED METER AND FITTING ASSEMBLY
5. METER BOX HEIGHT ADJUSTMENTS ON EXISTING SERVICES SHALL BE MADE WITH MANUFACTURER METER BOX EXTENSION OR BY STACKING METER BOXES AS APPROVED BY THE MANUFACTURER.
6. METER BOX SHALL BE LOCATED IN PLANTER AREAS ONLY. SEE PUBLIC WORKS STANDARDS FOR TRAFFIC RATED BOXES AND COVERS.
7. METER BOX SHALL BE LOCATED BEHIND THE SIDEWALK AT LOCATIONS WITH CURB TIGHT SIDEWALK.
8. METER BOX SHALL BE LOCATED NOT MORE THAN 12" FROM BACK OF CURB OR SIDEWALK.
9. METER BOX SHALL MATCH SIDEWALK GRADE (IF SIDEWALK EXISTS) OTHERWISE SET FLUSH WITH SURROUNDING GROUND SURFACE.
10. IF REQUIRED, CUSTOMER SHALL INSTALL AN APPROVED BACKFLOW PREVENTION DEVICE AND OBTAIN THE NECESSARY PERMITS AND INSPECTIONS FROM THE BUILDING DEPARTMENT.
11. EACH PROPERTY SHALL HAVE AN INDIVIDUAL WATER SERVICE FROM THE WATER MAIN. SHARED OR DOUBLE WATER SERVICES ARE NOT ALLOWED.

1 1/2" - 2" Single Service			CITY OF WILSONVILLE
DRAWING NUMBER: WT-3045	DRAWN BY: SR	SCALE: N.T.S.	PUBLIC WORKS STANDARDS
FILE NAME: WT-3045.DWG	APPROVED BY: NK	DATE: 1/23/18	

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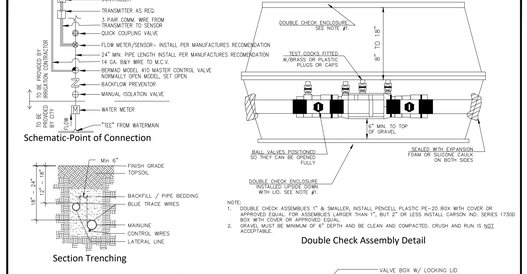

NOTE
1. DOUBLE CHECK ASSEMBLIES 1" & SMALLER, INSTALL PENCELL PLASTIC PE-10 BOX WITH COVER OR APPROVED EQUAL. FOR ASSEMBLIES LARGER THAN 1", BUT 2" OR LESS INSTALL CARSON IND. SERIES 17300 BOX WITH COVER OR APPROVED EQUAL.
2. GRAVEL MUST BE MINIMUM OF 6" DEPTH AND BE CLEAN AND COMPACTED. CRUSH AND RUN IS NOT ACCEPTABLE.

Public Right-Of-Way Irrigation Details Part 1			CITY OF WILSONVILLE
DRAWING NUMBER: WT-3120	DRAWN BY: SR	SCALE: N.T.S.	PUBLIC WORKS STANDARDS
FILE NAME: WT-3120.DWG	APPROVED BY: NK	DATE: 2/22/18	

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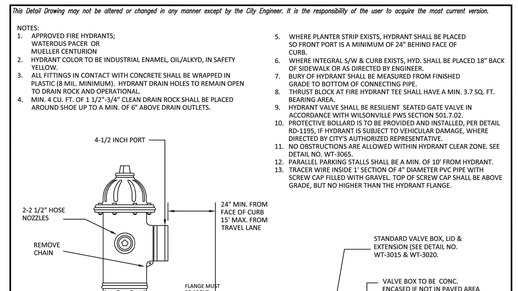

NOTES:
1. APPROVED FIRE HYDRANTS; WATEROUS PACER OR MUELLER CENTURION
2. HYDRANT COLOR TO BE INDUSTRIAL ENAMEL, OIL/ALKYD, IN SAFETY YELLOW.
3. ALL FITTINGS IN CONTACT WITH CONCRETE SHALL BE WRAPPED IN PLASTIC (8 MIL. MINIMUM). HYDRANT DRAIN HOLES TO REMAIN OPEN TO DRAIN ROCK AND OPERATIONAL.
4. MIN. 4 CU. FT. OF 1 1/2"-3/4" CLEAN DRAIN ROCK SHALL BE PLACED AROUND SHOE UP TO A MIN. OF 6" ABOVE DRAIN OUTLETS.
5. WHERE PLANTER STRIP EXISTS, HYDRANT SHALL BE PLACED SO FRONT PORT IS A MINIMUM OF 24" BEHIND FACE OF CURB.
6. WHERE INTEGRAL S/W & CURB EXISTS, HYD. SHALL BE PLACED 18" BACK OF SIDEWALK OR AS DIRECTED BY ENGINEER.
7. BURY OF HYDRANT SHALL BE MEASURED FROM FINISHED GRADE TO BOTTOM OF CONNECTING PIPE.
8. THRUST BLOCK AT FIRE HYDRANT TEE SHALL HAVE A MIN. 3.7 SQ. FT. BEARING AREA.
9. HYDRANT VALVE SHALL BE RESILIENT SEATED GATE VALVE IN ACCORDANCE WITH WILSONVILLE PWS SECTION 501.7.02.
10. PROTECTIVE BOLLARD IS TO BE PROVIDED AND INSTALLED, PER DETAIL RD-1195, IF HYDRANT IS SUBJECT TO VEHICULAR DAMAGE, WHERE DIRECTED BY CITY'S AUTHORIZED REPRESENTATIVE.
11. NO OBSTRUCTIONS ARE ALLOWED WITHIN HYDRANT CLEAR ZONE. SEE DETAIL NO. WT-3065.
12. PARALLEL PARKING STALLS SHALL BE A MIN. OF 10' FROM HYDRANT.
13. TRACER WIRE INSIDE 1' SECTION OF 4" DIAMETER PVC PIPE WITH SCREW CAP FILLED WITH GRAVEL, TOP OF SCREW CAP SHALL BE ABOVE GRADE, BUT NO HIGHER THAN THE HYDRANT FLANGE.

Fire Hydrant Assembly			CITY OF WILSONVILLE
DRAWING NUMBER: WT-3060	DRAWN BY: SR	SCALE: N.T.S.	PUBLIC WORKS STANDARDS
FILE NAME: WT-3060.DWG	APPROVED BY: NK	DATE: 10/19/18	

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WILSONVILLE, OR 97070

Project

DELTA LOGISTICS SITE EXPANSION FRONTAGE MPROVEMENTS
9710 SW DAY RD.
CITY OF WILSONVILLE, OR

REGISTERED PROFESSIONAL ENGINEER
OREGON
JULY 10, 2007
GREGORY I. MIND
EXPIRES: 12/31/24

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REVISION SCHEDULE

Delta	Issued As	Issue Date

SHEET TITLE:
DETAILS

DRAWN BY: CME

CHECKED BY: GIM

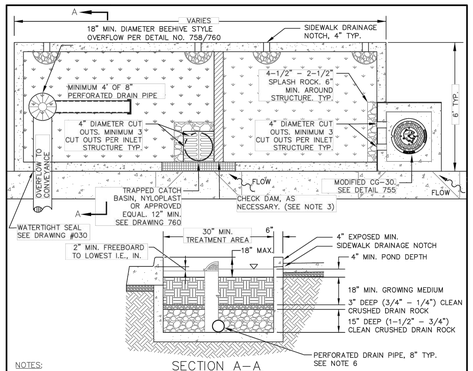
SHEET
R0.03

JOB NO. **2200502.04**

DEVELOPMENT REVIEW SET 04/24/23

1057

2200502001DRAWINGS\CIVIL\50204-R0.03-DETAILS.DWG GIM 03/01/23 12:29 1:1



SECTION A–A

NOTES:

1. THIS DETAIL REPRESENTS A FLOW THROUGH PLANTER WITH FULL LENGTH CONCRETE WALLS AND FLOOR. FOR INFILTRATION PLANTER CONCRETE WALLS W/FOOTING WILL BE REQUIRED AS SHOWN ON DRAWING #750.
2. WALL'S STRUCTURAL DESIGN AND DIMENSIONS DETERMINED BY ENGINEER.
3. PROVIDE PROTECTION FROM ALL VEHICLE TRAFFIC, EQUIPMENT STAGING, AND FOOT TRAFFIC IN PROPOSED FACILITY AREAS PRIOR TO, DURING, AND AFTER CONSTRUCTION.
4. SIDEWALK ELEVATION MUST BE SET ABOVE CHECK DAM AND INLET/OUTLET ELEVATIONS TO ALLOW OVERFLOW TO DRAIN TO STREET OR PIPED OVERFLOW SYSTEM AS APPLICABLE.
5. PLANTER SHALL BE FLAT BOTTOM IN ALL DIRECTIONS TO WITHIN 1 INCH. CHECK DAMS SHALL BE PLACED ACCORDING TO INDIVIDUAL PROJECT PLANS PER DETAIL 762. PROVIDE 2" MIN FREEBOARD.
6. STREET SIDE CURB NOTCHES TO BE LOCATED AS IDENTIFIED ON PROJECT PLANS.
7. SIDEWALK CURB NOTCH: 1" LOWER THAN SIDEWALK, SLOPED TO FACILITY. SIDEWALK DRAINAGE NOTCHES SHALL ALIGN WITH SIDEWALK CONTRACTION JOINTS AND LOW POINTS.
8. PERFORATED PIPE IN INFILTRATION FACILITIES: BOTTOM OF PIPE SHALL BE SET AT 2 1/2" ABOVE SUBGRADE. PERFORATED PIPE IN FLOW THROUGH FACILITIES: BOTTOM OF PIPE SHALL BE SET AT BASE OF DRAIN ROCK LAYER.
9. HYDRANTS, UTILITY POLES, OR ANY UTILITY BOXES PLACED WITHIN PLANTER MUST BE APPROVED BY JURISDICTION IN WRITING.
10. ACTUAL ELEVATIONS AND DIMENSIONS TO BE CONSTRUCTED AS IDENTIFIED ON PROJECT PLANS.
11. ENSURE THAT A DOWNSTREAM CATCH BASIN IS IN PLACE FOR EMERGENCY OVERFLOW.

STREET SIDE PLANTER WITHOUT STREET PARKING

DRAWING NO. 745 REVISED 10–31–19

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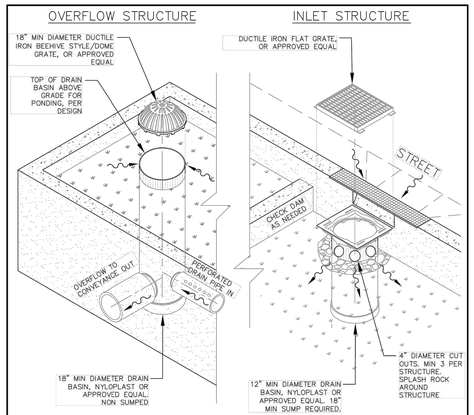

NOTE:

1. PLACE STRUCTURE ON 3/4" TO 0" BASE ROCK PLACED OVER NATIVE SUBGRADE.

OVERFLOW/INLET STRUCTURE

DRAWING NO. 760 REVISED 10–31–19

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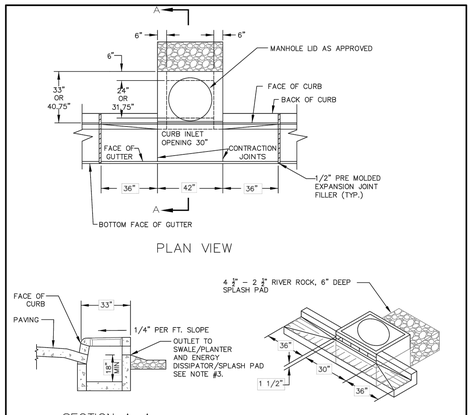

PLAN VIEW

SECTION A–A NON–SNOUT

PERSPECTIVE VIEW SHOWING DEPRESSED GUTTER AT CURB INLET

NOTES:

1. INSTALL STRUCTURE ON MINIMUM OF 8" OF 3/4" TO 0" COMPACTED BASE MATERIAL.
2. INSTALL ENERGY DISSIPATER/SPLASH PAD AT OUTFALL OF STRUCTURE.
3. FOUR INCH DIAMETER CUT OUTS, MINIMUM 3 CUT OUTS EVENLY SPACED PER INLET STRUCTURE, TYPICAL.

MODIFIED CG–30 INLET WITH SUMP

DRAWING NO. 755 REVISED 10–31–19

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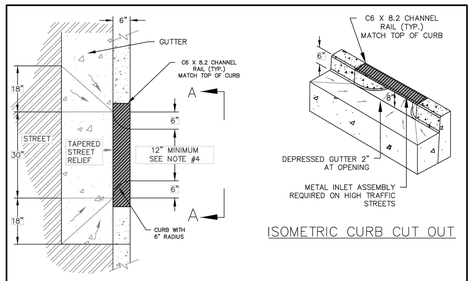
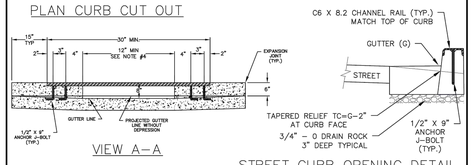


PLAN CURB CUT OUT

ISOMETRIC CURB CUT OUT



VIEW A–A

STREET CURB OPENING DETAIL

NOTES:

1. INFLOW STRUCTURE PER LOCAL JURISDICTION.
2. INFLOW STRUCTURE – CURB CUT OUT SHALL HAVE MINIMUM 2" DROP AT THE FLOW LINE LEADING TO THE SPLASH PAD, SEE DETAIL.
3. CURB PROFILE PER LOCAL JURISDICTION.
4. CURB CUT OUT TO MATCH INLET GRATE DIMENSION.

CURB CUT OUT TOP RAIL

DRAWING NO. 753 REVISED 10–31–19

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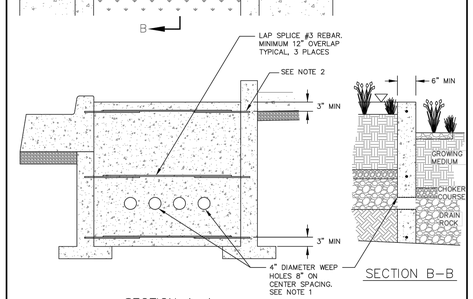

SECTION A–A

SECTION B–B

NOTES:

1. WEEP HOLES TO BE PLACED WITHIN DRAIN ROCK LAYER. TOP OF WEEP HOLE TO BE SAME ELEVATION AS THE TOP OF DRAIN ROCK LAYER, ON LOWEST SIDE OF CHECK DAM.
2. MINIMUM 3" REBAR EMBEDMENT FOR CURB AND PLANTER WALL.
3. CHECK DAM SPACING SHALL PROVIDE A MINIMUM OF 2" FREEBOARD, AND AN 18" MAXIMUM DROP FROM ANY ADJACENT CURB TO TOP OF FACILITY GROWING MEDIUM.

CONCRETE CHECK DAM

DRAWING NO. 762 REVISED 10–31–19

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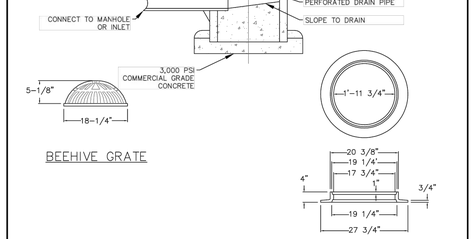

BEEHIVE GRATE

18"x4" REVERSIBLE MANHOLE FRAME

NOTES

1. SECURE GRATE IN PLACE WITH 54" OF WIRE ROPE. LOOP ENDS OF WIRE ROPE AROUND U–BOLT AND GRATE. CRIMP EACH END OF WIRE ROPE WITH 3" OVERLAP.
2. DRILL 2" DEEP HOLES INTO PIPE AND EPOXY #4 REBAR U–BOLT (2"X 4") IN HOLES.
3. GRATE TO BE CAST IRON, ASTM A48 CL30.
4. SIZE INLET BASED ON CALCULATED FLOWS AND MANUFACTURERS RECOMMENDATIONS.
5. WIRE ROPE BETWEEN 1/8"–3/16" DIAMETER, STAINLESS STEEL, 7 STRANDS OF 19 WIRES.

BEEHIVE INLET

DRAWING NO. 758 REVISED 10–31–19

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STORMWATER FACILITY GROWING MEDIUM

FURNISH IMPORTED BLENDED SOIL FOR ALL VEGETATED LIDA FACILITIES CONFORMING TO THE FOLLOWING:

- GENERAL COMPOSITION – USE MATERIAL THAT IS ANY BLEND OF LOAMY SOIL, SAND, AND COMPOST THAT IS 30–40% COMPOST (BY VOLUME) AND MEETS THE OTHER CRITERIA IN THIS SPECIFICATION.
- ANALYSIS REQUIREMENTS FOR THE BLENDED MATERIAL:
  PARTICLE GRADATION – A SIEVE ANALYSIS OF THE BLENDED MATERIAL, NOT INCLUDING COMPOST, SHALL BE CONDUCTED IN CONFORMANCE WITH ASTM C117/C136, AASHTO T11/T27, ASTM D422/D1140, OR ASTM D691.3. THE ANALYSIS SHALL INCLUDE THE FOLLOWING SIEVE SIZES: 1 INCH, 3/8 INCH, #4, #10, #20, #40, #60, #100, #200. THE GRADATION OF THE BLEND SHALL MEET THE FOLLOWING GRADATION CRITERIA.

SIEVE SIZE	PERCENT PASSING
1 INCH	100
# 4	85 –100
# 10	50–100
# 40	20–60
# 100	10–40
# 200	10–20

- THE MATERIAL SHALL BE LOOSE AND EASILY BROKEN INTO SMALL PIECES
- IT SHALL BE WELL MIXED AND HOMOGENOUS.
- IT SHALL BE FREE OF WOOD PIECES, PLASTIC, AND OTHER FOREIGN MATTER.
- IT SHALL HAVE NO VISIBLE FREE WATER.
- THE PH (POWER OF HYDROGEN) OF THE BLENDED MATERIAL SHALL BE TESTED AND BE BETWEEN 6 TO 8.

COMPOST

THE COMPOST SHALL BE DERIVED FROM PLANT MATERIAL AND PROVIDED BY A MEMBER OF THE US COMPOSTING COUNCIL SEAL OF TESTING ASSURANCE (STA) PROGRAM. SEE WWW.COMPOSTINGCOUNCIL.ORG FOR A LIST OF LOCAL PROVIDERS.

THE COMPOST SHALL BE THE RESULT OF THE BIOLOGICAL DEGRADATION AND TRANSFORMATION OF PLANT–DERIVED MATERIALS UNDER CONDITIONS DESIGNED TO PROMOTE AEROBIC DECOMPOSITION. THE MATERIAL SHALL BE WELL COMPOSTED, FREE OF VIABLE WEED SEEDS, AND STABLE WITH REGARD TO OXYGEN CONSUMPTION AND CARBON DIOXIDE GENERATION. THE COMPOST SHALL HAVE NO VISIBLE FREE WATER AND PRODUCE NO DUST WHEN HANDLED. IT SHALL MEET THE FOLLOWING CRITERIA, AS REPORTED BY THE US COMPOSTING COUNCIL STA COMPOST TECHNICAL DATA SHEET PROVIDED BY THE VENDOR.

- 100% OF THE MATERIAL MUST PASS THROUGH A 1/2–INCH SCREEN.
- THE PH OF THE MATERIAL SHALL BE BETWEEN 6 MIN. AND 8 MAX.
- MANUFACTURED INERT MATERIAL (PLASTIC, CONCRETE, CERAMICS, METAL, ETC.) SHALL BE LESS THAN 1.0% BY WEIGHT.
- THE ORGANIC MATTER CONTENT SHALL BE BETWEEN 30 AND 70% (DRY WEIGHT BASIS).
- SOLUBLE SALT CONTENT SHALL BE LESS THAN 6.0 MMHOS/CM.
- MATURITY INDICATOR SHALL BE GREATER THAN 80% FOR GERMINATION AND VIGOR.
- STABILITY SHALL BE "STABLE" TO "VERY STABLE".
- CARBON/NITROGEN (C/N) RATIO SHALL BE LESS THAN 25:1.
- TRACE METALS TEST RESULT = "PASS."

CONSTRUCTION

STORMWATER FACILITY GROWING MEDIUM:

- PROTECTION OF THE SOIL – THE MATERIAL SHALL BE PROTECTED FROM ALL SOURCES OF CONTAMINATION, INCLUDING WEED SEEDS, WHILE AT THE SUPPLIER, IN CONVEYANCE, AND AT THE PROJECT SITE.
- WET AND WINTER CONDITIONS – HAULING AND PLACEMENT OF THE MATERIAL WILL NOT BE ALLOWED WHEN THE WEATHER IS TOO WET OR THE GROUND IS FROZEN OR SATURATED AS DETERMINED BY THE OWNERS REPRESENTATIVE.
- PLACEMENT OF THE SOIL – PLACE THE MATERIAL IN LOOSE LIFTS, NOT TO EXCEED 8 INCHES EACH AND EACH LIFT SHALL BE COMPACTED WITH A WATER–FILLED LANDSCAPE ROLLER. DO NOT OTHERWISE MECHANICALLY COMPACT THE MATERIAL.
- TIMING OF PLANT INSTALLATION – WEATHER PERMITTING AND AS APPROVED, INSTALL PLANTS AS SOON AS POSSIBLE AFTER PLACING AND GRADING THE SOIL IN ORDER TO MINIMIZE EROSION AND FURTHER COMPACTION.
- EROSION CONTROL – TEMPORARY EROSION CONTROL MEASURES ARE REQUIRED UNTIL PERMANENT STABILIZATION MEASURES ARE FUNCTIONAL.
- PROTECTION OF THE INSTALLED SOIL – IN ALL CASES, THE PROTECT INSTALLED MATERIAL FROM FOOT OR EQUIPMENT TRAFFIC AND SURFACE WATER RUNOFF. INSTALL TEMPORARY FENCING OR WALKWAYS AS NEEDED TO KEEP WORKERS, PEDESTRIANS, AND EQUIPMENT OUT OF THE AREA. UNDER NO CIRCUMSTANCES SHOULD MATERIALS AND EQUIPMENT BE STORED ON TOP OF THE INSTALLATION AREA.

GROWING MEDIUM SPECIFICATION FOR VEGETATED FACILITIES

DRAWING NO. 742 REVISED 10–31–19

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9710 SW DAY RD.
CITY OF WILSONVILLE, OR

REGISTERED PROFESSIONAL ENGINEER
OREGON
JULY 10, 2015
GREGORY I. MINO
EXPIRES: 12/31/24

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REVISION SCHEDULE

Delta	Issued As	Issue Date

SHEET TITLE:
DETAILS

DRAWN BY: CME

CHECKED BY: GIM

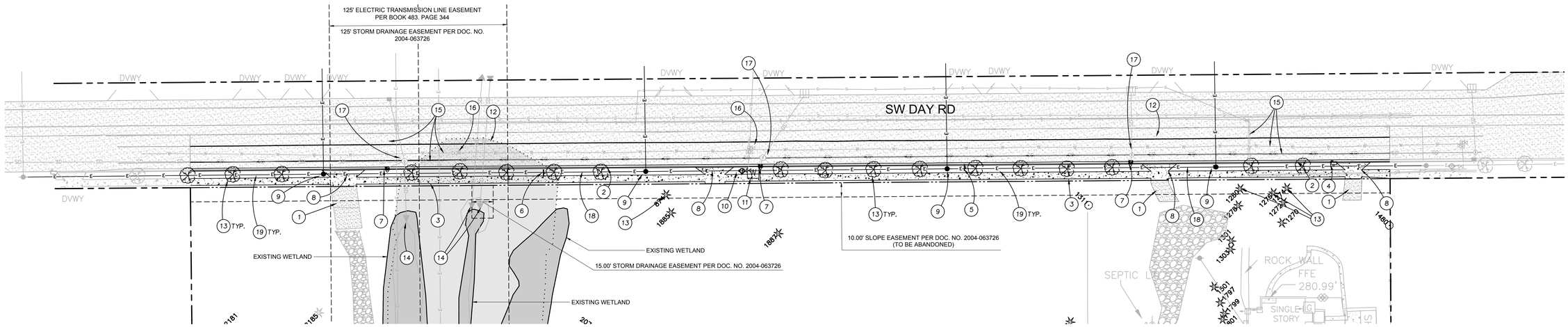
SHEET

R0.04

JOB NO. **2200502.04**

DEVELOPMENT REVIEW SET 04/24/23

1058



1 R1.01 FRONTAGE IMPROVEMENTS DEMOLITION PLAN

30 0 15 30 60 120 1:1

(IN FEET)
1 inch = **30** ft.

KEY NOTES

1. REMOVE EXISTING ASPHALT PER SECTION 1/R0.02
2. REMOVE EXISTING CURB AND GUTTER
3. REMOVE EXISTING SIDEWALK
4. REMOVE EXISTING MAILBOX
5. RELOCATE EXISTING "TRUCKS ENTERING ROADWAY" SIGN
6. RELOCATE EXISTING "40 SPEED" SIGN
7. REMOVE EXISTING CATCH BASIN
8. REMOVE EXISTING DRIVEWAY
9. RELOCATE EXISTING POWER POLE
10. RELOCATE FIRE HYDRANT
11. REMOVE WATER METER AND SERVICE LATERAL TO MAINLINE
12. GRIND ASPHALT PAVEMENT PER SECTION 1/R0.02
13. REMOVE EXISTING TREE
14. PROTECT EXISTING STORM CULVERTS
15. PROTECT EXISTING UTILITIES AT THE SURFACE WITHIN THE GRINDING AREA
16. PROTECT VALVES AND ADJUST TO GRADE
17. PROTECT EXISTING MANHOLES IN GRINDING AREA, ADJUST TO GRADE
18. RELOCATE EXISTING OVERHEAD POWER LINES
19. REMOVE EXISTING HEDGE

Item 2.

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Planning ▪ Engineering

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Seattle, WA
206.749.9993
www.mcknze.com

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DESIGN DRIVEN | CLIENT FOCUSED

Client

DELTA LOGISTICS
9835 SW COMMERCE CIRCLE
WILSONVILLE, OR 97070

Project

DELTA LOGISTICS SITE EXPANSION FRONTAGE MPROVEMENTS
9710 SW DAY RD.
CITY OF WILSONVILLE, OR

REGISTERED PROFESSIONAL ENGINEER
91697
OREGON
JULY 10, 2015
GREGORY I. MINO
EXPIRES: 12/31/24

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REVISION SCHEDULE

Delta	Issued As	Issue Date

SHEET TITLE:
DEMOLITION PLAN

DRAWN BY: CME

CHECKED BY: GIM

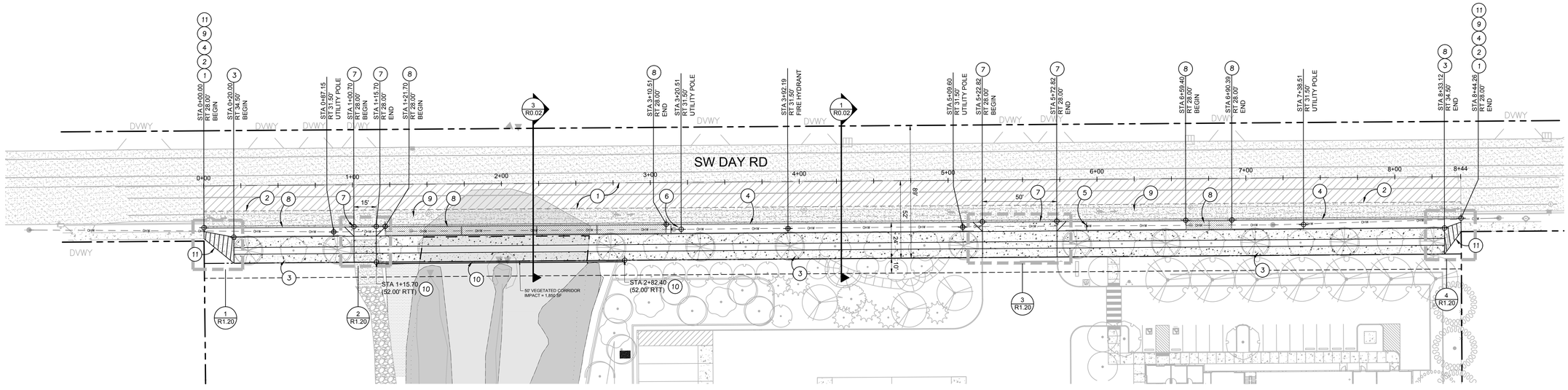
SHEET

R1.01

JOB NO. **2200502.04**

1059

DEVELOPMENT REVIEW SET 04/24/23



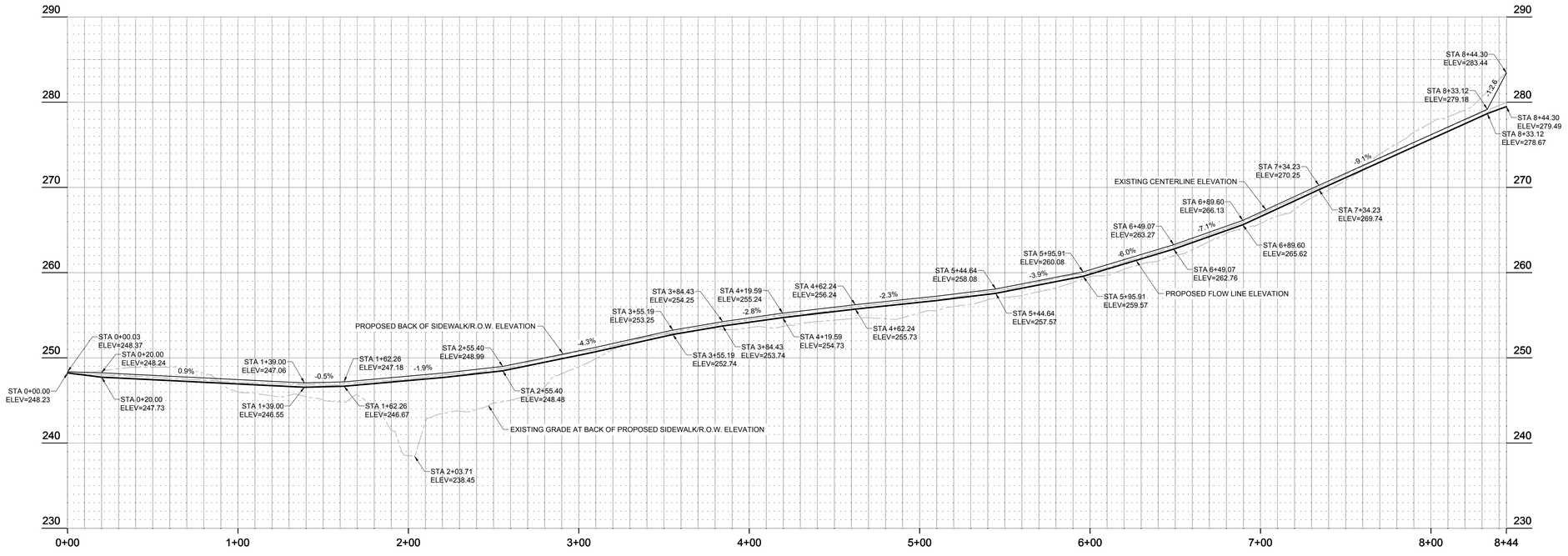
1 R1.10 FRONTAGE IMPROVEMENTS PLAN

30 0 15 30 60 120 1:1

(IN FEET)
1 inch = **30** ft.

KEY NOTES

1. ASPHALT OVERLAY
2. SAWCUT EXISTING ASPHALT
3. SIDEWALK PER RD-1075/R0.03
4. VERTICAL CURB AND GUTTER PER RD-1060/R0.03
5. RELOCATED "TRUCKS ENTERING ROADWAY" SIGN
6. RELOCATED EXISTING "40 SPEED" SIGN
7. COMMERCIAL DRIVEWAY PER RD-1095/R0.03
8. STORMWATER PLANTER PER ST-6005/R0.03
9. CONCRETE PAVEMENT
10. RETAINING WALL
11. ASPHALT PAVING WITH CROSSWALK STRIPING FROM PROPOSED SIDEWALK TO EXISTING



2 R1.10 FRONTAGE IMPROVEMENTS PROFILE

HORIZONTAL SCALE: 1"=30'
VERTICAL SCALE: 1"=5"

1:1

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Project

DELTA LOGISTICS SITE EXPANSION FRONTAGE MPROVEMENTS
9710 SW DAY RD. CITY OF WILSONVILLE, OR

REGISTERED PROFESSIONAL ENGINEER
91697
OREGON
JULY 10, 2007
GREGORY I. MINO
EXPIRES: 12/31/24

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REVISION SCHEDULE

Delta	Issued As	Issue Date

SHEET TITLE:
PLAN AND PROFILE

DRAWN BY: CME

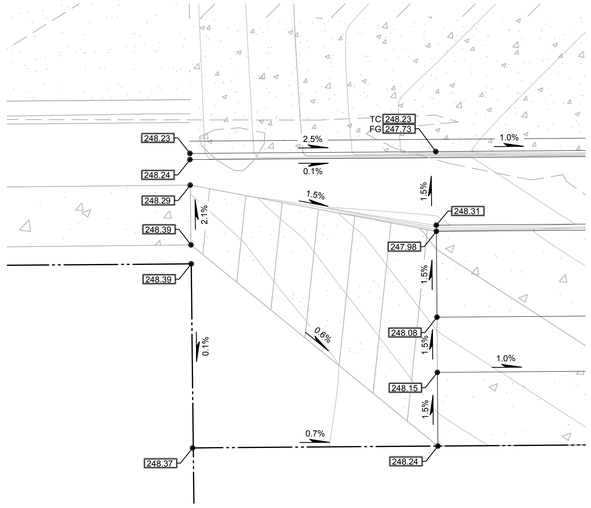
CHECKED BY: GIM

SHEET
R1.10

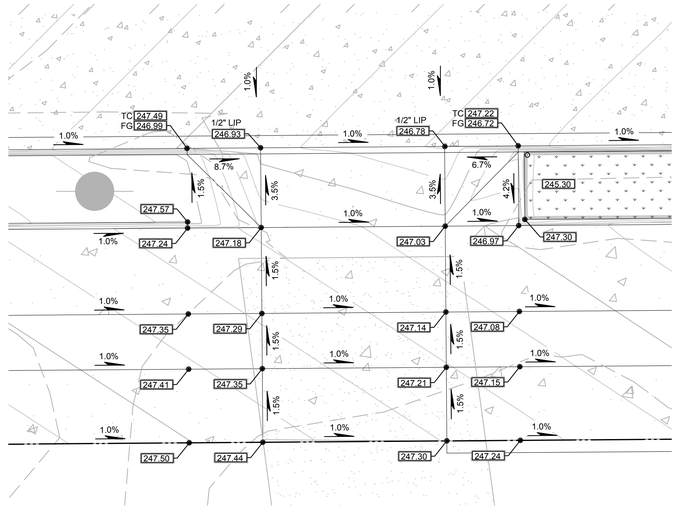
JOB NO. **2200502.04**

DEVELOPMENT REVIEW SET 04/24/23

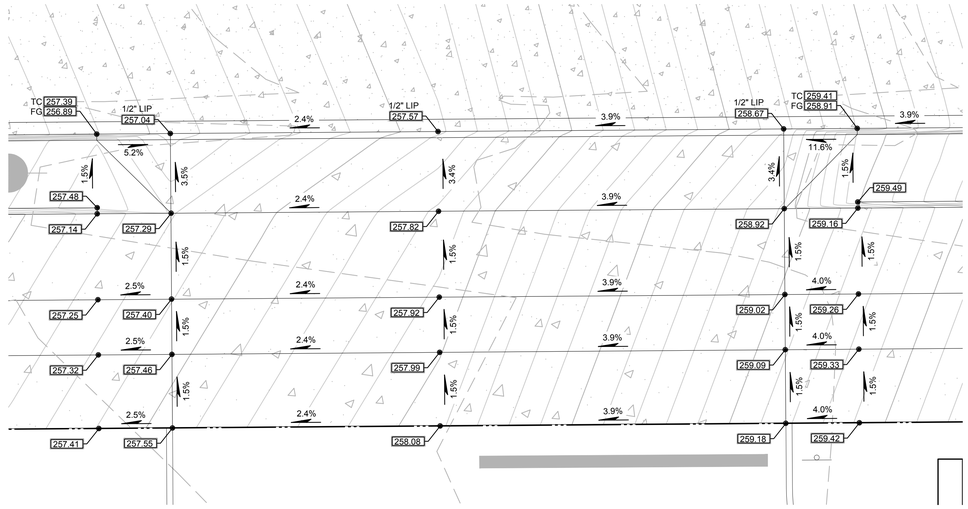
1060



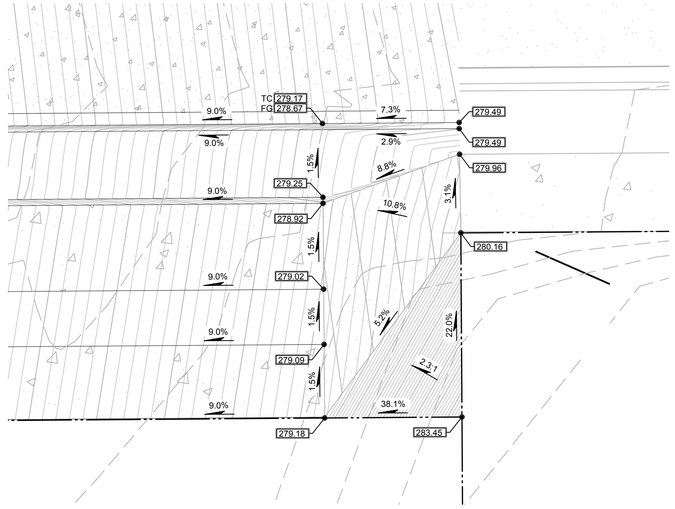
1 R1.20 WESTERLY JOIN
SCALE: 1"=5'



2 R1.20 MAINTENANCE DRIVEWAY
SCALE: 1"=5'



3 R1.20 PROJECT DRIVEWAY
SCALE: 1"=5'



4 R1.20 EASTERLY JOIN
SCALE: 1"=5'

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DELTA LOGISTICS SITE EXPANSION FRONTAGE MPROVEMENTS
9710 SW DAY RD.
CITY OF
WILSONVILLE, OR

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JULY 10, 2015
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REVISION SCHEDULE

Delta	Issued As	Issue Date

SHEET TITLE:
PLAN ENLARGEMENTS

DRAWN BY: CME

CHECKED BY: GIM

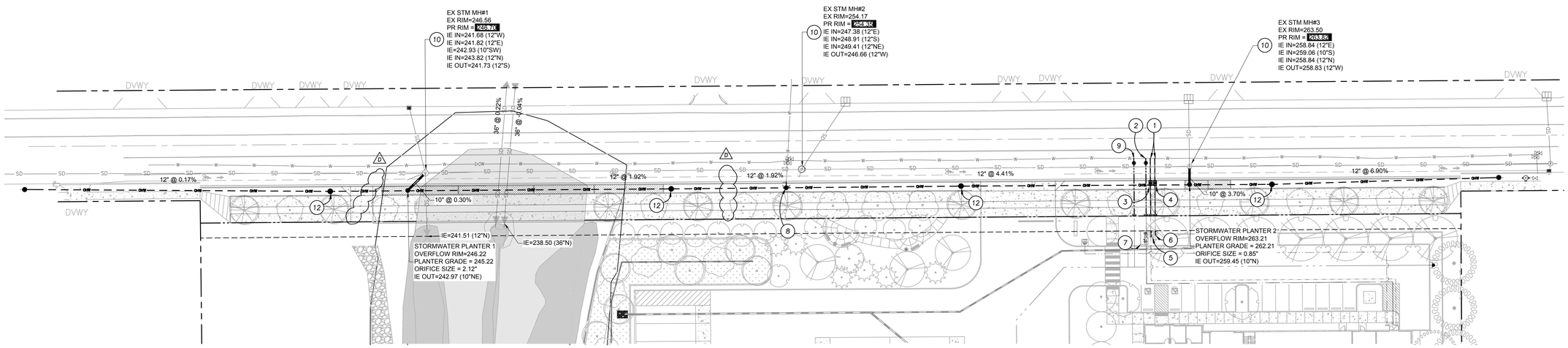
SHEET

R1.20

JOB NO. **2200502.04**

DEVELOPMENT REVIEW SET 04/24/23

1061



1 / R1.30 UTILITY PLAN

30 0 15 30 60 120 1:1

(IN FEET)
1 inch = 30 ft.

KEY NOTES

1. DOMESTIC/IRRIGATION WATER SERVICE CONNECTION PER DETAIL WT-3045/R0.03
2. 8" FIRE WATER SERVICE CONNECTION (TO PRIVATE FIRE SPRINKLERS)
3. 3" DOMESTIC WATER METER WITH 4" SERVICE LINE, SEE DETAIL WT-3045/R0.03
4. 1.5" IRRIGATION WATER METER WITH 2" SERVICE LINE, SEE DETAIL WT-3045/R0.03
5. DOMESTIC WATER BACKFLOW ASSEMBLY PER PRIVATE ONSITE PLANS
6. IRRIGATION BACKFLOW ASSEMBLY PER PRIVATE ONSITE PLANS
7. FIRE WATER BACKFLOW ASSEMBLY PER PRIVATE ONSITE PLANS
8. FIRE HYDRANT, SEE DETAIL WT-3060/R0.03
9. 12" FIRE WATER SERVICE CONNECTION (TO ONSITE PUBLIC HYDRANTS)
10. JOIN EXISTING STORM MANHOLE
11. NOT USED
12. RELOCATED UTILITY POLE WITH STREET LIGHT LUMINAIRE

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DELTA LOGISTICS SITE EXPANSION FRONTAGE MPROVEMENTS
9710 SW DAY RD.
CITY OF WILSONVILLE, OR

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OREGON
JULY 10, 2015
GREGORY I. MINO
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REVISION SCHEDULE

Delta	Issued As	Issue Date
A	LAND USE	06/08/2022
B	REVISION	07/26/2022
C	REVISION	09/12/2022
D	REVISION	02/28/2023

SHEET TITLE:
UTILITY PLAN

DRAWN BY: CME

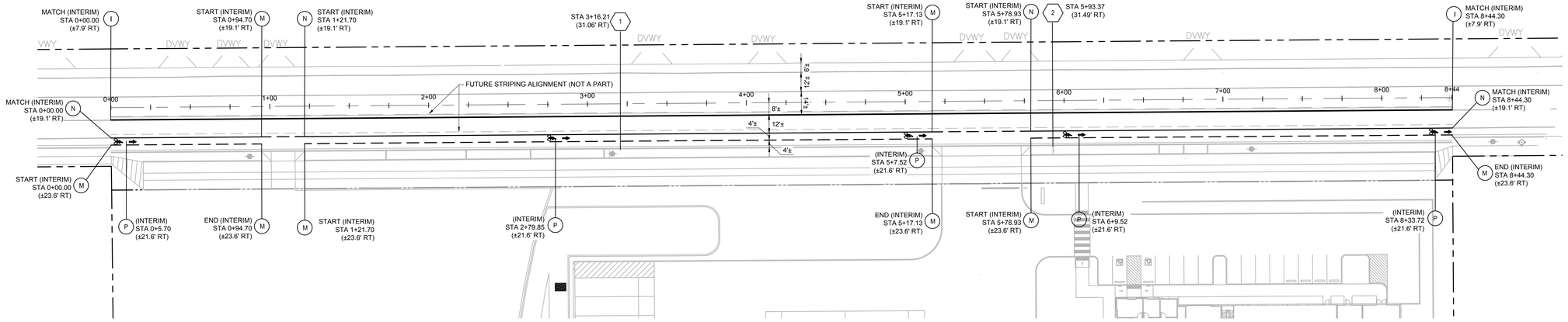
CHECKED BY: GIM

SHEET
R1.30

JOB NO. **2200502.04**

1062

DEVELOPMENT REVIEW SET 04/24/23



1 R1.40 SIGNING AND STRIPING PLAN

30 0 15 30 60 120 1:1

(IN FEET)
1 inch = 30 ft.

SIGNING NOTES

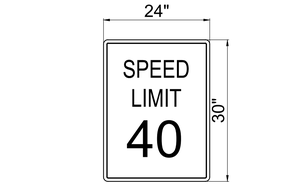
1. REFER TO THE CITY OF WILSONVILLE DWG. RD-1245/SHEET R1.41
2. POSTS SHALL BE INSTALLED WITH V-LOCK PER CITY OF WILSONVILLE DWG. RD-1250/SHEET R1.41

STRIPING NOTES

1. REFER TO THE CITY OF WILSONVILLE PAVEMENT MARKING NOTES ON CITY OF WILSONVILLE STD. DWG. RD-1280/SHEET R1.41
2. DO NOT PAINT CURBS MAINTAINED BY THE CITY OF WILSONVILLE. CONTRACTOR WILL BE RESPONSIBLE FOR THE REMOVAL OF ANY PAINT ON CITY CURBS.

SIGN & SUPPORT DATA TABLE

SIGN NO. (N)	QTY. USED	SIGN DIMENSION		SIGN CODE		TYPE OF SUPPORT							FOOTING TYPE		SIGN LEGEND / OTHER REMARKS
						MOUNT									
		WIDTH (IN)	HEIGHT (IN)	MUTCD	ODOT	SINGLE PIPE POST	EXISTING PIPE POST	UTILITY POLE	LIGHT POLE	SIGNAL POLE	MODIFIED BIKE RACK	CANTILEVER	BREAKAWAY DOME ASSEMBLY	BREAKAWAY ANCHOR ASSEMBLY	
1	1	24	30	R2-1 TYPE W1				X							[SPEED LIMIT 40] MOUNTED ON POLE
2	1	36	36			X									[TRUCKS ENTERING ROADWAY]



1 R2-1 TYPE W1 SIGN

2 "TRUCKS ENTERING ROADWAY" SIGN

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9710 SW DAY RD. CITY OF WILSONVILLE, OR

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JULY 10, 2015
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EXPIRES: 12/31/24

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REVISION SCHEDULE

Delta	Issued As	Issue Date

SHEET TITLE:
STRIPING AND SIGNAGE PLAN

DRAWN BY: CME

CHECKED BY: GIM

SHEET

R1.40

JOB NO. **2200502.04**

DEVELOPMENT REVIEW SET 04/24/23

1063

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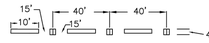
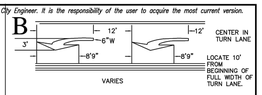
A



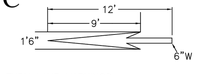
SKIP CENTERLINE:
4" YELLOW LINE WITH TYPE I BI– DIRECTIONAL YELLOW RAISED PAVEMENT MARKERS AT 40' O.C.

B



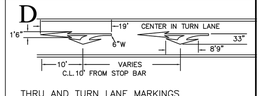
TURN LANE MARKINGS:
SEE MUTCD AND ODOT STANDARD DRAWING TM501 FOR DETAILS. ARROWS SHALL BE METHYL METHACRYLATE (MMA) PAVEMENT MARKING MATERIAL.

C



THRU LANE MARKINGS
SEE MUTCD FOR DETAILS. THRU ARROWS SHALL BE METHYL METHACRYLATE (MMA) PAVEMENT MARKING MATERIAL

D

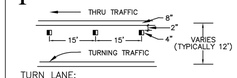


THRU AND TURN LANE MARKINGS
SEE MUTCD FOR DETAILS. TURN AND THRU ARROWS SHALL BE METHYL METHACRYLATE (MMA) PAVEMENT MARKING MATERIAL

E

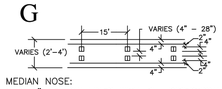
STOP BAR:
SHALL BE METHYL METHACRYLATE (MMA) PAVEMENT MARKING MATERIAL. NOT REQUIRED AT INTERSECTIONS IF MARKED CROSSWALKS ARE INSTALLED.

F



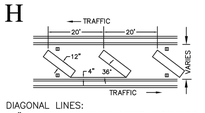
TURN LANE:
8" WHITE LINE WITH MONO–DIRECTIONAL CRYSTAL TYPE I MARKERS (WHITE) AT 15' O.C.

G



MEDIAN NOSE:
TWO 4" YELLOW LINES WITH BI– DIRECTIONAL YELLOW TYPE I MARKERS AT 15' O.C. FOR USE AT INTERSECTIONS WHERE MEDIAN NOSE IS LESS THAN 4' WIDE.

H



DIAGONAL LINES:
12" YELLOW OR WHITE LINES INSTALLED AS SHOWN.

Pavement Markings Page 1

DRAWING NUMBER: RD-1265	DRAWN BY: SR	SCALE: N.T.S.
FILE NAME: RD-1265.DWG	APPROVED BY: PN	DATE: 5/16/19

CITY OF WILSONVILLE
PUBLIC WORKS STANDARDS

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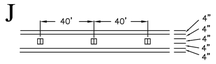
I

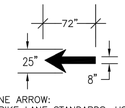
TWO WAY LEFT TURN STRIPE:
4" YELLOW LINES WITH TYPE I BI–DIRECTIONAL YELLOW RAISED PAVEMENT MARKERS AT 40' O.C. OUTSIDE LINE IS SOLID INSIDE AT 10'/30' PATTERN.

J



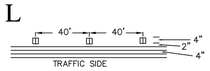
CENTERLINES:
TWO 4" YELLOW LINES WITH BI–DIRECTIONAL YELLOW TYPE I MARKERS AT 40' O.C.

K



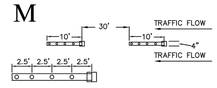
BICYCLE LANE ARROW:
SEE ODOT BIKE LANE STANDARDS. USE PREFORMED METHYL METHACRYLATE (MMA) PAVEMENT MARKING MATERIAL.

L



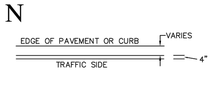
MEDIAN STRIPE:
TWO 4" YELLOW LINES WITH TYPE I BI–DIRECTIONAL YELLOW RAISED PAVEMENT MARKERS AT 40' O.C.

M



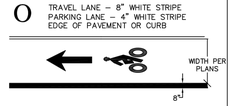
LANE LINE:
4" WHITE WITH CRYSTAL. TYPE I WHITE MONO–DIRECTIONAL MARKERS AT 40' O.C.

N



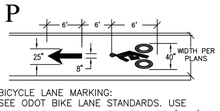
FOG LINE:
4" WHITE LINE AS SHOWN ON PLANS

O



BIKE LANE LINE – 8" WIDE WHITE LINE

P



BICYCLE LANE MARKING:
SEE ODOT BIKE LANE STANDARDS. USE PREFORMED METHYL METHACRYLATE (MMA) PAVEMENT MARKING MATERIAL.

Pavement Markings Page 2

DRAWING NUMBER: RD-1270	DRAWN BY: SR	SCALE: N.T.S.
FILE NAME: RD-1270.DWG	APPROVED BY: PN	DATE: 5/16/19

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PUBLIC WORKS STANDARDS

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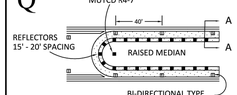
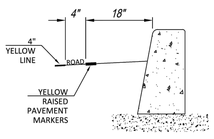
Q



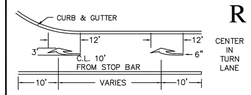
RAISED MEDIAN STRIPE:
4" YELLOW LINE WITH TYPE I BI-DIRECTIONAL YELLOW RAISED PAVEMENT MARKERS AT 40' O.C.

REFLECTORS: 15' - 20' SPACING, NO PEEL AND STICKS



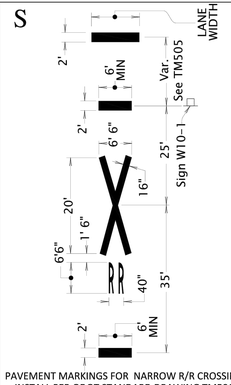
SECTION A - A

R



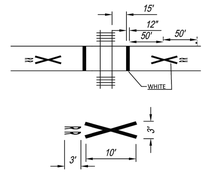
RIGHT TURN LANE MARKINGS:
SEE MUTCD AND ODOT STANDARD DRAWING TM501 FOR DETAILS. ARROWS SHALL BE METHYL METHACRYLATE (MMA) PAVEMENT MARKING MATERIAL.

S



PAVEMENT MARKINGS FOR NARROW R/R CROSSING
INSTALL PER ODOT STANDARD DRAWING TM501

T



PAVEMENT WORD AND SYMBOL MARKINGS
FOR BIKE ROUTE AT R/R GRADE X-ING

Pavement Markings Page 3

DRAWING NUMBER: RD-1275	DRAWN BY: SR	SCALE: N.T.S.
FILE NAME: RD-1275.DWG	APPROVED BY: PN	DATE: 5/9/19

CITY OF WILSONVILLE
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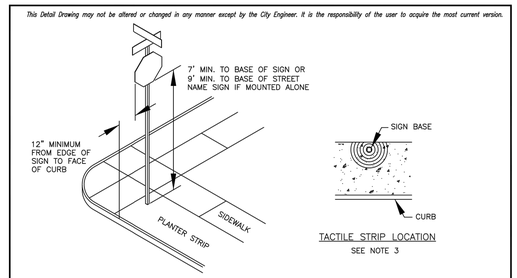

NOTE:
1. SIGN LOCATIONS SHALL BE ACCORDING TO MUTCD AND AS MODIFIED HEREIN.
2. SIGNS WHERE THE SIDEWALK IS CURB TIGHT SHALL BE LOCATED 6" OUTSIDE THE SIDEWALK TO MAXIMUM DISTANCE OF 7' FROM THE FACE OF CURB.
3. IF THE SIDEWALK IS WIDER THAN 6', A TACTILE STRIP 2' WIDE FROM A RADIUS POINT FROM THE BASE OF THE SIGN SHALL BE PLACED IN THE WET CONCRETE. THE TACTILE STRIP SHALL BE MADE BY USING A 1/4" TINE METAL BROOM TO A DEPTH OF 1/4".

Street Sign Locations

DRAWING NUMBER: RD–1245	DRAWN BY: SR	SCALE: N.T.S.
FILE NAME: RD–1245.DWG	APPROVED BY: NK	DATE: 4/2/14

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PUBLIC WORKS STANDARDS

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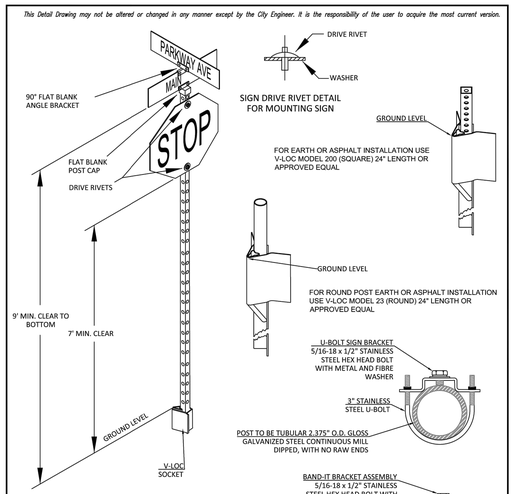

NOTES:
1. SURFACE MOUNT SIGN POSTS TO BE REVIEWED AND APPROVED BY CITY AUTHORIZED REPRESENTATIVE
2. ALL SIGN HARDWARE TO BE STAINLESS STEEL
3. V-LOCK WEDGE TO FACE DIRECTION OF TRAVEL

Street Sign Assembly

DRAWING NUMBER: RD-1250	DRAWN BY: SR	SCALE: N.T.S.
FILE NAME: RD-1250.DWG	APPROVED BY: PN	DATE: 4/11/19

CITY OF WILSONVILLE
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Item 2.

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Client

DELTA LOGISTICS
9835 SW COMMERCE CIRCLE
WILSONVILLE, OR 97070

Project

DELTA LOGISTICS SITE EXPANSION FRONTAGE MPROVEMENTS
9710 SW DAY RD.
CITY OF WILSONVILLE, OR

REGISTERED PROFESSIONAL ENGINEER
OREGON
JULY 10, 2015
GREGORY I. MINO
EXPIRES: 12/31/24

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REVISION SCHEDULE

Delta	Issued As	Issue Date

SHEET TITLE:
STRIPING AND SIGNAGE DETAILS

DRAWN BY: CME

CHECKED BY: GIM

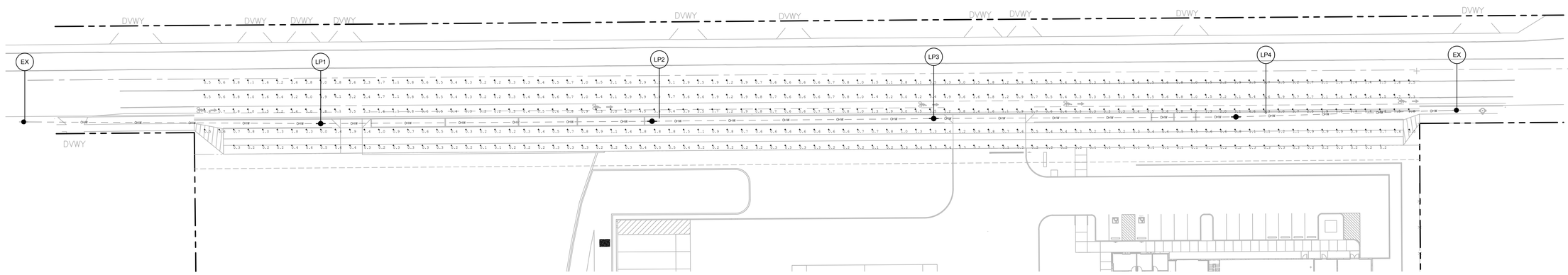
SHEET

R1.41

JOB NO. **2200502.04**

1064

DEVELOPMENT REVIEW SET 04/24/23



1 R1.50 STREET LIGHTING AND PHOTOMETRICS PLAN

30 0 15 30 60 120 1:1

(IN FEET)
1 inch = 30 ft.

LIGHTING NOTES

1. ALL MATERIALS AND WORKMANSHIP CONFORM TO CITY OF WILSONVILLE AND PGE OPTION B SPECIFICATIONS. ALL MATERIALS AND INSTALLATIONS SHALL BE APPROVED BY WILSONVILLE AND PGE
2. CONTRACTOR SHALL COORDINATE INSTALLATION OF STREET LIGHTS WITH PGE AND CITY FORCES. CONTRACTOR SHALL VERIFY EXISTING CONDITIONS. NOTIFY ENGINEER OF ANY DISCREPANCIES.
3. CONTRACTOR SHALL SUBMIT A LIGHTING SUBMITTAL OF ALL LIGHTING EQUIPMENT TO THE CITY OF WILSONVILLE AND HAVE APPROVED PRIOR TO ORDERING.
4. CONTACT PGE AT (503) 323-6700 TO BEGIN A WORK ORDER REQUEST. VERIFY PROPOSED LIGHT POLE LOCATION WITH PGE AND CITY PRIOR TO ORDERING AND INSTALLATION. NOTIFY ENGINEER OF ANY DISCREPANCIES.
5. STREET LIGHTING SHALL BE PER PGE OPTION B: PGE MAINTAINS LUMINAIRES AND PROVIDES ELECTRICITY SERVICE TO LUMINAIRES THAT ARE PURCHASED AND OWNED BY THE OWNER AND INSTALLED ON UTILITY POLES.
6. CONTRACTOR SHALL VERIFY LUMINAIRE CHARACTERISTICS AND CATALOG NUMBER, INCLUDING BUT NOT LIMITED TO EXTERIOR HOUSING COLOR, WITH PGE AND CITY FORCES PRIOR TO ORDERING.
7. WIRES TO BE PROVIDED AND PULLED BY PGE
8. CONTRACTOR IS RESPONSIBLE FOR THE CORRECT OPERATION OF THE STREET LIGHT SYSTEM FOR THE FIRST YEAR AFTER BEING ENERGIZED BY PGE.THE CONTRACTOR IS ALSO RESPONSIBLE FOR ANY POLES WHICH GO OUT OF PLUMB WITHIN THE FIRST YEAR. DURING THIS ACCEPTANCE PERIOD ANY REPAIRS OR POLE STRAIGHTENING PERFORMED ON THE INSTALLED SYSTEM BY PGE WILL BE BILLED TO THE DEVELOPER.

STREET LIGHTING EQUIPMENT

1. LUMINAIRES SHALL BE:

   LUM 1: LEOTEK GRAY LED:
   GCL-80G-MV-WW-3R-GY-610-PCR7RWGWLFDCPGE

LIGHTING LEGEND

EX	EXISTING LIGHTPOLE
LP1	INSTALL LUMINAIRE POLE (30' MOUNTING HEIGHT) SEE FOOTING DETAIL RD-1335
N	POLE NUMBER (N). SEE POLE INFORMATION TABLE.

ILLUMINATION DATA

SW DAY RD - COLLECTOR ROAD

	AVERAGE (fc)	MINIMUM (fc)	AVERAGE/MINIMUM
DESIGNED	1.7	.2	8.7:1
RECOMMENDED MINIMUM VALUE	0.6	-	4.0:1

SIDEWALK ALONG SW DAY RD - COLLECTOR ROAD

	AVERAGE (fc)	MINIMUM (fc)	AVERAGE/MINIMUM
DESIGNED	0.3	0.1	2.5:1
RECOMMENDED MINIMUM VALUE	0.6	-	4.0:1

NOTES:
1. A LIGHT LOSS FACTOR OF 0.85 WAS USED FOR ALL LUMINAIRES
2. STREET LIGHTING WAS DEIGNED IN ACCORDANCE WITH THE MOST CURRENT AMERCIAN STANDARD PRACTICE FOR ROADWAY LIGHTING (RP-8-14) PER CITY OF WILSONVILLE PUBLIC WORKS STANDARD
3. DESIGN ASSUMES A LOW PEDESTRIANS TRAFFIC AREA AND A R2/R3 PAVEMENT CLASSIFICATION

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REVISION SCHEDULE

Delta	Issued As	Issue Date

SHEET TITLE:
STREET LIGHTING AND PHOTOMETRICS PLAN

DRAWN BY: CME

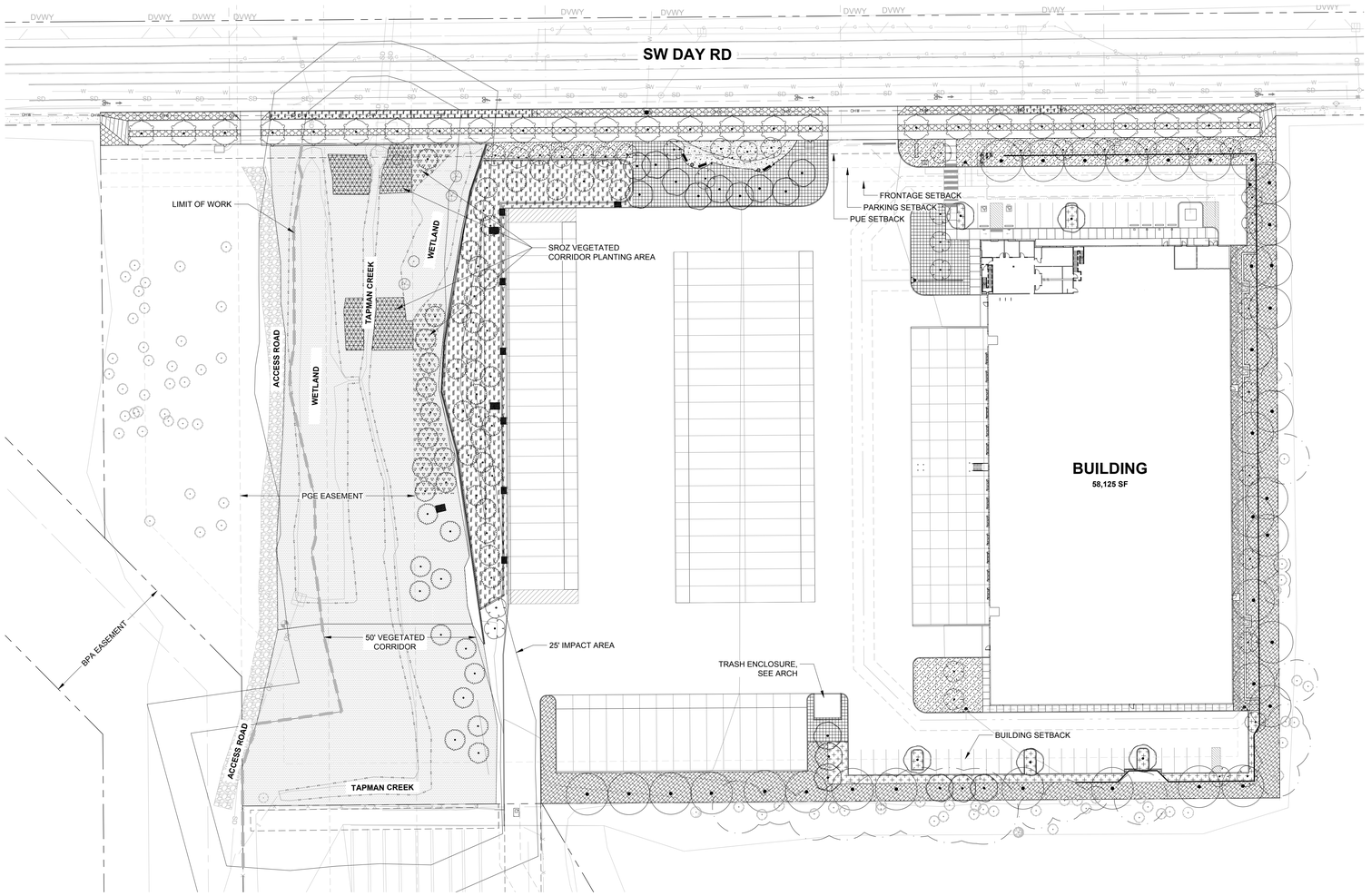
CHECKED BY: GIM

SHEET
R1.50

JOB NO. **2200502.04**

1065

DEVELOPMENT REVIEW SET 04/24/23



1 L0.01 **ZONING COMPLIANCE PLAN**

40 0 20 40 80 160

(IN FEET)

1 inch = 40 ft.

ZONING COMPLIANCE LEGEND

PRIMARY TREE
2" CAL MIN
PSEUDOTSUGA MENZIESII / DOUGLAS FIR
QUERCUS GARRYANA / OREGON WHITE OAK
THUJA PLICATA / WESTERN RED CEDAR
ZELKOVA SERRATA "GREEN VASE" / GREEN VASE SAWLEAF ZELKOVA

SECONDARY TREE
1.75" – 2" CAL MIN
CALOCEDRUS DECURRENS / INCENSE CEDAR
TILIA TOMENTOSA 'STERLING' / STERLING SILVER LINDEN
ULMUS X 'FRONTIER' / FRONTIER ELM

ACCENT TREE
1.75" CAL MIN
ACER RUBRUM 'BOWHALL' / BOWHALL RED MAPLE
AMELANCHIER ALNIFOLIA 'AUTUMN BRILLIANCE' / SERVICEBERRY
SINGLE STEM
CORNUS KOUSA X NUTTALLII 'KN4-43' / STARLIGHT KOUSA DOGWOOD

STREET TREE
3" CAL MIN
ACER GRANDIDENTATUM 'SCHMIDT' TM / ROCKY MOUNTAIN GLOW MAPLE
CORNUS KOUSA 'MILKY WAY' / MILKY WAY KOUSA DOGWOOD
PARROTIA PERSICA 'INGE'S RUBY VASE' TM / RUBY VASE PERSIAN PARROTIA

STORMWATER TREE
CORNUS X 'EDDIE'S WHITE WONDER' / EDDIE'S WHITE WONDER DOGWOOD
FRAXINUS LATIFOLIA / OREGON ASH
PSEUDOTSUGA MENZIESII / DOUGLAS FIR
RHAMNUS PURSHIANA / CASCARA BUCKTHORN
PINUS PONDEROSA VAR. BENTHAMIANA / WILLAMETTE VALLEY PONDEROSA PINE

HIGH SCREEN STANDARD
–

LOW SCREEN STANDARD
–

PARKING LANDSCAPE
–

STORMWATER
–

GEN. LANDSCAPE REQ
–

STREET PLANTING
–

WAYSIDE
–

VEGETATION PROTECTION AREA
–

ZONING COMPLIANCE

JURISDICTION	WILSONVILLE, OR
STORMWATER	CITY OF WILSONVILLE

SECTION 4.155(.03)
B. OFF-STREET PARKING LANDSCAPE REQS
PARKING AREAS OVER 650 SF, EXCLUDING ACCESS AREAS, LOADING OR DELIVERY AREAS, SHALL BE LANDSCAPED TO 10% MIN. 1 TREE PER 8 STALLS AND ISLANDS SHALL BE AT LEAST 8 FT WIDE.

TOTAL PARKING AREA	19,884 SF
PARKING LANDSCAPE (10% MIN)	3,160 SF (15.9%)
STALLS	41 STALLS
TREES (1 PER 8 STALLS = 6 TREES)	6 TREES
ISLANDS (8 FT WIDTH MIN)	8 WIDTH

SECTION 4.176(.02)
C. GENERAL LANDSCAPING STANDARD
WHERE LANDSCAPE IS GREATER THAN 30 FT DEEP, PROVIDE 1 TREE PER 800 SF AND 2 HIGH SHRUBS OR 3 LOW SHRUBS PER 400 SF.

SW DAY ROAD EAST PARKING LOT PERIMETER

LANDSCAPE AREA	4,770 SF
TREES (1 PER 800 SF = 6 TREES)	8 TREES
LOW SHRUBS (3 PER 400 SF = 36 SHRUBS)	151 SHRUBS

SW DAY ROAD PERIMETER

LANDSCAPE AREA	1,112 SF
TREES (1 PER 800 SF = 2 TREES)	7 TREES
LOW SHRUBS (3 PER 400 SF = 15 SHRUBS)	88 SHRUBS

SOUTH SIDE OF LOADING DOCKS

LANDSCAPE AREA	1,906 SF
TREES (1 PER 800 SF = 3 TREES)	2 TREES
LOW SHRUBS (3 PER 400 SF = 15 SHRUBS)	21 SHRUBS

D. LOW SCREEN LANDSCAPING STANDARD
ONE TREE PER 30 LF, 3-FT HT EVERGREEN HEDGE, AND GROUNDCOVER TO FULL COVERAGE. A 3-FT HIGH MASONRY WALL OR BERM MAY REPLACE THE SHRUBS.

EAST AND SOUTH PERIMETER

PERIMETER	986 LF
TREES (1 PER 30 LF = 33 TREES)	40 TREES
SHRUBS (EVERGREEN)	3 FT HT

E. LOW BERM LANDSCAPING STANDARD
STANDARD NOT FEASIBLE ALONG SW DAY ROAD.

F. HIGH SCREEN LANDSCAPING STANDARD

WAYSIDE PERIMETER	127 LF
TREES (1 PER 30 LF = 5 TREES)	12 TREES
HEDGE (EVERGREEN)	6 FT HT
GROUNDCOVER	FULL COVERAGE
LOADING DOCKS	42 LF
TREES (1 PER 30 LF = 2 TREES)	3 TREES
ARCHITECTURAL SCREEN WALL	16 FT H X 32 FT W
GROUNDCOVER	FULL COVERAGE
TRASH ENCLOSURE	20 LF
TREES (1 PER 30 LF = 1 TREE)	1 TREE
HEDGE (EVERGREEN)	6 FT HT
GROUNDCOVER	FULL COVERAGE

SECTION 4.176(.03)
LANDSCAPE AREA

TOTAL DEVELOPMENT AREA	336,851 SF (7.7 AC)
LANDSCAPE (15% MIN)	117,433 SF (34.8%)

SECTION 4.176(.04)
BUFFERING AND SCREENING

SITE ZONING	INDUSTRIAL
ADJACENT ZONING	INDUSTRIAL
OUTDOOR STORAGE	NONE
SITE ZONING	INDUSTRIAL
FENCE	NONE
ADDITIONAL SCREENING	N/A

SECTION 4.176(.06)
A. SHRUBS AND GROUNDCOVER

SHRUBS (2 GAL MIN)	2 GAL MIN
3 YEAR GROUND COVERAGE (80% MIN)	80% MIN
TURF OR LAWN (10% MAX)	0%

B. TREES

DECIDUOUS (2-INCH CAL, 10 FT HT MIN)	2-INCH CAL, 10 FT HT
EVERGREEN (12 FT HT MIN)	12 FT HT

C. LARGER PLANT MATERIAL
PROPOSED DEVELOPMENT IS GREATER THAN 50,000 SF IN FOOTPRINT AREA / LARGER THAN 24-FEET IN HT AT MATURITY TREES WILL BE AT LEAST 50% THE HT OF THE BUILDING. DECIDUOUS TREES SHALL BE AT LEAST 10-FEET TALL AND 2-INCH CALIPER. EVERGREEN TREES MUST BE AT LEAST 12-FEET IN HT LARGER PLANT MATERIAL HAS BEEN PROVIDED ALONG THE FRONTAGE.

BUILDING HT	40 FT
SHORTEST MATURE TREE HT (50% OF BLDG HT MIN)	40 FT (100%)
DECIDUOUS TREES (10 FT HT, 2-INCH CAL AT INSTALL)	YES
EVERGREEN TREES (12 FT HT AT INSTALL)	YES

D. STREET TREES
ARTERIAL TREES SHALL BE 3-INCH CALIPER. STREET TREES SPECIES IS SHORT ENOUGH FOR OVERHEAD ELECTRICAL WIRES AND TOLERANT OF WET SOIL.

E. PLANT SPECIES
THE LANDSCAPE CONSISTS OF EXISTING LANDSCAPING AND/OR NATIVE VEGETATION TO BE PROTECTED AND MAINTAINED DURING CONSTRUCTION AND NATIVE AND DROUGHT TOLERANT PLANT MATERIAL. PLANT MATERIAL PROVIDED HAS BEEN CROSS-REFERENCED WITH THE CITY FTS LIST OF PROHIBITED PLANT MATERIALS.

F. TREE CREDITS
SEE TREE PLAN SHEET L0.03. NONE REQUESTED.

SECTION 4.176(.07)
INSTALLATION AND MAINTENANCE
SEE PLANTING NOTES THIS SHEET. PLANT MATERIAL REQUIRED BY CODE SHALL BE CONTINUOUSLY MAINTAINED BY OWNER AND REPLACED IN KIND WITHIN ONE GROWN SEASON IF DEAD.

IRRIGATION
SEE IRRIGATION NOTES THIS SHEET. PERMANENT SYSTEM TO BE DESIGN BUILD.

SECTION 4.176(.09)
PLANT MATERIAL LIST
SEE PLANT SCHEDULE ON SHEET L0.02.

CONDITION OF EXISTING PLANTINGS
ALL VEGETATION IS PROPOSED FOR REMOVAL, OTHER THAN THAT WITHIN THE SIGNIFICANT RESOURCE OVERLAY ZONE. SEE ARBORIST REPORT FOR CONDITION OF EXISTING TREES TO REMAIN.

WATER USAGE

WATER USE CATEGORY	C
WAYSIDE AREA (8 TO 13 ACRES)	NATIVE/DROUGHT TOLERANT

COFFEE CREEK DESIGN GUIDELINES
WAYSIDE ON ADDRESSING STREET

WAYSIDE AREA (8 TO 13 ACRES, 600 SF MIN.)	736 SF PROVIDED
BUFFER DEPTH ON 3 SIDES (20 FT MIN)	20-30 LF PROVIDED

AMENITIES

SEATING (1 LF PER 40 SF OF WAYSIDE = 18 LF)	18 LF SEATING
PAVED WALKING SURFACE (5 FT MIN)	7 FT WIDTH

SHEET INDEX

L0.01	GENERAL LANDSCAPE NOTES
L0.02	PLANT SCHEDULES AND STORMWATER NOTES
L0.03	TREE REMOVAL PLAN
L0.04	TREE MITIGATION PLAN
L0.05	VEGETATED CORRIDOR ENHANCEMENT PLANTING PLAN
L1.10	PLANTING PLAN - WEST
L1.11	PLANTING PLAN - EAST
L1.20	IRRIGATION PLAN - WEST
L1.21	IRRIGATION PLAN - EAST
L5.10	PLANTING DETAILS
L5.11	IRRIGATION DETAILS

TABLE OF ABBREVIATIONS

ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE	MAX	MAXIMUM
		MIN	MINIMUM
B&B	BALL AND BURLAP	MIX	MIXTURE
CAL	CALIPER	NTS	NOT TO SCALE
CONC	CONCRETE	OC	ON CENTER
DEG	DEGREE	POC	POINT OF CONNECTION
DIAØ	DIAMETER	PVC	POLY VINYL CHLORIDE
DWGS	DRAWING	SCH	SCHEDULE
ELL	ELBOW	SF	SQUARE FOOT
EQ	EQUAL	SPEC	SPECIFICATION
FT	FEET/FOOT	TYP	TYPICAL
GAL	GALLON	X	TIMES
GALV	GALVANIZED		
H/HT	HEIGHT		

LANDSCAPE NOTES

GENERAL

1. CONTRACTOR SHALL CONFIRM ALL EXISTING CONDITIONS PRIOR TO COMMENCING WORK.
2. CALL BEFORE YOU DIG. CONTRACTOR SHALL VERIFY INVERT ELEVATIONS OF ALL UNDERGROUND UTILITIES AND NOTIFY LANDSCAPE ARCHITECT IF THERE ARE ANY DISCREPANCIES WITH PLANTING ROOT ZONES. TO REQUEST LOCATES FOR PROPOSED EXCAVATION CALL 1-800-332-2344 (OR 811) IN OREGON.
3. NOTIFY THE OWNER OR OWNER'S REPRESENTATIVE OF ANY DISCREPANCIES OR CONFLICTS WITH EXISTING CONDITIONS PRIOR TO COMMENCEMENT OF ANY WORK.
4. LOCATION OF EXISTING TREES SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO COMMENCEMENT OF WORK.
5. DAMAGE TO EXISTING CONCRETE CURB, ASPHALT PAVING, OR OTHER STRUCTURE SHALL BE REPAIRED OR REPLACED TO PRE CONSTRUCTION CONDITIONS.
6. CONTRACTOR SHALL COORDINATE WITH THE OWNER ANY DISRUPTION TO VEHICULAR CIRCULATION PRIOR TO COMMENCEMENT OF ANY WORK.

PLANTING

1. ALL EXISTING TREES, PLANTS, AND ROOTS SHALL BE PROTECTED FROM DAMAGE FROM ANY CONSTRUCTION PREPARATION, REMOVAL OR INSTALLATION ACTIVITIES WITHIN AND ADJACENT TO PROJECT LIMITS.
2. SHRUBS ADJACENT TO PARKING AREAS SHALL BE PLANTED 2 FT MINIMUM AWAY FROM THE BACK OF CURB. SHRUBS AND GROUNDCOVER ALONG OTHER PAVEMENT EDGES SHALL BE PLANTED A MINIMUM OF ONE HALF THEIR ON CENTER SPACING AWAY FROM PAVEMENT EDGE.
3. ALL PLANT MATERIAL SHALL BE HEALTHY NURSERY STOCK, WELL BRANCHED AND ROOTED, FULL FOLIAGE, FREE FROM INSECTS, DISEASES, WEEDS, WEED ROT, INJURIES AND DEFECTS WITH NO LESS THAN MINIMUMS SPECIFIED IN AMERICAN STANDARDS FOR NURSERY STOCK, ANSI Z60.1-2004.
4. TREES IN THE RIGHT OF WAY SHALL BE TALL ENOUGH TO BE LIMBED UP TO AT LEAST 8 FT ABOVE DRIVE SURFACE GRADE WHILE MAINTAINING ENOUGH BRANCHES TO SUPPORT HEALTHY GROWTH.
5. DO NOT PLANT TREES ABOVE WATERLINES, UTILITIES, OR OTHER UNDERGROUND PIPING.
6. IF DISTURBANCE IS NECESSARY AROUND EXISTING TREES, CONTRACTOR SHALL PROTECT THE CROWN AND ALL WORK WITHIN THE TREE DRIPZONE SHALL BE LIMITED TO THE USE OF HAND TOOLS AND MANUAL EQUIPMENT ONLY.
7. REPLACE, REPAIR AND RESTORE DISTURBED LANDSCAPE AREAS DUE TO GRADING, TRENCHING OR OTHER REASONS TO PRE-CONSTRUCTION CONDITION AND PROVIDE MATERIAL APPROVED BY THE OWNER AND OWNER'S REPRESENTATIVE.
8. EXISTING AREAS PROPOSED FOR NEW PLANT MATERIAL SHALL BE CLEARED AND LEGALLY DISPOSED UNLESS SO NOTED.
9. A SOILS ANALYSIS, BY AN INDEPENDENT SOILS TESTING LABORATORY RECOGNIZED BY THE STATE DEPARTMENT OF AGRICULTURE, SHALL BE USED TO RECOMMEND AN APPROPRIATE PLANTING SOIL AND/OR SPECIFIED SOIL AMENDMENTS.
10. TOPSOIL SHALL BE AMENDED AS RECOMMENDED BY AN INDEPENDENT SOILS TESTING LABORATORY AND AS OUTLINED IN THE SPECIFICATION.
11. ALL LANDSCAPED AREAS SHALL BE COVERED BY A LAYER OF ORGANIC MULCH TO A MINIMUM DEPTH OF 2-INCHES.

IRRIGATION

1. UNLESS OTHERWISE INDICATED, ALL NEW LANDSCAPE AREAS TO BE IRRIGATED WITH A FULLY AUTOMATIC UNDERGROUND IRRIGATION SYSTEM. PROVIDE LOOP SYSTEM FOR OPTIMUM EFFICIENCY.
2. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS (IRRIGATION PLANS) TO LANDSCAPE ARCHITECT PRIOR TO CONSTRUCTION. DRAWINGS TO INDICATE HEAD TYPE, GALLONS PER MINUTE, LATERAL LINES, AND BE AT MINIMUM SCALE OF 1"=20'
3. CONTRACTOR TO DETERMINE STATIC WATER PRESSURE AT THE P.O.C. PRIOR TO PREPARING SHOP DRAWINGS.
4. CONTRACTOR SHALL ESTABLISH MINIMUM PRESSURE AND MAXIMUM DEMAND REQUIREMENTS FOR IRRIGATION SYSTEM DESIGN, AND PROVIDE INFORMATION IN AN IRRIGATION SCHEDULE.
5. IRRIGATION SYSTEM AS DESIGNED AND INSTALLED SHALL PERFORM WITHIN THE TOLERANCES AND SPECIFICATIONS OF THE SPECIFIED MANUFACTURERS.
6. SYSTEM SHALL BE DESIGNED TO SUPPLY MANUFACTURER'S SPECIFIED MINIMUM OPERATING PRESSURE TO FARTHEST EMITTER FROM WATER METER.
7. SYSTEM SHALL PROVIDE HEAD TO HEAD COVERAGE WITHOUT OVERSPRAY ONTO BUILDING, FENCES, SIDEWALKS, PARKING AREAS, OR OTHER NON-VEGETATED SURFACES.
8. ALL IRRIGATION PIPE MATERIAL AND INSTALLATION SHALL CONFORM TO APPLICABLE CODE FOR PIPING AND COMPONENT REQUIREMENTS.
9. PROVIDE SLEEVING AT ALL AREAS WHERE PIPE TRAVELS UNDER CONCRETE OR HARD SURFACING.
10. VALVES SHALL BE WIRED AND INSTALLED PER MANUFACTURER'S RECOMMENDED INSTALLATION PROCEDURES AND CONNECTED TO THE IRRIGATION CONTROLLER.
11. REFER TO CIVIL DETAILS AND DETAILS ON L5.11 FOR POINT OF CONNECTION AND BACKFLOW PREVENTION INFORMATION.
12. MAINLINE LAYOUT IS DIAGRAMMATIC ONLY.
13. CONTROLLER TO BE MOUNTED WITHIN BUILDING INTERIOR. GENERAL CONTRACTOR TO COORDINATE LOCATION WITH OWNER'S REPRESENTATIVE.
14. ZONE THE FOLLOWING AREAS SEPARATELY: TEMPORARY AREAS, PERMANENT LANDSCAPE AREAS, AND TREES.
15. QUICK COUPLERS TO BE PLACED EVERY 300 LINEAR FEET MAX.
16. IRRIGATION SHALL BE WINTERIZED THROUGH LOW PRESSURE, HIGH VOLUME AIR BLOWOUT CONNECTION THROUGH QUICK COUPLER.
17. THE SYSTEM SHALL BE GRAVITY DRAINED. THE CONTRACTOR SHALL PROVIDE APPROPRIATE MANUAL DRAINS AT LOW POINTS.

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CITY OF WILSONVILLE, OR

REGISTERED 1066 NICOLE TERREIRA OREGON 12/11/2020 LANDSCAPE ARCHITECT

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REVISION SCHEDULE

Delta	Issued As	Issue Date

GENERAL LANDSCAPE NOTES

SHEET
L0.01

JOB NO. **2200502.00**

1066

DEVELOPMENT REVIEW SET - 04/24/23

STORMWATER FACILITY PLANT SCHEDULES

PER CITY OF WILSONVILLE STORMWATER AND SURFACE WATER DESIGN & CONSTRUCTION STANDARDS - SECTION 3 - PUBLIC WORKS STANDARDS (2015)

LANDSCAPE PLAN FACILITY AREA CALCULATIONS INCLUDE TOP OF FREEBOARD. CIVIL PLAN FACILITY AREA CALCULATIONS REPORT TO TOP OF OVERFLOW INLET, EXCLUDING THE 4" FREEBOARD.

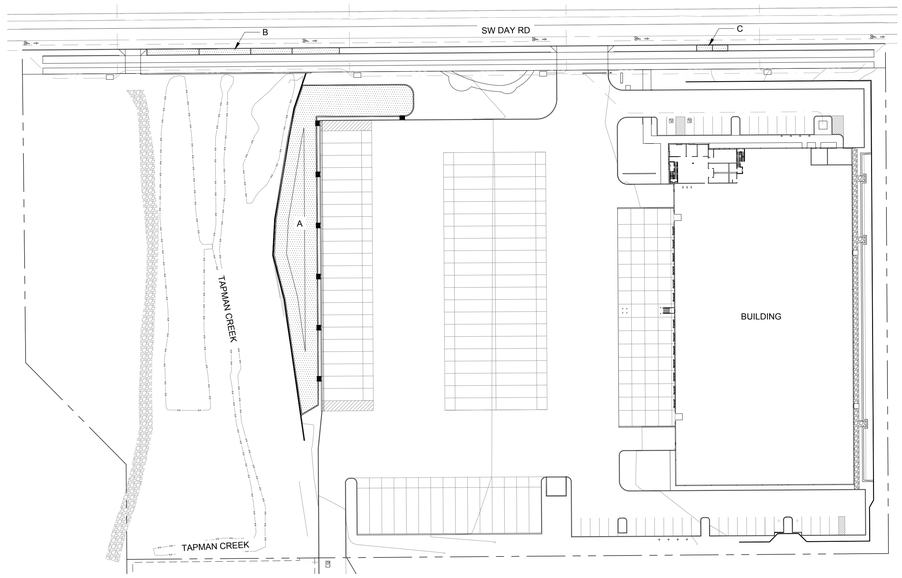
PROVIDE AT LEAST 50% EVERGREEN PLANTS AND AT LEAST 2 SPECIES OF HERBACEOUS AND SMALL SHRUBS/GROUNDCOVER PLANT COMMUNITIES.

MOIST (ZONE A) VEGETATION TYPE	QUANTITY	SIZE
GROUNDCOVER PLANTS	115/100 SF	#1 CONTAINER
SMALL SHRUBS	3/100 SF	#1 CONTAINER
LARGE SHRUBS / SMALL TREES	4/100 SF	30" HEIGHT

DRY (ZONE B) VEGETATION TYPE	QUANTITY	SIZE
GROUNDCOVER PLANTS	115/100 SF	#1 CONTAINER
SMALL SHRUBS	3/100 SF	#1 CONTAINER
LARGE SHRUBS / SMALL TREES	4/100 SF	30" HEIGHT
TREE (DECIDUOUS) OR	1/100 SF	1" CALIPER
TREE (EVERGREEN)	1/100 SF	6' HEIGHT

PLANT LIST				FACILITY A (PRIVATE)	
PLANT NAME	SIZE	SPACING	EVER-GREEN	ZONE A	ZONE B
				9,299 SF	3,454 SF
REQUIRED GROUND COVER PLANTS (115 PER 100 SF)				10,693	3,972
ARCTOSTAPHYLOS UVA-URSI / KINNIKINNICK	#1	12" OC	YES		2,000
CAREX DENSA / DENSE SEDGE	#1	12" OC	YES	3,500	
CAREX OBNUPTA / SLOUGH SEDGE	#1	12" OC	YES	3,500	
JUNCUS PATENS / SPREADING RUSH	#1	12" OC	YES	3,693	1,972
REQUIRED SMALL SHRUBS (3 PER 100 SF)				279	104
CORNUS SERCIA / RED TWIG DOGWOOD	#2	AS SHOWN	NO	10	
MAHONIA AQUIFOLIUM / OREGON GRAPE	#2	AS SHOWN	YES	150	2
PHYSOCARPUS CAPITATUS / PACIFIC NINEBARK	#2	AS SHOWN	NO		
ROSA PISOCARPA	#2	AS SHOWN	NO	121	14
SYMPHORICARPOS ALBUS / SNOWBERRY	#1	AS SHOWN	NO		114
REQUIRED LARGE SHRUBS / SMALL TREES (4 PER 100 SF)				372	138
HOLODISCUS DISCOLOR / OCEANSPRAY	30" HT	AS SHOWN	NO	66	28
RIBES SANGUINEUM / RED FLOWERING CURRANT	30" HT	AS SHOWN	NO	73	10
RUBUS SPECTABILIS / SALMONBERRY	30" HT	AS SHOWN	NO	10	10
SPIREA DOUGLASII / WESTERN SPIREA	30" HT	AS SHOWN	NO	223	66
REQUIRED TREES (1 PER 100 SF)				0	33
CORNUS NUTTALII / EDDIE'S WHITE WONDER DOGWOOD	2" CAL	AS SHOWN	NO	12	
FRAXINUS LATIFOLIA / OREGON ASH	2" CAL	AS SHOWN	NO		
RHAMNUS PURSHIANA	2" CAL	AS SHOWN	NO	22	
TOTAL PLANTS IN FACILITY				28,753	
TOTAL EVERGREEN PLANTS				10,889	
% EVERGREEN IN FACILITY				37.9%	

PLANT LIST				FACILITIES B-C (PUBLIC)	
PLANT NAME	SIZE	SPACING	EVER-GREEN	B ZONE A	C ZONE A
				1,025 SF	162 SF
REQUIRED GROUND COVER PLANTS (115 PER 100 SF)				1,179	187
CAREX DENSA / DENSE SEDGE	#1	12" OC	YES	786	93
JUNCUS PATENS / SPREADING RUSH	#1	12" OC	YES	393	94
REQUIRED SMALL SHRUBS (3 PER 100 SF)				31	5
SPIREA B. 'TOR' / BIRCHLEAF SPIREA	#1	AS SHOWN	NO	15	2
SYMPHORICARPOS ALBUS / COMMON WHITE SNOWBERRY	#1	AS SHOWN	NO	20	3
REQUIRED SMALL SHRUB IN LIEU OF LARGE SHRUB (4 PER 100 SF)				41	7
SPIREA B. 'TOR' / BIRCHLEAF SPIREA	#1	AS SHOWN	NO	47	7
TOTAL PLANTS IN FACILITY				1,252	199
TOTAL EVERGREEN PLANTS				1,179	187
% EVERGREEN IN FACILITY				94.2%	93.9%



STORMWATER KEY MAP
SCALE: NTS

STORMWATER FACILITY PLANTING NOTES

1. PLANTING SCHEDULE: CONTAINERIZED STOCK SHALL BE INSTALLED ONLY FROM FEBRUARY 1 THROUGH MAY 1 AND OCTOBER 1 THROUGH NOVEMBER 15. BARE ROOT STOCK SHALL BE INSTALLED ONLY FROM DECEMBER 15 THROUGH APRIL 15. SEEDING SHALL OCCUR ONLY BETWEEN MARCH 1 THROUGH MAY 15 AND SEPTEMBER 1 THROUGH OCTOBER 15.
2. EROSION CONTROL: GRADING, SOIL PREPARATION, AND SEEDING SHALL BE PERFORMED DURING OPTIMAL WEATHER CONDITIONS AND AT LOW FLOW LEVELS TO MINIMIZE SEDIMENT IMPACTS. BIODEGRADABLE FABRICS SUCH AS BURLAP MAY BE USED TO SECURE PLANT PLUGS IN PLACE AND TO DISCOURAGE FLOATING UPON INUNDATION. NO PLASTIC MESH THAT CAN ENTANGLE WILDLIFE IS PERMITTED.
3. GROWING MEDIUM INSTALLATION:
   - 3.1. PROTECT GROWING MEDIUM FROM ALL SOURCES OF CONTAMINATION, INCLUDING WEED SEEDS, WHILE AT THE SUPPLIER, IN CONVEYANCE, AND AT THE PROJECT SITE.
   - 3.2. PLACE MEDIUM IN LOOSE LIFTS, NOT TO EXCEED 8-INCHES AND EACH LIFT SHALL BE COMPACTED WITH A WATER-FILLED LANDSCAPE ROLLER. THE MATERIAL SHALL NOT OTHERWISE BE MECHANICALLY COMPACTED.
   - 3.3. WEATHER PERMITTING, PLANTS SHALL BE INSTALLED AS SOON AS POSSIBLE AFTER PLACING AND GRADING THE GROWING MEDIUM IN ORDER TO MINIMIZE EROSION AND FURTHER COMPACTION.
   - 3.4. TEMPORARY EROSION CONTROL MEASURES ARE REQUIRED UNTIL PERMANENT STABILIZATION MEASURES ARE FUNCTIONAL, INCLUDING PROTECTION OF OVERFLOW STRUCTURES.
   - 3.5. IN ALL CASES, THE FACILITY MUST BE PROTECTED FROM FOOT AND EQUIPMENT TRAFFIC THAT IS UNRELATED TO THE CONSTRUCTION OF THE FACILITY. TEMPORARY FENCING OR WALKWAYS SHOULD BE INSTALLED AS NEEDED TO KEEP WORKERS, PEDESTRIANS, AND EQUIPMENT OUT OF THE FACILITY. UNDER NO CIRCUMSTANCES SHOULD MATERIALS AND EQUIPMENT BE STORED IN THE FACILITY.
   - 3.6. STORMWATER MANAGEMENT FACILITIES SHALL BE KEPT CLEAN AND SHALL NOT BE USED AS EROSION AND SEDIMENT CONTROL STRUCTURES DURING CONSTRUCTION.
   - 3.7. PLACEMENT OF THE GROWING MEDIUM WILL NOT BE ALLOWED WHEN THE GROUND IS FROZEN OR SATURATED OR WHEN THE WEATHER IS DETERMINED TO BE TOO WET.
4. MULCHING FOR STORMWATER FACILITIES SHALL BE PER SECTION A.3.7. USE OF MULCH IN FREQUENTLY INUNDATED AREAS SHALL BE LIMITIED TO AVOID ANY POSSIBLE WATER QUALITY IMPACTS INCLUDING THE LEACHING OF TANNINS AND NUTRIENTS, ANFD THE MIGRATION OF MULCH INTO WATER WAYS. MULCHES SHALL BE STABLE AND INERT MATTER OF SUFFICIENT MASS AND DENSITY THAT IT WILL NOT FLOAT IN STANDARD FLOWS, MULCH COVER SHOULD BE MAINTAINED THROUGHOUT THE LIFE OF THE FACILITY WITH MINIMUM THICKNESS OF 2-INCHES IN DEPTH.
5. PLANT PROTECTION FROM WILDLIFE: DEPENDING ON SITE CONDITIONS, APPROPRIATE MEASURES SHALL BE TAKEN TO LIMIT WILDLIFE-RELATED DAMAGE. IF BEAVERS OR NUTRIA ARE PRESENT, PROTECT THE MAIN STEM OF ALL TREES WITHIN 100' OF THE EDGE OF WATER WITH 36" OF WIRE MESH.
6. FERTILIZER SHOULD GENERALLY BE AVOIDED IN STORMWATER FACILITIES. FERTILIZE ALL PLANTS DURING ESTABLISHMENT AS NEEDED WITH SLOW RELEASE, ORGANIC (LOW YIELD) MATERIAL.
7. IRRIGATION: A CITY APPROVED IRRIGATION SYSTEM MAY BE USED DURING THE 2-YEAR ESTABLISHMENT PERIOD. WATERING SHALL BE AT A RATE TO MAINTAIN ALL PLANTINGS IN A HEALTHY THRIVING CONDITION DURING ESTABLISHMENT. OTHER IRRIGATION TECHNIQUES, SUCH AS DEEP WATERING, MAY BE ALLOWED WITH PRIOR APPROVAL BY THE CITY'S AUTHORIZED REPRESENTATIVE.
8. MAINTENANCE: CHECK FOR WEEDS REGULARLY. CHECK MULCH REGULARLY AND MAINTAIN EVEN COVERAGE. REPLANT BARE PATCHES AS NECESSARY TO COMPLY WITH THE FACILITY'S COVERAGE REQUIREMENTS AND MAINTENANCE PLAN. IMPLEMENT ALL OF THE REQUIRED MAINTENANCE ACTIVITIES LISTED IN THE CITY OF WILSONVILLE VEGETATED STORMWATER MANAGEMENT FACILITY DETAILS.

PLANT SCHEDULE

ACCENT TREES	BOTANICAL / COMMON NAME	SIZE	
	ACER RUBRUM 'BOWHALL' BOWHALL RED MAPLE	2" CAL. B&B	
	AMELANCHIER ALNIFOLIA 'AUTUMN BRILLIANCE' SERVICEBERRY SINGLE STEM	2" CAL. B&B	
	CORNUS KOUSA X NUTTALLII 'KN4-43' STARLIGHT KOUSA DOGWOOD	2" CAL. B&B	
PRIMARY TREES	BOTANICAL / COMMON NAME	SIZE	
	PSEUDOTSUGA MENZIESII DOUGLAS FIR	12" HT. MIN. B&B	
	QUERCUS GARRYANA OREGON WHITE OAK	2" CAL. B&B	
	THUJA PLICATA WESTERN RED CEDAR	12" HT. MIN. B&B	
	ZELKOVA SERRATA 'GREEN VASE' GREEN VASE SAWLEAF ZELKOVA	2" CAL. B&B	
SECONDARY TREES	BOTANICAL / COMMON NAME	SIZE	
	CALOCEDRUS DECURRENS INCENSE CEDAR	12" HT. MIN. B&B	
	TILIA TOMENTOSA 'STERLING' STERLING SILVER LINDEN	2" CAL. B&B	
STORMWATER TREES	BOTANICAL / COMMON NAME	SIZE	
	ACER MACROPHYLLUM BIG LEAF MAPLE	2" CAL. B&B	
	CORNUS X 'EDDIE'S WHITE WONDER' EDDIE'S WHITE WONDER DOGWOOD	2" CAL. B&B	
	FRAXINUS LATIFOLIA OREGON ASH	2" CAL. B&B	
	PINUS PONDEROSA VAR. BENTHAMIANA WILLAMETTE VALLEY PONDEROSA PINE	10' HT. MIN. B&B	
	PSEUDOTSUGA MENZIESII DOUGLAS FIR	10' HT. MIN. B&B	
	RHAMNUS PURSHIANA CASCARA BUCKTHORN	2" CAL., B&B	
STREET TREES	BOTANICAL / COMMON NAME	SIZE	
	ACER GRANDIDENTATUM 'SCHMIDT' TM ROCKY MOUNTAIN GLOW MAPLE	3" CAL. B&B	
	CORNUS KOUSA 'MILKY WAY' MILKY WAY KOUSA DOGWOOD	3" CAL. B&B	
	PARROTIA PERSICA 'INGE'S RUBY VASE' TM RUBY VASE PERSIAN PARROTIA	3" CAL. B&B	
SHRUBS	BOTANICAL / COMMON NAME	SIZE	SPACING
	ACER CIRCINATUM 'PACIFIC FIRE' PACIFIC FIRE VINE MAPLE	5' HT. MIN.	60" o.c.
	ARBUTUS UNEDO 'COMPACTA' DWARF STRAWBERRY TREE	5 GAL.	72" o.c.
	CORNUS SERICEA 'KELSEYI' KELSEYI DWARF REDTWIG DOGWOOD	2 GAL.	24" o.c.
	DEUTZIA GRACILIS 'NIKKO' SLENDER DEUTZIA (3' H X 5' W)	2 GAL.	48" o.c.
	GAULTHERIA SHALLON SALAL	2 GAL.	36" o.c.
	MAHONIA AQUIFOLIUM OREGON GRAPE	5 GAL.	60" o.c.
	MAHONIA AQUIFOLIUM 'COMPACTA' COMPACT OREGON GRAPE	2 GAL.	36" o.c.
	MYRICA CALIFORNICA PACIFIC WAX MYRTLE	2 GAL.	72" o.c.
	POLYSTICHUM MUNITUM WESTERN SWORD FERN	2 GAL.	24" o.c.
	RIBES SANGUINEUM RED FLOWERING CURRANT	2 GAL.	48" o.c.
	SPIRAEA BETULIFOLIA 'TOR' BIRCHLEAF SPIREA MATURE (3' X 3')	2 GAL.	30" o.c.
	SYMPHORICARPOS ALBUS COMMON WHITE SNOWBERRY	2 GAL.	36" o.c.
	VACCINIUM OVATUM EVERGREEN HUCKLEBERRY	2 GAL.	60" o.c.
	VACCINIUM OVATUM 'SCARLET OVATION' SCARLET OVATION EVERGREEN HUCKLEBERRY MATURE (3' X 3')	2 GAL.	36" o.c.
	VIBURNUM DAVIDII DAVID VIBURNUM (3' H X 3' W)	2 GAL.	36" o.c.
	VIBURNUM TINUS 'SPRING BOUQUET' SPRING BOUQUET LAURUSTINUS MATURE (6'H X 4'W)	2 GAL.	48" o.c.

PERENNIALS	BOTANICAL / COMMON NAME	SIZE	SPACING
	ACHILLEA MILLIFOLIUM 'ALABASTER' ALABASTER YARROW	1 GAL.	18" o.c.
	ASTER SUBSPICATUS DOUGLAS ASTER	1 GAL.	24" o.c.
	POLYSTICHUM MUNITUM WESTERN SWORD FERN	1 GAL.	24" o.c.
	PTERIDIUM AQUILINUM WESTERN BRACKENFERN	1 GAL.	24" o.c.
	SALVIA X SUPERBA 'CARADONNA' CARADONNA SAGE	1 GAL.	24" o.c.
STORMWATER SHRUBS	BOTANICAL / COMMON NAME	SIZE	SPACING
	CORNUS SERICEA RED TWIG DOGWOOD	2 GAL.	48" o.c.
	HOLODISCUS DISCOLOR OCEAN-SPRAY	2 GAL.	48" o.c.
	MAHONIA AQUIFOLIUM OREGON GRAPE	2 GAL.	36" o.c.
	RIBES SANGUINEUM RED FLOWERING CURRANT	2 GAL.	48" o.c.
	ROSA PISOCARPA CLUSTERED WILD ROSE	2 GAL.	36" o.c.
	RUBUS SPECTABILIS SALMONBERRY	2 GAL.	50" o.c.
	SPIRAEA BETULIFOLIA 'TOR' TOR BIRCHLEAF SPIREA	2 GAL.	30" o.c.
	SPIRAEA DOUGLASII WESTERN SPIREA (3-4' H X 3' W) NATIVE	2 GAL.	48" o.c.
	SYMPHORICARPOS ALBUS COMMON WHITE SNOWBERRY	2 GAL.	36" o.c.
GROUND COVERS	BOTANICAL / COMMON NAME	SIZE	SPACING
	ARCTOSTAPHYLOS UVA-URSI KINNIKINNICK	1 GAL.	24" o.c.
	BOUTELOUA GRACILIS 'BLONDE AMBITION' BLONDE AMBITION BLUE GRAMA	1 GAL.	24" o.c.
	FESTUCA OCCIDENTALIS WESTERN FESCUE GRASS	1 GAL.	18" o.c.
	GERANIUM X CANTABRIGIENSE 'BIOKOVO' BIOKOVO CRANESBILL	1 GAL.	24" o.c.
	MAHONIA REPENS CREEPING MAHONIA	1 GAL.	24" o.c.
	PROTIME 402 NATIVE RIPARIAN MIX PROTIME SEEDS	1 LB / 1000 SF	
	SEED MIX NATIVE POLLINATOR MEADOW MIX SUNMARK SEEDS	1 LB / 1000 SF	
	SEED MIX NATIVE UPLANDS MEADOW MIX SUNMARK SEEDS	1 LB / 1000 SF	
STORMWATER PLANTING	BOTANICAL / COMMON NAME	SIZE	SPACING
	CAREX DENSA DENSE SEDGE	1 GAL.	
	JUNCUS PATENS CALIFORNIA GRAY RUSH	1 GAL.	

Item 2.
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WILSONVILLE, OR 97070

Project
DELTA LOGISTICS SITE EXPANSION
9710 SW DAY RD.
CITY OF WILSONVILLE, OR

REGISTERED 1067 NICOLE FERREIRA OREGON 12/11/2020 LANDSCAPE ARCHITECT

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REVISION SCHEDULE

Delta	Issued As	Issue Date

PLANT SCHEDULES AND STORMWATER NOTES

SHEET
L0.02

JOB NO. **2200502.00**

DEVELOPMENT REVIEW SET - 04/24/23

TREE PROTECTION NOTES

SEE G0.01 FOR PROJECT ARBORIST CONTACT INFORMATION.

1. PROTECTION FENCING: ESTABLISH TREE PROTECTION FENCING IN THE LOCATIONS SHOWN. THE INTENT OF THE TREE PROTECTION FENCING IS TO PROTECT THE MINIMUM ROOT PROTECTION ZONES DETAILED IN FIGURE 1. NOTE THAT THE TREE PROTECTION FENCING MAY BE MOVED TO ALLOW CONSTRUCTION ACCESS TO THE SIDE OF THE PROPOSED BUILDING FOLLOWING APPROVAL BY THE PROJECT ARBORIST.
2. DIRECTIONAL FELLING - FELL THE TREES TO BE REMOVED AWAY FROM THE TREES TO BE RETAINED SO THEY DO NOT CONTACT OR OTHERWISE DAMAGE THE TRUNKS OR BRANCHES OF THE RETAINED TREES. NO VEHICLES OR HEAVY EQUIPMENT SHOULD BE PERMITTED WITHIN THE TREE PROTECTION ZONES DURING TREE REMOVAL OPERATIONS.
3. STUMP REMOVAL - THE STUMPS OF THE TREES TO BE REMOVED FROM WITHIN THE TREE PROTECTION ZONES SHALL BE RETAINED OR CAREFULLY STUMP GROUND SO AS NOT TO DISTURB THE ROOT SYSTEMS OF THE RETAINED TREES.
4. PERIODIC RISK ASSESSMENTS: CONDUCT RISK ASSESSMENTS PERIODICALLY THROUGHOUT CONSTRUCTION TO DOCUMENT WHETHER TREES ARE ADAPTING TO THE NEW SITE CONDITIONS AND RISKS ARE MITIGATED APPROPRIATELY WITH CITY APPROVAL. THE RETAINED TREES WERE PREVIOUSLY PROTECTED WITHIN A STAND OF SURROUNDING TREES. THE REMOVAL OF ADJACENT TREES WILL EXPOSE THE RETAINED TREES TO CHANGES IN WIND FORCES WHICH WILL INCREASE THEIR RISK OF WINDTHROW. THE PROJECT ARBORIST SHALL CONDUCT A TREE RISK ASSESSMENT IMMEDIATELY FOLLOWING SITE CLEARING TO IDENTIFY TREES THAT POSE SIGNIFICANT RISKS. FOR TREES THAT POSE SIGNIFICANT RISKS, CONSULT PROJECT ARBORIST FOR RETENTION STRATEGIES, SUCH AS PRUNING OR SNAG CREATION. ANY RECOMMENDED TREE REMOVAL OR SNAG CREATION REQUIRES REVIEW AND APPROVAL OF THE CITY OF WILSONVILLE.
5. CONSTRUCTION ACCESS: WHEN ACCESSING THE SIDES OF THE BUILDING IN THE MODIFIED TREE PROTECTION ZONE, SOIL COMPACTION PREVENTION SUCH AS THE PLACEMENT OF STEEL PLATES IS REQUIRED TO PROTECT THE ROOT ZONES OF THE ADJACENT TREES.
6. ONSITE SUPERVISION OF PROJECT ARBORIST: THE PROJECT ARBORIST SHALL BE ONSITE TO OVERSEE THE RETAINING WALL EXCAVATION AND FOUNDATION CONSTRUCTION WITHIN AND ADJACENT TO THE TREE PROTECTION ZONES OF TREES PERIMETER TREES.
7. PROTECT CROWNS OF TREES: THE CROWNS OF THE TREES MAY EXTEND BEYOND THE TREE PROTECTION FENCING. CARE WILL NEED TO BE TAKEN TO NOT CONTACT OR OTHERWISE DAMAGE THE CROWNS OF THE TREES DURING CONSTRUCTION ACTIVITIES. ANY REQUIRED PRUNING SHALL BE COMPLETED BY AN ISA CERTIFIED ARBORIST CONSISTENT WITH ANSI A300 PRUNING STANDARDS AS DIRECTED BY THE PROJECT ARBORIST.
8. SEDIMENT FENCING: SEDIMENT FENCING SHALL BE INSTALLED OUTSIDE THE PROTECTION ZONES OF THE TREES TO BE RETAINED TO MINIMIZE ROOT DISTURBANCES. IF EROSION CONTROL IS REQUIRED INSIDE THE ROOT ZONES, STRAW WATTLES SHALL BE USED ON THE SOIL SURFACE.

BEFORE CONSTRUCTION BEGINS

1. NOTIFY ALL CONTRACTORS OF TREE PROTECTION PROCEDURES. FOR SUCCESSFUL TREE PROTECTION ON A CONSTRUCTION SITE, ALL CONTRACTORS MUST KNOW AND UNDERSTAND THE GOALS OF TREE PROTECTION.
   a. HOLD A TREE PROTECTION MEETING WITH ALL CONTRACTORS TO EXPLAIN THE GOALS OF TREE PROTECTION.
   b. HAVE ALL CONTRACTORS SIGN MEMORANDA OF UNDERSTANDING REGARDING THE GOALS OF TREE PROTECTION. THE MEMORANDA SHOULD INCLUDE A PENALTY FOR VIOLATING THE TREE PROTECTION PLAN. THE PENALTY SHOULD EQUAL THE RESULTING FINES ISSUED BY THE LOCAL JURISDICTION PLUS THE APPRAISED VALUE OF THE TREE(S) WITHIN THE VIOLATED TREE PROTECTION ZONE PER THE CURRENT TRUNK FORMULA METHOD AS OUTLINED IN THE CURRENT EDITION OF THE 'GUILD FOR PLANT APPRAISAL' BY THE COUNCIL OF TREE AND LANDSCAPE APPRAISERS. THE PENALTY SHOULD BE PAID TO THE OWNER OF THE PROPERTY.
2. FENCING
   a. TREE PROTECTION FENCING MAY BE SET AS SHOWN ON THE TREE PLAN.
   b. THE FENCING SHOULD BE PUT IN PLACE BEFORE THE GROUND IS CLEARED TO PROTECT THE TREES AND THE SOIL AROUND THE TREE FROM DISTURBANCES.
   c. FENCING SHOULD CONSIST OF 4-FOOT HIGH STEEL FENCING ON CONCRETE BLOCKS OR OTHER ANCHORING DEVICES, OR 4-FOOT METAL FENCING SECURED TO THE GROUND WITH 6-FOOT METAL POSTS TO PREVENT IT FROM BEING MOVED BY CONTRACTORS, SAGGING, OR FALLING DOWN.
   d. FENCING SHOULD REMAIN IN THE POSITION THAT IS ESTABLISHED BY THE PROJECT ARBORIST AND NOT BE MOVED WITHOUT APPROVAL FROM THE PROJECT ARBORIST UNTIL FINAL PROJECT APPROVAL.
2. SIGNAGE
   a. ALL TREE PROTECTION FENCING SHOULD HAVE SIGNAGE AS FOLLOWS SO THAT ALL CONTRACTORS UNDERSTAND THE PURPOSE OF THE FENCING:

TREE PROTECTION ZONE

DO NOT REMOVE OR ADJUST THE LOCATION OF THIS TREE PROTECTION FENCING. UNAUTHORIZED ENCROACHMENT MAY RESULT IN FINES.

Please contact the project arborist if alterations to the location of the tree protection fencing are necessary.

Project Arborist: Teregan & Associates, Inc. (503) 697-1975

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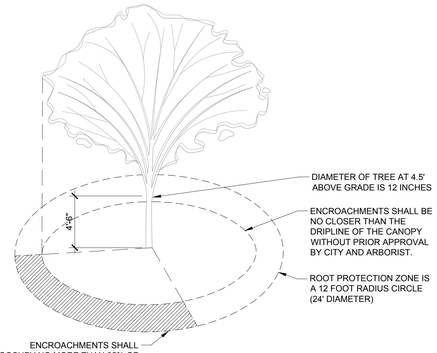
   b. SIGNAGE SHOULD BE PLACED EVERY 75-FEET OR LESS.

DURING CONSTRUCTION

1. PROTECTION GUIDELINES WITHIN THE TREE PROTECTION ZONES:
   a. NO NEW BUILDINGS; GRADE CHANGES OR CUT AND FILL, DURING OR AFTER CONSTRUCTION; NEW IMPERVIOUS SURFACES; OR UTILITY OR DRAINAGE FILED PLACEMENT SHOULD BE ALLOWED WITHIN THE TREE PROTECTION ZONES.
   b. NO TRAFFIC SHOULD BE ALLOWED WITHIN THE TREE PROTECTION ZONES. THIS INCLUDES BUT IS NOT LIMITED TO VEHICLE, HEAVY EQUIPMENT, OR EVEN REPEATED FOOT TRAFFIC.
   c. NO STORAGE OF MATERIALS INCLUDING BUT NOT LIMITED TO SOIL, ON STRUCTION MATERIALS, OR WASTE FROM THE SITE SHOULD BE PERMITTED WITHIN THE TREE PROTECTION ZONES. WASTE INCLUDES BUT IS NOT LIMITED TO CONCRETE WASH OUT, GASOLINE, DIESEL, PAINT, CLEANER, THINNERS, ETC.
   d. CONSTRUCTION TRAILERS SHOULD NOT BE PARKED/PLACED WITHIN THE TREE PROTECTION ZONES.
   e. NO VEHICLES SHOULD BE ALLOWED TO PARK WITHIN THE TREE PROTECTION ZONES.
   f. NO OTHER ACTIVITIES SHOULD BE ALLOWED THAT WILL CAUSE SOIL COMPACTIONS WITHIN THE TREE PROTECTION ZONES.
2. THE TREES SHOULD BE PROTECTED FROM ANY CUTTING, SKINNING, OR BREAKING OF BRANCHES, TRUNKS OR WOODY ROOTS.
3. THE PROJECT ARBORIST SHOULD BE NOTIFIED PRIOR TO THE CUTTING OF WOODY ROOTS FROM TREES THAT ARE TO BE RETAINED TO EVALUATE AND OVERSEE THE PROPER CUTTING OF ROOTS WITH SHARP CUTTING TOOLS. CUT ROOTS SHOULD BE IMMEDIATELY COVERED WITH SOIL OR MULCH TO PREVENT THEM FROM DRYING OUT.
4. TREES THAT HAVE WOODY ROOTS CUT SHOULD BE PROVIDED SUPPLEMENTAL WATER DURING THE SUMMER MONTHS.
5. ANY NECESSARY PASSAGE OF UTILITIES WITHIN THE TREE PROTECTION ZONES SHOULD BE BY MEANS OF TUNNELING UNDER WOODY ROOTS BY HAND DIGGING OR BORING WITH OVERSIGHT BY THE PROJECT ARBORIST.
6. ANY DEVIATION FROM THE RECOMMENDATIONS IN THIS SECTION SHOULD RECEIVE PRIOR APPROVAL FROM THE PROJECT ARBORIST.

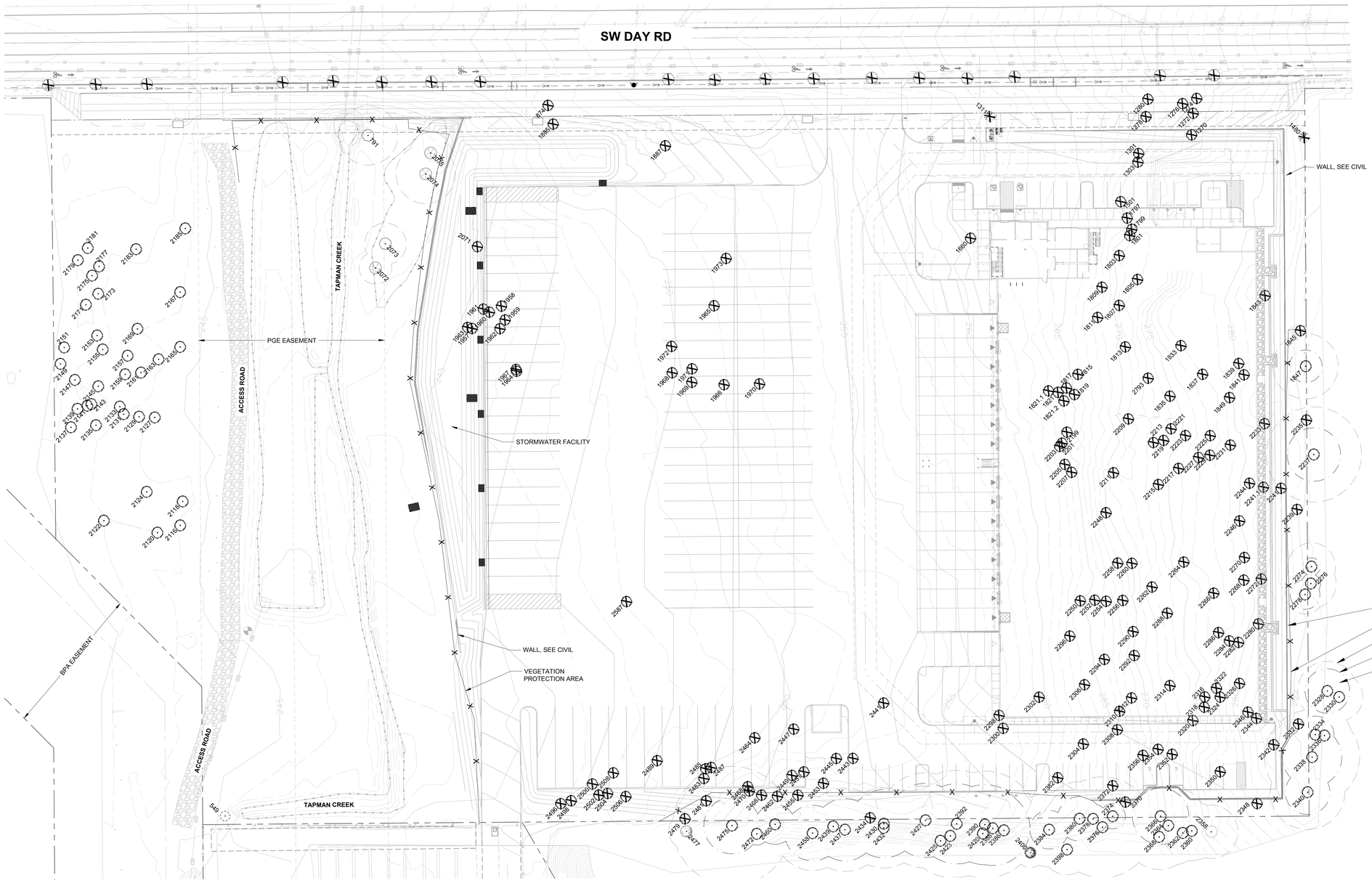
AFTER CONSTRUCTION

1. CAREFULLY LANDSCAPE THE AREAS WITHIN THE TREE PROTECTION ZONES. DO NOT ALLOW TRENCHING FOR IRRIGATION OR OTHER UTILITIES WITHIN THE TREE PROTECTION ZONES.
2. CAREFULLY PLANT NEW PLANTS WITHIN THE TREE PROTECTION ZONES. AVOID CUTTING THE WOODY ROOTS OF TREES THAT ARE RETAINED.
3. DO NOT INSTALL PERMANENT IRRIGATION WITHIN THE TREE PROTECTION ZONES UNLESS IT IS DRIP IRRIGATION TO SUPPORT A SPECIFIC PLANTING OR THE IRRIGATION IS APPROVED BY THE PROJECT ARBORIST.
4. PROVIDE ADEQUATE DRAINAGE WITHIN THE TREE PROTECTION ZONES AND DO NOT ALTER SOIL HYDROLOGY SIGNIFICANTLY FROM EXISTING CONDITIONS FOR THE TREES TO BE RETAINED.
5. PROVIDE FOR THE ONGOING INSPECTION AND TREATMENT OF INSECT AND DISEASE POPULATIONS THAT CAN DAMAGE THE RETAINED TREES AND PLANTS.
6. THE RETAINED TREES MAY NEED TO BE FERTILIZED IF RECOMMENDED BY THE PROJECT ARBORIST.
7. ANY DEVIATION FROM THE RECOMMENDATIONS IN THIS SECTION SHOULD RECEIVE PRIOR APPROVAL FROM THE PROJECT ARBORIST.



1 ROOT PROTECTION ZONE

SCALE: NTS



1 L0.03 TREE REMOVAL PLAN

30 0 15 30 60 120

(IN FEET)

1 inch = 30 ft.

TREE DATA

ALL TREES (257 TREES)	QTY	RETAIN	REMOVE	MITIGATION
ON SITE < 6" DBH	200	46	154	154
PUBLIC < 6" DBH	21	0	21	21
OFF SITE < 6" DBH	36	36	0	0
TOTAL	257	82	175	175

TREE INVENTORY - ON SITE AND PUBLIC

EXISTING	BOTANICAL / COMMON NAME	QTY
	DOUGLAS FIR TO REMOVE	155
	DOUGLAS FIR TO REMAIN	40
	ENGLISH HAWTHORN TO REMAIN	1
	OREGON ASH TO REMAIN	3
	STREET TREES TO REMOVE	18
	SWEET CHERRY TO REMOVE	2
	WILLOW TO REMAIN	2

TREE INVENTORY - OFF SITE PRIVATE

EXISTING	BOTANICAL / COMMON NAME	QTY
	BIGLEAF MAPLE TO REMAIN	1
	DOUGLAS FIR TO REMAIN	33
	OREGON WHITE OAK TO REMAIN	1
	PACIFIC MADRONE TO REMAIN	1

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WILSONVILLE, OR 97070

Project

DELTA LOGISTICS SITE EXPANSION

9710 SW DAY RD.
CITY OF WILSONVILLE, OR

REGISTERED LANDSCAPE ARCHITECT
OREGON
NICOLE TERREIRA
12/11/2020

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REVISION SCHEDULE

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TREE REMOVAL PLAN

SHEET

L0.03

JOB NO. 2200502.00

1068

DEVELOPMENT REVIEW SET - 04/24/23

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MITIGATION REQUIREMENTS

REPLACE LIVING TREES 6-INCH IN DBH OR LARGER WITH A 2-INCH CALIPER TREE OR LARGER OF SIMILAR MATURE CANOPY SIZE AND STRUCTURE.

TOTAL TREES REQUIRING MITIGATION	**175**
TOTAL 2" CAL. TREES IN PLAN	**175**
TOTAL TREES REQUIRING FEE IN LIEU	**0**

TREE CREDITS (SECTION 4.176.06.F)

DBH IS 18-24"	3 TREE CREDITS
DBH IS 25-31"	4 TREE CREDITS
DBH IS 32" OR GREATER	5 TREE CREDITS

FOR FULL LIST OF TREES TO BE REMOVED SEE EXHIBIT D ARBORIST'S REPORT.

TREES TO BE RETAINED		DBH	CREDITS	CONDITION
549	CRATAEGUS MONOGYNA	5"	0	FAIR
791	WILLOW / SALIX	20"	0	POOR
1847	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	22"	0	FAIR
2072	OREGON ASH / FRAXINUS LATIFOLIA	11"	0	POOR
2073	WILLOW / SALIX	14"	0	DEAD
2074	OREGON ASH / FRAXINUS LATIFOLIA	20"	0	POOR
2075	OREGON ASH / FRAXINUS LATIFOLIA	14"	0	FAIR
2116	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	21"	0	DEAD
2118	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	24"	0	DEAD
2120	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	32"	0	POOR
2122	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	32"	5	FAIR
2124	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	17"	0	FAIR
2127	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	33"	5	GOOD
2129	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	18"	0	VERY POOR
2131	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	16"	0	POOR
2133	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	15"	0	FAIR
2135	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	15"	0	FAIR
2137	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	30"	4	FAIR
2139	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	37"	5	GOOD
2141	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	19"	3	FAIR
2143	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	16"	0	DEAD
2145	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	26"	4	FAIR
2147	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	15"	0	FAIR
2149	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	24"	3	FAIR
2151	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	29"	0	POOR
2153	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	15"	0	DEAD
2155	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	12"	0	FAIR
2157	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	19"	0	DEAD
2159	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	32"	5	GOOD
2161	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	16"	0	DEAD
2163	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	24"	3	FAIR
2165	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	26"	0	DEAD
2167	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	34"	5	FAIR
2169	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	28"	4	POOR
2171	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	22"	3	FAIR
2173	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	21"	0	VERY POOR
2175	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	26"	0	DEAD
2177	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	24"	0	VERY POOR
2179	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	15"	0	DEAD
2181	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	21"	0	DEAD
2183	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	24"	0	DEAD
2185	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	23"	3	POOR
2278	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	14"	0	POOR
2340	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	22"	3	GOOD
2366	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	13"	0	POOR
2374	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	12"	0	GOOD

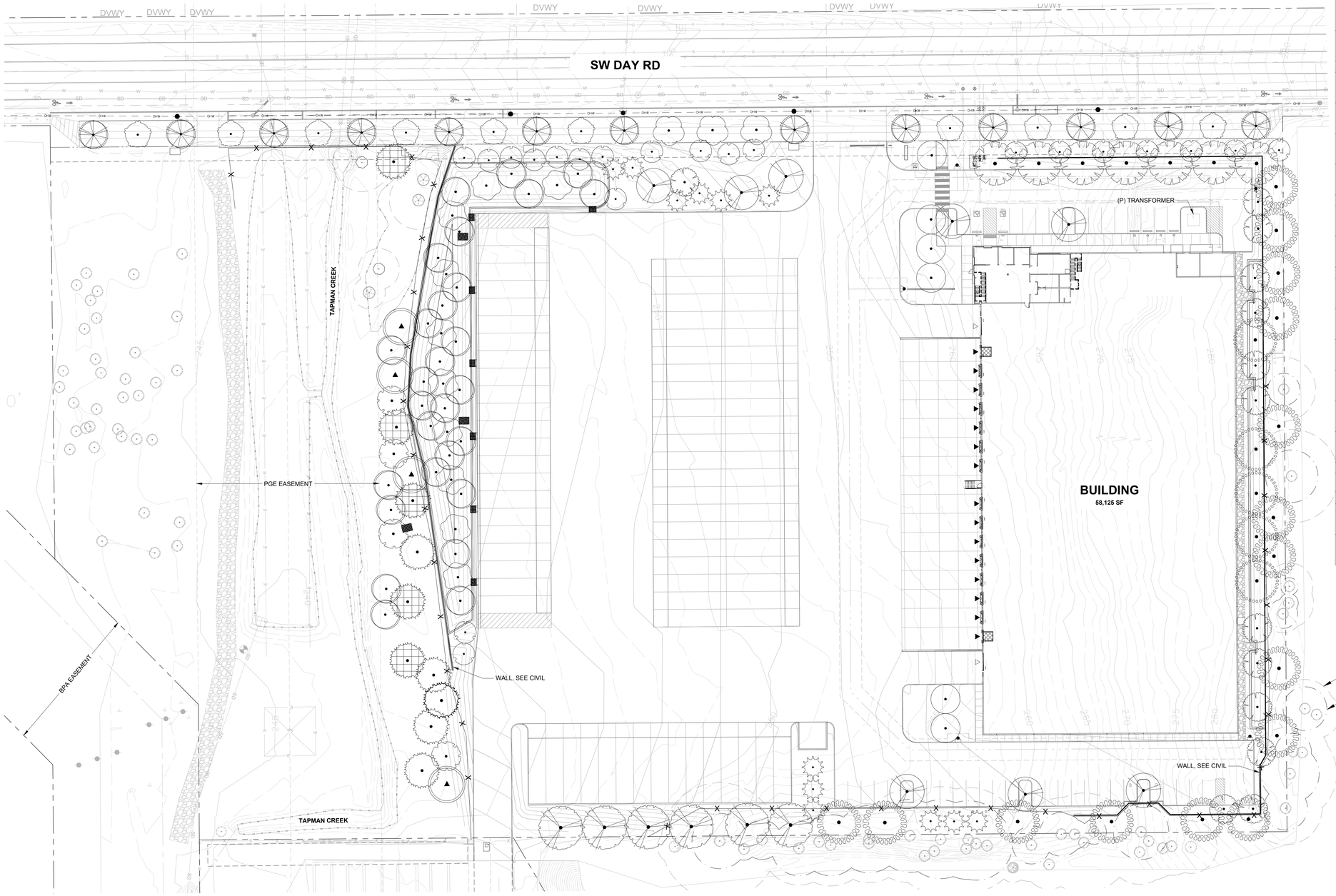
TOTAL TREE CREDITS **55 TREES**

EXISTING TREE INVENTORY

EXISTING	BOTANICAL / COMMON NAME	QTY
	DOUGLAS FIR TO REMAIN	40
	ENGLISH HAWTHORN TO REMAIN	1
	OREGON ASH TO REMAIN	3
	WILLOW TO REMAIN	2

PROPOSED TREES

ACCENT TREES	QTY	BOTANICAL / COMMON NAME
	6	ACER RUBRUM 'BOWHALL' BOWHALL RED MAPLE
	21	AMELANCHIER ALNIFOLIA 'AUTUMN BRILLIANCE' SERVICEBERRY
	13	CORNUS KOUSA X NUTTALLII 'KN4-43' STARLIGHT KOUSA DOGWOOD
PRIMARY TREES	**QTY**	**BOTANICAL / COMMON NAME**
	15	PSEUDOTSUGA MENZIESII DOUGLAS FIR
	6	QUERCUS GARRYANA OREGON WHITE OAK
	5	THUJA PLICATA WESTERN RED CEDAR
	7	ZELKOVA SERRATA 'GREEN VASE' GREEN VASE SAWLEAF ZELKOVA
SECONDARY TREES	**QTY**	**BOTANICAL / COMMON NAME**
	12	CALOCEDRUS DECURRENS INCENSE CEDAR
	8	TILIA TOMENTOSA 'STERLING' STERLING SILVER LINDEN
STORMWATER TREES	**QTY**	**BOTANICAL / COMMON NAME**
	4	ACER MACROPHYLLUM BIG LEAF MAPLE
	10	CORNUS X 'EDDIE'S WHITE WONDER' EDDIE'S WHITE WONDER DOGWOOD
	4	FRAXINUS LATIFOLIA OREGON ASH
	5	PINUS PONDEROSA VAR. BENTHAMIANA WILLAMETTE VALLEY PONDEROSA PINE
	5	PSEUDOTSUGA MENZIESII DOUGLAS FIR
	28	RHAMNUS PURSHIANA CASCARA BUCKTHORN
STREET TREES	**QTY**	**BOTANICAL / COMMON NAME**
	13	ACER GRANDIDENTATUM 'SCHMIDT' TM ROCKY MOUNTAIN GLOW MAPLE
	3	CORNUS KOUSA 'MILKY WAY' MILKY WAY KOUSA DOGWOOD
	10	PARROTIA PERSICA 'INGE'S RUBY VASE' TM RUBY VASE PERSIAN PARROTIA



NOTE

1. OFFSITE TREES IMPACTED BY ONSITE IMPROVEMENT ON ADJACENT PRIVATE PROPERTY ARE RECOMMENDED FOR REMOVAL AND MITIGATION CONTINGENT UPON APPROVAL OF ADJACENT PROPERTY OWNER.

1 L0.04 TREE MITIGATION PLAN

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

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TREE MITIGATION PLAN

SHEET
L0.04

JOB NO. **2200502.00**

1069

DEVELOPMENT REVIEW SET - 04/24/23

MITIGATION PLANTING NOTES

NOTES PER EXHIBIT C NATURAL RESOURCE ASSESSMENT FOR 9710 SW DAY ROAD PREPARED BY SCHOTT AND ASSOCIATES (2022) AND AMENDED BY MACKENZIE (2023) TO REFLECT SITE PLAN CHANGES RESULTING IN LESS ENCROACHMENT ON THE VEGETATED CORRIDOR AND IMPACT AREA.

SITE PREPARATION
PRIOR TO ANY SITE CLEARING, GRADING OR CONSTRUCTION, THE SROZ AREA SHALL BE STAKED, AND FENCED PER APPROVED PLAN. DURING CONSTRUCTION, THE SROZ AREA SHALL REMAIN FENCED AND UNDISTURBED EXCEPT AS ALLOWED BY AN APPROVED DEVELOPMENT PERMIT.

PROPOSED ENCROACHMENTS
ENCROACHMENTS ARE PROPOSED TO THE VEGETATED CORRIDOR AND IMPACT AREA.

- ENCROACHMENTS WILL OCCUR IN THE NORTHERN PORTION OF THE VEGETATED CORRIDOR FOR THE CITY REQUIRED WIDENING OF SW DAY RD AND IN THE SOUTHERN PORTION FOR THE TAPMAN CREEK CROSSING. THESE AREAS ARE VEGETATED ENTIRELY BY INVASIVE SPECIES INCLUDING HIMALAYAN BLACKBERRY AND REED CANARY GRASS. NO TREES OR NATIVE SPECIES WILL BE REMOVED AS A RESULT OF CONSTRUCTION.
- ENCROACHMENT WITHIN THE IMPACT AREAS WILL OCCUR ON THE EAST SIDE OF THE CREEK FOR THE CONSTRUCTION OF A VEGETATED WATER QUALITY AND STORMWATER DETENTION FACILITY. NO ENCROACHMENTS TO TAPMAN CREEK OR THE WETLANDS ARE PROPOSED. NO TREES WILL BE REMOVED FROM THE SROZ.
- DEVELOPMENT ACTIVITY HAS BEEN LIMITED TO THE IMPACT AREA WHERE PRACTICAL EXCEPT WHERE NECESSARY TO WIDEN SW DAY ROAD.

MITIGATION PLANTING
THE MITIGATION PLANTING PLAN WAS DESIGNED ACCORDING SECTION 4.139.07(.02)(E) AND SHALL MEET THE FOLLOWING:

- THE PLANTING PLAN SHALL BE IMPLEMENTED PRIOR TO OR AT THE SAME TIME AS THE IMPACT ACTIVITY IS CONDUCTED.
- ALL TREES, SHRUBS AND GROUND COVER SHALL BE NATIVE VEGETATION.
- TREES AND SHRUBS SHALL BE AT LEAST ONE-GALLON IN SIZE AND SHALL BE AT LEAST TWELVE (12) INCHES IN HEIGHT.
- 2-GALLON TREES SHALL BE PLANTED BETWEEN EIGHT (8) AND TWELVE (12) FEET ON CENTER, AND SHRUBS SHALL BE PLANTED BETWEEN FOUR (4) AND FIVE (5) FEET ON CENTER, OR CLUSTERED IN SINGLE SPECIES GROUPS OF NO MORE THAN FOUR (4) PLANTS, WITH EACH CLUSTER PLANTED BETWEEN EIGHT (8) AND TEN (10) FEET ON CENTER. WHEN PLANTING NEAR EXISTING TREES, THE DRIP LINE OF THE EXISTING TREE SHALL BE THE STARTING POINT FOR PLANT SPACING MEASUREMENTS.
- SHRUBS SHALL CONSIST OF AT LEAST TWO (2) DIFFERENT SPECIES. IF FIVE (5) TREES OR MORE ARE PLANTED, THEN NO MORE THAN FIFTY (50) PERCENT OF THE TREES MAY BE OF THE SAME GENUS.
- INVASIVE NON-NATIVE OR NOXIOUS VEGETATION SHALL BE REMOVED WITHIN THE MITIGATION AREA PRIOR TO PLANTING AND SHALL BE REMOVED OR CONTROLLED FOR FIVE (5) YEARS FOLLOWING THE DATE THAT THE MITIGATION PLANTING IS COMPLETED.

MITIGATION GOALS AND PERFORMANCE STANDARDS

THE MITIGATION SITE GOAL IS AS FOLLOWS:

ENHANCE 32,890 SF OF VEGETATED CORRIDOR TO IMPROVE RIPARIAN CORRIDOR, WATER QUALITY PROTECTION, ECOLOGICAL INTEGRITY AND WILDLIFE HABITAT FUNCTIONS BY REMOVING INVASIVE SPECIES AND MAINTAINING A NATIVE, WOODY-DOMINATED PLANT COMMUNITY.

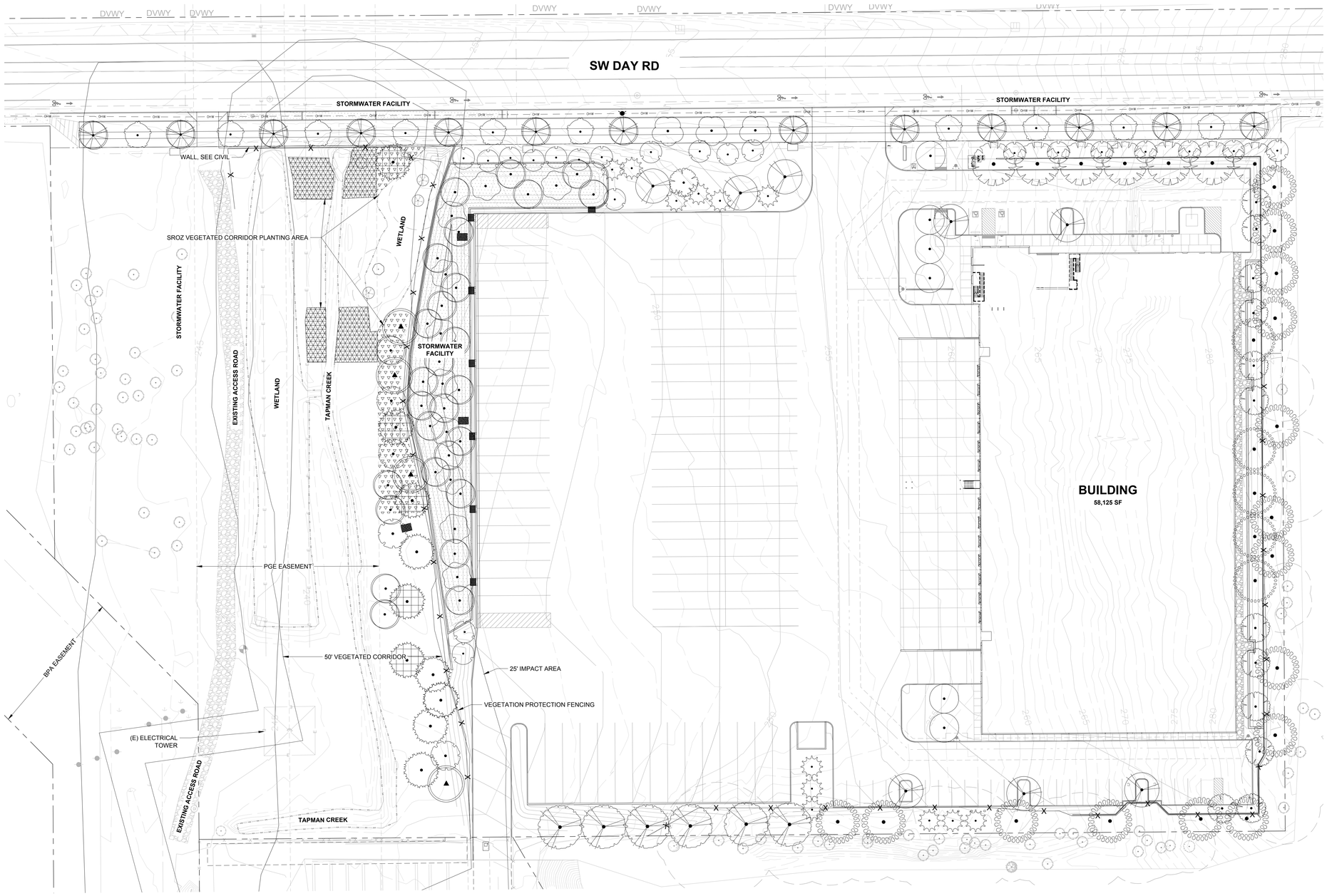
PERFORMANCE STANDARDS ARE BASED ON METRO'S TITLE 3 WATER QUALITY PERFORMANCE STANDARDS TO PROTECT AND IMPROVE WATER QUALITY AND PROTECT THE FUNCTIONS AND VALUES OF WATER QUALITY RESOURCE AREAS (METRO 2018). THIS PLAN'S PERFORMANCE STANDARDS FOR FOREST AND/OR SHRUB DOMINATED AREAS AND SHALL CONSIST OF THE FOLLOWING:

1. ESTABLISHMENT OF PERMANENT MONITORING LOCATIONS DURING THE FIRST ANNUAL MONITORING.
2. COVER OF NATIVE HERBACEOUS SPECIES IS AT LEAST 60%.
3. COVER OF INVASIVE SPECIES IS NO MORE THAN 10%. AFTER THE SITE HAS MATURED TO THE STAGE WHEN DESIRABLE CANOPY SPECIES REACH 50% COVER, THE COVER OF INVASIVE SPECIES MAY INCREASE BUT MAY NOT EXCEED 30%.
4. BARE SUBSTRATE REPRESENTS NO MORE THAN 20% COVER.
5. DENSITY OF WOODY VEGETATION IS AT LEAST 1,600 LIVE TREES OR SHRUBS PER ACRE OR THE COVER OF NATIVE WOODY VEGETATION ON SITE IS AT LEAST 50%. NATIVE VOLUNTEER SPECIES MAY BE INCLUDED IN THE COVER OR DENSITY ESTIMATE.
6. BY YEAR 3 AND THEREAFTER, AT LEAST 6 DIFFERENT NATIVE SPECIES MUST BE PRESENT. TO QUALIFY, A SPECIES MUST HAVE AT LEAST 5% AVERAGE COVER IN THE HABITAT CLASS AND OCCUR IN AT LEAST 10% OF THE PLOTS SAMPLED.
7. BY YEAR 5, A MINIMUM OF EIGHTY (80) PERCENT OF THE TREES AND SHRUBS INITIALLY REQUIRED SHALL REMAIN ALIVE.

MAINTENANCE AND MONITORING

MONITORING WILL OCCUR ANNUALLY OVER A 5-YEAR MONITORING PERIOD TO ASSESS CONDITION OF PLANTINGS, IRRIGATION, MULCH ETC. MONITORING WILL BE CONDUCTED BY QUALIFIED PERSONNEL DURING PEAK GROWING SEASON (JULY-AUGUST). ANNUAL MONITORING REPORTS WILL BE PROVIDED TO THE PLANNING DIRECTOR FOR REVIEW BY DECEMBER OF EACH MONITORING YEAR. THE REPORT SHALL CONTAIN, AT A MINIMUM, PHOTOGRAPHS FROM ESTABLISHED PHOTO POINTS, QUANTITATIVE MEASURE OF SUCCESS CRITERIA, INCLUDING PLANT SURVIVAL AND VIGOR. THE YEAR 1 ANNUAL REPORT SHALL BE SUBMITTED ONE YEAR FOLLOWING MITIGATION ACTION IMPLEMENTATION. THE FINAL ANNUAL REPORT (YEAR 5 REPORT) SHALL DOCUMENT SUCCESSFUL SATISFACTION OF MITIGATION GOALS, AS PER THE STATED PERFORMANCE STANDARDS.

THE APPLICANT WILL BE RESPONSIBLE FOR COORDINATING ONGOING MAINTENANCE AND MANAGEMENT. IF THE OWNERSHIP OF THE MITIGATION SITE PROPERTY CHANGES, THE NEW OWNERS WILL HAVE THE CONTINUED RESPONSIBILITIES MAINTENANCE ACTIVITIES INCLUDING MULCHING, WEED REMOVAL, HERBIVORY CONTROL, AND SUPPLEMENTAL PLANTING WILL BE CONDUCTED BY A QUALIFIED CONTRACTOR AT LEAST TWICE PER GROWING SEASON AND ONCE PRIOR TO THE GROWING SEASON OR MORE FREQUENTLY AS INDICATED BY MONITORING RESULTS. ANY FAILED PLANTS WILL BE REPLACED IN-KIND WITH THE CAUSE OF LOSS (WILDLIFE DAMAGE, POOR PLANT STOCK, DROUGHT, WEED OVERGROWTH, ETC.) DOCUMENTED AND ADDITIONAL MAINTENANCE DONE TO ADDRESS THE CAUSE OF LOSS AND ENSURE FUTURE PLANT SURVIVAL.



1 L0.05 TREE MITIGATION PLAN

30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.

SROZ ENCROACHMENT MITIGATION TABLE

	ENCROACHMENT	MITIGATION RATE		
VEGETATED CORRIDOR	1,850 SF	3.2:1	RIPARIAN FOREST COMMUNITY	3,360 SF
	6,305 SF		RIPARIAN SHRUB COMMUNITY	2,945 SF
IMPACT AREA	9,833.70 SF	N/A		

MITIGATION PLANT SCHEDULE PER SRIR

	SPECIES	TYPE	MIN SIZE*	SPACING	QTY	TOTAL
RIPARIAN FOREST COMMUNITY: 3,360 SF						
	OREGON ASH *FRAXINUS LATIFOLIA*	TREE	2-INCH CAL	15 FT OC	11	
	SCOULER FTS WILLOW *SALIX SCOULERIANA*	TREE	2 GAL OR BARE ROOT	8 FT OC	31	
	WESTERN REDCEDAR *THUJA PLICATA*	TREE	2 GAL OR BARE ROOT	8 FT OC	31	73 TREES
	REDOSIER DOGWOOD *CORNUS STOLONIFERA*	SHRUB	1 GAL OR BARE ROOT	5 FT OC CLUSTER	30	
	RED ELDERBERRY *SAMBUCUS RACEMOSA*	SHRUB	1 GAL OR BARE ROOT	5 FT OC CLUSTER	30	
	SNOWBERRY *SYMPHORICARPOS ALBUS*	SHRUB	1 GAL OR BARE ROOT	5 FT OC CLUSTER	30	
	SALMONBERRY *RUBUS SPECTABILIS*	SHRUB	1 GAL OR BARE ROOT	5 FT OC CLUSTER	14	
	SWAMP ROSE *ROSA PISOCARPA*	SHRUB	1 GAL OR BARE ROOT	5 FT OC CLUSTER	30	
RIPARIAN SHRUB COMMUNITY : 2,945 SF						
	SPECIES	TYPE	MIN SIZE*	SPACING	QTY	
	REDOSIER DOGWOOD *CORNUS STOLONIFERA*	SHRUB	1 GAL OR BARE ROOT	5 FT OC CLUSTER	15	
	RED ELDERBERRY *SAMBUCUS RACEMOSA*	SHRUB	1 GAL OR BARE ROOT	5 FT OC CLUSTER	30	
	SNOWBERRY *SYMPHORICARPOS ALBUS*	SHRUB	1 GAL OR BARE ROOT	5 FT OC CLUSTER	15	
	SALMONBERRY *RUBUS SPECTABILIS*	SHRUB	1 GAL OR BARE ROOT	5 FT OC CLUSTER	10	
	SWAMP ROSE *ROSA PISOCARPA*	SHRUB	1 GAL OR BARE ROOT	5 FT OC CLUSTER	17	
	INDIAN PLUM *OEMLERIA CERASIFORMIS*	SHRUB	1 GAL OR BARE ROOT	5 FT OC CLUSTER	30	251 SHRUBS
	PROTIME 402*	HERB	25 LBS PER ACRE		1.7 LBS	

*NATIVE RIPARIAN MIX INCLUDES BLUE WILDRYE (ELYMUS GLAUCUS), MEADOW BARLEY (HORDEUM BRACHYANTHERUM), AND TUFTED HAIRGRASS (DESCHAMPSIA CESPITOSA)

PROPOSED PLANT LIST (REMAINDER OF SITE)

IN COMPLIANCE WITH THE MITIGATION REQUIREMENTS, NATIVE AND DROUGHT TOLERANT VEGETATION IS USED THROUGHOUT THE SITE.

PLANT NAME	NATIVE STATUS
ACCENT TREES	
ACER RUBRUM 'BOWHALL'	
AMELANCHIER ALNIFOLIA 'AUTUMN BRILLIANCE'	NATIVE CULTIVAR
CORNUS KOUSA X NUTTALLII 'KN4-43'	NATIVE CULTIVAR
PRIMARY TREES	
PSEUDOTSUGA MENZIESII	NATIVE
QUERCUS GARRYANA	NATIVE
THUJA PLICATA	NATIVE
ZELKOVA SERRATA 'GREEN VASE'	
SECONDARY TREES	
CALOCEDRUS DECURRENS	NATIVE
TILIA TOMENTOSA 'STERLING'	
STORMWATER TREES	
ACER MACROPHYLLUM	NATIVE CULTIVAR
CORNUS X 'EDDIE'S WHITE WONDER'	NATIVE
FRAXINUS LATIFOLIA	NATIVE
PINUS PONDEROSA VAR. BENTHAMIANA	
PSEUDOTSUGA MENZIESII	
RHAMNUS PURSHIANA	
STREET TREES	
ACER GRANDIDENTATUM 'SCHMIDT' TM	
CORNUS KOUSA 'MILKY WAY'	
PARROTIA PERSICA 'INGE'S RUBY VASE' TM	NATIVE CULTIVAR
SHRUBS	NATIVE CULTIVAR
ACER CIRCINATUM 'PACIFIC FIRE'	
ARBUTUS UNEDO 'COMPACTA'	NATIVE
CORNUS SERICEA 'KELSEYI'	NATIVE
DEUTZIA GRACILIS 'NIKKO'	NATIVE CULTIVAR
GAULTHERIA SHALLON	NATIVE
MAHONIA AQUIFOLIUM	NATIVE
MAHONIA AQUIFOLIUM 'COMPACTA'	NATIVE CULTIVAR
MYRICA CALIFORNICA	NATIVE
POLYSTICHUM MUNITUM	NATIVE
RIBES SANGUINEUM	NATIVE CULTIVAR
SPIRAEA BETULIFOLIA 'TOR'	
SYMPHORICARPOS ALBUS	
VACCINIUM OVATUM	
VACCINIUM OVATUM 'SCARLET OVATION'	
VIBURNUM DAVIDII	NATIVE CULTIVAR
VIBURNUM TINUS 'SPRING BOUQUET'	NATIVE
	NATIVE
PERENNIALS	NATIVE
ACHILLEA MILLIFOLIUM 'ALABASTER'	
ASTER SUBSPICATUS	
POLYSTICHUM MUNITUM	
PTERIDIUM AQUILINUM	NATIVE
SALVIA X SUPERBA 'CARADONNA'	NATIVE
	NATIVE
STORMWATER SHRUBS	NATIVE
CORNUS SERICEA	NATIVE
HOLODISCUS DISCOLOR	NATIVE
MAHONIA AQUIFOLIUM	NATIVE CULTIVAR
RIBES SANGUINEUM	NATIVE
ROSA PISOCARPA	NATIVE
RUBUS SPECTABILIS	
SPIRAEA BETULIFOLIA 'TOR'	
SPIRAEA DOUGLASII	NATIVE
SYMPHORICARPOS ALBUS	
GROUND COVERS	NATIVE
ARCTOSTAPHYLOS UVA-URSI	
BOUTELOUA GRACILIS 'BLONDE AMBITION'	NATIVE
FESTUCA OCCIDENTALIS	NATIVE
GERANIUM X CANTABRIGIENSE 'BIOKOVO'	NATIVE
MAHONIA REPENS	
PROTIME 402 NATIVE RIPARIAN MIX	
SEED MIX NATIVE POLLINATOR MEADOW MIX	
SEED MIX NATIVE UPLANDS MEADOW MIX	NATIVE
	NATIVE
STORMWATER PLANTING	
CAREX DENSA	
JUNCUS PATENS	

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REVISION SCHEDULE

Delta	Issued As	Issue Date

VEGETATED CORRIDOR ENHANCEMENT PLANTING PLAN

SHEET
L0.05

JOB NO. 2200502.00

1070

DEVELOPMENT REVIEW SET - 04/24/23

1 L1.10 PLANTING PLAN WEST

20 0 10 20 40 80

(IN FEET)

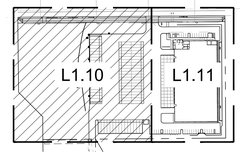
1 inch = 20 ft.

PLANT KEY LEGEND

ACCENT TREES	BOTANICAL / COMMON NAME
	AMELANCHIER ALNIFOLIA 'AUTUMN BRILLIANCE' SERVICEBERRY
	CORNUS KOUSA X NUTTALLII '2NN4-43' STARLIGHT KOUSA DOGWOOD
PRIMARY TREES	BOTANICAL / COMMON NAME
	PSEUDOTSUGA MENZIESII DOUGLAS FIR
	QUERCUS GARRYANA OREGON WHITE OAK
SECONDARY TREES	BOTANICAL / COMMON NAME
	CALOCEDRUS DECURRENS INCENSE CEDAR
	TILIA TOMENTOSA 'STERLING' STERLING SILVER LINDEN
STORMWATER TREES	BOTANICAL / COMMON NAME
	ACER MACROPHYLLUM BIG LEAF MAPLE
	CORNUS X 'EDDIE'S WHITE WONDER' EDDIE'S WHITE WONDER DOGWOOD
	FRAXINUS LATIFOLIA OREGON ASH
	PINUS PONDEROSA VAR. BENTHAMIANA WILLAMETTE VALLEY PONDEROSA PINE
	PSEUDOTSUGA MENZIESII DOUGLAS FIR
	RHAMNUS PURSHIANA CASCARA BUCKTHORN
STREET TREES	BOTANICAL / COMMON NAME
	ACER GRANDIDENTATUM 'SCHMIDT' TM ROCKY MOUNTAIN GLOW MAPLE
	CORNUS KOUSA 'MILKY WAY' MILKY WAY KOUSA DOGWOOD
	PARROTIA PERSICA 'INGE'S RUBY VASE' TM RUBY VASE PERSIAN PARROTIA
SHRUBS	BOTANICAL / COMMON NAME
	ARBUTUS UNEDO 'COMPACTA' DWARF STRAWBERRY TREE
	CORNUS SERICEA 'KELSEYI' KELSEYI DWARF REDTWIG DOGWOOD
	DEUTZIA GRACILIS 'NIKKO' SLENDER DEUTZIA
	GAULTHERIA SHALLON SALAL
	MAHONIA AQUIFOLIUM OREGON GRAPE
	MAHONIA AQUIFOLIUM 'COMPACTA' COMPACT OREGON GRAPE
	MYRICA CALIFORNICA PACIFIC WAX MYRTLE
	RIBES SANGUINEUM RED FLOWERING CURRANT
	SPIRAEA BETULIFOLIA 'TOR' BIRCHLEAF SPIREA
	SYMPHORICARPOS ALBUS COMMON WHITE SNOWBERRY
	VACCINIUM OVATUM EVERGREEN HUCKLEBERRY
	VACCINIUM OVATUM 'SCARLET OVATION' SCARLET OVATION EVERGREEN HUCKLEBERRY
	VIBURNUM DAVIDII DAVID VIBURNUM
	VIBURNUM TINUS 'SPRING BOUQUET' SPRING BOUQUET LAURUSTINUS
PERENNIALS	BOTANICAL / COMMON NAME
	ACHILLEA MILLIFOLIUM 'ALABASTER' ALABASTER YARROW
	ASTER SUBSPICATUS DOUGLAS ASTER
	POLYSTICHUM MUNITUM WESTERN SWORD FERN
	PTERIDIUM AQUILINUM WESTERN BRACKENFERN
STORMWATER SHRUBS	BOTANICAL / COMMON NAME
	CORNUS SERICEA RED TWIG DOGWOOD
	HOLODISCUS DISCOLOR OCEAN-SPRAY
	MAHONIA AQUIFOLIUM OREGON GRAPE
	RIBES SANGUINEUM RED FLOWERING CURRANT
	ROSA PISOCARPA CLUSTERED WILD ROSE
	RUBUS SPECTABILIS SALMONBERRY
	SPIRAEA BETULIFOLIA 'TOR' TOR BIRCHLEAF SPIREA
	SPIRAEA DOUGLASII WESTERN SPIREA
	SYMPHORICARPOS ALBUS COMMON WHITE SNOWBERRY
GROUND COVERS	BOTANICAL / COMMON NAME
	ARCTOSTAPHYLOS UVA-URSI KINNIKINNICK
	BOUTELOUA GRACILIS 'BLONDE AMBITION' BLONDE AMBITION BLUE GRAMA
	FESTUCA OCCIDENTALIS WESTERN FESCUE GRASS
	MAHONIA REPENS CREEPING MAHONIA
	PROTIME 402 NATIVE RIPARIAN MIX PROTIME SEEDS
	SEED MIX NATIVE POLLINATOR MEADOW MIX SUNMARK SEEDS
STORMWATER PLANTING	BOTANICAL / COMMON NAME
	CAREX DENSA DENSE SEDGE
	JUNCUS PATENS CALIFORNIA GRAY RUSH

REFERENCE NOTES

1. PLANT SIZE, SPACING, AND QUANTITY. SEE PLANT SCHEDULE L0.02
2. PROPOSED UTILITY BOX. AVOID PLANTING WITHIN DEFINED ACCESS ZONE.
3. COORDINATE SHRUB LAYOUT WITH EXISTING UTILITIES, REPORT CONFLICTS TO LANDSCAPE ARCHITECT.



KEY MAP
SCALE: NTS

DEVELOPMENT REVIEW SET - 04/24/23

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9835 SW COMMERCE CIRCLE
WILSONVILLE, OR 97070

Project
DELTA LOGISTICS SITE EXPANSION

9710 SW DAY RD.
CITY OF WILSONVILLE, OR

REGISTERED LANDSCAPE ARCHITECT
OREGON
NICOLE TERREIRA
12/11/2020

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REVISION SCHEDULE

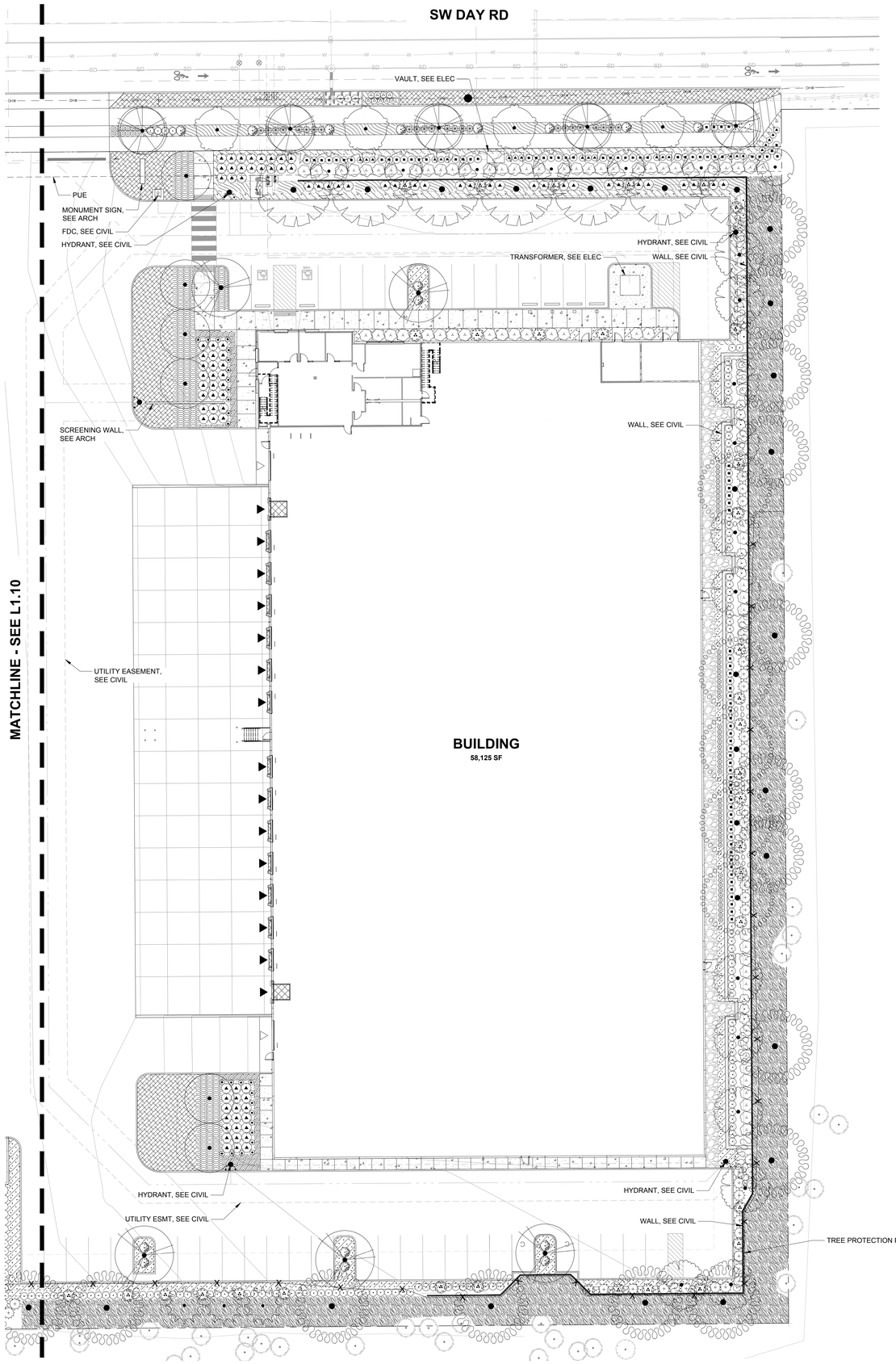
Delta	Issued As	Issue Date

PLANTING PLAN - WEST

SHEET
L1.10

JOB NO. 2200502.00

1071



1 L1.11 PLANTING PLAN EAST

20 0 10 20 40 80

(IN FEET)

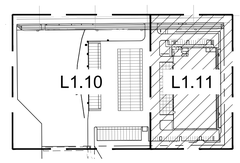
1 inch = 20 ft.

PLANT KEY LEGEND

ACCENT TREES	BOTANICAL / COMMON NAME
	ACER RUBRUM 'BOWHALL' BOWHALL RED MAPLE
	AMELANCHIER ALNIFOLIA 'AUTUMN BRILLIANCE' SERVICEBERRY
	CORNUS KOUSA X NUTTALLII 'KN4-43' STARLIGHT KOUSA DOGWOOD
PRIMARY TREES	BOTANICAL / COMMON NAME
	PSEUDOTSUGA MENZIESII DOUGLAS FIR
	THUJA PLICATA WESTERN RED CEDAR
	ZELKOVA SERRATA 'GREEN VASE' GREEN VASE SAWLEAF ZELKOVA
SECONDARY TREES	BOTANICAL / COMMON NAME
	CALOCEDRUS DECURRENS INCENSE CEDAR
	TILIA TOMENTOSA 'STERLING' STERLING SILVER LINDEN
STREET TREES	BOTANICAL / COMMON NAME
	ACER GRANDIDENTATUM 'SCHMIDT' TM ROCKY MOUNTAIN GLOW MAPLE
	PARROTIA PERSICA 'INGE'S RUBY VASE' TM RUBY VASE PERSIAN PARROTIA
SHRUBS	BOTANICAL / COMMON NAME
	ACER CIRCINATUM 'PACIFIC FIRE' PACIFIC FIRE VINE MAPLE
	ARBUTUS UNEDO 'COMPACTA' DWARF STRAWBERRY TREE
	CORNUS SERICEA 'KELSEYI' KELSEYI DWARF REDTWIG DOGWOOD
	DEUTZIA GRACILIS 'NIKKO' SLENDER DEUTZIA
	GAULTHERIA SHALLON SALAL
	MAHONIA AQUIFOLIUM OREGON GRAPE
	MAHONIA AQUIFOLIUM 'COMPACTA' COMPACT OREGON GRAPE
	POLYSTICHUM MUNITUM WESTERN SWORD FERN
	RIBES SANGUINEUM RED FLOWERING CURRANT
	SPIRAEA BETULIFOLIA 'TOR' BIRCHLEAF SPIREA
	SYMPHORICARPOS ALBUS COMMON WHITE SNOWBERRY
	VACCINIUM OVATUM EVERGREEN HUCKLEBERRY
	VIBURNUM DAVIDII DAVID VIBURNUM
	VIBURNUM TINUS 'SPRING BOUQUET' SPRING BOUQUET LAURUSTINUS
PERENNIALS	BOTANICAL / COMMON NAME
	SALVIA X SUPERBA 'CARADONNA' CARADONNA SAGE
STORMWATER SHRUBS	BOTANICAL / COMMON NAME
	SPIRAEA BETULIFOLIA 'TOR' TOR BIRCHLEAF SPIREA
	SYMPHORICARPOS ALBUS COMMON WHITE SNOWBERRY
GROUND COVERS	BOTANICAL / COMMON NAME
	ARCTOSTAPHYLOS UVA-URSI KINNIKINNICK
	BOUTELOUA GRACILIS 'BLONDE AMBITION' BLONDE AMBITION BLUE GRAMA
	FESTUCA OCCIDENTALIS WESTERN FESCUE GRASS
	GERANIUM X CANTABRIGIENSE 'BIOKOVO' BIOKOVO CRANESBILL
	MAHONIA REPENS CREEPING MAHONIA
	SEED MIX NATIVE POLLINATOR MEADOW MIX SUNMARK SEEDS
	SEED MIX NATIVE UPLANDS MEADOW MIX SUNMARK SEEDS
STORMWATER PLANTING	BOTANICAL / COMMON NAME
	CAREX DENSA DENSE SEDGE
	JUNCUS PATENS CALIFORNIA GRAY RUSH

REFERENCE NOTES

1. PLANT SIZE, SPACING, AND QUANTITY, SEE PLANT SCHEDULE L0.02.
2. PROPOSED UTILITY BOX. AVOID PLANTING WITHIN DEFINED ACCESS ZONE.
3. COORDINATE SHRUB LAYOUT WITH EXISTING UTILITIES, REPORT CONFLICTS TO LANDSCAPE ARCHITECT.



KEY MAP

SCALE: NTS

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OREGON
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REVISION SCHEDULE

Delta	Issued As	Issue Date

PLANTING PLAN - EAST

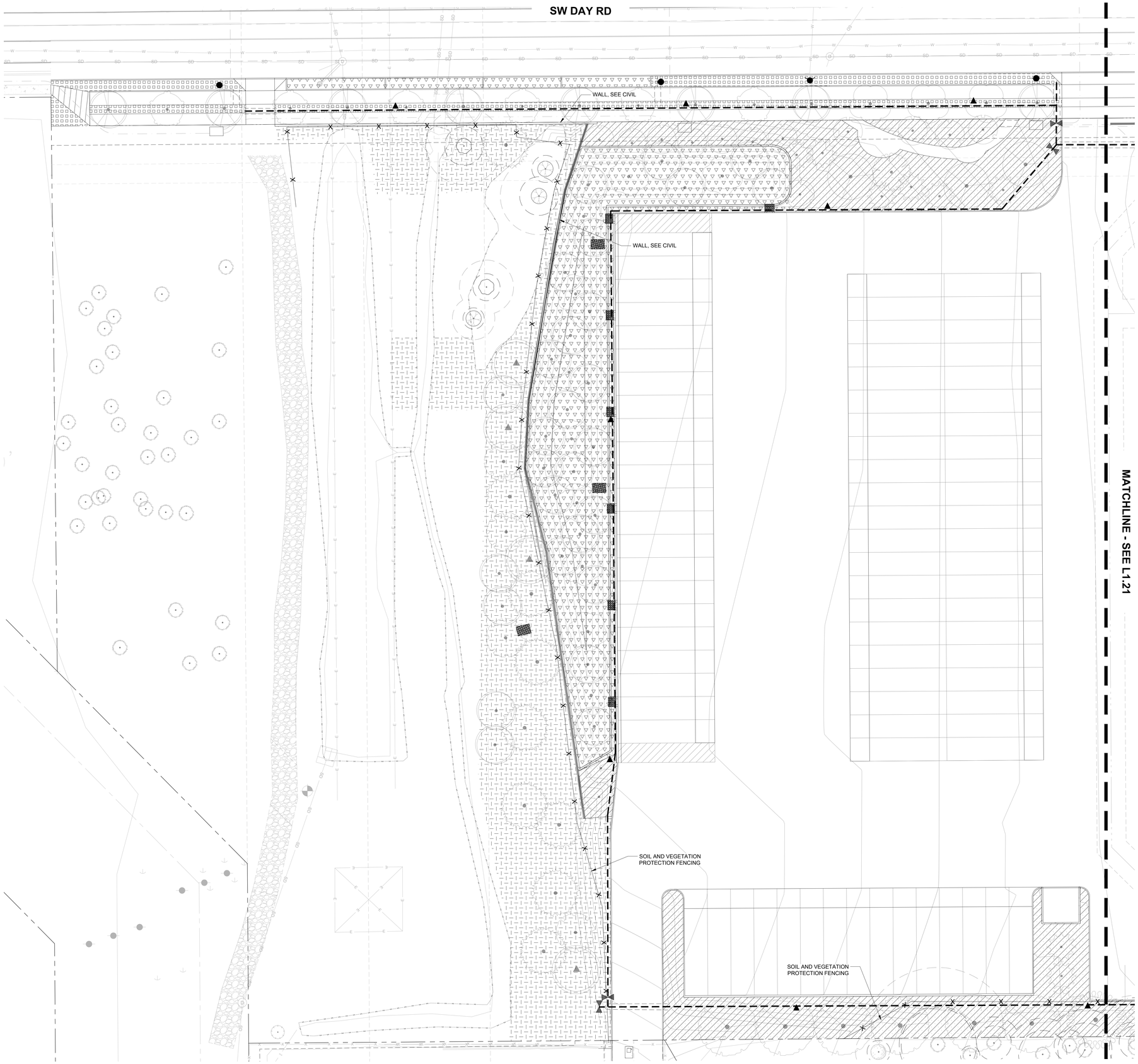
SHEET

L1.11

JOB NO. 2200502.00

1072

DEVELOPMENT REVIEW SET - 04/24/23



1 L1.20 IRRIGATION PLAN WEST

20 0 10 20 40 80

(IN FEET)

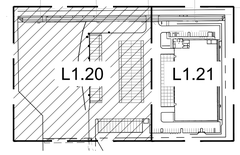
1 inch = 20 ft.

IRRIGATION LEGEND

- POC — POINT OF CONNECTION, INCLUDE DOUBLE CHECK BACKFLOW PREVENTOR, MASTER VALVE AND FLOW SENSOR - SEE DETAIL ON L5.11
- IRRIGATION CONTROLLER
- GATE VALVE
- QUICK COUPLER AT 150' (INTERVALS MAX)
- MAINLINE SLEEVE- DIAMETER AT LEAST TWICE DIAMETER OF PIPE BEING SLEEVED
- MAINLINE-SCHEDULE 40 PVC
- SHRUB AND GROUNDCOVER DRIP AREA
- SHRUB AND GROUNDCOVER SPRAY AREA
- STORMWATER AREA - ZONE SEPARATELY
- LAWN AREA - ZONE SEPARATELY
- TEMPORARY IRRIGATED AREA - ZONE SEPARATELY
- RIGHT-OF-WAY - ZONE SEPARATELY
- MEADOW AREA - ZONE SEPARATELY

REFERENCE NOTES

1. CAREFULLY EXCAVATE IRRIGATION TRENCHES IN VICINITY OF EXISTING TREES. SEE TREE PROTECTION NOTES L0.03 AND IN EXHIBIT D ARBORIST REPORT.



KEY MAP
SCALE: NTS

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REVISION SCHEDULE

Delta	Issued As	Issue Date
1	LAND USE	2/20/2023

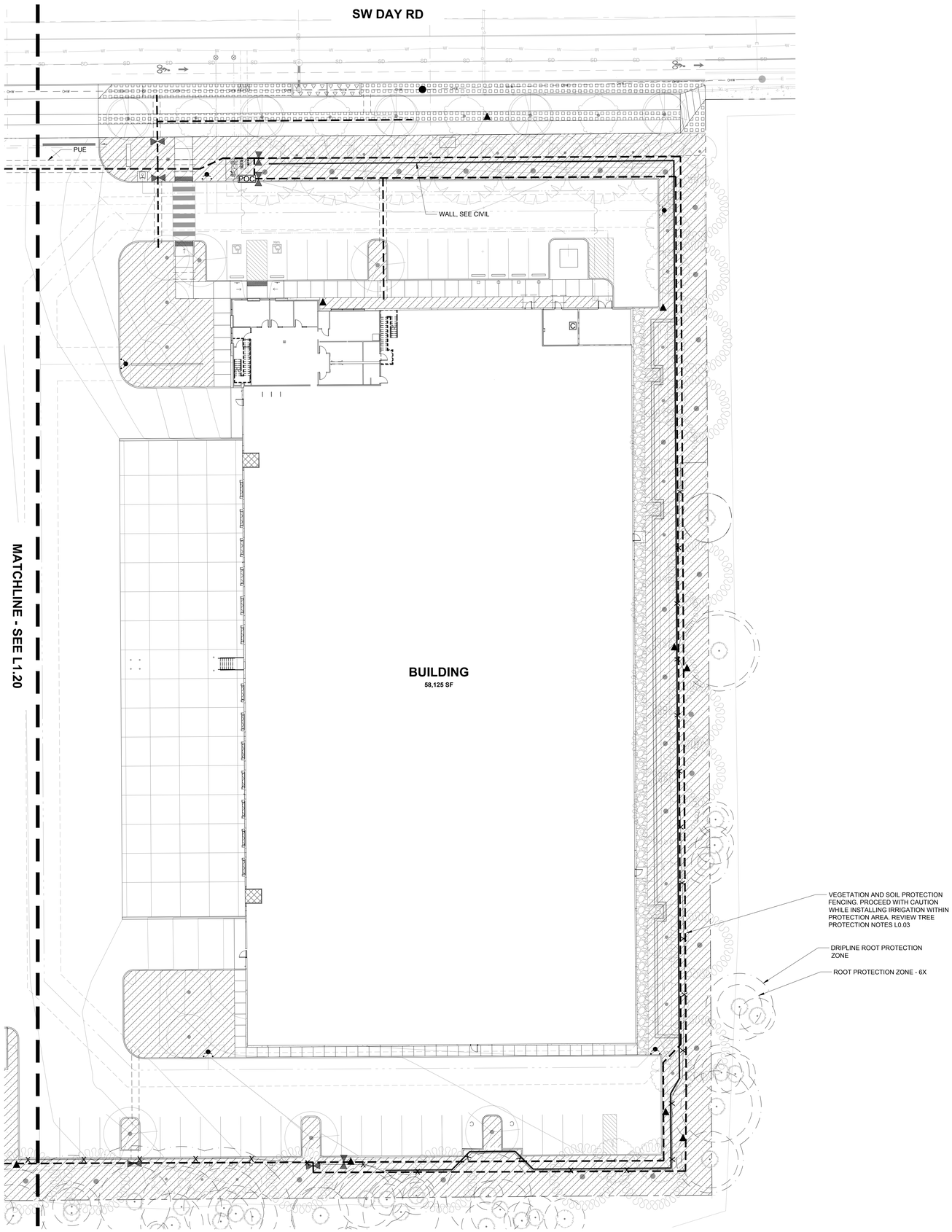
IRRIGATION PLAN - WEST

SHEET
L1.20

JOB NO. **2200502.00**

1073

DEVELOPMENT REVIEW SET - 04/24/23



1 L1.21 IRRIGATION PLAN EAST

20 0 10 20 40 80

(IN FEET)

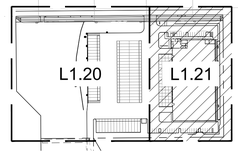
1 inch = 20 ft.

IRRIGATIONLEGEND

POC	POINT OF CONNECTION, INCLUDE DOUBLE CHECK BACKFLOW PREVENTOR, MASTER VALVE AND FLOW SENSOR - SEE DETAIL ON L5.11
C	IRRIGATION CONTROLLER
	GATE VALVE
	QUICK COUPLER AT 150' (INTERVALS MAX)
	MAINLINE SLEEVE- DIAMETER AT LEAST TWICE DIAMETER OF PIPE BEING SLEEVED
	MAINLINE-SCHEDULE 40 PVC
	SHRUB AND GROUNDCOVER DRIP AREA
	SHRUB AND GROUNDCOVER SPRAY AREA
	STORMWATER AREA - ZONE SEPARATELY
	LAWN AREA - ZONE SEPARATELY
	TEMPORARY IRRIGATED AREA - ZONE SEPARATELY
	RIGHT-OF-WAY - ZONE SEPARATELY
	MEADOW AREA - ZONE SEPARATELY

REFERENCE NOTES

1. CAREFULLY EXCAVATE IRRIGATION TRENCHES IN VICINITY OF EXISTING TREES. SEE TREE PROTECTION NOTES L0.03 AND IN EXHIBIT D ARBORIST REPORT.



KEY MAP
SCALE: NTS

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REGISTERED 1060 NICOLE TEIXEIRA OREGON 12/11/2020 LANDSCAPE ARCHITECT

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REVISION SCHEDULE

Delta	Issued As	Issue Date
1	LAND USE	2/20/2023

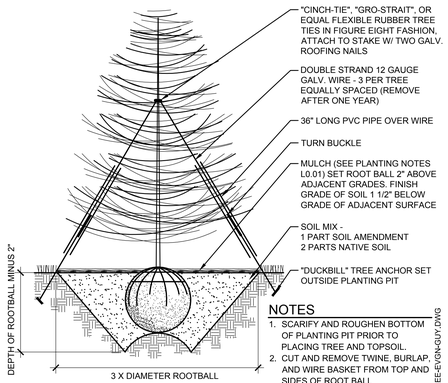
IRRIGATION PLAN - EAST

SHEET
L1.21

JOB NO. **2200502.00**

1074

DEVELOPMENT REVIEW SET - 04/24/23



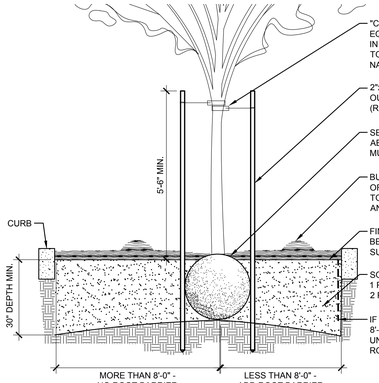
NOTES

1. SCARIFY AND ROUGHEN BOTTOM OF PLANTING PIT PRIOR TO PLACING TREE AND TOPSOIL.
2. CUT AND REMOVE TWINE, BURLAP AND WIRE BASKET FROM TOP AND SIDES OF ROOT BALL

LS-DETL-TREE-EVGN-GUY.DWG

1 EVERGREEN TREE PLANTING DETAIL

SCALE: NTS

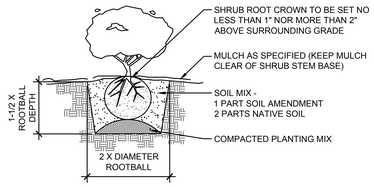


NOTES

1. PLANT ALL TREES AT LEAST 32 INCHES FROM THE END OF HEAD-IN PARKING SPACES TO PREVENT DAMAGE FROM CAR OVERHANGS.
2. ALL ROOTS MUST BE COMPLETELY COVERED. BACKFILL SHOULD BE THOROUGHLY WATERED AS IT IS PLACED AROUND THE ROOTS.
3. SCARIFY AND ROUGHEN BOTTOM OF PLANTING PIT PRIOR TO PLACING TREE AND TOPSOIL. SLOPE BOTTOM TO DRAIN TO SIDES.
4. THE ENTIRE WIDTH OF THE PLANTING ISLAND SHALL CONTAIN ONLY SOIL/COMPOST PLANTING MIX AND BE FREE OF ALL DEBRIS INCLUDING GARBAGE, CONCRETE, GRAVEL OR OTHER FOREIGN MATERIALS.
5. ALL TREES SHALL CONFORM TO MOST RECENT ANSI Z60.1 AMERICAN STANDARD FOR NURSERY STOCK. FIRST LIMBS OF DECIDUOUS TREES IN PARKING LOTS AND ALONG STREETS AND SIDEWALKS SHALL BE 5 FEET ABOVE GROUND OR HIGHER.
6. EXCAVATE HOLE INTO PREPARED SOIL TO ONE INCH LESS THAN HEIGHT OF ROOTBALL AND TWO TIMES THE WIDTH OF THE ROOTBALL. TAMP BOTTOM OF PIT UNDER ROOTBALL THOROUGHLY TO KEEP TREE FROM SETTLING. BUTTRESS AT THE BOTTOM OF THE PIT NO LESS THAN THREE FEET WIDE IF NEEDED TO REINFORCE LATERAL SUPPORT.
7. DO NOT DAMAGE THE ROOTBALL WHEN PLANTING. REMOVE ALL WIRE, STRING AND BURLAP FROM TOP AND SIDES OF ROOTBALL ONLY AFTER PLACING IN THE HOLE.
8. SET TREE STRAIGHT ON TAMPED SOIL.
9. BACKFILL HOLE WITH APPROVED PLANTING MEDIUM MIX TO HALF DEPTH. TAMP SOIL TO STABILIZE ROOTBALL. FINISH BACKFILLING AND TAMP AGAIN.
10. STAKE TREES OUTSIDE OF ROOTBALL AND PARALLEL TO PLANTING ISLAND CURBS WITH TREE STAKES. USE ONE INCH HEAVY CHAINLOCK TREE TIES OR SIMILAR. REMOVE AFTER ONE YEAR.
11. WATER IMMEDIATELY AND THOROUGHLY, TWICE PER WEEK DURING THE FIRST MONTH, THEN ONCE PER WEEK THROUGH THE REMAINDER OF THE DRY SEASON. WATER A MINIMUM OF ONCE PER MONTH DURING THE SECOND SUMMER SEASON.
12. ALL PLANTING BEDS CONTAINING TREES AND SHRUBS AND SURFACE DRAINAGE SHALL BE PREPARED SIMILAR TO THIS LANDSCAPE TREE PLANTING AND DRAINAGE DETAIL.

2 DECIDUOUS TREE PLANTING DETAIL

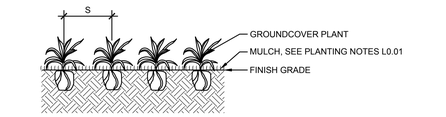
SCALE: NTS



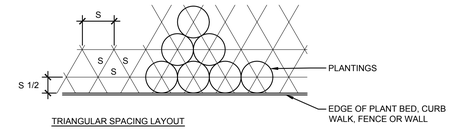
LS-DETL-SHRB.DWG

3 SHRUB PLANTING

SCALE: NTS



PLANTING SECTION



TRIANGULAR SPACING LAYOUT

NOTES

1. TILL SOIL SO THAT THERE ARE NO CLODS OR CLUMPS LARGER THAN 1 1/2" DIAMETER

LS-DETL-GCVR.DWG

4 GROUNDCOVER PLANTING

SCALE: NTS

TREE PROTECTION MEASURES

UNLESS OTHERWISE INDICATED FOR REMOVAL ALL TREES SHALL RECEIVE PROTECTIVE MEASURES FOR THE DURATION OF THE PROJECT IN ACCORDANCE WITH THE CITY REQUIREMENTS.

6' HIGH MINIMUM CHAIN-LINK FENCING, SHALL BE ERECTED AND MAINTAINED. FENCING SHALL BE INSTALLED AS INDICATED ON THIS PLAN. IN AREAS WHERE ROOT ZONE ENCROACHMENT IS UNAVOIDABLE ADJUSTMENTS OF FENCING LOCATION SHALL BE COORDINATED WITH A CERTIFIED ARBORIST PRIOR TO START OF WORK.

NO ACTIVITY MAY BE CONDUCTED WITHIN ANY DESIGNATED TREE PROTECTION AREA INCLUDING BUT NOT LIMITED TO PARKING EQUIPMENT, PLACING SOLVENTS, STORING MATERIALS AND SOIL DEPOSITS, DUMPING CONCRETE WASHOUT, OR OTHER DEBRIS, OR ANY EXCAVATION OR COMPACTION WORK.

DURING CONSTRUCTION NO OBJECTS SHALL BE ATTACHED TO ANY TREE DESIGNATED TO BE RETAINED AND PROTECTED.

FENCE SHALL REMAIN IN PLACE UNTIL THE COMPLETION OF CONSTRUCTION ACTIVITIES. MOVEMENT OR REMOVAL OF THE FENCE REQUIRES APPROVAL BY THE ARBORIST AND/OR THE CITY'S AUTHORIZED REPRESENTATIVE.

EXCAVATION / TRENCHING AROUND TREES

PROPOSED TRENCHING AND EXCAVATION AROUND TREES SHALL BE COORDINATED WITH CONSULTING ARBORIST.

WHERE TRENCHING IS REQUIRED WITHIN CRITICAL ROOT ZONE, TUNNEL UNDER OR AROUND ROOTS BY HAND DIGGING OR BORING. DO NOT CUT MAIN LATERAL ROOTS OR TAP ROOTS. CLEANLY CUT/SEVER SMALLER ROOTS. RELOCATE ROOTS IN BACKFILL AREAS WHEREVER POSSIBLE.

DO NOT ALLOW EXPOSED ROOTS TO DRY OUT BEFORE PERMANENT BACKFILL IS PLACED, PROVIDE TEMPORARY EARTH COVER, OR PACK WITH PEAT MOSS AND WRAP WITH BURLAP. WATER AND MAINTAIN IN MOIST CONDITION UNTIL RELOCATED AND COVERED WITH BACKFILL.

5 TREE PROTECTION

SCALE: NTS

SECTION VIEW

PLAN VIEW

NOTES

1. INSTALL ROOT BARRIER PER MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS.
2. INSTALL ROOT BARRIER WHERE CENTER OF ROOT BALL IS WITHIN 8' OF PAVEMENT.

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6 ROOT BARRIER DETAIL

SCALE: NTS

NOTES

1. PROTECT MATERIAL FROM CONTAMINATION.
2. DO NOT HAUL OR PLACE MATERIAL WHEN THE WEATHER IS TOO WET OR THE GROUND IS FROZEN OR SATURATED AS DETERMINED BY THE OWNER'S REPRESENTATIVE.
3. PLACE MATERIAL IN LOOSE LIFTS, 8 INCHES MAX. AND COMPACT WITH A WATER-FILLED LANDSCAPE ROLLER. DO NOT OTHERWISE MECHANICALLY COMPACT THE MATERIAL.
4. INSTALL PLANT MATERIAL AS SOON AS POSSIBLE AFTER PLACING AND GRADING THE SOIL TO MINIMIZE EROSION AND COMPACTION.
5. TEMPORARY EROSION CONTROL MEASURES ARE REQUIRED UNTIL PERMANENT STABILIZATION MEASURES ARE FUNCTIONAL.
6. PROTECT THE INSTALLED MATERIAL FROM FOOT OR EQUIPMENT TRAFFIC AND SURFACE WATER RUNOFF. INSTALL TEMPORARY FENCING OR WALKWAYS AS NEEDED TO KEEP WORKS, PEDESTRIANS, AND EQUIPMENT OUT OF THE AREA. UNDER NO CIRCUMSTANCES SHOULD MATERIALS AND EQUIPMENT BE STORED ON TOP OF THE INSTALLATION AREA.

LS-DETL-PLNT-SOIL-STMW+BES.DWG

7 SOIL PREP. AT STORMWATER

SCALE: NTS

NOTES

1. REMOVE ALL ROCK, DEBRIS AND OTHER FOREIGN MATTER OVER 1" IN DIAMETER FROM TOP 12" OF SOIL.
2. RIP AND TILL SUBGRADE TO 6" DEEP (MIN.) PRIOR TO INSTALLING TOPSOIL AND TILL INTERFACE OF SUBGRADE AND TOPSOIL.
3. TILL TOPSOIL AND SOIL AMENDMENTS TO A MIN. 12" DEPTH.
4. SUBMIT SAMPLE OF MULCH & TOPSOIL FOR ACCEPTANCE PRIOR TO PLACEMENT.

LS-DETL-PLNT-SOIL.DWG

8 SOIL PREPARATION

SCALE: NTS

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PLANTING DETAILS

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L5.10

JOB NO. **2200502.00**

1075

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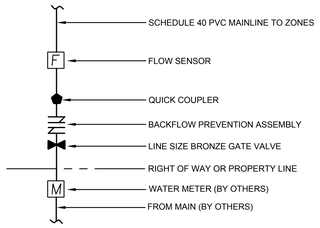
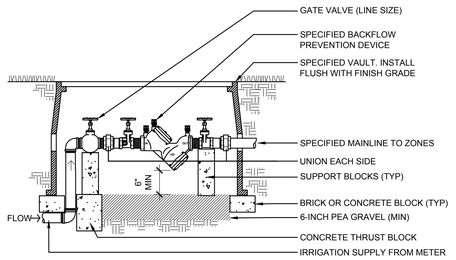


LI-DETL-GEN-POC.DWG

1 POINT OF CONNECTION

SCALE: NTS



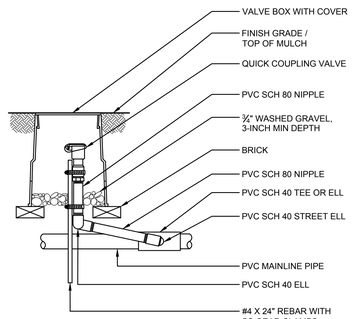
NOTE:
INSTALL BACKFLOW PREVENTOR PER CODE AND REQUIREMENTS OF PREVAILING JURISDICTIONS.

LI-DETL-VALV-DCHK.DWG

2 DOUBLE CHECK VALVE

BACKFLOW PREVENTOR (BELOW GRADE)

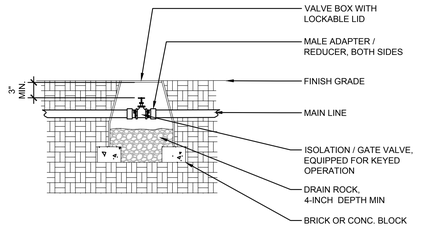
SCALE: NTS



LI-DETL-VALV-QCUP.DWG

3 QUICK COUPLER VALVE

SCALE: NTS

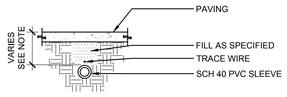


NOTES:
1. SCH 80 ADAPTER AND FITTINGS TO BE SAME SIZE AS ISOLATION VALVE

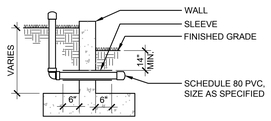
LI-DETL-06-VALV-GATE-ISOL.DWG

4 ISOLATION / GATE VALVE

SCALE: NTS



SECTION AT PAVING



SECTION AT WALLS

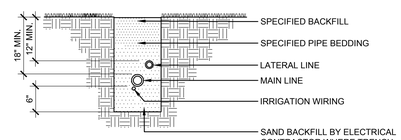
MIN DEPTH OF PIPE	
MAINLINE	18"
LATERAL AT PAVING	14"
AT DRIVING SURFACE	24"

NOTES:
1. SLEEVES TO BE TWICE DIAMETER OF LINE OR LINES PASSING THROUGH.
2. EXTEND IRRIGATION SLEEVE 6-INCHES BEYOND EDGE OF PAVING, EACH SIDE.
3. INSTALL SLEEVES AT SAME TIME AS WALL OR PAVING INSTALLATION.
4. INSTALL PIPE IN SLEEVE BEFORE BACKFILLING AND CAP BOTH ENDS WITHOUT GLUE.

LI-DETL-GEN-SLEEVE.DWG

5 IRRIGATION SLEEVES

SCALE: NTS

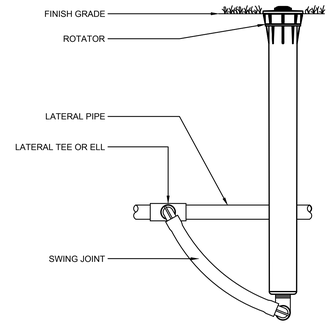


NOTES:
1. SNAKE ALL PVC PIPING IN TRENCHING
2. TIE LOOSE 3 FT LOOP IN ALL IRRIGATION WIRING AT CHANGES IN DIRECTION GREATER THAN 30 DEGREES. UNTIE AFTER ALL CONNECTIONS HAVE BEEN MADE.
3. WHERE ELECTRICAL WIRING DOES NOT SHARE COMMON TRENCH, OVER EXCAVATE TRENCH 2 INCHES MIN AND BACKFILL WITH SPECIFIED BEDDING MATERIAL.
4. LOCATE ALL WIRING NOT IN COMMON TRENCHES ACCURATELY ON RECORD DRAWINGS.

LI-DETL-GEN-TRENCH.DWG

6 IRRIGATION TRENCHING (TYP)

SCALE: NTS



LI-DETL-HEAD-SPRAY-MT.DWG

7 MULTI-TRAJECTORY SPRAY HEAD

DETAIL-SUBTITLE

SCALE: NTS

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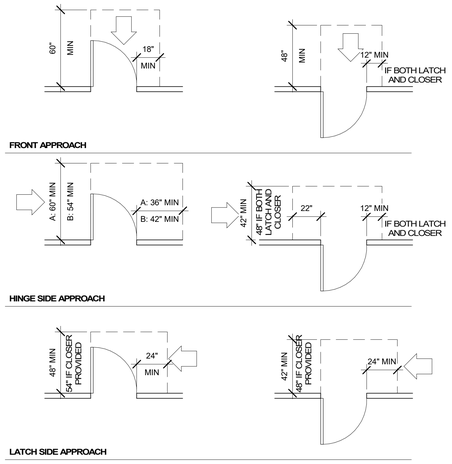
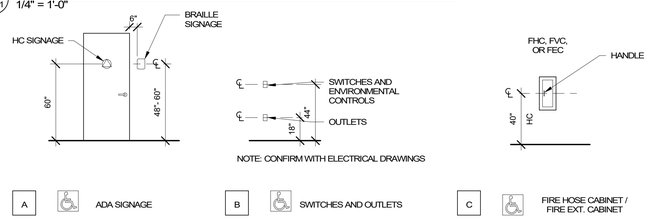


1 ADA DOOR CLEARANCES
A0.01 1/4" = 1'-0"



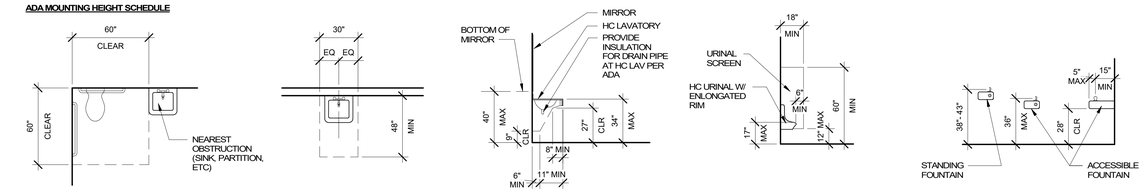
A ADA SIGNAGE

B SWITCHES AND OUTLETS

C FIRE HOSE CABINET / FIRE EXT. CABINET

2 ADA MOUNTING HEIGHTS
A0.01 1/4" = 1'-0"

ADA MOUNTING HEIGHT SCHEDULE



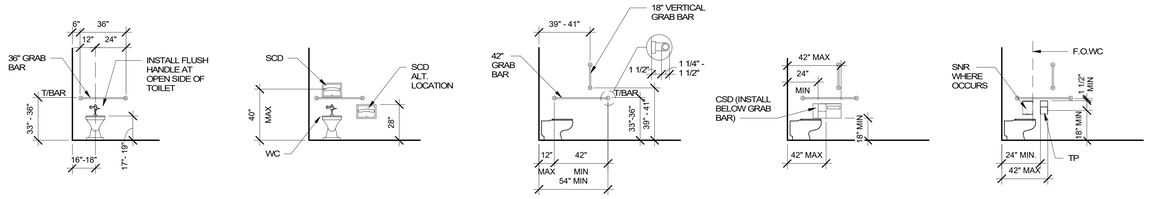
A TOILET PLAN CLEAR FLOOR SPACE

B LAVATORY - PLAN CLEAR FLOOR SPACE

C LAVATORY KNEE/TOE CLEARANCE

D URINAL

E DRINKING FOUNTAIN



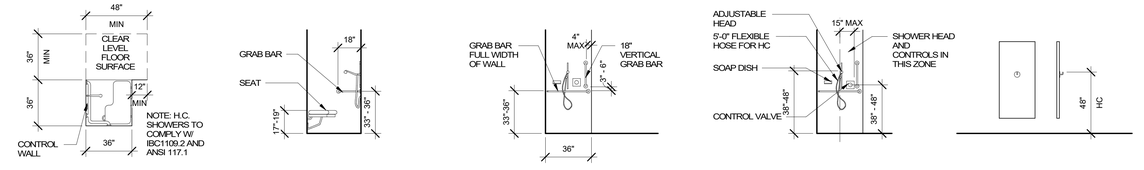
F TOILET STALL - REAR WALL GRAB BARS

G TOILET STALL - REAR WALL ACCESSORIES

H TOILET STALL - SIDE WALL GRAB BARS

J TOILET STALL - SIDE WALL COMBINED RECESSED DISPENSER

K TOILET STALL - SIDE WALL DISPENSERS BELOW BAR



L SHOWER STALL PLAN VIEW

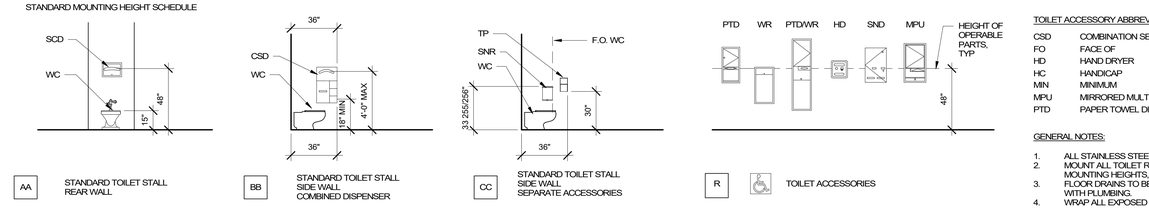
M SHOWER STALL REAR WALL

N SHOWER STALL SIDE ELEVATION GRAB BARS

P SHOWER STALL SIDE ELEVATION

Q UTILITY HOOK / DOOR BUMPER

STANDARD MOUNTING HEIGHT SCHEDULE



AA STANDARD TOILET STALL REAR WALL

BB STANDARD TOILET STALL SIDE WALL COMBINED DISPENSER

CC STANDARD TOILET STALL SIDE WALL SEPARATE ACCESSORIES

R TOILET ACCESSORIES

TOILET ACCESSORY ABBREVIATIONS LEGEND

CSD	COMBINATION SEAT DISPENSER	SND	SANITARY NAPKIN DISPENSER
FO	FACE OF	SNR	SANITARY NAPKIN RECEPTACLE
HD	HAND DRYER	SCD	SEAT COVER DISPENSER
HC	HANDICAP	TO	TOP OF
MIN	MINIMUM	TYP	TYPICAL
MPU	MIRRORED MULTI-PURPOSE UNIT	TP	TOILET PAPER
PTD	PAPER TOWEL DISPENSER	WR	WASTE RECEPTACLE
		WC	WATER CLOSET

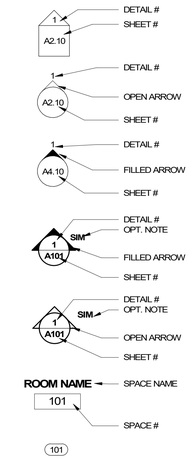
GENERAL NOTES:

1. ALL STAINLESS STEEL ACCESSORIES TO BE SATIN FINISH UNLESS OTHERWISE NOTED.
2. MOUNT ALL TOILET ROOM ACCESSORIES PER MANUFACTURER'S RECOMMENDED MOUNTING HEIGHTS, WITHIN STATED ADA TOLERANCES.
3. FLOOR DRAINS TO BE LOCATED OUTSIDE OF ADA CLEAR FLOOR AREAS, COORDINATE WITH PLUMBING.
4. WRAP ALL EXPOSED WASTE AND HOT WATER LINES PER ADA GUIDELINES.

3 ADA TOILET ROOM CLEARANCES AND MOUNTING HEIGHTS
A0.01 1/4" = 1'-0"

ARCHITECTURAL LEGEND

ANNOTATION SYMBOLS



ARCHITECTURAL GENERAL NOTES

A. OVERALL FLOOR PLANS ARE INTENDED TO IDENTIFY ENTIRE FLOOR AREA. SEE INDIVIDUAL AREA PLANS FOR SPECIFIC DIMENSIONS, DETAILING, PARTITION TYPES, AND ADDITIONAL INFORMATION.
B. PROVIDE 30' - 0" CLEAR MINIMUM TO BOTTOM OF STRUCTURE; MECHANICAL DUCTS, LIGHTING, SPRINKLERS, ETC.
C. ALL WALLS ARE TO 6" ABOVE CEILING GRID UNLESS OTHERWISE NOTED.
D. WHERE TOP OF WALL MEETS UNDERSIDE OF ROOF DECK, PROVIDE DEFLECTION HEAD AS REQUIRED.
E. REFERENCE BUILDING ELEVATIONS FOR EXTERIOR WINDOW TYPE DESIGNATION.
F. REFERENCE DOOR SCHEDULE FOR DOOR TYPE DESIGNATION AND ADD'L INFORMATION.
G. SEE CODE ANALYSIS PLANS FOR FIRE EXTINGUISHER LOCATIONS.
H. PROVIDE BLOCKING AS REQUIRED ADJACENT TO FIRE EXTINGUISHERS FOR OWNER INSTALLED AED STATIONS
I. COORDINATE ALL EXTERIOR WALL PENETRATIONS AMONG AFFECTED DISCIPLINES.
J. WATERPROOFING SYSTEMS AND THEIR INSTALLATIONS SHALL BE SUITABLE FOR THEIR INTENDED PURPOSES.
K. PROVIDE APPROPRIATE AND COMPLETE SEALANT OF ALL PENETRATIONS THROUGH EXTERIOR ASSEMBLIES. SEAL VOIDS BETWEEN SLEEVES, CONDUITS, AND OTHER PENETRATIONS WITH APPROPRIATE JOINT SEALANT. CONTRACTOR TO ASSURE PROPER SEALANT OF ALL VOIDS AT OPENINGS AND PENETRATIONS.
L. FURNITURE AND EQUIPMENT BY OTHERS, SHOWN FOR REFERENCE ONLY. CONTRACTOR TO COORDINATE WALL MOUNTED FURNITURE, INCLUDING BUT NOT LIMITED TO, CABINETRY, PROJECTION SCREENS, WHITE BOARDS, TELEVISIONS, ETC. AND PROVIDE NECESSARY BLOCKING AS REQUIRED.
M. CONTRACTOR SHALL COORDINATE DELIVERY AND INSTALLATION OF OWNER FURNISHED EQUIPMENT WITH THE OWNER.

DIMENSIONING

A. ALL DIMENSIONS TO FACE OF GYP. CENTERLINE OF COLUMN OR EXTERIOR FACE OF WALL, UNLESS OTHERWISE NOTED. ALIGN FINISHES WHERE INDICATED.
B. WALL THICKNESSES ARE ACTUAL, UNLESS OTHERWISE NOTED.
C. DIMENSIONS MARKED "CLR" ARE FROM FINISH SURFACE TO FINISH SURFACE. DIMENSIONS WITH THIS MARK TAKE PRIORITY OVER ADJACENT DIMENSIONS. DIMENSIONS ADJACENT TO LATCH SIDE OF DOORS INDICATE REQUIRED CLEARANCES BETWEEN CLEAR DOOR OPENING AND ADJACENT FINISH.
D. ALL DIMENSIONS SHOWN AS PLUS/MINUS (+/-) ARE FOR GENERAL LAYOUT AND REFERENCE ONLY.
E. DOORS NOT DIMENSIONED ARE TO BE LOCATED 4" FROM FACE OF WALL TO OUTSIDE EDGE OF JAMB.

MEP

A. ALL MEP TO BE DESIGN-BUILD.
B. COORDINATE AND REFER TO MECHANICAL AND ELECTRICAL DISCIPLINES FOR SPECIFIC INFORMATION LOCATIONS, DIMENSIONS, CONNECTIONS, AND PENETRATIONS.
C. SEE MEP DRAWINGS FOR ADDITIONAL INFORMATION.

FIRE RATED WALLS

A. ALL RATED CONSTRUCTION ASSEMBLIES EXTEND FROM FLOOR STRUCTURE TO UNDERSIDE OF STRUCTURE AND DECKING ABOVE UNLESS OTHERWISE NOTED.
B. PROVIDE TYPE 'X' GYPSUM BOARD AT ALL FIRE RATED WALLS AND PARTITIONS. SEE CODE SUMMARY DRAWINGS AND FLOOR PLANS FOR SCOPE OF FIRE RATED WALLS.
C. ALL PENETRATIONS AND VOIDS THROUGH FIRE-RATED ASSEMBLIES TO BE FIRE STOPPED WITH APPROVED MATERIALS.
D. PROVIDE FIRE BLOCKING AS REQUIRED.

MISC

A. STAIRS ARE DESIGN-BUILD BY CONTRACTOR. SEE VERTICAL CIRCULATION DRAWINGS FOR TREADS, RISERS, RAILING, AND DIMENSIONAL REQUIREMENTS. SEE SPECIFICATIONS FOR DESIGN REQUIREMENTS. PROVIDE SHOP DRAWINGS WITH CALCULATIONS PREPARED AND STAMPED BY A PROFESSIONAL ENGINEER REGISTERED IN OREGON FOR REVIEW BY ARCHITECT.
B. SEE STRUCTURAL DRAWINGS FOR FRAMING, SLAB EDGE, ROOF OPENINGS INFORMATION.
C. SEE STRUCTURAL DRAWINGS FOR PANEL/WALL THICKNESS.
D. FURR ALL EXTERIOR WALLS WITHIN THE OFFICE AND UTILITY ROOMS.
E. PAINT ALL EXPOSED STEEL.
F. ALL EXPOSED EXTERIOR STEEL TO BE GALVANIZED.

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SHEET TITLE:
ARCHITECTURAL GENERAL NOTES AND SYMBOLS

SHEET
A0.01

JOB NO. **2200502.00**

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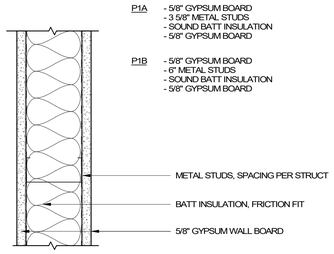
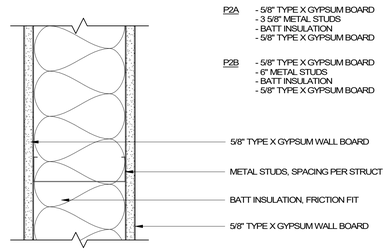


P1 TYPICAL WALL

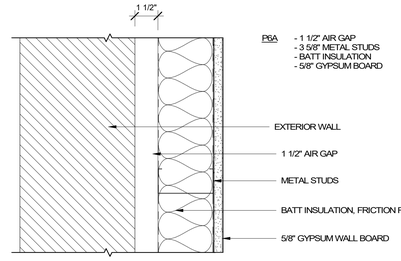
1 A0.02 METAL STUD WALL
3" = 1'-0"



P2 RATED WALL

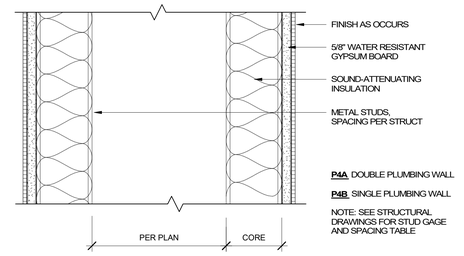
UL DESIGN # U465

2 A0.02 (1) HR RATED WALL
3" = 1'-0"



P3 FURRING WALL

3 A0.02 INSULATED FURRING WALL
3" = 1'-0"



P4A DOUBLE PLUMBING WALL

P4B SINGLE PLUMBING WALL

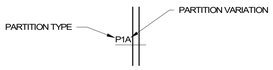
NOTE: SEE STRUCTURAL DRAWINGS FOR STUD GAGE AND SPACING TABLE

4 A0.02 PLUMBING WALL
3" = 1'-0"

PARTITION TYPES

PARTITION TYPES ARE REFERENCED ON PLANS AND IN DETAILS AS FOLLOWS:

PARTITION TYPE: (P1, P2, P3,...) GENERAL DESCRIPTION AND PURPOSE
PARTITION VARIATION: (A, B, C,...) DETAILED DESCRIPTION OF ASSEMBLY



PARTITION NOTES

1. PROVIDE METAL STUD GAUGE TO ACCOMMODATE PARTITION HEIGHT AND MAXIMUM DEFLECTION OF L/240 IN ACCORDANCE WITH MSMA (METAL STUD MANUFACTURER'S ASSOCIATION) LOAD TABLES. **(SEE STRUCTURAL DRAWINGS FOR STUD GAGE AND SPACING TABLE)**
2. ALL WALLS ARE FULL HEIGHT (TO THE BOTTOM OF DECK OR STRUCTURE ABOVE) UNLESS NOTED OTHERWISE. SEE REFLECTED CEILING PLANS FOR MORE INFORMATION.
3. ALL RATED PARTITIONS SHALL EXTEND FROM FLOOR SLAB TO STRUCTURE ABOVE. PROVIDE RATED PENETRATIONS AS REQUIRED. REFER TO PLANS FOR EXTENTS.
4. **(PER SPEC)** PLACE CONTROL JOINTS CONSISTENT WITH LINES OF BUILDING SPACES AND AS INDICATED, NOT MORE THAN 30 FEET APART ON WALLS AND CEILINGS OVER 50 FEET LONG. AT EXTERIOR SOFFITS, NOT MORE THAN 30 FEET APART IN BOTH DIRECTIONS.
5. ALL WALLS WITH CERAMIC TILE, WAINSCOT W/ PLYWOOD SUBSTRATE OR MIRROR SHALL USE MIN. 33 MIL STUDS.
6. TERMINATE BARRIER AND ANTI-FRACTURE MEMBRANE 2" BELOW TOP OF TILE WAINSCOT AS OCCURS.
7. REFER TO SPECIFICATIONS FOR WATERPROOF MEMBRANE, THINSET, AND GROUT REQUIREMENTS.
8. TILE INSTALLATION TO COMPLY W/ TCA HANDBOOK GUIDELINES SEE SHEET A8.7. HORIZ. CJ @ B/STRUCTURE

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SHEET TITLE:
PARTITION TYPES

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A0.02

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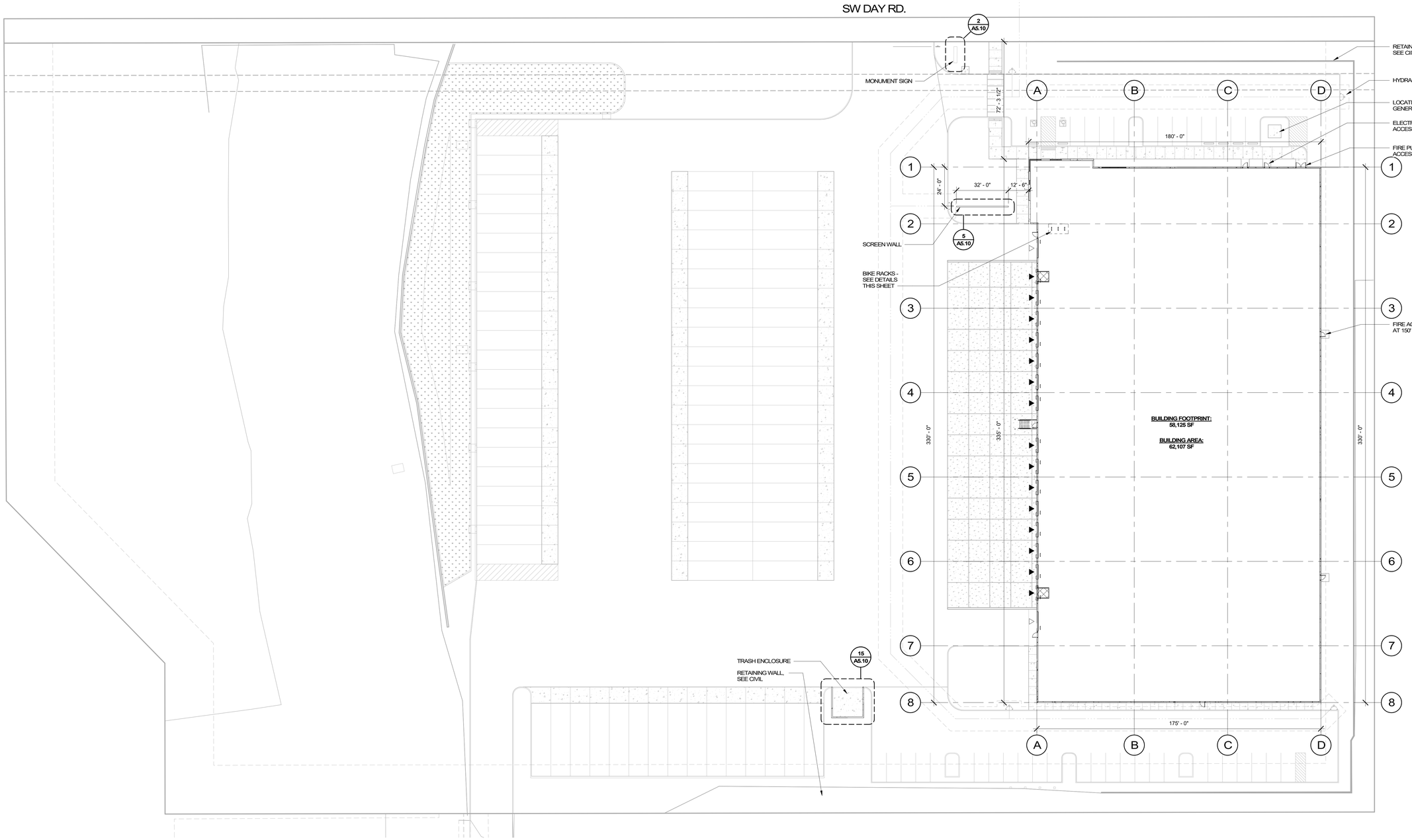
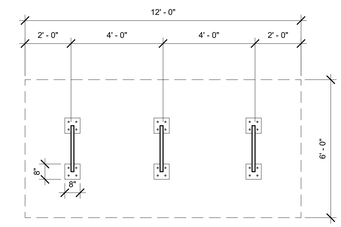
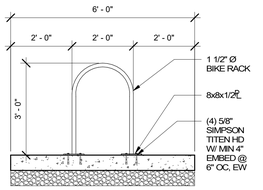


1 A0.09 SITE PLAN
1 : 300



2 A0.09 BIKE RACK PLAN
3/8" = 1'-0"



3 A0.09 BIKE RACKS ELEVATION
1/2" = 1'-0"

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REVISION SCHEDULE

Delta	Issued As	Issue Date
A	REV 1	7/26/22

SHEET TITLE:
SITE PLAN

SHEET
A0.09

JOB NO. **2200502.00**

DEVELOPMENT REVIEW SET 04/24/23

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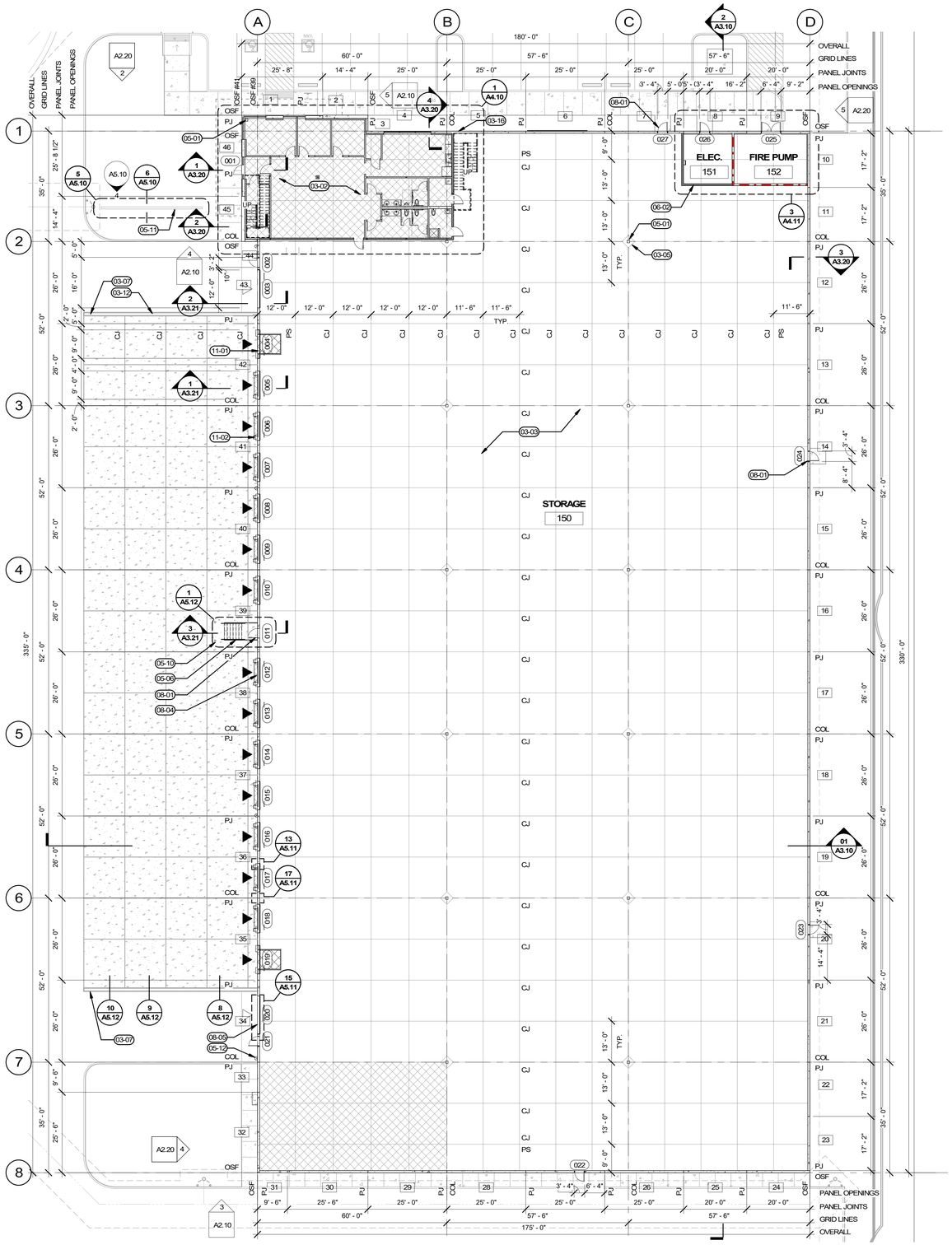
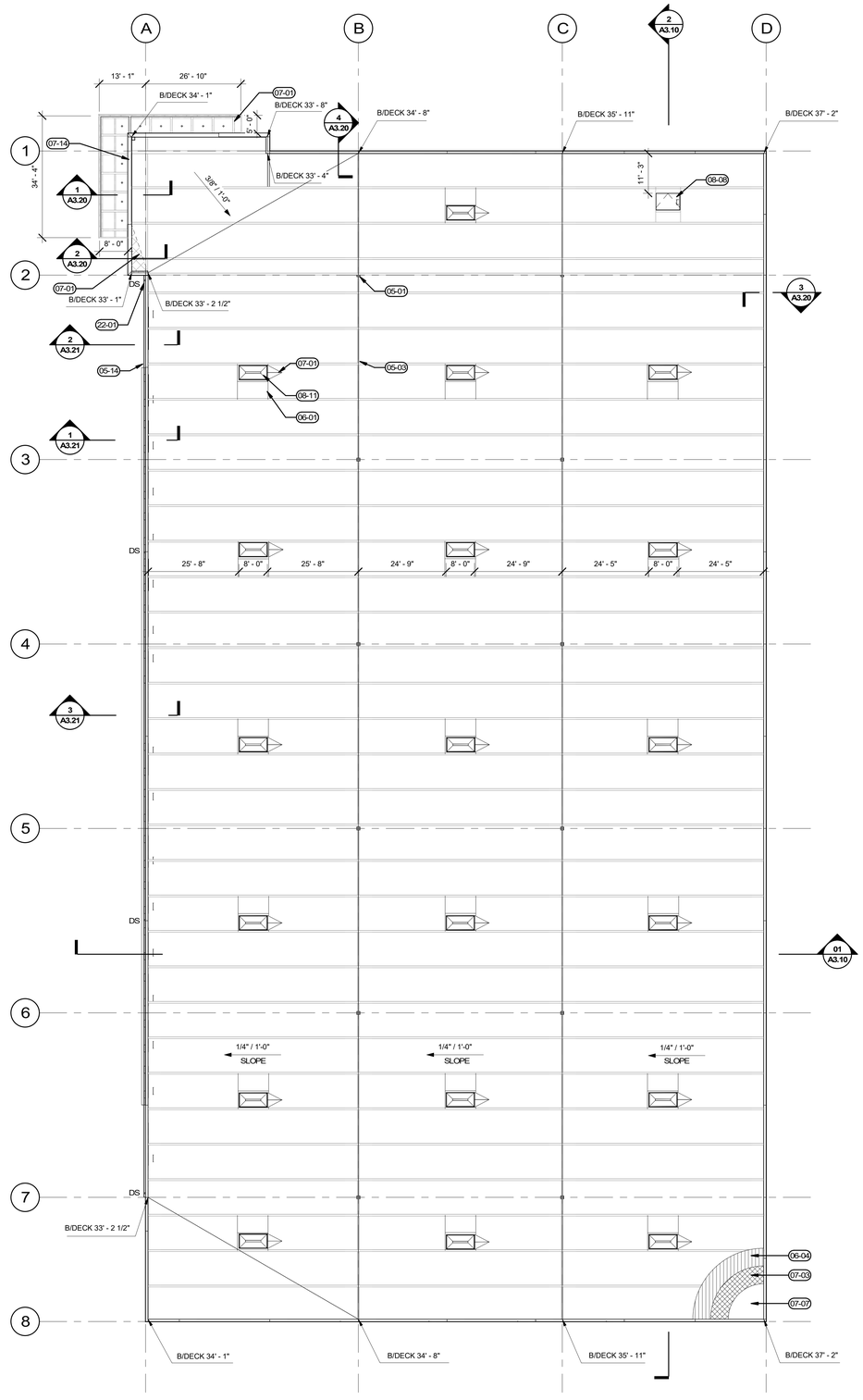


1 A1.10 OVERALL FLOOR PLAN
1/16" = 1'-0"



2 A1.10 OVERALL ROOF PLAN
1/16" = 1'-0"

PROJECT INFORMATION

BUILDING AREA:	58,125 SF
CLEAR HEIGHT:	30' CLEAR
DOCK DOORS:	15 POSITIONS
DRIVE IN DOORS:	2 POSITIONS

WALL TYPES

- CONCRETE TILT PANEL - SEE STRUCTURAL ELEVATIONS FOR THICKNESSES
- 1HR RATED WALL PER 11/A5.20
- FULL HEIGHT WALL PER 12/A5.20
- STICK-PIN INSULATION 10/A5.20
- INTERIOR PARTITION PER 13/15/A5.20

GENERAL NOTES - ARCH

A. VERIFY AND CONFIRM ALL DIMENSIONS AND CONDITIONS. NOTIFY ARCHITECT OF ANY DISCREPANCIES PRIOR TO THE START OF CONSTRUCTION.
A. SEE STRUCTURAL FOR ADDITIONAL INFORMATION
B. SEE DETAIL 4/A5.11 FOR SLAB JOINT DETAILS
C. INSTALL DOOR ARMOR PER 14/A5.11 AT ALL GRADE ACCESS AND DOCK-HIGH OVERHEAD DOORS.
D. CAULK FLOOR JOINT PER DETAIL 18/A5.11
E. CAULK DOCK APRON JOINTS PER DETAIL 13/A5.12
F. SITE IS SHOWN FOR REFERENCE ONLY, SEE CIVIL
G. SEE ELEVATIONS AND STRUCTURAL FOR ADDITIONAL INFORMATION FOR FUTURE OPENINGS
H. PROVIDE DOWNSPOUT GUARDS AT ALL LOCATION ALONG BUILDING SOUTH FACE, SEE DETAIL 17/A5.11
I. PROVIDE SIGNAGE AS REQUIRED BY LOCAL JURISDICTION, FIRE MARSHAL, AND EMERGENCY SERVICES.
J. SEE DETAIL XX.XX FOR DOOR LANDINGS AS OCCUR PER CIVIL.
K. PROVIDE DOCK DOOR BUMPERS AT ALL 9'X10' DOCK DOORS

GENERAL NOTES - ROOF

A. VERIFY AND CONFIRM ALL DIMENSIONS AND CONDITIONS. NOTIFY ARCHITECT OF ANY DISCREPANCIES PRIOR TO THE START OF CONSTRUCTION.
B. ALL ROOF ELEVATION SHOWN AT DISTANCE ABOVE FINISH FLOOR AND BASED ON FINISH FLOOR ELEVATION OF 0'-0".
C. PROVIDE 30'-0" CLEAR MINIMUM TO ALL STRUCTURALMEMBERS, ELECTRICAL FIXTURES, MECHANICAL UNITS AND FIRE SPRINKLERS LINES. SEE BUILDING SECTIONS.
D. PROVIDE FRAMING FOR ROOF ACCESSORIES (SKYLIGHTS, ROOF HATCH AND MECHANICAL) AS REQUIRED IN ACCORDANCE WITH STRUCTURAL.
E. ROOF STRUCTURE SHOWN FOR REFERENCE ONLY, SEE STRUCTURAL.
F. SEE DETAIL XX.XX FOR PIPE PENETRATION.
G. SEE DETAIL XX.XX FOR MECHANICAL UNIT CURBING INSTALLATION.
H. SEE DETAIL XX.XX FOR TYPICAL ROOF ASSEMBLY
I. MAINTAIN 1/4" MIN SLOPE THROUGHOUT ROOF
J. ALL ROOF ELEVATIONS ARE TO BOTTOM OF DECK UNLESS NOTED OTHERWISE
K. BUILDING IS DESIGNED WITH AN ESFR SPRINKLERED SYSTEM FOR CLASS I-IV NON ENCAPSULATED COMMODITIES PER NFPA 13. SEE FIRE PROTECTION SPECIFICATIONS. FIRE PUMP IS PROPSED.
L. CONTRACTOR TO PROVIDE COVERS, ENCLOSURES AND/OR SEALANTS AT ALL ROOF PENETRATIONS, PIPES, CURBS DUCTS, AND CONNECTIONS. GC TO COORDINATE WITH MEP DESIGN BUILD DISCIPLINES.
M. PROVIDE SPLASH BLOCKS AT DOWNSPOUTS OF ALL ROOF ACCESSORY STRUCTURES.

SYMBOLS LEGEND

CONTROL JOINT	CJ
CONSTRUCTION JOINT	CONST JT
PANEL JOINT	PJ
DOWNSPOUT	DS
POUR STRIP	PS
DOCK OVERHEAD DOOR	▲
DOCK DRIVE-IN DOOR	△
PANEL NUMBER, SEE STRUCTURAL	##
UNDERSLAB VAPOR BARRIER	

KEYNOTES

03-02	UNDERSLAB VAPOR BARRIER, EXTENTS PER HATCHED AREA, SEE SPECIFICATIONS	06-01	FRAMING AT ALL ROOF HATCHES, SKYLIGHTS AND ACCESSORIES PER DETAILS, SEE STRUCTURAL
03-03	6" CONCRETE SLAB ON GRADE, SEE STRUCTURAL	06-02	RATED WALL - SEE WALL TYPE LEGEND. EXTENDED TO UNDERSIDE OF ROOF DECK ABOVE.
03-05	CONCRETE COLUMN BLOCKOUT, SEE STRUCTURAL.	06-04	WOOD ROOF DECK PER STRUCT.
03-07	MOUNTABLE CONCRETE CURB AT FINAL 5'-0" OF RETAINING WALL	07-01	CRICKET AS REQUIRED FOR MIN 1/4 PER FOOT SLOPE, SEE DETAIL 8/A5.13
03-12	CONCRETE RETAINING WALL WITH MOUNTABLE CURB, SEE DETAILS 7-11/A5.12	07-03	RIGID INSULATION, SEE TYPICAL ROOF ASSEMBLY 3/A3.10.
03-16	TILT-UP CONCRETE PANEL, SEE STRUCTURAL	07-07	ROOF MEMBRANE, SEE TYPICAL ROOF ASSEMBLY 3/A3.10
05-01	HSS COLUMN, SEE STRUCTURAL	07-14	SHEET METAL PARAPET FLASHING, SEE DETAIL 1/A5.13
05-03	STEEL GIRDER, SEE STRUCTURAL	08-01	INSULATED HM PERSONNEL DOOR, PAINT PER ELEVATIONS. SEE DOOR SCHEDULE
05-06	STEEL ACCESS STAIRS, SEE DETAILS 1-4/A5.12	08-04	9'-0" X 10'-0" OHD INSULATED HIGH-LIFT DOCK DOOR, PAINT P-1. SEE DOOR SCHEDULE
05-10	STEEL BOLLARD, SEE DETAIL 6/A5.12	08-05	12'-0" X 14'-0" OHD INSULATED DRIVE-IN DOOR WITH 3'-0" X 7'-0" PERSONNEL DOOR, PAINT P-1, WITH 1" INSULATED TRANSOM WINDOW ABOVE. SEE DOOR SCHEDULE
05-11	PERFORATED ARCHITECTURAL METAL PANEL SCREENING WALL FASTENED TO HSS FRAME PER STRUCT, SEE DETAILS 4-6/A5.10	08-08	ROOF ACCESS, SEE DETAILS 14-15/A5.13
05-12	DOWNSPOUT GUARD, SEE DETAIL 17/A5.11	08-11	4'X8' SKYLIGHT WITH BURGLAR BAR. PROVIDE CRICKET AT HIGH SIDE W/ 1/2" MIN SLOPE. SEE DETAIL 3/A5.13. COORDINATE LAYOUT WITH SPRINKLER CONTRACTOR.
05-14	SHEET METAL GUTTER TO MATCH PARAPET COPING, SEE DETAIL 11/A5.13	11-01	DOCK PIT LEVELER, SEE SPECIFICATION & 8/A5.20 FOR PIT DETAIL
		11-02	EDGE OF DOCK LEVELER, SEE SPECIFICATIONS
		22-01	6" DIAMETER DOWNSPOUT, SEE DETAIL XX.XX. PAINT TO MATCH BACKGROUND COLOR, SEE ELEVATIONS

DEVELOPMENT REVIEW SET 04/24/23

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REVISION SCHEDULE

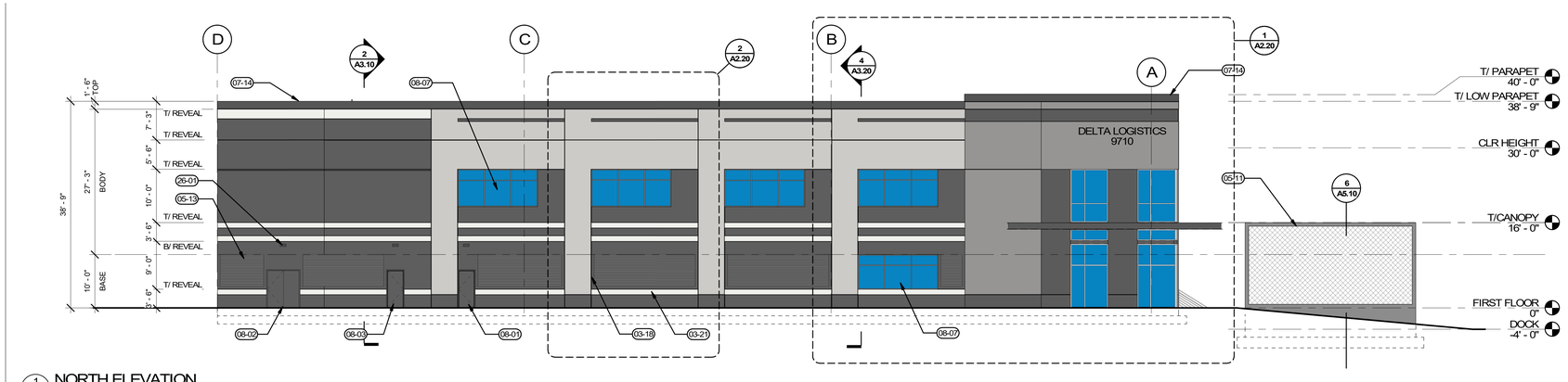
Delta	Issued As	Issue Date

SHEET TITLE:
OVERALL FLOOR & ROOF PLANS

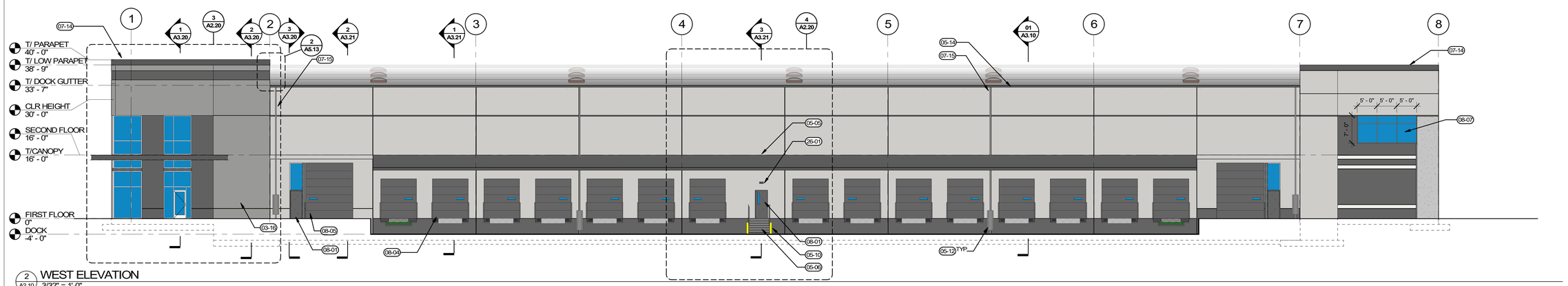
SHEET
A1.10

JOB NO. **2200502.00**

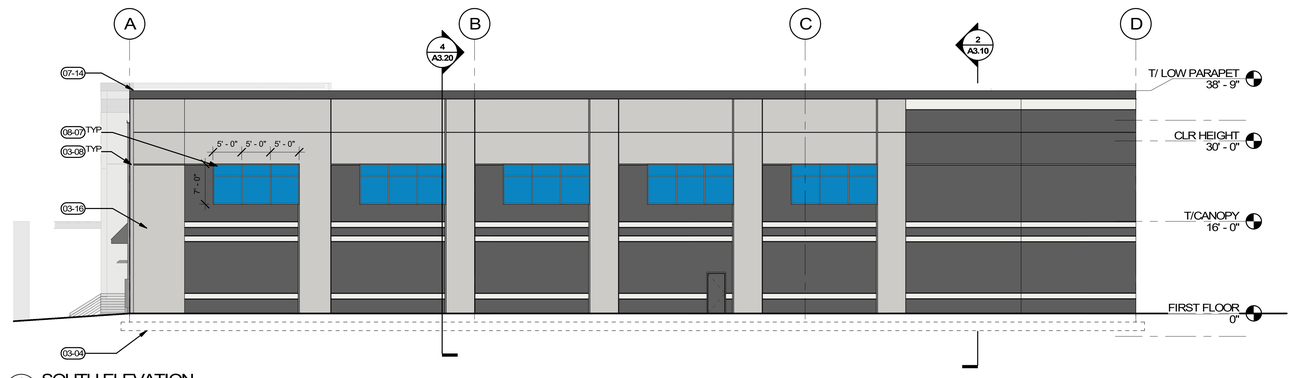
1080



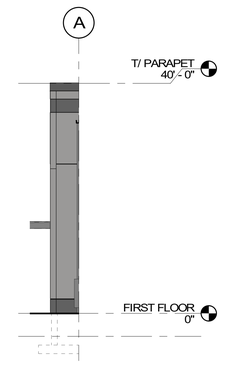
1 A2.10 NORTH ELEVATION
3/32" = 1'-0"



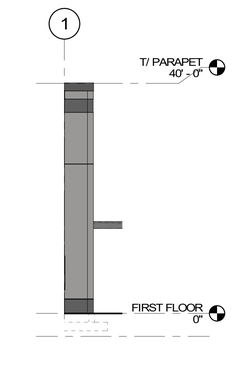
2 A2.10 WEST ELEVATION
3/32" = 1'-0"



3 A2.10 SOUTH ELEVATION
3/32" = 1'-0"



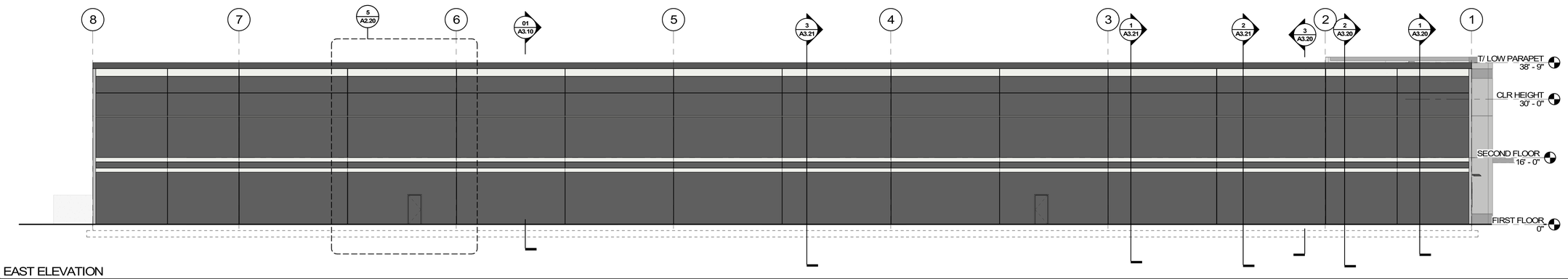
4 A2.10 SOUTH RETURN WALL
3/32" = 1'-0"



5 A2.10 EAST RETURN WALL
3/32" = 1'-0"

PAINT LEGEND

- SW 7006 / EXTRA WHITE
- SW 7667 / ZIRCON
- SW 7670 / GRAY SHINGLE
- SW 7674 / PEPPERCORN



6 A2.10 EAST ELEVATION
3/32" = 1'-0"

KEYNOTES

03-04	CONCRETE FOOTING, SEE STRUCTURAL
03-08	WRAP REVEALS AROUND EDGE OF CONCRETE PANEL
03-16	TILT-UP CONCRETE PANEL, SEE STRUCTURAL
03-18	1" REVEAL "A", SEE DETAIL 5/A5.11
03-21	12" REVEAL W/ 1/2" DEPTH, SEE DETAIL 5/A5.11
05-05	CONTINUOUS CFS DOCK CANOPY WITH SHEET METAL ROOF, SEE DETAIL 7/A5.13
05-06	STEEL ACCESS STAIRS, SEE DETAILS 1-4/A5.12
05-10	STEEL BOLLARD, SEE DETAIL 6/A5.12
05-11	PERFORATED ARCHITECTURAL METAL PANEL SCREENING WALL FASTENED TO HSS FRAME PER STRUCT, SEE DETAILS 4-6/A5.10
05-12	DOWNSPOUT GUARD, SEE DETAIL 17/A5.11
05-13	PERFORATED ARCHITECTURAL METAL PANELS FASTENED TO CONCRETE WALLS WITH VERT. HAT CHANNELS, SEE DETAIL 7/A5.10.
05-14	SHEET METAL GUTTER TO MATCH PARAPET COPING, SEE DETAIL 11/A5.13
07-14	SHEET METAL PARAPET FLASHING, SEE DETAIL 1/A5.13
07-15	DOWNSPOUT, SEE DETAIL XX.XX
08-01	INSULATED HM PERSONNEL DOOR, PAINT PER ELEVATIONS. SEE DOOR SCHEDULE
08-02	INSULATED DOUBLE HM PERSONNEL DOOR, PAINT PER ELEVATIONS, SEE DOOR SCHEDULE
08-03	INSULATED HM PERSONNEL DOOR AT ELECTRICAL ROOM, PAINT PER ELEVATIONS, SEE DOOR SCHEDULE
08-04	9'-0" X 10'-0" OHD INSULATED HIGH-LIFT DOCK DOOR, PAINT P-1. SEE DOOR SCHEDULE
08-05	12'-0" X 14'-0" OHD INSULATED DRIVE-IN DOOR WITH 3'-0" X 7'-0" PERSONNEL DOOR, PAINT P-1, WITH 1" INSULATED TRANSOM WINDOW ABOVE. SEE DOOR SCHEDULE
08-07	STOREFRONT WINDOW, SEE DETAILS 1-3/A5.20
26-01	EXTERIOR LIGHT. DESIGN-BUILD ELECTRICAL TO VERIFY ALL REQUIREMENTS. COORDINATE WITH A/E IF LOCATIONS ARE TO CHANGE. SEE CIVIL FOR ADDITIONAL INFORMATION. SHOE BOX STYLE, DARK ANODIZED FINISH AND FULL CUT OFF.

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REVISION SCHEDULE

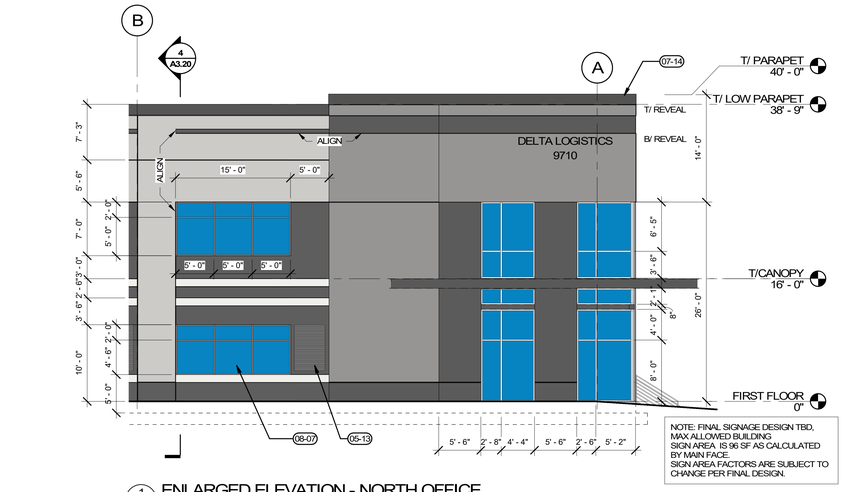
Delta	Issued As	Issue Date
A	REV 1	7/26/22

SHEET TITLE:
BUILDING ELEVATIONS

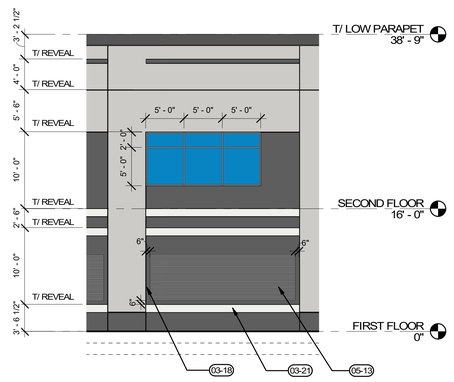
SHEET
A2.10

JOB NO. **2200502.00**

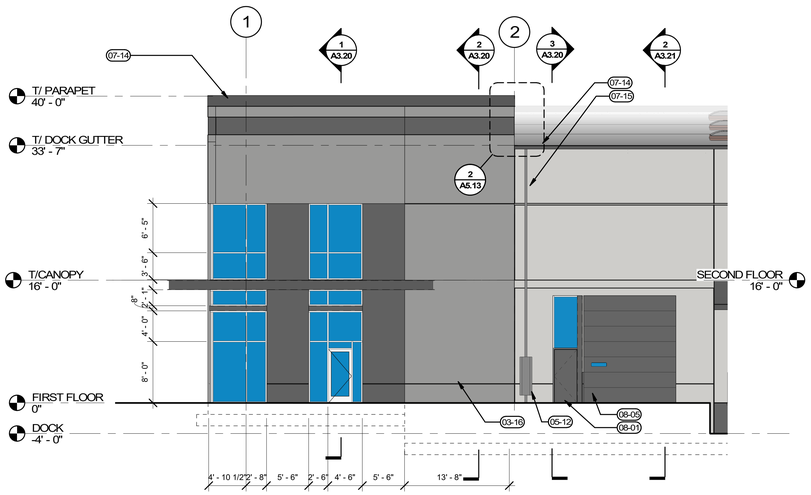
DEVELOPMENT REVIEW SET 04/24/23



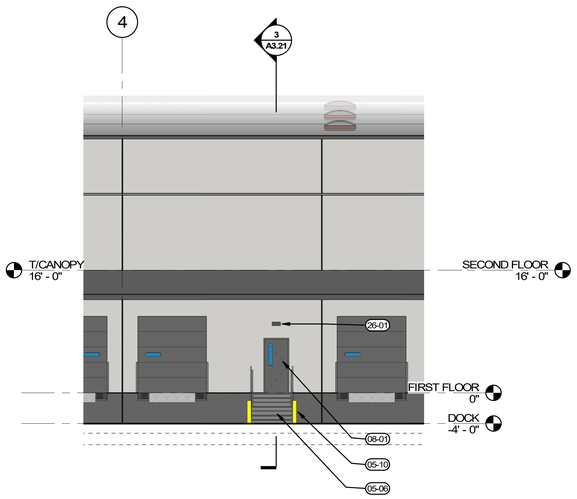
1 A2.20 ENLARGED ELEVATION - NORTH OFFICE
1/8" = 1'-0"



2 A2.20 ENLARGED ELEVATION - TYP. END PANEL
1/8" = 1'-0"



3 A2.20 WEST ELEVATION
1/8" = 1'-0"



4 A2.20 WEST ELEVATION
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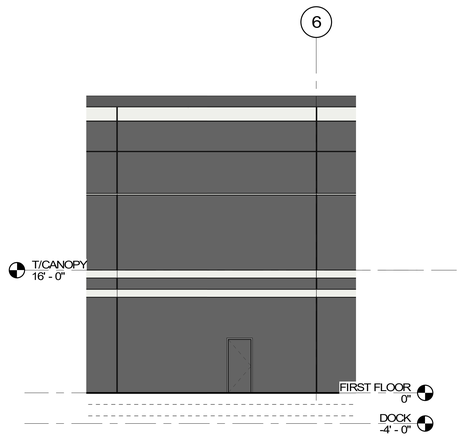

5 A2.20 EAST ELEVATION
1/8" = 1'-0"

KEYNOTES

03-16	TILT-UP CONCRETE PANEL, SEE STRUCTURAL
03-18	1" REVEAL "A", SEE DETAIL 5/A5.11
03-21	12" REVEAL W/ 1/2" DEPTH, SEE DETAIL 5/A5.11
05-06	STEEL ACCESS STAIRS, SEE DETAILS 1-4/A5.12
05-10	STEEL BOLLARD, SEE DETAIL 6/A5.12
05-12	DOWNSPOUT GUARD, SEE DETAIL 17/A5.11
05-13	PERFORATED ARCHITECTURAL METAL PANELS FASTENED TO CONCRETE WALLS WITH VERT. HAT CHANNELS, SEE DETAIL 7/A5.10.
07-14	SHEET METAL PARAPET FLASHING, SEE DETAIL 1/A5.13
07-15	DOWNSPOUT, SEE DETAIL XX.XX
08-01	INSULATED HM PERSONNEL DOOR, PAINT PER ELEVATIONS. SEE DOOR SCHEDULE
08-05	12'-0" X 14'-0" OHD INSULATED DRIVE-IN DOOR WITH 3'-0" X 7'-0" PERSONNEL DOOR, PAINT P-1, WITH 1" INSULATED TRANSOM WINDOW ABOVE. SEE DOOR SCHEDULE
08-07	STOREFRONT WINDOW, SEE DETAILS 1-3/A5.20
26-01	EXTERIOR LIGHT. DESIGN-BUILD ELECTRICAL TO VERIFY ALL REQUIREMENTS. COORDINATE WITH A/E IF LOCATIONS ARE TO CHANGE. SEE CIVIL FOR ADDITIONAL INFORMATION. SHOE BOX STYLE, DARK ANODIZED FINISH AND FULL CUT OFF.

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REVISION SCHEDULE

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SHEET TITLE:
ENLARGED BUILDING ELEVATIONS

SHEET
A2.20

JOB NO. **2200502.00**

DEVELOPMENT REVIEW SET 04/24/23
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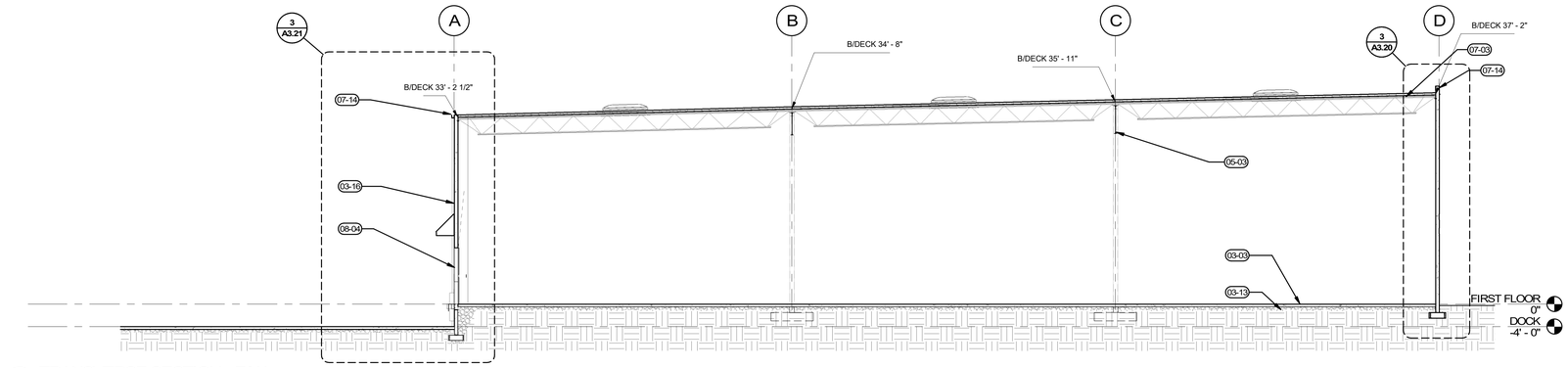
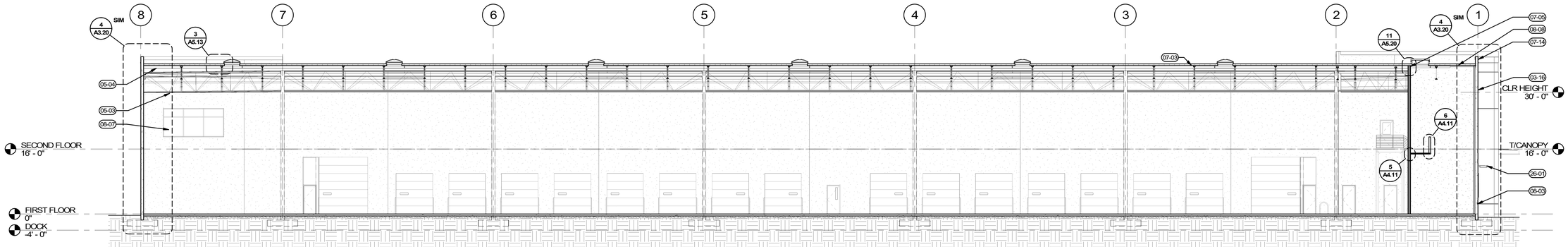
1/8" = 1'-0"



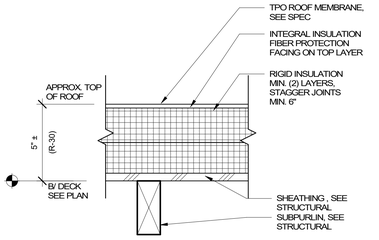
01 A3.10 TRANSVERSE SECTION - E/W
3/32" = 1'-0"

KEYNOTES

03-03	6" CONCRETE SLAB ON GRADE, SEE STRUCTURAL
03-13	COMPACT GRANULAR FILL, PER GEOTECH RECOMMENDATIONS
03-16	TILT-UP CONCRETE PANEL, SEE STRUCTURAL
05-03	STEEL GIRDER, SEE STRUCTURAL
05-04	STEEL DECKING, SEE STRUCTURAL
07-03	RIGID INSULATION, SEE TYPICAL ROOF ASSEMBLY 3/A3.10.
07-05	PROVIDE FIRESTOPPPING WHERE RATED WALL MEETS UNDERSIDE OF ROOF DECK. SEE DETAIL XX.XX
07-14	SHEET METAL PARAPET FLASHING, SEE DETAIL 1/A5.13
08-03	INSULATED HM PERSONNEL DOOR AT ELECTRICAL ROOM, PAINT PER ELEVATIONS, SEE DOOR SCHEDULE
08-04	9'-0" X 10'-0" OHD INSULATED HIGH-LIFT DOCK DOOR, PAINT P-1. SEE DOOR SCHEDULE
08-07	STOREFRONT WINDOW, SEE DETAILS 1-3/A5.20
08-08	ROOF ACCESS, SEE DETAILS 14-15/A5.13
26-01	EXTERIOR LIGHT. DESIGN-BUILD ELECTRICAL TO VERIFY ALL REQUIREMENTS. COORDINATE WITH A/E IF LOCATIONS ARE TO CHANGE. SEE CIVIL FOR ADDITIONAL INFORMATION. SHOE BOX STYLE, DARK ANODIZED FINISH AND FULL CUT OFF.



2 A3.10 LONGITUDINAL SECTION - N/S
3/32" = 1'-0"



3 A3.10 TYPICAL ROOF ASSEMBLY
3" = 1'-0"

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REVISION SCHEDULE

Delta	Issued As	Issue Date

SHEET TITLE:
BUILDING SECTIONS

SHEET
A3.10

JOB NO. **2200502.00**

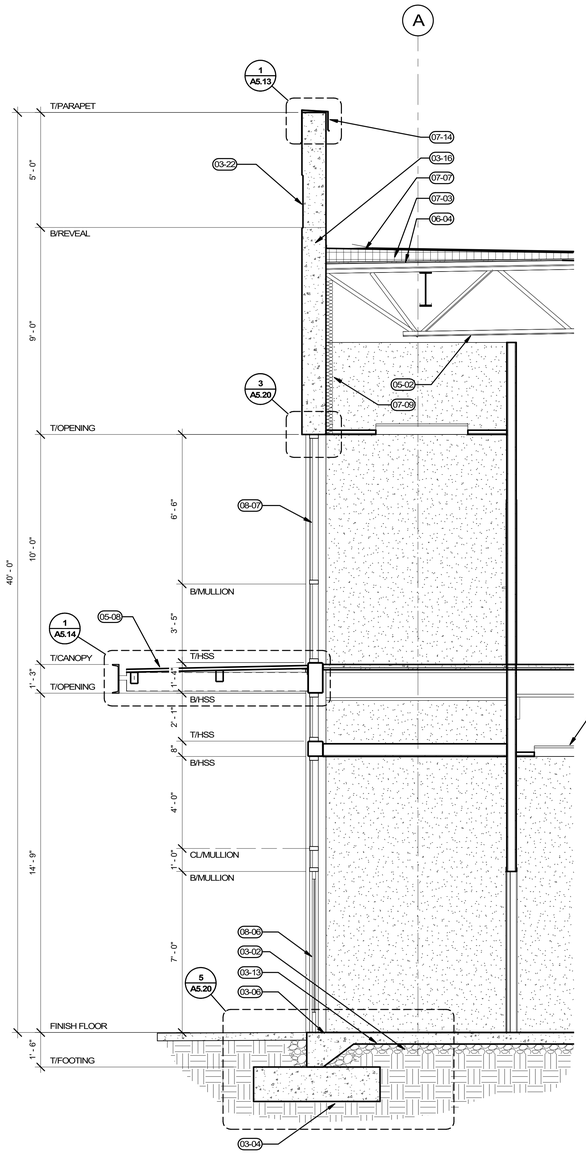
DEVELOPMENT REVIEW SET 04/24/23

GENERAL NOTES

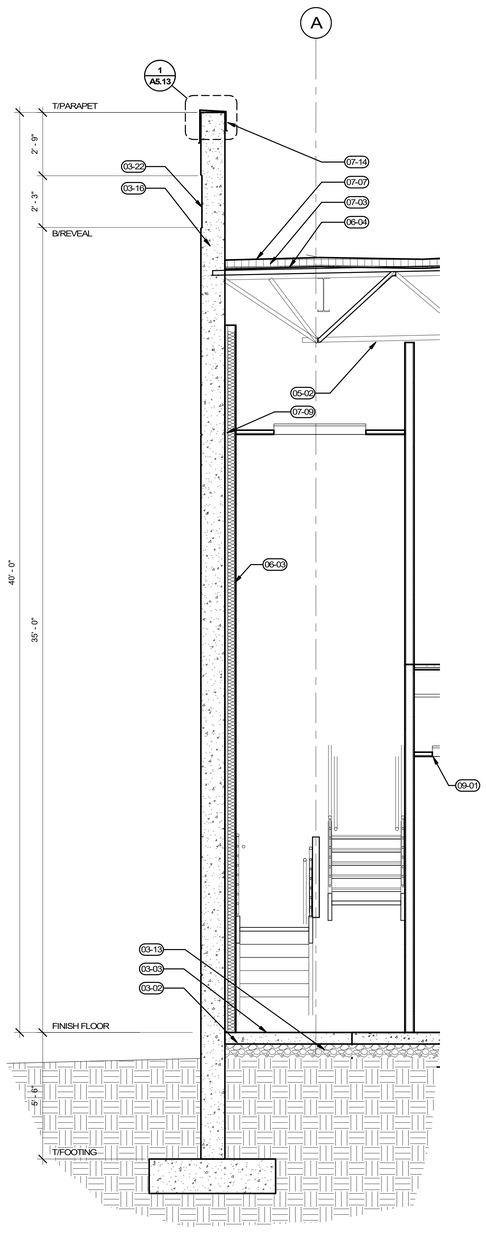
A. SEE ARCHITECTURAL GENERAL NOTES ON A0.01 FOR ADDITIONAL INFORMATION
B. SEE A1.10 FOR WALL TYPES

KEYNOTES

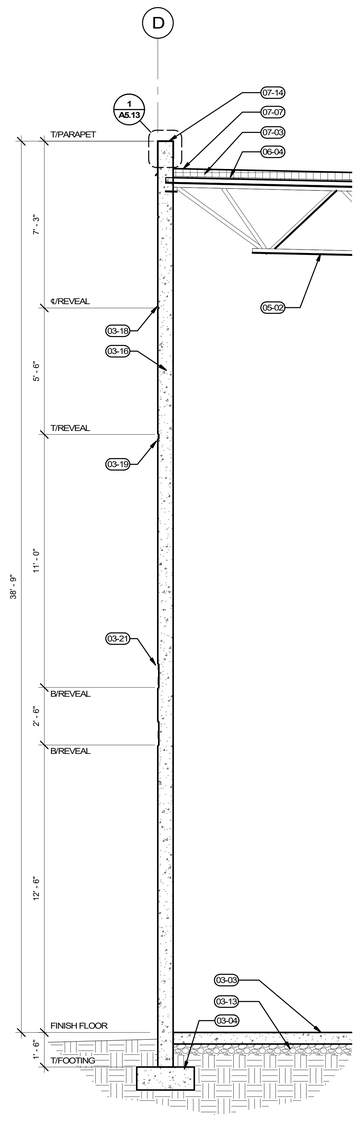
03-02	UNDERSLAB VAPOR BARRIER, EXTENTS PER HATCHED AREA, SEE SPECIFICATIONS
03-03	6" CONCRETE SLAB ON GRADE, SEE STRUCTURAL
03-04	CONCRETE FOOTING, SEE STRUCTURAL
03-06	CONCRETE THICKENED SLAB, SEE STRUCTURAL
03-13	COMPACT GRANULAR FILL, PER GEOTECH RECOMMENDATIONS
03-16	TILT-UP CONCRETE PANEL, SEE STRUCTURAL
03-18	1" REVEAL "A", SEE DETAIL 5/A5.11
03-19	2" REVEAL W/ 1/2" DEPTH, SEE DETAIL 5/A5.11
03-20	6" REVEAL W/ 1/2" DEPTH, SEE DETAIL 5/A5.11
03-21	12" REVEAL W/ 1/2" DEPTH, SEE DETAIL 5/A5.11
03-22	2'-3" REVEAL W/ 1/2" DEPTH, SEE DETAIL 5/A5.11
05-02	STEEL JOIST FRAMING, SEE STRUCTURAL
05-08	STEEL FRAMED CANOPY, SEE DETAILS 9-10/A5.13
06-03	FURRED OUT EXTERIOR WALL AT OFFICE PER PLANS. SEE WALL TYPES, SHEET A1.10.
06-04	WOOD ROOF DECK PER STRUCT.
07-01	CRICKET AS REQUIRED FOR MIN 1/4 PER FOOT SLOPE, SEE DETAIL 8/A5.13
07-03	RIGID INSULATION, SEE TYPICAL ROOF ASSEMBLY 3/A3.10.
07-07	ROOF MEMBRANE, SEE TYPICAL ROOF ASSEMBLY 3/A3.10
07-09	STICK-PIN INSULATION AT EXTERIOR WALL, SEE WALL TYPES, SHEET A1.10
07-14	SHEET METAL PARAPET FLASHING, SEE DETAIL 1/A5.13
08-06	STOREFRONT ENTRY, SEE XX.XX ENLARGED PLANS
08-07	STOREFRONT WINDOW, SEE DETAILS 1-3/A5.20
09-01	ACT CEILING PER PLANS. SEE DETAILS FOR SEISMIC REQUIREMENTS.
26-03	LIGHT FIXTURE PER PLAN. REFER TO SPECS AND DETAILS FOR SEISMIC RESTRAINT REQUIREMENTS. FINAL DESIGN PER DESIGN/BUILD ELECTRICAL.



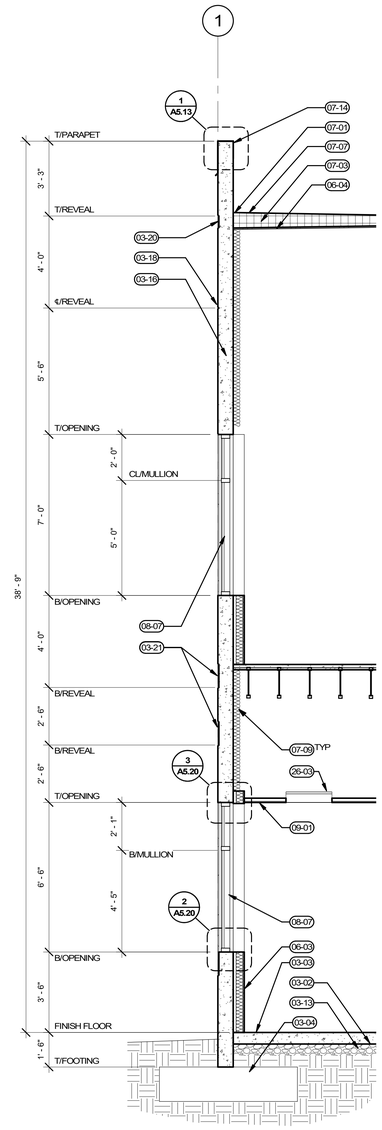
1 A3.20 WALL SECTION @ ENTRY VESTIBULE
3/8" = 1'-0"



2 A3.20 WALL SECTION @ STAIR
3/8" = 1'-0"



3 A3.20 WALL SECTION @ PLAIN PANEL PARAPET
3/8" = 1'-0"



4 A3.20 WALL SECTION @ STOREFRONT WINDOWS
3/8" = 1'-0"

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REVISION SCHEDULE

Delta	Issued As	Issue Date

SHEET TITLE:
WALL SECTIONS

SHEET
A3.20

JOB NO. **2200502.00**

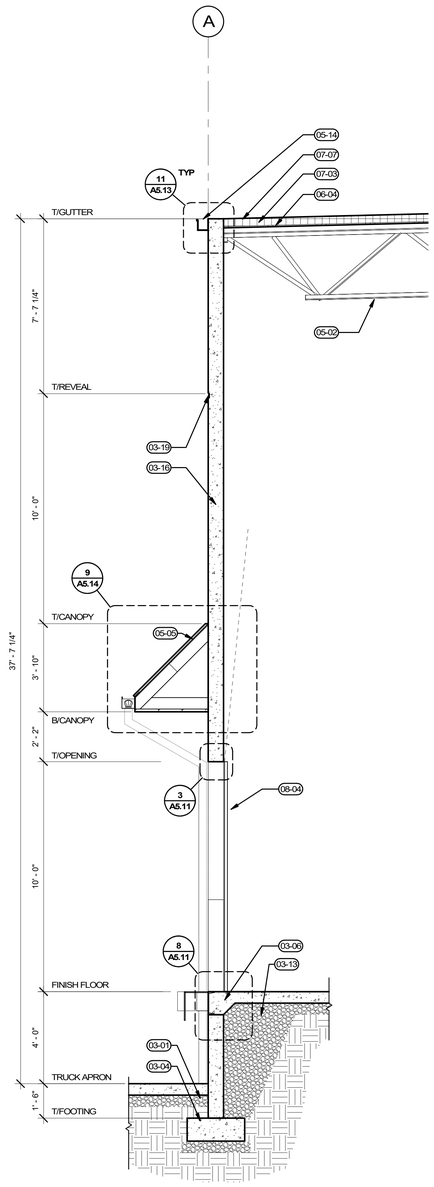
DEVELOPMENT REVIEW SET 04/24/23

GENERAL NOTES

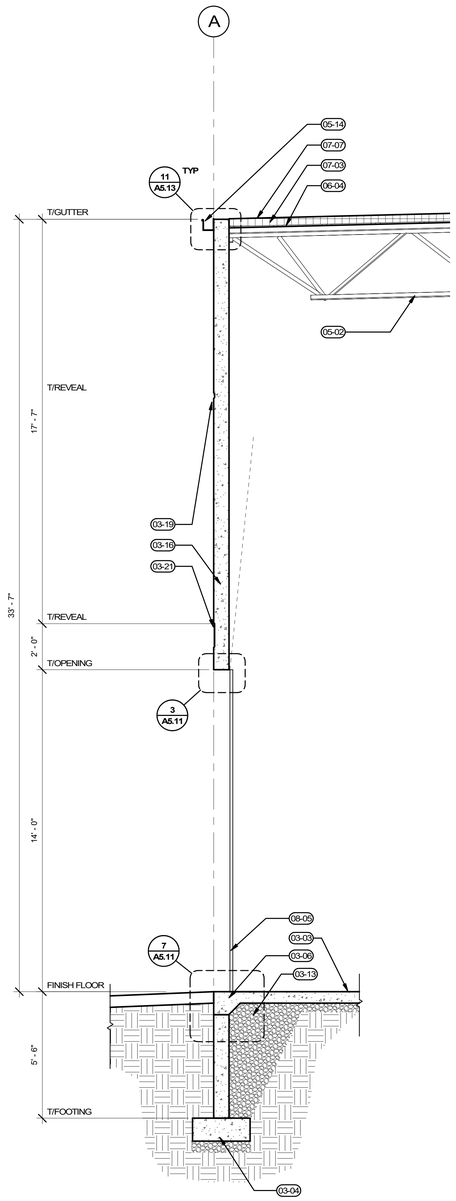
A. SEE ARCHITECTURAL GENERAL NOTES ON A0.01 FOR ADDITIONAL INFORMATION
B. SEE A1.10 FOR WALL TYPES

KEYNOTES

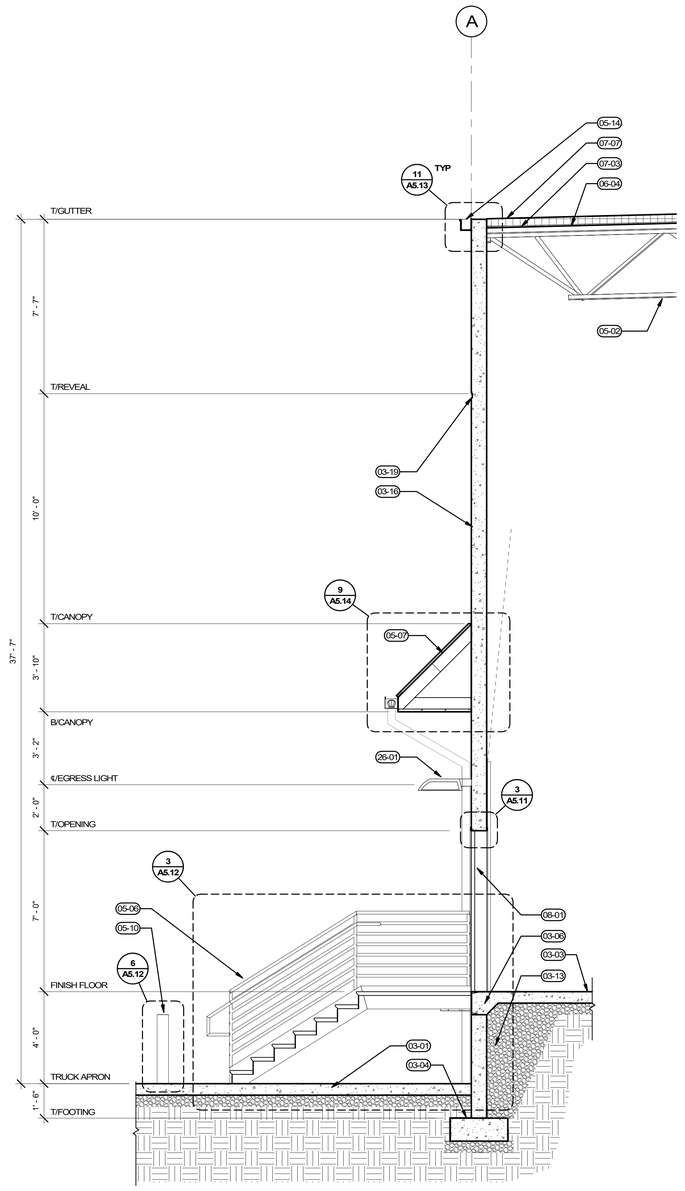
03-01	6" CONCRETE TRUCK APRON, SEE CIVIL
03-03	6" CONCRETE SLAB ON GRADE, SEE STRUCTURAL
03-04	CONCRETE FOOTING, SEE STRUCTURAL
03-06	CONCRETE THICKENED SLAB, SEE STRUCTURAL
03-13	COMPACT GRANULAR FILL, PER GEOTECH RECOMMENDATIONS
03-16	TILT-UP CONCRETE PANEL, SEE STRUCTURAL
03-19	2" REVEAL W/ 1/2" DEPTH, SEE DETAIL 5/A5.11
03-21	12" REVEAL W/ 1/2" DEPTH, SEE DETAIL 5/A5.11
05-02	STEEL JOIST FRAMING, SEE STRUCTURAL
05-05	CONTINUOUS CFS DOCK CANOPY WITH SHEET METAL ROOF, SEE DETAIL 7/A5.13
05-06	STEEL ACCESS STAIRS, SEE DETAILS 1-4/A5.12
05-07	STEEL FRAMED DOCK CANOPY, SEE DETAIL 7/A5.13
05-10	STEEL BOLLARD, SEE DETAIL 6/A5.12
05-14	SHEET METAL GUTTER TO MATCH PARAPET COPING, SEE DETAIL 11/A5.13
06-04	WOOD ROOF DECK PER STRUCT.
07-03	RIGID INSULATION, SEE TYPICAL ROOF ASSEMBLY 3/A3.10.
07-07	ROOF MEMBRANE, SEE TYPICAL ROOF ASSEMBLY 3/A3.10
08-01	INSULATED HM PERSONNEL DOOR, PAINT PER ELEVATIONS. SEE DOOR SCHEDULE
08-04	9'-0" X 10'-0" OHD INSULATED HIGH-LIFT DOCK DOOR, PAINT P-1. SEE DOOR SCHEDULE
08-05	12'-0" X 14'-0" OHD INSULATED DRIVE-IN DOOR WITH 3'-0" X 7'-0" PERSONNEL DOOR, PAINT P-1, WITH 1" INSULATED TRANSOM WINDOW ABOVE. SEE DOOR SCHEDULE
26-01	EXTERIOR LIGHT. DESIGN-BUILD ELECTRICAL TO VERIFY ALL REQUIREMENTS. COORDINATE WITH A/E IF LOCATIONS ARE TO CHANGE. SEE CIVIL FOR ADDITIONAL INFORMATION. SHOE BOX STYLE, DARK ANODIZED FINISH AND FULL CUT OFF.



1 A3.21 WALL SECTION @ DOCK DOOR
3/8" = 1'-0"



2 A3.21 WALL SECTION @ DRIVE-IN PANEL
3/8" = 1'-0"



3 A3.21 WALL SECTION @ DOCK STAIR
3/8" = 1'-0"

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SHEET TITLE:
WALL SECTIONS

SHEET
A3.21

JOB NO. **2200502.00**

DEVELOPMENT REVIEW SET 04/24/23
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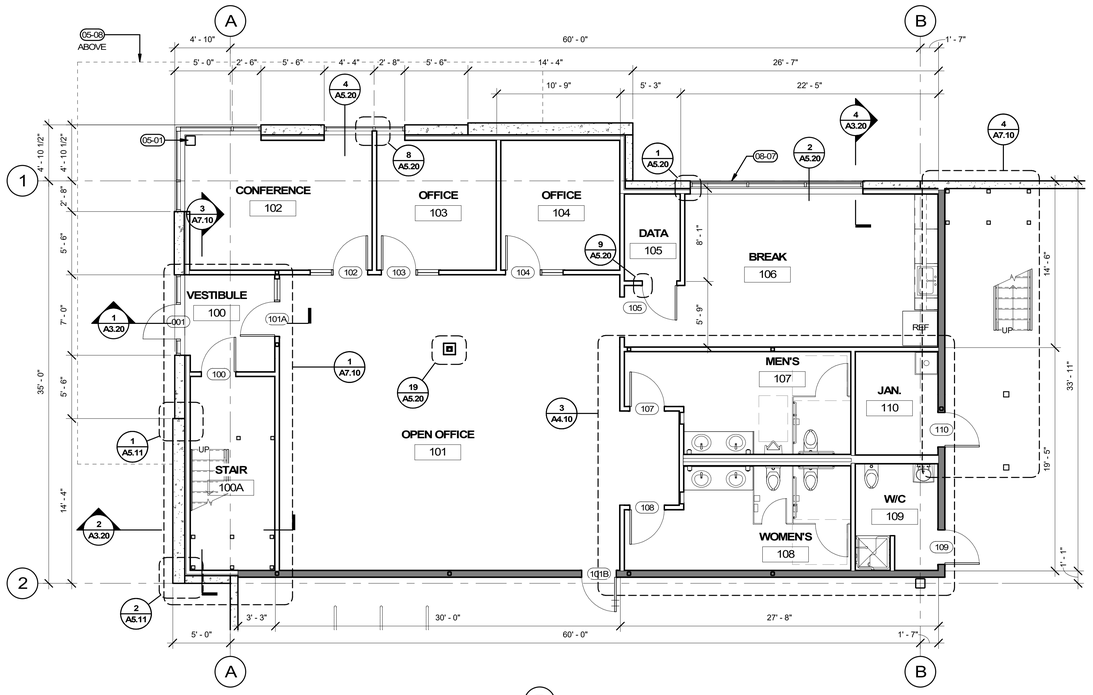
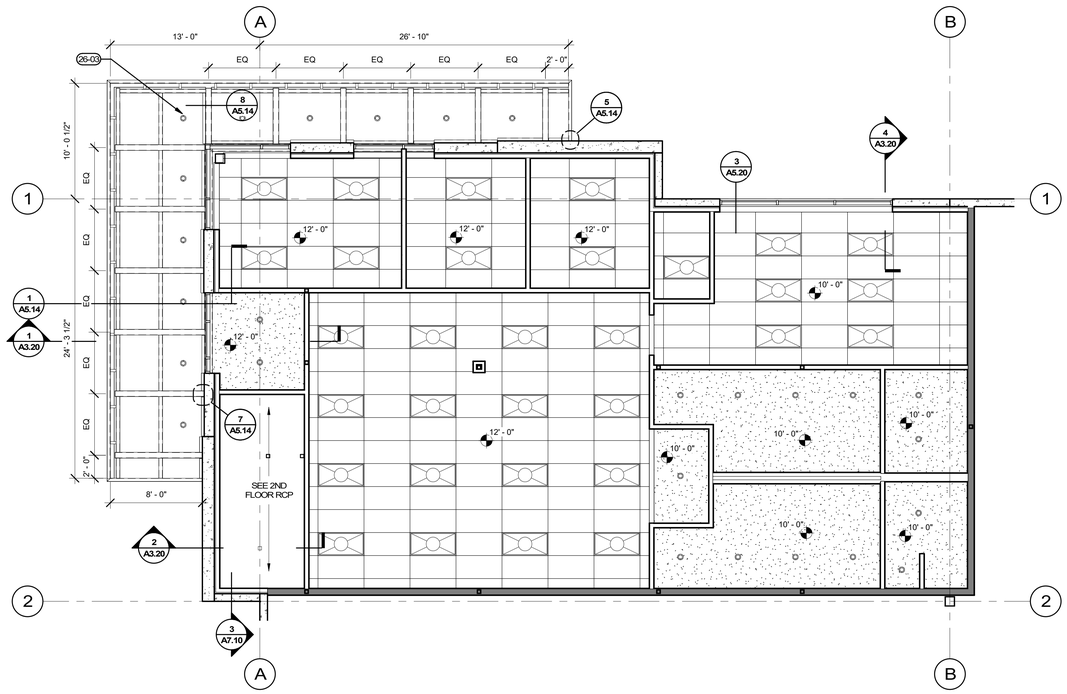
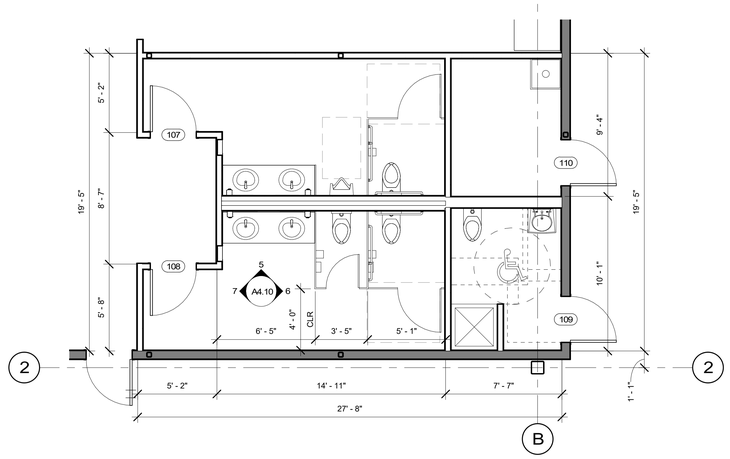


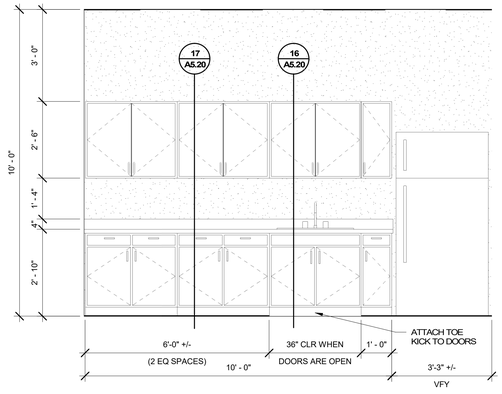
1 A4.10 NW OFFICE FIRST FLOOR PLAN
3/16" = 1'-0"



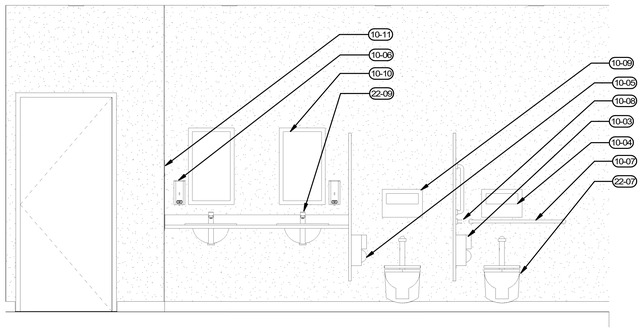
02 A4.10 NW OFFICE FIRST FLOOR RCP
3/16" = 1'-0"



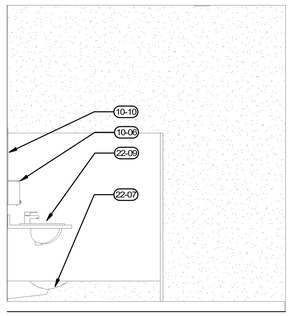
3 A4.10 RESTROOM PLAN - ENLARGED PLAN
1/4" = 1'-0"



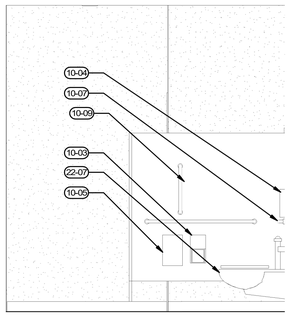
4 A4.10 BREAK ROOM ELEVATION
1/2" = 1'-0"



5 A4.10 RESTROOM ELEVATION - NORTH
1/2" = 1'-0"



6 A4.10 RESTROOM ELEVATION - EAST
1/2" = 1'-0"



7 A4.10 RESTROOM ELEVATION - WEST
1/2" = 1'-0"

GENERAL NOTES

A. SEE A0.01 FOR ADDITIONAL INFORMATION ON FIXTURE MOUNTING HEIGHTS. ALL REQUIRED ADA CLEARANCES ARE TO FACE OF FINISH.
B. ALL DIMENSIONS IN THIS SHEET ARE TO FACE OF FINISH UNLESS OTHERWISE NOTED.
C. CENTER ALL TOILETS/URINALS WITHIN STALL UNLESS OTHERWISE NOTED.
D. INSULATE ALL UNDER COUNTER HOT WATER AND WASTE LINES.
E. COORDINATION OF BLOCKING REQUIREMENTS FOR WALL-MOUNTED SPECIALTIES BY CONTRACTOR.
F. CONFIRM REQUIREMENTS AND SIZES FOR ALL EQUIPMENT/APPLIANCES PRIOR TO CONSTRUCTION OF CABINETRY/COUNTERS.
G. FINISH ENDS OF COUNTERS, DOORS, FACES, TYP.
H. ALL EXPOSED EDGES AT DOORS AND SHELVING TO BE P-LAM TO MATCH ADJACENT VERTICAL SURFACES.
I. SCRIBE TO FIT CASEWORK AT ALL WALLS.
J. WRAP ALL EXPOSED EDGES WITH P-LAM UNLESS NOTED OTHERWISE.
K. SHIM AS REQUIRED.

WALL TYPES

CONCRETE TILT PANEL - SEE STRUCTURAL ELEVATIONS FOR THICKNESSES

1HR RATED WALL PER 11/A5.20

FULL HEIGHT WALL PER 12/A5.20

STICK-PIN INSULATION 10/A5.20

INTERIOR PARTITION PER 13/15/A5.20

KEYNOTES

05-01	HSS COLUMN, SEE STRUCTURAL
05-08	STEEL FRAMED CANOPY, SEE DETAILS 9-10/A5.13
08-07	STOREFRONT WINDOW. SEE DETAILS 1-3/A5.20
10-03	TOILET PAPER DISPENSER
10-04	TOILET SEAT COVER DISPENSER
10-05	SANITARY NAPKIN DISPOSAL
10-06	WALL MOUNTED SOAP DISPENSER
10-07	42" HORIZONTAL GRAB BAR, SEE STANDARD MOUNTING HEIGHT DETAILS
10-08	48" HORIZONTAL GRAB BAR, SEE STANDARD MOUNTING HEIGHT DETAILS
10-09	18" VERTICAL GRAB BAR, SEE STANDARD MOUNTING HEIGHT DETAILS
10-10	2'-6" WIDE MIRROR, FROM 3'-3" AFF TO 7'-0", CENTER ON SINK
10-11	RECESSED PAPER TOWEL DISPENSER / TRASH RECEPTACLE
22-07	WALL MOUNTED WATER CLOSET BY DESIGN BUILD PLUMBING. SEE STANDARD MOUNTING HEIGHT DETAIL
22-09	LAVATORY BY DESIGN BUILD PLUMBING. SEE STANDARD MOUNTING DETAIL
26-03	LIGHT FIXTURE PER PLAN. REFER TO SPECS AND DETAILS FOR SEISMIC RESTRAINT REQUIREMENTS. FINAL DESIGN PER DESIGN/BUILD ELECTRICAL.

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REVISION SCHEDULE

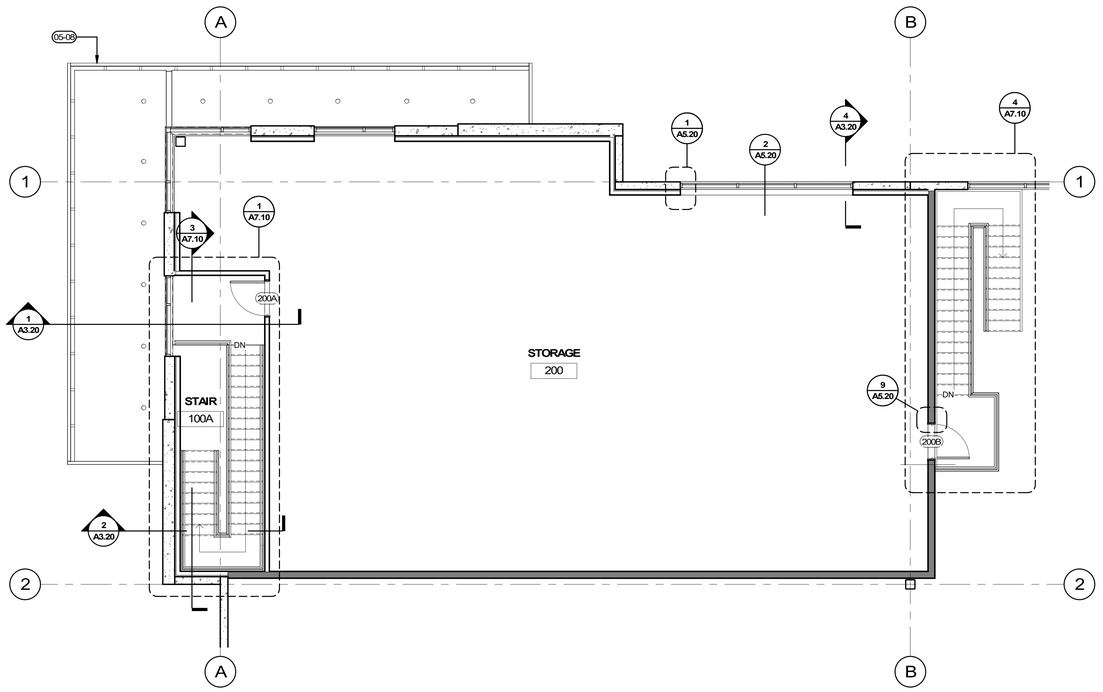
Delta	Issued As	Issue Date

SHEET TITLE:
ENLARGED PLANS

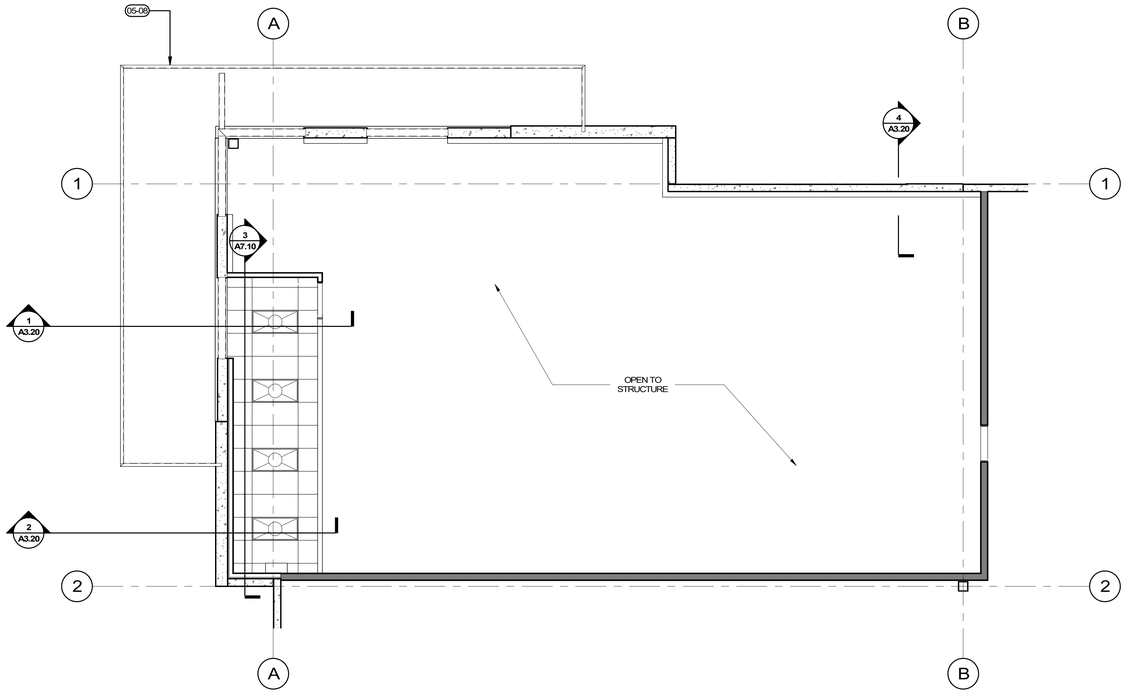
SHEET
A4.10

JOB NO. **2200502.00**

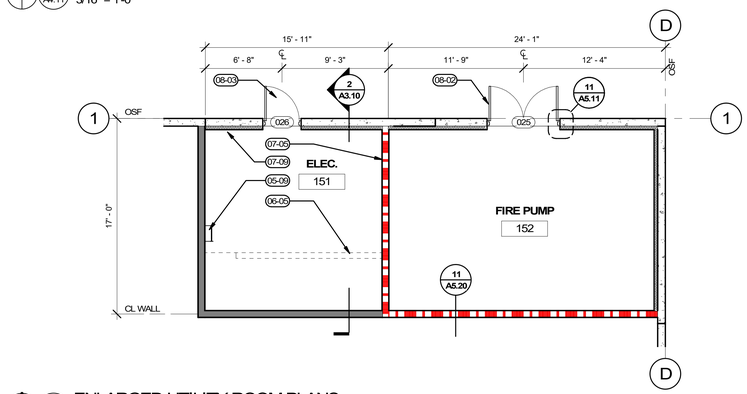
DEVELOPMENT REVIEW SET 04/24/23



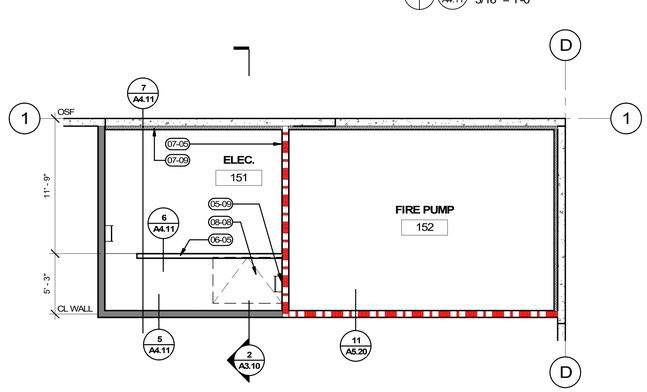
1 A4.11 NW FLOOR PLAN - SECOND FLOOR
3/16" = 1'-0"



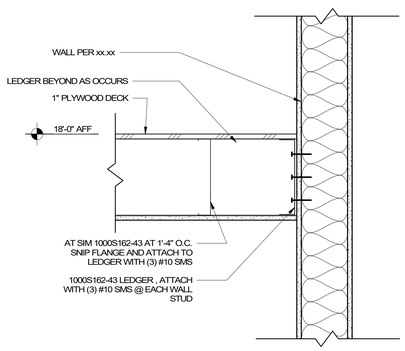
2 A4.11 NW RCP - SECOND FLOOR
3/16" = 1'-0"



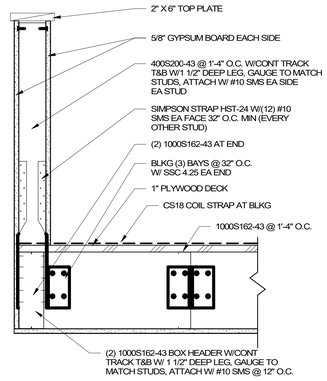
3 A4.11 ENLARGED UTILITY ROOM PLANS
3/16" = 1'-0"



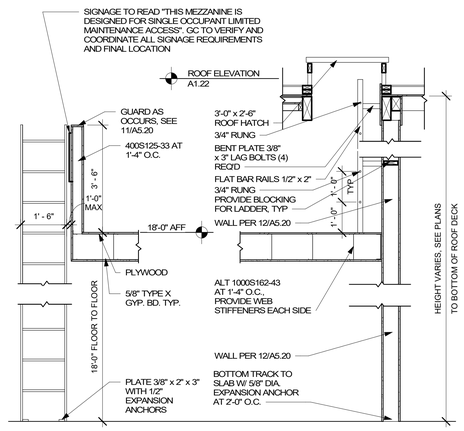
04 A4.11 ENLARGED MEZZANINE PLAN
3/16" = 1'-0"



5 A4.11 MEZZANINE DETAIL
1 1/2" = 1'-0"



6 A4.11 MEZZANINE RAILING
1 1/2" = 1'-0"



7 A4.11 ACCESS LADDER DETAIL
1/2" = 1'-0"

GENERAL NOTES

A. SEE A0.01 FOR ADDITIONAL INFORMATION ON FIXTURE MOUNTING HEIGHTS. ALL REQUIRED ADA CLEARANCES ARE TO FACE OF FINISH.
B. ALL DIMENSIONS IN THIS SHEET ARE TO FACE OF FINISH UNLESS OTHERWISE NOTED.
C. CENTER ALL TOILETS/URINALS WITHIN STALL UNLESS OTHERWISE NOTED.
D. INSULATE ALL UNDER COUNTER HOT WATER AND WASTE LINES.
E. COORDINATION OF BLOCKING REQUIREMENTS FOR WALL-MOUNTED SPECIALTIES BY CONTRACTOR.
F. CONFIRM REQUIREMENTS AND SIZES FOR ALL EQUIPMENT/APPLIANCES PRIOR TO CONSTRUCTION OF CABINETRY/COUNTERS.
G. FINISH ENDS OF COUNTERS, DOORS, FACES, TYP.
H. ALL EXPOSED EDGES AT DOORS AND SHELVING TO BE P-LAM TO MATCH ADJACENT VERTICAL SURFACES.
I. SCRIBE TO FIT CASEWORK AT ALL WALLS.
J. WRAP ALL EXPOSED EDGES WITH P-LAM UNLESS NOTED OTHERWISE.
K. SHIM AS REQUIRED.

WALL TYPES

CONCRETE TILT PANEL - SEE STRUCTURAL ELEVATIONS FOR THICKNESSES
1HR RATED WALL PER 11/A5.20
FULL HEIGHT WALL PER 12/A5.20
STICK-PIN INSULATION 10/A5.20
INTERIOR PARTITION PER 13/15/A5.20

KEYNOTES

05-08 STEEL FRAMED CANOPY, SEE DETAILS 9-10/A5.13
05-09 ROOF ACCESS LADDER BY DESIGN-BUILD
06-05 WOOD FRAMED EQUIPMENT PLATFORM. SEE DETAILS 9-11/A5.20.
07-05 PROVIDE FIRESTOPPPING WHERE RATED WALL MEETS UNDERSIDE OF ROOF DECK. SEE DETAIL XX.XX.
07-09 STICK-PIN INSULATION AT EXTERIOR WALL, SEE WALL TYPES, SHEET A1.10
08-02 INSULATED DOUBLE HM PERSONNEL DOOR, PAINT PER ELEVATIONS, SEE DOOR SCHEDULE
08-03 INSULATED HM PERSONNEL DOOR AT ELECTRICAL ROOM, PAINT PER ELEVATIONS, SEE DOOR SCHEDULE
08-08 ROOF ACCESS, SEE DETAILS 14-15/A5.13

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REVISION SCHEDULE

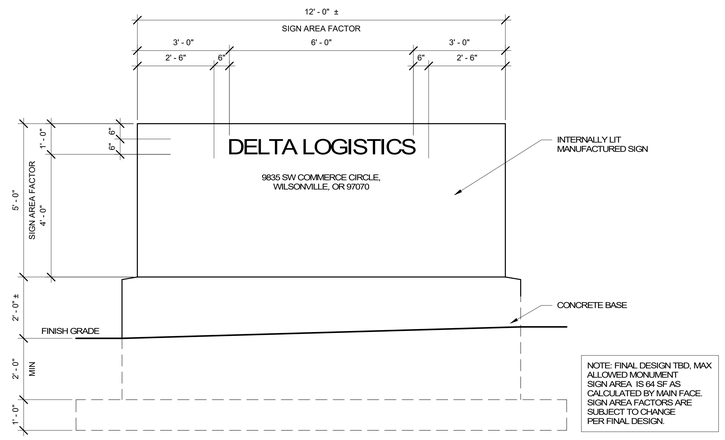
Delta	Issued As	Issue Date

SHEET TITLE:
ENLARGED PLANS

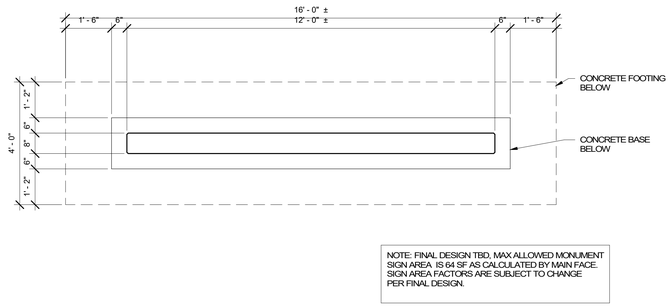
SHEET
A4.11

JOB NO. **2200502.00**

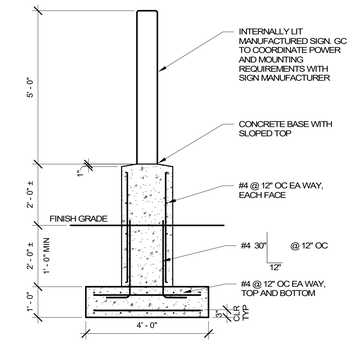
DEVELOPMENT REVIEW SET 04/24/23



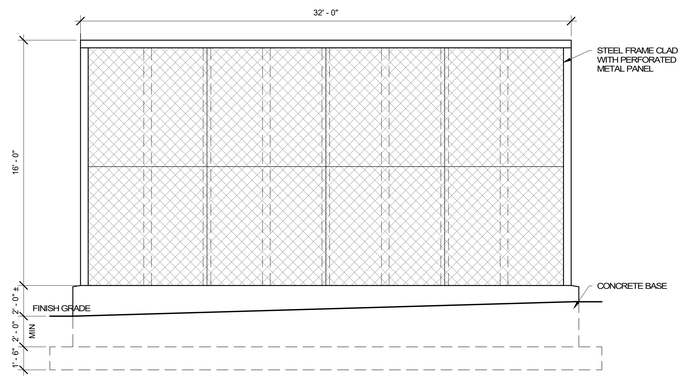
1 A5.10 MONUMENT SIGN ELEVATION
1/2" = 1'-0"



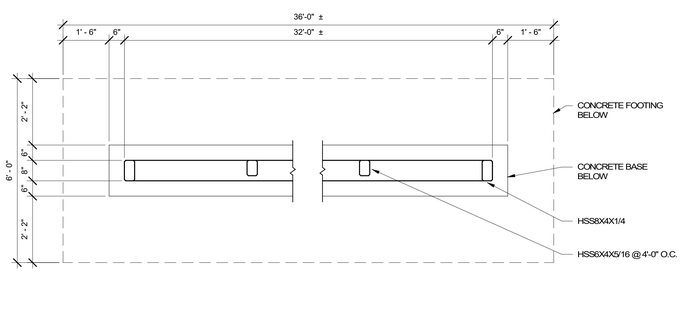
2 A5.10 MONUMENT SIGN PLAN
1/2" = 1'-0"



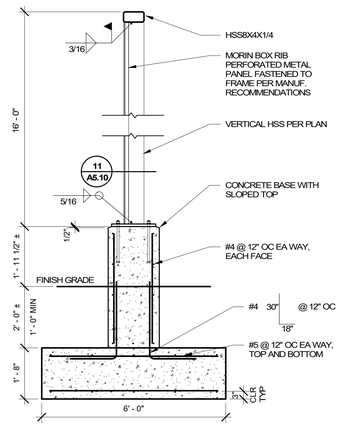
3 A5.10 MONUMENT SIGN SECTION
1/2" = 1'-0"



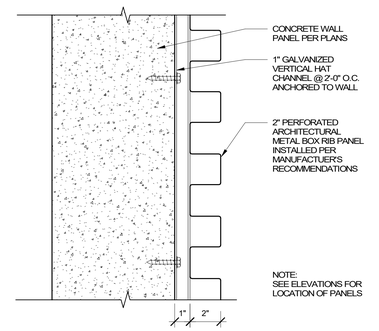
4 A5.10 SCREENING WALL ELEVATION
1/4" = 1'-0"



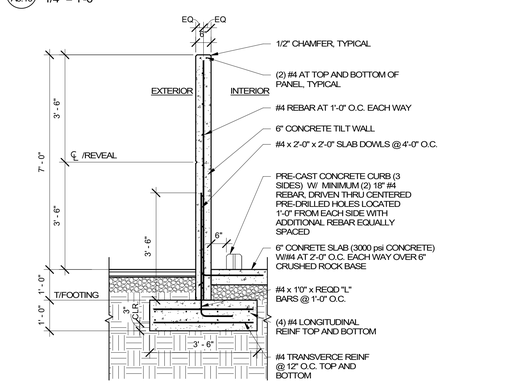
5 A5.10 SCREENING WALL PLAN
1/2" = 1'-0"



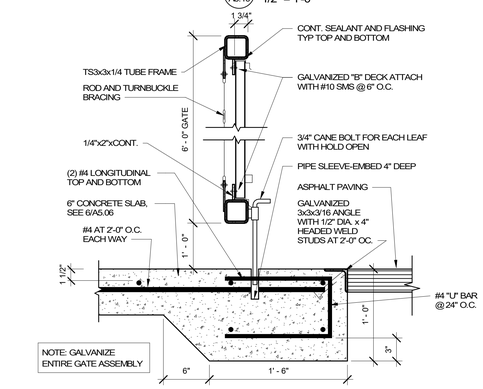
6 A5.10 SCREENING WALL SECTION
1/2" = 1'-0"



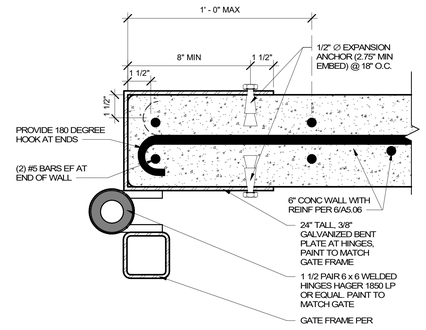
7 A5.10 WALL PANEL APPLIQUE
3" = 1'-0"



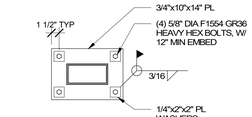
8 A5.10 TRASH ENCLOSURE WALL
1/2" = 1'-0"



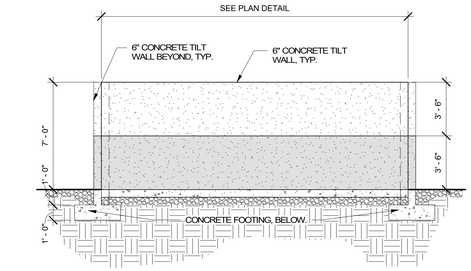
9 A5.10 GATE SECTION
1 1/2" = 1'-0"



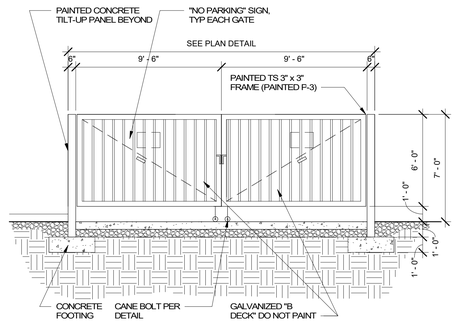
10 A5.10 HINGE CONNECTION
3" = 1'-0"



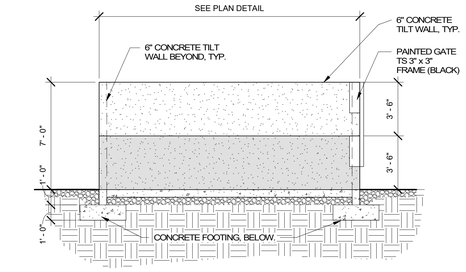
11 A5.10 VERTICAL HSS SECTION
1" = 1'-0"



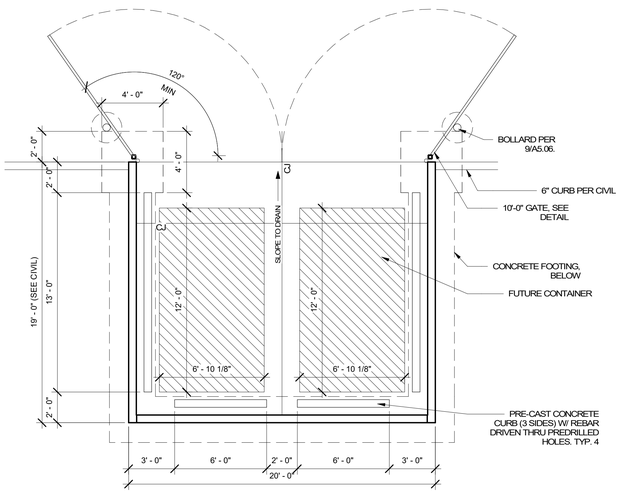
12 A5.10 TRASH ENCLOSURE REAR ELEVATION
1/4" = 1'-0"



13 A5.10 TRASH ENCLOSURE FRONT ELEVATION
1/4" = 1'-0"



14 A5.10 TRASH ENCLOSURE SIDE ELEVATION
1/4" = 1'-0"



15 A5.10 TRASH ENCLOSURE PLAN
1/4" = 1'-0"

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REGISTERED ARCHITECT
SCOTT J. MOORE
PORTLAND, OREGON
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STATE OF OREGON

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REVISION SCHEDULE

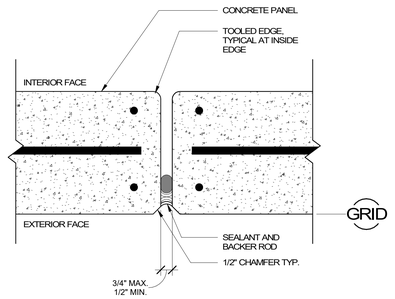
Delta	Issued As	Issue Date
A	REV 1	7/26/22

SHEET TITLE:
SITE DETAILS

SHEET
A5.10

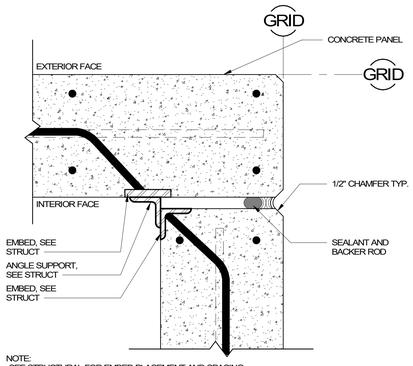
JOB NO. **2200502.00**

DEVELOPMENT REVIEW SET 04/24/23



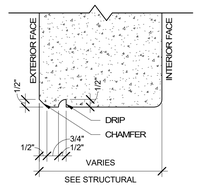
NOTE:
-SEE STRUCTURAL FOR EMBED PLACEMENT AND SPACING
-SEE PANEL ELEVATIONS FOR REINFORCEMENT AND THICKNESS
-TOOL ALL INTERIOR EDGES OF CONCRETE PANEL

1 A5.11 END TO END CONNECTION
3" = 1'-0"

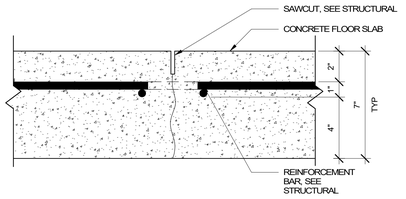


NOTE:
-SEE STRUCTURAL FOR EMBED PLACEMENT AND SPACING
-SEE PANEL ELEVATIONS FOR REINFORCEMENT AND THICKNESS
-TOOL ALL INTERIOR EDGES OF CONCRETE PANEL

2 A5.11 CORNER CONNECTION
3" = 1'-0"

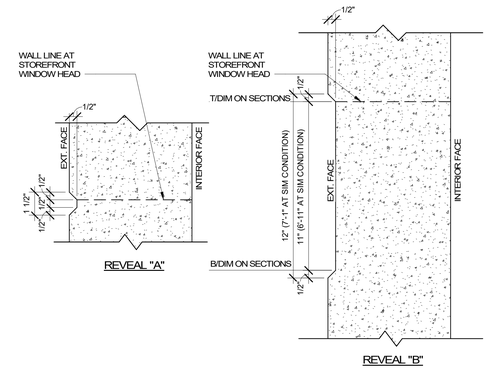


3 A5.11 DRIP EDGE
3" = 1'-0"

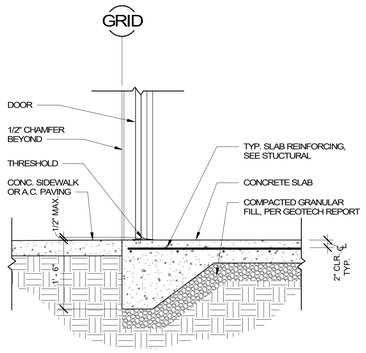


NOTE: FOLLOW ALL MANUFACTURER RECOMMENDATIONS FOR SLAB JOINT PREPARATION AND MATERIAL INSTALLATION.

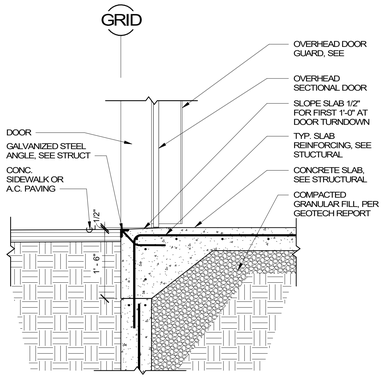
4 A5.11 FLOOR JOINT
3" = 1'-0"



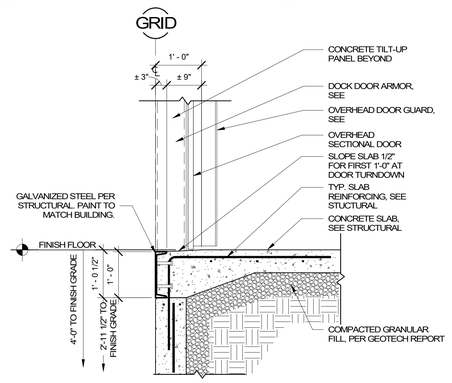
5 A5.11 CONCRETE REVEALS
3" = 1'-0"



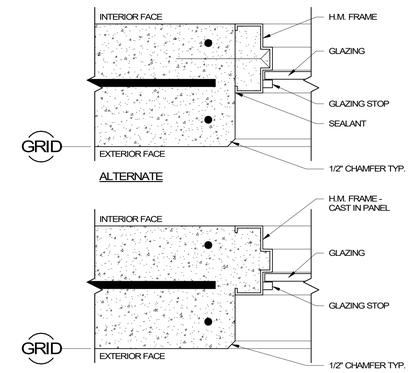
6 A5.11 SLAB AT PERSONNEL DOOR
3/4" = 1'-0"



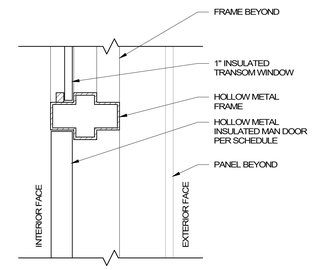
7 A5.11 SLAB AT DRIVE-IN DOOR
3/4" = 1'-0"



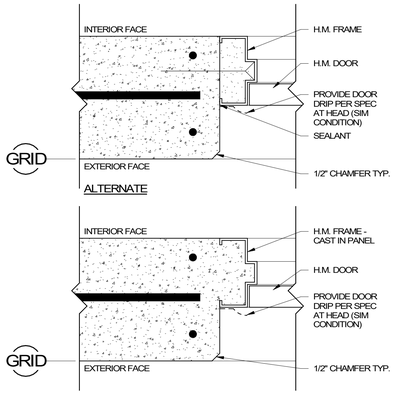
8 A5.11 TURN-DOWN SLAB EDGE AT DOCK DOOR
3/4" = 1'-0"



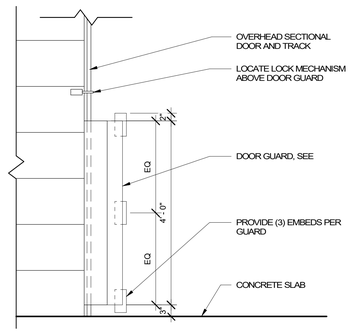
9 A5.11 EXTERIOR TRANSOM WINDOW
3" = 1'-0"



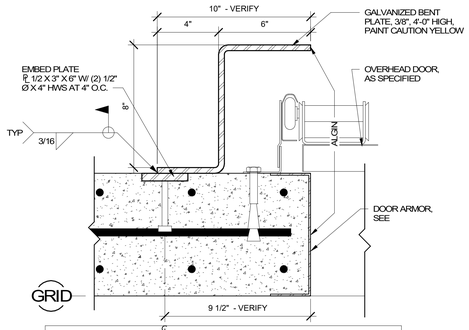
10 A5.11 EXT. TRANSOM WINDOW SECTION
3" = 1'-0"



11 A5.11 EXT. DOOR JAMB/HEAD
3" = 1'-0"

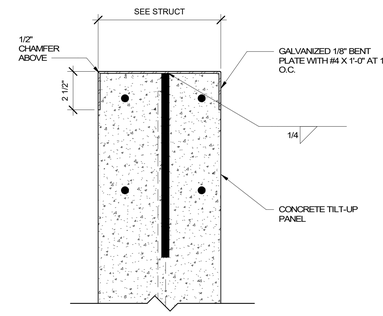


12 A5.11 OVERHEAD DOOR GUARD ELEVATION
3/4" = 1'-0"

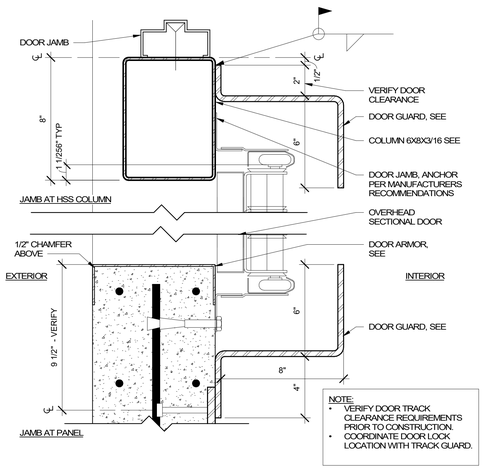


NOTE:
- VERIFY DOOR TRACK CLEARANCE REQUIREMENTS PRIOR TO CONSTRUCTION.
- COORDINATE DOOR LOCK LOCATION WITH TRACK GUARD.

13 A5.11 OVERHEAD DOOR GUARD
3" = 1'-0"

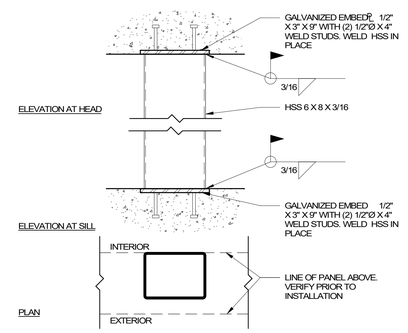


14 A5.11 DOOR ARMOR
3" = 1'-0"

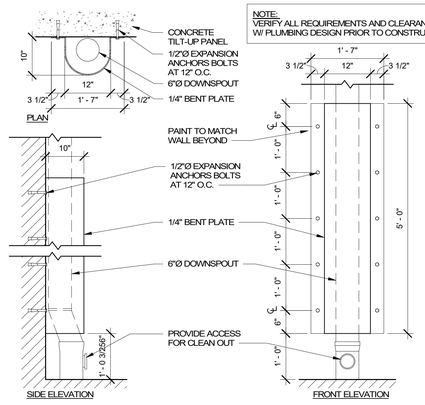


NOTE:
- VERIFY DOOR TRACK CLEARANCE REQUIREMENTS PRIOR TO CONSTRUCTION.
- COORDINATE DOOR LOCK LOCATION WITH TRACK GUARD.

15 A5.11 DRIVE-IN DOOR JAMB
3" = 1'-0"



16 A5.11 HSS CONNECTION AT SLAB/PANEL
1 1/2" = 1'-0"



NOTE:
VERIFY ALL REQUIREMENTS AND CLEARANCES W/ PLUMBING DESIGN PRIOR TO CONSTRUCTION

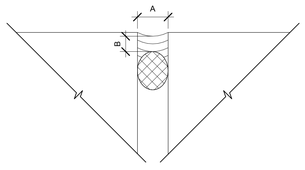
17 A5.11 DOWNSPOUT GUARD
3/4" = 1'-0"

NOTES:
DIMENSIONS A AND B MUST BE AT LEAST 1/4", JOINT SURFACE TOOLED CONCAVE

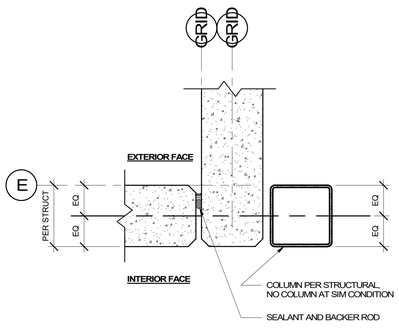
POROUS SUBSTRATES:
IF A = 1/4"-1/2", THEN B = A.
IF A = 1/2"-1", THEN A:B IS 2:1.
IF A = 1"-2", THEN A:B IS 2:1 (WITH B NOT GREATER THAN 1/2").
IF A IS GREATER THAN 2", CONSULT THE MANUFACTURER.

NON-POROUS SUBSTRATES:
IF A = 1/4"-1/2", THEN B = 1/4".
IF A = 1/2"-1", THEN A:B IS 2:1 (WITH B NOT GREATER THAN 3/8").
IF A = 1"-2", THEN B IS NOT GREATER THAN 3/8".
IF A IS GREATER THAN 2", CONSULT THE MANUFACTURER.

SEE MANUFACTURING SPECIFICATIONS FOR ADDITIONAL INFORMATION. IN THE EVENT OF A CONFLICT, MANUFACTURING REQUIREMENTS TAKE PRECEDENCE.



18 A5.11 TYPICAL SEALANT JOINT
12" = 1'-0"



19 A5.11 COLUMN AT INSIDE CORNER
1 1/2" = 1'-0"

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9710 SW DAY RD.
CITY OF WILSONVILLE, OR

REGISTERED ARCHITECT
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#5795
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REVISION SCHEDULE

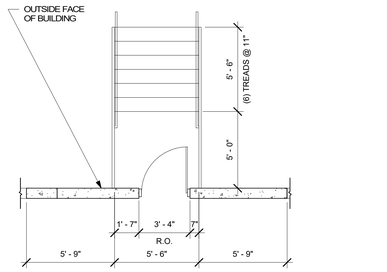
Delta	Issued As	Issue Date

SHEET TITLE:
EXTERIOR DETAILS

SHEET
A5.11

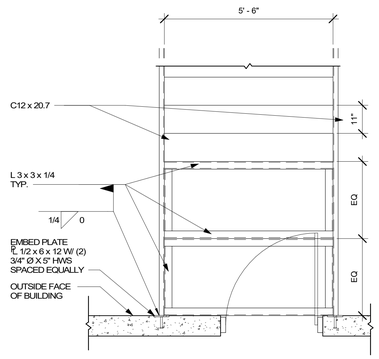
JOB NO. **2200502.00**

DEVELOPMENT REVIEW SET 04/24/23

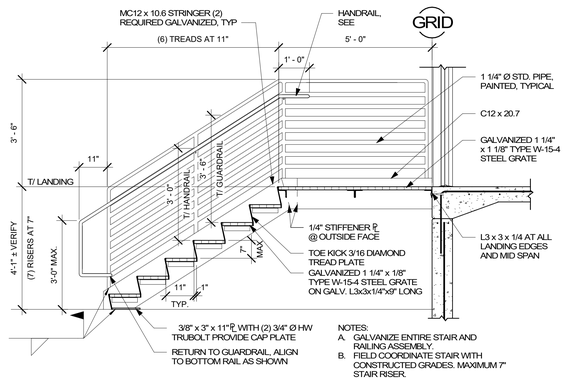


NOTE: STAIRS & GUARD/HANDRAILS ARE DESIGN/BUILD

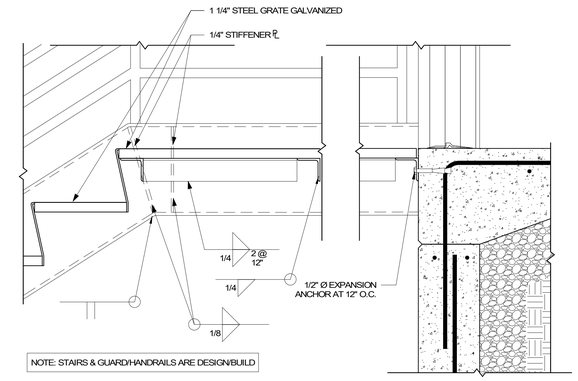
1 A5.12 METAL STAIR PLAN
1/4" = 1'-0"



2 A5.12 METAL STAIR FRAMING PLAN
1/2" = 1'-0"

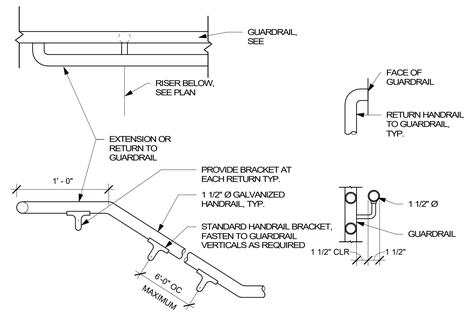


3 A5.12 METAL STAIR SECTION
1/2" = 1'-0"



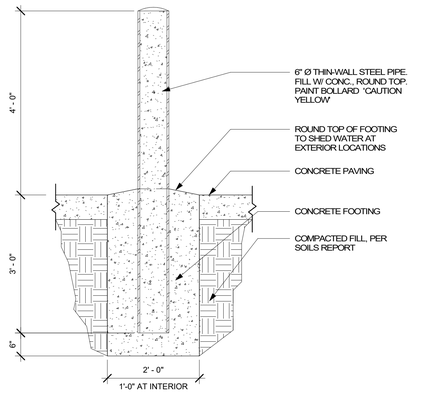
NOTE: STAIRS & GUARD/HANDRAILS ARE DESIGN/BUILD

4 A5.12 STAIR LANDING SECTION
1 1/2" = 1'-0"

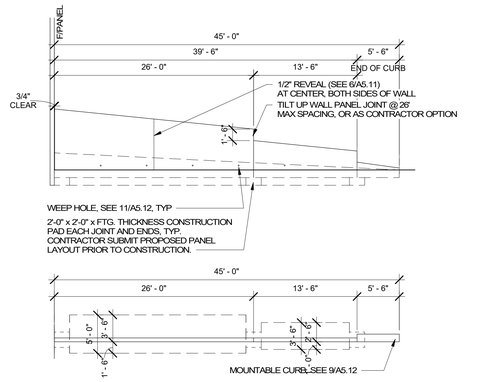


NOTE: STAIRS & GUARD/HANDRAILS ARE DESIGN/BUILD

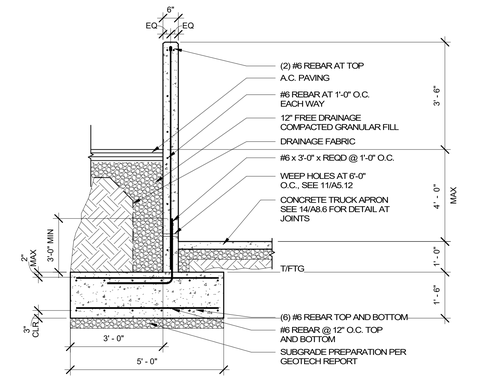
5 A5.12 TYPICAL HANDRAIL
1 1/2" = 1'-0"



6 A5.12 BOLLARD
3/4" = 1'-0"



7 A5.12 DOCK RETAINING WALL ELEVATION
1/8" = 1'-0"



8 A5.12 RETAINING WALL SECTION
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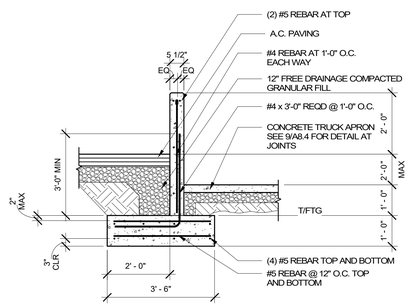

9 A5.12 RETAINING WALL SECTION - LOW
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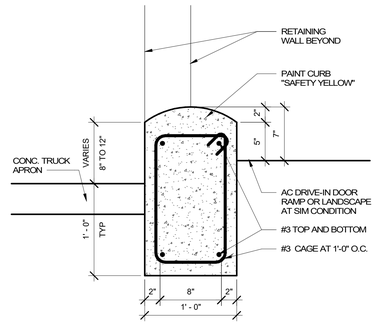
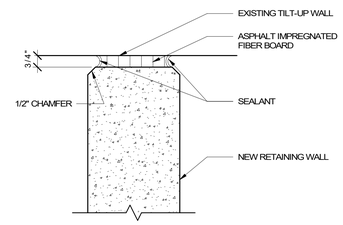
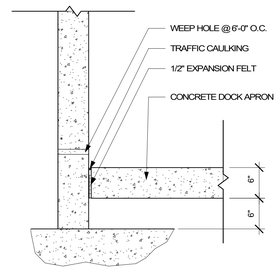


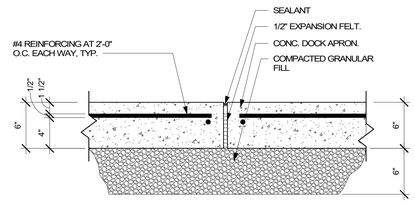
10 A5.12 MOUNTABLE CURB
1 1/2" = 1'-0"



11 A5.12 RETAINING WALL JOINT
3" = 1'-0"



12 A5.12 DOCK APRON AT RETAINING WALL
1" = 1'-0"



13 A5.12 DOCK APRON JOINT
1 1/2" = 1'-0"

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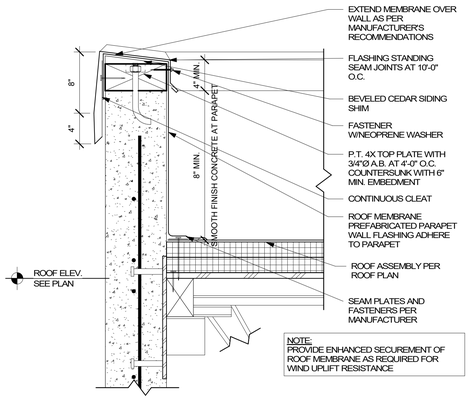
SHEET TITLE:
EXTERIOR DETAILS

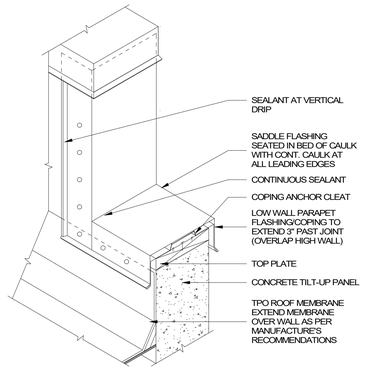
SHEET
A5.12

JOB NO. **2200502.00**

DEVELOPMENT REVIEW SET 04/24/23



1 A5.13 PARAPET FLASHING
1 1/2" = 1'-0"



2 A5.13 STEP PARAPET
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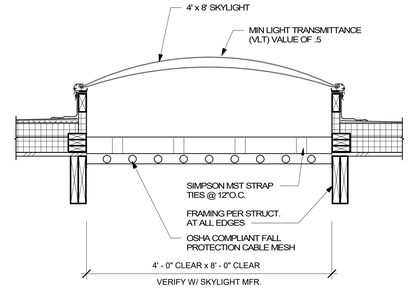
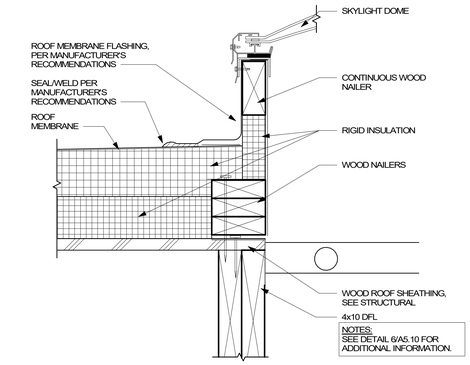
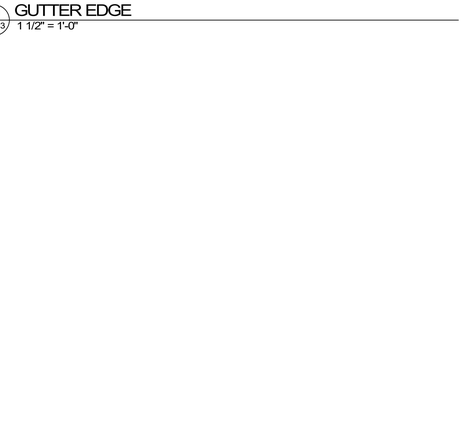


3 A5.13 SKYLIGHT SECTION
1" = 1'-0"



4 A5.13 SKYLIGHT CURB
3" = 1'-0"



5 A5.13 MECHANICAL CURB
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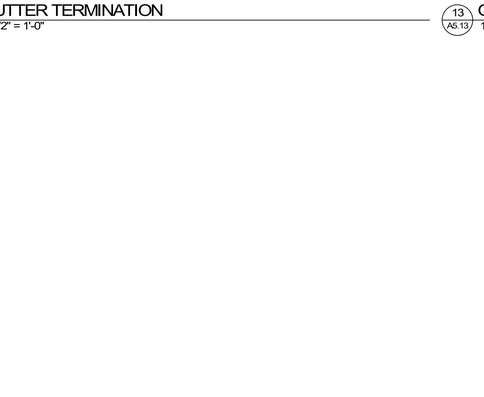

6 A5.13 PIPE FLASHING
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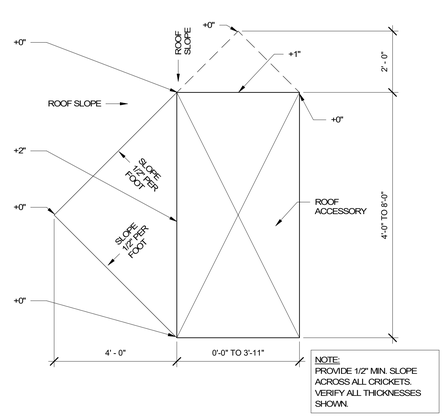
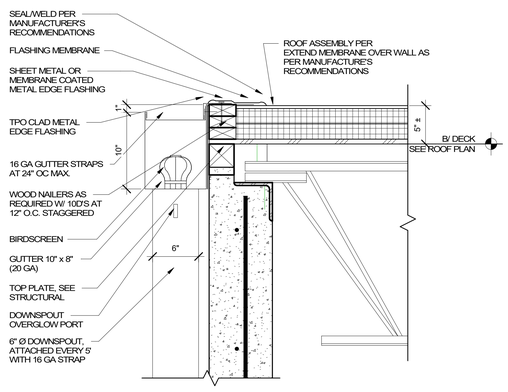
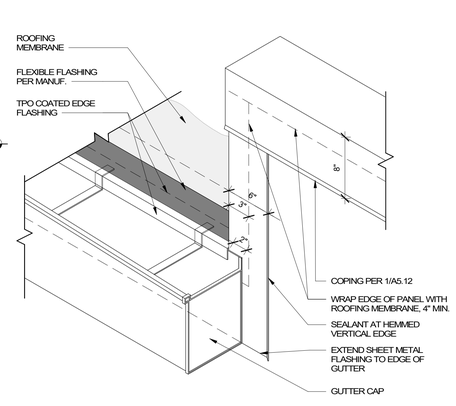


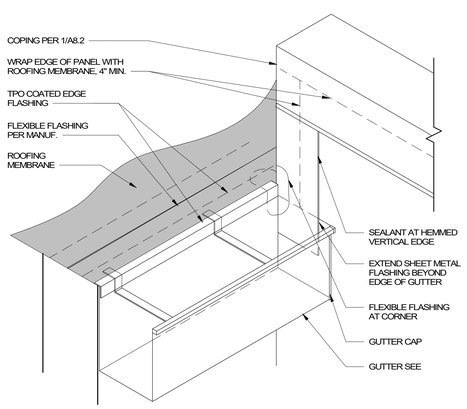
8 A5.13 CRICKET PLAN
1/2" = 1'-0"



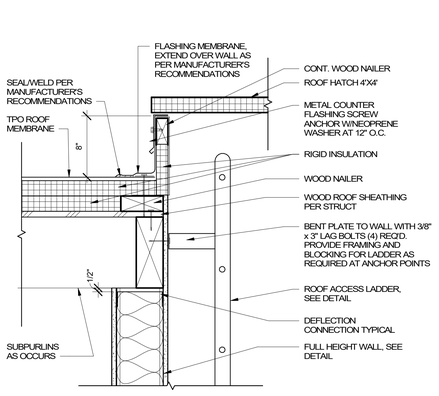
11 A5.13 GUTTER EDGE
1 1/2" = 1'-0"



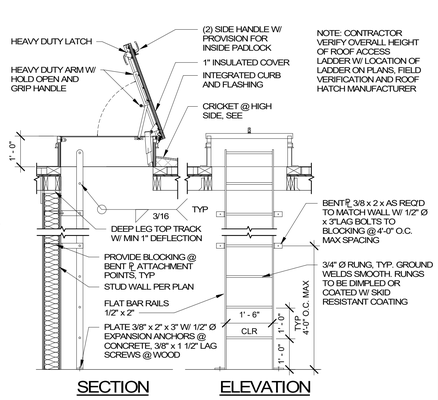
12 A5.13 GUTTER TERMINATION
1 1/2" = 1'-0"



13 A5.13 GUTTER TERMINATION AT PARAPET
1 1/2" = 1'-0"



14 A5.13 ROOF HATCH
1 1/2" = 1'-0"



15 A5.13 ROOF ACCESS LADDER
1/2" = 1'-0"

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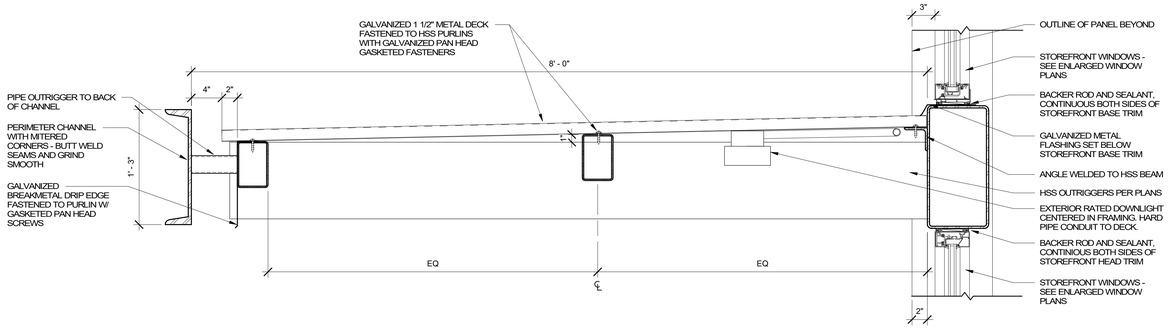
SHEET TITLE:
ROOF DETAILS

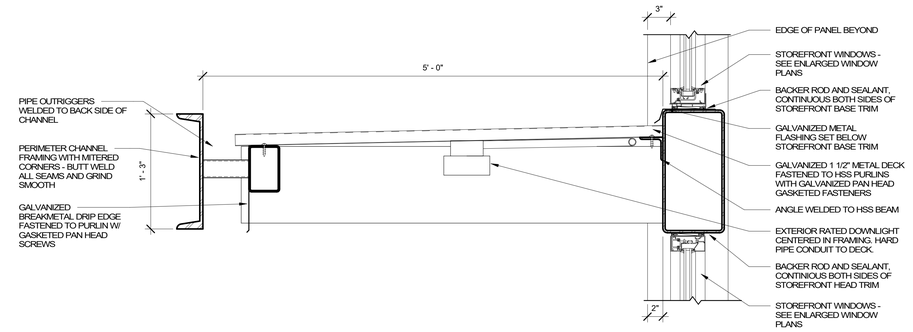
SHEET
A5.13

JOB NO. **2200502.00**

DEVELOPMENT REVIEW SET 04/24/23



1 A5.14 ENTRY CANOPY SECTION DETAIL - WEST
1 1/2" = 1'-0"



2 A5.14 ENTRY CANOPY SECTION DETAIL - NORTH
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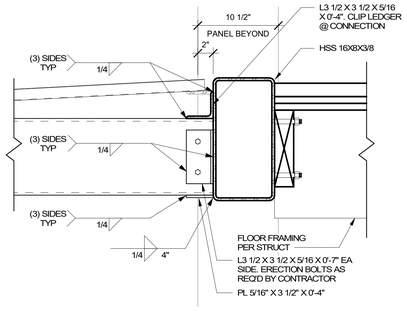
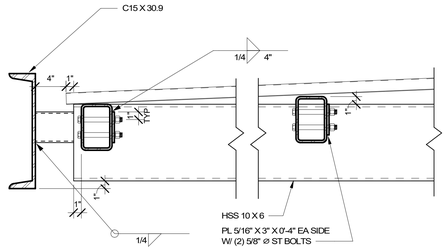
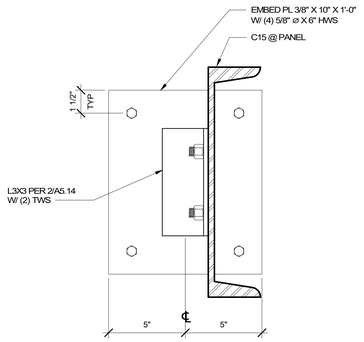


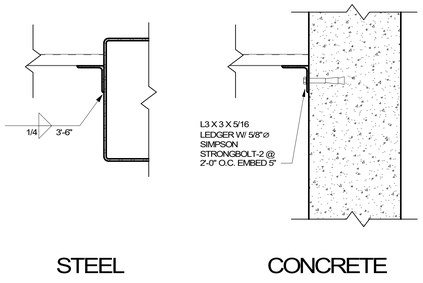
3 A5.14 CANOPY CONNECTION AT FLOOR FRAMING
1 1/2" = 1'-0"



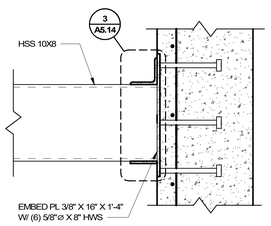
4 A5.14 PRIMARY CANOPY FRAMING
1 1/2" = 1'-0"



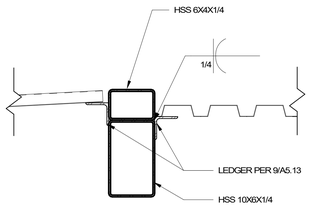
5 A5.14 CHANNEL RETURN AT PANEL EMBED
3" = 1'-0"



6 A5.14 CANOPY LEDGER
1 1/2" = 1'-0"



7 A5.14 OUTRIGGER AT PANEL EMBED
1 1/2" = 1'-0"



8 A5.14 CANOPY ROOF/DECK TRANSITION
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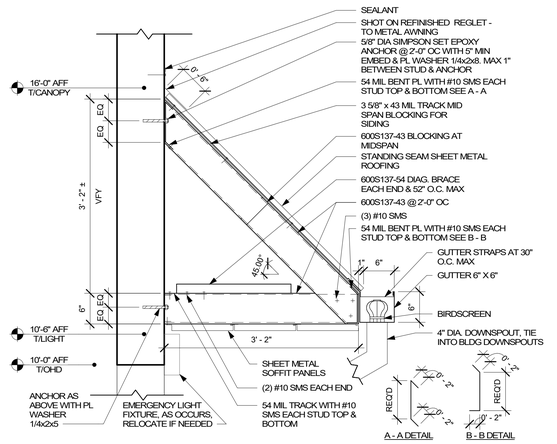
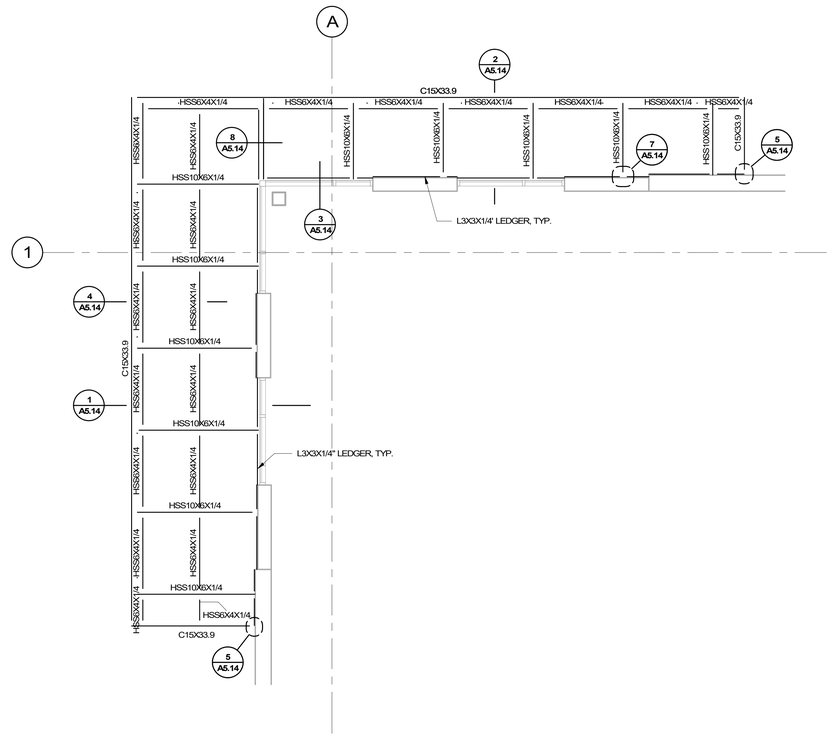


9 A5.14 CANOPY ABOVE DOCKS
1" = 1'-0"



10 A5.14 ENTRY CANOPY FRAMING PLAN
1/4" = 1'-0"

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DEC. 13, 2005
RYAN R. BAKER
EXPIRES: 12/31/23

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SHEET TITLE:
CANOPY FRAMING PLAN & DETAILS

SHEET
A5.14

JOB NO. **2200502.00**

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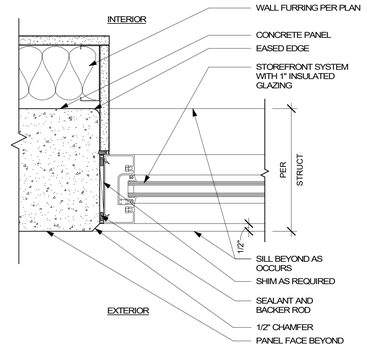
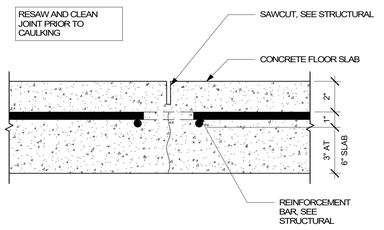
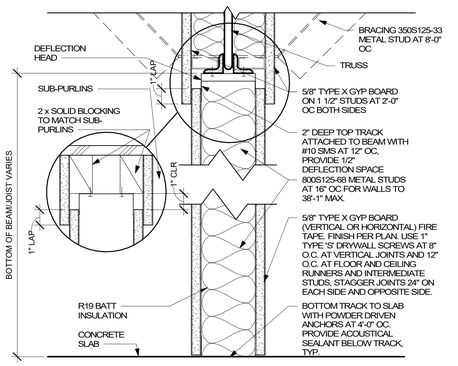


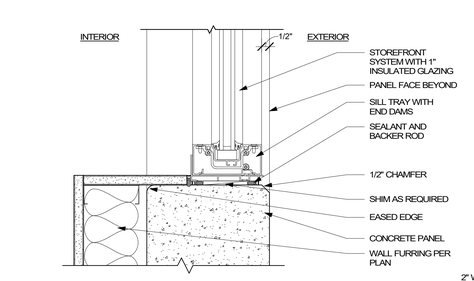
1 WINDOW JAMB
A5.20 — 3" = 1'-0"



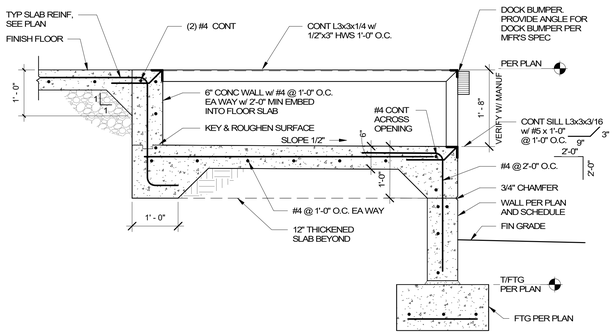
6 CAULKED FLOOR JOINT
A5.20 — 3" = 1'-0"



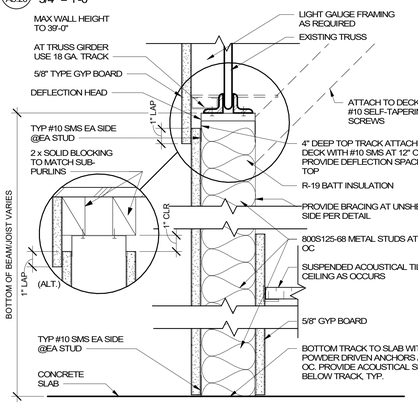
11 1-HR FIRE BARRIER
A5.20 — 3" = 1'-0"



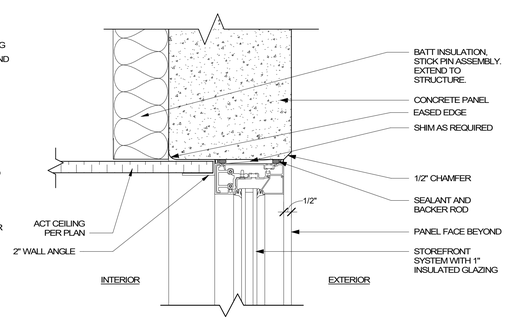
2 WINDOW SILL
A5.20 — 3" = 1'-0"



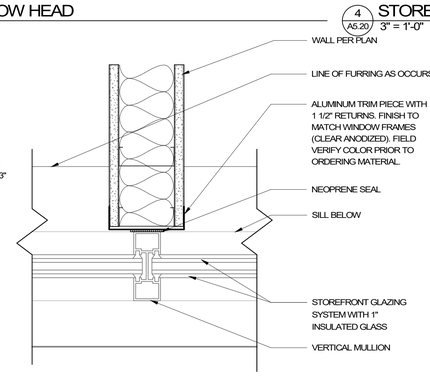
7 DOCK PIT DETAIL
A5.20 — 3/4" = 1'-0"



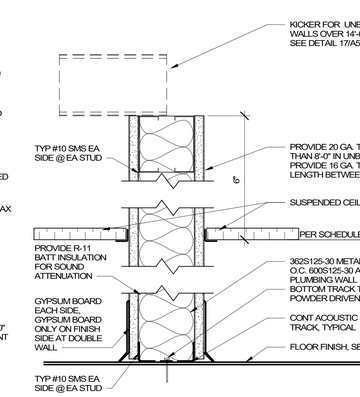
12 FULL HEIGHT SEPARATION WALL
A5.20 — 3" = 1'-0"



3 WINDOW HEAD
A5.20 — 3" = 1'-0"



8 WALL AT EXTERIOR MULLION
A5.20 — 3" = 1'-0"



13 THRU-GRID WALL
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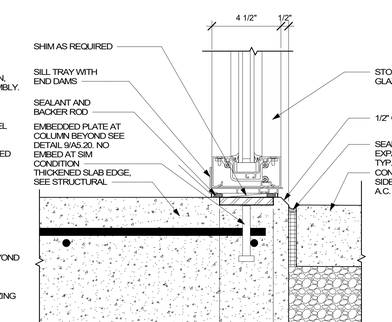

4 STOREFRONT SILL
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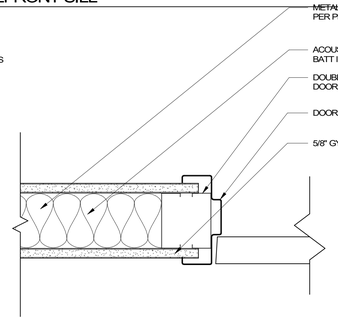

9 INTERIOR DOOR JAMB
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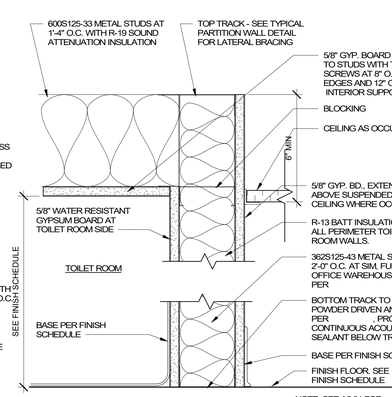
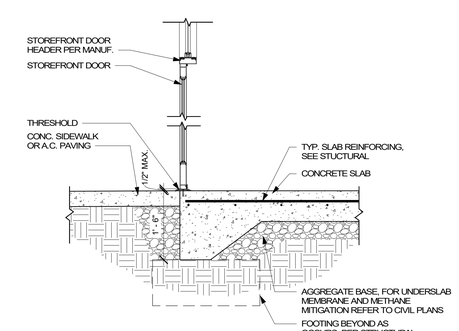
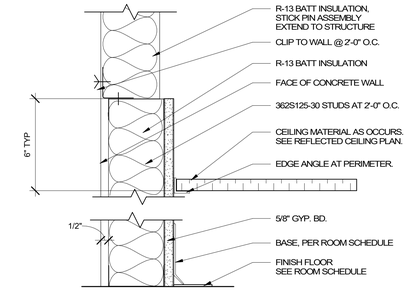


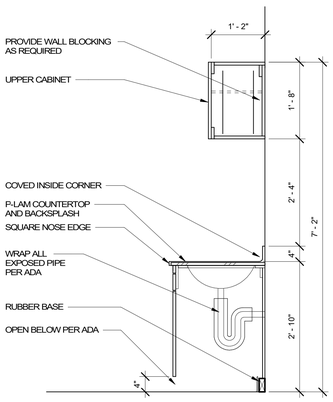
14 TOILET ROOM WALL
A5.20 — 3" = 1'-0"



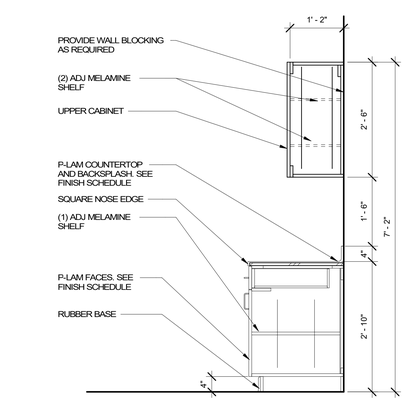
5 TURN-DOWN AT STOREFRONT DOOR
A5.20 — 3/4" = 1'-0"



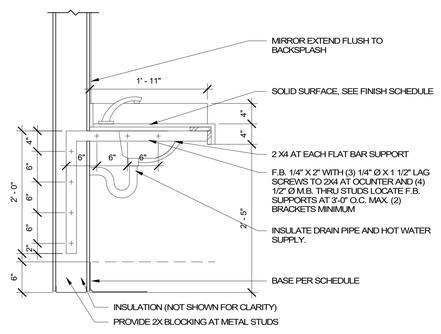
10 FURRING
A5.20 — 3" = 1'-0"



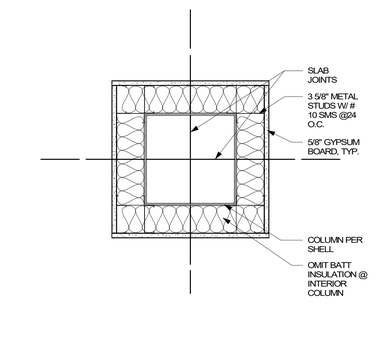
16 CASEWORK SECTION AT SINK
A5.20 — 3/4" = 1'-0"



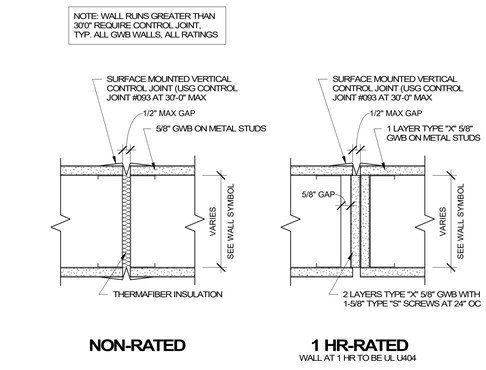
17 CASEWORK SECTION
A5.20 — 3/4" = 1'-0"



18 LAVATORY SECTION
A5.20 — 1" = 1'-0"



19 FURRING AT COLUMN
A5.20 — 1 1/2" = 1'-0"



20 TYPICAL GWB CONTROL JOINT
A5.20 — 3" = 1'-0"

Item 2.

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REVISION SCHEDULE

Delta	Issued As	Issue Date

SHEET TITLE:
STOREFRONT & INTERIOR DETAILS

SHEET
A5.20

JOB NO. **2200502.00**

DEVELOPMENT REVIEW SET 04/24/23

DOOR SCHEDULE

DOOR	To Room: Name	DOOR WIDTH	DOOR HEIGHT	DOOR THK	DOOR TYPE	DOOR MAT'L	DOOR FINISH	FRAME TYPE	FRAME MAT'L	FRAME FINISH	HDWR GROUP	RATING	COMMENTS
001	VESTIBULE	3' - 0"	7' - 0"	1 3/4"	A	AL/GL	GL/FF	SF	AL	FF	H1		
002	STORAGE	3' - 0"	7' - 0"	1 3/4"	F	HM	P	HM	STL	P	H2		
003		12' - 0"	14' - 0"	1 1/2"	G	MANUF	P	-	-	-	-		
004	STORAGE	9' - 0"	10' - 0"	1 1/2"	E	MANUF	P	-	-	-	-		
005	STORAGE	9' - 0"	10' - 0"	1 1/2"	E	MANUF	P	-	-	-	-		
006	STORAGE	9' - 0"	10' - 0"	1 1/2"	E	MANUF	P	-	-	-	-		
007	STORAGE	9' - 0"	10' - 0"	1 1/2"	E	MANUF	P	-	-	-	-		
008	STORAGE	9' - 0"	10' - 0"	1 1/2"	E	MANUF	P	-	-	-	-		
009	STORAGE	9' - 0"	10' - 0"	1 1/2"	E	MANUF	P	-	-	-	-		
010	STORAGE	9' - 0"	10' - 0"	1 1/2"	E	MANUF	P	-	-	-	-		
011	STORAGE	3' - 0"	7' - 0"	1 3/4"	K	SC	S	HM	STL	P	H2		
012	STORAGE	9' - 0"	10' - 0"	1 1/2"	E	MANUF	P	-	-	-	-		
013	STORAGE	9' - 0"	10' - 0"	1 1/2"	E	MANUF	P	-	-	-	-		
014	STORAGE	9' - 0"	10' - 0"	1 1/2"	E	MANUF	P	-	-	-	-		
015	STORAGE	9' - 0"	10' - 0"	1 1/2"	E	MANUF	P	-	-	-	-		
016	STORAGE	9' - 0"	10' - 0"	1 1/2"	E	MANUF	P	-	-	-	-		
017	STORAGE	9' - 0"	10' - 0"	1 1/2"	E	MANUF	P	-	-	-	-		
018	STORAGE	9' - 0"	10' - 0"	1 1/2"	E	MANUF	P	-	-	-	-		
019	STORAGE	9' - 0"	10' - 0"	1 1/2"	E	MANUF	P	-	-	-			
020		12' - 0"	14' - 0"	1 1/2"	G	MANUF	P	-	-	-	-		
021	STORAGE	3' - 0"	7' - 0"	1 3/4"	K	SC	S	HM	STL	P	H2		
022	STORAGE	3' - 0"	7' - 0"	1 3/4"	K	SC	S	HM	STL	P	H2		
023	STORAGE	3' - 0"	7' - 0"	1 3/4"	K	SC	S	HM	STL	P	H2		
024	STORAGE	3' - 0"	7' - 0"	1 3/4"	K	SC	S	HM	STL	P	H2		
025	FIRE PUMP	6' - 0"	7' - 0"	1 3/4"	D	HM	P	HM	STL	P	H4		
026	ELEC.	3' - 0"	7' - 0"	1 3/4"	C	HM	P	HM	STL	P	H3		
027	STORAGE	3' - 0"	7' - 0"	1 3/4"	K	SC	S	HM	STL	P	H2		
100	STAIR	3' - 0"	7' - 0"	1 3/4"	K	SC	S	TIMELY	STL	FF	H6		
101A	OPEN OFFICE	3' - 0"	7' - 0"	1 3/4"	J	SC	S	TIMELY	STL	FF	H6		
101B	OPEN OFFICE	3' - 0"	7' - 0"	1 3/4"	K	SC	S	HM	STL	P	H5		
102	CONFERENCE	3' - 0"	7' - 0"	1 3/4"	J	SC	S	TIMELY	STL	FF	H6		
103	OFFICE	3' - 0"	7' - 0"	1 3/4"	J	SC	S	TIMELY	STL	FF	H5		
104	OFFICE	3' - 0"	7' - 0"	1 3/4"	J	SC	S	TIMELY	STL	FF	H5		
105	BREAK	3' - 0"	7' - 0"	1 3/4"	H	SC	S	TIMELY	STL	FF	H5		
107	MEN'S	3' - 0"	7' - 0"	1 3/4"	H	SC	S	TIMELY	STL	FF	H6		
108	WOMEN'S	3' - 0"	7' - 0"	1 3/4"	H	SC	S	TIMELY	STL	FF	H6		
109	STORAGE	3' - 0"	7' - 0"	1 3/4"	H	SC	S	HM	STL	P	H5		
110	STORAGE	3' - 0"	7' - 0"	1 3/4"	H	SC	S	HM	STL	P	H5		
200A	STORAGE	3' - 0"	7' - 0"	1 3/4"	K	SC	S	HM	STL	P	H6		
200B	STORAGE	3' - 0"	7' - 0"	1 3/4"	K	SC	S	HM	STL	P	H6		

HARDWARE GROUPS

PROVIDE ALL HARDWARE SPECIFICED/REQUIRED TO MAKE DOORS FULLY FUNCTIONAL. COMPLIANT WITH APPLICABLE CODES, AND SECURE TO THE EXTENT SPECIFICED.

H1 - EXTERIOR STOREFRONT DOOR
- CYLINDERS BY HARDWARE SUPPLIER
- BALANCE OF HARDWARE BY STOREFRONT SUPPLIER, SEE SPECIFICATIONS.
- EXIT DEVICE (PUSH/PULL)

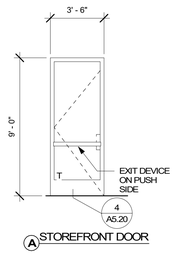
H2 - EXTERIOR ACCESS DOORS
- EXIT DEVICE (PUSH/PULL)
- BUTTS
- CLOSER
- LOCK GUARD
- THRESHOLD
- WEATHER STRIPPING
- DOOR DRIP
- DOOR SWEEP

H3 - EXTERIOR UTILITY DOORS
- EXIT DEVICE
- BUTTS
- CLOSER
- LOCK GUARD
- THRESHOLD
- WEATHER STRIPPING
- DOOR DRIP
- DOOR SWEEP

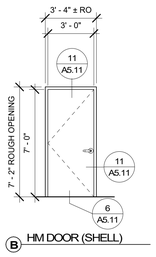
H4 - EXTERIOR DOUBLE DOOR (FIRE PUMP ROOM)
- EXIT DEVICE
- MANUAL FLUSH BOLT (INACTIVE LEAF)
- STOREROOM LOCK (ACTIVE LEAF)
- ASTRAGAL
- BUTTS
- CLOSER
- LOCK GUARD
- THRESHOLD
- WEATHER STRIPPING
- DOOR DRIP
- DOOR SWEEP

H5 - PRIVACY

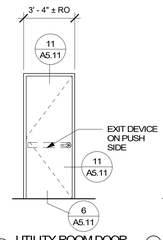
H6 - PASSAGE



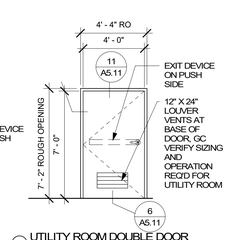
A STOREFRONT DOOR



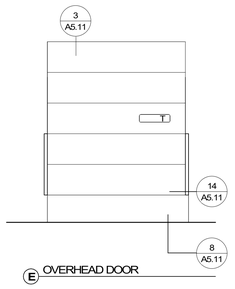
B HM DOOR (SHELL)



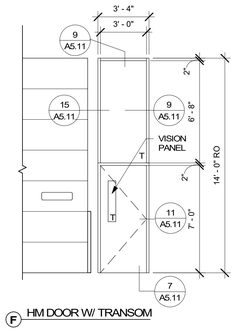
C UTILITY ROOM DOOR



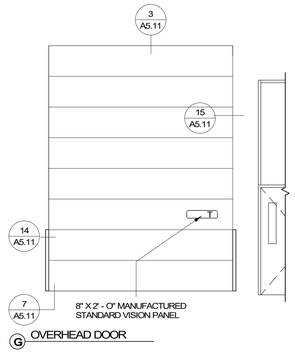
D UTILITY ROOM DOUBLE DOOR



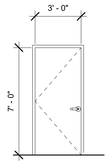
E OVERHEAD DOOR



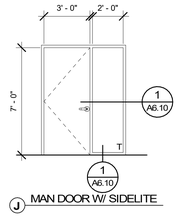
F HM DOOR W/ TRANSOM



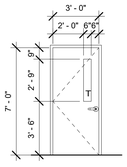
G OVERHEAD DOOR



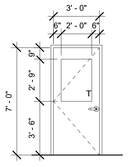
H MAN DOOR
H1 - HOLLOW METAL DOOR



J MAN DOOR W/ SIDELITE



K MAN DOOR W/ VP
C1 - HOLLOW METAL DOOR

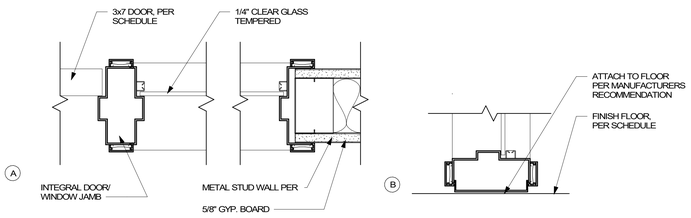


L MAN DOOR W/ HALF-LITE
F1 - HOLLOW METAL DOOR

1 A6.10 DOOR TYPES

1/4" = 1'-0"

T=TEMPERED GLASS



2 A6.10 RELITE DETAIL

3" = 1'-0"

FINISH SCHEDULE

ROOM NO	ROOM NAME	FLOOR MAT'L FINISH	BASE MAT'L FINISH	N. WALL MAT'L FINISH	E. WALL MAT'L FINISH	S. WALL MAT'L FINISH	W. WALL MAT'L FINISH	CEILING MAT'L FINISH	COMMENTS
100	VESTIBULE	CPT-1	RB-1	P-1	P-1	P-1	P-1	GYP BD	
100A	STAIR	CPT-2	RB-1	P-1	P-1	P-1	P-1	ACT-1	
101	OPEN OFFICE	CPT-2	RB-1	P-1	P-1	P-1	P-1	ACT-1	
102	CONFERENCE	CPT-2	RB-1	P-1	P-1	P-1	P-1	ACT-1	
103	OFFICE	CPT-2	RB-1	P-1	P-1	P-1	P-1	ACT-1	
104	OFFICE	CPT-2	RB-1	P-1	P-1	P-1	P-1	ACT-1	
105	DATA	LVT-1	RB-1	P-1	P-1	P-1	P-1	ACT-1	
106	BREAK	LVT-1	RB-1	P-1	P-1	P-1	P-1	ACT-1	
107	MEN'S	SV-1	SV-1	P-1	P-1	P-1	P-1	GYP BD	
108	WOMEN'S	SV-1	SV-1	P-1	P-1	P-1	P-1	GYP BD	
109	W/C	SV-1	SV-1	P-1	P-1	P-1	P-1	GYP BD	
110	JAN.	SC	RB-1	P-1	P-1	P-1	P-1	GYP BD	
150	STORAGE	SC	-	-	-	-	-	OTS	
151	ELEC.	SC	-					OTS	
152	FIRE PUMP	SC	-					OTS	
200	STORAGE	TBD	TBD	TBD	TBD	TBD	TBD	OTS	

INTERIOR FINISH SCHEDULE

SECTION 033500 - CONCRETE FINISHES
1. SEALED CONCRETE
SC ASHFORD FORMULA, SEE SPECIFICATIONS

SECTION 06400 -WOOD AND PLASTICS

1. PLASTICS
COUNTERTOPS:
PL-1 TBD

VERTICAL FACES:
PL-2 TBD

2. SOLID SURFACE
COUNTERTOPS:
SS-1 TBD

SECTION 09650 - RESILIENT FLOORING

1. SHEET VINYL FLOORING
SV-1 TBD

2. LUXURY VINYL TILE
LVT-1 TBD

3. RUBBER BASE
RB-1 TBD

2. FIBER REINFORCED PANELS
WAINSCOT: TBD

3. WOOD DOORS
WD-1 SPECIES: TBD, FINISH: TBD

SECTION 095100 - ACOUSTIC CEILING

1. SUSPENDED ACOUTICAL CEILING TILE
ACT-1 TBD

NOTE: PROVIDE COVED BASE AT ALL RESILIENT FLOORING AREAS, STRAIGHT BASE AT ALL CUT-PILE CARPET AND CONCRETE AREAS. 4" BASE IN ALL AREAS EXCEPT TOILET ROOMS AND JANITOR CLOSETS, TO RECEIVE 6" COVE BASE.

SECTION 09942 - PAINT

1. INTERIOR PAINT
P-1 TBD
P-2 TBD
P-3 TBD
P-4 TBD
P-5 TBD (HM DOORS)

2. EXTERIOR PAINT
SEE ELEVATIONS

NOTE: USE SATIN/EGGSHELL WASHABLE FINISH AT ALL WALLS, CEILINGS AND SOFFITS TYPICAL. USE SEMI GLOSS FINISH AT ALL TOILET ROOM WALLS AND CEILINGS, TYPICAL.

SECTION 122100 – BLINDS

1. PER SPECIFICATIONS

Item 2.

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REVISION SCHEDULE

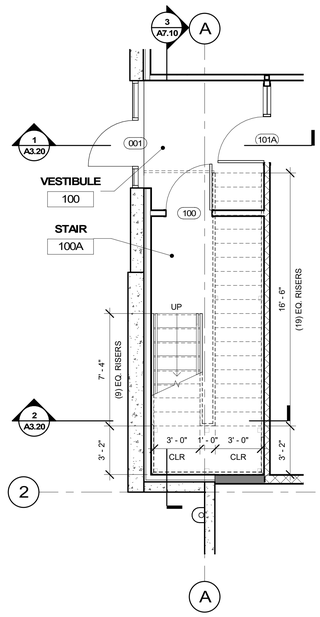
Delta	Issued As	Issue Date

SHEET TITLE:
DOOR & FINISH SCHEDULE

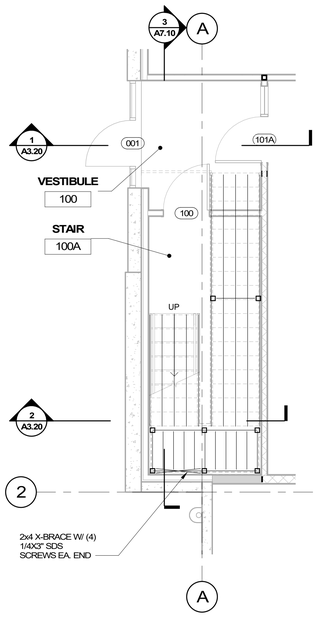
SHEET
A6.10

JOB NO. 2200502.00

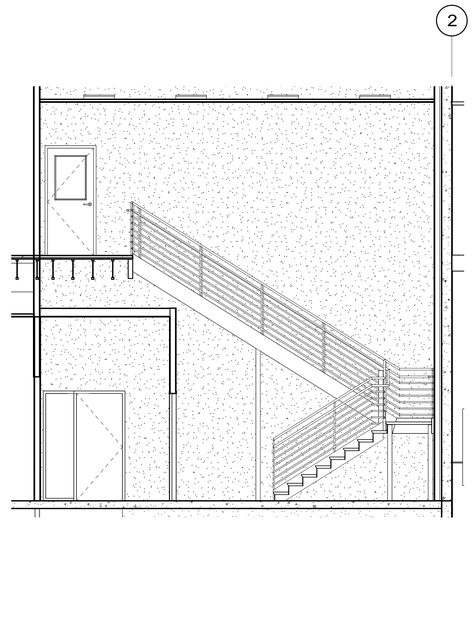
DEVELOPMENT REVIEW SET 04/24/23



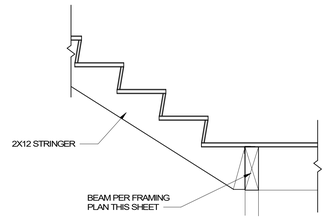
1 A7.10 MAIN STAIR - ENLARGED PLAN
1/4" = 1'-0"



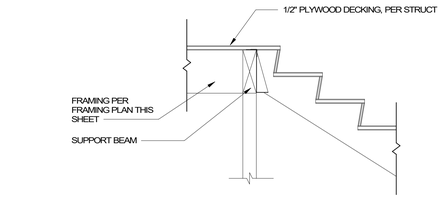
2 A7.10 MAIN STAIR - FRAMING PLAN
1/4" = 1'-0"



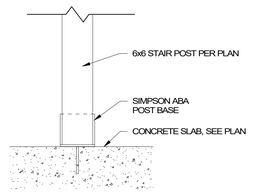
3 A7.10 MAIN STAIR - SECTION
1/4" = 1'-0"



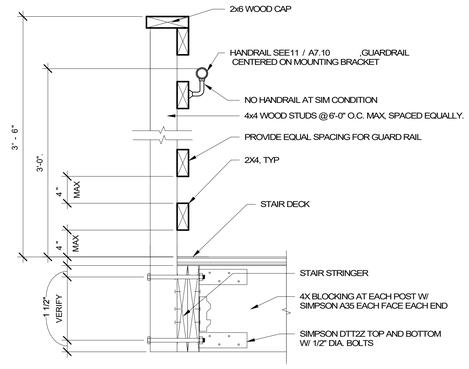
7 A7.10 STAIR AT MID-LANDING
3/4" = 1'-0"



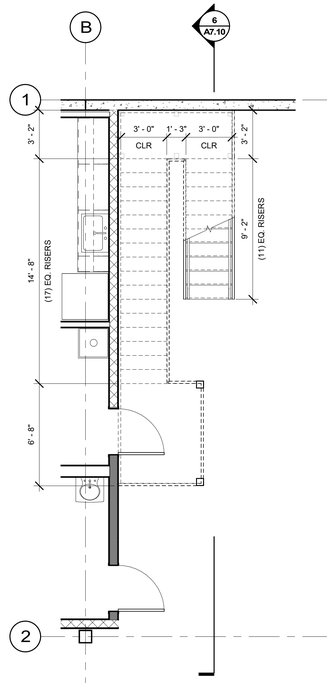
8 A7.10 STAIR AT TOP LANDING
3/4" = 1'-0"



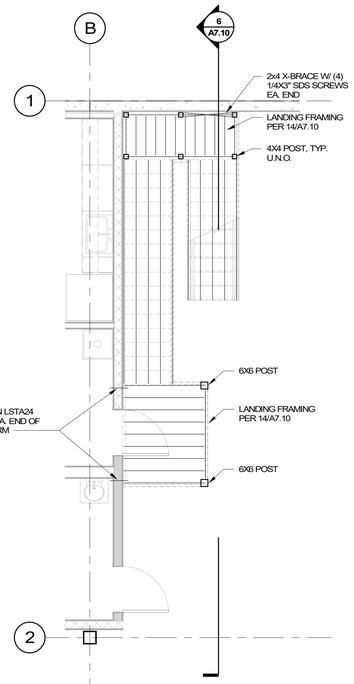
9 A7.10 STAIR POST DETAIL
1 1/2" = 1'-0"



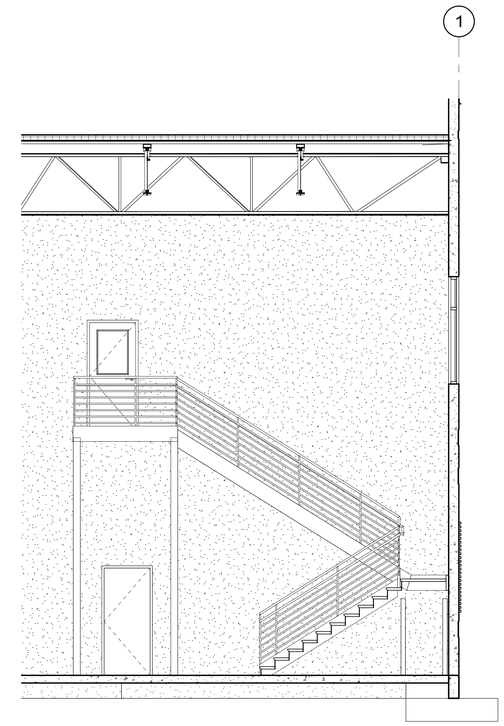
10 A7.10 STAIRWAY GUARDRAIL
1 1/2" = 1'-0"



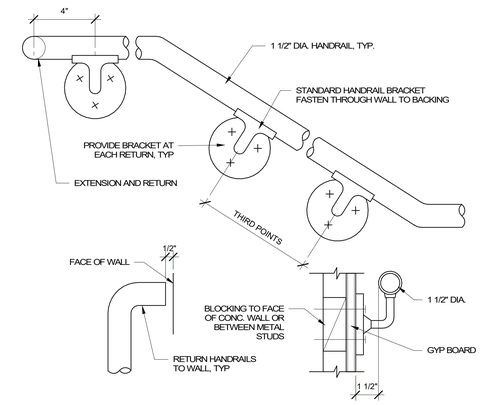
4 A7.10 WAREHOUSE STAIR - ENLARGED PLAN
1/4" = 1'-0"



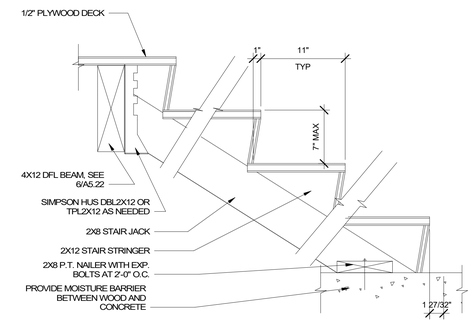
5 A7.10 WAREHOUSE STAIR - FRAMING PLAN
1/4" = 1'-0"



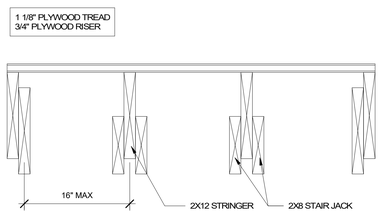
6 A7.10 WAREHOUSE STAIR - SECTION
1/4" = 1'-0"



11 A7.10 TYPICAL HANDRAIL
3" = 1'-0"



12 A7.10 TYPICAL STAIR TREAD RISER
1 1/2" = 1'-0"



13 A7.10 TYPICAL STAIR TREAD SECTION
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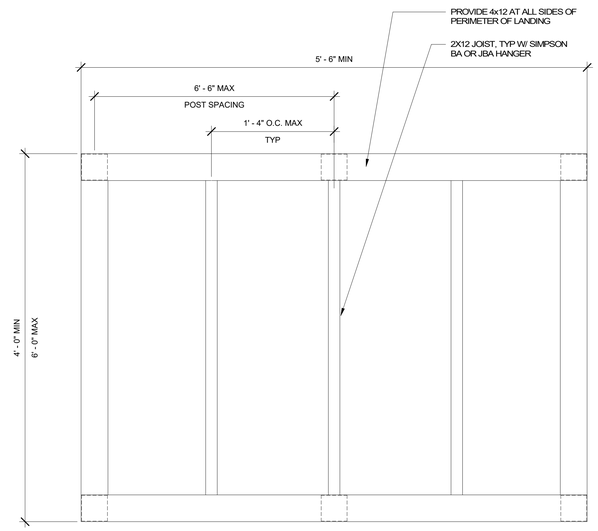

14 A7.10 TYPICAL STAIR LANDING FRAME
1 1/2" = 1'-0"

Architecture ▪ Interiors
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Client

Delta Logistics
9835 SW COMMERCE CIRCLE,
WILSONVILLE, OR 97070

Project

DELTA LOGISTICS
9710 SW DAY RD.
CITY OF WILSONVILLE, OR

REGISTERED PROFESSIONAL ENGINEER
OREGON
MAY 13, 2008
RYAN R. BAKER
70815PE
EXPIRES: 12/31/23

REGISTERED ARCHITECT
SCOTT J. MOORE
PORTLAND, OREGON
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STATE OF OREGON

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REVISION SCHEDULE

Delta	Issued As	Issue Date

SHEET TITLE:
STAIR PLANS

SHEET
A7.10

JOB NO. **2200502.00**

DEVELOPMENT REVIEW SET 04/24/23

Autodesk Docs://Delta Logistics Wilsonville Annex-ZC/502 Delta Logistics-B.rvt 3/7/2023 3:23:20 PM

1095

As indicated

January 31, 2023

City of Wilsonville
Attention: Cindy Luxhoj
29799 SW Town Center Loop E
Wilsonville, OR 97070

Re: **Delta Logistics Annex [DB22-0007]**
Western Access Location Analysis and Recommendation
Project Number 2200502.04

Dear Cindy:

This letter follows through on our discussion with City staff at our virtual meeting on January 4, 2023.

CONTEXT

The applicant's preferred plan for internal site circulation is to construct a crossing of Tapman Creek within the proposed development site, so all movements of semi-tractor units ("bobtails") between their storage area in the northwest corner of the property and the main truck access areas (dock and trailer storage) can be completed within the property itself. That site plan, submitted as part of the initial land use application package, is referred to as "Option I."

Responding to a request from staff, the following access/circulation analysis is to support the applicant's alternative site plan (Option II, Phase 1 and 2) for achieving access to the approximately two-acre portion of property located west of the Tapman Creek corridor without a private stream crossing, in case the City declines to approve the Option I plan.

APPROACH

To study how to align a new north-south Supporting Street, the applicant's design team (including Mackenzie planning and traffic engineering staff) reviewed the City's policy and regulatory framework.

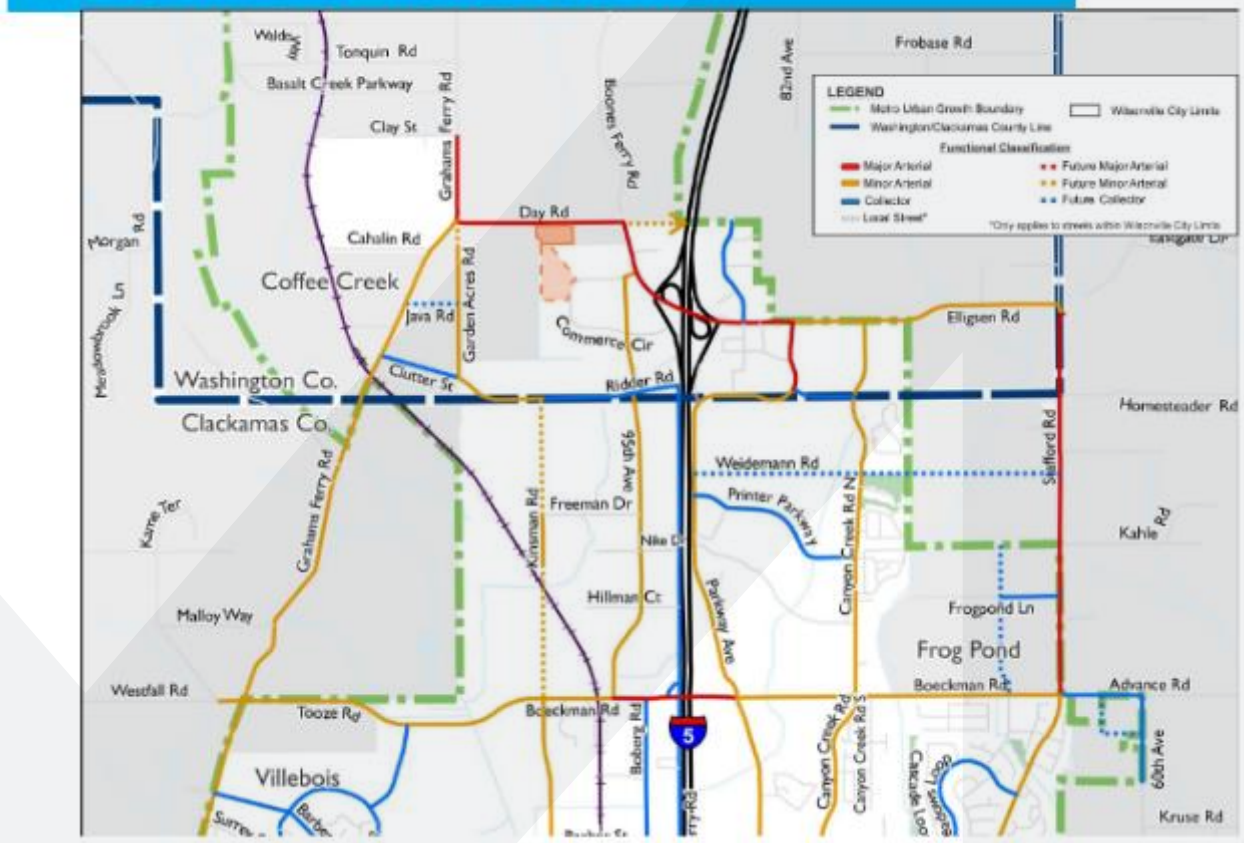
In the discussion that follows, a symbol to identify the subject property's approximate location has been added to excerpts from Figures in the City's adopted planning documents.

TRANSPORTATION SYSTEM PLAN

Arterials and Collectors surround the core of the Coffee Creek Industrial Overlay District (TSP Fig. 3-2).

City of Wilsonville
Exhibit B3 DB22-0007

FIGURE 3-2. FUNCTIONAL CLASS DESIGNATIONS



Day Road: Major Arterial

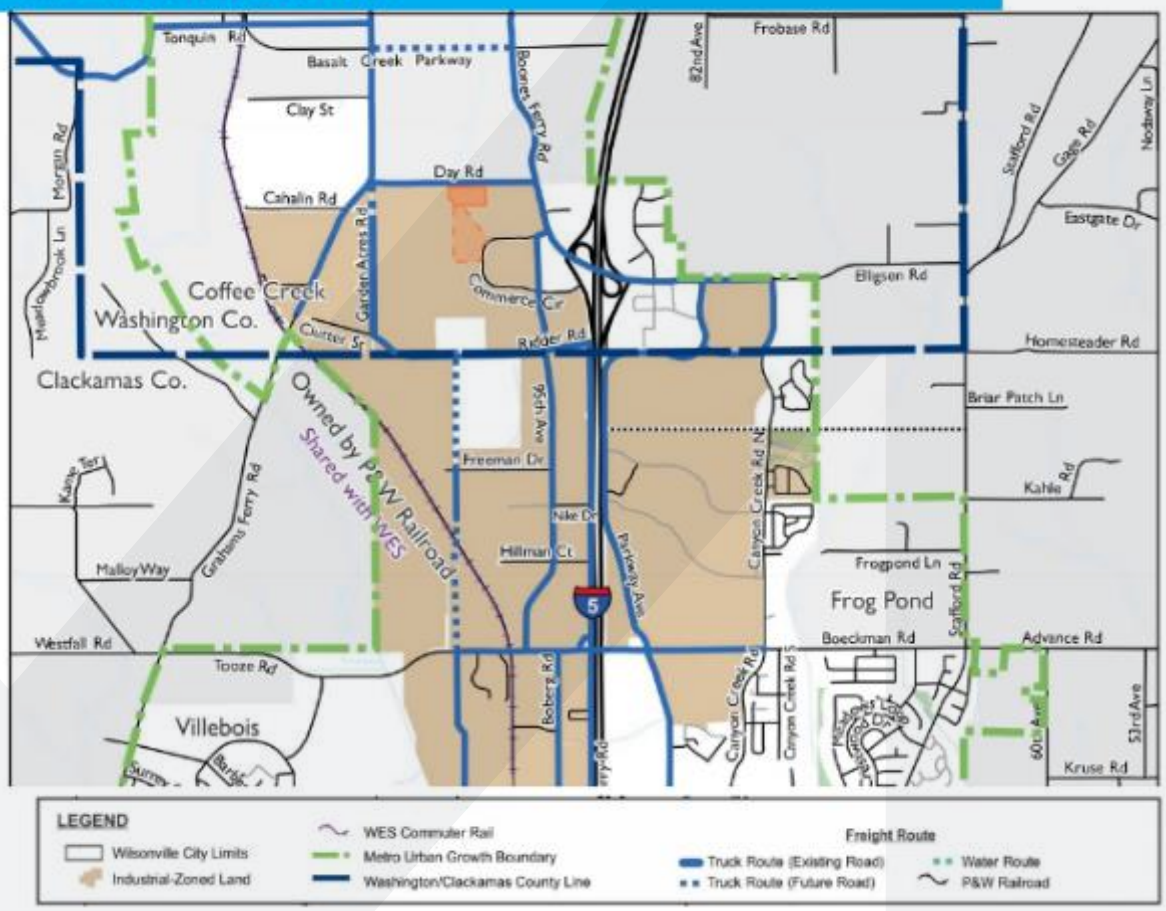
Garden Acres Road, Grahams Ferry Road, 95th Avenue: Minor Arterials

Kinsman Road is identified as a future Minor Arterial south of Ridder Road but does not extend north of there.

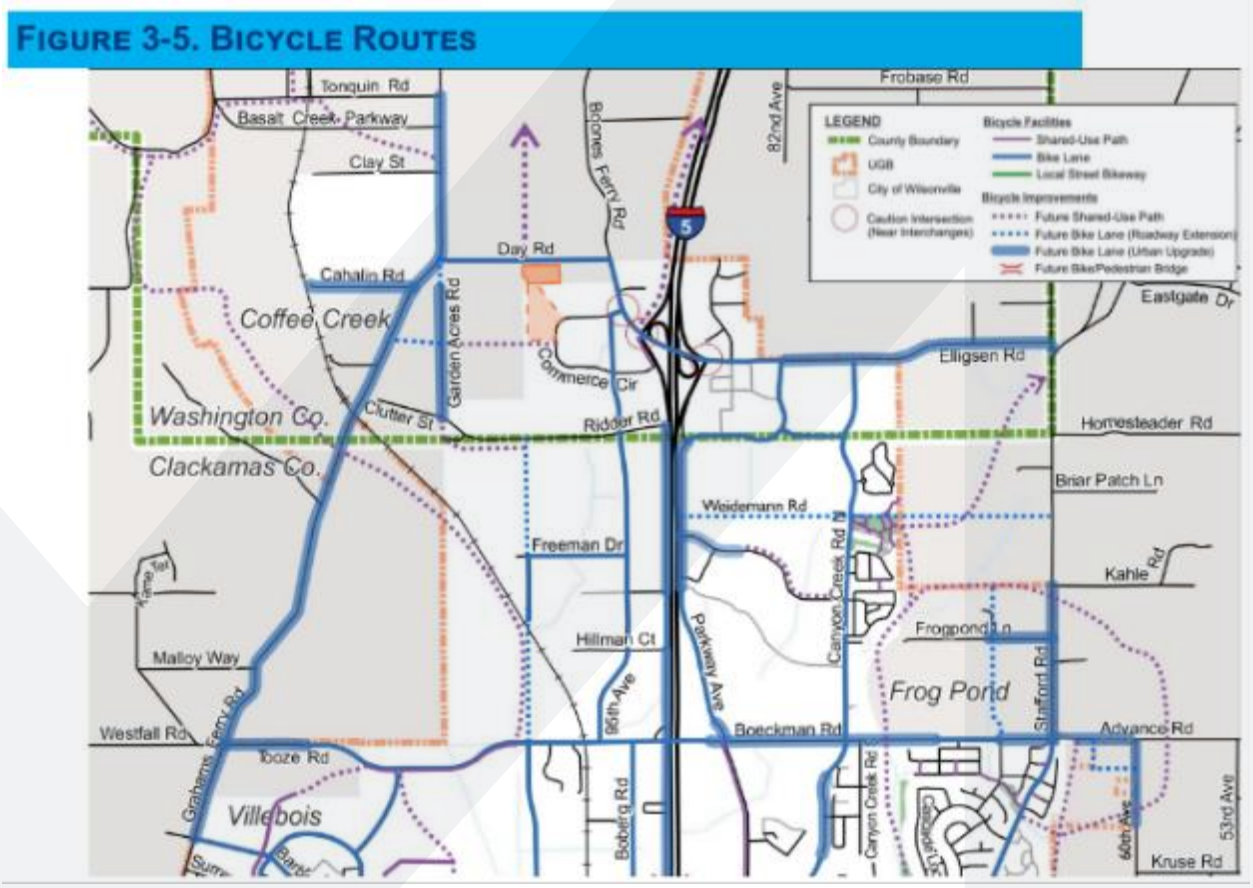
Ridder Road: Arterial between Garden Acres Road and future Kinsman Road extension; Collector east of that future intersection to frontage road west of I-5.

All of the above are designated Freight Routes (TSP Fig. 3-4).

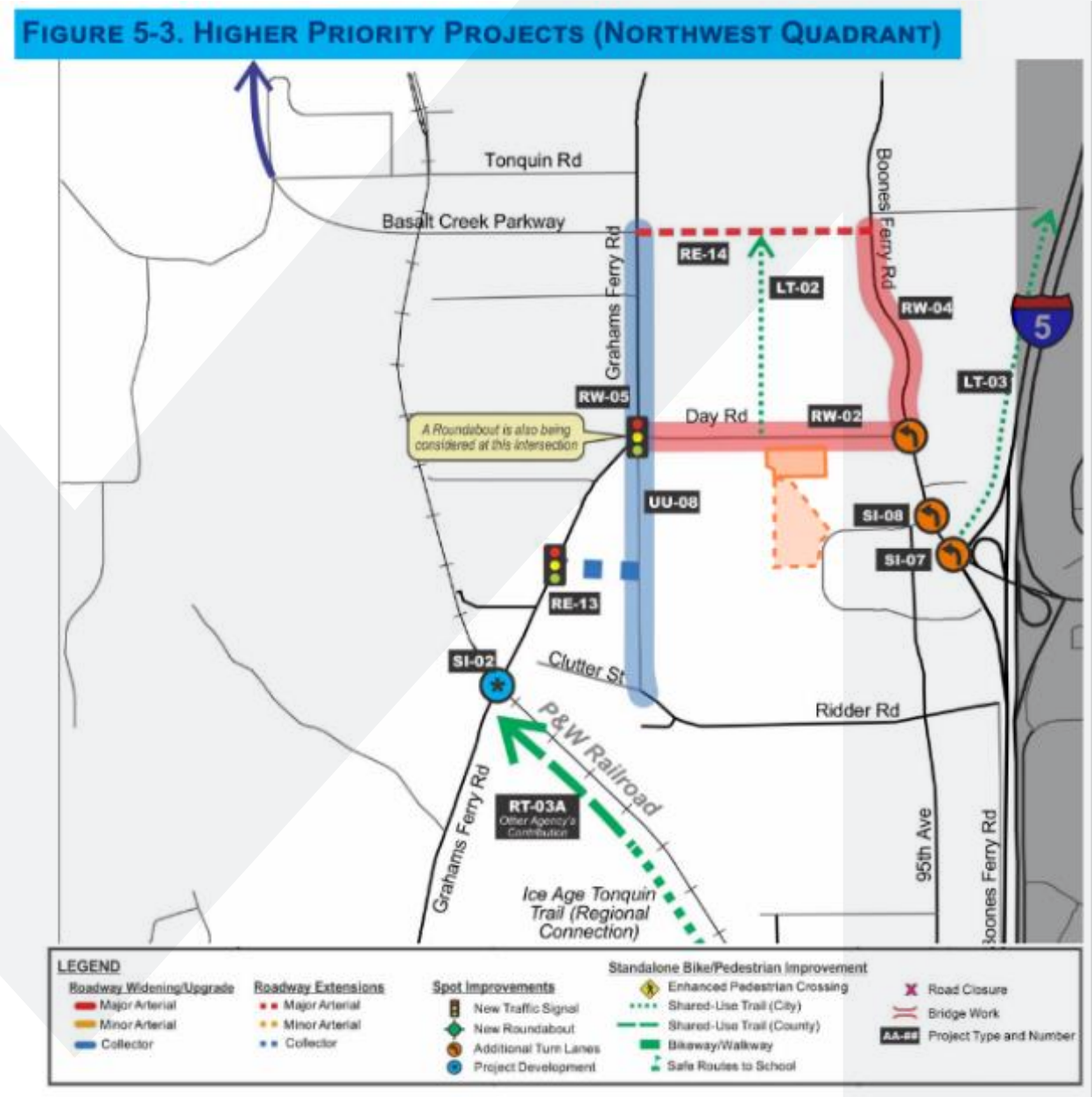
FIGURE 3-4. FREIGHT ROUTES



TSP Fig. 3-5 Bicycle Routes includes an east-west connection between Garden Acres Road and Commerce Circle, and a Shared-Use Path north of Day Road.



TSP Fig. 5-3 identifies Day Road and Garden Acres Road, including their intersection, as Higher Priority Projects for funding of improvements. To the north, project RE-14 connecting Basalt Creek Parkway between Boones Ferry Road and Grahams Ferry Road has now been constructed. The Shared-Use Trail extending north of Day Road is identified and funded as Project LT-02.

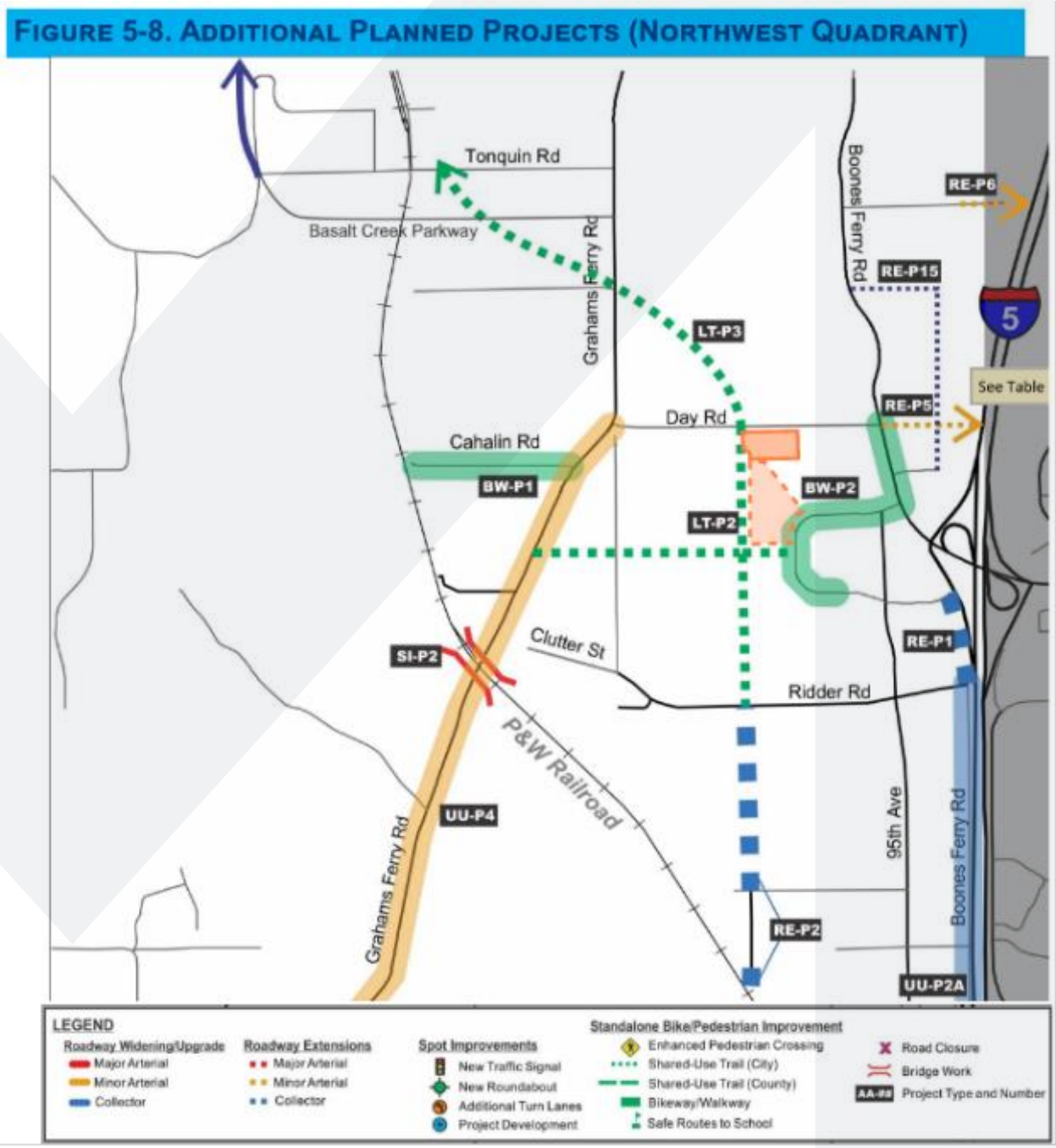


Project: LT-02 Basalt Creek Canyon Ridge Trail $450,000 (2019/Ord. # 823)

Build a north/south trail connection within Basalt Creek (west of the Canyon) to improve the pedestrian and bicycle network and make connections to east/west road that run north and south. This trail would require a grade-separated crossing of Basalt Creek Parkway and would be

connected to the regional trail network by extending Tonquin Road with bike/pedestrian facilities across Graham's Ferry to this future Basalt Creek Canyon Ridge Trail.

TSP Fig. 5-8 Additional Planned Projects designates the Kinsman Road corridor north of Ridder Road not as a street, but as a Shared-Use Trail that extends north across Day Road and beyond to make a pedestrian/bicycle connection to the Ice Age Tonquin Trail in the Sherwood-Tualatin area, to form a regional network.



Project: RE-P2 Kinsman Road Extension (Central) $12,000,000)

Description: *Construct 2/3-lane roadway from Boeckman Road to Ridder Road with bike lanes and sidewalks*

Why not higher priority?: *High cost due to grade-separated RR crossing and construction across Metro lands; alternative route (95th Avenue) is available*

Project: LT-P2 Area 42 Trail $220,000

Description: *Shared Use Path from Kinsman Road to Day Road*

Why not higher priority?: *To be constructed as Coffee Lake Creek Master Plan Area Redevelops*

Project: LT-P3 BPA Power Line Trail $500,000

Description: *Shared Use Path from Day Road to Ice Age Tonquin Trail providing trail users to City's northern industrial area*

Why not higher priority?: *Ice Age Tonquin Trail provides key connection to north (more critical when Coffee Lake Creek develops)*

***Definition: Shared-Use Paths** are a type of trail designed to be part of the transportation system that provide off-road routes for a variety of users, which principally include bicyclists and pedestrians.*

Standalone Pedestrian and Bicycle Improvements (Bikeways and Walkways)

Project: BW-P1 Cahalin Road Bike Lanes and Sidewalks $700,000

Description: *Construct bike lanes and sidewalks from Kinsman Road extension [Project RE-P2] to Ice Age Tonquin Trail*

Why not higher priority?: *High cost due to railroad crossing barrier*

COFFEE CREEK REGULATING PLAN (FIGURE CC-1)

The Regulating Plan includes a network of Supporting Streets serving properties on both sides of Garden Acres Road (an Addressing Street).

A north-south Supporting Street is shown on the west side of the BPA power lines corridor, extending south of Day Road (but transitioning to a pedestrian trail before reaching Ridder Road, where there is a conflicting power station).

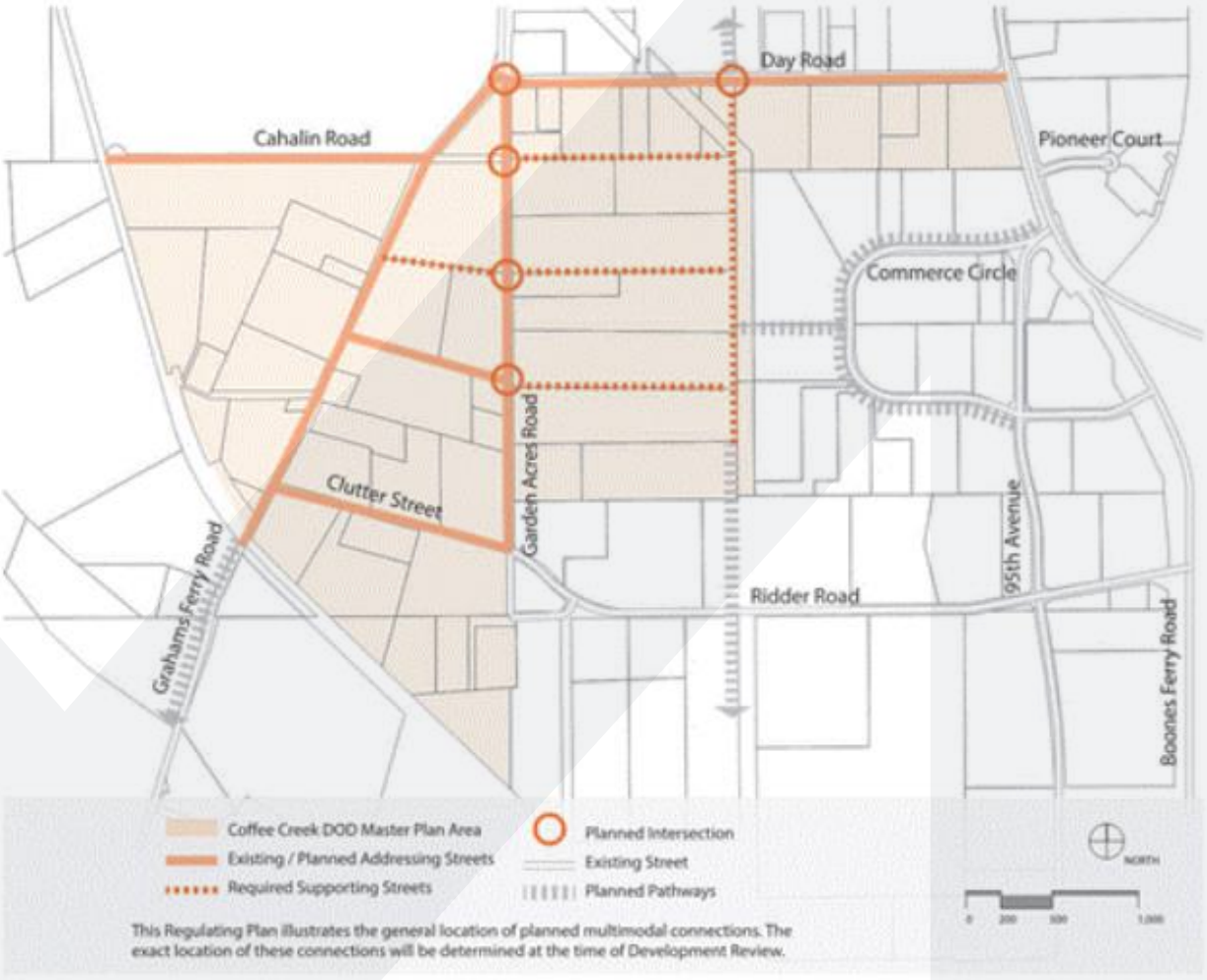


Figure CC-1 - Regulating Plan

When we compare Figure CC-1 against TSP Figure 5-8, there is an apparent conflict or confusion between the function of the Kinsman Road corridor between Ridder Road and Day Road: is it for pedestrians and cyclists (per the TSP) or for vehicles accessing industrial sites (CC-1)?

FIGURE 5-8. ADDITIONAL PLANNED PROJECTS (NORTHWEST QUADRANT)

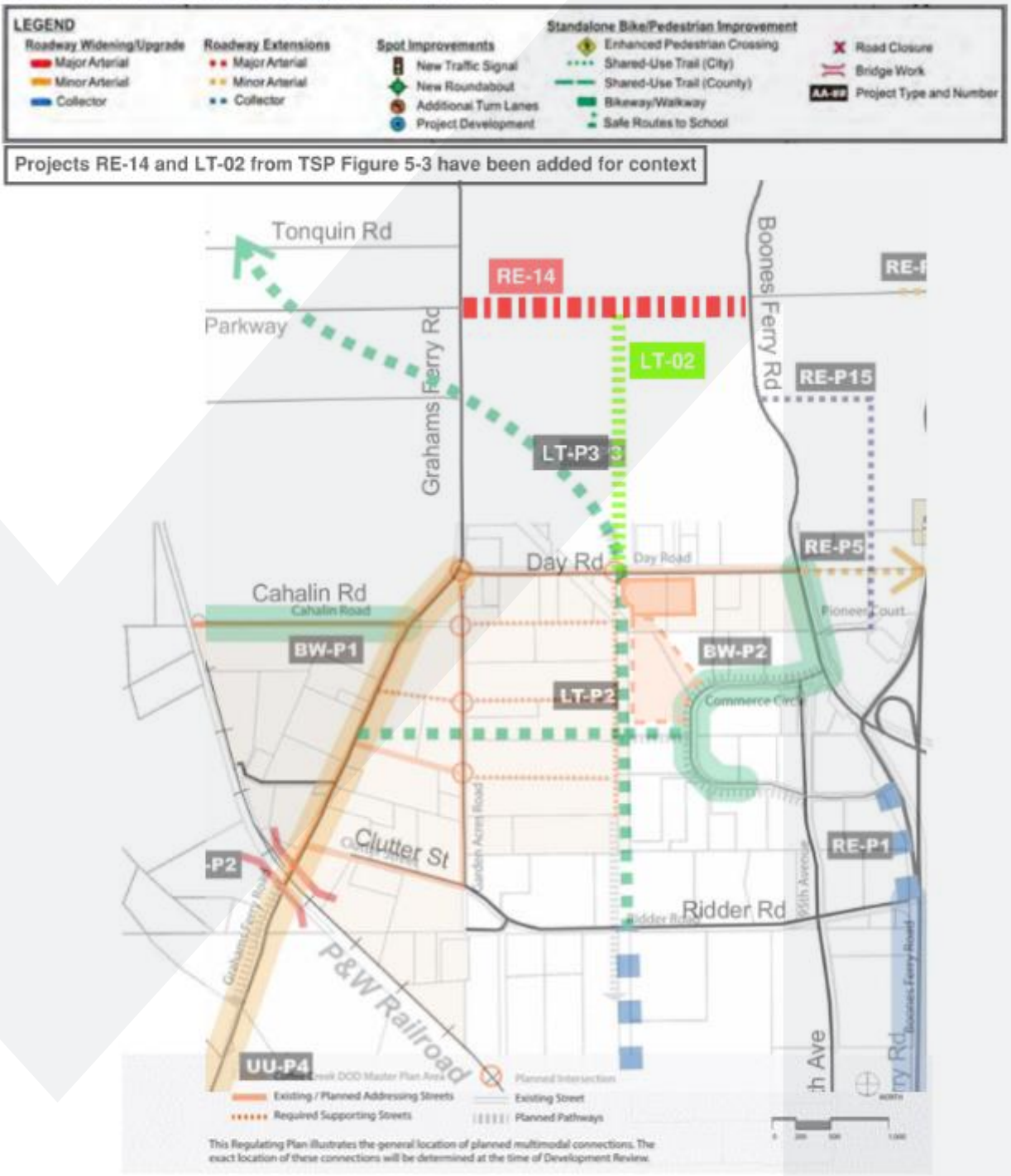


Figure CC-1 - Regulating Plan

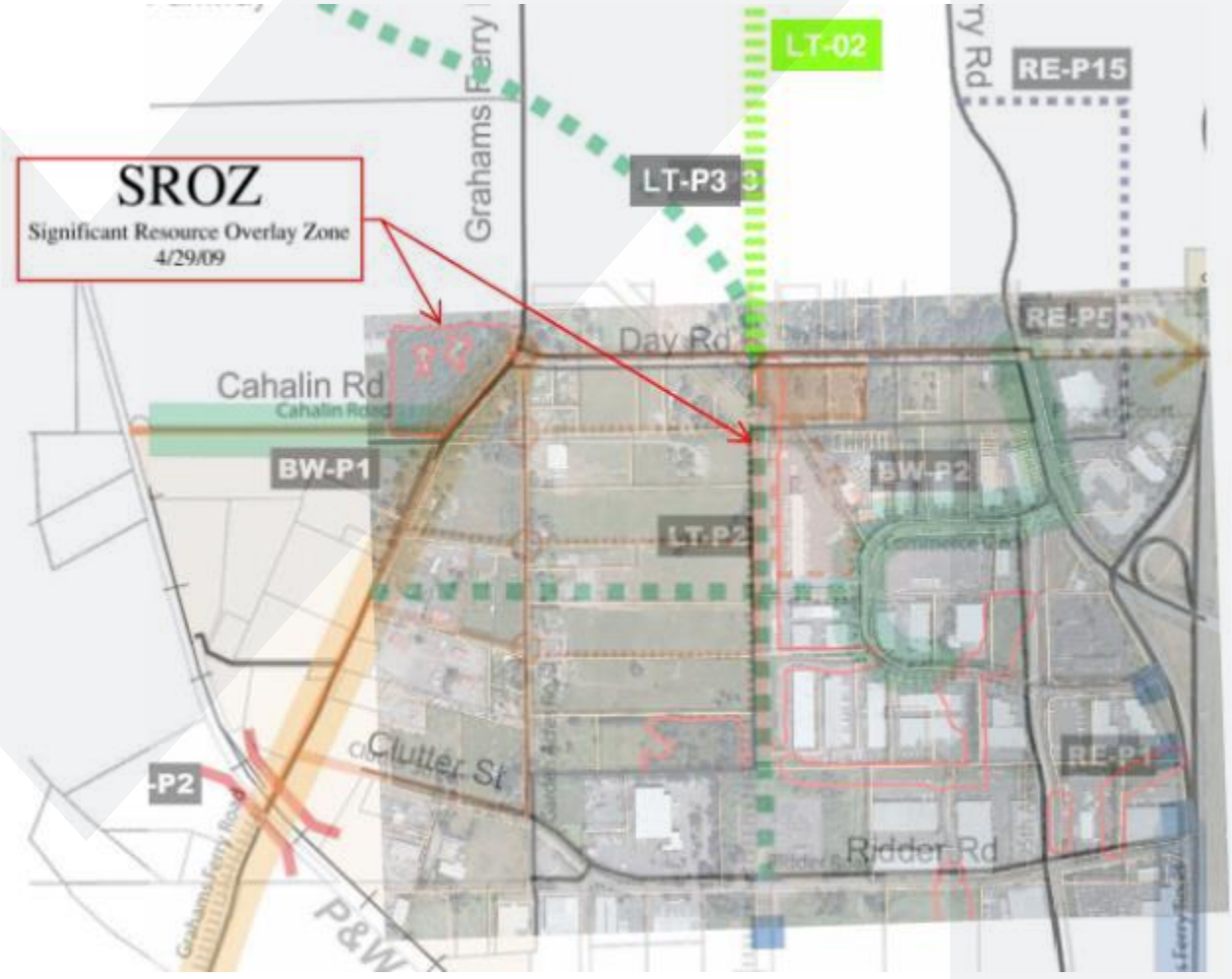
CORRIDOR ANALYSIS

In an effort to resolve the ambiguity, we performed an analysis of existing conditions and access/circulation needs in the BPA Power Lines corridor.

The BPA corridor is a substantial barrier to vehicular circulation. Neither the TSP nor Figure CC-1 proposes to add a vehicular crossing between Day Road and Ridder Road.

South of Ridder Road, the Kinsman Road corridor is on the east side of the BPA corridor.

North of Ridder Road, the Shared-Use Trail appears to correspond to the BPA corridor. South of the subject property, Tapman Creek flows south within the BPA corridor near its east edge; it appears to be the basis for the centerline of the City's SROZ designation.



These factors indicate the adopted TSP identifies the BPA corridor for realization of a Shared-Use Trail that is segregated from vehicular traffic (except where crossings of east-west roads are necessary) rather than a shared roadway facility (i.e., streets with bike lanes and sidewalks).

Turning to the vehicular access needs of the planned redevelopment area between the BPA corridor and Garden Acres Road, it is apparent that a network of Supporting Streets intersecting Garden Acres Road (an "Addressing Street" in the Coffee Creek concept and a Minor Arterial in the TSP) is intended to provide local access. Three Supporting Streets are shown on the east side of Garden Acres Road in Figure CC-1, extending to a north-south Supporting Street segment south of Day Road west of the BPA corridor.

The Coffee Creek Connectivity Standards in Section 4.134(.10)A provide that *[t]he location, alignment, and cross-section of required streets or private drives and shared-use paths is flexible, as long as they comply with spacing and minimum cross section standards.*

Subsection 4.134(.10)A.1.a further provides that *[a] Required Supporting Street is one that intersects with an Addressing Street as shown on Figure CC-1.* ***The exact location and design of these connections will be determined at the time of development review.*** [emphasis added]

Several issues affect implementation of a vehicular roadway (Supporting Street) abutting the west edge of the BPA corridor:

- There would be no developable property on the east side of the Supporting Street, and therefore no private development that would construct frontage improvements on its east side as a condition of development. The alignment could require City capital funds to be allocated to acquire right-of-way and complete its construction.
- The collinear alignment with TSP Project LT-P3 BPA Power Line Trail would effectively convert that segment of the Shared-Use Trail to a shared vehicular roadway, mixing pedestrian/bicycle users with vehicles, including trucks hauling freight.
- Extending the Supporting Street in a straight line north to intersect Day Road would require a new street crossing under the BPA power lines corridor, which transitions to a diagonal southeast-to-northwest alignment a short distance south of Day Road.

CONFLICT RESOLUTION

The practical issues noted above can be resolved by shifting the Supporting Street's alignment to the west:

- The resulting Supporting Street network will create areas of developable land between the north-south Supporting Street and the BPA corridor to the east, similar to the way Commerce Circle forms a loop on the west side of SW 95th Avenue, serving developed properties on both sides of that street.
- The full Supporting Street network can then be extended and constructed through street dedication and frontage improvement requirements as conditions of approval for development applications on both sides of the north-south Supporting Street.
- With freight and vehicular access needs for all the industrial redevelopment met by the Supporting Street network (and the Addressing Streets, Garden Homes Road and Day Road), the

north-south corridor along the BPA power lines can be devoted to implementation of the LT-P3 BPA Power Line Trail project as a Shared-Use Trail, per the TSP.

- The City can require east-west trail linkages to the Supporting Street network, enabling people who work in the Coffee Creek Industrial District to commute by way of the Shared-Use Trail.
- The westerly realignment of the Supporting Street could extend north to Day Road at a location just west of the BPA corridor, so no new roadway crossing under the BPA corridor would be needed.
- It is interesting to look at the sizes of the two speculative industrial projects that have been developed in the Coffee Creek Industrial Overlay District to date, as a general indicator of the scale of development that is being attracted to the area at this time. The first was the Panattoni project, on approximately 5.6 acres on the south side of SW Clutter Road just west of Garden Acres Road. The second was the Ares (Black Creek Group) project, on 8.1 acres between Grahams Ferry Road and Garden Acres Road, just south of Cahalin Road. Figures I and II below provide a visual illustration of how shifting the alignment of the north-south Supporting Street to the west will provide multiple redevelopment sites of similar size with vehicular access at the west and pedestrian/bike access at the east.

Figure I. Conceptual Connectivity Master Plan Concept 1

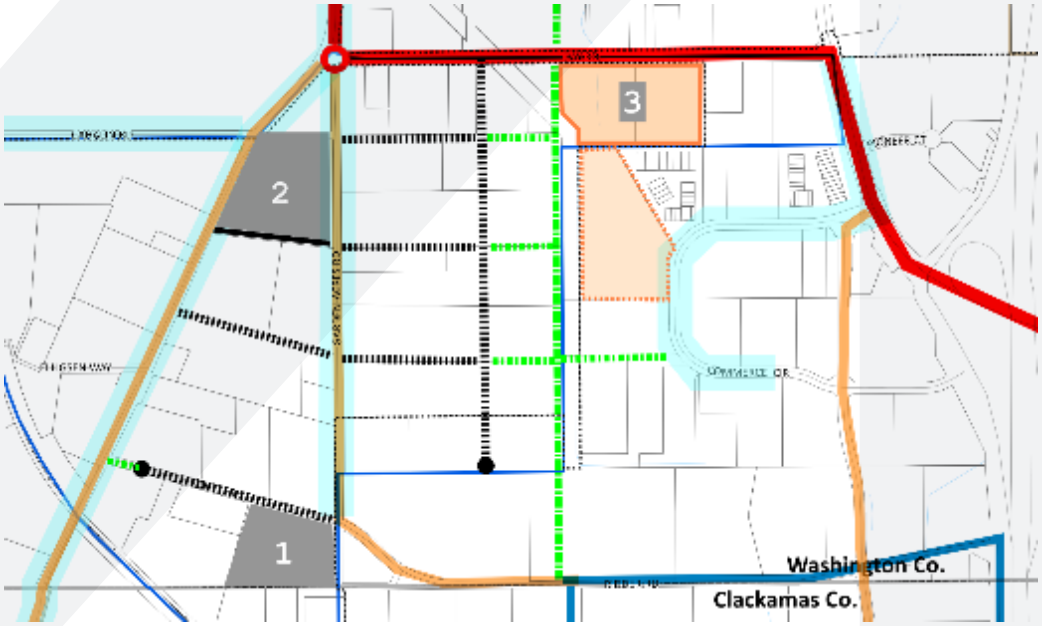
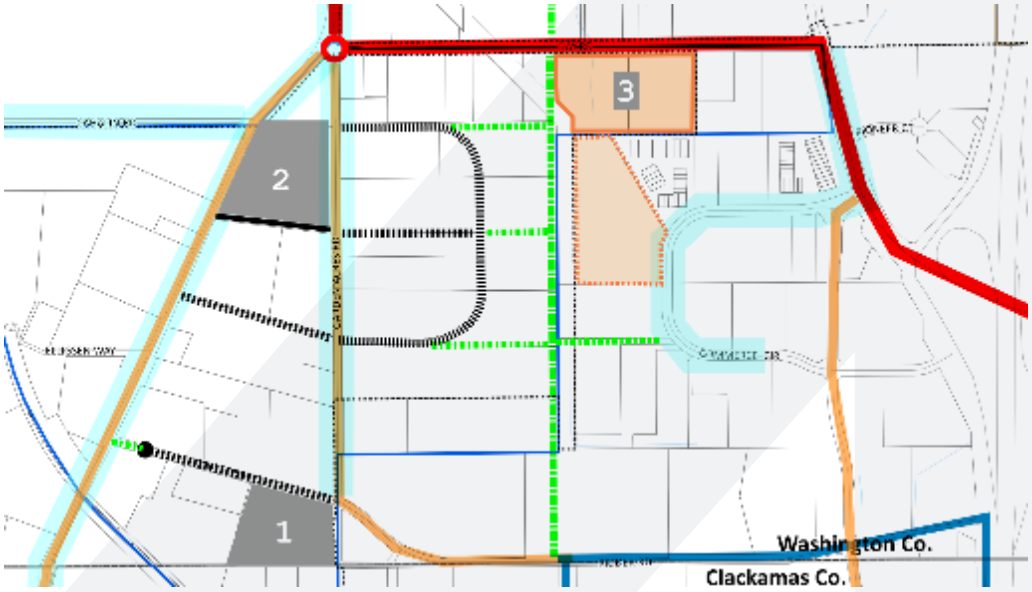
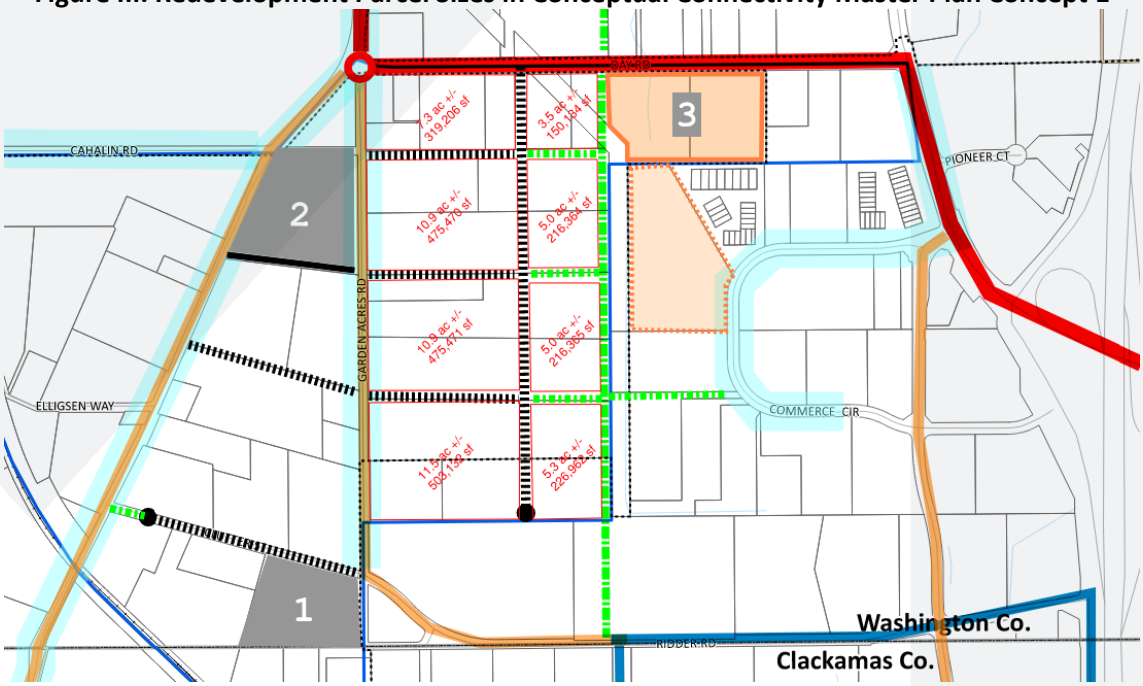


Figure II. Conceptual Connectivity Master Plan Concept 2 – Loop Street



- Figure III below adds approximate areas for the potential redevelopment sites that would be formed by the resulting network, using Concept 1 as a base map.

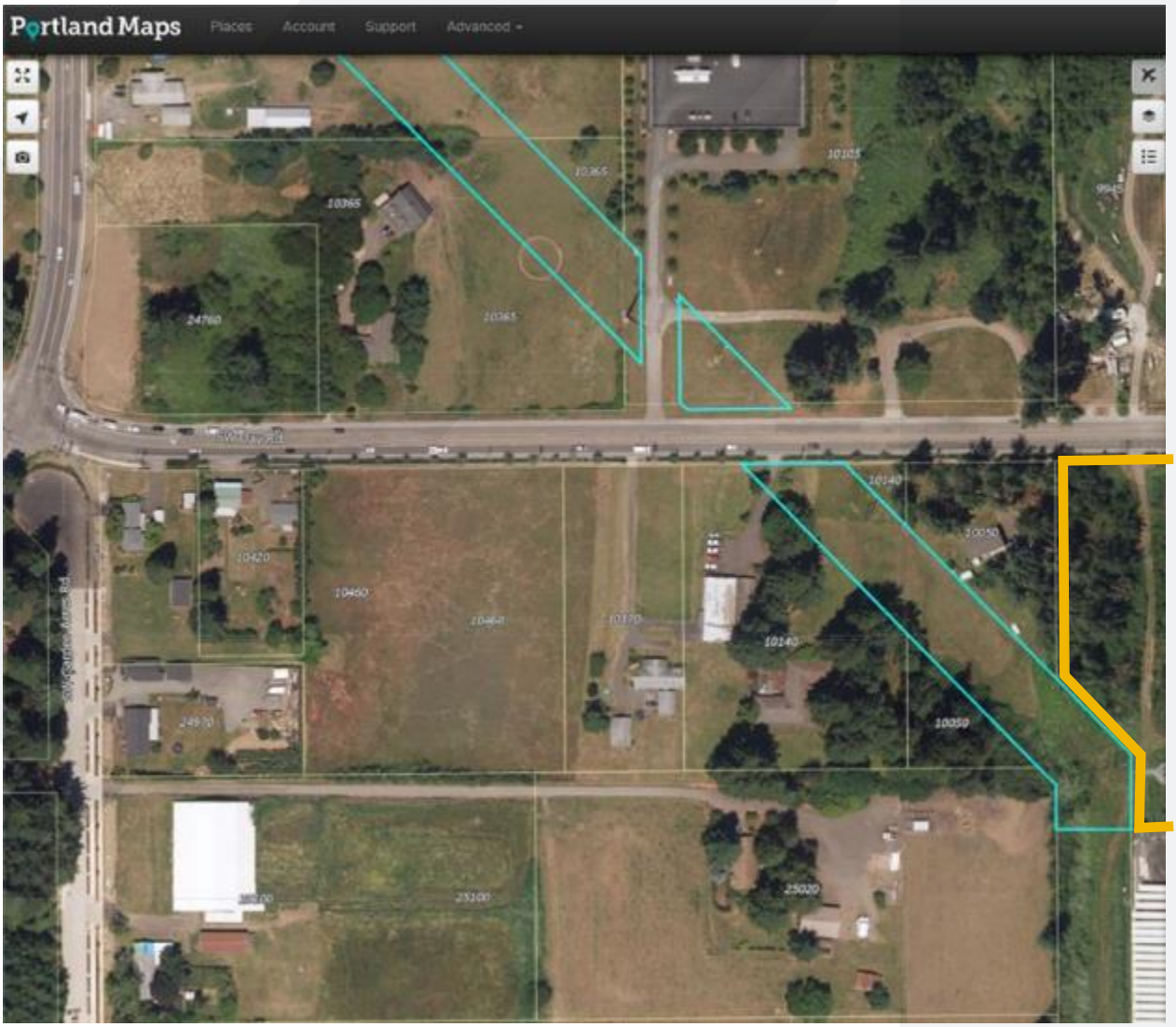
Figure III. Redevelopment Parcel Sizes in Conceptual Connectivity Master Plan Concept 1



ACCESS FOR REDEVELOPMENT WEST OF THE SUBJECT PROPERTY

Between the subject property and Garden Acres Road to the west, there are five properties with frontage on Day Road. Based on aerial photography, all appear to be in residential use at this time, similar to pre-redevelopment conditions at the speculative development sites discussed above (see Figure IV). The Coffee Creek Industrial District planning is intended to facilitate their redevelopment for urban employment use, but the current parcel configurations reflect their initial development in Washington County as rural residential homesites. Although it is not a regulatory requirement, it is to be expected that developers will assemble multiple parcels to form sites of suitable size and configuration to support industrial redevelopment similar to the recent projects in the area.

Figure IV: Aerial Photo of BPA Corridor Crossing Day Road



As noted in the Coffee Creek regulations, the specific locations and configurations of Supporting Street alignments, as well as access locations, are to be determined in the development review process. With that in mind, Figure CC-1 should be referenced as a **conceptual plan for street network connectivity** rather than a prescriptive set of precise alignments; however, the need for access to the western part of the subject property (identified as project site "3" in the figure above) requires examination of these questions:

1. Is a north-south Supporting Street immediately west of the BPA corridor consistent with the TSP (in particular, the Shared-Access Trail on TSP Figure 5-8)?
2. Would shifting the Supporting Street to the west be more consistent with TSP Figure 5-8, while providing sufficient vehicular and freight access to the industrial area east of Garden Acres Road?
3. Assuming a Supporting Street immediately west of the BPA corridor extended north on that axis to intersect Day Road (as illustrated in Figure CC-1), would that create a good (or even suitable) driveway access location for the property to the west?
    A. Assessor records list BPA as the fee title owner of this segment of the power lines corridor (blue in the Figure III image).
    B. The BPA corridor divides the two rectangular parcels at the right (just west of the subject property outlined in orange) into two fragments (see the matching address numbers on both components).
    C. It is not known at this time when any of those parcels will be proposed for redevelopment, or whether they will be consolidated to form a smaller number of larger sites suitable for industrial use.
    D. The appropriate access locations and routing for site access and circulation, as well as for achieving the network connectivity intended by Figure CC-1, can and should be determined in the context of those future redevelopment actions. It would be premature to commit to a specific alignment without the information actual development responding to market forces provides, e.g., the types of industries/employers that are needed in the area, and the forms of development that are desired and feasible to construct.
    E. Particularly if a developer consolidates the easterly two or three (or more) parcels, requiring access to be taken from a Supporting Street at the far east end would not be desirable or practical, because vehicles would need to cross the BPA power lines corridor to get to and from any proposed building(s), which cannot be constructed under the power lines. Locating the Supporting Street and its Day Road intersection farther to the west will be more functional and feasible in that redevelopment scenario.
    F. Due to these factors, a "wait and see" approach is warranted with respect to committing to a specific alignment for the north-south Supporting Street at this time.

ACHIEVING ACCESS WITH FUTURE FLEXIBILITY

The applicant's initial development application/site plan proposes a single driveway access on SW Day Road, at an optimal location with respect to sight distance limitations to the east on Day Road. The plan ("Option I") includes an internal drive aisle and crossing of Tapman Creek so all internal movements of semi-tractor units – between their storage area and other areas for trailer storage and docking/loading –

can be completed within the property. That is, no semi-tractors would be required to travel on public streets except when they are arriving or departing.

Option I remains the applicant's preferred plan for development and operation, and we believe we have provided sufficient justification for the City to approve the Variance request to allow it. A Variance is necessary because the Wilsonville Code has not anticipated a situation like this, and it does not contain provisions that provide guidance that would allow a private stream crossing.

In reviewing the application, Staff was not persuaded to support the Variance request. Staff instead advised the applicant that a separate driveway for the semi-tractor storage area would be allowed if it were in conjunction with a Supporting Street intersecting Day Road just west of the property, as shown on Figure CC-1. The applicant's design team has diligently researched the feasibility of that as an alternative approach, including preparing an Option II site plan and performing the analysis above regarding the appropriate alignment and timing of such a Supporting Street. As noted above, the analysis identified a number of reasons why, at this time, committing to locate a Supporting Street abutting the BPA corridor with an on-axis intersection at Day Road would be sub-optimal and inconsistent with substantial elements of the Transportation System Plan – specifically, a designated Shared-Use Trail extending north of Ridder Road on the Kinsman Road axis, per Figure 5-8.

To respond to these future uncertainties – including preserving opportunities for superior options to emerge as redevelopment occurs over time in the Coffee Creek District – the applicant has prepared the Option II alternative site plan with a two-phase implementation approach:

- The Phase 1 plan locates a secondary, western Day Road driveway on axis with the central drive aisle of the double-sided semi-tractor storage area, providing access for semi-tractor vehicles at a point approximately 467 feet west of the proposed main driveway on Day Road (measuring edge-to-edge).
- The Phase 2 plan shows how the semi-tractor storage area driveway can be relocated to the west property boundary, set back up to over 200 feet from Day Road, when a Supporting Street is constructed west of the subject property. (Alternatively, even if the small property adjacent to the west were redeveloped alone, the access could be relocated to a shared access driveway for the two properties on the same alignment, which the City could require through the Development Review procedure for that site.) At that time, the interim (Phase 1) driveway on Day Road would be abandoned, the driveway apron removed and replaced with curb, and the planter strips and site landscaping constructed to match the remainder of the Day Road frontage improvements.

Because Option II does not involve a private drive aisle crossing of Tapman Creek, the proposed stream buffer impact mitigations (such as dense plantings of native species plants) in the Option I proposal would not be required and are not included in Option II.

Option II would also permanently route all trips by semi-tractor units to and from the western storage area by way of Day Road, adding an increment of traffic to this segment of the arterial (although it is not a large number of trips).

SUMMARY AND RECOMMENDATION

Based on detailed review of the Transportation System Plan and Coffee Creek Industrial Overlay District policies, standards and guidelines, the applicant recommends the City defer committing to a Supporting Street alignment abutting the BPA power lines corridor and take a "wait and see" approach as redevelopment proposals continue to come forward in the Coffee Creek Industrial District.

The Applicant's preferred site access/circulation plan remains the proposal to accomplish internal semi-tractor movements within the site itself, by creating a vehicular drive across Tapman Creek (Option I, i.e., the initial application). The applicant requests consideration of the needed Variance request to allow it, based on the submitted application materials and this additional information about the larger planning/circulation context.

If the City declines to approve Option I, the applicant recommends approval of the alternative access plan in Option II Phases 1 and 2, which will allow the applicant to construct an interim access to the western portion of the property at an acceptable separation from the proposed main driveway on Day Road, while setting the stage for that interim access to be closed at a future time when the City approves a shared-access configuration on the property to the west.

Thank you for your consideration.

Sincerely,

Lee Leighton, AICP
Land Use Planning

Enclosure(s): Proposed Site Plan – Option I (Sheet C1.20 Grading)
Proposed Alternative Site Plans –Option II Phase 1 and Phase 2
Master Circulation Plan A
Master Circulation Plan B
Alternative Access Scenario letter from Janet Jones, P.E., dated January 30, 2023

c: Igor Nichiporchik, Vlad Tkach – Delta Logistics
Janet Jones, Breezy Rinehart-Young, Adam Goldberg – Mackenzie

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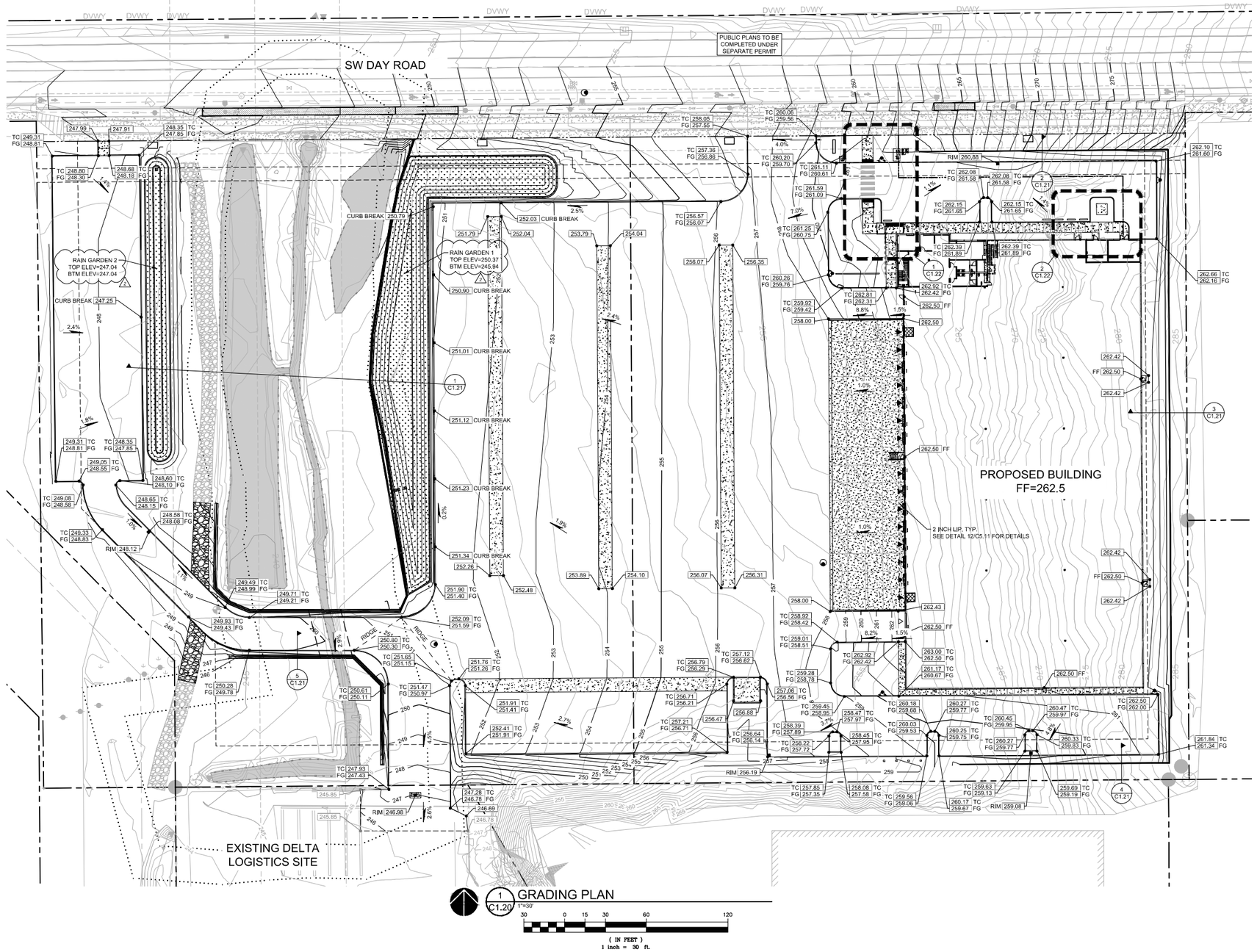
Project

DELTA LOGISTICS SITE EXPANSION
9710 SW DAY RD.
CITY OF WILSONVILLE, OR



1 C1.20 GRADING PLAN
1"=30'

30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.

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REVISION SCHEDULE

Delta	Issued As	Issue Date
1	PLAN CHECK	09/10/2022
2	LAND USE	11/15/2022

SHEET TITLE:
GRADING PLAN

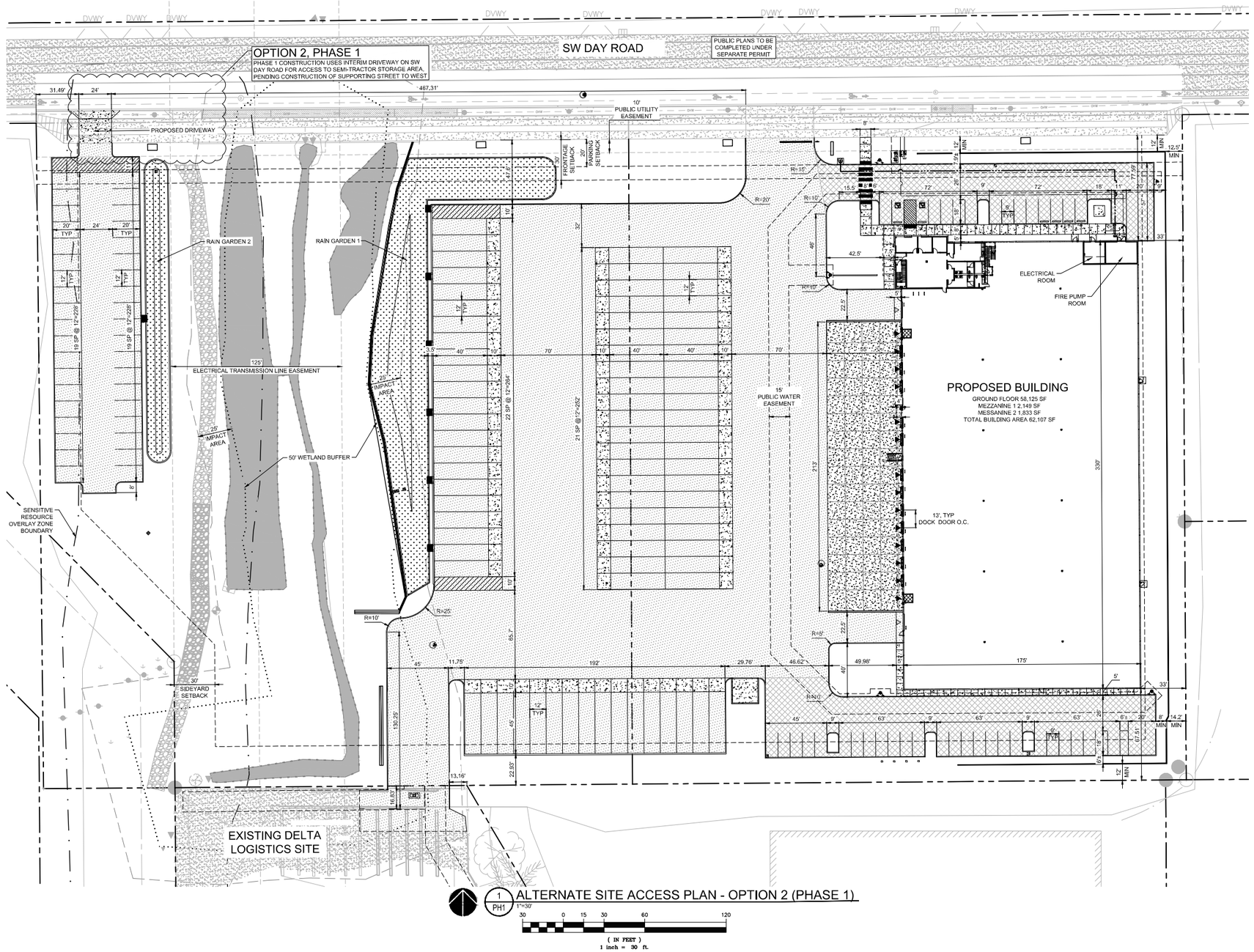
DRAWN BY: AOC, BMR

CHECKED BY: BMR, BDN

SHEET
C1.20

JOB NO. **2200502.04**

DESIGN REVIEW SET 07/29/2022



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206.749.9993
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MACKENZIE
Client

DELTA LOGISTICS
9835 SW COMMERCE CIRCLE
WILSONVILLE, OR
97070

Project

DELTA LOGISTICS SITE EXPANSION
9710 SW DAY RD.
CITY OF
WILSONVILLE, OR

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REVISION SCHEDULE

Delta	Issued As	Issue Date

SHEET TITLE:
ALTERNATE SITE ACCESS PLAN - OPTION 2 (PHASE 1)

DRAWN BY:

CHECKED BY:

SHEET

OPT 2

JOB NO. **2200502.04**

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DESIGN REVIEW SET 07/29/2022

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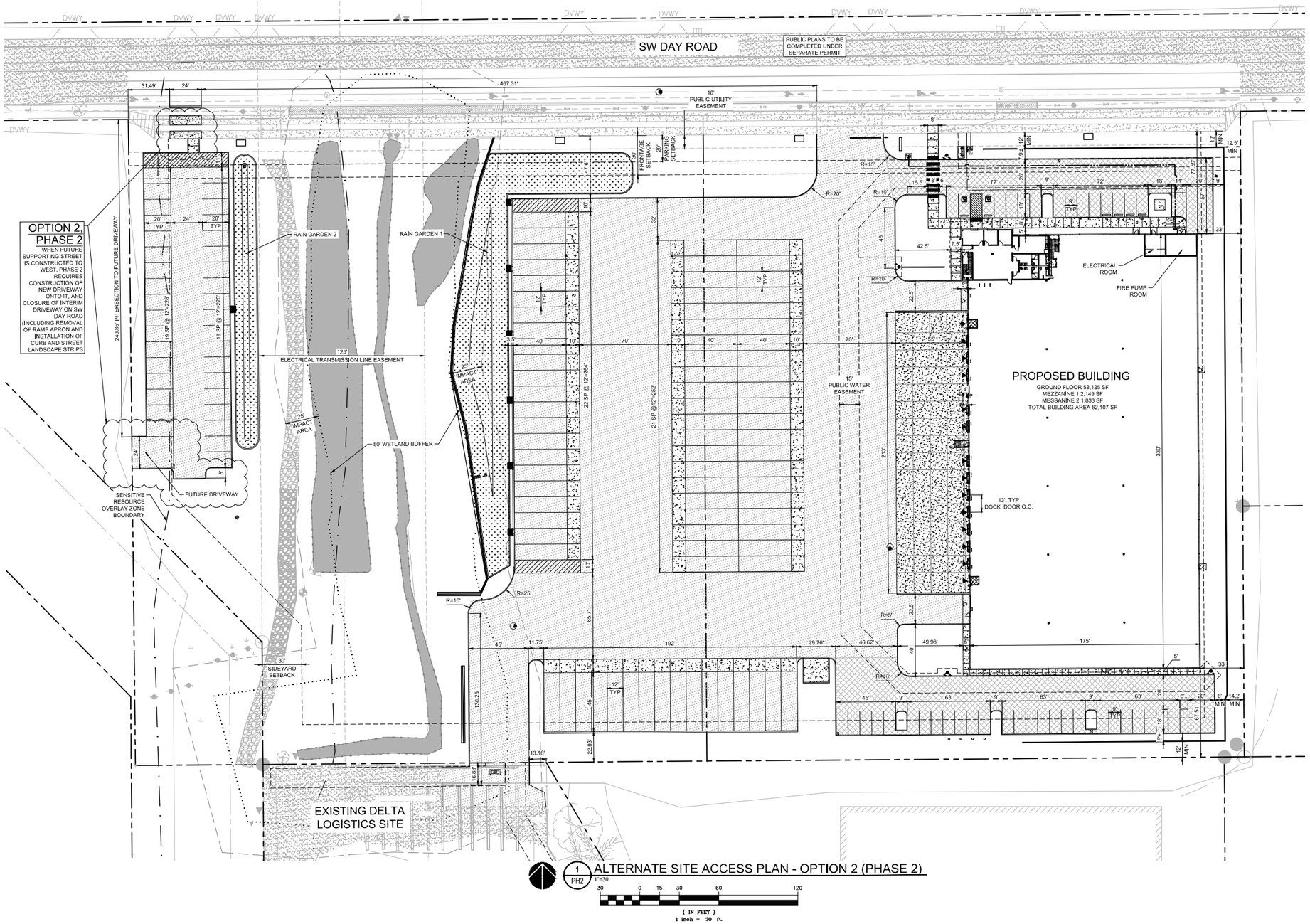

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REVISION SCHEDULE

Delta	Issued As	Issue Date

SHEET TITLE:
ALTERNATE SITE ACCESS PLAN - OPTION 2 (PHASE 2)

DRAWN BY:

CHECKED BY:

SHEET
OPT2

JOB NO. **2200502.04**

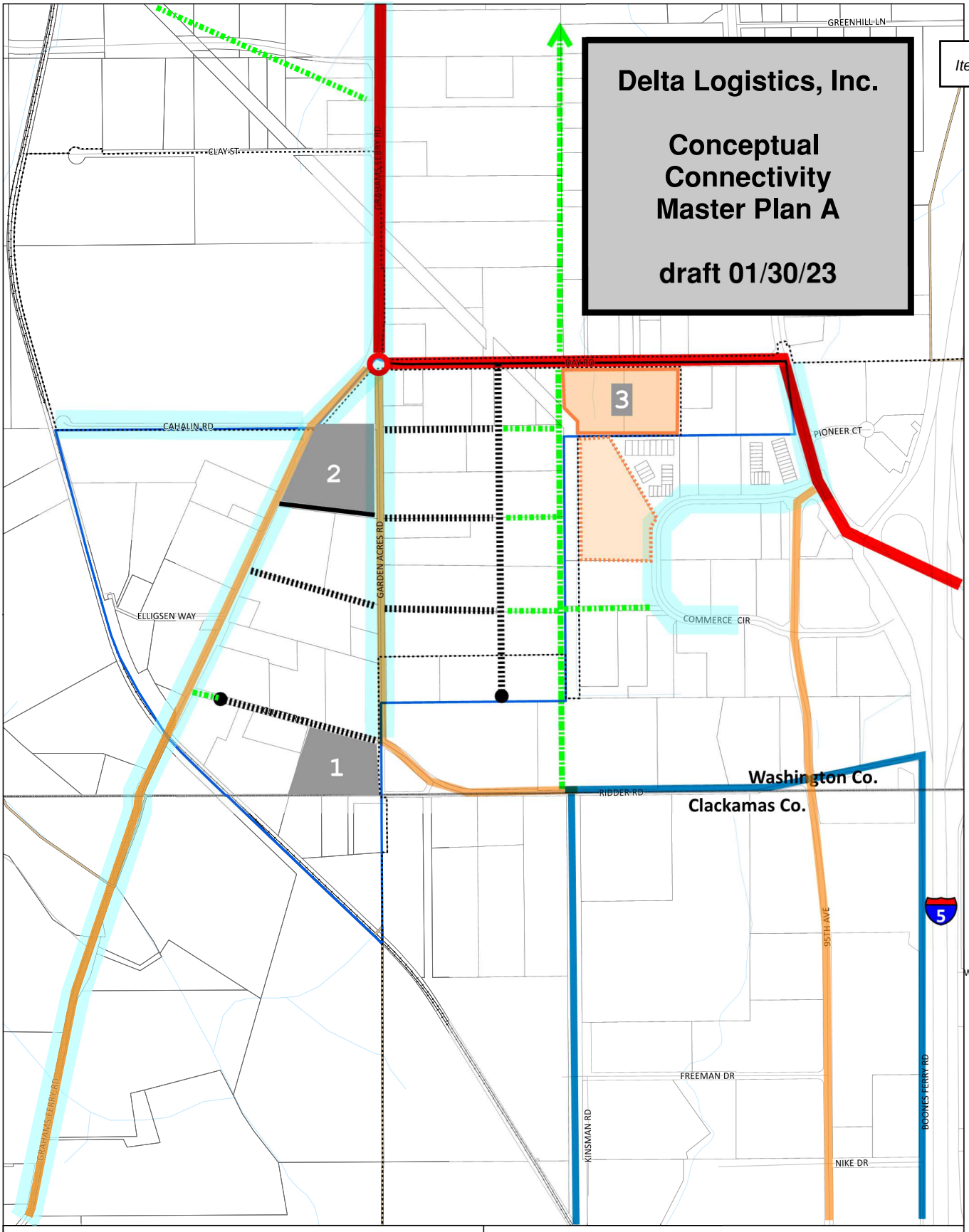
DESIGN REVIEW SET 07/29/2022

"220050200" C:\TEMP\ACPUBLISH_12388\502-SITE EXHIBIT OPTION2- PH2.DWG BMR 01/30/23 14:23 1:30

Delta Logistics, Inc.

Conceptual Connectivity Master Plan A

draft 01/30/23



Coffee Creek Industrial Design Overlay District

WILSONVILLE OREGON

2,640 ft

0 Mile 0.5

March 2018

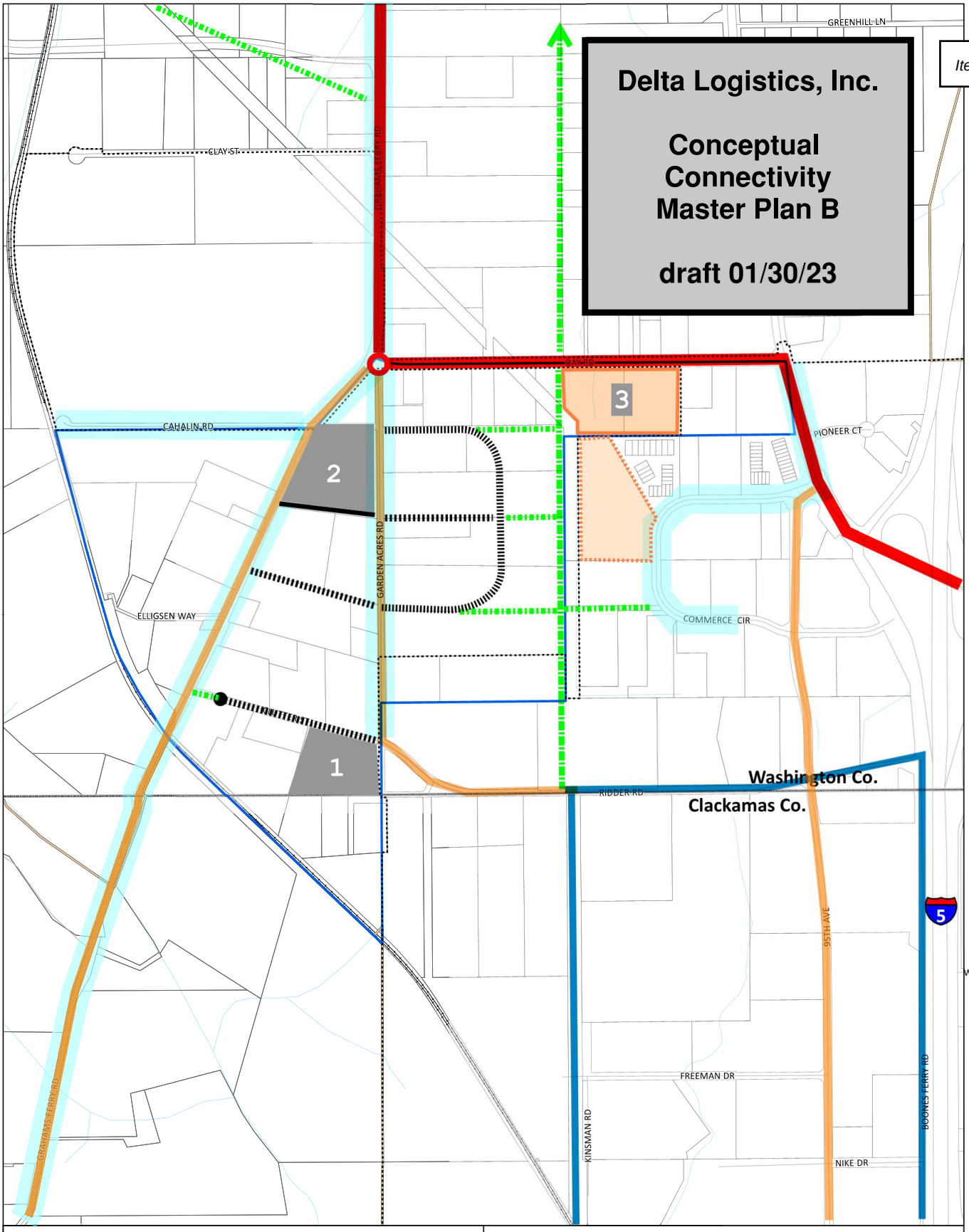
Map Legend

- Coffee Creek Industrial Design Overlay District Boundary
- County Boundary
- City Boundary
- Urban Growth Boundary
- Taxlots

WILSONVILLE GIS

This map is to be used in conjunction with written code provided in Section 4.134 of the Wilsonville Planning and Land Development Ordinance.

Disclaimer: The City of Wilsonville makes no representations, express or implied, as to the accuracy, completeness and timeliness of the information displayed. Data errors and omissions may exist in map and report. This map is not suitable for legal, engineering, or surveying purposes. Please contact the City of Wilsonville Planning Division to verify report information is complete and accurate.



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WILSONVILLE OREGON

2,640 ft

0 Mile 0.5

March 2018

Map Legend

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- County Boundary
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MACKENZIE.

January 31, 2023

City of Wilsonville
Attention: Amy Pepper
29799 SW Town Center Loop E
Wilsonville, OR 97070

Re: **Delta Logistics**
Alternative Access Scenario
Project Number 2200502.04

Dear Amy:

Mackenzie has prepared this letter to review access limitations to the bobtail parking area of the proposed Delta Logistics site expansion on SW Day Road in Wilsonville, Oregon, including exploration of an alternative circulation plan for the Coffee Creek plan area.

INTRODUCTION

Delta Logistics is proposing a site expansion on Washington County Tax lots 3S102B000600 and 3S102B000601 south of SW Day Road. Access to the site is proposed via a new driveway on SW Day Road, as well as cross-circulation to the existing site to the south which currently takes access from SW Commerce Circle. The proposed expansion includes an approximately 62,100 SF warehousing building with truck docks on the west side of the building and associated parking on lot 00600, and a surface parking lot dedicated to "bobtail" semi-tractor parking/storage to the west on lot 00601. The bobtail tractor parking area will be used to store tractors when not utilized in conjunction with a trailer for transport.

The current proposal includes a crossing of Tapman Creek connecting the bobtail tractor parking/storage lot to the warehousing building. Due to challenges with site grading, the bobtail storage must be placed on lot 00601 to maintain a warehousing building area that meets Delta Logistics' business needs. City of Wilsonville staff has advised the applicant they will not support a crossing of Tapman Creek; however, not allowing a crossing of Tapman Creek presents significant challenges for Delta Logistics and the surrounding transportation network.

ACCESS LIMITATIONS

If a crossing of Tapman Creek for access to the bobtail parking area is not allowed, then a second driveway will be needed to serve lot 00601. Without access to this lot, Delta Logistics is unable to utilize this property for their operations, which creates an unnecessary hardship on Delta Logistics. This would also force Delta Logistics to provide bobtail parking/storage on the main site with the warehousing building, decreasing the warehousing building footprint or the trailer storage capacity and thereby restricting Delta Logistics' development potential to a level that fails to meet their business needs.

An alternative site design could include the main access on SW Day Road serving the proposed warehousing building and a second vehicular access to the bobtail parking area located approximately 465 feet west, as measured between near driveway edges. This would require that drivers walk to the bobtail storage site from the warehouse, drive the bobtail to the main site via SW Day Road to load a trailer, and exit the main site to make deliveries. Once drivers return, they will

have to return to the main site to unload the trailer, drive the bobtail to the storage area via SW Day Road, and walk back to the warehouse. This results in a total of four vehicle trips on SW Day Road per bobtail tractor as opposed to two trips assuming a crossing of Tapman Creek was allowed. The doubling of trips onto the Major Arterial is unnecessary, would decrease the capacity of the roadway, and would present safety deficiencies as bobtails speed up to enter the traffic stream and quickly slow down again to enter the warehousing site, all within approximately 465 feet. Per acceleration data presented by the American Association of State Highway and Transportation Officials (AASHTO) for passenger cars on level surface (Figure 2-33 of the "Green Book"), it takes vehicles approximately 220 feet to accelerate up to 30 mph from stop. Similarly, it takes vehicles approximately 175 feet to come to a complete stop once traveling at 30 mph (Figure 2-34 of the "Green Book"). This suggests the bobtail drivers will utilize almost the entire span between driveways to speed up to a free-flow speed greater than 30 mph and then immediately slow down to turn into the next driveway. Alternatively, bobtail drivers may travel at a speed lower than 30 mph which would cause disruption to the flow of traffic traveling closer to the 45-mph design speed.

Additionally, a second access to SW Day Road for the subject property does not meet the City's access spacing standard for a Minor Arterial. Per the City's TSP, the desired access spacing requirement on SW Day Road is 1,000 feet as measured between centerlines, and the minimum access spacing requirement is 600 feet. The maximum access spacing that can be achieved for this property while maintaining safe sight lines (see Mackenzie's March 18, 2021 letter reviewing sight distance) along SW Day Road is approximately 505 feet between centerlines. While a variance for this second access could be considered, we note this alternative is less desirable than containing internal movements within the Delta Logistics site itself, for the reasons discussed above.

The City has noted the potential for a new north/south roadway ("Supporting Street" per Coffee Creek Figure CC-1) adjacent to the site's western boundary; however, currently adopted plans such as the 2013 Transportation System Plan as amended in 2016 and 2019 (TSP) and the Capital Improvement Projects (CIP) list do not include plans for a new north-south vehicular roadway in that corridor between SW Day Road and SW Ridder Road to the south.

The City's currently adopted TSP identifies a new shared-use trail (LT-02) extending north of SW Day Road to the planned Basalt Creek Parkway extension (RE-14) as a "Higher Priority Project." This shared-use trail is described as a "standalone pedestrian and bicycle improvement" in the City's TSP. No trail connection is identified south of SW Day Road under the "Higher Priority Project" list. Under the "Additional Planned Projects" list, a new shared-use trail (LT-P3) is identified between SW Ridder Road and SW Day Road and extending northwest to Tonquin Road. The "Additional Planned Projects" list includes improvements desired by the City but not identified as higher priority due to funding limitations.

The TSP does consider whether a future Minor Arterial will be needed between SW Beockman Road and SW Day Road to alleviate congestion at the 95th Avenue/Elligsen Road intersection, noting this new connection would be needed as the northwest quadrant develops to provide access to future developments; however, the TSP also notes this connection would be "difficult to construct due to the P&W railroad track and Metro green space in this quadrant." We agree there are significant challenges with any roadway construction in this area due to the existing Bonneville Power Administration's (BPA) easement that runs north/south adjacent to lot 00601, and Tapman Creek which runs along the eastern side of the BPA easement from SW Day Road to just north of the power substation along SW Ridder Road. Additionally, such an alignment would result in a lack of frontage to private property along one side due to the location of the BPA easement, and thus would require City funding to complete.

Typically, the TSP includes long-range planned projects that are identified as needed improvements to serve future growth. Those projects are then added to the City's CIP list once funding is secured. If an improvement is not identified in

the TSP as a "high-priority project," the chances of that improvement being funded are minimal. Based on this review, it is not likely a new north/south Minor Arterial adjacent to the subject property will be constructed prior to the construction of the proposed development. Therefore, if a new north/south roadway parallel to the site is constructed at a future date or not at all, access to the bobtail parking area will need to be provided from SW Day Road, or via the crossing of Tapman Creek on the subject site. In the event a new north/south roadway adjacent to the site is constructed, an interim access on SW Day Road will need to be provided until such time ultimate access from a new north/south roadway is constructed.

ALTERNATIVE CIRCULATION PLAN

The Coffee Creek Urban Renewal Plan identifies a potential north/south Minor Collector parallel to the subject site. We understand the TSP notes there is a need for additional north/south connectivity in the Coffee Creek area, consistent with the Coffee Creek Urban Renewal Plan, but as previously noted, there is no such identified planned improvement project listed in the City's currently adopted TSP.

Goal 3 of the Coffee Creek Urban Renewal Plan describes providing "a safe and efficient multi-modal transportation system consistent with the Transportation System Plan." Again, the City's currently adopted TSP does not include a plan for a north/south vehicular roadway adjacent to the site, but instead includes a plan for a pedestrian and bicyclist trail at this location.

The Coffee Creek Urban Renewal Plan also identifies specific infrastructure improvements needed within the plan area. This list includes improvements to SW Day Road, SW Grahams Ferry Road, SW Garden Acres Road, SW Clutter Road, and a new east-west roadway, SW Java Road. This list does not include a new north/south roadway extending north from the existing SW Kinsman Road terminus through SW Ridder Road and to SW Day Road. We note existing buildings north of SW Ridder Road preclude the alignment shown on the Coffee Creek Plan for a new north/south roadway.

Currently, SW Garden Acres Road and SW 95th Avenue provide north/south connectivity between SW Day Road and SW Ridder Road. Both roadways are designated Minor Arterials and are spaced a little over a half-mile apart. The City's TSP notes the desired spacing for Minor Arterials is one mile, per Table 3-1 Facility Spacing Guidelines. The desired spacing is specific to the distance between roadways of the same or higher functional classification. In this area, the existing spacing between SW Garden Acres Road and SW 95th Avenue is about half the desired spacing between Minor Arterials. Therefore, we don't see a need to add another north/south Minor Arterial between these two roadways.

An alternative to the planned north/south roadway identified in the Coffee Creek Master Plan could be to provide an east/west Collector east of SW Garden Acres Road to provide circulation to future industrial areas east of SW Garden Acres Road and west of the BPA easement. This provides local circulation to future developments in the area and does so in a way that does not interfere with the existing BPA easement and Tapman Creek. Another alternative could include constructing a local loop street, similar to SW Commerce Circle on the west side of SW 95th Avenue, that provides circulation in a loop with two approaches to SW Garden Acres Road. Enclosed with this letter are examples of how future circulation to currently undeveloped parcels within the Coffee Creek area can be achieved with a new east-west Collector or a new loop street connecting to SW Garden Acres Road.

CONCLUSION

The proposed Delta Logistics expansion site on SW Day Road comprises two tax lots, one of which is bisected by Tapman Creek. The proposal includes an approximately 62,100 SF warehousing building and associated parking east of the creek, and a "bobtail" tractor trailer parking area west of the creek. The development proposal also includes a crossing of Tapman Creek to maintain all truck-related functions on site.

City staff has indicated that they will not support a crossing of the Tapman Creek on site. City staff has also indicated there is a planned north/south public road connection west of the subject site from which a future access can be located to serve the bobtail storage area; however, we note the following challenges with staff's suggestions:

- We find inconsistencies between the adopted TSP and the Coffee Creek diagram regarding the nature of the planned north-south circulation facility immediately west of the subject site.
- There are challenges with constructing a roadway at this location due to existing BPA easement and Tapman Creek, as well as a lack of properties that can provide half-street improvements.
- Due to the construction challenges, we suggest City staff explore the potential for a new east-west Collector extending east from SW Garden Acres Road, or a local access street loop similar to Commerce Circle on the west side of SW 95th Avenue, to serve future industrial development east of Garden Acres Road.
- Without a north/south roadway from which to take access or an internal crossing of Tapman Creek, the subject property requires a second access on SW Day Road.
- Compared to having a creek crossing to complete internal trips within the subject property, a second access on SW Day Road would add unnecessary trips, cause friction for through movements eastbound on Day Road, and would not meet the City's access spacing requirement. This is the case whether access would be in the form of the proposed interim driveway on SW Day Road or alternatively if a driveway were located on a new street or shared driveway immediately to the west.
- Without access to the bobtail storage area, Delta Logistics would be unable to utilize their property to its fullest potential, causing a hardship on Delta Logistics.

Based on this review, we conclude that allowing an on-site crossing of Tapman Creek continues to be the superior design alternative to achieve the desired arterial functioning of SW Day Road under present and future conditions.

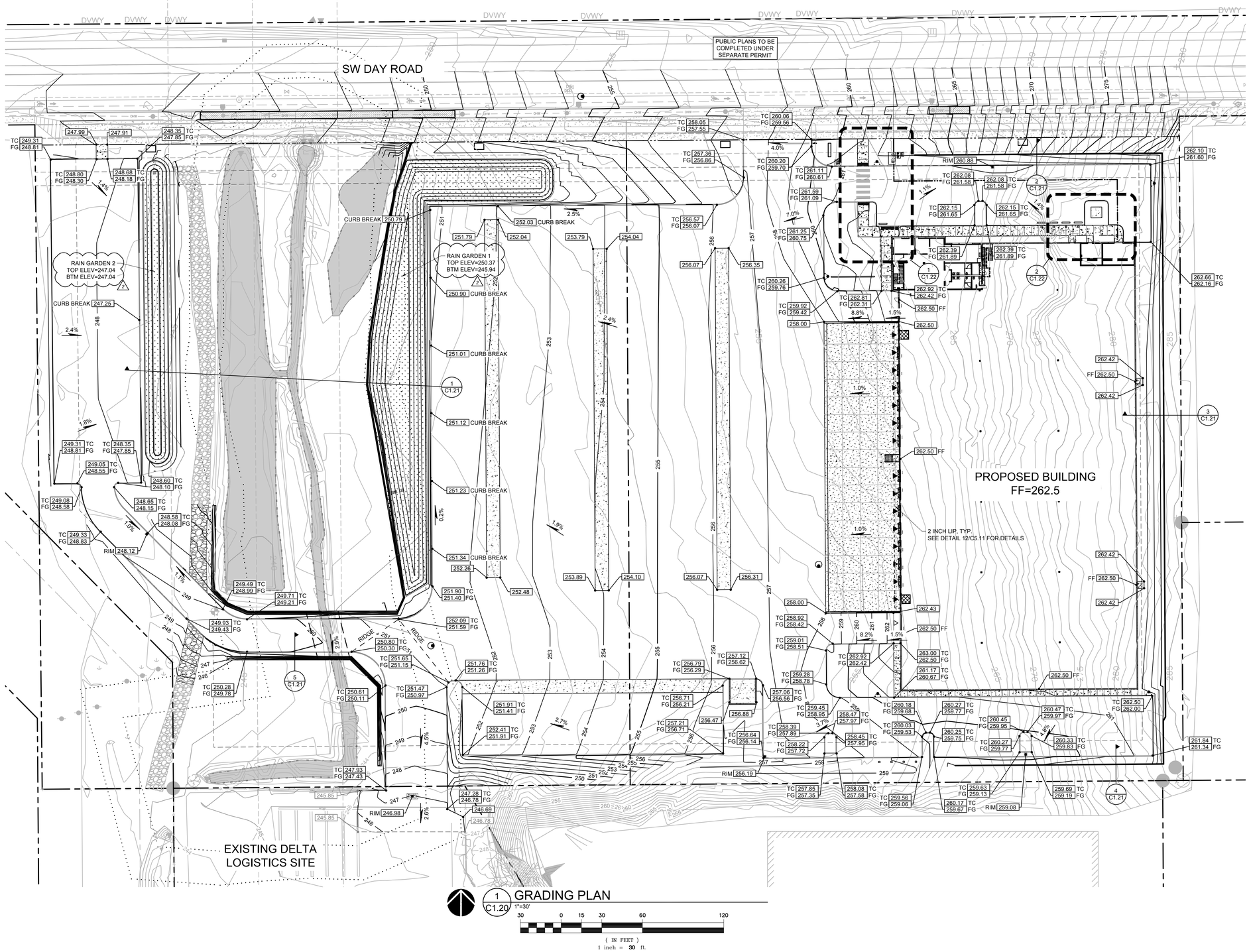
Please contact me at 971-346-3741 or jjones@mcknze.com if you have any questions or comments on the information presented in this letter.

Sincerely,

Janet Jones, PE
Senior Associate | Traffic Engineer

Enclosure(s): Proposed Site Plan – Option I
Proposed Site Plans –Option II Phase 1 and Phase 2

c: Igor Nichiporchik, Vlad Tkach – Delta Logistics
Lee Leighton, Breezy Rinehart-Young, Adam Goldberg – Mackenzie



1 C1.20 GRADING PLAN

1"=30'

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

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Client

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WILSONVILLE, OR
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REVISION SCHEDULE

Delta	Issued As	Issue Date
1	PLAN CHECK	06/10/2022
2	LAND USE	11/15/2022

SHEET TITLE:
GRADING PLAN

DRAWN BY: AOC, BMR

CHECKED BY: BMR, BDN

SHEET
C1.20

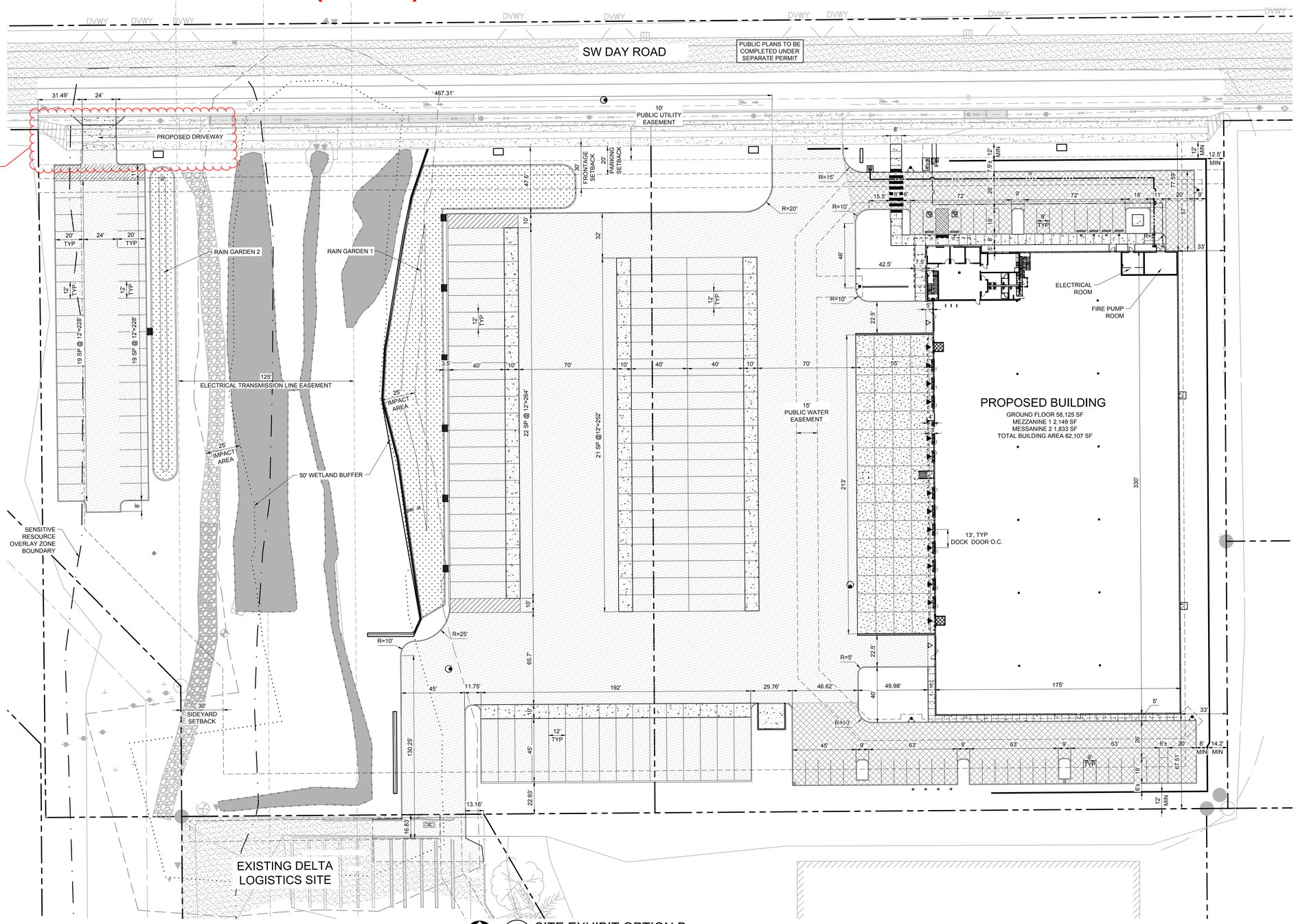
JOB NO. **2200502.04**

DESIGN REVIEW SET 07/29/2022

ALTERNATIVE SITE/ACCESS PLAN - OPTION II (PHASE 1)

OPTION II, PHASE 1:

Phase 1 construction uses interim driveway on SW Day Road for access to Semi-Tractor storage area, pending construction of Supporting Street to west.



1 C1.10B SITE EXHIBIT OPTION B

1"=30'

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(IN FEET)
1 inch = **30** ft.

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Item 2.

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REVISION SCHEDULE

Delta	Issued As	Issue Date

SHEET TITLE:
SITE EXHIBIT OPTION B

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CHECKED BY:

SHEET
C1.10B

JOB NO. **2200502.04**

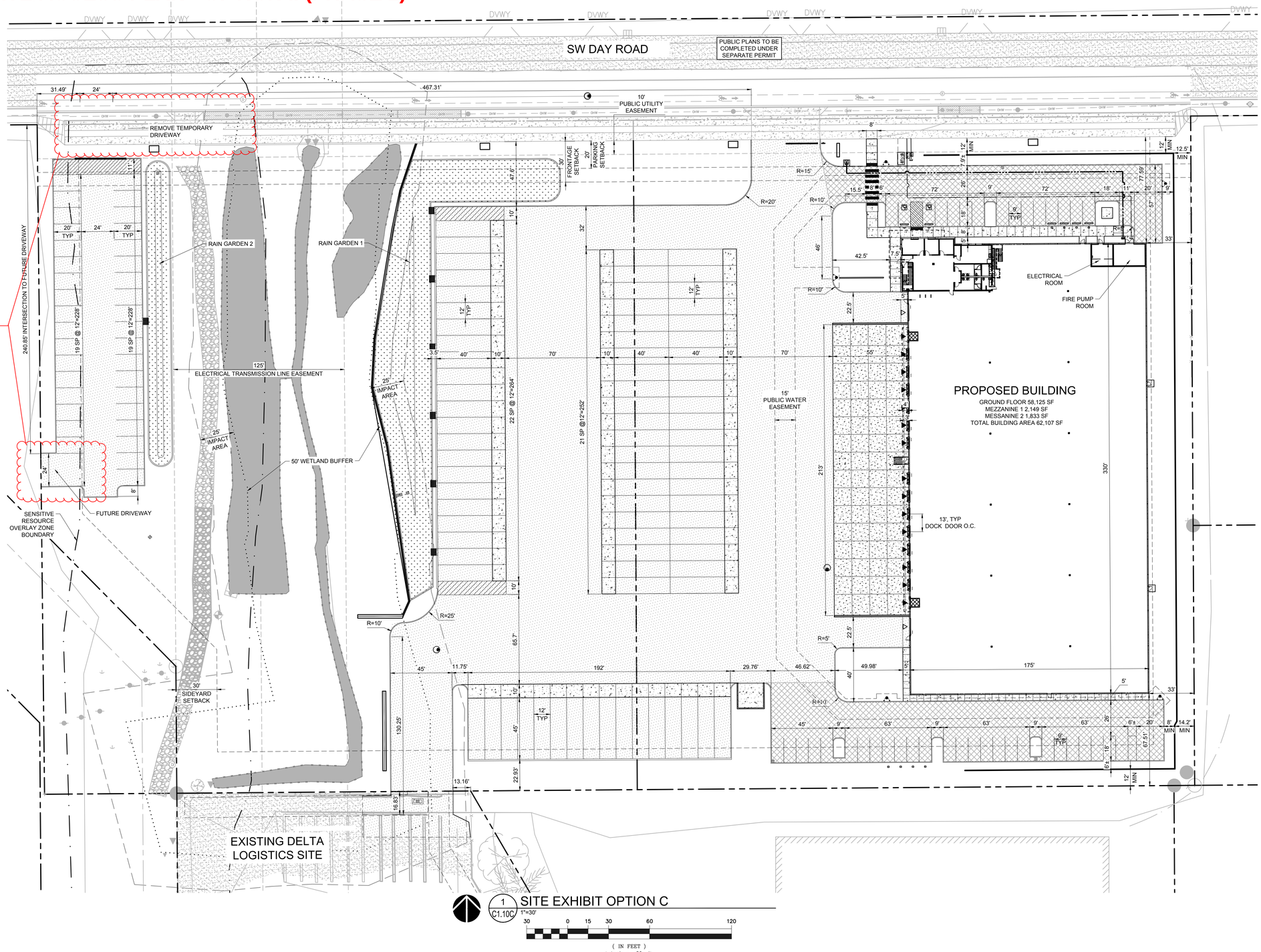
1124

DESIGN REVIEW SET 07/29/2022

ALTERNATIVE SITE/ACCESS PLAN - OPTION II (PHASE 2)

OPTION II, PHASE 2:

When future Supporting Street is constructed to west, Phase 2 requires construction of new driveway onto it, and closure of interim driveway on SW Day Road (including removal of ramp apron and installation of curb and street landscape strips).



1 C1.10C SITE EXHIBIT OPTION C

1"=30'

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

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REVISION SCHEDULE

Delta	Issued As	Issue Date

SHEET TITLE:
SITE EXHIBIT OPTION C

DRAWN BY:

CHECKED BY:

SHEET
C1.10C

JOB NO. **2200502.04**

1125

DESIGN REVIEW SET 07/29/2022

DELTA LOGISTICS
9710 SW DAY RD.
CITY OF WILSONVILLE, OR

LAND USE RESUBMITTAL - JULY 26, 2022

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TELEPHONE: 503-665-2200
CONTACT: IGOR NICHIPORCHIK
EMAIL: IGOR@DELTAGOV.COM

SURVEY CONSULTANT
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EMAIL: TONY@WEDDLESURVEYING.COM

GEOTECH CONSULTANT
NV5
CONTACT: BRETT SHIPTON
EMAIL: BRETT.SHIPTON@NV5.COM
TELEPHONE: 503-968-8787

GENERAL CONTRACTOR
BUILT ENVIRONMENTS NORTHWEST
TELEPHONE: 503.650.4086
CONTACT: ANDREI SHUPENKA
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FIRE PROTECTION
TO BE DETERMINED
TELEPHONE: TBD
CONTACT: TBD
EMAIL: TBD

ARCHITECT
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ARCHITECT OF RECORD: SCOTT MOORE
PROJECT MANAGER: ADAM GOLDBERG
EMAIL: AGOLDBERG@MCKNZE.COM

CIVIL ENGINEER
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EMAIL: NFERREIRA@MCKNZE.COM

STRUCTURAL ENGINEER
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TELEPHONE: 503-224-9560
ENGINEER: RYAN BAKER
EMAIL: RBAKER@MCKNZE.COM

SITE INFORMATION
ADDRESS: 9710 SW DAY RD.
CITY OF WILSONVILLE, OR

REFER TO CIVIL PLANS FOR ADDITIONAL SITE INFORMATION

BUILDING INFORMATION

AREA	SQUARE FEET
BUILDING	58,116 SF
FLOOR 1	
WAREHOUSE	55,569 SF
OFFICE	2,437 SF
OFFICE (F)	(2,037 SF)
FLOOR 2:	
MEZZANINE	2,196 SF
MEZZANINE (F)	1,833 SF

GEOTECHNICAL REPORT
SEE APPENDIX ONE IN THE SPECIFICATION BOOK FOR GEOTECHNICAL REPORT DATED 6/30/2021 AND ADDENDUM #1 DATED 11/19/2021

PERMITS
- BUILDING: #
- EARLY GRADING: #

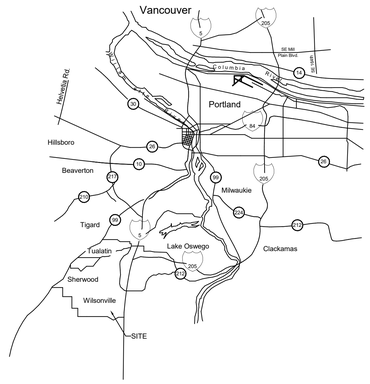
DEFERRED SUBMITTALS
- DESIGN BUILD STAIRS
- OPEN WEB METAL JOIST & GIRDERS
- STOREFRONT SYSTEM AND ATTACHMENT
- BUCKLING - RESTRAINED BRACE & CONNECTION
- MECHANICAL
- ELECTRICAL
- PLUMBING
- FIRE PROTECTION

SEPARATE PERMITS
- DESIGN BUILD FIRE SPRINKLER
- DESIGN BUILD FIRE ALARM
- MECHANICAL
- ELECTRICAL
- PLUMBING
- PUBLIC WORKS
- UNDERGROUND FIRE LINES
- EMERGENCY RESPONSE RADIO COVERAGE (ERRC)
- FIRE PUMP (INSTALLED PER NFPA 20)
- DIESEL FUEL TANK (PER 2019 OFC CHPTER 57 & NFPA 30). INCLUDE FUEL FILL PLAN
- KNOXBOX
- WAREHOUSE RACKING
- WAREHOUSE EQUIPMENT AND ATTACHMENT

NOTES:

1. DESIGN BUILDERS ARE FULLY RESPONSIBLE FOR THE DESIGN OF THESE SYSTEMS / COMPONENTS. THESE SYSTEMS / COMPONENTS SHOWN ON DOCUMENTS ARE SCHEMATIC ONLY. THEY ARE NOT INTENDED TO REPRESENT FINAL / CODE COMPLIANT DESIGN. PROVIDE DESIGN DOCUMENT SUBMITTAL TO MACKENZIE FOR REVIEW PRIOR TO SUBMITTAL TO CITY OF WILSONVILLE, OREGON.

1 G0.01 BUILDING PERSPECTIVE



2 G0.01 VICINITY MAP
NTS

DRAWING INDEX

G0.01	TITLE SHEET AND DRAWING INDEX
G0.02	PROJECT GENERAL NOTES, SYMBOLS, AND ABBREVIATIONS
G1.10	CODE ANALYSIS
G1.11	ENERGY CODE COMPLIANCE
G1.20	EXISTING CONDITIONS SURVEY

CIVIL DRAWINGS

C0.01	CIVIL NOTES AND LEGEND
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City of Wilsonville
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SHEET

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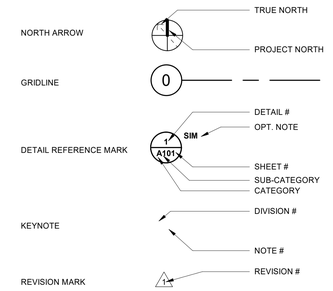
STANDARD ABBREVIATIONS

@	AT
AB	ANCHOR BOLT
AC	ASPHALTIC CONCRETE
ACI	AMERICAN CONCRETE INSTITUTE
ADA	AMERICANS WITH DISIBILITIES ACT
ADD'L	ADDITIONAL
ADJ	ADJACENT/ ADJUSTABLE
AESS	ARCHITECTURALLY EXPOSED STRUCTURAL STEEL
AFF	ABOVE FINISH FLOOR
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
AL / ALUM	ALUMINUM
ALT	ALTERNATE
APPROX	APPROXIMATE
ARCH	ARCHITECT(URAL)
ATR	ALL-THREAD ROD
B/	BOTTOM OF
BATT	BATTEN INSULATION
BD	BOARD
BLD / BLDG	BUILDING
BLK	BLOCK
BLKG	BLOCKING
BM	BENCHMARK / BEAM
BN	BOUNDARY NAIL
BOT / BOTT	BOTTOM
BRG	BEARING
BSMT	BASEMENT
BTWN	BETWEEN
BUR	BUILT UP ROOFING
CAB	CABINET
CB	CATCH BASIN
CDF	CONTROLLED DENSITY FILL
CIP	CAST IRON
CJ	CONTROL JOINT
CL /℄	CENTERLINE
CLNG	CEILING
CLR	CLEAR
CMP	CORRUGATED METAL PIPE
CMU	CONCRETE MASONRY UNIT
CNTR	CENTER
CO	CLEAN OUT
COL	COLUMN
CONC	CONCRETE
CONF	CONFERENCE
CONN	CONNECTION
CONN	CONNECTION
CONST	CONSTRUCTION
CONT	CONTINUOUS
CONTR	CONTRACTOR
COORD	COORDINATE
CORR	CORRUGAT(ED) (ION)
CPT	CARPET
CRC	CHEMICAL RESISTANT COATING
CSK	COUNTERSINK
CSP	CONCRETE SEWER PIPE
CTOP	COUNTERTOP
CTR / CNTR	CENTER
CW	CONCRETE WALL
d	PENNY(NAILS)
DBA	DEFORMED BAR ANCHOR
DBL	DOUBLE
DC	DEMAND CRITICAL WELD
DET / DTL	DETAIL
DET/DTL	DETAIL
DF	DRINKING FOUNTAIN / DOUGLAS FIR
DIA / ø	DIAMETER
DIAPH	DIAPHRAGM
DIM	DIMENSION
DL	DEAD LOAD
DN	DOWN
DP	DEEP
DR	DOOR
DS	DOWN SPOUT
DWG	DRAWING
DWLS	DOWELS
(E) / EXIST	EXISTING
E/	EDGE OF
EA	EACH
EF	EACH FACE
EIFS	EXTERIOR INSULATION FINISH SYSTEM
ELECT	ELECTRICAL
ELEV	ELEVATION
EN	EDGE NAIL
ENGR	ENGINEER
EOP	EDGE OF PANEL
EP	EPOXY PAINT / EDGE OF PAVEMENT
EPDM	ETHYLENE PROPYLENE DIENE MONOMER
EQ	EQUAL
ES	EACH SIDE
ETC	EPOXY TRAFFIC COATING / ETCETERA
EW	EACH WAY
EXP	EXPOSED STRUCTURE
EXP JT / EJ	EXPANSION JOINT
EXT	EXTERIOR
F/	FACE OF
F/STUD	FACE OF STUD
FB	FLAT BAR
FC	FACE OF CURB
FD	FLOOR DRAIN
FDC	FIRE DEPARTMENT CONNECTION
FE	FIRE EXTINGUISHER
FF	FACTORY FINISH / FINISHED FACE
FFE	FINISH FLOOR ELEVATION
FIN	FINISH(ED)
FL	FLUSH
FLR	FLOOR
FM	FACTORY MUTUAL
FN	FIELD NAILING
FND	FOUNDATION
FOC	FACE OF CONCRETE
FOF	FACE OF FINISH
FOIC	FURNISH BY OWNER INSTALL BY CONTRACTOR
FOM	FACE OF MASONRY
FOS	FACE OF STUD
FOW	FACE OF WALL
FS	FAR SIDE
FT	FEET/FOOT FIRE TREATED
FTG	FOOTING
GA	GAUGE
GALV	GALVANIZED
GEN	GENERAL
GLB	GLULAM BEAM
GLZ	GLAZING
GR	GRADE
GRD	GRID ONLY
GSA	U.S. GENERAL SERVICES ADMINISTRATION
GYP BD	GYPSUM BOARD
HB	HOSE BIB
HC	HOLLOW CORE / HANDICAP
HCM	HOLLOW CLAY MASONRY
HDPE	HIGH DENSITY POLYETHELENE
HDR	HEADER
HDWR	HARDWARE
HGR	HANGER
HL	HALF LITE
HM	HOLLOW METAL
HMK	HOLLOW METAL KNOCKDOWN
HMW	HOLLOW METAL WELDED
HORIZ	HORIZONTAL
HR(S)	HOUR(S)
HS	HEADED STUD
HSB	HIGH STRENGTH BOLT
HSS	HOLLOW STRUCTURAL STEEL
HTG	HEATING
HVAC	HEATING, VENTILATION AND AIR CONDITIONING
HWS	HEADED WELD STUD
IBC	INTERNATIONAL BUILDING CODE
ID	INSIDE DIAMETER
IE	INVERT ELEVATION
IF	INSIDE FACE
IFC	INTERNATIONAL FIRE CODE
IMC	INTERNATIONAL MECHANCIAL CODE
INFO	INFORMATION
INSP	INSPECTION / INSPECTOR
INSUL	INSULATION
INT	INTERIOR
IPC	INTERNATIONAL PLUMBING CODE
JNT	JOINT
JST	JOIST
K	KIPS
KSF	KIPS PER SQUARE FOOT
KSI	KIPS PER SQUARE INCH
L	ANGLE
LAM	LAMINATE
LAV	LAVATORY
LB	LAG BOLT
LL	LIVE LOAD
LLV	LONG LEG VERTICAL
LONG / LONGIT	LONGITUDINAL
LP	LOWPOINT
LSL	LAMINATED STRAND LUMBER
LVL	LAMINATED VENEER LUMBER
LWC	LIGHTWEIGHT CONCRETE
M	MIRROR
M/E/P	MECHANICAL/ ELECTRICAL/ PLUMBING OR PROCESS
MANF	MANUFACTURER
MAS	MASONRY
MATL	MATERIAL
MAX	MAXIMUM
MB	MACHINE BOLT
MDF/MDO	MEDIUM DENSITY FIBERBOARD / OVERLAY
MECH	MECHANICAL
MFD	MANUFACTURED
MFG	MANUFACTURING
MFR	MANUFACTURER
MGR	MANAGER
MH	MAN HOLE
MIN	MINIMUM
MISC	MISCELLANEOUS
MK	MARK
MLP	METAL LINEAR PANEL
MO	MASONRY OPENING
MOD BIT	MODIFIED BITUMINOUS
MP	METAL PANEL
MTL	METAL
(N)	NEW
NFPA	NATIONAL FIRE PROTECTION AGENCY
NIC	NOT IN CONTRACT
NO. / #	NUMBER
NOM	NOMINAL
NR	NON RATED
NS	NEAR SIDE
NTE	NOT TO EXCEED
NTS	NOT TO SCALE
O/A	OVERALL
OC	ON CENTER
OD	OUTSIDE DIAMETER
OFCI	OWNER FURNISHED, CONTRACTOR INSTALLED
OFOI	OWNER FURNISHED, OWNER INSTALLED
OH	OPPOSITE HAND
OHD	OVERHEAD DOOR
OPNG	OPENING
OPP	OPPOSITE
OSF / O/FACE	OUTSIDE FACE
OSSC	OREGON STRUCTURAL SPECIALTY CODE
OTS	OPEN TO STRUCTURE
P	PAINT
P-LAM	PLASTIC LAMINATE
P.E.	PROFFESSIONAL ENGINEER
PB	PARTICLE BOARD
PDA / PAF	POWDER DRIVEN ANCHORS/POWDER ACTUATED FASTENER
PJ	PANEL JOINT
PL / ℙ	PLATE
PLB	PARALLAM BEAM
PLMB	PLUMBING
PLY / PLYWD	PLYWOOD
PNL	PANEL
PR	PAIR
PS	POUR STRIP
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PSL	PARALLEL STRAND LUMBER
PT	PRESSURE TREATED / PORCELAIN TILE
PVC	POLY VINYL CHLORIDE
PVMT	PAVEMENT
R	RADIUS
RAD	RADIUL
RB	RUBBER BASE
RBE	ROOF BASE ELEVATION
RCP	REFLECTED CEILING PLAN
RD	ROOF DRAIN
RECEPT	RECEPTION(IST)
REF	REFERENCE / REFRIGERATOR
REINF	REINFORCING
REQ / REQ'D	REQUIRED
REV	REVISION
RM	ROOM
RO	ROUGH OPENING
ROW	RIGHT OF WAY
S	STAIN
SAT	SUSPENDED ACOUSTICAL TILE
SC	SEALED CONCRETE / SOLID CORE WOOD
SCHED	SCHEDULE
SCM	STRUCTURAL CLAY MASONRY
SF	STORE FRONT / SQUARE FEET
SFRS	SEISMIC FORCE RESISTING SYSTEM
SHTG / SHT'G	SHEATHING
SIM	SIMILAR
SLRS	SEISMIC LOAD RESISTIVE SYSTEM
SLV	SHORT LEG VERTICAL
SMS	SHEET METAL SCREW
SOG	SLAB ON GRADE
SP	SPACE(D)(S)
SPEC(S)	SPECIFICATION(S)
SQ	SQUARE
SS	STAINLESS STEEL / SOLID SURFACE
ST	STONE
STA PT	STATION POINT
STAGG	STAGGERED
STD	STANDARD
STIFF	STIFFENER
STL	STEEL
STRUCT	STRUCTURAL
SUSP	SUSPENDED
SV	SHEET VINYL
T	TEMPERED
T&B	TOP AND BOTTOM
T/	TOP OF
TC	TOP OF CURB
TEMP	TEMPERATURE / TEMPORARY
THK	THICK / THICKNESS
TL	TOTAL LOAD
TN	TOE NAIL
TO	TOP OF
TOF	TOP OF FOOTING
TOS	TOP OF STEEL
TOW	TOP OF WALL
TPO	THERMOPLASTIC POLYOLEFIN
TRANS / TRANSV	TRANSVERSE
TS	TUBE STEEL
TYP	TYPICAL
U/S	UNDERSIDE
UC	UNDER COUNTER
UL	UNDER WRITERS LABORATORIES
UNO / UON	UNLESS NOTED OTHERWISE
USG	UNITED STATES GYPSUM
VCT	VINYL COMPOSITION TILE
VERT	VERTICAL
VEST	VESTIBULE
VFY	VERIFY
VIF	VERIFY IN FIELD
VP	VISION PANEL
W/	WITH
W/CRC	COATING WITH CHEMICAL RESISTANCE
W/O	WITHOUT
WB	WOOD BASE
WC	WATER CLOSET / WALL COVERING
WD	WOOD
WF	WIDE FLANGE BEAM
WH	WATER HEATER
WP	WATER PROOF / WOOD PANELING / WORK POINT
WR	WATER RESISTANT
WRGB	WATER RESISTANT GYPSUM BOARD
WS	WATER STOP / WELDED STUD
WWF	WELDED WIRE FABRIC
WWR	WELDED WIRE MESH

SYMBOLS AND REFERENCES



PROJECT GENERAL NOTES

A. THE DRAWINGS LOCATE PRODUCTS, SURFACES, AND MATERIALS AND THE NOTES CONVEY DESIGN INTENT. THE PROJECT INTENT IS TO PROVIDE FOR A COMPLETE, WORKING SYSTEM.
B. ALL WORKMANSHIP AND MATERIALS SHALL CONFORM TO THE LATEST ADOPTED BUILDING CODE EDITION, AND TO CONDITIONS AND SPECIFICATIONS OF ALL GOVERNING AUTHORITIES.
C. VERIFY AND CONFIRM ALL CONDITIONS, DIMENSIONS, AND LAYOUT INFORMATION PRIOR TO START OF CONSTRUCTION. NOTIFY MACKENZIE OF ANY DISCREPANCIES PRIOR TO START OF WORK. ANY CORRECTION WORK REQUIRED AS A RESULT OF NOT REPORTING SUCH DISCREPANCIES SHALL BE PERFORMED AT NO ADDITIONAL COST TO THE OWNER.
D. CONTRACTOR AND SUBCONTRACTORS SHALL CAREFULLY EXAMINE THE SITE AND THE CONSTRUCTION DOCUMENTS OF THE ENTIRE WORK. INCONSISTENCIES IN THE PLANS OR SPECIFICATIONS SHALL BE CALLED TO THE ATTENTION OF MACKENZIE.
E. REFER TO ENLARGED PLANS AND ELEVATIONS WHERE INDICATED FOR ADDITIONAL INFORMATION. ENLARGED PLANS TAKE PRECEDENCE OVER PLANS OF SMALLER SCALE, AND DETAILS TAKE PRECEDENCE OVER PLANS. IN THE CASE OF A CONFLICT, THE HIGHEST COST OPTION SHOULD BE PRICED.
F. DETAIL REFERENCES SHALL BE APPLIED TO ALL INSTANCES WHERE THE SAME CONDITIONS OCCUR, UNLESS NOTED OTHERWISE.
G. THE TERMS "ABOVE FINISH FLOOR" (AFF) AND "FINISH FLOOR ELEVATION" (FFE) REFER TO FINAL FINISHED FLOOR ELEVATION, WHETHER BUILT-UP SLAB, COMPOSITE DECK, OR RAISED ACCESS FLOOR.
H. DO NOT SCALE DRAWINGS.
I. CUTTING AND DRILLING OF STRUCTURAL MEMBERS NOT DETAILED REQUIRES THE WRITTEN PERMISSION OF THE STRUCTURAL ENGINEER OF RECORD.
J. FINISH FLOOR ELEVATION OF 0'-0" = 262.5' AS INDICATED ON CIVIL DRAWINGS.
K. SAVE AND RECYCLE DEMOLITION DEBRIS AS APPLICABLE. ALL DEMOLISHED OR REMOVED EXISTING MATERIAL SHALL BE LEGALLY DISPOSED. COORDINATE WITH THE CITY OF WILSONVILLE REQUIREMENTS FOR RECYCLING/RE-USE OF DEMOLITION DEBRIS.
L. THE CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE RESULTING FROM THEIR WORK. THE CONTRACTOR WILL COORDINATE CLEAN UP OF ALL AREAS AFFECTED BY DUST OR ANY MATERIALS, BOTH DURING CONSTRUCTION AND UPON COMPLETION OF THE PROJECT, INCLUDING THE INSIDE OF ALL WINDOWS AS NECESSARY SO THAT THE SPACE IS READY FOR OCCUPANCY BY TENANT.
M. ALL DESIGN-BUILD ITEMS, SYSTEMS, AND ELEMENTS ARE TO BE SUBMITTED FOR REVIEW AND APPROVED BY MACKENZIE.
N. EXISTING MATERIAL NOTED TO BE RETURNED TO THE OWNER SHALL BE SAFELY STORED AND PROTECTED UNTIL IT IS REMOVED FROM THE SITE BY THE OWNER

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PROJECT GENERAL NOTES, SYMBOLS, AND ABBREVIATIONS

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SHEET

G0.02

JOB NO. **2200502.00**

1127

LAND USE RESUBMITTAL 07/26/22

BUILDING INFORMATION

SITE AREA: SEE CIVIL
BUILDING FOOTPRINT: 58,125 SF
BUILDING AREA: 60,274 SF

BUILDING CODE DATA

BASED ON THE 2019 OREGON STRUCTURAL SPECIALTY CODE

GENERAL CODE ANALYSIS:

CONSTRUCTION TYPE: III-B, TWO STORIES

FIRE PROTECTION:
AUTOMATIC FIRE SPRINKLER SYSTEM THROUGHOUT (ESFR)
BUILDING IS DESIGNED WITH AN ESFR SPRINKLERED SYSTEM FOR CLASS I-IV NON ENCAPSULATED COMMODITIES PER NFPA 13. SEE FIRE PROTECTION SPECIFICATIONS. FIRE PUMP IS PROPOSED.

OCCUPANCIES:
B AND S-1
- BASED ON NON SPERATED USE PER 508.3 (A)

AREA	GROSS SQUARE FEET
BUILDING	62,107 SF
FLOOR 1:	
WAREHOUSE	58,125 SF
FLOOR 2:	
STORAGE	2,149 SF
FUTURE STORAGE	(1,833 SF)

BUILDING HEIGHT AND STORIES (TABLES 504.3 AND 504.4):

ALLOWABLE: 60'-0" / 2 STORIES
PROVIDED: 46'-6" / 2 STORIES

UNLIMITED AREA BUILDING (SEE SECTION 507.4):

THE BUILDING, TWO STORIES, FULLY SPRINKLERED, UNLIMITED AREA ALLOWED PER SECTION 507.4, SURROUNDED BY A BUFFER OF 60'-0" FEET OR MORE ON 4 SIDES.

BUILDING FIRE RESISTIVE REQUIREMENTS (SEE SECTION 601):

STRUCTURAL FRAME:	NR
BEARING WALLS - EXTERIOR:	NR
BEARING WALLS - INTERIOR:	NR
NON-BEARING WALLS - EXTERIOR:	NR
NON-BEARING WALLS - INTERIOR:	NR
FLOOR:	NR
ROOF:	NR
SHAFTS (707.3.1)	NONE
STAIRS (1019.1)	NONE
ELECTRICAL ROOM (Table 509)	NR
FIRE PUMP ROOM (913.2.1.1)	1-HR FIRE BARRIER

ELECTRICAL ROOM REQUIREMENTS PER 509 INCEDENTAL USES TABLE 509 ELECTRICAL INSTALLATIONS AND TRANSFORMERS REQUIREMENTS REFERENCES SEPARATION AND/OR PROTECTION PER ELECTRICAL CODE SECTIONS 110.26-110.34 AND 450.8-450.48. PER ELECTRICAL DRAWINGS TRANSFORMER VAULTS ARE LOCATED AT EXTERIOR AND NOT WITHING THE ELECTRICAL ROOM. PER ELECTRICAL DRAWINGS DRY-TYPE TRANSFORMERS INSTALLED INDOORS ARE LESS THE 112.5 KVA AND DOES NOT REQUIRE TO BE LOCATED IN A ROOM WITH RATED CONSTRUCTION PER OESC 450.21.A.

ELECTRICAL ROOM WILL NOT HOUSE BATTERY STORAGE

FIRE BARRIERS SHALL MEET ALL CONTINUITY REQUIREMENTS PER 707.5.

PENETRATIONS THROUGH FIRE BARRIER WALLS SHALL MEET ALL REQUIREMENTS PER SECTION 714 AS WELL AS FIRE RESISTANCE RATED WALLS TO MEET FIRE STOPPING PER SPECIFICATION 07 84 00

FIRE BARRIERS SHALL MEET ALL DUCT AND AIR TRANSFER OPENING REQUIREMENTS PER 707.10

FIRE SEPARATION DISTANCE (TABLE 602):

III-B	NORTH	EAST	SOUTH	WEST
WAREHOUSE	100'	33'	104'	635'

- FULLY SPRINKLERED ESFR FIRE SYSTEM
- PORTABLE FIRE EXTINCUISHERS SHALL BE PROVIDED THROUGHOUT BASED ON 2019 OREGON FIRE CODE

DOORS (SECTION 1010)
RATED, SIZED, AND HARDWARE PROVIDED TO MEET SECTION 1010 - SEE INDIVIDUAL FLOOR PLANS AND SPECIFICATIONS.

- PROVIDE PANIC HARDWARE AT ELECTRICAL ROOM (1010.1.9)

MEANS OF EGRESS ILLUMINATION (SECTION 1008)

ILLUMINATION SHALL BE PROVIDED IN THE MEANS OF EGRESS IN ACCORDANCE WITH SECTION 1008.2. UNDER EMERGENCY POWER, MEANS OF EGRESS ILLUMINATION SHALL COMPLY WITH SECTION 1008.3.

FIRE PROTECTION - CHAPTER 9

BASED ON 2019 OREGON FIRE CODE
OFC SECTION 509.1

ROOMS CONTAINING CONTROLS FOR AIR CONTAINING SYSTEMS, SPRINKLER RISERS AND VALVES, OR OTHER FIRE DETECTION, SUPPRESSION OR CONTROL ELEMENTS SHALL BE IDENTIFIED FOR THE USE OF THE FIRE DEPARTMENT.

SIGNS REQUIRED TO IDENTIFY FIRE PROTECTION EQUIPMENT AND EQUIPMENT LOCATIONS TO BE APPROVED BY THE FIRE CODE OFFICIAL.

WHERE REQUIRED AND APPROVED BY THE FIRE CODE OFFICIAL UTILITIES ARE TO BE LEGIBLY MARKED TO IDENTITY THE JANITOR SPACE IT SERVES.

PENETRATIONS THROUGH FIRE RESISTANCE RATED WALLS SHALL MEET ALL REQUIREMENTS PER SECTION 714 AS WELL AS FIRE RESISTANCE RATED WALLS TO MEET FIRE STOPPING PER SPECIFICATION 07 84 00

SECTION 903 - AUTOMATIC SPRINKLER SYSTEMS
FULLY SPRINKLERED NFPA-13 ESFR FIRE SYSTEM

SECTION 906 PORTABLE FIRE EXTINGUISHERS
PROVIDE (1) FIRE EXTINGUISHER WITH RATING OF NOT LESS THAN 2-A:10-B:C FOR EACH 3,000 SF OF FLOOR AREA. TRAVEL FROM ANY PORTION OF BUILDING NOT TO EXCEED 75'. FIRE EXTINGUISHERS LOCATED WITH OFFICE AREA TO BE SEMI-RECESSED CABINETS.

OFC APPENDIX D FIRE APPARATUS ACCESS ROADS
SEE SHEET C1.00 FOR AERIAL FIRE APPARATUS ACCESS.

OFC CHAPTER 32 - HIGH-PILED COMBUSTIBLE STORAGE
BUILDING IS DESIGNED TO ACCOMMODATE HIGH PILED STORAGE TYPE I-IV UNENCAPSULTED COMMODITIES UP TO 36' HIGH-PILED STORAGE PER OFC TABLE 3206.2:

- AN AUTOMATIC SPRINKLER SYSTEM IS PROVIDED IN ACCORDANCE WITH OFC SECTION 3206.4
- FIRE DETECTION SYSTEM IS NOT REQUIRED PER TABLE 3206.2
- BUILDING ACCESS IS PROVIDED PER OFC SECTION 3206.6
- SMOKE AND HEAT REMOVAL IS REQUIRED PER TABLE 3260.6 FOOTNOTE I: AUTOMATIC FIRE-EXTINGUISHING SYSTEM PROVIDED IN ACCORDANCE WITH OFC 3207 AND 3208
- MAX PILE DIMENSIONS - 120' LONG x 40' HIGH
- MAX PILE VOUME - 400,000 CUBIC FEET

MEANS OF EGRESS

SECTION 1008 - MEANS OF EGRESS ILLUMINATION
- PROVIDE MEANS OF EGRESS ILLUMINATION AT A MINIMUM OF ONE FOOT CANDLE AT PATH OF EGRESS TO MEET SECTION 1008. EXTEND 5'-0" OUTSIDE EGRESS DOORS.
- WAREHOUSE/ OFFICE PROVIDE
  - EMERGENCY POWER FOR MIN 90 MINUTES. (BATTERY BACK-UP)
  - AVERAGE INITIAL ILLUMINATION OF 1 FOOT-CANDLE(11 LUX)
  - MAXIMUM UNIFORMITY RATIO OF 40 : 1
  - SEE FLOOR PLANS FOR PATH

SECTION 1010 - DOORS, GATES AND TURNSTILES
- EXTERIOR DOORS SIZED AND HARDWARE PROVIDED TO MEET SECTION. SEE FLOOR PLAN AND DOOR HARDWARE. ALL DOOR HARDWARE TO COMPLY WITH ADA REQUIREMENTS. SEE SPEC'S.
- THRESHOLDS TO COMPLY WITH 1010.1.7
- HARDWARE ON DOORS REQUIRED TO BE ACCESSIBLE SHALL COMPLY WITH 1008.1.9.1
- HARDWARE HEIGHT TO COMPLY WITH 1010.1.9.2
- LOCKS AND LATCHES TO COMPLY 1010.1.9.4
- BOLT LOCKS ARE NOT PERMITTED UNLESS MEETING 1010.1.9.5 EXCEPTIONS
- THE UNLATCHING OF ANY DOOR OR LEAF SHALL COMPLY 1010.1.9.6

SECTION 1013 - EXIT SIGNS
- PROVIDE EXIT SIGNAGE TO MEET SECTION 1013.1.

SECTION 1028 - EXIT DISCHARGE
- ALL EXITS DISCHARGE AT GROUND LEVEL

GENERAL NOTES

A. THIS SHEET IS MEANT FOR CODE REVIEW PURPOSES ONLY.
B. SEE SHEET A1.10 FOR ADDITIONAL PLAN INFORMATION.
C. EMERGENCY LIGHTING ALONG THE EGRESS PATH SHALL NOT BE LESS THAN 1 FOOTCANDLE AT THE FLOOR LEVEL AT ALL POINTS ALONG THE EGRESS PATH, A MAXIMUM-TO-MINIMUM ILLUMINATION UNIFORMITY RATIO OF 40:1 SHALL NOT BE EXCEEDED TO MEET ALL REQUIREMENTS OF SECTION 1008.
D. SECTION 1010.1.1 REQUIRES A CLEAR DOOR WIDTH OF 32". ALL PROVIDED DOORS COMPLY.

GOVERNING CODES

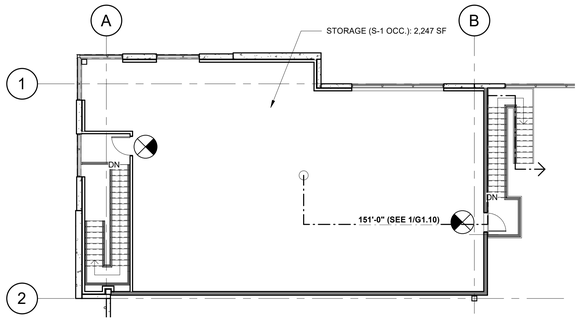
2019 OREGON STRUCTURAL SPECIALTY CODE
2021 OREGON ENERGY EFFICIENCY CODE
2019 OREGON MECHANICAL SPECIALTY CODE
2021 OREGON ELECTRICAL SPECIALTY CODE
2021 OREGON PLUMBING SPECIALTY CODE
2019 OREGON FIRE CODE
ICC A117.1-2009 ACCESSIBILITY

LEGEND

DOCK HIGH OVERHEAD DOOR
DRIVE IN OVERHEAD DOOR
FIRE EXTINGUISHER LOCATION (75' CLEARANCE RADIUS). GC TO COORDINATE FINAL QUANTITIES & LOCATIONS WITH FIRE MARSHAL
EXITS
FIRE ACCESS DOOR
PROVIDE EMERGENCY ILLUMINATED EXIT SIGNS PER THESE LOCATIONS
MAXIMUM TRAVEL DISTANCE

WALL TYPES

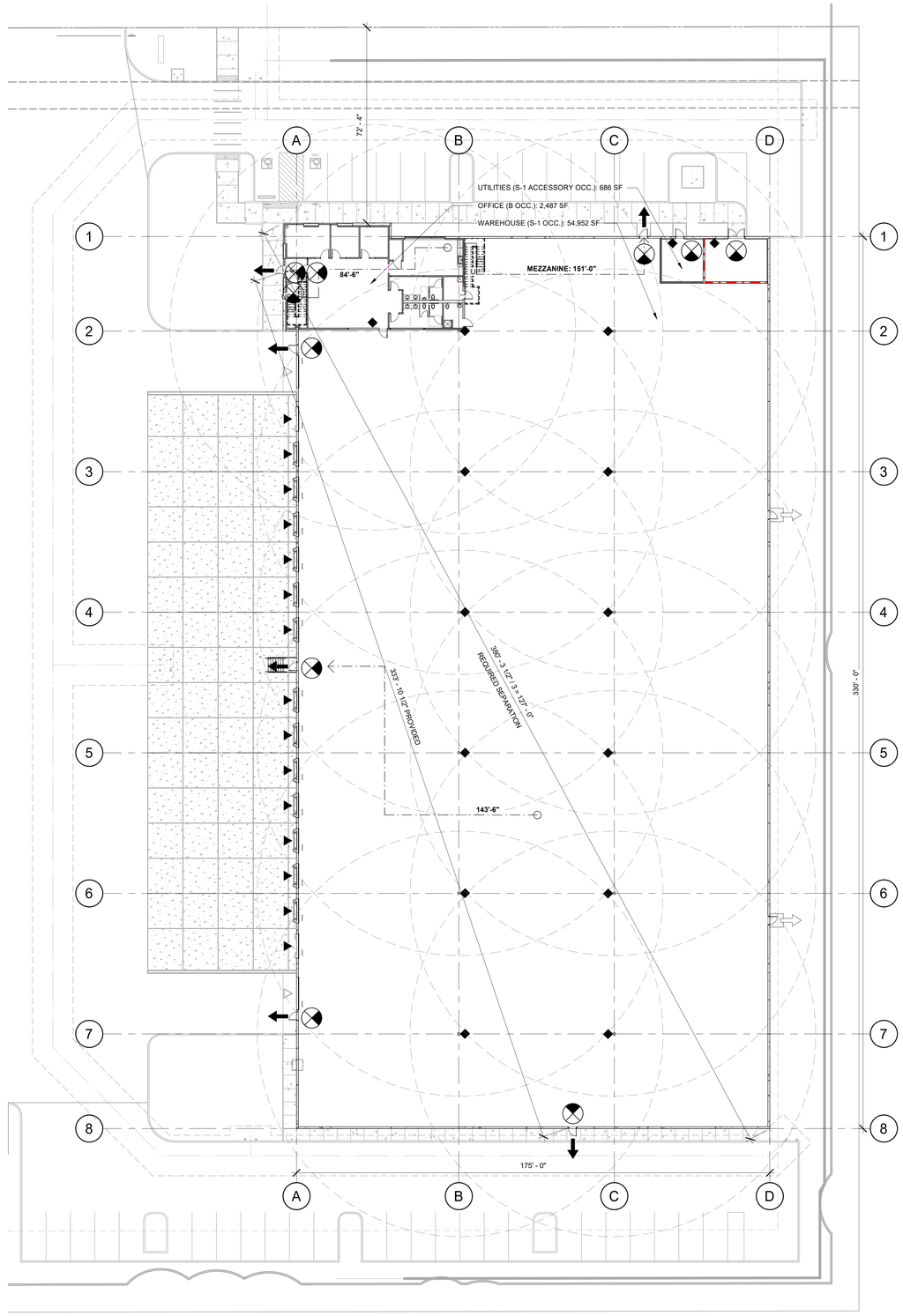
CONCRETE TILT PANEL - SEE STRUCTURAL ELEVATIONS FOR THICKNESSES
1HR RATED WALL PER 11/A5.20
FULL HEIGHT WALL PER 12/A5.20
STICK-PIN INSULATION 10/A5.20
INTERIOR PARTITION PER 13/15/A5.20



2 / G1.10 CODE PLAN - SECOND FLOOR
1" = 10'-0"

OCCUPANCY					WATER CLOSETS				LAVATORIES				DRINKING FOUNTAINS	
USE	OCCUPANCY TYPE	LOAD FACTOR 1004.1.2	AREA	OCCUPANCY LOAD	RATIO	MEN'S WATER CLOSETS	WOMEN'S WATER CLOSETS	UNISEX WATER CLOSETS	RATIO	MEN'S LAVATORIES	WOMEN'S LAVATORIES	UNISEX LAVATORIES	RATIO	RATIO
OFFICE	B		2,443.00	60	1 PER 25 ≤ 50, 1 PER 50 REMAINDER	1.20	1.20	-	1 PER 40 ≤ 80, 1 PER 80 REMAINDER	0.75	0.75	-	N/A	-
OFFICE (150LOAD FACTOR)		150	1,693.00	12										
OFFICE (15 LOAD FACTOR)		15	590.00	40										
STORAGE	S-1	300	2,149.00	8										
WAREHOUSE	S-1	500	55,682.00	112	1 PER 100	0.56	0.56	-	1 PER 100	0.56	0.56	-	N/A	-
SUBTOTALS			60,274.00			1.76	1.76	-		1.31	1.31	-	-	-
REQUIRED TOTALS						2	2	-		2	2	-	-	-
PROVIDED						2	2	1		2	2	1		-

CODE SECTION	OCCUPANCY				1005			1006.2.1		1006.2.1		1017		1006	
USE	OCCUPANCY TYPE (CHAP. 3)	LOAD FACTOR 1004.1.2	AREA	OCCUPANT LOAD (1004.1.1)	EGRESS WIDTH FACTOR	EGRESS WIDTH	WIDTH PROVIDED	COMMON PATH REQUIRED	COMMON PATH PROVIDED	MIN. EXIT DISTANCE	EXIT DISTANCE PROVIDED	MAX TRAVEL DISTANCE	TRAVEL DISTANCE PROVIDED	EXITS REQUIRED	EXITS PROVIDED
BUSINESS AREAS	B	150	1,853	13	0.2	3''		100'-0"	44'-0"	32'-4"	64'-8"			1	2
100 VESTIBULE			100												
101 OPEN OFFICE			1,040									200'-0"	84'-6"		
107 WOMENS			175												
106 MENS			175												
108 JAN.			55												
109 W/C			58												
103 OFFICE			125												
104 OFFICE			125												
UNCONCENTRATED	B	15	590	40	0.2	8''		100'-0"	44'-0"	N/A	N/A			1	1
105 BREAK			315												
105A DATA			40												
102 CONFERENCE			235												
WAREHOUSE	S-1	500	54,985	110	0.2	22''		100'-0"	N/A	211'-4"					
001 WAREHOUSE			54,985									250'-0"	143'-6"	2	5
STORAGE	S-1	300	2,846	10	0.2	2''		100'-0"	N/A	211'-4"					
002 ELECTRICAL			280												
005 FIRE PUMP			417												
200 STORAGE			2,149									250'-0"	151'-0"	2	2
BUILDING TOTAL			60,274	163		33''	216''								



1 / G1.10 CODE PLAN - FIRST FLOOR
1" = 20'-0"

Architecture ▪ Interiors
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Client

Delta Logistics
9835 SW COMMERCE CIRCLE,
WILSONVILLE, OR 97070

Project

DELTA LOGISTICS
9710 SW DAY RD.
CITY OF WILSONVILLE, OR

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REVISION SCHEDULE

Delta	Issued As	Issue Date
A	REV 1	7/26/22

SHEET TITLE:
CODE ANALYSIS

DRAWN BY: ADG

CHECKED BY: SJM

SHEET

G1.10

JOB NO. **2200502.00**

LAND USE RESUBMITTAL 07/26/22

COMcheck Software Version COMcheckWeb
Envelope Compliance Certificate

Project Information

Energy Code:	90.1 (2019) Standard
Project Title:	Delta Logistics - Wilsonville
Location:	Wilsonville, Oregon
Climate Zone:	4c
Project Type:	New Construction
Vertical Glazing / Wall Area:	5%
Performance Sim. Specs:	EnergyPlus 8.1.0.009 (EPW: USA_OR_Portland.Intl.AP.726980_TMY3.epw)

Construction Site:
9710 SW Day Road
Wilsonville, Oregon 97070

Owner/Agent:
Igor Nichiporchik
Delta Logistics
9835 SW Commerce Circle
Wilsonville, Oregon 97070
503-665-2200
igor@deltagov.com

Designer/Contractor:
Adam Goldberg
Mackenzie
1515 SE Water Ave, Suite 100
Portland, Oregon 97214
8476481232
agoldberg@mcknze.com

Building Area	Floor Area
1-Warehouse : Semiheated	55682
2-Office : Nonresidential	2443

Envelope Assemblies

Assembly	Gross Area or Perimeter	Cavity R-Value	Cont. R-Value	Proposed U-Factor	Budget U-Factor(a)
Roof: Insulation Entirely Above Deck, [Bldg. Use 1 - Warehouse]	55682	---	20.0	0.048	0.093
Skylight: Metal Frame: Plastic, with Curb, Perf. Specs.: Product ID N/A, SHGC 0.35, VT 0.64, [Bldg. Use 1 - Warehouse] (b)	576	---	---	0.450	0.750
Roof: Insulation Entirely Above Deck, [Bldg. Use 2 - Office]	2443	---	20.0	0.048	0.032
OFFICE SLAB: Unheated Slab-On-Grade, [Bldg. Use 2 - Office] (c)	112	---	---	0.730	0.520
WAREHOUSE SLAB: Unheated Slab-On-Grade, [Bldg. Use 1 - Warehouse] (c)	911	---	---	0.730	0.730
NORTH					
TILT WALL - (furring at office) NORTH: Solid Concrete, 12in. Thickness, Normal Density, Furring: Metal, [Bldg. Use 2 - Office]	394	13.0	0.0	0.138	0.104
Window: Metal Frame: Fixed, Perf. Specs.: Product ID N/A, SHGC 0.40, VT 0.50, [Bldg. Use 2 - Office] (b)	140	---	---	0.450	0.360
TILT WALL - (stickpin at office): Solid Concrete, 10in. Thickness, Normal Density, Furring: None, [Bldg. Use 2 - Office]	952	---	13.0	0.067	0.104
Window: Metal Frame: Fixed, Perf. Specs.: Product ID N/A, SHGC 0.40, VT 0.50, [Bldg. Use 2 - Office] (b)	224	---	---	0.450	0.360
TILT WALL - NORTH: Solid Concrete, 8in. Thickness, Normal Density, Furring: None, [Bldg. Use 1 - Warehouse]	2637	---	0.0	0.740	0.580
Man Door: Insulated Metal, Swinging, [Bldg. Use 1 - Warehouse]	21	---	---	0.130	0.370
Window: Metal Frame: Fixed, Perf. Specs.: Product ID N/A, SHGC 0.40, VT 0.50, [Bldg. Use 1 - Warehouse] (b)	315	---	---	0.450	0.500
TILT WALL - (furring at office) NORTH: Solid Concrete, 8in.	295	13.0	0.0	0.142	0.104

Assembly	Gross Area or Perimeter	Cavity R-Value	Cont. R-Value	Proposed U-Factor	Budget U-Factor(a)
Thickness, Normal Density, Furring: Metal, [Bldg. Use 2 - Office]					
Window: Metal Frame: Fixed, Perf. Specs.: Product ID N/A, SHGC 0.40, VT 0.50, [Bldg. Use 2 - Office] (b)	97	---	---	0.450	0.360
TILT WALL - (stickpin at office) NORTH: Solid Concrete, 8in. Thickness, Normal Density, Furring: None, [Bldg. Use 2 - Office]	706	---	13.0	0.068	0.104
Window: Metal Frame: Fixed, Perf. Specs.: Product ID N/A, SHGC 0.40, VT 0.50, [Bldg. Use 2 - Office] (b)	105	---	---	0.450	0.360
TILT WALL - (furring at riser) NORTH: Solid Concrete, 8in. Thickness, Normal Density, Furring: Metal, [Bldg. Use 1 - Warehouse]	453	13.0	0.0	0.142	0.580
Door: Insulated Metal, Swinging, [Bldg. Use 1 - Warehouse]	63	---	---	0.130	0.370
Ext. Wall: Solid Concrete, 8in. Thickness, Normal Density, Furring: None, [Bldg. Use 1 - Warehouse]	1037	---	13.0	0.068	0.580
EAST					
TILT WALL (furring at riser) - EAST: Solid Concrete, 8in. Thickness, Normal Density, Furring: Metal, [Bldg. Use 1 - Warehouse]	160	13.0	0.0	0.142	0.580
TILT WALL (stickpin at riser) - EAST: Solid Concrete, 8in. Thickness, Normal Density, Furring: None, [Bldg. Use 1 - Warehouse]	429	---	13.0	0.068	0.580
TILT WALL - EAST: Solid Concrete, 8in. Thickness, Normal Density, Furring: None, [Bldg. Use 1 - Warehouse]	11516	---	0.0	0.740	0.580
Man Door: Insulated Metal, Swinging, [Bldg. Use 1 - Warehouse]	42	---	---	0.130	0.370
SOUTH					
TILT WALL - SOUTH: Solid Concrete, 8in. Thickness, Normal Density, Furring: None, [Bldg. Use 1 - Warehouse]	6071	---	0.0	0.740	0.580
Man Door: Insulated Metal, Swinging, [Bldg. Use 1 - Warehouse]	21	---	---	0.130	0.370
Window: Metal Frame: Fixed, Perf. Specs.: Product ID N/A, SHGC 0.40, VT 0.50, [Bldg. Use 1 - Warehouse] (b)	525	---	---	0.450	0.500
WEST					
TILT WALL - WEST: Solid Concrete, 8in. Thickness, Normal Density, Furring: None, [Bldg. Use 1 - Warehouse]	9747	---	0.0	0.740	0.580
Window: Metal Frame: Fixed, Perf. Specs.: Product ID N/A, SHGC 0.40, VT 0.50, [Bldg. Use 1 - Warehouse] (b)	148	---	---	0.450	0.500
Man Door: Insulated Metal, Swinging, [Bldg. Use 1 - Warehouse]	63	---	---	0.130	0.370
Roll-Up Door: Insulated Metal, Non-Swinging, [Bldg. Use 1 - Warehouse]	1686	---	---	0.130	0.360
TILT WALL - (furring office) WEST: Solid Concrete, 12in. Thickness, Normal Density, Furring: Metal, [Bldg. Use 2 - Office]	438	13.0	0.0	0.138	0.104
Window: Metal Frame: Fixed, Perf. Specs.: Product ID N/A, SHGC 0.40, VT 0.50, [Bldg. Use 2 - Office] (b)	141	---	---	0.450	0.360
TILT WALL - (stickpin at office) WEST: Solid Concrete, 10in. Thickness, Normal Density, Furring: None, [Bldg. Use 2 - Office]	1006	---	13.0	0.067	0.104
Window: Metal Frame: Fixed, Perf. Specs.: Product ID N/A, SHGC 0.40, VT 0.50, [Bldg. Use 2 - Office] (b)	225	---	---	0.450	0.360

(a) Budget U-factors are used for software baseline calculations ONLY, and are not code requirements.
(b) Fenestration product performance must be certified in accordance with NFRC and requires supporting documentation.
(c) Slab-On-Grade proposed and budget U-factors shown in table are F-factors.

Envelope PASSES: Design 1% better than code

Envelope Compliance Statement

Compliance Statement: The proposed envelope design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed envelope systems have been designed to meet the 90.1 (2019) Standard requirements in COMcheck Version COMcheckWeb and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

Name - Title _____ Signature _____ Date _____

Item 2.

Architecture ▪ Interiors
Planning ▪ Engineering

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Client

Delta Logistics
9835 SW COMMERCE CIRCLE,
WILSONVILLE, OR
97070

Project

DELTA LOGISTICS
9710 SW DAY RD.
CITY OF
WILSONVILLE, OR

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REVISION SCHEDULE

Delta	Issued As	Issue Date

SHEET TITLE:
ENERGY CODE COMPLIANCE

DRAWN BY: ADG

CHECKED BY: SJM

SHEET

G1.11

JOB NO. **2200502.00**

1129

LAND USE RESUBMITTAL 07/26/22

TOPOGRAPHIC SURVEY

9710 SW DAY ROAD

LOCATED IN THE SW 1/4 AND THE NW 1/4
SECTION 2, T.3S., R.1W., W.M.
WASHINGTON COUNTY, OREGON

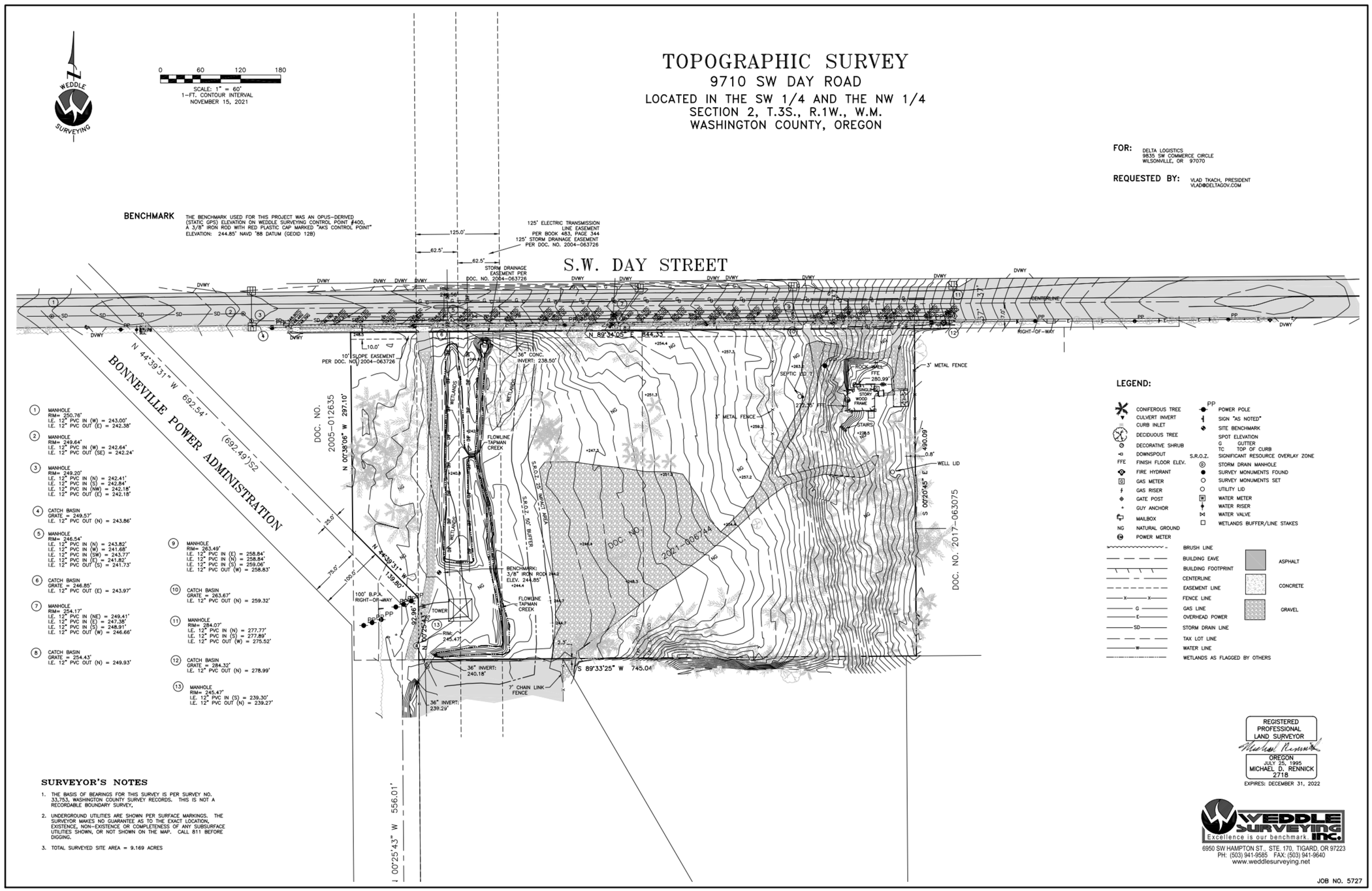
0 60 120 180
SCALE: 1" = 60'
1-FT. CONTOUR INTERVAL
NOVEMBER 15, 2021

WEDDLE SURVEYING

FOR: DELTA LOGISTICS
9835 SW COMMERCE CIRCLE
WILSONVILLE, OR 97070

REQUESTED BY: VLAD TKACH, PRESIDENT
VLAD@DELTAGOV.COM

BENCHMARK THE BENCHMARK USED FOR THIS PROJECT WAS AN OPUS-DERIVED (STATIC GPS) ELEVATION ON WEDDLE SURVEYING CONTROL POINT #400, A 3/8" IRON ROD WITH RED PLASTIC CAP MARKED "AKS CONTROL POINT" ELEVATION: 244.85' NAVD '88 DATUM (GEOID 12B)



1. MANHOLE
RIM= 250.76'
I.E. 12" PVC IN (W) = 243.00'
I.E. 12" PVC OUT (E) = 242.38'

2. MANHOLE
RIM= 249.64'
I.E. 12" PVC IN (W) = 242.64'
I.E. 12" PVC OUT (SE) = 242.24'

3. MANHOLE
RIM= 249.20'
I.E. 12" PVC IN (N) = 242.41'
I.E. 12" PVC IN (S) = 242.84'
I.E. 12" PVC IN (NW) = 242.18'
I.E. 12" PVC OUT (E) = 242.18'

4. CATCH BASIN
GRATE = 249.57'
I.E. 12" PVC OUT (N) = 243.86'

5. MANHOLE
RIM= 246.54'
I.E. 12" PVC IN (N) = 243.82'
I.E. 12" PVC IN (W) = 241.68'
I.E. 12" PVC IN (SW) = 243.77'
I.E. 12" PVC IN (E) = 241.82'
I.E. 12" PVC OUT (S) = 241.73'

6. CATCH BASIN
GRATE = 246.85'
I.E. 12" PVC OUT (E) = 243.97'

7. MANHOLE
RIM= 254.17'
I.E. 12" PVC IN (NE) = 249.41'
I.E. 12" PVC IN (E) = 247.38'
I.E. 12" PVC IN (S) = 248.91'
I.E. 12" PVC OUT (W) = 246.66'

8. CATCH BASIN:
GRATE = 254.43'
I.E. 12" PVC OUT (N) = 249.93'

9. MANHOLE
RIM= 263.49'
I.E. 12" PVC IN (E) = 258.84'
I.E. 12" PVC IN (N) = 258.84'
I.E. 12" PVC IN (S) = 259.06'
I.E. 12" PVC OUT (W) = 258.83'

10. CATCH BASIN
GRATE = 263.67'
I.E. 12" PVC OUT (N) = 259.32'

11. MANHOLE
RIM= 284.07'
I.E. 12" PVC IN (N) = 277.73'
I.E. 12" PVC IN (S) = 277.89'
I.E. 12" PVC OUT (W) = 275.52'

12. CATCH BASIN
GRATE = 284.32'
I.E. 12" PVC OUT (N) = 278.99'

13. MANHOLE
RIM= 245.47'
I.E. 12" PVC IN (S) = 239.30'
I.E. 12" PVC OUT (N) = 239.27'

LEGEND:

- CONIFEROUS TREE
- CULVERT INVERT
- CURB INLET
- DECIDUOUS TREE
- DECORATIVE SHRUB
- DOWNSPOUT
- FFE FINISH FLOOR ELEV.
- FIRE HYDRANT
- GAS METER
- GAS RISER
- GATE POST
- GUY ANCHOR
- MAILBOX
- NG NATURAL GROUND
- POWER METER
- PP POWER POLE
- SIGN "AS NOTED"
- SITE BENCHMARK
- SPOT ELEVATION G GUTTER TC TOP OF CURB
- S.R.O.Z. SIGNIFICANT RESOURCE OVERLAY ZONE
- STORM DRAIN MANHOLE
- SURVEY MONUMENTS FOUND
- SURVEY MONUMENTS SET
- UTILITY LID
- WATER METER
- WATER RISER
- WATER VALVE
- WETLANDS BUFFER/LINE STAKES

- BRUSH LINE
- BUILDING EAVE
- BUILDING FOOTPRINT
- CENTERLINE
- EASEMENT LINE
- FENCE LINE
- GAS LINE
- OVERHEAD POWER
- STORM DRAIN LINE
- TAX LOT LINE
- WATER LINE
- WETLANDS AS FLAGGED BY OTHERS

ASPHALT
CONCRETE
GRAVEL

SURVEYOR'S NOTES

1. THE BASIS OF BEARINGS FOR THIS SURVEY IS PER SURVEY NO. 33,753, WASHINGTON COUNTY SURVEY RECORDS. THIS IS NOT A RECORDABLE BOUNDARY SURVEY,
2. UNDERGROUND UTILITIES ARE SHOWN PER SURFACE MARKINGS. THE SURVEYOR MAKES NO GUARANTEE AS TO THE EXACT LOCATION, EXISTENCE, NON-EXISTENCE OR COMPLETENESS OF ANY SUBSURFACE UTILITIES SHOWN, OR NOT SHOWN ON THE MAP. CALL 811 BEFORE DIGGING.
3. TOTAL SURVEYED SITE AREA = 9.169 ACRES

REGISTERED PROFESSIONAL LAND SURVEYOR
OREGON
JULY 25, 1995
MICHAEL D. RENNICK
2718
EXPIRES: DECEMBER 31, 2022

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www.weddlesurveying.net

JOB NO. 5727

Item 2.

Architecture ▪ Interiors
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REVISION SCHEDULE

Delta	Issued As	Issue Date

SHEET TITLE:
EXISTING CONDITIONS SURVEY

DRAWN BY: Author

CHECKED BY: Checker

SHEET

G1.20

JOB NO. 2200502.00

1130

LAND USE RESUBMITTAL 07/26/22

GENERAL NOTES

1. ALL WORK SHALL CONFORM TO THE CURRENT STANDARD SPECIFICATIONS AND REQUIREMENTS OF THE AUTHORITIES HAVING JURISDICTION AND THE CURRENT AMERICAN PUBLIC WORKS ASSOCIATION STANDARDS FOR PUBLIC WORKS CONSTRUCTION
2. THE SURVEY INFORMATION SHOWN AS A BACKGROUND SCREEN IS BASED ON A SURVEY BY OTHERS AND IS SHOWN FOR REFERENCE ONLY. CONTRACTOR TO VERIFY ALL EXISTING CONDITIONS WITH ITS OWN RESOURCES PRIOR TO START OF ANY CONSTRUCTION
3. CONTRACTOR MUST COMPLY WITH LOCAL AND STATE REQUIREMENTS TO NOTIFY ALL UTILITY COMPANIES FOR LINE LOCATIONS SEVENTY-TWO (72) HOURS (MINIMUM) PRIOR TO START OF WORK. DAMAGE TO UTILITIES SHALL BE CORRECTED AT THE CONTRACTOR'S EXPENSE
4. CONTRACTOR SHALL ADJUST ALL STRUCTURES IMPACTED BY CONSTRUCTION IMPROVEMENTS TO NEW FINISH GRADES
5. REQUEST BY THE CONTRACTOR FOR CHANGES TO THE PLANS MUST BE APPROVED BY THE ENGINEER.
6. ALL WORK WITHIN THE PUBLIC RIGHT-OF-WAY REQUIRES A PUBLIC WORKS PERMIT
7. CONTRACTOR SHALL PROVIDE THE ENGINEER OF RECORD WITH AS-BUILT PLANS AT LEAST 2 WEEKS PRIOR TO REQUESTING AGENCY SIGN OFF ON PERMITS FOR OCCUPANCY
8. CONTRACTOR SHALL PERFORM ALL THE WORK SHOWN ON THE DRAWINGS AND ALL INCIDENTAL WORK NECESSARY TO COMPLETE THE PROJECT

SITE DEMOLITION NOTES

1. COMPLY WITH ALL APPLICABLE CODES AND REGULATIONS FOR DEMOLITION OPERATIONS AND SAFETY OF ADJACENT STRUCTURES AND THE PUBLIC
2. INSTALL EROSION CONTROL MEASURES AND TEMPORARY FENCING PRIOR TO ANY DEMOLITION ACTIVITIES
3. MITIGATE DUST POLLUTION DUE TO DEMOLITION ACTIVITIES
4. PROTECT ALL EXISTING STRUCTURES, UTILITIES, LANDSCAPE AND OTHER ELEMENTS THAT ARE NOT DESIGNATED FOR REMOVAL. ANY DAMAGE TO EXISTING IMPROVEMENTS NOT DESIGNATED FOR REMOVAL SHALL BE REPAIRED/REPLACED AT THE CONTRACTOR'S EXPENSE
5. DO NOT BEGIN REMOVAL UNTIL ITEMS TO BE SALVAGED OR RELOCATED HAVE BEEN REMOVED AS NOTED. IF REMOVED GRAVEL OR PAVEMENT MATERIALS ARE TO BE RECYCLED OR REUSED, PREVENT CONTAMINATION OF THESE MATERIALS FROM TOPSOIL OR OTHER DELETERIOUS MATERIAL
6. CONTRACTOR SHALL COORDINATE DEMOLITION WORK WITH AFFECTED UTILITY COMPANIES, OBTAIN ALL REQUIRED PERMITS, NOTIFY THEM PRIOR TO STARTING WORK, AND COMPLY WITH THEIR REQUIREMENTS. ADDITIONAL REMOVALS MAY BE REQUIRED BY THE AUTHORITIES HAVING JURISDICTION AND THE CONTRACTOR SHALL CONFIRM ACCORDINGLY PRIOR TO BID. ACCURATELY RECORD ACTUAL LOCATIONS OF CAPPED AND ACTIVE UTILITIES FOR AS-BUILT PURPOSES AND SUPPLY TO OWNER AND ARCHITECT/ENGINEER OF RECORD
7. DEMOLISH AND REMOVE ALL NON-BUILDING SITE STRUCTURES AND ASSOCIATED FEATURES (APPURTENANCES) AS SHOWN. WITHIN AREA OF NEW CONSTRUCTION, REMOVE DESIGNATED WALLS AND FOOTINGS TO 2 FEET MINIMUM BELOW FINISHED GRADE. DEMOLISH ALL PAVED AREAS DESIGNATED FOR REMOVAL DOWN TO NATIVE SUBGRADE
8. ALL VEGETATION AND DELETERIOUS MATERIALS WITHIN THE LIMITS OF WORK SHALL BE STRIPPED AND REMOVED FROM THE SITE PRIOR TO GRADING WORK UNLESS NOTED OTHERWISE (E.G. PROTECTED TREES)
9. IF HAZARDOUS MATERIALS ARE DISCOVERED DURING DEMOLITION, STOP WORK AND IMMEDIATELY NOTIFY THE OWNER AND ARCHITECT/ENGINEER OF RECORD

GRADING NOTES

1. ROUGH GRADING: ROUGH GRADE TO ALLOW FOR DEPTH OF BUILDING SLABS, PAVEMENTS, BASE COURSES, AND TOPSOIL PER DETAILS AND SPECIFICATIONS
2. FINISH GRADING: BRING ALL FINISH GRADES TO LEVELS INDICATED. WHERE GRADES ARE NOT OTHERWISE INDICATED, HARDSCAPE FINISH GRADES ARE TO BE THE SAME AS ADJACENT SIDEWALKS, CURBS, OR THE OBVIOUS GRADE OF ADJACENT STRUCTURE. SOFTSCAPE GRADES (INCLUDING ADDITIONAL DEPTH OF TOPSOIL) SHALL BE SET 6 INCHES BELOW BUILDING FINISHED FLOORS WHERE ABUTTING BUILDINGS, 1-2 INCHES WHERE ABUTTING WALKWAYS OR CURBS, OR MATCHING OTHER SOFTSCAPE GRADES. GRADE TO UNIFORM LEVELS OR SLOPES BETWEEN POINTS WHERE GRADES ARE GIVEN. ROUND OFF SURFACES, AVOID ABRUPT CHANGES IN LEVELS. AT COMPLETION OF JOB AND AFTER BACKFILLING BY OTHER TRADES HAS BEEN COMPLETED, REFILL AND COMPACT AREAS WHICH HAVE SETTLED OR ERODED TO BRING TO FINAL GRADES
3. EXCAVATION: EXCAVATE FOR SLABS, PAVING, AND OTHER IMPROVEMENTS TO SIZES AND LEVELS SHOWN OR REQUIRED. ALLOW FOR FORM CLEARANCE AND FOR PROPER COMPACTION OF REQUIRED BACKFILLING MATERIAL. DAMAGE TO UTILITIES SHALL BE CORRECTED AT THE CONTRACTOR'S EXPENSE
4. EFFECTIVE EROSION PREVENTION AND SEDIMENT CONTROL IS REQUIRED. EROSION CONTROL DEVICES MUST BE INSTALLED AND MAINTAINED MEETING THE LOCAL AGENCY AND STATE AGENCY REQUIREMENTS. THE AUTHORITIES HAVING JURISDICTION MAY, AT ANY TIME, ORDER CORRECTIVE ACTION AND STOPPAGE OF WORK TO ACCOMPLISH EFFECTIVE EROSION CONTROL
5. DRAINAGE SHALL BE CONTROLLED WITHIN THE WORK SITE AND SHALL BE ROUTED SO THAT ADJACENT PRIVATE PROPERTY, PUBLIC PROPERTY, AND THE RECEIVING SYSTEM ARE NOT ADVERSELY IMPACTED. THE ENGINEER AND/OR AUTHORITIES HAVING JURISDICTION MAY, AT ANY TIME, ORDER CORRECTIVE ACTION AND STOPPAGE OF WORK TO ACCOMPLISH EFFECTIVE DRAINAGE CONTROL
6. SITE TOPSOIL STOCKPILED DURING CONSTRUCTION AND USED FOR LANDSCAPING SHALL BE APPROVED BY THE LANDSCAPE ARCHITECT
7. CONTRACTOR TO REVIEW AND CONFIRM GRADES AT JOIN POINTS, SUCH AS AT DAYLIGHT LIMITS AND BUILDING ENTRANCES, PRIOR TO CONSTRUCTION
8. ACCESSIBLE PARKING SPACES AND LOADING ZONES SHALL BE CONSTRUCTED AT 2% MAXIMUM SLOPE IN ALL DIRECTIONS
9. PEDESTRIAN SIDEWALK CONNECTIONS BETWEEN PUBLIC R.O.W. AND BUILDING ENTRANCES SHALL BE CONSTRUCTED AT AND 2% MAXIMUM CROSS SLOPE AND 5% MAXIMUM LONGITUDINAL SLOPE (8.33% FOR DESIGNATED RAMPS)

UTILITY NOTES

1. ALL WORK SHALL CONFORM TO THE CURRENT EDITIONS OF THE STATE PLUMBING AND BUILDING CODES WITH LOCAL AMENDMENTS AS APPLICABLE ALONG WITH ANY ADDITIONAL REQUIREMENTS OF THE AUTHORITIES HAVING JURISDICTION.
2. THE WORKING DRAWINGS ARE GENERALLY DIAGRAMMATIC. THEY DO NOT SHOW EVERY OFFSET, BEND OR ELBOW REQUIRED FOR INSTALLATION IN THE SPACE PROVIDED. THEY DO NOT SHOW EVERY DIMENSION, COMPONENT PIECE, SECTION, JOINT OR FITTING REQUIRED TO COMPLETE THE PROJECT. ALL LOCATIONS FOR WORK SHALL BE CHECKED AND COORDINATED WITH EXISTING CONDITIONS IN THE FIELD BEFORE BEGINNING CONSTRUCTION. EXISTING UNDERGROUND UTILITIES WITHIN THE LIMITS OF EXCAVATION SHALL BE VERIFIED AS TO CONDITION, SIZE AND LOCATION BY UNCOVERING (POTHOLING), PROVIDING SUCH IS PERMITTED BY THE AUTHORITIES HAVING JURISDICTION, BEFORE BEGINNING CONSTRUCTION. CONTRACTOR TO NOTIFY ENGINEER IF THERE ARE ANY DISCREPANCIES.
3. NOT ALL REQUIRED CLEANOUTS ARE SHOWN ON THE PLANS. PROVIDE CLEANOUTS PER DETAIL 1/CS.10 AS REQUIRED BY THE AUTHORITIES HAVING JURISDICTION AND THE CURRENT EDITION OF THE STATE PLUMBING CODE (E.G. UNIFORM PLUMBING CODE CHAPTER 7, SECTIONS 707 AND 719, AND CHAPTER 11, SECTION 1101.13).
4. ALL SANITARY AND STORM PIPING IS DESIGNED USING CONCENTRIC PIPE TO PIPE AND WYE FITTINGS, UNLESS OTHERWISE NOTED
5. ALL DOWNSPOUT LEADERS TO BE 6 INCHES AT 2.0% MINIMUM UNLESS NOTED OTHERWISE
6. IF APPLICABLE, PROVIDE 2 INCH PVC DRAIN LINE FROM DOMESTIC WATER METER VAULT AND BACKFLOW PREVENTER VAULT TO THE DOUBLE DETECTOR CHECK VALVE (FIRE) VAULT. PROVIDE 1/3 HP SUMP PUMP AT BASE OF FIRE VAULT AND INSTALL 2 INCH PVC DRAIN LINE WITH BACKFLOW VALVE FROM SUMP PUMP TO DAYLIGHT AT NEAREST CURB. FURNISH 3/4 INCH DIAMETER CONDUIT FROM BUILDING ELECTRICAL ROOM TO FIRE VAULT FOR SUMP PUMP ELECTRICAL SERVICE. NOTE: COORDINATE WITH FIRE PROTECTION CONTRACTOR FOR FLOW SENSOR INSTALLATION AND CONDUIT REQUIREMENTS
7. PREFABRICATED PLUMBING PRODUCTS USED SHALL BE LISTED ON THE IAPMO R&T PRODUCT LISTING DIRECTORY (pld.iapmo.org). ALL SUBMITTALS FOR REVIEW SHALL BE ACCOMPANIED BY MANUFACTURER'S LITERATURE CLEARLY STATING THIS CERTIFICATION AND/OR THE PRODUCT LISTING CERTIFICATE FROM THE IAPMO DIRECTORY WEBSITE
8. IF APPLICABLE, CONTRACTOR TO PROVIDE POWER TO IRRIGATION CONTROLLER. SEE LANDSCAPE PLANS AND SPECIFICATIONS
9. SEE BUILDING PLUMBING DRAWINGS FOR PIPING WITHIN THE BUILDING AND UP TO 5 FEET OUTSIDE THE BUILDING, INCLUDING ANY FOUNDATION DRAINAGE PIPING
10. CONTRACTOR TO MAINTAIN MINIMUM 3 FEET OF COVER OVER ALL UTILITY PIPING AND CONDUITS, UNLESS NOTED OTHERWISE
11. WHERE CONNECTING TO AN EXISTING PIPE, AND PRIOR TO ORDERING MATERIALS, THE CONTRACTOR SHALL EXPOSE THE EXISTING PIPE TO VERIFY THE LOCATION, SIZE, AND ELEVATION. NOTIFY ENGINEER OF ANY DISCREPANCIES
12. CONTRACTOR SHALL SCOPE ALL PRIVATE ONSITE GRAVITY SYSTEM LINES THAT ARE BEING CONNECTED TO FOR PROPOSED SERVICE. SCOPING SHALL OCCUR A MINIMUM OF 72 HOURS PRIOR TO CONSTRUCTION AND THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY OF ANY DISCREPANCIES WITH AS-BUILT RECORDS/SURVEY FINDINGS OR IF THE EXISTING UTILITIES ARE DAMAGED OR SHOW SIGNS OF SIGNIFICANT DETERIORATION. CONTRACTOR SHALL PROVIDE THE ENGINEER WITH VIDEO RECORDS, ALONG WITH A SKETCH IF THE LOCATIONS DIFFER FROM AS-BUILT PLANS OR SURVEY FINDINGS
13. PRODUCT MATERIAL SUBMITTALS FOR REVIEW BY THE ENGINEER SHALL BE ACCOMPANIED BY A MANUFACTURER'S CERTIFICATION THAT THE PRODUCT IS CAPABLE OF MEETING PERFORMANCE EXPECTATIONS (I.E. - WATERTIGHT, MINIMUM/MAXIMUM BURIAL, PREVENTION OF GROUNDWATER INTRUSION, ETC.) BASED ON THEIR REVIEW OF THE PROJECT PLANS. IN THE ABSENCE OF A MANUFACTURER'S CERTIFICATION, THE GENERAL CONTRACTOR'S REVIEW STAMP SHALL CONSTITUTE THAT THEY HAVE PERFORMED THE NECESSARY REVIEW TO CERTIFY THE PRODUCT'S CONFORMANCE TO PROJECT SPECIFICATIONS AND GENERAL EXPECTATIONS
14. PIPE LENGTHS SHOWN ON PLANS ARE TWO DIMENSIONAL AND MEASURED FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE
15. MANHOLE RIM ELEVATIONS SHOWN ON PLANS REFERENCE THE CENTER OF THE STRUCTURE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RECONCILING LIDS/GRATES/ETC TO THE SLOPES OF THE SITE GRADING
16. MANHOLE OR VAULT RIM ELEVATIONS SHALL BE SET FLUSH IN PAVEMENT AREAS AND 3-4 INCHES ABOVE GRADE IN LANDSCAPE AREAS. RIMS IN PAVEMENT AREAS SHALL BE H-20 TRAFFIC RATED

EROSION CONTROL NOTES

1. HOLD A PRE-CONSTRUCTION MEETING OF PROJECT CONSTRUCTION PERSONNEL THAT INCLUDES THE LOCAL AGENCY INSPECTOR TO DISCUSS EROSION AND SEDIMENT CONTROL MEASURES AND CONSTRUCTION LIMITS
2. EROSION AND SEDIMENT CONTROL MEASURES MUST BE IN PLACE BEFORE ANY LAND IS DISTURBED AND MUST REMAIN IN PLACE AND BE MAINTAINED, REPAIRED, AND PROMPTLY IMPLEMENTED FOLLOWING PROCEDURES ESTABLISHED FOR THE DURATION OF CONSTRUCTION, INCLUDING APPROPRIATE NON-STORMWATER POLLUTION CONTROLS
3. THE EROSION CONTROL DRAWING IS FOR GENERAL GUIDANCE ONLY. THE CONTRACTOR SHALL KEEP THE PLAN CURRENT FOR ALL PHASES OF CONSTRUCTION AND MEET EROSION/SEDIMENT CONTROL REQUIREMENTS OF ALL AUTHORITIES HAVING JURISDICTION (AHJ). ALL EROSION CONTROL MEASURES SHALL CONFORM TO THE REQUIREMENTS OF THE AHJ, THE PLANS, AND THE PROJECT SPECIFICATIONS
4. CONSTRUCT EROSION CONTROL IN CONJUNCTION WITH ALL CLEARING AND GRADING ACTIVITIES, AND IN SUCH A MANNER AS TO ENSURE THAT SEDIMENT AND SEDIMENT LADEN WATER DO NOT ENTER THE DRAINAGE SYSTEM, ROADWAYS, OR VIOLATE APPLICABLE WATER STANDARDS
5. METHOD OF INSTALLATION FOR SEDIMENT FENCE SHALL NOT CAUSE DAMAGE TO VEGETATED SLOPE EXCEPT AT POINT OF INSTALLATION. SIDECAST MATERIAL SHALL BE KEPT TO A MINIMUM AND SHALL BE TO THE UPHILL SIDE OF THE SEDIMENT FENCE. THE FENCE SHALL BE INSTALLED AT LEAST 4 FEET FROM ADJACENT TREES
6. ALL EROSION CONTROL DEVICES SHALL BE EXAMINED AND REPAIRED AFTER EACH STORM OCCURRENCE, AND INLETS SHALL BE CLEANED OF SEDIMENT WHENEVER NECESSARY
7. HYDROSEED AND MULCH ALL DISTURBED AREAS UPON COMPLETION OF CONSTRUCTION OR AS DIRECTED BY THE AUTHORITIES HAVING JURISDICTION
8. THE CONTRACTOR SHALL LIMIT CONSTRUCTION TRAFFIC TO PAVED AREAS TO PREVENT AND MINIMIZE SEDIMENT TRACKING OFF-SITE. CONTRACTOR SHALL SWEEP OR VACUUM PAVED AREAS IF SEDIMENT ACCUMULATION OCCURS. DO NOT TRACK SEDIMENT TO THE PUBLIC STREET OR NEIGHBORING PROPERTIES
9. INSTALL TEMPORARY EROSION PREVENTION SUCH AS JUTE NETTING OR GEOTEXTILE ON DISTURBED AREAS STEEPER THAN 4H:1V
10. STAGING AND STOCKPILE AREAS TO BE DETERMINED BY CONTRACTOR AND ADJUSTED TO ACCOMMODATE THE PROGRESS OF CONSTRUCTION

SITE WORK NOTES

1. ALL CURB RADII TO BE 3 FEET UNLESS NOTED OTHERWISE
2. STAIR RISERS AND TREADS SHALL BE CONFORMANT WITH THE REQUIREMENTS OF THE AUTHORITIES HAVING JURISDICTION AND THE CURRENT EDITION OF THE STATE BUILDING CODE (E.G. INTERNATIONAL BUILDING CODE, CHAPTER 10, SECTION 1011.5)
3. WHEREVER A PEDESTRIAN WALKING PATH IS WITHIN 36 INCHES OF A VERTICAL DROP OF 30 INCHES OR GREATER, GUARDRAIL SHALL BE INSTALLED CONFORMANT WITH THE REQUIREMENTS OF THE AUTHORITIES HAVING JURISDICTION AND THE CURRENT EDITION OF THE STATE BUILDING CODE (E.G. INTERNATIONAL BUILDING CODE, CHAPTER 10, SECTION 1015)
4. PAVEMENTS WITH DEPRESSIONS OR BIRD BATHS, UNCONTROLLED CRACKS WHICH ARE VISIBLE WITHOUT MAGNIFICATION, AND/OR BONY OR OPEN GRADED SURFACES (EXCEPTING POROUS PAVEMENTS) WILL BE CONSIDERED UNACCEPTABLE. CONTRACTOR SHALL REVIEW PAVEMENT REPAIR OR REPLACEMENT ALTERNATIVES WITH THE OWNER AND ENGINEER PRIOR TO CONDUCTING THE REPAIR WORK.

LEGEND

	EXISTING	PROPOSED
ROW LINE		
BRUSH LINE		
BUILDING EAVE		
BUILDING FOOTPRINT		
CENTERLINE		
EASEMENT LINE		
FENCE LINE		
GAS LINE	G	
OVERHEAD POWER	E	
SANITARY LINE		
STORM DRAIN LINE	SD	
TAX LOT LINE		
WATER LINE	W	
DOMESTIC WATER LINE		
FIRE WATER LINE (PRIVATE)		
FIRE WATER LINE (PUBLIC)		
WETLANDS AOI		
WETLANDS BUFFER		
SROZ BOUNDARY		
CULVERT INVERT		
CURB INLET		
DECORATIVE SHRUB		
DOWNSPOUT		
CATCH BASIN		
FIRE HYDRANT		
GAS METER	G	
GAS RISER		
GATE POST		
GUY ANCHOR		
MAILBOX		
MANHOLE		
POWER METER	EM	
SIGN "AS NOTED"		
SITE BENCHMARK		
STORM DRAIN MANHOLE	D	
SURVEY MONUMENTS FOUND		
SURVEY MONUMENTS SET		
UTILITY LID		
WATER METER	W	
WATER RISE		
WATER VALVE		
WATER VAULT		
FDC		
WETLANDS BUFFER/ LINE STAKES		
POWER POLE	PP	
SDEWALK		
TREE		
WETLAND AREA		
RAIN GARDEN		

ABBREVIATIONS

TC	TOP OF CURB	WM	WATER METER
AC	ASPHALT	OH	OVERHEAD WIRE
FH	FIRE HYDRANT	SSWR	SANITARY SEWER
FG	FINISHED GRADE	MH	MANHOLE
SW	SIDEWALK ELEVATION	IE	INVERT ELEVATION
TS	TOP OF STAIR	CB	CATCH BASIN
BS	BOTTOM OF STAIR	STM	STORM
TYP	TYPICAL	RD	ROOF DRAIN
R.O.W.	RIGHT OF WAY	FF/FFE	FINISHED FLOOR ELEVATION
LS	LANDSCAPE	NG	NATURAL GROUND
SROZ	SIGNIFICANT RESOURCE OVERLAY ZONE	CL	CENTERLINE
		GPM	GALLONS PER MINUTE
CO	CLEAN OUT	FW	FIRE WATER
INV	INVERT	PWS	PUBLIC WORKS STANDARDS
RD	ROOF DRAIN		
COW	CITY OF WILSONVILLE	PUE	PUBLIC UTILITY EASEMENT
AOI	AREA OF IMPACT	ELEV	ELEVATION

Item 2.

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REVISION SCHEDULE

Delta	Issued As	Issue Date

SHEET TITLE:
CIVIL NOTES AND LEGEND

DRAWN BY: AOC, BMR

CHECKED BY: BMR, BDN

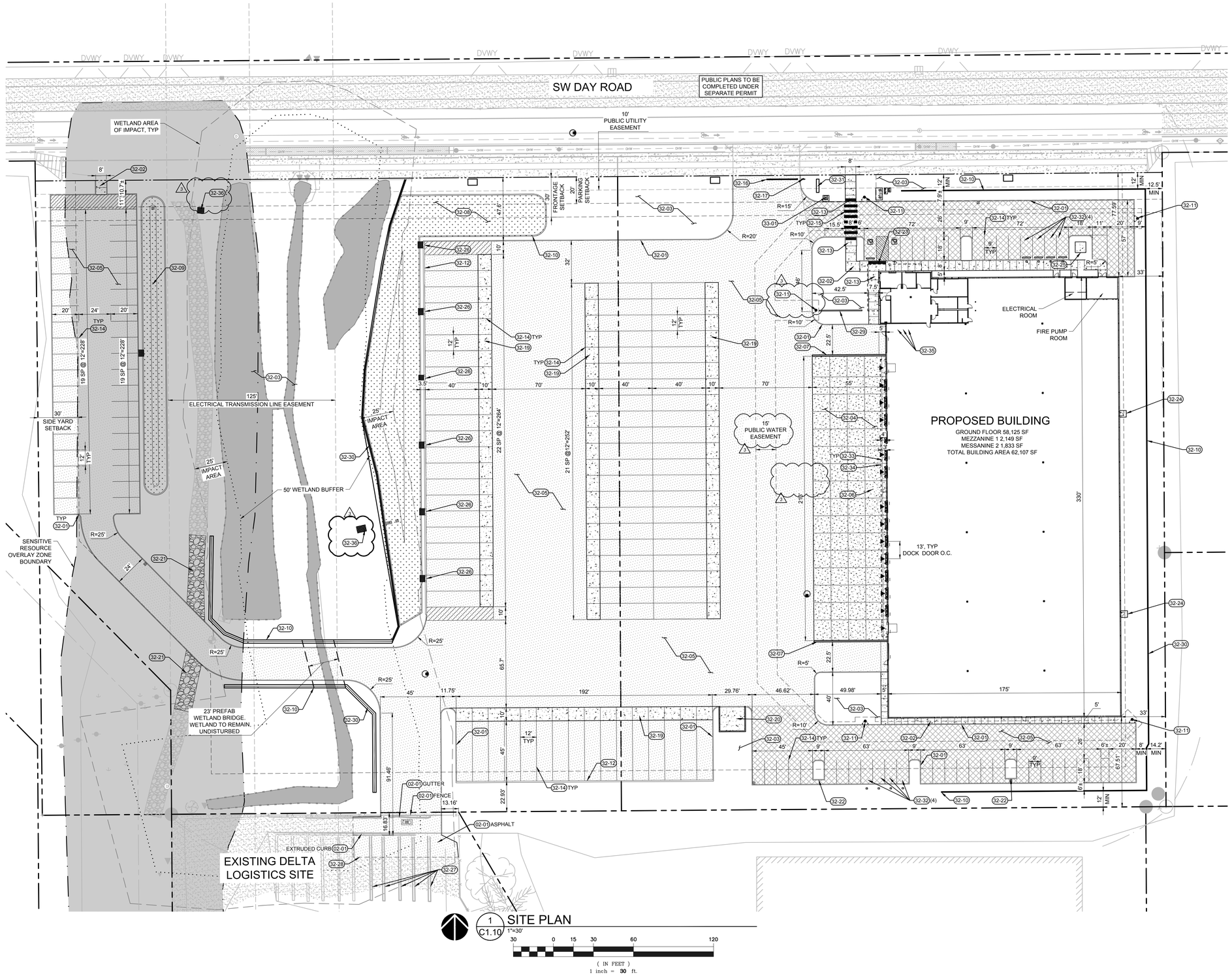
SHEET

C0.01

JOB NO. **2200502.04**

DESIGN REVIEW SET 07/29/2022

1131



1 C1.10 SITE PLAN

1"=30'

30 0 15 30 60 120

(IN FEET)
1 inch = **30** ft.

SITE COVERAGE SUMMARY

BUILDING FOOTPRINT AREA:	58,125	SF	1.33 AC
PARKING AND PAVING AREA:	190,265	SF	4.37 AC
LANDSCAPE AREA:	138,317	SF	3.15 AC
TOTAL SITE AREA:	386,708	SF	8.88 AC

SITE PARKING SUMMARY

TRAILERS (50'X12'):	80 STALLS
TRACTOR STALLS (20'X12'):	38 STALLS
PASSENGER VEHICLES (18'X9'):	39 STALLS
ACCESSIBLE STALLS:	2 STALLS
TOTAL VEHICLE STALLS:	41 STALLS

PAVEMENT LEGEND

*PAVEMENT SECTIONS PER GEODESIGN, SEE APPENDIX IN PROJECT SPECIFICATIONS

	SECTION PER SUBSURFACE CONDITION: BEDROCK	SOIL SUBGRADE
LIGHT PAVEMENT (NO TRUCK TRAFFIC)	2.5" AC OVER 4.0" BASE ROCK	2.5" AC OVER 8.0" BASE ROCK
HEAVY TRUCK PAVEMENT: (APPROX.50 TPD)	4.0" AC OVER 4.0" BASE ROCK	5.0" AC OVER 18.0" BASE ROCK
CONCRETE SECTION:	6" PCC WITH #4 @ 24" O.C. OVER 4" OF CRUSHED ROCK BASE. SUBGRADE TO BE COMPACTED TO GEOTECHNICAL REPORT SPECIFICATIONS	

KEYNOTES

02-01	REMOVE EXISTING AS NOTED
32-01	CONCRETE VERTICAL CURB, PER DETAIL 1/C5.10
32-02	CONCRETE SIDEWALK, PER DETAIL 7/C5.10
32-03	LANDSCAPE AREA, SEE LANDSCAPE PLANS
32-04	CONCRETE TRUCK DOCK, SEE PAVEMENT LEGEND
32-05	ASPHALT PAVING AREA, SEE PAVEMENT LEGEND
32-06	DOCK STAIR, PER ARCHITECTURAL DETAIL
32-07	DOCK RETAINING WALL, PER ARCHITECTURAL DETAIL
32-08	RAIN GARDEN 1, PER DETAIL 7/C5.12
32-09	RAIN GARDEN 2, PER DETAIL 8/C5.12
32-10	DESIGN-BUILD SOIL NAIL WALL, OR APPROVED EQUAL. SEE WALL PLAN FOR DETAILS
32-11	FIRE HYDRANT ASSEMBLY WITH BOLLARD PROTECTION. BOLLARD, PER DETAIL 2 AND 3/C5.10, SEE UTILITY PLAN FOR FIRE HYDRANT DETAILS
32-12	12" HIGH X 12" WIDE CURB AT TRUCK TRAILER PARKING STALLS, PER DETAIL 3/C5.10
32-13	PERPENDICULAR CURB RAMP, PER DETAIL 12/C5.10
32-14	4" WHITE PARKING STRIPE, PER SPECIFICATIONS
32-15	12" WIDE CROSSWALK STRIPE, PER SPECIFICATIONS
32-16	12" WIDE WHITE STOP BAR STRIPE
32-17	STOP SIGN, PER DETAIL 14/C5.10
32-19	10' WIDE TRAILER LANDING GEAR STRIP. 6" PCC W/ #4 @ 24" O.C. EACH WAY OVER 4" CRUSHED ROCK BASE. SEE DETAIL 8/C5.10 FOR CONCRETE TO ASPHALT TRANSITION
32-20	19'X20' CONCRETE PAD FOR TRASH ENCLOSURE. SEE ARCHITECTURAL PLANS FOR TRASH ENCLOSURE DETAIL
32-21	RAMP GRAVEL ROAD TO MATCH GRADE AT DRIVE AISLE. SLOPE NOT TO EXCEED 10%. INSTALL FLUSH CURB AT FOR WIDTH OF ROAD AT DRIVE AISLE. SEE GRADING PLAN FOR MORE DETAILS.
32-22	3' CHANNEL, PER DETAIL 1/C5.12
32-23	PARALLEL CURB RAMP, PER DETAIL 13/C5.10
32-24	5' X 5' CONCRETE LANDING, PER DETAIL 7/C5.10
32-25	8' X 8' CONCRETE PAD FOR GENERATOR. SEE MEP PLAN
32-26	3' WIDE CURB BREAK AT 50' O.C., PER DETAIL 5/C5.10
32-27	PAINT OVER EXISTING TRAILER STALL PARKING WITH BLACK PAINT
32-28	FULL DEPTH SAW CUT, PER DETAIL 2/C5.10
32-29	SCREEN WALL, PER ARCHITECTURAL DETAIL 9/A5.10
32-30	3' HIGH GUARDRAIL TO BE EMBEDDED IN RETAINING WALL AT ALL LOCATIONS WHERE WALL HEIGHT IS GREATER THAN 30". SEE RETAINING WALL PROFILES AND DETAILS 3 AND 4/C5.12
32-31	MONUMENT SIGN. SEE LANDSCAPE PLANS FOR DETAILS
32-32	FUTURE ELECTRIC VEHICLE PARKING STALL. SEE ELECTRICAL PLANS FOR DETAILS
32-33	3' WIDE ISOLATED ROW. SEE DETAIL 12/C5.11
32-34	BUILDING CANOPY. SEE ARCHITECTURAL PLANS FOR DETAILS AND SPECIFICATIONS.
32-35	3 BIKE RACKS. SEE ARCHITECTURAL PLANS FOR DETAILS
32-36	RIP RAP AT PIPE OUTFALL, PER DETAIL 9/C5.12. SEE UTILITY PLANS FOR LOCATION
33-01	FDC CONNECTION, PER DETAIL 16/C5.10, SEE UTILITY PLAN

Item 2.

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REVISION SCHEDULE

Delta	Issued As	Issue Date
1	PLAN CHECK	06/10/2022
2	LAND USE	07/26/2022
3	LAND USE	11/15/2022

SHEET TITLE:
SITE PLAN

DRAWN BY: AOC, BMR

CHECKED BY: BMR, BDN

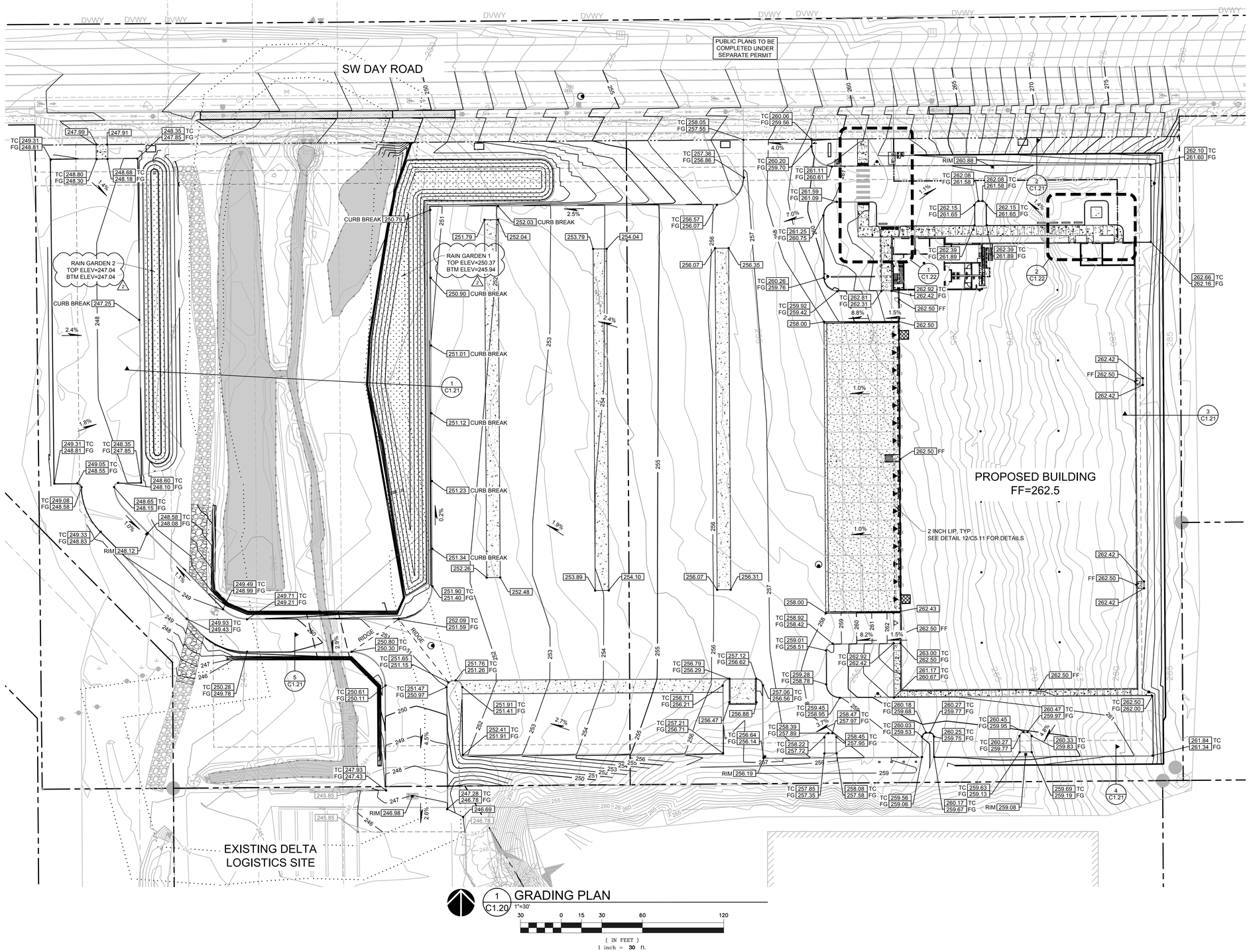
SHEET
C1.10

JOB NO. **2200502.04**

THE SURVEY INFORMATION SHOWN AS A BACKGROUND SCREEN ON THIS SHEET IS SHOWN FOR REFERENCE ONLY AND IS BASED ON A SURVEY BY: WEDDLE SURVEYING, INC. DATE:12/06/21

DESIGN REVIEW SET 07/29/2022

2200502\00\DRAWINGS\CIVIL\50204-C1.10-SITE PLAN.DWG BMR 11/16/22 18:17 1:30



1 C1.20 GRADING PLAN

1"=30'

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

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1	PLAN CHECK	06/10/2022
2	LAND USE	11/15/2022

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GRADING PLAN

DRAWN BY: AOC, BMR

CHECKED BY: BMR, BDN

SHEET
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JOB NO. **2200502.04**

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220050200\DRAWINGS\CIVIL\50204-C1.20-GRADING PLAN.DWG BMR 11/16/22 18:17 1:30

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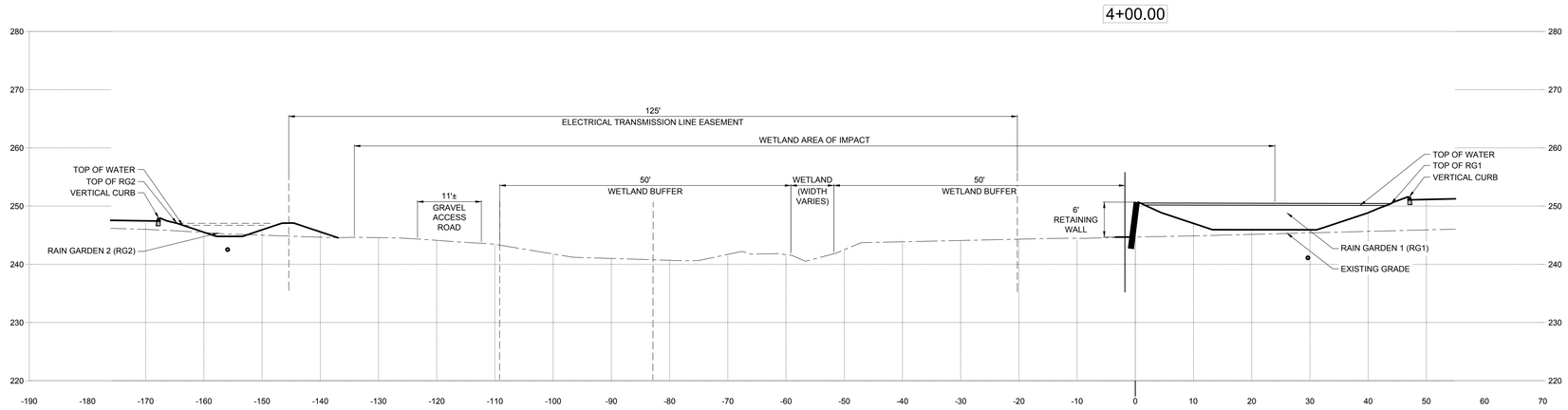

1 C1.21 **CROSS SECTION - NORTHWEST WALL**
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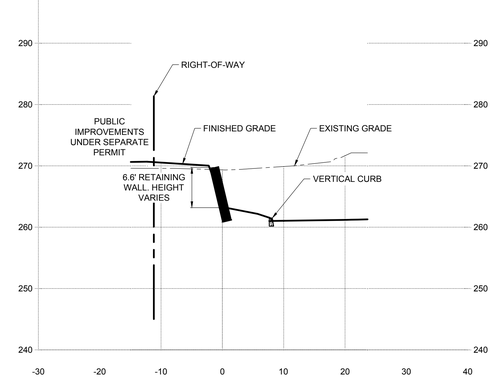
VERT. SCALE: 1"=1'



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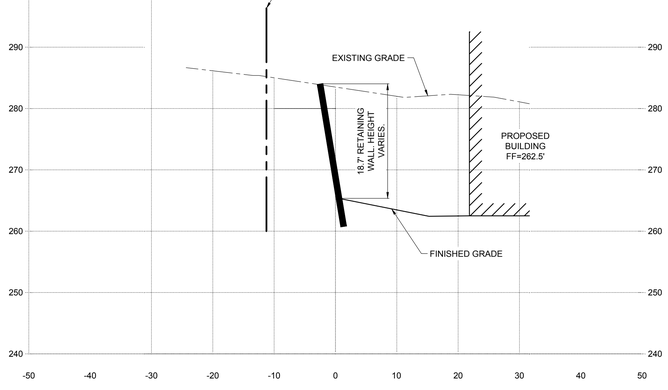
VERT. SCALE: 1"=1'



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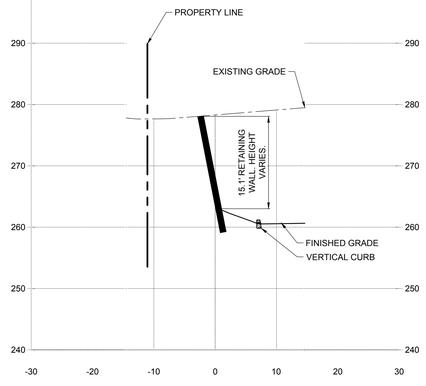
VERT. SCALE: 1"=1'



4 C1.21 **CROSS SECTION 3 - EAST WALL**
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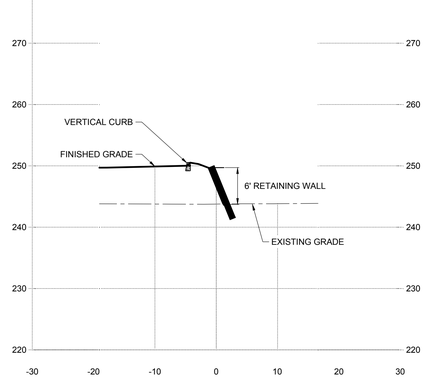
VERT. SCALE: 1"=1'



1 C1.21 **CROSS SECTION - SE WALL**
SCALE: 1"=10'
VERT. SCALE: 1"=1'

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REVISION SCHEDULE		
Delta	Issued As	Issue Date
1	PLAN CHECK	07/14/2022

SHEET TITLE:
GRADING CROSS SECTIONS

DRAWN BY: AOC, BMR

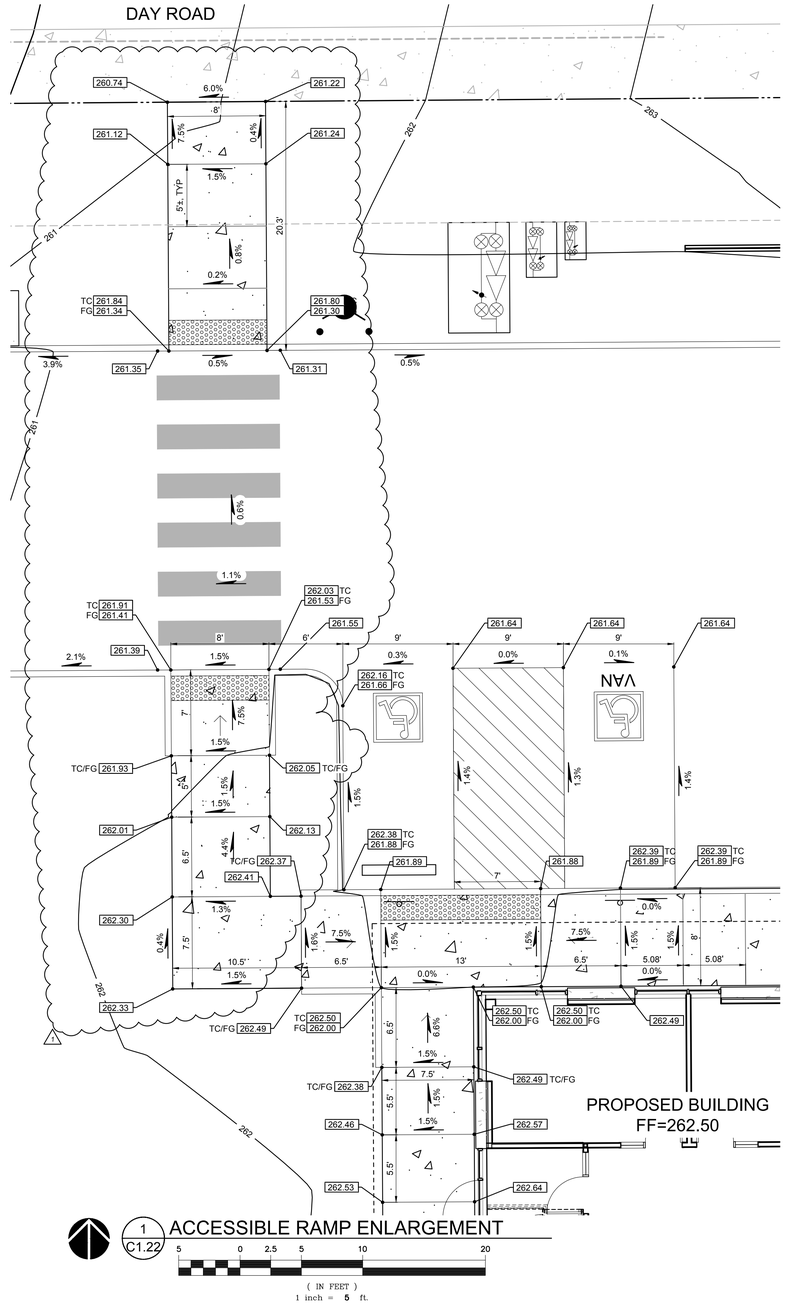
CHECKED BY: BMR, BDN

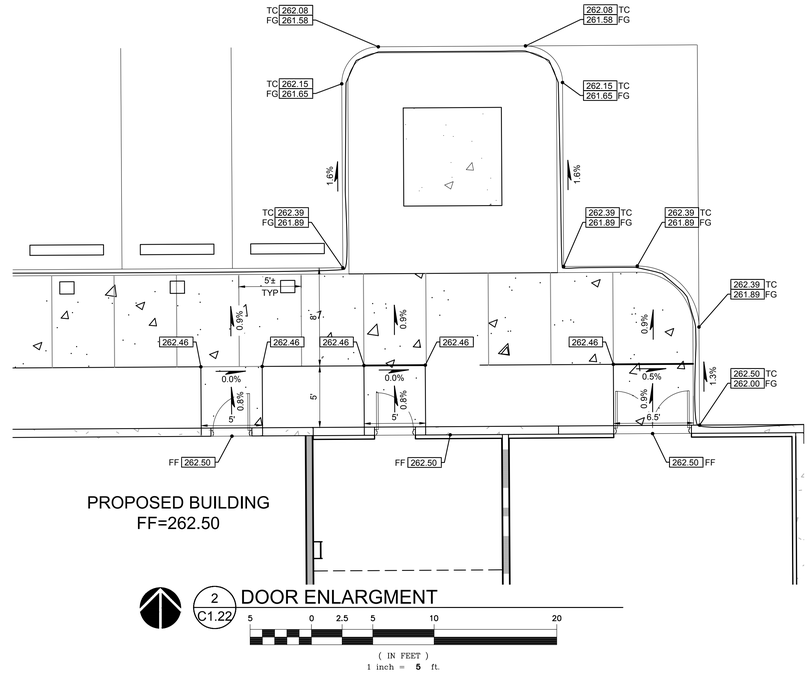
SHEET
C1.21

10 0 5 10 20 40
(IN FEET)
1 inch = **10** ft.

JOB NO. **2200502.04**

DESIGN REVIEW SET 07/29/2022





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WILSONVILLE, OR
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Project

DELTA LOGISTICS SITE EXPANSION
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CITY OF
WILSONVILLE, OR

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REVISION SCHEDULE

Delta	Issued As	Issue Date
1	PLAN CHECK	06/10/2022

SHEET TITLE:
GRADING ENLARGEMENT PLAN

DRAWN BY: AOC, BMR

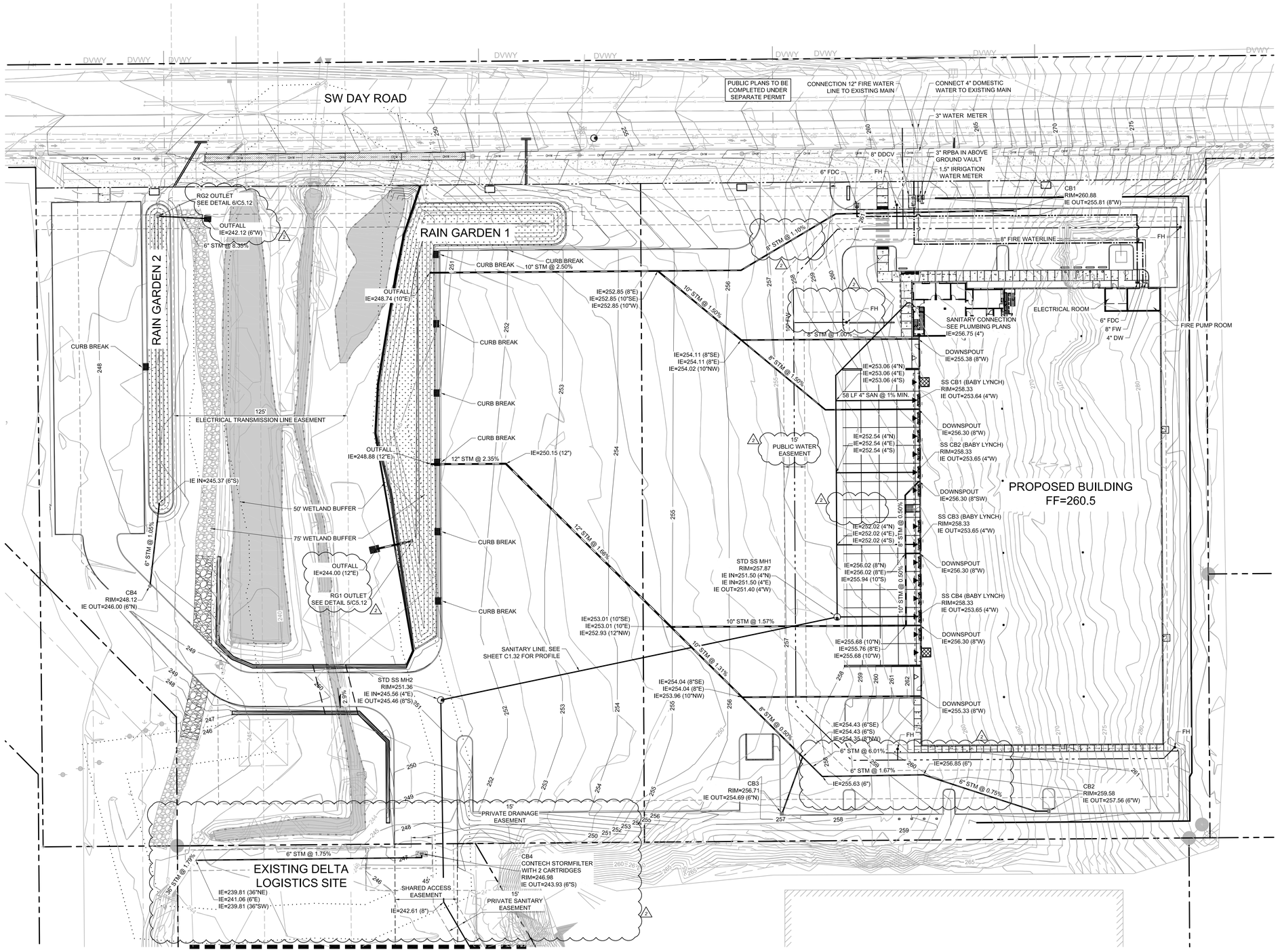
CHECKED BY: BMR, BDN

SHEET
C1.22

JOB NO. **2200502.04**

DESIGN REVIEW SET 07/29/2022

220050200\DRAWINGS\CIVIL\50204-C1.22-ACCESSIBLE RAMP ENLARGMENT.DWG BMR 11/16/22 18:18 1:5



MATCH LINE - SEE SHEET 1/C1.31

1 C1.30 UTILITY PLAN

1"=30'

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

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REVISION SCHEDULE

Delta	Issued As	Issue Date
1	PLAN CHECK	06/10/2022
2	LAND USE	11/15/2022

SHEET TITLE:
UTILITY PLAN

DRAWN BY: AOC, BMR

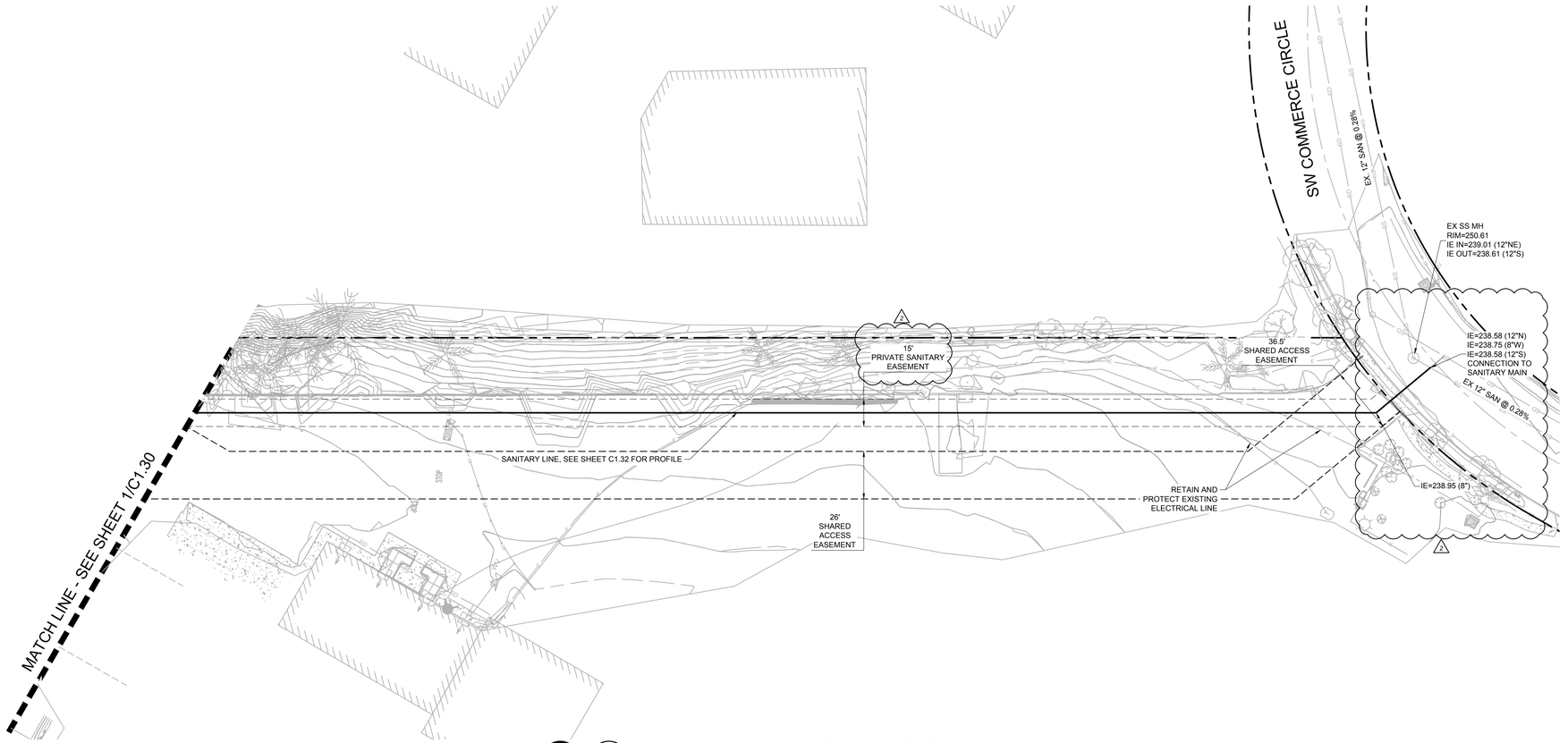
CHECKED BY: BMR

SHEET
C1.30

JOB NO. **2200502.04**

DESIGN REVIEW SET 07/29/2022

1136



1 C1.31 UTILITY PLAN - SANITARY CONNECTION
1"=30'

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

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REVISION SCHEDULE

Delta	Issued As	Issue Date
1	PLAN CHECK	06/10/2022
2	PLAN CHECK	11/15/2022

SHEET TITLE:
UTILITY PLAN - SANITARY CONNECTION

DRAWN BY: AOC, BMR

CHECKED BY: BMR, BDN

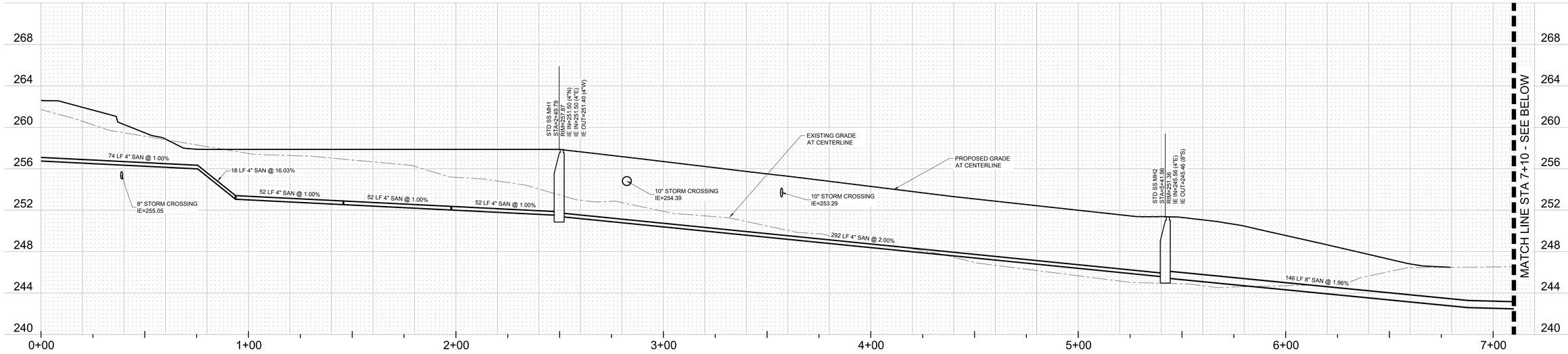
SHEET

C1.31

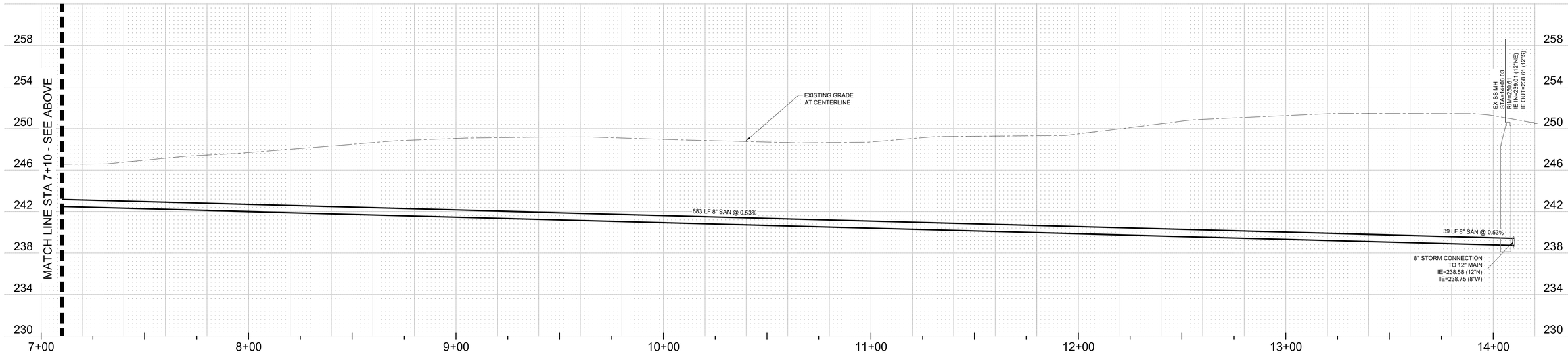
JOB NO. **2200502.04**

DESIGN REVIEW SET 07/29/2022

2200502\2200502.04\DWG\2200502.04-C1.00-UTILITY PLANS.DWG BMR 11/18/22 14:30 1:30



1 C1.32 SANITARY PROFILE
HORZ. SCALE 1"=20'
VERT. SCALE 1"=5"



2 C1.32 SANITARY PROFILE
HORZ. SCALE 1"=20'
VERT. SCALE 1"=5"

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REVISION SCHEDULE

Delta	Issued As	Issue Date

SHEET TITLE:
SANITARY PROFILE

DRAWN BY: BMR

CHECKED BY: BMR, BDN

SHEET

C1.32

JOB NO. **2200502.04**

DESIGN REVIEW SET 07/29/2022

220050200\DRAWINGS\CIVIL\50204-C1.32-SANITARY PROFILE.DWG BMR 11/16/22 18:19 1:20

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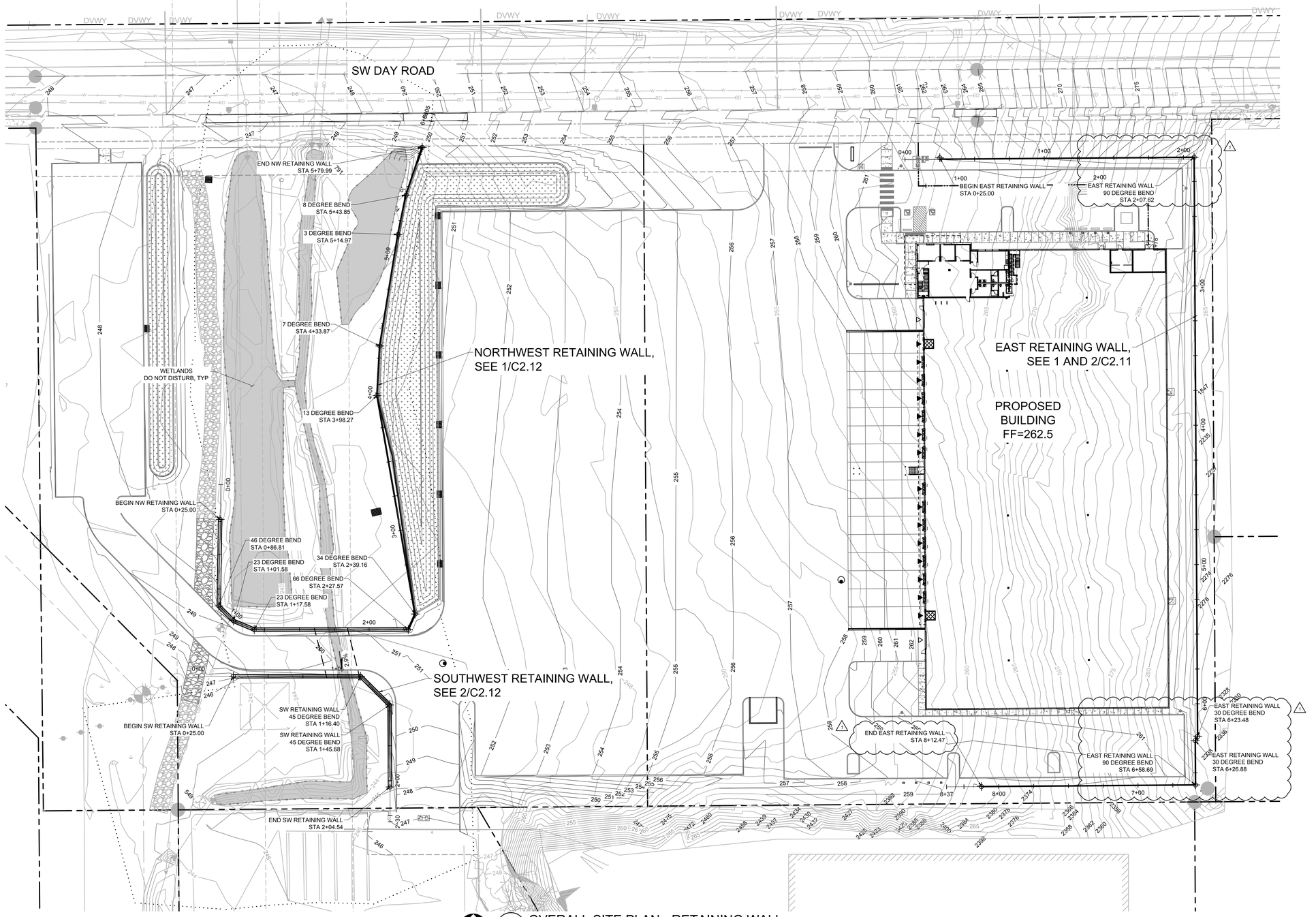

1 / C2.10 OVERALL SITE PLAN - RETAINING WALL

30 0 15 30 60 120
(IN FEET)
1 inch = **30** ft.

LEGEND

	EXISTING	PROPOSED
RIGHT-OF-WAY		
MAJOR CONTOUR	590	590
MINOR CONTOUR	591	591

NOTE:

WALL ELEVATIONS ARE PROVIDED FOR CONTRACTOR COORDINATION ONLY. WALL FINAL DESIGN TO BE DESIGN-BUILD. REFER TO DESIGN-BUILD PLANS FOR WALL DETAILS, BLOCK LAYOUT, REINFORCING, AND OTHER DETAILS.

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REVISION SCHEDULE

Delta	Issued As	Issue Date
1	PLAN CHECK	07/14/2022

SHEET TITLE:
OVERALL RETAINING WALL PLAN

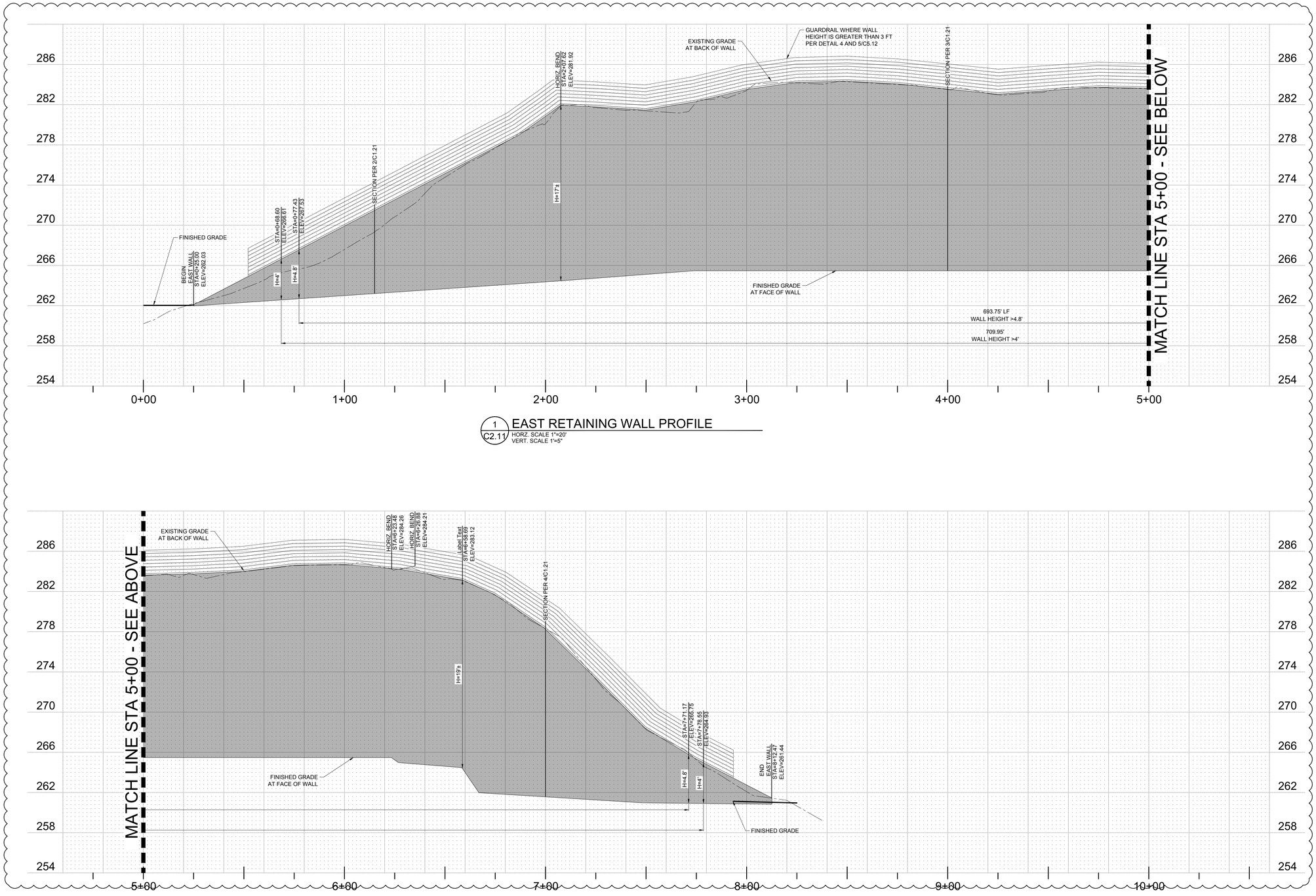
DRAWN BY: BMR
BMR, BDN
CHECKED BY:

SHEET
C2.11

JOB NO. **2200502.04**

1139

DESIGN REVIEW SET 07/29/2022



1 C2.11 EAST RETAINING WALL PROFILE
HORZ. SCALE 1"=20'
VERT. SCALE 1"=5"

2 C2.11 EAST RETAINING WALL PROFILE
HORZ. SCALE 1"=20'
VERT. SCALE 1"=5"

LEGEND

	EXISTING	PROPOSED
RIGHT-OF-WAY		
MAJOR CONTOUR	590	590
MINOR CONTOUR	591	591

ABBREVIATIONS

FW	GROUND ELEVATION AT FACE OF WALL
BW	GROUND ELEVATION AT BACK OF WALL

NOTE:

WALL ELEVATIONS ARE PROVIDED FOR CONTRACTOR COORDINATION ONLY. WALL FINAL DESIGN TO BE DESIGN-BUILD. REFER TO DESIGN-BUILD PLANS FOR WALL DETAILS, BLOCK LAYOUT, REINFORCING, AND OTHER DETAILS.

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REVISION SCHEDULE

Delta	Issued As	Issue Date
1	PLAN CHECK	07/14/2022

SHEET TITLE:
EAST RETAINING WALL PROFILE

DRAWN BY: AOC, BMR
CHECKED BY: BMR, BDN

SHEET
C2.11

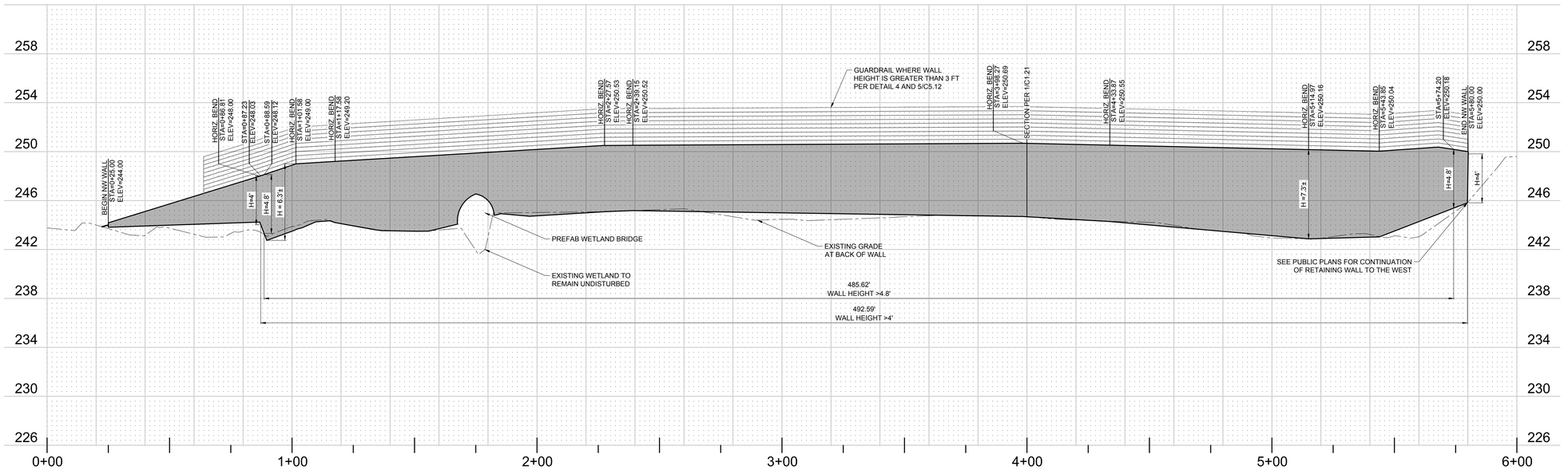
JOB NO. **2200502.04**

1140

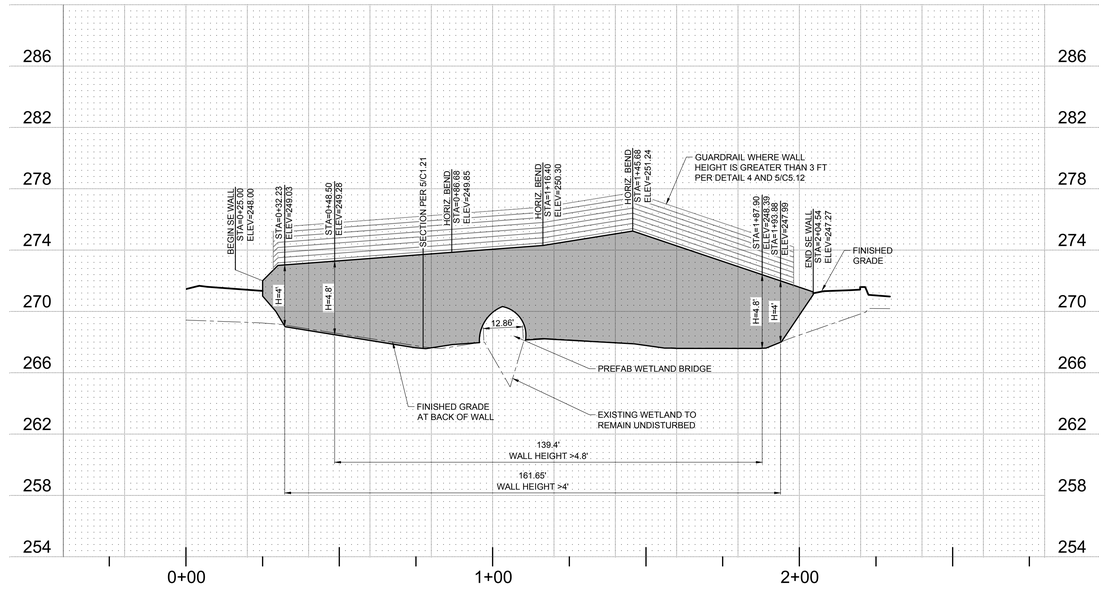
DESIGN REVIEW SET 07/29/2022

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.



1 C2.12 NORTHWEST RETAINING WALL PROFILE
HORZ. SCALE 1"=20'
VERT. SCALE 1"=5"



2 C2.12 SOUTHWEST RETAINING WALL PROFILE
HORZ. SCALE 1"=20'
VERT. SCALE 1"=5"

LEGEND

	EXISTING	PROPOSED
RIGHT-OF-WAY		
MAJOR CONTOUR	590	590
MINOR CONTOUR	591	591

ABBREVIATIONS

FW	GROUND ELEVATION AT FACE OF WALL
BW	GROUND ELEVATION AT BACK OF WALL

NOTE:

WALL ELEVATIONS ARE PROVIDED FOR CONTRACTOR COORDINATION ONLY. WALL FINAL DESIGN TO BE DESIGN-BUILD. REFER TO DESIGN-BUILD PLANS FOR WALL DETAILS, BLOCK LAYOUT, REINFORCING, AND OTHER DETAILS.

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REVISION SCHEDULE

Delta	Issued As	Issue Date

SHEET TITLE:
NORTHWEST AND SOUTHWEST RETAINING WALL PROFILES

DRAWN BY: AOC, BMR

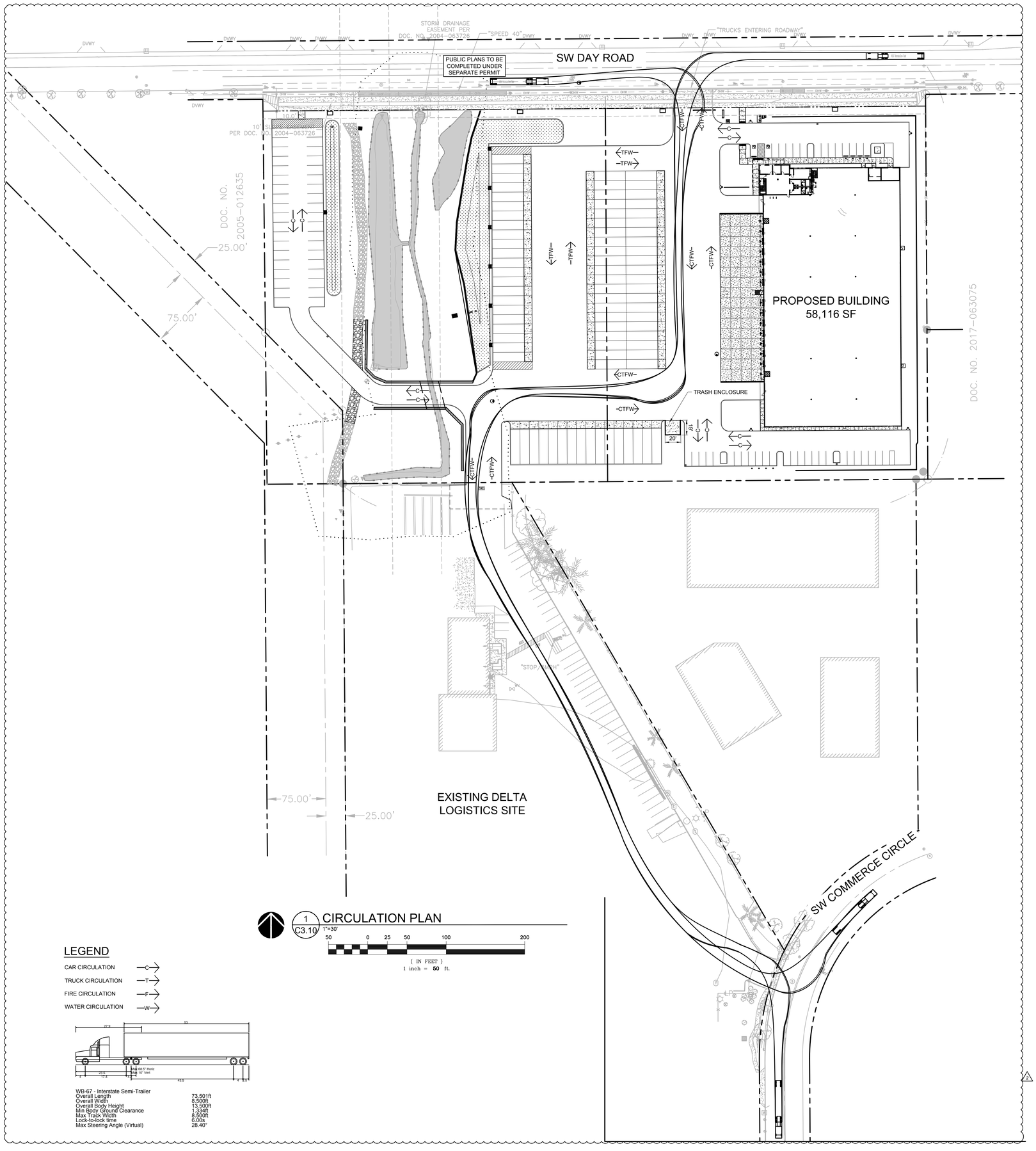
CHECKED BY: BMR, BDN

SHEET
C2.12

JOB NO. **2200502.04**

1141

DESIGN REVIEW SET 07/29/2022



1 C3.10 CIRCULATION PLAN

1"=30'

50 0 25 50 100 200

(IN FEET)
1 inch = 50 ft.

LEGEND

CAR CIRCULATION —C→

TRUCK CIRCULATION —T→

FIRE CIRCULATION —F→

WATER CIRCULATION —W→

WB-67 - Interstate Semi-Trailer	
Overall Length	73.501ft
Overall Width	8.500ft
Overall Body Height	13.500ft
Min Body Ground Clearance	1.334ft
Max Track Width	8.500ft
Lock-to-lock time	6.00s
Max Steering Angle (Virtual)	28.40°

THE SURVEY INFORMATION SHOWN AS A BACKGROUND SCREEN ON THIS SHEET IS SHOWN FOR REFERENCE ONLY AND IS BASED ON A SURVEY BY: WEDDLE SURVEYING, INC. DATE: 12/06/21

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REVISION SCHEDULE		
Delta	Issued As	Issue Date
1	PLAN CHECK	06/10/2022
2	LAND USE	11/15/2022

SHEET TITLE:

CIRCULATION PLAN

DRAWN BY: BMR

CHECKED BY: BMR, GIM

SHEET

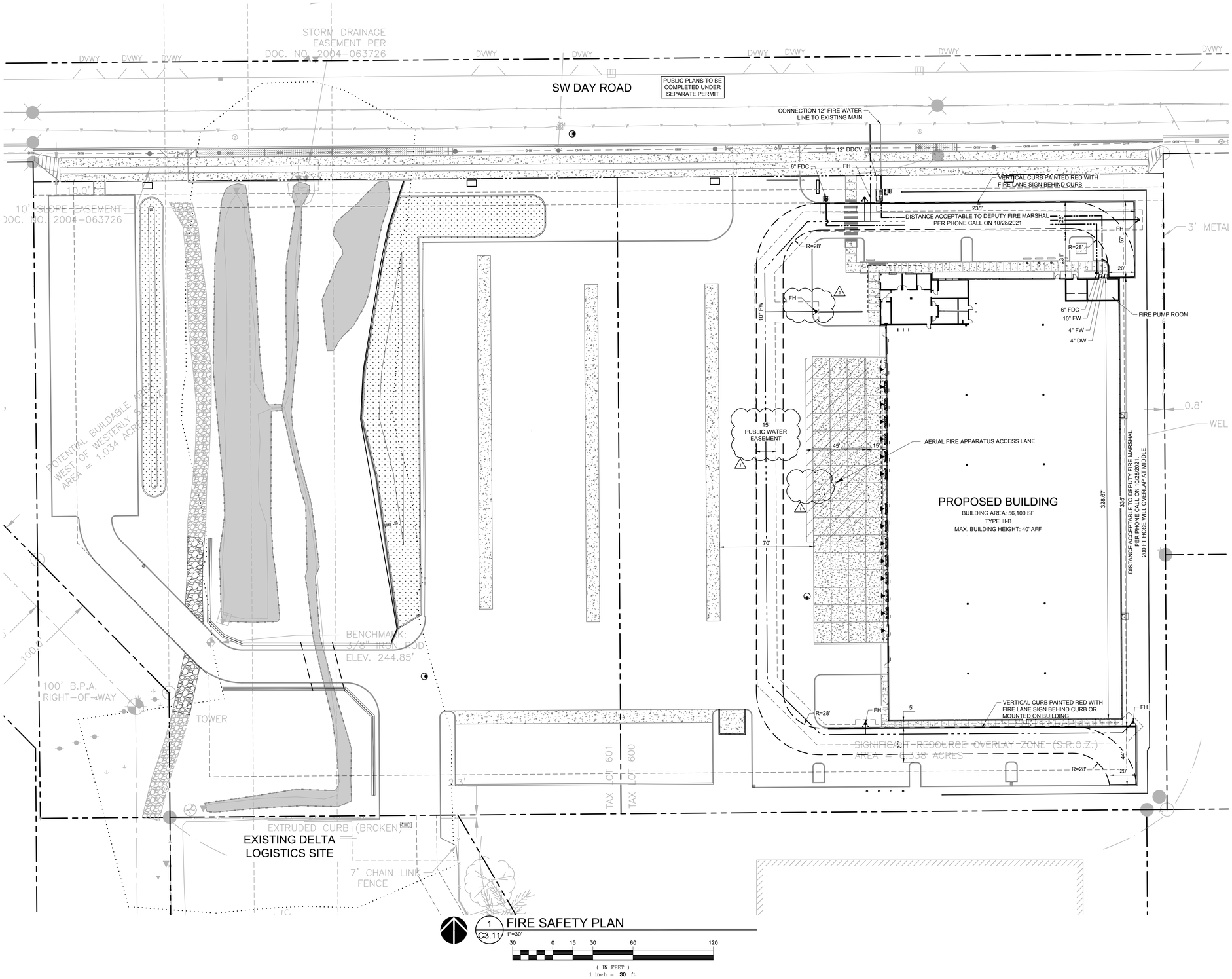
C3.10

JOB NO. **2200502.04**

1142

DESIGN REVIEW SET 07/29/2022

2200502\00\DRAWINGS\CIVIL\2200-C3.10 CIRCULATION PLAN.DWG BMR 11/16/22 18:20 1:50



1 C3.11 FIRE SAFETY PLAN

1"=30'

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

THE SURVEY INFORMATION SHOWN AS A BACKGROUND SCREEN ON THIS SHEET IS SHOWN FOR REFERENCE ONLY AND IS BASED ON A SURVEY BY: WEDDLE SURVEYING, INC. DATE: 12/05/21

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REVISION SCHEDULE

Delta	Issued As	Issue Date
1	LAND USE	11/15/2022

SHEET TITLE:
FIRE SAFETY PLAN

DRAWN BY: BMR

CHECKED BY: BMR, GIM

SHEET
C3.11

JOB NO. **2200502.04**

1143

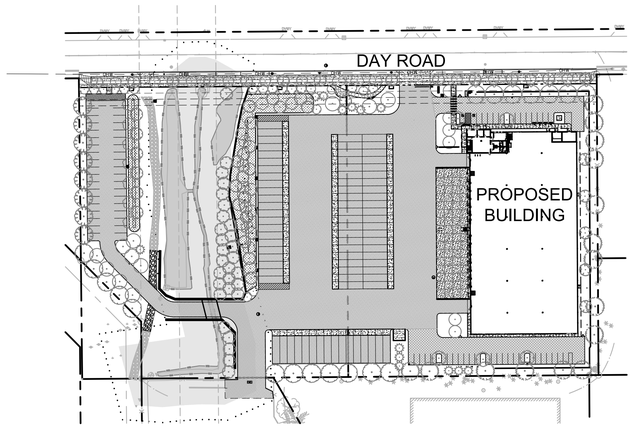
DESIGN REVIEW SET 07/29/2022

DELTA LOGISTICS SITE EXPANSION EROSION AND SEDIMENT CONTROL PLAN

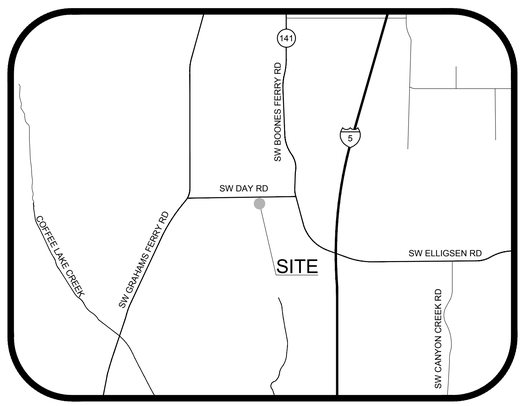
WILSONVILLE, OR

TAX LOTS 600, 601 3S102B000601, 3S102B000600

CLACKAMAS COUNTY, OREGON



SITE PLAN
1"=100' WILSONVILLE, OR



VICINITY MAP
NTS WILSONVILLE, OR

NARRATIVE DESCRIPTIONS

EXISTING SITE CONDITIONS

* UNDEVELOPED LAND

DEVELOPED CONDITIONS

*INDUSTRIAL BUILDING AND STORAGE

NATURE OF CONSTRUCTION ACTIVITY AND ESTIMATED TIME TABLE

*DEMOLITION	OCT 2022 TO NOV 2022
*CLEARING AND GRUBBING	MAR 2023 TO JUN 2023
*MASS GRADING	APR 2023 TO JULY 2023
*UTILITY INSTALLATION	JULY 2023 TO AUG 2023
*SITE CONSTRUCTION	AUG 2023 TO OCT 2023
*FINAL STABILIZATION	OCT 2023 TO NOV 2023

TOTAL SITE AREA = 386,732 SF (6.74 AC)

TOTAL DISTURBED AREA = 386,732 SF (6.74 AC)

SITE SOIL CLASSIFICATION: (FROM USGS)

5B - BRIEDWELL STONY SILT LOAM, 0 TO 7 % SLOPES
37B - QUATAMA LOAM, 3 TO 7 % SLOPES
38B - SAUM SILT LOAM, 2 TO 7 % SLOPES
38C - SAUM SILT LOAM, 7 TO 12 % SLOPES
38D - SAUM SILT LOAM, 12 TO 20 % SLOPES
43 - WAPATO SILTY CLAY LOAM
63B - SALEM GRAVELLY SILT LOAM, 0 TO 7 % SLOPES

RECEIVING WATER BODIES:

NEAREST WATER BODY: COFFEE LAKE CREEK

PERMITTEE'S SITE INSPECTOR:

COMPANY: BUILT ENVIRONMENTS NORTHWEST
INSPECTOR: PETER ZAGARYUK
PHONE:(503) 816-1219
E-MAIL: VZEXCAVATION@GMAIL.COM
CERTIFICATION: CWT21-1240, EXPIRES 05/13/2024

RATIONALE STATEMENT

A COMPREHENSIVE LIST OF AVAILABLE BEST MANAGEMENT PRACTICES (BMP) OPTIONS BASED ON DEQ's GUIDANCE MANUAL HAS BEEN REVIEWED TO COMPLETE THIS EROSION AND SEDIMENT CONTROL PLAN. SOME OF THE ABOVE LISTED BMP's WERE NOT CHOSEN BECAUSE THEY WERE DETERMINED TO NOT EFFECTIVELY MANAGE EROSION PREVENTION AND SEDIMENT CONTROL FOR THIS PROJECT BASED ON SPECIFIC SITE CONDITIONS, INCLUDING SOIL CONDITIONS TOPOGRAPHIC CONSTRAINTS, ACCESSIBILITY TO THE SITE, AND OTHER RELATED CONDITIONS, AS THE PROJECT PROGRESSES AND THERE IS A NEED TO REVISE THE ESCP PLAN, AN ACTION PLAN WILL BE SUBMITTED.

INITIAL _____

PROJECT LOCATION:

ALONG SW DAY ROAD BETWEEN
SW GRAHAMS FERRY ROAD AND
SW BOONES FERRY ROAD
WILSONVILLE, OR 97223
LATITUDE = 45°20'23"
LONGITUDE = -122°46'41"

PROPERTY DESCRIPTION:

PHYSICAL DESCRIPTION: ALONG SW DAY ROAD
BETWEEN SW GRAHAMS FERRY ROAD AND SW
BOONES FERRY ROAD
TAX LOTS: 600, 601
TOWNSHIP 3 SOUTH, RANGE 1 WEST
CLACKAMAS COUNTY, OREGON

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GENERAL NOTE:

THIS PLAN SHOWS THE MINIMUM SUGGESTED LEVEL OF EROSION AND SEDIMENT CONTROL PROTECTION REQUIRED. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO IMPLEMENT ADDITIONAL MEASURES AS NECESSARY TO COMPLY WITH ALL PERMITS, LOCAL, AND STATE REQUIREMENTS.

CLIENT

DELTA LOGISTICS
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IGOR@DELTAFREIGHTINC.COM

CIVIL ENGINEERING

MACKENZIE
CONTACT (PUBLIC): GREG MINO
1515 SE WATER AVE
PORTLAND, OR 97214
PHONE: (971)-346-3702
GMINO@MCKNZE.COM

CONTACT (PRIVATE): BREEZY RINEHART
1515 SE WATER AVE
PORTLAND, OR 97214
PHONE: 971-346-3761
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SURVEYOR

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THE SURVEY INFORMATION SHOWN AS A BACKGROUND SCREEN ON THIS SHEET IS SHOWN FOR REFERENCE ONLY AND IS BASED ON A SURVEY BY: WEDDLE SURVEYING, INC. DATE: 12/06/21

STANDARD EROSION AND SEDIMENT CONTROL PLAN DRAWING NOTES:

1. ONCE KNOWN, INCLUDE A LIST OF ALL CONTRACTORS THAT WILL ENGAGE IN CONSTRUCTION ACTIVITIES ON SITE, AND THE AREAS OF THE SITE WHERE THE CONTRACTOR(S) WILL ENGAGE IN CONSTRUCTION ACTIVITIES. REVISE THE LIST AS APPROPRIATE UNTIL PERMIT COVERAGE IS TERMINATED (SECTION 4.4.C.I). IN ADDITION, INCLUDE A LIST OF ALL PERSONNEL (BY NAME AND POSITION) THAT ARE RESPONSIBLE FOR THE DESIGN, INSTALLATION AND MAINTENANCE OF STORMWATER CONTROL MEASURES (E.G. ESCP DEVELOPER, BMP INSTALLER (SEE SECTION 4.10), AS WELL AS THEIR INDIVIDUAL RESPONSIBILITIES. (SECTION 4.4.C.II)
2. VISUAL MONITORING INSPECTION REPORTS MUST BE MADE IN ACCORDANCE WITH DEQ 1200-C PERMIT REQUIREMENTS. (SECTION 6.5)
3. INSPECTION LOGS MUST BE KEPT IN ACCORDANCE WITH DEQ'S 1200-C PERMIT REQUIREMENTS. (SECTION 6.5.G)
4. RETAIN A COPY OF THE ESCP AND ALL REVISIONS ON SITE AND MAKE IT AVAILABLE ON REQUEST TO DEQ, AGENT, OR THE LOCAL MUNICIPALITY. (SECTION 4.7)
5. THE PERMIT REGISTRANT MUST IMPLEMENT THE ESCP. FAILURE TO IMPLEMENT ANY OF THE CONTROL MEASURES OR PRACTICES DESCRIBED IN THE ESCP IS A VIOLATION OF THE PERMIT. (SECTIONS 4 AND 4.11)
6. THE ESCP MUST BE ACCURATE AND REFLECT SITE CONDITIONS. (SECTION 4.8)
7. SUBMISSION OF ALL ESCP REVISIONS IS NOT REQUIRED. SUBMITTAL OF THE ESCP REVISIONS IS ONLY UNDER SPECIFIC CONDITIONS. SUBMIT ALL NECESSARY REVISION TO DEQ OR AGENT WITHIN 10 DAYS. (SECTION 4.9)
8. SEQUENCE CLEARING AND GRADING TO THE MAXIMUM EXTENT PRACTICAL TO PREVENT EXPOSED INACTIVE AREAS FROM BECOMING A SOURCE OF EROSION. (SECTION 2.2.2)
9. CREATE SMOOTH SURFACES BETWEEN SOIL SURFACE AND EROSION AND SEDIMENT CONTROLS TO PREVENT STORMWATER FROM BYPASSING CONTROLS AND PONDING. (SECTION 2.2.3)
10. IDENTIFY, MARK, AND PROTECT (BY CONSTRUCTION FENCING OR OTHER MEANS) CRITICAL RIPARIAN AREAS AND VEGETATION INCLUDING IMPORTANT TREES AND ASSOCIATED ROOTING ZONES, AND VEGETATION AREAS TO BE PRESERVED. IDENTIFY VEGETATIVE BUFFER ZONES BETWEEN THE SITE AND SENSITIVE AREAS (E.G., WETLANDS), AND OTHER AREAS TO BE PRESERVED, ESPECIALLY IN PERIMETER AREAS. (SECTION 2.2.1)
11. PRESERVE EXISTING VEGETATION WHEN PRACTICAL AND RE-VEGETATE OPEN AREAS. RE-VEGETATE OPEN AREAS WHEN PRACTICABLE BEFORE AND AFTER GRADING OR CONSTRUCTION. IDENTIFY THE TYPE OF VEGETATIVE SEED MIX USED. (SECTION 2.2.5)
12. MAINTAIN AND DELINEATE ANY EXISTING NATURAL BUFFER WITHIN THE 50-FEET OF WATERS OF THE STATE. (SECTION 2.2.4)
13. INSTALL PERIMETER SEDIMENT CONTROL, INCLUDING STORM DRAIN INLET PROTECTION AS WELL AS ALL SEDIMENT BASINS, TRAPS, AND BARRIERS PRIOR TO LAND DISTURBANCE. (SECTIONS 2.1.3)
14. CONTROL BOTH PEAK FLOW RATES AND TOTAL STORMWATER VOLUME, TO MINIMIZE EROSION AT OUTLETS AND DOWNSTREAM CHANNELS AND STREAMBANKS. (SECTIONS 2.1.1. AND 2.2.16)
15. CONTROL SEDIMENT AS NEEDED ALONG THE SITE PERIMETER AND AT ALL OPERATIONAL INTERNAL STORM DRAIN INLETS AT ALL TIMES DURING CONSTRUCTION, BOTH INTERNALLY AND AT THE SITE BOUNDARY. (SECTIONS 2.2.6 AND 2.2.13)
16. ESTABLISH CONCRETE TRUCK AND OTHER CONCRETE EQUIPMENT WASHOUT AREAS BEFORE BEGINNING CONCRETE WORK. (SECTION 2.2.14)
17. APPLY TEMPORARY AND/OR PERMANENT SOIL STABILIZATION MEASURES IMMEDIATELY ON ALL DISTURBED AREAS AS GRADING PROGRESSES. TEMPORARY OR PERMANENT STABILIZATIONS MEASURES ARE NOT REQUIRED FOR AREAS THAT ARE INTENDED TO BE LEFT UNVEGETATED, SUCH AS DIRT ACCESS ROADS OR UTILITY POLE PADS.(SECTIONS 2.2.20 AND 2.2.21)
18. ESTABLISH MATERIAL AND WASTE STORAGE AREAS, AND OTHER NON-STORMWATER CONTROLS. (SECTION 2.3.7)
19. KEEP WASTE CONTAINER LIDS CLOSED WHEN NOT IN USE AND CLOSE LIDS AT THE END OF THE BUSINESS DAY FOR THOSE CONTAINERS THAT ARE ACTIVELY USED THROUGHOUT THE DAY. FOR WASTE CONTAINERS THAT DO NOT HAVE LIDS, PROVIDE EITHER (1) COVER (E.G., A TARP, PLASTIC SHEETING, TEMPORARY ROOF) TO PREVENT EXPOSURE OF WASTES TO PRECIPITATION, OR (2) A SIMILARLY EFFECTIVE MEANS DESIGNED TO PREVENT THE DISCHARGE OF POLLUTANTS (E.G., SECONDARY CONTAINMENT). (SECTION 2.3.7)
20. PREVENT TRACKING OF SEDIMENT ONTO PUBLIC OR PRIVATE ROADS USING BMPS SUCH AS: CONSTRUCTION ENTRANCE, GRAVELED (OR PAVED) EXITS AND PARKING AREAS, GRAVEL ALL UNPAVED ROADS LOCATED ONSITE, OR USE AN EXIT TIRE WASH. THESE BMPS MUST BE IN PLACE PRIOR TO LAND- DISTURBING ACTIVITIES. (SECTION 2.2.7)
21. WHEN TRUCKING SATURATED SOILS FROM THE SITE, EITHER USE WATER-TIGHT TRUCKS OR DRAIN LOADS ON SITE. (SECTION 2.2.7.F)
22. CONTROL PROHIBITED DISCHARGES FROM LEAVING THE CONSTRUCTION SITE, I.E., CONCRETE WASH-OUT, WASTEWATER FROM CLEANOUT OF STUCCO, PAINT AND CURING COMPOUNDS. (SECTIONS 1.5 AND 2.3.9)
23. ENSURE THAT STEEP SLOPE AREAS WHERE CONSTRUCTION ACTIVITIES ARE NOT OCCURRING ARE NOT DISTURBED. (SECTION 2.2.10)
24. PREVENT SOIL COMPACTION IN AREAS WHERE POST-CONSTRUCTION INFILTRATION FACILITIES ARE TO BE INSTALLED. (SECTION 2.2.12)
25. USE BMPS TO PREVENT OR MINIMIZE STORMWATER EXPOSURE TO POLLUTANTS FROM SPILLS: VEHICLE AND EQUIPMENT FUELING, MAINTENANCE, AND STORAGE; OTHER CLEANING AND MAINTENANCE ACTIVITIES; AND WASTE HANDLING ACTIVITIES. THESE POLLUTANTS INCLUDE FUEL, HYDRAULIC FLUID, AND OTHER OILS FROM VEHICLES AND MACHINERY, AS WELL AS DEBRIS, FERTILIZER, PESTICIDES AND HERBICIDES, PAINTS, SOLVENTS, CURING COMPOUNDS AND ADHESIVES FROM CONSTRUCTION OPERATIONS. (SECTIONS 2.2.15 AND 2.3)
26. PROVIDE PLANS FOR SEDIMENTATION BASINS THAT HAVE BEEN DESIGNED PER SECTION 2.2.17 AND STAMPED BY AN OREGON PROFESSIONAL ENGINEER. (SEE SECTION 2.2.17.A)
27. IF ENGINEERED SOILS ARE USED ON SITE, A SEDIMENTATION BASIN/IMPOUNDMENT MUST BE INSTALLED. (SEE SECTIONS 2.2.17 AND 2.2.18)
28. PROVIDE A DEWATERING PLAN FOR ACCUMULATED WATER FROM PRECIPITATION AND UNCONTAMINATED GROUNDWATER SEEPAGE DUE TO SHALLOW EXCAVATION ACTIVITIES. (SEE SECTION 2.4)
29. IMPLEMENT THE FOLLOWING BMPS WHEN APPLICABLE: WRITTEN SPILL PREVENTION AND RESPONSE PROCEDURES, EMPLOYEE TRAINING TO PREVENT AND PROPER DISPOSAL PROCEDURES, SPILL KITS IN ALL VEHICLES, REGULAR MAINTENANCE SCHEDULE FOR VEHICLES AND MACHINERY, MATERIAL DELIVERY AND STORAGE CONTROLS, TRAINING AND SIGNAGE, AND COVERED STORAGE AREAS FOR WASTE AND SUPPLIES. (SECTION 2.3)
30. USE WATER, SOIL-BINDING AGENT OR OTHER DUST CONTROL TECHNIQUE AS NEEDED TO AVOID WIND-BLOWN SOIL. (SECTION 2.2.9)
31. THE APPLICATION RATE OF FERTILIZERS USED TO REESTABLISH VEGETATION MUST FOLLOW MANUFACTURER'S RECOMMENDATIONS TO MINIMIZE NUTRIENT RELEASES TO SURFACE WATERS. EXERCISE CAUTION WHEN USING TIME-RELEASE FERTILIZERS WITHIN ANY WATERWAY RIPARIAN ZONE. (SECTION 2.3.5)
32. IF AN ACTIVE TREATMENT SYSTEM (FOR EXAMPLE, ELECTRO-COAGULATION, FLOCCULATION, FILTRATION, ETC.) FOR SEDIMENT OR OTHER POLLUTANT REMOVAL IS EMPLOYED, SUBMIT AN OPERATION AND MAINTENANCE PLAN (INCLUDING SYSTEM SCHEMATIC, LOCATION OF SYSTEM, LOCATION OF INLET, LOCATION OF DISCHARGE, DISCHARGE DISPERSION DEVICE DESIGN, AND A SAMPLING PLAN AND FREQUENCY) BEFORE OPERATING THE TREATMENT SYSTEM. OBTAIN ENVIRONMENTAL MANAGEMENT PLAN APPROVAL FROM DEQ BEFORE OPERATING THE TREATMENT SYSTEM. OPERATE AND MAINTAIN THE TREATMENT SYSTEM ACCORDING TO MANUFACTURER'S SPECIFITATIONS. (SECTION 1.2.9)
33. TEMPORARILY STABILIZE SOILS AT THE END OF THE SHIFT BEFORE HOLIDAYS AND WEEKENDS, IF NEEDED. THE REGISTRANT IS RESPONSIBLE FOR ENSURING THAT SOILS ARE STABLE DURING RAIN EVENTS AT ALL TIMES OF THE YEAR. (SECTION 2.2)
34. AS NEEDED BASED ON WEATHER CONDITIONS, AT THE END OF EACH WORKDAY SOIL STOCKPILES MUST BE STABILIZED OR COVERED, OR OTHER BMPS MUST BE IMPLEMENTED TO PREVENT DISCHARGES TO SURFACE WATERS OR CONVEYANCE SYSTEMS LEADING TO SURFACE WATERS. (SECTION 2.2.8)
35. SEDIMENT FENCE: REMOVE TRAPPED SEDIMENT BEFORE IT REACHES ONE THIRD OF THE ABOVE GROUND FENCE HEIGHT AND BEFORE FENCE REMOVAL. (SECTION 2.1.5.B)
36. OTHER SEDIMENT BARRIERS (SUCH AS BIOBAGS): REMOVE SEDIMENT BEFORE IT REACHES TWO INCHES DEPTH ABOVE GROUND HEIGHT AND BEFORE BMP REMOVAL. (SECTION 2.1.5.C)
37. CATCH BASINS: CLEAN BEFORE RETENTION CAPACITY HAS BEEN REDUCED BY FIFTY PERCENT. SEDIMENT BASINS AND SEDIMENT TRAPS: REMOVE TRAPPED SEDIMENTS BEFORE DESIGN CAPACITY HAS BEEN REDUCED BY FIFTY PERCENT AND AT COMPLETION OF PROJECT. (SECTION 2.1.5.D)
38. WITHIN 24 HOURS, SIGNIFICANT SEDIMENT THAT HAS LEFT THE CONSTRUCTION SITE, MUST BE REMEDIATED. INVESTIGATE THE CAUSE OF THE SEDIMENT RELEASE AND IMPLEMENT STEPS TO PREVENT A RECURRENCE OF THE DISCHARGE WITHIN THE SAME 24 HOURS. ANY IN-STREAM CLEAN-UP OF SEDIMENT SHALL BE PERFORMED ACCORDING TO THE OREGON DEPARTMENT OF STATE LANDS REQUIRED TIMEFRAME. (SECTION 2.2.19.A)
39. THE INTENTIONAL WASHING OF SEDIMENT INTO STORM SEWERS OR DRAINAGE WAYS MUST NOT OCCUR. VACUUMING OR DRY SWEEPING AND MATERIAL PICKUP MUST BE USED TO CLEANUP RELEASED SEDIMENTS. (SECTION 2.2.19)
40. DOCUMENT ANY PORTION(S) OF THE SITE WHERE LAND DISTURBING ACTIVITIES HAVE PERMANENTLY CEASED OR WILL BE TEMPORARILY INACTIVE FOR 14 OR MORE CALENDAR DAYS. (SECTION 6.5.F.)
41. PROVIDE TEMPORARY STABILIZATION FOR THAT PORTION OF THE SITE WHERE CONSTRUCTION ACTIVITIES CEASE FOR 14 DAYS OR MORE WITH A COVERING OF BLOWN STRAW AND A TACKIFIER, LOOSE STRAW, OR AN ADEQUATE COVERING OF COMPOST MULCH UNTIL WORK RESUMES ON THAT PORTION OF THE SITE. (SECTION 2.2.20)
42. DO NOT REMOVE TEMPORARY SEDIMENT CONTROL PRACTICES UNTIL PERMANENT VEGETATION OR OTHER COVER OF EXPOSED AREAS IS ESTABLISHED. ONCE CONSTRUCTION IS COMPLETE AND THE SITE IS STABILIZED, ALL TEMPORARY EROSION CONTROLS AND RETAINED SOILS MUST BE REMOVED AND DISPOSED OF PROPERLY, UNLESS NEEDED FOR LONG TERM USE FOLLOWING TERMINATION OF PERMIT COVERAGE. (SECTION 2.2.21)

BMP MATRIX FOR CONSTRUCTION PHASES

REFER TO DEQ GUIDANCE MANUAL FOR A COMPREHENSIVE LIST OF AVAILABLE BMP'S.

	DEMOLTION	CLEARING	MASS GRADING	UTILITY INSTALLATION	STREET CONSTRUCTION	FINAL STABILIZATION	WET WEATHER (OCT. 1 - MAY 31ST)
EROSION PREVENTION							
PRESERVE NATURAL VEGETATION	**X	X					
GROUND COVER						X	X
HYDRAULIC APPLICATIONS							
PLASTIC SHEETING			X	X	X		X
STRAW MULCH COVER	X						X
ROCK COVER							
DUST CONTROL	X	X	X	X	X		
TEMPORARY/PERMANENT SEEDING	X		X	X	X	X	X
BUFFER ZONE	**X	X	X	X	X	X	X
OTHER:							
SEDIMENT CONTROL							
SEDIMENT FENCE (INTERIOR)	**X	**X	X	X	X	X	X
STRAW WATTLES	**X	**X	X	X	X	X	X
FILTER BERM							
INLET PROTECTION	**X	**X	X	X	X	X	X
DEWATERING				X			
SEDIMENT TRAP							
NATURAL BUFFER ENCROACHMENT	X	X	X	X	X	X	X
OTHER:							
RUNOFF CONTROL							
CONSTRUCTION ENTRANCE	**X	**X	X	X			X
PIPE SLOPE DRAIN				X			
OUTLET PROTECTION				X			
SURFACE ROUGHENING			X	X			X
CHECK DAMS		X		X			X
OTHER:							
POLLUTION PREVENTION							
PROPER SIGNAGE	X	X	X	X	X	X	X
HAZ WASTE MGMT	X	X	X	X	X	X	X
SPILL KIT ON-SITE	X	X	X	X	X	X	X
CONCRETE WASHOUT AREA	X	X	X	X	X	X	X
OTHER:							

* SIGNIFIES ADDITIONAL BMP'S REQUIRED FOR WORK WITHIN 50' OF WATER OF THE STATE.
** SIGNIFIES BMP THAT WILL BE INSTALLED PRIOR TO ANY GROUND DISTURBING ACTIVITY.

INSPECTION FREQUENCY TABLE

SITE CONDITION	MINIMUM FREQUENCY
1. ACTIVE PERIOD	ON INITIAL DATE THAT LAND DISTURBANCE ACTIVITIES COMMENCE. WITHIN 24 HOURS OF ANY STORM EVENT, INCLUDING RUNOFF FROM SNOWMELT, IS OCCURRING AND RESULTS IN DISCHARGE FROM THE SITE. AT LEAST ONCE EVERY FOURTEEN (14) DAYS, REGARDLESS OF WHETHER STORMWATER RUNOFF IS OCCURRING.
2. PRIOR TO THE SITE BECOMING INACTIVE OR IN ANTICIPATION OF SITE INACCESSIBILITY.	ONCE TO ENSURE THAT EROSION AND SEDIMENT CONTROL MEASURES ARE IN WORKING ORDER. ANY NECESSARY MAINTENANCE AND REPAIR MUST BE MADE PRIOR TO LEAVING THE SITE.
3. INACTIVE PERIODS GREATER THAN FOURTEEN (14) CONSECUTIVE CALENDAR DAYS.	THE INSPECTOR MAY REDUCE THE FREQUENCY OF INSPECTIONS IN ANY AREA OF THE SITE WHERE THE STABILIZATION STEPS IN SECTION 2.2.20 HAVE BEEN COMPLETED TO TWICE PER MONTH FOR THE FIRST MONTH, NO LESS THAN 14 CALENDAR DAYS APART, THEN ONCE PER MONTH.
4. PERIODS DURING WHICH THE SITE IS INACCESSIBLE DUE TO INCLEMENT WEATHER.	IF SAFE, ACCESSIBLE, AND PRACTICAL, INSPECTIONS MUST OCCUR DAILY AT A RELEVANT AND ACCESSIBLE DISCHARGE POINT OR DOWNSTREAM LOCATION OF THE RECEIVING WATERBODY.
5. PERIODS DURING WHICH CONSTRUCTION ACTIVITIES ARE SUSPENDED AND RUNOFF IS UNLIKELY DUE TO FROZEN CONDITIONS.	VISUAL MONITORING INSPECTIONS MAY BE TEMPORARILY SUSPENDED. IMMEDIATELY RESUME MONITORING UPON THAWING, OR WHEN WEATHER CONDITIONS MAKE DISCHARGES LIKELY.
5. PERIODS DURING WHICH CONSTRUCTION ACTIVITIES ARE CONDUCTED AND RUNOFF IS UNLIKELY DURING FROZEN CONDITIONS.	MONTHLY. RESUME MONITORING IMMEDIATELY UPON MELT, OR WHEN WEATHER CONDITIONS MAKE DISCHARGES LIKELY.

- HOLD A PRE-CONSTRUCTION MEETING OF PROJECT PERSONNEL THAT INCLUDED THE INSPECTOR TO DISCUSSION EROSION AND SEDIMENT CONTROL MEASURES AND CONSTRUCTION LIMITS
- ALL INSPECTIONS MUST BE MADE IN ACCORDANCE WITH DEQ 1200-C PERMIT REQUIREMENTS
- INSPECTION LOGS MUST BE KEPT IN ACCORDANCE WITH DEQ'S 1200-C PERMIT REQUIREMENTS
  - ** RETAIN A COPY OF THE ESCP AND ALL REVISIONS ON SITE AND MAKE IT AVAILABLE ON REQUEST TO DEQ, AGENT, OR THE LOCAL MUNICIPALITY. DURING INACTIVE PERIODS OF GREATER THAN SEVEN (7) CONSECUTIVE CALENDAR DAYS, RETAIN THE ESCP AT THE CONSTRUCTION SITE OR AT ANOTHER LOCATION.

THE PERMITTEE IS REQUIRED TO MEET ALL THE CONDITIONS OF THE 1200-C PERMIT. THIS ESCP AND GENERAL CONDITIONS HAVE BEEN DEVELOPED TO FACILITATE COMPLIANCE WITH THE 1200-C PERMIT REQUIREMENTS. IN CASES OF DISCREPANCIES OR OMISSIONS, THE 1200-C PERMIT REQUIREMENTS SUPERCEDE REQUIREMENTS OF THIS PLAN.

LOCAL AGENCY-SPECIFIC EROSION CONTROL NOTES:

1. IF VEGETATIVE SEED MIXES ARE SPECIFIED, SEEDING MUST TAKE PLACE NO LATER THAT SEPTEMBER 1; THE TYPE AND PERCENTAGES OF SEED IN THE MIX MUST BE IDENTIFIED ON THE PLANS.
2. ALL PUMPING OF SEDIMENT LADEN WATER SHALL BE DISCHARGED OVER AN UNDISTURBED, PREFERABLY VEGETATED AREA, AND THROUGH A SEDIMENT CONTROL BMP I.E. (FILTER BAG).
3. ALL EXPOSED SOILS MUST BE COVERED DURING THE WET WEATHER PERIOD, OCTOBER 01 - MAY 31.

EROSION AND SEDIMENT CONTROL PLANS SHEET INDEX

C4.00 EROSION AND SEDIMENT CONTROL COVER SHEET
C4.10 DEMOLITION ESC PLAN
C4.20 CLEARING ESC PLAN
C4.30 MASS GRADING AND STABILIZATION CONSTRUCTION ESC PLAN
C4.40 MASS GRADING AND STABILIZATION RUNOFF CONTROL PLAN
C4.50 UTILITY CONSTRUCTION ESC PLAN
C4.60 FOUNDATION ESC PLAN
C4.70 EROSION AND SEDIMENT CONTROL PLAN DETAILS

GENERAL PERMIT
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
STORMWATER DISCHARGE PERMIT

DATE: 09/15/2020
FILE NO. 127017
EPA NO. ORR10G282

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REVISION SCHEDULE

Delta	Issued As	Issue Date

SHEET TITLE:
EROSION AND SEDIMENT CONTROL COVER SHEET

DRAWN BY: AOC

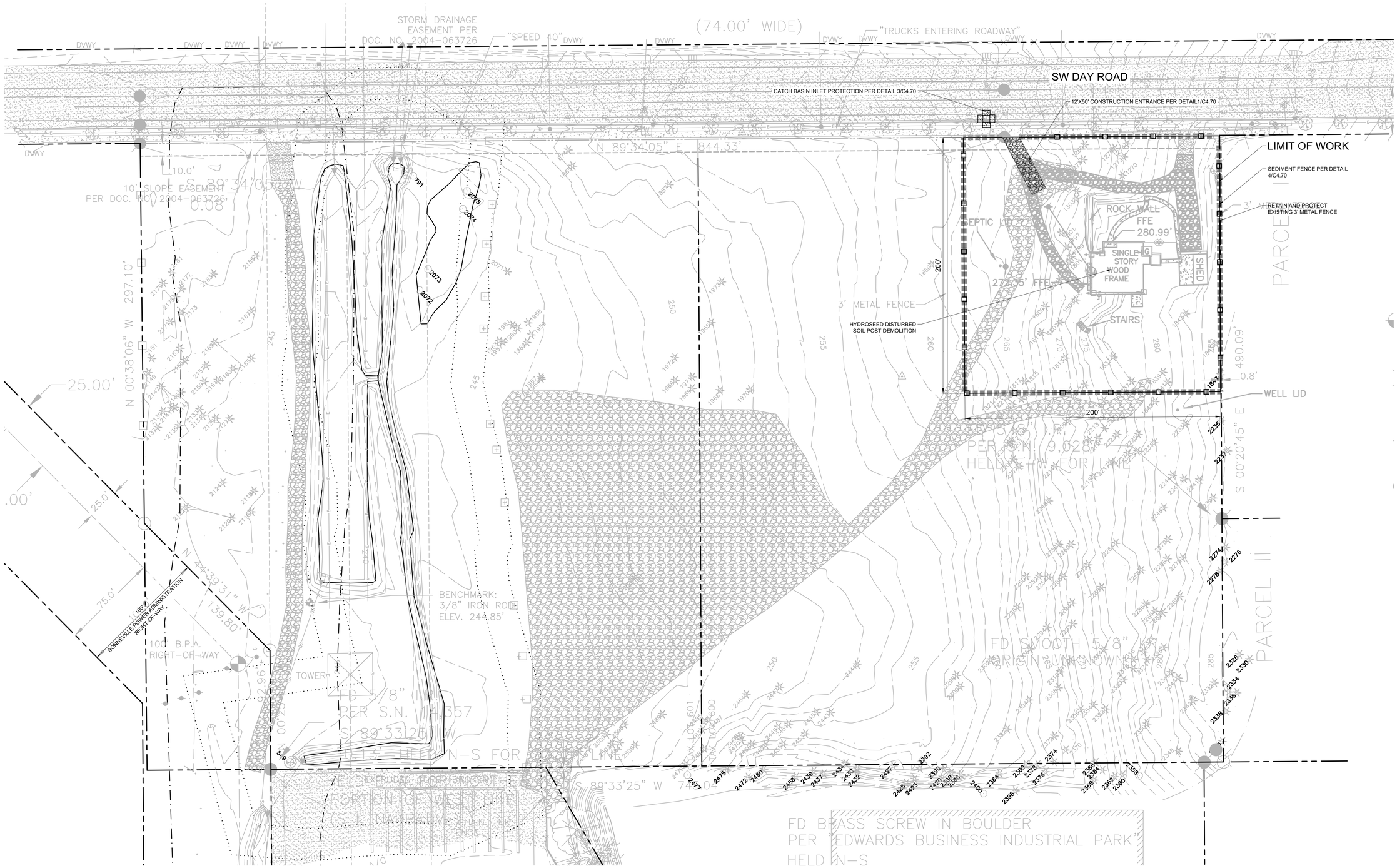
CHECKED BY: BMR

SHEET
C4.00

JOB NO. **2200502.04**

1144

DESIGN REVIEW SET 07/29/2022



1 C4.10 ESC DEMOLITION PLAN

SCALE: 1"=30'

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

PRE-CONSTRUCTION, CLEARING, AND DEMOLITION NOTES:

1. ALL BASE ESC MEASURES (INLET PROTECTION, PERIMETER SEDIMENT CONTROL, GRAVEL CONSTRUCTION ENTRANCES, ETC) MUST BE IN PLACE, FUNCTIONAL, AND APPROVED IN AN INITIAL INSPECTION, PRIOR TO COMMENCEMENT OF CONSTRUCTION ACTIVITIES.
2. SEDIMENT BARRIERS APPROVED FOR USE INCLUDE SEDIMENT FENCE, BERMS, CONSTRUCTED OUT OF MULCH, CHIPPINGS OR OTHER SUITABLE MATERIAL, STRAW WATTLES, OR OTHER APPROVED MATERIALS.
3. SENSITIVE RESOURCES INCLUDING, BUT NOT LIMITED TO, TREES, WETLANDS, AND RIPARIAN PROTECTION AREAS SHALL BE CLEARLY DELINEATED WITH ORANGE CONSTRUCTION FENCING OR CHAIN LINK FENCING IN A MANNER THAT IS CLEARLY VISIBLE TO ANYONE IN THE AREA. NO ACTIVITIES ARE PERMITTED TO OCCUR BEYOND THE CONSTRUCTION BARRIER.
4. CONSTRUCTION ENTRANCES SHALL BE INSTALLED AT THE BEGINNING OF CONSTRUCTION AND MAINTAINED FOR THE DURATION OF THE PROJECT. ADDITIONAL MEASURES INCLUDING, BUT NOT LIMITED TO, STREET SWEEPING, AND VACUUMING, MAY BE REQUIRED TO ENSURE THAT ALL PAVED AREAS ARE KEPT CLEAN FOR THE DURATION OF THE PROJECT.
5. RUN-ON AND RUN-OFF CONTROLS SHALL BE IN PLACE AND FUNCTIONING PRIOR TO BEGINNING SUBSTANTIAL CONSTRUCTION ACTIVITIES. RUN-ON AND RUN-OFF CONTROL MEASURES INCLUDE: SLOPE DRAINS (WITH OUTLET PROTECTION), CHECK DAMS, SURFACE ROUGHENING, AND BANK STABILIZATION.
6. ADDITIONAL EROSION CONTROL MEASURES AND DETAILS CAN BE FOUND IN THE CLEAN WATER SERVICES'S CONSTRUCTION AND DESIGN STANDARDS, 2017.

THE SURVEY INFORMATION SHOWN AS A BACKGROUND SCREEN ON THIS SHEET IS SHOWN FOR REFERENCE ONLY AND IS BASED ON A SURVEY BY: WEDSLE SURVEYING, INC. DATE: 12/06/21

Item 2.

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REVISION SCHEDULE

Delta	Issued As	Issue Date

SHEET TITLE:
DEMOLITION ESC PLAN

DRAWN BY: AOC, BMR

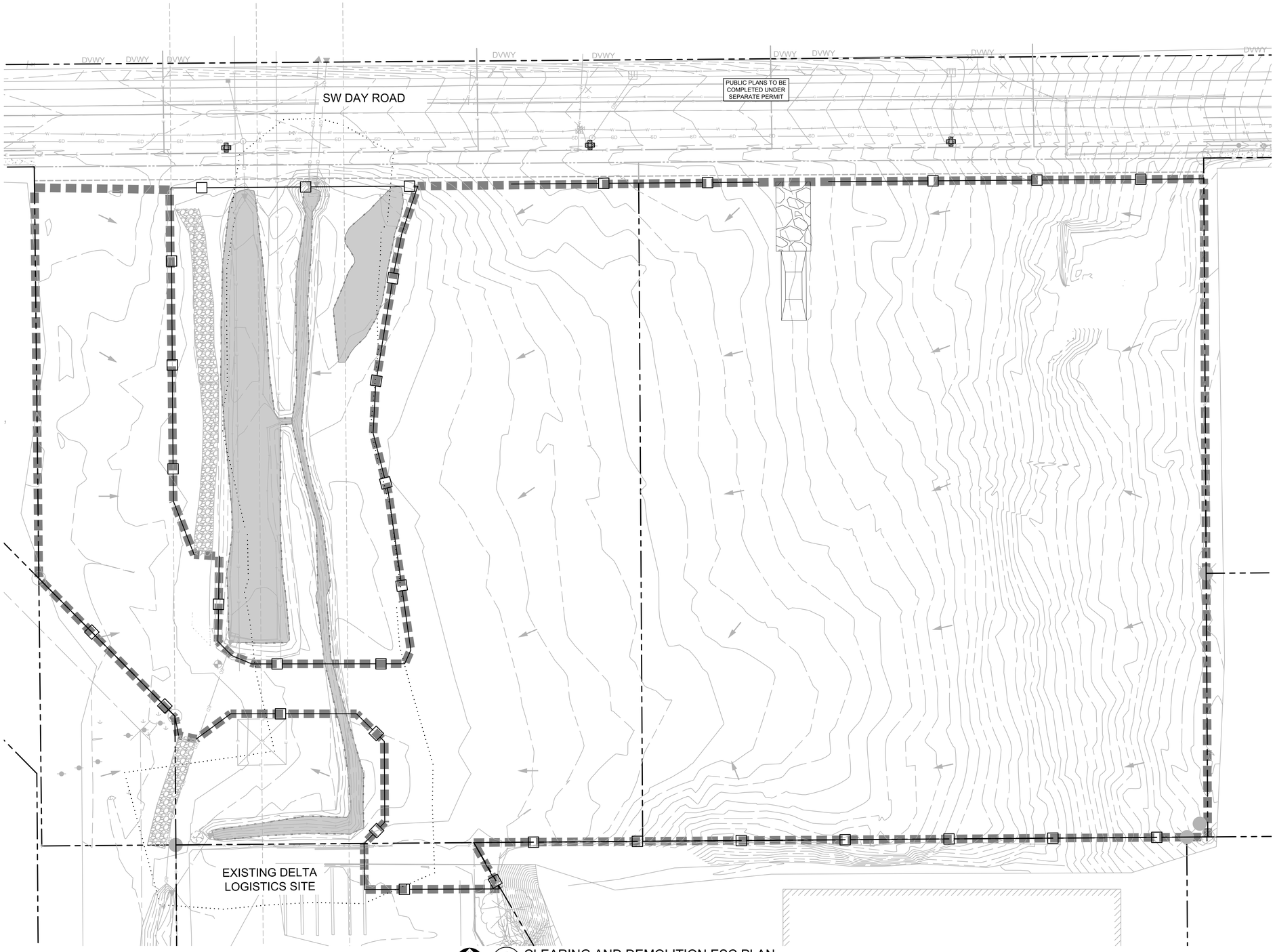
CHECKED BY: BMR

SHEET
C4.10

JOB NO. **2200502.04**

DESIGN REVIEW SET 07/29/2022

1145



1 C4.20 CLEARING AND DEMOLITION ESC PLAN 1"=30'

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

PRE-CONSTRUCTION, CLEARING, AND DEMOLITION NOTES:

1. ALL BASE ESC MEASURES (INLET PROTECTION, PERIMETER SEDIMENT CONTROL, GRAVEL CONSTRUCTION ENTRANCES, ETC) MUST BE IN PLACE, FUNCTIONAL, AND APPROVED IN AN INITIAL INSPECTION, PRIOR TO COMMENCEMENT OF CONSTRUCTION ACTIVITIES.
2. SEDIMENT BARRIERS APPROVED FOR USE INCLUDE SEDIMENT FENCE, BERMS, CONSTRUCTED OUT OF MULCH, CHIPPINGS OR OTHER SUITABLE MATERIAL, STRAW WATTLES, OR OTHER APPROVED MATERIALS.
3. SENSITIVE RESOURCES INCLUDING, BUT NOT LIMITED TO, TREES, WETLANDS, AND RIPARIAN PROTECTION AREAS SHALL BE CLEARLY DELINEATED WITH ORANGE CONSTRUCTION FENCING OR CHAIN LINK FENCING IN A MANNER THAT IS CLEARLY VISIBLE TO ANYONE IN THE AREA. NO ACTIVITIES ARE PERMITTED TO OCCUR BEYOND THE CONSTRUCTION BARRIER.
4. CONSTRUCTION ENTRANCES SHALL BE INSTALLED AT THE BEGINNING OF CONSTRUCTION AND MAINTAINED FOR THE DURATION OF THE PROJECT. ADDITIONAL MEASURES INCLUDING, BUT NOT LIMITED TO, STREET SWEEPING, AND VACUUMING, MAY BE REQUIRED TO ENSURE THAT ALL PAVED AREAS ARE KEPT CLEAN FOR THE DURATION OF THE PROJECT.
5. RUN-ON AND RUN-OFF CONTROLS SHALL BE IN PLACE AND FUNCTIONING PRIOR TO BEGINNING SUBSTANTIAL CONSTRUCTION ACTIVITIES. RUN-ON AND RUN-OFF CONTROL MEASURES INCLUDE: SLOPE DRAINS (WITH OUTLET PROTECTION), CHECK DAMS, SURFACE ROUGHENING, AND BANK STABILIZATION.
6. ADDITIONAL EROSION CONTROL MEASURES AND DETAILS CAN BE FOUND IN THE CLEAN WATER SERVICES'S CONSTRUCTION AND DESIGN STANDARDS, 2017.

LEGEND

- EXISTING DRAINAGE FLOW DIRECTION
- SEDIMENT FENCE/STRAW WATTLE, PER DETAIL 4/C4.70
- LIMIT OF DISTURBANCE
- INLET PROTECTION, PER DETAIL 2/C4.70
- GRAVEL CONSTRUCTION ENTRANCE, PER DETAIL 3/C4.70
- WHEEL WASH, PER DETAIL 1/C4.70

STAGING AND STOCKPILE AREAS ARE TO BE DETERMINED BY THE CONTRACTOR AND ADJUSTED TO ACCOMMODATE THE PROGRESS OF CONSTRUCTION. THE OWNER'S EROSION CONTROL INSPECTOR SHALL BE MADE AWARE OF ALL CHANGES AND CONSULTED FOR BMP IMPLEMENTATIONS THAT MAY BE NECESSARY TO ACCOMMODATE THE SELECTED LOCATIONS.

THIS PLAN IS INTENDED TO BE ONLY A BASELINE APPROACH TO EROSION AND SEDIMENT CONTROL FOR THE PROJECT SITE. THE OWNER'S EROSION AND SEDIMENT CONTROL INSPECTOR SHALL BE RESPONSIBLE FOR INSTRUCTING THE CONTRACTOR TO ADJUST BMP'S AS NECESSARY TO PROPERLY MANAGE THE VARIOUS PHASES OF CONSTRUCTION AND ANY UNFORESEEN CONDITIONS REQUIRING DIFFERENT OR ADDITIONAL BMP'S TO MANAGE.

SEE SHEETS C4.70 FOR EROSION AND SEDIMENT CONTROL DETAILS

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Client

DELTA LOGISTICS
9835 SW COMMERCE CIRCLE
WILSONVILLE, OR
97070

Project

DELTA LOGISTICS SITE EXPANSION
9710 SW DAY RD.
CITY OF
WILSONVILLE, OR

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REVISION SCHEDULE

Delta	Issued As	Issue Date

SHEET TITLE:
CLEARING AND DEMOLITION ESC PLAN

DRAWN BY: AOC, BMR

CHECKED BY: BMR, BDN

SHEET
C4.20

JOB NO. **2200502.04**

DESIGN REVIEW SET 07/29/2022

MASS GRADING AND STABILIZATION CONSTRUCTION ESC PLAN

1 / C4.30 1"=30'

30 0 15 30 60 120

(IN FEET)
1 inch = **30** ft.

EROSION CONTROL GENERAL NOTES

1. SEED USED FOR TEMPORARY OR PERMANENT SEEDING SHALL BE COMPOSED OF ONE OF THE FOLLOWING MIXTURES. UNLESS OTHERWISE AUTHORIZED, A.VEGETATED CORRIDOR AREAS REQUIRE NATIVE SEED MIXES. SEE RESTORATION PLAN FOR APPROPRIATE SEED MIX.
   B.DWARF GRASS MIX (MIN. 100 LB./AC.)
   1. DWARF PERENNIAL RYEGRASS (80% BY WEIGHT)
   2. CREEPING RED FESCUE (20% BY WEIGHT)
   C.STANDARD HEIGHT GRASS MIX (MIN. 100LB./AC.)
   1. ANNUAL RYEGRASS (40% BY WEIGHT)
   2. TURF-TYPE FESCUE (60% BY WEIGHT)
2. SLOPE TO RECEIVE TEMPORARY OR PERMANENT SEEDING SHALL HAVE THE SURFACE ROUGHENED BY MEANS OF TRACK-WALKING OR THE USE OF OTHER APPROVED IMPLEMENTS. SURFACE ROUGHENING IMPROVES SEED BEDDING AND REDUCES RUN-OFF VELOCITY.
3. LONG TERM SLOPE STABILIZATION MEASURES SHALL INCLUDE THE ESTABLISHMENT OF PERMANENT VEGETATIVE COVER VIA SEEDING WITH APPROVED MIX AND APPLICATION RATE.
4. TEMPORARY SLOPE STABILIZATION MEASURES SHALL INCLUDE: COVERING EXPOSED SOIL WITH PLASTIC SHEETING, STRAW MULCHING, WOOD CHIPS, OR OTHER APPROVED MEASURES.
5. STOCKPILED SOIL OR STRIPPINGS SHALL BE PLACED IN A STABLE LOCATION AND CONFIGURATION. DURING "WET WEATHER" PERIODS, STOCKPILES SHALL BE COVERED WITH PLASTIC SHEETING OR STRAW MULCH. SEDIMENT FENCE IS REQUIRED AROUND THE PERIMETER OF THE STOCKPILE.
6. EXPOSED CUT OR FILL AREAS SHALL BE STABILIZED THROUGH THE USE OF TEMPORARY SEEDING AND MULCHING, EROSION CONTROL BLANKETS OR MATS MID-SLOPE SEDIMENT FENCES OR WATTLES, OR OTHER APPROPRIATE MEASURES. SLOPES EXCEEDING 25% MAY REQUIRE ADDITIONAL EROSION CONTROL MEASURES.
7. AREAS SUBJECT TO WIND EROSION SHALL USE APPROPRIATE DUST CONTROL MEASURES INCLUDING THE APPLICATION OF A FINE SPRAY OF WATER, PLASTIC SHEETING, STRAW MULCHING, OR OTHER APPROVED MEASURES.
8. CONSTRUCTION ENTRANCES SHALL BE INSTALLED AT THE BEGINNING OF CONSTRUCTION AND MAINTAINED FOR THE DURATION OF THE PROJECT. ADDITIONAL MEASURES INCLUDING, BUT NOT LIMITED TO, TIRE WASHES, STREET SWEEPING, AND VACUUMING MAY BE BE REQUIRED TO INSURE THAT ALL PAVED AREAS ARE KEPT CLEAN FOR THE DURATION OF THE PROJECT.
9. ACTIVE INLETS TO STORM WATER SYSTEMS SHALL BE PROTECTED THROUGH THE USE OF APPROVED INLET PROTECTION MEASURES. ALL INLET PROTECTION MEASURES ARE TO BE REGULARLY INSPECTED AND MAINTAINED AS NEEDED.
10. SATURATED MATERIALS THAT ARE HAULED OFF-SITE MUST BE TRANSPORTED IN WATER-TIGHT TRUCKS TO ELIMINATE SPILLAGE OF SEDIMENT AND SEDIMENT-LADEN WATER.
11. AN AREA SHALL BE PROVIDED FOR THE WASHING OUT OF CONCRETE TRUCKS IN A LOCATION THAT DOES NOT PROVIDE RUN-OFF THAT CAN ENTER THE STORM WATER SYSTEM. IF THE CONCRETE WASH-OUT AREA CAN NOT BE CONSTRUCTED GREATER THAN 50' FROM ANY DISCHARGE POINT, SECONDARY MEASURES SUCH AS BERMS OR TEMPORARY SETTLING PITS MAY BE REQUIRED. THE WASH-OUT SHALL BE LOCATED WITHIN SIX FEET OF TRUCK ACCESS AND BE CLEANED WHEN IT REACHES 50% OF THE CAPACITY.
12. SWEEPINGS FROM EXPOSED AGGREGATE CONCRETE SHALL NOT BE TRANSFERRED TO THE STORM WATER SYSTEM. SWEEPINGS SHALL BE PICKED UP AND DISPOSED IN THE TRASH.
13. AVOID PAVING IN WET WEATHER WHEN PAVING CHEMICALS CAN RUN-OFF INTO THE STORM WATER SYSTEM.
14. USE BMPs SUCH AS CHECK-DAMS, BERMS, AND INLET PROTECTION TO PREVENT RUN-OFF FROM REACHING DISCHARGE POINTS.
15. COVER CATCH BASINS, MANHOLES, AND OTHER DISCHARGE POINTS WHEN APPLYING SEAL COAT, TACK COAT, ETC. TO PREVENT INTRODUCING THESE MATERIALS TO THE STORM WATER SYSTEM.

EROSION AND SEDIMENT CONTROL BMP IMPLEMENTATION

1. ALL BASE ESC MEASURES (INLET PROTECTION, PERIMETER SEDIMENT CONTROL, GRAVEL CONSTRUCTION ENTRANCES, ETC.) MUST BE IN PLACE, FUNCTIONAL, AND APPROVED IN AN INITIAL INSPECTION, PRIOR TO COMMENCEMENT OF CONSTRUCTION ACTIVITIES.
2. ALL "SEDIMENT BARRIERS (TO BE INSTALLED AFTER GRADING)" SHALL BE INSTALLED IMMEDIATELY FOLLOWING ESTABLISHMENT OF FINISHED GRADE AS SHOWN ON THESE PLANS.
3. LONG TERM SLOPE STABILIZATION MEASURES "INCLUDING MATTING" SHALL BE IN PLACE OVER ALL EXPOSED SOILS BY OCTOBER 1.
4. THE STORM WATER FACILITY SHALL BE CONSTRUCTED PRIOR TO THE STORM WATER SYSTEM FUNCTIONING AND SITE PAVING.
5. INLET PROTECTION SHALL BE IN-PLACE IMMEDIATELY FOLLOWING PAVING ACTIVITIES.

DEWATERING NOTE

1. CONTRACTOR SHALL MONITOR DEWATERING OPERATIONS WITH DAILY INSPECTIONS DURING DEWATERING OPERATIONS.
2. DEWATERING TECHNIQUES SHALL INCLUDE A PUMP AND HOSE TO CONVEY THE DEWATERING FLOW TO APPROVED LOCATIONS. THE APPROVED LOCATIONS IS THE STORM FILTRATION BASIN.
3. DEWATERING INTO THE STORM DETENTION WATER QUALITY BASIN MAY ONLY PROCEED ONCE THE DETENTION SYSTEM INLET RIP-RAP AND OUTLET APPURTENANCES AND RIP-RAP OUTFALL ARE INSTALLED AND PERMANENT SOIL STABILIZATION IS IN PLACE
4. TRENCH AND FOUNDATION EXCAVATIONS SHALL BE PROTECTED DURING WET WEATHER FROM OVER SATURATION.
5. DEWATERING OPERATIONS LEFT OVERNIGHT SHALL BE INSPECTED IMMEDIATELY IN THE MORNING. IF DEWATERING OPERATIONS ARE LEFT IN OPERATION OVER WEEKENDS, HOLIDAYS OR MORE THAN 24 HOURS, THE CONTRACTOR SHALL PROVIDE FOR DAILY INSPECTIONS AND PROVIDE FOR INSPECTION WITHIN 2 HOURS AFTER RAIN EVENTS PRODUCING MORE THAN 0.5-INCHES IN A 24-HOUR PERIOD.

LEGEND

- EXISTING DRAINAGE FLOW DIRECTION
- PROPOSED DRAINAGE FLOW DIRECTION
- SEDIMENT FENCE/STRAW WATTLE, PER DETAIL 4/C4.70
- LIMIT OF DISTURBANCE
- INLET PROTECTION, PER DETAIL 2/C4.70
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SPILL KIT AND SPILL RESPONSE PROCEDURES SHALL BE KEPT IN/ON THE JOBSITE TRAILER AT ALL TIMES AND ALL FIELD PERSONNEL SHALL BE MADE AWARE

STAGING AND STOCKPILE AREAS ARE TO BE DETERMINED BY THE CONTRACTOR AND ADJUSTED TO ACCOMMODATE THE PROGRESS OF CONSTRUCTION. THE OWNER'S EROSION CONTROL INSPECTOR SHALL BE MADE AWARE OF ALL CHANGES AND CONSULTED FOR BMP IMPLEMENTATIONS THAT MAY BE NECESSARY TO ACCOMMODATE THE SELECTED LOCATIONS.

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SEE SHEETS C4.70 FOR EROSION AND SEDIMENT CONTROL DETAILS

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MASS GRADING AND STABILIZATION CONSTRUCTION ESC PLAN

DRAWN BY: AOC

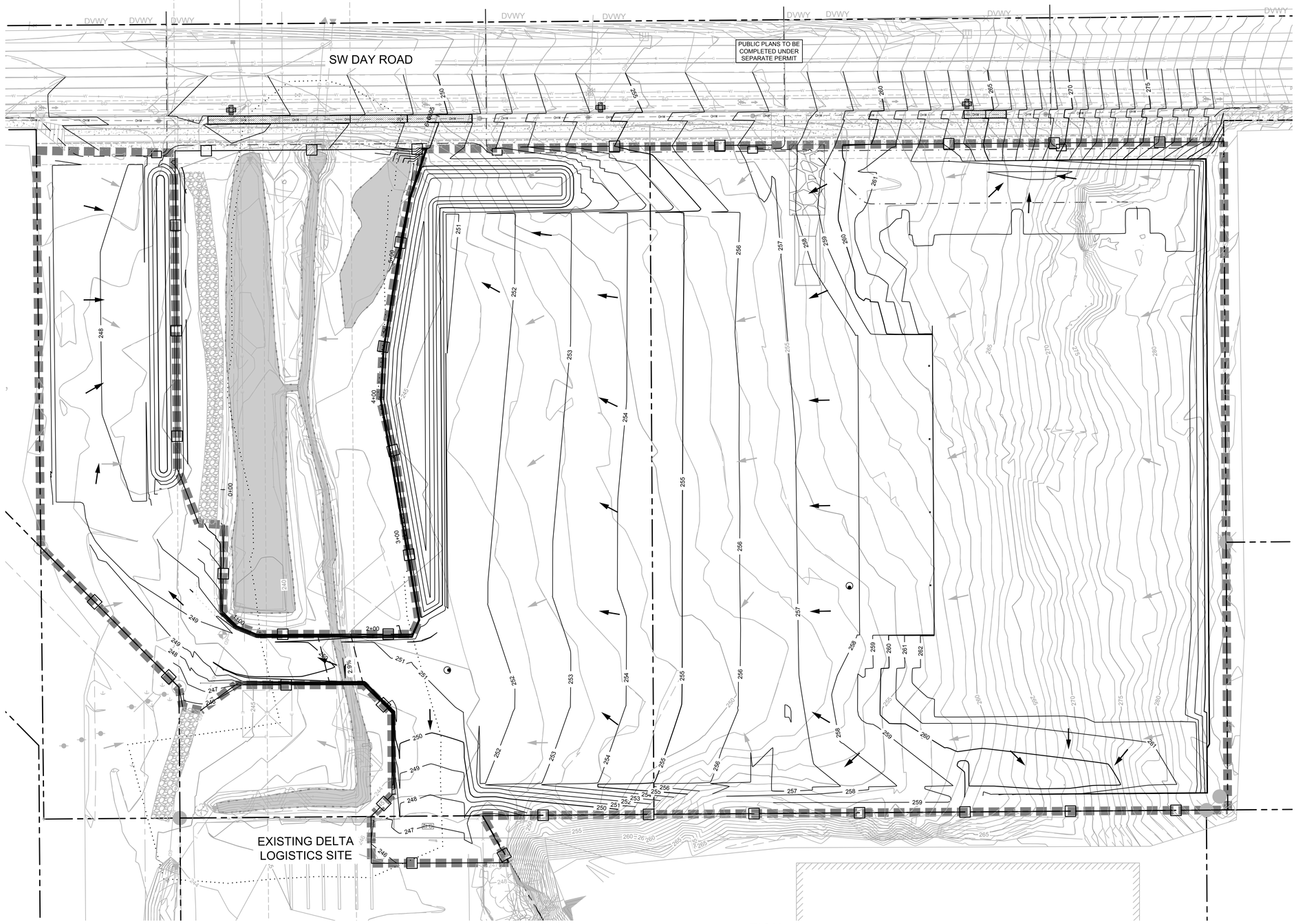
CHECKED BY: BMR

SHEET
C4.30

JOB NO. **2200502.04**

1147

DESIGN REVIEW SET 07/29/2022



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MASS GRADING AND STABILIZATION RUNOFF CONTROL PLAN

1 / C4.40 — 1"=30'

30 0 15 30 60 120

(IN FEET)
1 inch = **30** ft.

EROSION AND SEDIMENT CONTROL BMP IMPLEMENTATION

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LEGEND

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- PROPOSED DRAINAGE FLOW DIRECTION
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SEE SHEETS C4.70 FOR EROSION AND SEDIMENT CONTROL DETAILS

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MASS GRADING AND STABILIZATION RUNOFF CONTROL PLAN

DRAWN BY: AOC

CHECKED BY: BMR

SHEET
C4.40

JOB NO. **2200502.04**

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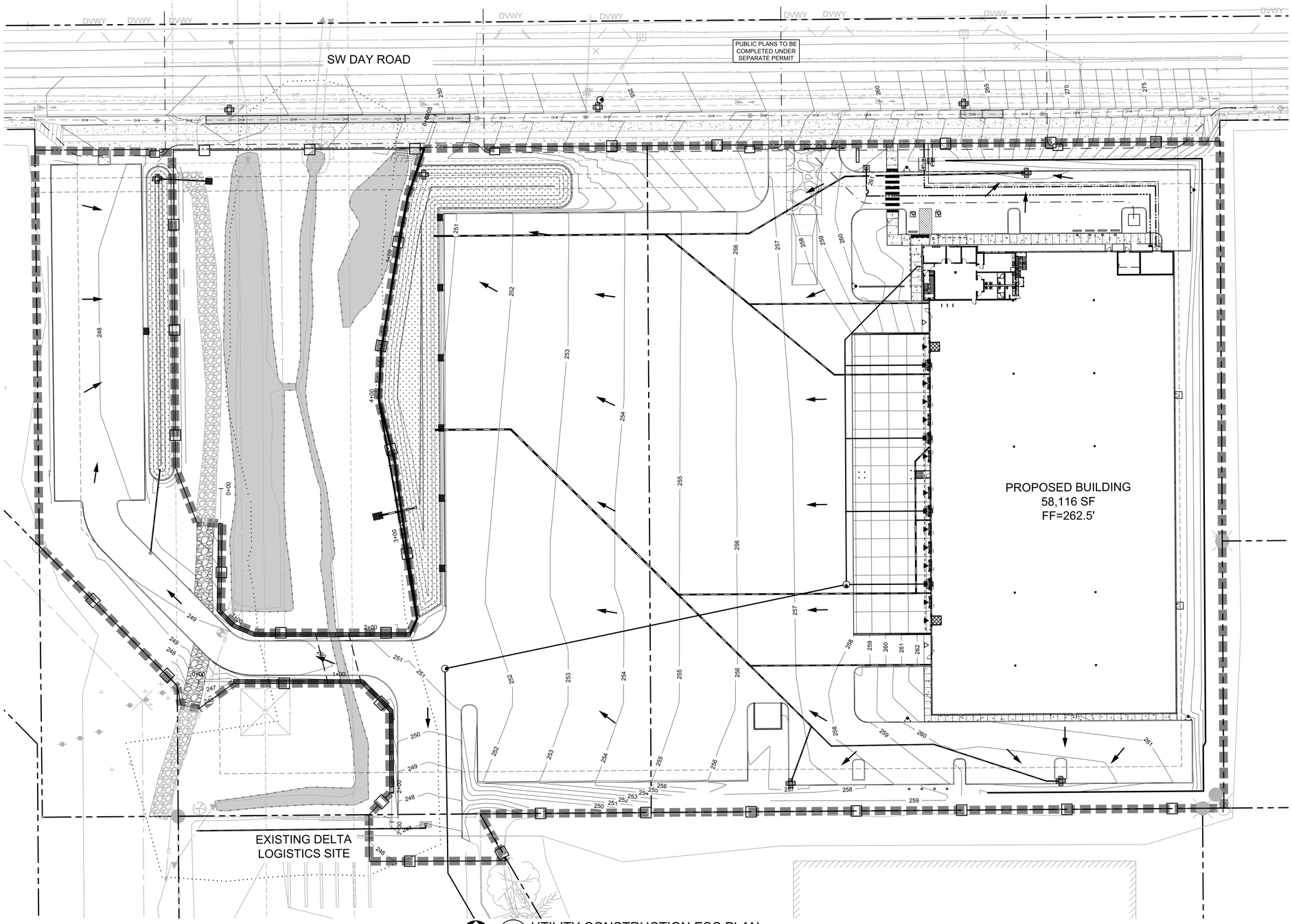

1 C4.50 UTILITY CONSTRUCTION ESC PLAN
1"=30'

30 0 15 30 60 120
(IN FEET)
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Client

DELTA LOGISTICS
9835 SW COMMERCE CIRCLE
WILSONVILLE, OR
97070

Project

DELTA LOGISTICS SITE EXPANSION
9710 SW DAY RD.
CITY OF
WILSONVILLE, OR

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REVISION SCHEDULE

Delta	Issued As	Issue Date

SHEET TITLE:
UTILITY CONSTRUCTION ESC PLAN

DRAWN BY: AOC

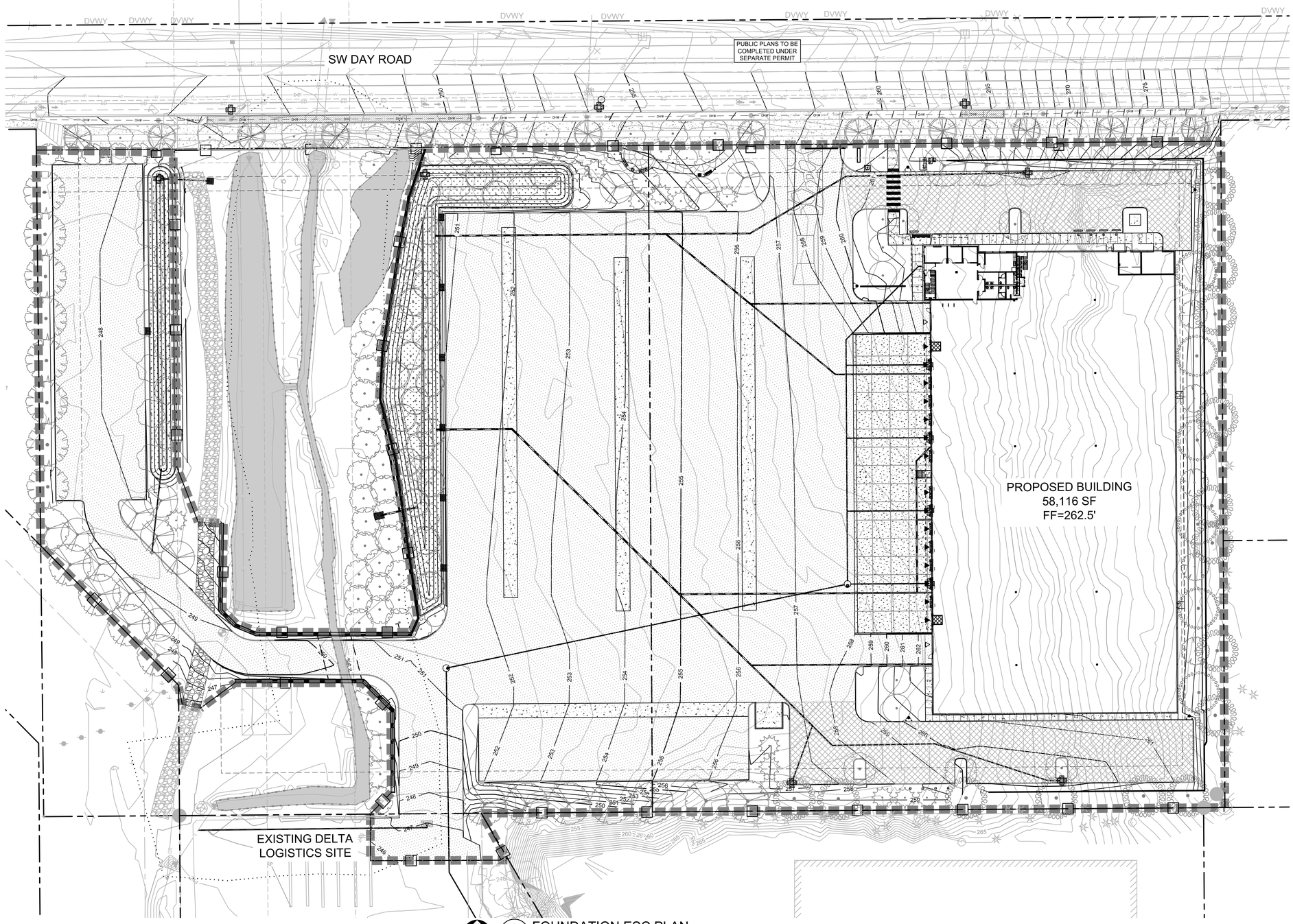
CHECKED BY: BMR

SHEET
C4.50

JOB NO. **2200502.04**

1149

DESIGN REVIEW SET 07/29/2022



1 C4.60 FOUNDATION ESC PLAN

1"=30'

30 0 15 30 60 120

(IN FEET)

1 inch = **30** ft.

EROSION CONTROL GENERAL NOTES

1. SEED USED FOR TEMPORARY OR PERMANENT SEEDING SHALL BE COMPOSED OF ONE OF THE FOLLOWING MIXTURES. UNLESS OTHERWISE AUTHORIZED, A VEGETATED CORRIDOR AREAS REQUIRE NATIVE SEED MIXES. SEE RESTORATION PLAN FOR APPROPRIATE SEED MIX.
   B. DWARF GRASS MIX (MIN. 100 LB./AC.)
      1. DWARF PERENNIAL RYEGRASS (80% BY WEIGHT)
      2. CREEPING RED FESCUE (20% BY WEIGHT)
   C. STANDARD HEIGHT GRASS MIX (MIN. 100LB./AC.)
      1. ANNUAL RYEGRASS (40% BY WEIGHT)
      2. TURF-TYPE FESCUE (60% BY WEIGHT)
2. SLOPE TO RECEIVE TEMPORARY OR PERMANENT SEEDING SHALL HAVE THE SURFACE ROUGHENED BY MEANS OF TRACK-WALKING OR THE USE OF OTHER APPROVED IMPLEMENTS. SURFACE ROUGHENING IMPROVES SEED BEDDING AND REDUCES RUN-OFF VELOCITY.
3. LONG TERM SLOPE STABILIZATION MEASURES SHALL INCLUDE THE ESTABLISHMENT OF PERMANENT VEGETATIVE COVER VIA SEEDING WITH APPROVED MIX AND APPLICATION RATE.
4. TEMPORARY SLOPE STABILIZATION MEASURES SHALL INCLUDE: COVERING EXPOSED SOIL WITH PLASTIC SHEETING, STRAW MULCHING, WOOD CHIPS, OR OTHER APPROVED MEASURES.
5. STOCKPILED SOIL OR STRIPPINGS SHALL BE PLACED IN A STABLE LOCATION AND CONFIGURATION. DURING "WET WEATHER" PERIODS, STOCKPILES SHALL BE COVERED WITH PLASTIC SHEETING OR STRAW MULCH. SEDIMENT FENCE IS REQUIRED AROUND THE PERIMETER OF THE STOCKPILE.
6. EXPOSED CUT OR FILL AREAS SHALL BE STABILIZED THROUGH THE USE OF TEMPORARY SEEDING AND MULCHING, EROSION CONTROL BLANKETS OR MATS MID-SLOPE SEDIMENT FENCES OR WATTLES, OR OTHER APPROPRIATE MEASURES. SLOPES EXCEEDING 25% MAY REQUIRE ADDITIONAL EROSION CONTROL MEASURES.
7. AREAS SUBJECT TO WIND EROSION SHALL USE APPROPRIATE DUST CONTROL MEASURES INCLUDING THE APPLICATION OF A FINE SPRAY OF WATER, PLASTIC SHEETING, STRAW MULCHING, OR OTHER APPROVED MEASURES.
8. CONSTRUCTION ENTRANCES SHALL BE INSTALLED AT THE BEGINNING OF CONSTRUCTION AND MAINTAINED FOR THE DURATION OF THE PROJECT. ADDITIONAL MEASURES INCLUDING, BUT NOT LIMITED TO, TIRE WASHES, STREET SWEEPING, AND VACUUMING MAY BE BE REQUIRED TO INSURE THAT ALL PAVED AREAS ARE KEPT CLEAN FOR THE DURATION OF THE PROJECT.
9. ACTIVE INLETS TO STORM WATER SYSTEMS SHALL BE PROTECTED THROUGH THE USE OF APPROVED INLET PROTECTION MEASURES. ALL INLET PROTECTION MEASURES ARE TO BE REGULARLY INSPECTED AND MAINTAINED AS NEEDED.
10. SATURATED MATERIALS THAT ARE HAULED OFF-SITE MUST BE TRANSPORTED IN WATER-TIGHT TRUCKS TO ELIMINATE SPILLAGE OF SEDIMENT AND SEDIMENT-LADEN WATER.
11. AN AREA SHALL BE PROVIDED FOR THE WASHING OUT OF CONCRETE TRUCKS IN A LOCATION THAT DOES NOT PROVIDE RUN-OFF THAT CAN ENTER THE STORM WATER SYSTEM. IF THE CONCRETE WASH-OUT AREA CAN NOT BE CONSTRUCTED GREATER THAN 50' FROM ANY DISCHARGE POINT, SECONDARY MEASURES SUCH AS BERMS OR TEMPORARY SETTLING PITS MAY BE REQUIRED. THE WASH-OUT SHALL BE LOCATED WITHIN SIX FEET OF TRUCK ACCESS AND BE CLEANED WHEN IT REACHES 50% OF THE CAPACITY.
12. SWEEPINGS FROM EXPOSED AGGREGATE CONCRETE SHALL NOT BE TRANSFERRED TO THE STORM WATER SYSTEM. SWEEPINGS SHALL BE PICKED UP AND DISPOSED IN THE TRASH.
13. AVOID PAVING IN WET WEATHER WHEN PAVING CHEMICALS CAN RUN-OFF INTO THE STORM WATER SYSTEM.
14. USE BMPs SUCH AS CHECK-DAMS, BERMS, AND INLET PROTECTION TO PREVENT RUN-OFF FROM REACHING DISCHARGE POINTS.
15. COVER CATCH BASINS, MANHOLES, AND OTHER DISCHARGE POINTS WHEN APPLYING SEAL COAT, TACK COAT, ETC. TO PREVENT INTRODUCING THESE MATERIALS TO THE STORM WATER SYSTEM.

EROSION AND SEDIMENT CONTROL BMP IMPLEMENTATION

1. ALL BASE ESC MEASURES (INLET PROTECTION, PERIMETER SEDIMENT CONTROL, GRAVEL CONSTRUCTION ENTRANCES, ETC.) MUST BE IN PLACE, FUNCTIONAL, AND APPROVED IN AN INITIAL INSPECTION, PRIOR TO COMMENCEMENT OF CONSTRUCTION ACTIVITIES.
2. ALL "SEDIMENT BARRIERS (TO BE INSTALLED AFTER GRADING)" SHALL BE INSTALLED IMMEDIATELY FOLLOWING ESTABLISHMENT OF FINISHED GRADE AS SHOWN ON THESE PLANS.
3. LONG TERM SLOPE STABILIZATION MEASURES "INCLUDING MATTING" SHALL BE IN PLACE OVER ALL EXPOSED SOILS BY OCTOBER 1.
4. THE STORM WATER FACILITY SHALL BE CONSTRUCTED PRIOR TO THE STORM WATER SYSTEM FUNCTIONING AND SITE PAVING.
5. INLET PROTECTION SHALL BE IN-PLACE IMMEDIATELY FOLLOWING PAVING ACTIVITIES.

DEWATERING NOTE

1. CONTRACTOR SHALL MONITOR DEWATERING OPERATIONS WITH DAILY INSPECTIONS DURING DEWATERING OPERATIONS.
2. DEWATERING TECHNIQUES SHALL INCLUDE A PUMP AND HOSE TO CONVEY THE DEWATERING FLOW TO APPROVED LOCATIONS. THE APPROVED LOCATIONS IS THE STORM FILTRATION BASIN.
3. DEWATERING INTO THE STORM DETENTION WATER QUALITY BASIN MAY ONLY PROCEED ONCE THE DETENTION SYSTEM INLET RIP-RAP AND OUTLET APPURTENANCES AND RIP-RAP OUTFALL ARE INSTALLED AND PERMANENT SOIL STABILIZATION IS IN PLACE
4. TRENCH AND FOUNDATION EXCAVATIONS SHALL BE PROTECTED DURING WET WEATHER FROM OVER SATURATION.
5. DEWATERING OPERATIONS LEFT OVERNIGHT SHALL BE INSPECTED IMMEDIATELY IN THE MORNING. IF DEWATERING OPERATIONS ARE LEFT IN OPERATION OVER WEEKENDS, HOLIDAYS OR MORE THAN 24 HOURS, THE CONTRACTOR SHALL PROVIDE FOR DAILY INSPECTIONS AND PROVIDE FOR INSPECTION WITHIN 2 HOURS AFTER RAIN EVENTS PRODUCING MORE THAN 0.5-INCHES IN A 24-HOUR PERIOD.

LEGEND

- SEDIMENT FENCE/STRAW WATTLE, PER DETAIL 4/C4.70
- LIMIT OF DISTURBANCE
- INLET PROTECTION, PER DETAIL 2/C4.70
- GRAVEL CONSTRUCTION ENTRANCE, PER DETAIL 3/C4.70
- WHEEL WASH, PER DETAIL 1/C4.70

SPILL KIT AND SPILL RESPONSE PROCEDURES SHALL BE KEPT IN/ON THE JOBSITE TRAILER AT ALL TIMES AND ALL FIELD PERSONNEL SHALL BE MADE AWARE

STAGING AND STOCKPILE AREAS ARE TO BE DETERMINED BY THE CONTRACTOR AND ADJUSTED TO ACCOMMODATE THE PROGRESS OF CONSTRUCTION. THE OWNER'S EROSION CONTROL INSPECTOR SHALL BE MADE AWARE OF ALL CHANGES AND CONSULTED FOR BMP IMPLEMENTATIONS THAT MAY BE NECESSARY TO ACCOMMODATE THE SELECTED LOCATIONS.

THIS PLAN IS INTENDED TO BE ONLY A BASELINE APPROACH TO EROSION AND SEDIMENT CONTROL FOR THE PROJECT SITE. THE OWNER'S EROSION AND SEDIMENT CONTROL INSPECTOR SHALL BE RESPONSIBLE FOR INSTRUCTING THE CONTRACTOR TO ADJUST BMP'S AS NECESSARY TO PROPERLY MANAGE THE VARIOUS PHASES OF CONSTRUCTION AND ANY UNFORESEEN CONDITIONS REQUIRING DIFFERENT OR ADDITIONAL BMP'S TO MANAGE.

SEE SHEETS C4.70 FOR EROSION AND SEDIMENT CONTROL DETAILS

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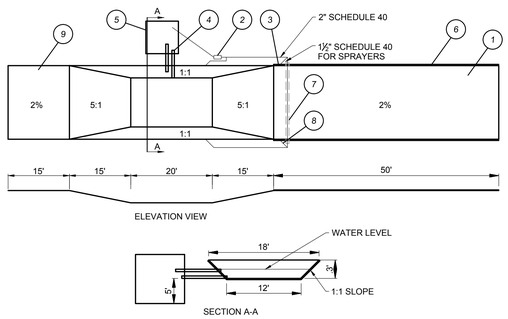
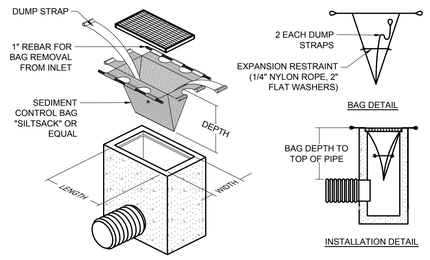


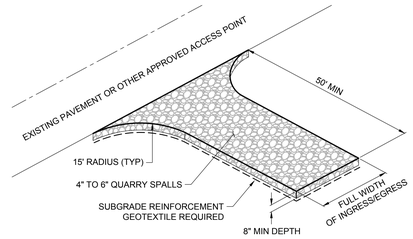
NOTES:

1. ASPHALT CONSTRUCTION ENTRANCE - 6" ASPHALT TREATED BASE(ATB).
2. 3-INCH TRASH PUMP WITH FLOATS ON THE SUCTION HOSE.
3. MIDPOINT SPRAY NOZZLES IF NEEDED.
4. 6-INCH SEWER PIPE WITH BUTTERFLY VALVES. BOTTOM ONE IS A DRAIN. LOCATE TOP PIPES INVERT ONE FOOT ABOVE BOTTOM OF WHEEL WASH.
5. 8'x8' SUMP WITH 5' OF CATCH. BUILD SO CAN BE CLEANED WITH TRACKHOE.
6. ASPHALT CURB ON THE LOW ROAD SIDE TO DIRECT WATER BACK TO THE POND.
7. 6-INCH SLEEVE UNDER ROAD.
8. BALL VALVES.
9. 15' ATB APRON TO PROTECT GROUND FROM SPLASHING WATER.



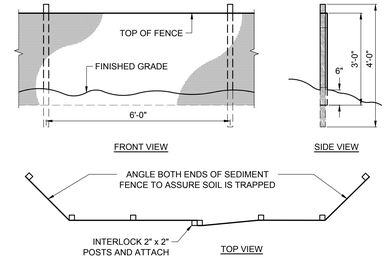
NOTES:

A. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING THE CORRECT SIZE DEVICE FOR EACH INLET
B. THE INLET SEDIMENT CONTROL DEVICE SHALL BE OF NORMAL FLOW DESIGN, 40 GAL/MIN/SF WITH NO OVERFLOWS
C. THE SEDIMENT CONTROL DEVICE SHALL BE INSPECTED DAILY BY THE CONTRACTOR AND MAINTAINED A MINIMUM OF ONCE PER MONTH AND WITHIN THE 24 HOURS FOLLOWING A STORM EVENT
D. SUBSTITUTION OF A SHEET OF FILTER FABRIC PLACED OVER THE OPENING OF THE INLET IS NOT APPROVED



NOTES:

1. QUARRY SPALL MATERIAL SHALL BE "CLEAN" (LESS THAN 5% PASSING THE US STANDARD NO.200 SIEVE)
2. CONTRACTOR IS RESPONSIBLE FOR OBTAINING APPROVALS FROM THE AUTHORITIES HAVING JURISDICTION FOR ALTERNATES, SUCH AS A RUMBLE TRACK
3. PROTECT CONSTRUCTION ENTRANCES FROM SILTATION FROM ADJOINING BARE SOIL AREAS
4. ANY RAMPING CONSTRUCTED TO MOUNT EXISTING ROADWAY CURBING SHALL NOT IMPEDE DRAINAGE OF THE ROADWAY



NOTES:

A. BURY BOTTOM OF FILTER FABRIC 6" MIN VERTICALLY BELOW FINISHED GRADE
B. UTILIZE 2" x 2" FIR, PINE, OR STEEL FENCE POSTS TO ANCHOR FENCING
C. ATTACH FENCING TO POSTS USING STITCHED LOOPS INSTALLED ON UPHILL SIDE OF SLOPE
D. COMPACT THE NATIVE FILL IN ALL AREAS OF FILTER FABRIC TRENCH
E. ACCUMULATED SEDIMENT CAN BE ALLOWED TO REACH NO MORE THAN ONE-THIRD OF THE SEDIMENT FENCE HEIGHT

1 C4.70 WHEEL WASH

N.T.S.

WHEEL WASH

2 C4.70 CATCH BASIN SEDIMENT FILTER BAG

NTS

3 C4.70 CONSTRUCTION ENTRANCE

NTS

4 C4.70 SEDIMENT FENCE

NTS

PLASTIC SHEETING

NOTES:

1. MINIMUM 12" OVERLAP OF ALL SEAMS REQUIRED.
2. BARRIER REQUIRED @ TOE OF STOCK PILE.
3. COVERING MAINTAINED TIGHTLY IN PLACE BY USING SANDBAGS OR TIRES ON ROPES WITH A MAXIMUM 10' GRID SPACING IN ALL DIRECTIONS.

TREE PROTECTION MEASURES:

1. UNLESS OTHERWISE INDICATED FOR REMOVAL ALL TREES SHALL RECEIVE PROTECTIVE MEASURES FOR THE DURATION OF THE PROJECT IN ACCORDANCE WITH LOCAL AGENCY REQUIREMENTS.
2. 6' HIGH MINIMUM METAL CHAIN LINK FENCING SHALL BE ERECTED AND MAINTAINED. FENCING SHALL COMPLETELY SURROUND AT MINIMUM THE TREE DRIP LINE FOR EACH TREE OR GROUP OF EXISTING TREES. THE TREE DRIP LINE SHALL BE DEFINED AS A CLEARANCE ZONE OF 1 FOOT PER 1 INCH DBH (DIAMETER AT BREAST HEIGHT = 4.5 FEET ABOVE GRADE) FROM THE TREE BEING PROTECTED.
3. IN AREAS WHERE ROOT ZONE ENCROACHMENT IS UNAVOIDABLE, A CERTIFIED ARBORIST SHALL DESIGNATE THE FENCING LOCATION PRIOR TO START OF WORK.
4. NO ACTIVITY MAY BE CONDUCTED WITHIN ANY DESIGNATED TREE PROTECTION AREA, INCLUDING BUT NOT LIMITED TO PARKING EQUIPMENT, PLACING SOLVENTS, STORING MATERIALS AND SOIL DEPOSITS. DUMPING CONCRETE WASHOUT OR OTHER DEBRIS, OR ANY EXCAVATION OR COMPACTION WORK.
5. DURING CONSTRUCTION NO OBJECTS SHALL BE ATTACHED TO ANY TREE DESIGNATED TO BE RETAINED AND PROTECTED.
6. PROVIDE MULCH COVER TO A MINIMUM DEPTH OF 6", PLYWOOD, OR OTHER SIMILAR MATERIAL AT AREAS ADJOINING DESIGNATED TREE PROTECTION AREAS TO PROTECT ROOTS FROM DAMAGE CAUSED BY HEAVY EQUIPMENT. COORDINATE PLACEMENTS AND LOCATION WITH THE LANDSCAPE ARCHITECT OR A CERTIFIED ARBORIST.
7. PROTECTION FENCE SHALL BE MAINTAINED IN PLACE UNTIL REMOVAL IS AUTHORIZED BY THE AUTHORITY HAVING JURISDICTION OR UNTIL A FINAL CERTIFICATE OF OCCUPANCY IS ISSUED.

EXCAVATION/TRENCHING AROUND TREES:

1. PROPOSED TRENCHING AND EXCAVATION IN CLOSE PROXIMITY TO TREE PROTECTION ZONES MAY REQUIRE COORDINATION WITH A CERTIFIED ARBORIST. IF MAIN LATERAL OR TAP ROOTS OR ARE FOUND, STOP WORK IN THE AREA IMMEDIATELY AND CONSULT A CERTIFIED ARBORIST.
2. WHERE TRENCHING IS REQUIRED WITHIN CRITICAL ROOT ZONE, AND HAS BEEN REVIEWED AND APPROVED BY A CERTIFIED ARBORIST, TUNNEL UNDER OR AROUND ROOTS BY HAND DIGGING OR BORING. DO NOT CUT MAIN LATERAL ROOTS OR TAP ROOTS. CLEANLY CUT/SEVER SMALLER ROOTS.
3. RELOCATE ROOTS IN BACKFILL AREAS WHEREVER POSSIBLE. DO NOT ALLOW EXPOSED ROOTS TO DRY OUT BEFORE PERMANENT BACKFILL IS PLACED. PROVIDE TEMPORARY EARTH COVER OR PACK WITH PEAT MOSS AND WRAP WITH BURLAP. WATER AND MAINTAIN IN MOIST CONDITION UNTIL RELOCATED AND COVERED WITH BACKFILL.

FENCING NOTES:

1. TEMPORARY FENCE SHALL BE 6' IN HEIGHT AND SET AS SHOWN ON PLANS.
2. SIGNAGE DESIGNATING THE PROTECTION ZONE AND PENALTIES FOR VIOLATIONS SHALL BE SECURED IN A PROMINENT LOCATION ON EACH PROTECTION FENCE.
3. THE AUTHORITY HAVING JURISDICTION SHALL APPROVE THE INSTALLED TREE PROTECTION FENCING PRIOR TO DEMOLITION OR CONSTRUCTION ACTIVITIES.
4. FENCE MATERIALS SHALL CONSIST OF METAL CHAIN LINK SECURED WITH 8' METAL POSTS.
5. MOVEMENT OR REMOVAL OF FENCING REQUIRES APPROVAL BY THE AUTHORITY HAVING JURISDICTION.

5 C4.70 STOCKPILE COVER/SHEETING

NTS

6 C4.70 TREE PROTECTION FENCING

NTS

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DRAWN BY: AOC, BMR

CHECKED BY: BMR, BDN

SHEET

C4.70

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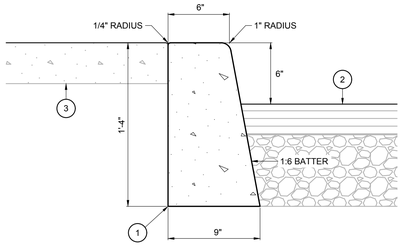
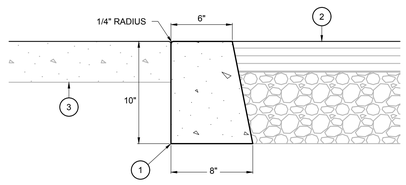


KEYNOTES:
1. CONCRETE FOR CURBING PER PROJECT SPECIFICATIONS
2. PAVEMENT SECTION PER CIVIL PLANS
3. SEE PLANS FOR IMPROVEMENTS AT BACK OF CURB. WHERE SIDEWALK OCCURS, THE SIDEWALK AND TOP OF CURB SHALL BE FLUSH. WHERE ABUTTING A PLANTER AREA, THE FINAL GRADE SHALL BE 1" MINIMUM BELOW TOP OF CURB, OR AS DIRECTED BY THE LANDSCAPE ARCHITECT

1 C5.10 **VERTICAL CURB** NTS



KEYNOTES:
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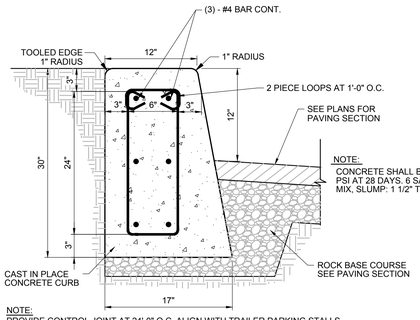
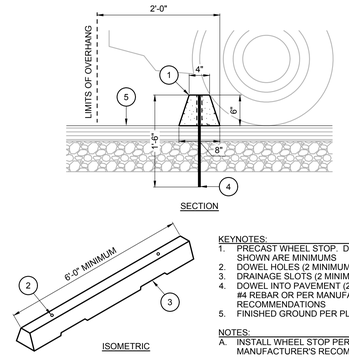
2. PAVEMENT SECTION PER PLANS
3. SEE PLANS FOR IMPROVEMENTS AT BACK OF CURB. WHERE SIDEWALK OCCURS, THE SIDEWALK AND TOP OF CURB SHALL BE FLUSH. WHERE ABUTTING A PLANTER AREA, THE FINAL GRADE SHALL BE 1" MINIMUM BELOW TOP OF CURB, OR AS DIRECTED BY THE LANDSCAPE ARCHITECT

2 C5.10 **FLUSH CURB** NTS



NOTE:
PROVIDE CONTROL JOINT AT 24'-0" O.C. ALIGN WITH TRAILER PARKING STALLS

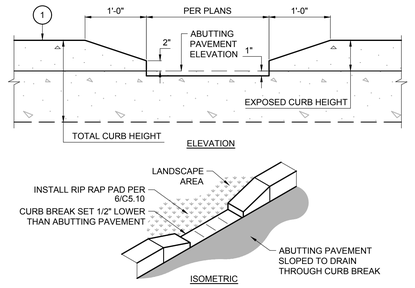
3 C5.10 **12" X 30" REINFORCED CURB** N.T.S. VCURB



KEYNOTES:
1. PRECAST WHEEL STOP. DIMENSIONS SHOWN ARE MINIMUMS
2. DOWEL HOLES (2 MINIMUM)
3. DRAINAGE SLOTS (2 MINIMUM)
4. DOWEL INTO PAVEMENT (2 MINIMUM). #4 REBAR OR PER MANUFACTURER'S RECOMMENDATIONS
5. FINISHED GROUND PER PLANS

NOTES:
A. INSTALL WHEEL STOP PER MANUFACTURER'S RECOMMENDATIONS

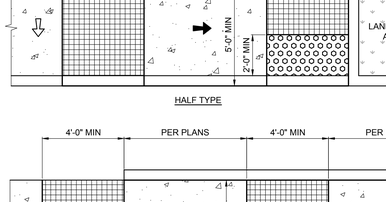
4 C5.10 **PRECAST WHEEL STOP** NTS



KEYNOTES:
1. CONCRETE CURB PER 1/C5.10 . CONCRETE FOR CURBING PER PROJECT SPECIFICATIONS

NOTES:
A. IF CURBING IS REINFORCED, BEND REINFORCEMENT TO PASS UNDER CURB BREAK WHILE MAINTAINING 3" COVER ON REBAR

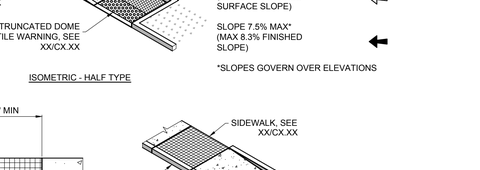
5 C5.10 **CURB BREAK** NTS



KEYNOTES:
1. CRUSHED, ANGULAR, 6"-10" DIAMETER ROCK (I.E. ODOT CLASS 50 RIP RAP). TOP OF RIP RAP LAYER TO BE FLUSH WITH ADJACENT GRADE
2. WOVEN FILTER FABRIC, ENCASING ALL BUT THE TOP SURFACE OF THE AGGREGATE
3. PIPE OUTFALL OR CURB BREAK LOCATION, WIDTH/DIAMATER, AND INVERT PER PLAN. CENTER RIP RAP PAD ON PIPE OUTFALL/CURB BREAK
4. RIP RAP PAD DIMENSIONS PER PLAN. IF NONE NOTED, INSTALL TO A MINIMUM WIDTH OF 12" TO EITHER SIDE OF A CURB BREAK OR PIPE OUTFALL AND 48" LONG

NOTES:
A. ALL FEATURES SHOWN OTHER THAN THE RIP RAP PAD ARE SHOWN FOR REFERENCE ONLY TO PROVIDE CONTEXT OF THE RIP RAP'S RELATIONSHIP TO ITS SURROUNDINGS. REFER TO THE PLANS FOR PROJECT SPECIFIC RELATIONSHIPS TO OTHER SITEWORK ELEMENTS

6 C5.10 **RIP RAP PAD** NTS



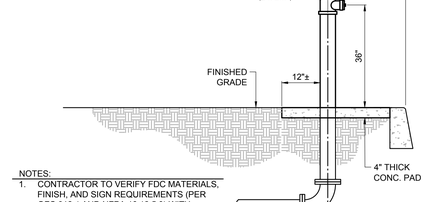
NOTES:
A. CONCRETE SIDEWALK SHALL BE BROOM FINISHED UNLESS OTHERWISE NOTED ON PLANS
B. SEE PROJECT SPECIFICATIONS FOR CONCRETE, AGGREGATE BASE, AND JOINT MATERIALS
C. WHERE SIDEWALK ABUTS CURBING, SURFACE SHALL BE FLUSH WITH TOP OF CURB UNLESS NOTED OTHERWISE ON PLANS. WHERE SIDEWALK ABUTS LANDSCAPE OR OTHER PERVIOUS AREA, GRADE SHALL BE RECESSED 1" MINIMUM OR AS OTHERWISE DICTATED BY THE LANDSCAPE ARCHITECT OR NOTED ON PROJECT PLANS
D. DO NOT USE SHINERS ON TOOLED EDGES UNLESS NOTED OTHERWISE
E. CONTROL JOINTS SHALL BE EVENLY SPACED AND LOCATED EVERY 5' MAXIMUM, WITH EXPANSION JOINTS EVERY FOURTH JOINT, OR PER PLAN. SIDEWALK JOINTS SHALL BE ALIGNED WITH CURB JOINTS OR WHERE PERPENDICULAR CURBING INTERSECTS.

7 C5.10 **CONCRETE SIDEWALK AND JOINTS** NTS

KEYNOTES:
1. CONCRETE PAVEMENT PER PLANS AND PROJECT SPECIFICATIONS
2. ASPHALT PAVEMENT AND BASE COURSE PER PLANS AND PROJECT SPECIFICATIONS
3. PROVIDE 3/8" TOOLED EDGE RADIUS ON CONCRETE AND APPLY SEALANT AT JOINT PER PROJECT SPECIFICATIONS

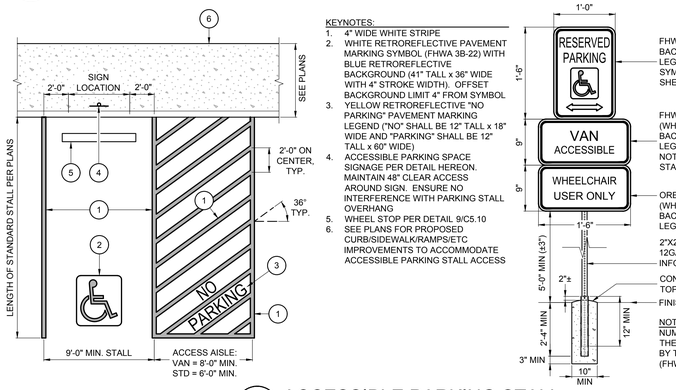
NOTES:
A. THIS DETAIL IS NOT REQUIRED WHERE SIDEWALKS ABUT ASPHALT PAVEMENT IF PROVISIONS ARE SPECIFIED THAT PREVENT VEHICULAR ACCESS ONTO SIDEWALK

8 C5.10 **ASPHALT TO CONCRETE TRANSITION** NTS



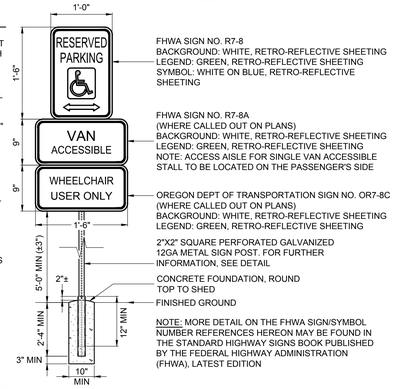
NOTES:
A. PLACE TRUNCATED DOME DETECTABLE WARNING TEXTURE (OR CAST-IN-PLACE PANELS) IN THE LOWER 24" FOR THE FULL WIDTH OF THE RAMP
B. ARRANGE DOMES USING AN INLINE PATTERN AS SHOWN IN THE DETAIL ABOVE
C. COLOR OF DOME TEXTURE (OR PANELS) TO BE SAFETY YELLOW, UNLESS NOTED OTHERWISE ON PLANS
D. SURFACE APPLIED PANELS SHALL ONLY BE ALLOWED IN RETROFIT CONDITIONS AND WITH THE PRIOR APPROVAL OF THE ENGINEER

9 C5.10 **TRUNCATED DOMES** NTS



KEYNOTES:
1. 4" WIDE WHITE STRIPE
2. WHITE RETROREFLECTIVE PAVEMENT MARKING SYMBOL (FHWA 3B-22) WITH BLUE RETROREFLECTIVE BACKGROUND (41" TALL x 36" WIDE WITH 4" STROKE WIDTH). OFFSET BACKGROUND LIMIT 4" FROM SYMBOL
3. YELLOW RETROREFLECTIVE "NO PARKING" PAVEMENT MARKING LEGEND ("NO" SHALL BE 12" TALL x 18" WIDE AND "PARKING" SHALL BE 12" TALL x 60" WIDE)
4. ACCESSIBLE PARKING SPACE SIGNAGE PER DETAIL HEREON. MAINTAIN 48" CLEAR ACCESS AROUND SIGN. ENSURE NO INTERFERENCE WITH PARKING STALL OVERHANG
5. WHEEL STOP PER DETAIL 9/C5.10
6. SEE PLANS FOR PROPOSED CURB/SIDEWALK/RAMPS/ETC IMPROVEMENTS TO ACCOMMODATE ACCESSIBLE PARKING STALL ACCESS

10 C5.10 **ACCESSIBLE PARKING STALL** NTS



FHWA SIGN NO. R7-8
BACKGROUND: WHITE, RETRO-REFLECTIVE SHEETING
LEGEND: GREEN, RETRO-REFLECTIVE SHEETING
SYMBOL: WHITE ON BLUE, RETRO-REFLECTIVE SHEETING

FHWA SIGN NO. R7-8A
(WHERE CALLED OUT ON PLANS)
BACKGROUND: WHITE, RETRO-REFLECTIVE SHEETING
LEGEND: GREEN, RETRO-REFLECTIVE SHEETING
NOTE: ACCESS AISLE FOR SINGLE VAN ACCESSIBLE STALL TO BE LOCATED ON THE PASSENGER'S SIDE

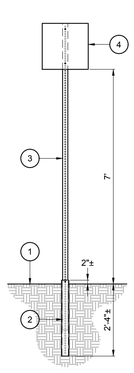
OREGON DEPT OF TRANSPORTATION SIGN NO. OR7-8C
(WHERE CALLED OUT ON PLANS)
BACKGROUND: WHITE, RETRO-REFLECTIVE SHEETING
LEGEND: GREEN, RETRO-REFLECTIVE SHEETING

2"X2" SQUARE PERFORATED GALVANIZED 12GA METAL SIGN POST. FOR FURTHER INFORMATION, SEE DETAIL

CONCRETE FOUNDATION, ROUND TOP TO SHED

FINISHED GROUND

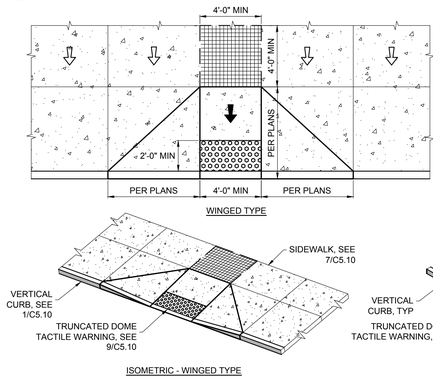
NOTE: MORE DETAIL ON THE FHWA SIGN/SYMBOL NUMBER REFERENCES HEREON MAY BE FOUND IN THE STANDARD HIGHWAY SIGNS BOOK PUBLISHED BY THE FEDERAL HIGHWAY ADMINISTRATION (FHWA), LATEST EDITION



KEYNOTES:
1. EXISTING OR FINISHED GRADE PER PLANS
2. 30" LONG, PERFORATED GALVANIZED 12GA METAL POST SLEEVE SIZED TO ACCOMMODATE 2"x2" SQUARE POST. EMBED SLEEVE SUCH THAT APPROXIMATELY 2" IS EXPOSED ABOVE GRADE TO ALLOW FOR INSTALLATION OF THE CORNER BOLT IN THE TOP HOLE
3. 2"x2" SQUARE PERFORATED GALVANIZED 12GA METAL SIGN POST (UNISTRUT TELESPAR, OR EQUAL). SIGN POST SHALL BE EMBEDDED A MINIMUM OF 12" INTO THE POST SLEEVE. CONTRACTOR TO VERIFY REQUIRED POST LENGTH PRIOR TO ORDERING
4. ATTACH SIGN TO PERFORATED POST USING A MINIMUM OF 2 DRIVE RIVETS THROUGH THE FACE OF THE SIGN. SIZE, SHAPE, AND WORDING OF SIGN PER PLANS OR SEPARATE DETAIL

NOTES:
A. SIGN POST SHALL BE PLACED SUCH THAT EDGE OF MOUNTED SIGN IS AT LEAST 24" AWAY FROM ANY ADJACENT ROADWAY

11 C5.10 **SIGN POST** NTS



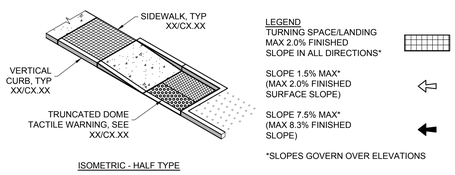
LEGEND
TURNING SPACE/LANDING
MAX 2.0% FINISHED
SLOPE IN ALL DIRECTIONS*

SLOPE 1.5% MAX*
(MAX 2.0% FINISHED
SURFACE SLOPE)

SLOPE 7.5% MAX*
(MAX 8.3% FINISHED
SLOPE)

*SLOPES GOVERN OVER ELEVATIONS

12 C5.10 **PERPENDICULAR CURB RAMPS** NTS

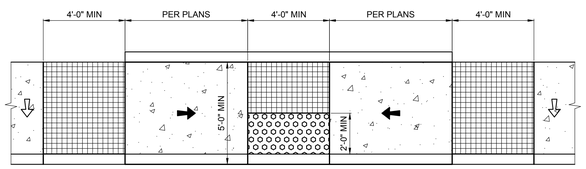


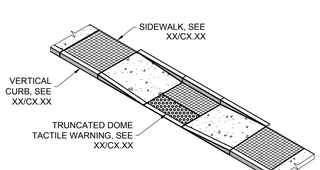
LEGEND
TURNING SPACE/LANDING
MAX 2.0% FINISHED
SLOPE IN ALL DIRECTIONS*

SLOPE 1.5% MAX*
(MAX 2.0% FINISHED
SURFACE SLOPE)

SLOPE 7.5% MAX*
(MAX 8.3% FINISHED
SLOPE)

*SLOPES GOVERN OVER ELEVATIONS



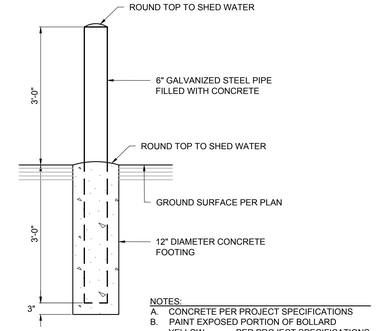


13 C5.10 **PARALLEL CURB RAMPS** NTS

MUTCD# R1-1
LEGEND - WHITE (REFL)
BACKGROUND-RED (REFL)

NOTE: SEE DETAIL 15/C5.10 FOR INSTALLATION DETAILS

14 C5.10 **STOP SIGN** N.T.S. STOPSIGN



NOTES:
A. CONCRETE PER PROJECT SPECIFICATIONS
B. PAINT EXPOSED PORTION OF BOLLARD YELLOW PER PROJECT SPECIFICATIONS

15 C5.10 **6" PIPE BOLLARD** NTS

NOTES:
1. CONTRACTOR TO VERIFY FDC MATERIALS, FINISH, AND SIGN REQUIREMENTS (PER OFC 912.4 AND NFPA 16.12.5.8) WITH LOCAL FIRE MARSHAL
2. FDC SHALL BE PROTECTED BY ORANGE CONSTRUCTION FENCING DURING CONSTRUCTION

IF NEARBY BACKFLOW PREVENTOR VAULT, LOCATE AUTOMATIC BALL DRIP TOGETHER WITH CHECK VALVE IN VAULT. CHECK VALVE SHALL OTHERWISE BE LOCATED IN THE BUILDING

16 C5.10 **FIRE DEPARTMENT CONNECTION** NTS

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REVISION SCHEDULE

Delta	Issued As	Issue Date

SHEET TITLE:
CIVIL DETAILS

DRAWN BY: AOC, BMR

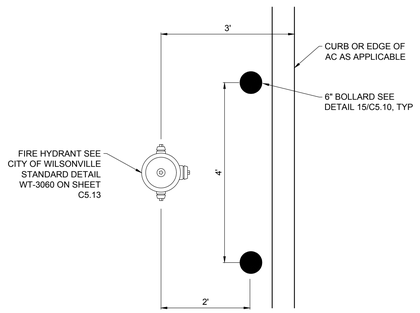
CHECKED BY: BMR, BDN

SHEET
C5.10

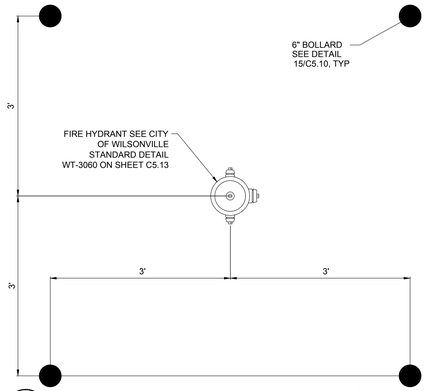
JOB NO. **2200502.04**

DESIGN REVIEW SET 07/29/2022

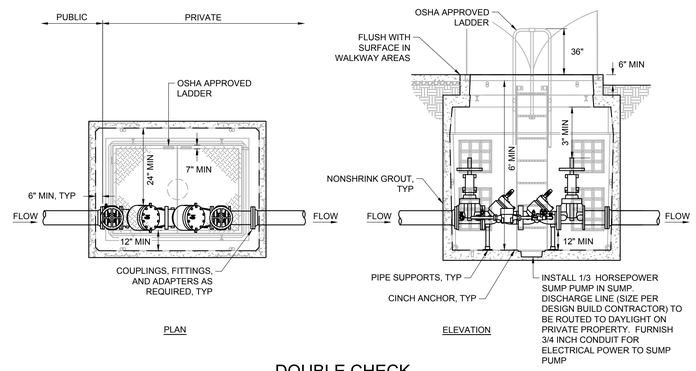
1 C5.11 NOT USED
N.T.S.



2 C5.11 FIRE HYDRANT BOLLARD PROTECTION
NTS



3 C5.11 FIRE HYDRANT (4) BOLLARD PROTECTION
N.T.S.
FH BOLLARD



BACKFLOW PREVENTER SHALL BE APPROVED BY THE STATE HEALTH DEPARTMENT AND PLUMBING CODE

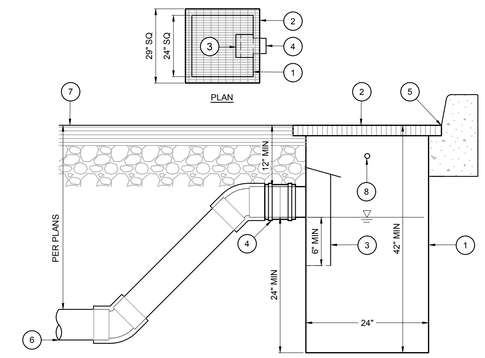
VAULT SHALL BE PRECAST CONCRETE WITH GALVANIZED HINGED ACCESS DOORS (OLDCASTLE, OR EQUAL)

VAULT SHALL BE MECHANICALLY LOCKED AND VALVES SHALL BE PROVIDED WITH ELECTRONIC TAMPER SWITCHES

APPROXIMATE VAULT SIZES

BACKFLOW (DIAMETER)	VAULT (OUTSIDE)
3 INCH	7'-0"(L) 4'-8" (W) 7'-0" (H)
4 INCH	7'-0"(L) 4'-8" (W) 7'-0" (H)
6 INCH	7'-9"(L) 6'-3" (W) 7'-2" (H)
8 INCH	8'-8"(L) 6'-8" (W) 8'-1" (H)
10 INCH	8'-8"(L) 6'-8" (W) 8'-1" (H)

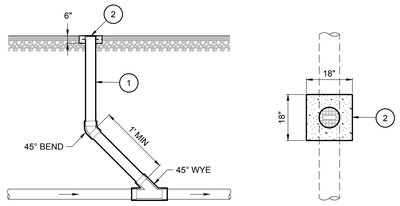
4 C5.11 DOUBLE CHECK VALVE AND VAULT (3" AND LARGER)
NTS



KEYNOTES:
1. PREFABRICATED, ASPHALT DIPPED, 10 GAUGE STEEL SUMPED CATCH BASIN WITH INTEGRAL GRATE FRAME
2. GRATE: HEAVY DUTY CAST IRON (ASTM A 48, CLASS 30B) BICYCLE SAFE
3. SEDIMENT TRAP WITH HINGED LID
4. INSTALL FLEXIBLE CLAMPED COUPLING ON INTEGRAL CATCH BASIN OUTLET. IMMEDIATELY TURN DOWN PIPING AT 45 DEGREES TO INTERSECT WITH THE SITE PIPING
5. LOCATE CATCH BASIN SUCH THAT THE EDGE OF GRATE FRAME IS INLINE WITH THE ABUTTING CURBLINE (WHERE APPLIES).
6. PIPE SIZE, INVERT, AND SLOPE PER PLANS
7. PAVING SECTION PER PLANS
8. 1/2 INCH TO 1 INCH DIAMETER WEEPHOLES, MINIMUM 1 PER SIDE. CONTRACTOR SHALL VERIFY COMPLIANCE WITH LOCAL JURISDICTION PRIOR TO PROCURING MATERIALS

NOTES:
A. ALL PRODUCTS USED SHALL BE COMPLIANT WITH BOTH THE UNIFORM AND LOCAL JURISDICTION PLUMBING CODES
B. WHERE ABUTTING CURBING, GRATE SHALL BE ORIENTED SO THAT THE ELONGATED PATTERN IS PERPENDICULAR TO THE CURB FACE

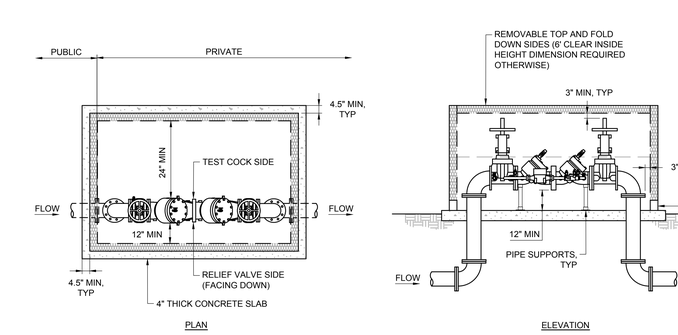
5 C5.11 STEEL CATCH BASIN
NTS



KEYNOTES:
1. CLEANOUT PIPING AND FITTINGS TO BE OF THE SAME SIZE (8" MAX) AND MATERIAL AS THE PIPING IT IS SERVING
2. CLEANOUT LID & FRAME: HEAVY DUTY CAST IRON ACCESS BOX, SCORIATED CAST IRON COVER, THREADED BRONZE PLUGS, MOUNTED IN 4,000 PSI CONCRETE COLLAR.

NOTES:
A. CONCRETE COLLAR MAY BE OMITTED IN LANDSCAPE AREAS. USE PLASTIC PIPE CAP AND SET 3 INCHES ABOVE GRADE

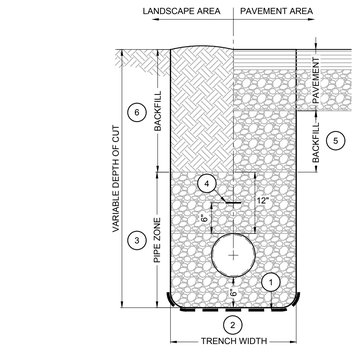
6 C5.11 CLEANOUT
NTS



BACKFLOW PREVENTER SHALL BE APPROVED BY THE STATE HEALTH DEPARTMENT AND PLUMBING CODE

ENCLOSURE SHALL BE WEATHERPROOF, INSULATED, AND HEATED (HOTBOX, OR EQUAL)

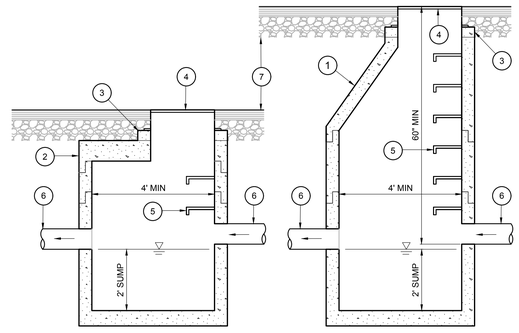
7 C5.11 REDUCED PRESSURE BACKFLOW AND ENCLOSURE (3" AND LARGER)
NTS



KEYNOTES:
1. INSTALL TRENCH STABILIZATION AS NECESSARY TO OBTAIN COMPACTION
2. TRENCH WIDTH SHALL ACCOMMODATE THE PIPE DIAMETER PLUS ONE ADDITIONAL PIPE DIAMETER ON EITHER SIDE OF THE PIPE, BUT IN NO CASE LESS THAN 6 INCHES OR MORE THAN 18 INCHES
3. PIPE ZONE TO CONSIST OF IMPORTED GRANULAR MATERIAL
4. TRACER WIRE PER PROJECT SPECIFICATIONS
5. BACKFILL IN PAVEMENT AREAS WITH IMPORTED GRANULAR MATERIAL TO PAVEMENT SUBGRADE ELEVATION
6. BACKFILL IN LANDSCAPE AREAS WITH NATIVE MATERIAL TO PLANTER SUBGRADE ELEVATION. MOUND TOP TO SHED AT 2% EACH DIRECTION

NOTES:
A. THIS DETAIL IS FOR USE ON PRIVATE PROPERTY ONLY. TRENCHING AND BACKFILL REQUIREMENTS FOR WORK IN THE PUBLIC RIGHT-OF-WAY SHALL BE COMPLIANT WITH THE STANDARDS OF THE AUTHORITY HAVING JURISDICTION
B. SEE GEOTECHNICAL REPORT AND PROJECT SPECIFICATIONS FOR RECOMMENDED MATERIALS AND FURTHER REQUIREMENTS (i.e. SIZE AND GRADATION OF GRANULAR MATERIALS, MINIMUM COMPACTION, MAXIMUM LIFT PLACEMENT, TRACER WIRE, ETC.)
C. IF GROUNDWATER IS ENCOUNTERED, CONSULT THE GEOTECHNICAL ENGINEER OF RECORD FOR ADDITIONAL RECOMMENDATIONS WITH REGARD TO TRENCHING, PIPE PLACEMENT, AND BACKFILL
D. REFER TO PROJECT SPECIFICATIONS FOR MINIMUM PIPE COVER AND ALTERNATE MATERIAL REQUIREMENTS. CONTRACTOR SHALL PREVENT CONSTRUCTION VEHICLES FROM DRIVING OVER PIPING WITH LESS THAN 12" COVER AT ANY POINT IN TIME DURING CONSTRUCTION

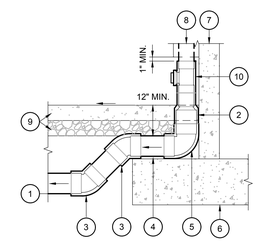
8 C5.11 UTILITY TRENCH BEDDING & BACKFILL
NTS



KEYNOTES:
1. 48" MIN DIAMETER PRECAST CONCRETE MANHOLE WITH ECCENTRIC CONE
2. 48" MIN DIAMETER PRECAST CONCRETE FLAT TOP MANHOLE (USED WHEN LESS THAN 60" AVAILABLE FROM PIPE INVERT TO RIM). CONCENTRIC LID SHALL BE USED AND STEPS SHALL BE OMITTED WHEN DEPTH FROM RIM TO INVERT IS LESS THAN 3 FEET
3. PRECAST CONCRETE GRADE RING AS REQUIRED TO ACCOMMODATE PAVING SECTION (12" TOTAL, MAX)
4. MANHOLE FRAME AND COVER PER PROJECT SPECIFICATIONS, RIM ELEVATION PER PLANS
5. 6 1/2" MIN LONG MANHOLE STEPS AT 12" ON CENTER PER PROJECT SPECIFICATIONS. LOCATE WITHIN 24" OF COVER AND FLOOR OF MANHOLE, AND A MINIMUM OF 5" FROM PRECAST SECTION JOINT
6. PIPE SIZE, INVERT, AND SLOPE PER PLANS
7. PAVING SECTION PER PLANS

NOTES:
A. MANHOLE DIAMETER SHALL BE INCREASED, IF REQUIRED, TO PROVIDE A MINIMUM OF 12" SEPARATION BETWEEN PIPE CONNECTIONS, OR WHEN ANY PIPE DIAMETER IS GREATER THAN 1/2 THE DIAMETER OF THE MANHOLE
B. MANHOLE ACCESS COVER SHALL NOT BE LOCATED DIRECTLY OVER A PIPE CONNECTION UNLESS DIRECTED OTHERWISE BY THE ENGINEER
C. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OF ALL MANHOLES FOR REVIEW AND APPROVAL BY THE ENGINEER PRIOR TO PROCURING MATERIALS
D. SELECTED MANHOLE SHALL MEET THE CRITERIA OF THE PROJECT SPECIFICATIONS AND BE INSTALLED ACCORDINGLY
E. INLET AND OUTLET PIPES CONNECTIONS SHALL BE COMPLIANT WITH PROJECT SPECIFICATIONS OR THE REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION, WHICHEVER IS MOST STRINGENT

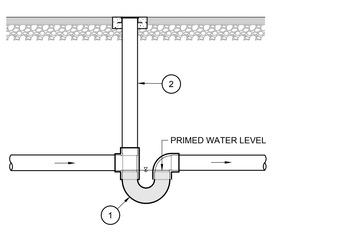
9 C5.11 STORM SEWER MANHOLES
NTS



KEYNOTES:
1. PIPE INVERT, SIZE AND SLOPE PER CIVIL PLANS
2. REDUCER AS NECESSARY TO TRANSITION BETWEEN PIPE SIZES
3. 45° ELBOW
4. SOLID GROUT AT BASE @ MINIMUM 2%
5. 90° SHORT ELBOW
6. FOOTING PER STRUCTURAL PLANS
7. BUILDING WALL PER ARCHITECTURAL PLANS
8. SEE ARCHITECTURAL PLANS FOR CONTINUATION
9. PAVING SECTION AND SLOPE PER CIVIL PLANS
10. THREADED CLEANOUT ON TEE FITTING PER UNIFORM PLUMBING CODE

NOTES:
A. ALL WORK WITHIN 5-FEET OF THE BUILDING SHALL BE INSTALLED COMPLIANT WITH THE UNIFORM PLUMBING CODE (UPC). SEE PLUMBING AND ARCHITECTURAL PLANS FOR ADDITIONAL INFORMATION

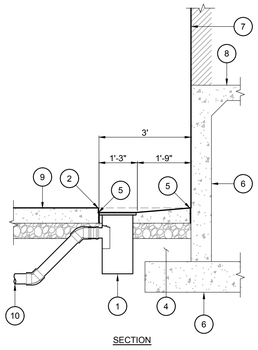
10 C5.11 DOWNSPOUT
NTS



KEYNOTES:
1. P-TRAP AND ASSOCIATED FITTINGS COMPLIANT WITH THE UNIFORM PLUMBING CODE AND PROJECT SPECIFICATIONS
2. CLEANOUT PER 6/C5.11

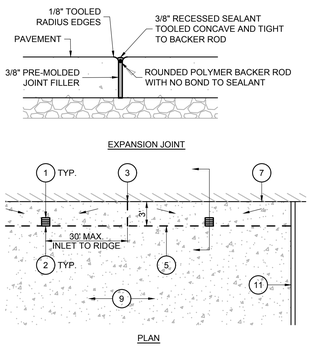
NOTES:
A. CONTRACTOR TO PROVIDE PRIME TO P-TRAP FROM BUILDING WATER SUPPLY

11 C5.11 P-TRAP
NTS

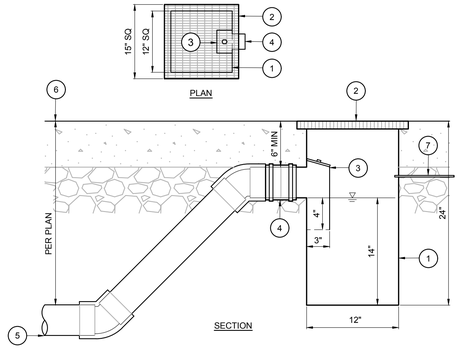


KEYNOTES:
1. PRIMED SANITARY AREA DRAIN PER 11/C5.10 [ELEVATION = FF - 4'-2"]
2. 1/8" TOOLED RADIUS EDGE [ELEVATION = FF - 4'-0"]
3. NO LIP AT RIDGE LINE [ELEVATION = FF - 4'-0"]
4. LEAVE NO VOIDS OR UNCOMPACTED MATERIAL. UTILIZE LEAN CONCRETE BACKFILL IF NECESSARY TO OBTAIN COMPACTION
5. EXPANSION JOINT PER DETAIL HEREON
6. RETAINING WALL AND FOUNDATIONS PER STRUCTURAL PLANS
7. BUILDING WALL PER ARCHITECTURAL PLANS
8. BUILDING FINISHED FLOOR, SEE ARCHITECTURAL PLANS FOR CONTINUATION
9. PAVING SECTION AND SLOPE PER PLANS
10. PIPE INVERT, SIZE AND SLOPE PER PLANS

NOTES:
A. ALL WORK WITHIN 5-FEET OF THE BUILDING SHALL BE INSTALLED COMPLIANT WITH THE UNIFORM PLUMBING CODE (UPC)
B. CONTRACTOR SHALL COORDINATE AND INSTALL WATER SUPPLY FOR PRIMING FROM BUILDING PLUMBING



12 C5.11 LOADING DOCK ISOLATION ROW
NTS



KEYNOTES:
1. PREFABRICATED, ASPHALT DIPPED, 10 GAUGE STEEL SUMPED AREA DRAIN WITH INTEGRAL GRATE FRAME
2. "HEEL-PROOF", HEAVY DUTY REMOVABLE TRAFFIC GRATE CAPABLE OF SUPPORTING H20 LOADING
3. SEDIMENT TRAP WITH BRASS SCREW CAP (NO HINGE)
4. INSTALL FLEXIBLE CLAMPED COUPLING ON INTEGRAL AREA DRAIN OUTLET. IMMEDIATELY TURN DOWN PIPING AT 45 DEGREES TO INTERSECT WITH THE SITE PIPING
5. PIPE SIZE, INVERT, AND SLOPE PER PLANS
6. PAVING SECTION PER PLANS
7. PRIMED WATER SUPPLY

NOTES:
A. ALL PRODUCTS USED SHALL BE COMPLIANT WITH BOTH THE UNIFORM AND LOCAL JURISDICTION PLUMBING CODES
B. CONTRACTOR SHALL COORDINATE AND INSTALL WATER SUPPLY FOR PRIMING FROM BUILDING PLUMBING

13 C5.11 SANITARY AREA DRAIN
NTS

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Planning ▪ Engineering

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DELTA LOGISTICS
9835 SW COMMERCE CIRCLE
WILSONVILLE, OR
97070

Project

DELTA LOGISTICS SITE EXPANSION
9710 SW DAY RD.
CITY OF WILSONVILLE, OR

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REVISION SCHEDULE

Delta	Issued As	Issue Date
1	PLAN CHECK	06/10/2022

SHEET TITLE:
CIVIL DETAILS

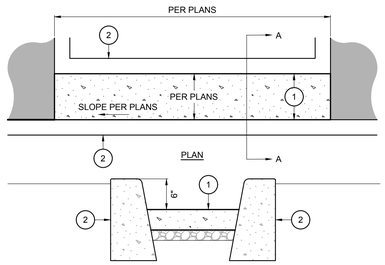
DRAWN BY: AOC, BMR

CHECKED BY: BMR, BDN

SHEET
C5.11

JOB NO. **2200502.04**

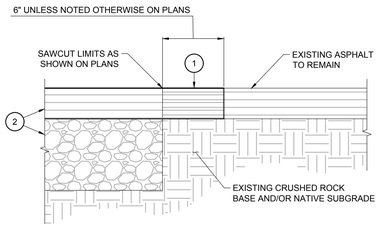
DESIGN REVIEW SET 07/29/2022



KEYNOTES:
1. 4" CONCRETE OVER 2" ROCK BASE. CONCRETE AND BASE PER SPECIFICATIONS
2. CONCRETE VERTICAL CURB PER 1/C5.10

NOTES:
A. CHANNEL SLOPE TO MATCH SLOPE OF ADJACENT PAVEMENT
B. WHERE CHANNEL IS IN-LINE WITH CURB AND GUTTER, CONTINUE CROSS SECTION OF CURB AND GUTTER THROUGH LENGTH OF CHANNEL
C. SECTION MAY BE CONSTRUCTED MONOLITHICALLY

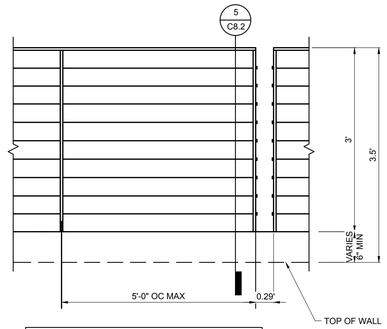
1 C5.12 CONCRETE CURB CHANNEL
NTS



KEYNOTES:
1. ADDITIONALWIDTH OF EXISTING ASPHALT PAVEMENT TO BE SAWCUT AND REMOVED BEYOND THE SAWCUT LIMITS SHOWN ON PLANS
2. PROPOSED ASPHALT PAVEMENT SECTION PER PLANS

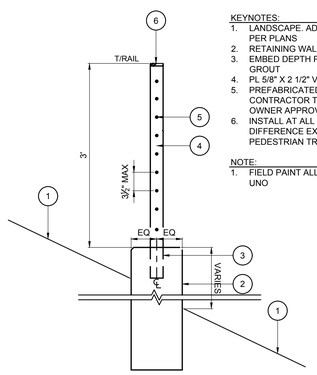
NOTES:
A. DO NOT DISTURB THE EXISTING CRUSHED ROCK BASE OR NATIVE SUBGRADE UNDER THE ADDITIONAL WIDTH OF SAWCUT OR EXISTING ASPHALT PAVEMENT
B. PAVEMENT REPLACEMENT WITHIN THE ADDITIONAL SAWCUT LIMITS SHALL MATCH EXISTING OR PROPOSED SECTION, WHICHEVER IS GREATER

2 C5.12 ASPHALT PAVEMENT SAWCUT
NTS



NOTE: FIELD PAINT ALL STEEL COMPONENTS BLACK, UNO

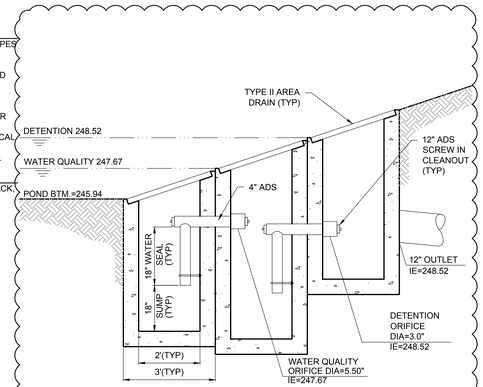
3 C5.12 GUARDRAIL ELEVATION
N.T.S.



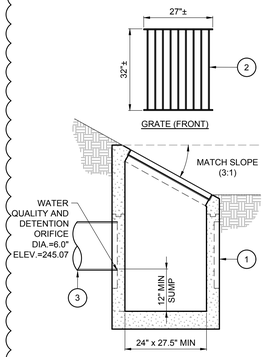
KEYNOTES:
1. LANDSCAPE. ADJACENT GRADES AND SLOPES PER PLANS
2. RETAINING WALL. HEIGHT PER PLANS.
3. EMBED DEPTH PER MANUFACTURER, SOLID GROUT
4. PL 5/8" X 2 1/2" VERTICAL SUPPORT
5. PREFABRICATED METAL GUARDRAIL CONTRACTOR TO PROVIDE SUBMITTAL FOR OWNER APPROVAL
6. INSTALL AT ALL LOCATIONS WHERE VERTICAL DIFFERENCE EXCEEDS 30" ADJACENT TO PEDESTRIAN TRAFFIC AND WHERE NOTED.

NOTE:
1. FIELD PAINT ALL STEEL COMPONENTS BLACK, UNO

4 C5.12 GUARDRAIL SECTION - EMBED
N.T.S.



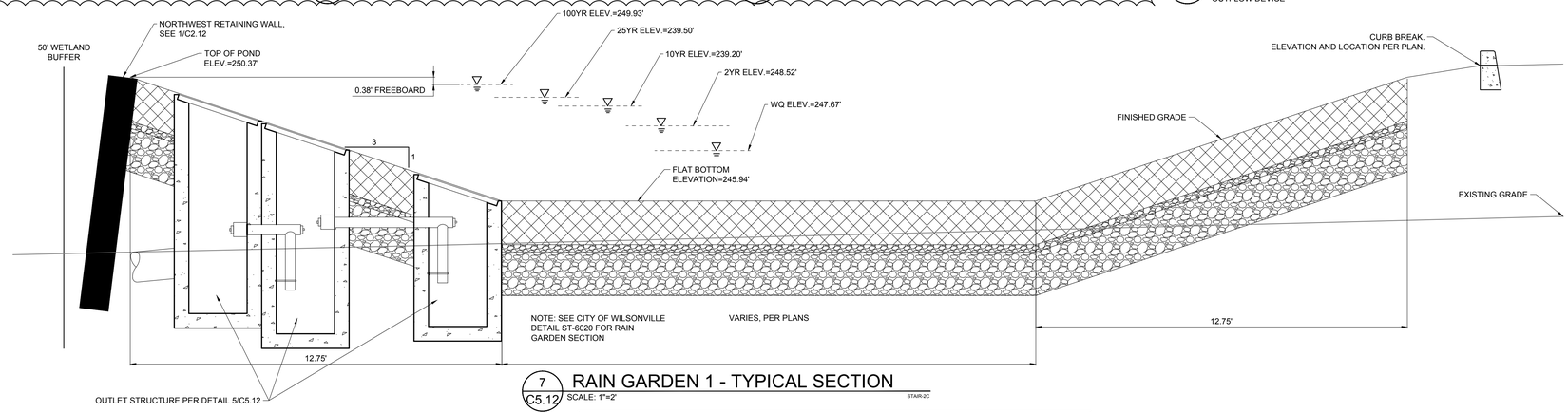
5 C5.12 RAIN GARDEN 1 OUTLET
N.T.S.
OUTFLOW DEVICE



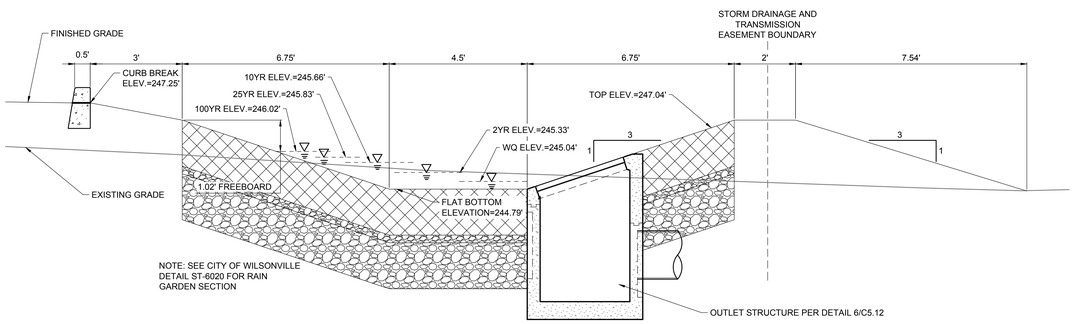
KEYNOTES:
1. PRECAST CONCRETE CATCH BASIN WITH DITCH INLET TOP SECTION
2. WELDED STEEL FRAME AND GRATE: 2.5" x 3/8" SQ. EDGE FLAT BARS ON ENDS WITH 2.5" x 1/4" SQ. EDGE FLAT BARS IN BETWEEN, SET 3" O.C.
3. OUTLET PIPE SIZE AND INVERT PER PLAN INSTALL AS CLOSE AS PRACTICAL TO TOP OF PRECAST KNOCKOUT TO MAXIMIZE SUMP, UP TO 18" MAX

NOTES:
A. BOTTOM OF GRATE OPENING SHALL BE SET AT FLOWLINE OF DITCH, UNLESS NOTED OTHERWISE ON PLAN
B. PRECAST SECTIONS SHALL CONFORM TO THE REQUIREMENTS OF ASTM C-478
C. PRECAST REINFORCEMENT SHALL BE REBAR MEETING ASTM A615 GRADE 60
D. PRECAST STRUCTURE SHALL CONFORM TO ODOT TYPE G-2 CATCH BASIN DESIGN W/DITCH INLET TOP
E. FRAME AND GRATE SHALL BE NEW STRUCTURAL ASTM A-36 FLAT BAR STEEL OR APPROVED EQUAL
F. CONTRACTOR SHALL VERIFY WITH LOCAL JURISDICTION IF GRATE IS REQUIRED TO BE LOCKED OR CHAIN TO GRATE AND INSTALL ADDITIONAL EQUIPMENT AS REQUIRED

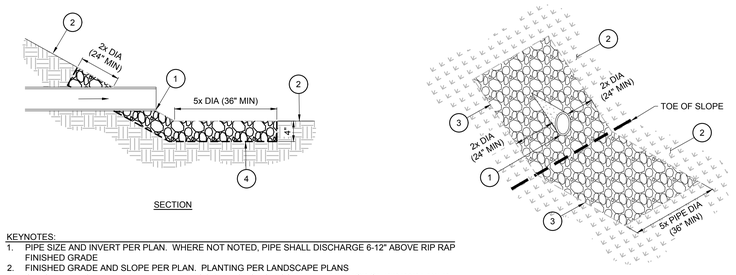
6 C5.12 RAIN GARDEN 2 OUTLET
NTS



7 C5.12 RAIN GARDEN 1 - TYPICAL SECTION
SCALE: 1"=2'
STAIR-2C



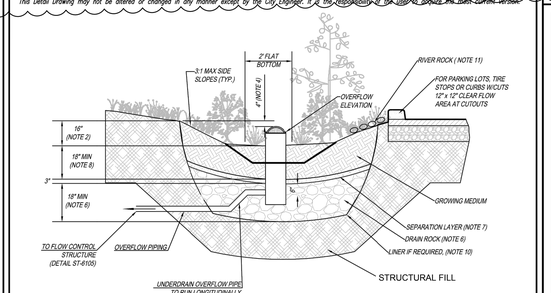
8 C5.12 RAIN GARDEN 2 - TYPICAL SECTION
SCALE: 1"=2'
STAIR-2C



KEYNOTES:
1. PIPE SIZE AND INVERT PER PLAN. WHERE NOT NOTED, PIPE SHALL DISCHARGE 6-12" ABOVE RIP RAP FINISHED GRADE
2. FINISHED GRADE AND SLOPE PER PLAN. PLANTING PER LANDSCAPE PLANS
3. CRUSHED, ANGULAR, 6"-10" DIAMETER ROCK (I.E. ODOT CLASS 50 RIP RAP). TOP OF RIP RAP LAYER TO BE FLUSH WITH ADJACENT GRADE. IF INDICATED, DIMENSIONS OF RIP RAP SHOWN ON PLAN SHALL SUPERCEDE THOSE SHOWN ON THIS DETAIL. DIAMETER (DIA) REFERENCES REFER TO THE INSIDE DIAMETER OF THE OUTFALL PIPE
4. WOVEN FILTER FABRIC ENCASING ALL BUT THE TOP SURFACE OF THE RIP RAP

9 C5.12 PIPE OUTFALL - RIP RAP
NTS

This Detail Drawing may not be altered or changed in any manner except by the City Engineer. It is the responsibility of the user to acquire the most current version.



GENERAL NOTES:
1. **PROVIDE PROTECTION** FROM ALL VEHICLE TRAFFIC, EQUIPMENT STAGING, AND FOOT TRAFFIC IN PROPOSED INFILTRATION AREAS PRIOR TO, DURING AND AFTER CONSTRUCTION. UNLESS REQUIRED BY SITE CONDITIONS, UNLINED RAIN GARDENS ARE PREFERRED TO MAXIMIZE ONSITE INFILTRATION.
2. **DIMENSIONS:**
   -DEPTH OF BASIN (FROM TOP OF GROWING MEDIUM TO OVERFLOW ELEVATION); 12"
   -FLAT BOTTOM WIDTH: 2' MINIMUM
   -SIDE SLOPES OF RAIN GARDEN: 3:1 MAXIMUM
   -CENTERLINE SLOPE OF RAIN GARDEN: 0.5% OR LESS
3. **SETBACKS:**
   -FILTRATION RAIN GARDEN SHALL BE 10' FROM FOUNDATIONS AND 5' FROM PROPERTY LINES UNLESS APPROVED BY BUILDING OFFICIAL
4. **OVERFLOW:**
   -OVERFLOW REQUIRED. INLET ELEVATION SHALL ALLOW FOR 4" OF FREEBOARD, MINIMUM.
   - PROTECT FROM DEBRIS AND SEDIMENT WITH STRAINER OR GRATE.
5. **PIPING:**
   -PERFORATED UNDER-DRAIN PIPING: SHALL RUN LONGITUDINALLY THROUGH LENGTH OF FACILITY, SHALL BE ABS SCH. 40, CAST IRON, OR PVC SCH.40. MINIMUM DIAMETER IS 6". PIPING SHALL HAVE 1% GRADE AN FOLLOW THE UNIFORM PLUMBING CODE. PVC NOT ALLOWED ABOVE GROUND. WRAP UNDER-DRAIN IN FILTER FABRIC TO REDUCE TRANSPORT OF FINES. OVERFLOW PIPING: SHALL BE ABS SCH. 40, CAST IRON, OR PVC SCH. 40 AND SHALL NOT BE PERFORATED. MINIMUM DIAMETER IS 6". PIPING SHALL HAVE 1% GRADE AND FOLLOW THE UNIFORM PLUMBING CODE. PVC NOT ALLOWED ABOVE GROUND.
6. **DRAIN ROCK:**
   -SIZE: 1 1/2" to 3/4"-0 WASHED
   -DEPTH: 18" MINIMUM
7. **SEPARATION** BETWEEN DRAIN ROCK AND GROWING MEDIUM: SHALL BE A 3" LAYER OF 3/4" - 1/4" OPEN GRADED AGGREGATE.
8. **GROWING MEDIUM:**
   -DEPTH: 18" MINIMUM
   -SEE APPENDIX A FOR SPECIFICATION OR USE SAND/LOAM/COMPOST 3-WAY MIX.
   -FACILITY SURFACE AREA MAY BE REDUCED BY 25% WHEN GROWING MEDIA DEPTH IS INCREASED TO 30" OR MORE.
9. **VEGETATION:** FOLOW LANDSCAPE PLANS OR REFER TO PLANTING REQUIREMENTS IN APPENDIX A.
10. **WATERPROOF LINER (IF REQUIRED):** SHALL BE 30 MIL PVC OR EQUIVALENT.
11. **INSTALL RIVER ROCK** SPLASH PAD OVER A NON WOVEN GEO TEXTILE FABRIC TO TRANSITION FROM INLETS TO GROWING MEDIUM. SIZE OF ROCK SHALL BE 1'-3", 4 SQUARE FEET, 6" DEEP.
12. **SEASONAL HIGH GROUNDWATER SEPARATION:**
   -SEPARATION DISTANCE AS REQUIRED BY CITY.

Rain Garden - Filtration			CITY OF WILSONVILLE
DRAWING NUMBER: ST-6020	DRAWN BY: SR	SCALE: N.T.S.	PUBLIC WORKS STANDARDS
FILE NAME: ST-6020.DWG	APPROVED BY: NK	DATE: 4/16/18	

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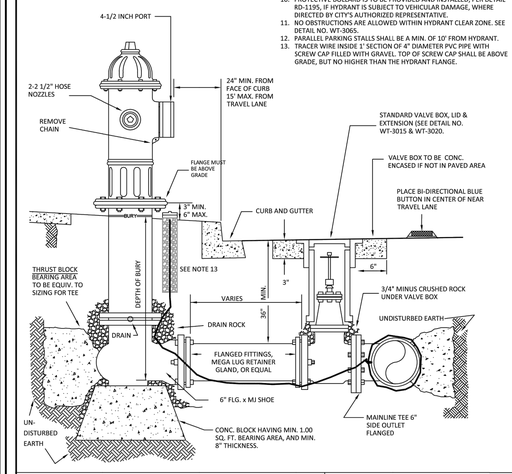
NOTES:
1. APPROVED FIRE HYDRANTS; WATEROUS PACER OR MUELLER CENTURION
2. HYDRANT COLOR TO BE INDUSTRIAL ENAMEL, OIL/ALKYD, IN SAFETY YELLOW.
3. ALL FITTINGS IN CONTACT WITH CONCRETE SHALL BE WRAPPED IN PLASTIC (8 MIL. MINIMUM). HYDRANT DRAIN HOLES TO REMAIN OPEN TO DRAIN ROCK AND OPERATIONAL.
4. MIN. 4 CU. FT. OF 1 1/2"-3/4" CLEAN DRAIN ROCK SHALL BE PLACED AROUND SHOE UP TO A MIN. OF 6" ABOVE DRAIN OUTLETS.
5. WHERE PLANTER STRIP EXISTS, HYDRANT SHALL BE PLACED SO FRONT PORT IS A MINIMUM OF 24" BEHIND FACE OF CURB.
6. WHERE INTEGRAL S/W & CURB EXISTS, HYD. SHALL BE PLACED 18" BACK OF SIDEWALK OR AS DIRECTED BY ENGINEER.
7. BURY OF HYDRANT SHALL BE MEASURED FROM FINISHED GRADE TO BOTTOM OF CONNECTING PIPE.
8. THRUST BLOCK AT FIRE HYDRANT TEE SHALL HAVE A MIN. 3.7 SQ. FT. BEARING AREA.
9. HYDRANT VALVE SHALL BE RESILIENT SEATED GATE VALVE IN ACCORDANCE WITH WILSONVILLE PWS SECTION 501.7.02.
10. PROTECTIVE BOLLARD IS TO BE PROVIDED AND INSTALLED, PER DETAIL RD-1195, IF HYDRANT IS SUBJECT TO VEHICULAR DAMAGE, WHERE DIRECTED BY CITY'S AUTHORIZED REPRESENTATIVE.
11. NO OBSTRUCTIONS ARE ALLOWED WITHIN HYDRANT CLEAR ZONE. SEE DETAIL NO. WT-3065.
12. PARALLEL PARKING STALLS SHALL BE A MIN. OF 10' FROM HYDRANT.
13. TRACER WIRE INSIDE 1" SECTION OF 4" DIAMETER PVC PIPE WITH SCREW CAP FILLED WITH GRAVEL. TOP OF SCREW CAP SHALL BE ABOVE GRADE, BUT NO HIGHER THAN THE HYDRANT FLANGE.



Fire Hydrant Assembly			CITY OF WILSONVILLE
DRAWING NUMBER: WT-3060	DRAWN BY: SR	SCALE: N.T.S.	PUBLIC WORKS STANDARDS
FILE NAME: WT-3060.DWG	APPROVED BY: NK	DATE: 10/19/18	

Item 2.

Architecture ▪ Interiors
Planning ▪ Engineering

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Client

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9835 SW COMMERCE CIRCLE
WILSONVILLE, OR 97070

Project

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REVISION SCHEDULE

Delta	Issued As	Issue Date
1	PLAN CHECK	06/10/2022
2	LAND USE	11/15/2022

SHEET TITLE:
CIVIL DETAILS

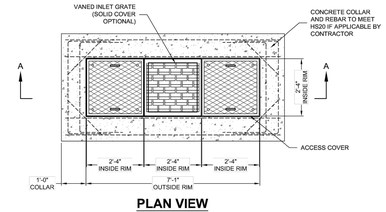
DRAWN BY: AOC, BMR

CHECKED BY: BMR, BDN

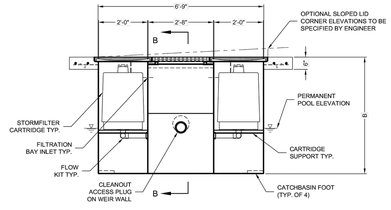
SHEET
C5.12

JOB NO. **2200502.04**

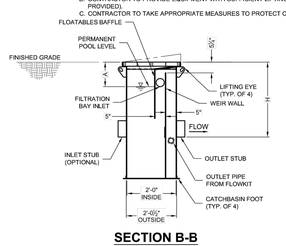
DESIGN REVIEW SET 07/29/2022



PLAN VIEW



SECTION A-A



SECTION B-B

STORMFILTER STEEL CATCHBASIN DESIGN NOTES

STORMFILTER TREATMENT CAPACITY IS A FUNCTION OF THE CARTRIDGE SELECTION AND THE NUMBER OF CARTRIDGES. 2 CARTRIDGE CATCHBASIN HAS A MAXIMUM OF TWO CARTRIDGES. SYSTEM IS SHOWN WITH A 27" CARTRIDGE, AND IS ALSO AVAILABLE WITH AN 18" CARTRIDGE. STORMFILTER CATCHBASIN CONFIGURATIONS ARE AVAILABLE WITH A DRY INLET BAY FOR VECTOR CONTROL.
PEAK HYDRAULIC CAPACITY PER TABLE BELOW. IF THE SITE CONDITIONS EXCEED PEAK HYDRAULIC CAPACITY, AN UPSTREAM BYPASS STRUCTURE IS REQUIRED.

CARTRIDGE SELECTION

CARTRIDGE HEIGHT	27"			18"			18" DEEP		
RECOMMENDED HYDRAULIC DROP (H)	3.05'			2.3'			3.3'		
SPECIFIC FLOW RATE (gpm/sf)	2 gpm/sf	1.67 gpm/sf	1 gpm/sf	2 gpm/sf	1.67 gpm/sf	1 gpm/sf	2 gpm/sf	1.67 gpm/sf	1 gpm/sf
CARTRIDGE FLOW RATE (gpm)	22.5	18.79	11.25	15	12.53	7.5	15	12.53	7.5
PEAK HYDRAULIC CAPACITY	1.0			1.0			1.8		
INLET PERMANENT POOL LEVEL (A)	1'-0"			1'-0"			2'-0"		
OVERALL STRUCTURE HEIGHT (B)	4'-9"			3'-9"			4'-9"		

* 1.67 gpm/sf SPECIFIC FLOW RATE IS APPROVED WITH PHOSPHOSORB® (PSORB) MEDIA ONLY

GENERAL NOTES
1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. FOR SITE SPECIFIC DRAWINGS WITH DETAILED STORMFILTER CATCHBASIN STRUCTURE DIMENSIONS AND WEIGHTS, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS LLC REPRESENTATIVE. WWW.CONTECHES.COM
3. STORMFILTER CATCHBASIN WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING.
4. INLET SHOULD NOT BE LOWER THAN OUTLET. INLET (IF APPLICABLE) AND OUTLET PIPING TO BE SPECIFIED BY ENGINEER AND PROVIDED BY CONTRACTOR.
5. MANUFACTURER TO APPLY A SURFACE BEAD WELD IN THE SHAPE OF THE LETTER "O" ABOVE THE OUTLET PIPE STUB ON THE EXTERIOR SURFACE OF THE STEEL SFCB.
6. STORMFILTER CATCHBASIN EQUIPPED WITH 4 INCH (APPROXIMATE) LONG STUBS FOR INLET (IF APPLICABLE) AND OUTLET PIPING. STANDARD OUTLET STUB IS 8 INCHES IN DIAMETER. MAXIMUM OUTLET STUB IS 15 INCHES IN DIAMETER. CONNECTION TO COLLECTION PIPING CAN BE MADE USING FLEXIBLE COUPLING BY CONTRACTOR.
7. STEEL STRUCTURE TO BE MANUFACTURED OF 1/4 INCH STEEL PLATE. CASTINGS SHALL MEET AASHTO M306 LOAD RATING. TO MEET HS20 LOAD RATING ON STRUCTURE, A CONCRETE COLLAR IS REQUIRED. WHEN REQUIRED, CONCRETE COLLAR WITH #4 REINFORCING BARS TO BE PROVIDED BY CONTRACTOR.
8. FILTER CARTRIDGES SHALL BE MEDIA-FILLED, PASSIVE, SIPHON ACTUATED, RADIAL FLOW, AND SELF CLEANING. RADIAL MEDIA DEPTH SHALL BE 7-INCHES. FILTER MEDIA CONTACT TIME SHALL BE AT LEAST 38 SECONDS.
9. SPECIFIC FLOW RATE IS EQUAL TO THE FILTER TREATMENT CAPACITY (gpm) DIVIDED BY THE FILTER CONTACT SURFACE AREA (sq ft).

INSTALLATION NOTES
A. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE CATCHBASIN (LIFTING CLUTCHES PROVIDED).
C. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO PROTECT CARTRIDGES FROM CONSTRUCTION-RELATED EROSION RUNOFF.

2-CARTRIDGE DEEP CATCHBASIN STORMFILTER DATA

STRUCTURE ID		CB4
WATER QUALITY FLOW RATE (cfs)		0.071
PEAK FLOW RATE (<1 ft cfs)		0.24
RETURN PERIOD OF PEAK FLOW (yrs)		25
CARTRIDGE FLOW RATE (gpm)		44.0
MEDIA TYPE (PERLITE, ZPG, PSORB)		ZPG
RIM ELEVATION		246.98'
PIPE DATA:	I.E.	DIAMETER
INLET STUB	---	---
OUTLET STUB	243.93'	6"

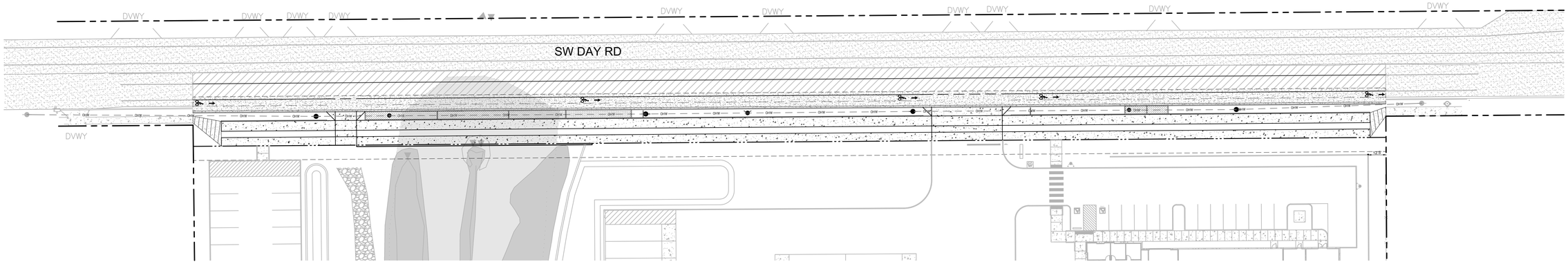
CONFIGURATIONS

SLOPED LID	NO
SOLID COVER	NO

NOTES/SPECIAL REQUIREMENTS:

The Stormwater Solution
StormFilter®
Patents: www.contechstormwater.com/Catalog/index.cfm/Patents
The StormFilter is one or more of the following patents: 5,322,629; 5,707,527; 5,759,415; 6,027,639; 6,350,374; 6,406,218; 6,641,720; 6,511,595; 6,649,048; 6,991,114; 7,186,333; 7,296,692; 7,297,266; 7,297,267; 7,390,411; 7,425,262; 7,470,366; 7,563,363; 7,686,173; 7,708,880; 7,905,367; 7,959,797; 8,002,973; 8,557,110; 8,673,157; 8,858,791; 9,199,184; 9,266,040; 9,352,260; 9,352,261; 9,352,262; 9,352,263; 9,352,264; 9,352,265; 9,352,266; 9,352,267; 9,352,268; 9,352,269; 9,352,270; 9,352,271; 9,352,272; 9,352,273; 9,352,274; 9,352,275; 9,352,276; 9,352,277; 9,352,278; 9,352,279; 9,352,280; 9,352,281; 9,352,282; 9,352,283; 9,352,284; 9,352,285; 9,352,286; 9,352,287; 9,352,288; 9,352,289; 9,352,290; 9,352,291; 9,352,292; 9,352,293; 9,352,294; 9,352,295; 9,352,296; 9,352,297; 9,352,298; 9,352,299;

DELTA LOGISTICS FRONTAGE IMPROVEMENTS
WILSONVILLE, OR



1 R0.00 SITE MAP

30 0 15 30 60 120 1:1

(IN FEET)
1 inch = 30 ft.

NOTICE TO EXCAVATORS:
ATTENTION: OREGON LAW REQUIRES YOU TO FOLLOW RULES ADOPTED BY THE OREGON UTILITY NOTIFICATION CENTER. THOSE RULES ARE SET FORTH IN OAR 952-001-0010 THROUGH OAR 952-001-0090. YOU MAY OBTAIN COPIES OF THE RULES BY CALLING THE CENTER.
(NOTE: THE TELEPHONE NUMBER FOR THE OREGON UTILITY NOTIFICATION CENTER IS (503)-232-1987).

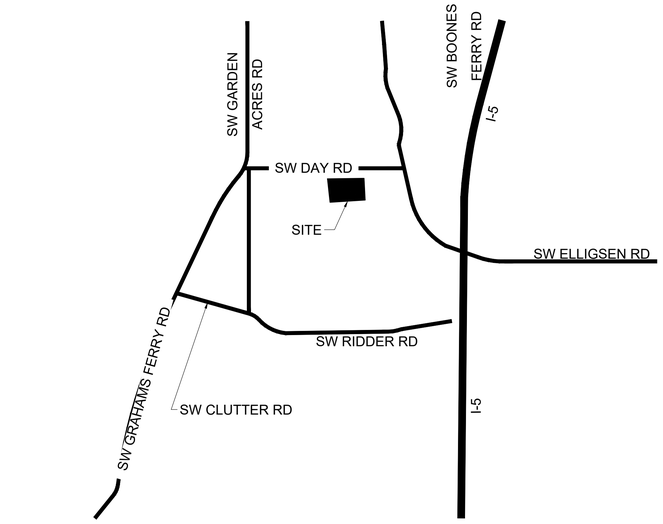
POTENTIAL UNDERGROUND FACILITY OWNERS

Dig Safely.

Call the Oregon One-Call Center
DIAL 811 or 1-800-332-2344

EMERGENCY TELEPHONE NUMBERS

NW NATURAL GAS	
M-F 7am-6pm	503-226-4211 Ext.4313
AFTER HOURS	503-226-4211
PGE	503-228-6322
COMCAST	1-800-266-2278
CITY OF WILSONVILLE WATER AND SEWER	503-570-1610
CENTURYLINK	1-866-421-0662
FRONTIER COMMUNICATIONS	1-855-801-3655



2 R0.00 VICINITY MAP
N.T.S.
1:1

APPLICANT
DELTA LOGISTICS
ATTN: VLAD TKACH
9835 SW COMMERCE CIRCLE,
WILSONVILLE, OR 97070
PH: (503) 665-2200
E-MAIL: vlad@deltagov.com

SURVEYOR
WEDDLE SURVEYING INC.
ATTN: ANTHONY RYAN
6950 SW HAMPTON ST., SUITE 170
TIGARD, OR 97223
PH: (503) 941-9585
FAX: (503) 941-9640
E-MAIL: tony@weddlesurveying.com

SITE ADDRESS
9710 SW DAY RD
SHERWOOD, OR 97140
PARCEL# 3S102B000600
#3S102B000601

BENCH MARK
THE BENCHMARK USED FOR THIS PROJECT WAS CONTROL POINT #400, A 3/8" IRON ROD WITH RED PLASTIC CAP MARKED "AKS CONTROL POINT"
ELEVATION: 244.85' NAVD '88 DATUM (GEOID 12B)

CIVIL
MACKENZIE
ATTN: GREG MINO
1515 SE WATER AVE, SUITE #100
PORTLAND, OR 97214
PH: (503) 224-9560
FAX: (503) 228-1285
E-MAIL: GIM@mcknze.com

LANDSCAPE ARCHITECT
MACKENZIE
ATTN: STEVEN TUTTLE
1515 SE WATER AVENUE, SUITE 100
PORTLAND, OREGON 97214
PH: (503) 224-9560
FAX: (503) 228-1285
E-MAIL: SPT@mcknze.com

PLANNER
MACKENZIE
ATTN: LEE LEIGHTON
1515 SE WATER AVE, SUITE #100
PORTLAND, OR 97214
PH: (503) 224-9560
FAX: (503) 228-1285
E-MAIL: LDL@mcknze.com

ELECTRIC SERVICE PROVIDER
PGE
ATTN: JOSE VELASCO
PH: (503) 672-5454
E-MAIL: jose.velasco@pgn.com
PROJECT #: M3228270

SHEET INDEX

Sheet Number	Sheet Title
R0.00	COVER SHEET
R0.01	NOTES, LEGEND, AND ABBREVIATIONS
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Item 2.

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DELTA LOGISTICS
9835 SW COMMERCE CIRCLE
WILSONVILLE, OR
97070

Project

DELTA LOGISTICS SITE EXPANSION FRONTAGE MPROVEMENTS
9710 SW DAY RD.
CITY OF
WILSONVILLE, OR

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Delta	Issued As	Issue Date

SHEET TITLE:
COVER SHEET

DRAWN BY: CME

CHECKED BY: GIM

SHEET
R0.00

JOB NO. **2200502.04**

LAND USE RESUBMITTAL 07/26/22

1156

GENERAL NOTES

1. ALL WORK SHALL CONFORM TO THE STANDARD SPECIFICATIONS AND THE REQUIREMENTS OF CITY OF WILSONVILLE, CITY OF WILSONVILLE PUBLIC WORKS STANDARDS-2017 AND THE CURRENT AMERICAN PUBLIC WORKS ASSOCIATION STANDARDS FOR PUBLIC WORKS CONSTRUCTION.
2. THE WORKING DRAWINGS ARE GENERALLY DIAGRAMMATIC. THEY DO NOT SHOW EVERY OFFSET, BEND OR ELBOW REQUIRED FOR INSTALLATION IN THE SPACE PROVIDED. THEY DO NOT SHOW EVERY DIMENSION, COMPONENT PIECE, SECTION, JOINT OR FITTING REQUIRED TO COMPLETE THE PROJECT. ALL LOCATIONS FOR WORK SHALL BE CHECKED AND COORDINATED WITH EXISTING CONDITIONS IN THE FIELD BEFORE BEGINNING CONSTRUCTION. EXISTING UNDERGROUND UTILITIES LAYING WITHIN THE LIMITS OF EXCAVATION SHALL BE VERIFIED AS TO CONDITION, SIZE AND LOCATION BY UNCOVERING, PROVIDING SUCH IS PERMITTED BY LOCAL PUBLIC AUTHORITIES WITH JURISDICTION, BEFORE BEGINNING CONSTRUCTION. CONTRACTOR TO NOTIFY ENGINEER IF THERE ARE ANY DISCREPANCIES.
3. EFFECTIVE EROSION CONTROL IS REQUIRED. EROSION CONTROL DEVICES MUST BE INSTALLED AND MAINTAINED TO MEET THE CITY REQUIREMENTS. THE GOVERNING JURISDICTION MAY, AT ANY TIME, ORDER CORRECTIVE ACTION AND STOPPAGE OF WORK TO ACCOMPLISH EFFECTIVE EROSION CONTROL.
4. EFFECTIVE DRAINAGE CONTROL IS REQUIRED. DRAINAGE SHALL BE CONTROLLED WITHIN THE WORK SITE AND SHALL BE ROUTED SO THAT ADJACENT PRIVATE PROPERTY, PUBLIC PROPERTY, AND THE RECEIVING SYSTEM ARE NOT ADVERSELY IMPACTED. THE GOVERNING JURISDICTION MAY, AT ANY TIME, ORDER CORRECTIVE ACTION AND STOPPAGE OF WORK TO ACCOMPLISH EFFECTIVE DRAINAGE CONTROL.
5. CONTRACTOR SHALL ADJUST ALL STRUCTURES IMPACTED BY CONSTRUCTION IMPROVEMENTS TO NEW FINISH GRADES.
6. EXCAVATION: EXCAVATE FOR SLABS, PAVING, AND OTHER IMPROVEMENTS TO SIZES AND LEVELS SHOWN OR REQUIRED. ALLOW FOR FORM CLEARANCE AND FOR PROPER COMPACTION OF REQUIRED BACKFILLING MATERIAL. EXCAVATOR(S) SHALL NOTIFY ALL UTILITY COMPANIES FOR LINE LOCATIONS SEVENTY-TWO (72) HOURS (MINIMUM) PRIOR TO START OF WORK. DAMAGE TO UTILITIES SHALL BE CORRECTED AT THE CONTRACTOR'S EXPENSE.
7. WHERE CONNECTING TO AN EXISTING PIPE, AND PRIOR TO ORDERING MATERIALS, THE CONTRACTOR SHALL EXPOSE THE END OF THE EXISTING PIPE VERIFY THE LOCATION, SIZE, AND ELEVATION. NOTIFY ENGINEER OF ANY DISCREPANCIES.

UTILITY NOTES

1. ALL WORK SHALL CONFORM TO THE REQUIREMENTS OF CITY OF WILSONVILLE, DEPARTMENT OF ENVIRONMENTAL SERVICE, AND THE CURRENT EDITION OF THE UNIFORM PLUMBING CODE AND THE INTERNATIONAL BUILDING CODE. ALL WORK WITHIN THE PUBLIC R.O.W. REQUIRES A PUBLIC WORKS PERMIT.
2. THE WORKING DRAWINGS ARE GENERALLY DIAGRAMMATIC. THEY DO NOT SHOW EVERY OFFSET, BEND OR ELBOW REQUIRED FOR INSTALLATION IN THE SPACE PROVIDED. THEY DO NOT SHOW EVERY DIMENSION, COMPONENT PIECE, SECTION, JOINT OR FITTING REQUIRED TO COMPLETE THE PROJECT. ALL LOCATIONS FOR WORK SHALL BE CHECKED AND COORDINATED WITH EXISTING CONDITIONS IN THE FIELD BEFORE BEGINNING CONSTRUCTION. EXISTING UNDERGROUND UTILITIES LAYING WITHIN THE LIMITS OF EXCAVATION SHALL BE VERIFIED AS TO CONDITION, SIZE AND LOCATION BY UNCOVERING, PROVIDING SUCH IS PERMITTED BY LOCAL PUBLIC AUTHORITIES WITH JURISDICTION, BEFORE BEGINNING CONSTRUCTION. CONTRACTOR TO NOTIFY ENGINEER IF THERE ARE ANY DISCREPANCIES.
3. PROVIDE CLEANOUTS AS REQUIRED IN THE CURRENT EDITION OF THE UNIFORM PLUMBING CODE.
4. ALL STORM PIPING IS SIZED FOR A MANNING'S "N" VALUE = 0.013 ALL STORM PIPING IS DESIGNED USING CONCENTRIC PIPE TO PIPE AND WYE FITTINGS, UNLESS OTHERWISE NOTED.
5. VERIFY LOCATION, SIZE AND DEPTH OF EXISTING UTILITIES BY POTHOLING PRIOR TO CONSTRUCTION. NOTIFY ENGINEER OF DISCREPANCIES.
6. THE SURVEY INFORMATION SHOWN AS A BACKGROUND SCREEN ON THIS SHEET IS BASED ON A SURVEY PREPARED BY WEDDLE SURVEYING, INC.
7. CONTRACTOR TO PROVIDE POWER TO IRRIGATION CONTROLLER VIA DESIGN BUILD ELECTRICAL. SEE SPECIFICATIONS AND LANDSCAPE PLANS.
8. SEE BUILDING PLUMBING DRAWINGS FOR PIPING WITHIN THE BUILDING AND UP TO 5' OUTSIDE THE BUILDING, INCLUDING ANY FOUNDATION DRAINAGE PIPING.
9. CONTRACTOR TO MAINTAIN MINIMUM 3 FT OF COVER OVER ALL WATER LINE.

GRADING NOTES

1. ROUGH GRADING: BRING ALL FINISH GRADES TO APPROXIMATE LEVELS INDICATED. WHERE GRADES ARE NOT OTHERWISE INDICATED, FINISH GRADES ARE TO BE THE SAME AS ADJACENT SIDEWALKS, CURBS, OR THE OBVIOUS GRADE OF ADJACENT STRUCTURE. GRADE TO UNIFORM LEVELS OR SLOPES BETWEEN POINTS WHERE GRADES ARE GIVEN. ROUND OFF SURFACES, AVOID ABRUPT CHANGES IN LEVELS. ROUGH GRADE TO ALLOW FOR DEPTH OF CONCRETE SLABS, WALKS, AND THEIR BASE COURSES. GRADE FOR PAVED DRIVES AND PAVED PARKING AREAS AS INDICATED AND SPECIFIED HEREIN, AND PROVIDE FOR SURFACE DRAINAGE AS SHOWN, ALLOWING FOR THICKNESS OF SURFACING MATERIAL.
   FINISH GRADING: AT COMPLETION OF JOB AND AFTER BACKFILLING BY OTHER CRAFTS HAS BEEN COMPLETED, REFILL AND COMPACT AREAS WHICH HAVE SETTLED OR ERODED TO BRING TO FINAL GRADES.
   GRADING TOLERANCES:
   ROUGH GRADE AT PAVED OR LANDSCAPED AREAS: ±0.1 FT.
   FINISH GRADE PRIOR TO PLACING FINAL SURFACING: ±0.03 FT.
2. EFFECTIVE EROSION PREVENTION AND SEDIMENT CONTROL IS REQUIRED. EROSION CONTROL DEVICES MUST BE INSTALLED AND MAINTAINED MEETING THE CITY AND DEQ REQUIREMENTS. THE GOVERNING JURISDICTION MAY, AT ANY TIME, ORDER CORRECTIVE ACTION AND STOPPAGE OF WORK TO ACCOMPLISH EFFECTIVE EROSION CONTROL.
3. EFFECTIVE DRAINAGE CONTROL IS REQUIRED. DRAINAGE SHALL BE CONTROLLED WITHIN THE WORK SITE AND SHALL BE SO ROUTED THAT ADJACENT PRIVATE PROPERTY, PUBLIC PROPERTY, AND THE RECEIVING SYSTEM ARE NOT ADVERSELY IMPACTED. THE GOVERNING JURISDICTION MAY, AT ANY TIME, ORDER CORRECTIVE ACTION AND STOPPAGE OF WORK TO ACCOMPLISH EFFECTIVE DRAINAGE CONTROL.
4. SITE TOPSOIL SHALL BE STOCKPILED DURING CONSTRUCTION AND USED FOR LANDSCAPING.
5. THE SURVEY INFORMATION SHOWN AS A BACKGROUND SCREEN ON THIS SHEET IS BASED ON A SURVEY BY NORTHWEST SURVEYING INC, AND IS SHOWN FOR REFERENCE ONLY. CONTRACTOR TO VERIFY ALL EXISTING CONDITIONS WITH HIS OWN RESOURCES PRIOR TO START OF ANY CONSTRUCTION.
6. CONTRACTOR TO COORDINATE GRADES AT ENTRANCE WITH ARCHITECTURAL PLANS PRIOR TO CONSTRUCTION.
7. 2% MAXIMUM CROSS SLOPE AT ALL ADA-COMPLIANT PARKING SPACES AND LOADING ZONES.
8. 5% MAX LONGITUDINAL SLOPE (EXCLUDING RAMPS) AT PEDESTRIAN SIDEWALK CONNECTIONS BETWEEN PUBLIC R.O.W. AND BUILDING ENTRANCES.
9. WHERE SLOPES ARE STEEPER THAN 3:1, CONTRACTOR SHALL INSTALL JUTE MATTING. SLOPE SHALL BE PREPARED TO ENSURE COMPLETE AND DIRECT CONTACT OF MATTING WITH SOIL. FOLLOW MANUFACTURER'S RECOMMENDATIONS.

LEGEND

	EXISTING	PROPOSED
CURBLINE AND GUTTER		
BRUSH LINE		
BUILDING EAVE		
BUILDING FOOTPRINT		
CENTERLINE		
EASEMENT LINE		
FENCE LINE		
GAS LINE	G	
OVERHEAD POWER	E	
STORM DRAIN LINE	SD	
PERFORATED PIPE		
PROPERTY LINE		
R.O.W. LINE		
WATER LINE	W	
WETLANDS		
WETLANDS BUFFER		
CULVER INLET/OUTLET		
CURB INLET		
DECORATIVE SHRUB		
DOWNSPOUT		
FIRE HYDRANT		
GAS METER	G	
GAS RISER		
GATE POST		
GUY ANCHOR		
MAILBOX		
POWER METER	EM	
SIGN "AS NOTED"		P
SITE BENCHMARK		
STORM DRAIN MANHOLE	D	
SURVEY MONUMENTS FOUND		
SURVEY MONUMENTS SET		
UTILITY LID		
WATER METER	W	
WATER RISER		
WATER VALVE		
WATER VAULT		WV
WETLANDS BUFFER/ LINE STAKES		
POWER POLE	PP	
SIDEWALK		
CONFEROUS TREE		
DECIDUOUS TREE		

ABBREVIATIONS

TC	TOP OF CURB	WM	WATER METER
AC	ASPHALT	OH	OVERHEAD WIRE
FH	FIRE HYDRANT	SSWR	SANITARY SEWER
FG	FINISHED GRADE	MH	MANHOLE
SW	SIDEWALK ELEVATION	IE	INVERT ELEVATION
TS	TOP OF STAIR	CB	CATCH BASIN
BS	BOTTOM OF STAIR	STM	STORM
TYP	TYPICAL	RD	ROOF DRAIN
R.O.W.	RIGHT OF WAY	FF/FFE	FINISHED FLOOR ELEVATION
LS	LANDSCAPE	NG	NATURAL GROUND
SROZ	SIGNIFICANT RESOURCE OVERLAY ZONE	CL	CENTERLINE
		GPM	GALLONS PER MINUTE
CO	CLEAN OUT	FW	FIRE WATER
INV	INVERT	PWS	PUBLIC WORKS STANDARDS
RD	ROOF DRAIN		
COW	CITY OF WILSONVILLE	PUE	PUBLIC UTILITY EASEMENT
		ELEV	ELEVATION

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Project

DELTA LOGISTICS SITE EXPANSION FRONTAGE MPROVEMENTS
9710 SW DAY RD. CITY OF WILSONVILLE, OR

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Delta	Issued As	Issue Date

SHEET TITLE:
NOTES, LEGEND, AND ABBREVIATIONS

DRAWN BY: AOC, BMR

CHECKED BY: BMR, BDN

SHEET
R0.01

JOB NO. **2200502.04**

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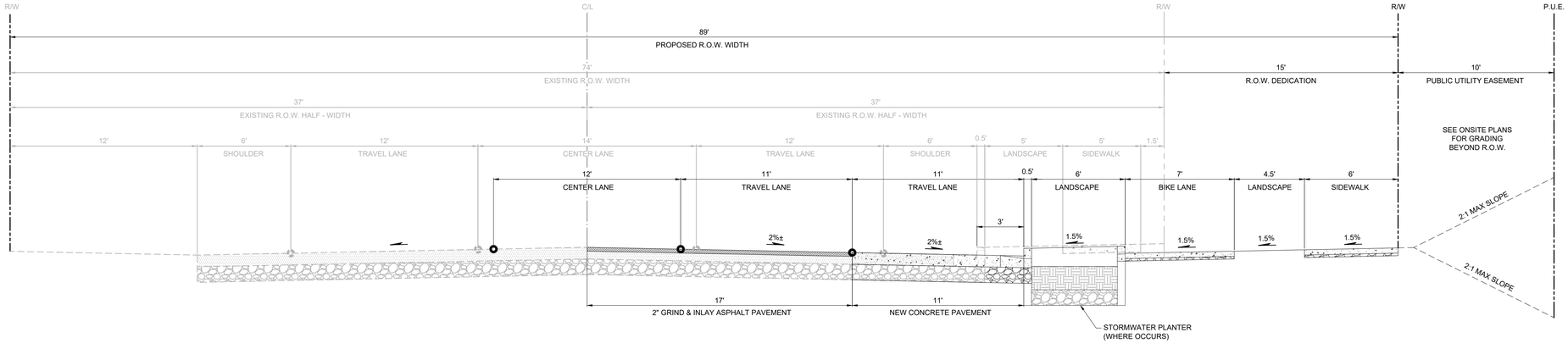
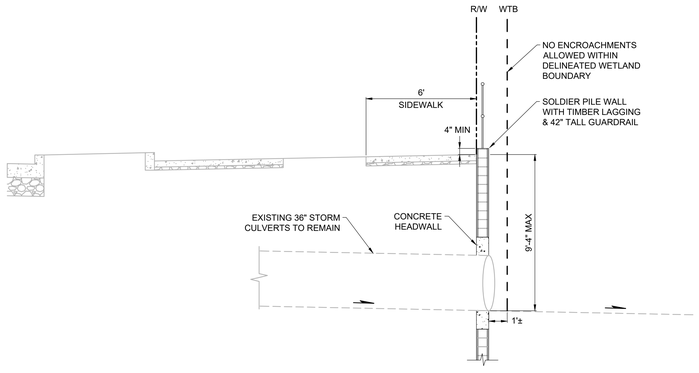
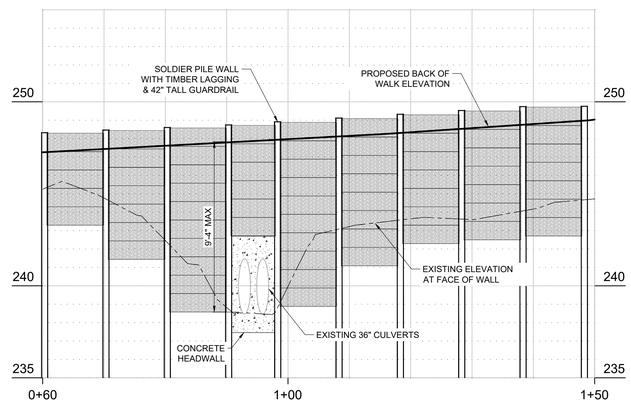


1 R0.02 TYPICAL SECTION - DAY ROAD
N.T.S.



2 R0.02 CROSS SECTION - DAY ROAD (CULVERT)
N.T.S.



1 R0.02 ELEVATION - DAY ROAD (CULVERT)
N.T.S.

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DRAWN BY: CME

CHECKED BY: GIM

SHEET

R0.02

JOB NO. **2200502.04**

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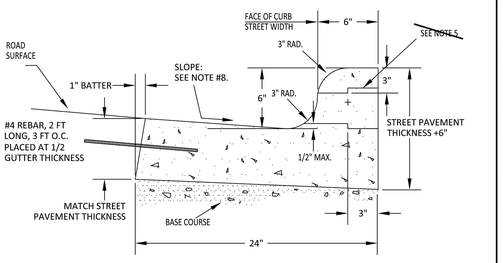

NOTES
1. NOT FOR USE ALONG MEDIANS.
2. CONCRETE SHALL BE COMMERCIAL MIX, MIN. COMPRESSIVE STRENGTH OF 3300 PSI AT 28 DAYS AND INCORPORATE MICRO-REINFORCEMENT "FIBERMESH 300" OR APPROVED EQUAL.
3. CONSTRUCTION JOINTS.
   A. SPACING TO BE NOT MORE THAN 12 FEET.
   B. JOINTS SHALL BE HAND SAWCUT, WHEN WET, THROUGH ENTIRE WIDTH AND FULL DEPTH OF CURB AND GUTTER.
4. BASE ROCK TO BE 3/4"-0 COMPACTED TO 95% OF AASHTO T-180 AND SHALL BE TO SUB GRADE, STREET STRUCTURE, OR 4" IN DEPTH, WHICHEVER IS GREATER.
5. ~~DRAINAGE BLOCK OUT~~
   ~~A. 3" I.D. PLASTIC PIPE WITH COUPLING.~~
   ~~B. DRAINAGE ACCESS THRU EXISTING CURB SHALL BE CORE DRILLED.~~
6. FOR RECONSTRUCTED CURB, DRILL CONCRETE STREET AND SET DOWELS WITH EPOXY PRIOR TO CURB INSTALLATION.
7. BASE COURSE SHALL BE THOROUGHLY WATERED IMMEDIATELY PRIOR TO PLACEMENT OF CONCRETE WHEN THE MEASURED OR FORECASTED ASCENDING AIR TEMPERATURE IS 80 DEGREES OR GREATER.
8. GUTTER PAN SHALL HAVE A NORMAL SLOPE OF 6.7% DESIGN (1" FALL OVER THE 15" GUTTER PAN), 6.0% MINIMUM, 8.0% MAXIMUM. GUTTER PAN SLOPE AT SIDEWALK RAMPS SHALL BE BETWEEN 2% AND 5% TO MATCH CROSS SLOPE OF STREET, THE FULL WIDTH OF THE SIDEWALK RAMP. THE MAXIMUM ALGEBRAIC GRADE BREAK BETWEEN THE SIDEWALK RAMP AND THE STREET CROSS SLOPE, INCLUDING THE GUTTER PAN, SHALL BE 11%. SEE SIDEWALK RAMP DETAILS RD-1110 THROUGH 1140.
8. GUTTER STAMPS ARE REQUIRED AT LOCATIONS OF ALL SERVICE AND CONDUIT CROSSINGS (SEC. 201.2.24.D). MARKINGS SHALL BE SANDBLASTED INTO CONCRETE CURBS. LETTER SHALL BE 3" IN HEIGHT AND EMBOSSED A MINIMUM OF 1/8" DEEP.

Concrete Street Curb and Gutter			CITY OF WILSONVILLE
DRAWING NUMBER: RD-1060	DRAWN BY: SR	SCALE: N.T.S.	PUBLIC WORKS STANDARDS
FILE NAME: RD-1060.DWG	APPROVED BY: NK	DATE: 3/14/18	

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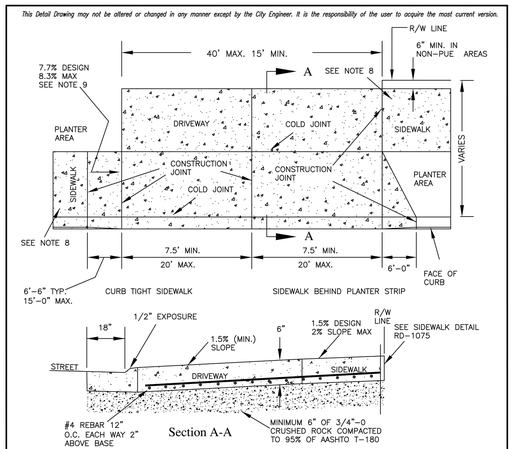

NOTES
1. DRIVEWAYS SHALL BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH "PROPOSED ACCESSIBILITY GUIDELINES FOR PEDESTRIAN FACILITIES IN THE PUBLIC RIGHT-OF-WAY" (PROWAG) JULY, 2011 EDITION.
2. CONCRETE SHALL BE COMMERCIAL MIX, MIN. COMPRESSIVE STRENGTH OF 3300 PSI AT 28 DAYS.
3. BASE COURSE SHALL BE THOROUGHLY WATERED IMMEDIATELY PRIOR TO PLACEMENT OF CONCRETE WHEN THE MEASURED OR FORECASTED ASCENDING AIR TEMPERATURE IS 80 DEGREES OR GREATER.
4. CURB JOINT SHALL BE A TROWELED JOINT WITH A MIN. 1/2" RADIUS ALONG THE BACK OF CURB.
5. CONTRACTION JOINT SPACING SHALL NOT EXCEED 12 FEET.
6. USE EXISTING CURB EXPANSION JOINT OR SAW CUT AND PLACE COLD JOINT.
7. SPACING OF 2" CONCRETE SUPPORT BLOCKS SHALL BE NO GREATER THAN 3" AND BLOCKS SHALL BE TIED TO #4 REBAR WITH WIRE.
8. SIDEWALK THICKNESS SHALL BE 6 INCHES MINIMUM, REINFORCED, AND EXTEND TO AT LEAST ONE PANEL BEYOND DRIVEWAY APRON.
9. ON STEEP SLOPES, SIDEWALK RAMPS SHALL HAVE A MAXIMUM SLOPE OF 8.3% OR MAXIMUM LENGTH OF 15 FEET CONSTRUCTED AT A CONSTANT SLOPE.
10. THE CROSS SLOPE OF THE PEDESTRIAN ACCESS ROUTE SHALL BE DESIGNED AT 1.5% AND NOT EXCEED 2%.
11. DRIVEWAYS SHALL NOT BE WIDER THAN NECESSARY TO SAFELY ACCOMMODATE PROJECTED PEAK HOUR TRIPS AND TURNING MOVEMENTS AND SHALL BE DESIGNED TO MINIMIZE PEDESTRIAN CROSSING DISTANCES.

Commercial Driveway - Type I			CITY OF WILSONVILLE
DRAWING NUMBER: RD-1095	DRAWN BY: SR	SCALE: N.T.S.	PUBLIC WORKS STANDARDS
FILE NAME: RD-1095.DWG	APPROVED BY: PN	DATE: 4/8/19	

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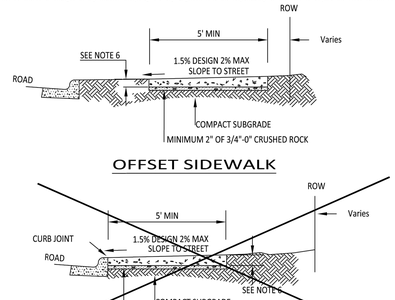

NOTES
1. SIDEWALK SHALL BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH "PROPOSED ACCESSIBILITY GUIDELINES FOR PEDESTRIAN FACILITIES IN THE PUBLIC RIGHT-OF-WAY" (PROWAG) JULY, 2011 EDITION.
2. CONCRETE SHALL BE NATURAL IN COLOR, WITH NO COLORING EITHER ADDED TO THE MIX OR APPLIED TO THE FINISH.
3. CURB TIGHT SIDEWALK MAY ONLY BE USED WITH PRIOR APPROVAL FROM THE CITY ENGINEER.
4. SIDEWALKS SHALL HAVE A LIGHT BROOM FINISH TRANSVERSE TO THE LINE OF TRAVEL AND ALL EDGES TOOL ROUNDED.
   -NEW SIDEWALK, 6 FEET OR LESS IN WIDTH, SHALL HAVE ALL EDGES 3" WIDE SHINED AFTER BROOMING
   -INFILL & REPLACEMENT SIDEWALK SHALL BE FINISHED TO MATCH THE EXISTING SIDEWALK.
5. FOR SIDEWALKS ADJACENT TO THE CURB AND POURED AT SAME TIME AS THE CURB, THE JOINT BETWEEN THEM SHALL BE A TROWELED JOINT WITH A MINIMUM 1/2" RADIUS.
6. SIDEWALK SHALL HAVE A MINIMUM THICKNESS OF 6 INCHES CONCRETE OVER 6" OF CRUSHED ROCK AT:
   - CURBTIGHT SIDEWALK AT INTERSECTION RADIUS.
   - A MINIMUM OF ONE PANEL BEYOND EDGES OF DRIVEWAYS.
   OTHERWISE SIDEWALK SHALL HAVE A MINIMUM THICKNESS OF 4" CONCRETE OVER 2" CRUSHED ROCK.
7. DRAIN BLOCKOUTS IN CURBS SHALL BE EXTENDED TO BACK OF SIDEWALK WITH 3" DIA. PLASTIC PIPE AT 2% SLOPE. CONSTRUCTION JOINT TO BE PLACED OVER PIPE.
8. CONCRETE SHALL BE COMMERCIAL MIX, MIN. COMPRESSIVE STRENGTH OF 3300 PSI AT 28 DAYS.
9. BASE ROCK SHALL BE COMPACTED TO PROVIDE A FIRM BASE FOR CONCRETE.
10. SIDEWALK PANELS SHOULD BE SQUARE AND OF CONSISTANT DIMENSION ALONG A BLOCK FACE. THE LENGTH OF A SIDEWALK PANEL SHALL BE ADJUSTED AS NECESSARY TO ALIGN WITH CURB JOINTS.
11. WIDE SIDEWALKS SHALL BE SCORED PER CITY AUTHORIZED REPRESENTATIVE.
12. BASE COURSE SHALL BE THOROUGHLY WATERED IMMEDIATELY PRIOR TO PLACEMENT OF CONCRETE WHEN THE MEASURED OR FORECASTED ASCENDING AIR TEMPERATURE IS 80 DEGREES OR GREATER.

Concrete Sidewalk			CITY OF WILSONVILLE
DRAWING NUMBER: RD-1075	DRAWN BY: SR	SCALE: N.T.S.	PUBLIC WORKS STANDARDS
FILE NAME: RD-1075.DWG	APPROVED BY: NK	DATE: 1/4/18	

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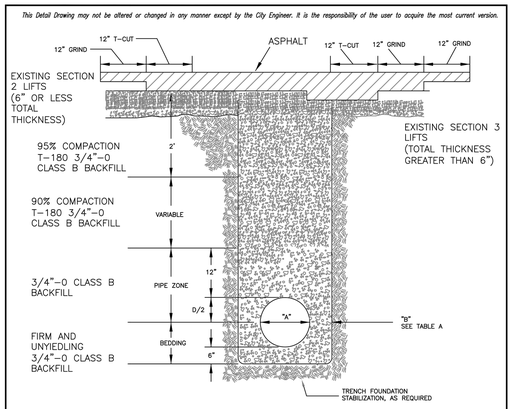

TABLE A

"A"	4"	6"	8"	10"	12"	15"	18"	21"	24"	30"	36"	42"	48"	54"	60"	66"	72"
"B"	6"	6"	6"	6"	6"	D/2	D/2	D/2	D/2	D/2	D/2	D/2	D/2	24"	24"	24"	24"

NOTES:
1. COMMERCIALLY MIXED CLSM MAY BE SUBSTITUTED FOR 3/4"-0 CLASS B BACKFILL ABOVE THE PIPE ZONE.
2. CLSM SHALL BE PLACED TO TOP OF ROAD BASE ROCK.
3. ASPHALT SHALL BE PLACED IN LIFTS NOT EXCEEDING 3" AND COMPACTED TO 92% OF RICE DENSITY
4. PIPE ZONE BACKFILL MATERIAL SHALL BE COMPACTED TO ASSURE THAT THERE ARE NO UNFILLED OR UNCOMPACTED AREAS AROUND THE PIPE.
5. IF S/W IS AGAINST CURB, FILL ROCK TO BACK OF S/W.
6. IF S/W IS NOT AGAINST CURB, FILL ROCK 2' BACK FROM CURB.
7. 12" TEE CUT TO BE MADE AFTER INSTALLATION AND COMPACTION OF CRUSHED AGGREGATE.
8. ASPHALT GRINDING TO MATCH NEW TOP LIFT THICKNESS.
9. LIFT THICKNESS MINIMUM OF 2" MAXIMUM OF 3" TO BE COORDINATED WITH CITY INSPECTOR.

Standard Backfill and Street Repair			CITY OF WILSONVILLE
DRAWING NUMBER: S-2145	DRAWN BY: SR	SCALE: N.T.S.	PUBLIC WORKS STANDARDS
FILE NAME: S-2145.dwg	APPROVED BY: NK	DATE: 6/4/14	

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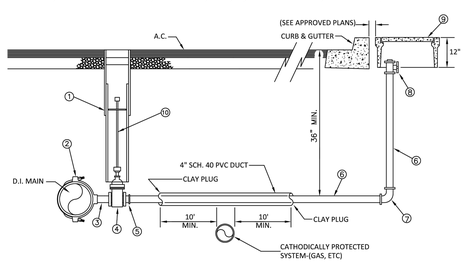

MATERIALS:
1. STANDARD VALVE BOX AND LID. SEE STANDARD DETAIL NO. WT-3020.
2. PIPE O.D. X 2" I.P.T. TEE OR STAINLESS STEEL STRAP WITH DUCTILE IRON BODY SADDLE.
3. 2" X 6" BRASS I.P.T. NIPPLE.
4. 2" I.P.T. X I.P.T. GATE VALVE (MUELLER NO. A-2360-8).
5. 2" M.I.P. X 110 COMP. STRAIGHT COUPLING MUELLER H-15428 OR FORD C84-77-Q.
6. 2" ASTM B-88 TYPE 'K' RIGID COPPER TUBING. IF SLEEVED IN A RIGID CASING USE SOFT TEMPER TYPE "K" TUBING.
7. 2" 110 COMP. X 110 COMP - 1/4 BEND MUELLER H-15526 OR FORD L84-77-Q.
8. 1 1/2"-2" 110 COMP. ANGLE METER STOP MUELLER H-14277 ONLY.
9. APPROVED BOX, COVER AND LID:
   - STANDARD: SEE DETAIL NO. WT-3050 - WT-3052.
   - TRAFFIC RATED: SEE DETAIL NO. WT-3053 - WT-3055
10. VALVE OPERATOR EXTENSION, AS NEEDED. SEE DETAIL NO. WT-3015.

NOTES:
1. SUBSTITUTES FOR ANY MATERIALS SHOWN SHALL BE APPROVED PRIOR TO CONSTRUCTION BY THE CITY WATER DEPARTMENT.
2. ALL PIPE AND STRUCTURE ZONES SHALL BE BACKFILLED USING 3/4"-0 CRUSHED AGGREGATE AND COMPACTED TO 95% MAXIMUM DENSITY AS DETERMINED BY AASHTO T-180.
3. WHEN AN ACTIVE CATHODIC PROTECTED SYSTEM IS ENCOUNTERED, SCH. 40 PVC SHALL BE INSTALLED AS SHOWN WITH CLAY PLUG.
4. METER BOX SHALL BE CENTERED OVER THE COMPLETED METER AND FITTING ASSEMBLY
5. METER BOX HEIGHT ADJUSTMENTS ON EXISTING SERVICES SHALL BE MADE WITH MANUFACTURER METER BOX EXTENSION OR BY STACKING METER BOXES AS APPROVED BY THE MANUFACTURER.
6. METER BOX SHALL BE LOCATED IN PLANTER AREAS ONLY. SEE PUBLIC WORKS STANDARDS FOR TRAFFIC RATED BOXES AND COVERS.
7. METER BOX SHALL BE LOCATED BEHIND THE SIDEWALK AT LOCATIONS WITH CURB TIGHT SIDEWALK.
8. METER BOX SHALL BE LOCATED NOT MORE THAN 12" FROM BACK OF CURB OR SIDEWALK.
9. METER BOX SHALL MATCH SIDEWALK GRADE (IF SIDEWALK EXISTS) OTHERWISE SET FLUSH WITH SURROUNDING GROUND SURFACE.
10. IF REQUIRED, CUSTOMER SHALL INSTALL AN APPROVED BACKFLOW PREVENTION DEVICE AND OBTAIN THE NECESSARY PERMITS AND INSPECTIONS FROM THE BUILDING DEPARTMENT.
11. EACH PROPERTY SHALL HAVE AN INDIVIDUAL WATER SERVICE FROM THE WATER MAIN. SHARED OR DOUBLE WATER SERVICES ARE NOT ALLOWED.

1 1/2" - 2" Single Service			CITY OF WILSONVILLE
DRAWING NUMBER: WT-3045	DRAWN BY: SR	SCALE: N.T.S.	PUBLIC WORKS STANDARDS
FILE NAME: WT-3045.DWG	APPROVED BY: NK	DATE: 1/23/18	

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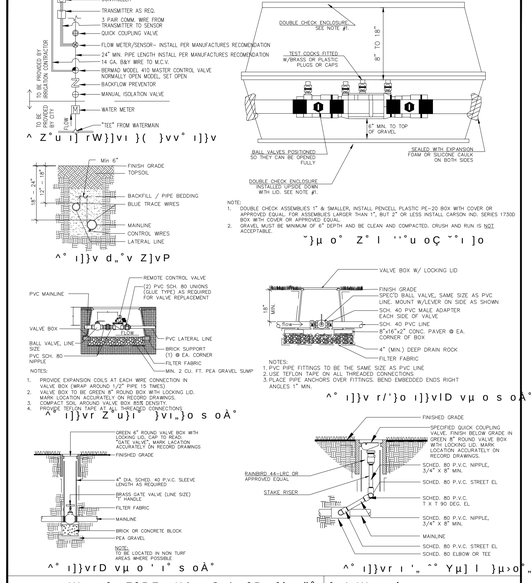

NOTE
1. DOUBLE CHECK ASSEMBLIES 1" & SMALLER, INSTALL PENCELL PLASTIC PE-20 BOX WITH COVER OR APPROVED EQUAL. FOR ASSEMBLIES LARGER THAN 1", BUT 2" OR LESS INSTALL CARSON IND. SERIES 17300 BOX WITH COVER OR APPROVED EQUAL.
2. GRAVEL MUST BE MINIMUM OF 6" DEPTH AND BE CLEAN AND COMPACTED. CRUSH AND RUN IS NOT ACCEPTABLE.

NOTES:
1. PVC PIPE FITTINGS TO BE THE SAME SIZE AS PVC LINE
2. USE TEFLON TAPE ON ALL THREADED CONNECTIONS
3. PLACE PIPE ANCHORS OVER FITTINGS. BEND EMBEDDED ENDS RIGHT ANGLES 1" MIN.

Fire Hydrant Assembly			CITY OF WILSONVILLE
DRAWING NUMBER: WT-3060	DRAWN BY: SR	SCALE: N.T.S.	PUBLIC WORKS STANDARDS
FILE NAME: WT-3060.DWG	APPROVED BY: NK	DATE: 10/19/18	

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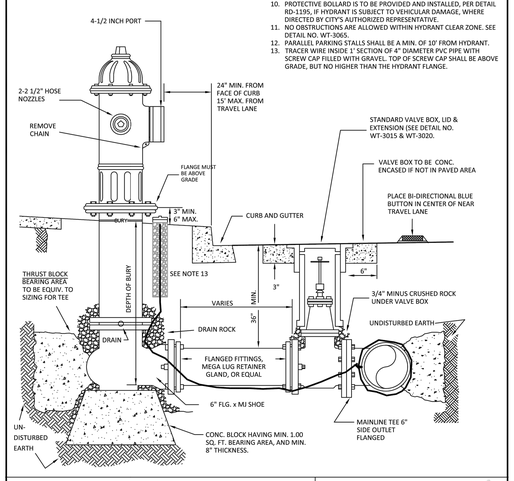
NOTES:
1. APPROVED FIRE HYDRANTS; WATEROUS PACER OR MUELLER CENTURION
2. HYDRANT COLOR TO BE INDUSTRIAL ENAMEL, OIL/ALKYD, IN SAFETY YELLOW.
3. ALL FITTINGS IN CONTACT WITH CONCRETE SHALL BE WRAPPED IN PLASTIC (8 MIL. MINIMUM). HYDRANT DRAIN HOLES TO REMAIN OPEN TO DRAIN ROCK AND OPERATIONAL.
4. MIN. 4 CU. FT. OF 1 1/2"-3/4" CLEAN DRAIN ROCK SHALL BE PLACED AROUND SHOE UP TO A MIN. OF 6" ABOVE DRAIN OUTLETS.
5. WHERE PLANTER STRIP EXISTS, HYDRANT SHALL BE PLACED SO FRONT PORT IS A MINIMUM OF 24" BEHIND FACE OF CURB.
6. WHERE INTEGRAL S/W & CURB EXISTS, HYD. SHALL BE PLACED 18" BACK OF SIDEWALK OR AS DIRECTED BY ENGINEER.
7. BURY OF HYDRANT SHALL BE MEASURED FROM FINISHED GRADE TO BOTTOM OF CONNECTING PIPE.
8. THRUST BLOCK AT FIRE HYDRANT TEE SHALL HAVE A MIN. 3.7 SQ. FT. BEARING AREA.
9. HYDRANT VALVE SHALL BE RESILIENT SEATED GATE VALVE IN ACCORDANCE WITH WILSONVILLE PWS SECTION 501.7.02.
10. PROTECTIVE BOLLARD IS TO BE PROVIDED AND INSTALLED, PER DETAIL RD-1195, IF HYDRANT IS SUBJECT TO VEHICULAR DAMAGE, WHERE DIRECTED BY CITY'S AUTHORIZED REPRESENTATIVE.
11. NO OBSTRUCTIONS ARE ALLOWED WITHIN HYDRANT CLEAR ZONE. SEE DETAIL NO. WT-3065.
12. PARALLEL PARKING STALLS SHALL BE A MIN. OF 10' FROM HYDRANT.
13. TRACER WIRE INSIDE 1' SECTION OF 4" DIAMETER PVC PIPE WITH SCREW CAP FILLED WITH GRAVEL, TOP OF SCREW CAP SHALL BE ABOVE GRADE, BUT NO HIGHER THAN THE HYDRANT FLANGE.



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Delta	Issued As	Issue Date

SHEET TITLE:
DETAILS

DRAWN BY: CME

CHECKED BY: GIM

SHEET
R0.03

JOB NO. **2200502.04**

1159

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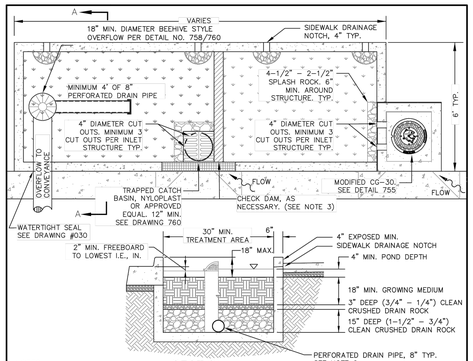

SECTION A–A

NOTES:

1. THIS DETAIL REPRESENTS A FLOW THROUGH PLANTER WITH FULL LENGTH CONCRETE WALLS AND FLOOR. FOR INFILTRATION PLANTER CONCRETE WALLS W/FOOTING WILL BE REQUIRED AS SHOWN ON DRAWING #750.
2. WALL'S STRUCTURAL DESIGN AND DIMENSIONS DETERMINED BY ENGINEER.
3. PROVIDE PROTECTION FROM ALL VEHICLE TRAFFIC, EQUIPMENT STAGING, AND FOOT TRAFFIC IN PROPOSED FACILITY AREAS PRIOR TO, DURING, AND AFTER CONSTRUCTION.
4. SIDEWALK ELEVATION MUST BE SET ABOVE CHECK DAM AND INLET/OUTLET ELEVATIONS TO ALLOW OVERFLOW TO DRAIN TO STREET OR PIPED OVERFLOW SYSTEM AS APPLICABLE.
5. PLANTER SHALL BE FLAT BOTTOM IN ALL DIRECTIONS TO WITHIN 1 INCH. CHECK DAMS SHALL BE PLACED ACCORDING TO INDIVIDUAL PROJECT PLANS PER DETAIL 762. PROVIDE 2" MIN FREEBOARD.
6. STREET SIDE CURB NOTCHES TO BE LOCATED AS IDENTIFIED ON PROJECT PLANS.
7. SIDEWALK CURB NOTCH: 1" LOWER THAN SIDEWALK, SLOPED TO FACILITY. SIDEWALK DRAINAGE NOTCHES SHALL ALIGN WITH SIDEWALK CONTRACTION JOINTS AND LOW POINTS.
8. PERFORATED PIPE IN INFILTRATION FACILITIES: BOTTOM OF PIPE SHALL BE SET AT 2 1/2" ABOVE SUBGRADE. PERFORATED PIPE IN FLOW THROUGH FACILITIES: BOTTOM OF PIPE SHALL BE SET AT BASE OF DRAIN ROCK LAYER.
9. HYDRANTS, UTILITY POLES, OR ANY UTILITY BOXES PLACED WITHIN PLANTER MUST BE APPROVED BY JURISDICTION IN WRITING.
10. ACTUAL ELEVATIONS AND DIMENSIONS TO BE CONSTRUCTED AS IDENTIFIED ON PROJECT PLANS.
11. ENSURE THAT A DOWNSTREAM CATCH BASIN IS IN PLACE FOR EMERGENCY OVERFLOW.

STREET SIDE PLANTER WITHOUT STREET PARKING

DRAWING NO. 745 REVISED 10–31–19

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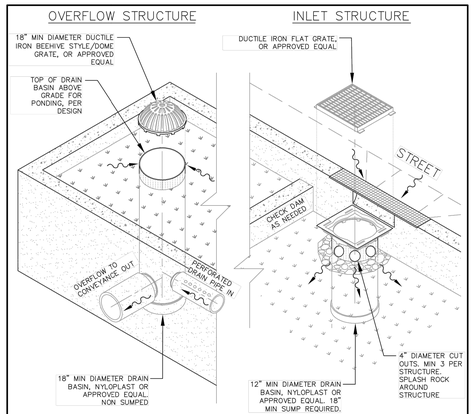

NOTE:

1. PLACE STRUCTURE ON 3/4" TO 0" BASE ROCK PLACED OVER NATIVE SUBGRADE.

OVERFLOW/INLET STRUCTURE

DRAWING NO. 760 REVISED 10–31–19

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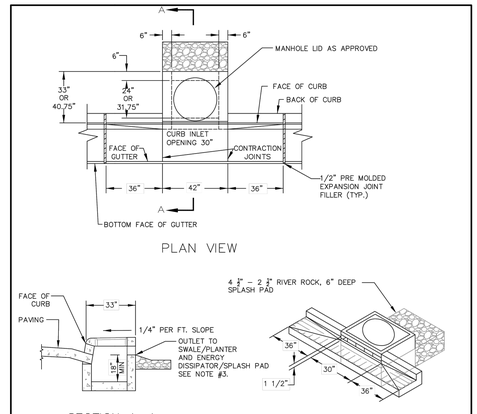


PLAN VIEW

SECTION A–A
NON–SNOUT

PERSPECTIVE VIEW SHOWING DEPRESSED GUTTER AT CURB INLET

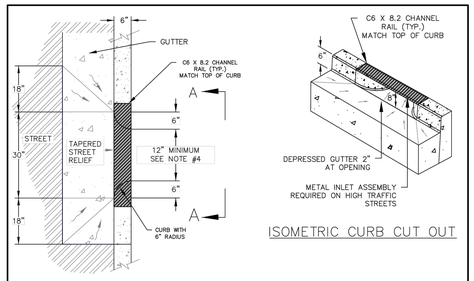
NOTES:

1. INSTALL STRUCTURE ON MINIMUM OF 8" OF 3/4" TO 0" COMPACTED BASE MATERIAL.
2. INSTALL ENERGY DISSIPATER/SPLASH PAD AT OUTFALL OF STRUCTURE.
3. FOUR INCH DIAMETER CUT OUTS, MINIMUM 3 CUT OUTS EVENLY SPACED PER INLET STRUCTURE, TYPICAL.

MODIFIED CG–30 INLET WITH SUMP

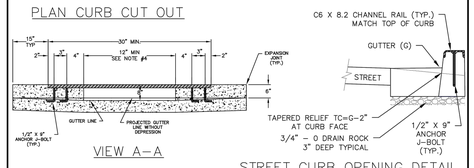
DRAWING NO. 755 REVISED 10–31–19

CleanWater Services



ISOMETRIC CURB CUT OUT

PLAN CURB CUT OUT



VIEW A–A

STREET CURB OPENING DETAIL

NOTES:

1. INFLOW STRUCTURE PER LOCAL JURISDICTION.
2. INFLOW STRUCTURE – CURB CUT OUT SHALL HAVE MINIMUM 2" DROP AT THE FLOW LINE LEADING TO THE SPLASH PAD, SEE DETAIL.
3. CURB PROFILE PER LOCAL JURISDICTION.
4. CURB CUT OUT TO MATCH INLET GRATE DIMENSION.

CURB CUT OUT TOP RAIL

DRAWING NO. 753 REVISED 10–31–19

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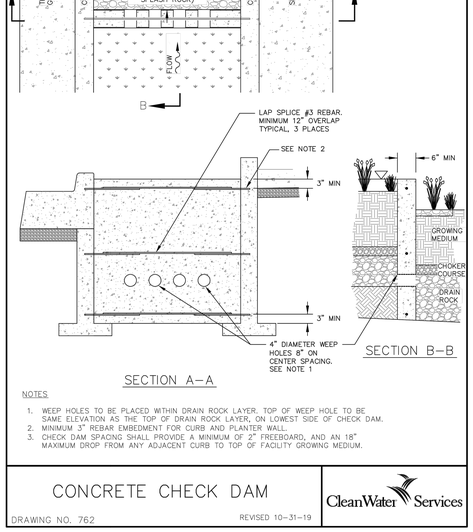

SECTION A–A

SECTION B–B

NOTES

1. WEEP HOLES TO BE PLACED WITHIN DRAIN ROCK LAYER. TOP OF WEEP HOLE TO BE SAME ELEVATION AS THE TOP OF DRAIN ROCK LAYER, ON LOWEST SIDE OF CHECK DAM.
2. MINIMUM 3" REBAR EMBEDMENT FOR CURB AND PLANTER WALL.
3. CHECK DAM SPACING SHALL PROVIDE A MINIMUM OF 2" FREEBOARD, AND AN 18" MAXIMUM DROP FROM ANY ADJACENT CURB TO TOP OF FACILITY GROWING MEDIUM.

CONCRETE CHECK DAM

DRAWING NO. 762 REVISED 10–31–19

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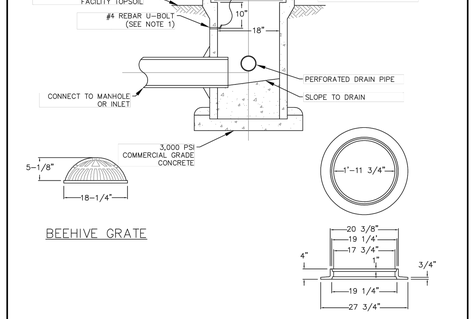

BEEHIVE GRATE

18"x4" REVERSIBLE MANHOLE FRAME

NOTES

1. SECURE GRATE IN PLACE WITH 54" OF WIRE ROPE, LOOP ENDS OF WIRE ROPE AROUND U–BOLT AND GRATE, CRIMP EACH END OF WIRE ROPE WITH 3" OVERLAP.
2. DRILL 2" DEEP HOLES INTO PIPE AND EPOXY #4 REBAR U–BOLT (2"X 4") IN HOLES.
3. GRATE TO BE CAST IRON, ASTM A48 CL30.
4. SIZE INLET BASED ON CALCULATED FLOWS AND MANUFACTURERS RECOMMENDATIONS.
5. WIRE ROPE BETWEEN 1/8"–3/16" DIAMETER, STAINLESS STEEL, 7 STRANDS OF 19 WIRES.

BEEHIVE INLET

DRAWING NO. 758 REVISED 10–31–19

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STORMWATER FACILITY GROWING MEDIUM

FURNISH IMPORTED BLENDED SOIL FOR ALL VEGETATED LIDA FACILITIES CONFORMING TO THE FOLLOWING:

- GENERAL COMPOSITION – USE MATERIAL THAT IS ANY BLEND OF LOAMY SOIL, SAND, AND COMPOST THAT IS 30–40% COMPOST (BY VOLUME) AND MEETS THE OTHER CRITERIA IN THIS SPECIFICATION.
- ANALYSIS REQUIREMENTS FOR THE BLENDED MATERIAL:
  PARTICLE GRADATION – A SIEVE ANALYSIS OF THE BLENDED MATERIAL, NOT INCLUDING COMPOST, SHALL BE CONDUCTED IN CONFORMANCE WITH ASTM C117/C136, AASHTO T11/T27, ASTM D422/D1140, OR ASTM D6913. THE ANALYSIS SHALL INCLUDE THE FOLLOWING SIEVE SIZES: 1 INCH, 3/8 INCH, #4, #10, #20, #40, #60, #100, #200. THE GRADATION OF THE BLEND SHALL MEET THE FOLLOWING GRADATION CRITERIA.

SIEVE SIZE	PERCENT PASSING
1 INCH	100
# 4	85 –100
# 10	50–100
# 40	20–60
# 100	10–40
# 200	10–20

- THE MATERIAL SHALL BE LOOSE AND EASILY BROKEN INTO SMALL PIECES
- IT SHALL BE WELL MIXED AND HOMOGENOUS.
- IT SHALL BE FREE OF WOOD PIECES, PLASTIC, AND OTHER FOREIGN MATTER.
- IT SHALL HAVE NO VISIBLE FREE WATER.
- THE PH (POWER OF HYDROGEN) OF THE BLENDED MATERIAL SHALL BE TESTED AND BE BETWEEN 6 TO 8.

COMPOST

THE COMPOST SHALL BE DERIVED FROM PLANT MATERIAL AND PROVIDED BY A MEMBER OF THE US COMPOSTING COUNCIL SEAL OF TESTING ASSURANCE (STA) PROGRAM. SEE WWW.COMPOSTINGCOUNCIL.ORG FOR A LIST OF LOCAL PROVIDERS.

THE COMPOST SHALL BE THE RESULT OF THE BIOLOGICAL DEGRADATION AND TRANSFORMATION OF PLANT–DERIVED MATERIALS UNDER CONDITIONS DESIGNED TO PROMOTE AEROBIC DECOMPOSITION. THE MATERIAL SHALL BE WELL COMPOSTED, FREE OF VIABLE WEED SEEDS, AND STABLE WITH REGARD TO OXYGEN CONSUMPTION AND CARBON DIOXIDE GENERATION. THE COMPOST SHALL HAVE NO VISIBLE FREE WATER AND PRODUCE NO DUST WHEN HANDLED. IT SHALL MEET THE FOLLOWING CRITERIA, AS REPORTED BY THE US COMPOSTING COUNCIL STA COMPOST TECHNICAL DATA SHEET PROVIDED BY THE VENDOR.

- 100% OF THE MATERIAL MUST PASS THROUGH A 1/2–INCH SCREEN.
- THE PH OF THE MATERIAL SHALL BE BETWEEN 6 MIN. AND 8 MAX.
- MANUFACTURED INERT MATERIAL (PLASTIC, CONCRETE, CERAMICS, METAL, ETC.) SHALL BE LESS THAN 1.0% BY WEIGHT.
- THE ORGANIC MATTER CONTENT SHALL BE BETWEEN 30 AND 70% (DRY WEIGHT BASIS).
- SOLUBLE SALT CONTENT SHALL BE LESS THAN 6.0 MMHOS/CM.
- MATURITY INDICATOR SHALL BE GREATER THAN 80% FOR GERMINATION AND VIGOR.
- STABILITY SHALL BE "STABLE" TO "VERY STABLE".
- CARBON/NITROGEN (C/N) RATIO SHALL BE LESS THAN 25:1.
- TRACE METALS TEST RESULT = "PASS."

CONSTRUCTION

STORMWATER FACILITY GROWING MEDIUM:

- PROTECTION OF THE SOIL – THE MATERIAL SHALL BE PROTECTED FROM ALL SOURCES OF CONTAMINATION, INCLUDING WEED SEEDS, WHILE AT THE SUPPLIER, IN CONVEYANCE, AND AT THE PROJECT SITE.
- WET AND WINTER CONDITIONS – HAULING AND PLACEMENT OF THE MATERIAL WILL NOT BE ALLOWED WHEN THE WEATHER IS TOO WET OR THE GROUND IS FROZEN OR SATURATED AS DETERMINED BY THE OWNERS REPRESENTATIVE.
- PLACEMENT OF THE SOIL – PLACE THE MATERIAL IN LOOSE LIFTS, NOT TO EXCEED 8 INCHES EACH AND EACH LIFT SHALL BE COMPACTED WITH A WATER–FILLED LANDSCAPE ROLLER. DO NOT OTHERWISE MECHANICALLY COMPACT THE MATERIAL.
- TIMING OF PLANT INSTALLATION – WEATHER PERMITTING AND AS APPROVED, INSTALL PLANTS AS SOON AS POSSIBLE AFTER PLACING AND GRADING THE SOIL IN ORDER TO MINIMIZE EROSION AND FURTHER COMPACTION.
- EROSION CONTROL – TEMPORARY EROSION CONTROL MEASURES ARE REQUIRED UNTIL PERMANENT STABILIZATION MEASURES ARE FUNCTIONAL.
- PROTECTION OF THE INSTALLED SOIL – IN ALL CASES, THE PROTECT INSTALLED MATERIAL FROM FOOT OR EQUIPMENT TRAFFIC AND SURFACE WATER RUNOFF. INSTALL TEMPORARY FENCING OR WALKWAYS AS NEEDED TO KEEP WORKERS, PEDESTRIANS, AND EQUIPMENT OUT OF THE AREA. UNDER NO CIRCUMSTANCES SHOULD MATERIALS AND EQUIPMENT BE STORED ON TOP OF THE INSTALLATION AREA.

GROWING MEDIUM SPECIFICATION FOR VEGETATED FACILITIES

DRAWING NO. 742 REVISED 10–31–19

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DELTA LOGISTICS SITE EXPANSION FRONTAGE MPROVEMENTS
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Delta	Issued As	Issue Date

SHEET TITLE:
DETAILS

DRAWN BY: CME

CHECKED BY: GIM

SHEET

R0.04

JOB NO. **2200502.04**

1160

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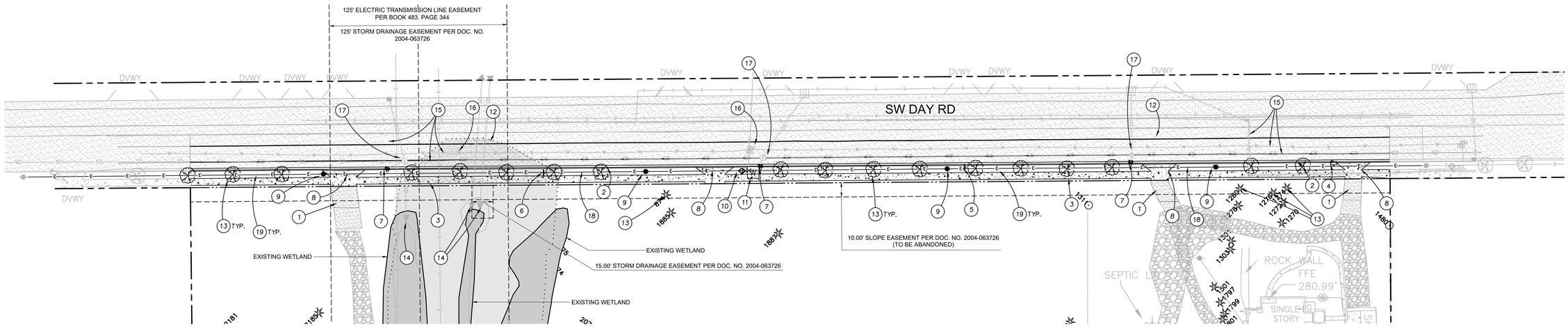

1 R1.01 FRONTAGE IMPROVEMENTS DEMOLITION PLAN

30 0 15 30 60 120 1:1

(IN FEET)
1 inch = 30 ft.

KEY NOTES

1. REMOVE EXISTING ASPHALT PER SECTION 1/R0.02
2. REMOVE EXISTING CURB AND GUTTER
3. REMOVE EXISTING SIDEWALK
4. REMOVE EXISTING MAILBOX
5. RELOCATE EXISTING "TRUCKS ENTERING ROADWAY" SIGN
6. RELOCATE EXISTING "40 SPEED" SIGN
7. REMOVE EXISTING CATCH BASIN
8. REMOVE EXISTING DRIVEWAY
9. RELOCATE EXISTING POWER POLE
10. RELOCATE FIRE HYDRANT
11. REMOVE WATER METER AND SERVICE LATERAL TO MAINLINE
12. GRIND ASPHALT PAVEMENT PER SECTION 1/R0.02
13. REMOVE EXISTING TREE
14. PROTECT EXISTING STORM CULVERTS
15. PROTECT EXISTING UTILITIES AT THE SURFACE WITHIN THE GRINDING AREA
16. PROTECT VALVES AND ADJUST TO GRADE
17. PROTECT EXISTING MANHOLES IN GRINDING AREA, ADJUST TO GRADE
18. RELOCATE EXISTING OVERHEAD POWER LINES
19. REMOVE EXISTING HEDGE

LAND USE RESUBMITTAL 07/26/22

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DRAWN BY: CME

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SHEET

R1.01

JOB NO. **2200502.04**

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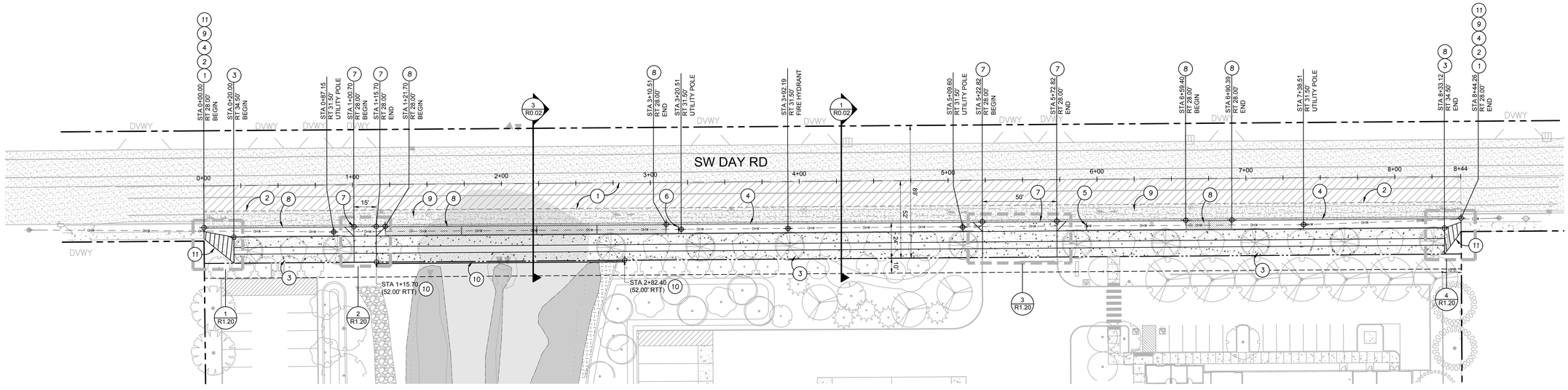


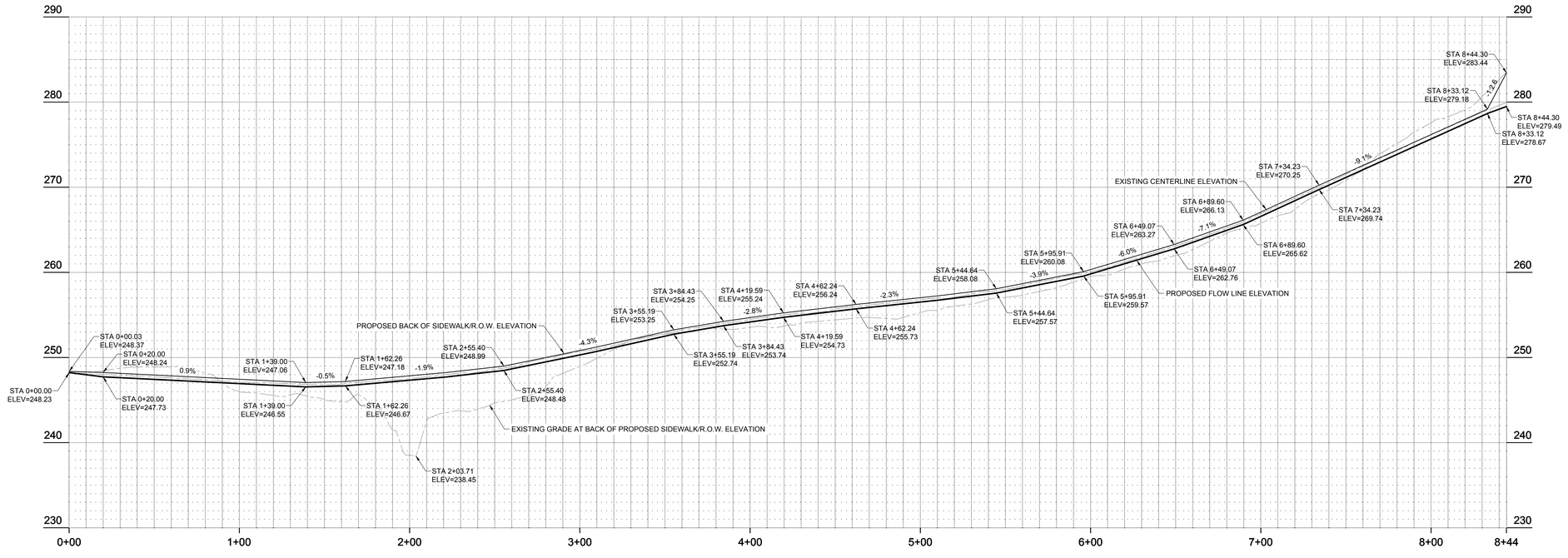
1 R1.10 FRONTAGE IMPROVEMENTS PLAN

30 0 15 30 60 120 1:1

(IN FEET)
1 inch = **30** ft.

KEY NOTES

1. ASPHALT OVERLAY
2. SAWCUT EXISTING ASPHALT
3. SIDEWALK PER RD-1075/R0.03
4. VERTICAL CURB AND GUTTER PER RD-1060/R0.03
5. RELOCATED "TRUCKS ENTERING ROADWAY" SIGN
6. RELOCATED EXISTING "40 SPEED" SIGN
7. COMMERCIAL DRIVEWAY PER RD-1095/R0.03
8. STORMWATER PLANTER PER ST-6005/R0.03
9. CONCRETE PAVEMENT
10. RETAINING WALL
11. ASPHALT PAVING WITH CROSSWALK STRIPING FROM PROPOSED SIDEWALK TO EXISTING



2 R1.10 FRONTAGE IMPROVEMENTS PROFILE

HORIZONTAL SCALE: 1"=30'
VERTICAL SCALE: 1"=5"

1:1

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WILSONVILLE, OR 97070

Project

DELTA LOGISTICS SITE EXPANSION FRONTAGE MPROVEMENTS
9710 SW DAY RD.
CITY OF WILSONVILLE, OR

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REVISION SCHEDULE

Delta	Issued As	Issue Date

SHEET TITLE:
PLAN AND PROFILE

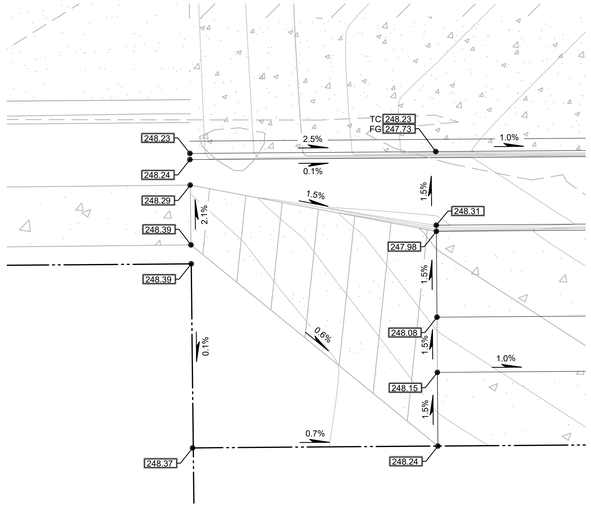
DRAWN BY: CME

CHECKED BY: GIM

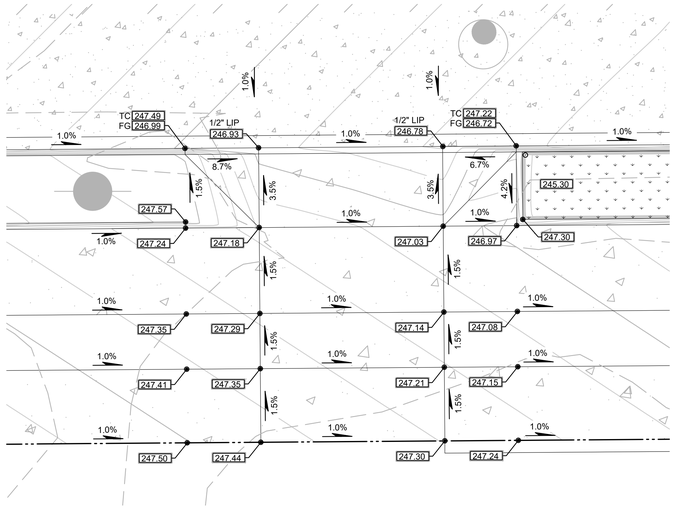
SHEET
R1.10

JOB NO. **2200502.04**

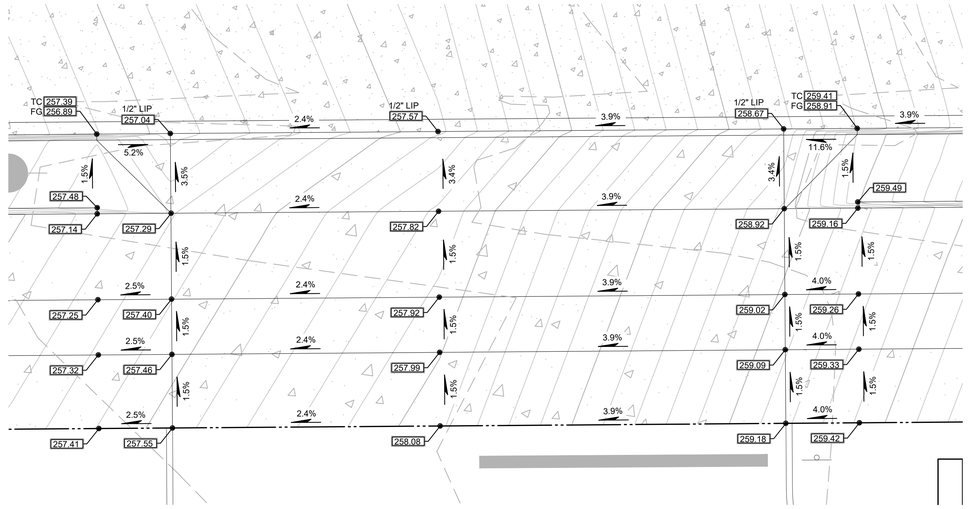
LAND USE RESUBMITTAL 07/26/22



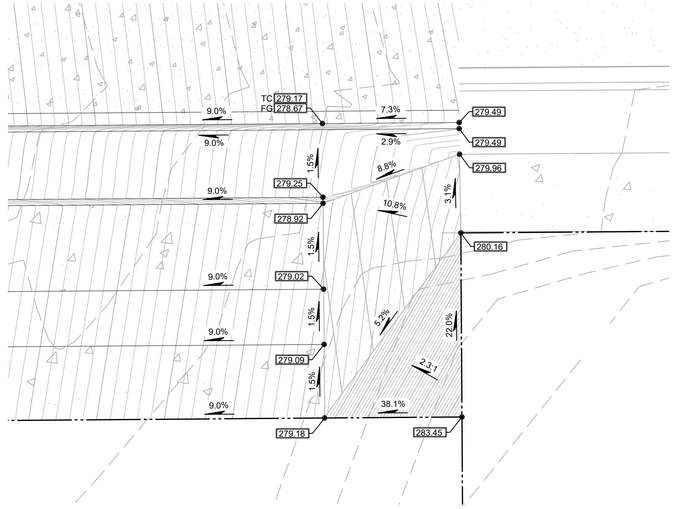
1 R1.20 WESTERLY JOIN
SCALE: 1"=5'



2 R1.20 MAINTENANCE DRIVEWAY
SCALE: 1"=5'



3 R1.20 PROJECT DRIVEWAY
SCALE: 1"=5'



4 R1.20 EASTERLY JOIN
SCALE: 1"=5'

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REVISION SCHEDULE

Delta	Issued As	Issue Date

SHEET TITLE:
PLAN ENLARGEMENTS

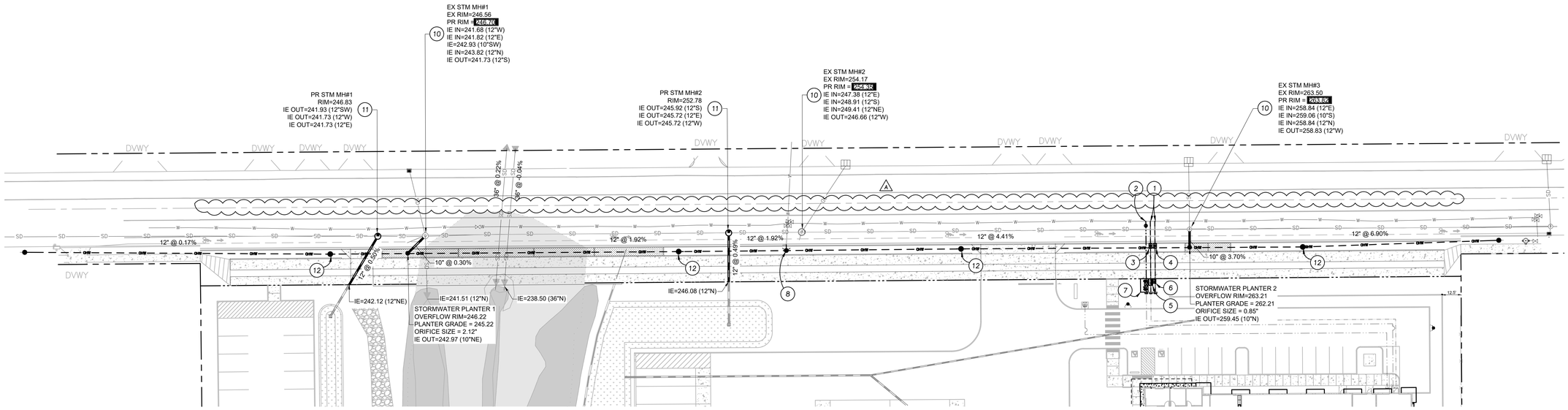
DRAWN BY: CME

CHECKED BY: GIM

SHEET
R1.20

JOB NO. **2200502.04**

LAND USE RESUBMITTAL 07/26/22



1 R1.30 UTILITY PLAN

30 0 15 30 60 120 1:1

(IN FEET)
1 inch = 30 ft.

KEY NOTES

1. DOMESTIC/IRRIGATION WATER SERVICE CONNECTION PER DETAIL WT-3045/R0.03
2. FIRE WATER SERVICE CONNECTION
3. 3" DOMESTIC WATER METER, SEE DETAIL WT-3045/R0.03
4. 1.5" IRRIGATION WATER METER
5. 3" REDUCED PRESSURE BACKFLOW ASSEMBLY
6. 1.5" DOUBLE CHECK ASSEMBLY, SEE DETAIL WT-3045/R0.03
7. 12" DOUBLE CHECK DETECTOR ASSEMBLY
8. FIRE HYDRANT, SEE DETAIL WT-3060/R0.03
9. NOT USED
10. JOIN EXISTING STORM MANHOLE
11. STORM MANHOLE
12. RELOCATED UTILITY POLE WITH STREET LIGHT LUMINAIRE

Item 2.

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REVISION SCHEDULE

Delta	Issued As	Issue Date
A	LAND USE	06/08/2022

SHEET TITLE:
UTILITY PLAN

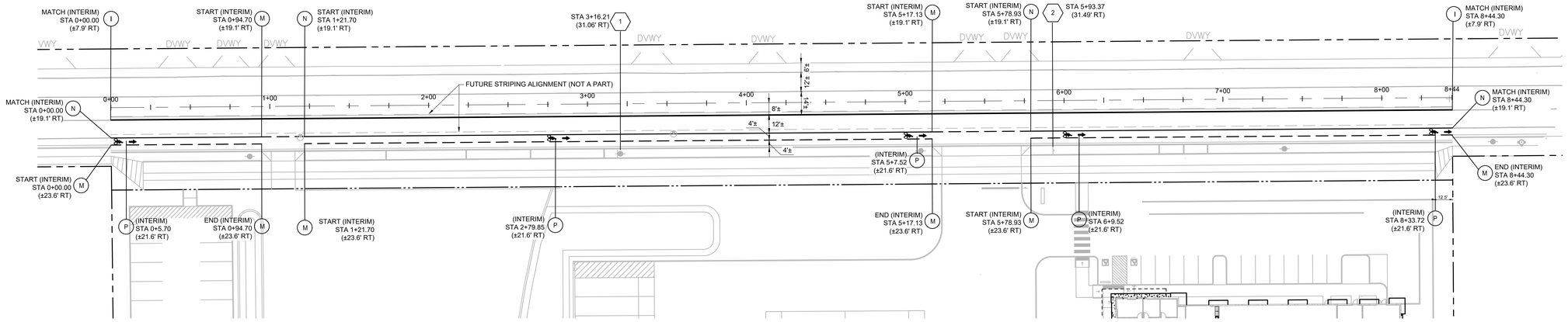
DRAWN BY: CME

CHECKED BY: GIM

SHEET
R1.30

JOB NO. **2200502.04**

LAND USE RESUBMITTAL 07/26/22



1 R1.40 SIGNING AND STRIPING PLAN

30 0 15 30 60 120 1:1

(IN FEET)
1 inch = 30 ft.

SIGNING NOTES

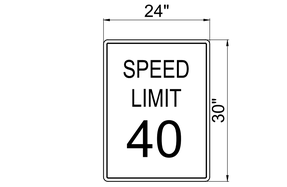
1. REFER TO THE CITY OF WILSONVILLE DWG. RD-1245/SHEET R1.41
2. POSTS SHALL BE INSTALLED WITH V-LOCK PER CITY OF WILSONVILLE DWG. RD-1250/SHEET R1.41

STRIPING NOTES

1. REFER TO THE CITY OF WILSONVILLE PAVEMENT MARKING NOTES ON CITY OF WILSONVILLE STD. DWG. RD-1280/SHEET R1.41
2. DO NOT PAINT CURBS MAINTAINED BY THE CITY OF WILSONVILLE. CONTRACTOR WILL BE RESPONSIBLE FOR THE REMOVAL OF ANY PAINT ON CITY CURBS.

SIGN & SUPPORT DATA TABLE

SIGN NO. (N)	QTY. USED	SIGN DIMENSION		SIGN CODE		TYPE OF SUPPORT						FOOTING TYPE		SIGN LEGEND / OTHER REMARKS
						MOUNT								
		WIDTH (IN)	HEIGHT (IN)	MUTCD	ODOT	SINGLE PIPE POST	EXISTING PIPE POST	UTILITY POLE	LIGHT POLE	SIGNAL POLE	MODIFIED BIKE RACK	CANTILEVER	BREAKAWAY DOME ASSEMBLY	BREAKAWAY ANCHOR ASSEMBLY	
1	1	24	30	R2-1 TYPE W1				X							[SPEED LIMIT 40] MOUNTED ON POLE
2	1	36	36			X									[TRUCKS ENTERING ROADWAY]



1 R2-1 TYPE W1 SIGN

2 "TRUCKS ENTERING ROADWAY" SIGN

LAND USE RESUBMITTAL 07/26/22

Item 2.

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9710 SW DAY RD. CITY OF WILSONVILLE, OR

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REVISION SCHEDULE

Delta	Issued As	Issue Date

SHEET TITLE:
STRIPING AND SIGNAGE PLAN

DRAWN BY: CME

CHECKED BY: GIM

SHEET

R1.40

JOB NO. **2200502.04**

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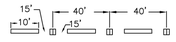
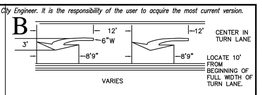
A



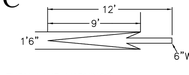
SKIP CENTERLINE:
4" YELLOW LINE WITH TYPE I BI– DIRECTIONAL YELLOW RAISED PAVEMENT MARKERS AT 40' O.C.

B



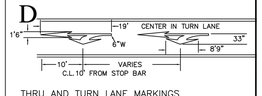
TURN LANE MARKINGS:
SEE MUTCD AND ODOT STANDARD DRAWING TM501 FOR DETAILS. ARROWS SHALL BE METHYL METHACRYLATE (MMA) PAVEMENT MARKING MATERIAL.

C



THRU LANE MARKINGS
SEE MUTCD FOR DETAILS. THRU ARROWS SHALL BE METHYL METHACRYLATE (MMA) PAVEMENT MARKING MATERIAL

D

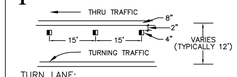


THRU AND TURN LANE MARKINGS
SEE MUTCD FOR DETAILS. TURN AND THRU ARROWS SHALL BE METHYL METHACRYLATE (MMA) PAVEMENT MARKING MATERIAL

E

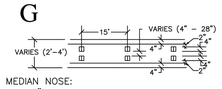
STOP BAR:
SHALL BE METHYL METHACRYLATE (MMA) PAVEMENT MARKING MATERIAL. NOT REQUIRED AT INTERSECTIONS IF MARKED CROSSWALKS ARE INSTALLED.

F



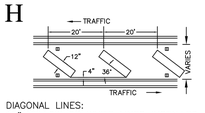
TURN LANE:
8" WHITE LINE WITH MONO–DIRECTIONAL CRYSTAL TYPE I MARKERS (WHITE) AT 15' O.C.

G



MEDIAN NOSE:
TWO 4" YELLOW LINES WITH BI– DIRECTIONAL YELLOW TYPE I MARKERS AT 15' O.C. FOR USE AT INTERSECTIONS WHERE MEDIAN NOSE IS LESS THAN 4' WIDE.

H



DIAGONAL LINES:
12" YELLOW OR WHITE LINES INSTALLED AS SHOWN.

Pavement Markings Page 1		
DRAWING NUMBER: RD-1265	DRAWN BY: SR	SCALE: N.T.S.
FILE NAME: RD-1265.DWG	APPROVED BY: PN	DATE: 5/16/19

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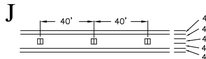
I

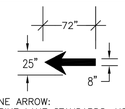
TWO WAY LEFT TURN STRIPE:
4" YELLOW LINES WITH TYPE I BI–DIRECTIONAL YELLOW RAISED PAVEMENT MARKERS AT 40' O.C. OUTSIDE LINE IS SOLID INSIDE AT 10'/30' PATTERN.

J



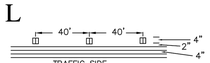
CENTERLINES:
TWO 4" YELLOW LINES WITH BI–DIRECTIONAL YELLOW TYPE I MARKERS AT 40' O.C.

K



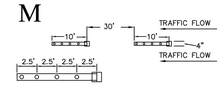
BICYCLE LANE ARROW:
SEE ODOT BIKE LANE STANDARDS. USE PREFORMED METHYL METHACRYLATE (MMA) PAVEMENT MARKING MATERIAL.

L



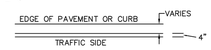
MEDIAN STRIPE:
TWO 4" YELLOW LINES WITH TYPE I BI–DIRECTIONAL YELLOW RAISED PAVEMENT MARKERS AT 40' O.C.

M



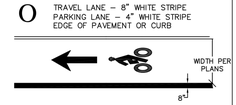
LANE LINE:
4" WHITE WITH CRYSTAL. TYPE I WHITE MONO–DIRECTIONAL MARKERS AT 40' O.C.

N



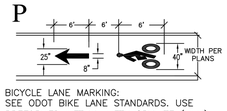
FOG LINE:
4" WHITE LINE AS SHOWN ON PLANS

O



BIKE LANE LINE – 8" WIDE WHITE LINE

P



BICYCLE LANE MARKING:
SEE ODOT BIKE LANE STANDARDS. USE PREFORMED METHYL METHACRYLATE (MMA) PAVEMENT MARKING MATERIAL.

Pavement Markings Page 2		
DRAWING NUMBER: RD-1270	DRAWN BY: SR	SCALE: N.T.S.
FILE NAME: RD-1270.DWG	APPROVED BY: PN	DATE: 5/16/19

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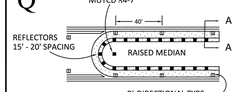
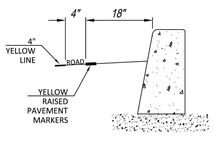
Q



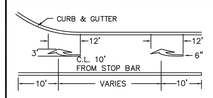
RAISED MEDIAN STRIPE:
4" YELLOW LINE WITH TYPE I BI-DIRECTIONAL YELLOW RAISED PAVEMENT MARKERS AT 40' O.C.

REFLECTORS: 15' - 20' SPACING, NO PEEL AND STICKS



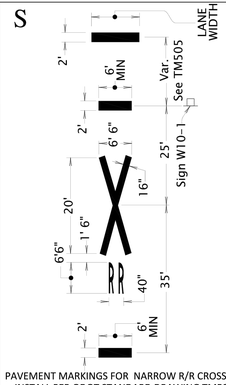
SECTION A - A

R



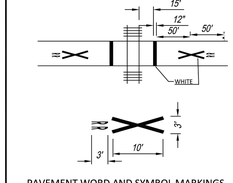
RIGHT TURN LANE MARKINGS:
SEE MUTCD AND ODOT STANDARD DRAWING TM501 FOR DETAILS. ARROWS SHALL BE METHYL METHACRYLATE (MMA) PAVEMENT MARKING MATERIAL.

S



PAVEMENT MARKINGS FOR NARROW R/R CROSSING
INSTALL PER ODOT STANDARD DRAWING TM501

T



PAVEMENT WORD AND SYMBOL MARKINGS
FOR BIKE ROUTE AT R/R GRADE X-ING

Pavement Markings Page 3		
DRAWING NUMBER: RD-1275	DRAWN BY: SR	SCALE: N.T.S.
FILE NAME: RD-1275.DWG	APPROVED BY: PN	DATE: 5/9/19

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PUBLIC WORKS STANDARDS

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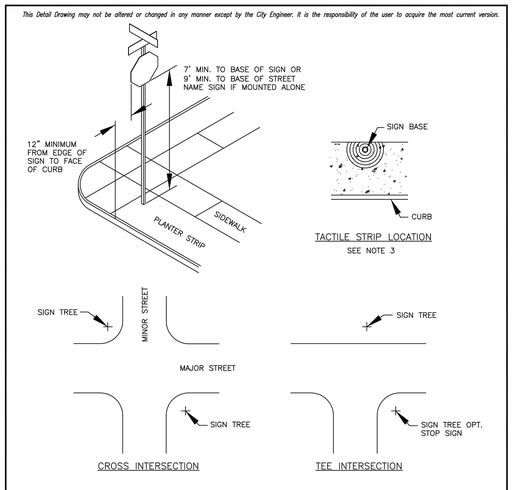

NOTE:
1. SIGN LOCATIONS SHALL BE ACCORDING TO MUTCD AND AS MODIFIED HEREIN.
2. SIGNS WHERE THE SIDEWALK IS CURB TIGHT SHALL BE LOCATED 6" OUTSIDE THE SIDEWALK TO MAXIMUM DISTANCE OF 7' FROM THE FACE OF CURB.
3. IF THE SIDEWALK IS WIDER THAN 6', A TACTILE STRIP 2' WIDE FROM A RADIUS POINT FROM THE BASE OF THE SIGN SHALL BE PLACED IN THE WET CONCRETE. THE TACTILE STRIP SHALL BE MADE BY USING A 1/4" TINE METAL BROOM TO A DEPTH OF 1/4".

Street Sign Locations		
DRAWING NUMBER: RD–1245	DRAWN BY: SR	SCALE: N.T.S.
FILE NAME: RD–1245.DWG	APPROVED BY: NK	DATE: 4/2/14

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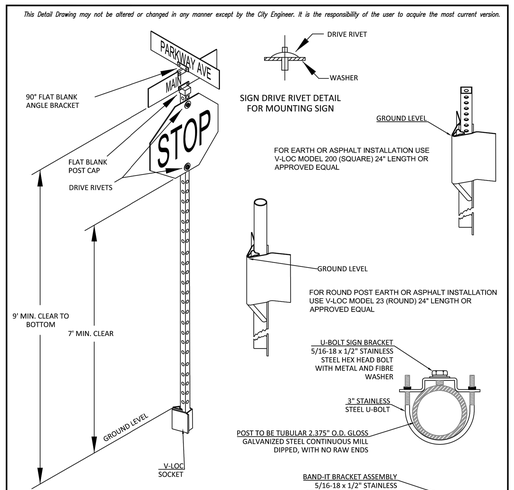

NOTES:
1. SURFACE MOUNT SIGN POSTS TO BE REVIEWED AND APPROVED BY CITY AUTHORIZED REPRESENTATIVE
2. ALL SIGN HARDWARE TO BE STAINLESS STEEL
3. V-LOCK WEDGE TO FACE DIRECTION OF TRAVEL

Street Sign Assembly		
DRAWING NUMBER: RD-1250	DRAWN BY: SR	SCALE: N.T.S.
FILE NAME: RD-1250.DWG	APPROVED BY: PN	DATE: 4/11/19

CITY OF WILSONVILLE
PUBLIC WORKS STANDARDS

Item 2.

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Client

DELTA LOGISTICS
9835 SW COMMERCE CIRCLE
WILSONVILLE, OR
97070

Project

DELTA LOGISTICS SITE EXPANSION FRONTAGE MPROVEMENTS
9710 SW DAY RD.
CITY OF WILSONVILLE, OR

PRELIMINARY NOT FOR CONSTRUCTION

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REVISION SCHEDULE

Delta	Issued As	Issue Date

SHEET TITLE:
STRIPING AND SIGNAGE DETAILS

DRAWN BY: CME

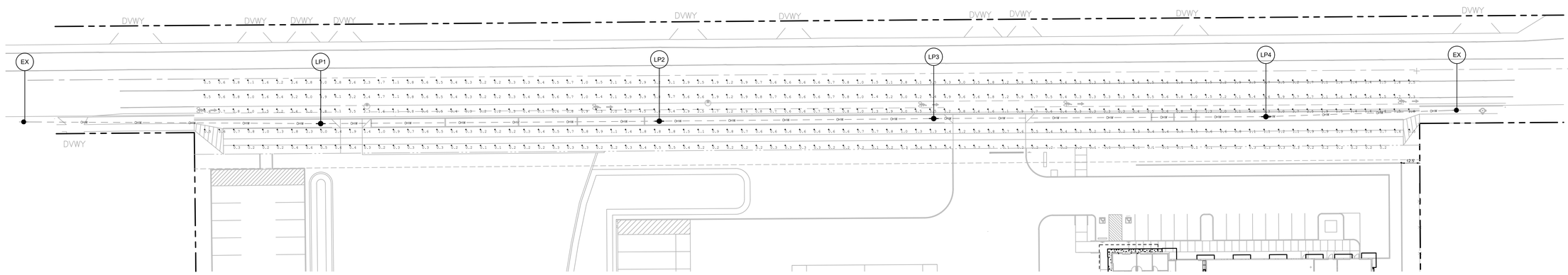
CHECKED BY: GIM

SHEET

R1.41

JOB NO. 2200502.04

LAND USE RESUBMITTAL 07/26/22



1 R1.50 STREET LIGHTING AND PHOTOMETRICS PLAN

30 0 15 30 60 120 1:1

(IN FEET)
1 inch = 30 ft.

LIGHTING NOTES

1. ALL MATERIALS AND WORKMANSHIP CONFORM TO CITY OF WILSONVILLE AND PGE OPTION B SPECIFICATIONS. ALL MATERIALS AND INSTALLATIONS SHALL BE APPROVED BY WILSONVILLE AND PGE
2. CONTRACTOR SHALL COORDINATE INSTALLATION OF STREET LIGHTS WITH PGE AND CITY FORCES. CONTRACTOR SHALL VERIFY EXISTING CONDITIONS. NOTIFY ENGINEER OF ANY DISCREPANCIES.
3. CONTRACTOR SHALL SUBMIT A LIGHTING SUBMITTAL OF ALL LIGHTING EQUIPMENT TO THE CITY OF WILSONVILLE AND HAVE APPROVED PRIOR TO ORDERING.
4. CONTACT PGE AT (503) 323-6700 TO BEGIN A WORK ORDER REQUEST. VERIFY PROPOSED LIGHT POLE LOCATION WITH PGE AND CITY PRIOR TO ORDERING AND INSTALLATION. NOTIFY ENGINEER OF ANY DISCREPANCIES.
5. STREET LIGHTING SHALL BE PER PGE OPTION B: PGE MAINTAINS LUMINAIRES AND PROVIDES ELECTRICITY SERVICE TO LUMINAIRES THAT ARE PURCHASED AND OWNED BY THE OWNER AND INSTALLED ON UTILITY POLES.
6. CONTRACTOR SHALL VERIFY LUMINAIRE CHARACTERISTICS AND CATALOG NUMBER, INCLUDING BUT NOT LIMITED TO EXTERIOR HOUSING COLOR, WITH PGE AND CITY FORCES PRIOR TO ORDERING.
7. WIRES TO BE PROVIDED AND PULLED BY PGE
8. CONTRACTOR IS RESPONSIBLE FOR THE CORRECT OPERATION OF THE STREET LIGHT SYSTEM FOR THE FIRST YEAR AFTER BEING ENERGIZED BY PGE.THE CONTRACTOR IS ALSO RESPONSIBLE FOR ANY POLES WHICH GO OUT OF PLUMB WITHIN THE FIRST YEAR. DURING THIS ACCEPTANCE PERIOD ANY REPAIRS OR POLE STRAIGHTENING PERFORMED ON THE INSTALLED SYSTEM BY PGE WILL BE BILLED TO THE DEVELOPER.

STREET LIGHTING EQUIPMENT

1. LUMINAIRES SHALL BE:

   LUM 1: LEOTEK GRAY LED:
   GCL-80G-MV-WW-3R-GY-610-PCR7RWGWLFDCPGE

LIGHTING LEGEND

- (EX) EXISTING LIGHTPOLE
- (LP1) INSTALL LUMINAIRE POLE (30' MOUNTING HEIGHT) SEE FOOTING DETAIL RD-1335
- (N) POLE NUMBER (N). SEE POLE INFORMATION TABLE.

ILLUMINATION DATA

SW DAY RD - COLLECTOR ROAD

	AVERAGE (fc)	MINIMUM (fc)	AVERAGE/MINIMUM
DESIGNED	1.7	.2	8.7:1
RECOMMENDED MINIMUM VALUE	0.6	-	4.0:1

SIDEWALK ALONG SW DAY RD - COLLECTOR ROAD

	AVERAGE (fc)	MINIMUM (fc)	AVERAGE/MINIMUM
DESIGNED	0.3	0.1	2.5:1
RECOMMENDED MINIMUM VALUE	0.6	-	4.0:1

NOTES:
1. A LIGHT LOSS FACTOR OF 0.85 WAS USED FOR ALL LUMINAIRES
2. STREET LIGHTING WAS DEIGNED IN ACCORDANCE WITH THE MOST CURRENT AMERCIAN STANDARD PRACTICE FOR ROADWAY LIGHTING (RP-8-14) PER CITY OF WILSONVILLE PUBLIC WORKS STANDARD
3. DESIGN ASSUMES A LOW PEDESTRIANS TRAFFIC AREA AND A R2/R3 PAVEMENT CLASSIFICATION

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REVISION SCHEDULE

Delta	Issued As	Issue Date

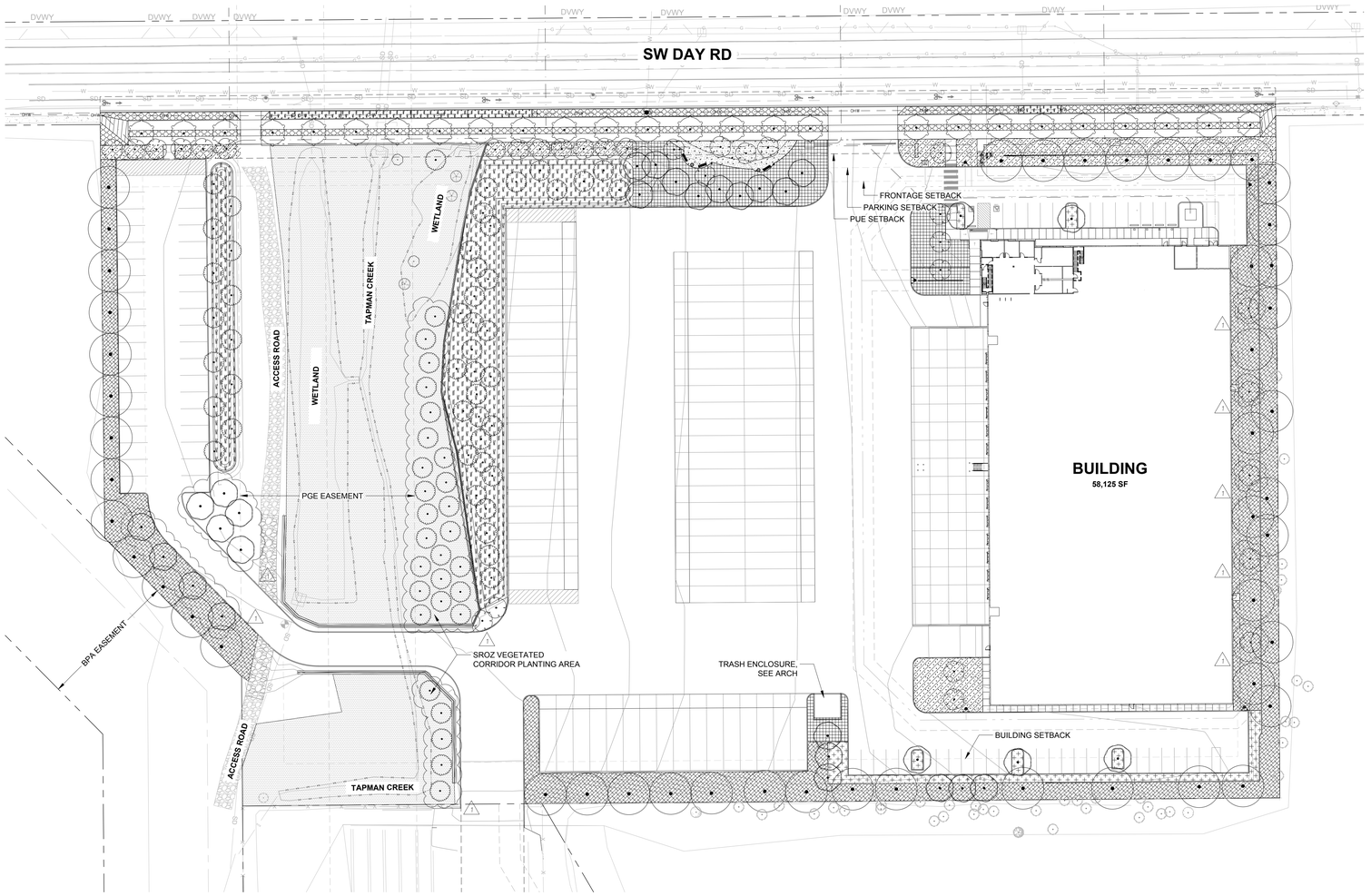
SHEET TITLE:
STREET LIGHTING AND PHOTOMETRICS PLAN

DRAWN BY: CME

CHECKED BY: GIM

SHEET
R1.50

JOB NO. **2200502.04**



1 L0.01 **ZONING COMPLIANCE PLAN**

40 0 20 40 80 160

(IN FEET)

1 inch = 40 ft.

ZONING COMPLIANCE LEGEND

PRIMARY TREE
2" CAL MIN
FRAXINUS PENNSYLVANICA 'MARSHALL'S SEEDLESS' / MARSHALL'S SEEDLESS GREEN ASH
PINUS PONDEROSA / PONDEROSA PINE
PSEUDOTSUGA MENZIESII / DOUGLAS FIR
QUERCUS GARRYANA / OREGON WHITE OAK
ZELKOVA SERRATA 'GREEN VASE' / GREEN VASE SAWLEAF ZELKOVA

SECONDARY TREE
1.75" – 2" CAL MIN
CALOCEDRUS DECURRENS / INCENSE CEDAR
TILIA TOMENTOSA 'STERLING' / STERLING SILVER LINDEN
ULMUS X 'FRONTIER' / FRONTIER ELM

ACCENT TREE
1.75" CAL MIN
ACER RUBRUM 'BOWHALL' / BOWHALL RED MAPLE
AMELANCHIER ALNIFOLIA 'AUTUMN BRILLIANCE' / SERVICEBERRY
SINGLE STEM
CORNUS KOUSA X NUTTALLII 'KN4-43' / STARLIGHT KOUSA DOGWOOD

STREET TREE
2" CAL MIN.
ACER GRANDIDENTATUM 'SCHMIDT' TM / ROCKY MOUNTAIN GLOW MAPLE
CORNUS KOUSA 'MILKY WAY' / MILKY WAY KOUSA DOGWOOD
PARROTIA PERSICA 'INOE'S RUBY VASE' TM / RUBY VASE PERSIAN PARROTIA

STORMWATER TREE
CORNUS X 'EDDIE'S WHITE WONDER' / EDDIE'S WHITE WONDER DOGWOOD
FRAXINUS LATIFOLIA / OREGON ASH
PSEUDOTSUGA MENZIESII / DOUGLAS FIR
RHAMNUS PURSHIANA / CASCARA BUCKTHORN

HIGH SCREEN STANDARD
–

LOW SCREEN STANDARD
–

PARKING LANDSCAPE
–

STORMWATER
–

GEN. LANDSCAPE REQ
–

STREET PLANTING
–

WAYSIDE
–

VEGETATION PROTECTION AREA
–

ZONING COMPLIANCE

JURISDICTION	WILSONVILLE, OR
STORMWATER	CITY OF WILSONVILLE

SECTION 4.155(.03)
B. OFF-STREET PARKING LANDSCAPE REQS
PARKING AREAS OVER 650 SF, EXCLUDING ACCESS AREAS, LOADING OR DELIVERY AREAS, SHALL BE LANDSCAPED TO 10% MIN. 1 TREE PER 8 STALLS AND ISLANDS SHALL BE AT LEAST 8 FT WIDE.

TOTAL PARKING AREA	19,884 SF
PARKING LANDSCAPE (10% MIN)	3,160 SF (15.9%)
STALLS	41 STALLS
TREES (1 PER 8 STALLS = 6 TREES)	6 TREES
ISLANDS (8 FT WIDTH MIN)	8 WIDTH

SECTION 4.176(.02)
C. GENERAL LANDSCAPING STANDARD
WHERE LANDSCAPE IS GREATER THAN 30 FT DEEP, PROVIDE 1 TREE PER 800 SF AND 2 HIGH SHRUBS OR 3 LOW SHRUBS PER 400 SF.

APPLIES ALONG SW DAY ROAD EAST PARKING LOT PERIMETER

LANDSCAPE AREA	4,770 SF
TREES (1 PER 800 SF = 6 TREES)	8 TREES
LOW SHRUBS (3 PER 400 SF = 36 SHRUBS)	147 SHRUBS

APPLIES ALONG SW DAY ROAD PERIMETER

LANDSCAPE AREA	1,938 SF
TREES (1 PER 800 SF = 3 TREES)	13 TREES
LOW SHRUBS (3 PER 400 SF = 15 SHRUBS)	128 SHRUBS

APPLIES ALONG SOUTH SIDE OF LOADING DOCKS

LANDSCAPE AREA	1,906 SF
TREES (1 PER 800 SF = 3 TREES)	3 TREES
LOW SHRUBS (3 PER 400 SF = 15 SHRUBS)	21 SHRUBS

D. LOW SCREEN LANDSCAPING STANDARD
ONE TREE PER 30 LF, 3-FT HT EVERGREEN HEDGE, AND GROUNDCOVER TO FULL COVERAGE. A 3-FT HIGH MASONRY WALL OR BERM MAY REPLACE THE SHRUBS.

APPLIES ALONG ADJACENT LOTS

PERIMETER	1,600 LF
TREE (1 PER 30 LF = 54 TREES)	55 TREES
SHRUBS	3 FT EVERGREEN

E. LOW BERM LANDSCAPING STANDARD
STANDARD NOT FEASIBLE ALONG SW DAY ROAD.

F. HIGH SCREEN LANDSCAPING STANDARD

WAYSIDE PERIMETER	127 LF
TREES (1 PER 30 LF = 5 TREES)	12 TREES
HEDGE	6 FT EVERGREEN
GROUNDCOVER	FULL COVERAGE
LOADING DOCKS	42 LF
TREES (1 PER 30 LF = 2 TREES)	3 TREES
ARCHITECTURAL SCREEN WALL	16 FT H X 32 FT W
GROUNDCOVER	FULL COVERAGE
TRASH ENCLOSURE	20 LF
TREES (1 PER 30 LF)	1 TREE
HEDGE	6 FT EVERGREEN
GROUNDCOVER	FULL COVERAGE

SECTION 4.176(.03)

LANDSCAPE AREA	
TOTAL SITE AREA	386,732 SF (8.9 AC)
15% MINIMUM	138,471 SF (35.8%)

SECTION 4.176(.04)

BUFFERING AND SCREENING	
SITE ZONING	INDUSTRIAL
ADJACENT ZONING	INDUSTRIAL
OUTDOOR STORAGE	NONE
SITE ZONING	INDUSTRIAL
FENCE	NONE
ADDITIONAL SCREENING	N/A

SECTION 4.176(.06)

A. SHRUBS AND GROUNDCOVER	
SHRUBS (2 GAL. MINIMUM)	2 GAL. MINIMUM
3 YEAR GROUND COVERAGE (80%)	80% MINIMUM
TURF OR LAWN (10% MAXIMUM)	0%
B. TREES	
DECIDUOUS (2" CAL. & 10' HEIGHT MINIMUM)	2" CAL. & 10' HT.
EVERGREEN (12 FT HEIGHT MINIMUM)	12' HT.

C. LARGER PLANT MATERIAL
PROPOSED DEVELOPMENT IS GREATER THAN 50,000 SF IN FOOTPRINT AREA / LARGER THAN 24-FEET IN HEIGHT. AT MATURITY TREES WILL BE AT LEAST 50% THE HEIGHT OF THE BUILDING. DECIDUOUS TREES SHALL BE AT LEAST 10-FEET TALL AND 2-INCH CALIPER. EVERGREEN TREES MUST BE AT LEAST 12-FEET IN HEIGHT. LARGER PLANT MATERIAL HAS BEEN PROVIDED ALONG THE FRONTAGE.

BUILDING HEIGHT	40 FT
SHORTEST MATURE TREE HEIGHT (50% OF BLDG HT MIN)	40 FT (100%)
DECIDUOUS TREES (10FT HT, 2-INCH CAL AT INSTALL)	YES
EVERGREEN TREES (12 FT HT AT INSTALL)	YES

D. STREET TREES
ARTERIAL TREES SHALL BE 3-INCH CALIPER. STREET TREES SPECIES IS SHORT ENOUGH FOR OVERHEAD ELECTRICAL WIRES AND TOLERANT OF WET SOIL.

E. PLANT SPECIES
THE LANDSCAPE CONSISTS OF EXISTING LANDSCAPING AND/OR NATIVE VEGETATION TO BE PROTECTED AND MAINTAINED DURING CONSTRUCTION AND NATIVE AND DROUGHT TOLERANT PLANT MATERIAL. PLANT MATERIAL PROVIDED HAS BEEN CROSS-REFERENCED WITH THE CITY'S LIST OF PROHIBITED PLANT MATERIALS.

F. TREE CREDITS
SEE TREE PLAN SHEET L0.03. NONE REQUESTED.

SECTION 4.176(.07)
INSTALLATION AND MAINTENANCE
SEE PLANTING NOTES THIS SHEET. PLANT MATERIAL REQUIRED BY CODE SHALL BE CONTINUOUSLY MAINTAINED BY OWNER AND REPLACED IN KIND WITHIN ONE GROWN SEASON IF DEAD.

IRRIGATION
SEE IRRIGATION NOTES THIS SHEET. PERMANENT SYSTEM TO BE DESIGN BUILD.

SECTION 4.176(.09)
PLANT MATERIAL LIST
SEE PLANT SCHEDULE ON SHEET L0.02.

CONDITION OF EXISTING PLANTINGS
ALL VEGETATION IS PROPOSED FOR REMOVAL, OTHER THAN THAT WITHIN THE SIGNIFICANT RESOURCE OVERLAY ZONE. SEE ARBORIST REPORT FOR CONDITION OF EXISTING TREES TO REMAIN.

WATER USAGE	
WATER USE CATEGORY	C
WAYSIDE AREA (8 TO 13 ACRES)	NATIVE/DROUGHT TOLERANT

COFFEE CREEK DESIGN GUIDELINES	
WAYSIDE ON ADDRESSING STREET	
WAYSIDE AREA (8 TO 13 ACRES, 600 SF MIN.)	736 SF PROVIDED
BUFFER DEPTH ON 3 SIDES (20 FT MIN)	20-30 LF PROVIDED
AMENITIES	
SEATING (1 LF PER 40 SF OF WAYSIDE = 18 LF)	18 LF SEATING
PAVED WALKING SURFACE (5 FT MIN)	7 FT WIDTH

SHEET INDEX

L0.01	GENERAL LANDSCAPE NOTES
L0.02	PLANT SCHEDULES AND STORMWATER NOTES
L0.03	TREE REMOVAL PLAN
L0.04	TREE MITIGATION PLAN
L0.05	VEGETATED CORRIDOR ENHANCEMENT PLANTING PLAN
L1.10	PLANTING PLAN - WEST
L1.11	PLANTING PLAN - EAST
L1.20	IRRIGATION PLAN - WEST
L1.21	IRRIGATION PLAN - EAST
L5.10	PLANTING DETAILS
L5.11	IRRIGATION DETAILS

TABLE OF ABBREVIATIONS

ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE	MAX	MAXIMUM
		MIN	MINIMUM
B&B	BALL AND BURLAP	MIX	MIXTURE
CAL	CALIPER	NTS	NOT TO SCALE
CONC	CONCRETE	OC	ON CENTER
DEG	DEGREE	POC	POINT OF CONNECTION
DIA/Ø	DIAMETER	PVC	POLY VINYL CHLORIDE
DWGS	DRAWING	SCH	SCHEDULE
ELL	ELBOW	SF	SQUARE FOOT
EQ	EQUAL	SPEC	SPECIFICATION
FT	FEET/FOOT	TYP	TYPICAL
GAL	GALLON	X	TIMES
GALV	GALVANIZED		
H/HT	HEIGHT		

LANDSCAPE NOTES

GENERAL

1. CONTRACTOR SHALL CONFIRM ALL EXISTING CONDITIONS PRIOR TO COMMENCING WORK.
2. CALL BEFORE YOU DIG. CONTRACTOR SHALL VERIFY INVERT ELEVATIONS OF ALL UNDERGROUND UTILITIES AND NOTIFY LANDSCAPE ARCHITECT IF THERE ARE ANY DISCREPANCIES WITH PLANTING ROOT ZONES. TO REQUEST LOCATES FOR PROPOSED EXCAVATION CALL 1-800-332-2344 (OR 811) IN OREGON.
3. NOTIFY THE OWNER OR OWNER'S REPRESENTATIVE OF ANY DISCREPANCIES OR CONFLICTS WITH EXISTING CONDITIONS PRIOR TO COMMENCEMENT OF ANY WORK.
4. LOCATION OF EXISTING TREES SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO COMMENCEMENT OF WORK.
5. DAMAGE TO EXISTING CONCRETE CURB, ASPHALT PAVING, OR OTHER STRUCTURE SHALL BE REPAIRED OR REPLACED TO PRE CONSTRUCTION CONDITIONS.
6. CONTRACTOR SHALL COORDINATE WITH THE OWNER ANY DISRUPTION TO VEHICULAR CIRCULATION PRIOR TO COMMENCEMENT OF ANY WORK.

PLANTING

1. ALL EXISTING TREES, PLANTS, AND ROOTS SHALL BE PROTECTED FROM DAMAGE FROM ANY CONSTRUCTION PREPARATION, REMOVAL OR INSTALLATION ACTIVITIES WITHIN AND ADJACENT TO PROJECT LIMITS.
2. SHRUBS ADJACENT TO PARKING AREAS SHALL BE PLANTED 2 FT MINIMUM AWAY FROM THE BACK OF CURB. SHRUBS AND GROUNDCOVER ALONG OTHER PAVEMENT EDGES SHALL BE PLANTED A MINIMUM OF ONE HALF THEIR ON CENTER SPACING AWAY FROM PAVEMENT EDGE.
3. ALL PLANT MATERIAL SHALL BE HEALTHY NURSERY STOCK, WELL BRANCHED AND ROOTED, FULL FOLIAGE, FREE FROM INSECTS, DISEASES, WEEDS, WEED ROT, INJURIES AND DEFECTS WITH NO LESS THAN MINIMUMS SPECIFIED IN AMERICAN STANDARDS FOR NURSERY STOCK, ANSI Z60.1-2004.
4. TREES IN THE RIGHT OF WAY SHALL BE TALL ENOUGH TO BE LIMBED UP TO AT LEAST 8 FT ABOVE DRIVE SURFACE GRADE WHILE MAINTAINING ENOUGH BRANCHES TO SUPPORT HEALTHY GROWTH.
5. DO NOT PLANT TREES ABOVE WATERLINES, UTILITIES, OR OTHER UNDERGROUND PIPING.
6. IF DISTURBANCE IS NECESSARY AROUND EXISTING TREES, CONTRACTOR SHALL PROTECT THE CROWN AND ALL WORK WITHIN THE TREE DRIPZONE SHALL BE LIMITED TO THE USE OF HAND TOOLS AND MANUAL EQUIPMENT ONLY.
7. REPLACE, REPAIR AND RESTORE DISTURBED LANDSCAPE AREAS DUE TO GRADING, TRENCHING OR OTHER REASONS TO PRE-CONSTRUCTION CONDITION AND PROVIDE MATERIAL APPROVED BY THE OWNER AND OWNER'S REPRESENTATIVE.
8. EXISTING AREAS PROPOSED FOR NEW PLANT MATERIAL SHALL BE CLEARED AND LEGALLY DISPOSED UNLESS SO NOTED.
9. A SOILS ANALYSIS, BY AN INDEPENDENT SOILS TESTING LABORATORY RECOGNIZED BY THE STATE DEPARTMENT OF AGRICULTURE, SHALL BE USED TO RECOMMEND AN APPROPRIATE PLANTING SOIL AND/OR SPECIFIED SOIL AMENDMENTS.
10. TOPSOIL SHALL BE AMENDED AS RECOMMENDED BY AN INDEPENDENT SOILS TESTING LABORATORY AND AS OUTLINED IN THE SPECIFICATION.
11. ALL LANDSCAPED AREAS SHALL BE COVERED BY A LAYER OF ORGANIC MULCH TO A MINIMUM DEPTH OF 2-INCHES.

IRRIGATION

1. UNLESS OTHERWISE INDICATED, ALL NEW LANDSCAPE AREAS TO BE IRRIGATED WITH A FULLY AUTOMATIC UNDERGROUND IRRIGATION SYSTEM. PROVIDE LOOP SYSTEM FOR OPTIMUM EFFICIENCY.
2. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS (IRRIGATION PLANS) TO LANDSCAPE ARCHITECT PRIOR TO CONSTRUCTION. DRAWINGS TO INDICATE HEAD TYPE, GALLONS PER MINUTE, LATERAL LINES, AND BE AT MINIMUM SCALE OF 1"=20'
3. CONTRACTOR TO DETERMINE STATIC WATER PRESSURE AT THE P.O.C. PRIOR TO PREPARING SHOP DRAWINGS.
4. CONTRACTOR SHALL ESTABLISH MINIMUM PRESSURE AND MAXIMUM DEMAND REQUIREMENTS FOR IRRIGATION SYSTEM DESIGN, AND PROVIDE INFORMATION IN AN IRRIGATION SCHEDULE.
5. IRRIGATION SYSTEM AS DESIGNED AND INSTALLED SHALL PERFORM WITHIN THE TOLERANCES AND SPECIFICATIONS OF THE SPECIFIED MANUFACTURERS.
6. SYSTEM SHALL BE DESIGNED TO SUPPLY MANUFACTURER'S SPECIFIED MINIMUM OPERATING PRESSURE TO FARTHEST EMITTER FROM WATER METER.
7. SYSTEM SHALL PROVIDE HEAD TO HEAD COVERAGE WITHOUT OVERSPRAY ONTO BUILDING, FENCES, SIDEWALKS, PARKING AREAS, OR OTHER NON-VEGETATED SURFACES.
8. ALL IRRIGATION PIPE MATERIAL AND INSTALLATION SHALL CONFORM TO APPLICABLE CODE FOR PIPING AND COMPONENT REQUIREMENTS.
9. PROVIDE SLEEVING AT ALL AREAS WHERE PIPE TRAVELS UNDER CONCRETE OR HARD SURFACING.
10. VALVES SHALL BE WIRED AND INSTALLED PER MANUFACTURER'S RECOMMENDED INSTALLATION PROCEDURES AND CONNECTED TO THE IRRIGATION CONTROLLER.
11. REFER TO CIVIL DETAILS AND DETAILS ON L5.11 FOR POINT OF CONNECTION AND BACKFLOW PREVENTION INFORMATION.
12. MAINLINE LAYOUT IS DIAGRAMMATIC ONLY.
13. CONTROLLER TO BE MOUNTED WITHIN BUILDING INTERIOR. GENERAL CONTRACTOR TO COORDINATE LOCATION WITH OWNER'S REPRESENTATIVE.
14. ZONE THE FOLLOWING AREAS SEPARATELY: TEMPORARY AREAS, PERMANENT LANDSCAPE AREAS, AND TREES.
15. QUICK COUPLERS TO BE PLACED EVERY 300 LINEAR FEET MAX.
16. IRRIGATION SHALL BE WINTERIZED THROUGH LOW PRESSURE, HIGH VOLUME AIR BLOWOUT CONNECTION THROUGH QUICK COUPLER.
17. THE SYSTEM SHALL BE GRAVITY DRAINED. THE CONTRACTOR SHALL PROVIDE APPROPRIATE MANUAL DRAINS AT LOW POINTS.

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REVISION SCHEDULE

Delta	Issued As	Issue Date
1	PLAN CHECK	10/07/2022

SHEET TITLE:
GENERAL LANDSCAPE NOTES

DRAWN BY: SKA, JWT

CHECKED BY: NRF

SHEET
L0.01

JOB NO. **2200502.04**

1168

DESIGN REVIEW SET 07/29/2022

STORMWATER FACILITY PLANT SCHEDULES

PER CITY OF WILSONVILLE STORMWATER AND SURFACE WATER DESIGN & CONSTRUCTION STANDARDS - SECTION 3 - PUBLIC WORKS STANDARDS (2015)

LANDSCAPE PLAN FACILITY AREA CALCULATIONS INCLUDE TOP OF FREEBOARD. CIVIL PLAN FACILITY AREA CALCULATIONS REPORT TO TOP OF OVERFLOW INLET, EXCLUDING THE 4" FREEBOARD.

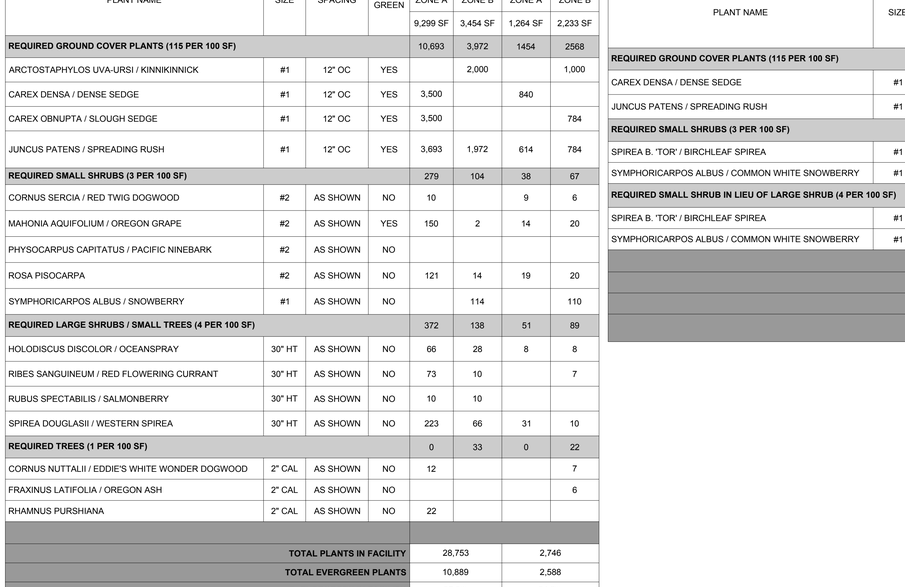
PROVIDE AT LEAST 50% EVERGREEN PLANTS AND AT LEAST 2 SPECIES OF HERBACEOUS AND SMALL SHRUBS/GROUNDCOVER PLANT COMMUNITIES.

MOIST (ZONE A) VEGETATION TYPE	QUANTITY	SIZE
GROUNDCOVER PLANTS	115/100 SF	#1 CONTAINER
SMALL SHRUBS	3/100 SF	#1 CONTAINER
LARGE SHRUBS / SMALL TREES	4/100 SF	30" HEIGHT

DRY (ZONE B) VEGETATION TYPE	QUANTITY	SIZE
GROUNDCOVER PLANTS	115/100 SF	#1 CONTAINER
SMALL SHRUBS	3/100 SF	#1 CONTAINER
LARGE SHRUBS / SMALL TREES	4/100 SF	30" HEIGHT
TREE (DECIDUOUS) OR	1/100 SF	1' CALIPER
TREE (EVERGREEN)	1/100 SF	6' HEIGHT

PLANT LIST				FACILITIES A-B (PRIVATE)			
				A		B	
PLANT NAME	SIZE	SPACING	EVER-GREEN	ZONE A	ZONE B	ZONE A	ZONE B
				9,299 SF	3,454 SF	1,264 SF	2,233 SF
REQUIRED GROUND COVER PLANTS (115 PER 100 SF)				10,693	3,972	1454	2568
ARCTOSTAPHYLOS UVA-URSI / KINNIKINNICK	#1	12" OC	YES		2,000		1,000
CAREX DENSA / DENSE SEDGE	#1	12" OC	YES	3,500		840	
CAREX OBNUPTA / SLOUGH SEDGE	#1	12" OC	YES	3,500			784
JUNCUS PATENS / SPREADING RUSH	#1	12" OC	YES	3,693	1,972	614	784
REQUIRED SMALL SHRUBS (3 PER 100 SF)				279	104	38	67
CORNUS SERCIA / RED TWIG DOGWOOD	#2	AS SHOWN	NO	10		9	6
MAHONIA AQUIFOLIUM / OREGON GRAPE	#2	AS SHOWN	YES	150	2	14	20
PHYSOCARPUS CAPITATUS / PACIFIC NINEBARK	#2	AS SHOWN	NO				
ROSA PISOCARPA	#2	AS SHOWN	NO	121	14	19	20
SYMPHORICARPOS ALBUS / SNOWBERRY	#1	AS SHOWN	NO		114		110
REQUIRED LARGE SHRUBS / SMALL TREES (4 PER 100 SF)				372	138	51	89
HOLODISCUS DISCOLOR / OCEANSPRAY	30" HT	AS SHOWN	NO	66	28	8	8
RIBES SANGUINEUM / RED FLOWERING CURRANT	30" HT	AS SHOWN	NO	73	10		7
RUBUS SPECTABILIS / SALMONBERRY	30" HT	AS SHOWN	NO	10	10		
SPIREA DOUGLASII / WESTERN SPIREA	30" HT	AS SHOWN	NO	223	66	31	10
REQUIRED TREES (1 PER 100 SF)				0	33	0	22
CORNUS NUTTALII / EDDIE'S WHITE WONDER DOGWOOD	2" CAL	AS SHOWN	NO	12			7
FRAXINUS LATIFOLIA / OREGON ASH	2" CAL	AS SHOWN	NO				6
RHAMNUS PURSHIANA	2" CAL	AS SHOWN	NO	22			
TOTAL PLANTS IN FACILITY				28,753		2,746	
TOTAL EVERGREEN PLANTS				10,889		2,588	
% EVERGREEN IN FACILITY				37.9%		94.2%	

PLANT LIST				FACILITIES C-D (PUBLIC)	
				C	D
PLANT NAME	SIZE	SPACING	EVER-GREEN	ZONE A	ZONE A
				1,025 SF	162 SF
REQUIRED GROUND COVER PLANTS (115 PER 100 SF)				1,179	187
CAREX DENSA / DENSE SEDGE	#1	12" OC	YES	786	93
JUNCUS PATENS / SPREADING RUSH	#1	12" OC	YES	393	94
REQUIRED SMALL SHRUBS (3 PER 100 SF)				31	5
SPIREA B. 'TOR' / BIRCHLEAF SPIREA	#1	AS SHOWN	NO	15	2
SYMPHORICARPOS ALBUS / COMMON WHITE SNOWBERRY	#1	AS SHOWN	NO	20	3
REQUIRED SMALL SHRUB IN LIEU OF LARGE SHRUB (4 PER 100 SF)				41	7
SPIREA B. 'TOR' / BIRCHLEAF SPIREA	#1	AS SHOWN	NO	47	7
SYMPHORICARPOS ALBUS / COMMON WHITE SNOWBERRY	#1	AS SHOWN	NO		
TOTAL PLANTS IN FACILITY				1,252	199
TOTAL EVERGREEN PLANTS				1,179	187
% EVERGREEN IN FACILITY				94.2%	93.9%



STORMWATER KEY MAP
SCALE: NTS

STORMWATER FACILITY PLANTING NOTES

1. PLANTING SCHEDULE: CONTAINERIZED STOCK SHALL BE INSTALLED ONLY FROM FEBRUARY 1 THROUGH MAY 1 AND OCTOBER 1 THROUGH NOVEMBER 15. BARE ROOT STOCK SHALL BE INSTALLED ONLY FROM DECEMBER 15 THROUGH APRIL 15. SEEDING SHALL OCCUR ONLY BETWEEN MARCH 1 THROUGH MAY 15 AND SEPTEMBER 1 THROUGH OCTOBER 15.
2. EROSION CONTROL: GRADING, SOIL PREPARATION, AND SEEDING SHALL BE PERFORMED DURING OPTIMAL WEATHER CONDITIONS AND AT LOW FLOW LEVELS TO MINIMIZE SEDIMENT IMPACTS. BIODEGRADABLE FABRICS SUCH AS BURLAP MAY BE USED TO SECURE PLANT PLUGS IN PLACE AND TO DISCOURAGE FLOATING UPON INUNDATION. NO PLASTIC MESH THAT CAN ENTANGLE WILDLIFE IS PERMITTED.
3. GROWING MEDIUM INSTALLATION:
   - 3.1. PROTECT GROWING MEDIUM FROM ALL SOURCES OF CONTAMINATION, INCLUDING WEED SEEDS, WHILE AT THE SUPPLIER, IN CONVEYANCE, AND AT THE PROJECT SITE.
   - 3.2. PLACE MEDIUM IN LOOSE LIFTS, NOT TO EXCEED 8-INCHES AND EACH LIFT SHALL BE COMPACTED WITH A WATER-FILLED LANDSCAPE ROLLER. THE MATERIAL SHALL NOT OTHERWISE BE MECHANICALLY COMPACTED.
   - 3.3. WEATHER PERMITTING, PLANTS SHALL BE INSTALLED AS SOON AS POSSIBLE AFTER PLACING AND GRADING THE GROWING MEDIUM IN ORDER TO MINIMIZE EROSION AND FURTHER COMPACTION.
   - 3.4. TEMPORARY EROSION CONTROL MEASURES ARE REQUIRED UNTIL PERMANENT STABILIZATION MEASURES ARE FUNCTIONAL, INCLUDING PROTECTION OF OVERFLOW STRUCTURES.
   - 3.5. IN ALL CASES, THE FACILITY MUST BE PROTECTED FROM FOOT AND EQUIPMENT TRAFFIC THAT IS UNRELATED TO THE CONSTRUCTION OF THE FACILITY. TEMPORARY FENCING OR WALKWAYS SHOULD BE INSTALLED AS NEEDED TO KEEP WORKERS, PEDESTRIANS, AND EQUIPMENT OUT OF THE FACILITY. UNDER NO CIRCUMSTANCES SHOULD MATERIALS AND EQUIPMENT BE STORED IN THE FACILITY.
   - 3.6. STORMWATER MANAGEMENT FACILITIES SHALL BE KEPT CLEAN AND SHALL NOT BE USED AS EROSION AND SEDIMENT CONTROL STRUCTURES DURING CONSTRUCTION.
   - 3.7. PLACEMENT OF THE GROWING MEDIUM WILL NOT BE ALLOWED WHEN THE GROUND IS FROZEN OR SATURATED OR WHEN THE WEATHER IS DETERMINED TO BE TOO WET.
4. MULCHING FOR STORMWATER FACILITIES SHALL BE PER SECTION A.3.7. USE OF MULCH IN FREQUENTLY INUNDATED AREAS SHALL BE LIMITIED TO AVOID ANY POSSIBLE WATER QUALITY IMPACTS INCLUDING THE LEACHING OF TANNINS AND NUTRIENTS, ANFD THE MIGRATION OF MULCH INTO WATER WAYS. MULCHES SHALL BE STABLE AND INERT MATTER OF SUFFICIENT MASS AND DENSITY THAT IT WILL NOT FLOAT IN STANDARD FLOWS, MULCH COVER SHOULD BE MAINTAINED THROUGHOUT THE LIFE OF THE FACILITY WITH MINIMUM THICKNESS OF 2-INCHES IN DEPTH.
5. PLANT PROTECTION FROM WILDLIFE: DEPENDING ON SITE CONDITIONS, APPROPRIATE MEASURES SHALL BE TAKEN TO LIMIT WILDLIFE-RELATED DAMAGE. IF BEAVERS OR NUTRIA ARE PRESENT, PROTECT THE MAIN STEM OF ALL TREES WITHIN 100' OF THE EDGE OF WATER WITH 36" OF WIRE MESH.
6. FERTILIZER SHOULD GENERALLY BE AVOIDED IN STORMWATER FACILITIES. FERTILIZE ALL PLANTS DURING ESTABLISHMENT AS NEEDED WITH SLOW RELEASE, ORGANIC (LOW YIELD) MATERIAL.
7. IRRIGATION: A CITY APPROVED IRRIGATION SYSTEM MAY BE USED DURING THE 2-YEAR ESTABLISHMENT PERIOD. WATERING SHALL BE AT A RATE TO MAINTAIN ALL PLANTINGS IN A HEALTHY THRIVING CONDITION DURING ESTABLISHMENT. OTHER IRRIGATION TECHNIQUES, SUCH AS DEEP WATERING, MAY BE ALLOWED WITH PRIOR APPROVAL BY THE CITY'S AUTHORIZED REPRESENTATIVE.
8. MAINTENANCE: CHECK FOR WEEDS REGULARLY. CHECK MULCH REGULARLY AND MAINTAIN EVEN COVERAGE. REPLANT BARE PATCHES AS NECESSARY TO COMPLY WITH THE FACILITY'S COVERAGE REQUIREMENTS AND MAINTENANCE PLAN. IMPLEMENT ALL OF THE REQUIRED MAINTENANCE ACTIVITIES LISTED IN THE CITY OF WILSONVILLE VEGETATED STORMWATER MANAGEMENT FACILITY DETAILS.

PLANT SCHEDULE

ACCENT TREES	BOTANICAL / COMMON NAME	SIZE	
	ACER RUBRUM 'BOWHALL' BOWHALL RED MAPLE	2" CAL. B&B	
	AMELANCHIER ALNIFOLIA 'AUTUMN BRILLIANCE' SERVICEBERRY SINGLE STEM	2" CAL. B&B	
	CORNUS KOUSA X NUTTALLII 'KN4-43' STARLIGHT KOUSA DOGWOOD	2" CAL. B&B	
PRIMARY TREES	BOTANICAL / COMMON NAME	SIZE	
	FRAXINUS PENNSYLVANICA 'MARSHALL'S SEEDLESS' MARSHALL'S SEEDLESS GREEN ASH	2" CAL. B&B	
	PINUS PONDEROSA PONDEROSA PINE	12' HT. MIN. B&B	
	PSEUDOTSUGA MENZIESII DOUGLAS FIR	12' HT. MIN. B&B	
	QUERCUS GARRYANA OREGON WHITE OAK	2" CAL. B&B	
	ZELKOVA SERRATA 'GREEN VASE' GREEN VASE SAWLEAF ZELKOVA	2" CAL. B&B	
SECONDARY TREES	BOTANICAL / COMMON NAME	SIZE	
	CALOCEDRUS DECURRENS INCENSE CEDAR	12' HT. MIN. B&B	
	TILIA TOMENTOSA 'STERLING' STERLING SILVER LINDEN	2" CAL. B&B	
	ULMUS X 'FRONTIER' FRONTIER ELM	2" CAL. B&B	
STORMWATER TREES	BOTANICAL / COMMON NAME	SIZE	
	CORNUS X 'EDDIE'S WHITE WONDER' EDDIE'S WHITE WONDER DOGWOOD	2" CAL. B&B	
	FRAXINUS LATIFOLIA OREGON ASH	2" CAL. B&B	
	RHAMNUS PURSHIANA CASCARA BUCKTHORN	2" CAL., B&B	
STREET TREES	BOTANICAL / COMMON NAME	SIZE	
	ACER GRANDIDENTATUM 'SCHMIDT' TM ROCKY MOUNTAIN GLOW MAPLE	3" CAL. B&B	
	CORNUS KOUSA 'MILKY WAY' MILKY WAY KOUSA DOGWOOD	3" CAL. B&B	
	PARROTIA PERSICA 'INGE'S RUBY VASE' TM RUBY VASE PERSIAN PARROTIA	3" CAL. B&B	
SHRUBS	BOTANICAL / COMMON NAME	SIZE	SPACING
	ARBUTUS UNEDO 'COMPACTA' DWARF STRAWBERRY TREE	5 GAL.	72" o.c.
	CORNUS SERICEA 'KELSEYI' KELSEYI DWARF REDTWIG DOGWOOD	2 GAL.	24" o.c.
	DEUTZIA GRACILIS 'NIKKO' SLENDER DEUTZIA (3' H X 5' W)	2 GAL.	48" o.c.
	GAULTHERIA SHALLON SALAL	2 GAL.	36" o.c.
	MAHONIA AQUIFOLIUM OREGON GRAPE	5 GAL.	60" o.c.
	MAHONIA AQUIFOLIUM 'COMPACTA' COMPACT OREGON GRAPE	2 GAL.	36" o.c.
	MYRICA CALIFORNICA PACIFIC WAX MYRTLE	2 GAL.	72" o.c.
	RIBES SANGUINEUM RED FLOWERING CURRANT	2 GAL.	48" o.c.
	SPIRAEA BETULIFOLIA 'TOR' BIRCHLEAF SPIREA MATURE (3' X 5')	2 GAL.	30" o.c.
	SYMPHORICARPOS ALBUS COMMON WHITE SNOWBERRY	2 GAL.	36" o.c.
	COMMON WHITE SNOWBERRY	2 GAL.	36" o.c.
	VACCINIUM OVATUM EVERGREEN HUCKLEBERRY	2 GAL.	60" o.c.
	VACCINIUM OVATUM 'SCARLET OVATION' SCARLET OVATION EVERGREEN HUCKLEBERRY MATURE (3' X 3')	2 GAL.	36" o.c.
	VIBURNUM DAVIDII DAVID VIBURNUM (3' H X 3' W)	2 GAL.	36" o.c.
	VIBURNUM TINUS 'SPRING BOUQUET' SPRING BOUQUET LAURUSTINUS MATURE (6'H X 4'W)	2 GAL.	48" o.c.
PERENNIALS	BOTANICAL / COMMON NAME	SIZE	SPACING
	ACHILLEA MILLIFOLIUM 'ALABASTER' ALABASTER YARROW	1 GAL.	18" o.c.
	ASTER SUBSPICATUS DOUGLAS ASTER	1 GAL.	24" o.c.
	POLYSTICHUM MUNITUM WESTERN SWORD FERN	1 GAL.	24" o.c.
	PTERIDIUM AQUILINUM WESTERN BRACKENFERN	1 GAL.	24" o.c.
	SALVIA X SUPERBA 'CARADONNA' CARADONNA SAGE	1 GAL.	24" o.c.
STORMWATER SHRUBS	BOTANICAL / COMMON NAME	SIZE	SPACING
	CORNUS SERICEA RED TWIG DOGWOOD	2 GAL.	48" o.c.
	HOLODISCUS DISCOLOR OCEAN-SPRAY	2 GAL.	48" o.c.
	MAHONIA AQUIFOLIUM OREGON GRAPE	2 GAL.	36" o.c.
	RIBES SANGUINEUM RED FLOWERING CURRANT	2 GAL.	48" o.c.
	ROSA PISOCARPA CLUSTERED WILD ROSE	2 GAL.	36" o.c.
	RUBUS SPECTABILIS SALMONBERRY	2 GAL.	50" o.c.
	SPIRAEA BETULIFOLIA 'TOR' TOR BIRCHLEAF SPIREA	2 GAL.	30" o.c.
	SPIRAEA DOUGLASII WESTERN SPIREA (3-4' H X 3' W) NATIVE	2 GAL.	48" o.c.
	SYMPHORICARPOS ALBUS COMMON WHITE SNOWBERRY	2 GAL.	36" o.c.
GROUND COVERS	BOTANICAL / COMMON NAME	SIZE	SPACING
	ARCTOSTAPHYLOS UVA-URSI KINNIKINNICK	1 GAL.	24" o.c.
	BOUTELOUA GRACILIS 'BLONDE AMBITION' BLONDE AMBITION BLUE GRAMA	1 GAL.	24" o.c.
	CRUSHED GRAVEL QUARTER-TEN	---	
	FESTUCA OCCIDENTALIS WESTERN FESCUE GRASS	1 GAL.	18" o.c.
	GERANIUM X CANTABRIGIENSE 'BIOKOVO' BIOKOVO CRANESBILL	1 GAL.	24" o.c.
	MAHONIA REPENS CREEPING MAHONIA	1 GAL.	24" o.c.
	PROTIME 402 NATIVE RIPARIAN MIX PROTIME SEEDS	1 LB / 1000 SF	
	SEED MIX NATIVE POLLINATOR MEADOW MIX SUNMARK SEEDS	1 LB / 1000 SF	
	SEED MIX NATIVE UPLANDS MEADOW MIX SUNMARK SEEDS	1 LB / 1000 SF	
STORMWATER PLANTING	BOTANICAL / COMMON NAME	SIZE	SPACING
	CAREX DENSA DENSE SEDGE	1 GAL.	
	CAREX OBNUPTA SLOUGH SEDGE	1 GAL.	
	JUNCUS PATENS CALIFORNIA GRAY RUSH	1 GAL.	

Item 2.

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CITY OF WILSONVILLE, OR

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REVISION SCHEDULE

Delta	Issued As	Issue Date

SHEET TITLE:
PLANT SCHEDULES AND STORMWATER NOTES

DRAWN BY: SKA

CHECKED BY: NRF

SHEET

L0.02

JOB NO. **2200502.04**

DESIGN REVIEW SET 07/29/2022

TREE PROTECTION NOTES

SEE G0.01 FOR PROJECT ARBORIST CONTACT INFORMATION.

1. PROTECTION FENCING: ESTABLISH TREE PROTECTION FENCING IN THE LOCATIONS SHOWN. THE INTENT OF THE TREE PROTECTION FENCING IS TO PROTECT THE MINIMUM ROOT PROTECTION ZONES DETAILED IN FIGURE 1. NOTE THAT THE TREE PROTECTION FENCING MAY BE MOVED TO ALLOW CONSTRUCTION ACCESS TO THE SIDE OF THE PROPOSED BUILDING FOLLOWING APPROVAL BY THE PROJECT ARBORIST.
2. DIRECTIONAL FELLING - FELL THE TREES TO BE REMOVED AWAY FROM THE TREES TO BE RETAINED SO THEY DO NOT CONTACT OR OTHERWISE DAMAGE THE TRUNKS OR BRANCHES OF THE RETAINED TREES. NO VEHICLES OR HEAVY EQUIPMENT SHOULD BE PERMITTED WITHIN THE TREE PROTECTION ZONES DURING TREE REMOVAL OPERATIONS.
3. STUMP REMOVAL - THE STUMPS OF THE TREES TO BE REMOVED FROM WITHIN THE TREE PROTECTION ZONES SHALL BE RETAINED OR CAREFULLY STUMP GROUND SO AS NOT TO DISTURB THE ROOT SYSTEMS OF THE RETAINED TREES.
4. PERIODIC RISK ASSESSMENTS: CONDUCT RISK ASSESSMENTS PERIODICALLY THROUGHOUT CONSTRUCTION TO DETERMINE IF TREES ARE ADAPTING TO THE NEW SITE CONDITIONS AND RISKS ARE MITIGATED APPROPRIATELY WITH CITY APPROVAL. THE RETAINED TREES WERE PREVIOUSLY PROTECTED WITHIN A STAND OF SURROUNDING TREES. THE REMOVAL OF ADJACENT TREES WILL EXPOSE THE RETAINED TREES TO CHANGES IN WIND FORCES WHICH WILL INCREASE THEIR RISK OF WINDTHROW. THE PROJECT ARBORIST SHALL CONDUCT A TREE RISK ASSESSMENT IMMEDIATELY FOLLOWING SITE CLEARING TO IDENTIFY TREES THAT POSE SIGNIFICANT RISKS. FOR TREES THAT POSE SIGNIFICANT RISKS, CONSULT PROJECT ARBORIST FOR RETENTION STRATEGIES, SUCH AS PRUNING OR SNAG CREATION. ANY RECOMMENDED TREE REMOVAL OR SNAG CREATION REQUIRES REVIEW AND APPROVAL OF THE CITY OF WILSONVILLE.
5. CONSTRUCTION ACCESS: WHEN ACCESSING THE SIDES OF THE BUILDING IN THE MODIFIED TREE PROTECTION ZONE, SOIL COMPACTION PREVENTION SUCH AS THE PLACEMENT OF STEEL PLATES IS REQUIRED TO PROTECT THE ROOT ZONES OF THE ADJACENT TREES.
6. ONSITE SUPERVISION OF PROJECT ARBORIST: THE PROJECT ARBORIST SHALL BE ONSITE TO OVERSEE THE RETAINING WALL EXCAVATION AND FOUNDATION CONSTRUCTION WITHIN AND ADJACENT TO THE TREE PROTECTION ZONES OF TREES PERIMETER TREES.
7. PROTECT CROWNS OF TREES: THE CROWNS OF THE TREES MAY EXTEND BEYOND THE TREE PROTECTION FENCING. CARE WILL NEED TO BE TAKEN TO NOT CONTACT OR OTHERWISE DAMAGE THE CROWNS OF THE TREES DURING CONSTRUCTION ACTIVITIES. ANY REQUIRED PRUNING SHALL BE COMPLETED BY AN ISA CERTIFIED ARBORIST CONSISTENT WITH ANSI A300 PRUNING STANDARDS AS DIRECTED BY THE PROJECT ARBORIST.
8. SEDIMENT FENCING: SEDIMENT FENCING SHALL BE INSTALLED OUTSIDE THE PROTECTION ZONES OF THE TREES TO BE RETAINED TO MINIMIZE ROOT DISTURBANCES. IF EROSION CONTROL IS REQUIRED INSIDE THE ROOT ZONES, STRAW WATTLES SHALL BE USED ON THE SOIL SURFACE.

BEFORE CONSTRUCTION BEGINS

1. NOTIFY ALL CONTRACTORS OF TREE PROTECTION PROCEDURES. FOR SUCCESSFUL TREE PROTECTION ON A CONSTRUCTION SITE, ALL CONTRACTORS MUST KNOW AND UNDERSTAND THE GOALS OF TREE PROTECTION.
   a. HOLD A TREE PROTECTION MEETING WITH ALL CONTRACTORS TO EXPLAIN THE GOALS OF TREE PROTECTION.
   b. HAVE ALL CONTRACTORS SIGN MEMORANDA OF UNDERSTANDING REGARDING THE GOALS OF TREE PROTECTION. THE MEMORANDA SHOULD INCLUDE A PENALTY FOR VIOLATING THE TREE PROTECTION PLAN. THE PENALTY SHOULD EQUAL THE RESULTING FINES ISSUED BY THE LOCAL JURISDICTION PLUS THE APPRAISED VALUE OF THE TREE(S) WITHIN THE VIOLATED TREE PROTECTION ZONE PER THE CURRENT TRUNK FORMULA METHOD AS OUTLINED IN THE CURRENT EDITION OF THE 'GUILD FOR PLANT APPRAISAL' BY THE COUNCIL OF TREE AND LANDSCAPE APPRAISERS. THE PENALTY SHOULD BE PAID TO THE OWNER OF THE PROPERTY.
2. FENCING
   a. TREE PROTECTION FENCING MAY BE SET AS SHOWN ON THE TREE PLAN.
   b. THE FENCING SHOULD BE PUT IN PLACE BEFORE THE GROUND IS CLEARED TO PROTECT THE TREES AND THE SOIL AROUND THE TREE FROM DISTURBANCES.
   c. FENCING SHOULD CONSIST OF 4-FOOT HIGH STEEL FENCING ON CONCRETE BLOCKS OR OTHER ANCHORING DEVICES, OR 4-FOOT METAL FENCING SECURED TO THE GROUND WITH 6-FOOT METAL POSTS TO PREVENT IT FROM BEING MOVED BY CONTRACTORS, SAGGING, OR FALLING DOWN.
   d. FENCING SHOULD REMAIN IN THE POSITION THAT IS ESTABLISHED BY THE PROJECT ARBORIST AND NOT BE MOVED WITHOUT APPROVAL FROM THE PROJECT ARBORIST UNTIL FINAL PROJECT APPROVAL.
2. SIGNAGE
   a. ALL TREE PROTECTION FENCING SHOULD HAVE SIGNAGE AS FOLLOWS SO THAT ALL CONTRACTORS UNDERSTAND THE PURPOSE OF THE FENCING:

TREE PROTECTION ZONE

DO NOT REMOVE OR ADJUST THE LOCATION OF THIS TREE PROTECTION FENCING. UNAUTHORIZED ENCROACHMENT MAY RESULT IN FINES.

Please contact the project arborist if alterations to the location of the tree protection fencing are necessary.

Project Arborist: Teregan & Associates, Inc. (503) 697-1975

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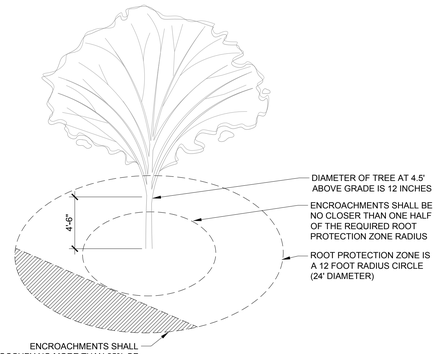
   b. SIGNAGE SHOULD BE PLACED EVERY 75-FEET OR LESS.

DURING CONSTRUCTION

1. PROTECTION GUIDELINES WITHIN THE TREE PROTECTION ZONES:
   a. NO NEW BUILDINGS; GRADE CHANGES OR CUT AND FILL, DURING OR AFTER CONSTRUCTION; NEW IMPERVIOUS SURFACES; OR UTILITY OR DRAINAGE FILED PLACEMENT SHOULD BE ALLOWED WITHIN THE TREE PROTECTION ZONES.
   b. NO TRAFFIC SHOULD BE ALLOWED WITHIN THE TREE PROTECTION ZONES. THIS INCLUDES BUT IS NOT LIMITED TO VEHICLE, HEAVY EQUIPMENT, OR EVEN REPEATED FOOT TRAFFIC.
   c. NO STORAGE OF MATERIALS INCLUDING BUT NOT LIMITED TO SOIL, ON STRUCTION MATERIALS, OR WASTE FROM THE SITE SHOULD BE PERMITTED WITHIN THE TREE PROTECTION ZONES. WASTE INCLUDES BUT IS NOT LIMITED TO CONCRETE WASH OUT, GASOLINE, DIESEL, PAINT, CLEANER, THINNERS, ETC.
   d. CONSTRUCTION TRAILERS SHOULD NOT BE PARKED/PLACED WITHIN THE TREE PROTECTION ZONES.
   e. NO VEHICLES SHOULD BE ALLOWED TO PARK WITHIN THE TREE PROTECTION ZONES.
   f. NO OTHER ACTIVITIES SHOULD BE ALLOWED THAT WILL CAUSE SOIL COMPACTIONS WITHIN THE TREE PROTECTION ZONES.
2. THE TREES SHOULD BE PROTECTED FROM ANY CUTTING, SKINNING, OR BREAKING OF BRANCHES, TRUNKS OR WOODY ROOTS.
3. THE PROJECT ARBORIST SHOULD BE NOTIFIED PRIOR TO THE CUTTING OF WOODY ROOTS FROM TREES THAT ARE TO BE RETAINED TO EVALUATE AND OVERSEE THE PROPER CUTTING OF ROOTS WITH SHARP CUTTING TOOLS. CUT ROOTS SHOULD BE IMMEDIATELY COVERED WITH SOIL OR MULCH TO PREVENT THEM FROM DRYING OUT.
4. TREES THAT HAVE WOODY ROOTS CUT SHOULD BE PROVIDED SUPPLEMENTAL WATER DURING THE SUMMER MONTHS.
5. ANY NECESSARY PASSAGE OF UTILITIES WITHIN THE TREE PROTECTION ZONES SHOULD BE BY MEANS OF TUNNELING UNDER WOODY ROOTS BY HAND DIGGING OR BORING WITH OVERSIGHT BY THE PROJECT ARBORIST.
6. ANY DEVIATION FROM THE RECOMMENDATIONS IN THIS SECTION SHOULD RECEIVE PRIOR APPROVAL FROM THE PROJECT ARBORIST.

AFTER CONSTRUCTION

1. CAREFULLY LANDSCAPE THE AREAS WITHIN THE TREE PROTECTION ZONES. DO NOT ALLOW TRENCHING FOR IRRIGATION OR OTHER UTILITIES WITHIN THE TREE PROTECTION ZONES.
2. CAREFULLY PLANT NEW PLANTS WITHIN THE TREE PROTECTION ZONES. AVOID CUTTING THE WOODY ROOTS OF TREES THAT ARE RETAINED.
3. DO NOT INSTALL PERMANENT IRRIGATION WITHIN THE TREE PROTECTION ZONES UNLESS IT IS DRIP IRRIGATION TO SUPPORT A SPECIFIC PLANTING OR THE IRRIGATION IS APPROVED BY THE PROJECT ARBORIST.
4. PROVIDE ADEQUATE DRAINAGE WITHIN THE TREE PROTECTION ZONES AND DO NOT ALTER SOIL HYDROLOGY SIGNIFICANTLY FROM EXISTING CONDITIONS FOR THE TREES TO BE RETAINED.
5. PROVIDE FOR THE ONGOING INSPECTION AND TREATMENT OF INSECT AND DISEASE POPULATIONS THAT CAN DAMAGE THE RETAINED TREES AND PLANTS.
6. THE RETAINED TREES MAY NEED TO BE FERTILIZED IF RECOMMENDED BY THE PROJECT ARBORIST.
7. ANY DEVIATION FROM THE RECOMMENDATIONS IN THIS SECTION SHOULD RECEIVE PRIOR APPROVAL FROM THE PROJECT ARBORIST.



1 ROOT PROTECTION ZONE

SCALE: NTS

TREE DATA

ALL TREES (257 TREES)	QTY	RETAIN	REMOVE	MITIGATION
ON SITE < 6" DBH	200	11	189	189
PUBLIC < 6" DBH	21	0	21	21
OFF SITE < 6" DBH	36	36	0	0
TOTAL	257	47	210	210

TREE INVENTORY - ON SITE AND PUBLIC

EXISTING	BOTANICAL / COMMON NAME	QTY
	DOUGLAS FIR TO REMOVE	190
	DOUGLAS FIR TO REMAIN	5
	ENGLISH HAWTHORN TO REMAIN	1
	OREGON ASH TO REMAIN	3
	STREET TREES TO REMOVE	18
	SWEET CHERRY TO REMOVE	2
	WILLOW TO REMAIN	2

TREE INVENTORY - OFF SITE PRIVATE

EXISTING	BOTANICAL / COMMON NAME	QTY
	BIGLEAF MAPLE TO REMAIN	1
	DOUGLAS FIR TO REMAIN	33
	OREGON WHITE OAK TO REMAIN	1
	PACIFIC MADRONE TO REMAIN	1

1 L0.03 TREE REMOVAL PLAN

30 0 15 30 60 120

(IN FEET)

1 inch = 30 ft.

DESIGN REVIEW SET 07/29/2022

220050200\DRAWINGS\LANDSCAPE\502-L0.01.DWG:L0.03 JWT 10/06/22 12:02 1:0.08

Item 2.

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REVISION SCHEDULE

Delta	Issued As	Issue Date
1	PLAN CHECK	10/07/2022

SHEET TITLE:
TREE REMOVAL PLAN

DRAWN BY: SKA

CHECKED BY: NRF

SHEET

L0.03

JOB NO. **2200502.04**

1170

MITIGATION REQUIREMENTS

REPLACE LIVING TREES 6-INCH IN DBH OR LARGER WITH A 2-INCH CALIPER TREE OR LARGER OF SIMILAR MATURE CANOPY SIZE AND STRUCTURE.

TOTAL TREES REQUIRING MITIGATION	**210**
TOTAL 2" CAL. TREES IN PLAN	**210**
TOTAL TREES REQUIRING FEE IN LIEU	**0**

TREE CREDITS (SECTION 4.176.06.F)

DBH IS 18-24"	3 TREE CREDITS
DBH IS 25-31"	4 TREE CREDITS
DBH IS 32" OR GREATER	5 TREE CREDITS

FOR FULL LIST OF TREES TO BE REMOVED SEE EXHIBIT D ARBORIST'S REPORT.

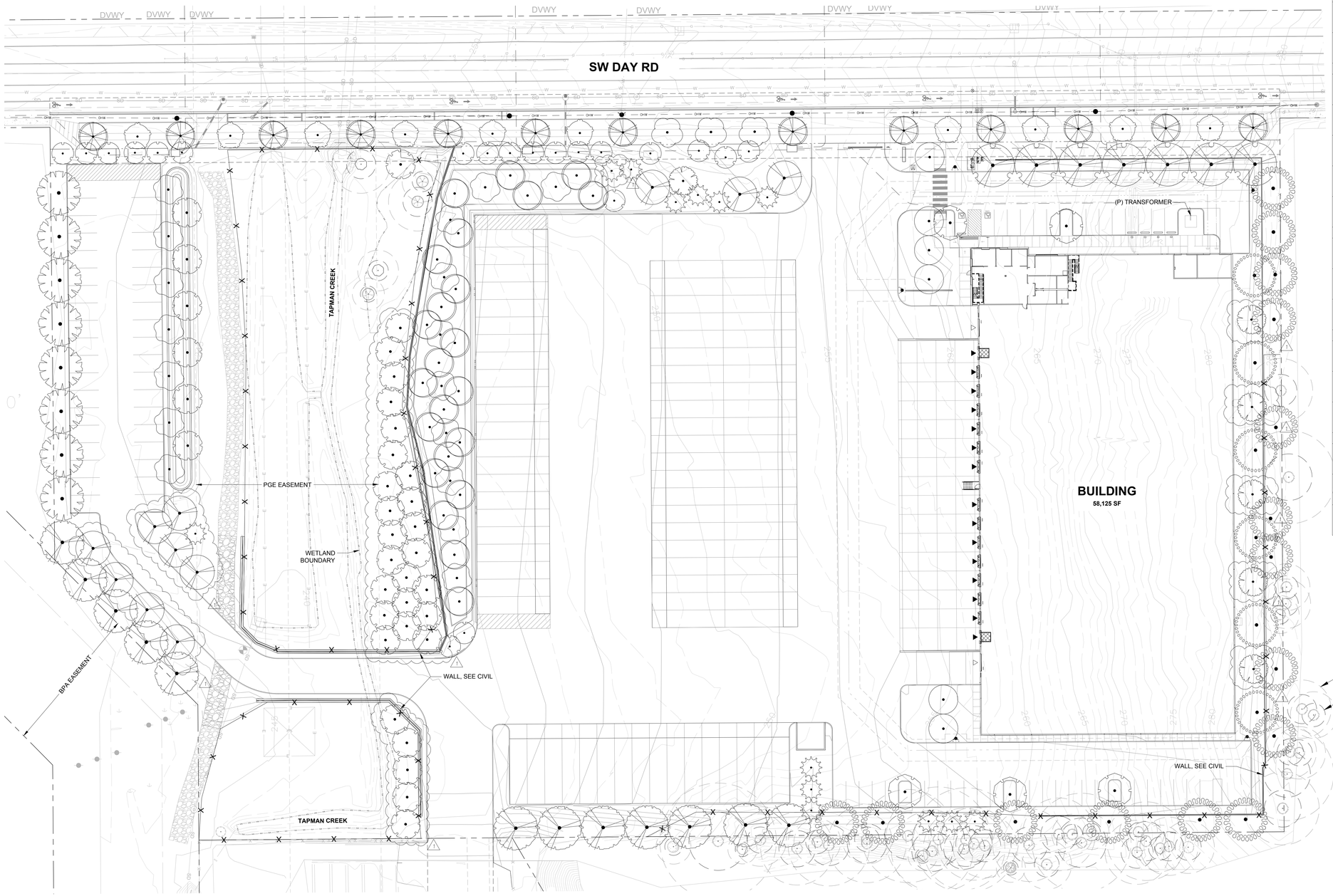
TREES TO BE RETAINED		DBH	CREDITS	CONDITION
549	CRATAEGUS MONOGYNA	5"	0	FAIR
791	WILLOW / SALIX	20"	0	POOR
1847	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	22"	0	FAIR
2072	OREGON ASH / FRAXINUS LATIFOLIA	11"	0	POOR
2073	WILLOW / SALIX	14"	0	DEAD
2074	OREGON ASH / FRAXINUS LATIFOLIA	20"	0	POOR
2075	OREGON ASH / FRAXINUS LATIFOLIA	14"	0	FAIR
2278	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	14"	0	POOR
2340	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	22"	0	GOOD
2366	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	13"	0	POOR
2374	DOUGLAS-FIR / PSEUDOTSUGA MENZIESII	12"	0	GOOD
TOTAL TREE CREDITS			**0 TREES**	

EXISTING TREE INVENTORY

EXISTING	BOTANICAL / COMMON NAME	QTY
	DOUGLAS FIR TO REMAIN	5
	ENGLISH HAWTHORN TO REMAIN	1
	OREGON ASH TO REMAIN	3
	WILLOW TO REMAIN	2

PROPOSED TREES

ACCENT TREES	QTY	BOTANICAL / COMMON NAME
	6	ACER RUBRUM 'BOWHALL' BOWHALL RED MAPLE
	20	AMELANCHIER ALNIFOLIA 'AUTUMN BRILLIANCE' SERVICEBERRY
	6	CORNUS KOUSA X NUTTALLII 'KN4-43' STARLIGHT KOUSA DOGWOOD
PRIMARY TREES	**QTY**	**BOTANICAL / COMMON NAME**
	7	FRAXINUS PENNSYLVANICA 'MARSHALL'S SEEDLESS' MARSHALL'S SEEDLESS GREEN ASH
	6	PINUS PONDEROSA PONDEROSA PINE
	15	PSEUDOTSUGA MENZIESII DOUGLAS FIR
	12	QUERCUS GARRYANA OREGON WHITE OAK
	8	ZELKOVA SERRATA 'GREEN VASE' GREEN VASE SAWLEAF ZELKOVA
SECONDARY TREES	**QTY**	**BOTANICAL / COMMON NAME**
	13	CALOCEDRUS DECURRENS INCENSE CEDAR
	11	TILIA TOMENTOSA 'STERLING' STERLING SILVER LINDEN
	5	ULMUS X 'FRONTIER' FRONTIER ELM
STORMWATER TREES	**QTY**	**BOTANICAL / COMMON NAME**
	17	CORNUS X 'EDDIE'S WHITE WONDER' EDDIE'S WHITE WONDER DOGWOOD
	35	FRAXINUS LATIFOLIA OREGON ASH
	23	RHAMNUS PURSHIANA CASCARA BUCKTHORN
STREET TREES	**QTY**	**BOTANICAL / COMMON NAME**
	13	ACER GRANDIDENTATUM 'SCHMIDT' TM ROCKY MOUNTAIN GLOW MAPLE
	3	CORNUS KOUSA 'MILKY WAY' MILKY WAY KOUSA DOGWOOD
	10	PARROTIA PERSICA 'INGE'S RUBY VASE' TM RUBY VASE PERSIAN PARROTIA



NOTE

1. OFFSITE TREES IMPACTED BY ONSITE IMPROVEMENT ON ADJACENT PRIVATE PROPERTY ARE RECOMMENDED FOR REMOVAL AND MITIGATION CONTINGENT UPON APPROVAL OF ADJACENT PROPERTY OWNER.

1 L0.04 TREE MITIGATION PLAN

30 0 15 30 60 120

(IN FEET)

1 inch = 30 ft.

Item 2.

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DELTA LOGISTICS
9835 SW COMMERCE CIRCLE
WILSONVILLE, OR
97070

Project

DELTA LOGISTICS SITE EXPANSION
9710 SW DAY RD.
CITY OF WILSONVILLE, OR

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REVISION SCHEDULE

Delta	Issued As	Issue Date
1	PLAN CHECK	10/06/2022

SHEET TITLE:
TREE MITIGATION PLAN

DRAWN BY: AEZ, JWT

CHECKED BY: NRF

SHEET
L0.04

JOB NO. **2200502.04**

1171

DESIGN REVIEW SET 07/29/2022

MITIGATION PLANTING NOTES

NOTES PER EXHIBIT C NATURAL RESOURCE ASSESSMENT FOR 9710 SW DAY ROAD PREPARED BY SCHOTT AND ASSOCIATES (2022).

SITE PREPARATION
PRIOR TO ANY SITE CLEARING, GRADING OR CONSTRUCTION, THE SROZ AREA SHALL BE STAKED, AND FENCED PER APPROVED PLAN. DURING CONSTRUCTION, THE SROZ AREA SHALL REMAIN FENCED AND UNDISTURBED EXCEPT AS ALLOWED BY AN APPROVED DEVELOPMENT PERMIT.

PROPOSED ENCROACHMENTS
ENCROACHMENTS ARE PROPOSED TO THE VEGETATED CORRIDOR AND IMPACT AREA.

- ENCROACHMENTS WILL OCCUR IN THE NORTHERN PORTION OF THE VEGETATED CORRIDOR FOR THE CITY REQUIRED WIDENING OF SW DAY RD AND IN THE SOUTHERN PORTION FOR THE TAPMAN CREEK CROSSING. THESE AREAS ARE VEGETATED ENTIRELY BY INVASIVE SPECIES INCLUDING HIMALAYAN BLACKBERRY AND REED CANARY GRASS. NO TREES OR NATIVE SPECIES WILL BE REMOVED AS A RESULT OF CONSTRUCTION.
- ENCROACHMENTS WILL OCCUR ON BOTH SIDES OF THE CREEK FOR THE ROAD CROSSING AND ALONG THE EASTERN PORTION OF THE IMPACT AREA FOR THE ROAD WIDENING, CREEK CROSSING, AND CONSTRUCTION OF A VEGETATED WATER QUALITY AND STORMWATER DETENTION FACILITY. NO ENCROACHMENTS TO TAPMAN CREEK OR THE WETLANDS ARE PROPOSED. NO TREES WILL BE REMOVED FROM THE SROZ.
- DEVELOPMENT ACTIVITY HAS BEEN LIMITED TO THE IMPACT AREA WHERE PRACTICAL EXCEPT WHERE NECESSARY TO WIDEN SW DAY ROAD AND CROSS TAPMAN CREEK TO ACCESS THE WESTERN PORTION OF THE SITE.

MITIGATION PLANTING
THE MITIGATION PLANTING PLAN WAS DESIGNED ACCORDING SECTION 4.139.07(.02)(E) AND SHALL MEET THE FOLLOWING:

- THE PLANTING PLAN SHALL BE IMPLEMENTED PRIOR TO OR AT THE SAME TIME AS THE IMPACT ACTIVITY IS CONDUCTED.
- ALL TREES, SHRUBS AND GROUND COVER SHALL BE NATIVE VEGETATION.
- TREES AND SHRUBS SHALL BE AT LEAST ONE-GALLON IN SIZE AND SHALL BE AT LEAST TWELVE (12) INCHES IN HEIGHT.
- TREES SHALL BE PLANTED BETWEEN EIGHT (8) AND TWELVE (12) FEET ON CENTER, AND SHRUBS SHALL BE PLANTED BETWEEN FOUR (4) AND FIVE (5) FEET ON CENTER, OR CLUSTERED IN SINGLE SPECIES GROUPS OF NO MORE THAN FOUR (4) PLANTS, WITH EACH CLUSTER PLANTED BETWEEN EIGHT (8) AND TEN (10) FEET ON CENTER. WHEN PLANTING NEAR EXISTING TREES, THE DRIP LINE OF THE EXISTING TREE SHALL BE THE STARTING POINT FOR PLANT SPACING MEASUREMENTS.
- SHRUBS SHALL CONSIST OF AT LEAST TWO (2) DIFFERENT SPECIES. IF FIVE (5) TREES OR MORE ARE PLANTED, THEN NO MORE THAN FIFTY (50) PERCENT OF THE TREES MAY BE OF THE SAME GENUS.
- INVASIVE NON-NATIVE OR NOXIOUS VEGETATION SHALL BE REMOVED WITHIN THE MITIGATION AREA PRIOR TO PLANTING AND SHALL BE REMOVED OR CONTROLLED FOR FIVE (5) YEARS FOLLOWING THE DATE THAT THE MITIGATION PLANTING IS COMPLETED.

MITIGATION GOALS AND PERFORMANCE STANDARDS

THE MITIGATION SITE GOAL IS AS FOLLOWS:

ENHANCE 32,890 SQ. FT. OF VEGETATED CORRIDOR TO IMPROVE RIPARIAN CORRIDOR, WATER QUALITY PROTECTION, ECOLOGICAL INTEGRITY AND WILDLIFE HABITAT FUNCTIONS BY REMOVING INVASIVE SPECIES AND MAINTAINING A NATIVE, WOODY-DOMINATED PLANT COMMUNITY.

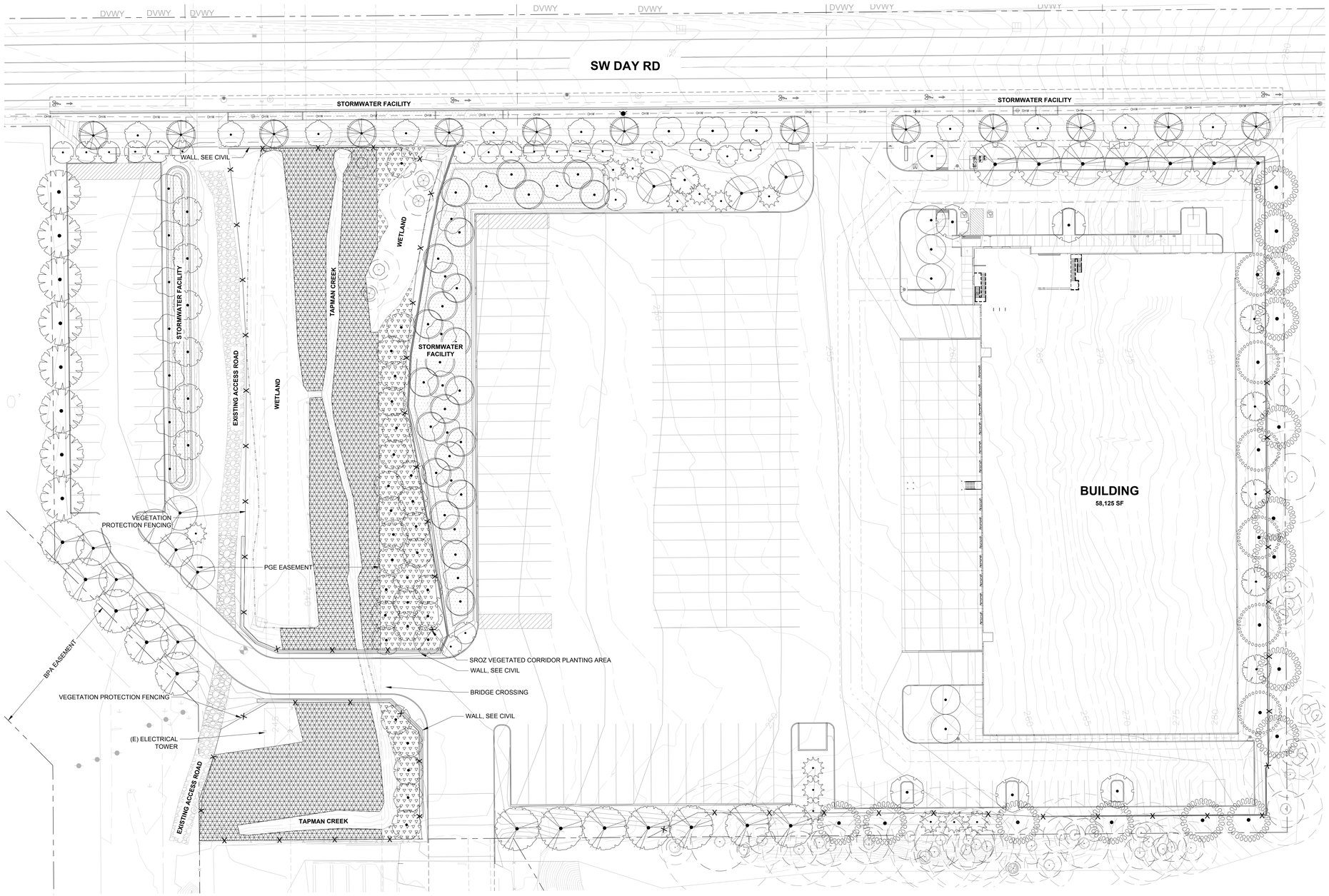
PERFORMANCE STANDARDS ARE BASED ON METRO'S TITLE 3 WATER QUALITY PERFORMANCE STANDARDS TO PROTECT AND IMPROVE WATER QUALITY AND PROTECT THE FUNCTIONS AND VALUES OF WATER QUALITY RESOURCE AREAS (METRO 2018). THIS PLAN'S PERFORMANCE STANDARDS FOR FOREST AND/OR SHRUB DOMINATED AREAS AND SHALL CONSIST OF THE FOLLOWING:

1. ESTABLISHMENT OF PERMANENT MONITORING LOCATIONS DURING THE FIRST ANNUAL MONITORING.
2. COVER OF NATIVE HERBACEOUS SPECIES IS AT LEAST 60%
3. COVER OF INVASIVE SPECIES IS NO MORE THAN 10%. AFTER THE SITE HAS MATURED TO THE STAGE WHEN DESIRABLE CANOPY SPECIES REACH 50% COVER, THE COVER OF INVASIVE SPECIES MAY INCREASE BUT MAY NOT EXCEED 30%.
4. BARE SUBSTRATE REPRESENTS NO MORE THAN 20% COVER.
5. DENSITY OF WOODY VEGETATION IS AT LEAST 1,600 LIVE TREES OR SHRUBS PER ACRE OR THE COVER OF NATIVE WOODY VEGETATION ON SITE IS AT LEAST 50%. NATIVE VOLUNTEER SPECIES MAY BE INCLUDED IN THE COVER OR DENSITY ESTIMATE.
6. BY YEAR 3 AND THEREAFTER, AT LEAST 6 DIFFERENT NATIVE SPECIES MUST BE PRESENT. TO QUALIFY, A SPECIES MUST HAVE AT LEAST 5% AVERAGE COVER IN THE HABITAT CLASS AND OCCUR IN AT LEAST 10% OF THE PLOTS SAMPLED.
7. BY YEAR 5, A MINIMUM OF EIGHTY (80) PERCENT OF THE TREES AND SHRUBS INITIALLY REQUIRED SHALL REMAIN ALIVE.

MAINTENANCE AND MONITORING

MONITORING WILL OCCUR ANNUALLY OVER A 5-YEAR MONITORING PERIOD TO ASSESS CONDITION OF PLANTINGS, IRRIGATION, MULCH ETC. MONITORING WILL BE CONDUCTED BY QUALIFIED PERSONNEL DURING PEAK GROWING SEASON (JULY-AUGUST). ANNUAL MONITORING REPORTS WILL BE PROVIDED TO THE PLANNING DIRECTOR FOR REVIEW BY DECEMBER OF EACH MONITORING YEAR. THE REPORT SHALL CONTAIN, AT A MINIMUM, PHOTOGRAPHS FROM ESTABLISHED PHOTO POINTS, QUANTITATIVE MEASURE OF SUCCESS CRITERIA, INCLUDING PLANT SURVIVAL AND VIGOR. THE YEAR 1 ANNUAL REPORT SHALL BE SUBMITTED ONE YEAR FOLLOWING MITIGATION ACTION IMPLEMENTATION. THE FINAL ANNUAL REPORT (YEAR 5 REPORT) SHALL DOCUMENT SUCCESSFUL SATISFACTION OF MITIGATION GOALS, AS PER THE STATED PERFORMANCE STANDARDS.

THE APPLICANT WILL BE RESPONSIBLE FOR COORDINATING ONGOING MAINTENANCE AND MANAGEMENT. IF THE OWNERSHIP OF THE MITIGATION SITE PROPERTY CHANGES, THE NEW OWNERS WILL HAVE THE CONTINUED RESPONSIBILITIES MAINTENANCE ACTIVITIES INCLUDING MULCHING, WEED REMOVAL, HERBIVORY CONTROL, AND SUPPLEMENTAL PLANTING WILL BE CONDUCTED BY A QUALIFIED CONTRACTOR AT LEAST TWICE PER GROWING SEASON AND ONCE PRIOR TO THE GROWING SEASON OR MORE FREQUENTLY AS INDICATED BY MONITORING RESULTS. ANY FAILED PLANTS WILL BE REPLACED IN-KIND WITH THE CAUSE OF LOSS (WILDLIFE DAMAGE, POOR PLANT STOCK, DROUGHT, WEED OVERGROWTH, ETC.) DOCUMENTED AND ADDITIONAL MAINTENANCE DONE TO ADDRESS THE CAUSE OF LOSS AND ENSURE FUTURE PLANT SURVIVAL.



1 / L0.05 TREE MITIGATION PLAN

30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.

MITIGATION PLANT SCHEDULE PER SRIR

RIPARIAN FOREST COMMUNITY: 8,600 SQ. FT.					
SPECIES	TYPE	MIN SIZE*	SPACING	QTY	TOTAL
OREGON ASH	TREE	2 CAL.	8'OC	9	
FRAXINUS LATIFOLIA		2"CAL	15' OC	28	
SCOULER'S WILLOW	TREE	2 GAL. OR	8'OC	37	1
SALIX SCOULERIANA		BARE ROOT			
WESTERN REDCEDAR	TREE	2 GAL OR	8'OC	60	134
THUJA PLICATA		BARE ROOT			TREES
REDOSIER DOGWOOD	SHRUB	1 GAL. OR	5'OC	86	
CORNUS STOLONIFERA		BARE ROOT	CLUSTER		
RED ELDERBERRY	SHRUB	1 GAL. OR	5'OC	86	
SAMBUCUS RACEMOSA		BARE ROOT	CLUSTER		
SNOWBERRY	SHRUB	1 GAL. OR	5'OC	86	
SYMPHORICARPOS ALBUS		BARE ROOT	CLUSTER		
SALMONBERRY	SHRUB	1 GAL. OR	5'OC	86	
RUBUS SPECTABILIS		BARE ROOT	CLUSTER		
SWAMP ROSE	SHRUB	1 GAL. OR	5'OC	86	
ROSA PISOCARPA		BARE ROOT	CLUSTER		
RIPARIAN SHRUB COMMUNITY : 24,263 SQ. FT.					
SPECIES	TYPE	MIN SIZE*	SPACING	QTY	
REDOSIER DOGWOOD	SHRUB	1 GAL. OR	5'OC	200	
CORNUS STOLONIFERA		BARE ROOT	CLUSTER		
RED ELDERBERRY	SHRUB	1 GAL. OR	5'OC	200	
SAMBUCUS RACEMOSA		BARE ROOT	CLUSTER		
SNOWBERRY	SHRUB	1 GAL. OR	5'OC	213	
SYMPHORICARPOS ALBUS		BARE ROOT	CLUSTER		
SALMONBERRY	SHRUB	1 GAL. OR	5'OC	200	
RUBUS SPECTABILIS		BARE ROOT	CLUSTER		
SWAMP ROSE	SHRUB	1 GAL. OR	5'OC	200	
ROSA PISOCARPA		BARE ROOT	CLUSTER		
INDIAN PLUM	SHRUB	1 GAL. OR	5'OC	200	1,643
OEMLERIA CERASIFORMIS		BARE ROOT	CLUSTER		SHRUBS
PROTIME 402*	HERB	25 LBS PER ACRE		17.5 LBS	

*NATIVE RIPARIAN MIX INCLUDES BLUE WILDRYE (ELYMUS GLAUCUS), MEADOW BARLEY (HORDEUM BRACHYANTHERUM), AND TUFTED HAIRGRASS (DESCHAMPSIA CESPITOSA)

PROPOSED PLANT LIST (REMAINDER OF SITE)

IN COMPLIANCE WITH THE MITIGATION REQUIREMENTS, NATIVE AND DROUGHT TOLERANT VEGETATION IS USED THROUGHOUT THE SITE.

PLANT NAME	NATIVE STATUS
ACCENT TREES	
ACER RUBRUM 'BOWHALL'	
AMELANCHIER ALNIFOLIA 'AUTUMN BRILLIANCE'	NATIVE CULTIVAR
CORNUS KOUSA X NUTTALLII 'KN4-43'	NATIVE CULTIVAR
PRIMARY TREES	
FRAXINUS PENNSYLVANICA 'MARSHALL'S SEEDLESS'	
PINUS PONDEROSA	NATIVE
PSEUDOTSUGA MENZIESII	NATIVE
QUERCUS GARRYANA	NATIVE
ZELKOVA SERRATA 'GREEN VASE'	
SECONDARY TREES	
CALOCEDRUS DECURRENS	NATIVE
TILIA TOMENTOSA 'STERLING'	
ULMUS X 'FRONTIER'	
STORMWATER TREES	
CORNUS X 'EDDIE'S WHITE WONDER'	NATIVE CULTIVAR
FRAXINUS LATIFOLIA	NATIVE
RHAMNUS PURSHIANA	NATIVE
STREET TREES	
ACER GRANDIDENTATUM 'SCHMIDT' TM	
CORNUS KOUSA 'MILKY WAY'	
PARROTIA PERSICA 'INGE'S RUBY VASE' TM	
SHRUBS	
ARBUTUS UNEDO 'COMPACTA'	NATIVE CULTIVAR
CORNUS SERICEA 'KELSEYI'	
DEUTZIA GRACILIS 'NIKKO'	NATIVE
GAULTHERIA SHALLON	NATIVE
MAHONIA AQUIFOLIUM	NATIVE CULTIVAR
MAHONIA AQUIFOLIUM 'COMPACTA'	NATIVE
MYRICA CALIFORNICA	NATIVE
RIBES SANGUINEUM	NATIVE CULTIVAR
SPIRAEA BETULIFOLIA 'TOR'	NATIVE
SYMPHORICARPOS ALBUS	NATIVE
VACCINIUM OVATUM	NATIVE CULTIVAR
VACCINIUM OVATUM 'SCARLET OVATION'	
VIBURNUM DAVIDII	
VIBURNUM TINUS 'SPRING BOUQUET'	
PERENNIALS	
ACHILLEA MILLIFOLIUM 'ALABASTER'	NATIVE CULTIVAR
ASTER SUBSPICATUS	NATIVE
POLYSTICHUM MUNITUM	NATIVE
PTERIDIUM AQUILINUM	NATIVE
SALVIA X SUPERBA 'CARADONNA'	
STORMWATER SHRUBS	
CORNUS SERICEA	NATIVE
HOLODISCUS DISCOLOR	NATIVE
MAHONIA AQUIFOLIUM	NATIVE
RIBES SANGUINEUM	NATIVE
ROSA PISOCARPA	NATIVE
RUBUS SPECTABILIS	NATIVE CULTIVAR
SPIRAEA BETULIFOLIA 'TOR'	NATIVE
SPIRAEA DOUGLASII	NATIVE
SYMPHORICARPOS ALBUS	NATIVE
GROUND COVERS	
ARCTOSTAPHYLOS UVA-URSI	NATIVE
BOUTELOUA GRACILIS 'BLONDE AMBITION'	
CRUSHED GRAVEL	
FESTUCA OCCIDENTALIS	NATIVE
GERANIUM X CANTABRIGIENSE 'BIOKOVO'	
MAHONIA REPENS	NATIVE
PROTIME 402 NATIVE RIPARIAN MIX	NATIVE
SEED MIX NATIVE POLLINATOR MEADOW MIX	NATIVE
SEED MIX NATIVE UPLANDS MEADOW MIX	
STORMWATER PLANTING	
CAREX DENSA	NATIVE
CAREX OBNUPTA	NATIVE
JUNCUS PATENS	NATIVE

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REVISION SCHEDULE

Delta	Issued As	Issue Date
1	PLAN CHECK	10/06/2022

SHEET TITLE:
VEGETATED CORRIDOR ENHANCEMENT PLANTING PLAN

DRAWN BY: AEZ, LJM, JWT

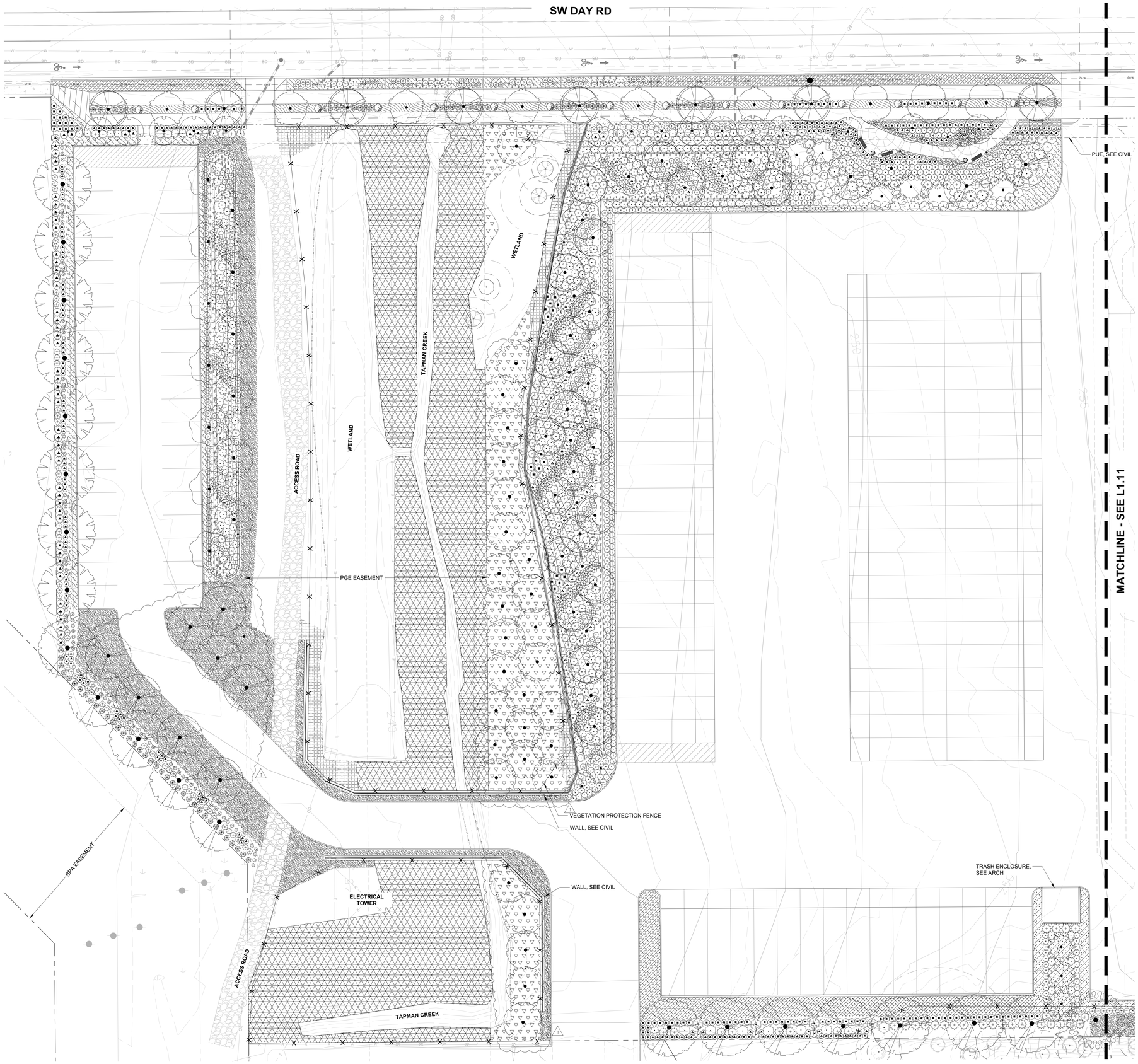
CHECKED BY: NRF

SHEET
L0.05

JOB NO. **2200502.04**

1172

DESIGN REVIEW SET 07/29/2022



1 L1.10 PLANTING PLAN WEST

20 0 10 20 40 80

(IN FEET)

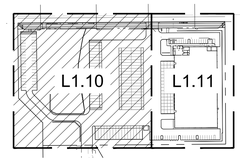
1 inch = 20 ft.

PLANT KEY LEGEND

ACCENT TREES	BOTANICAL / COMMON NAME
	AMELANCHIER ALNIFOLIA 'AUTUMN BRILLIANCE' SERVICEBERRY
	CORNUS KOUSA X NUTTALLII 'KN4-43' STARLIGHT KOUSA DOGWOOD
PRIMARY TREES	BOTANICAL / COMMON NAME
	PSEUDOTSUGA MENZIESII DOUGLAS FIR
	QUERCUS GARRYANA OREGON WHITE OAK
	ZELKOVA SERRATA 'GREEN VASE' GREEN VASE SAWLEAF ZELKOVA
SECONDARY TREES	BOTANICAL / COMMON NAME
	CALOCEDRUS DECURRENS INCENSE CEDAR
	TILIA TOMENTOSA 'STERLING' STERLING SILVER LINDEN
STORMWATER TREES	BOTANICAL / COMMON NAME
	CORNUS X 'EDDIE'S WHITE WONDER' EDDIE'S WHITE WONDER DOGWOOD
	FRAXINUS LATIFOLIA OREGON ASH
	RHAMNUS PURSHIANA CASCARA BUCKTHORN
STREET TREES	BOTANICAL / COMMON NAME
	ACER GRANDIDENTATUM 'SCHMIDT' TM ROCKY MOUNTAIN GLOW MAPLE
	CORNUS KOUSA 'MILKY WAY' MILKY WAY KOUSA DOGWOOD
	PARROTIA PERSICA 'INGE'S RUBY VASE' TM RUBY VASE PERSIAN PARROTIA
SHRUBS	BOTANICAL / COMMON NAME
	ARBUTUS UNEDO 'COMPACTA' DWARF STRAWBERRY TREE
	CORNUS SERICEA 'KELSEYI' KELSEYI DWARF REDTWIG DOGWOOD
	DEUTZIA GRACILIS 'NIKKO' SLENDER DEUTZIA
	GAULTHERIA SHALLON SALAL
	MAHONIA AQUIFOLIUM OREGON GRAPE
	MAHONIA AQUIFOLIUM 'COMPACTA' COMPACT OREGON GRAPE
	MYRICA CALIFORNICA PACIFIC WAX MYRTLE
	RIBES SANGUINEUM RED FLOWERING CURRANT
	SPIRAEA BETULIFOLIA 'TOR' BIRCHLEAF SPIREA
	SYMPHORICARPOS ALBUS COMMON WHITE SNOWBERRY
	VACCINIUM OVATUM EVERGREEN HUCKLEBERRY
	VACCINIUM OVATUM 'SCARLET OVATION' SCARLET OVATION EVERGREEN HUCKLEBERRY
	VIBURNUM DAVIDII DAVID VIBURNUM
	VIBURNUM TINUS 'SPRING BOUQUET' SPRING BOUQUET LAURUSTINUS
PERENNIALS	BOTANICAL / COMMON NAME
	ACHILLEA MILLIFOLIUM 'ALABASTER' ALABASTER YARROW
	ASTER SUBSPICATUS DOUGLAS ASTER
	POLYSTICHUM MUNITUM WESTERN SWORD FERN
	PTERIDIUM AQUILINUM WESTERN BRACKENFERN
STORMWATER SHRUBS	BOTANICAL / COMMON NAME
	CORNUS SERICEA RED TWIG DOGWOOD
	HOLODISCUS DISCOLOR OCEAN-SPRAY
	MAHONIA AQUIFOLIUM OREGON GRAPE
	RIBES SANGUINEUM RED FLOWERING CURRANT
	ROSA PISOCARPA CLUSTERED WILD ROSE
	RUBUS SPECTABILIS SALMONBERRY
	SPIRAEA BETULIFOLIA 'TOR' TOR BIRCHLEAF SPIREA
	SPIRAEA DOUGLASII WESTERN SPIREA
	SYMPHORICARPOS ALBUS COMMON WHITE SNOWBERRY
GROUND COVERS	BOTANICAL / COMMON NAME
	ARCTOSTAPHYLOS UVA-URSI KINNIKINNICK
	BOUTELOUA GRACILIS 'BLONDE AMBITION' BLONDE AMBITION BLUE GRAMA
	FESTUCA OCCIDENTALIS WESTERN FESCUE GRASS
	MAHONIA REPENS CREEPING MAHONIA
	PROTIME 402 NATIVE RIPARIAN MIX PROTIME SEEDS
	SEED MIX NATIVE POLLINATOR MEADOW MIX SUNMARK SEEDS
	SEED MIX NATIVE UPLANDS MEADOW MIX SUNMARK SEEDS
STORMWATER PLANTING	BOTANICAL / COMMON NAME
	CAREX DENSA DENSE SEDGE
	CAREX OBNUPTA SLOUGH SEDGE
	JUNCUS PATENS CALIFORNIA GRAY RUSH

REFERENCE NOTES

1. PLANT SIZE, SPACING, AND QUANTITY, SEE PLANT SCHEDULE L0.02
2. PROPOSED UTILITY BOX. AVOID PLANTING WITHIN DEFINED ACCESS ZONE.
3. COORDINATE SHRUB LAYOUT WITH EXISTING UTILITIES, REPORT CONFLICTS TO LANDSCAPE ARCHITECT.



KEY MAP
SCALE: NTS

Item 2.

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REVISION SCHEDULE

Delta	Issued As	Issue Date
1	PLANCHECK	10/06/2022

SHEET TITLE:
PLANTING PLAN - WEST

DRAWN BY: SKA

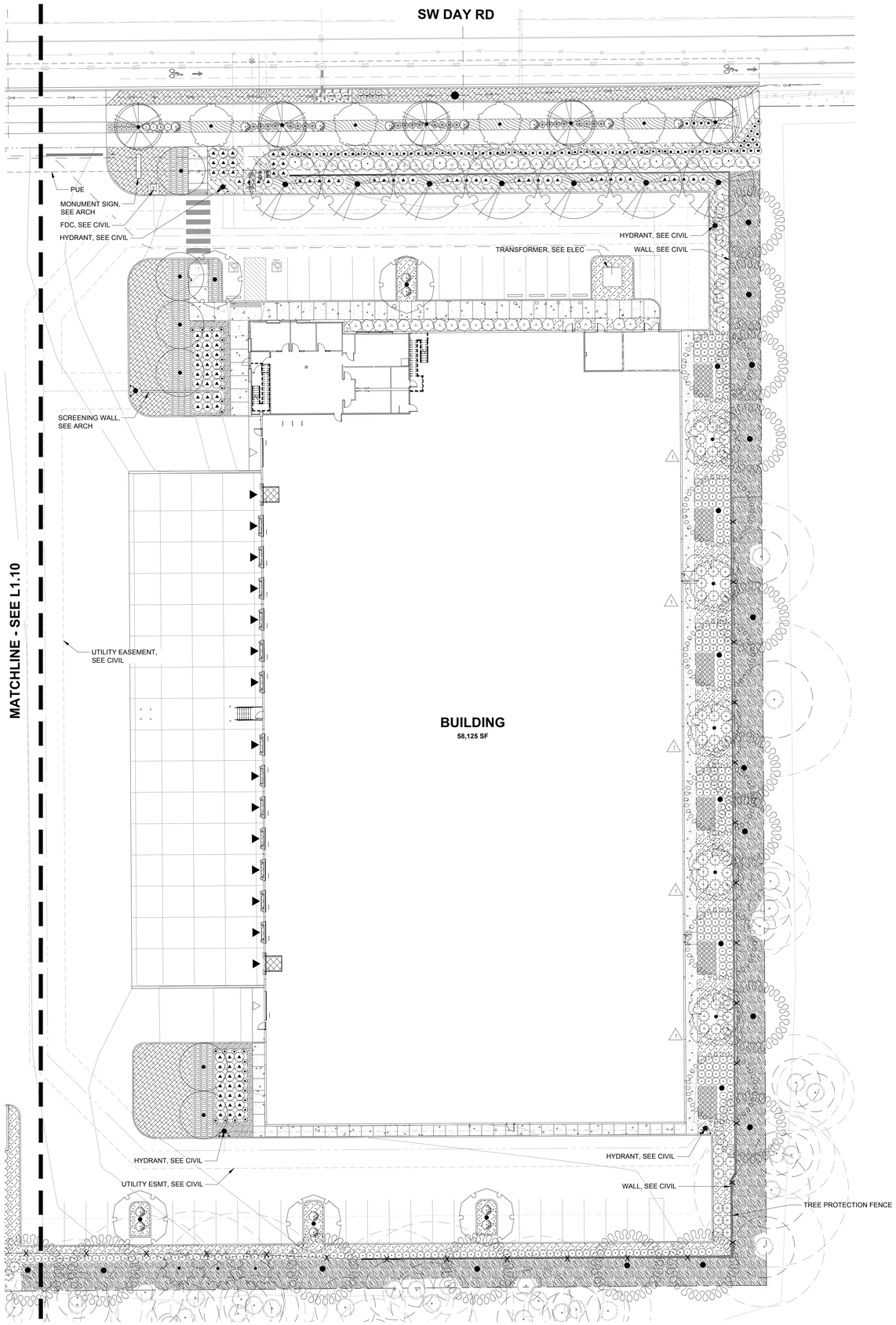
CHECKED BY: NRF

SHEET
L1.10

JOB NO. **2200502.04**

1173

DESIGN REVIEW SET 07/29/2022



1 L1.11 PLANTING PLAN EAST

20 0 10 20 40 80

(IN FEET)

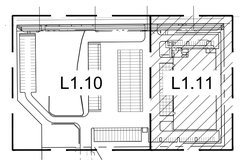
1 inch = 20 ft.

PLANT KEY LEGEND

ACCENT TREES	BOTANICAL / COMMON NAME
	ACER RUBRUM 'BOWHALL' BOWHALL RED MAPLE
	CORNUS KOUSA X NUTTALLII 'KN4-43' STARLIGHT KOUSA DOGWOOD
PRIMARY TREES	BOTANICAL / COMMON NAME
	FRAXINUS PENNSYLVANICA 'MARSHALL'S SEEDLESS' MARSHALL'S SEEDLESS GREEN ASH
	PINUS PONDEROSA PONDEROSA PINE
	PSEUDOTSUGA MENZIESII DOUGLAS FIR
SECONDARY TREES	BOTANICAL / COMMON NAME
	CALOCEDRUS DECURRENS INCENSE CEDAR
	ULMUS X 'FRONTIER' FRONTIER ELM
STREET TREES	BOTANICAL / COMMON NAME
	ACER GRANDIDENTATUM 'SCHMIDT' TM ROCKY MOUNTAIN GLOW MAPLE
	PARROTIA PERSICA 'INGE'S RUBY VASE' TM RUBY VASE PERSIAN PARROTIA
SHRUBS	BOTANICAL / COMMON NAME
	ARBUTUS UNEDO 'COMPACTA' DWARF STRAWBERRY TREE
	CORNUS SERICEA 'KELSEYI' KELSEYI DWARF REDTWIG DOGWOOD
	DEUTZIA GRACILIS 'NIKKO' SLENDER DEUTZIA
	GAULTHERIA SHALLON SALAL
	MAHONIA AQUIFOLIUM OREGON GRAPE
	MAHONIA AQUIFOLIUM 'COMPACTA' COMPACT OREGON GRAPE
	SPIRAEA BETULIFOLIA 'TOR' BIRCHLEAF SPIREA
	SYMPHORICARPOS ALBUS COMMON WHITE SNOWBERRY
	VACCINIUM OVATUM EVERGREEN HUCKLEBERRY
	VIBURNUM DAVIDII DAVID VIBURNUM
	VIBURNUM TINUS 'SPRING BOUQUET' SPRING BOUQUET LAURUSTINUS
PERENNIALS	BOTANICAL / COMMON NAME
	POLYSTICHUM MUNITUM WESTERN SWORD FERN
	SALVIA X SUPERBA 'CARADONNA' CARADONNA SAGE
STORMWATER SHRUBS	BOTANICAL / COMMON NAME
	SPIRAEA BETULIFOLIA 'TOR' TOR BIRCHLEAF SPIREA
	SYMPHORICARPOS ALBUS COMMON WHITE SNOWBERRY
GROUND COVERS	BOTANICAL / COMMON NAME
	ARCTOSTAPHYLOS UVA-URSI KINNIKINNICK
	BOUTELOUA GRACILIS 'BLONDE AMBITION' BLONDE AMBITION BLUE GRAMA
	CRUSHED GRAVEL QUARTER-TEN
	FESTUCA OCCIDENTALIS WESTERN FESCUE GRASS
	GERANIUM X CANTABRIGIENSE 'BIOKOVO' BIOKOVO CRANESBILL
	MAHONIA REPENS CREEPING MAHONIA
	SEED MIX NATIVE POLLINATOR MEADOW MIX SUNMARK SEEDS
	SEED MIX NATIVE UPLANDS MEADOW MIX SUNMARK SEEDS
STORMWATER PLANTING	BOTANICAL / COMMON NAME
	CAREX DENSA DENSE SEDGE
	JUNCUS PATENS CALIFORNIA GRAY RUSH

REFERENCE NOTES

1. PLANT SIZE, SPACING, AND QUANTITY, SEE PLANT SCHEDULE L0.02
2. PROPOSED UTILITY BOX. AVOID PLANTING WITHIN DEFINED ACCESS ZONE.
3. COORDINATE SHRUB LAYOUT WITH EXISTING UTILITIES, REPORT CONFLICTS TO LANDSCAPE ARCHITECT.



KEY MAP

SCALE: NTS

Item 2.

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Project

DELTA LOGISTICS SITE EXPANSION

9710 SW DAY RD.
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Delta	Issued As	Issue Date
1	PLAN CHECK	10/06/2022

SHEET TITLE:

PLANTING PLAN - EAST

DRAWN BY: SKA

CHECKED BY: NRF

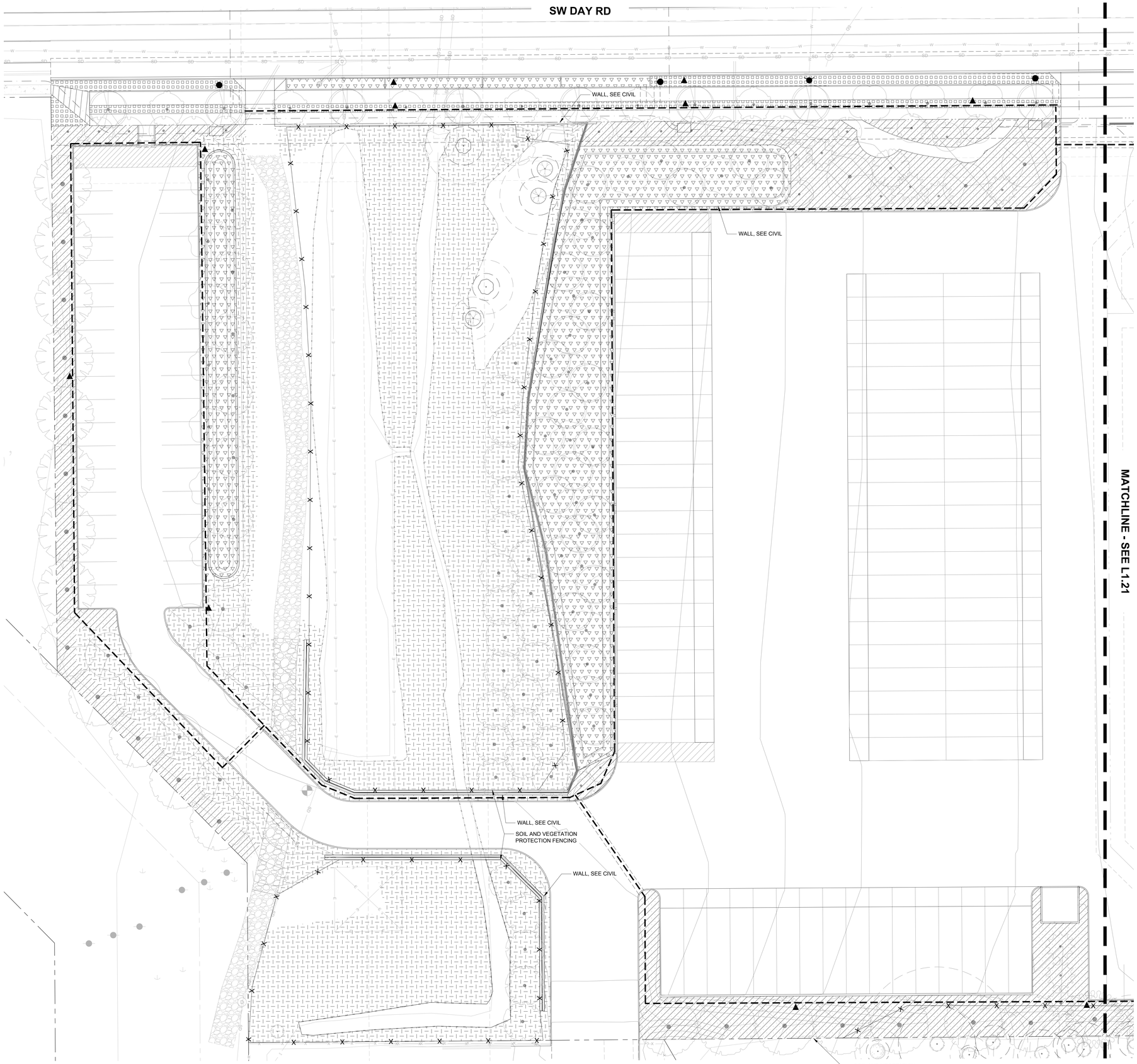
SHEET

L1.11

JOB NO. 2200502.04

1174

DESIGN REVIEW SET 07/29/2022



1 L1.20 IRRIGATION PLAN WEST

20 0 10 20 40 80

(IN FEET)

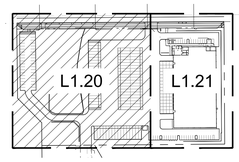
1 inch = 20 ft.

IRRIGATION LEGEND

- POC — POINT OF CONNECTION, INCLUDE DOUBLE CHECK BACKFLOW PREVENTOR, MASTER VALVE AND FLOW SENSOR - SEE DETAIL ON L5.11
- IRRIGATION CONTROLLER
- GATE VALVE
- QUICK COUPLER AT 150' (INTERVALS MAX)
- MAINLINE SLEEVE- DIAMETER AT LEAST TWICE DIAMETER OF PIPE BEING SLEEVED
- MAINLINE-SCHEDULE 40 PVC
- SHRUB AND GROUNDCOVER DRIP AREA
- SHRUB AND GROUNDCOVER SPRAY AREA
- STORMWATER AREA - ZONE SEPARATELY
- LAWN AREA - ZONE SEPARATELY
- TEMPORARY IRRIGATED AREA - ZONE SEPARATELY
- RIGHT-OF-WAY - ZONE SEPARATELY
- MEADOW AREA - ZONE SEPARATELY

REFERENCE NOTES

1. CAREFULLY EXCAVATE IRRIGATION TRENCHES IN VICINITY OF EXISTING TREES. SEE TREE PROTECTION NOTES L0.03 AND IN EXHIBIT D ARBORIST REPORT.



KEY MAP
SCALE: NTS

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REVISION SCHEDULE

Delta	Issued As	Issue Date

SHEET TITLE:
IRRIGATION PLAN - WEST

DRAWN BY: SKA

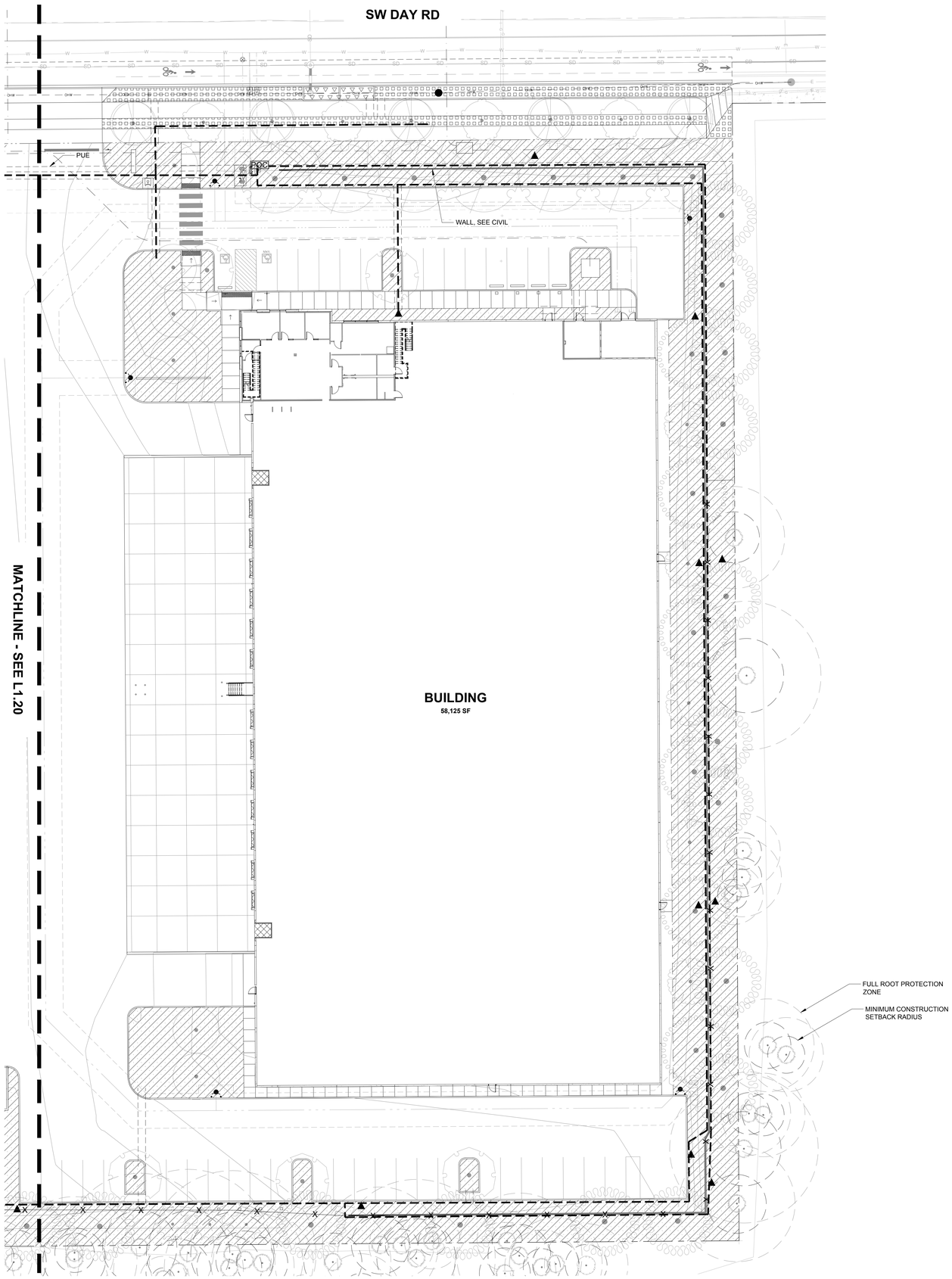
CHECKED BY: NRF

SHEET
L1.20

JOB NO. 2200502.04

1175

DESIGN REVIEW SET 07/29/2022



1 L1.21 IRRIGATION PLAN EAST

20 0 10 20 40 80

(IN FEET)

1 inch = 20 ft.

IRRIGATIONLEGEND

- POC — POINT OF CONNECTION, INCLUDE DOUBLE CHECK BACKFLOW PREVENTOR, MASTER VALVE AND FLOW SENSOR - SEE DETAIL ON L5.11
- IRRIGATION CONTROLLER
- GATE VALVE
- QUICK COUPLER AT 150' (INTERVALS MAX)
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- LAWN AREA - ZONE SEPARATELY
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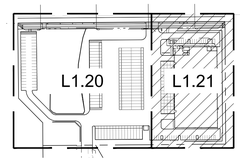
- RIGHT-OF-WAY - ZONE SEPARATELY
- MEADOW AREA - ZONE SEPARATELY

REFERENCE NOTES

1. CAREFULLY EXCAVATE IRRIGATION TRENCHES IN VICINITY OF EXISTING TREES. SEE TREE PROTECTION NOTES L0.03 AND IN EXHIBIT D ARBORIST REPORT.



KEY MAP
SCALE: NTS

DESIGN REVIEW SET 07/29/2022

2200502\00\DRAWINGS\LANDSCAPE\502-L0.01.DWG:L1.21 NRF 07/28/22 20:41 1:0.08

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REVISION SCHEDULE

Delta	Issued As	Issue Date

SHEET TITLE:
IRRIGATION PLAN - EAST

DRAWN BY: SKA

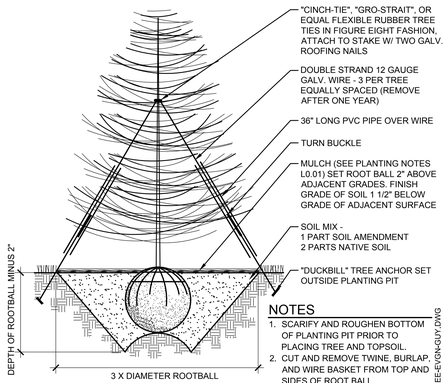
CHECKED BY: NRF

SHEET

L1.21

JOB NO. **2200502.04**

1176



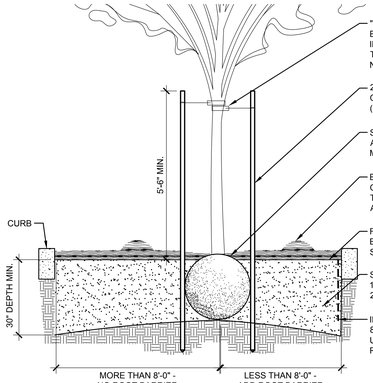
NOTES

1. SCARIFY AND ROUGHEN BOTTOM OF PLANTING PIT PRIOR TO PLACING TREE AND TOPSOIL.
2. CUT AND REMOVE TWINE, BURLAP AND WIRE BASKET FROM TOP AND SIDES OF ROOT BALL

LS-DETL-TREE-EVGN-GUY.DWG

1 EVERGREEN TREE PLANTING DETAIL

SCALE: NTS

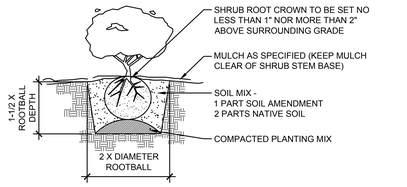


NOTES

1. PLANT ALL TREES AT LEAST 32 INCHES FROM THE END OF HEAD-IN PARKING SPACES TO PREVENT DAMAGE FROM CAR OVERHANGS.
2. ALL ROOTS MUST BE COMPLETELY COVERED. BACKFILL SHOULD BE THOROUGHLY WATERED AS IT IS PLACED AROUND THE ROOTS.
3. SCARIFY AND ROUGHEN BOTTOM OF PLANTING PIT PRIOR TO PLACING TREE AND TOPSOIL. SLOPE BOTTOM TO DRAIN TO SIDES.
4. THE ENTIRE WIDTH OF THE PLANTING ISLAND SHALL CONTAIN ONLY SOIL/COMPOST PLANTING MIX AND BE FREE OF ALL DEBRIS INCLUDING GARBAGE, CONCRETE, GRAVEL OR OTHER FOREIGN MATERIALS.
5. ALL TREES SHALL CONFORM TO MOST RECENT ANSI Z60.1 AMERICAN STANDARD FOR NURSERY STOCK. FIRST LIMBS OF DECIDUOUS TREES IN PARKING LOTS AND ALONG STREETS AND SIDEWALKS SHALL BE 5 FEET ABOVE GROUND OR HIGHER.
6. EXCAVATE HOLE INTO PREPARED SOIL TO ONE INCH LESS THAN HEIGHT OF ROOTBALL AND TWO TIMES THE WIDTH OF THE ROOTBALL. TAMP BOTTOM OF PIT UNDER ROOTBALL THOROUGHLY TO KEEP TREE FROM SETTLING. BUTTRESS AT THE BOTTOM OF THE PIT NO LESS THAN THREE FEET WIDE IF NEEDED TO REINFORCE LATERAL SUPPORT.
7. DO NOT DAMAGE THE ROOTBALL WHEN PLANTING. REMOVE ALL WIRE, STRING AND BURLAP FROM TOP AND SIDES OF ROOTBALL ONLY AFTER PLACING IN THE HOLE.
8. SET TREE STRAIGHT ON TAMPED SOIL.
9. BACKFILL HOLE WITH APPROVED PLANTING MEDIUM MIX TO HALF DEPTH. TAMP SOIL TO STABILIZE ROOTBALL. FINISH BACKFILLING AND TAMP AGAIN.
10. STAKE TREES OUTSIDE OF ROOTBALL AND PARALLEL TO PLANTING ISLAND CURBS WITH TREE STAKES. USE ONE INCH HEAVY CHAINLOCK TREE TIES OR SIMILAR. REMOVE AFTER ONE YEAR.
11. WATER IMMEDIATELY AND THOROUGHLY, TWICE PER WEEK DURING THE FIRST MONTH, THEN ONCE PER WEEK THROUGH THE REMAINDER OF THE DRY SEASON. WATER A MINIMUM OF ONCE PER MONTH DURING THE SECOND SUMMER SEASON.
12. ALL PLANTING BEDS CONTAINING TREES AND SHRUBS AND SURFACE DRAINAGE SHALL BE PREPARED SIMILAR TO THIS LANDSCAPE TREE PLANTING AND DRAINAGE DETAIL.

2 DECIDUOUS TREE PLANTING DETAIL

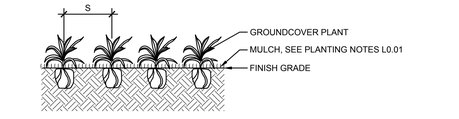
SCALE: NTS



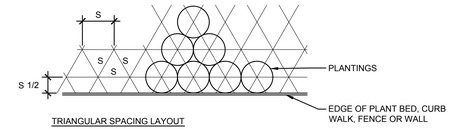
LS-DETL-SHRB.DWG

3 SHRUB PLANTING

SCALE: NTS



PLANTING SECTION



TRIANGULAR SPACING LAYOUT

NOTES

1. TILL SOIL SO THAT THERE ARE NO CLODS OR CLUMPS LARGER THAN 1 1/2" DIAMETER

LS-DETL-GCVR.DWG

4 GROUNDCOVER PLANTING

SCALE: NTS

TREE PROTECTION MEASURES

UNLESS OTHERWISE INDICATED FOR REMOVAL ALL TREES SHALL RECEIVE PROTECTIVE MEASURES FOR THE DURATION OF THE PROJECT IN ACCORDANCE WITH THE CITY REQUIREMENTS.

6' HIGH MINIMUM CHAIN-LINK FENCING, SHALL BE ERECTED AND MAINTAINED. FENCING SHALL BE INSTALLED AS INDICATED ON THIS PLAN. IN AREAS WHERE ROOT ZONE ENCROACHMENT IS UNAVOIDABLE ADJUSTMENTS OF FENCING LOCATION SHALL BE COORDINATED WITH A CERTIFIED ARBORIST PRIOR TO START OF WORK.

NO ACTIVITY MAY BE CONDUCTED WITHIN ANY DESIGNATED TREE PROTECTION AREA INCLUDING BUT NOT LIMITED TO PARKING EQUIPMENT, PLACING SOLVENTS, STORING MATERIALS AND SOIL DEPOSITS, DUMPING CONCRETE WASHOUT, OR OTHER DEBRIS, OR ANY EXCAVATION OR COMPACTION WORK.

DURING CONSTRUCTION NO OBJECTS SHALL BE ATTACHED TO ANY TREE DESIGNATED TO BE RETAINED AND PROTECTED.

FENCE SHALL REMAIN IN PLACE UNTIL THE COMPLETION OF CONSTRUCTION ACTIVITIES. MOVEMENT OR REMOVAL OF THE FENCE REQUIRES APPROVAL BY THE ARBORIST AND/OR THE CITY'S AUTHORIZED REPRESENTATIVE.

EXCAVATION / TRENCHING AROUND TREES

PROPOSED TRENCHING AND EXCAVATION AROUND TREES SHALL BE COORDINATED WITH CONSULTING ARBORIST.

WHERE TRENCHING IS REQUIRED WITHIN CRITICAL ROOT ZONE, TUNNEL UNDER OR AROUND ROOTS BY HAND DIGGING OR BORING. DO NOT CUT MAIN LATERAL ROOTS OR TAP ROOTS. CLEANLY CUT/SEVER SMALLER ROOTS. RELOCATE ROOTS IN BACKFILL AREAS WHEREVER POSSIBLE.

DO NOT ALLOW EXPOSED ROOTS TO DRY OUT BEFORE PERMANENT BACKFILL IS PLACED, PROVIDE TEMPORARY EARTH COVER, OR PACK WITH PEAT MOSS AND WRAP WITH BURLAP. WATER AND MAINTAIN IN MOIST CONDITION UNTIL RELOCATED AND COVERED WITH BACKFILL.

5 TREE PROTECTION

SCALE: NTS

SECTION VIEW

PLAN VIEW

NOTES

1. INSTALL ROOT BARRIER PER MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS.
2. INSTALL ROOT BARRIER WHERE CENTER OF ROOT BALL IS WITHIN 8' OF PAVEMENT.

URBAN TREE FOUNDATION © 2014
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6 ROOT BARRIER DETAIL

SCALE: NTS

NOTES

1. PROTECT MATERIAL FROM CONTAMINATION.
2. DO NOT HAUL OR PLACE MATERIAL WHEN THE WEATHER IS TOO WET OR THE GROUND IS FROZEN OR SATURATED AS DETERMINED BY THE OWNER'S REPRESENTATIVE.
3. PLACE MATERIAL IN LOOSE LIFTS, 8 INCHES MAX. AND COMPACT WITH A WATER-FILLED LANDSCAPE ROLLER. DO NOT OTHERWISE MECHANICALLY COMPACT THE MATERIAL.
4. INSTALL PLANT MATERIAL AS SOON AS POSSIBLE AFTER PLACING AND GRADING THE SOIL TO MINIMIZE EROSION AND COMPACTION.
5. TEMPORARY EROSION CONTROL MEASURES ARE REQUIRED UNTIL PERMANENT STABILIZATION MEASURES ARE FUNCTIONAL.
6. PROTECT THE INSTALLED MATERIAL FROM FOOT OR EQUIPMENT TRAFFIC AND SURFACE WATER RUNOFF. INSTALL TEMPORARY FENCING OR WALKWAYS AS NEEDED TO KEEP WORKS, PEDESTRIANS, AND EQUIPMENT OUT OF THE AREA. UNDER NO CIRCUMSTANCES SHOULD MATERIALS AND EQUIPMENT BE STORED ON TOP OF THE INSTALLATION AREA.

LS-DETL-PLNT-SOIL-STMW+BES.DWG

7 SOIL PREP. AT STORMWATER

SCALE: NTS

NOTES

1. REMOVE ALL ROCK, DEBRIS AND OTHER FOREIGN MATTER OVER 1" IN DIAMETER FROM TOP 12" OF SOIL.
2. RIP AND TILL SUBGRADE TO 6" DEEP (MIN.) PRIOR TO INSTALLING TOPSOIL AND TILL INTERFACE OF SUBGRADE AND TOPSOIL.
3. TILL TOPSOIL AND SOIL AMENDMENTS TO A MIN. 12" DEPTH.
4. SUBMIT SAMPLE OF MULCH & TOPSOIL FOR ACCEPTANCE PRIOR TO PLACEMENT.

LS-DETL-PLNT-SOIL.DWG

8 SOIL PREPARATION

SCALE: NTS

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SHEET

L5.10

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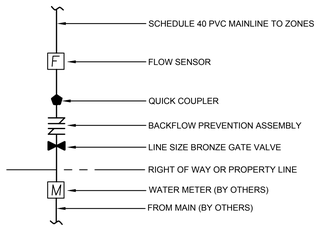
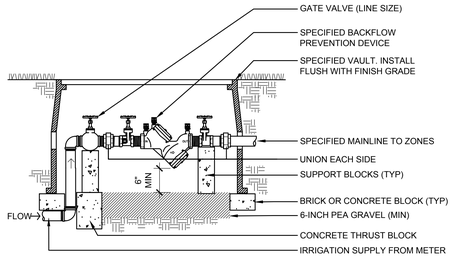


1 POINT OF CONNECTION

SCALE: NTS

LI-DETL-GEN-POC.DWG



NOTE:

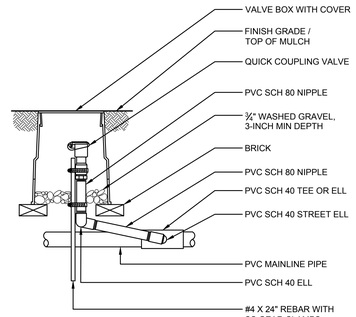
INSTALL BACKFLOW PREVENTOR PER CODE AND REQUIREMENTS OF PREVAILING JURISDICTIONS.

2 DOUBLE CHECK VALVE

BACKFLOW PREVENTOR (BELOW GRADE)

SCALE: NTS

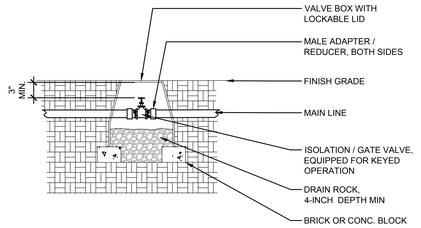
LI-DETL-VALV-DCHK.DWG



3 QUICK COUPLER VALVE

SCALE: NTS

LI-DETL-VALV-QCUP.DWG



NOTES:

1. SCH 80 ADAPTER AND FITTINGS TO BE SAME SIZE AS ISOLATION VALVE

4 ISOLATION / GATE VALVE

SCALE: NTS

LI-DETL-06-VALV-GATE-ISOL.DWG

SECTION AT PAVING

SECTION AT WALLS

MIN DEPTH OF PIPE	
MAINLINE	18"
LATERAL AT PAVING	14"
AT DRIVING SURFACE	24"

NOTES:

1. SLEEVES TO BE TWICE DIAMETER OF LINE OR LINES PASSING THROUGH.
2. EXTEND IRRIGATION SLEEVE 6-INCHES BEYOND EDGE OF PAVING, EACH SIDE.
3. INSTALL SLEEVES AT SAME TIME AS WALL OR PAVING INSTALLATION.
4. INSTALL PIPE IN SLEEVE BEFORE BACKFILLING AND CAP BOTH ENDS WITHOUT GLUE.

5 IRRIGATION SLEEVES

SCALE: NTS

LI-DETL-GEN-SLEEVE.DWG

NOTES:

1. SNAKE ALL PVC PIPING IN TRENCHING
2. TIE LOOSE 3 FT LOOP IN ALL IRRIGATION WIRING AT CHANGES IN DIRECTION GREATER THAN 30 DEGREES. UNTIE AFTER ALL CONNECTIONS HAVE BEEN MADE.
3. WHERE ELECTRICAL WIRING DOES NOT SHARE COMMON TRENCH, OVER EXCAVATE TRENCH 2 INCHES MIN AND BACKFILL WITH SPECIFIED BEDDING MATERIAL.
4. LOCATE ALL WIRING NOT IN COMMON TRENCHES ACCURATELY ON RECORD DRAWINGS.

6 IRRIGATION TRENCHING (TYP)

SCALE: NTS

LI-DETL-GEN-TRENCH.DWG

7 MULTI-TRAJECTORY SPRAY HEAD

DETAIL-SUBTITLE

SCALE: NTS

LI-DETL-HEAD-SPRAY-MT.DWG

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Client

DELTA LOGISTICS

9835 SW COMMERCE CIRCLE
WILSONVILLE, OR 97070

Project

DELTA LOGISTICS SITE EXPANSION

9710 SW DAY RD.
CITY OF WILSONVILLE, OR

PRELIMINARY NOT FOR CONSTRUCTION

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REVISION SCHEDULE		
Delta	Issued As	Issue Date

SHEET TITLE:

IRRIGATION DETAILS

DRAWN BY: SKA

CHECKED BY: NRF

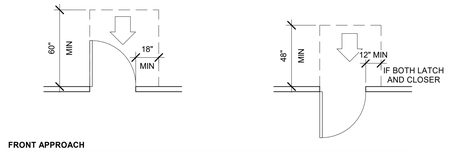
SHEET

L5.11

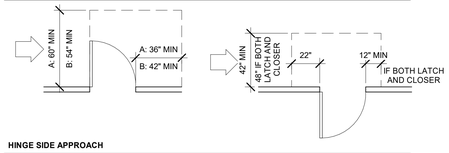
JOB NO. **2200502.04**

DESIGN REVIEW SET 07/29/2022

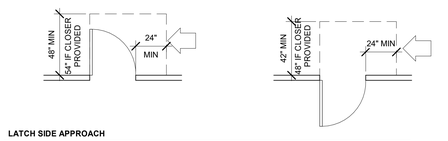
1178



FRONT APPROACH

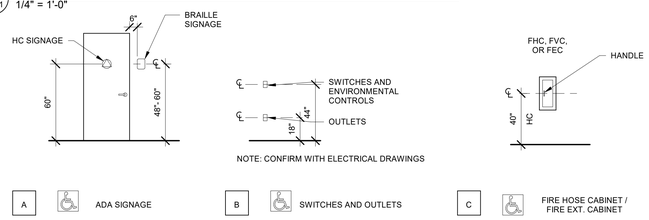


HINGE SIDE APPROACH



LATCH SIDE APPROACH

1 ADA DOOR CLEARANCES
A0.01 1/4" = 1'-0"



NOTE: CONFIRM WITH ELECTRICAL DRAWINGS

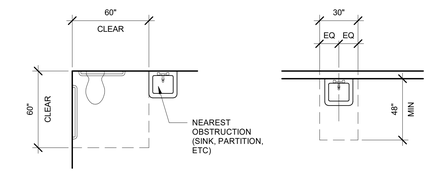
A — ADA SIGNAGE

B — SWITCHES AND OUTLETS

C — FIRE HOSE CABINET / FIRE EXT. CABINET

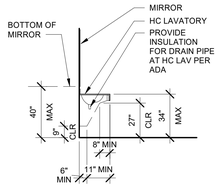
2 ADA MOUNTING HEIGHTS
A0.01 1/4" = 1'-0"

ADA MOUNTING HEIGHT SCHEDULE

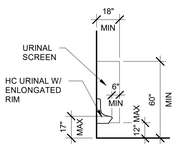


A — TOILET PLAN CLEAR FLOOR SPACE

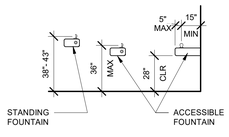
B — LAVATORY - PLAN CLEAR FLOOR SPACE



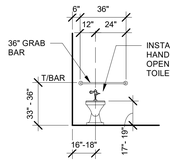
C — LAVATORY KNEE/TOE CLEARANCE



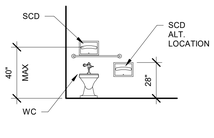
D — URINAL



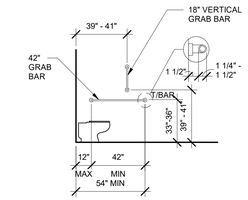
E — DRINKING FOUNTAIN



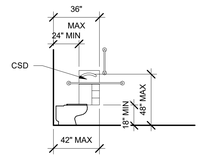
F — TOILET STALL - REAR WALL GRAB BARS



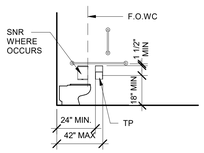
G — TOILET STALL - REAR WALL ACCESSORIES



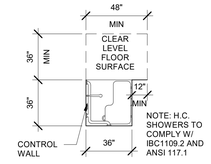
H — TOILET STALL - SIDE WALL GRAB BARS



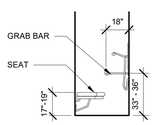
J — TOILET STALL - SIDE WALL COMBINED RECESSED DISPENSER



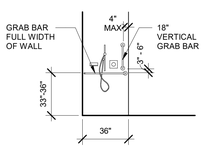
K — TOILET STALL - SIDE WALL DISPENSERS BELOW BAR



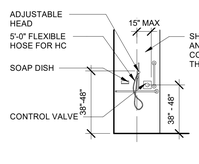
L — SHOWER STALL PLAN VIEW



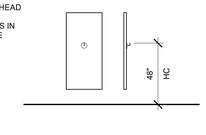
M — SHOWER STALL REAR WALL



N — SHOWER STALL SIDE ELEVATION GRAB BARS

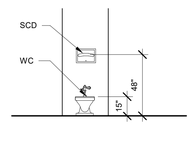


P — SHOWER STALL SIDE ELEVATION

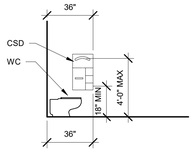


Q — UTILITY HOOK / DOOR BUMPER

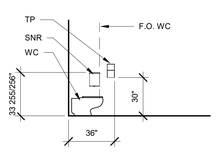
STANDARD MOUNTING HEIGHT SCHEDULE



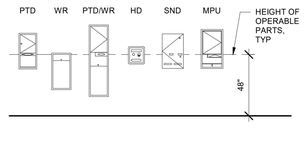
AA — STANDARD TOILET STALL REAR WALL



BB — STANDARD TOILET STALL SIDE WALL COMBINED DISPENSER



CC — STANDARD TOILET STALL SIDE WALL SEPARATE ACCESSORIES



R — TOILET ACCESSORIES

TOILET ACCESSORY ABBREVIATIONS LEGEND

CSD	COMBINATION SEAT DISPENSER	SND	SANITARY NAPKIN DISPENSER
FO	FACE OF	SNR	SANITARY NAPKIN RECEPTACLE
HD	HAND DRYER	SCD	SEAT COVER DISPENSER
HC	HANDICAP	TO	TOP OF
MIN	MINIMUM	TYP	TYPICAL
MPU	MIRRORED MULTI-PURPOSE UNIT	TP	TOILET PAPER
PTD	PAPER TOWEL DISPENSER	WR	WASTE RECEPTACLE
		WC	WATER CLOSET

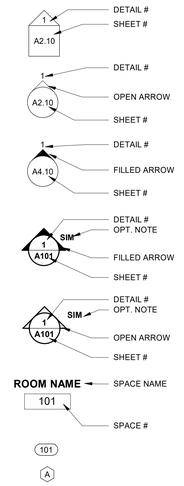
GENERAL NOTES:

1. ALL STAINLESS STEEL ACCESSORIES TO BE SATIN FINISH UNLESS OTHERWISE NOTED.
2. MOUNT ALL TOILET ROOM ACCESSORIES PER MANUFACTURER'S RECOMMENDED MOUNTING HEIGHTS, WITHIN STATED ADA TOLERANCES.
3. FLOOR DRAINS TO BE LOCATED OUTSIDE OF ADA CLEAR FLOOR AREAS, COORDINATE WITH PLUMBING.
4. WRAP ALL EXPOSED WASTE AND HOT WATER LINES PER ADA CODE.

3 ADA TOILET ROOM CLEARANCES AND MOUNTING HEIGHTS
A0.01 1/4" = 1'-0"

ARCHITECTURAL LEGEND

ANNOTATION SYMBOLS



ARCHITECTURAL GENERAL NOTES

A. OVERALL FLOOR PLANS ARE INTENDED TO IDENTIFY ENTIRE FLOOR AREA. SEE INDIVIDUAL AREA PLANS FOR SPECIFIC DIMENSIONS, DETAILING, PARTITION TYPES, AND ADDITIONAL INFORMATION.
B. PROVIDE 30' - 0" CLEAR MINIMUM TO BOTTOM OF STRUCTURE, MECHANICAL DUCTS, LIGHTING, SPRINKLERS, ETC.
C. ALL WALLS ARE TO 6" ABOVE CEILING GRID UNLESS OTHERWISE NOTED.
D. WHERE TOP OF WALL MEETS UNDERSIDE OF ROOF DECK, PROVIDE DEFLECTION HEAD AS REQUIRED.
E. REFERENCE BUILDING ELEVATIONS FOR EXTERIOR WINDOW TYPE DESIGNATION.
F. REFERENCE DOOR SCHEDULE FOR DOOR TYPE DESIGNATION AND ADD'L INFORMATION.
G. SEE CODE ANALYSIS PLANS FOR FIRE EXTINGUISHER LOCATIONS.
H. PROVIDE BLOCKING AS REQUIRED ADJACENT TO FIRE EXTINGUISHERS FOR OWNER INSTALLED AED STATIONS
I. COORDINATE ALL EXTERIOR WALL PENETRATIONS AMONG AFFECTED DISCIPLINES.
J. WATERPROOFING SYSTEMS AND THEIR INSTALLATIONS SHALL BE SUITABLE FOR THEIR INTENDED PURPOSES.
K. PROVIDE APPROPRIATE AND COMPLETE SEALANT OF ALL PENETRATIONS THROUGH EXTERIOR ASSEMBLIES. SEAL VOIDS BETWEEN SLEEVES, CONDUITS, AND OTHER PENETRATIONS WITH APPROPRIATE JOINT SEALANT. CONTRACTOR TO ASSURE PROPER SEALANT OF ALL VOIDS AT OPENINGS AND PENETRATIONS.
L. FURNITURE AND EQUIPMENT BY OTHERS, SHOWN FOR REFERENCE ONLY. CONTRACTOR TO COORDINATE WALL MOUNTED FURNITURE, INCLUDING BUT NOT LIMITED TO, CABINETRY, PROJECTION SCREENS, WHITE BOARDS, TELEVISIONS, ETC. AND PROVIDE NECESSARY BLOCKING AS REQUIRED.
M. CONTRACTOR SHALL COORDINATE DELIVERY AND INSTALLATION OF OWNER FURNISHED EQUIPMENT WITH THE OWNER.

DIMENSIONING

A. ALL DIMENSIONS TO FACE OF GYP. CENTERLINE OF COLUMN OR EXTERIOR FACE OF WALL, UNLESS OTHERWISE NOTED. ALIGN FINISHES WHERE INDICATED.
B. WALL THICKNESSES ARE ACTUAL UNLESS OTHERWISE NOTED.
C. DIMENSIONS MARKED "CLR" ARE FROM FINISH SURFACE TO FINISH SURFACE. DIMENSIONS WITH THIS MARK TAKE PRIORITY OVER ADJACENT DIMENSIONS. DIMENSIONS ADJACENT TO LATCH SIDE OF DOORS INDICATE REQUIRED CLEARANCES BETWEEN CLEAR DOOR OPENING AND ADJACENT FINISH.
D. ALL DIMENSIONS SHOWN AS PLUS/MINUS (+/-) ARE FOR GENERAL LAYOUT AND REFERENCE ONLY.
E. DOORS NOT DIMENSIONED ARE TO BE LOCATED 4" FROM FACE OF WALL TO OUTSIDE EDGE OF JAMB.

MEP

A. ALL MEP TO BE DESIGN-BUILD.
B. COORDINATE AND REFER TO MECHANICAL AND ELECTRICAL DISCIPLINES FOR SPECIFIC INFORMATION, LOCATIONS, DIMENSIONS, CONNECTIONS, AND PENETRATIONS.
C. SEE MEP DRAWINGS FOR ADDITIONAL INFORMATION.

FIRE RATED WALLS

A. ALL RATED CONSTRUCTION ASSEMBLIES EXTEND FROM FLOOR STRUCTURE TO UNDERSIDE OF STRUCTURE AND DECKING ABOVE UNLESS OTHERWISE NOTED.
B. PROVIDE TYPE 'X' GYPSUM BOARD AT ALL FIRE RATED WALLS AND PARTITIONS. SEE CODE SUMMARY DRAWINGS AND FLOOR PLANS FOR SCOPE OF FIRE RATED WALLS.
C. ALL PENETRATIONS AND VOIDS THROUGH FIRE-RATED ASSEMBLIES TO BE FIRE STOPPED WITH APPROVED MATERIALS.
D. PROVIDE FIRE BLOCKING AS REQUIRED.

MISC

A. STAIRS ARE DESIGN-BUILD BY CONTRACTOR. SEE VERTICAL CIRCULATION DRAWINGS FOR TREADS, RISERS, RAILING, AND DIMENSIONAL REQUIREMENTS. SEE SPECIFICATIONS FOR DESIGN REQUIREMENTS. PROVIDE SHOP DRAWINGS WITH CALCULATIONS PREPARED AND STAMPED BY A PROFESSIONAL ENGINEER REGISTERED IN OREGON FOR REVIEW BY ARCHITECT.
B. SEE STRUCTURAL DRAWINGS FOR FRAMING, SLAB EDGE, ROOF OPENINGS INFORMATION.
C. SEE STRUCTURAL DRAWINGS FOR PANEL/WALL THICKNESS.
D. FURR ALL EXTERIOR WALLS WITHIN THE OFFICE AND UTILITY ROOMS.
E. PAINT ALL EXPOSED STEEL.
F. ALL EXPOSED EXTERIOR STEEL TO BE GALVANIZED.

Item 2.

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REVISION SCHEDULE

Delta	Issued As	Issue Date

SHEET TITLE:
ARCHITECTURAL GENERAL NOTES AND SYMBOLS

DRAWN BY: ADG

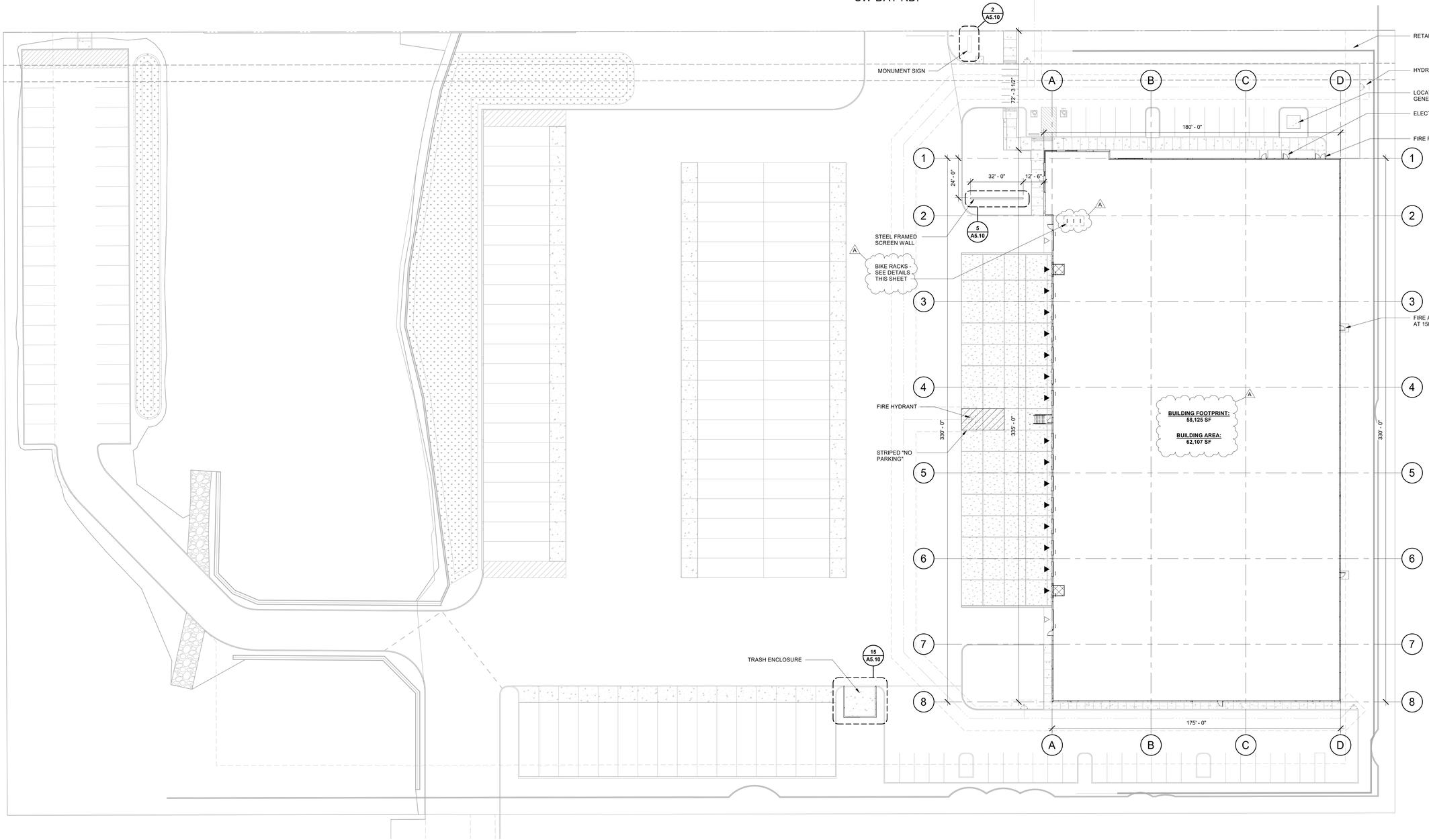
CHECKED BY: SJM

SHEET

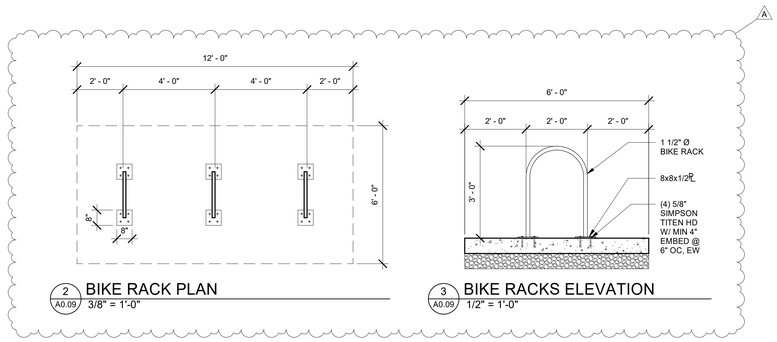
A0.01

JOB NO. **2200502.00**

LAND USE RESUBMITTAL 07/26/22



1 A0.09 SITE PLAN
1 : 300



2 A0.09 BIKE RACK PLAN
3/8" = 1'-0"

3 A0.09 BIKE RACKS ELEVATION
1/2" = 1'-0"

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REVISION SCHEDULE

Delta	Issued As	Issue Date
A	REV 1	7/26/22

SHEET TITLE:
SITE PLAN

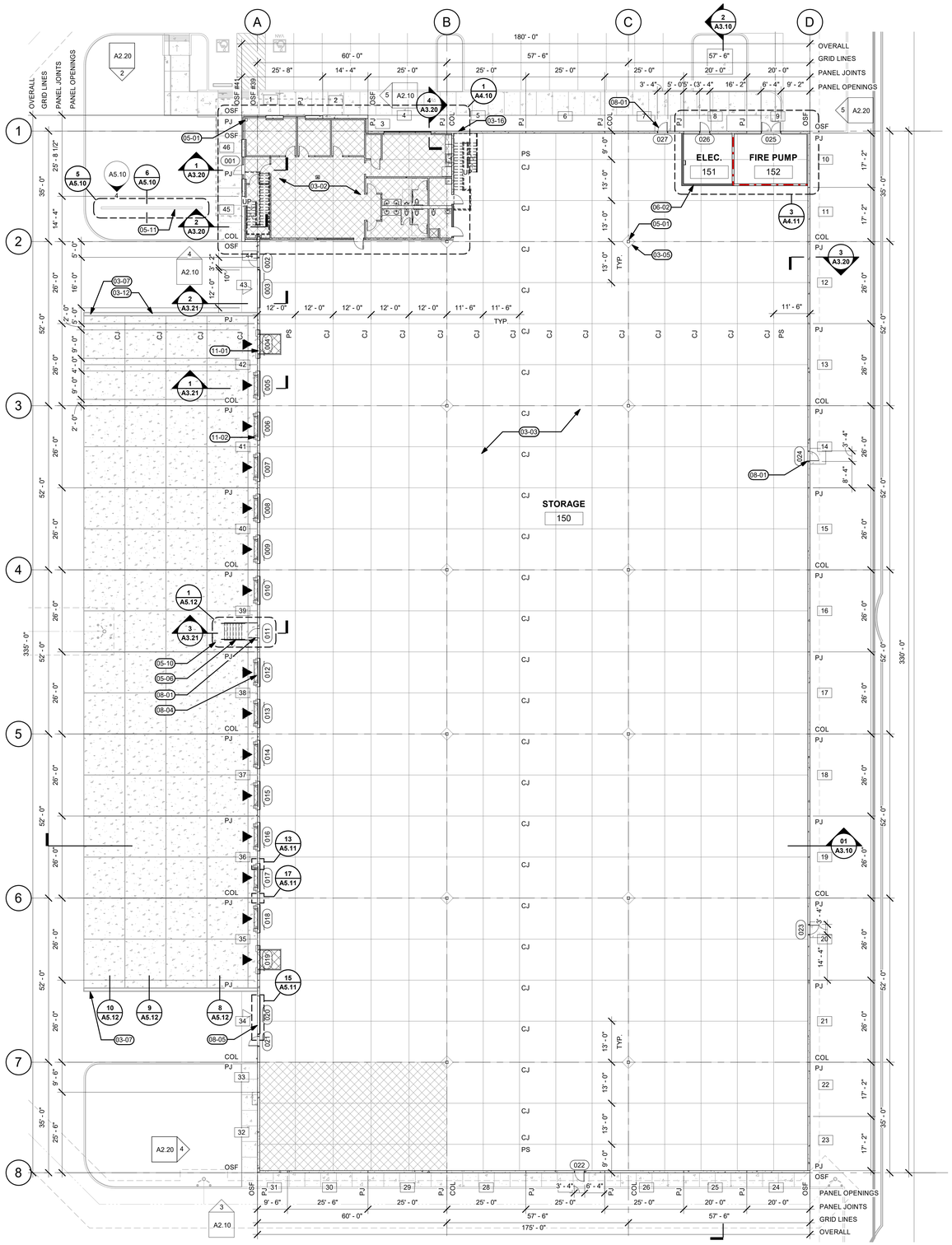
DRAWN BY: ADG

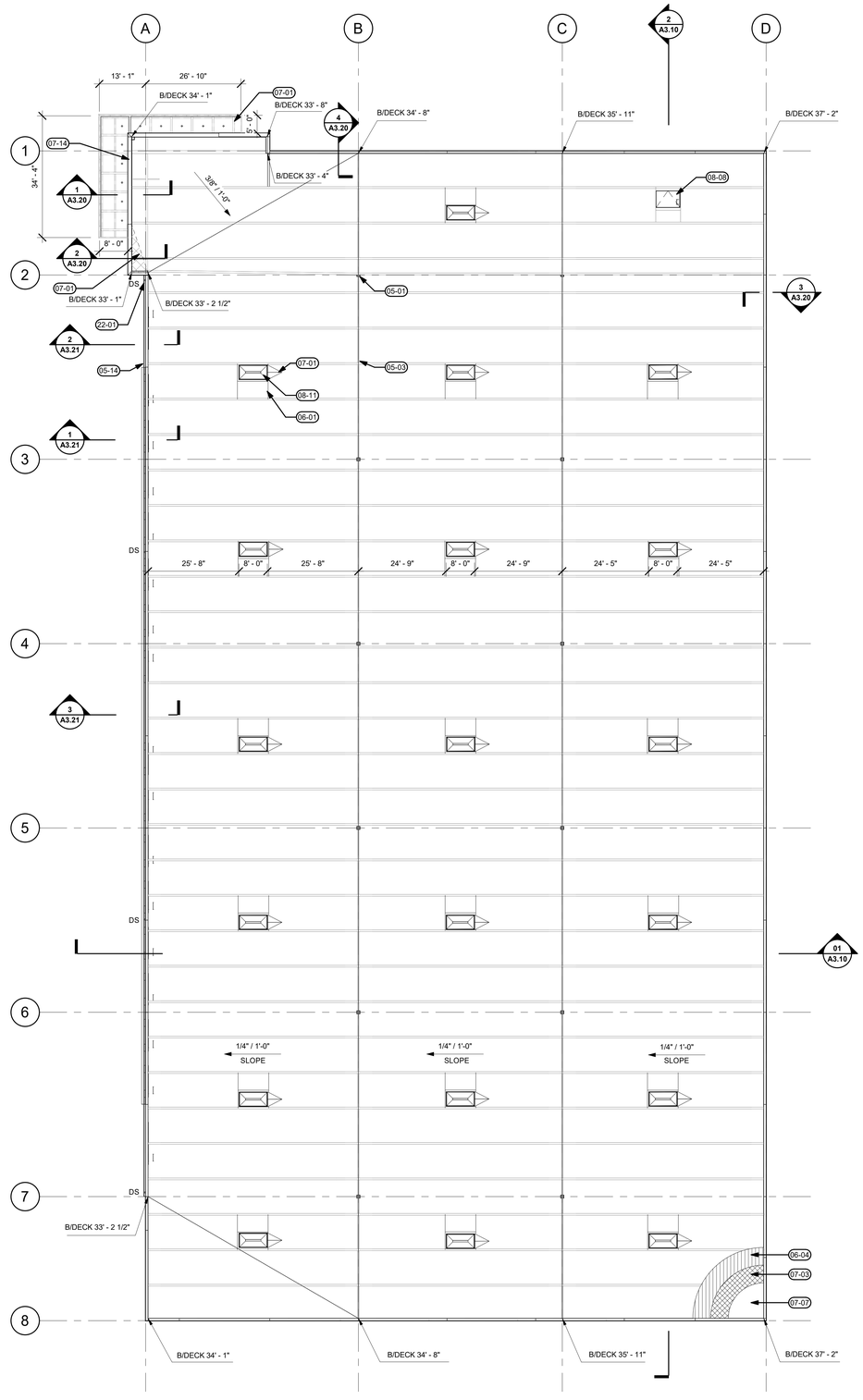
CHECKED BY: SJM

SHEET
A0.09

JOB NO. **2200502.00**

LAND USE RESUBMITTAL 07/26/22





1 A1.10 OVERALL FLOOR PLAN
1/16" = 1'-0"

2 A1.10 OVERALL ROOF PLAN
1/16" = 1'-0"

PROJECT INFORMATION

BUILDING AREA:	58,125 SF
CLEAR HEIGHT:	30' CLEAR
DOCK DOORS:	15 POSITIONS
DRIVE IN DOORS:	2 POSITIONS

WALL TYPES

CONCRETE TILT PANEL - SEE STRUCTURAL ELEVATIONS FOR THICKNESSES

1HR RATED WALL PER 11/A5.20

FULL HEIGHT WALL PER 12/A5.20

STICK-PIN INSULATION 10/A5.20

INTERIOR PARTITION PER 13/15/A5.20

GENERAL NOTES - ARCH

A. VERIFY AND CONFIRM ALL DIMENSIONS AND CONDITIONS. NOTIFY ARCHITECT OF ANY DISCREPANCIES PRIOR TO THE START OF CONSTRUCTION.
A. SEE STRUCTURAL FOR ADDITIONAL INFORMATION
B. SEE DETAIL 4/A5.11 FOR SLAB JOINT DETAILS
C. INSTALL DOOR ARMOR PER 14/A5.11 AT ALL GRADE ACCESS AND DOCK-HIGH OVERHEAD DOORS
D. CAULK FLOOR JOINT PER DETAIL 18/A5.11
E. CAULK DOCK APRON JOINTS PER DETAIL 13/A5.12
F. SITE IS SHOWN FOR REFERENCE ONLY, SEE CIVIL
G. SEE ELEVATIONS AND STRUCTURAL FOR ADDITIONAL INFORMATION FOR FUTURE OPENINGS
H. PROVIDE DOWNSPOUT GUARDS AT ALL LOCATION ALONG BUILDING SOUTH FACE, SEE DETAIL 17/A5.11
I. PROVIDE SIGNAGE AS REQUIRED BY LOCAL JURISDICTION, FIRE MARSHAL AND EMERGENCY SERVICES.
J. SEE DETAIL XX.XX FOR DOOR LANDINGS AS OCCUR PER CIVIL.
K. PROVIDE DOCK DOOR BUMPERS AT ALL 9'X10' DOCK DOORS

GENERAL NOTES - ROOF

A. VERIFY AND CONFIRM ALL DIMENSIONS AND CONDITIONS. NOTIFY ARCHITECT OF ANY DISCREPANCIES PRIOR TO THE START OF CONSTRUCTION.
B. ALL ROOF ELEVATION SHOWN AT DISTANCE ABOVE FINISH FLOOR AND BASED ON FINISH FLOOR ELEVATION OF 0'-0".
C. PROVIDE 30'-0" CLEAR MINIMUM TO ALL STRUCTURALMEMBERS, ELECTRICAL FIXTURES, MECHANICAL UNITS AND FIRE SPRINKLERS LINES. SEE BUILDING SECTIONS.
D. PROVIDE FRAMING FOR ROOF ACCESSORIES (SKYLIGHTS, ROOF HATCH AND MECHANICAL) AS REQUIRED IN ACCORDANCE WITH STRUCTURAL.
E. ROOF STRUCTURE SHOWN FOR REFERENCE ONLY, SEE STRUCTURAL.
F. SEE DETAIL XX.XX FOR PIPE PENETRATION.
G. SEE DETAIL XX.XX FOR MECHANICAL UNIT CURBING INSTALLATION.
H. SEE DETAIL XX.XX FOR TYPICAL ROOF ASSEMBLY
I. MAINTAIN 1/4" MIN SLOPE THROUGHOUT ROOF
J. ALL ROOF ELEVATIONS ARE TO BOTTOM OF DECK UNLESS NOTED OTHERWISE
K. BUILDING IS DESIGNED WITH AN ESFR SPRINLERED SYSTEM FOR CLASS I-IV NON ENCAPSULATED COMMODITIES PER NFPA 13. SEE FIRE PROTECTION SPECIFICATIONS. FIRE PUMP IS PROPSED.
L. CONTRACTOR TO PROVIDE COVERS, ENCLOSURES AND/OR SEALANTS AT ALL ROOF PENETRATIONS, PIPES, CURBS DUCTS, AND CONNECTIONS. GC TO COORDINATE WITH MEP DESIGN BUILD DISCIPLINES.
M. PROVIDE SPLASH BLOCKS AT DOWNSPOUTS OF ALL ROOF ACCESSORY STRUCTURES.

SYMBOLS LEGEND

CONTROL JOINT	CJ
CONSTRUCTION JOINT	CONST JT
PANEL JOINT	PJ
DOWNSPOUT	DS
POUR STRIP	PS
DOCK OVERHEAD DOOR	▲
DOCK DRIVE-IN DOOR	△
PANEL NUMBER, SEE STRUCTURAL	##
UNDERSLAB VAPOR BARRIER	

KEYNOTES

03-02	UNDERSLAB VAPOR BARRIER, EXTENTS PER HATCHED AREA, SEE SPECIFICATIONS	06-02	RATED WALL - SEE WALL TYPE LEGEND. EXTENDED TO UNDERSIDE OF ROOF DECK ABOVE.
03-03	6" CONCRETE SLAB ON GRADE, SEE STRUCTURAL	06-04	WOOD ROOF DECK PER STRUCT.
03-05	CONCRETE COLUMN BLOCKOUT, SEE STRUCTURAL	07-01	CRICKET AS REQUIRED FOR MIN 1/4 PER FOOT SLOPE, SEE DETAIL 8/A5.13
03-07	MOUNTABLE CONCRETE CURB AT FINAL 5'-0" OF RETAINING WALL	07-03	RIGID INSULATION, SEE TYPICAL ROOF ASSEMBLY 3/A3.10.
03-12	CONCRETE RETAINING WALL WITH MOUNTABLE CURB, SEE DETAILS 7-11/A5.12	07-07	ROOF MEMBRANE, SEE TYPICAL ROOF ASSEMBLY 3/A3.10
03-16	TILT-UP CONCRETE PANEL, SEE STRUCTURAL	07-14	SHEET METAL PARAPET FLASHING, SEE DETAIL 1/A5.13
05-01	HSS COLUMN, SEE STRUCTURAL	08-01	INSULATED HM PERSONNEL DOOR, PAINT PER ELEVATIONS. SEE DOOR SCHEDULE
05-03	STEEL GIRDER, SEE STRUCTURAL	08-04	9'-0" X 10'-0" OHD INSULATED HIGH-LIFT DOCK DOOR, PAINT P-1. SEE DOOR SCHEDULE
05-06	STEEL ACCESS STAIRS, SEE DETAILS 1-4/A5.12	08-05	12'-0" X 14'-0" OHD INSULATED DRIVE-IN DOOR WITH 3'-0" X 7'-0" PERSONNEL DOOR, PAINT P-1, WITH 1" INSULATED TRANSOM WINDOW ABOVE. SEE DOOR SCHEDULE
05-10	STEEL BOLLARD, SEE DETAIL 6/A5.12	08-08	ROOF ACCESS, SEE DETAILS 14-15/A5.13
05-11	PERFORATED ARCHITECTURAL METAL PANEL SCREENING WALL FASTENED TO HSS FRAME PER STRUCT, SEE DETAILS 4-6/A5.10	08-11	4'X8' SKYLIGHT WITH BURGLAR BAR. PROVIDE CRICKET AT HIGH SIDE W/ 1/2" MIN SLOPE. SEE DETAIL 3/A5.13. COORDINATE LAYOUT WITH SPRINKLER CONTRACTOR.
05-14	SHEET METAL GUTTER TO MATCH PARAPET COPING, SEE DETAIL 11/A5.13	11-01	DOCK PIT LEVELER, SEE SPECIFICATION & 8/A5.20 FOR PIT DETAIL
06-01	FRAMING AT ALL ROOF HATCHES, SKYLIGHTS AND ACCESSORIES PER DETAILS, SEE STRUCTURAL	11-02	EDGE OF DOCK LEVELER, SEE SPECIFICATIONS
		22-01	6" DIAMETER DOWNSPOUT, SEE DETAIL XX.XX. PAINT TO MATCH BACKGROUND COLOR, SEE ELEVATIONS

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REVISION SCHEDULE

Delta	Issued As	Issue Date

SHEET TITLE:
OVERALL FLOOR & ROOF PLANS

DRAWN BY: ADG

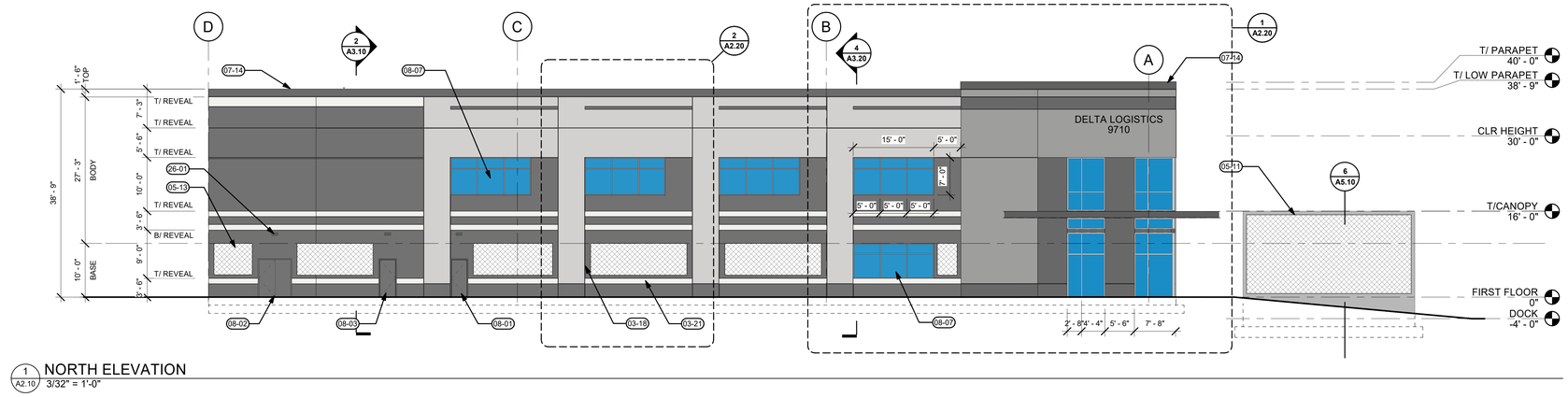
CHECKED BY: SJM

SHEET
A1.10

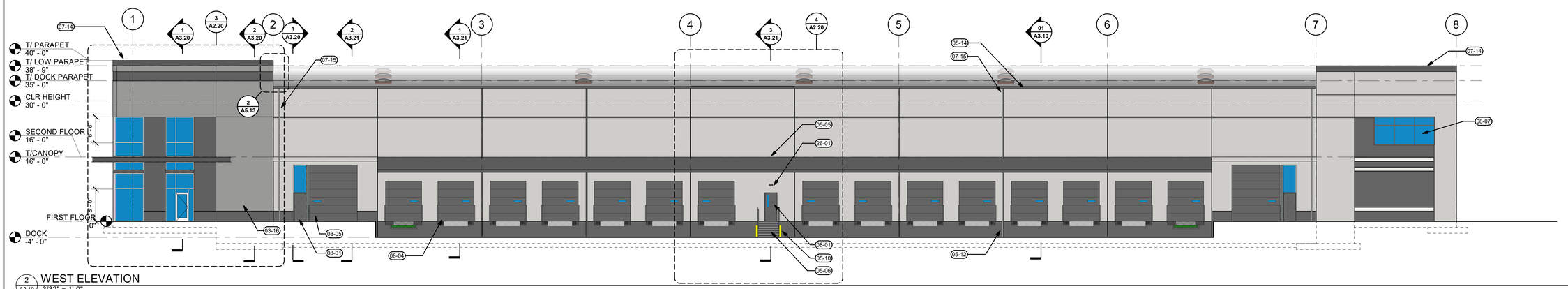
JOB NO. **2200502.00**

1181

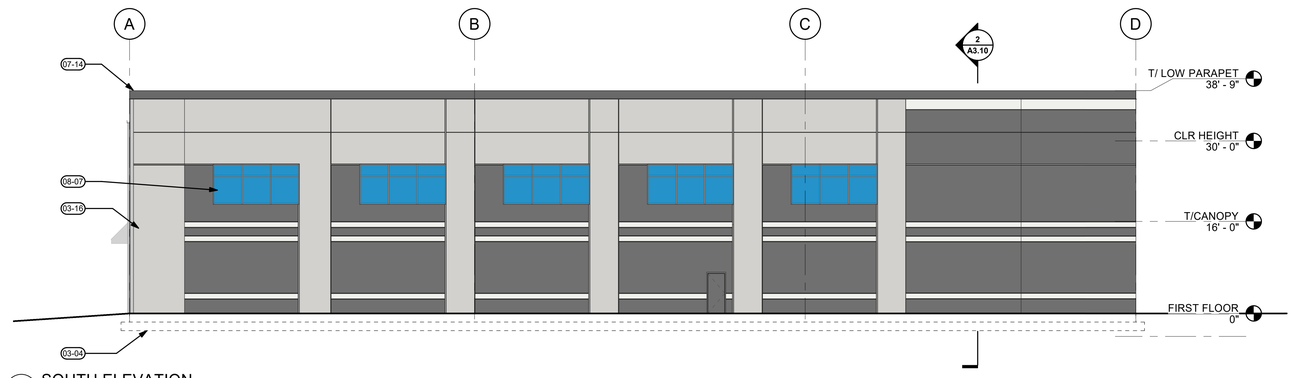
LAND USE RESUBMITTAL 07/26/22



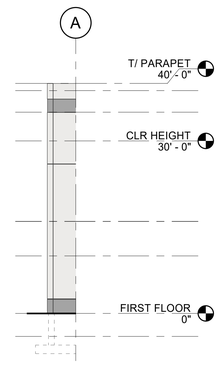
1 A2.10 NORTH ELEVATION
3/32" = 1'-0"



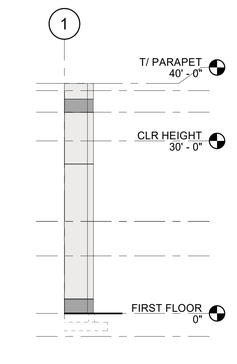
2 A2.10 WEST ELEVATION
3/32" = 1'-0"



3 A2.10 SOUTH ELEVATION
3/32" = 1'-0"



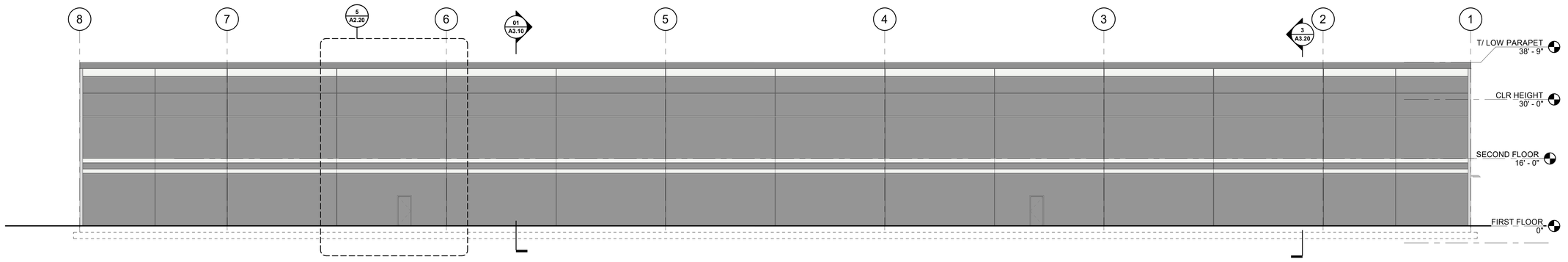
4 A2.10 SOUTH RETURN WALL
3/32" = 1'-0"



5 A2.10 EAST RETURN WALL
3/32" = 1'-0"

PAINT LEGEND

- SW 7006 / EXTRA WHITE
- SW 7667 / ZIRCON
- SW 7670 / GRAY SHINGLE
- SW 7674 / PEPPERCORN



6 A2.10 EAST ELEVATION
3/32" = 1'-0"

KEYNOTES

03-04	CONCRETE FOOTING, SEE STRUCTURAL
03-16	TILT-UP CONCRETE PANEL, SEE STRUCTURAL
03-18	1" REVEAL "A", SEE DETAIL 5/A5.11
03-21	12" REVEAL W/ 1/2" DEPTH, SEE DETAIL 5/A5.11
05-05	CONTINUOUS CFS DOCK CANOPY WITH SHEET METAL ROOF, SEE DETAIL 7/A5.13
05-06	STEEL ACCESS STAIRS, SEE DETAILS 1-4/A5.12
05-10	STEEL BOLLARD, SEE DETAIL 6/A5.12
05-11	PERFORATED ARCHITECTURAL METAL PANEL SCREENING WALL FASTENED TO HSS FRAME PER STRUCT, SEE DETAILS 4-6/A5.10
05-12	DOWNSPOUT GUARD, SEE DETAIL 17/A5.11
05-13	PERFORATED ARCHITECTURAL METAL PANELS FASTENED TO CONCRETE WALLS WITH VERT. HAT CHANNELS, SEE DETAIL 7/A5.10.
05-14	SHEET METAL GUTTER TO MATCH PARAPET COPING, SEE DETAIL 11/A5.13
07-14	SHEET METAL PARAPET FLASHING, SEE DETAIL 1/A5.13
07-15	DOWNSPOUT, SEE DETAIL XX.XX
08-01	INSULATED HM PERSONNEL DOOR, PAINT PER ELEVATIONS. SEE DOOR SCHEDULE
08-02	INSULATED DOUBLE HM PERSONNEL DOOR, PAINT PER ELEVATIONS, SEE DOOR SCHEDULE
08-03	INSULATED HM PERSONNEL DOOR AT ELECTRICAL ROOM, PAINT PER ELEVATIONS, SEE DOOR SCHEDULE
08-04	9'-0" X 10'-0" OHD INSULATED HIGH-LIFT DOCK DOOR, PAINT P-1. SEE DOOR SCHEDULE
08-05	12'-0" X 14'-0" OHD INSULATED DRIVE-IN DOOR WITH 3'-0" X 7'-0" PERSONNEL DOOR, PAINT P-1, WITH 1" INSULATED TRANSOM WINDOW ABOVE. SEE DOOR SCHEDULE
08-07	STOREFRONT WINDOW, SEE DETAILS 1-3/A5.20
26-01	EXTERIOR LIGHT. DESIGN-BUILD ELECTRICAL TO VERIFY ALL REQUIREMENTS. COORDINATE WITH A/E IF LOCATIONS ARE TO CHANGE. SEE CIVIL FOR ADDITIONAL INFORMATION. SHOE BOX STYLE, DARK ANODIZED FINISH AND FULL CUT OFF.

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REVISION SCHEDULE

Delta	Issued As	Issue Date
A	REV 1	6/10/22

SHEET TITLE:
BUILDING ELEVATIONS

DRAWN BY: ADG

CHECKED BY: SJM

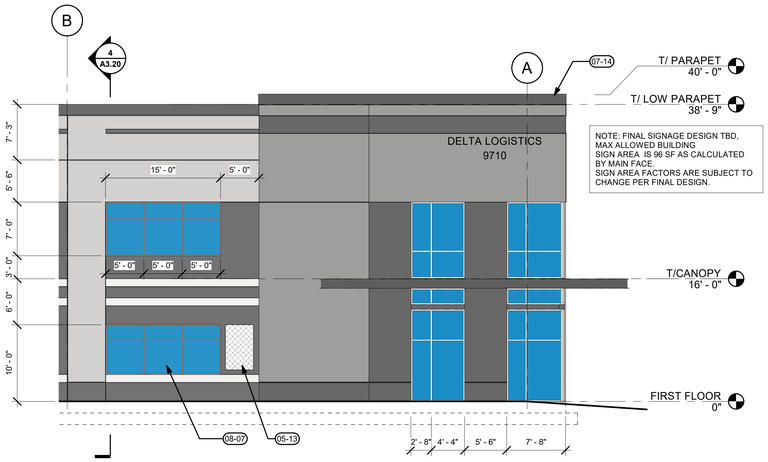
SHEET
A2.10

JOB NO. **2200502.00**

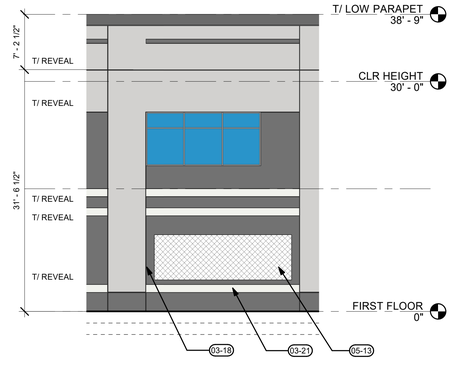
LAND USE RESUBMITTAL 07/26/22

KEYNOTES

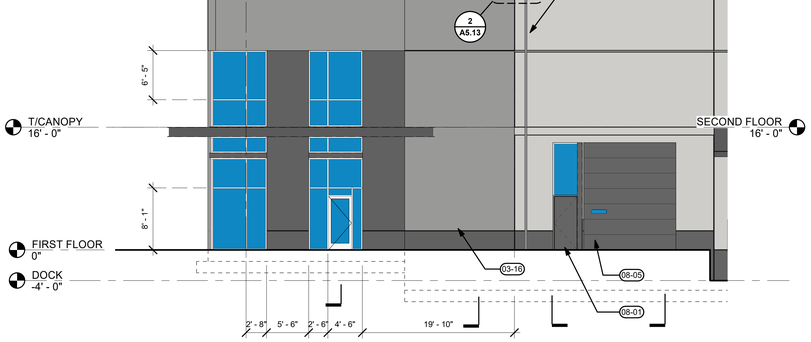
03-16	TILT-UP CONCRETE PANEL, SEE STRUCTURAL
03-18	1" REVEAL "A", SEE DETAIL 5/A5.11
03-21	12" REVEAL W/ 1/2" DEPTH, SEE DETAIL 5/A5.11
05-06	STEEL ACCESS STAIRS, SEE DETAILS 1-4/A5.12
05-10	STEEL BOLLARD, SEE DETAIL 6/A5.12
05-13	PERFORATED ARCHITECTURAL METAL PANELS FASTENED TO CONCRETE WALLS WITH VERT. HAT CHANNELS, SEE DETAIL 7/A5.10.
07-14	SHEET METAL PARAPET FLASHING, SEE DETAIL 1/A5.13
07-15	DOWNSPOUT, SEE DETAIL XX.XX
08-01	INSULATED HM PERSONNEL DOOR, PAINT PER ELEVATIONS. SEE DOOR SCHEDULE
08-05	12'-0" X 14'-0" OHD INSULATED DRIVE-IN DOOR WITH 3'-0" X 7'-0" PERSONNEL DOOR, PAINT P-1, WITH 1" INSULATED TRANSOM WINDOW ABOVE. SEE DOOR SCHEDULE
08-07	STOREFRONT WINDOW, SEE DETAILS 1-3/A5.20
26-01	EXTERIOR LIGHT. DESIGN-BUILD ELECTRICAL TO VERIFY ALL REQUIREMENTS. COORDINATE WITH A/E IF LOCATIONS ARE TO CHANGE. SEE CIVIL FOR ADDITIONAL INFORMATION. SHOE BOX STYLE, DARK ANODIZED FINISH AND FULL CUT OFF.



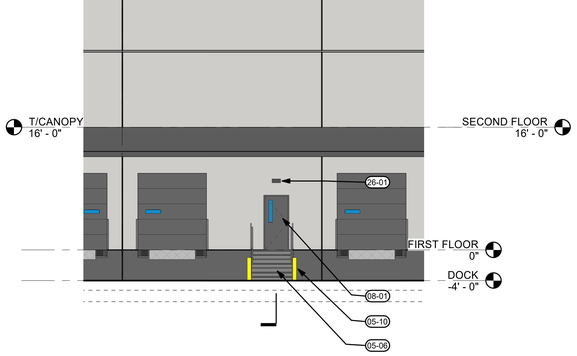
1 A2.20 ENLARGED ELEVATION - NORTH OFFICE
1/8" = 1'-0"



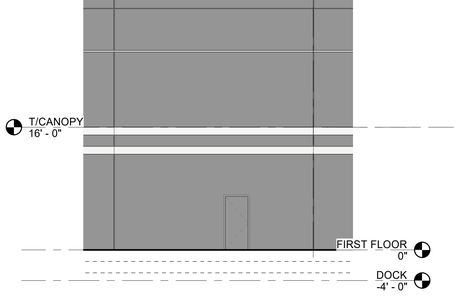
2 A2.20 ENLARGED ELEVATION - TYP. END PANEL
1/8" = 1'-0"



3 A2.20 WEST ELEVATION
1/8" = 1'-0"



4 A2.20 WEST ELEVATION
1/8" = 1'-0"



5 A2.20 EAST ELEVATION
1/8" = 1'-0"

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REVISION SCHEDULE

Delta	Issued As	Issue Date

SHEET TITLE:
ENLARGED BUILDING ELEVATIONS

DRAWN BY: ADG

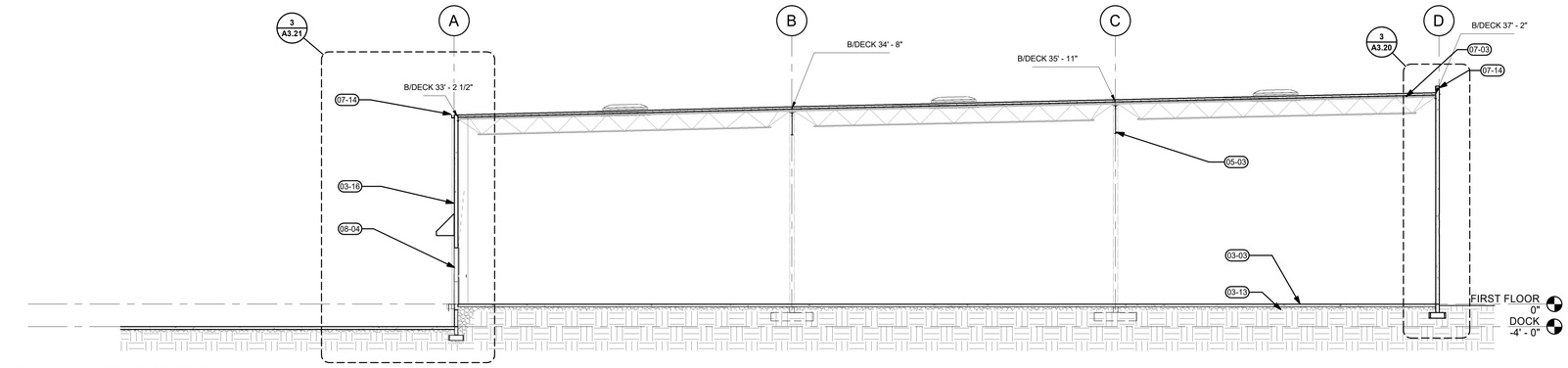
CHECKED BY: SJM

SHEET

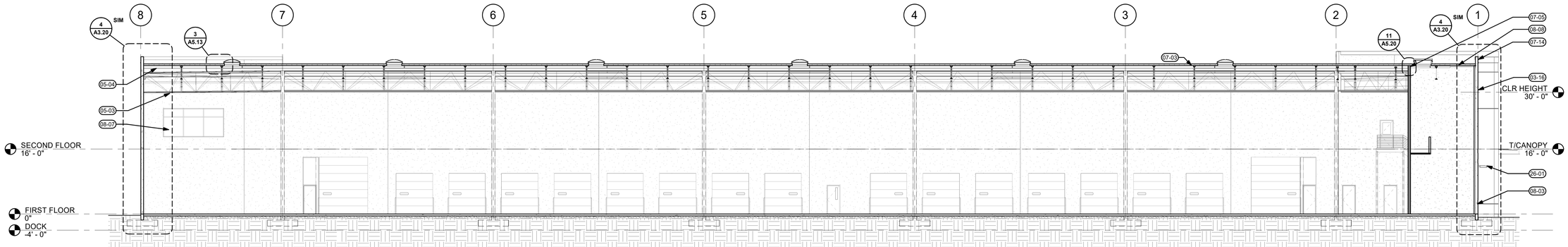
A2.20

JOB NO. **2200502.00**

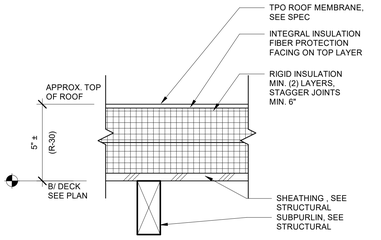
LAND USE RESUBMITTAL 07/26/22



01 A3.10 TRANSVERSE SECTION - E/W
3/32" = 1'-0"



2 A3.10 LONGITUDINAL SECTION - N/S
3/32" = 1'-0"



3 A3.10 TYPICAL ROOF ASSEMBLY
3" = 1'-0"

KEYNOTES

03-03	6" CONCRETE SLAB ON GRADE, SEE STRUCTURAL
03-13	COMPACT GRANULAR FILL, PER GEOTECH RECOMMENDATIONS
03-16	TILT-UP CONCRETE PANEL, SEE STRUCTURAL
05-03	STEEL GIRDER, SEE STRUCTURAL
05-04	STEEL DECKING, SEE STRUCTURAL
07-03	RIGID INSULATION, SEE TYPICAL ROOF ASSEMBLY 3/A3.10.
07-05	PROVIDE FIRESTOPPPING WHERE RATED WALL MEETS UNDERSIDE OF ROOF DECK. SEE DETAIL XX.XX.
07-14	SHEET METAL PARAPET FLASHING, SEE DETAIL 1/A5.13
08-03	INSULATED HM PERSONNEL DOOR AT ELECTRICAL ROOM, PAINT PER ELEVATIONS, SEE DOOR SCHEDULE
08-04	9'-0" X 10'-0" OHD INSULATED HIGH-LIFT DOCK DOOR, PAINT P-1. SEE DOOR SCHEDULE
08-07	STOREFRONT WINDOW, SEE DETAILS 1-3/A5.20
08-08	ROOF ACCESS, SEE DETAILS 14-15/A5.13
26-01	EXTERIOR LIGHT. DESIGN-BUILD ELECTRICAL TO VERIFY ALL REQUIREMENTS. COORDINATE WITH AE IF LOCATIONS ARE TO CHANGE. SEE CIVIL FOR ADDITIONAL INFORMATION. SHOE BOX STYLE, DARK ANODIZED FINISH AND FULL CUT OFF.

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BUILDING SECTIONS

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SHEET

A3.10

JOB NO. **2200502.00**

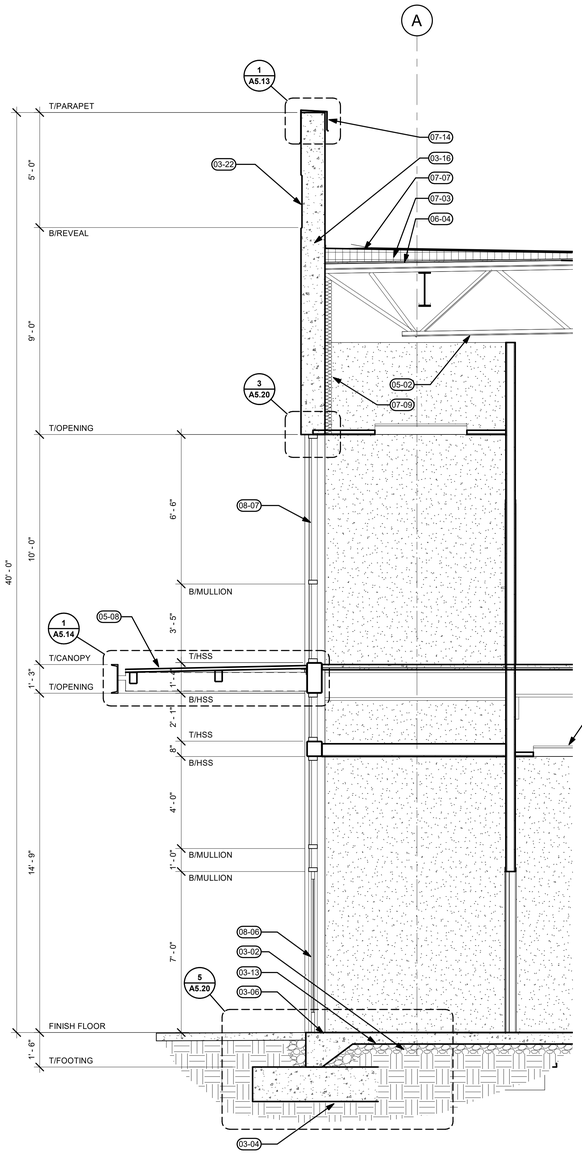
LAND USE RESUBMITTAL 07/26/22

GENERAL NOTES

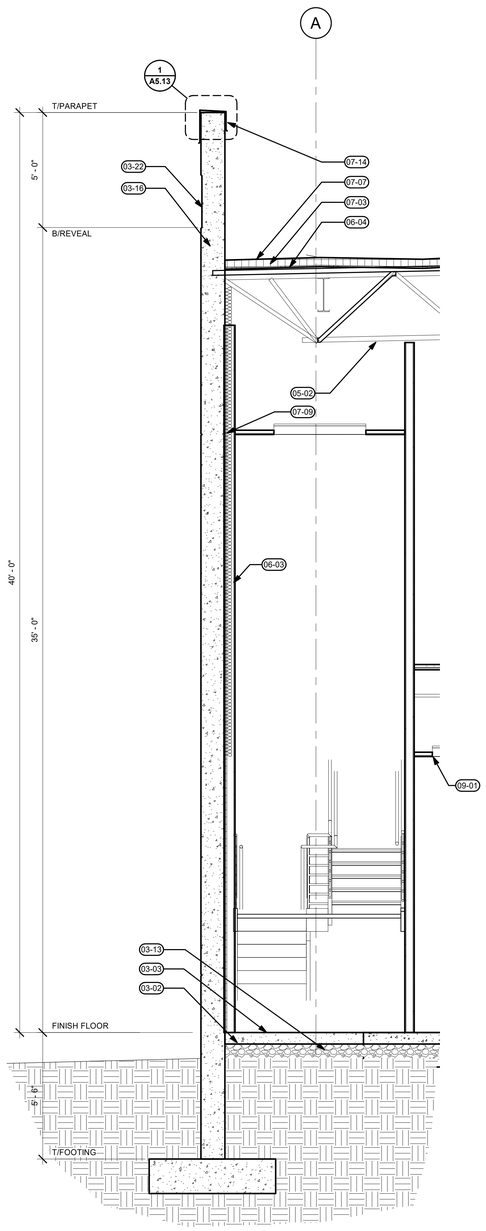
A. SEE ARCHITECTURAL GENERAL NOTES ON A0.01 FOR ADDITIONAL INFORMATION
B. SEE A1.10 FOR WALL TYPES

KEYNOTES

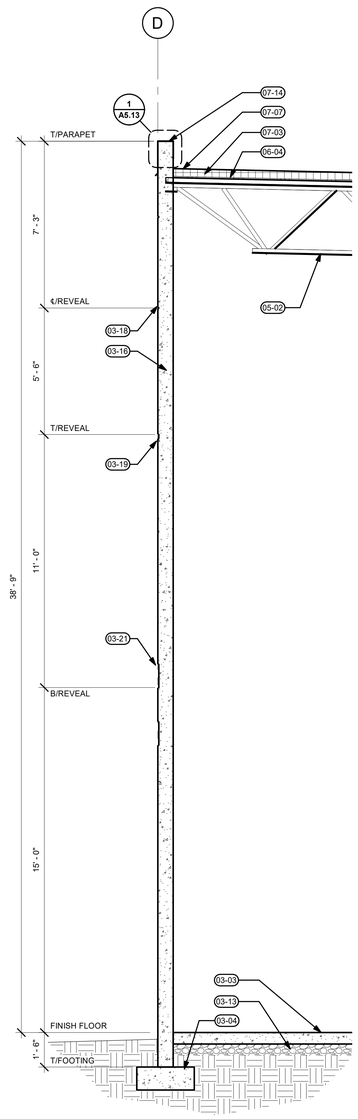
03-02	UNDERSLAB VAPOR BARRIER, EXTENTS PER HATCHED AREA, SEE SPECIFICATIONS
03-03	6" CONCRETE SLAB ON GRADE, SEE STRUCTURAL
03-04	CONCRETE FOOTING, SEE STRUCTURAL
03-06	CONCRETE THICKENED SLAB, SEE STRUCTURAL
03-13	COMPACT GRANULAR FILL, PER GEOTECH RECOMMENDATIONS
03-16	TILT-UP CONCRETE PANEL, SEE STRUCTURAL
03-18	1" REVEAL "A", SEE DETAIL 5/A5.11
03-19	2" REVEAL W/ 1/2" DEPTH, SEE DETAIL 5/A5.11
03-20	6" REVEAL W/ 1/2" DEPTH, SEE DETAIL 5/A5.11
03-21	12" REVEAL W/ 1/2" DEPTH, SEE DETAIL 5/A5.11
03-22	2'-3" REVEAL W/ 1/2" DEPTH, SEE DETAIL 5/A5.11
05-02	STEEL JOIST FRAMING, SEE STRUCTURAL
05-08	STEEL FRAMED CANOPY, SEE DETAILS 9-10/A5.13
06-03	FURRED OUT EXTERIOR WALL AT OFFICE PER PLANS. SEE WALL TYPES, SHEET A1.10.
06-04	WOOD ROOF DECK PER STRUCT.
07-01	CRICKET AS REQUIRED FOR MIN 1/4 PER FOOT SLOPE, SEE DETAIL 8/A5.13
07-03	RIGID INSULATION, SEE TYPICAL ROOF ASSEMBLY 3/A3.10.
07-07	ROOF MEMBRANE, SEE TYPICAL ROOF ASSEMBLY 3/A3.10
07-09	STICK-PIN INSULATION AT EXTERIOR WALL, SEE WALL TYPES, SHEET A1.10
07-14	SHEET METAL PARAPET FLASHING, SEE DETAIL 1/A5.13
08-06	STOREFRONT ENTRY, SEE XX.XX ENLARGED PLANS
08-07	STOREFRONT WINDOW, SEE DETAILS 1-3/A5.20
09-01	ACT CEILING PER PLANS. SEE DETAILS FOR SEISMIC REQUIREMENTS.
26-03	LIGHT FIXTURE PER PLAN. REFER TO SPECS AND DETAILS FOR SEISMIC RESTRAINT REQUIREMENTS. FINAL DESIGN PER DESIGN/BUILD ELECTRICAL.



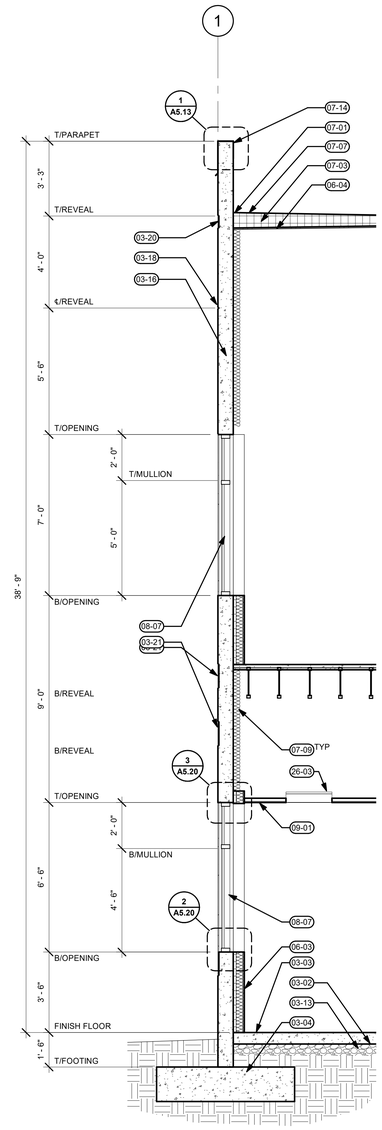
1 A3.20 WALL SECTION @ ENTRY VESTIBULE
3/8" = 1'-0"



2 A3.20 WALL SECTION @ STAIR
3/8" = 1'-0"



3 A3.20 WALL SECTION @ PLAIN PANEL PARAPET
3/8" = 1'-0"



4 A3.20 WALL SECTION @ STOREFRONT WINDOWS
3/8" = 1'-0"

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REVISION SCHEDULE

Delta	Issued As	Issue Date

SHEET TITLE:
WALL SECTIONS

DRAWN BY: ADG

CHECKED BY: SJM

SHEET
A3.20

JOB NO. **2200502.00**

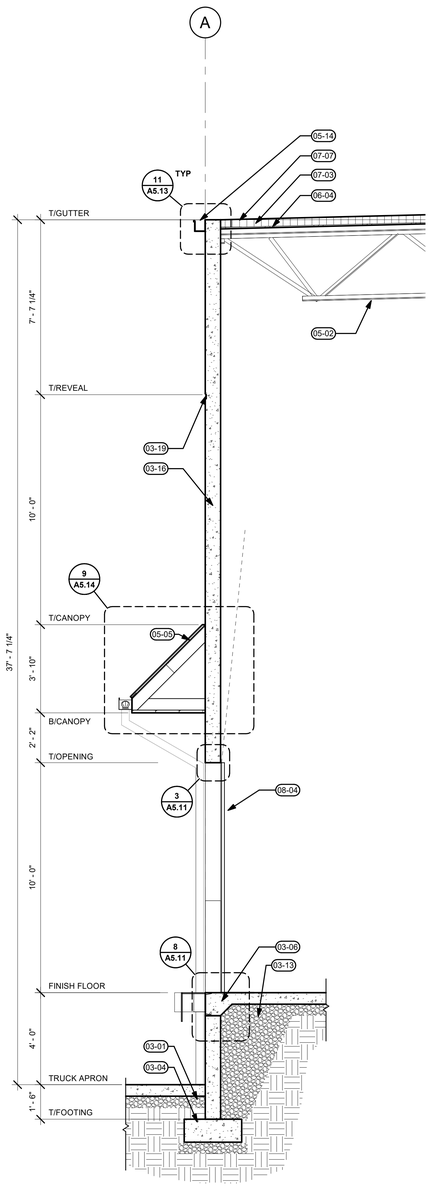
LAND USE RESUBMITTAL 07/26/22

GENERAL NOTES

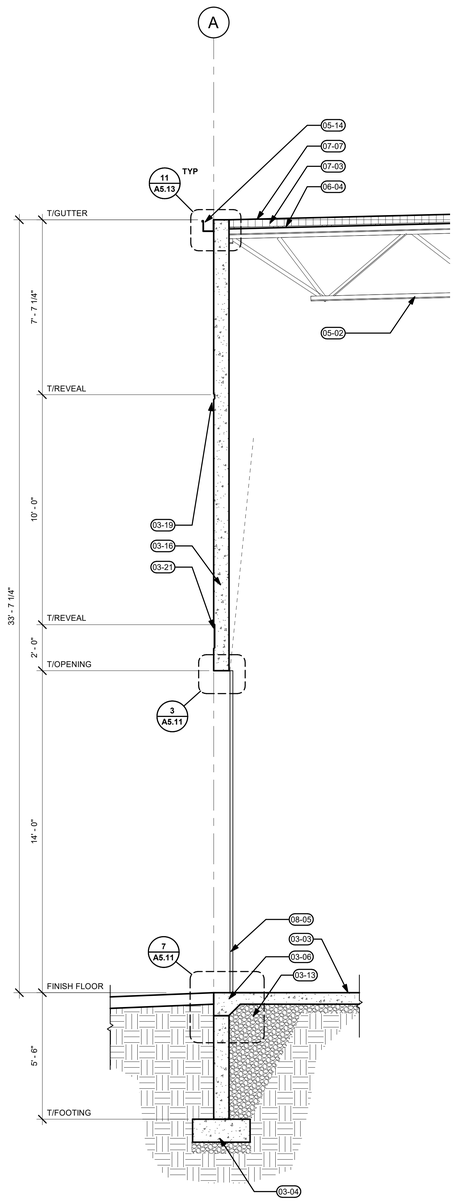
A. SEE ARCHITECTURAL GENERAL NOTES ON A0.01 FOR ADDITIONAL INFORMATION
B. SEE A1.10 FOR WALL TYPES

KEYNOTES

03-01	6" CONCRETE TRUCK APRON, SEE CIVIL
03-03	6" CONCRETE SLAB ON GRADE, SEE STRUCTURAL
03-04	CONCRETE FOOTING, SEE STRUCTURAL
03-06	CONCRETE THICKENED SLAB, SEE STRUCTURAL
03-13	COMPACT GRANULAR FILL, PER GEOTECH RECOMMENDATIONS
03-16	TILT-UP CONCRETE PANEL, SEE STRUCTURAL
03-19	2" REVEAL W/ 1/2" DEPTH, SEE DETAIL 5/A5.11
03-21	12" REVEAL W/ 1/2" DEPTH, SEE DETAIL 5/A5.11
05-02	STEEL JOIST FRAMING, SEE STRUCTURAL
05-05	CONTINUOUS CFS DOCK CANOPY WITH SHEET METAL ROOF, SEE DETAIL 7/A5.13
05-06	STEEL ACCESS STAIRS, SEE DETAILS 1-4/A5.12
05-07	STEEL FRAMED DOCK CANOPY, SEE DETAIL 7/A5.13
05-10	STEEL BOLLARD, SEE DETAIL 6/A5.12
05-14	SHEET METAL GUTTER TO MATCH PARAPET COPING, SEE DETAIL 11/A5.13
06-04	WOOD ROOF DECK PER STRUCT.
07-03	RIGID INSULATION, SEE TYPICAL ROOF ASSEMBLY 3/A3.10.
07-07	ROOF MEMBRANE, SEE TYPICAL ROOF ASSEMBLY 3/A3.10
08-01	INSULATED HM PERSONNEL DOOR, PAINT PER ELEVATIONS. SEE DOOR SCHEDULE
08-04	9'-0" X 10'-0" OHD INSULATED HIGH-LIFT DOCK DOOR, PAINT P-1. SEE DOOR SCHEDULE
08-05	12'-0" X 14'-0" OHD INSULATED DRIVE-IN DOOR WITH 3'-0" X 7'-0" PERSONNEL DOOR, PAINT P-1, WITH 1" INSULATED TRANSOM WINDOW ABOVE. SEE DOOR SCHEDULE
26-01	EXTERIOR LIGHT. DESIGN-BUILD ELECTRICAL TO VERIFY ALL REQUIREMENTS. COORDINATE WITH A/E IF LOCATIONS ARE TO CHANGE. SEE CIVIL FOR ADDITIONAL INFORMATION. SHOE BOX STYLE, DARK ANODIZED FINISH AND FULL CUT OFF.



1 A3.21 WALL SECTION @ DOCK DOOR
3/8" = 1'-0"



2 A3.21 WALL SECTION @ DRIVE-IN PANEL
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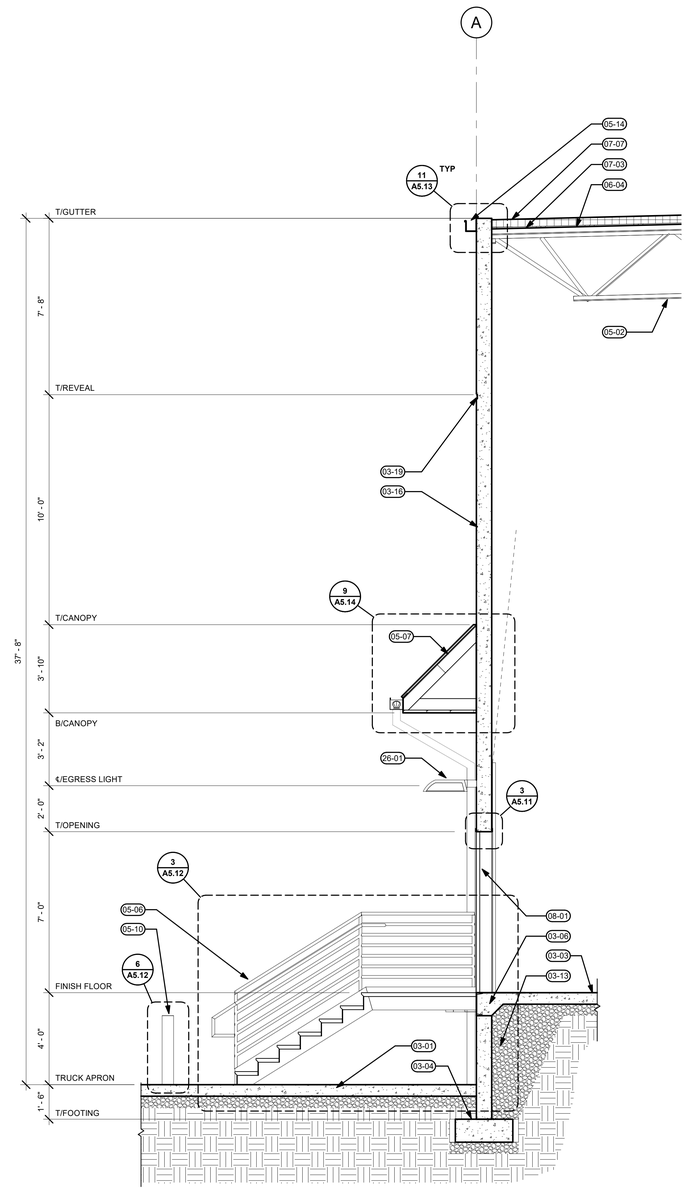

3 A3.21 WALL SECTION @ DOCK STAIR
3/8" = 1'-0"

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WALL SECTIONS

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A3.21

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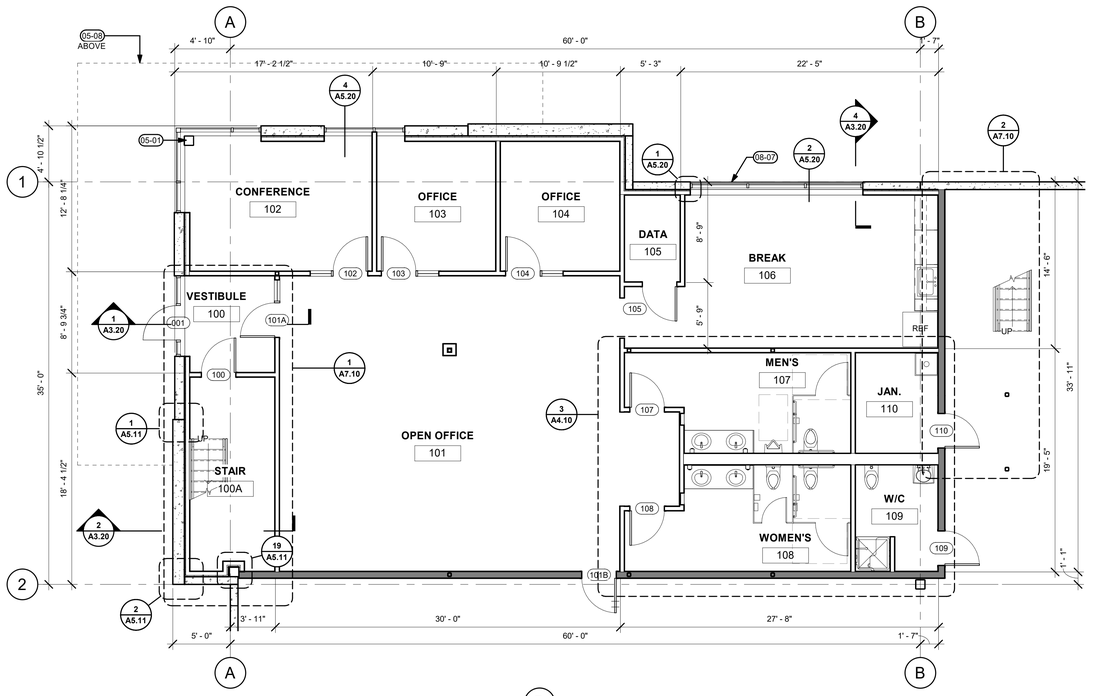
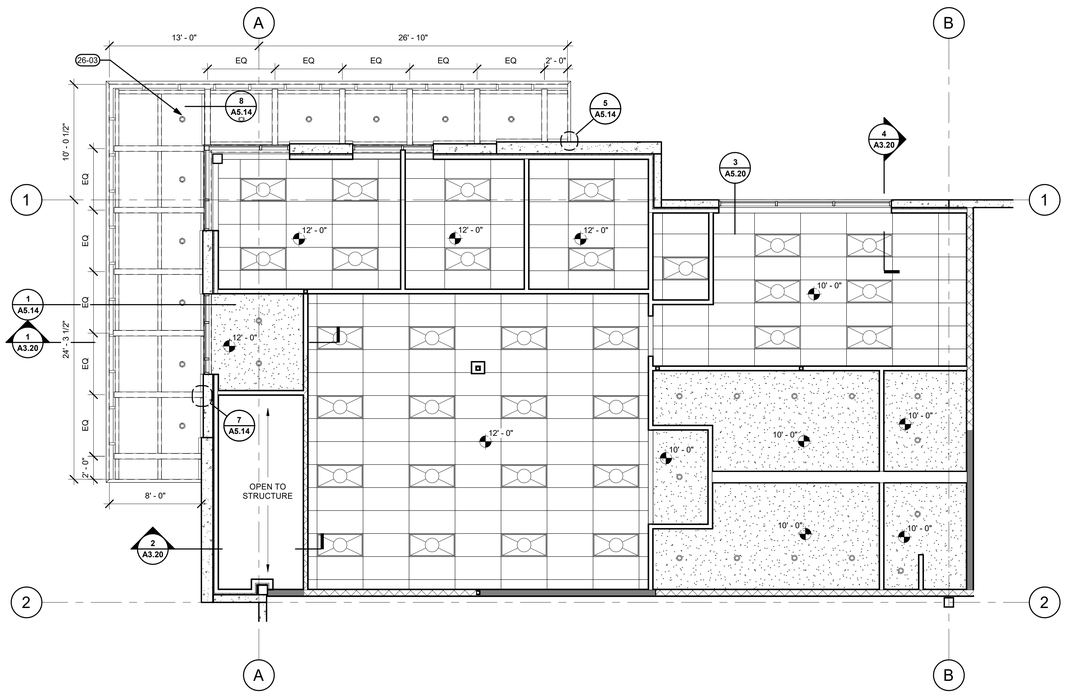


1 A4.10 NW OFFICE FLOOR PLAN
3/16" = 1'-0"



02 A4.10 NW OFFICE RCP & CANOPY FRAMING PLAN
3/16" = 1'-0"

3 A4.10 RESTROOM PLAN - ENLARGED PLAN
1/4" = 1'-0"

4 A4.10 BREAK ROOM ELEVATION
1/2" = 1'-0"

5 A4.10 RESTROOM ELEVATION - NORTH
1/2" = 1'-0"

6 A4.10 RESTROOM ELEVATION - EAST
1/2" = 1'-0"

7 A4.10 RESTROOM ELEVATION - WEST
1/2" = 1'-0"

GENERAL NOTES

A. SEE A0.01 FOR ADDITIONAL INFORMATION ON FIXTURE MOUNTING HEIGHTS. ALL REQUIRED ADA CLEARANCES ARE TO FACE OF FINISH.
B. ALL DIMENSIONS IN THIS SHEET ARE TO FACE OF FINISH UNLESS OTHERWISE NOTED.
C. CENTER ALL TOILETS/URINALS WITHIN STALL UNLESS OTHERWISE NOTED.
D. INSULATE ALL UNDER COUNTER HOT WATER AND WASTE LINES.
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F. CONFIRM REQUIREMENTS AND SIZES FOR ALL EQUIPMENT/APPLIANCES PRIOR TO CONSTRUCTION OF CABINETRY/COUNTERS.
G. FINISH ENDS OF COUNTERS, DOORS, FACES, TYP.
H. ALL EXPOSED EDGES AT DOORS AND SHELVING TO BE P-LAM TO MATCH ADJACENT VERTICAL SURFACES.
I. SCRIBE TO FIT CASEWORK AT ALL WALLS.
J. WRAP ALL EXPOSED EDGES WITH P-LAM UNLESS NOTED OTHERWISE.
K. SHIM AS REQUIRED.

WALL TYPES

CONCRETE TILT PANEL - SEE STRUCTURAL ELEVATIONS FOR THICKNESSES

1HR RATED WALL PER 11/A5.20

FULL HEIGHT WALL PER 12/A5.20

STICK-PIN INSULATION 10/A5.20

INTERIOR PARTITION PER 13/15/A5.20

KEYNOTES

05-01	HSS COLUMN, SEE STRUCTURAL
05-08	STEEL FRAMED CANOPY, SEE DETAILS 9-10/A5.13
08-07	STOREFRONT WINDOW, SEE DETAILS 1-3/A5.20
10-03	TOILET PAPER DISPENSER
10-04	TOILET SEAT COVER DISPENSER
10-05	SANITARY NAPKIN DISPOSAL
10-06	WALL MOUNTED SOAP DISPENSER
10-07	42" HORIZONTAL GRAB BAR, SEE STANDARD MOUNTING HEIGHT DETAILS
10-08	48" HORIZONTAL GRAB BAR, SEE STANDARD MOUNTING HEIGHT DETAILS
10-09	18" VERTICAL GRAB BAR, SEE STANDARD MOUNTING HEIGHT DETAILS
10-10	2'-6" WIDE MIRROR, FROM 3'-3" AFF TO 7'-0", CENTER ON SINK
10-11	RECESSED PAPER TOWEL DISPENSER / TRASH RECEPTACLE
22-07	WALL MOUNTED WATER CLOSET BY DESIGN BUILD PLUMBING. SEE STANDARD MOUNTING HEIGHT DETAIL
22-09	LAVATORY BY DESIGN BUILD PLUMBING. SEE STANDARD MOUNTING DETAIL
26-03	LIGHT FIXTURE PER PLAN. REFER TO SPECS AND DETAILS FOR SEISMIC RESTRAINT REQUIREMENTS. FINAL DESIGN PER DESIGN/BUILD ELECTRICAL.

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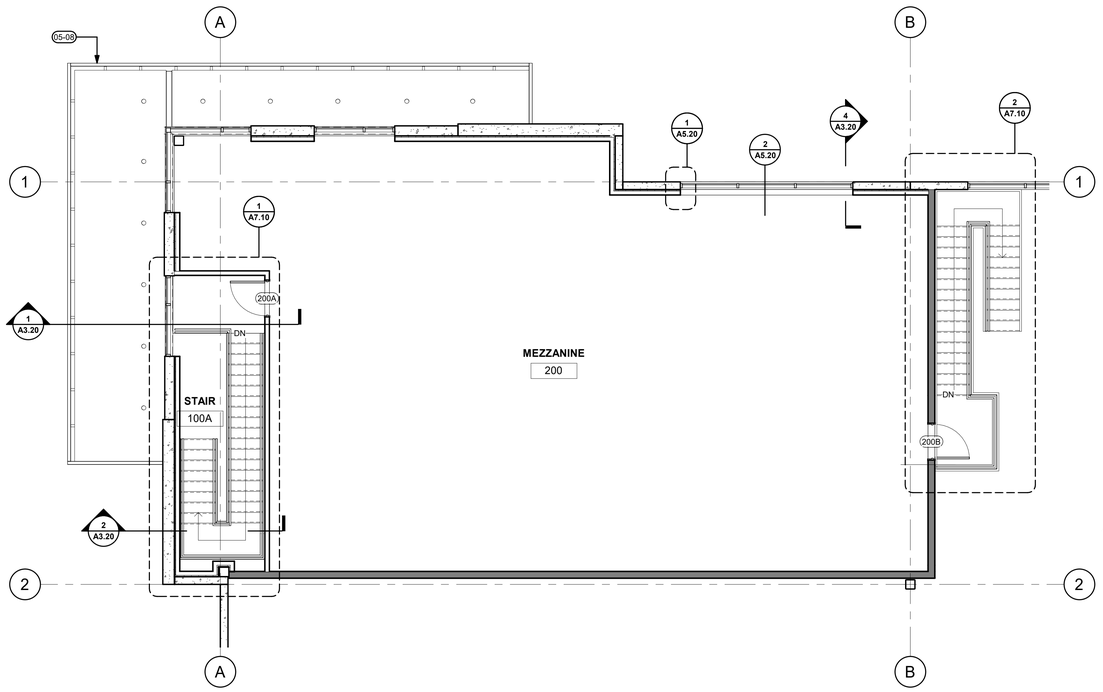
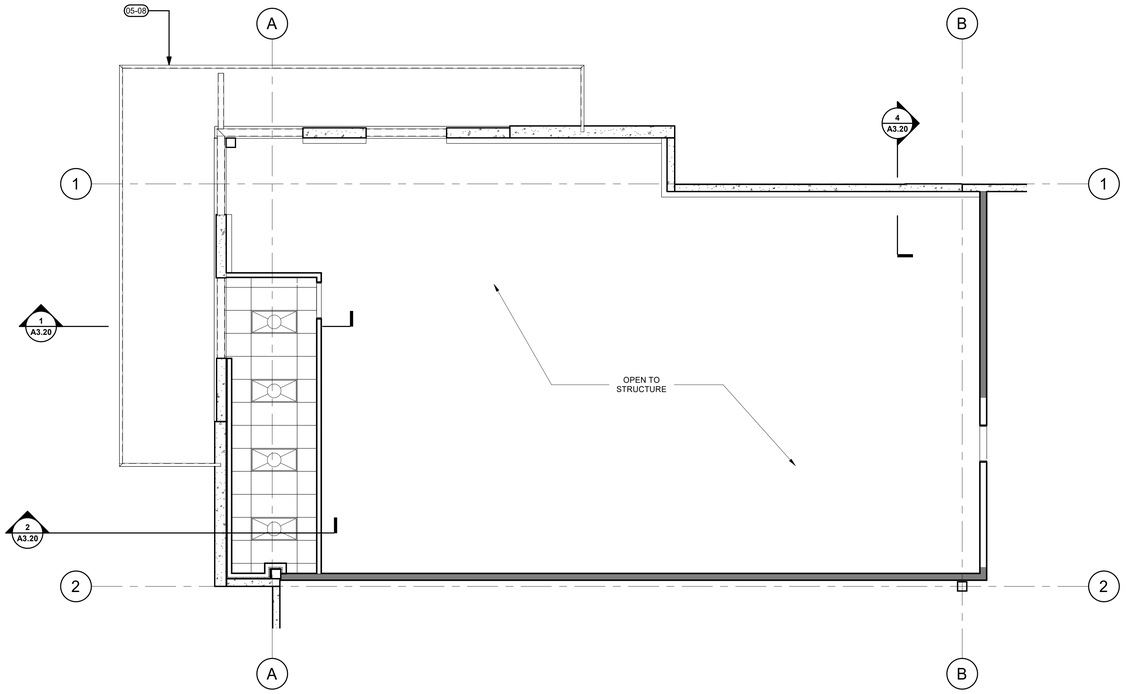
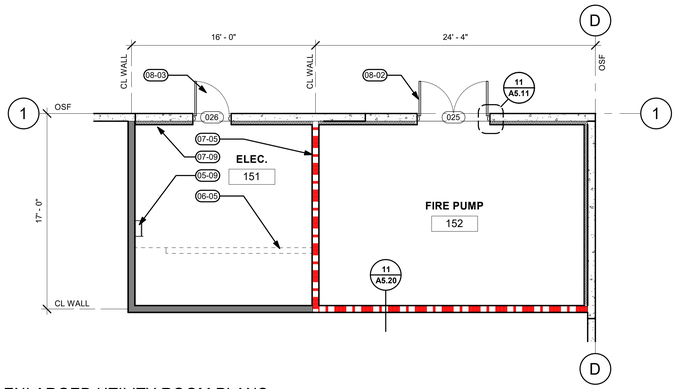


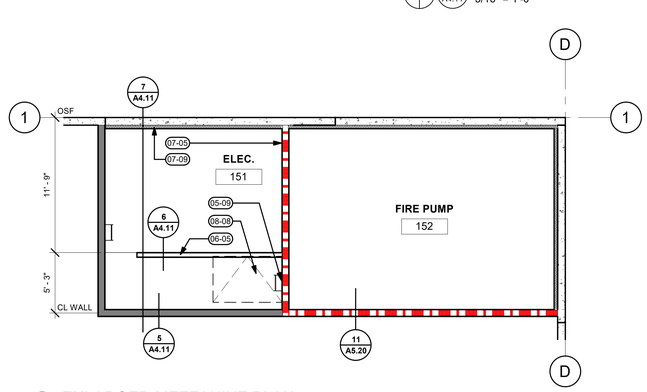
1 A4.11 NW MEZZANINE FLOOR PLAN
3/16" = 1'-0"



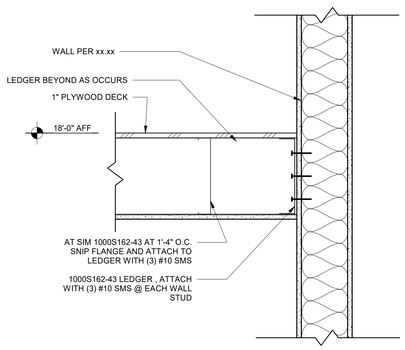
2 A4.11 NW MEZZANINE RCP
3/16" = 1'-0"



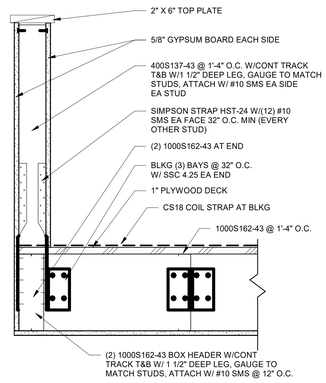
3 A4.11 ENLARGED UTILITY ROOM PLANS
3/16" = 1'-0"



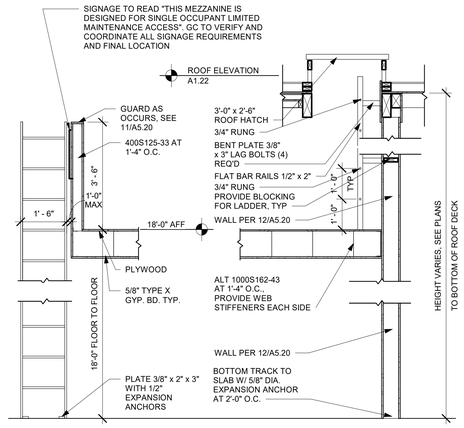
04 A4.11 ENLARGED MEZZANINE PLAN
3/16" = 1'-0"



5 A4.11 MEZZANINE DETAIL
1 1/2" = 1'-0"



6 A4.11 MEZZANINE RAILING
1 1/2" = 1'-0"



7 A4.11 ACCESS LADDER DETAIL
1/2" = 1'-0"

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WALL TYPES

CONCRETE TILT PANEL - SEE STRUCTURAL ELEVATIONS FOR THICKNESSES	
1HR RATED WALL PER 11/A5.20	
FULL HEIGHT WALL PER 12/A5.20	
STICK-PIN INSULATION 10/A5.20	
INTERIOR PARTITION PER 13/15/A5.20	

KEYNOTES

05-08	STEEL FRAMED CANOPY, SEE DETAILS 9-10/A5.13
05-09	ROOF ACCESS LADDER BY DESIGN-BUILD
06-05	WOOD FRAMED EQUIPMENT PLATFORM. SEE DETAILS 9-11/A5.20.
07-05	PROVIDE FIRESTOPPPING WHERE RATED WALL MEETS UNDERSIDE OF ROOF DECK. SEE DETAIL XX.XX.
07-09	STICK-PIN INSULATION AT EXTERIOR WALL, SEE WALL TYPES, SHEET A1.10
08-02	INSULATED DOUBLE HM PERSONNEL DOOR, PAINT PER ELEVATIONS, SEE DOOR SCHEDULE
08-03	INSULATED HM PERSONNEL DOOR AT ELECTRICAL ROOM, PAINT PER ELEVATIONS, SEE DOOR SCHEDULE
08-08	ROOF ACCESS, SEE DETAILS 14-15/A5.13

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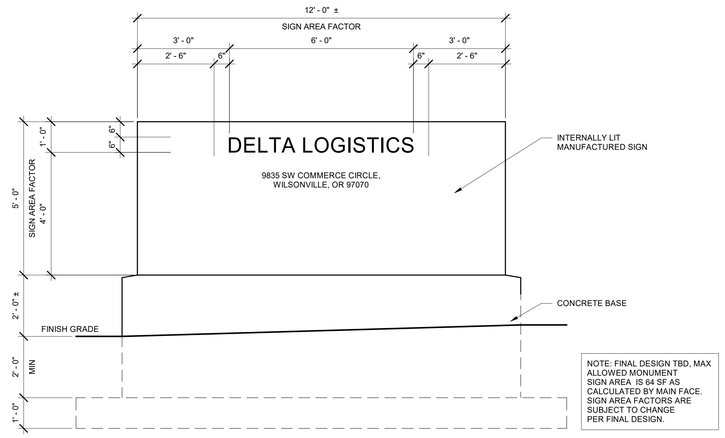
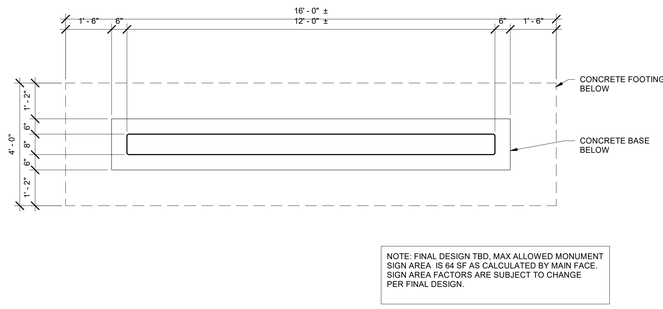
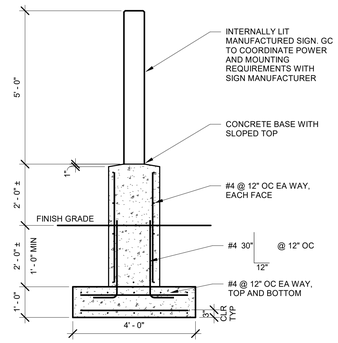


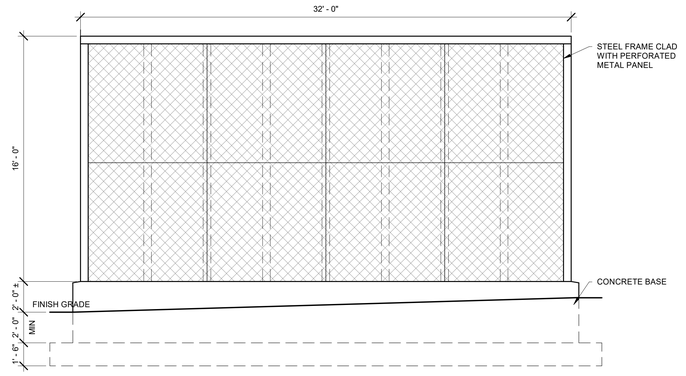
1 A5.10 MONUMENT SIGN ELEVATION
1/2" = 1'-0"



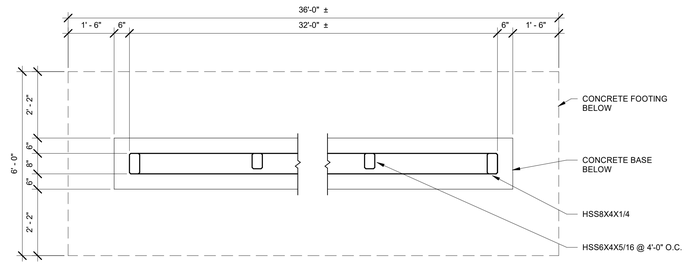
2 A5.10 MONUMENT SIGN PLAN
1/2" = 1'-0"



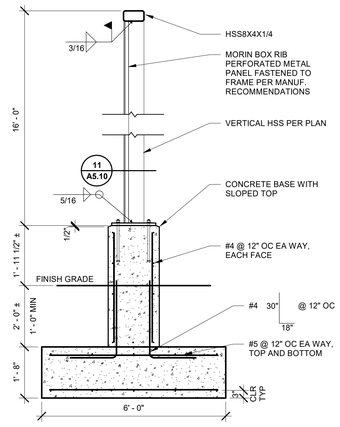
3 A5.10 MONUMENT SIGN SECTION
1/2" = 1'-0"



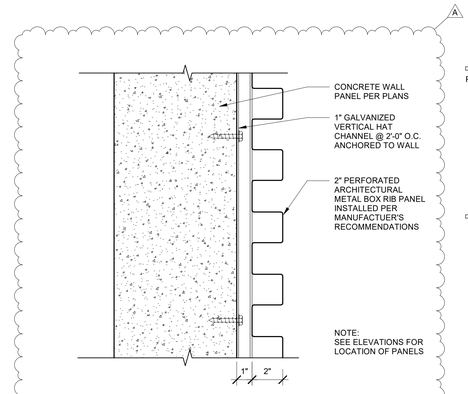
4 A5.10 SCREENING WALL ELEVATION
1/4" = 1'-0"



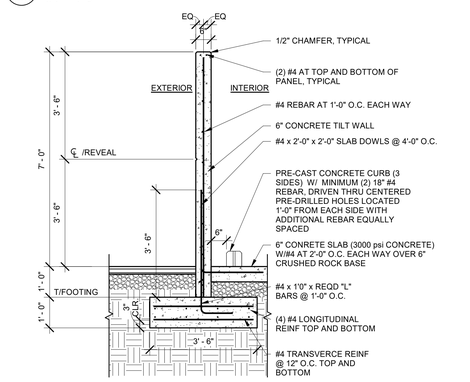
5 A5.10 SCREENING WALL PLAN
1/2" = 1'-0"



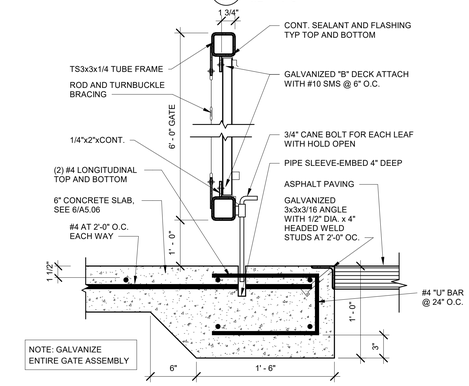
6 A5.10 SCREENING WALL SECTION
1/2" = 1'-0"



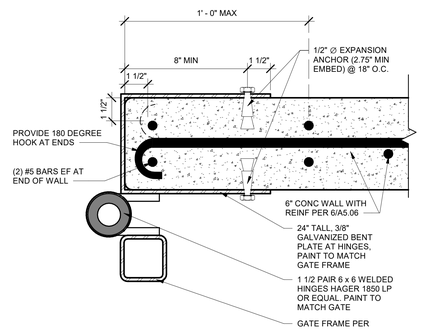
7 A5.10 WALL PANEL APPLIQUE
3" = 1'-0"



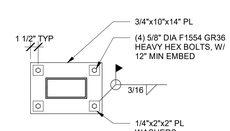
8 A5.10 TRASH ENCLOSURE WALL
1/2" = 1'-0"



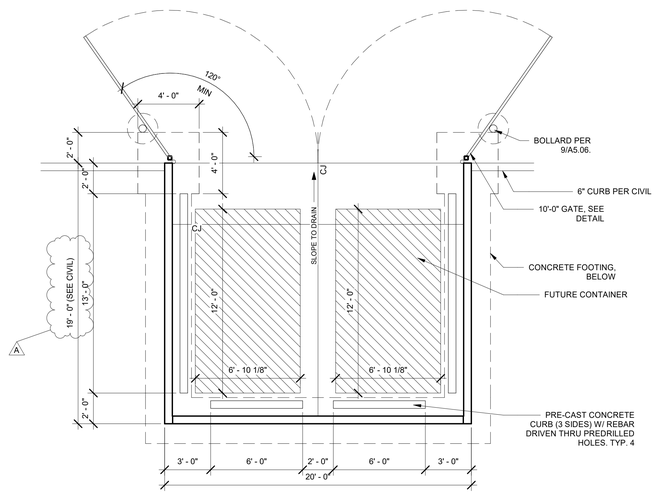
9 A5.10 GATE SECTION
1 1/2" = 1'-0"



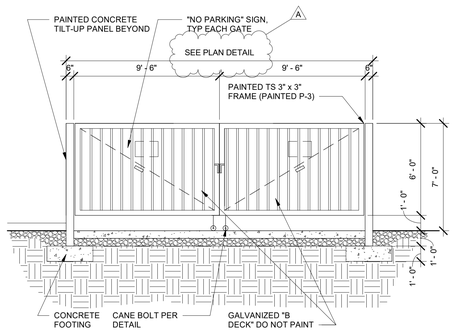
10 A5.10 HINGE CONNECTION
3" = 1'-0"



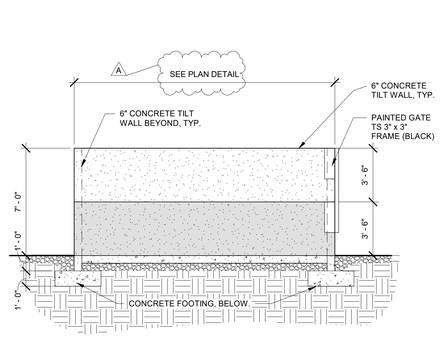
11 A5.10 VERTICAL HSS SECTION
1" = 1'-0"



12 A5.10 TRASH ENCLOSURE REAR ELEVATION
1/4" = 1'-0"



13 A5.10 TRASH ENCLOSURE FRONT ELEVATION
1/4" = 1'-0"



14 A5.10 TRASH ENCLOSURE SIDE ELEVATION
1/4" = 1'-0"

15 A5.10 TRASH ENCLOSURE PLAN
1/4" = 1'-0"

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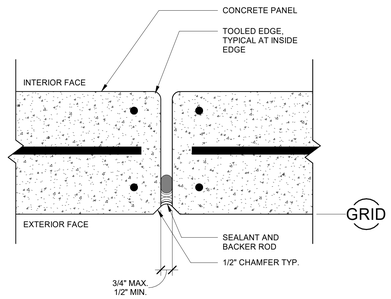
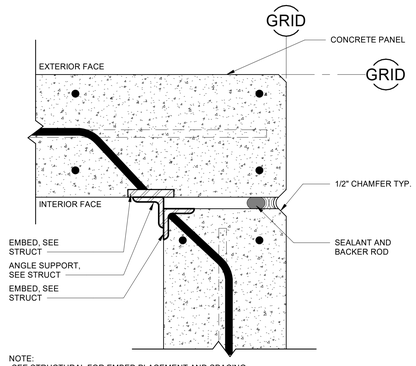


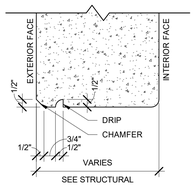
NOTE:
-SEE STRUCTURAL FOR EMBED PLACEMENT AND SPACING
-SEE PANEL ELEVATIONS FOR REINFORCEMENT AND THICKNESS
-TOOL ALL INTERIOR EDGES OF CONCRETE PANEL

1 A5.11 END TO END CONNECTION
3" = 1'-0"

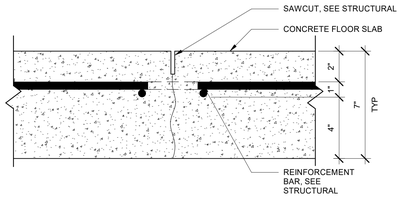


NOTE:
-SEE STRUCTURAL FOR EMBED PLACEMENT AND SPACING
-SEE PANEL ELEVATIONS FOR REINFORCEMENT AND THICKNESS
-TOOL ALL INTERIOR EDGES OF CONCRETE PANEL

2 A5.11 CORNER CONNECTION
3" = 1'-0"

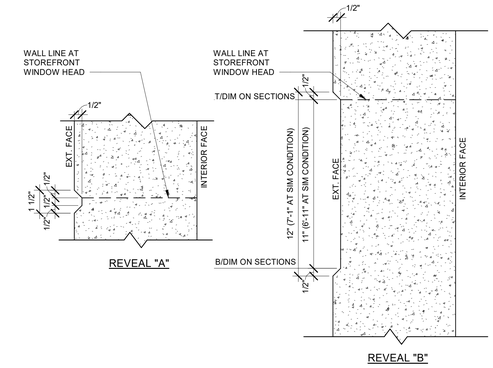


3 A5.11 DRIP EDGE
3" = 1'-0"

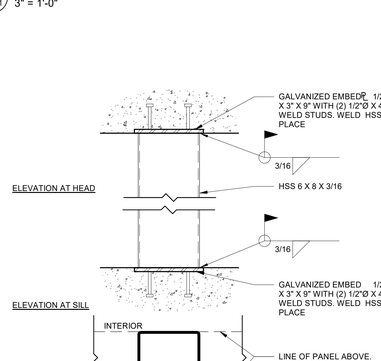


NOTE: FOLLOW ALL MANUFACTURER RECOMMENDATIONS FOR SLAB JOINT PREPARATION AND MATERIAL INSTALLATION.

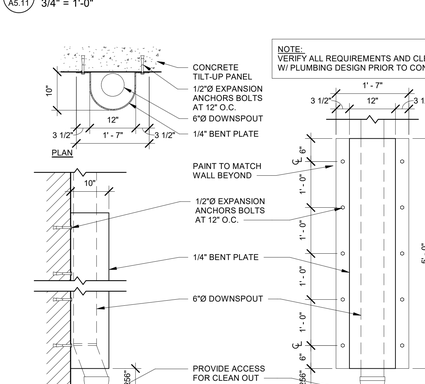
4 A5.11 FLOOR JOINT
3" = 1'-0"



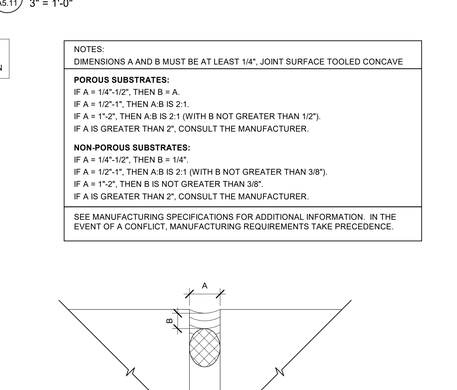
5 A5.11 CONCRETE REVEALS
3" = 1'-0"



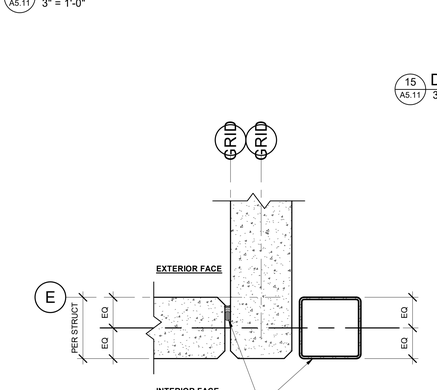
6 A5.11 SLAB AT PERSONNEL DOOR
3/4" = 1'-0"



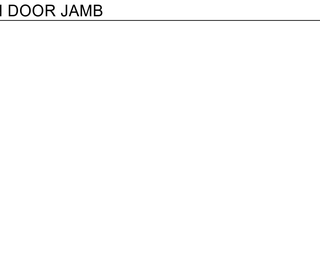
7 A5.11 SLAB AT DRIVE-IN DOOR
3/4" = 1'-0"



8 A5.11 TURN-DOWN SLAB EDGE AT DOCK DOOR
3/4" = 1'-0"

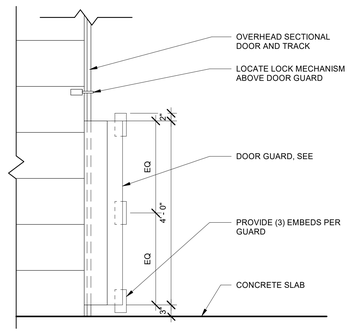


9 A5.11 EXTERIOR TRANSOM WINDOW
3" = 1'-0"

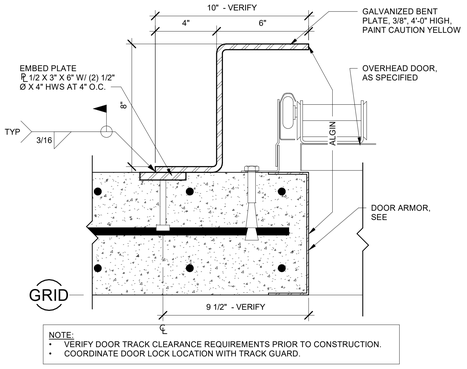


10 A5.11 EXT. TRANSOM WINDOW SECTION
3" = 1'-0"

11 A5.11 EXT. DOOR JAMB/HEAD
3" = 1'-0"

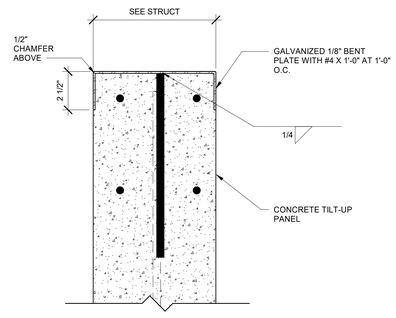


12 A5.11 OVERHEAD DOOR GUARD ELEVATION
3/4" = 1'-0"

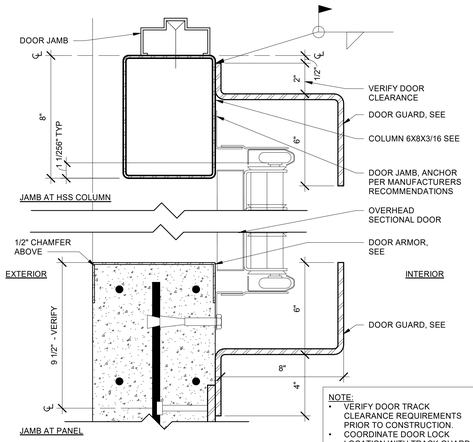


NOTE:
- VERIFY DOOR TRACK CLEARANCE REQUIREMENTS PRIOR TO CONSTRUCTION.
- COORDINATE DOOR LOCK LOCATION WITH TRACK GUARD.

13 A5.11 OVERHEAD DOOR GUARD
3" = 1'-0"



14 A5.11 DOOR ARMOR
3" = 1'-0"



NOTE:
- VERIFY DOOR TRACK CLEARANCE REQUIREMENTS PRIOR TO CONSTRUCTION.
- COORDINATE DOOR LOCK LOCATION WITH TRACK GUARD.

15 A5.11 DRIVE-IN DOOR JAMB
3" = 1'-0"

16 A5.11 HSS CONNECTION AT SLAB/PANEL
1 1/2" = 1'-0"

17 A5.11 DOWNSPOUT GUARD
3/4" = 1'-0"

NOTE:
VERIFY ALL REQUIREMENTS AND CLEARANCES W/ PLUMBING DESIGN PRIOR TO CONSTRUCTION

NOTES:
DIMENSIONS A AND B MUST BE AT LEAST 1/4", JOINT SURFACE TOOLED CONCAVE

POROUS SUBSTRATES:
IF A = 1/4"-1/2", THEN B = A.
IF A = 1/2"-1", THEN A:B IS 2:1.
IF A = 1"-2", THEN A:B IS 2:1 (WITH B NOT GREATER THAN 1/2").
IF A IS GREATER THAN 2", CONSULT THE MANUFACTURER.

NON-POROUS SUBSTRATES:
IF A = 1/4"-1/2", THEN B = 1/4".
IF A = 1/2"-1", THEN A:B IS 2:1 (WITH B NOT GREATER THAN 3/8").
IF A = 1"-2", THEN B IS NOT GREATER THAN 3/8".
IF A IS GREATER THAN 2", CONSULT THE MANUFACTURER.

SEE MANUFACTURING SPECIFICATIONS FOR ADDITIONAL INFORMATION. IN THE EVENT OF A CONFLICT, MANUFACTURING REQUIREMENTS TAKE PRECEDENCE.

18 A5.11 TYPICAL SEALANT JOINT
12" = 1'-0"

19 A5.11 COLUMN AT INSIDE CORNER
1 1/2" = 1'-0"

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CHECKED BY: SJM

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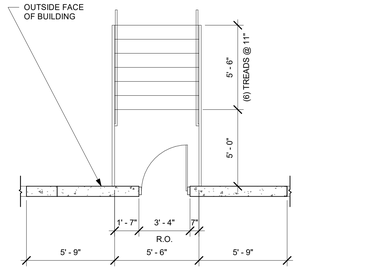
A5.11

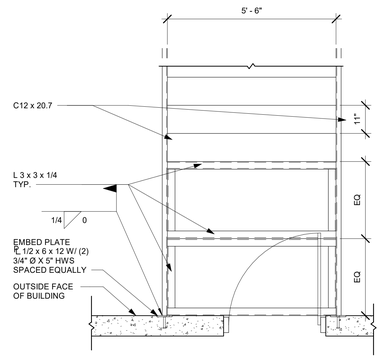
JOB NO. **2200502.00**

1190

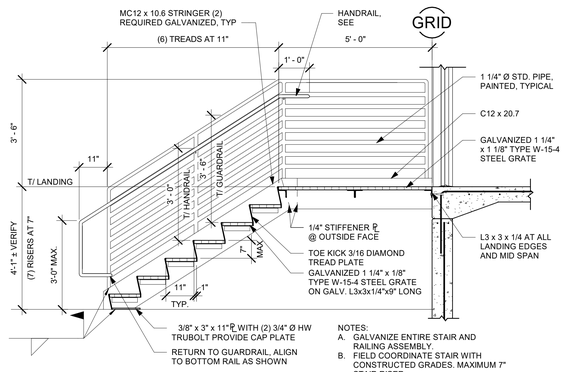


NOTE: STAIRS & GUARD/HANDRAILS ARE DESIGN/BUILD

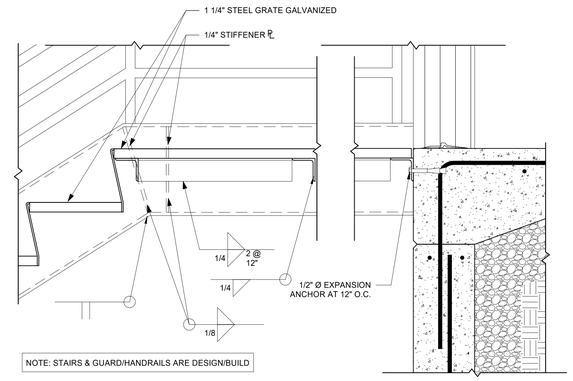
1 A5.12 METAL STAIR PLAN
1/4" = 1'-0"



2 A5.12 METAL STAIR FRAMING PLAN
1/2" = 1'-0"

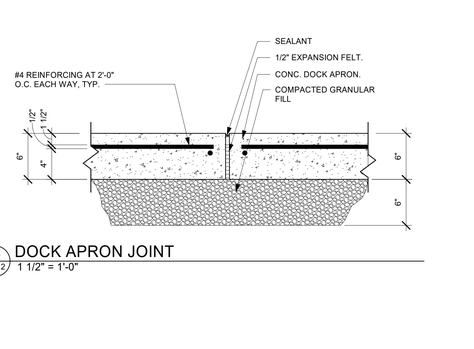


3 A5.12 METAL STAIR SECTION
1/2" = 1'-0"



NOTE: STAIRS & GUARD/HANDRAILS ARE DESIGN/BUILD

4 A5.12 STAIR LANDING SECTION
1 1/2" = 1'-0"



NOTE: STAIRS & GUARD/HANDRAILS ARE DESIGN/BUILD

5 A5.12 TYPICAL HANDRAIL
1 1/2" = 1'-0"

6 A5.12 BOLLARD
3/4" = 1'-0"

7 A5.12 DOCK RETAINING WALL ELEVATION
1/8" = 1'-0"

8 A5.12 RETAINING WALL SECTION
1/2" = 1'-0"

9 A5.12 RETAINING WALL SECTION - LOW
1/2" = 1'-0"

10 A5.12 MOUNTABLE CURB
1 1/2" = 1'-0"

11 A5.12 RETAINING WALL JOINT
3" = 1'-0"

12 A5.12 DOCK APRON AT RETAINING WALL
1" = 1'-0"

13 A5.12 DOCK APRON JOINT
1 1/2" = 1'-0"

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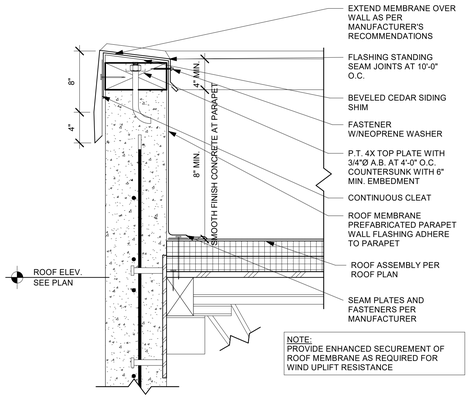
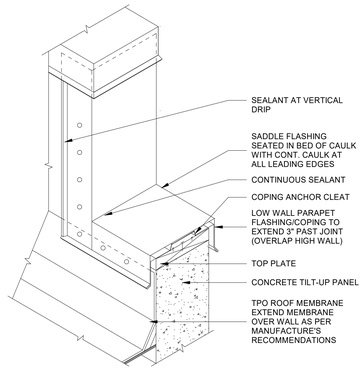
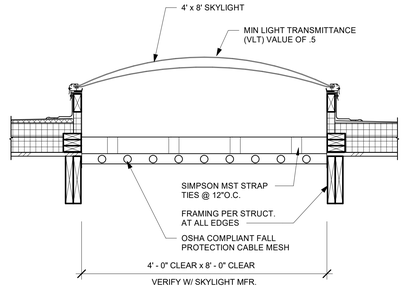


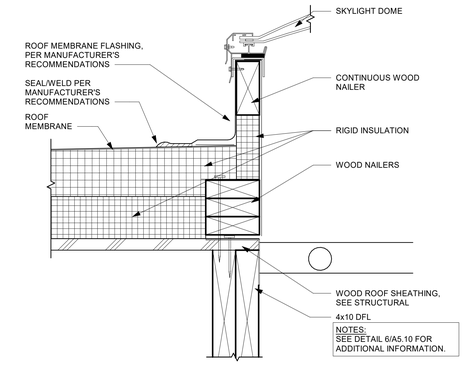
1 A5.13 PARAPET FLASHING
1 1/2" = 1'-0"



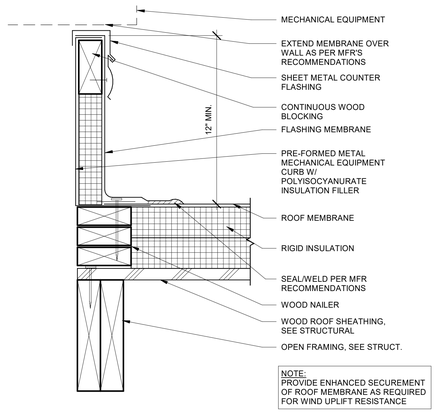
2 A5.13 STEP PARAPET
1 1/2" = 1'-0"



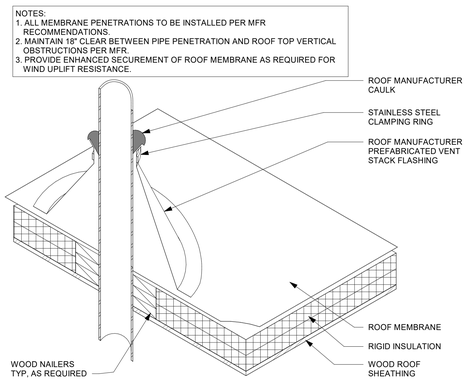
3 A5.13 SKYLIGHT SECTION
1" = 1'-0"



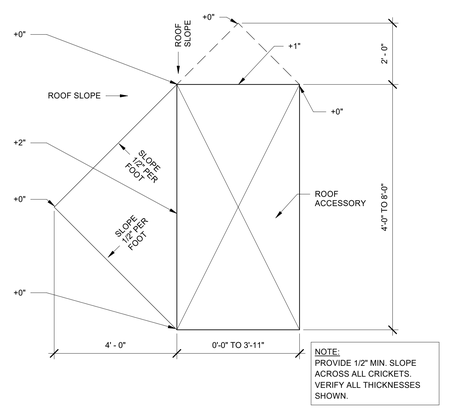
4 A5.13 SKYLIGHT CURB
3" = 1'-0"



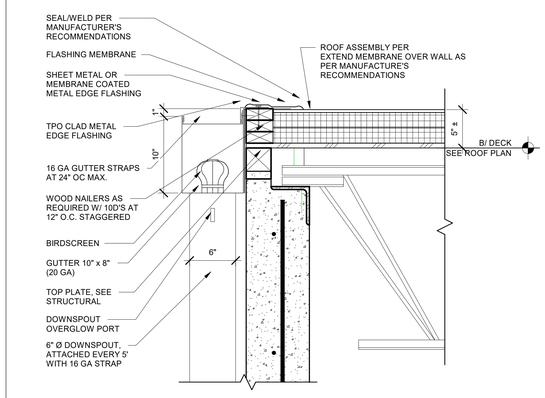
5 A5.13 MECHANICAL CURB
3" = 1'-0"



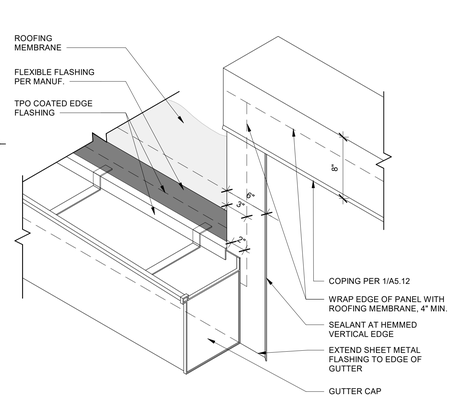
6 A5.13 PIPE FLASHING
1 1/2" = 1'-0"



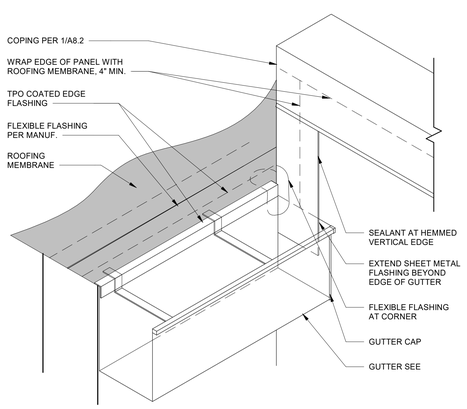
8 A5.13 CRICKET PLAN
1/2" = 1'-0"



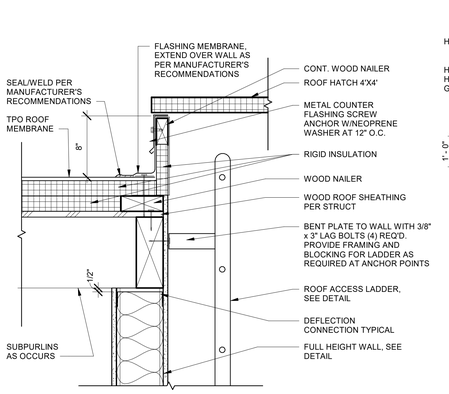
11 A5.13 GUTTER EDGE
1 1/2" = 1'-0"



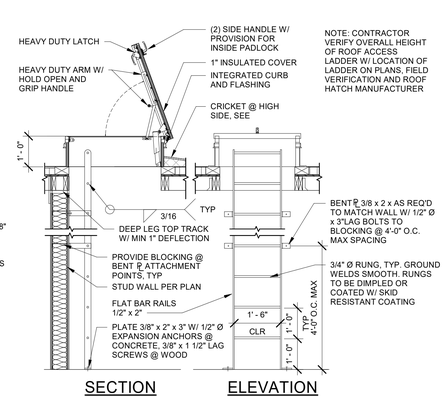
12 A5.13 GUTTER TERMINATION
1 1/2" = 1'-0"



13 A5.13 GUTTER TERMINATION AT PARAPET
1 1/2" = 1'-0"



14 A5.13 ROOF HATCH
1 1/2" = 1'-0"



15 A5.13 ROOF ACCESS LADDER
1/2" = 1'-0"

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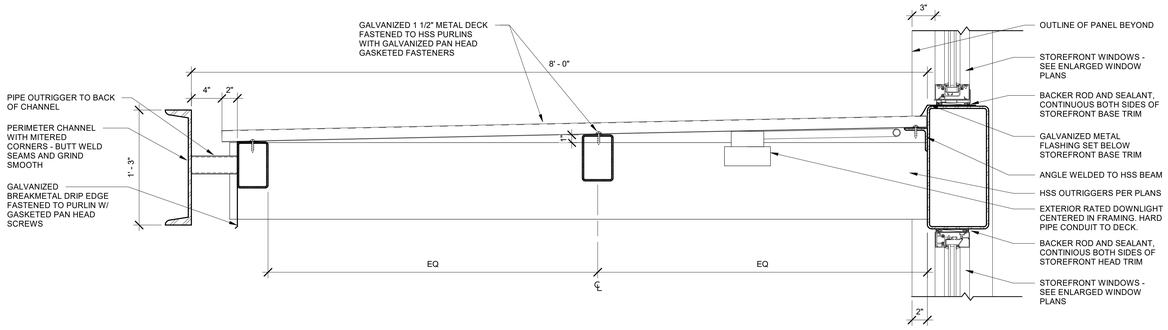
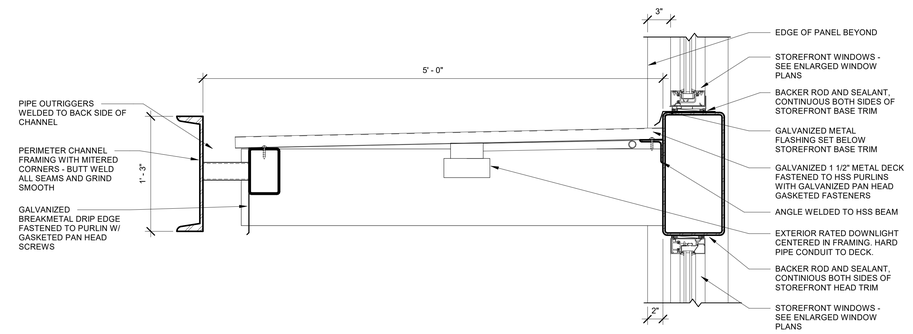
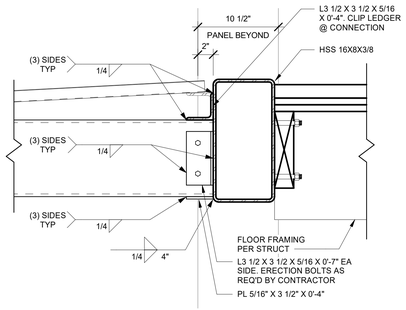


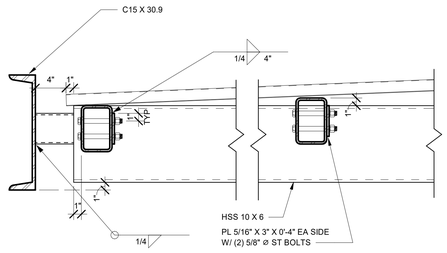
1 A5.14 ENTRY CANOPY SECTION DETAIL - WEST
1 1/2" = 1'-0"



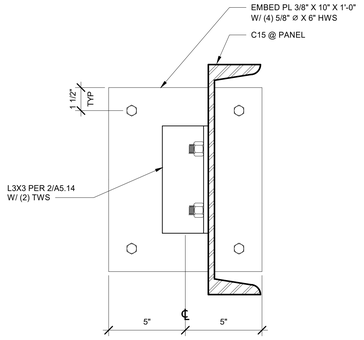
2 A5.14 ENTRY CANOPY SECTION DETAIL - NORTH
1 1/2" = 1'-0"



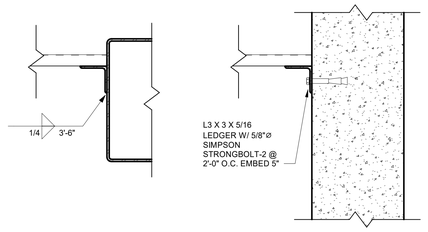
3 A5.14 CANOPY CONNECTION AT FLOOR FRAMING
1 1/2" = 1'-0"



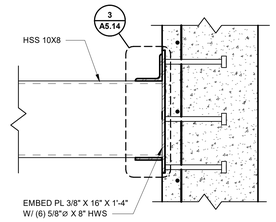
4 A5.14 PRIMARY CANOPY FRAMING
1 1/2" = 1'-0"



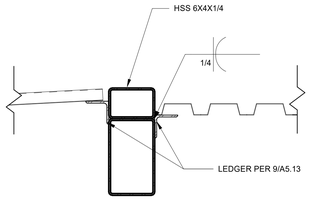
5 A5.14 CHANNEL RETURN AT PANEL EMBED
3" = 1'-0"



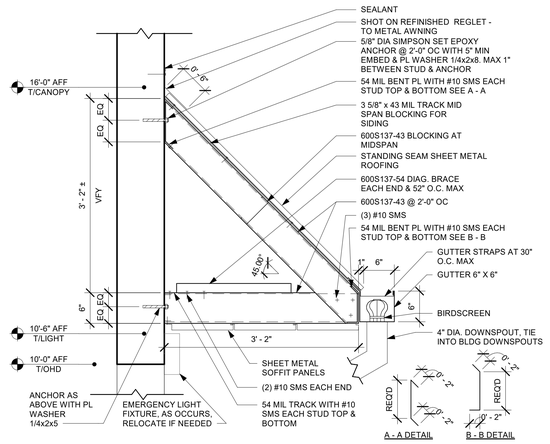
6 A5.14 CANOPY LEDGER
1 1/2" = 1'-0"



7 A5.14 OUTRIGGER AT PANEL EMBED
1 1/2" = 1'-0"



8 A5.14 CANOPY ROOF/DECK TRANSITION
1 1/2" = 1'-0"



9 A5.14 CANOPY ABOVE DOCKS
1" = 1'-0"

Architecture ▪ Interiors
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Vancouver, WA
360.695.7879
Seattle, WA
206.749.9993
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Client

Delta Logistics
9835 SW COMMERCE CIRCLE,
WILSONVILLE, OR 97070

Project

DELTA LOGISTICS
9710 SW DAY RD.
CITY OF WILSONVILLE, OR

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REVISION SCHEDULE

Delta	Issued As	Issue Date

SHEET TITLE:
CANOPY DETAILS

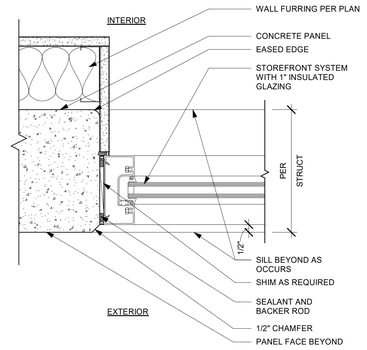
DRAWN BY: Author

CHECKED BY: Checker

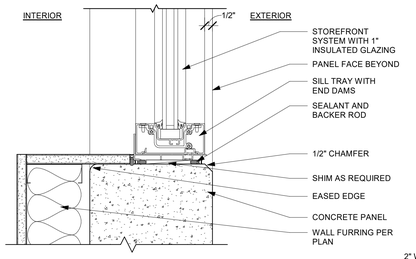
SHEET
A5.14

JOB NO. **2200502.00**

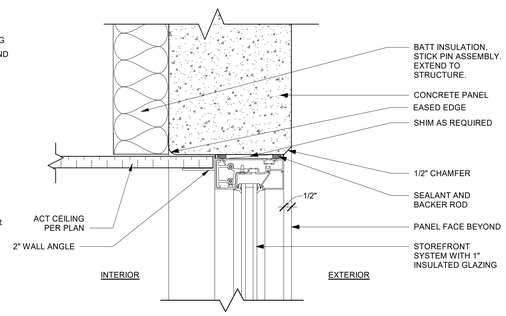
LAND USE RESUBMITTAL 07/26/22



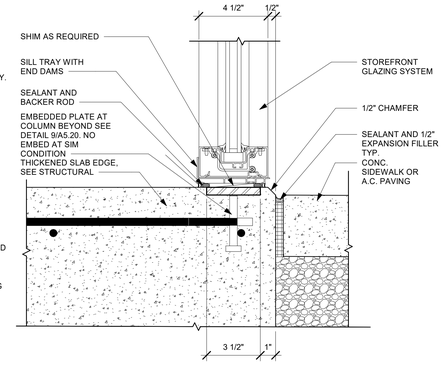
1 WINDOW JAMB
A5.20 — 3" = 1'-0"



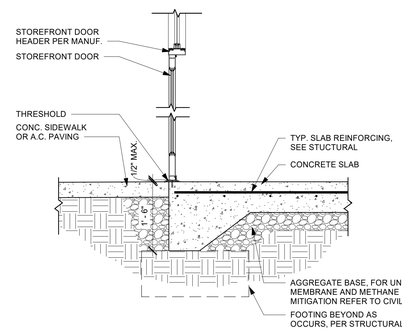
2 WINDOW SILL
A5.20 — 3" = 1'-0"



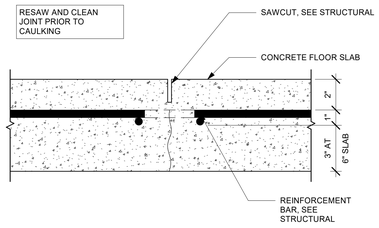
3 WINDOW HEAD
A5.20 — 3" = 1'-0"



4 STOREFRONT SILL
A5.20 — 3" = 1'-0"

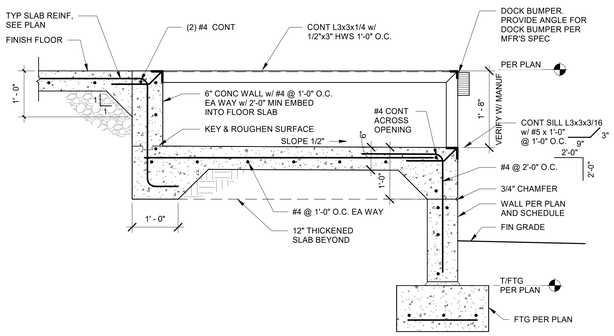


5 TURN-DOWN AT STOREFRONT DOOR
A5.20 — 3/4" = 1'-0"

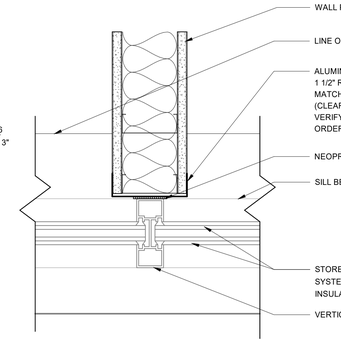


NOTE: FOLLOW ALL MANUFACTURER RECOMMENDATIONS FOR SLAB JOINT PREPARATION AND MATERIAL INSTALLATION.

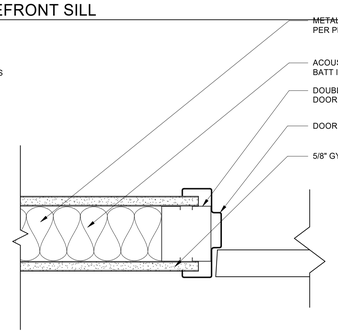
6 CAULKED FLOOR JOINT
A5.20 — 3" = 1'-0"



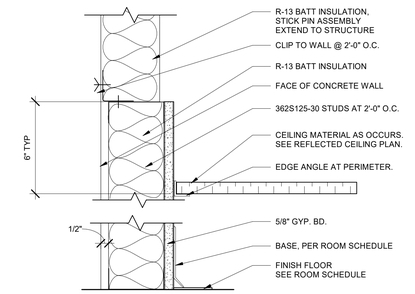
7 DOCK PIT DETAIL
A5.20 — 3/4" = 1'-0"



8 WALL AT EXTERIOR MULLION
A5.20 — 3" = 1'-0"



9 INTERIOR DOOR JAMB
A5.20 — 3" = 1'-0"

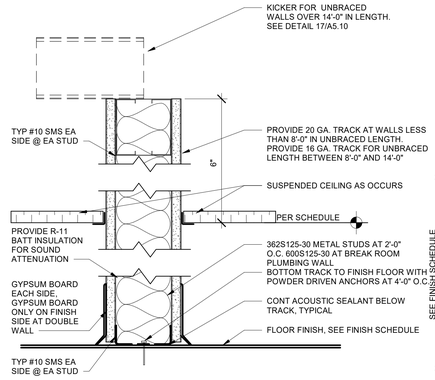


10 FURRING
A5.20 — 3" = 1'-0"

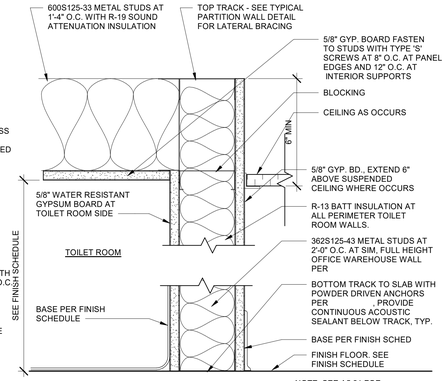
1 HOUR RATED WALL (GA FILE # WP 1200)

11 1-HR FIRE BARRIER
A5.20 — 3" = 1'-0"

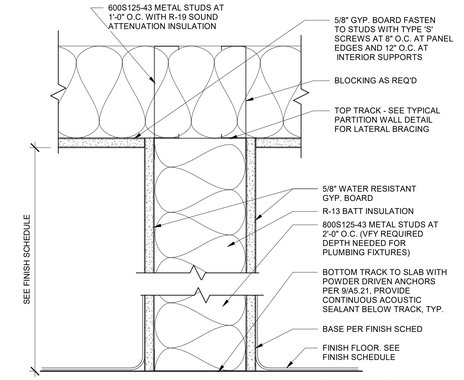
12 FULL HEIGHT SEPARATION WALL
A5.20 — 3" = 1'-0"



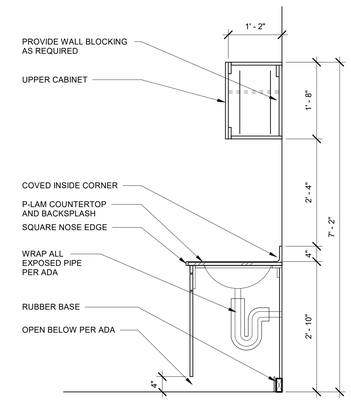
13 THRU-GRID WALL
A5.20 — 3" = 1'-0"



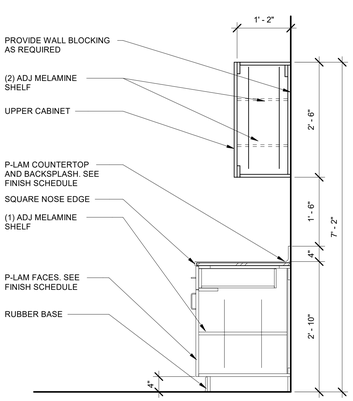
14 TOILET ROOM WALL
A5.20 — 3" = 1'-0"



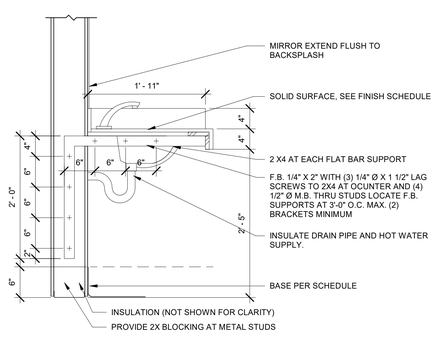
15 PLUMBING WALL
A5.20 — 3" = 1'-0"



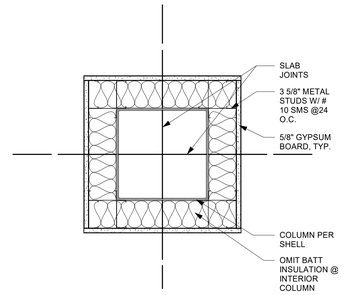
16 CASEWORK SECTION AT SINK
A5.20 — 3/4" = 1'-0"



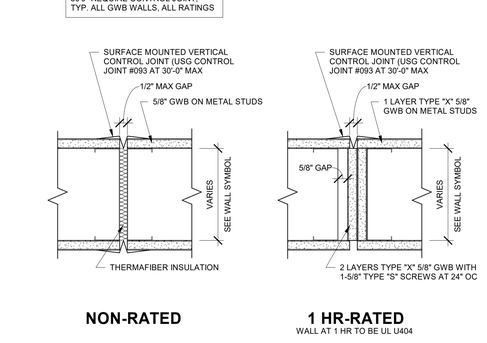
17 CASEWORK SECTION
A5.20 — 3/4" = 1'-0"



18 LAVATORY SECTION
A5.20 — 1" = 1'-0"



19 FURRING AT COLUMN
A5.20 — 1 1/2" = 1'-0"



20 TYPICAL GWB CONTROL JOINT
A5.20 — 3" = 1'-0"

LAND USE RESUBMITTAL 07/26/22

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REVISION SCHEDULE

Delta	Issued As	Issue Date

SHEET TITLE:
STOREFRONT & INTERIOR DETAILS

DRAWN BY: Author

CHECKED BY: Checker

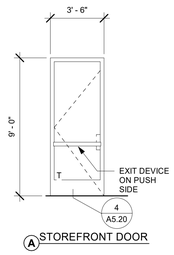
SHEET
A5.20

JOB NO. **2200502.00**

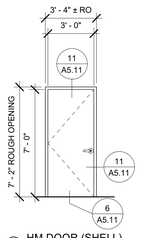
1194

DOOR SCHEDULE

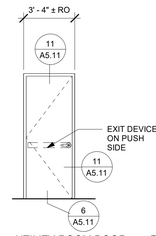
DOOR	To Room: Name	DOOR WIDTH	DOOR HEIGHT	DOOR THK	DOOR TYPE	DOOR MAT'L	DOOR FINISH	FRAME TYPE	FRAME MAT'L	FRAME FINISH	HDWR GROUP	RATING	COMMENTS
001	VESTIBULE	3' - 0"	7' - 0"	1 3/4"	A	AL/GL	GL/FF	SF	AL	FF	H1		
002	STORAGE	3' - 0"	7' - 0"	1 3/4"	F	HM	P	HM	STL	P	H2		
003		12' - 0"	14' - 0"	1 1/2"	G	MANUF	P	-	-	-	-		
004	STORAGE	9' - 0"	10' - 0"	1 1/2"	E	MANUF	P	-	-	-	-		
005	STORAGE	9' - 0"	10' - 0"	1 1/2"	E	MANUF	P	-	-	-	-		
006	STORAGE	9' - 0"	10' - 0"	1 1/2"	E	MANUF	P	-	-	-	-		
007	STORAGE	9' - 0"	10' - 0"	1 1/2"	E	MANUF	P	-	-	-	-		
008	STORAGE	9' - 0"	10' - 0"	1 1/2"	E	MANUF	P	-	-	-	-		
009	STORAGE	9' - 0"	10' - 0"	1 1/2"	E	MANUF	P	-	-	-	-		
010	STORAGE	9' - 0"	10' - 0"	1 1/2"	E	MANUF	P	-	-	-	-		
011	STORAGE	3' - 0"	7' - 0"	1 3/4"	K	SC	S	HM	STL	P	H2		
012	STORAGE	9' - 0"	10' - 0"	1 1/2"	E	MANUF	P	-	-	-	-		
013	STORAGE	9' - 0"	10' - 0"	1 1/2"	E	MANUF	P	-	-	-	-		
014	STORAGE	9' - 0"	10' - 0"	1 1/2"	E	MANUF	P	-	-	-	-		
015	STORAGE	9' - 0"	10' - 0"	1 1/2"	E	MANUF	P	-	-	-	-		
016	STORAGE	9' - 0"	10' - 0"	1 1/2"	E	MANUF	P	-	-	-	-		
017	STORAGE	9' - 0"	10' - 0"	1 1/2"	E	MANUF	P	-	-	-	-		
018	STORAGE	9' - 0"	10' - 0"	1 1/2"	E	MANUF	P	-	-	-	-		
019	STORAGE	9' - 0"	10' - 0"	1 1/2"	E	MANUF	P	-	-	-			
020		12' - 0"	14' - 0"	1 1/2"	G	MANUF	P	-	-	-	-		
021	STORAGE	3' - 0"	7' - 0"	1 3/4"	K	SC	S	HM	STL	P	H2		
022	STORAGE	3' - 0"	7' - 0"	1 3/4"	K	SC	S	HM	STL	P	H2		
023	STORAGE	3' - 0"	7' - 0"	1 3/4"	K	SC	S	HM	STL	P	H2		
024	STORAGE	3' - 0"	7' - 0"	1 3/4"	K	SC	S	HM	STL	P	H2		
025	FIRE PUMP	6' - 0"	7' - 0"	1 3/4"	D	HM	P	HM	STL	P	H4		
026	ELEC.	3' - 0"	7' - 0"	1 3/4"	C	HM	P	HM	STL	P	H3		
027	STORAGE	3' - 0"	7' - 0"	1 3/4"	K	SC	S	HM	STL	P	H2		
100	STAIR	3' - 0"	7' - 0"	1 3/4"	K	SC	S	TIMELY	STL	FF	H6		
101A	OPEN OFFICE	3' - 0"	7' - 0"	1 3/4"	J	SC	S	TIMELY	STL	FF	H6		
101B	OPEN OFFICE	3' - 0"	7' - 0"	1 3/4"	K	SC	S	HM	STL	P	H5		
102	CONFERENCE	3' - 0"	7' - 0"	1 3/4"	J	SC	S	TIMELY	STL	FF	H6		
103	OFFICE	3' - 0"	7' - 0"	1 3/4"	J	SC	S	TIMELY	STL	FF	H5		
104	OFFICE	3' - 0"	7' - 0"	1 3/4"	J	SC	S	TIMELY	STL	FF	H5		
105	BREAK	3' - 0"	7' - 0"	1 3/4"	H	SC	S	TIMELY	STL	FF	H5		
107	MEN'S	3' - 0"	7' - 0"	1 3/4"	H	SC	S	TIMELY	STL	FF	H6		
108	WOMEN'S	3' - 0"	7' - 0"	1 3/4"	H	SC	S	TIMELY	STL	FF	H6		
109	STORAGE	3' - 0"	7' - 0"	1 3/4"	H	SC	S	HM	STL	P	H5		
110	STORAGE	3' - 0"	7' - 0"	1 3/4"	H	SC	S	HM	STL	P	H5		
200A	MEZZANINE	3' - 0"	7' - 0"	1 3/4"	K	SC	S	HM	STL	P	H6		
200B	MEZZANINE	3' - 0"	7' - 0"	1 3/4"	K	SC	S	HM	STL	P	H6		



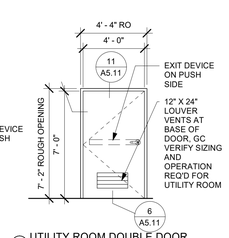
A STOREFRONT DOOR



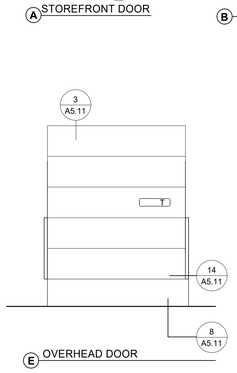
B HM DOOR (SHELL)



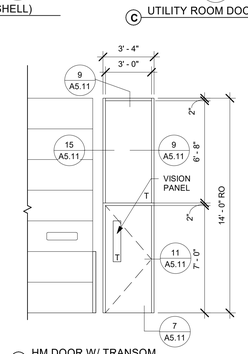
C UTILITY ROOM DOOR



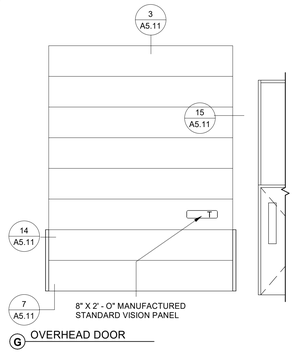
D UTILITY ROOM DOUBLE DOOR



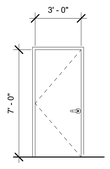
E OVERHEAD DOOR



F HM DOOR W/ TRANSOM

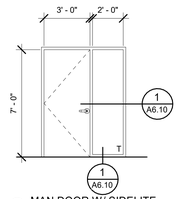


G OVERHEAD DOOR

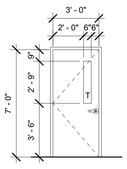


H MAN DOOR

H1 - HOLLOW METAL DOOR

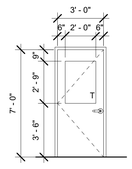


J MAN DOOR W/ SIDELITE



K MAN DOOR W/ VP

C1 - HOLLOW METAL DOOR



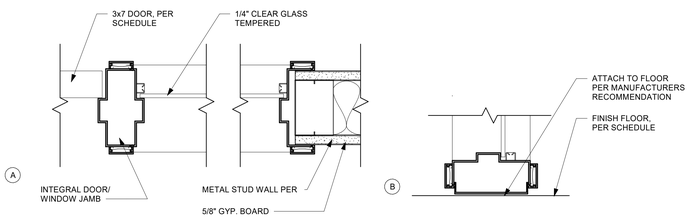
L MAN DOOR W/ HALF-LITE

F1 - HOLLOW METAL DOOR

1 A6.10 DOOR TYPES

1/4" = 1'-0"

T=TEMPERED GLASS



2 A6.10 RELITE DETAIL

3" = 1'-0"

HARDWARE GROUPS

PROVIDE ALL HARDWARE SPECIFICED/REQUIRED TO MAKE DOORS FULLY FUNCTIONAL. COMPLIANT WITH APPLICABLE CODES, AND SECURE TO THE EXTENT SPECIFICED.

H1 - EXTERIOR STOREFRONT DOOR
- CYLINDERS BY HARDWARE SUPPLIER
- BALANCE OF HARDWARE BY STOREFRONT SUPPLIER, SEE SPECIFICATIONS.
- EXIT DEVICE (PUSH/PULL)

H2 - EXTERIOR ACCESS DOORS
- EXIT DEVICE (PUSH/PULL)
- BUTTS
- CLOSER
- LOCK GUARD
- THRESHOLD
- WEATHER STRIPPING
- DOOR DRIP
- DOOR SWEEP

H3 - EXTERIOR UTILITY DOORS
- EXIT DEVICE
- BUTTS
- CLOSER
- LOCK GUARD
- THRESHOLD
- WEATHER STIPPING
- DOOR DRIP
- DOOR SWEEP

H4 - EXTERIOR DOUBLE DOOR (FIRE PUMP ROOM)
- EXIT DEVICE
- MANUAL FLUSH BOLT (INACTIVE LEAF)
- STOREROOM LOCK (ACTIVE LEAF)
- ASTRAGAL
- BUTTS
- CLOSER
- LOCK GUARD
- THRESHOLD
- WEATHER STRIPPING
- DOOR DRIP
- DOOR SWEEP

H5 - PRIVACY

H6 - PASSAGE

FINISH SCHEDULE

ROOM NO	ROOM NAME	FLOOR MAT'L FINISH	BASE MAT'L FINISH	N. WALL MAT'L FINISH	E. WALL MAT'L FINISH	S. WALL MAT'L FINISH	W. WALL MAT'L FINISH	CEILING MAT'L FINISH	COMMENTS
100	VESTIBULE	CPT-1	RB-1	P-1	P-1	P-1	P-1	GYP BD	
100A	STAIR	CPT-2	RB-1	P-1	P-1	P-1	P-1	ACT-1	
101	OPEN OFFICE	CPT-2	RB-1	P-1	P-1	P-1	P-1	ACT-1	
102	CONFERENCE	CPT-2	RB-1	P-1	P-1	P-1	P-1	ACT-1	
103	OFFICE	CPT-2	RB-1	P-1	P-1	P-1	P-1	ACT-1	
104	OFFICE	CPT-2	RB-1	P-1	P-1	P-1	P-1	ACT-1	
105	DATA	LVT-1	RB-1	P-1	P-1	P-1	P-1	ACT-1	
106	BREAK	LVT-1	RB-1	P-1	P-1	P-1	P-1	ACT-1	
107	MEN'S	SV-1	SV-1	P-1	P-1	P-1	P-1	GYP BD	
108	WOMEN'S	SV-1	SV-1	P-1	P-1	P-1	P-1	GYP BD	
109	W/C	SV-1	SV-1	P-1	P-1	P-1	P-1	GYP BD	
110	JAN.	SC	RB-1	P-1	P-1	P-1	P-1	GYP BD	
150	STORAGE	SC	-	-	-	-	-	OTS	
151	ELEC.	SC	-					OTS	
152	FIRE PUMP	SC	-					OTS	
200	MEZZANINE	TBD	TBD	TBD	TBD	TBD	TBD	OTS	

INTERIOR FINISH SCHEDULE

SECTION 033500 - CONCRETE FINISHES
1. SEALED CONCRETE
SC ASHFORD FORMULA, SEE SPECIFICATIONS

SECTION 06400 -WOOD AND PLASTICS

1. PLASTICS
COUNTERTOPS:
PL-1 TBD

VERTICAL FACES:
PL-2 TBD

2. SOLID SURFACE
COUNTERTOPS:
SS-1 TBD

SECTION 09650 - RESILIENT FLOORING

1. SHEET VINYL FLOORING
SV-1 TBD

2. LUXURY VINYL TILE
LVT-1 TBD

3. RUBBER BASE
RB-1 TBD

2. FIBER REINFORCED PANELS
WAINSCOT: TBD

3. WOOD DOORS
WD-1 SPECIES: TBD, FINISH: TBD

SECTION 095100 - ACOUSTIC CEILING

1. SUSPENDED ACOUTICAL CEILING TILE
ACT-1 TBD

NOTE: PROVIDE COVED BASE AT ALL RESILIENT FLOORING AREAS, STRAIGHT BASE AT ALL CUT-PILE CARPET AND CONCRETE AREAS. 4" BASE IN ALL AREAS EXCEPT TOILET ROOMS AND JANITOR CLOSETS, TO RECEIVE 6" COVE BASE.

SECTION 09942 - PAINT

1. INTERIOR PAINT
P-1 TBD
P-2 TBD
P-3 TBD
P-4 TBD
P-5 TBD (HM DOORS)

2. EXTERIOR PAINT
SEE ELEVATIONS

NOTE: USE SATIN/EGGSHELL WASHABLE FINISH AT ALL WALLS, CEILINGS AND SOFFITS TYPICAL. USE SEMI GLOSS FINISH AT ALL TOILET ROOM WALLS AND CEILINGS, TYPICAL.

SECTION 122100 – BLINDS

1. PER SPECIFICATIONS

LAND USE RESUBMITTAL 07/26/22

Item 2.

Architecture ▪ Interiors
Planning ▪ Engineering

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360.695.7879
Seattle, WA
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Client

Delta Logistics
9835 SW COMMERCE CIRCLE, WILSONVILLE, OR 97070

Project

DELTA LOGISTICS
9710 SW DAY RD. CITY OF WILSONVILLE, OR

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REVISION SCHEDULE

Delta	Issued As	Issue Date

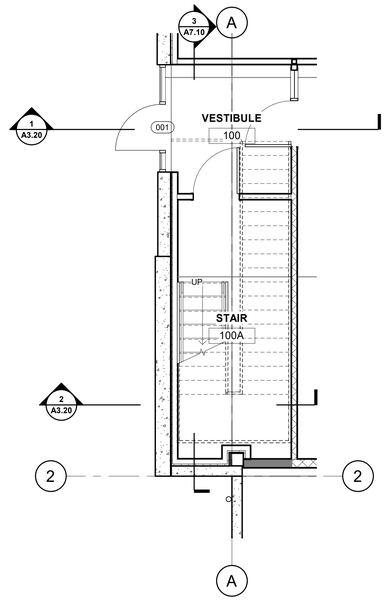
SHEET TITLE:
DOOR & FINISH SCHEDULE

DRAWN BY: Author

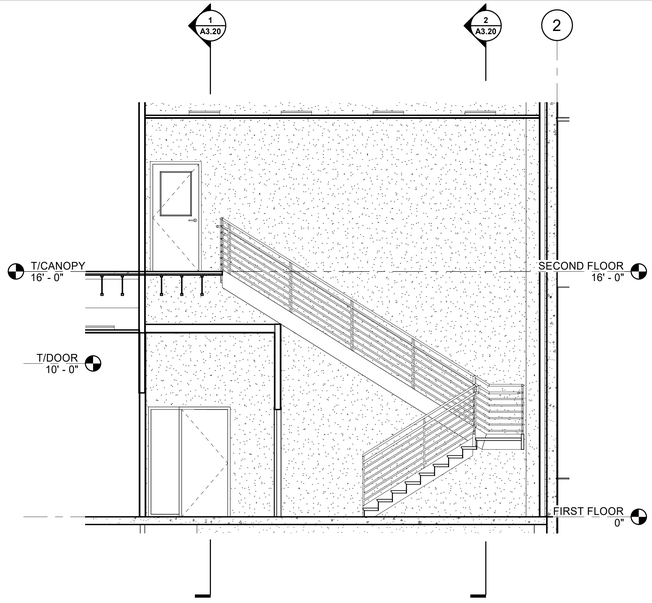
CHECKED BY: Checker

SHEET
A6.10

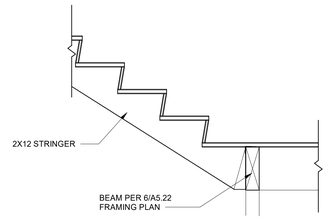
JOB NO. **2200502.00**



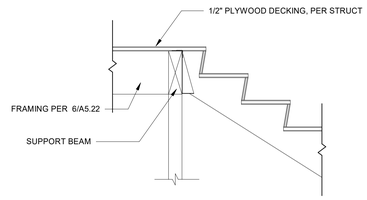
1 A7.10 MAIN STAIR - ENLARGED PLAN
1/4" = 1'-0"



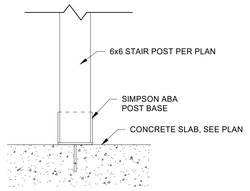
3 A7.10 MAIN STAIR - SECTION
1/4" = 1'-0"



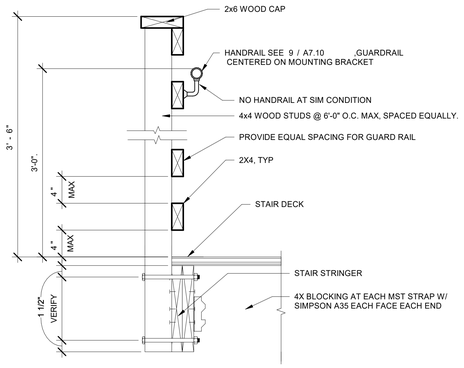
5 A7.10 STAIR AT MID-LANDING
3/4" = 1'-0"



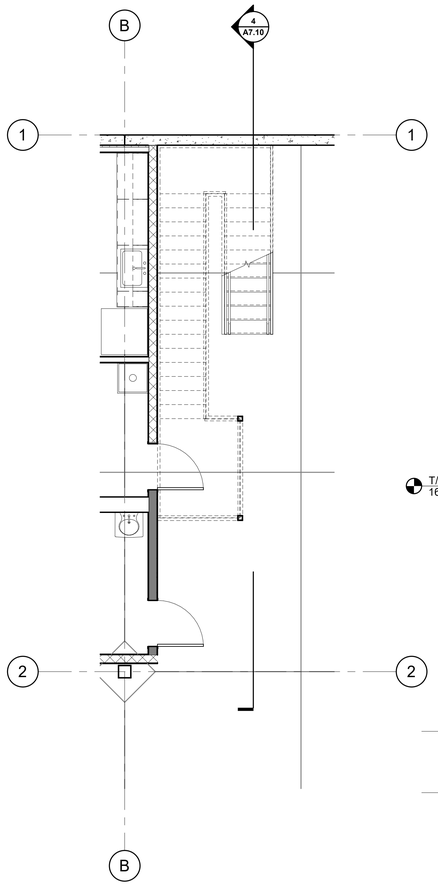
6 A7.10 STAIR AT TOP LANDING
3/4" = 1'-0"



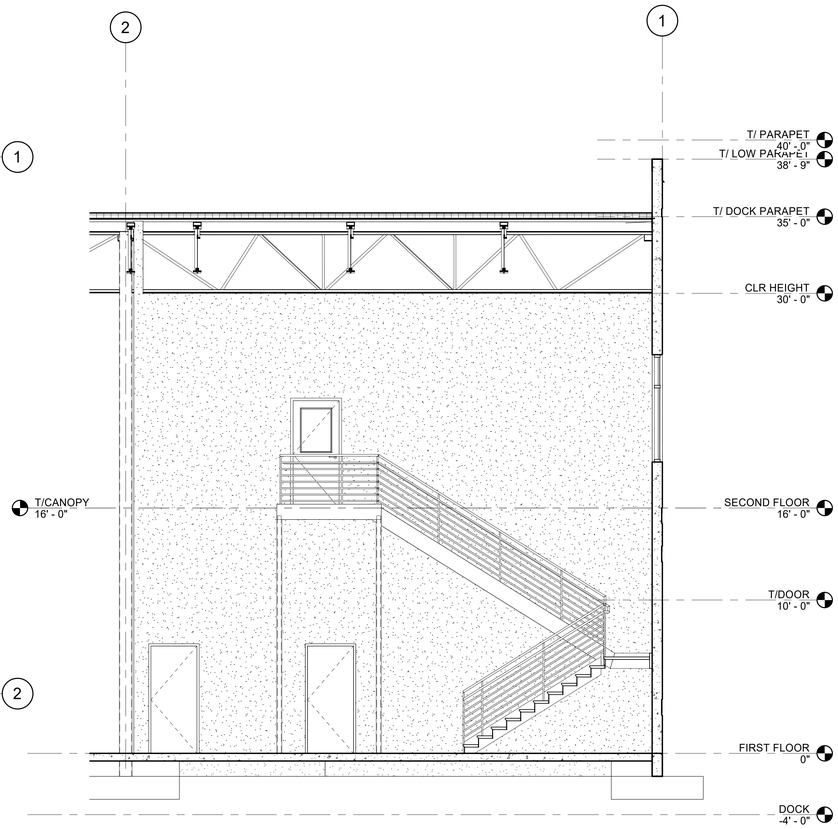
7 A7.10 STAIR POST DETAIL
1 1/2" = 1'-0"



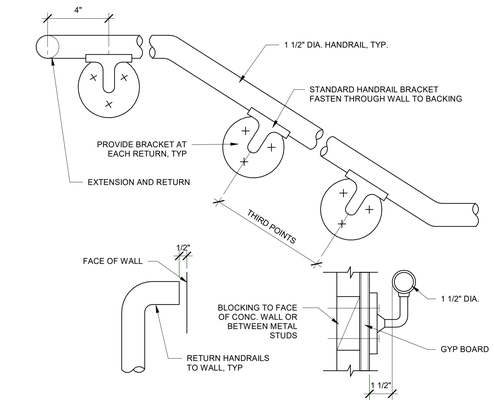
8 A7.10 STAIRWAY GUARDRAIL
1 1/2" = 1'-0"



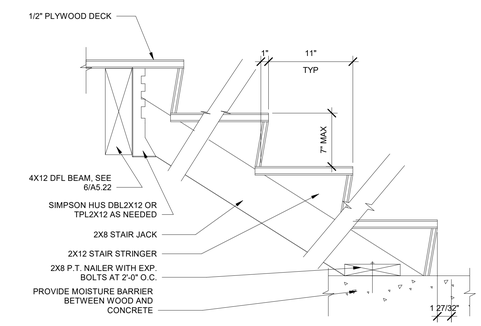
2 A7.10 WAREHOUSE STAIR - ENLARGED PLAN
1/4" = 1'-0"



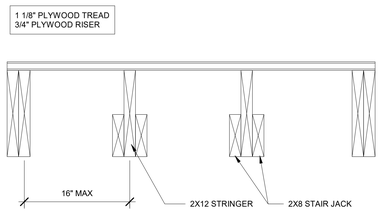
4 A7.10 WAREHOUSE STAIR - SECTION
1/4" = 1'-0"



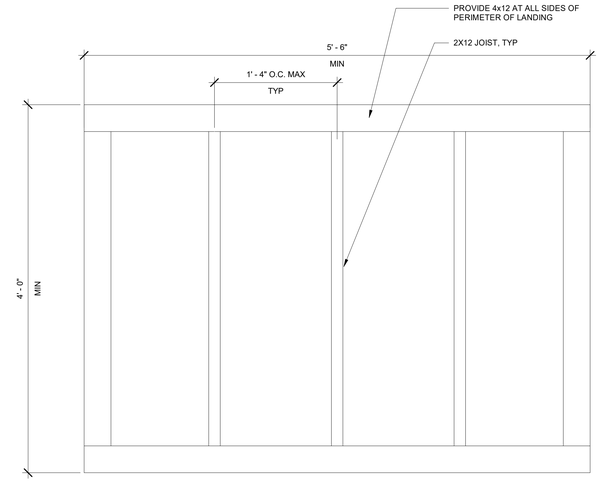
9 A7.10 TYPICAL HANDRAIL
3" = 1'-0"



10 A7.10 TYPICAL STAIR TREAD RISER
1 1/2" = 1'-0"



11 A7.10 TYPICAL STAIR TREAD SECTION
1 1/2" = 1'-0"



12 A7.10 TYPICAL STAIR LANDING FRAME
1 1/2" = 1'-0"

LAND USE RESUBMITTAL 07/26/22

Item 2.

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REVISION SCHEDULE

Delta	Issued As	Issue Date

SHEET TITLE:
STAIR PLANS

DRAWN BY: Author

CHECKED BY: Checker

SHEET

A7.10

JOB NO. **2200502.00**

1196

DEVELOPMENT REVIEW BOARD MEETING
MAY 8, 2023
6:30 PM

Board Member Communications:

3. Results of the April 24, 2023 DRB Panel B meeting

City of Wilsonville

Development Review Board Panel B Meeting
Meeting Results

DATE: **APRIL 24, 2023**
LOCATION: 29799 SW TOWN CENTER LOOP EAST, WILSONVILLE, OR
TIME START: **6:25 P.M.** **TIME END: 6:33 P.M.**

ATTENDANCE LOG

BOARD MEMBERS	STAFF
John Andrews	Daniel Pauly
Justin Brown	Amy Pepper
Alice Galloway	Shelley White

AGENDA RESULTS

AGENDA	ACTIONS
CITIZENS INPUT	None
CONSENT AGENDA	
1. Approval of minutes of the March 27, 2023 DRB Panel B meeting	1. Unanimously accepted as presented.
PUBLIC HEARINGS	None
BOARD MEMBER COMUNICATIONS	
2. Results of the April 10, 2023 DRB Panel A meeting 3. Recent City Council Action Minutes	2. No comments. 3. No comments.
STAFF COMMUNICATIONS	
4. DRB Member Training: Transportation	4. Training conducted after meeting adjournment.

DEVELOPMENT REVIEW BOARD MEETING
MAY 8, 2023
6:30 PM

Board Member Communications:

4. Recent City Council Action Minutes

City Council Meeting Action Minutes
April 3, 2023

COUNCILORS PRESENT
Mayor Fitzgerald
Council President Akervall
Councilor Linville
Councilor Berry
Councilor Dunwell

STAFF PRESENT
Amanda Guile-Hinman, City Attorney
Andrea Villagrana, Human Resource Manager
Andrew Barrett, Capital Projects Eng. Manager
Andy Stone, IT Director
Beth Wolf, Senior Systems Analyst
Bill Evans, Communications & Marketing Manager
Bryan Cosgrove, City Manager
Cindy Luxhoj, Associate Planner
Dan Pauly, Planning Manager
Dwight Brashear, Transit Director
Jeanna Troha, Assistant City Manager
Kelsey Lewis, Grants & Programs Manager
Kimberly Veliz, City Recorder
Zach Weigel, City Engineer

AGENDA ITEM	ACTIONS
WORK SESSION	**START:** 5:04 p.m.
A. Regional Transportation Plan Project List Endorsement	Council was briefed on Resolution No. 3052, which endorses the Wilsonville/Smart Regional Transportation Plan project list and authorizing the Mayor to sign a letter to Metro stating as such.
B. Frog Pond East and South Implementation: Development Code	Council provided input and guidance on the draft Development Code amendments for Frog Pond East and South Implementation.
C. Prohibited Camping Code Update Project	Staff sought additional feedback to inform the draft overnight camping Code being established to put the City in compliance with new state and federal law before July 1. 2023.
D. City Council Retreat Follow Up & Council Goals Confirmation	Council reviewed and provided feedback on draft 2023-2025 City Council Goals.
REGULAR MEETING	
Mayor's Business A. Upcoming Meetings	Upcoming meetings were announced by the Mayor as well as the regional meetings she attended on behalf of the City.
B. Wilsonville Wildcats Week Proclamation	The Mayor read a proclamation declaring April 3-7, 2023 as Wilsonville Wildcats Week.

C. Municipal Court Judge Employment Agreement Amendment	Council moved to approve the contra included in the packet for Wilsonville. Judge Fred Winehouse. Passed 5-0.
D. Council Goals Adoption	Council made a motion to approve the goals as included in the packet and amended in Council discussion during the Work Session. Passed 5-0.
Communications A. Fiber Update	Staff briefed Council on the City's fiber infrastructure being developed for future benefit in conjunction with road development projects, which provide opportunities to underground new cable.
Consent Agenda A. **Resolution No. 3050** A Resolution of the City of Wilsonville Authorizing the City Manager to Execute an Intergovernmental Agreement on Broadband Services and Infrastructure Sharing Between the City of Wilsonville and the City of Sherwood. B. **Resolution No. 3052** A Resolution Of The City Of Wilsonville Endorsing The Wilsonville / Smart Regional Transportation Plan Project List And Authorizing The Mayor To Sign A Letter To Metro Stating As Such. C. Minutes of the March 20, 2023 City Council Meeting.	The Consent Agenda was approved 5-0.
New Business A. **Resolution No. 3053** A Resolution of the City of Wilsonville Authorizing the City Manager to Execute a Real Estate Purchase and Sale Agreement between the West Linn-Wilsonville School District and the City of Wilsonville for the Purchase of Approximately 2.93 Acres for a Neighborhood Park Located in Frog Pond West.	Resolution No. 3053 was approved 5-0.
Continuing Business A. **Ordinance No. 875** An Ordinance of the City of Wilsonville Annexing Approximately 9.63 Acres of Property Located at 25540 SW Garden Acres Road for Development of a Corporate Headquarters/Fabrication Facility and Associated Site Improvements.	Ordinance No. 875 was adopted on second reading by a vote of 5-0.

B. **Ordinance No. 876** An Ordinance of the City of Wilsonville Approving a Zone Map Amendment from the Washington County Future Development - 20 Acre (FD-20) Zone to the Planned Development Industrial - Regionally Significant Industrial Area (PDI-RSIA) Zone on Approximately 9.63 Acres Located at 25540 SW Garden Acres Road for Development of a Corporate Headquarters/Fabrication Facility and Associated Site Improvements.	Ordinance No. 876 was adopted on second reading by a vote of 5-0.
Public Hearing A. None.	
City Manager's Business	Shared the City and TriMet were scheduled to meet on April 14, 2023.
Legal Business	No report.
EXECUTIVE SESSION	Pursuant to: • ORS 192.660(2)(i) Performance Evaluations of Public Officer and Employees
ADJOURN	9:16 p.m.

City Council Meeting Action Minutes
April 17, 2023

COUNCILORS PRESENT
Mayor Fitzgerald
Council President Akervall
Councilor Linville
Councilor Berry
Councilor Dunwell

STAFF PRESENT
Amanda Guile-Hinman, City Attorney
Andrew Barrett, Capital Projects Eng. Manager
Beth Wolf, Senior Systems Analyst
Bill Evans, Communications & Marketing Manager
Bryan Cosgrove, City Manager
Dan Pauly, Planning Manager
Georgia McAlister, Associate Planner
Jeanna Troha, Assistant City Manager
Kimberly Veliz, City Recorder
Matt Lorenzen, Economic Development Manager
Zach Weigel, City Engineer

AGENDA ITEM	ACTIONS
WORK SESSION	**START:** 5:02 p.m.
A. Twist Bioscience	Twist Bioscience staff shared details of the company's recent tenant improvement to their factory in the ParkWorks Industry Center.
B. Second Acquisition of Properties and Property Interests Related to Construction of the Boeckman Road Corridor	Staff presented on Resolution No. 3037, and URA Resolution No. 342. The resolutions authorize acquisition of the second group of properties and property interests related to construction of the Boeckman Road Corridor Project.
C. Prohibited Camping Code Update Project	Staff sought additional feedback to inform the draft overnight camping Code being created to put the City in compliance with new state and federal law before July 1, 2023.
URBAN RENEWAL MEETING	
Consent Agenda A. **URA Resolution No. 342** A Resolution Of The Urban Renewal Agency Of The City Of Wilsonville Authorizing Acquisition Of The Second Group Of Properties And Property Interests Related To Construction Of The Boeckman Road Corridor Project. B. Minutes of the February 23, 2023 Urban Renewal Agency Meeting.	The URA Consent Agenda was approved 5-0.
URA New Business	

URA Continuing Business A. None.	
URA Public Hearing A. None.	
REGULAR MEETING	
Mayor's Business A. State of the City Address B. Upcoming Meetings	Mayor Fitzgerald presented the 2023 State of the City Address. Upcoming meetings were announced by the Mayor as well as the regional meetings she attended on behalf of the City.
Communications A. None.	
Consent Agenda C. **Resolution No. 3037** A Resolution Of The City Of Wilsonville Authorizing Acquisition Of The Second Group Of Properties And Property Interests Related To Construction Of The Boeckman Road Corridor Project. D. Minutes of the April 3, 2023 City Council Meeting.	The Consent Agenda was approved 5-0.
New Business A. Second Amendment To Ground Lease For Raw Water Pipeline	Council approved 5-0.
Continuing Business A. None.	
Public Hearing A. **Ordinance No. 877** An Ordinance Of The City Of Wilsonville Adopting Transportation System Plan Amendments To Integrate Transportation Projects From The Frog Pond East And South Master Plan. B. **Ordinance No. 878** An Ordinance Of The City Of Wilsonville Approving A Street Name Change Of SW Columbine Avenue To SW Ponderosa Avenue In The Frog Pond Ridge Subdivision.	Ordinance No. 877 was adopted on first reading by a vote of 5-0. Ordinance No. 878 was adopted on first reading by a vote of 5-0.

City Manager's Business	No report.
Legal Business	No report.
ADJOURN	8:52 p.m.