



DEVELOPMENT REVIEW BOARD PANEL B AGENDA

January 22, 2024 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/81495007189>

TO PROVIDE PUBLIC TESTIMONY:

Individuals must submit a testimony card online:

<https://www.ci.wilsonville.or.us/DRB-SpeakerCard>

Email testimony regarding Resolution No. 426
to Cindy Luxhoj, AICP, Associate Planner at
luxhoj@ci.wilsonville.or.us
by 2:00 PM on the January 22, 2024.

Email testimony regarding Resolution No. 427
to Georgia McAlister, Associate Planner at
gmcaster@ci.wilsonville.or.us
by 2:00 PM on the January 22, 2024.

CALL TO ORDER

CHAIR'S REMARKS

ROLL CALL

John Andrews	Rachelle Barrett
Megan Chuinard	Alice Galloway
Kamran Mesbah	

CITIZEN INPUT

This is an opportunity for visitors to address the Development Review Board on items not on the agenda. Staff and the Board will make every effort to respond to questions raised during citizens input before tonight's meeting ends or as quickly as possible thereafter.

ELECTION OF 2024 CHAIR AND VICE-CHAIR

Development Review Board Panel B
January 22, 2024

Page 1 of 3

1. Chair
2. Vice-Chair

CONSENT AGENDA

3. Approval of minutes of the September 25, 2023 DRB Panel B meeting

PUBLIC HEARINGS

4. **Resolution No. 426. Canyon Creek Subdivision Tract A Open Space.** The applicant is requesting approval of a Site Design Review of Parks and Open Space in the Canyon Creek Phase 3 Subdivision.

Case File:

DB23-0012 Site Design Review of Tract A Open Space
-Site Design Review of Parks and Open Space (SDR23-0008)

5. **Resolution No. 427. Wilsonville Transit Oriented Development.** The applicant is requesting approval of a Stage I Preliminary Plan, Stage 2 Final Plan, Site Design Review, Type C Tree Removal Plan, Tentative Partition Plat, Master Sign Plan, and Waiver for development of an 121-unit apartment building with retail on the ground floor adjacent to Trimet WES Station and the Wilsonville Transit Center along SW Barber Street just west of Kinsman Road.

Case Files:

DB23-0011 Wilsonville Transit Oriented Development
-Stage 1 Preliminary Plan (STG123-0004)
-Stage 2 Final Plan (STG223-0006)
-Site Design Review (SDR23-0007)
-Type C Tree Removal Plan (TPLN23-0003)
-Tentative Partition Plat (PART23-0002)
-Master Sign Plan (MSP23-0001)
-Waiver (WAIV23-0004)

BOARD MEMBER COMMUNICATIONS

6. Results of the December 11, 2023 DRB Panel A meeting
7. Results of the January 8, 2024 DRB Panel A meeting
8. 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.

Habr  interpretes disponibles para aqu llas personas que no hablan Ingl s, previo acuerdo. Comun quese al 503-682-4960.

DEVELOPMENT REVIEW BOARD MEETING

**MONDAY, JANUARY 22, 2024
6:30 PM**

Consent Agenda:

3. Approval of minutes from the September 25, 2023
DRB Panel B meeting



**DEVELOPMENT REVIEW BOARD PANEL B
MEETING MINUTES**

September 25, 2023 at 6:30 PM

City Hall Council Chambers & Remote Video Conferencing

CALL TO ORDER

A regular meeting of the Development Review Board Panel B was held at City Hall beginning at 6:30 p.m. on Monday, September 25, 2023. Vice Chair Andrews called the meeting to order at 6:30 p.m., followed by roll call.

CHAIR'S REMARKS

ROLL CALL

Present for roll call were: John Andrews, Justin Brown, Megan Chuinard and Alice Galloway. Rachelle Barrett was absent.

Staff present: Daniel Pauly, Amanda Guile-Hinman, Kerry Rappold, Kimberly Rybold, Cindy Luxhoj, Sarah Pearlman, and Shelley White

CITIZEN INPUT

This is an opportunity for visitors to address the Development Review Board (DRB) on items not on the agenda. There were no comments.

CONSENT AGENDA

1. Approval of minutes of July 24, 2023 DRB Panel B meeting

Alice Galloway made a motion to approve the July 24, 2023 DRB Panel B meeting minutes as presented. Megan Chuinard seconded the motion, which passed unanimously.

PUBLIC HEARINGS

2. **Resolution No. 420. Charbonneau Country Club Tennis Building.** The Applicant is requesting approval of a Stage 2 Final Plan and Site Design Review for the addition of a steel frame building over the existing outdoor tennis courts at Charbonneau Country Club.

Case Files:
DB23-0005 Charbonneau Country Club Tennis Building
-Stage 2 Final Plan (STG223-0004)
-Site Design Review (SDR23-0004)

Vice Chair Andrews called the public hearing to order at 6:38 p.m. and read the conduct of hearing format into the record. Vice Chair Andrews and Alice Galloway declared for the record that they had visited the site. No board member, however, declared a conflict of interest, bias, or conclusion from a site visit. No board member participation was challenged by any member of the audience.

Sarah Pearlman, Assistant 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.

Ms. Pearlman presented the Staff report via PowerPoint, briefly noting the site's location and background and reviewing the requested applications with these comments:

- The subject site was zoned Planned Development Commercial (PDC) and surrounding uses included other Commercial uses in the Charbonneau Village Center, the golf course, and residential condominiums.
 - The existing tennis building was approved in 1984 to cover two of the four tennis courts and the Applicant proposed covering the remaining tennis courts with a 14,440 sq ft building to increase usability. The proposed building was designed to look very similar to the existing building.
- Proper noticing was followed for this application. Notice of Public Hearing was mailed to all property owners within 250 ft of the subject property and published in the newspaper. Additional posting was placed on the site and on the City's website.
 - One public comment was received during the comment period from a nearby property owner concerned with the design of the building being akin to a big box store. Staff shared additional clarifying information and photos about the building's design that showed it was designed to look like the existing tennis building. The comment was included as Exhibit D1 of the Staff report.
- The Stage 2 Plan Modification reviewed the function and design of the proposed tennis court building and ensured that the proposal met commercial development standards. The proposed project was consistent with the Commercial designation in the Comprehensive Plan as well as the site's PDC zoning.
- The Site Design Review focused on the design and placement of the proposed tennis building. Appropriate professional services and quality materials were used to design the building. No trees were proposed for removal and no changes to landscaping were proposed.
 - The proposed building was designed to complement the existing tennis building. Key differences included orientation of siding, a slightly darker color for the roof and trim, and steel rather than wood to construct the building.
 - Based on the findings of fact, information included in the Staff report, and information received from a duly-advertised public hearing, Staff recommended the DRB approve with conditions the request for the Charbonneau tennis building addition.

Vice Chair Andrews asked if the two buildings would share a common wall or be independent buildings with separate walls.

Ms. Pearlman replied there would be two independent buildings with separate walls, adding she believed a fire wall was planned potentially between the two buildings.

Daniel Pauly, Planning Manager, noted the Building Code would address whether a firewall was required. If there is not a certain setback, an upgrade would be required.

Vice Chair Andrews confirmed there were no further questions from the Board and called for the Applicant's presentation.

Ben Altman, Pioneer Design Group, 9020 SW Washington Square Drive, Portland, OR, 97223 stated Staff had given a very good description of the project, and the Applicant agreed with Staff's findings and the conditions of approval.

- He emphasized that the proposed building was the same size and shape as the existing building. The only real difference was the proposed building had metal siding rather than wood, a choice that was primarily

economic as metal was the most economical method given the current supply issues. Given the color choices available through the building supplier, they had matched the colors as closely as possible to the existing building.

Alice Galloway asked how the Applicant had addressed the comment that the proposed building would resemble a big box store and if the building would be heated and air-conditioned.

Mr. Altman responded it was fully conditioned, just like the existing building. He noted it was the same size as the existing building, so it was a big box to that extent, but that was what was necessary to have a tennis building; not a lot of detail was provided to change it otherwise. He confirmed the building would have skylights to let in natural light.

Vice Chair Andrews asked if there was a construction schedule.

Mr. Altman replied the Applicant would move as fast as possible. Regarding the storm drainage, the Applicant understood that no impervious cover was being added, the Staff report concluded otherwise so that would be sorted out with Engineering. Otherwise, the building was pretty much designed, the storm drainage just needed to be worked out with City Engineering and then the Applicant would apply for permits.

Vice Chair Andrews 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.

Ms. Galloway asked if the noise factor related to pickle ball being played in an aluminum building had been considered.

Donna Roisom, 7470 SW Downs Post Road, Wilsonville, OR, 97070 replied that in metal buildings, the noise stayed within the building itself. Additionally, ball and paddle technology was always changing. She had played inside numerous metal buildings, as tennis courts were often housed in metal buildings, and pickleball courts often shared those facilities, but noise had not been an issue.

Vice Chair Andrews confirmed there were no additional questions or discussion and closed the public hearing at 6:54 pm.

Alice Galloway moved to adopt the Staff report as presented. Justin Brown seconded the motion, which passed unanimously.

Alice Galloway moved to adopt Resolution No. 420. The motion was seconded by Megan Chuinard and passed unanimously.

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

- 3. Resolution No. 421. 6753 SW Montgomery Way SRIR and SROZ.** The Applicant is requesting approval of an Abbreviated Significant Resource Impact Report (SRIR) and Significant Resource Overlay Zone (SROZ) large lot exception for construction of a residence at 6753 SW Montgomery Way.

Case Files:

DB23-0006 6753 SW Montgomery Way
 -Abbreviated SRIR (SRIR23-0001)
 -SROZ Large Lot Exception (SROZ23-0001)

Vice Chair Andrews called the public hearing to order at 6:59 p.m. and read the conduct of hearing format into the record. Vice Chair Andrews declared for the record that they had visited the site. No board member, however, declared a conflict of interest, bias, or conclusion from a site visit. No board member participation was challenged by any member of the audience.

Cindy Luxhoj, AICP, 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.

Ms. Luxhoj presented the Staff report via PowerPoint, briefly noting the site's location and background and reviewing the requested applications with these comments:

- The subject property was the last undeveloped property in the River Estates II Subdivision (Lot 12). The 2.98-acre site was entirely within the Significant Resource Overlay Zone (SROZ) and the southern part of the property was within the 100-year floodplain. The property was designated 0-1 dwelling unit/acre in the Comprehensive Plan and was in the Future Development Agricultural Holding Zone. Surrounding land uses include residential on all sides.
 - The Applicant proposed building a residence on the property, roughly in the center of the site within the 100-year floodplain. The building site was chosen by the Applicant in consultation with the City to minimize impacts to the SROZ, including tree removal. The approximate area of disturbance within the SROZ needed to build the residence and other site improvements was 12,636 sq ft, or approximately 9.73 percent of the property.
- Proper noticing was followed for the application with notice 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.
 - Two public comments were received during the comment period. The first was from a nearby property owner who wanted to inform the Applicant of the location of their well in relation to the Applicant's property so it was not impacted during construction, and the second was from another nearby property owner who had expressed concerns regarding construction activities, their potential impact on properties in the area, and access to the property in the event of fire. Both comments were included as Exhibits D1 and D2 of the Staff report.
- The application before the DRB included an abbreviated Significant Resource Impact Report (SRIR) and a Significant Resource Overlay Zone (SROZ) Large Lot Exception to construct a residence on a parcel located entirely within the SROZ.
 - Per City Code, construction of a new dwelling was exempt from SROZ ordinance regulations unless the building encroached in the SROZ and its associated impact areas, and impacts to the SROZ were necessary for construction of the proposed residence.
 - Generally, a request to construct a new dwelling on a lot with limited buildable land would be processed as a Class 2 Administrative Review, but because the Applicant had requested a Large Lot Exception and the subject property was eligible due to its size, DRB review was required. However, the DRB's review request was limited to the Abbreviated SRIR and SROZ Large Lot Exception. No other aspects of the application were subject to DRB review. (Slide 5)
- Discussion points related to utilities, services, and tree removal and preservation. The subject property was over 300 linear ft from public sewer and water in SW Rose Lane and was therefore not required to connect to City utilities.
 - The Applicant had proposed to install a well northwest of the residence for water, outlined in red. Also proposed was a private septic drain field with an alternative design to minimize impacts to the SROZ located to the east of the residence, outlined in green. (Slide 6)

- Although DRB review of tree removal was not required for the proposed residence, the arborist's report was included as an exhibit to the Staff report because it was one component of the Abbreviated SRIR.
 - Trees proposed for removal, indicated in red, were limited to the residence, driveway, and septic system development area. Impacts were minimized to the maximum extent possible. Trees highlighted in green were considered high value trees due to their size, species, condition, and position within the tree canopy. As stated in the arborist's report, given the trees' location, it may be possible the project could be designed around preserving those trees.
- A Type B Tree Removal Permit and Mitigation Plan was required and is being reviewed concurrently by Staff. A decision on the Type B Permit would not be issued until after the DRB had reviewed the SRIR and SROZ requests and rendered a decision. (Slide 7)

Kerry Rappold, Natural Resources Manager, provided background on the SROZ, which was adopted in June of 2001 as a way for the City to comply with Goal 5. As a part of that process, a number of resource categories were identified throughout the city, including streams, riparian corridors, wetlands, and wildlife habitats.

- The subject site fell under wildlife habitat. There was a wetland identified adjacent or close to Montgomery Way, but it did not qualify as locally significant wetland, which were protected within the SROZ. It was still considered a jurisdictional wetland and would be regulated by the Oregon Department of State Lands, so if it met the State's permitting threshold, the Applicant would have to get a permit for that driveway access.
- When the SROZ was adopted in 2001, normal provisions were included. There was also an understanding that exemptions might be needed, in terms of existing uses, activities, but also situations such as the subject lot, which was completely encumbered by the SROZ, making it almost unbuildable. It was likely the Large Lot Exception had been created for these lots along Montgomery Way as there was no comparable situation in any other part of the city, so this was the City's second Large Lot Exception, and as mentioned, this was the last lot within the River Estates to be developed.
- Within the SROZ requirements, the two optional steps that had to be followed were the Abbreviated Significant Resource Impact Report and the standard impact report.
 - The standard report was more applicable to larger development projects that required mitigation, more analytical details, and had larger impacts to resources.
 - The Abbreviated was a shortened version of the standard impact report. The process was user-friendly, mostly applicable to single-family dwellings, and Staff shared information with and helped the Applicant through the process, which involved a site development permit application and basic information that had to be identified on the site plan. The Applicant did have the wetlands delineated by Pacific Habitat Services, so there was a boundary for that wetland. The floodplain had also been identified within the property and the tree inventory was also completed.
 - There were a number of exceptions within the City's SROZ requirements and most applicable when developing a lot like the Applicant's was the Large Lot Exception. He stated the subject lot met all the applicable requirements (Slide 10), noting the lot was 100 percent encumbered by the SROZ and the Applicant's site plan showed that all the development on the site, including the driveway, house, septic field, and any area that would create a disturbance on the site was within the 10 percent threshold. The Applicant attempted to reduce their impacts by choosing the subject area for development. He added had walked the building site, and the chosen site had more opening than elsewhere on the site.
 - He noted the lot had been legally created as part of the subdivision process.

Ms. Luxhoj concluded Staff's presentation, stating that based on the findings of fact, information included in the Staff report, and information received from a duly-advertised public hearing, Staff recommended that the DRB Panel B approve with conditions the subject Abbreviated SRIR and SROZ Large Lot Exception for 6753 SW Montgomery Way.

Alice Galloway asked about the responses to the emails received during the public comment period, particularly the response to Danton Mendell who had asked why the property was allowed to be developed after all these years.

Ms. Luxhoj clarified that development was always allowed, but there had not been an applicant able or willing to go through the lengthy process required. She confirmed nothing had changed in terms of climate change or water.

Ms. Galloway noted the other public comment had expressed concern about constructions impacts to their property and emergency vehicle access to the subject property due to the narrow road.

Ms. Luxhoj replied the Applicant would have to comply with normal construction practices, such as timing of construction as far as the times of day, hours, etc. Additionally, the Applicant did receive a review and approval by Tualatin Valley Fire & Rescue. She noted a Y-shaped turnaround for emergency vehicle access on the Site Plan (Slide 3), adding all emergency vehicles would be in that driveway, not sitting on narrow Montgomery Way. The Applicant had chosen this option as opposed to sprinkling the house.

Vice Chair Andrews asked where construction equipment would be situated since the site was not cleared and was full of trees.

Ms. Luxhoj noted the Applicant was limited in how much disturbance they could have to the site overall and deferred to Mr. Rappold for further clarification with regard to construction.

Mr. Rappold replied the City expected to see tree protection fencing on the site, as well as protection for other vegetation and existing conditions, and that would significantly limit the area of disturbance that they would have in terms of traffic, and what they were hauling in and out of the site.

Vice Chair Andrews asked if there would be any oversight to ensure the road was not blocked for long periods of time to ensure other neighbors would be able to access their properties.

Mr. Pauly confirmed there would be an inspector, adding many Public Works Standards would ensure compliance. Construction is temporary and the Applicant had flagging coordinated; otherwise, the road could not be closed.

Ms. Galloway understood the DRB had no control over tree removal but asked who would monitor tree removal.

Ms. Luxhoj responded the Applicant would have to do a Concurrent Type B Tree Removal, which was a Class 2 Administrative Review tree removal permit.

Mr. Pauly added the DRB would get notice of it; however, he had never heard of a Type B Tree Removal permit being denied.

Ms. Luxhoj explained a pending notice would be issued with a 10-day comment period, an administrative decision would be rendered, and then it would go out for a 14-day appeal. She confirmed DRB had the purview to call it up.

Mr. Pauly added protective fencing would be erected, noting Ms. Luxhoj had monitored a similar site to this a few doors down for a similar approval a few years ago, which went fairly smoothly, so Staff had some experience with similar projects.

Vice Chair Andrews asked where the 100-year and 500-year floodplains were located on the site.

Ms. Luxhoj indicated the location of the floodplains on the Site Plan (Slide 3), noting that everything to the south or left of the diagonal line was within the 100-year floodplain, and the 500-year floodplain was to the other side, or everything to the right. She noted the Applicant stated in their materials that the house was sited in the driest part of the property, which was still within the 100-year floodplain, so the City's Building Standards required the Applicant to follow construction practices and the house to be designed to allow water to flow for the 100-year flood should it ever happened. Additionally, the septic system was located in the only location on the site that the County would approve.

Vice Chair Andrews confirmed there were no further questions from the Board and called for the Applicant's presentation.

Joseph Oreste, Applicant, stated Staff's presentation was fantastic and thanked them for all of their time and effort throughout the process. He noted that he would pass the public comments received on to his general contractor and hoped they would be conscientious as to the concerns expressed about disturbance on Montgomery Way and keep the contractors on the property to the best of their ability.

Vice Chair Andrews confirmed there were no questions of the Applicant and no public testimony regarding the application from people present at City Hall and that no one on Zoom indicated they wanted to testify.

Vice Chair Andrews confirmed there were no additional questions or discussion and closed the public hearing at 7:28 pm.

Alice Galloway moved to adopt the Staff report as presented. Megan Chuinard seconded the motion, which passed unanimously.

Alice Galloway moved to adopt Resolution No. 421. The motion was seconded by Justin Brown and passed unanimously.

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

BOARD MEMBER COMMUNICATIONS

4. Results of the August 14, 2023 DRB Panel A meeting

Vice Chair Andrews noted the Bocce ball courts were almost finished at Charbonneau Park.

5. Recent City Council Action Minutes

There were no comments.

STAFF COMMUNICATIONS – None

ADJOURNMENT

The meeting adjourned at 7:32 p.m.

Development Review Board Panel B
September 25, 2023

DEVELOPMENT REVIEW BOARD MEETING

MONDAY, JANUARY 22, 2024
6:30 PM

Public Hearing:

4. **Resolution No. 426. Canyon Creek Subdivision Tract A Open Space.** The applicant is requesting approval of a Site Design Review of Parks and Open Space in the Canyon Creek Phase 3 Subdivision.

Case File:

DB23-0012 Site Design Review of Tract A Open Space
-Site Design Review of Parks and Open Space (SDR23-0008)

**DEVELOPMENT REVIEW BOARD
RESOLUTION NO. 426**

A RESOLUTION ADOPTING FINDINGS AND CONDITIONS OF APPROVAL, APPROVING A SITE DESIGN REVIEW OF PARKS AND OPEN SPACE IN THE CANYON CREEK PHASE 3 SUBDIVISION.

WHEREAS, an application, together with planning exhibits for the above-captioned development, has been submitted by Jennifer Arnold of Emerio Design, LLC – Applicant, on behalf of Scott Miller of Samm-Miller, LLC – Owner, in accordance with the procedures set forth in Section 4.008 of the Wilsonville Code, and

WHEREAS, the subject site is located at 28700 SW Canyon Creek Road South on Tax Lot 6400, Section 13BD, Township 3 South, Range 1 West, Willamette Meridian, City of Wilsonville, Clackamas County, Oregon, and

WHEREAS, the Planning Staff has prepared the staff report on the above-captioned subject dated January 11, 2024, and

WHEREAS, said planning exhibits and staff report were duly considered by the Development Review Board Panel B at a scheduled meeting conducted on January 22, 2024, 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 January 11, 2024, attached hereto as Exhibit A1, with findings and recommendations contained therein, and authorizes the Planning Director to issue permits consistent with said recommendations for:

DB23-0012 Site Design Review of Tract A Open Space: Site Design Review of Parks and Open Space (SDR23-0008).

ADOPTED by the Development Review Board of the City of Wilsonville at a regular meeting thereof this 22nd day of January, 2024, 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)*.

Rachelle Barrett, Acting Chair - Panel B
Wilsonville Development Review Board

Attest:

Shelley White, Planning Administrative Assistant



Exhibit A1
Staff Report
Wilsonville Planning Division
Site Design Review of Tract A Open Space
28700 SW Canyon Creek Road South

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

Hearing Date:	January 22, 2024
Date of Report:	January 11, 2024

Application Nos.:	DB23-0012 Site Design Review of Tract A Open Space - Site Design Review (SDR23-0008)
Request/Summary:	The request before the Development Review Board includes Site Design Review of the required open space in the Canyon Creek Phase 3 Subdivision at 28700 SW Canyon Creek Road South. Improvements include a ramped access pathway from the public street, hard and soft surface pathways within the open space, benches and other furnishings, and landscaping.
Location:	28700 SW Canyon Creek Road South. The property is specifically known as Tax Lot 6400, Section 13BD, Township 3 South, Range 1 West, Willamette Meridian, City of Wilsonville, Clackamas County, Oregon.
Owner:	Samm-Miller, LLC (Contact: Scott Miller)
Applicant:	Emerio Design, LLC (Contact: Jennifer Arnold)
Comprehensive Plan Designation:	Residential 4-5 dwelling units/acre
Zone Map Classification:	Planned Development Residential-3 (PDR-3)
Staff Reviewers:	Cindy Luxhoj AICP, Associate Planner Amy Pepper, PE, Development Engineering Manager Kerry Rappold, Natural Resources Manager
Staff Recommendation:	<u>Approve with conditions</u> the requested Site Design Review.

Applicable Review Criteria:

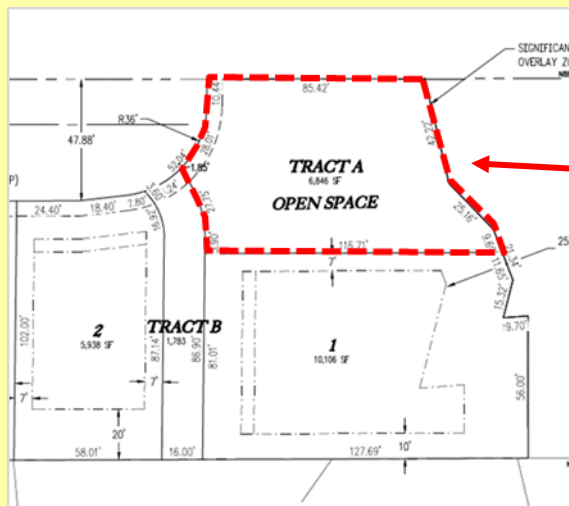
<u>Development Code:</u>	
Section 4.001	Definitions
Section 4.008	Application Procedures-In General
Section 4.009	Who May Initiate Application
Section 4.010	How to Apply
Section 4.011	How Applications are Processed
Section 4.014	Burden of Proof
Section 4.031	Authority of the Development Review Board
Section 4.034	Application Requirements
Subsection 4.035 (.04)	Site Development Permit Application
Subsection 4.035 (.05)	Complete Submittal Requirement
Section 4.110	Zones
Section 4.113	Standards Applying to Residential Development in All Zones
Section 4.118	Standards Applying to Planned Development Zones
Section 4.124	Planned Development Residential (PDR) Zone
Section 4.140	Planned Development Regulations
Section 4.154	On-site Pedestrian Access and Circulation
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 4.199.20 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
<u>Other Planning Documents:</u>	
Wilsonville Comprehensive Plan Previous Land Use Approvals	

Vicinity Map



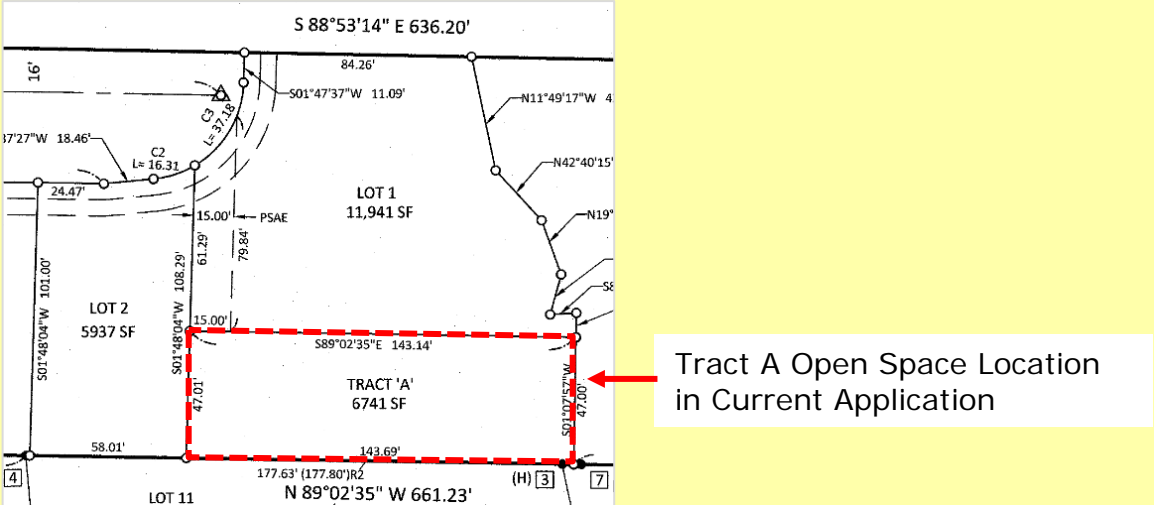
Background:

The Canyon Creek South Subdivision was approved as a five (5)-lot residential development with a required open space area (Tract A) in April 2020, Case File No. DB20-0039 et seq. When the staff report was prepared for the Development Review Board (DRB) public hearing, only the size and general location and shape of the required usable Tract A open space area had been submitted by the applicant, as shown in the illustration below.



Tract A Open Space Location in DB20-0039 et seq

In response to public testimony received and subsequent discussion by the DRB at the hearing, Condition of Approval DRB 1 was added requiring the plans to be updated to swap the location of the Tract A open space with Lot 1, as illustrated below and proposed in the current application.



In addition, as further explained in Finding E1 of the DRB decision for DB20-0039 et seq, although the applicant previously proposed a professionally designed open space meeting the applicable standards for Site Design Review, this late change to the location of Tract A did not provide the applicant’s design team time to complete a professional design of the relocated open space. At that time the DRB was required to make a decision on other related applications, no evidence on the record would prevent a design of the proposed open space area meeting applicable City standards, and certainty existed that such a design could be created. Thus the DRB decision also included Conditions of Approval PDD 14 and PDE 1 specific to the Tract A open space, as follows:

- **PDD 14. Prior to Final Plat Approval:** The applicant shall submit a revised Sheet L1 showing the landscaping plan to match the new shape and square footage of the proposed usable open space area in Tract A. If the project landscape architect changes, the applicant shall submit a new Affidavit of Professional Credentials for Residential Usable Open Space Areas in the City of Wilsonville. For final approval of the revised open space area, the applicant shall return to the Development Review Board for review of the redesigned open space. See Finding D49.
- **PDE 1. Prior to Final Plat Approval:** The applicant shall submit landscape plans meeting applicable design standards and receive DRB approval of the landscape plans for the usable open space (Tract A) and install the approved landscaping unless such landscaping installation is deferred based [on] written agreement with the City.

The current application responds to these specific Conditions of Approval by requesting Site Design Review of the required Tract A open space by the DRB.

Summary:

Site Design Review of Parks and Open Space (SDR23-0008)

Site Design Review focuses on design of the required Tract A open space area, including access, pathways, site furnishings, and landscaping. This request is in direct response to the Conditions of Approval in Case File No. DB20-0039 et seq requiring the applicant to return to DRB for review of the open space area for conformance with the Site Design Review criteria and requirements for open space areas contained in Section 4.113, and final design approval.

Neighborhood and Public Comments:

No public comments were received during the comment period.

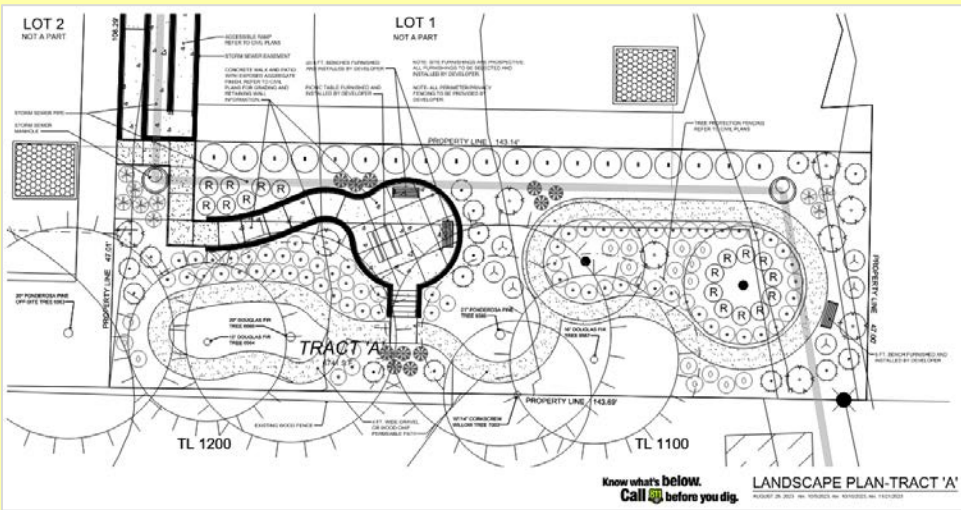
Discussion Points – Verifying Compliance with Standards:

This section provides a discussion of key clear and objective development standards that apply to the proposed application. The Development Review Board will verify compliance of the proposed application with these standards. The ability of the proposed application 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.

Site Design Review of Required Open Space per Conditions of Approval of DB20-0039 et seq

As discussed in the Background section of this staff report, the current application responds to Conditions of Approval of Case File No. DB20-0039 et seq regarding design of the Tract A open space in the Canyon Creek South Subdivision.

As demonstrated in the Findings, the Tract A open space, shown below and in the applicant’s submitted plans (Exhibit B2), has been designed by a registered professional landscape architect and conforms with the Site Design Review criteria for open space in residential subdivisions.



Discussion Points – Discretionary Review:

The Development Review Board may approve or deny items in this section based upon a review of evidence submitted by the applicant. There are no discretionary review requests included as part of the proposed application.

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 the proposed application (DB23-0012) with the following conditions:

Planning Division Conditions:

Request A: Site Design Review (SDR23-0008)

PDA 1.	Ongoing: The Conditions of Approval contained in DB20-0039 et seq, AR23-0005, and TR23-0013 shall continue to apply to this application.
PDA 2.	Ongoing: Construction, site development, and landscaping shall be carried out and maintained in substantial accord with the Development Review Board 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 A6.
PDA 3.	Prior to Final Plat Approval: The applicant/owner shall submit for review and approval by the City Attorney CC&Rs, bylaws, etc. related to the maintenance of Tract A. Such documents shall assure the long-term protection and maintenance of Tract A by the HOA of the subdivision. See Finding A12.
PDA 4.	<p>General: The following requirements for planting of shrubs and ground cover shall be met:</p> <ul style="list-style-type: none"> • 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-inch to 12-inch spread. • Shrubs shall reach their designed size for screening within three (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-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. • Appropriate plant materials shall be installed beneath the canopies of trees and large shrubs to avoid the appearance of bare ground in those locations.

	<ul style="list-style-type: none"> Compost-amended topsoil shall be integrated in all areas to be landscaped, including lawns. See Finding A32.
PDA 5.	General: All trees shall be balled and burlapped and conform in size and grade to “American Standards for Nursery Stock” current edition. See Finding A35.
PDA 6.	Ongoing: Plant materials shall be installed 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 A35.
PDA 7.	Prior to Final Plat Approval: All landscaping and site furnishings required and approved by the Development Review Board for common tracts shall be installed prior to Final Plat Approval 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 Final Plat Approval. "Security" is cash, certified check, time certificates of deposit, assignment of a savings account, an irrevocable letter of credit, 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 installation of the landscaping is not completed within the six (6)-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/owner. See Finding A38.
PDA 8.	Prior to Final Plat Approval: The applicant shall either (1) enter into a Residential Subdivision Development Compliance Agreement with the City that covers installation of the proposed access ramp from the public right-of-way to the Tract A open space area, and site furnishings and landscaping in Tract A or (2) install all Tract A open space and related improvements. See Finding A38.
PDA 9.	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 Development Review Board, pursuant to the applicable sections of Wilsonville’s Development Code. See Finding A39.
PDA 10.	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 Findings A40 and A41.

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 Findings and Conditions:

PFA 1.	<u>Prior to Final Plat Approval:</u> Applicant shall dedicate a public access easement over all portions of the ADA accessible path.
PFA 2.	<u>Prior to Construction of Tract A Open Space Improvements:</u> Applicant shall submit construction drawings showing the proposed improvements, including a landscaping plan for review and approval under the existing Public Works permit.

Master Exhibit List:

Entry of the following exhibits into the public record by the Development Review Board confirms its consideration of the application as submitted. The list below includes exhibits for Planning Case File No. DB23-0012 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)

Materials from Applicant

- B1. **Applicant's Narrative and Materials** – *Available Under Separate Cover*
Signed Application Form
Narrative
- B2. **Applicant's Drawings and Plans** – *Available Under Separate Cover*
- B3. Incompleteness Response Letter Dated October 17, 2023 – *Available Under Separate Cover*

Procedural Statements and Background Information:

1. The statutory 120-day time limit applies to this application. The application was received on September 6, 2023. Staff conducted a completeness review within the statutorily allowed 30-day review period and found the application incomplete on October 5, 2023. The applicant submitted additional materials on October 23, 2023. Staff conducted a second completeness review within the statutorily allowed 30-day review period and found the application to be complete on November 22, 2023. The City must render a final decision for the request, including any appeals, by March 21, 2024.
2. Surrounding land uses are as follows:

Compass Direction	Zone	Existing Use
North	FDA-H	Residential
East	PDR-4	Significant Resource Overlay Zone (SROZ) and Residential
South	PDR-4	Residential
West	PDR-3	Residential

3. Previous Planning Approvals:
 Bridle Trail Ranchetts – Approved prior to City incorporation
 AR20-0032 – Class 2 Administrative Review 2-Lot Partition
 DB20-0039 et seq – Canyon Creek 5-Lot Subdivision
 TR21-0242 – Type C Tree Removal Permit – 16 trees as approved by DB20-0044
 AR23-0005 – Administrative Relief of Setback at 28700 SW Canyon Creek Road South
 TR23-0013 – Type C Tree Removal Permit – one (1) tree additional to those approved by DB20-0044 and TR21-0242
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:

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 by Scott Miller for the property owner, Samm-Miller, LLC, and is signed by the owner's authorized representative and the applicant.

Pre-Application Conference

Subsection 4.010 (.02)

A pre-application conference was held for the Canyon Creek South Subdivision on March 28, 2019 (PA19-0006) in accordance with this subsection. As the current application responds to specific conditions of approval of the previously approved DB20-0039 et seq, a subsequent pre-application conference was not required.

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

Subsections 4.035 (.04) A. and 4.035 (.05)

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

Zoning - Generally

Section 4.110

The proposed development is in conformity with the applicable zoning district and City review uses the general development regulations listed in Sections 4.140 through 4.199.

Request A: Site Design Review of Required Open Space (SDR23-0008)

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

Subsection 4.140 (.01) and (.02)

- A1.** The proposed improvements to the Tract A open space are consistent with the Planned Development Regulations purpose statement and lot qualifications.

Ownership Requirements

Subsection 4.140 (.03)

- A2.** The property owner, Samm-Miller, LLC, represented by Scott Miller, signed the application.

Professional Design Team

Subsection 4.140 (.04)

- A3.** The design was led by credentialed professionals. Brian Lind, Emerio Design, LLC, is the registered professional landscape architect for the project and the same landscape architect who was originally associated with the previously approved Canyon Creek South Subdivision project (DB20-0039 et seq).

Submission Timing in Relation to Stage 1 and Stage 2 Approvals

Subsection 4.140 (.09) A. and I. and Section 4.023

- A4.** The current application is requesting approval of Site Design Review of the required Tract A open space in the previously approved subdivision to fulfill the Conditions of Approval PDD 14 and PDE 1 of Case File No. DB20-0039 et seq. While not within two (2) years of the Stage 1 and Stage 2 approvals, the development has been under construction since it was approved in 2020 and, thus, is vested, including the subject Conditions of Approval for returning to the DRB for review and approval of the Tract A open space design.

Consistency with Plans

Subsection 4.140 (.09) J. 1.

- A5.** The proposed subdivision is consistent with the Residential 4-5 dwelling units/acre designation in the Comprehensive Plan and the site's zoning, Planned Development Residential-3 (PDR-3).

Adherence to Approved Plans

Subsection 4.140 (.09) L.

- A6.** A Condition of Approval will ensure adherence to approved plans unless modified under the proper authority.

Standards Applying to Residential Developments in Any Zone

Open Space Standards within Residential Developments

Subsection 4.113 (.01) A. and B.

- A7.** The Tract A open space is proposed as part of the previously approved Canyon Creek Subdivision, thus this section applies. The purpose and intent of the open space requirements are met through the provision of Tract A, a 6,741-square-foot usable open space area, along with an additional 44,198 square feet of open space located within the Significant Resource Overlay Zone (SROZ). As over half of the subject property is classified as SROZ, well in excess of 25 percent of the property is proposed as open space, substantially exceeding the requirement. The open space has been designed by a registered professional landscape architect and will allow for adequate light, air, open space and usable recreational facilities for residents of the development.

Open Space Area Required, Characteristics and Usable Space

Subsection 4.113 (.01) C. and D.

- A8.** The proposed five-lot subdivision must provide 25% open space, half of which (12.5%) must be located outside of the SROZ and be usable open space programmed for active recreational use. The applicant has provided Tract A to be the usable open space area for the subdivision. The gross development area (GDA) of the site, including Tract A, is 105,727 square feet. After removing the SROZ area of 44,198 square feet, the net buildable area is 53,836 square feet. Twenty-five percent (25%) of the GDA is 13,459 square feet and 12.5% of the site GDA is 6,729 square feet. The revised Tract A open space area shown on the plans is now 6,741 square feet, which meets the minimum usable open space requirement for the proposed subdivision.

Standards Applying to All Planned Development Zones

Waivers

Subsection 4.118 (.03) A. through D.

- A9.** The applicant has not requested any waivers to the standards applying to all planned development zones.

Other Requirements or Restrictions

Subsection 4.118 (.03) E.

- A10.** No additional requirements or restrictions are recommended pursuant to this subsection.

Impact on Development Cost

Subsection 4.118 (.04)

- A11.** In staff's professional opinion, the determination of compliance or attached conditions of approval do not unnecessarily increase the cost of development and no evidence has been submitted to the contrary.

Dedications or Easements for Recreation Facilities, Open Space, Public Utilities Subsection 4.118 (.05)

- A12.** Conditions of Approval require the applicant to dedicate a public access easement over all portions of the ADA accessible path providing access to and within the Tract A open space area, and require adoption of CC&Rs assigning responsibility for maintenance of Tract A to the HOA of the subdivision.

Habitat Friendly Development Practices Subsection 4.118 (.09)

- A13.** Grading will be limited to that needed for the proposed improvements, no significant native vegetation would be retained by an alternative site design, and no impacts on wildlife corridors or fish passages have been identified.

Planned Development Residential (PDR) Zone

Typically Permitted Uses Subsection 4.124 (.01)

- A14.** The applicant is proposing design of an open space area, which is an outright allowed use in the PDR-3 zone.

On-site Pedestrian Access and Circulation

Continuous Pathway System, Vehicle Pathway Separation, Width and Surface Subsection 4.154 (.01) B.1. through B.6.

- A15.** The applicant has proposed a ramped pathway from the public right-of-way providing access to the Tract A open space. The path continues into the open space as a hard surface walkway meeting ADA requirements to a small plaza area with a picnic table and benches. A soft surface path extends in a looped configuration further into the open space area with another bench located near to the SROZ boundary. No changes to pedestrian circulation and access within the subdivision, outside of the Tract A open space, are proposed or required with the current application.

Other Development Standards

Access, Ingress, and Egress Section 4.167

- A16.** Pedestrian access to the subdivision from SW Canyon Creek Road South is provided as part of the development and no changes are proposed to the approved plans for this access.

Natural Features and Other Resources

Section 4.171

A17. Over half of the subdivision property is protected as part of the City's SROZ and its buffer area. In addition, numerous preserved and protected mature trees are located along the south and west boundaries of the site, with six (6) of these trees in the southern part of the Tract A open space. The site slopes from the north and west to the east and south toward the SROZ, necessitating the proposed ramp from the public right-of-way to the Tract A open space to provide safe, ADA accessible access to the area. There are no structures of any historic or cultural designation needing protection, and no overhead powerlines, high voltage powerline easements or rights-of-way, or petroleum pipeline easements on the site.

Outdoor Lighting

Sections 4.199.20 through 4.199.60

A18. A streetlight is proposed in the public right-of-way near the proposed ramp, which will provide lighting for open space users. However, no lighting of the ramp or pathway, or within the Tract A open space area is required or proposed.

Public Safety and Crime Prevention

Design for Public Safety, Surveillance and Access

Subsections 4.175 (.01) and (.03)

A19. No evidence has been presented that the design and function of the Tract A open space will prevent surveillance or encourage crime.

Addressing and Directional Signing

Subsection 4.175 (.02)

A20. No changes to addressing or directional signage are proposed with the current application.

Lighting to Discourage Crime

Subsection 4.175 (.04)

A21. As discussed above, no changes are proposed with the current application to previously approved outdoor lighting and surveillance systems, which are designed and will continue to discourage crime on the site.

Site Design Review

Open Space Requirements Objectives and Design

Subsection 4.400 (.01), 4.400 (.02) and Subsection 4.421 (.03)

A22. The Tract A open space has been professionally designed by a credentialed professional and meets applicable landscape and site design standards. Professional design and meeting the landscape and site design standards ensures the proposed Tract A open space design meets the standards and objectives of Site Design Review. Specifically:

- The proposed picnic table and benches are typical of open space areas, are appropriate for the site function, and are well designed.
- Landscaping is designed appropriately and integrates with the mature preserved trees in the open space area, providing a pleasing environment for users.
- The proposed design of Tract A allows for landscaping requirements to be met while supporting use of the open space for recreation, and creates a visual environment that is compatible with surrounding residential uses.
- Tract A provides recreation for residents of the subdivision, as well as a landscaped buffer between houses in the proposed subdivision and the residential area to the south, thus sustaining the comfort, health and tranquility of the community.
- Installation of landscaping in the open space will provide a pleasing environment for users of the site.
- The proposal will not impact the availability or orderly, efficient and economic provision of public services and facilities, which are available and adequate for the subject property.

Development Review Board Jurisdiction Section 4.420

A23. A Condition of Approval will ensure construction, site development, and landscaping are carried out in substantial accordance with the DRB-approved plans, drawings, sketches, and other documents. No building permits will be granted prior to Development Review Board approval of the Tract A open space design. No variances are requested from site development requirements.

Design Standards Subsection 4.421 (.01) A. through G.

A24. The applicant has provided sufficient information demonstrating compliance with the standards of this subsection as follows:

- **Pursuant to Standard A** (Preservation of Landscape), over half of the subdivision property is protected as part of the City's SROZ and its buffer area. In addition, numerous preserved and protected mature trees are located along the south and west boundaries of the site, with six (6) of these trees in the southern part of the Tract A open space. The trees will be preserved and protected and proposed landscaping within Tract A is proposed to be primarily native trees, shrubs and groundcover to blend with the natural setting of the site.
- **Pursuant to Standard B** (Relation of Proposed Buildings to Environment), the proposed picnic table and benches have been placed in appropriate locations and designed to blend with the environment of the open space area.
- **Pursuant to Standard C** (Drives, Parking, and Circulation), no parking is proposed for the Tract A open space. A ramp provides connection between the open space and the public right-of-way, and both hard and soft surface paths provide circulation within the area for residents of the subdivision.
- **Pursuant to Standard D** (Surface Water Drainage), there is no indication this project

will have a negative impact on surface water drainage.

- **Pursuant to Standard E** (Utility Service), no above ground utility installations are proposed in the Tract A open space and no changes to utility service are included in the current application.
- **Pursuant to Standard F** (Advertising Features), no signs are proposed as part of the current application; therefore, this standard does not apply.
- **Pursuant to Standard G** (Special Features), no special features are proposed for the Tract A open space.

Conditions of Approval

Subsection 4.421 (.05)

A25. The Development Review 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 the Code. In making this determination of compliance and attaching conditions, the DRB is required, however, to consider the effects of this action on the availability and cost of needed housing. No conditions of approval in addition to those already included in this staff report are recommended to ensure the proper and efficient functioning of the proposed improvements.

Color or Materials Requirements

Subsection 4.421 (.06)

A26. The structures proposed in the Tract A open space include a picnic table and benches. These use recycled plastic molded and colored to look like natural wood and black coated metal supports and assembly components. A six (6)-foot-tall sight-obscuring fence is proposed along the southern boundary of the open space area shared with Tax Lot 1100 to the south. The proposed materials reflect and blend with the surrounding environment while creating a unique neighborhood feature for subdivision residents.

Site Design Review Submission Requirements

Submission Requirements

Section 4.440

A27. The applicant has submitted materials in addition to requirements of Section 4.035, as applicable.

Time Limit on Site Design Review Approvals

Time Limit on Approval

Section 4.442

A28. The current application will expire two (2) years after approval, unless a building permit has been issued and substantial development has taken place or an extension is approved in accordance with this section.

Landscaping Standards

Landscaping Standards Purpose

Subsection 4.176 (.01)

A29. Through complying with the various landscape standards in Section 4.176 the applicant has demonstrated that the design of the Tract A open space is in compliance with the landscaping and screening purpose statement.

Landscape Code Compliance

Subsection 4.176 (.02) B.

A30. No waivers or variances to landscape standards have been requested.

Intent and Required Materials

Subsections 4.176 (.02) C.

A31. As shown on the landscape plan (Exhibit B2), the Tract A open space is designed to meet the General Landscaping Standard as appropriate for areas that are generally open. A mix of ground cover, evergreen and deciduous shrubs, and deciduous trees as proposed to be planted. Existing mature trees along the south property boundary are proposed for protection and preservation and the landscape plan shows native plantings and a soft surface path, as appropriate, within the dripline of these trees. A six (6)-foot-tall sight-obscuring wooden fence is proposed along the south property boundary shared with Tax Lot 1100 to provide privacy for and separation from this neighbor.

Shrubs and Groundcover Materials

Subsection 4.176 (.06) A.

A32. Proposed shrubs include longleaf and creeping mahonia, apricot drift and baldhip rose, pink winter currant, evergreen huckleberry, and spring bouquet laurustinus. Groundcover includes western columbine and blue wildrye. A Condition of Approval ensures that the detailed requirements of this subsection are met.

Types of Plant Species

Subsection 4.176 (.06) E.

A33. The applicant has provided sufficient information in their landscape plan showing the proposed landscape design meets the standards of this subsection.

Exceeding Plant Standards

Subsection 4.176 (.06) G.

A34. The selected landscape materials do not violate any height or vision clearance requirements.

Landscape Installation and Maintenance

Subsection 4.176 (.07)

- A35.** 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 (1) growing season, unless appropriate substitute species are approved by the City. A permanent underground irrigation system is proposed as noted on the landscape plan.

Landscape Plan Requirements

Subsection 4.176 (.09)

- A36.** The applicant's landscape plan (Exhibit B2) provides the required information including proposed landscape areas, type, installation size, number and placement of materials and plant material list.

Completion of Landscaping

Subsection 4.176 (.10)

- A37.** The applicant has not requested to defer completion of landscaping.

Installation of Landscaping

Landscape Installation or Bonding

Subsection 4.450 (.01)

- A38.** A Condition of Approval will assure installation or 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. "Security" is cash, certified check, time certificates of deposit, assignment of a savings account, irrevocable letter of credit, 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 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 shall be returned to the applicant. A Condition of Approval further requires that the applicant, prior to Final Plat approval, either (1) enter into a Residential Subdivision Development Compliance Agreement with the City that covers installation of the proposed access ramp from the public right-of-way to the Tract A open space area, and site furnishings and landscaping in Tract A, or (2) install all Tract A open space and related improvements.

Approved Landscape Plan
Subsection 4.450 (.02)

A39. Action by the City approving a proposed landscape plan is binding on the applicant. 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 through a Class 1 or Class 2 Administrative Review or Development Review Board and provide ongoing assurance the criterion is met.

Landscape Maintenance and Watering
Subsection 4.450 (.03)

A40. A Condition of Approval will ensure landscaping is continually maintained in accordance with this subsection.

Modifications of Landscaping
Subsection 4.450 (.04)

A41. A Condition of Approval will provide ongoing assurance that this criterion is met by preventing modification or removal of landscaping without appropriate City review.



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: _____

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:

Name: Jennifer Arnold
Company: Emerio Design, LLC
Mailing Address: 1500 Valley River Dr Suite 100
City, State, Zip: Eugene, OR 97401
Phone: 503-746-8812 Fax: _____
E-mail: jarnold@emeriodesign.com

Authorized Representative:

Name: Jennifer Arnold
Company: Emerio Design, LLC
Mailing Address: 1500 Valley River Dr Suite 100
City, State, Zip: Eugene, OR 97401
Phone: 503-746-8812 Fax: _____
E-mail: jarnold@emeriodesign.com

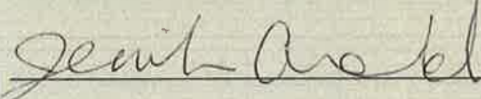
Property Owner:

Name: Scott Miller
Company: Samm-Miller, LLC
Mailing Address: 1327 Jay Court
City, State, Zip: West Linn, OR 97068
Phone: 503-819-3610 Fax: _____
E-mail: samm-miller@comcast.net

Property Owner's Signature:


Printed Name: Scott Miller Date: 3-9-23

Applicant's Signature: (if different from Property Owner)


Printed Name: Jennifer Arnold Date: 3/10/23

Site Location and Description:

Project Address if Available: 28700 SW Canyon Creek Road S. Suite/Unit _____
Project Location: SE end of SW Canyon Creek Road S.
Tax Map #(s): 31W13BD Tax Lot #(s): 6400 County: Washington Clackamas

Request:

Tract A Landscape Plan for DRB review

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 Site Design Review
- Request for Special Meeting Request for Time Extension Signs Stage II Final Plan
- SROZ/SRIR Review Staff Interpretation Stage I Master Plan Variance
- Type C Tree Removal Plan Tree Permit (B or C) Temporary Use Other (describe)
- Villebois SAP Villebois PDP Villebois FDP
- Zone Map Amendment Waiver(s) Conditional Use

Project Name

Prepared for:
Samm Miller LLC
1327 Jay Court
West Linn, OR 97068
Samm-miller@comcast.net

Prepared by:



1500 Valley River Drive, Suite 100
Eugene, OR 97401
503.746.8812
emeriodesign.com

Project Summary

Request:	Application for Site Design Review of Parks and Open Space	
Location and Map Number:	28700 SW Canyon Creek Road South Clackamas County Assessor's Map No. 31W13BD, Tax Lot 6400	
Applicant/Owner:	Samm Miller, LLC 1327 Jay Court West Linn, OR 97068 Phone: 503-819-3610 Email: Samm-miller@comcast.net	
Engineer/Planner:	Emerio Design, LLC 1500 Valley River Drive Suite 100 Eugene, OR 97401 503-746-8812 Engineer: Roy Hankins, PE roy@emeriodesign.com	Planner: Jennifer Arnold jarnold@emeriodesign.com

I. Project Description

The subject property is located at 28700 SW Canyon Creek Road S. The applicant proposes a landscape plan for Tract A. Tract A is an open space tract associated with the Canyon Creek Phase 3 Subdivision approval. As stated in the decision for the Canyon Creek Phase 3 subdivision, the applicant was required to comply with the following conditions of approval:

PDD 14. Prior to Final Plat Approval: The applicant shall submit a revised Sheet L1 showing the landscaping plan to match the new shape and square footage of the proposed usable open space area in Tract A. If the project landscape architect changes, the applicant shall submit a new Affidavit of Professional Credentials for Residential Usable Open Space Areas in the City of Wilsonville. For final approval of the revised open space area, the applicant shall return to the Development Review Board for review of the redesigned open space. See Finding D49.

PDE 1. Prior to Final Plat Approval: The applicant shall submit landscape plans meeting applicable design standards and receive DRB approval of the landscape plans for the usable open space (Tract A) and install the approved landscaping unless such landscaping installation is deferred based written agreement with the City.

The applicant is using the same project Landscape Architect as was originally associated with this project.

The proposed development conforms to all applicable sections of the Wilsonville Development Code and the above conditions of approval. This application provides findings of fact that demonstrate conformance with all applicable standards of the previously mentioned governing regulations. Applicable criteria of the Development Code will appear in *italics* followed by the applicant's responses in **bold** text.

II. Existing Conditions

As its address would suggest, the subject property has frontage on SW Canyon Creek Road S, an existing public road. Elevations on the subject property decrease from the west to the eastern property line. The site is currently under construction for improvements associated with active permit number LEEC21-0009.

North: Future Development Agricultural-Holding (FDA-H) (Map 31W13BD, Lot 6300).

South: Planned Development Residential (PDR) (Map 31W13BD, Lots 1400, 1300, 1200, 1100).

East: Planned Development Residential (PDR) (Map 31W13AC, Lot 9700) City owned open space Tract.

West: Planned Development Residential (PDR) (Map 31W13BD, Lot 3802).

III. Response to Applicable Criteria

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: Existing significant trees along the southern property line are shown to be preserved. The remaining Tract A area has incorporated existing plants and topography into the design to the greatest extent possible.

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: No buildings are proposed for Tract A. Buildings associated with the subdivision approval are on adjacent parcels and not part of the landscape plan of this application. Natural vegetation and topography have been incorporated into the landscape design of Tract A.

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: No vehicular parking or circulation is proposed for Tract A however a pedestrian path is shown from the paved turn-around on lot 1 through Tract A to picnic table and seating area. No buildings or structures are proposed on Tract A, and the proposed plan is not shown to detract from the design from adjacent proposals on neighboring properties. Properties to the east are buffered by city owned open space, properties to the south are buffered by the protection of existing trees, Tract A improvements are shown to be setback from lot 1 (property to the north) by over 11 feet, and the seating area is shown to be on the opposite side of Tract A as the development on lot 2.

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: Special attention has been given to ensure proper site drainage (see submitted landscape plan). A stormwater report has been included with this submittal to address drainage requirements.

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: No above ground utilities or buildings are proposed with this application. Sanitary and stormwater disposal methods were approved with the initial subdivision approval and subsequent approval of the civil construction plans. The criterion does not apply.

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: No advertising features are proposed with this application. The criterion does not apply.

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: The applicant does not propose any exposed storage areas, machinery installations, truck loading areas, utility buildings, or primary or accessory structures. As shown on the landscape plan, screen plantings are proposed in areas where existing screening is insufficient.

(.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.

(.03) The Board shall also be guided by the purpose of Section 4.400, and such objectives shall serve as additional criteria and standards.

(.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.

(.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.

(.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: No structures are proposed for Tract A and no previous approvals with conditions have been imposed for Tract A indicating specific colors or materials of improvements.

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.

(.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.

(...)

Response: This application does not propose any mixed solid waste or recycling areas with the proposed landscape design of Tract A. The criteria of this section do not apply to this application.

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 110 percent of the cost of the landscaping as determined by the Planning Director is filed with the City assuring such installation within six 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: See landscape plan for installation notes as advised by the project's Landscape Architect.

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.

Response: The applicant proposes to utilize the natural topography of Tract A to the greatest extent possible. Grading is generally confined to the area of the pedestrian path and seating area leaving mostly the natural topography for the remainder of the tract. Walls are proposed along the ADA ramp near the public right-of-way and a hand rail is proposed along part of the path and seating area.

B. All grading, filling and excavating done in connection with any development shall be in accordance with the Uniform Building Code.

Response: Civil construction plans were approved earlier this year and construction activities are underway on the subject site. All grading, filing, and excavation needed for the development of the subdivision has already been reviewed for compliance with this section. This application proposes a landscape plan for Tract A and includes minimal additional grading with Tract A improvements. A grading plan for Tract A has been included with this application submittal to demonstrate compliance with the above standard.

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: Existing trees along the southern property line are shown to be preserved which limits grading and development activities. Erosion control measures are in place to ensure protection with adjacent sensitive lands and natural resources. Tract A is not located on a hillside requiring additional slope stabilization.

(.03) Hillsides. All developments proposed on slopes greater than 25 percent 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:

Response: Tract A slope does not exceed 25% and therefore a geologic study is not required for this application.

B. Slope stabilization and re-vegetation plans shall be included as part of the applicant's landscape plans.

Response: This application proposes a landscape plan for the open space Tract A associated with the Canyon Creek Phase 3 subdivision. As part of that review, a tree mitigation plan was submitted and approved. This application does not seek to change that approval. No slope stabilization is proposed with this application.

C. Buildings shall be clustered to reduce alteration of terrain and provide for preservation of natural features.

Response: No buildings are proposed with this application. The criterion does not apply.

D. Creation of building sites through mass pad grading and successive padding or terracing of building sites shall be avoided where feasible.

Response: The grading plans (stormwater areas and lot grading) were approved with the civil construction plans in March of 2023 and no changes to those approvals are proposed with this application. A grading plan has been submitted with this application for Tract A to accommodate the ADA compliant pedestrian path and seating area.

E. Roads shall be of minimum width, with grades consistent with the City's Public Works Standards.

Response: No new roads are proposed with this application. The applicant does not propose any changes to the streets as they were approved on the civil construction plans.

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.

Response: The applicant acknowledges and understands the responsibilities of the developer regarding maintenance.

G. The applicant shall obtain an erosion and sediment control permit from the City's Building and Environmental Services Division's.

Response: The applicant currently has an active erosion and sediment control permit issued by the City's Building and Environmental Services Division (permit # LEEC21-0009).

(.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.

Response: No parking, structures or vehicle circulation are proposed on Tract A. Site development activities are currently underway, but vegetation was not removed prior to approved site development work. Tree protection is in place to save the trees along the southern property line during site development activities.

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.

Response: The grove of trees along the southern property line is shown to be preserved. Tree type, diameter, and location of significant trees is shown on the submitted landscape plan. All significant trees are proposed to be preserved.

3. Existing trees are preserved within any right-of-way when such trees are suitably located, healthy, and when approved grading allows.

Response: Tract A is not adjacent to right-of-way with existing trees; therefore the above criterion does not apply.

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.
2. Providing for drainage and water and air filtration to the roots of trees which will be covered with impermeable surfaces.
3. Requiring, if necessary, the advisory expertise of a registered arborist/horticulturist both during and after site preparation.
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: As shown on the submitted landscape plan, disturbance within the critical root zone of preserved trees is limited to planting native low shrubs (creeping Mahonia) by hand. No compacting activities are proposed within the tree protection area. Planting notes are on the submitted landscape plan regarding the management program for all plants and the plans were prepared by a licensed landscape architect. The project arborist and landscape architect will be available to provide expertise during and after site preparation.

(.05) High Voltage Powerline Easements and Right-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: Although the proposed use of Tract A is nonresidential, Tract A does not have any high voltage powerline easements and is not located adjacent to right-of-way. Additionally, Tract A does not have any petroleum pipeline easements.

(.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: The applicant has an active erosion control permit and is complying with the requirements with that permit approval. As shown on approved civil construction plans, stormwater is managed in an appropriate way using LIDA facilities. Additionally, based on the information from DOGAMI the subject site is not identified to be within an earth movement hazard zone and therefore the above standards do not apply.

(.08) Standards for Soil Hazard Areas:

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.

B. 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: Based on the information from DOGAMI, the subject site is not identified to have soil hazard areas and therefore the above criteria do not apply.

(.09) Historic Protection: Purpose.

A. To preserve structures, sites, objects, and areas within the City of Wilsonville having historic, cultural, or archaeological significance.

Response: No historical resources are identified on the subject site and therefore the criteria of this section do not apply.

4.176. Landscaping, Screening, and Buffering.

(.02) Landscaping and Screening Standards:

A. 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.

B. 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 1,600 square feet shall have two trees if the standard calls for one tree per 800 square feet.

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: As shown on the submitted landscape plan, trees and shrubs are grouped together by plant type and distributed throughout the Tract. Ground cover and low spreading shrubs are shown between the drip line of the significant trees along the southern property line and the proposed pedestrian path. Tract A is shown to be approximately 47 feet by 143 feet and the landscape plan includes the preservation of significant trees along the southern property line, two new trees near the eastern property line, and 77 shrubs of various types and sizes (see landscape plan for details). In addition to the trees and shrubs, the applicant proposes a variety of grasses and perennials distributed throughout the Tract. Bark mulch is proposed within critical root zone areas to avoid tree root disturbance.

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 feet high and 95 percent 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 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: A continuous line of shrubs is shown along the boundary of the property where a tree is not shown to be planted or preserved. Screening is shown along the eastern property line between two new trees and is a mix of groundcover, tall and medium screening, and accent shrubs. For screening along the southern property line, the applicant proposes to preserve the existing trees, and fill the remaining area with tall screening shrubs. Tract A is not located along a street and has existing tree canopy covering a significant portion of the site. The two new trees proposed complete the consistent canopy around the open space. No trees are proposed to be planted within the stormwater pipeline easement.

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 high along the interior side of the landscaped area (see Figure 23: Low Berm Landscaping). If the berm is less than three 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 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 berms are proposed as the applicant proposes to work with the existing topography of the site to the greatest extent possible in conjunction with dense plantings and the creation of an ADA compliant usable space. A continuous line of shrubs is shown along the boundary of the property where a tree is not shown to be planted or preserved. Screening is shown along the eastern property line between two new trees and is a mix of groundcover, tall screening, medium and tall shrubs. For screening along the southern property line, the applicant proposes to preserve the existing trees, plant one tree, and fill the remaining area with tall screening shrubs. Tract A is not located along a street and has existing tree canopy covering a significant portion of the site. The two new trees proposed complete the consistent canopy around the usable open space portion. The applicant has agreed to construct a wooden privacy fence along the rear property line of adjacent tax lot 1100 which shares the southern boundary with Tract A. Exhibit F shows fence material details.

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 feet high and 95 percent 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 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: A continuous line of shrubs is shown along the boundary of the property where a tree is not shown to be planted or preserved. Screening is shown along the eastern property line between two new trees and is a mix of groundcover, tall screening shrubs and tall accent shrubs. For screening along the southern property line, the applicant proposes to preserve the existing trees, plant one tree, and fill the remaining area with screening shrubs. Tract A is not located along a street and has existing tree canopy covering a significant portion of the site. The two new trees proposed complete the consistent canopy around the usable open space portion.

Ground cover is shown between the drip line of the significant trees along the southern property line and the proposed pedestrian path. Tract A is shown to be approximately 47 feet by 143 feet and the landscape plan includes the preservation of significant trees along the southern property line, two new trees near the eastern property line, and 77 shrubs of various types and sizes (see landscape plan for details). Bark mulch is shown in the critical root zone under the existing trees to avoid root disturbance during planting.

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 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 walls are proposed for screening purposes on the site and the applicant does not anticipate needing to screen Tract A from adjacent properties due to noise. Tract A is located in a residential area, and it is not anticipated that noise generated on this open space tract will exceed typical neighborhood sounds. Extensive vegetative screening and landscaping are shown throughout Tract A. See submitted landscape plan which demonstrates compliance with above screening standards.

H. 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 feet high along the interior side of the landscaped area (see Figure 26: High Berm Landscaping). If the berm is less than six 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 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 berms are proposed as the applicant proposes to work with the existing topography of the site in conjunction with dense plantings. A continuous line of shrubs is shown along the boundary of the property where a tree is not shown to be planted or preserved. Screening is shown along the eastern property line between two new trees and is a mix of groundcover, tall screening shrubs and tall accent shrubs. For screening along the southern property line, the applicant proposes to preserve the existing trees, plant one tree, and fill the remaining area with screening shrubs. Tract A is not located along a street and has existing tree canopy covering a significant portion of the site. The two new trees proposed complete the consistent canopy around the usable open space portion.

I. 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 feet high and at least 50 percent 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: The applicant proposes to construct a six feet wooden privacy along the rear property line of adjacent tax lot 1100 which shares the southern boundary with Tract A. This will result in a continuous wooden privacy fence along the southern boundary of Tract A in addition to vegetative screening. See Exhibit F for fence material details as this is a fully sight-obstructing fence. The applicant's submitted landscape plan shows compliance with vegetative screening standards.

J. 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 feet high and 100 percent 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: The applicant proposes to construct a six feet wooden privacy along the rear property line of adjacent tax lot 1100 which shares the southern boundary with Tract A. This will result in a continuous wooden privacy fence along the southern boundary of Tract A in addition to vegetative screening. See Exhibit F for fence material details as this is a fully sight-obstructing fence. The last 25 feet of the proposed fence is proposed to be located within the SROZ buffer area but does not encroach into the SROZ overlay area. The applicant's submitted landscape plan shows compliance with vegetative screening standards.

(.03) Landscape Area. Not less than 15 percent) of the total lot area, shall be landscaped with vegetative plant materials. The ten percent parking area landscaping required by section 4.155.03(B)(1) is included in the 15 percent 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).

(.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.

Response: No parking areas are proposed on Tract A and more than 15% of the site is shown to be landscaped. Landscaping is shown to screen the Tract from adjacent properties and to enhance the experience of community users. The proposed plants provide a variety of heights, textures, and plant types. Tract A is not within a Screening and Buffering Overlay Zone. Per the submitted landscape plan, Tract A is screened from adjacent developments as density varies in the area.

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.

Response: Tract A is zoned PDR-3 and not considered a commercial or industrial area needing buffering/screening. The criterion does not apply.

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.

Response: Tract A does not have any roof or ground mounted, mechanical or utility equipment as no structures are proposed. The above criterion does not apply.

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.

Response: No outdoor storage areas are proposed for Tract A and therefore the above criterion does not apply.

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.

Response: No loading areas, docks or truck parking is proposed for Tract A and therefore the above criterion does not apply.

F. In any zone any fence over six feet high measured from soil surface at the outside of fence line shall require Development Review Board approval.

Response: The applicant proposes to construct a privacy fence along the shared boundary between TL 1100 and Tract A but does not propose the fence exceeding 6 feet in height. The above criterion is met.

(.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 110 percent of the cost of such fence or planting and its installation. (See Sections 4.400 to 4.470 for additional requirements.)

Response: The applicant proposes to construct a six feet wooden privacy along the rear property line of adjacent tax lot 1100 which shares the southern boundary with Tract A. This will result in a continuous wooden privacy fence along the southern boundary of Tract A in addition to vegetative screening. See Exhibit F for fence material details as this is a fully sight-obstructing fence. The applicant proposes to construct the proposed fence prior to installing plant materials and pedestrian path.

(.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 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 ten inches to 12 inches spread.

Response: As shown on the submitted landscape plan, native topsoil is proposed to be preserved and reused where feasible. Additionally, proposed shrubs are shown to be planted from 2 to 3 gallon containers. Groundcover, grasses/perennials are shown to be planted from 1 gallon

containers. Surface bark mulch is proposed in areas throughout Tract A. Sufficient erosion control measures are shown on the approved LEEC21-0009 permit.

2. *Ground cover. Shall be equal to or better than the following depending on the type of plant materials used: gallon containers spaced at four feet on center minimum, four inch pot spaced two feet on center minimum, two one-fourth inch 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 percent of the bare soil in required landscape areas within three years of planting. Where wildflower seeds are designated for use as a ground cover, the City may require annual re-seeding as necessary.*

Response: Groundcover is shown to be planted throughout the site from 1 gallon containers. The proposed spacing is approximately 3 feet to 3.5 feet on-center, depending on location. No bare root plantings are proposed. Ground cover is shown to be planted to provide sufficient cover over bare soil areas. Bark mulch is proposed in areas of existing trees or where no new plants are proposed. Wildflower seeds are not proposed to be distributed to comply with groundcover standards.

3. *Turf or lawn in non-residential developments. Shall not be used to cover more than ten percent 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.*

Response: The submitted landscape plan shows grasses and perennials to be planted in selective areas throughout Tract A but not to exceed 10% of the landscaped area. Fertilizer is only proposed for ground cover, shrubs, and trees per the manufacturer recommendation. Irrigation is proposed for plant maintenance, but no lawn areas are proposed. An irrigation meter is shown on the submitted civil plan sheets to provide the water for the irrigation system.

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.*

Response: The applicant's submitted landscape plan proposes a mix of shrubs, groundcover and bark mulch under large existing trees and larger shrubs proposed to be planted.

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: Proposed plants are a mix of native and low maintenance types. Fertilizer is proposed based on manufacturers recommendations and compost amended topsoil is recommended by the Project's Landscape Architect at the time of planting. Irrigation is proposed to utilize SMART Technology installed by Landscape Contractor to ensure irrigation only in the required months of little to no rain. An irrigation meter is shown on the civil plan sheet included with this application.

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 two inch 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 1¾ inch to 2 inch 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 1¾ inch minimum caliper.*
4. *Large conifer trees such as Douglas Fir or Deodar Cedar shall be installed at a minimum height of eight 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 feet.*

Response: Proposed trees are known to be well-branched and meet the AAN standards. The large existing ponderosa Pine and Douglas Fir trees along the southern property line are shown to be preserved and incorporated into the landscape plan. The applicant proposes two Western Dogwoods (2.00" caliper) on the eastern end of Tract A to complete the canopy and provide additional screening.

C. Where a proposed development includes buildings larger than 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 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 feet; and*
 - ii. *Minimum trunk diameter (caliper) of two inches (measured at four and one-half feet above grade).*
 - b. *Evergreen trees: Minimum height of 12 feet.*

Response: The proposed landscape plan for Tract A does not include any structures. The 5-lot subdivision has been approved and those lots will be individually landscaped. The landscaping for

Tract A has been designed to screen the open space area from the adjacent structures. Tall shrubs and existing significant trees are shown to be as close to the nearest off-site structure (the future home on lot 2).

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—Three inches minimum caliper*
 - b. *Collector streets—Two inches minimum caliper.*
 - c. *Local streets or residential private access drives—1¾ inches minimum caliper.*
 - d. *Accent or median tree—1¾ inches minimum caliper.*

Response: Tract A is not located adjacent to public right-of-way. The approved 5-lot subdivision has a condition to comply with street tree standards and the applicant does not propose to modify compliance with those conditions of approval.

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 Macrophyllum (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 (PinOak), Tilia americana (American Linden).*
 - b. *Trees under 50 feet mature height: Acer rubrum (Red Sunset Maple), Cornus nuttallii (Native Pacific 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: Tract A is not located adjacent to public right-of-way. The approved 5-lot subdivision has a condition to comply with street tree standards and the applicant does not propose to modify

compliance with those conditions of approval. Tract A is the open space tract associated with the approved subdivision.

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: Existing significant trees located along the southern property line are shown to be preserved and incorporated into the landscape plan for Tract A. Many of the proposed plants are native species and others have been chosen due to their tolerance to drought and hardness in low temps. All proposed plants are low maintenance, and the submitted landscape plan includes a maintenance schedule, guarantee, and average water demand per plant type.

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 growing season of notice.*

Response: The applicant understands the tree credit policy and the owner's responsibilities as outlined above.

G. Exceeding Standards. Landscape materials that exceed the minimum standards of this Section are encouraged, provided that height and vision clearance requirements are met.

Response: The applicant has proposed landscaping throughout Tract A to provide an inviting space for community users. The landscape area appears to exceed minimum standards but does not conflict with vision clearance requirements.

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: The applicant understands their burden of proof.

(.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.

Response: As noted on the landscape plan, planting instructions by plant unit are provided along with a guarantee that plants will survive for two full growing seasons or two years (whichever is longer).

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.

Response: As noted on the landscape plan, maintenance of plants is included. It is the advice of the project Landscape Architect that maintenance of plants be done immediately after each tree is planted, protect, and maintain plantings for a period of 60-days after acceptance and then ongoing maintenance to occur as needed.

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.*

Response: Irrigation is included with the proposal for Tract A and an irrigation meter is shown on the submitted plan. The submitted landscape plan includes irrigation notes to demonstrate compliance with the above criteria.

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: Included on the landscape plan Planting Notes, is a statement plants are to be protected for a period of 60-days after acceptance and then ongoing maintenance and protection to occur as needed.

(.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.

(.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 (\pm two inches per week): small convoluted lawns, lawns under existing trees, annual and perennial flower beds, and temperamental shrubs;

Response: Tract A is not considered a corner lot. The submitted landscape plan includes all landscaping areas within the open space tract to demonstrate compliance with the conditions of approval for the subdivision. Irrigation is proposed for Tract A using SMART technology to ensure proper watering as needed without being excessive.

B. Moderate water usage areas (\pm one inch per week): large lawn areas, average water-using shrubs, and trees;

Response: The applicant does not propose any large lawn areas on Tract A and all plants will be watered by permanent irrigation using SMART technology. It is anticipated that once plants are established, regular watering will be done as needed. Water demand per plant type is listed on the submitted landscape plan.

C. Low water usage areas (Less than one inch per week, or gallons per hour): seeded fieldgrass, swales, native plantings, drought-tolerant shrubs, and ornamental grasses or drip irrigated areas.

Response: It is anticipated that once plants are established, the water demands will be low. Many of the plants proposed for Tract A are native and/or drought tolerant.

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: The applicant proposes to plant started plants ranging from 1 gallon to 2 gallon sizes. The applicant does not propose any temporary plantings or irrigation and does not propose aquatic plants.

(.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.

(.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.

(.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.

Response: As associated with the subdivision approval, the applicant was conditioned to mitigate tree removal and remove invasive plants within Tract B. The applicant does not propose any modifications to the subdivision approval. This application for the landscaping on Tract A is required per the subdivision conditions of approval. No street trees are proposed on Tract A. Existing vegetation is proposed to be incorporated into the landscape design to the greatest extent possible. The eastern boundary of Tract A is the western boundary of the Significant Resource Overlay Zone (SROZ). The SROZ requires a 25 foot setback from that line which encroaches into the landscape area of Tract A. The applicant proposes to remove invasive species within the SROZ buffer area and mitigate by planting native shrubs and ground cover in this area.

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.

Response: See submitted landscape plan for compliance with this standard.

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.

Response: See submitted landscape plan for compliance with this standard.

C. Installation. Install native plants unsuitable 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.

Response: See submitted landscape plan for compliance with this standard.

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.

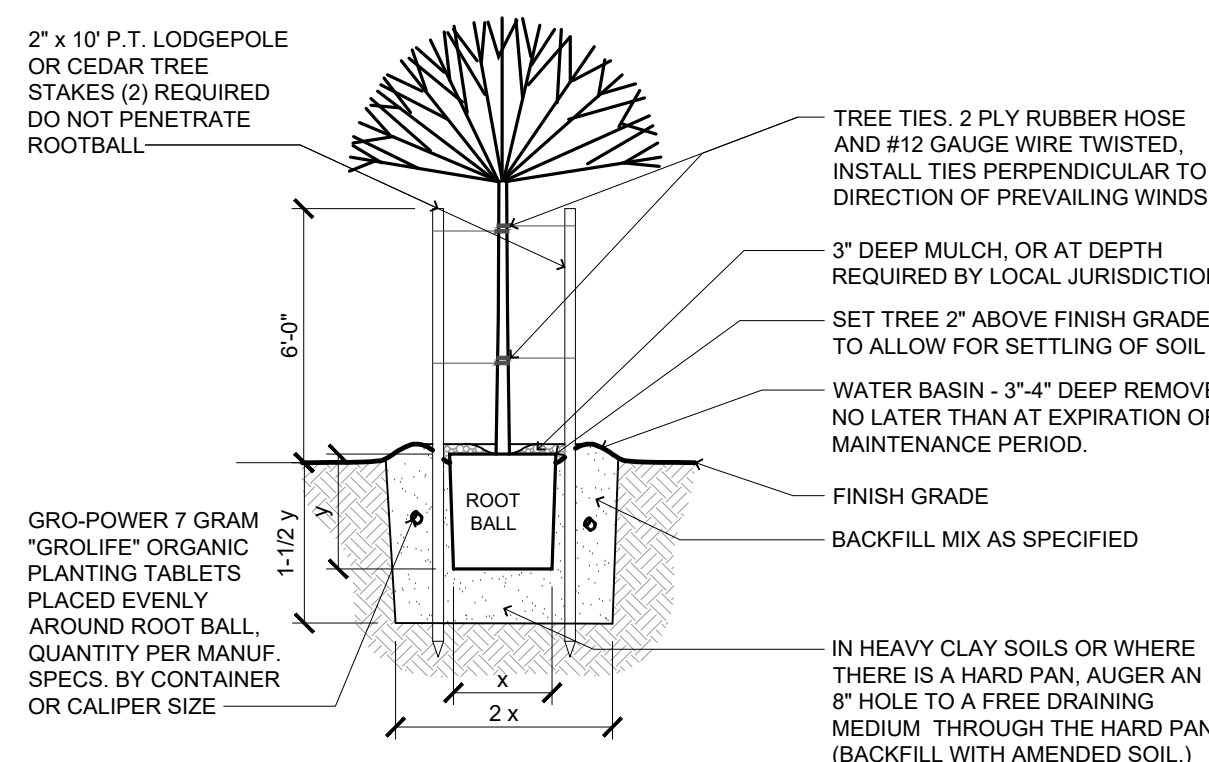
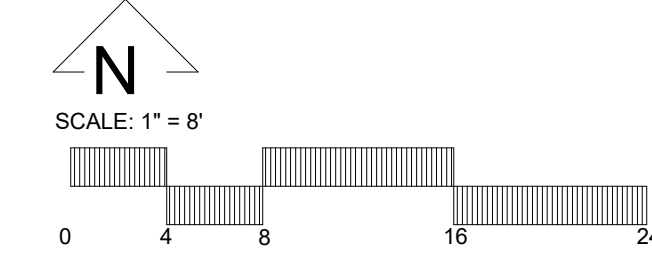
Response: See submitted landscape plan for compliance with this standard. A permanent irrigation system is proposed to be installed for the landscaping of Tract A. A ¾ inch irrigation meter is proposed to serve Tract A.

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.

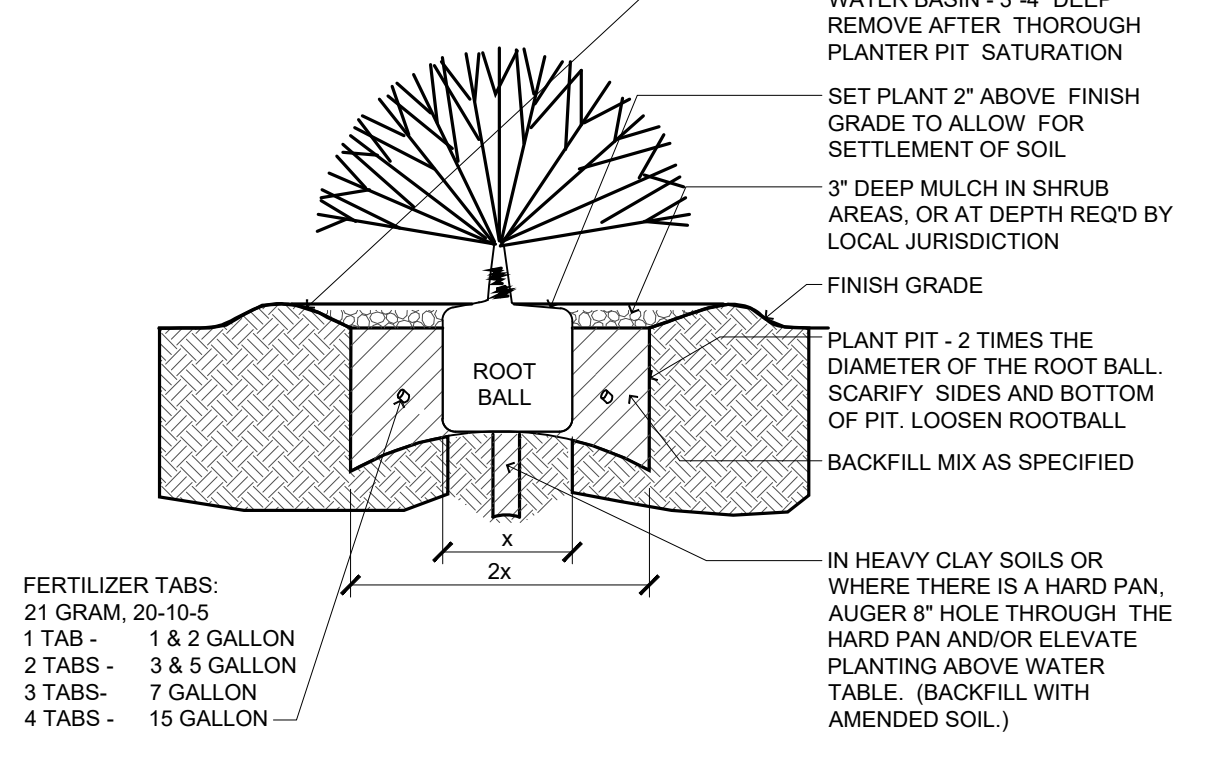
Response: The applicant understands the responsibilities of monitoring and reporting of native landscaped areas.

IV. Conclusion

This application narrative and accompanying plan set demonstrate that all applicable provisions of the Wilsonville Community Development Code are satisfied.



1 TREE PLANTING (SECTION) SCALE: NOT TO SCALE



2 SHRUB/GROUNDCOVER PLANTING (SECTION) SCALE: NOT TO SCALE

PLANTING SCHEDULE

Table with columns: SYMBOL, QUANTITY, BOTANICAL NAME, COMMON NAME, SIZE, TYPE, REMARKS, WATER DEMAND. Lists plants like Cornus nuttallii, Mahonia nervosa, and Aquilegia formosa.

PLANTING NOTES

Plant material: All plant material shall be nursery grown under climatic conditions similar to or harder than those at the site.

Trees: All trees shall be healthy grown nursery stock, be a minimum of 2" caliper at 6 inches above ground level, and be at least 8-10 feet high conforming in size and grade with the standard for nursery stock ANSI Z60.1-1990 1990 ed.

Topsoil: Backfill for planting holes to be 2/3 topsoil, 1/3 textural soil amendment. Shrub beds to have 6" of topsoil and 2" of textural soil amendment.

Fertilizer: 10-15-10 slow release on shrubs, trees, and groundcovers. All plants to receive applications of fertilizer according to manufacturer's recommendation.

Mulch: Minimum 2" layer of medium grind, well-rotted bark mulch or commercial compost.

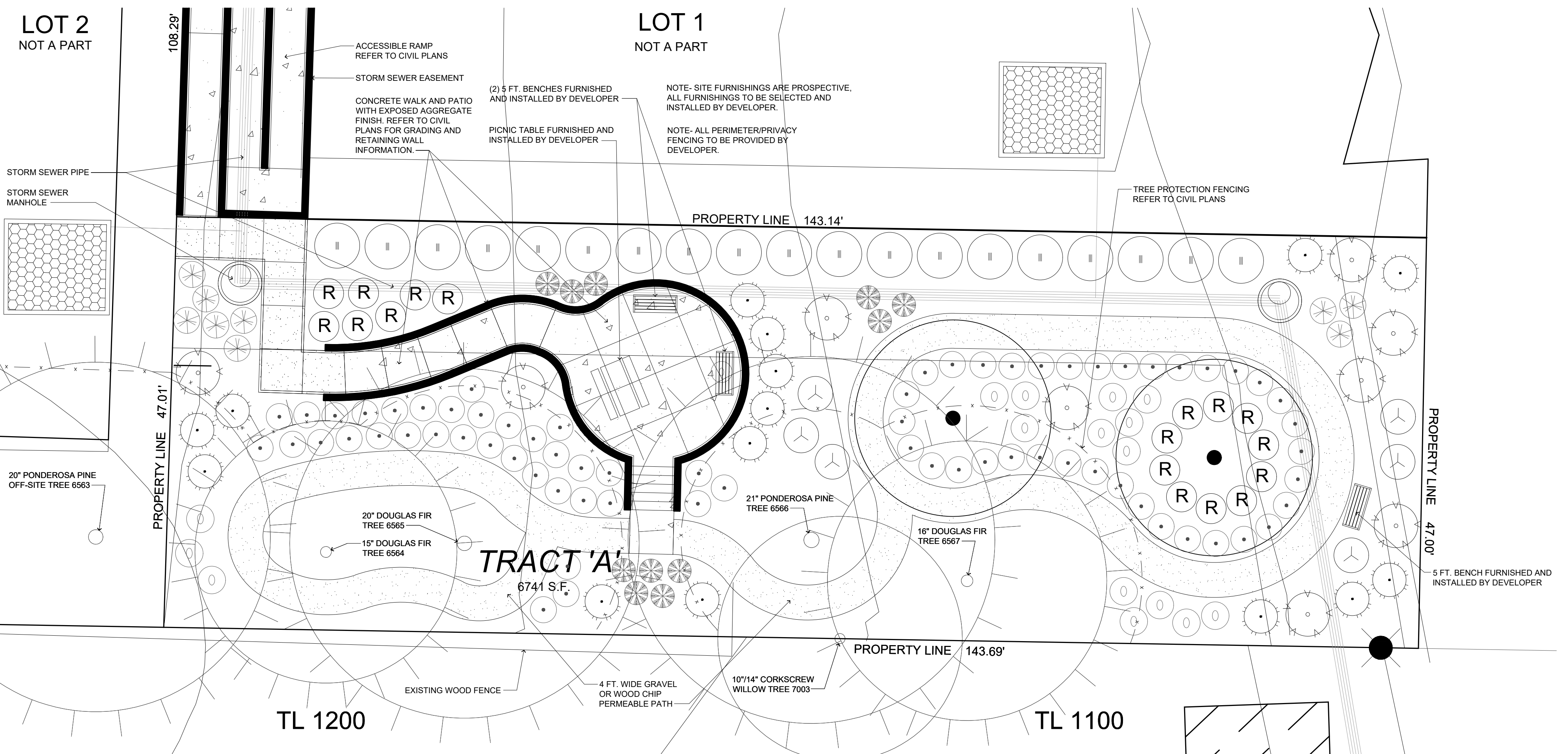
Planting: Stones, mortar, rubbish, and any material harmful to plant life are all to be removed from all planting areas. - All planting areas to be raked smooth prior to planting.

Maintenance: Begin maintenance immediately after each tree is planted. Protect and maintain plantings for a period of 60 days after acceptance.

Guarantee: Guarantee all plant material after final acceptance for duration of two full growing seasons or for two years, whichever is longer.

IRRIGATION NOTES

Irrigation to be provided by a permanent Design/Build irrigation system utilizing SMART Technology installed by Landscape Contractor.



Know what's below. Call 811 before you dig.

LANDSCAPE PLAN-TRACT 'A' AUGUST 29, 2023 rev. 10/5/2023, rev. 10/10/2023, rev. 11/21/2023

28705 SW CANYON CREEK ROAD S 2-LOT PARTITION TAX MAP 31W13BD NW 1/4 OF SEC.13, T.3S R.1W W.M. WILSONVILLE, OREGON

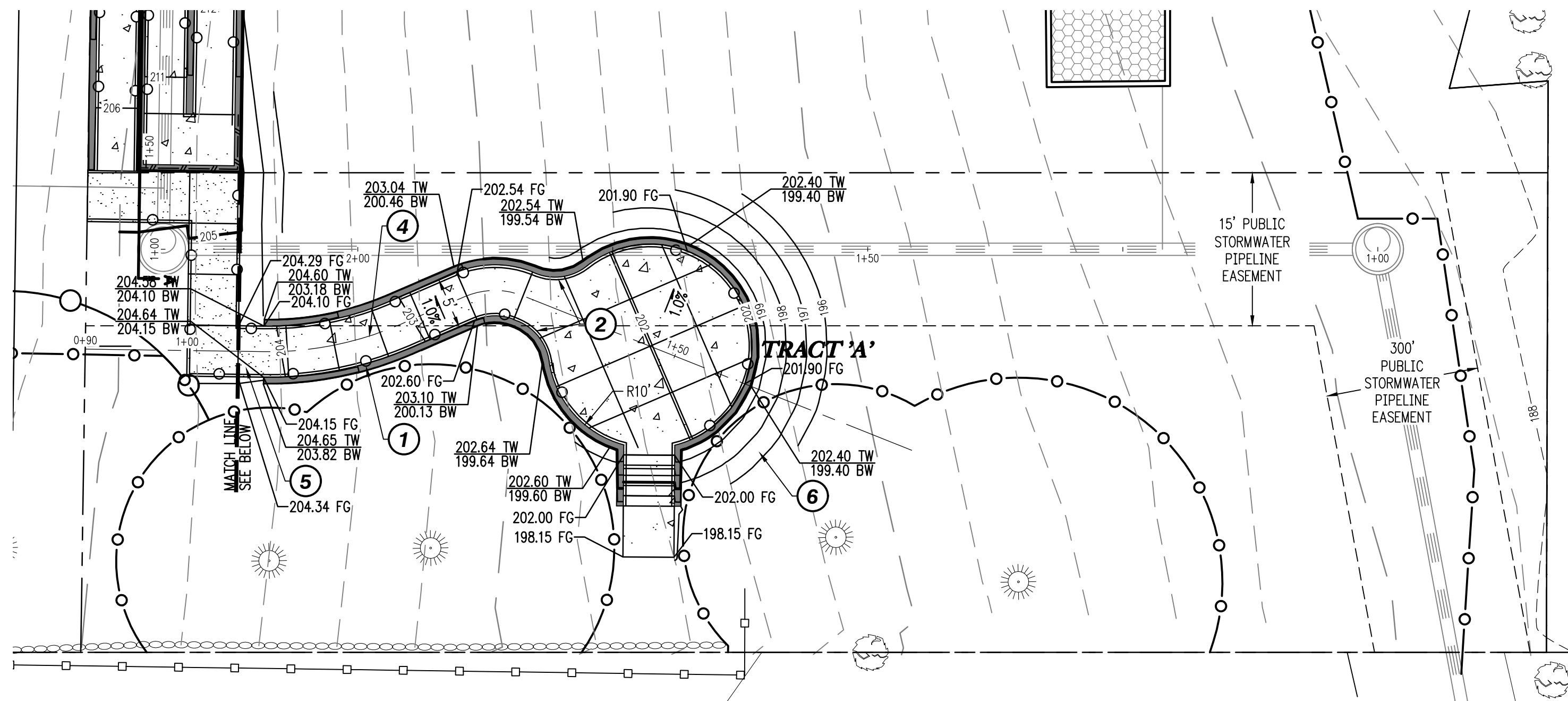
lenity architecture 3150 Lettiss Court, SE, Salem, Oregon 97301 P: 503 399 0090 F: 503 399 0585 www.lenityarchitecture.com

REVISIONS table with columns: NO, DATE, DESCRIPTION. Shows 1st submission on 12/10/20.

EMERIO ENGINEERING • SURVEYING • DESIGN 6449 SW CALLEBROOK PLACE, SUITE 100 BEAVERTON, OREGON 97008 TEL: (503) 748-9812 FAX: (503) 639-9592 www.emeriodesign.com

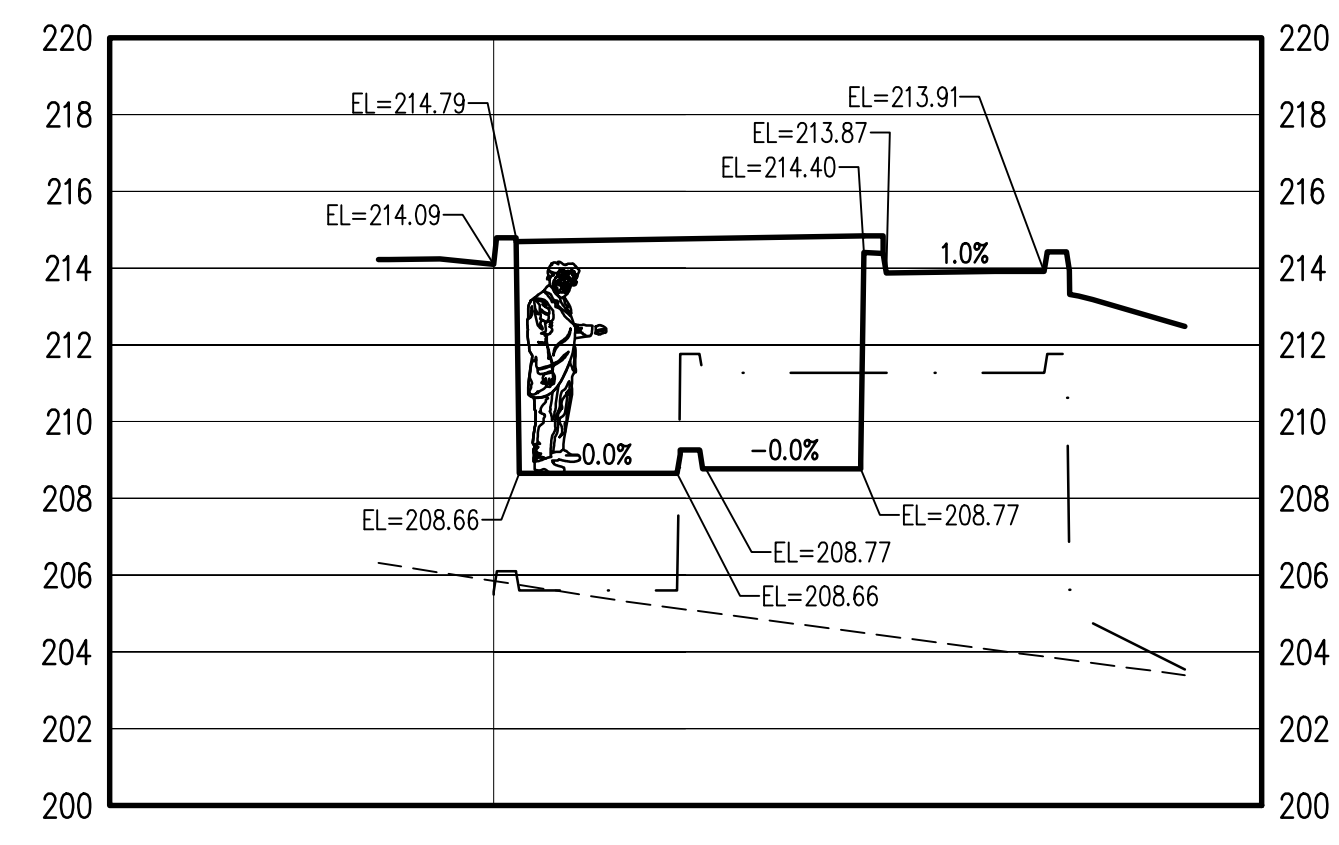
REGISTERED LANDSCAPE ARCHITECT Brian D. Lind OREGON 11/08/02 Exp. 11/30/2023

SHEET L1 OF 1

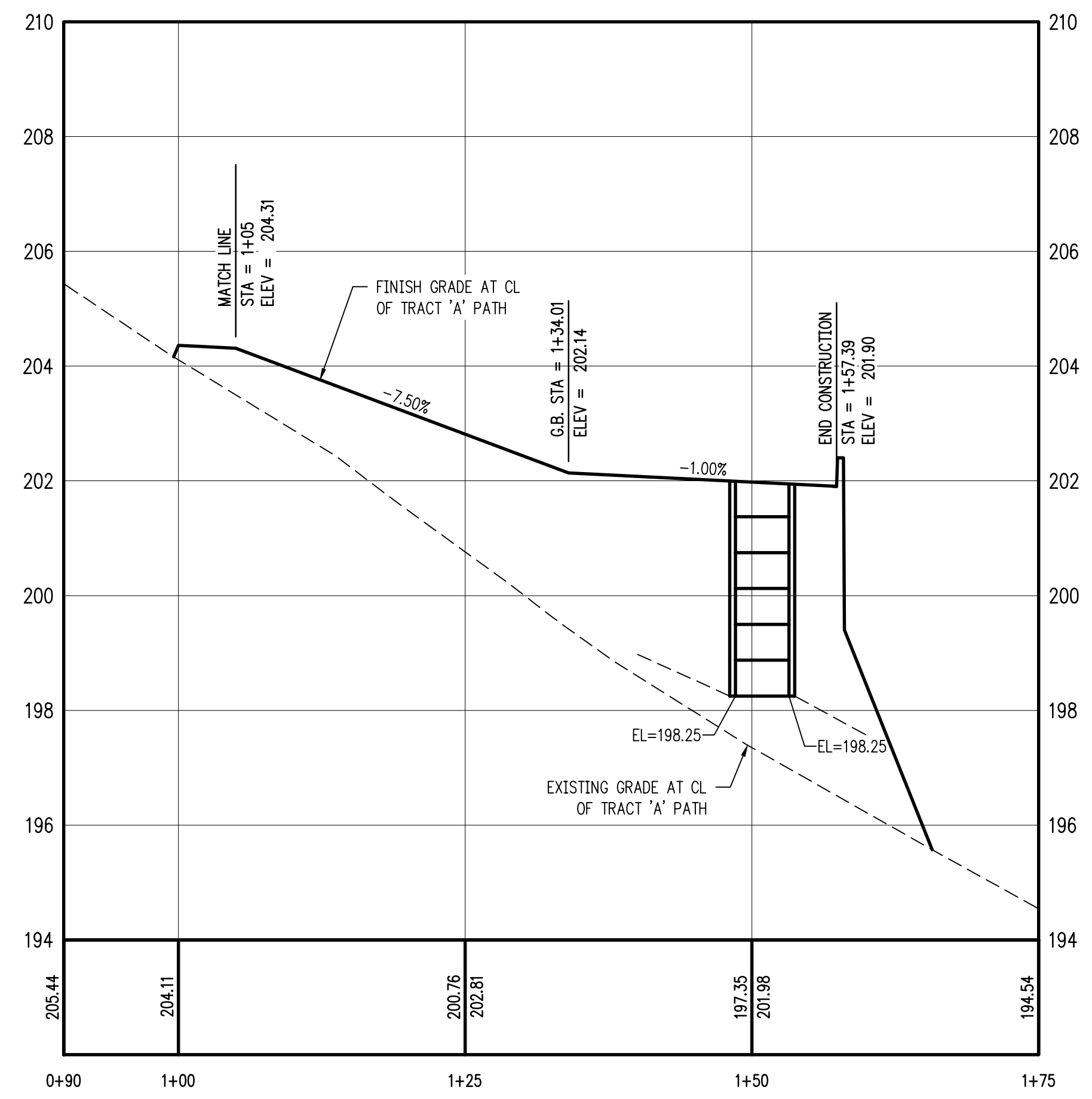


TRACT A IS SUBJECT TO A BLANKET PUBLIC PEDESTRIAN AND BICYCLE ACCESS EASEMENT OVER ITS ENTIRETY
 TRACT A IS SUBJECT TO A BLANKET TREE PROTECTION AND PRESERVATION EASEMENT OVER ITS ENTIRETY.
 TRACT A IS SUBJECT TO A BLANKET STORMWATER AND ACCESS EASEMENT OVER ITS ENTIRETY.

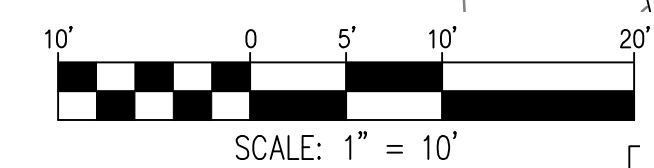
TRACT 'A' GRADING - PLAN



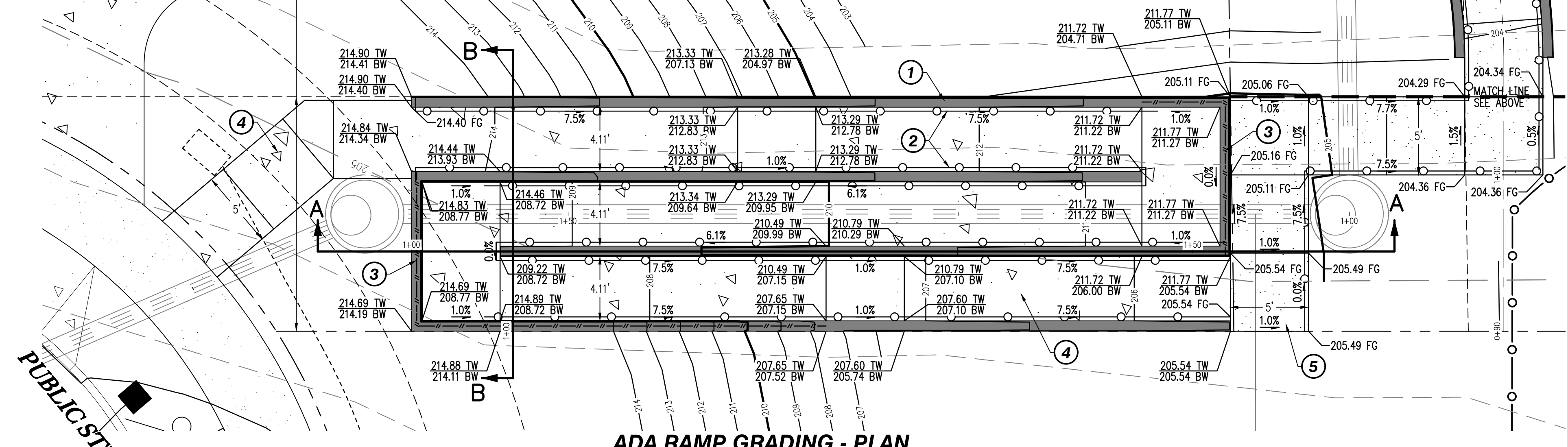
SECTION B-B



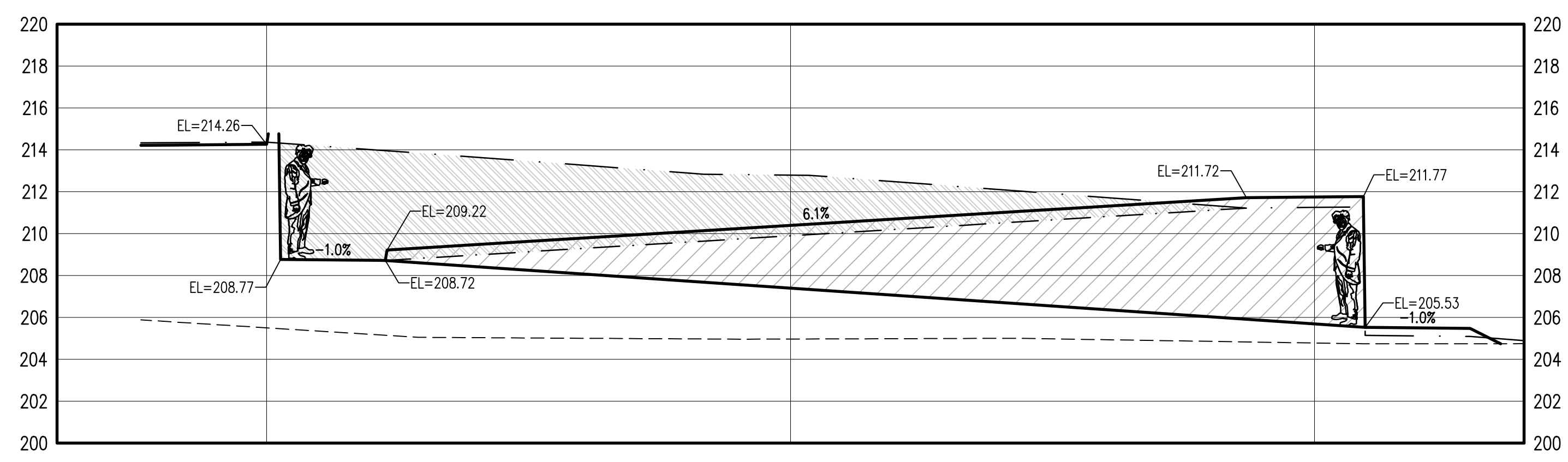
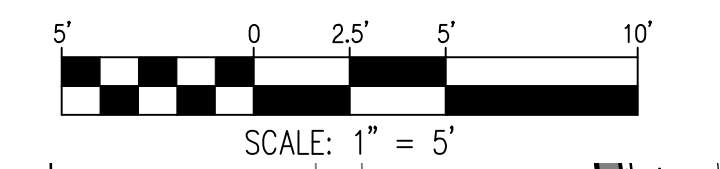
TRACT 'A' PATH - PROFILE



15' PUBLIC STORMWATER PIPELINE & PUBLIC PEDESTRIAN AND BICYCLE ACCESS EASEMENT



ADA RAMP GRADING - PLAN



SECTION A-A

SCALE: 1"=5' HORZ. 1"=5' VERT.

CONSTRUCTION NOTES:

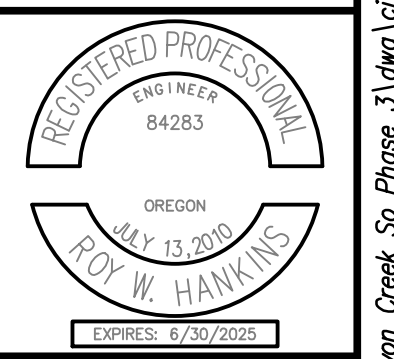
- ① PROPOSED WALL
- ② PROPOSED HANDRAIL
- ③ PROPOSED GUARD RAIL WHERE WALL HEIGHT IS GREATER THAN 2.5'
- ④ PROPOSED CONCRETE PATH
- ⑤ PROPOSED PERVIOUS CONCRETE PATH
- ⑥ ANY GRADING PROPOSED WITHIN TREE PROTECTION FENCING WILL BE DONE UNDER THE SUPERVISION OF THE PROJECT ARBORIST.

28700 CANYON CREEK RD S
 TAX LOT 6400
 TAX MAP 31W13BD
 NW 1/4 OF SEC.13, T.3S R.1W W.M.
 WILSONVILLE, OREGON

TRACT 'A' PATH & ADA RAMP GRADING PLAN & PROFILE

NO.	DATE	DESCRIPTION
1	12/16/21	2ND REVISION
2	03/30/22	3RD REVISION
3	05/02/22	4TH REVISION
4	05/04/22	5TH REVISION
5	05/04/22	6TH REVISION
6	05/12/22	ADDRESS CITY REVIEW COMMENTS
7	11/01/22	ADDRESS CITY REVIEW COMMENTS
8	01/05/23	STREET LIGHT REVISION
9	07/26/23	

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 6446 SW FALLBROOK PLACE SUITE 100
 BEAVERTON, OREGON 97008
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 www.emeriodesign.com



SHEET
1 OF **2**

Memo

To	Cindy Luxhoj, City of Wilsonville
From	Jennifer Arnold, Emerio Design
CC:	Amy Pepper, City of Wilsonville
Date	October 17, 2023
Subject	DB23-0012 Canyon Creek South Site Design Review of Tract A – Incompleteness Letter Response

Items listed in the October 5, 2023, incompleteness letter will appear in *italics*, followed by the applicant’s responses in regular typeface.

1. *Indication of how the concrete walk in the Tract A open space connects to the sidewalk in the public right-of-way. The pathway must be vertically or horizontally separated from the driveway in accordance with WC Section 4.154. The pathway must be ADA compliant. Submit a grading plan showing that the ADA pathway can be constructed as shown.*

Applicant Response: As included in Exhibit A, a grading plan showing pathway grades to demonstrate compliance with ADA standards. The driveway previously proposed at the public street has been changed to a 5 foot wide sidewalk that continues to Tract A.

2. *Materials detail or cut sheet describing the surface treatment (“exposed pea-gravel aggregate finish”) of the concrete walk.*

Applicant Response: A detail of the exposed aggregate concrete sidewalk has been included as Exhibit B to address this comment.

3. *Materials detail or cut sheet of the benches, picnic table, and any other site furnishings.*

Applicant Response: Included with Exhibit C are example images and detail sheets for both the picnic table and the benches. The example picnic table is intended to demonstrate material colors and materials but is not an ADA table as the detail specifies. The applicant proposes an ADA picnic table but had difficulty finding the appropriate image to match the detail.

4. *Materials detail or cut sheet of the perimeter/privacy fencing, indication of where the fence will be located around the open space, and explanation of why this is necessary.*

Applicant Response: See Exhibit F for fence detail information. The applicant has proposed constructing a fence along a portion of the southern boundary of Tract A to benefit the property owners on TL1100. The existing neighbor on TL 1200 has an existing wooden privacy fence and the applicant does not propose any change to that existing fence. This will create a continuous fence along the southern boundary of Tract A which will provide safety and privacy screening. This was not an agreement made based on a requirement of the Wilsonville Development Code but out of a good faith effort to work with the adjacent property owners given the ongoing disturbance associated with construction.

Memo

5. *Sufficient information indicating where the SROZ and Impact Area boundaries are in relation to the Tract A open space improvements, and demonstrating impacts to the SROZ and buffer zone, if applicable, and proposed impact mitigation. Demonstrate that only native plantings are proposed in the SROZ and Impact Area, if any, in the Tract A open space.*

Applicant Response: The eastern boundary of Tract A is the SROZ boundary, but this overlay has an associated 25 foot buffer which projects into Tract A. Within the 25 foot buffer from the eastern boundary, the applicant proposes to plant one new tree (Western Dogwood native cultivar) and a mix of several native cultivar shrubs and perennial grasses. See the submitted landscape plan for plant details. No structures, walls, impervious surfaces, or disturbances are proposed within the SROZ buffer area and certainly not in the SROZ protection Tract approved with the subdivision approval. Invasive plants within Tract A such as Himalayan blackberry are proposed to be removed and replaced with non-invasive plant materials.

6. *Indication of water consumption categories for the plant materials on the landscape planting schedule.*

Applicant Response: Water consumption categories are included on the submitted landscape plan for each plant type. This information has been included on the Planting Schedule table on the landscape plan.

7. *Sufficient information demonstrating the project is or will be adequately served by stormwater, and that LID is used to the maximum extent feasible. Show how the new impervious area will be managed. Submit a Stormwater Report.*

Applicant Response: A stormwater report has been submitted with this application to demonstrate compliance with stormwater standards and to address this comment. See Exhibit E for stormwater report details.

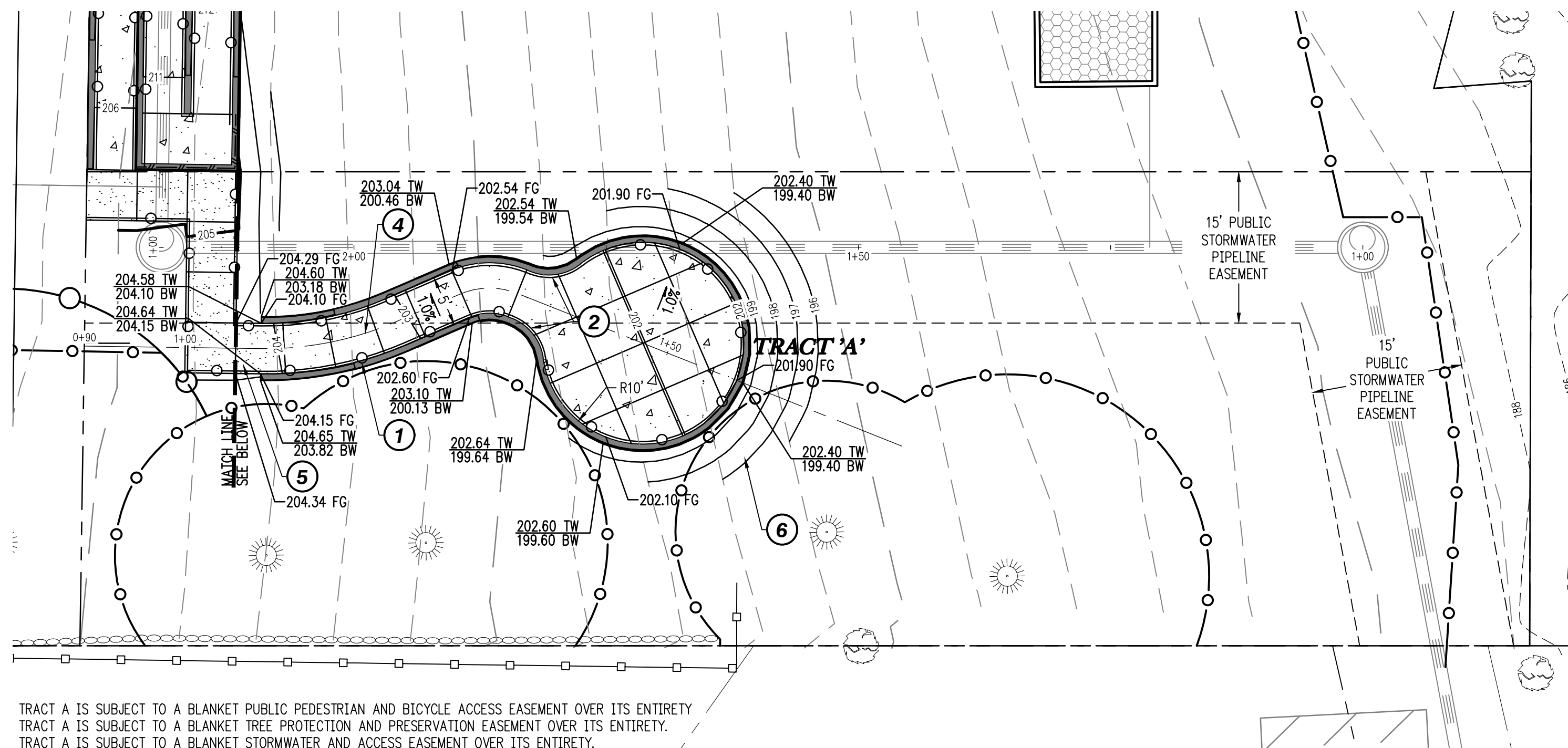
8. *Sufficient information provided about easements and dedications. Show the stormwater pipeline easement, public pedestrian and bicycles access easement, tree protection and preservation easement, and stormwater maintenance and access easements on the plans. No trees should be planted in the stormwater pipeline easement.*

Applicant Response: No trees are proposed to be planted within the stormwater pipeline easement as shown on the landscape plan. The stormwater pipeline easement is shown on the submitted grading plan and included in Exhibit D. Exhibit D also includes the plat with all easements noted and the SROZ boundary as shown on the preliminary plat. Tract A is intended to be a public space with easements to provide legal access and use.

Exhibits Included:

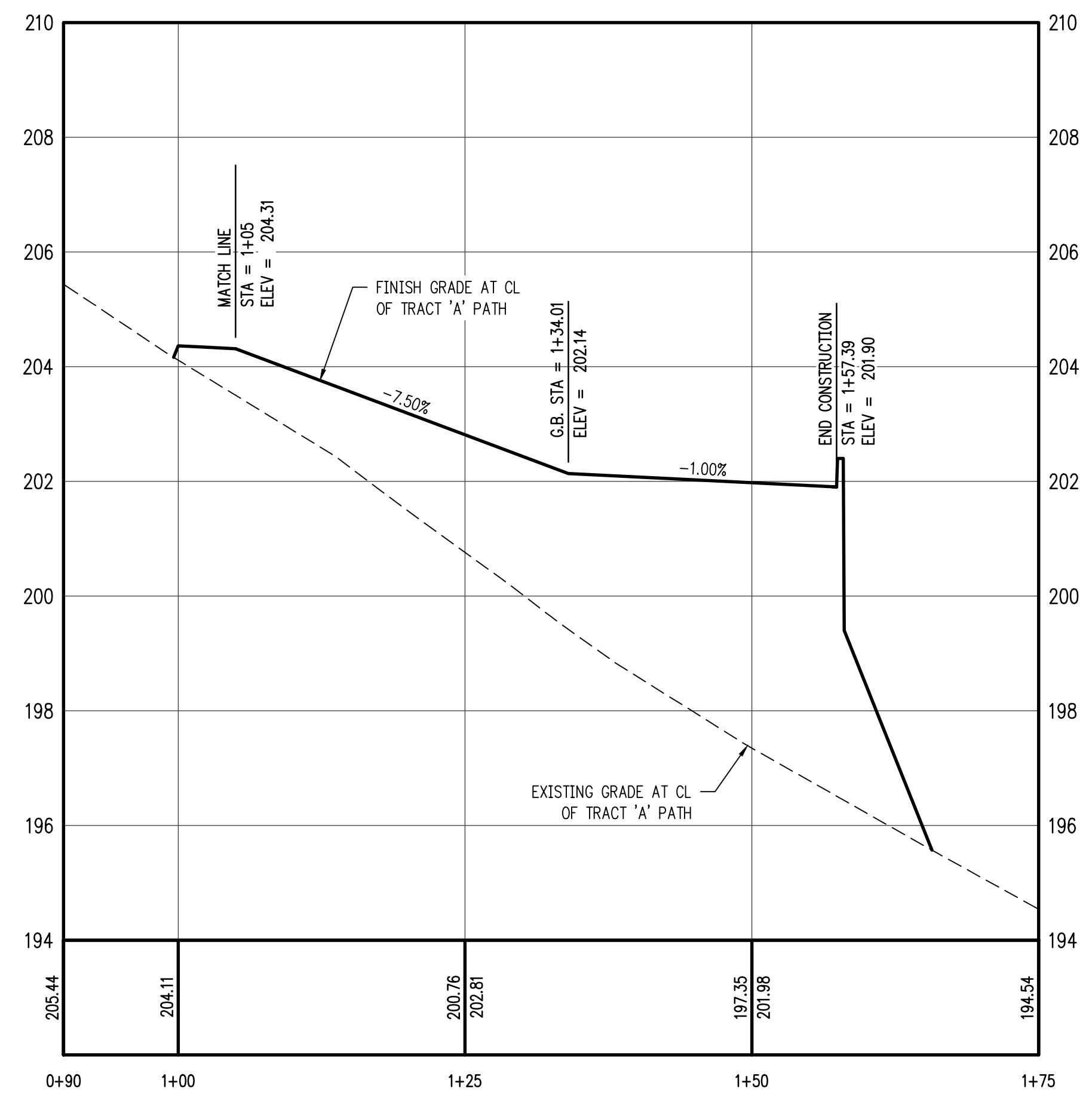
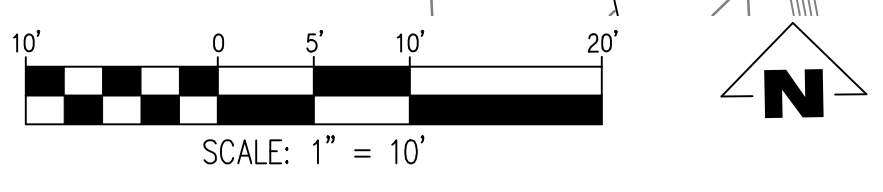
Exhibit A: TRACT 'A' PATH & ADA RAMP GRADING PLAN & PROFILE
Exhibit B: Materials Detail for Concrete Walk
Exhibit C: ADA Table & Bench information
Exhibit D: Plats
Exhibit E: Stormwater & Drainage Report
Exhibit F: Fence Detail
Exhibit G: Narrative Site Design Review of Parks and Open Space_REV1
Exhibit H: Landscape Plan – Tract A

Exhibit A



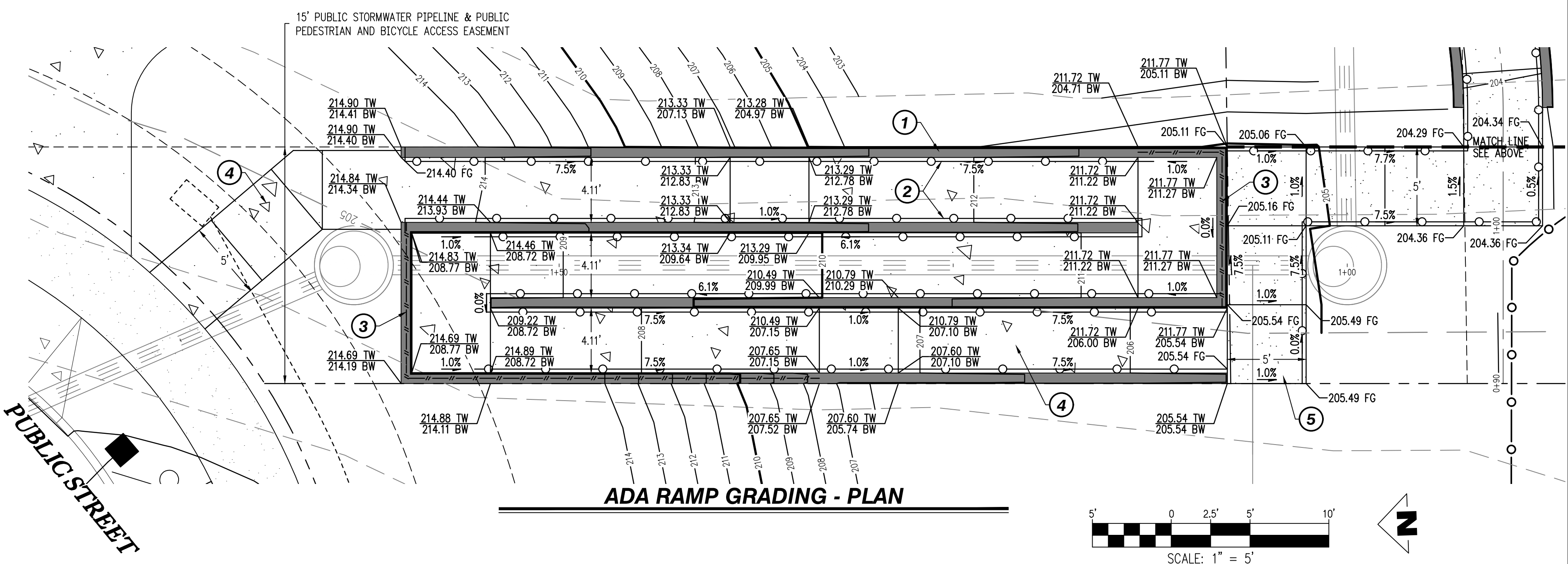
TRACT A IS SUBJECT TO A BLANKET PUBLIC PEDESTRIAN AND BICYCLE ACCESS EASEMENT OVER ITS ENTIRETY
 TRACT A IS SUBJECT TO A BLANKET TREE PROTECTION AND PRESERVATION EASEMENT OVER ITS ENTIRETY.
 TRACT A IS SUBJECT TO A BLANKET STORMWATER AND ACCESS EASEMENT OVER ITS ENTIRETY.

TRACT 'A' GRADING - PLAN

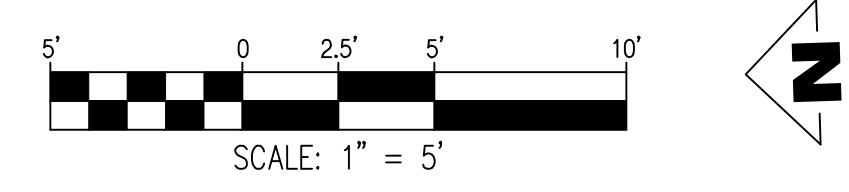


TRACT 'A' PATH - PROFILE

SCALE: 1"=10' HORZ. 1"=5' VERT.



ADA RAMP GRADING - PLAN



CONSTRUCTION NOTES:

- ① PROPOSED WALL
- ② PROPOSED HANDRAIL
- ③ PROPOSED GUARD RAIL WHERE WALL HEIGHT IS GREATER THAN 2.5'
- ④ PROPOSED CONCRETE PATH
- ⑤ PROPOSED PERVIOUS CONCRETE PATH
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28700 CANYON CREEK RD S
 TAX LOT 6400
 TAX MAP 31W13BD
 NW 1/4 OF SEC.13, T.3S R.1W W.M.
 WILSONVILLE, OREGON

**TRACT 'A' PATH & ADA
 RAMP GRADING PLAN &
 PROFILE**

NO.	DATE	DESCRIPTION
1	12/16/21	2ND REVISION
2	03/30/22	3RD REVISION
3	05/02/22	4TH REVISION
4	05/04/22	5TH REVISION
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9		

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 FAX: (503) 639-6592
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SHEET
 1 OF 2

Exhibit B

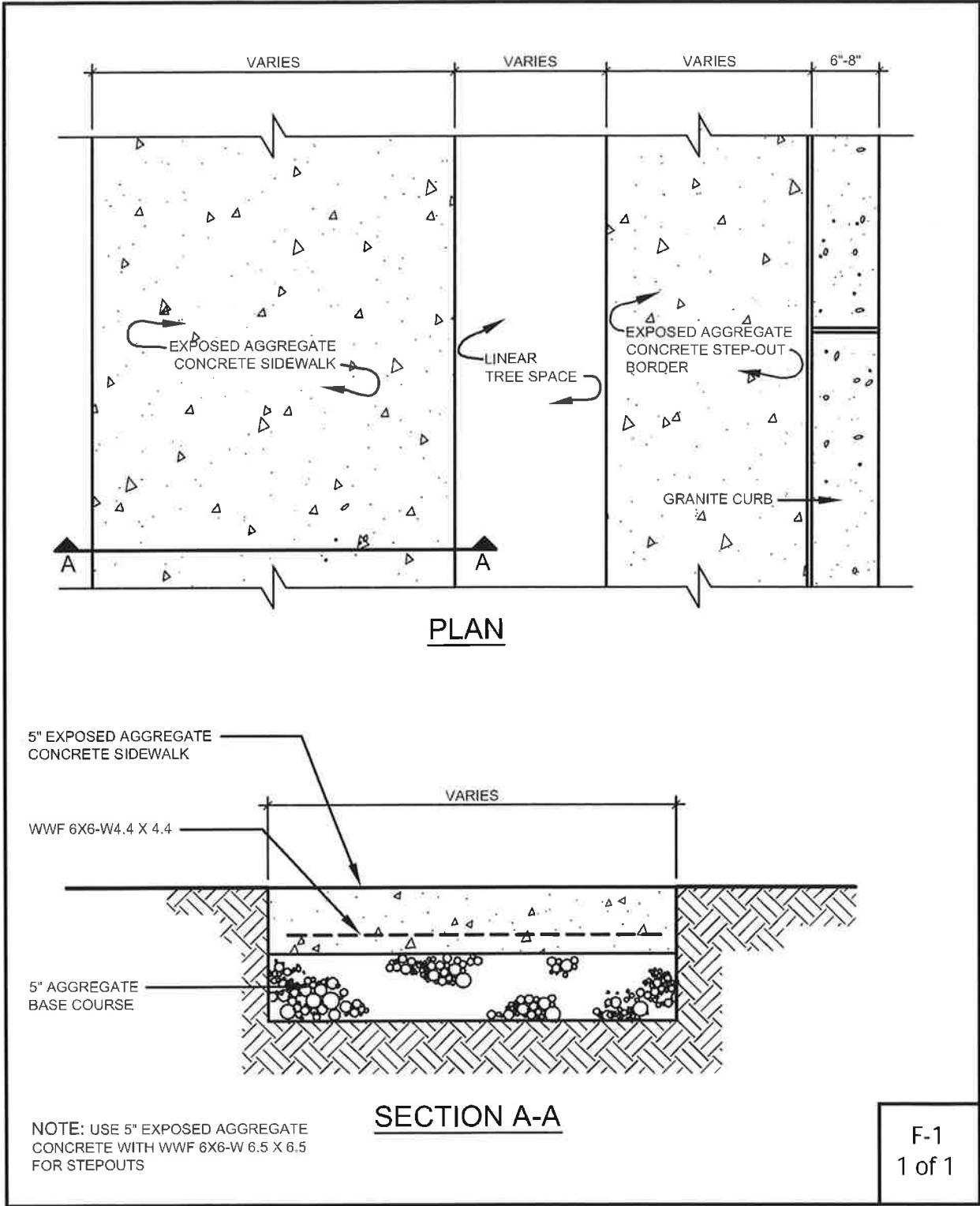
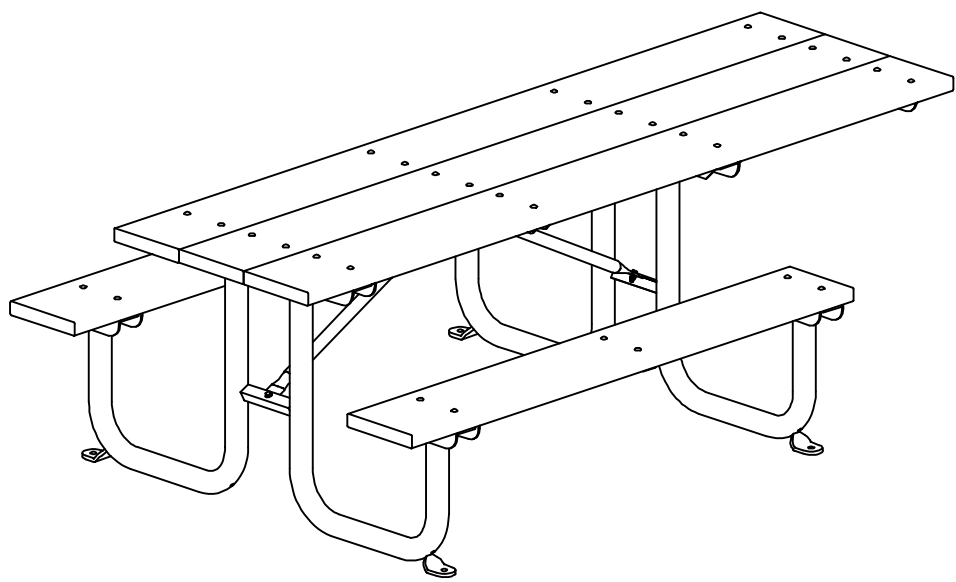
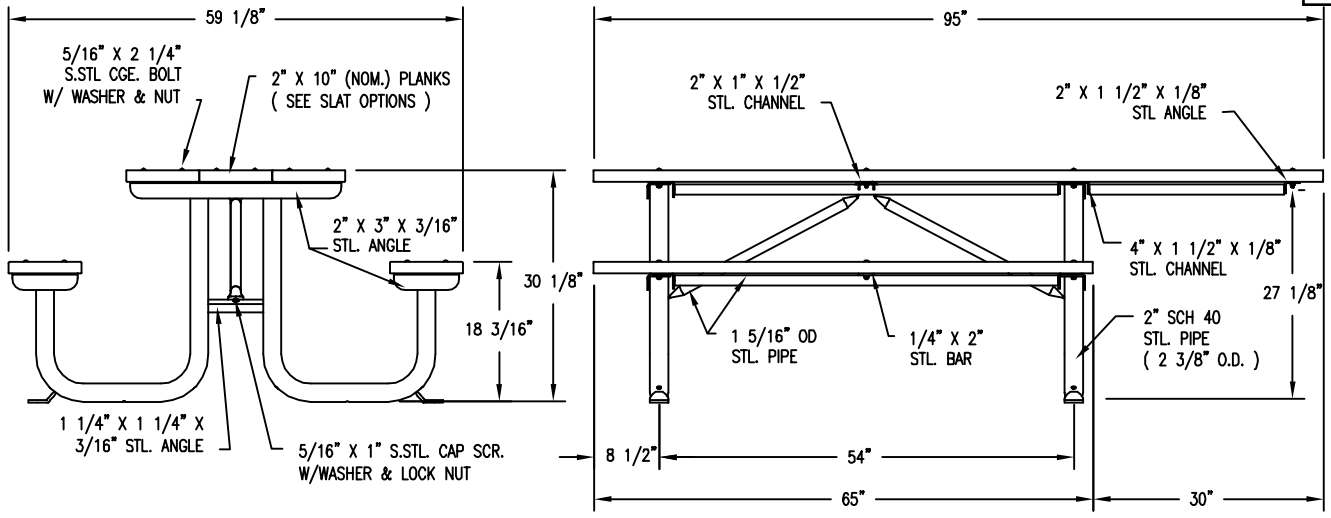


Figure 5: Sidewalk Detail—Exposed Aggregate Concrete

Interagency Initiative for National Mall Road Improvement

Exhibit C



SLAT OPTIONS

- "CEDAR" RECYCLED PLASTIC
- "GREY" RECYCLED PLASTIC
- "REDWOOD" RECYCLED PLASTIC
- "WALNUT" RECYCLED PLASTIC
- OTHER _____

NOTES

- 1.) 1/2" X 3 3/4" EXPANSION ANCHORS PROVIDED.

FINISH OPTIONS:

- ALL STL. MEMBERS COATED W/ ZINC RICH EPOXY THEN FINISHED W/ POLYESTER POWDER COATING.
- HOT DIP GALV. AFTER FABRICATION.

	PICNIC TABLE	DATE DRAWN : 03/22/94	REV. J	DRAWING NUMBER 77-68-1PL	SHEET 1 OF 2
		DRAWN BY : CDC			
		DATE REV. : 01/11/17			
		REV. BY : RDH			

NOTES:

- 1.) DURING ASSEMBLY PROCEDURE;
DO NOT COMPLETELY TIGHTEN HARDWARE.
- 2.) THE ACTUAL PARTS WILL NOT BE NUMBERED.
NUMBERS ONLY APPLY TO DRAWING.
- 3.) UPON COMPLETION OF ASSEMBLY SQUARE
ALL COMPONENTS THEN TIGHTEN ALL HARDWARE.
- 4.) MOUNT AND ANCHOR AS SPECIFIED.

TOOLS REQ'D

- 1/2" WRENCH
- 3/4" WRENCH
- 1/2" MASONRY DRILL BIT
DRILL

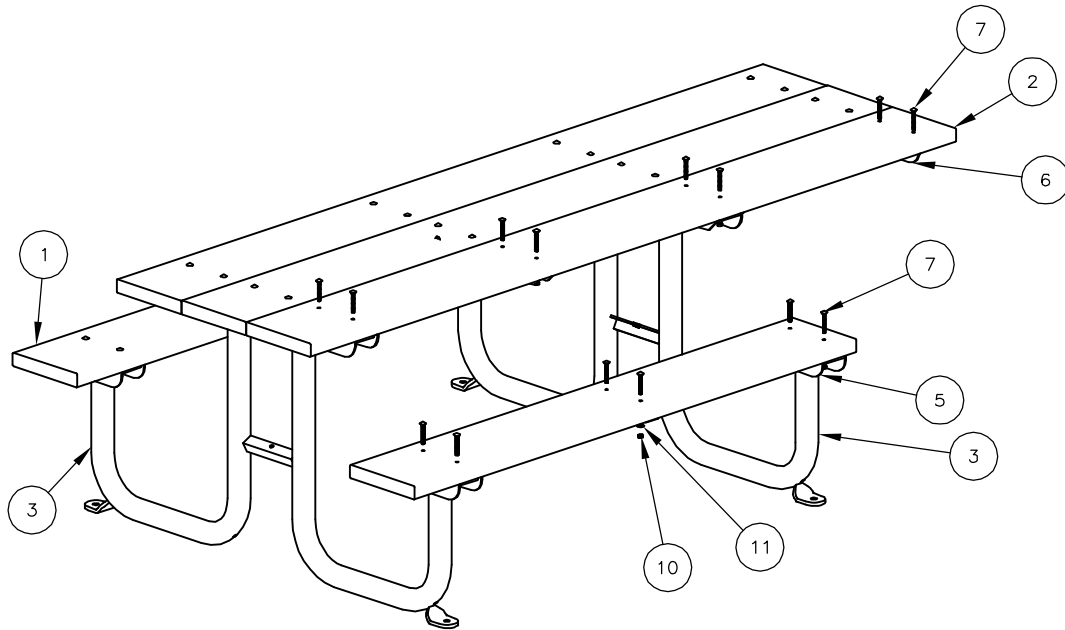
PARTS LIST

ITEM	QTY	PART NO	DESCRIPTION
1	2	0-71-68-1PL-1	2" X 10" X 65" SLAT, PLASTIC
2	3	0-71-68-1PL-2	2" X 10" X 95" SLAT, PLASTIC
3	2	0-77-00-01	END SUPPORT FRAME
4	2	0-77-60-02	DIAGONAL BRACE FOR 6' TABLE
5	2	0-77-60-14	6' SEAT BRACE
6	1	0-77-68-1-15	TABLE TOP BRACE, HANDICAPPED
7	36	1-11-062	5/16" X 2 1/4" SS CGE BOLT
8	4	1-12-061	5/16" X 1" SS HEX HD CAP SCR
9	4	1-20-016	5/16" SS NYLON LOCKNUT
10	36	1-21-015	5/16" SS HEX NUT
11	44	1-22-017	5/16" SS FLAT WASHER

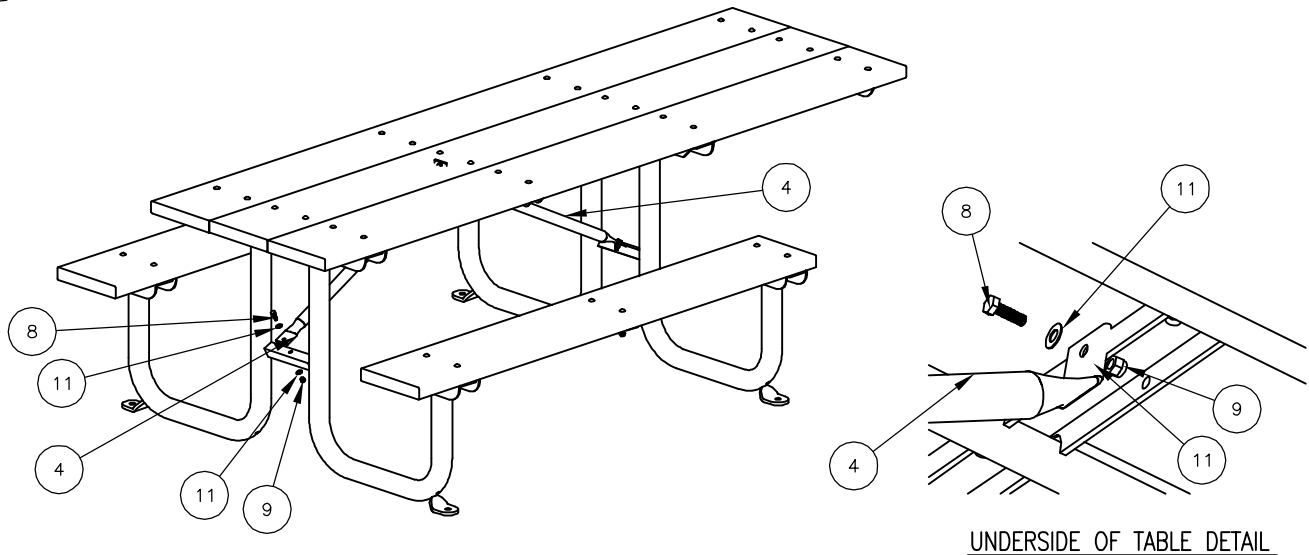
KITS PROVIDED

ITEM	QTY	PART NO	DESCRIPTION
12	1	K-77PL	77PL SER HARDWARE KIT
13	1	K-ANCO860-4	1/2" X 3 3/4" SS ANCHOR KIT (4PC)

① ATTACH SUPPORT FRAMES TO SLATS. BE SURE TABLE & SEAT BRACES ARE BETWEEN SLATS & SUPPORT FRAMES.



② ATTACH DIAGONAL BRACES TO STEP 1 ASSEMBLY.

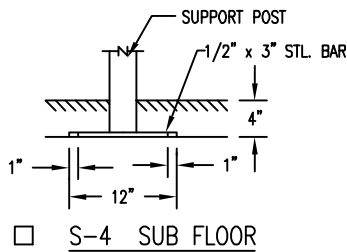
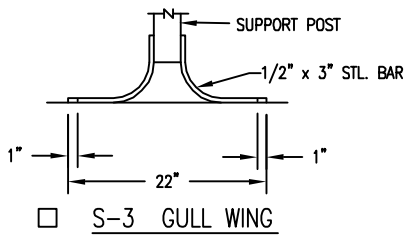
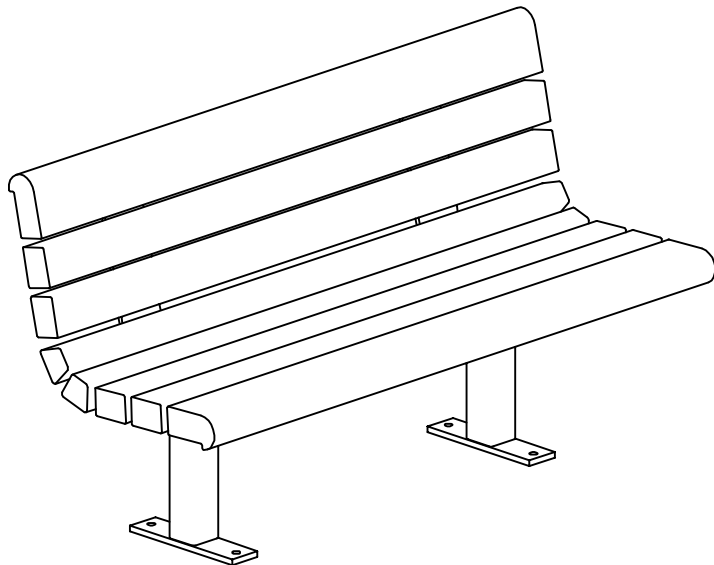
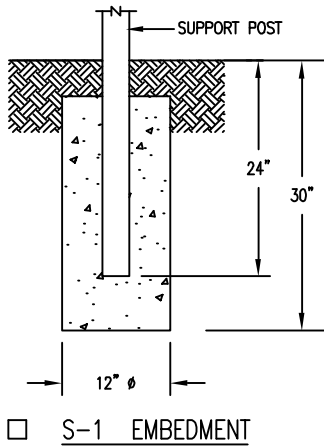
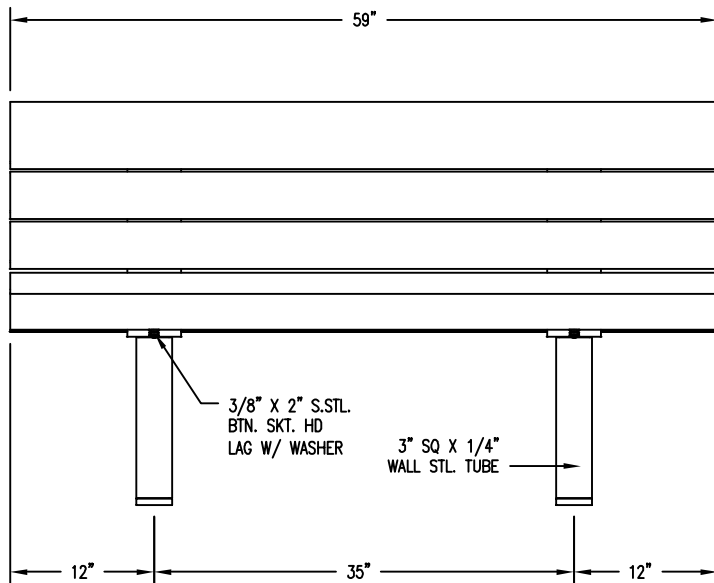
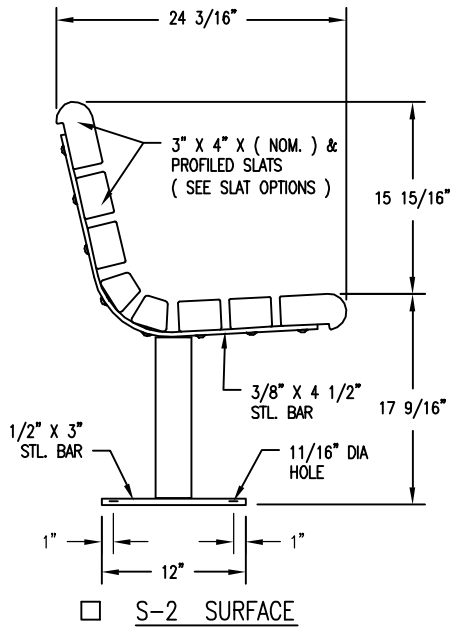


MID-STATE TRAIL

Item 4.



73

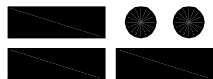


SLAT OPTIONS

- "CEDAR" RECYCLED PLASTIC
- "GREY" RECYCLED PLASTIC
- "REDWOOD" RECYCLED PLASTIC
- "WALNUT" RECYCLED PLASTIC
- OTHER _____

NOTES

- 1.) ALL STL. MEMBERS COATED W/ ZINC RICH EPOXY THEN FINISHED W/ POLYESTER POWDER COATING.
- 2.) 1/2" X 3 3/4" EXPANSION ANCHOR BOLT PROVIDED FOR S-2, S-3 & S-4 OPTIONS.



DuMor, inc.
P.O. Box 142 Mifflintown, PA 17059-0142

SCALE : NONE
DATE DRAWN : 8/6/96
DRAWN BY : HD
DATE REV. : 10/25/11
REV. BY : RDH

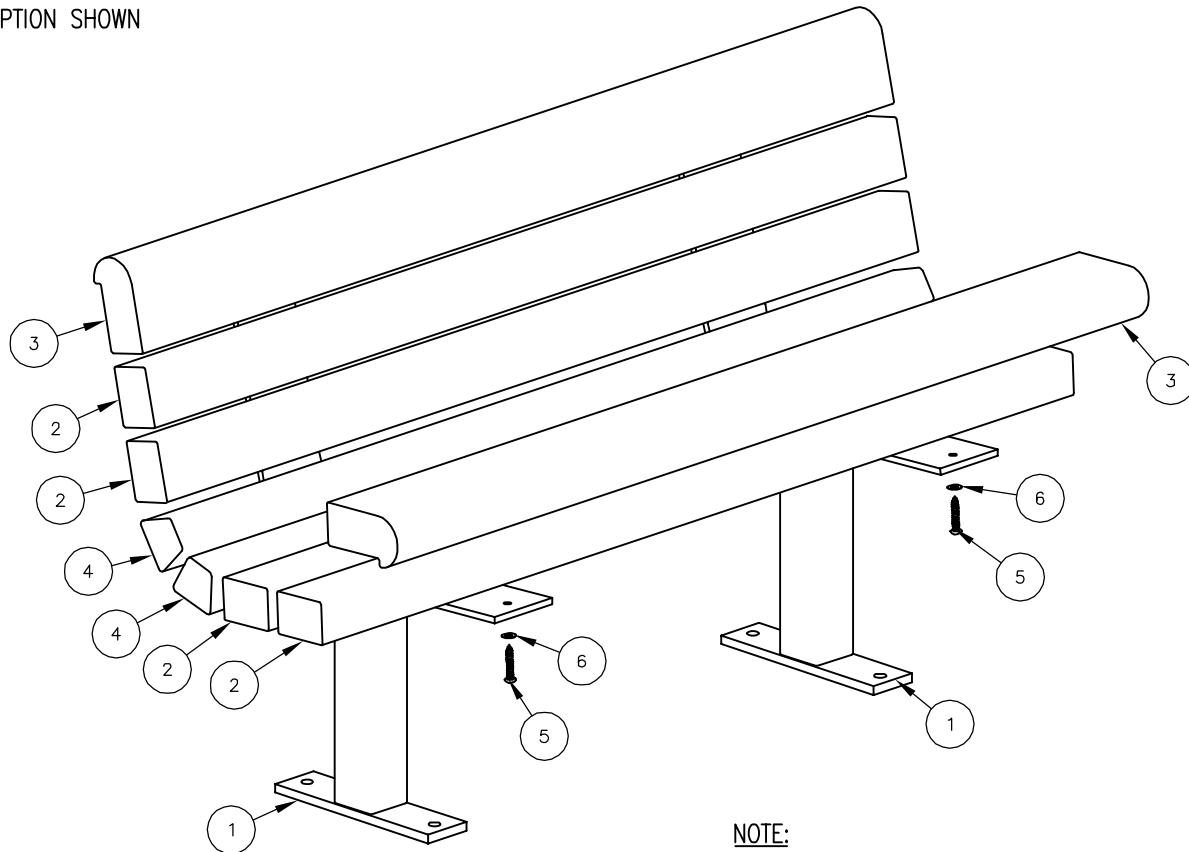
TITLE : BENCH

REV. E

DRAWING NUMBER 88-50PL

SHEET 1 OF 2

SURFACE MOUNT
OPTION SHOWN



NOTE:

- 1.) DURING ASSEMBLY PROCEDURE;
DO NOT COMPLETELY TIGHTEN HARDWARE.
- 2.) THE ACTUAL PARTS WILL NOT BE NUMBERED;
NUMBERS ONLY APPLY TO DRAWING.
- 3.) SEE SPEC. SHEET 1 FOR MOUNTING OPTION.

STEP 1:

- USE 3 - PCS. SUPPORT FOR SURFACE MOUNT (1)
- 4 - PCS. 3" X 4" X 59" PLASTIC INT'R SLAT (2)
- 2 - PCS. 59" PLASTIC EDGE SLAT (3)
- 2 - PCS. 59" PLASTIC TRAP SLAT (4)
- 24 - PCS. 3/8" X 2" SS. BTN. SKT. HD. LAG SCR. (5)
- 24 - PCS. 3/8" SS. FLAT WASHER (6)

ATTACH SLATS (2, 3, & 4) TO SUPPORT FOR SURFACE MOUNT (1) USING HARDWARE (5 & 6). TIGHTEN TO SNUG FIT.
REPEAT UNTIL ALL SLATS ARE ATTACHED.

STEP 2:

UPON COMPLETION OF BENCH ASSEMBLY SQUARE ALL COMPONENTS THEN TIGHTEN ALL HARDWARE.

STEP 3:

ANCHOR ACCORDING TO SUPPORT OPTION USED.

ITEM	QTY	PART NO	DESCRIPTION
1	2	0-88-00-01/S-2	BENCH SUPPORT FOR SURFACE MOUNT
2	4	0-88-50PL-02	3" X 4" X 59" PLASTIC SLAT
3	2	0-88-50PL-03	59" PLASTIC EDGE SLAT
4	2	0-88-50PL-04	59" PLASTIC TRAP SLAT
5	16	1-13-016	3/8" X 2" SS BTN SKT HD LAG SCR
6	16	1-22-024	3/8" SS FLAT WASHER

DuMor, inc.
P.O. Box 142 Mifflintown, PA 17059-0142

SCALE : NONE
DATE DRAWN : 8/6/96
DRAWN BY : HD
DATE REV. : 10/25/11
REV. BY : RDH

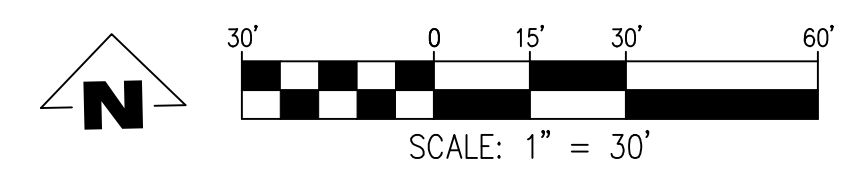
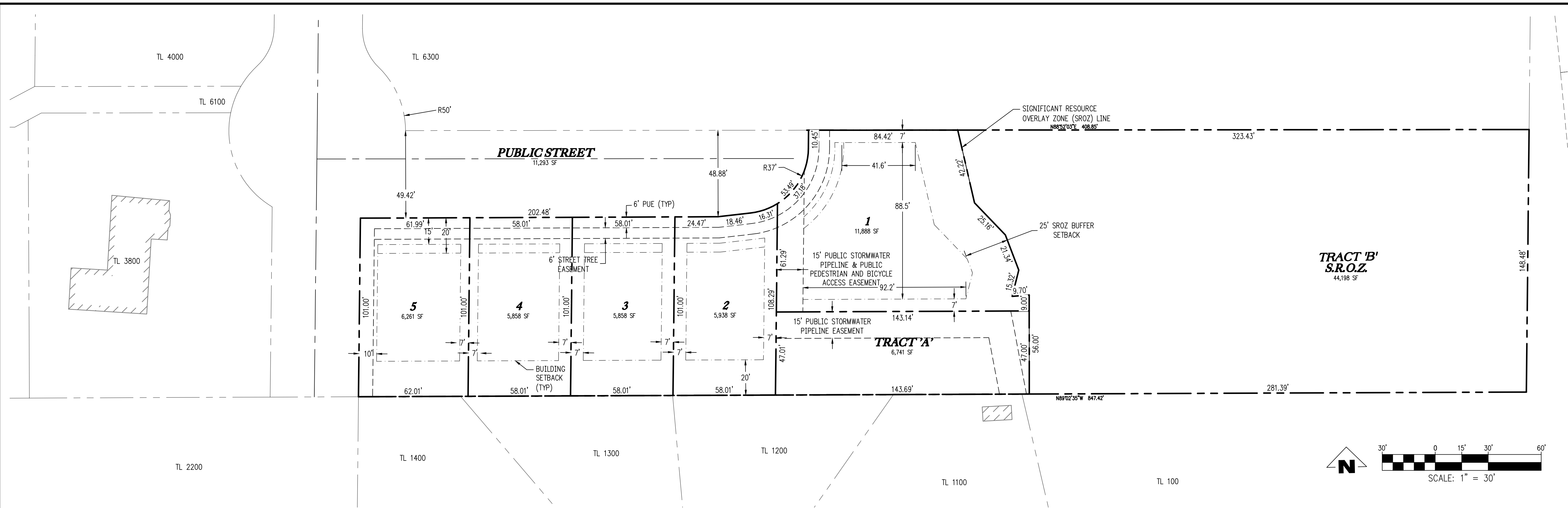
TITLE : BENCH		DRAWING NUMBER 88-50PL	SHEET 2 OF 2
REV. E			

Item 4.



Exhibit D

Exhibit D: Preliminary Plat Showing SROZ Boundary



TRACT A IS SUBJECT TO A BLANKET PUBLIC PEDESTRIAN AND BICYCLE ACCESS EASEMENT OVER ITS ENTIRETY.
 TRACT A IS SUBJECT TO A BLANKET TREE PROTECTION AND PRESERVATION EASEMENT OVER ITS ENTIRETY.
 TRACT A IS SUBJECT TO A BLANKET STORMWATER AND ACCESS EASEMENT OVER ITS ENTIRETY.

PARCEL DATA	
AREA:	2.25 AC
PROPOSED ZONING:	PDR-3
TAX MAP:	31W13BD
TAX LOTS:	6400
NO. OF LOTS:	5

SITE DATA	
ZONE:	PDR-3
TOTAL SITE AREA:	2.25 ACRES (98,034 SQ. FT.)
NON-BUILDABLE AREA:	1.01 ACRES (44,198 SQ. FT.)
NET BUILDABLE AREA:	1.24 ACRES (53,836 SQ. FT.)
5 LOTS & 2 TRACTS	
MINIMUM LOT SIZE:	5,858 SQ. FT.
MAXIMUM LOT SIZE:	44,198 SQ. FT. (TRACT 'B')

TRACT 'A' DATA	
USABLE OPEN SPACE AREA:	0.15 ACRES (6,741 SQ. FT.)

MINIMUM SETBACKS	
FRONT:	15'
GARAGE:	20'
SIDE:	7' (5' SINGLE STORY)
REAR:	20'
MAX HEIGHT:	35'
MAX LOT COVERAGE:	
• 50% FOR LOTS CONTAINING LESS THAN 7,000 SQ. FT.	
• 45% FOR LOTS BETWEEN 7,000-8,000 SQ. FT.	
• 40% FOR LOTS EXCEEDING 8,000 SQ. FT.	
MIN LOT WIDTH:	40'

LEGEND	
	EXISTING SROZ LINE
	PROPERTY BOUNDARY
	PROPOSED LOT LINE
	PROPOSED RIGHT-OF-WAY LINE
	PROPOSED ROAD CENTERLINE
	PROPOSED PUE

28700 CANYON CREEK RD S
 TAX LOT 6400
 TAX MAP 31W13BD
 NW 1/4 OF SEC.13, T.3S R.1W W.M.
 WILSONVILLE, OREGON

PRELIMINARY PLAT

REVISIONS		
NO.	DATE	DESCRIPTION
1	12/16/21	2ND REVISION
2	03/30/22	3RD REVISION
3	05/02/22	4TH REVISION
4	05/04/22	5TH REVISION
5	08/12/22	6TH REVISION
6	11/01/22	ADDRESS CITY REVIEW COMMENTS
7	01/05/23	ADDRESS CITY REVIEW COMMENTS
8	07/26/23	STREET LIGHT REVISION

EMERIO
 ENGINEERING • SURVEYING • DESIGN
 6446 SW FALLBROOK PLACE, SUITE 100
 BEAVERTON, OREGON 97008
 TEL: (503) 748-8812
 FAX: (503) 639-8592
 www.emeriodesign.com



Exhibit D: Proposed Plat Showing Easements



6445 SW FALLBROOK PLACE, SUITE 100
BEAVERTON, OREGON 97008
TEL: (503) 748-8812
FAX: (503) 639-9592
www.emeriodesign.com
EMERIO JOB: 0463-005

SPRING TERRACE

A REPLAT OF LOT 9, "BRIDLE TRAIL RANCHETTS" (PLAT NO. 1147)
AND OTHER LAND LOCATED IN THE NORTHWEST 1/4 OF SECTION 13,
TOWNSHIP 3 SOUTH, RANGE 1 WEST, WILLAMETTE MERIDIAN,
CITY OF WILSONVILLE, CLACKAMAS COUNTY, OREGON
OCTOBER 19, 2023

BOOK _____ PAGE _____

PLAT NO. _____

CITY OF WILSONVILLE CASE FILE NO. DB20-0045

MONUMENT REFERENCE TABLE

1	FD. 1/2" IR, NO CAP, UP 0.8", SET IN R3
2	FD. 5/8" IR WITH YPC MARKED "EMERIO DESIGN" SET IN R10
3	FD. 5/8" IR WITH YPC MARKED "SUMMERS P.L.S. 1042", FLUSH, SET IN R4
4	FD. 5/8" IR WITH YPC MARKED "SUMMERS P.L.S. 1042", FLUSH, SET IN R4
5	FD. 5/8" IR, NO CAP, DOWN 0.8", SET IN R2
6	FD. 5/8" IR WITH YPC MARKED "G&L LAND SURVEYORS, INC." SET IN R5
7	FD. 5/8" IR, NO CAP, DOWN 0.7", SET IN R2
8	FD. 5/8" IR, NO CAP, DOWN 0.1", SET IN R3

REFERENCES

- R1 SN 2022-234
- R2 SN 8185
- R3 PLAT OF "BRIDLE TRAIL RANCHETTS" (PLAT NO. 1147)
- R4 PLAT OF "SUNDIAL" (PLAT NO. 2910)
- R5 PLAT OF "RENAISSANCE AT CANYON CREEK SOUTH" (PLAT NO. 3978)
- R6 PARTITION PLAT NO. 2018-122

CURVE TABLE					
CURVE NO.	LENGTH	RADIUS	DELTA	CHORD BEARING	CHORD
C1	53.81	50.00	61°39'33"	N 30°56'18" E	51.25
C2	16.31	37.00	25°15'00"	N 71°59'58" E	16.71
C3	37.18	37.00	57°35'00"	N 30°35'03" E	35.64

REGISTERED
PROFESSIONAL
LAND SURVEYOR

Jon T. Feigion 10/20/23

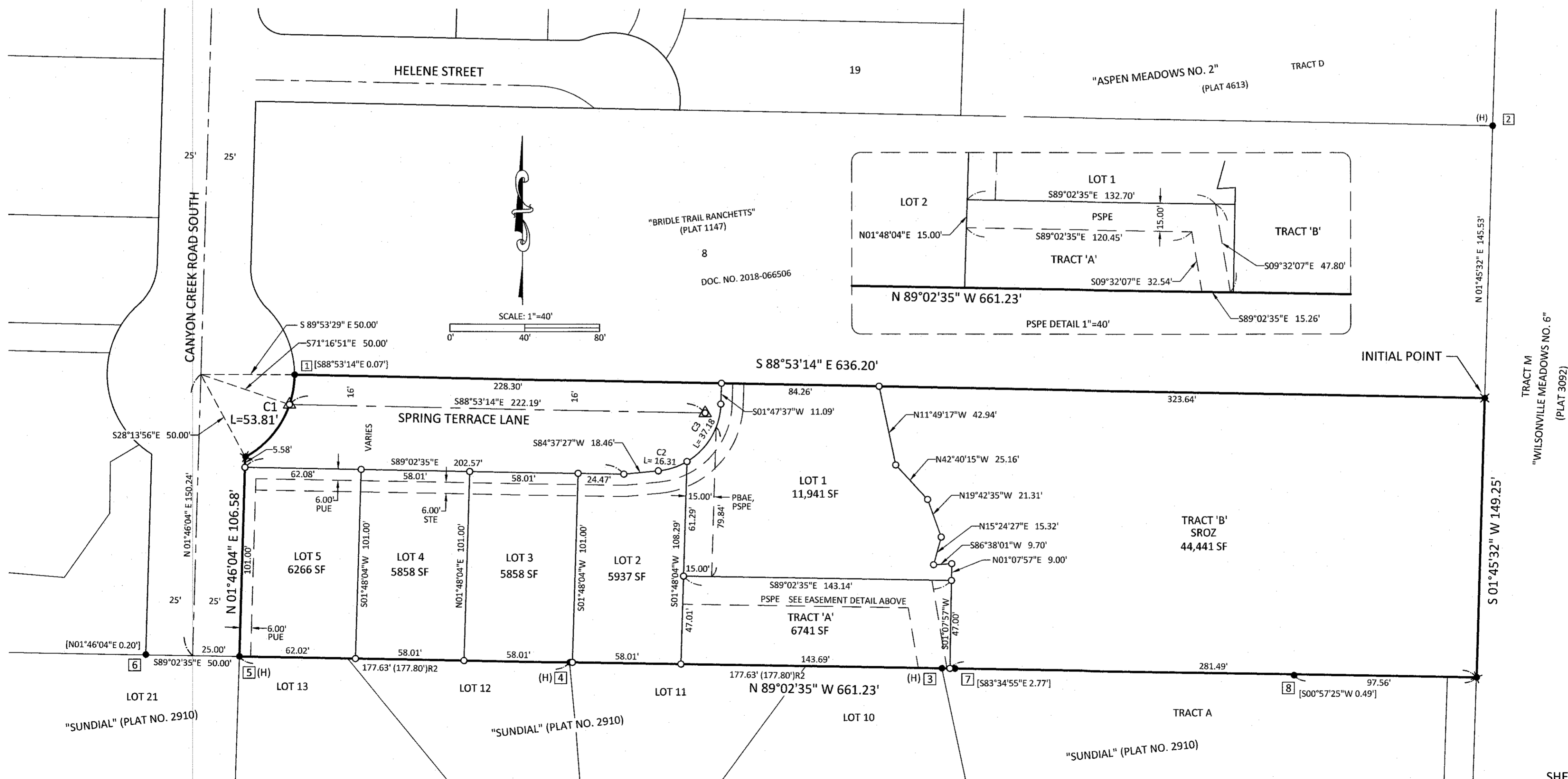
OREGON
JANUARY 15, 1987
JON T. FEIGION
2252

RENEWAL 12-31-23
I HEREBY CERTIFY THAT THIS IS A
TRUE AND EXACT COPY OF THE
ORIGINAL PLAT.

- ### LEGEND
- DENOTES SET 5/8" X 30" IR WITH YPC MARKED "EMERIO DESIGN", SET ON _____
 - △ DENOTES SET 5/8" X 30" IR WITH YPC MARKED "EMERIO DESIGN", SET ON _____
 - ✱ FOUND 5/8" IR WITH YPC MARKED "EMERIO DESIGN", SET IN R1
 - FOUND MONUMENT AS DESCRIBED IN MONUMENT REFERENCE TABLE
 - (H) HELD MONUMENT POSITION
 - [] MONUMENT FALLING
 - R2 SURVEY REFERENCE NUMBER
 - FD. FOUND
 - IR IRON ROD
 - YPC YELLOW PLASTIC CAP
 - SF SQUARE FEET
 - SN SURVEY NUMBER, CLACKAMAS COUNTY SURVEY RECORDS
 - DOC. NO. DOCUMENT NUMBER, CLACKAMAS COUNTY DEED RECORDS
 - PUE PUBLIC UTILITY EASEMENT
 - PSPE PUBLIC STORMWATER PIPELINE EASEMENT (SEE NOTE 3)
 - PBAE PUBLIC PEDESTRIAN AND BICYCLE ACCESS EASEMENT (SEE NOTE 6)
 - STE STREET TREE EASEMENT TO BENEFIT THE CITY OF WILSONVILLE
 - SROZ SIGNIFICANT RESOURCE OVERLAY ZONE

NARRATIVE

THE PURPOSE OF THIS SURVEY IS TO SUBDIVIDE THE LAND DESCRIBED IN DOCUMENT NO. 2021-107591, CLACKAMAS COUNTY DEED RECORDS AS APPROVED IN CITY OF WILSONVILLE CASE FILE NO. DB20-0045. THE BASIS OF BEARINGS AND BOUNDARY DETERMINATION ARE PER SN2022-234.



SPRING TERRACE

A REPLAT OF LOT 9, "BRIDLE TRAIL RANCHETTS" (PLAT NO. 1147)
AND OTHER LAND LOCATED IN THE NORTHWEST 1/4 OF SECTION 13,
TOWNSHIP 3 SOUTH, RANGE 1 WEST, WILLAMETTE MERIDIAN,
CITY OF WILSONVILLE, CLACKAMAS COUNTY, OREGON
OCTOBER 19, 2023

BOOK _____ PAGE _____

PLAT NO. _____

CITY OF WILSONVILLE CASE FILE NO. DB20-0045

DECLARATION

KNOW ALL PERSONS BY THESE PRESENTS THAT SAMM-MILLER, LLC, AN OREGON LIMITED LIABILITY COMPANY, IS THE OWNER OF THE LAND REPRESENTED ON THE ANNEXED MAP, BEING MORE PARTICULARLY DESCRIBED IN THE ACCOMPANYING SURVEYOR'S CERTIFICATE, AND HAS CAUSED THE SAME TO BE SUBDIVIDED INTO LOTS AND TRACTS IN ACCORDANCE WITH THE PROVISIONS OF O.R.S. CHAPTER 92, AND DOES HEREBY GRANT ALL EASEMENTS AS SHOWN OR NOTED HEREON.

SAMM-MILLER, LLC, AN OREGON LIMITED LIABILITY COMPANY

BY: _____
SCOTT JAMES MILLER, MANAGER

ACKNOWLEDGEMENT

STATE OF OREGON)
)SS
COUNTY OF CLACKAMAS)

THIS INSTRUMENT WAS ACKNOWLEDGED BEFORE ME ON _____, 20____,
BY SCOTT JAMES MILLER, MANAGER OF SAMM-MILLER, LLC, AN OREGON LIMITED LIABILITY COMPANY.

NOTARY SIGNATURE _____

NOTARY PUBLIC - OREGON (PRINT NAME) _____

COMMISSION NO. _____

MY COMMISSION EXPIRES _____, 20____

PLAT NOTES

- THIS PLAT IS SUBJECT TO THE CONDITIONS OF APPROVAL PER CITY OF WILSONVILLE PLANNING CASE FILE NOS. DB20-0041, DB20-0042, DB20-0043, DB20-0044, AND DB20-0045.
- A 6.00-FOOT WIDE STREET TREE EASEMENT FOR THE BENEFIT OF THE CITY OF WILSONVILLE SHALL EXIST ON LOTS 1-5 TO PLANT, REMOVE OR MAINTAIN APPROVED STREET TREES. LOTS 1-5 ARE SUBJECT TO A STREET TREE EASEMENT AGREEMENT PER DOCUMENT NO. _____, CLACKAMAS COUNTY DEED RECORDS.
- A PORTION OF LOT 1 AND TRACT 'A' ARE SUBJECT TO A PUBLIC STORMWATER PIPELINE EASEMENT FOR STORMWATER PIPELINE ACCESS AND MAINTENANCE TO BENEFIT THE CITY OF WILSONVILLE.
- TRACT 'A' IS AN OPEN SPACE TRACT AND IS OWNED BY THE SPRING TERRACE HOMEOWNERS' ASSOCIATION PER DOCUMENT NO. _____, CLACKAMAS COUNTY DEED RECORDS.
- TRACT 'B' IS A SIGNIFICANT RESOURCE OVERLAY ZONE AS AS DEFINED BY CITY OF WILSONVILLE DEVELOPMENT CODE SECTIONS 4.139 THROUGH 4.139.11 AND IS SUBJECT TO A CONSERVATION EASEMENT AS RECORDED IN DOCUMENT NO. _____, CLACKAMAS COUNTY DEED RECORDS, FOR THE BENEFIT OF THE CITY OF WILSONVILLE, TO PRESERVE THE CITY'S MAPPED SIGNIFICANT RESOURCES.
- A PORTION OF LOT 1 AND THE ENTIRETY OF TRACT A IS SUBJECT TO A PUBLIC PEDESTRIAN AND BICYCLE ACCESS EASEMENT.
- THE ENTIRETY OF TRACT 'A' IS SUBJECT TO A BLANKET TREE PROTECTION AND PRESERVATION EASEMENT.
- THE ENTIRETY OF TRACT 'A' IS SUBJECT TO A BLANKET PUBLIC STORMWATER MAINTENANCE AND ACCESS EASEMENT.

SURVEYOR'S CERTIFICATE

I, JON T. FEIGION, CERTIFY THAT I HAVE CORRECTLY SURVEYED AND MARKED WITH PROPER MONUMENTS, THE LANDS REPRESENTED ON THE PLAT OF SPRING TERRACE, BEING A REPLAT OF LOT 9, "BRIDLE TRAIL RANCHETTS" (PLAT NO. 1147), CLACKAMAS COUNTY PLAT RECORDS, AND OTHER LAND CONVEYED TO SAMM-MILLER, LLC BY DEED RECORDED IN DOCUMENT NO. 2021-107591, CLACKAMAS COUNTY DEED RECORDS, LOCATED IN THE NORTHWEST ONE-QUARTER OF SECTION 13, TOWNSHIP 3 SOUTH, RANGE 1 WEST, WILLAMETTE MERIDIAN, CITY OF WILSONVILLE, CLACKAMAS COUNTY, OREGON, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT THE INITIAL POINT, WHERE I FOUND A 5/8" IRON ROD WITH YELLOW PLASTIC CAP MARKED "EMERIO DESIGN" AT THE NORTHEAST CORNER OF THE TRACT OF LAND CONVEYED TO SAMM-MILLER, LLC BY DEED RECORDED AS DOCUMENT NO. 2021-107591, CLACKAMAS COUNTY DEED RECORDS, ALSO BEING ON THE WEST LINE OF TRACT "M", WILSONVILLE MEADOWS NO. 6" (PLAT NO. 3092), SAID INITIAL POINT BEARS SOUTH 01°45'32" WEST, 145.53 FEET FROM A 5/8" IRON ROD WITH YELLOW PLASTIC CAP MARKED "EMERIO DESIGN" AT THE SOUTHEAST CORNER OF TRACT "D", "ASPEN MEADOWS NO. 2" (PLAT NO. 4613);

THENCE ALONG THE EAST LINE OF SAID SAMM-MILLER TRACT AND THE WEST LINE OF SAID TRACT "M", SOUTH 01°45'32" WEST, 149.25 FEET TO THE SOUTHEAST CORNER OF SAID SAM-MILLER TRACT; THENCE ALONG THE SOUTH LINE OF SAID SAMM-MILLER TRACT AND THE NORTH LINE OF THE PLAT OF "SUNDIAL" (PLAT NO. 2910), NORTH 89°02'35" WEST, 661.23 FEET TO THE WESTERLY LINE OF SAID SAMM-MILLER TRACT, ALSO BEING THE EASTERLY RIGHT OF WAY LINE OF CANYON CREEK ROAD SOUTH (25.0 FEET FROM CENTERLINE);

THENCE ALONG SAID EASTERLY RIGHT OF WAY LINE, NORTH 01°46'04" EAST, 106.58 FEET TO A POINT OF NONTANGENT CURVATURE; THENCE 53.81 FEET ALONG THE ARC OF A NONTANGENT 50.00-FOOT RADIUS CURVE (THE RADIUS POINT BEARS NORTH 28°13'56" WEST) THROUGH A CENTRAL ANGLE OF 61°39'33" (THE CHORD BEARS NORTH 30°56'18" EAST, 51.25 FEET) TO THE NORTHWEST CORNER OF SAID SAMM-MILLER TRACT, BEING ON THE SOUTH LINE OF LOT 8, OF SAID "BRIDLE TRAIL RANCHETTS", THENCE ALONG THE NORTH LINE OF SAID SAMM-MILLER TRACT, SOUTH 88°53'14" EAST, 636.20 FEET TO THE INITIAL POINT.

SAID PLAT CONTAINS 98, 471 SQUARE FEET (2.26 ACRES), MORE OR LESS



RENEWAL 12-31-23
I HEREBY CERTIFY THAT THIS IS A TRUE AND EXACT COPY OF THE ORIGINAL PLAT.

CONSENT AFFIDAVIT

A SUBDIVISION PLAT CONSENT AFFIDAVIT BY ALERA MANAGEMENT GROUP, AN OREGON LIMITED LIABILITY COMPANY, BENEFICIARY OF THAT TRUST DEED RECORDED IN INSTRUMENT NO. 2022-038925, DATED JULY 6, 2022, CLACKAMAS COUNTY DEED RECORDS, HAS BEEN EXECUTED AND RECORDED IN INSTRUMENT NO. _____, CLACKAMAS COUNTY DEED RECORDS.

CITY OF WILSONVILLE APPROVALS

CITY OF WILSONVILLE CASE FILE NO. DB20-0045

APPROVED THIS _____ DAY OF _____, 20____

BY: _____
CITY OF WILSONVILLE PLANNING DIRECTOR

APPROVED THIS _____ DAY OF _____, 20____

BY: _____
CITY OF WILSONVILLE COMMUNITY DEVELOPMENT DIRECTOR

CLACKAMAS COUNTY APPROVALS

APPROVED THIS _____ DAY OF _____, 20____

BY: _____
CLACKAMAS COUNTY SURVEYOR AND CLACKAMAS COUNTY BOARD OF COMMISSIONERS PER CODE CHAPTER 11.02

ALL TAXES, FEES, ASSESSMENTS OR OTHER CHARGES AS PROVIDED BY ORS 92.095 HAVE BEEN PAID THROUGH JUNE 30, 2023.

APPROVED THIS _____ DAY OF _____, 20____

CLACKAMAS COUNTY ASSESSOR AND TAX COLLECTOR
BY: _____
DEPUTY

STATE OF OREGON)
)SS
COUNTY OF CLACKAMAS)
I DO HEREBY CERTIFY THAT THE ATTACHED PLAT WAS RECEIVED

FOR RECORD ON THE _____ DAY OF _____, 20____

AT _____ O'CLOCK _____ M.

AS PLAT NO. _____

DOCUMENT NO. _____
SHERRY HALL, CLACKAMAS COUNTY CLERK

BY: _____
DEPUTY



6445 SW FALLBROOK PLACE, SUITE 100
BEAVERTON, OREGON 97008
TEL: (503) 746-8812
FAX: (503) 639-9592
www.emeriodesign.com
EMERIO JOB: 0463-005

Exhibit E

Stormwater Management Plan
For Canyon Creek South Phase III
5-Lot Subdivision
Wilsonville, Oregon
(TL 3800 & 6400, Tax Map 31W13BD)

Emerio Project Number: 0463-005
City of Wilsonville Permit Number: PW21-0011
Date: 07/08/2021
Rev1: 09/23/2021
Rev2: 11/18/2021
Rev3: 08/15/2022
Rev4: 09/28/2023



Prepared For:
SAMM Miller LLC
Scott Miller
10211 SW Barber St.
Wilsonville, OR 97070
smiller@marquiscompanies.com

Prepared By:
Roy Hankins, PE
Emerio Design, LLC
6445 SW Fallbrook PL, Suite 100
Beaverton, Oregon 97008
(541) 521-9797
roy@emeriodesign.com

List of Appendices:

APPENDIX A – Site Information

- (1) Vicinity Map
- (2) Onsite Soils Maps – “Soils Survey for Clackamas County”
- (3) Curve Number Table
- (4) Infiltration Test Data and Email

APPENDIX B – Storm Facility Sizing & Analysis

- (1) Basin Tabulated Area Spreadsheet
- (2) WES BMP Sizing Report
- (3) Proposed Conveyance Spreadsheet
- (4) Downstream Conveyance Spreadsheet
- (5) Conveyance HydroCAD Plots

APPENDIX C – Site & Basin Maps

- (1) Pre-Developed Site Map
- (2) Post-Developed Basin Map
- (3) Proxy Treatment & Storm System Map
- (4) Downstream Basin Map
- (5) Downstream System Map

Project Overview and Description:

Size and location of project site: The current site is located approximately 510 feet south of the intersection of Daybreak Street & Canyon Creek Road South on the east side of SW Canyon Creek Road South. The site will be developed into a 5-lot subdivision, which will include public street areas and an open space tract. The site is located at 28705 Canyon Creek Road South in Wilsonville, Oregon (Appendix A(1)).

Zoning: The property is zoned PDR3.

Type of Development: The proposed residential development will consist of a public street, a tract with an associated concrete pathway, and four new duplexes and a quadplex, each with associated driveways.

Existing vs. post-construction conditions: Currently the site is made up of two existing residential lots on opposite sides of Canyon Creek Road South. All onsite paved areas and buildings on tax lot 6400 are to be removed. In the post-developed condition, there will be 5 proposed onsite lots, four of which will contain duplexes, while the fifth will contain a quadplex. There will also be one open space tract, and a public street along the northern border of the site.

Watershed Description: The site currently sheet flows toward the south and east toward Boeckman Creek. In the post-developed condition, the onsite and ROW impervious areas flows will infiltrate into the local soil or route to an existing outfall into Boeckman Creek via proposed stormwater planters. Most flows will route to the outfall due to low infiltration rates. Onsite pervious areas and the concrete pathway on Tract A will sheet flow to the south and east towards Boeckman Creek in a similar flow pattern to the pre-developed site condition.

Soil Classification:

The NRCS soil survey of Clackamas County, Oregon classifies the onsite soils as Aloha Silt Loam, Woodburn Silt Loam, and Xerochrepts and Haploxerolls. The associated hydrologic groups for these soils are C/D, C, and B respectively. As all construction aside from stormwater conveyance structures will occur in the Aloha Silt Loam and Woodburn Silt Loam areas, hydraulic soil group C will be used in this analysis. For the analysis of the proposed storm pipe network, a curve number of 86 will be used for pervious surfaces, and a curve number of 98 will be used for impervious surfaces. See Appendix A(2) for a soil classification map and A(3) for a curve number table.

Infiltration Testing:

Onsite infiltration testing was conducted by Hardman Geotechnical Services. The recommended infiltration rate from the test results was 0.3 in/hr as an average of the two tested onsite infiltration rates. A factor of safety of 2.0 was applied to this recommended infiltration rate in the design of the proposed stormwater facilities. See Appendix A(3) for infiltration test data and emailed recommendations from the Geotechnical Engineer.

Treatment Methodology:

Stormwater runoff will be addressed for this project by filtration planters and porous pavement, which will provide treatment and detention for the whole development. The City of Wilsonville approves the use of the WES BMP Sizing Tool to size the filtration planter facilities. Most proposed sidewalk and roadway areas will be treated by five filtration planters situated in the ROW. Four of these facilities will also manage runoff from impervious areas on lots 2, 3, 4, and 5. All five of these ROW planters will be unlined and

will allow for infiltration to the soil below. Impervious areas from lots 1 & 2 will be managed by individual lined filtration planters located on each lot, except for lot 2's driveway, which will route runoff to planter 4. All treated roof areas will route runoff to their respective planters via laterals. Sizing for the lot 2 planter assumes the total tributary impervious area is 2,750 SF per Wilsonville design standards for duplexes, while lot 1 uses the actual tributary impervious area as lot 1 contains a quadplex. All lot impervious areas routing runoff to the ROW planters will use actual impervious areas as the proposed homes develop more than 2,750 SF of impervious area per lot. All treatment areas are assumed to be 100% impervious. See Appendix B(1) for a list of all tabulated basin areas. See Appendix C(2) for planter locations and designations.

Due to ROW area restrictions, planters 4 & 5 will contain expanded, 30" deep growing mediums to reduce their required planter areas by 25%. This design modification allows the available planter areas to meet Wilsonville design standards. See the table below and Appendix B(2) for the sizing results.

A small section of new sidewalk and road area on the west side of the current Canyon Creek S cul-de-sac will go untreated. Most of the new pathway through Tract A will also go untreated. A section of roadway on the east side of the cul-de-sac to be maintained by grind and inlay paving will be proxy treated for most untreated areas in planters 1 & 2. In total, 1,633 of existing impervious area will be proxy treated for 526 SF of new sidewalk and road area, and 1,107 SF of pathway area on Tract A. The remaining 174 SF of new pathway area on Tract A will be constructed porous pavement to provide adequate stormwater management. See Appendix C(3) for a proxy treatment map.

Outlet pipes with flow control structures and overflow pipes will be provided for each public facility to route any stormwater that is not being infiltrated southeast to the outfall to Boeckman Creek.

See the following table for total combined basin areas going to each facility and both the required and provided planter sizes.

Basin ID	Facility ID	Total Basin Area (SF)	Facility Area Required (SF)	Facility Area Provided (SF)	Orifice Size (in)
A, B	Planter 1	2,949	118.0	171.1	0.5
C, D, E	Planter 2	6,057	240.8	243.0	0.7
F, G, H	Planter 3	5,634	225.4	278.8	0.7
I, J	*Planter 4	8,135	244.1	279.2	0.9
K	*Planter 5	629	19.0	19.0	0.2
M	Lot 1 Planter	5,815	407.1	408.0	0.7
L	Lot 2 Planter	2,750	192.5	193.0	0.5
N	Tract A Porous Pavement	174	N/A	N/A	N/A

*The required facility areas are reduced by 25% due to the increased growing medium depths in Planters 4 & 5.

As shown in the table above, all proposed facilities were appropriately sized to meet water quality and detention standards. See Appendix C(2) for the basin delineation map and Appendix B(2) for the BMP sizing report.

Conveyance Analysis:

All onsite post-developed storm drainage will route to proposed curb inlets or catch basins to enter the proposed storm system. Upstream areas will enter the storm system via proposed catch basins along Canyon Creek S.

The proposed storm conveyance system is a combination of 12" diameter storm pipes throughout the site. The proposed storm pipe systems will be designed to convey the 25-year, 24-hour design storm with rain intensity of 4.0 inches. HydroCAD v.10 was used to model all basin runoff quantities. Results indicate that all proposed storm pipes associated with development are appropriately sized and sloped to convey the post-developed storm drainage of the 25-year design storm under open channel flow conditions. See Appendix B(3) for the proposed stormwater conveyance spreadsheet, Appendix B(5) for the associated HydroCAD plots, Appendix C(2) for a conveyance basin map, and Appendix C(3) for a map of the analyzed new storm system.

Downstream Analysis:

An analysis of the downstream system capacity was performed up to the point the developed onsite flows are less than 10% of the tributary flow.

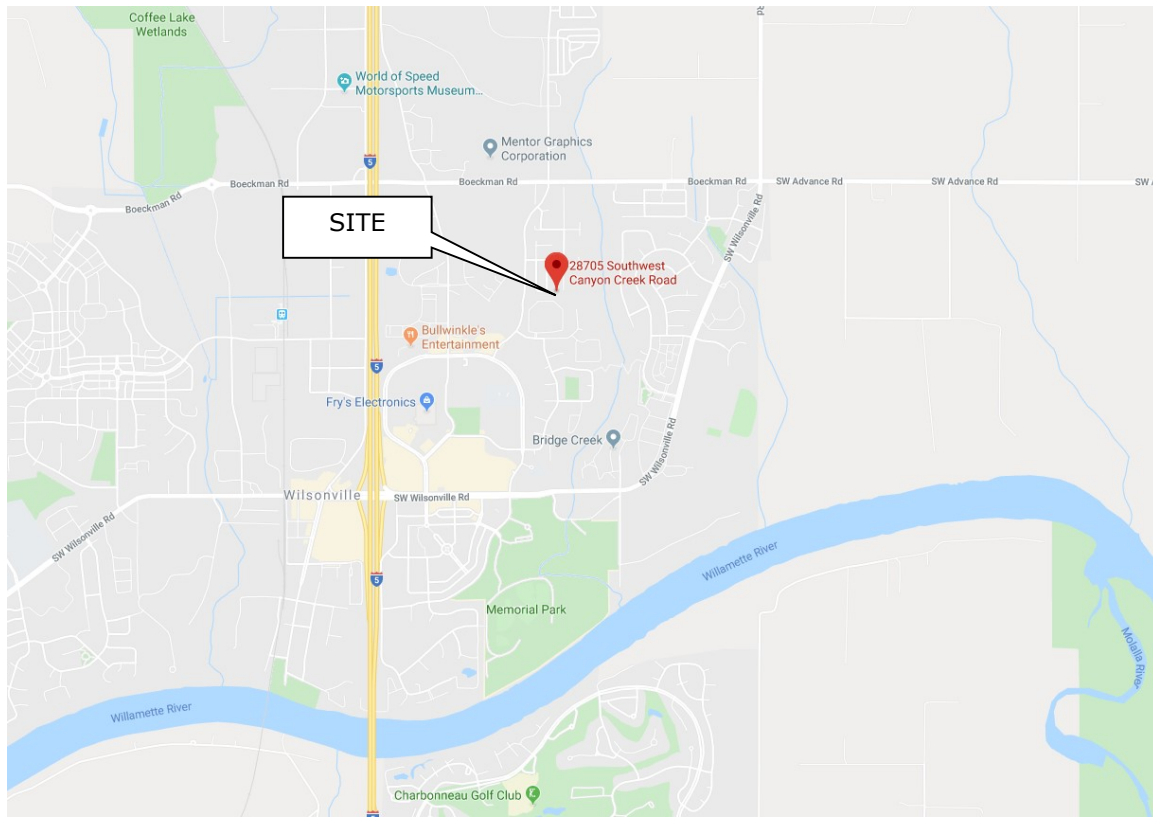
The existing downstream storm system is a combination of 12" diameter storm pipes with slopes ranging from 0.40% to 40.80%. Downstream basins were delineated to determine the total tributary flows based on City of Wilsonville as-built and GIS data. HydroCAD v.10 was used to model all basin runoff quantities during the 25-year design storm. It was determined that the total onsite flow directly entering the downstream system (0.624 cfs) reaches less than 10% of the total tributary flow (11.961 cfs) in the existing pipe that outfalls to Boeckman Creek. Up to this point, all downstream segments were found to operate within capacity assuming open channel flow throughout the system. See Appendix B(4) for the proposed stormwater conveyance spreadsheet, Appendix B(5) for the associated HydroCAD plots, Appendix C(4) for a downstream basin map, and Appendix C(5) for a map of the analyzed storm system.

Conclusion:

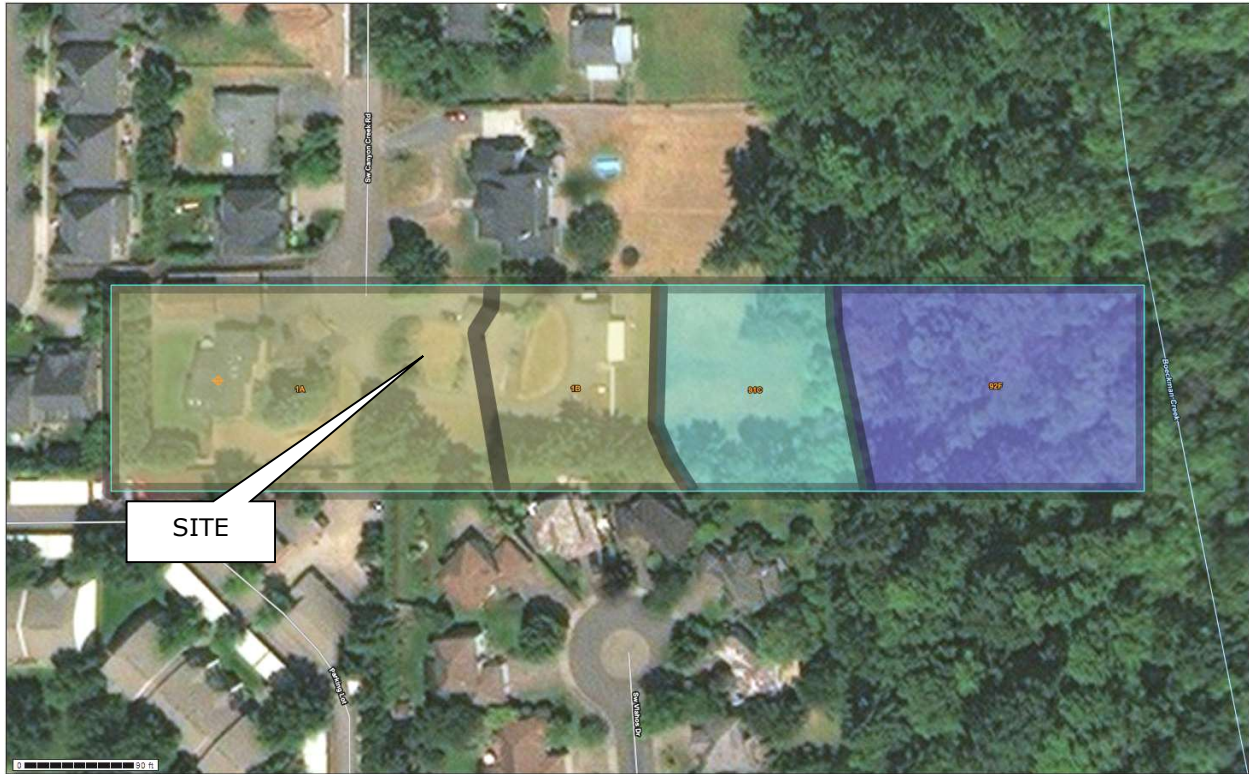
The design of the proposed site satisfies the stormwater design standards set by the City of Wilsonville.

Appendix A

Appendix A(1)
Vicinity Map



Appendix A(2)
Soil Classification Map



Tables — Hydrologic Soil Group — Summary By Map Unit

Summary by Map Unit — Clackamas County Area, Oregon (OR610)

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
1A	Aloha silt loam, 0 to 3 percent slopes	C/D	1.2	36.6%
1B	Aloha silt loam, 3 to 6 percent slopes	C/D	0.6	16.8%
91C	Woodburn silt loam, 8 to 15 percent slopes	C	0.6	18.0%
92F	Xerochrepts and Haploxerolls, very steep	B	1.0	28.7%
Totals for Area of Interest			3.3	100.0%

Appendix A(3)
Curve Number Table

RUNOFF CURVE NUMBERS (TR55)					
Table 2-2a: Runoff curve numbers for urban areas ¹					
Cover description		CN for hydrologic soil group			
Cover type and hydrologic condition	Average percent impervious area ²	A	B	C	D
		<i>Fully developed urban areas (vegetation established)</i>	Use CN = 86 for Onsite and Offsite Pervious Areas		
Open space (lawns, parks, golf courses, cemeteries, etc.) ³ :					
Poor condition (grass cover <50%)	68	79		86	89
Fair condition (grass cover 50% to 75%)	49	69		79	84
Good condition (grass cover >75%)	39	61	74	80	
Impervious areas:					
Paved parking lots, roofs, driveways, etc. (excluding right-of-way)		98	98	98	98
Streets and roads:					
Paved; curbs and storm sewers (excluding right-of-way)				98	98
Paved; open ditches (including right-of-way)				92	93
Gravel (including right-of-way)		76	85	89	91
Dirt (including right-of-way)		72	82	87	89
Western desert urban areas:					
Natural desert landscaping (pervious areas only) ⁴		63	77	85	88
Artificial desert landscaping (impervious weed barrier, desert shrub with 1- to 2-inch sand or gravel mulch and basin borders)		96	96	96	96
Urban districts:					
Commercial and business	85	89	92	94	95
Industrial	72	81	88	91	93
Residential districts by average lot size:					
1/8 acre or less (town houses)	65	77	85	90	92
1/4 acre	38	61	75	83	87
1/3 acre	30	57	72	81	86
1/2 acre	25	54	70	80	85
1 acre	20	51	68	79	84
2 acres	12	46	65	77	82

Eric,

We have the field work on this project completed.

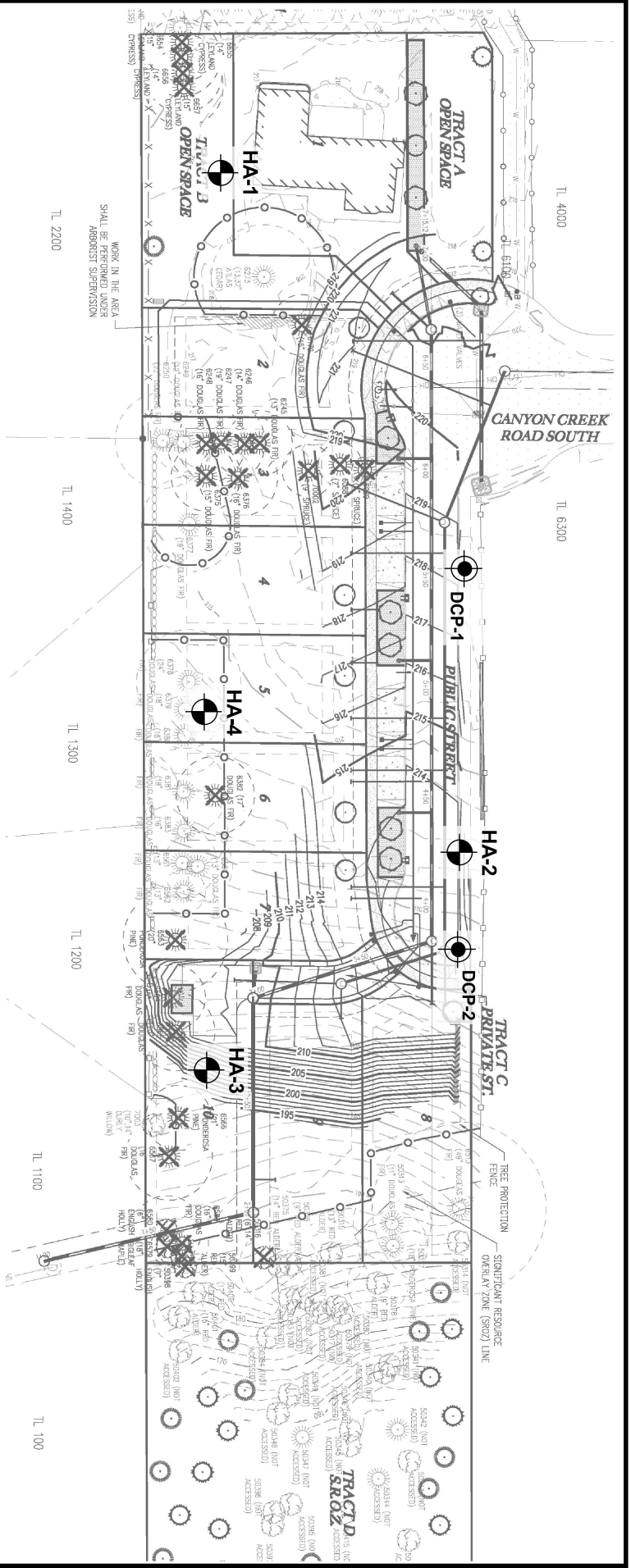
In the mean time, here is a site plan and the infiltration test results if you need to finalize your stormwater design. We had 0.4 inch/hour in HA-1 and 0.24 in/hour in HA-2, we recommend using the average of 0.3 inch/hour for design of the LIDAs or pervious pavements.

Report to follow soon.

Scott L. Hardman, P.E., G.E.
Hardman Geotechnical Services Inc.

503-575-5634 mobile

SITE PLAN AND
EXPLORATION LOCATIONS



Legend



HA-4 Hand Auger Designation and
 Approximate Location



DCP-2 Dynamic Cone Penetrometer (DCP) Test,
 Approximate Location

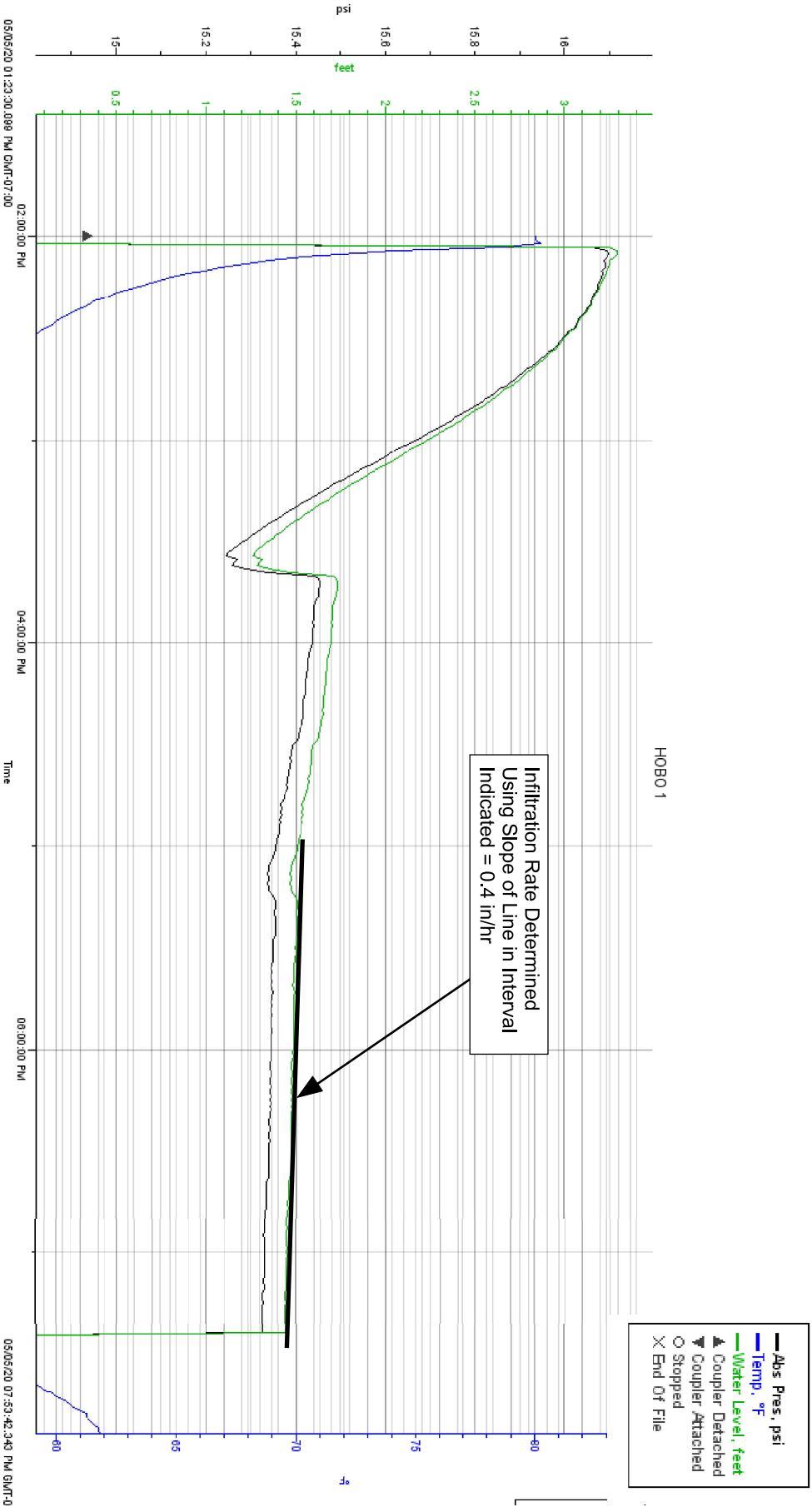
Base map provided by Emerio Design

Project: 28700 and 28705 Canyon Creek Road S
 Wilsonville, Oregon

Project No. 20-2574

FIGURE 2

INFILTRATION TEST DATA

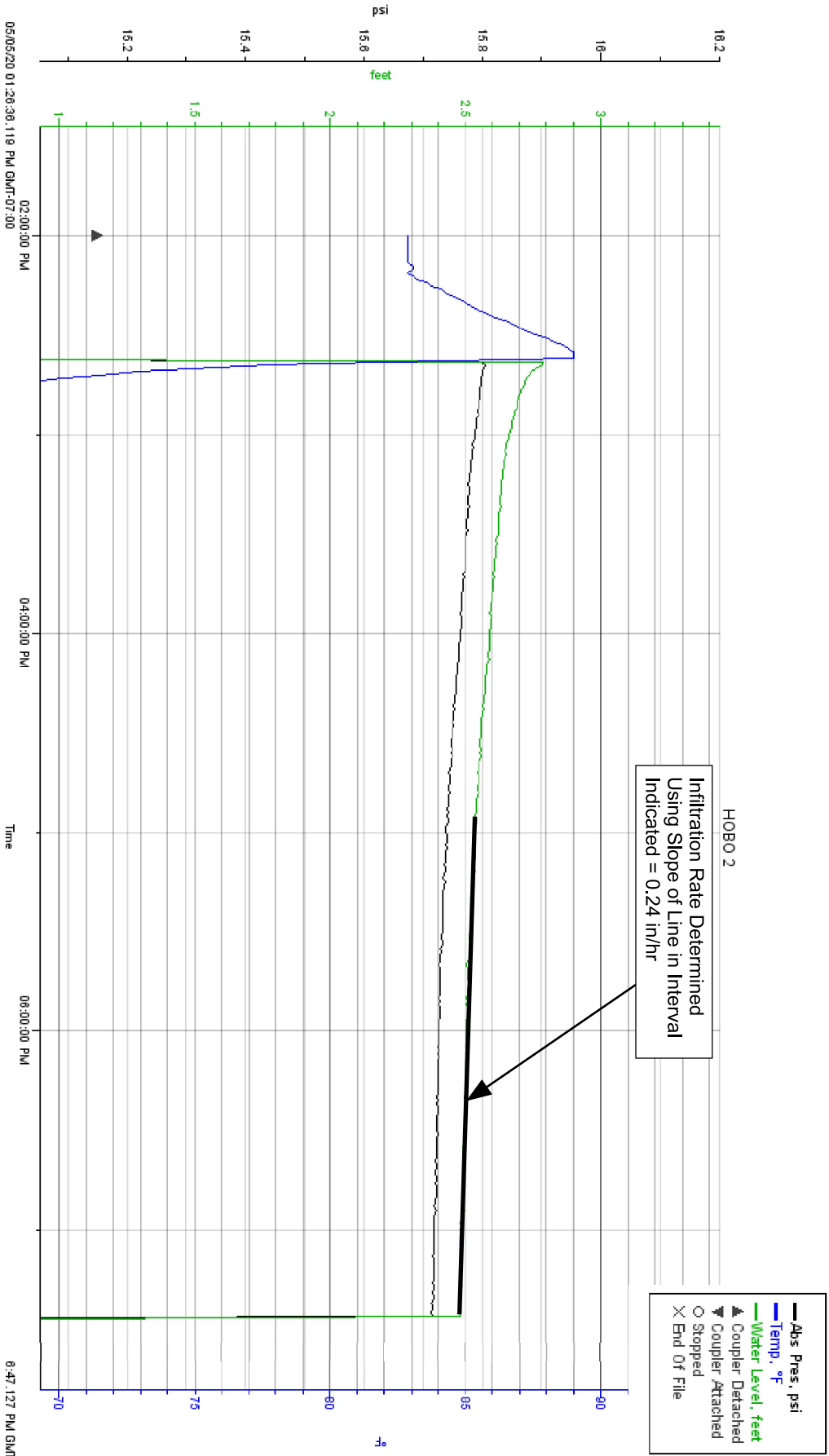


Project: 28700 and 28705 Canyon Creek Rd S
 Wilsonville, Oregon

Date Tested: 5/5/20
 Tested By: SLH
 Project No: 20-2574

Boring: HA-1
 Depth: 4 Feet

INFILTRATION TEST DATA



Project: 28700 and 28705 Canyon Creek Rd S
 Wilsonville, Oregon

Date Tested: 5/5/20
 Tested By: SLH
 Project No: 20-2574

Boring: HA-2
 Depth: 4 Feet

Appendix B

Basin Area Tabulated Data
Canyon Creek S Phase 3

Appendix B(1)

Basin ID	Name	Total Area SF	Total Area Acres	Lot Impervious SF	ROW/Tract Imp SF	Total Impervious SF	Total Pervious SF
A	Canyon Creek S Proposed	1,629	0.04	0	1,629	1,629	0
B	Lot 5 West Roof	1,320	0.03	1,320	0	1,320	0
C	Lot 5 East Roof & Driveway	1,807	0.04	1,807	0	1,807	0
D	Canyon Creek S & Public Road West	2,930	0.07	0	2,930	2,930	0
E	Lot 4 West Roof	1,320	0.03	1,320	0	1,320	0
F	Lot 4 East Roof & Driveway	1,807	0.04	1,807	0	1,807	0
G	Public Road Center	2,507	0.06	0	2507	2,507	0
H	Lot 3 West Roof	1,320	0.03	1,320	0	1,320	0
I	Lot 3 East Roof	1,320	0.03	1,320	0	1,320	0
J	Public Road East and Lots 3 & 2 Driveways	6,815	0.16	0	6,815	6,815	0
K	Public Road Sidewalk	629	0.01	0	629	629	0
L	Lot 2 Roof	2,750	0.06	2,750	0	2,750	0
M	Lot 1 Impervious	5,815	0.13	5,815	0	5,815	0
N	Tract A Porous Pavement	174	0.00	0	174	174	0
1	Offsite 1	27,021	0.62	14,207	4,944	19,151	7,870
2	Offsite 2	22,073	0.51	2,750	2,739	5,489	16,584
3	Downstream 1	16,500	0.38	16,500	0	16,500	0
4	Downstream 2	617,646	14.18	295,241	38,482	333,723	283,923

*Offsite Basin 1 includes impervious areas from lots T1, T2, & T3 that will route to the proposed storm system via laterals

**Downstream Basin 1 only includes lot impervious areas routing to the downstream storm system via laterals

WES BMP Sizing Report

Project Information

Project Name	Canyon Creek South Ph 3
Project Type	Subdivision
Location	28705 SW Canyon Creek Road South
Stormwater Management Area	31931
Project Applicant	Samm-Miller LLC
Jurisdiction	OutofDistrict

Drainage Management Area

Name	Area (sq-ft)	Pre-Project Cover	Post-Project Cover	DMA Soil Type	BMP
A	1,629	Grass	ConventionalConcrete	C	Planter 1
B	1,320	Grass	Roofs	C	Planter 1
C	1,769	Grass	ConventionalConcrete	C	Planter 2
D	2,930	Grass	Roofs	C	Planter 2
E	1,320	Grass	Roofs	C	Planter 2
F	1,807	Grass	ConventionalConcrete	C	Planter 3
G	2,507	Grass	Roofs	C	Planter 3
H	1,320	Grass	Roofs	C	Planter 3
I	1,320	Grass	ConventionalConcrete	C	Planter 4
J	6,815	Grass	ConventionalConcrete	C	Planter 4
K	629	Grass	Roofs	C	Planter 5
L	2,750	Grass	Roofs	C	Lot 2 Planter
M	5,815	Grass	Roofs	C	Lot 1 Planter

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 3	FlowControlAndTreatment	Stormwater Planter -	C3	225.4	278.8	0.7

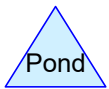
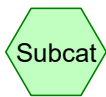
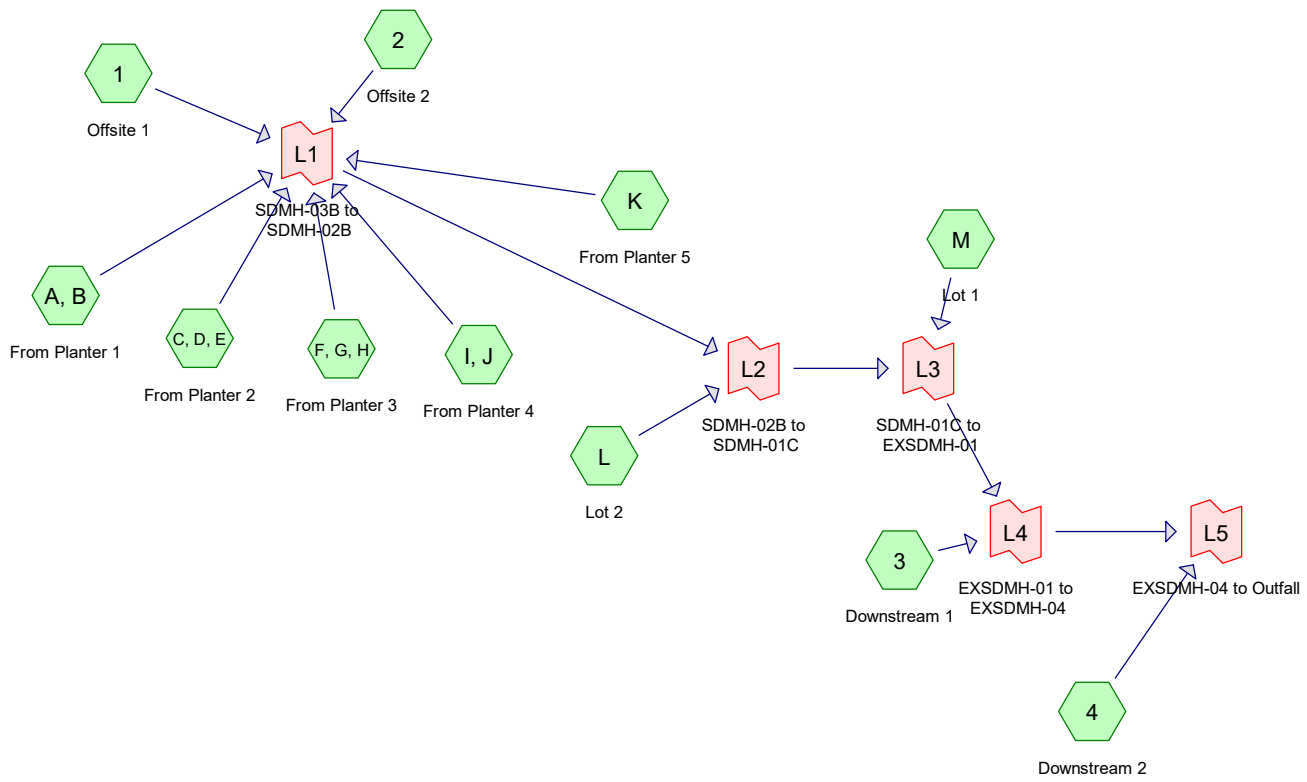
		Filtration				
Planter 2	FlowControlAndTreatment	Stormwater Planter - Filtration	C3	240.8	243.0	0.7
Planter 1	FlowControlAndTreatment	Stormwater Planter - Filtration	C3	118.0	171.1	0.5
Planter 4	FlowControlAndTreatment	Stormwater Planter - Filtration	C3	325.4	279.2	0.9
Lot 1 Planter	FlowControlAndTreatment	Stormwater Planter - Filtration	Lined	407.1	408.0	0.7
Lot 2 Planter	FlowControlAndTreatment	Stormwater Planter - Filtration	Lined	192.5	193.0	0.5
Planter 5	FlowControlAndTreatment	Stormwater Planter - Filtration	C3	25.2	19.0	0.2

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 B(3)
Project:		Canyon Creek South Phase 3												
Project:		Conveyance Calculations												
Date:		8/15/2022												
Calc'd By:		Hankins												
Pipe Information and Calculations														
Segment	Design Section	Q (Calc'd) "Q"	Pipe Dia. (inch) "D"	Pipe Dia. (ft) "D"	Manning's number "n"	Slope "S" %	Slope "S"	Area Full (Calc'd) "Af"	Wetted Perimeter (Calc'd) "Wp"	Hydraulic Radius (Calc'd) "Rf"	Velocity Full (Calc'd) "Vf"	Flow Rate Full (Calc'd) "Qf"	% Pipe Capacity Used (Calc'd) "Q/Qf"	Velocity @ Q/Qf (Calc'd) "V"
SDMH-03B to SDMH-02C	Public Street	1.394	12	1.00	0.013	0.44	0.0044	0.785	3.142	0.250	3.017	2.370	58.8%	1.77
SDMH-02C to SDMH-02B	Public Street	1.394	12	1.00	0.013	3.19	0.0319	0.785	3.142	0.250	8.124	6.381	21.8%	1.77
SDMH-02B to SDMH-01C	Tract A	1.453	12	1.00	0.013	10.87	0.1087	0.785	3.142	0.250	14.996	11.778	12.3%	1.85
SDMH-01C to SDMH-01B	Tract A	1.513	12	1.00	0.013	10.10	0.1010	0.785	3.142	0.250	14.455	11.353	13.3%	1.93
SDMH-01B to EXSDMH-00A	Tract A	1.513	12	1.00	0.013	0.44	0.0044	0.785	3.142	0.250	3.017	2.370	63.8%	1.93

														Appendix B(4)
Project:		Canyon Creek South Phase 3												
Project:		Downstream Conveyance Calculations												
Date:		8/15/2022												
Calc'd By:		Hankins												
														Pipe Information and Calculations
Segment	Design Section	Q (Calc'd) "Q"	Pipe Dia. (inch) "D"	Pipe Dia. (ft) "D"	Manning's number "n"	Slope "S" %	Slope "S"	Area Full (Calc'd) "Af"	Wetted Perimeter (Calc'd) "WPf"	Hydraulic Radius (Calc'd) "Rf"	Velocity Full (Calc'd) "Vf"	Flow Rate Full (Calc'd) "Qf"	% Pipe Capacity Used (Calc'd) "Q/Qf"	Velocity @ Q/Qf (Calc'd) "V"
EXSDMH-01 to EXSDMH-02	Downstream	1.869	12	1.00	0.013	0.40	0.0040	0.785	3.142	0.250	2.877	2.259	82.7%	2.38
EXSDMH-02 to EXSDMH-03	Downstream	1.869	12	1.00	0.013	0.40	0.0040	0.785	3.142	0.250	2.877	2.259	82.7%	2.38
EXSDMH-03 to EXSDMH-04	Downstream	1.869	12	1.00	0.013	0.40	0.0040	0.785	3.142	0.250	2.877	2.259	82.7%	2.38
EXSDMH-04 to Outfall	Downstream	11.961	12	1.00	0.013	40.80	0.4080	0.785	3.142	0.250	29.054	22.819	52.4%	15.23



Routing Diagram for 0463-005 Downstream
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0463-005 Downstream

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Printed 8/15/2022

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Page 2

Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
350,223	98	(3, 4)
283,923	86	(4)
53,543	98	Impervious (1, 2, A, B, C, D, E, F, G, H, I, J, K, L, M)
24,454	86	Pervious (1, 2)

0463-005 Downstream

Type IA 24-hr 25-year Rainfall=4.00"

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Summary for Subcatchment 1: Offsite 1

Runoff = 0.528 cfs @ 7.89 hrs, Volume= 7,679 cf, Depth= 3.41"

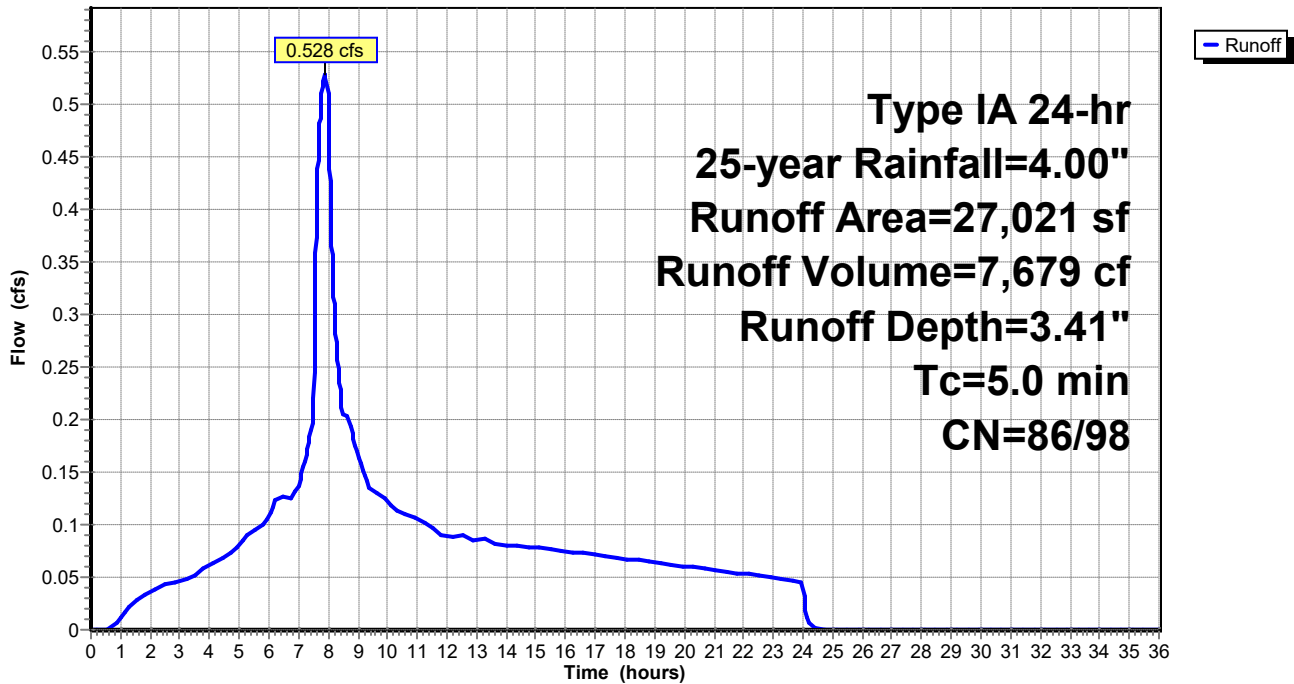
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type IA 24-hr 25-year Rainfall=4.00"

	Area (sf)	CN	Description
*	19,151	98	Impervious
*	7,870	86	Pervious
	27,021	95	Weighted Average
	7,870	86	29.13% Pervious Area
	19,151	98	70.87% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

Subcatchment 1: Offsite 1

Hydrograph



0463-005 Downstream

Type IA 24-hr 25-year Rainfall=4.00"

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Summary for Subcatchment 2: Offsite 2

Runoff = 0.361 cfs @ 7.92 hrs, Volume= 5,241 cf, Depth= 2.85"

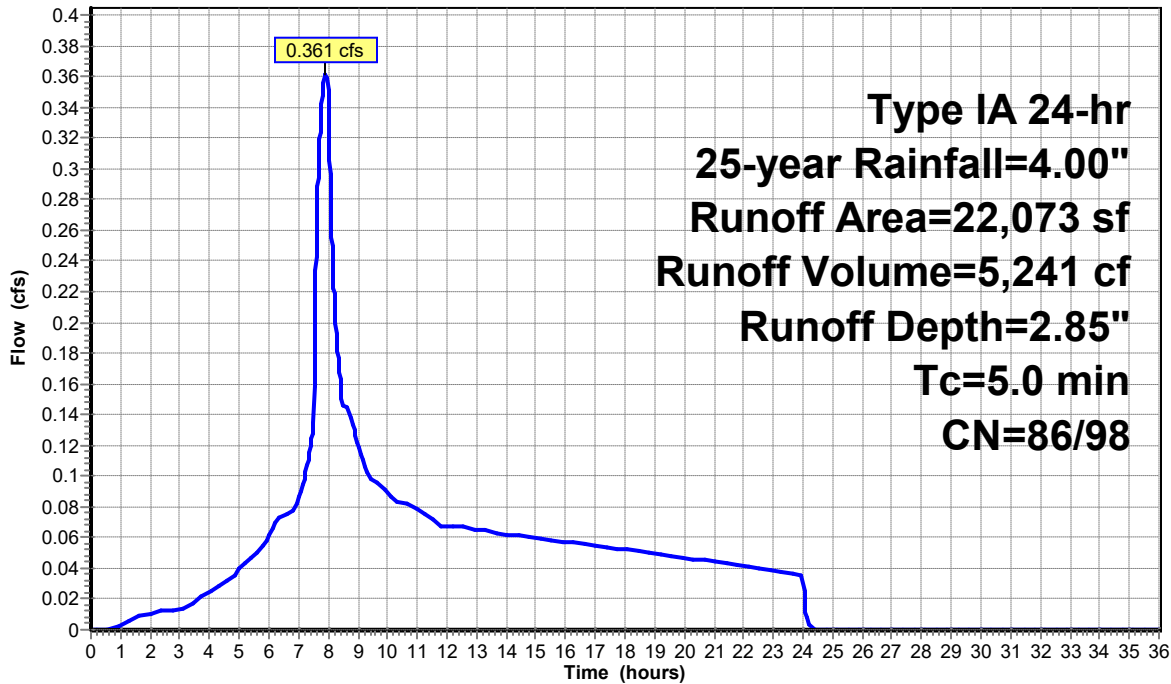
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type IA 24-hr 25-year Rainfall=4.00"

	Area (sf)	CN	Description
*	5,489	98	Impervious
*	16,584	86	Pervious
	22,073	89	Weighted Average
	16,584	86	75.13% Pervious Area
	5,489	98	24.87% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

Subcatchment 2: Offsite 2

Hydrograph



0463-005 Downstream

Type IA 24-hr 25-year Rainfall=4.00"

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Summary for Subcatchment 3: Downstream 1

Runoff = 0.356 cfs @ 7.88 hrs, Volume= 5,177 cf, Depth= 3.77"

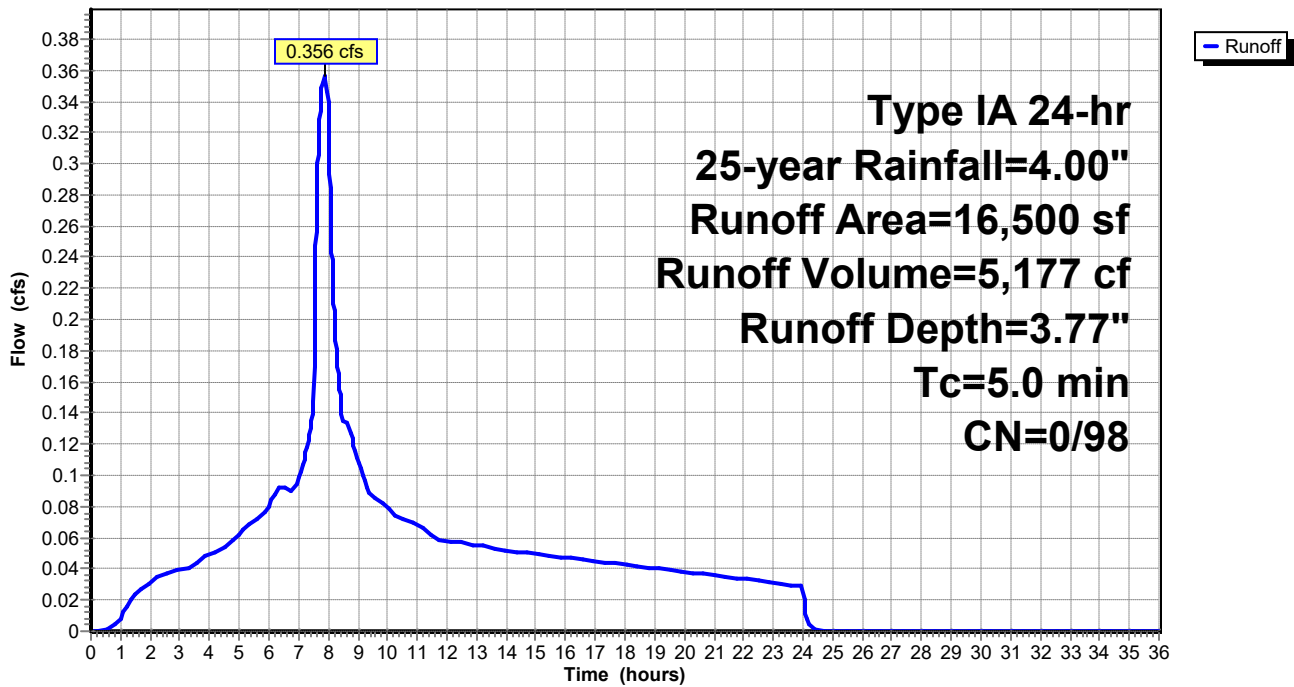
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type IA 24-hr 25-year Rainfall=4.00"

	Area (sf)	CN	Description
*	16,500	98	
*	0	74	
	16,500	98	Weighted Average
	16,500	98	100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

Subcatchment 3: Downstream 1

Hydrograph



0463-005 Downstream

Type IA 24-hr 25-year Rainfall=4.00"

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Summary for Subcatchment 4: Downstream 2

Runoff = 10.145 cfs @ 8.00 hrs, Volume= 164,955 cf, Depth= 3.20"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type IA 24-hr 25-year Rainfall=4.00"

	Area (sf)	CN	Description
*	333,723	98	
*	283,923	86	
	617,646	92	Weighted Average
	283,923	86	45.97% Pervious Area
	333,723	98	54.03% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.4	50	0.0290	0.15		Sheet Flow, Grass: Short n= 0.150 P2= 2.60"
5.0	358	0.0290	1.19		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
3.7	591	0.0169	2.64		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.3	50	0.0060	3.11	1.697	Pipe Channel, 10.0" Round Area= 0.5 sf Perim= 2.6' r= 0.21' n= 0.013
0.1	84	0.0485	13.09	23.133	Pipe Channel, 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.013
0.2	181	0.0485	13.09	23.133	Pipe Channel, 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.013
14.7	1,314	Total			

0463-005 Downstream

Type IA 24-hr 25-year Rainfall=4.00"

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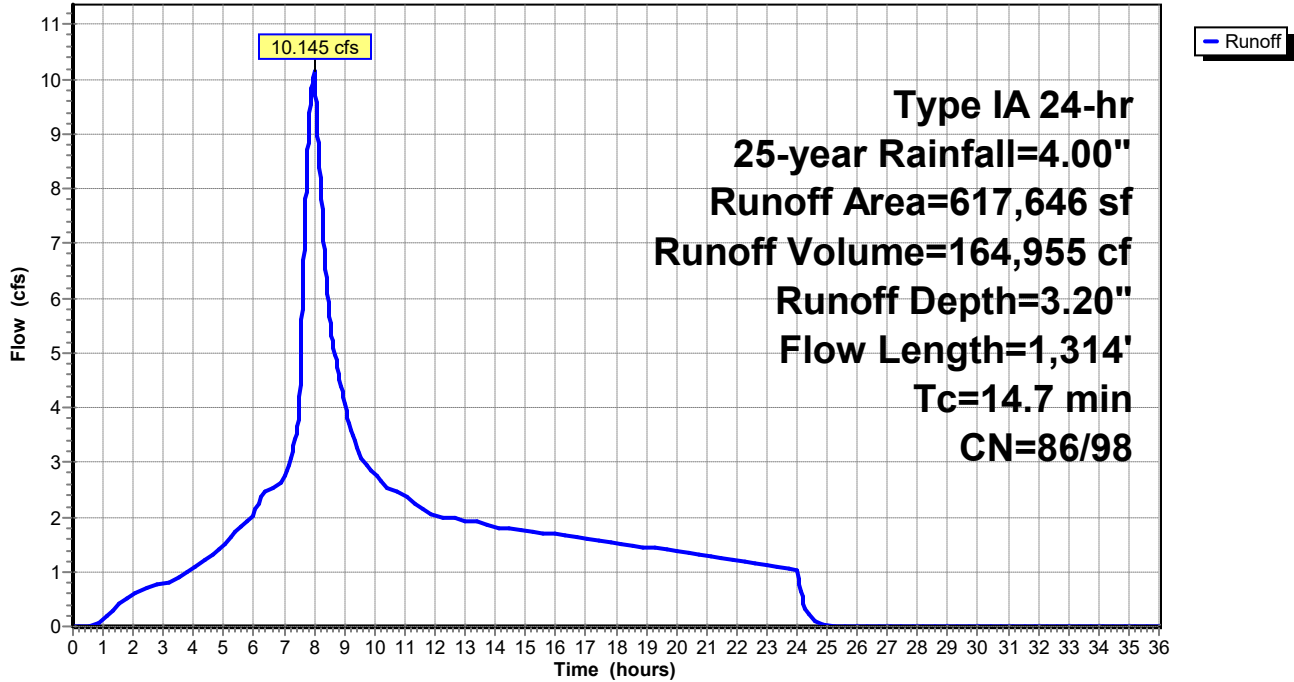
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Subcatchment 4: Downstream 2

Hydrograph



0463-005 Downstream

Type IA 24-hr 25-year Rainfall=4.00"

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Summary for Subcatchment A, B: From Planter 1

Runoff = 0.064 cfs @ 7.88 hrs, Volume= 925 cf, Depth= 3.77"

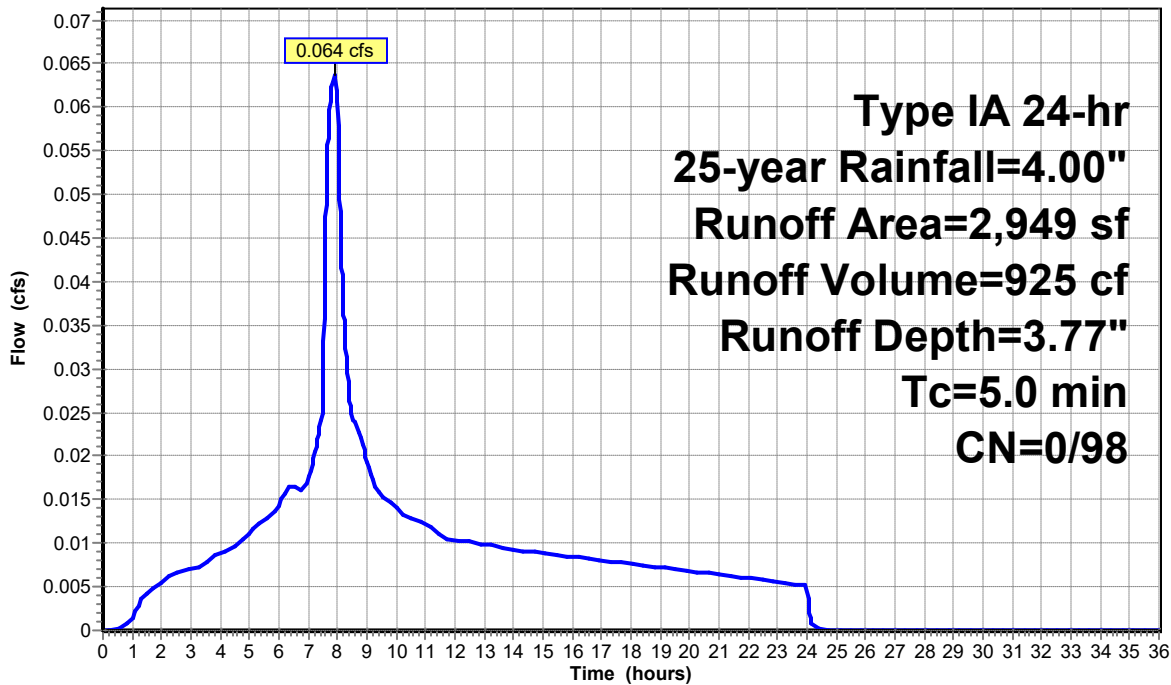
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type IA 24-hr 25-year Rainfall=4.00"

Area (sf)	CN	Description
* 2,949	98	Impervious
2,949	98	100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

Subcatchment A, B: From Planter 1

Hydrograph



Runoff

**Type IA 24-hr
25-year Rainfall=4.00"
Runoff Area=2,949 sf
Runoff Volume=925 cf
Runoff Depth=3.77"
Tc=5.0 min
CN=0/98**

0463-005 Downstream

Type IA 24-hr 25-year Rainfall=4.00"

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Summary for Subcatchment C, D, E: From Planter 2

Runoff = 0.131 cfs @ 7.88 hrs, Volume= 1,900 cf, Depth= 3.77"

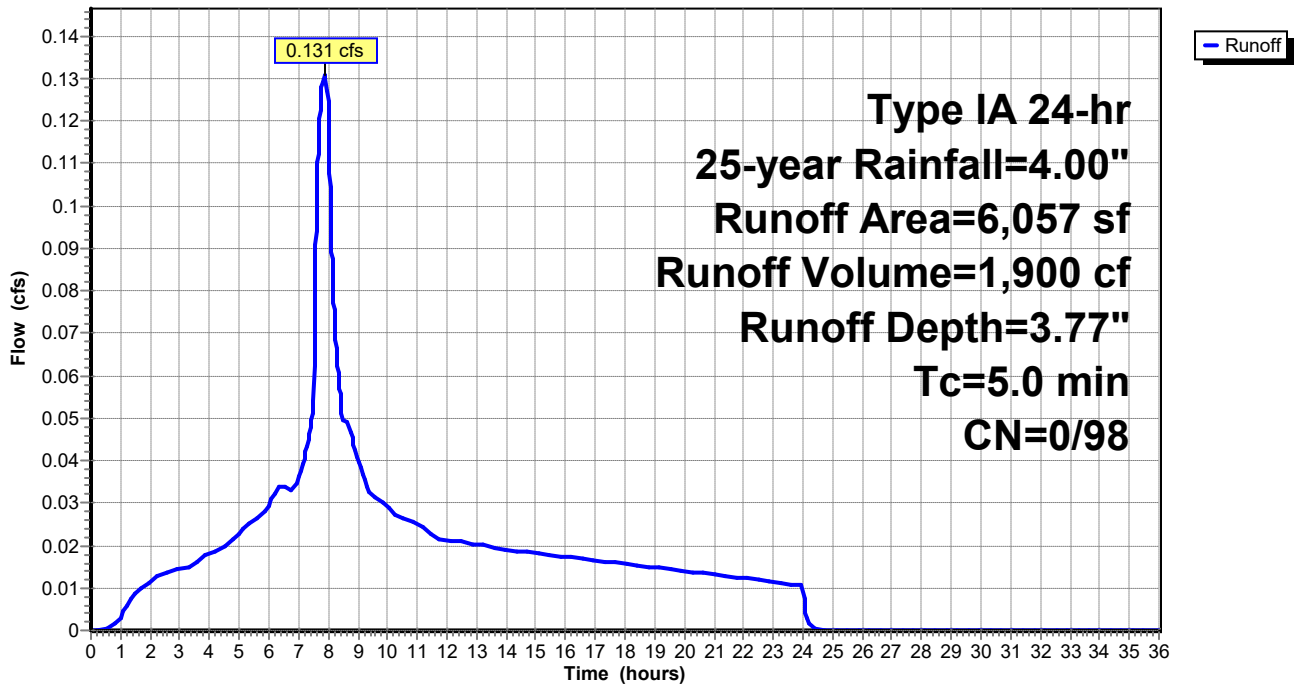
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type IA 24-hr 25-year Rainfall=4.00"

Area (sf)	CN	Description
* 6,057	98	Impervious
6,057	98	100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

Subcatchment C, D, E: From Planter 2

Hydrograph



0463-005 Downstream

Type IA 24-hr 25-year Rainfall=4.00"

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Summary for Subcatchment F, G, H: From Planter 3

Runoff = 0.122 cfs @ 7.88 hrs, Volume= 1,768 cf, Depth= 3.77"

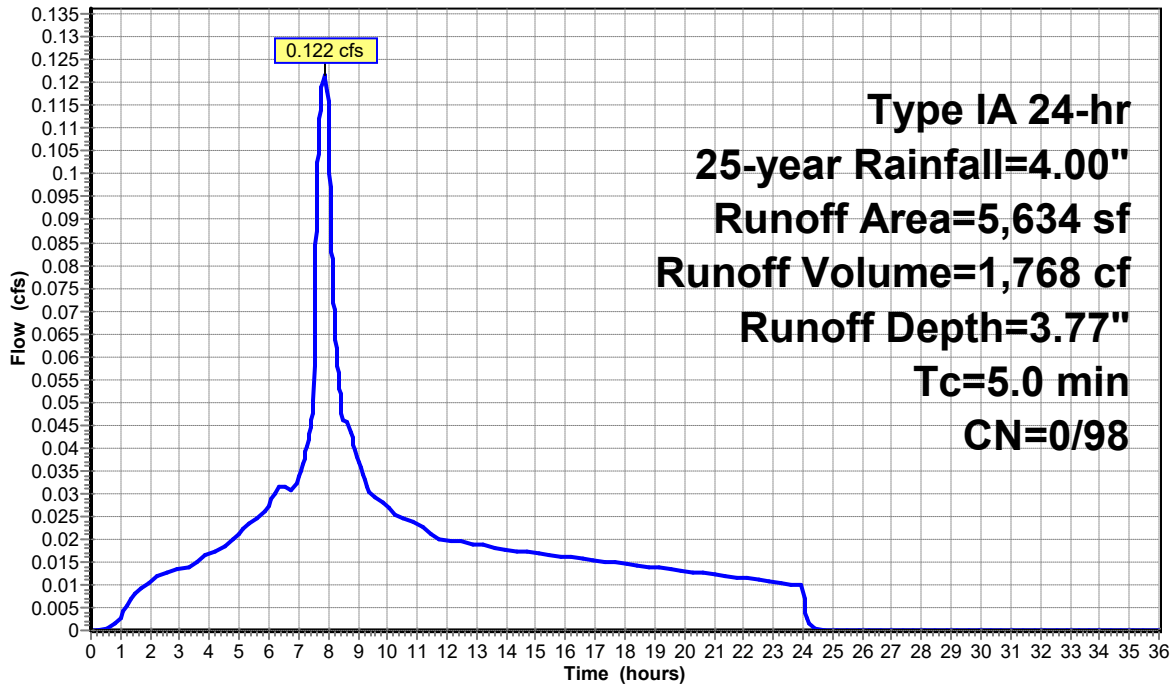
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type IA 24-hr 25-year Rainfall=4.00"

Area (sf)	CN	Description
* 5,634	98	Impervious
5,634	98	100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

Subcatchment F, G, H: From Planter 3

Hydrograph



0463-005 Downstream

Type IA 24-hr 25-year Rainfall=4.00"

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Summary for Subcatchment I, J: From Planter 4

Runoff = 0.176 cfs @ 7.88 hrs, Volume= 2,552 cf, Depth= 3.77"

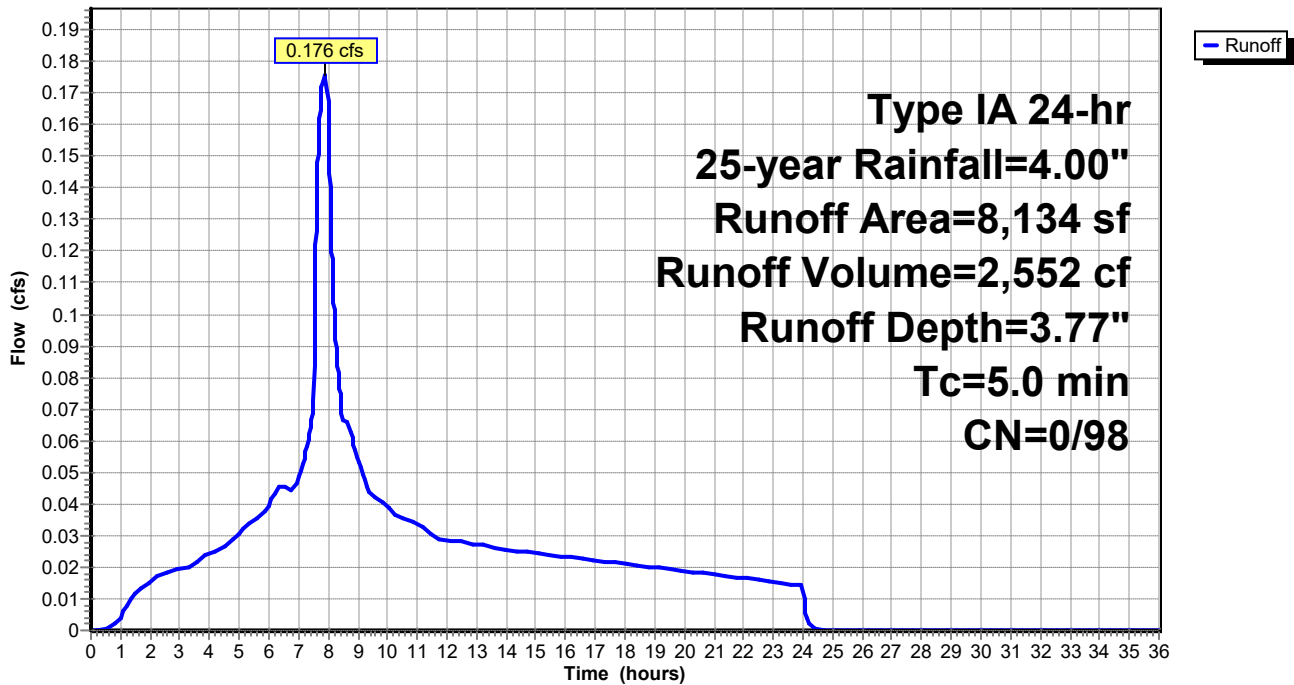
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type IA 24-hr 25-year Rainfall=4.00"

Area (sf)	CN	Description
* 8,134	98	Impervious
8,134	98	100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

Subcatchment I, J: From Planter 4

Hydrograph



0463-005 Downstream

Type IA 24-hr 25-year Rainfall=4.00"

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Summary for Subcatchment K: From Planter 5

Runoff = 0.014 cfs @ 7.88 hrs, Volume= 197 cf, Depth= 3.77"

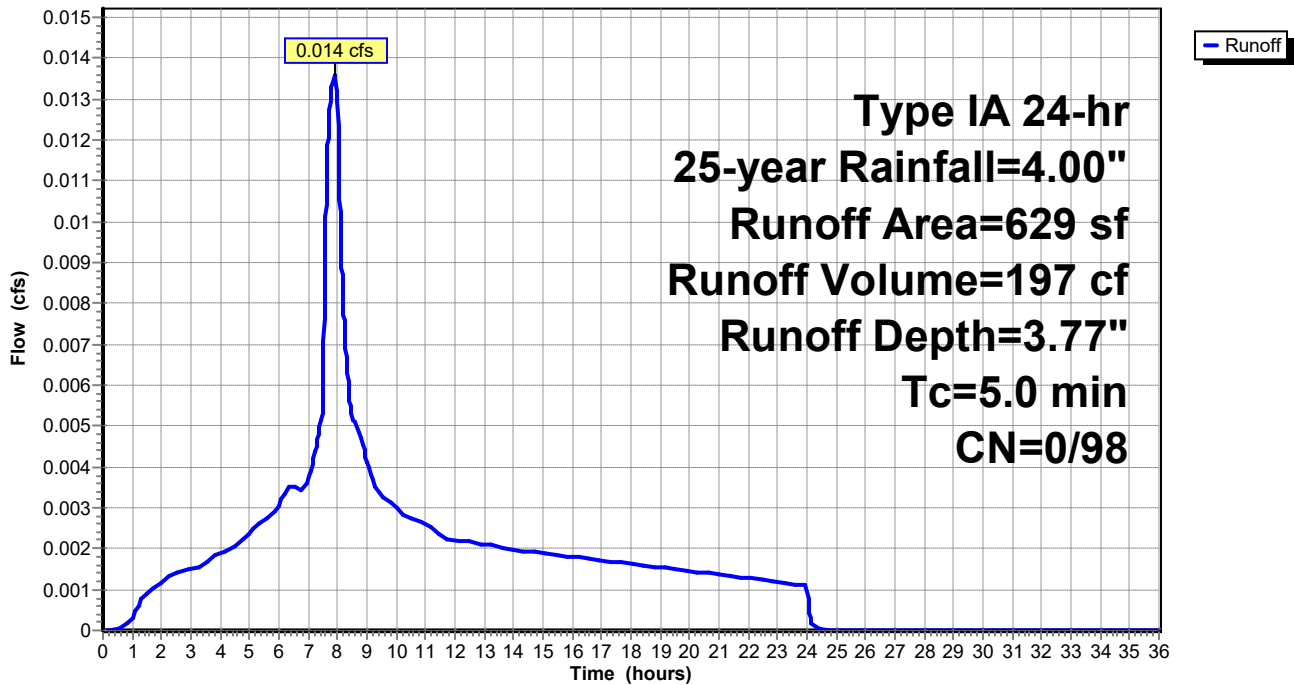
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type IA 24-hr 25-year Rainfall=4.00"

Area (sf)	CN	Description
* 629	98	Impervious
629	98	100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

Subcatchment K: From Planter 5

Hydrograph



0463-005 Downstream

Type IA 24-hr 25-year Rainfall=4.00"

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Summary for Subcatchment L: Lot 2

Runoff = 0.059 cfs @ 7.88 hrs, Volume= 863 cf, Depth= 3.77"

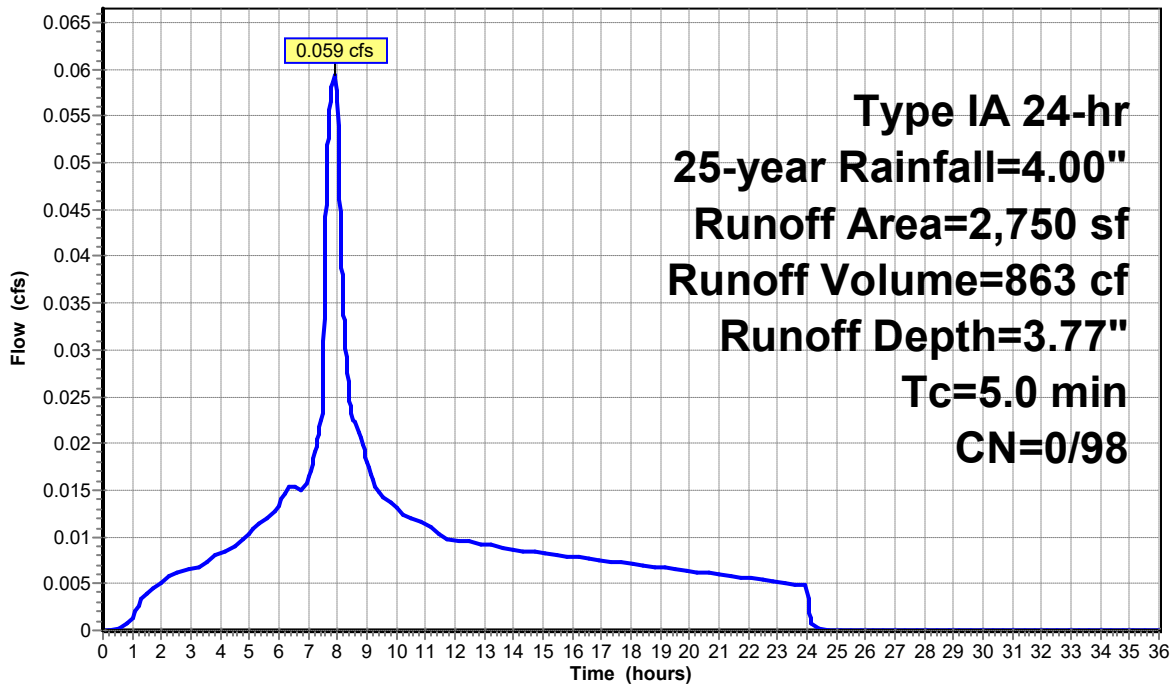
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type IA 24-hr 25-year Rainfall=4.00"

Area (sf)	CN	Description
* 2,750	98	Impervious
2,750	98	100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

Subcatchment L: Lot 2

Hydrograph



0463-005 Downstream

Type IA 24-hr 25-year Rainfall=4.00"

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Summary for Subcatchment M: Lot 1

Runoff = 0.059 cfs @ 7.88 hrs, Volume= 863 cf, Depth= 3.77"

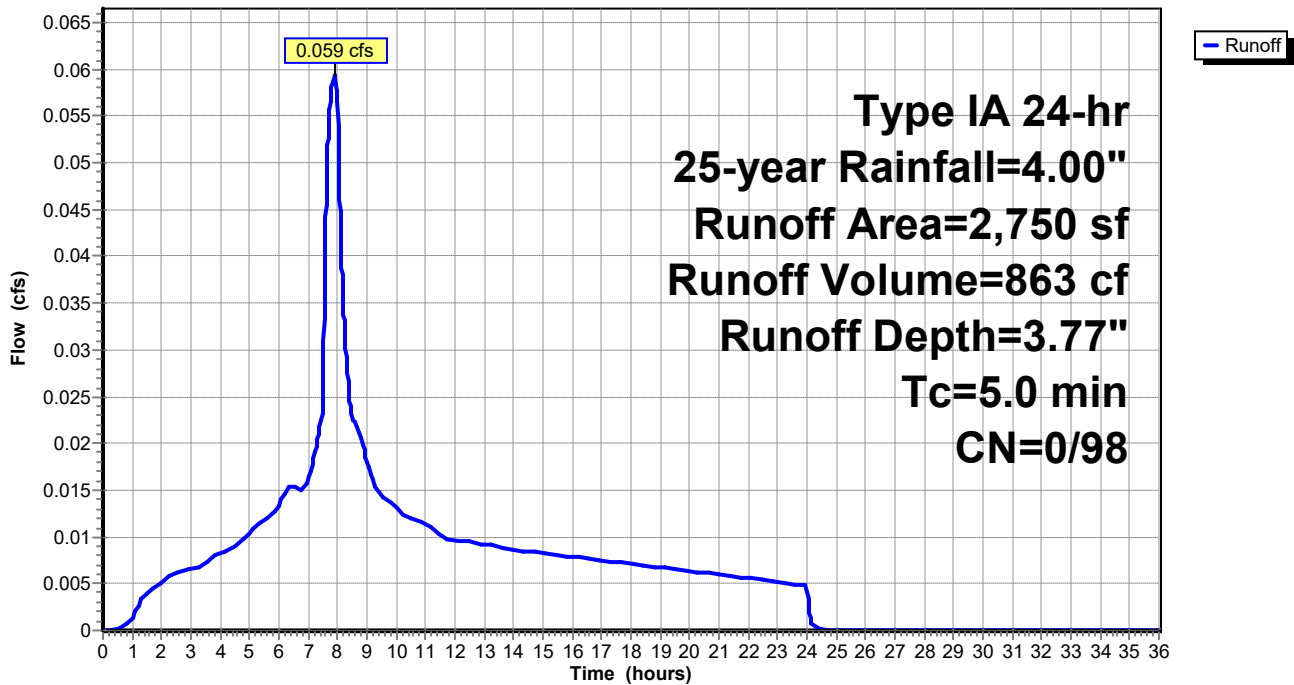
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type IA 24-hr 25-year Rainfall=4.00"

Area (sf)	CN	Description
* 2,750	98	Impervious
2,750	98	100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

Subcatchment M: Lot 1

Hydrograph



0463-005 Downstream

Type IA 24-hr 25-year Rainfall=4.00"

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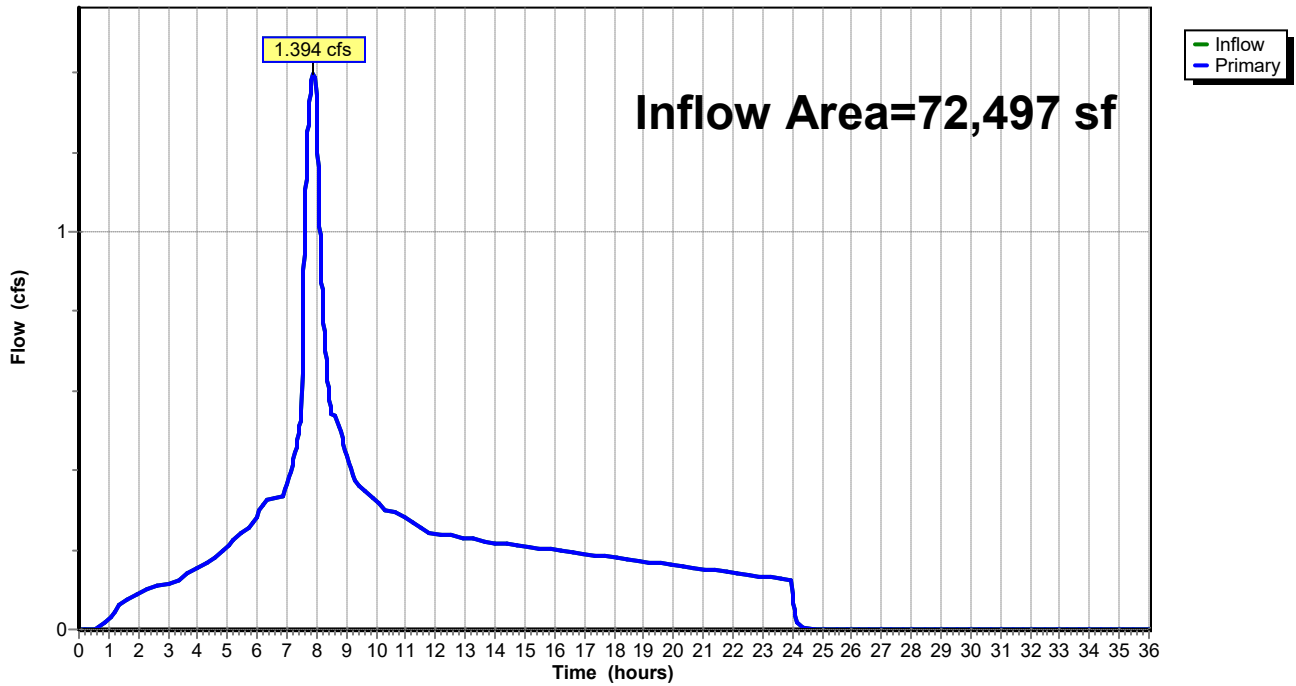
Summary for Link L1: SDMH-03B to SDMH-02B

Inflow Area = 72,497 sf, 66.27% Impervious, Inflow Depth = 3.35" for 25-year event
Inflow = 1.394 cfs @ 7.89 hrs, Volume= 20,263 cf
Primary = 1.394 cfs @ 7.89 hrs, Volume= 20,263 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Link L1: SDMH-03B to SDMH-02B

Hydrograph



0463-005 Downstream

Type IA 24-hr 25-year Rainfall=4.00"

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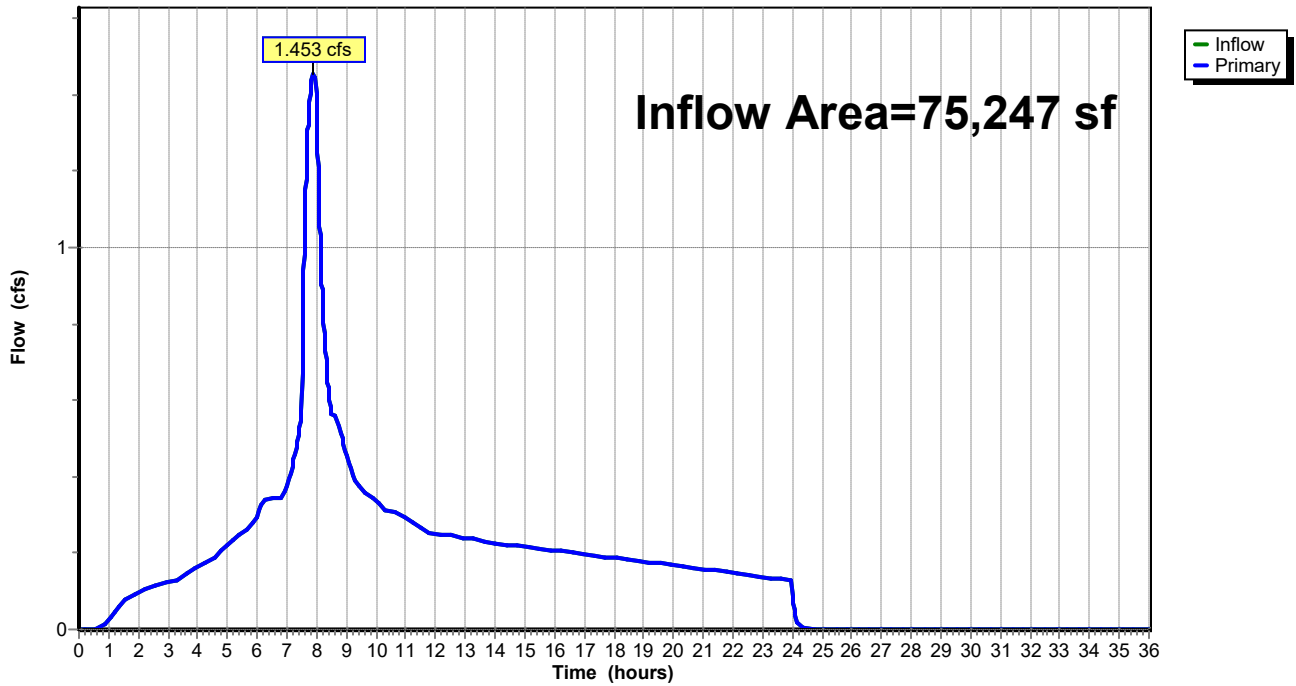
Summary for Link L2: SDMH-02B to SDMH-01C

Inflow Area = 75,247 sf, 67.50% Impervious, Inflow Depth = 3.37" for 25-year event
Inflow = 1.453 cfs @ 7.89 hrs, Volume= 21,126 cf
Primary = 1.453 cfs @ 7.89 hrs, Volume= 21,126 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Link L2: SDMH-02B to SDMH-01C

Hydrograph



0463-005 Downstream

Type IA 24-hr 25-year Rainfall=4.00"

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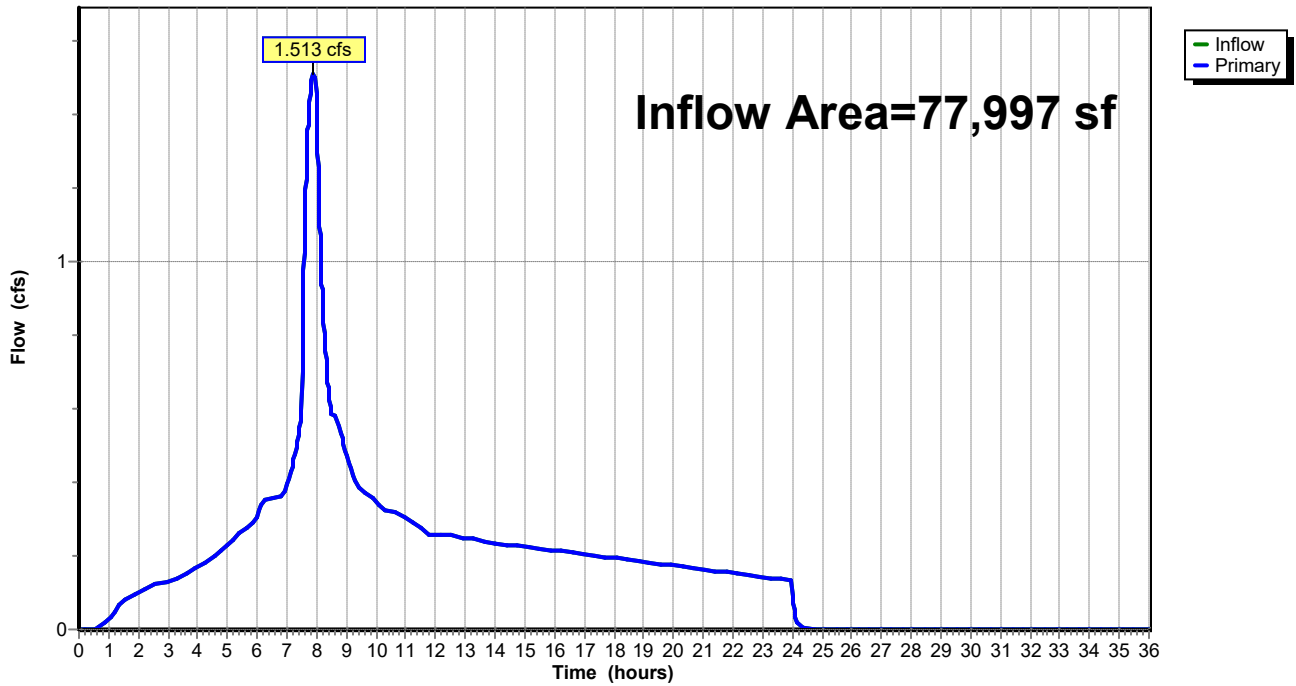
Summary for Link L3: SDMH-01C to EXSDMH-01

Inflow Area = 77,997 sf, 68.65% Impervious, Inflow Depth = 3.38" for 25-year event
Inflow = 1.513 cfs @ 7.89 hrs, Volume= 21,989 cf
Primary = 1.513 cfs @ 7.89 hrs, Volume= 21,989 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Link L3: SDMH-01C to EXSDMH-01

Hydrograph



0463-005 Downstream

Type IA 24-hr 25-year Rainfall=4.00"

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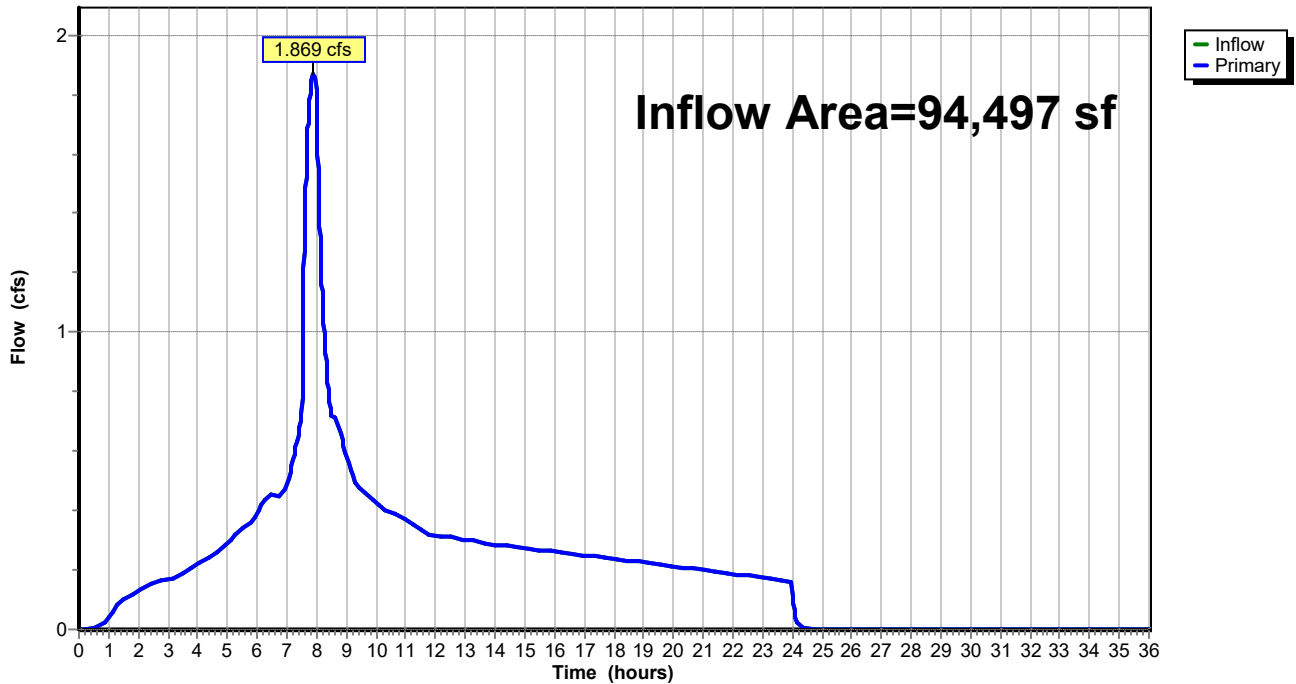
Summary for Link L4: EXSDMH-01 to EXSDMH-04

Inflow Area = 94,497 sf, 74.12% Impervious, Inflow Depth = 3.45" for 25-year event
Inflow = 1.869 cfs @ 7.89 hrs, Volume= 27,166 cf
Primary = 1.869 cfs @ 7.89 hrs, Volume= 27,166 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Link L4: EXSDMH-01 to EXSDMH-04

Hydrograph



0463-005 Downstream

Type IA 24-hr 25-year Rainfall=4.00"

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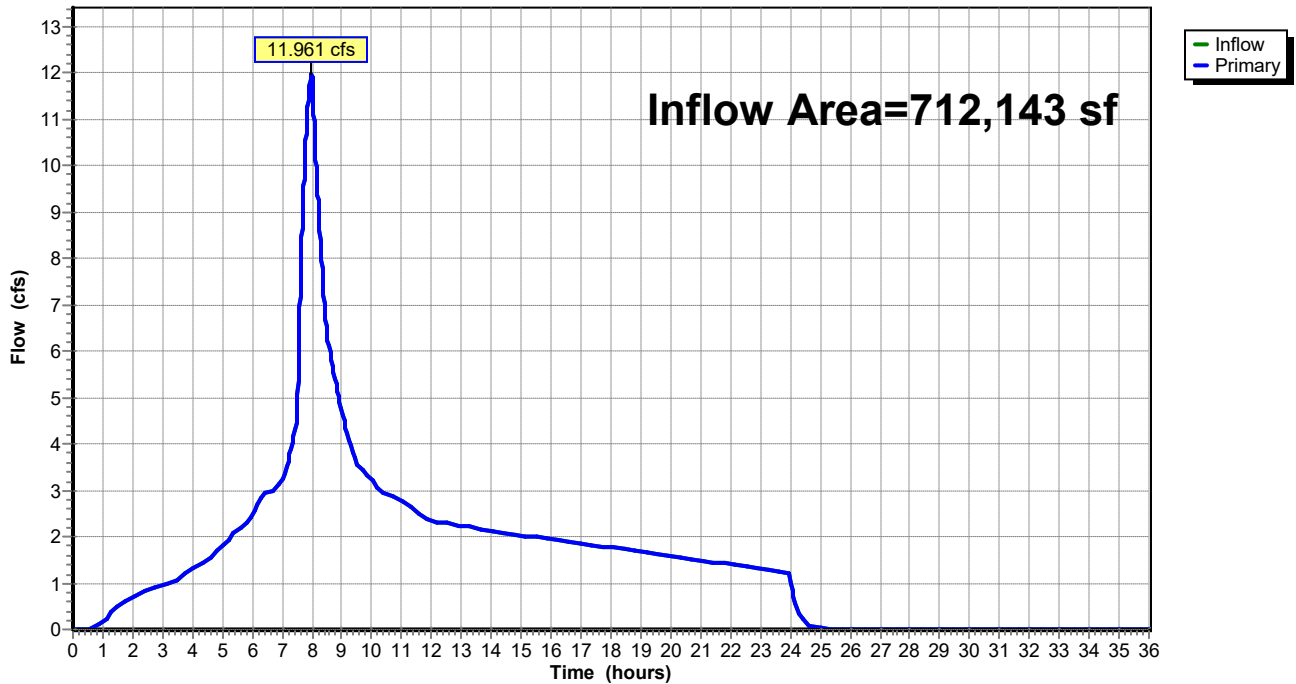
Summary for Link L5: EXSDMH-04 to Outfall

Inflow Area = 712,143 sf, 56.70% Impervious, Inflow Depth = 3.24" for 25-year event
Inflow = 11.961 cfs @ 8.00 hrs, Volume= 192,120 cf
Primary = 11.961 cfs @ 8.00 hrs, Volume= 192,120 cf, Atten= 0%, Lag= 0.0 min

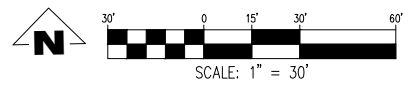
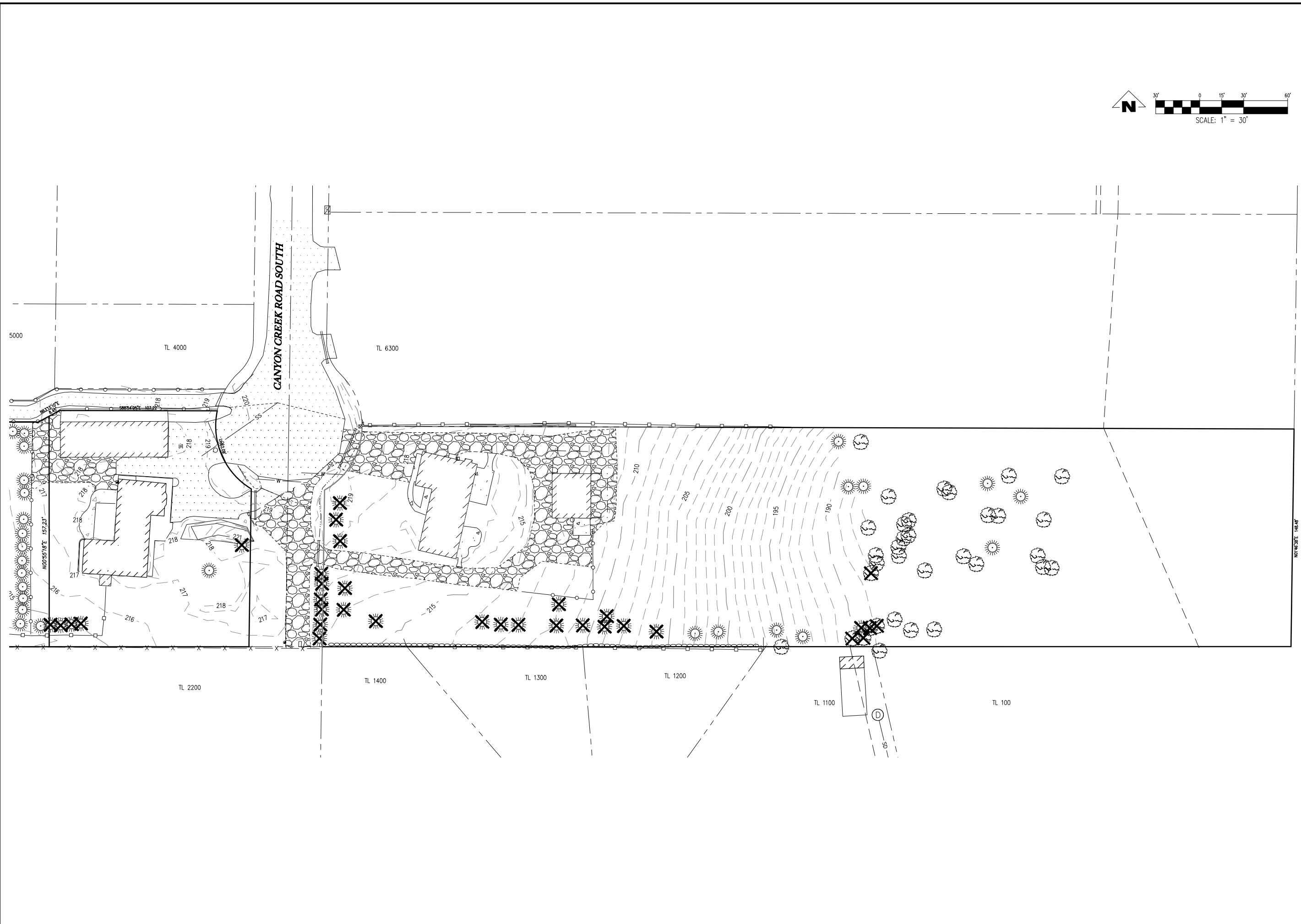
Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Link L5: EXSDMH-04 to Outfall

Hydrograph



Appendix C



28700 CANYON CREEK RD S
 TAX LOT 31W13BD
 TAX MAP 31W13BD
 NW 1/4 OF SEC.13, T.3S R.1W
 WILSONVILLE, OREGON

Item 4.

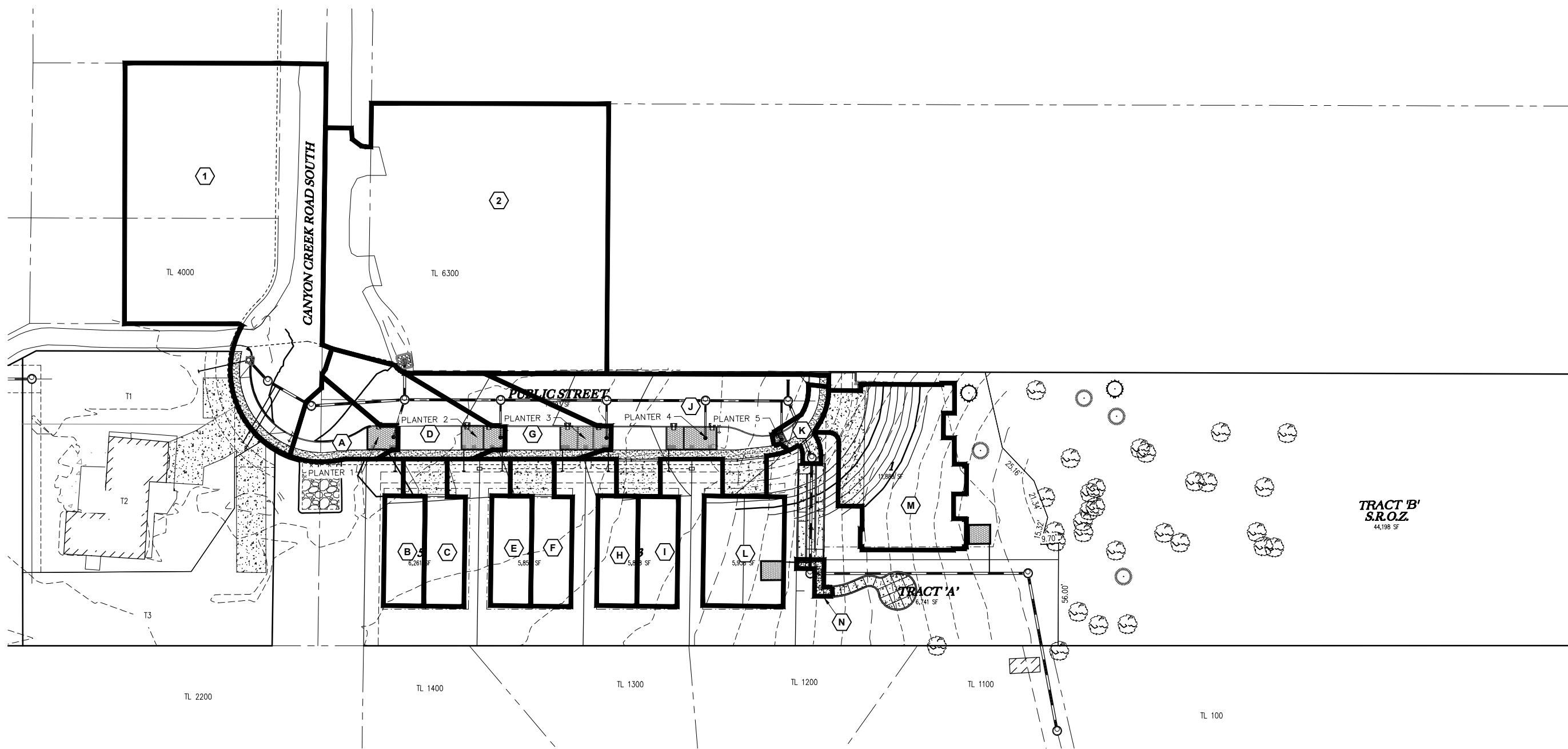
**APPENDIX C(1)
 PRE-DEVELOPED SITE MAP**

REVISIONS	
NO.	DATE
0	07/07/21
1	09/07/21
2	12/16/21
3	03/30/22
4	05/02/22
5	05/04/22
6	08/12/22

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 123

FILE:P:\0463-005 Canyon Creek So Phase 3\0463-005 Basin Areas Pre Layout\Basin Areas Plot Date: 8/15/2022 2:57 PM, by: Josh Meyer



28700 CANYON CREEK RD S
 TAX LOT 6400
 TAX MAP 31W13BD
 NW 1/4 OF SEC.13, T.3S R.1W
 WILSONVILLE, OREGON

Item 4.

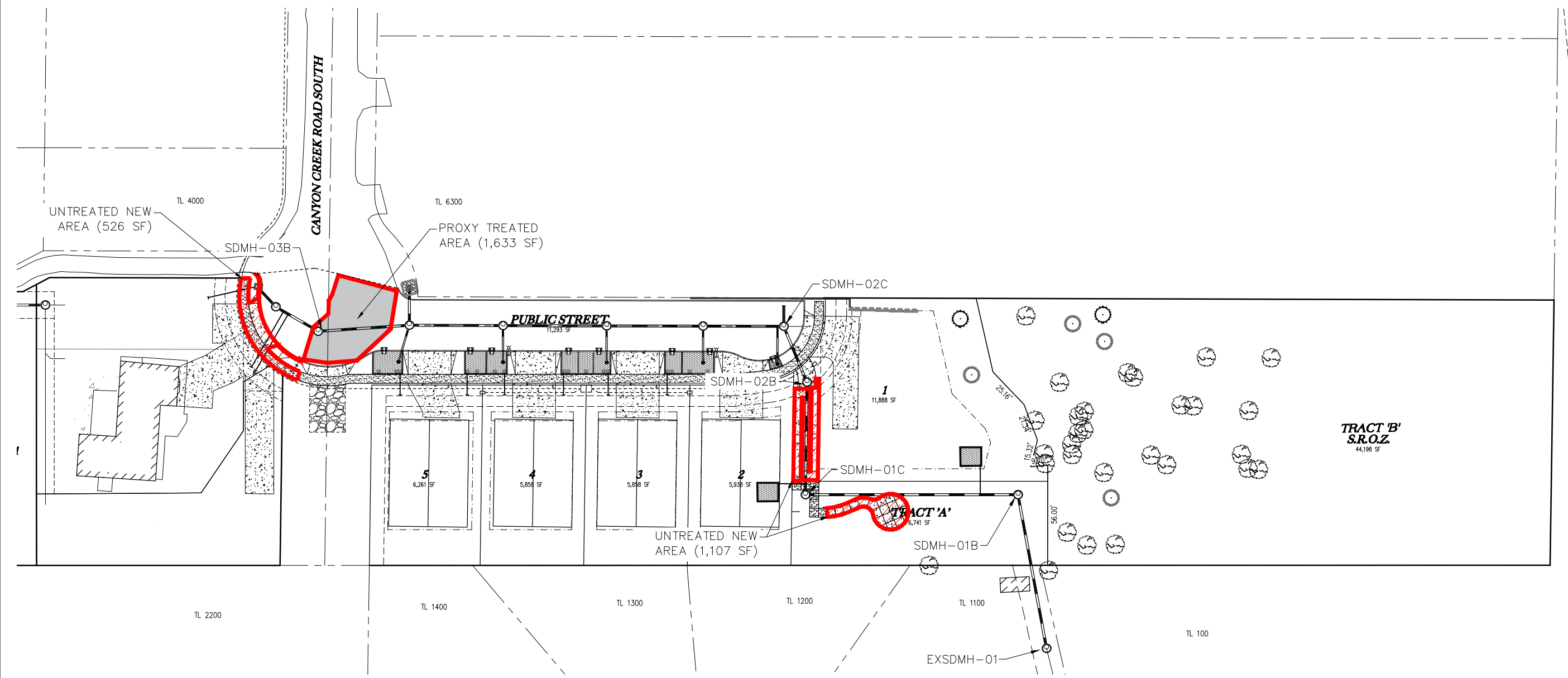
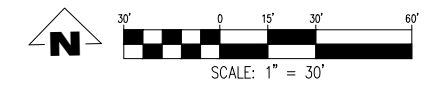
**APPENDIX C(2)
 POST-DEVELOPED BASIN
 MAP**

NO.	DATE	DESCRIPTION
1	12/16/21	1ST REVISION
2	03/30/22	2ND REVISION
3	05/02/22	3RD REVISION
4	05/02/22	4TH REVISION
5	05/04/22	5TH REVISION
6	09/12/22	6TH REVISION
7	11/01/22	ADDRESS CITY REVIEW COMMENTS
8	01/05/23	ADDRESS CITY REVIEW COMMENTS
9	07/26/23	STREET LIGHT REVISION

EMERIO
 ENGINEERING - SURVEYING - DESIGN

6446 SW FALLBROOK BLVD, SUITE 100
 BEAVERTON, OREGON 97008
 TEL: (503) 748-8812
 FAX: (503) 639-8992
 www.emeriodesign.com

FILE: P:\0463-005 Canyon Creek So Phase 3\0463-005 Storm\CAD\0463-005 Conveyance Basins_Layout_Basin Areas_Plot Date: 9/28/2023 2:30 PM, by: Josh Meyer



28700 CANYON CREEK RD S
 TAX LOT 6400
 TAX MAP 31W13BD
 NW 1/4 OF SEC.13, T.3S R.1W
 WILSONVILLE, OREGON

**APPENDIX C(3)
 PROXY TREATMENT AREA
 & STORM SYSTEM MAP**

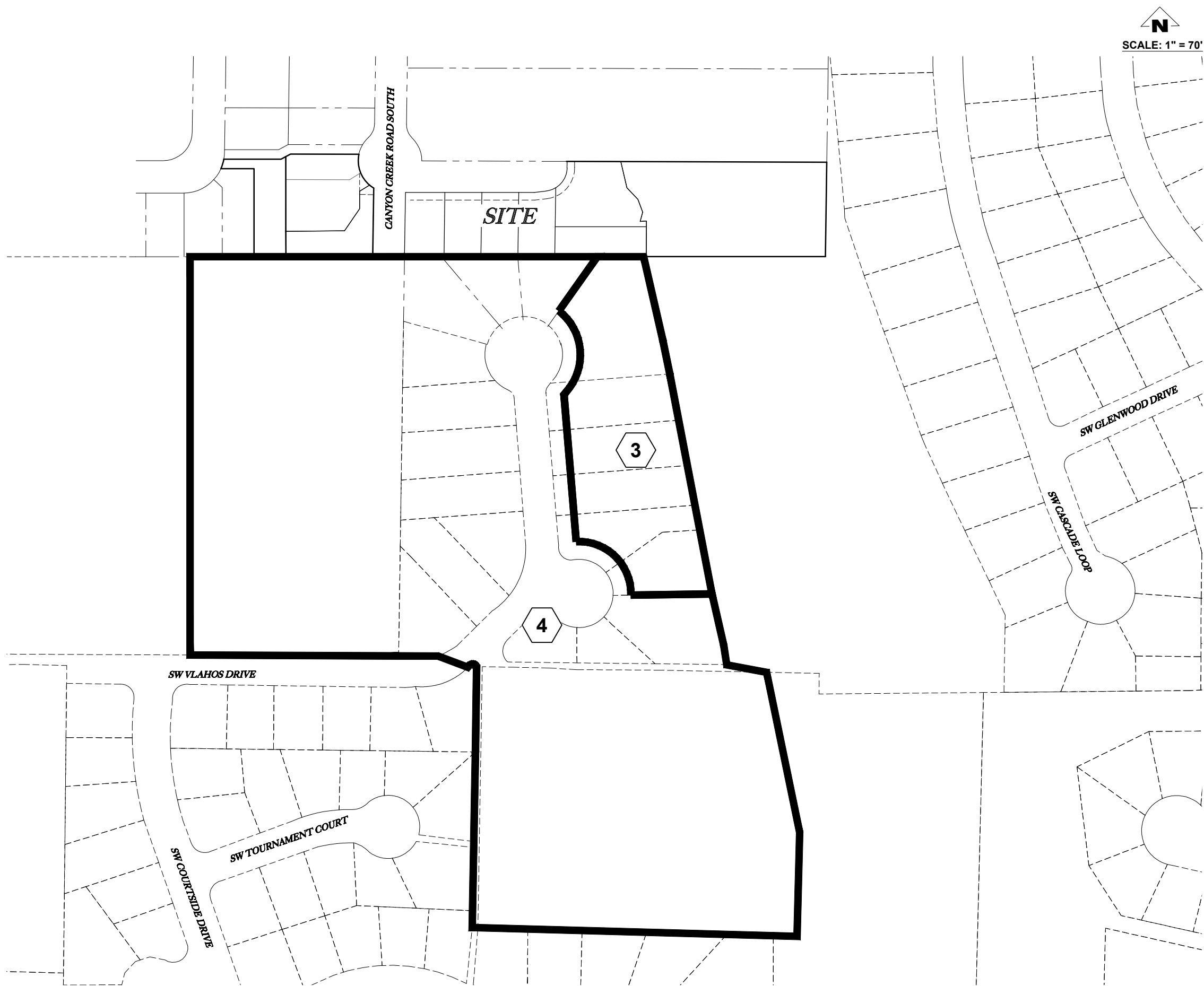
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6	09/12/22	6TH REVISION
7	11/01/22	ADDRESS CITY REVIEW COMMENTS
8	01/05/23	ADDRESS CITY REVIEW COMMENTS
9	07/26/23	STREET LIGHT REVISION

EMERIO
 ENGINEERING - SURVEYING - DESIGN

6446 SW FALLBROOK PLACE SUITE 100
 BEAVERTON OREGON 97008
 TEL: (503) 748-8812
 FAX: (503) 639-8592
 www.emeriodesign.com

FILE-P:\0463-005 Canyon Creek So Phase 3\0463-005 Basin Areas Post Layout\Proxy Areas Plot Date: 9/28/2023 2:31 PM by: Josh Meyer

Item 4.



28700 CANYON CREEK RD S
 TAX LOT 6400
 TAX MAP 31W13BD
 NW 1/4 OF SEC.13, T.3S R.1W
 WILSONVILLE, OREGON

**APPENDIX C(4)
 DOWNSTREAM BASIN MAP**

REVISIONS

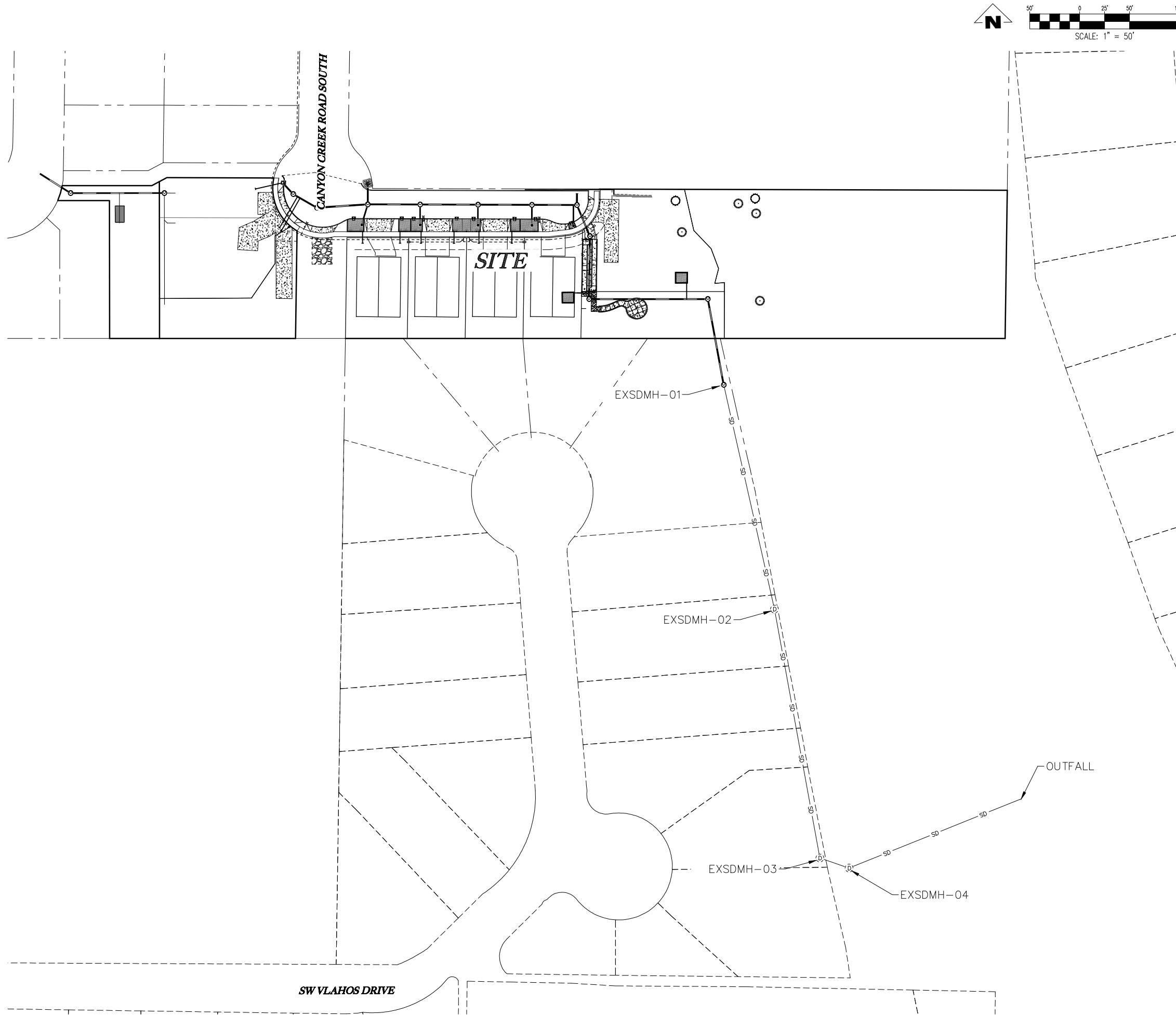
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2	03/30/22	2ND REVISION
3	05/02/22	3RD REVISION
4	05/02/22	4TH REVISION
5	05/04/22	5TH REVISION
6	09/12/22	6TH REVISION
7	11/01/22	ADDRESS CITY REVIEW COMMENTS
8	01/05/23	ADDRESS CITY REVIEW COMMENTS
9	07/26/23	STREET LIGHT REVISION

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6446 SW FALLBROOK PLACE, SUITE 100
 BEAVERTON, OREGON 97008
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FILE:P:\0463-005 Canyon Creek So Phase 3\docs\csm\Storm\CA01\0463-005 Downstream Basins, Layout - Basin Areas, Plot Date: 9/28/2023 2:17 PM, by: Josh Meyer

Item 4.



REVISIONS

NO.	DATE	DESCRIPTION
1	12/16/21	1ST REVISION
2	03/30/22	2ND REVISION
3	05/02/22	3RD REVISION
4	05/02/22	4TH REVISION
5	05/04/22	5TH REVISION
6	09/12/22	6TH REVISION
7	11/01/22	ADDRESS CITY REVIEW COMMENTS
8	01/05/23	ADDRESS CITY REVIEW COMMENTS
9	07/26/23	STREET LIGHT REVISION

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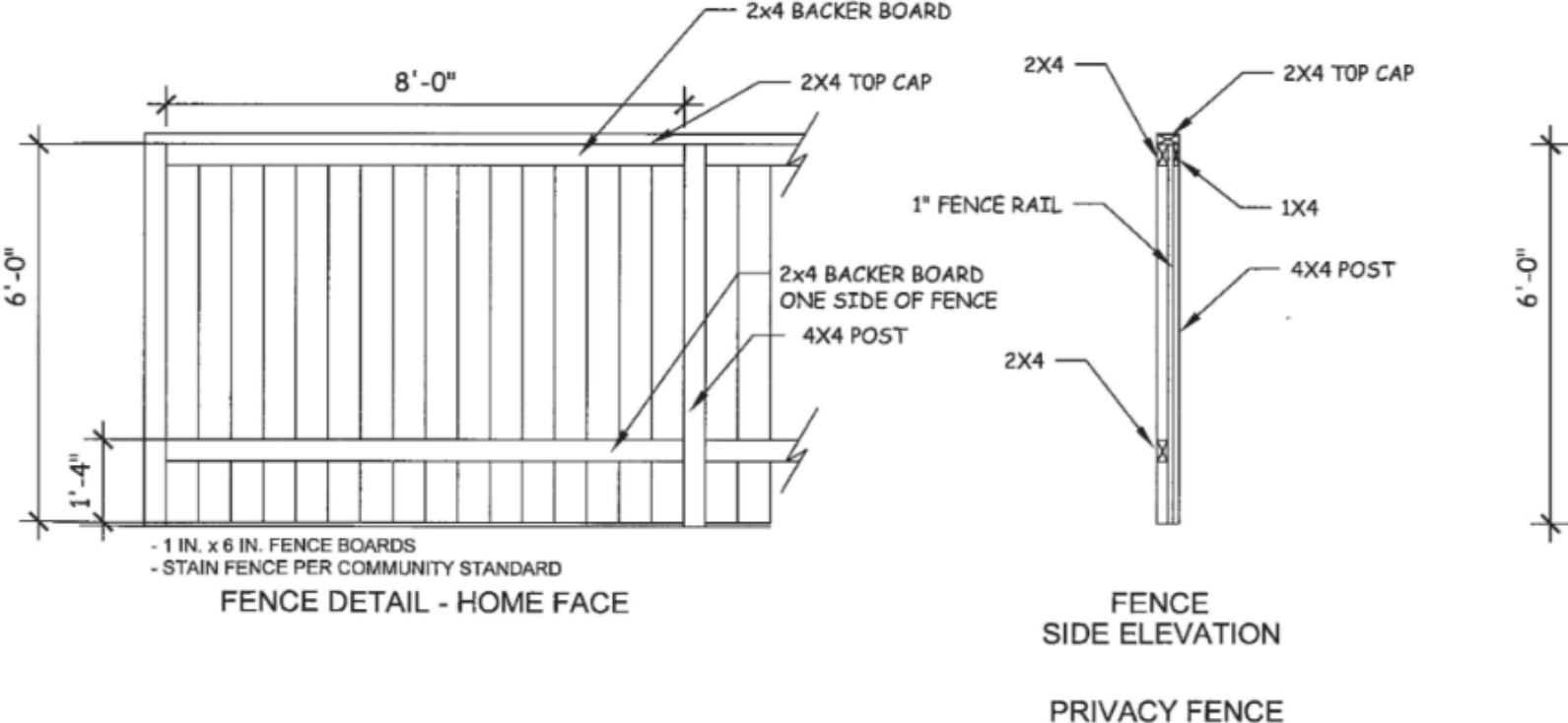
28700 CANYON CREEK RD S
 TAX LOT 6400
 TAX MAP 31W13BD
 NW 1/4 OF SEC.13, T.3S R.1W
 WILSONVILLE, OREGON

**APPENDIX C(5)
 DOWNSTREAM SYSTEM
 MAP**

Item 4.

Exhibit F

Exhibit F



FENCE DETAIL

Exhibit G

Contents of Applicant's Exhibit G are included in Exhibit B1 to the DRB Staff Report for DB23-0012

Exhibit H

Contents of Applicant's Exhibit H are included in Exhibit B2 to the DRB Staff Report for DB23-0012

MONDAY, JANUARY 22, 2024
6:30 PM

Public Hearing:

5. **Resolution No. 427. Wilsonville Transit Oriented Development.** The applicant is requesting approval of a Stage I Preliminary Plan, Stage 2 Final Plan, Site Design Review, Type C Tree Removal Plan, Tentative Partition Plat, Master Sign Plan, and Waiver for development of an 121-unit apartment building with retail on the ground floor adjacent to Trimet WES Station and the Wilsonville Transit Center along SW Barber Street just west of Kinsman Road.

Case Files:

- DB23-0011 Wilsonville Transit Oriented Development
- Stage 1 Preliminary Plan (STG123-0004)
- Stage 2 Final Plan (STG223-0006)
- Site Design Review (SDR23-0007)
- Type C Tree Removal Plan (TPLN23-0003)
- Tentative Partition Plat (PART23-0002)
- Master Sign Plan (MSP23-0001)
- Waiver (WAIV23-0004)

**DEVELOPMENT REVIEW BOARD
RESOLUTION NO. 427**

A RESOLUTION ADOPTING FINDINGS AND CONDITIONS OF APPROVAL, APPROVING A STAGE 1 PRELIMINARY PLAN, STAGE 2 FINAL PLAN, SITE DESIGN REVIEW, TYPE C TREE REMOVAL PLAN, TENTATIVE PARTITION PLAT, MASTER SIGN PLAN AND WAIVER FOR DEVELOPMENT OF AN 121-UNIT APARTMENT BUILDING WITH RETAIL ON THE GROUND FLOOR ADJACENT TO TRIMET WES STATION AND THE WILSONVILLE TRANSIT CENTER ALONG SW BARBER STREET JUST WEST OF KINSMAN ROAD.

WHEREAS, an application, together with planning exhibits for the above-captioned development, has been submitted by Robert Gibson with Palindrome Communities LLC, Applicant, in accordance with the procedures set forth in Section 4.008 of the Wilsonville Code, and

WHEREAS, the subject site is located at 9749 SW Barber Street, Taxlot 703, Section 14B, Township 3 South, Range 1 West, Willamette Meridian, Clackamas County, Oregon, and

WHEREAS, the Planning Staff has prepared the staff report on the above-captioned subject dated January 12, 2024, and

WHEREAS, said planning exhibits and staff report were duly considered by the Development Review Board Panel B at a scheduled meeting conducted on January 22, 2024, 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 January 12, 2024, attached hereto as Exhibit A1, with findings and recommendations contained therein, approving the requests with conditions, and authorizes the Planning Director to issue permits consistent with the Development Review Board approval for:

The Wilsonville Town Center Mixed Use Development (DB23-0011): Stage 1 Preliminary Plan (STG123-0004), Stage 2 Final Plan (STG223-0006), Site Deigns Review (SDR23-0007), Waivers (WAIV23-0004), Class 3 Master Sign Plan (MSP23-0001), and Type C Tree Removal Plan (TPLN23-0003) Tentative Partition Plat (PART23-0002).

ADOPTED by the Development Review Board of the City of Wilsonville at a regular meeting thereof this 22nd day of January, 2024, 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)*.

Rachelle Barrett, Acting Chair - Panel B
Wilsonville Development Review Board

Attest:

Shelley White, Planning Administrative Assistant



Exhibit A1
Staff Report
Wilsonville Planning Division
Wilsonville Transportation Oriented Development
Development Review Board Panel 'B'
Quasi-Judicial Public Hearing

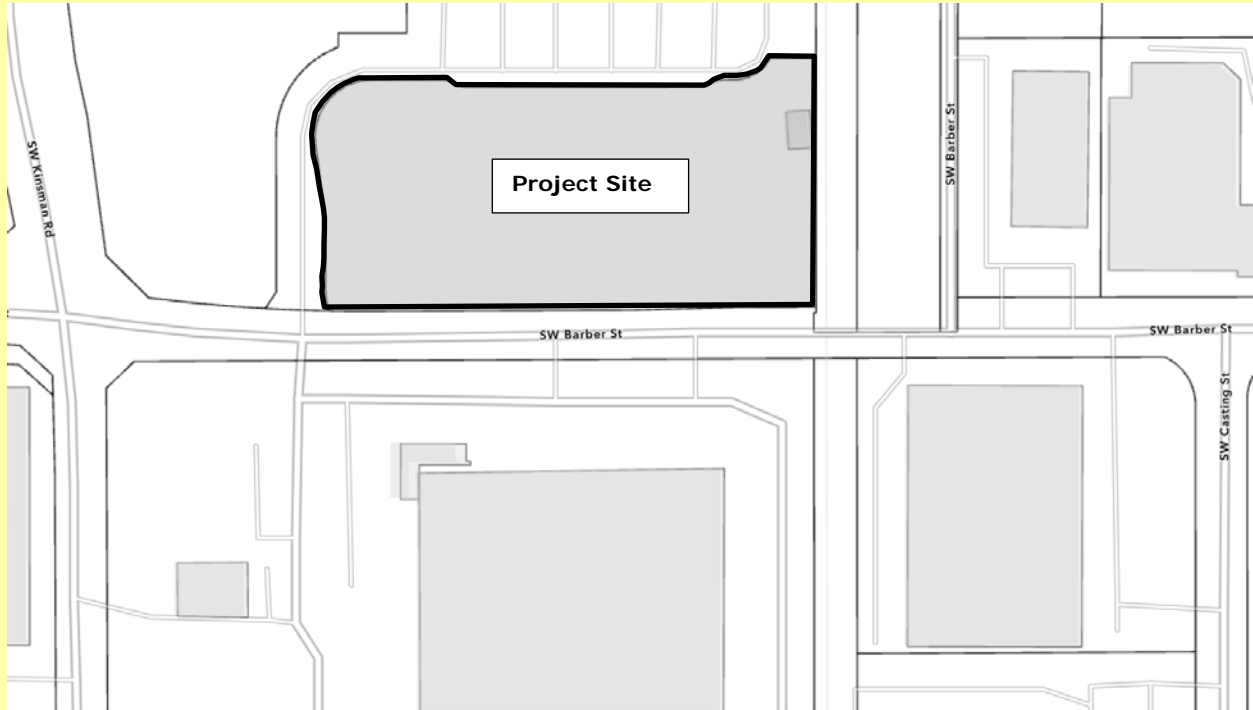
Hearing Date:	January 22, 2024
Date of Report:	January 12, 2024
Application No.:	DB23-0011 Wilsonville Transportation Oriented Development
Request/Summary:	The requests before the Development Review Board include a Stage 1 Preliminary Plan, Stage 2 Final Plan, Site Design Review, Type C Tree Plan, Tentative Partition Plat, and Waiver.
Location:	9749 SW Barber. The property is specifically known as Tax Lot 703, Section 14B, Township 3 South, Range 1 West, Willamette Meridian, Clackamas County, Oregon.
Owner:	City of Wilsonville
Applicant:	Palindrome Communities LLC (Robert Gibson)
Authorized Representative:	YBA Architects (Tim Schneider)
Comprehensive Plan Designation:	Industrial
Zone Map Classification:	PDI (Planned Development Industrial)
Staff Reviewers:	Georgia McAlister, Associate Planner Amy Pepper, Development Engineering Manager

Staff Recommendation: Approve with conditions the requested Stage 1 Master Plan, Stage 2 Final Plan, Site Design Review, Type C Tree Plan, Tentative Partition Plat, and Waiver.

Applicable Review Criteria:

<u>Development Code:</u>	
Section 4.001	Definitions
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 4.113	Standards Applying to Residential Development in Any Zone
Section 4.117	Standards Applying to Industrial Development in All Zones
Section 4.118	Standards Applying to Planned Development Zones
Section 4.133 through 4.133.05	
Section 4.135	Planned Development Industrial (PDI) Zone
Section 4.140	Planned Development Regulations
Section 4.154	On-site Pedestrian Access and Circulation
Section 4.155	Parking, Loading, and Bicycle Parking
Section 4.156.01-4.156.11	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 4.179	Mixed Solid Waste and Recycling
Sections 4.199.20 through 4.199.60	Outdoor Lighting
Sections 4.200 through 4.290	Land Divisions
Sections 4.300 through 4.320	Underground Utilities
Sections 4.400 through 4.440 as applicable	Site Design Review
Sections 4.600 through 4.640.20	Tree Preservation and Protection
<u>Other Planning Documents:</u>	
Wilsonville Comprehensive Plan	
Previous Land Use Approvals	
Transportation System Plan	
<u>Oregon State Statute:</u>	
ORS 197.308	Affordable Housing Allowed Outright

Vicinity Map:



Background:

The City of Wilsonville owns the subject site, which is located between SW Barber Street and the area used for bus stops/turn around at the Wilsonville Transit Center. Adjacent to the north of the bus turn around is the park and ride and the Westside Express Service (WES) commuter rail station

In 2020, City Council adopted the Equitable Housing Strategic Plan (EHSP) (Resolution No. 2820), which serves as a framework to organize the City's future efforts to promote equitable housing outcomes, including provision of affordable housing. The Plan includes five prioritized actions for the City to begin to implement in the first two years after Plan adoption, as well as additional actions for the City to consider in the long term. Implementation Action 1A. from the EHSP is to explore the implementation of transit oriented development (which would include affordable housing on top of a non-residential use) at City-owned Wilsonville Transit Center property. In support of this implementation action the City issued an Request for Proposal (RFP) for a development partner to help build the desired transit-oriented development, including the associated housing. After reviewing a number of proposal, the City selected Paladrome as the development partner. Since their selection, Paladrome has worked with the City to development the project that is now before the Development Review Board for review.

Summary:

Stage 1 Preliminary Plan

The Stage 1 Preliminary Plan proposes a new apartment building with ground floor commercial use. While not what would typically be expected in an industrial zone, the proposed use is allowed in the Planned Development Industrial Zone (PDI). The allowance is based on both a limited allowance of uses allowed in the City's Planning Development Commercial (PDC) zone as well as special provisions in State Statute that allow for affordable housing on certain publically-owned land. The proposed ground-floor commercial is within the 5,000 square foot for retail uses allowed in the PDI zone. The authority to develop affordable housing in areas not zoned for residential use in certain circumstances is described Oregon Revised Statute (ORS) 197.308. Under the ORS, when a property is owned by a public body, is located in an industrial area, not slated for heavy industrial use, and adjacent to existing residential development, residential development is an outright allowed use when the resulting housing is affordable housing. As an affordable housing development on a property owned by the City, not designated for heavy industrial use, adjacent to the Villebois Neighborhood, with only preserved wetlands in between, the proposed development is an allowed use under this Statute.

Stage 2 Final Plan

The Stage 2 Final Plan proposes approximately 128,675 square feet of residential use comprised of 121-units and 4,900 sq ft of commercial use on the ground floor of the building allocated between three tenants. The proposal also includes parking, usable open space, circulation areas, pedestrian connection, and landscaping meeting or exceeding City standards. All utilities and services are available for the site or will be with conditions of approval.

Site Design Review

The applicant used appropriate professional services to design the proposed 121-Unit Residential Mixed-Use building using quality materials and design. The proposed modern-design building uses natural wood and colors throughout the façade reflecting nature. The configuration of the site will allow for the retention of three significant Douglas fir trees identified as a City Council priority through the initial planning stages of the project. Landscaping is incorporated throughout the site providing shade, stormwater mitigation and aesthetic value. Special attention has been paid to usable outdoor space.

Type C Tree Removal Plan

The applicant proposes the removal of twenty-four (24) trees on the proposed development site. The tree species on site are a mix of native and non-native trees including Douglas fir, sweet tree, Zelkova, English-hawthorn, red pine, and Norway maple. The trees proposed for removal are not high quality trees and removal is necessary for the development of the site. The applicant proposes replanting 36 new trees on the subject property, which is in excess of the 1:1 mitigation ratio as required by the development code.

Master Sign Plan

The subject development proposes commercial tenant spaces on the North, South, East and West sides of the building. Three tenant spaces with four entrances are provided requiring a Master Sign Plan for the development. The Master Sign Plan provides guidance on location, size, materials, colors and finishes of the future signs in compliance with the Development Code. Since tenants have not been determined at this time, specific sign copy and design will be approved through subsequent Class 1 sign permits.

Tentative Partition Plat

The proposed tentative plat meets technical platting requirements and demonstrates consistency with the Stage 2 Final Plan. The partition will legally separate the proposed mixed-use residential development from the existing adjacent bus stops and turnaround to the north and east.

Waiver

The applicant requests to waive the 30 foot required setback at the front, rear, and side lot lines. The setbacks were set in the code with more traditional industrial development in mind. Due to the limited size of the property, unique shape, and goals to both preserve the three mature Douglas fir trees on site while providing as much affordable housing as possible, the required 30' setback on all sides is too limiting. The setback reduction will result in improved function of the site and will meet the Planned Development Regulations in Section 4.140 without negatively impacting the surrounding area or future residents. In addition, the setbacks will not bring the building close to adjoining buildings or industrial uses the site is bounded by the transit center and SW Barber Street. Across Barber Street is the parking and office component of Swire Coca-Cola. This is a component of the industrial use that does not merit special distancing or buffering from or to the proposed residential/commercial uses.

Public Comments and Responses:

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.

Residential and Commercial Uses in the Planned Development Industrial Zone

While not what would typically be expected in an industrial zone, the proposed use is allowed in the Planned Development Industrial Zone (PDI). The allowance is based on both a limited allowance of uses allowed in the City's Planning Development Commercial (PDC) zone as well

as special provisions in State Statute that allow for affordable housing on certain publically-owned land. The proposed ground-floor commercial is within the 5,000 square foot for retail uses allowed in the PDI zone. The authority to develop affordable housing in areas not zoned for residential use in certain circumstances is described Oregon Revised Statute (ORS) 197.308. Under the ORS, when a property is owned by a public body, is located in an industrial area, not slated for heavy industrial use, and adjacent to existing residential development, residential development is an outright allowed use when the resulting housing is affordable housing. As an affordable housing development on a property owned by the City, not designated for heavy industrial use, adjacent to the Villebois Neighborhood, with only preserved wetlands in between, the proposed development is an allowed use under this Statute.

Vehicular Parking

Pursuant to Oregon Administrative Rules (OAR) 660-012-0440, parking mandates, or the minimum vehicle parking requirements in Section 4.155 Table 5, are not applicable to the proposed development due to the site being within 1/2 mile of SMART Routes 2X and 4, which are considered the City’s most frequent transit routes, and within 1/4 mile of the WES Station. **The Development Review Board does not have authority, nor is allowed under State law, to consider the amount of vehicle parking provided in reviewing this application.** The City can still consider the design of individual parking spaces and areas that are proposed by developer as it relates to established clear and objective criteria, but cannot connect this consideration to the amount of parking.

Traffic

The City’s traffic consultant, DKS Associates, calculates that the proposed five story 121 unit 133,575 mixed-use apartment building will generate 71 new daily PM peak hour trips (45 in, 26 out). Five intersections were assessed including Barber St/Kinsman Rd, Wilsonville Rd/Boones Ferry Rd, Wilsonville Rd/Kinsman Rd, Barber St/Boones Ferry Rd, and Barber St/Driveway. Of the 71 new trips 60% will be through the I-5/Wilsonville Road Interchange area. Traffic operations at the five intersections studied as part of the traffic impact analysis are shown to continue meeting or exceed the LOS D standard.

Trees Retained as Council Priority

The preservation of three high quality Douglas fir trees is identified as a Council priority for the implementation of the proposed project. The trees will provide aesthetic, environmental and recreational benefits to future tenants and visitors of the transit-oriented development. Significant thought and care for the preservation of the trees is clear in the final proposed design of the project. The trees are incorporated into the open space so they can be enjoyed by future residents and activate the spaces. An elevated deck will maximize the open space amenity while protecting the roots of the trees. Any work within the root zone will be conducted under the supervision of a certified arborist. The project arborist developed a work plan that focuses on how to safely develop around the trees while avoiding cutting any major roots.

Transportation Oriented Development and Affordable Housing

In concert with efforts around the Region, and the State, Wilsonville has been working on addressing the lack of affordable housing. The City adopted the Equitable Housing Strategic Plan (EHSP) in 2020 after extensive research into the current state of housing in the City, public outreach, and work sessions with community housing experts. The EHSP created a list of specific implementation actions aiming to generate more affordable and equitable housing opportunities. The proposed transit-oriented development was “Implementation Action 1A” of the plan. As the first transit-oriented development of its kind in Wilsonville the apartments will provide the unique opportunity for residents to live in a suburban community without having to own a car to access more urban communities or to commute throughout Wilsonville. The free bus system, SMART, and WES Commuter rail, bike and pedestrian networks will provide convenient multi-model transportation access for residents at this site. In addition to providing accessible housing, the development will include ground floor commercial tenant space. One of the proposed tenants is Wilsonville Community Sharing, a local non-profit service agency operating food banks and connecting families in needs with a variety of resources.

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.

Setback Waiver

The applicant requests a waiver to the 30 foot setback required within the Planned Development Industrial zone. The review of this waiver request will be discretionary. Waiving the setbacks will allow for the best use of a small parcel fitting 121-units of affordable housing and supporting commercial and site improvement. With the proposed residential use of the new development the required 30’ setback is not necessary to separate intensive or industrial uses from commercial or residential use. Conversely, the 30’ setbacks are also not needed to separate the surrounding industrial uses from the residential use due to the low intensity of uses in the area. The use to the north and east are a transit hub and parking area. These uses will not have a negative impact on the residential use and in fact are an amenity for future residents and customers allowing easy access to public transportation. The uses are not typical industrial uses that may have negative impacts to surrounding properties. To the west of the development is a site used for mitigation by the City of Wilsonville. It is a natural area with native plantings and little activity. Again, the open space to the west is an additional amenity for future residents. To the south of the proposed development is the Swire Coca Cola plant. This is a more traditional industrial use, that buffering of some of its operations from a residential neighbor would be prudent. However, with SW Barber separating the two properties and the building location there is a 74’ separation between the proposed building and the property line of Coca Cola creating a significant distance between the two differing uses. Mature trees and fencing in front of Coca Cola also offer buffering. Additionally, the closest component of the large Coca Cola campus is the passenger vehicle parking and office. This is a component of the industrial use that does not merit special distancing

or buffering from or to the proposed residential/commercial uses like loading docks or machinery would.

Conclusion and Conditions of Approval:

Staff 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 the proposed application (DB23-0011) with the following conditions:

Planning Division Conditions:

Request A: Stage 1 Preliminary Plan (STG123-0004)

No conditions for this request

Request B: Stage 2 Final Plan (STG223-0006)

- PDB 1. General:** The approved modified final plan 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 Planning Director through the Administrative Review Process consistent with the authority granted in Wilsonville Code Subsection 4.030 (.01). All other modifications shall be processed in the same manner as the original application and shall be subject to the same procedural requirements. See Finding A5.
- 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.

Request C: Site Design Review (SDR23-0007)

- PDC 1. General:** Construction, site development, and landscaping shall be carried out in substantial accord with the Development Review Board approved plans, drawings, sketches, and other documents. Minor revisions may be approved by the Planning Director through administrative review pursuant to Subsection 4.030 (.01). See Finding C15.
- PDC 2. Prior to Temporary Occupancy:** All landscaping required and approved by the Board shall be installed prior to issuance of any 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 will be returned to the applicant. See Finding C37.

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 Development Review Board, pursuant to the applicable sections of Wilsonville’s Development Code. See Finding C38.

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 Board, unless altered as allowed by Wilsonville’s Development Code. See Findings C39 and C40.

PDC 5. 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” spread.
- Shrubs shall reach their designed size for screening within three (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" 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.
- 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 C41.

PDC 6. Prior to Temporary Occupancy: Plant materials shall be installed 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 C44.

Request D: Type C Tree Plan (TPLN23-0003)

PDD 1. General: This approval for removal applies only to the 24 trees identified in the applicant’s submitted materials. All other trees on the property shall be maintained unless removal is approved through separate application.

PDD 2. Prior to Grading Permit Issuance: The Applicant shall submit an application for a Type ‘C’ Tree Removal Permit on the Planning Division’s Development Permit Application form, 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 Development Review Board. 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 the Planning Division staff.
PDD 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.
PDD 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. The fencing shall comply with Wilsonville Public Works Standards Detail Drawing RD-1230. Protective fencing shall not be moved or access granted within the protected zone without arborist supervision and notice of the City of the purpose of proposed movement of fencing or access. See Finding D6.

Request E: Tentative Partition Plat (PART23-0002)

PDE 1.	Prior to Final Plat Approval: Any necessary easements or dedications shall be identified on the Final Subdivision Plat.
PDE 2.	General: The applicant / owner shall submit an application for Final Plat review and approval on the Planning Division Site Development Application and Permit form. The applicant/owner shall also provide materials for review by the City’s Planning Division in accordance with Section 4.220 of the City’s Development Code. The final plat shall be prepared in substantial accord with the tentative partition plat as approved by this action and as amended by these conditions, except as may be subsequently altered by minor revisions approved by the Planning Director.

Request F: Master Sign Plan (MSP23-0001)

PDF 1.	General: The applicant / owner shall submit and get approval of sign permits prior to the installation of any signs that are not exempt under Wilsonville’s sign regulations. Such review shall ensure conformance with the Master Sign Plan and other applicable regulations. The Master Sign Plan is binding upon the project unless modified using the processes defined in Wilsonville’s sign regulations.
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Request G: Waiver (WAIV23-0004)

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, 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:

Request: STG223-0006 Stage 2 Final Plan

PF 1.	Public Works Plans and Public Improvements shall conform to the “Public Works Plan Submittal Requirements and Other Engineering Requirements” in Exhibit C1.
PF 2.	<u>Prior to the Issuance of the Public Works Permit:</u> Applicant shall apply for City of Wilsonville Erosion Control, Grading and Building Permits. Erosion control measures shall be installed, inspected and approved prior to any onsite work occurring.
PF 3.	<u>Prior to Issuance of the Public Works Permit:</u> Submit site plans to Engineering showing street improvements including pavement restoration, curb and gutter, stormwater planters, planter strip, street trees, and 6-foot wide sidewalk for Barber Street. Existing ADA ramps adjacent to the project site shall be brought to current ADA standards, if applicable. Street improvements shall be constructed in accordance with the Public Works Standards.
PF 4.	With the land use application, the stormwater report was reviewed for general conformance with the City standards. <u>Prior to the Issuance of Public Works Permit:</u> A final stormwater report shall be submitted for technical review and approval. The stormwater report shall include information and calculations to demonstrate how the proposed development meets the City’s stormwater requirements. <u>Prior to Final Approval of the Public Works Permit:</u> Storm facilities shall be constructed, inspected and approved by the City.
PF 5.	<u>Prior to issuance of any occupancy Permits:</u> The applicant shall provide a site distance certification by an Oregon Registered Professional Engineer for the new driveway per the Traffic Impact Study.
PF 6.	<u>Prior to the issuance of any occupancy permits:</u> All public improvements shall be constructed, inspected, approved and accepted by the City.
PF 7.	<u>Prior to the issuance of any occupancy permits:</u> The applicant shall record Stormwater Maintenance and Access Easements for all stormwater facilities, onsite and in the right-of-way.
PF 8.	<u>Prior to issuance of any occupancy permits:</u> Applicant shall record an additional 2-foot public utility easement along the Barber Street right-of-way.

Master Exhibit List:

The entry of the following exhibits into the public record by the Development Review Board confirms its consideration of the application as submitted. The exhibit list below includes exhibits for Planning Case File DB23-0011. The exhibit list below 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)

Materials from Applicant

- B1. Development Permit Application Form
- B2. Land Use Narrative
Service Provider Letters
- B3. Construction Plan Set
- B4. Arborist Report
- B5. Geotechnical Report
- B6. Stormwater Report
- B7. Traffic Impact Analysis
- B8. Driveway Alignment Memo

Development Review Team Correspondence

- C1. Engineering Division Conditions

Procedural Statements and Background Information:

1. The statutory 120-day time limit applies to this application. The applicant first submitted the application for Stage 1 Preliminary Plan, Stage 2 Final Plan, Site Design Review, Type C Tree Plan, Tentative Partition Plat, and Waiver on August 21, 2023. Staff conducted a completeness review within the statutorily allowed 30-day review period and found the application to be incomplete on September 20, 2023. The applicant submitted additional materials on December 12, 2023. Staff conducted a second completeness review within the statutorily allowed 30-day review period and deemed the application complete on December 14, 2023. The City must render a final decision for the request, including any appeals, by April 12, 2023.
2. Surrounding land uses are as follows:

Compass Direction	Zone:	Existing Use:
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North:	PDI	Wilsonville Transit Center
East:	N/A	Wilsonville Transit Center/ WES Station
South:	PDI	Barber Street/Industrial Manufacturing
West:	PDI	Wilsonville Transit Center/City Owned Natural Resource Mitigation Site

3. Previous Planning Approvals:

- DB06-0076 Zone Map Amendment for Tri-Met Commuter Rail Station and SMART Bus Terminal
- DB06-0078 Stage I Preliminary Plan Tri-Met Commuter Rail Station and SMART Bus Terminal
- DB06-0079 Stage II Final Plan Tri-Met Commuter Rail Station and SMART Bus Terminal
- DB06-0080 Master Sign Plan Tri-Met Commuter Rail Station and SMART Bus Terminal
- DB06-0083 Type C Tree Removal Permit Tri-Met Commuter Rail Station and SMART Bus Terminal
- DB06-0084 Site Design Review Tri-Met Commuter Rail Station and SMART Bus Terminal
- SI06-0005 Significant Resource Impact Report

4. The applicant has complied with Sections 4.013-4.031 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:

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 processing of the application is in accordance with the applicable general procedures of this Section.

Initiating Application Section 4.009

The application has the signature of Bryan Cosgrove, Wilsonville City Manager, an authorized signer for the property owner, the City of Wilsonville.

Pre-Application Conference Subsection 4.010 (.02)

The City held a Pre-application conference on April 27, 2023 (PRE23-0006) 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.

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 (STG123-0004)

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

Affordable Housing Allowed Outright

Allowing Affordable Housing in the Industrial Zone
ORS 197.308 (2) and (3)

A1. The proposed Wilsonville Transportation Oriented Development will be a 121-unit affordable housing development with commercial development on the ground floor. The project site is zoned Planned Development Industrial. Commercial development under 5,000 sq ft is an allowed use in the PDI zone. Authority has been granted by the State to develop affordable housing in areas not zoned for residential use in certain circumstances as described in ORS 197.308. Under the ORS, when a property is owned by a public body, is located in an industrial area, not slated for heavy industrial use, and adjacent to existing residential development, residential development is an outright allowed use when the resulting housing is affordable housing. As an affordable housing development on a property owned by the City, not designated for heavy industrial use, adjacent to the Villebois Neighborhood, with only public roads and public open space intervening, the proposed residential portion of the development is an outright allowed use.

Planned Development Regulations

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

A2. The property is of sufficient size, lot configuration, and topography and otherwise appropriate to be developed in a manner consistent the purposes and objectives of Section 4.140 for the proposed uses. While the subject site proposed for development is 1.39 acres, it is part of a larger transit campus well in excess of two acres that previously received a Stage I approval. This larger previous Stage I area includes parking and transit facilities that are complementary to the proposed use on the site. The site is zoned Planned Development Industrial which allows for the development to be completed as a planned development. The property will be developed as a planned development in accordance with this subsection.

Ownership Requirements
Subsection 4.140 (.03)

A3. The land included in the proposed Stage 1 Preliminary Plan is under the single ownership of the City of Wilsonville and the application has been signed by the property owner's representative, City Manager, Bryan Cosgrove.

Professional Design Team
Subsection 4.140 (.04)

- A4.** As can be found in the applicant’s submitted materials, appropriate professionals have been involved in the planning and permitting process. The project architect is Alex Yale with LRS Architecture, the landscape architect is Blaire Didway with Shapiro Didway and the civil engineer is Steve Hansen with Emerio Design.

Application Requirements

Subsection 4.140 (.07)

- A5.** Review of the proposed revised 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 revised Stage 1 Preliminary Plan is under the sole ownership of the City of Wilsonville and the application has been signed by Bryan Cosgrove, Wilsonville City Manager, authorized to sign on behalf of the City of Wilsonville.
 - 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 Finding A4.
 - 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.

Planned Development Industrial (PDI) Zone

Uses Typically Permitted

Subsection 4.135 (.03)

- A6.** The proposed residential use for affordable housing is an outright allowed use for properties in the PDI zone owned by the City of Wilsonville or other governing body in accordance to ORS 197.139. See finding A1. Service commercial uses are permitted in the PDI zone, limited to 5,000 sq ft or less. The three commercial tenant spaces on the first floor of the development will total 4,900 sq ft falling slightly below the the 5,000 sq ft maximum service commercial allowance.

Prohibited Uses

Subsection 4.135 (.04)

- A7.** No prohibited uses are proposed by the applicant.

Block and Access Standards

Subsections 4.135 (.04) and 4.131 (.03)

A8. The proposed development will be accessed off of SW Barber St via a one-way drive/parking area. The entrance will come off the existing access drive to the Wilsonville Transit Center park and ride on the west side of the site and exit directly onto SW Barber St. SW Barber on the south side of the site. Location of the access has been approved by the City Engineer. See also Exhibit B8. Besides this one access to serve the site no changes to existing blocks or access or proposed or required.

Other Standards for PDI Zone

Lot Size

Subsections 4.135 (.07) A.

A9. Nothing in the Stage 1 Preliminary Plan would prevent lot size requirements from being met.

Setbacks

Subsections 4.135 (.07) C. through E.

A10. The minimum setback in the PDI zone for the front, rear and sides of the lot is 30'. A request to waive the 30' setback standard has been submitted by the applicant. See Request G for details regarding the setback waiver.

Standards for Residential Development in Any Zone

Outdoor Recreational Area and Open Space Land Area Requirements

Subsection 4.113 (.01)

A11. It is a requirement that open space is incorporated within any residential development at a minimum of 25% of the Gross Development area. The applicant proposes 20,518 sq ft of open space, approximately 33% of the Gross Development Area, exceeding the 25% requirement.

Open Space Area Required, Characteristics and Usable Space

Subsection 4.113 (.01) C and D

A12. Open space has been thoughtfully incorporated throughout the development. Approximately half of the provided space is usable open space comprising 14.9% of the gross development area. The useable open space includes ample space for a variety of recreation. Picnic tables, benches and seats are provided throughout the raised deck open space. The deck is in close proximity to the preserved Douglas fir trees taking advantage of the environmental amenities of the site. Adjacent to the two northern preserved trees area nature play structures and walking paths for the enjoyment of residents and visitors.

Other Standards

Subsections 4.113 (.03) through (.14)

A13. The applicant proposes meeting these standards as applicable. PDI setbacks apply to this development, however, the applicant requests a waiver to setbacks for the front, rear, and side lot lines. See Request B, Stage II Final Plan and Request G, Waiver Request.

Request B: Stage 2 Final Plan (STG223-0006)

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 & Lot Qualifications
Subsection 4.140 (.01) and (.02)

B1. The proposed Stage 2 Final Plan for development of the subject property is consistent with the Planned Development Regulations purpose statement 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 in a Planned Development zone and is designated for Industrial Development in the Comprehensive Plan. The proposed use is allowed as described in Finding A1. 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 the City of Wilsonville and the application has been signed by the property owner's representative, City Manager, Bryan Cosgrove.

Professional Design Team
Subsection 4.140 (.04)

B3. The applicant has utilized a professional design team from a variety of firms in accordance with this subsection. Tim Schneider, with YBA Architects is the applicant's representative.

Stage 2 Final Plan Submission Requirements and Process

Stage 2 Submission Within 2 Years of Stage 1
Subsection 4.140 (.09) A.

B4. The applicant is requesting approval of 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.

- B5.** The Development Review Board review considers all applicable permit criteria set forth in the Planning and Land Development Code and staff recommends the Development Review Board approve the application with conditions of approval.

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

- B6.** The Stage 2 plans conforms to the concurrent Stage 1 Master Plan. The applicant's submitted drawings and other documents show all the additional information required by this subsection.

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

- B7.** The applicant's submitted materials provide 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.

- B8.** The Development Review Board does not require any additional legal documentation for dedication or reservation of public facilities.

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

- B9.** The Stage 2 Approval, along with other associated applications, will expire two (2) years after approval, absent the granting of an extension in accordance with these subsections.

Consistency with Plans Subsection 4.140 (.09) J. 1. and ORS 197.308

- B10.** The site's zoning, Planned Development Industrial, is consistent with the Industrial designation in the Comprehensive Plan. The proposed project is not an industrial use. Instead a mixed-use building is proposed including residential and commercial use. The proposed use is allowed in accordance with ORS 197.308 which authorizes the development of affordable housing in areas not zoned residential when the property is owned by a public body.

The Transportation Systems Plan does not call for frontage and road improvements along Barber Street other than those required with the removal and reinstallation of the existing storm water and sidewalk facilities. Conditions of Approval will ensure the road improvements are constructed consistent with the Transportation Systems Plan and Public Works Construction Standards.

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

B11. The City's traffic consultant, DKS Associates, calculates that the proposed five story 121 unit 133,575 mixed-use apartment building will generate 71 new daily PM peak hour trips (45 in, 26 out). Five intersections were assessed including Barber St/Kinsman Rd, Wilsonville Rd/Boones Ferry Rd, Wilsonville Rd/Kinsman Rd, Barber St/Boones Ferry Rd, and Barber St/Driveway. Of the 71 new trips 60% will be through the I-5/Wilsonville Road Interchange area. Traffic operations at the five intersections studied as part of the traffic impact analysis are shown to continue meeting or exceed the LOS D standard.

Facilities and Services Concurrency

Subsection 4.140 (.09) J. 3.

B12. Facilities and services, including utilities in SW Barber Street, are available and sufficient or will be installed with construction of the proposed development. Utilities proposed to be installed during construction include a sanitary sewer later, water lines and stormwater facilities with associated pipelines.

The new development has frontage along SW Barber St which has previously been improved to urban levels.

Adherence to Approved Plans

Subsection 4.140 (.10) A.

B13. Condition of Approval PDB 1 ensures adherence to approved plans except for minor revisions by the Planning Director.

General Residential Development Standards

Effects of Compliance Requirements and Conditions on Cost of Needed Housing

Subsection 4.113 (.13)

B14. No parties have presented evidence nor has staff discovered evidence that provisions of this section are such that additional conditions, either singularly or cumulatively, have the effect of unnecessarily increasing the cost of housing or effectively excluding a needed housing type.

Standards Applying in All Planned Development Zones

Underground Utilities

Subsection 4.118 (.02)

B15. All utilities will be installed underground.

Waivers

Subsection 4.118 (.03)

B16. The applicant requests a waiver to front, rear, and side setbacks in the PDI Zone. See Request G for more details.

Other Requirements or Restrictions

Subsection 4.118 (.03) E.

B17. Staff does not recommend any additional requirements or restrictions pursuant to this subsection.

Impact on Development Cost

Subsection 4.118 (.04)

B18. Implementation of standards and imposing conditions does not unnecessarily increase the cost of development. No evidence has been submitted to the contrary.

Requiring Tract Dedications or Easements for Recreation Facilities, Open Space, Public Utilities

Subsection 4.118 (.05)

B19. Staff does not recommend any additional tract dedication for recreational facilities, open space, or easements for orderly extension of public utilities consistent with this subsection.

Habitat Friendly Development Practices

Subsection 4.118 (.09)

B20. The applicant will implement habitat-friendly development practices to the extent practicable. Grading will be limited to that needed for the proposed improvements, the City's stormwater standards will be met, thus limiting adverse hydrological impacts on water resources, and no impacts on wildlife corridors or fish passages have been identified. The site has been designed intentionally to preserve three mature Douglas fir trees.

Planned Development Industrial (PDI) Zone

Typically Permitted Uses

Subsection 4.135 (.03)

B21. Both residential and commercial uses are proposed with this development. While commercial uses are allowed in the PDI zone, residential uses are not typically permitted in the PDI zone. While not explicitly outright allowed in the Wilsonville Development Code, ORS 197.308 permits residential development as an outright allowed use in industrial zones when the property is publically owned and the constructed residential units are designated affordable housing. The proposed project is on city owned land and designated for affordable housing therefore it is an outright allowed use.

Block and Access Standards

Subsections 4.135(.04) and 4.131 (.03)

B22. No change to existing blocks are proposed or required. Site access will be at points approved by the City Engineer.

Standards Applying in to Residential Development in Any Zone

Required Open Space for Multi Family Development

Subsection 4.113 (.01) C.

B23. All multifamily developments are required to provide open space totaling at least 25% of the Gross Development Area. The applicant proposes 20,518 sq ft of open space, approximately 33% of the Gross Development Area, exceeding the 25% requirement.

Minimum Open Space Area Requirement

Subsection 4.113 (.01) D 1.

B24. The open space areas counted towards the 25% are at least 2,000 sq ft.

Open Space Characteristics

Subsection 4.113 (.01) D 2.

B25. The provided open space includes a raised deck with shared tables, benches, and chairs for leisure or outdoor workspace, nature play areas beneath the preserved Douglas fir trees, walking paths, and an additional open space with shared tables and seating located to the north of the building.

Usable Open Space

Subsection 4.113 (.01) D 3.

B26. The minimum open space required is 15,174 sq ft (applicant proposes 20,518 sq ft). 12.5% of the minimum open space must be useable open space. The applicant proposed 9,095 sq ft, or 12.5% of 15,174 sq ft, of usable open space designed by a professional landscape architect. As finding B22 describes, the useable open space has been designed for the use of all ages. Outdoor spaces have been designed to accommodate multi-level activities, including 2 outdoor, covered BBQ / eating spaces for residents, chess tables, charging stations, multiple seating forms and locations throughout the site, and a fenced trike track and natural play space for children that is visible and accessible from both the resident amenity space and from the outdoor dining space for the taproom / eatery. Special care has been taken around the existing Douglas fir trees to allow activity near the trees while protecting their root zones through the strategic placement of raised decking at the both of the southern outdoor dining spaces and the trike track; holding the majority of activity above the root zones and lessening the likelihood of extreme soil compaction over.

Standards Applying in to Commercial Development in Any Zone

Enclosed Commercial Business

Subsection 4.116 (.5)

B27. All commercial uses will be conducted entirely within the proposed structure.

On-site Pedestrian Access and Circulation

Continuous Pathway System

Subsection 4.154 (.01) B. 1.

- B28.** The proposed development provides pedestrian pathways throughout the site that connect all parking/loading and resident amenity areas while also connecting to adjacent sidewalks, to ensure adequate and safe connectivity for pedestrians crossing through/around this site.

Safe, Direct, Convenient Pathways

Subsection 4.154 (.01) B. 2.

- B29.** Proposed pedestrian pathways are flat, ADA compliant sidewalks constructed of stamped concrete or pavers. Where crossing the parking area, the applicant proposes a stamped concrete crossing that clearly distinguishes the crossing. The pathways provide direct access to the building from the parking area on all sides of the site. Pathways connect to all primary (and secondary) building entrances and existing sidewalks adjacent to the property.

Vehicle/Pathway Separation-Vertical or Horizontal

Subsection 4.154 (.01) B. 3.

- B30.** The proposed design of pedestrian pathways provide for vertical separation from vehicle circulation areas by raising the pathways 6”.

Crosswalks Clearly Marked

Subsection 4.154 (.01) B. 4.

- B31.** The use of stamped concrete and pavers for the internal sidewalks and pathways clearly differentiates the pathways from the parking area.

Pathways Width and Surface-5 Foot Wide, Durable Surface

Subsection 4.154 (.01) B. 5.

- B32.** The applicant proposes concrete pathways for pedestrian access throughout the site. Review at time of building permit will confirm all pathways are a minimum of five feet wide.

Parking Area Design Standards

Minimum and Maximum Parking

Subsection 4.155 (.03) G.

- B33.** Pursuant to Oregon Administrative Rules (OAR) 660-012-0440 parking mandates, or the minimum vehicle parking requirements in Table 5, are not applicable due to the site being within 1/2 mile of SMART Routes 2X and 4, the City’s most frequent transit routes, as well as within 1/4 mile to the Wilsonville WES Station. With no minimum or maximum vehicle parking requirements, the number of total vehicle parking spaces is at the complete discretion of the applicant, so long as the total number of spaces does not exceed the maximum and other non-parking requirements are still met. In addition, for any vehicle parking spaces provided, the applicable design standards as well percentage and similar requirements for certain types of spaces still apply.

Other Parking Area Design Standards

Subsections 4.155 (.02) and (.03)

B34. The applicable standards are met as follows:

Standard	Met	Explanation
Subsection 4.155 (.02) General Standards		
B. All spaces accessible and usable for parking	<input checked="" type="checkbox"/>	Standard parking lot design
I. Parking lot screen of at least 6 feet adjacent to residential district.	<input checked="" type="checkbox"/>	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.	<input checked="" type="checkbox"/>	The parking lot is surrounded by a six-inch curb.
K. Surfaced with asphalt, concrete or other approved material.	<input checked="" type="checkbox"/>	Surfaced with asphalt
Drainage meeting City standards	<input checked="" type="checkbox"/>	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.	<input checked="" type="checkbox"/>	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.	<input checked="" type="checkbox"/>	5 of the 14 proposed parking spaces are compact spaces making 35% of the parking spaces compact meeting this standard.
O. Where vehicles overhand curb, planting areas at least 7 feet in depth.	<input checked="" type="checkbox"/>	All parking area planting areas are at least 7 feet in depth.
Subsection 4.155 (.03) General Standards		
A. Access and maneuvering areas adequate.	<input checked="" type="checkbox"/>	Access to the area is available to residents and customers. Maneuvering area is plentiful.
A.1. Loading and delivery areas and circulation separate from customer/employee parking and pedestrian areas.	<input checked="" type="checkbox"/>	No loading or delivery areas are proposed.
Circulation patterns clearly marked.	<input checked="" type="checkbox"/>	No markings needed to clarify circulation.
A.2. To the greatest extent possible, vehicle and pedestrian traffic separated.	<input checked="" type="checkbox"/>	Vehicle and pedestrian traffic are clearly delineated and separated except for crosswalks.
C. Safe and Convenient Access, meet ADA and ODOT Standards.	<input checked="" type="checkbox"/>	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.	<input checked="" type="checkbox"/>	The applicant proposes 2 ADA parking spaces and 12 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.

B35. The applicant has not requested variances or waivers pursuant to this subsection.

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

B36. 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.

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

B37. Accommodations for electric vehicle charging stations will be provided with the project in compliance with the CFEC ruling. Stations will likely be installed at a later date; however the applicant is deferring the decision to after building permit to respond to market demand. The planned landscape area provides sufficient room for future installation of charging infrastructure with screening.

Parking Area Landscaping

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

B38. The applicant proposes landscaping throughout the parking area helping to minimize the visual dominance of the paved parking area.

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

B39. According to the applicant’s narrative the parking area is 8,294 square feet. 1090 square feet of the parking area is landscaped providing 13% of landscaped area. The landscape area provided is in excess of the 10% requirement.

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

- B40.** The proposed design screens the parking area from adjacent properties and adjacent rights-of-way by physical distance and proposed landscaping and vegetation. The low-screen standard is to be applied on south edge of the parking area to screen parking from the adjacent right of way. A mix of trees, shrubs, and ground cover provide an adequate landscape buffer along SW Barber Street.

Parking Area Internal Pedestrian Circulation

Subsection 4.155 (.03) B. 3.c.

- B41.** Internal pedestrian walkways are provided throughout the parking area at a minimum of 5ft in width with safe connections to the building meeting this standard.

Bicycle Parking

Required Bicycle Parking

Section 4.155 (.04) A. 1.

- B42.** Commercial uses require one bicycle parking space per 4,000 square feet or a minimum of two (2) bicycle parking spaces. With the proposed commercial spaces being 4,900 sq ft two bicycle spaces will be required for the commercial uses. Multifamily residential buildings require a minimum of one bicycle parking spaces per unit totaling 121 bicycle parking spaces for the proposed residential use. A total of 123 bicycle parking spaces are required for this development. 25 outdoor bicycle parking spaces are provided throughout the site near the entrances of commercial and residential spaces for the convenience of residents and customers. 130 bicycle spaces are provided within the building in bicycle storage room located on each floor of the building. The interior bicycle parking will provided security and convince for residents. The applicant has proposed a total of 155 bicycle parking spaces exceeding the required 123 spaces. More than 50% of the bicycle parking is long term parking.

Bicycle Parking Standards

Section 4.155 (.04) B.

- B43.** The applicant's plans show bicycle parking at the main entrance of the building and adjacent to the secondary entrance on the east side of the building. The applicant's narrative states that the bicycle parking spaces will comply with the 2' width and 6' length requirement with 5 feet of maneuvering space behind each space. Sheet A001 demonstrates compliance with this standard for the short and long term bicycle parking spaces.

Other Parking Standards

Minimum Off-Street Loading Requirements

Section 4.155 (.05)

- B44.** Off-street loading areas are not required with the proposed uses.

Other Development Standards

Access, Ingress, and Egress

Section 4.167

- B45.** Site access is proposed off of the existing Wilsonville Transit Center park and ride access drive to the west side of site with a one way circulation pattern and egress onto SW Barber Street.

Natural Features and Other Resources Purpose

Section 4.171 (.01)

- B46.** The proposed project has been designed to provide ample open space for recreation and landscaped area, to result in a site plan that is in harmony with the natural environment. The preservation of the large Douglas fir trees on site further the connection to the existing natural features, and makes them a prominent feature of the whole project and community as a whole.

Grading Limited to Protect Natural Features

Section 4.171 (.02)C

- B47.** The grading of the site seeks to minimize soil disturbance and areas of cut and fill as much as possible, while accommodating the new building and access paths throughout the site. There will be some fill necessary along the northern frontage, as the existing grades show the middle of the site is sunken from the existing sidewalk, which will remain. Three large Douglas fir trees are being retained on the site and will be protected during construction. Grading within the protection zone of these trees (12x the diameter of the tree itself) will need to remain as close as possible to the existing grades, with no more than 4" of cut/fill allowed. The site design allows this, by preserving a landscape area around these trees, with a gravel path for access, allowing the existing grades to remain. The Grading Plan has been updated and tree protection notes have been added to sheet C2.00 to minimize grading around the three existing trees. An arborist's report has also been performed by Teragan & Associates and is included with this application.

Outdoor Lighting

Sections 4.199.20 through 4.199.60

- B48.** The outdoor lighting standards apply to the proposal is required to meet the Outdoor Lighting Standards. See Request C, Findings C47 through C51.

Underground Installation of Utilities

Sections 4.300-4.320

- B49.** All utilities are proposed to be underground.

Public Safety and Crime Prevention

Design for Public Safety, Surveillance and Access

Subsections 4.175 (.01) and (.03)

B50. The proposed development is designed to ensure visibility to deter crime and ensure public safety. The proposed development includes lighting throughout the parking area. The site has been designed in such a way that visibility is clear throughout the site.

Addressing and Directional Signing

Subsection 4.175 (.02)

B51. Addressing will meet public safety standards. The building permit process will ensure conformance.

Lighting to Discourage Crime

Subsection 4.175 (.04)

B52. Lighting design is in accordance with the City's outdoor lighting standards, which will provide sufficient lighting to discourage crime.

Landscaping Standards

Landscaping Standards Purpose

Subsection 4.176 (.01)

B53. 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.

B54. The applicant requests no waivers or variances to landscape standards. All landscaping and screening must comply with standards of this section.

Intent and Required Materials

Subsections 4.176 (.02) C. through I.

B55. The applicant's planting plan implements the landscaping standards and integrates general and low screen landscaping throughout the site, consistent with professional landscaping and design best practices. Plantings meeting the low screen standard will be utilized along the south perimeter of the parking areas.

Landscape Area and Locations

Subsection 4.176 (.03)

B56. The proposed development will exceed the 15% landscaping requirement. The subject property is 60,695 square feet and provides 13,627 square feet of landscaping which is 22.4% of the site. Plantings are proposed along all perimeters of the development site. Landscaped open space areas are incorporated within the interior of the site tucked in to the south of the northeast portion of the building and to the northeast of the parking area. Landscaping is provided throughout the parking area. The landscaping will include trees, shrubs, ground cover and grasses planted in parking areas, general landscape areas, and stormwater facilities.

Buffering and Screening

Subsection 4.176 (.04)

B57. The subject property is zoned PDI and borders PDI zoning to the north, east, and south and west. Low-screen standards will be met on the perimeter of the parking areas on the south property line to shield the parking area from public view and the right of way.

Landscape Plan Requirements

Subsection 4.176 (.09)

B58. The applicant's submitted landscape plans are drawn to scale and show the type, installation size, number and placement of materials. Plans include a plant material list identifying plants by both their scientific and common names. A note on the landscape plan indicates the irrigation method.

Street Improvement Standards

Development and Associated Improvement Standards

Subsection 4.177 (.01) and 4.262 (.01)

B59. The Transportation Systems Plan does not call for additional frontage and road improvements along Barber Street triggered by this project. Right-of-way improvements will be limited to those associated with the removal and reinstallation of storm water facilities and sidewalks.

Street Design Standards

Subsection 4.177 (.02) and 4.262 (.01)

B60. Conditions of Approval will ensure the road improvements are constructed consistent with the Public Works Construction Standards.

Sidewalks

Subsection 4.177 (.03) and 4.262 (.03)

B61. A sidewalk meeting Public Works Construction Standards and ADA Standards is proposed along the south property line adjacent to SW Barber Street.

Bicycle Facilities

Subsection 4.177 (.04) and 4.262 (.0)

B62. Existing bike lanes will serve the proposed development.

Transit Improvements

Subsection 4.177 (.06)

B63. The proposed development is immediately adjacent to existing bus stops and near an existing transit rail station, ensuring it is well served by transit.

Access Drives and Driveway Approaches

Subsection 4.177 (.08)

B64. The design of the access drive provides clear travel lanes, free from obstructions. The design shows the drive aisles as asphalt. The development shall take access via the existing Wilsonville Transit Center park and ride access drive.

Mixed Solid Waste and Recyclables Storage

DRB Review of Adequate Storage Area, Minimum Storage Area
Section 4.179

B65. The proposed development includes one combined solid waste and recyclable storage area within the building. The enclosure is shown on Sheets A001 and in Exhibit B2. The trash enclosure on the ground floor is 545 square feet with smaller 70 sq ft waste and recycling storage rooms on floor providing a total of 825 sq ft of waste storage. The minimum requirement for the site is 654 square feet based on the following calculations:

Building	Use	Size	Min. Storage
Residential Units	Residential	121 units	50+5 per unit over 10 (111)=605 square feet
Commercial Tenant Spaces	Service Commercial	4,900 square feet	10 square feet per 1,000 square feet=49 square feet
		Total	654 square feet

Review by Franchise Garbage Hauler
Subsection 4.179 (.07).

B66. The applicant’s Exhibit B1 contains a letter from Republic Services indicating coordination with the franchised hauler, and that the proposed storage area and site plan meets Republic Services requirements.

Request C: Site Design Review (SDR23-0007)

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 building has a unique architectural expression, taking inspiration from modern vernacular and public

transit design to create a striking piece of architecture that seeks to create a sense of place and destination in this light-industrial part of the city, centered around public transit. High-quality materials are proposed on the exterior, including standard and glazed brick, and metal panel arranged in a stylized pattern designed to invoke movement and visual interest.

Inappropriate or Poor Design of Signs: The proposed master sign plan has been designed to be aesthetically pleasing and fit with the look of the overall development.

Lack of Proper Attention to Site Development: The applicant employed the skills of the appropriate professional services to design the site, demonstrating appropriate attention to site development. The proposed development offers a mix of uses, including 121 affordable housing units, commercial retail space and a transit welcome center. Being a transit-oriented development, the architectural design takes inspiration from modern vernacular and transit design, and provides a high-quality architectural landmark within this industrial area of the City.

Lack of Proper Attention to Landscaping: The applicant proposes landscaping exceeding the area requirements professionally designed by a landscape architect, incorporating a variety of plant materials, as well as retaining three significant Douglas fir trees demonstrating appropriate attention to landscaping.

Objectives and Standards of Site Design Review

Proper Functioning of the Site

Subsection 4.400 (.02) A. and Subsection 4.421 (.03)

- C2.** The professionally designed site demonstrates significant thought to make the site functional and safe. A one way drive aisle, standard size parking stalls, a complete pathway network, and access meeting City standards are among the site design features contributing to functionality and safety.

High Quality Visual Environment

Subsection 4.400 (.02) A. and Subsection 4.421 (.03)

- C3.** The project includes professionally designed building, landscaping and a professional, site specific, layout supports a quality visual environment. Careful attention has been made to provide distinct pedestrian paths through and around the parking lot that link pedestrians to all main entrances of the building and the adjacent sidewalks at the perimeter of the site. Landscaping is thoughtfully planted throughout the site in abundance providing great aesthetic value and enhancing the livability of the site which plantings on all property lines, adjacent to the building and throughout the open space.

Encourage Originality, Flexibility, and Innovation

Subsection 4.400 (.02) B. and Subsection 4.421 (.03)

- C4.** The applicant proposes buildings, landscaping, and other site elements professionally designed specifically for the site. The proposed development offers a mix of uses, including 121 affordable housing units, commercial retail space and a transit welcome center.

Sufficient flexibility exists to fit the planned development within the site. The transit oriented design is the first of its kind within Wilsonville.

Discourage Inharmonious Development

Subsection 4.400 (.02) C. and Subsection 4.421 (.03)

- C5. As indicated in Findings C1, C3, and C8 the architectural design of the proposed project offers a unique and exciting visual character, which draws inspiration from modern design and the idea of create movement within a static architectural form thus preventing monotonous, drab, unsightly, dreary development. A variety of materials are used throughout the façade.

Proper Relationships with Site and Surroundings

Subsection 4.400 (.02) D. and Subsection 4.421 (.03)

- C6. The applicant prepared a professional site-specific design that carefully considers the relationship of the building, landscaping, and other improvements with other improvements on and adjacent to the site, existing and planned. The development seamlessly integrates with the existing WES Station and Wilsonville Transit Center, using similar colors and materials. The movement and fluidity of the façade is reflective of the energy generated by the nearby transit hub.

Regard to Natural Aesthetics

Subsection 4.400 (.02) D. and Subsection 4.421 (.03)

- C7. Three Douglas fir trees were identified as a council priority to retain with the development of this site. The applicant has designed the development around the three Douglas fir trees both integrating them into the site without impacting the trees extensively. A children's play area has been designed to make use of the natural area at the base of the trees, to further integrate these valued trees into the design and everyday functioning of the project. A deck is proposed to be built adjacent to the trees. The architect has designed the deck to be elevated in order to protect the roots of the trees while further immersing visitors and residents in the natural features. Much of the site has been designed as new planted areas, to further ground the architecture in the natural environment.

Attention to Exterior Appearances

Subsection 4.400 (.02) D. and Subsection 4.421 (.03)

- C8. The applicant used appropriate professional services to design the exterior of the building. The majority of the façade is a deep blue comprised of both glazed bricks and metal paneling. The blue façade is broken up with contrasting materials including composite wood plank in light natural wood coloring, as well as black and grey segments of brick veneer, metal paneling and stamped concrete. Use of long lasting materials as well as landscaping will make the site more harmonious with adjacent and nearby development.



VIEW FROM SOUTHEAST CORNER



VIEW FROM NORTHEAST



VIEW FROM NORTHWEST

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

C9. The proposed development includes a Café/taproom, which provides a great amenity to draw people in and make this a new destination hub within the City, which did not exist before. The developments convenient access to public transit will further the ability of this

project to act as a destination, thereby promoting future investment and occupancy in business, commercial and industrial purposes.

Stabilize Property Values/Prevent Blight

Subsection 4.400 (.02) F. and Subsection 4.421 (.03)

C10. The high-quality architectural design and materials, as well as the additional commercial functions of the Café/Taproom, Community Food Bank and Transit Welcome Center will improve property values and, thus, increase tax revenues while promoting future development and preventing blight.

Adequate Public Facilities

Subsection 4.400 (.02) G. and Subsection 4.421 (.03)

C11. As found in the Stage 2 Final Plan review, see Request B, adequate public facilities serve the site or will with conditions of approval.

Pleasing Environments and Behavior

Subsection 4.400 (.02) H. and Subsection 4.421 (.03)

C12. The proposed development, with the addition of 121 new dwelling units and commercial space, will provide significant surveillance opportunities to prevent crime. The open spaces throughout the site remain visually open and sight-obscuring fences and the creation of hidden spaces not easily surveilled has been avoided on this project. The exterior resident amenity and children's play area features a fence that separates this area from the rest of the site and allows only residents entry. The fence will have visibility through it, and will help promote safety and security for residents and their children.

Civic Pride and Community Spirit

Subsection 4.400 (.02) I. and Subsection 4.421 (.03)

C13. As the first transit oriented development in Wilsonville the development creates a unique living opportunity for current and future residents of the City to live within a small community without needing a car. Additionally, the proposed project will offer affordable housing and social services to the City of Wilsonville, while featuring high-quality architectural and landscape design. By providing future residents new affordable housing opportunities, this will promote their sense of place and community and will help foster civic pride and community spirit.

Favorable Environment for Residents

Subsection 4.400 (.02) J. and Subsection 4.421 (.03)

C14. The proposed development will serve both future residents with housing opportunities as well as recreational and service opportunities with the inclusion of the Café/Taproom, Wilsonville Community Sharing, and Transit Welcome Center. The incorporation of the retained trees and thoughtful design of the open spaces will also be a welcomed addition to the Wilsonville community. The proposed project will offer attractive new affordable

housing opportunities for residents, fulfilling a significant demand during this current housing shortage. The project plays a key part of the City's Equitable Strategic Housing Plan and will offer new housing opportunities to those that have not had access to housing.

Jurisdiction and Power of the DRB for Site Design Review

Development Must Follow DRB Approved Plans

Section 4.420

- C15.** Condition of Approval PDC 1 ensures construction, site development, and landscaping are carried out in substantial accord with the Development Review Board approved plans, drawings, sketches, and other documents. The City will not issue any building permits for portions of the improvements requiring DRB review prior to DRB approval.

Design Standards

Preservation of Landscaping

Subsection 4.421 (.01) A.

- C16.** The proposed development aims to mitigate it's impact on the existing landscaping and grading of the site in a number of ways. The building itself has been designed around the three large Douglas fir trees being maintained, and the building slabs are designed to follow the existing grades around the site as best possible, to reduce the necessary cut and fill. The area around the trees to remain needs to be as un-disturbed as possible, including any changes to grading, as any changes could affect the health of the trees. A raised, permeable deck is proposed around the trees to provide recreational and social opportunities for residents, and that is tied to the existing natural features of the site

Harmony of Proposed Buildings to Environment

Subsection 4.421 (.01) B.

- C17.** The applicant used appropriate professional services to design the exterior of the building to ensure harmony with the environment. The area surrounding the subject property is unique with industrial development to the south, transit services adjacent to the north and east, and preserved natural areas to the west of the site. The applicant has utilized materials that relate to the existing WES Station and SMART Transit buildings adjacent to the site with a modern take. The deep blue color and natural wood incorporated throughout directly relates to the aesthetic of the existing building. A variety of materials creates visual interest. The applicant has utilized materials that are typically employed in industrial development, but has utilized a variety of colors, materials, and textures to add interest and create harmony with the adjacent environment. Condition of approval PDC 7 will ensure that the design of the building is enhanced. Landscaping is included around all structures to either enhance the appearance of or screen industrial uses.

Special Attention to Drives, Parking, and Circulation

Subsection 4.421 (.01)

- C18.** A professional level of attention was paid to drives, parking, and circulation in preparation and review of the proposed design.

Special Attention to Surface Water Drainage

Subsection 4.421 (.01) D.

- C19.** All on-site impervious areas have been designed and graded to drain into new flow-through stormwater treatment planters. The five features are located along the south perimeter of the proposed development and will improve water quality throughout the property. The proposed improvements will not adversely affect neighboring properties through the storm drainage system. Condition of Approval PF 3 will ensure all stormwater facilities will be Public Work standards.

Indication of Sewage Disposal

Subsection 4.421 (.01) E.

- C20.** All sewage disposal will be via standard sewer connections to City sewer lines found to be adequate to serve the site as part of the Stage 2 Final Plan.

Advertising Features Do Not Detract

Subsection 4.421 (.01) F.

- C21.** The proposed Master Sign Plan has been designed so that the signs or advertising features will be in harmony with and not detract from the surrounding area.

Screening and Buffering of Special Features

Subsection 4.421 (.01) G.

- C22.** The applicant does not propose any special features requiring additional screening or buffering.

Design Standards Apply to All Buildings, Structures, Signs, and Features

Subsection 4.421 (.02)

- C23.** The necessary design standards have been applied to all features of the site, including signs.

Conditions of Approval to Ensure Proper and Efficient Function

Subsection 4.421 (.05)

- C24.** 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)

- C25.** The colors and materials proposed by the applicant are appropriate. See finding C8 for more details regarding material and color choice.

Standards for Mixed Solid Waste and Recycling Areas

Multi-Family and Commercial Mixed Solid Waste and Recycling Capacity Subsection 4.430 (.01) and Subsection 4.179 (.06)

C26. As a mixed-use development with both commercial and multi-family uses the proposed project requires waste storage capacity of 49 sq ft for the commercial spaces and 605 sq ft for the residential portion for a total of 654 sq ft of mixed solid waste and recycling storage capacity. The applicants plans show a 545 sq ft shared trash and recycling room on the ground floor. In addition to the single ground floor storage room 70 sq ft of waste and recycling storage are located on each residential floor. The total waste and recycling storage capacity for the proposed development will be 825 sq ft, exceeding the required 654 sq ft.

Mixed Solid Waste and Recycling Areas Colocation Subsection 4.430 (.02) A. and Section 4.179 (.06)

C27. The proposal provides an interior storage area for both solid waste and recyclables.

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

C28. The applicant proposes a single interior location. Review of the Building Permit will ensure meeting of building and fire code.

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

C29. The applicant has included a letter from Republic Services in Exhibit B1 which indicates the location and arrangement is accessible to collection vehicles. Waste bins will be rolled from the waste storage area to the parking area for pick up as is described in the Republic Services service provider letter. The location of the storage area does impede sidewalks, parking area aisles, or public street right-of-way.

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

C30. Pursuant to a letter from Republic Services in Exhibit B1, the dimensions are adequate to accommodate the planned containers.

Site Design Review Submission Requirements

Submission Requirements Section 4.440

C31. The applicant submitted a site plan drawn to scale and a detailed landscape plan.

Time Limit on Site Design Review Approvals

Void after 2 Years Section 4.442

- C32.** The Applicant plans to develop the proposed project within two years and understands that the approval will expire after two years unless the City grants an extension.

Installation of Landscaping

Landscape Installation or Bonding

Subsection 4.450 (.01)

- C33.** Condition of Approval PDC 2 will assure installation or appropriate security.

Approved Landscape Plan Binding

Subsection 4.450 (.02)

- C34.** Condition of Approval PDC 3 provides ongoing assurance approved landscaping is installed and maintained.

Landscape Maintenance and Watering

Subsection 4.450 (.03)

- C35.** Condition of Approval PDC 4 will ensure continual maintenance of landscaping in a substantially similar manner as originally approved by the Board.

Limitation to Modifications of Landscaping

Subsection 4.450 (.04)

- C36.** Condition of Approval PDC 4 provides ongoing assurance of conformance with this criterion by preventing modification or removal without the appropriate City review.

Landscaping Standards

Shrubs and Groundcover Materials Requirements

Subsection 4.176 (.06) A.

- C37.** Condition of Approval PDC 5 requires meeting the detailed requirements of this subsection. Of particular note, the applicant's landscape plan, shows at least 2-gallon containers for shrubs and 1-gallon containers for groundcover. A diverse variety of shrubs species were selected for planting including Aztec pearl Mexican orange, Green spire Japanese euonymus, invincibelle wee white hydrangea, seaside serenade Martha's Vineyard hydrangea, Leafscape little flames leucothoe, cerise charm fringe flower, Suzanne fringe flower, Oregon grape, spft cares mahonia, ginger wine ninebark, otto luyken English laurel, snowball azalea, and double play big bang spirea. Ground cover plantings will include kinninnick, Japanese sedge varieties, fountain grass varieties, purple explosion lilyturf, northern lights tufted hair grass, creeping Oregon grape, breeze mat rush and Taiwan mondo grass.

Plant Materials Requirements-Trees

Subsection 4.176 (.06) B.

C38. As stated on the applicant's landscape plans, the plant material requirements for trees will be met as follows:

- Trees are B&B (Balled and Burlapped)
- Tree are 1.75-2" caliper.

A mix of nine different species of trees has been selected to be planted throughout the site in appropriate locations including Greencolumn black maple, spring flurry allegheny service berry, Tiny tower Italian cypress, Oregon ash, Moonglow sweetbay magnolia, Persian spire parrotia, douglas fir, streetspire oak and vine maples.

Plant Species Requirements

Subsection 4.176 (.06) E.

C39. The applicant's landscape plan provides sufficient information showing the proposed landscape design meets the standards of this subsection related to use of native vegetation and prohibited plant materials.

Landscape Installation and Maintenance Standards

Subsection 4.176 (.07)

C40. The installation and maintenance standards are met or will be met by Condition of Approval PDC 6 as follows:

- Plant materials are required to be installed to current industry standards and be properly staked to ensure survival.
- Within one growing season, the applicant must replace in kind plants that die, unless the City approves appropriate substitute species.
- Notes on the applicant's landscape plans provides for an irrigation system.

Landscape Plan Requirements

Subsection 4.176 (.09)

C41. The applicant's landscape plan shows all proposed landscape areas. The to-scale plans show the type, installation size, number and placement of materials. Plans include a plant material list. Plants identification is by both their scientific and common names.

Completion of Landscaping

Subsection 4.176 (.10)

C42. The applicant has not requested to defer installation and thus must install landscaping prior to occupancy.

Outdoor Lighting

Applicability of Outdoor Lighting Standards

Sections 4.199.20 and 4.199.60

C43. The proposed development will install new lighting throughout the parking area and site for safety and function thus the outdoor lighting standards apply.

Outdoor Lighting Zones

Section 4.199.30

C44. The subject property is within LZ2.

Optional Lighting Compliance Methods

Subsection 4.199.40 (.01) A.

C45. The applicant has the option of the performance or prescriptive method. The applicant has selected to comply with the prescriptive method.

Maximum Lamp Wattage and Shielding

Subsection 4.199.40 (.01) B. and Tables 7 and 8.

C46. The applicant has selected the prescriptive option for the project's outdoor lighting design. The applicant's narrative states that the proposed luminaires comply with the maximum wattage, shielding and mounting height requirements within Table 7 and 8. The proposed lights will meet the required setback standard of three times the mounting height of the light fixture or will meet expectation 3 or 4 for the prescriptive method through shielding.

Maximum Mounting Height Exceptions

Subsection 4.199.40 (.01) B. 4.c.

C47. Nothing in the applicant's materials indicates the maximum mounting height will be surpassed.

Lighting Curfew

Subsection 4.199.40 (.01) D.

C48. The applicant proposes the standard LZ 2 curfew of 10 PM.

Request D: Type C Tree Removal Plan (TPLN23-0003)

Type C Tree Removal-General

Tree Related Site Access

Subsection 4.600.50 (.03) A.

D1. It is understood the City has access to the property to verify information regarding trees.

Review Authority

Subsection 4.610.00 (.03) B.

D2. The requested removal is connected to site plan review by the Development Review Board for new development. The tree removal is thus being reviewed by the Development Review Board.

Conditions of Approval

Subsection 4.610.00 (.06) A.

D3. No additional conditions are recommended pursuant to this subsection.

Completion of Operation
Subsection 4.610.00 (.06) B.

D4. It is understood the tree removal will be completed prior to construction of the proposed building, which is a reasonable time frame for tree removal.

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

D5. 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)

D6. The standards of this subsection are met as follows:

- Standard for the Significant Resource Overlay Zone: No trees proposed for removal are located in the SROZ.
- Preservation and Conservation. The arborist report inventoried twenty-seven (27) trees located on the subject property. The tree species on site are a mix of native and non-native trees including Douglas fir, red pine, zelkova, Norway maple, sweet cherry, and English Hawthorn. The applicant proposes to preserve three (3) of the existing mature Douglas fir tree, which has been thoughtfully incorporated within the active open space area. Twenty-four (24) trees onsite are proposed for removal. The applicant proposes to plant thirty-six (36) new trees to mitigate for the twenty-four (24) trees proposed for removal, which exceeds the 1:1 mitigation requirement. Condition of approval PDD 4 will ensure that protective fencing is placed around the drip line of preserved trees prior to site grading or other site work that could damage the trees.
- Development Alternatives: The proposed tree removal has been minimized to the extent possible in order to redevelop the subject property. Three mature Douglas trees are proposed for retention. The site design was thoughtfully planned to avoid damaging the roots of the trees and allow them space to grow. An elevated deck will allow residents to use the open space adjacent to the trees while avoiding significant impacts during development.
- Land Clearing: Land clearing and grading is proposed and will be limited to areas necessary for construction of the proposed building, structures, and other site improvements.
- Compliance with Statutes and Ordinances: The necessary tree replacement and protection is planned according to the requirements of the tree preservation and protection ordinance.
- Limitation: Tree removal is limited to where it is necessary for construction (as discussed in Development Alternatives above) or to address nuisances or where the health of the trees warrants removal.

- Additional Standards: A tree survey has been provided, and no utilities are proposed to be located where they would cause adverse environmental consequences.

Review Process

Subsection 4.610.40 (.01)

D7. The plan is being reviewed concurrently with the Stage 2 Final Plan.

Tree Maintenance and Protection Plan

Section 4.610.40 (.02)

D8. The applicant has provided information on tree maintenance and protection in Exhibit B1 sheet C2.11. The tree protection fencing shown indicates fencing around the three Douglas fir trees to be retained on site. The arborist report includes specific instructions and recommendations regarding how to safely move forward with construction while protecting the health of the trees proposed for retention.

Replacement and Mitigation

Tree Replacement Requirement

Subsection 4.620.00 (.01)

D9. The applicant proposes removing twenty-four (24) trees and replanting thirty-six (36) trees as mitigation on the project site, exceeding a one-to-one ratio and the requirements of this subsection.

Basis for Determining Replacement and Replacement

Subsection 4.620.00 (.02) and (.03)

D10. Replacement trees will meet the minimum caliper and other replacement requirements. Tree species selected for replacement include including Greencolumn black maple, spring flurry allegheny service berry, tiny tower Italian cypress, Oregon ash, Moonglow sweetbay magnolia, Persian spire parrotia, Douglas fir, streetspire oak and vine maples. This mix of evergreen and deciduous trees are compatible for the function of the site while maintaining a diversity of species.

Replacement Tree Stock Requirements

Subsection 4.620.00 (.04)

D11. The planting notes on the applicant's Sheet L4 in Exhibit B2 indicate the appropriate quality.

Replacement Trees Locations

Subsection 4.620.00 (.05) A.

D12. The applicant proposes to mitigate for all removed trees on site and in the appropriate locations for the proposed development. The removal of six native trees will be mitigated with six native trees on the northeast perimeter of the site.

Protection of Preserved Trees

Tree Protection During Construction
Section 4.620.10

- D13.** Condition of Approval PDD 4 ensures the applicable requirements of this section will be met.

Request E: Tentative Partition Plat (PART23-0002)

Land Division Authorization

Plat Review Authority
Subsection 4.202 (.01) through (.03)

- E1.** The tentative partition plat is being reviewed by the Development Review board as is it is associated with a development proposal. The final plat will be reviewed by the Planning Division under the authority of the Planning Director to ensure compliance with the tentative partition plat.

Legally Lot Requirement
Subsection 4.202 (.04) A.

- E2.** It is understood that no parcels will be sold or transferred until the final plat has been approved by the Planning Director and recorded.

Undersized Lots Prohibited
Subsection 4.202 (.04) B.

- E3.** No parcels will be divided into a size smaller than allowed by the Planned Development Industrial Zone designation as there is no minimum lot size in the PDI zone. The resulting two parcels 1.39 acres (Parcel 1) and 1.97 acres (Parcel 2).

Plat Application Procedure

Pre-Application Conference
Subsection 4.210 (.01)

- E4.** A pre-application conference (PRE23-0006) was held on April 27, 2023 in accordance with this subsection.

Tentative Plat Preparation
Subsection 4.210 (.01) A.

- E5.** The applicant's Exhibit B2 includes a preliminary partition plat prepared in accordance with this subsection.

Tentative Plat Submission
Subsection 4.210 (.01) B.

- E6.** The tentative partition plat has been submitted with the required information.

Phases to Be Shown
Subsection 4.210 (.01) D.

E7. No phasing for development or improvements to the subject property has been submitted.

Remainder Tracts
Subsection 4.210 (.01) E.

E8. All affected property has been incorporated into the tentative partition plat.

Street Requirements for Land Divisions

Adjoining Streets Relationship
Subsection 4.236 (.02)

E9. No new streets are required or proposed related to the subject partition. However, improvements to Barber Street will be necessary due to construction. The existing sidewalk, storm water facility, curb and gutters, and planter strips will be removed to accommodate the new development. The applicant will restore the sidewalk, stormwater facilities, curb and gutters and planter strips to meet Public Works Standards as is required in Condition of Approval PF2.

General Land Division Requirements- Easements

Utility Line Easements
Subsection 4.237 (.02) A.

E10. New utility line easements will be required for public water lines, sewer, stormwater and all private utilities. See Condition of Approval PF 6.

General Land Division Requirements- Lot Size and Shape

Lot Size and Shape Meet Zoning Requirements
Subsection 4.237 (.05)

E11. The proposed parcels meet the requirements of the PDI zone, where there is no minimum lot size and shape requirements. See Finding E3. The proposed lot shapes are unique as the purpose of the partition is to separate the SMART Bus Turnaround from the proposed development.

On-Site Sewage Disposal
Subsection 4.237 (.05) A.

E12. The property is will be served by public sewer; therefore an on-site sewage disposal permit is not required from the City. Sanitary sewer laterals are included on the utility plan showing how the development will be served by the public sewer.

Appropriate Commercial and Industrial Lots

Subsection 4.237 (.05) B.

- E13.** As found in Request B above, the proposed parcels are sufficient size for applicable functional standards to be met including off-street service and parking.

Lot Size and Width for Planned Developments

Subsection 4.237 (.05) C.

- E14.** The proposed partition will result in two (2) lots ranging in size from 1.39 acres to 1.97 acres. There is no minimum lot size in the PDI zone.

General Land Division Requirements- Access

Minimum Street Frontage

Subsection 4.237 (.06)

- E15.** There is no minimum street frontage requirement in the PDI zone.

Standards Applying to Planned Development Industrial Development

Minimum Setbacks

Subsection 4.135 (.06) C. and D.

- E16.** The minimum front, side, and rear setbacks are 30 feet. The applicant requests a waiver to all setbacks. The setback waiver will allow for the small 1.39 acre property to be developed as a 121-unit mixed use residential building. See request G for details regarding the waiver.

General Land Division Requirements- Other

Through Lots

Subsection 4.237 (.07)

- E17.** No through lots are proposed with his partition.

Lot Side Lines

Subsection 4.237 (.08)

- E18.** The objective of the partition is to separate the proposed development from the existing SMART bus turnaround, thus the resulting lots are irregularly shaped and achieving right angles is challenging for Parcel 1. The side lot lines of Parcel 1 are as perpendicular with the access roads to the east and west as possible with the existing site constraints. The side lot lines of Parcel 2 are perpendicular to the Railroad Right-of-Way.

Large Lot Divisions

Subsection 4.237 (.09)

- E19.** There is no indication that the parcels created from this partition will be divided further.

Land for Public Purposes
Subsection 4.237 (.12)

E20. No property reservation is recommended as described in this subsection.

Corner Lots
Subsection 4.237 (.13)

E21. The resulting parcels will not be corner lots.

Lots of Record

Defining Lots of Record
Section 4.250

E22. The existing parcel is a lot of record, and the resulting parcels will be of record.

Request F: Master Sign Permit (MSP23-0001)

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

Sign Review and Submission

Master Sign Plan DRB Review
Subsection 4.031 (.01) M. and Subsection 4.156.02 (.03)

F1. The proposed development will include three commercial tenant spaces requiring a Master Sign Plan application subject to Development Review Board review.

Master Sign Plan Required
Subsection 4.156.02 (.07)

F2. Master Sign Plans are required for new developments with three or more commercial tenants. The proposed development will include three ground floor commercial tenant spaces thus requiring a Master Sign Plan for the development.

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

F3. As indicated in the table below the applicant has satisfied the submission for Master Sign Plan, which includes the submission requirements for Class 2 sign and Class 3 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	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Sign Drawings or Descriptions	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Documentation of Tenant Spaces Used in Calculating Max. Sign Area	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Drawings of Sign Placement	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Project Narrative	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Information on Any Requested Waivers or Variances	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Master Sign Plan Review Criteria

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

F4. 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.

F5. The applicant is proposing a master sign plan for the three commercial tenant spaces. The master sign plan requires the signs are constructed of materials that are compatible with the buildings architectural character and materials. Selected colors shall also be representative of the Tenant logo while relating to the architecture and design of the building. The proposed Master Sign Plan standards are generally typical of, proportional to, and compatible with commercial development in mixed-use buildings. No evidence has been presented nor testimony received demonstrating the subject signs would detract from the visual appearance of the surrounding area.

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

F6. There is no evidence, and no testimony has been received, suggesting the proposed sign plan 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.

- F7. The sign plan allows wall signage in appropriate locations in relation to existing architectural elements of the building.

Master Sign Plan Review Criteria: Consistent and Compatible Design

Subsection 4.156.02 (.07) B. 1.

- F8. The applicant has designed a master sign plan that provides for consistent and compatible design of signs throughout the development. The master sign plan criteria intends to express a refined urban sophistication through the use of clean and cotemporary shapes and forms. The master sign plan outlines a range of acceptable locations, colors, materials, finishes and lighting as well as unacceptable locations colors, materials, fishes, and lighting for the tenant wall signs. The plan calls for all signs to relate to the architectural character and materials of the building. It is recommended that signs are constructed with the same materials utilized in the construction of the building for seamless integration. The guidelines provide numerous examples of 'clean and contemporary' signage, graphics, materials, and formats to meet a variety of commercial tenant and business needs and changes over time that remain consistent with the overall building character. The Master Sign Plan on Sheet A002 (Exhibit B2) shows all necessary information regarding the proposed signage.

Master Sign Plan Review Criteria: Consider Future Needs

Subsection 4.156.02 (.07) B. 2.

- F9. The applicant proposes each tenant install signs in the same general location on the façade for each tenant space with the option for overhanging blade signs and wall mounted blade signs. The signs shall be installed in harmony with the buildings architecture. Additionally, guidance is provided regarding color, material, finishes, and lighting. By keeping consistent locations for each tenant space and providing guidelines for the design of the signs the applicant has proposed a Master Sign Plan that will provide a consistent look in the future should tenant spaces change over time.

Sign Measurement

Measurement of Cabinet Signs

Subsection 4.156.03 (.01) A.

- F10. The sign measurements use single rectangles, as allowed.

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

General Allowance

Subsection 4.156.08 (.01) A.

- F11. No ground mounted or freestanding signs are proposed.

Building Signs in the PDC, TC, PDI , and PF Zones

Establishing whether Building Facades are Eligible for Signs

Subsection 4.156.08 (.02) A.

F12. All facades of the proposed building are sign eligible as follows:

Façade	Sign Eligible	Criteria making sign eligible
North	Yes	Public entrance
East	Yes	Public entrance
South	Yes	Frontage on a street, primary parking area, public entrance
West	Yes	Public entrance

Building Sign Area Allowed

Subsection 4.156.08 (.02) B.1

F13. The proposed building is anticipated to have up to three tenants and has three storefront entrances facing north, east, and south. The north façade of the building is 220' allowing for 108 sq ft of sign area. The east façade of the building is 130' allowing for 60 sq ft of sign area. The west façade of the building is 50' allowing for 36 sq ft of sign area. The south façade of the building is 175' allowing for 84 sq ft of sign area. The Master Sign Plan requires the standards of this subsection are met and therefore the total square footage of all tenant signs will not exceed 60 sq ft. No information was provided regarding the residential entrance signage. Prior to installation, a Class 1 Sign Permit must be submitted for approval. The general location of blade signs are addressed in the Master Sign Plan, limited to 6 sq ft as specified in this subsection.

Building Sign Length Not to Exceed 75 Percent of Façade Length

Subsection 4.156.08 (.02) C.

F14. The proposed building signs do not exceed 75% of the length of the façade.

Building Sign Height Allowed

Subsection 4.156.08 (.02) D.

F15. The proposed building signs are within a definable architectural feature and have a definable space between the sign and the top and bottom of the architectural feature.

Building Sign Types Allowed

Subsection 4.156.08 (.02) E.

F16. The proposed master sign plan allows blade signs and hanging signs, and prohibits signs that do not meet this standard.

Site Design Review

Excessive Uniformity, Inappropriate Design

Subsection 4.400 (.01)

F17. With quality materials and design, the master sign plan standards 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)

F18. The sign allowances 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 individual's reference for the location of this development.

Design Standards

Subsection 4.421 (.01)

F19. The proposed location and approximate size of future signs are provided in the applicant's materials. Detail about design, color, texture, lighting, or materials are included in the master sign plan ensuring that the proposed signs would detract from the design of the surrounding properties.

Design Standards and Signs

Subsection 4.421 (.02)

F20. Design standards have been applied to the proposed signs, as applicable, see Findings F17-F19 above.

Color or Materials Requirements

Subsection 4.421 (.06)

F21. The master sign plan outlines a range of acceptable locations, colors, materials, finishes and lighting as well as unacceptable locations colors, materials, finishes, and lighting for the tenant wall signs. The plan calls for all signs to relate to the architectural character and materials of the building. The guidelines provide numerous examples of 'clean and contemporary' signage, graphics, materials, and formats to meet a variety of commercial tenant and business needs and changes over time that remain consistent with the overall building character.

Site Design Review-Procedures and Submittal Requirements

Section 4.440

F22. The applicant has submitted a sign plan as required by this section.

Request G: Waivers (WAIV23-0001)

Waiver to Setback Standards

Waivers to Development Standards
Subsection 4.118 (.03) A.

- G1.** Pursuant to this subsection, the DRB may waive typical development standards in order to implement the purposes and objectives of Section 4.140, Planned Development Regulations. The applicant proposes a waiver to the required building setbacks in the Planned Development Industrial Zone for all setbacks, front, rear and sides. The applicant's materials demonstrate how waiving the 30' setbacks will allow the implementation of Planned Development Regulations.

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

- G2.** Pursuant to Subsection 4.118 (.03) A., waivers must implement or better implement the purpose and objectives listed in this subsection. The project is unique in that it is a mixed-use affordable housing development located in the Planned Development Industrial zone. The proposed project is possible due to the fact the project site is City owned as ORS 197.308 allows industrial land, publically, to be used for residential development as long as the resulting units are affordable housing units. The City of Wilsonville is utilizing this allowance to encourage housing production within the City consistent with Equitable Housing Strategic Plan. The undeveloped land to the south of the Wilsonville Transit Center and turnaround, owned by the City, offers a unique opportunity to build a compact residential building adjacent to a local and regional transit hub. The 1.39 acres available for development would be severely limited by the required 30' setbacks in the industrial zone.

Waiving the setbacks allows for the intent of the Planned Development Regulations to be met specifically in regards to flexibility. The proposed setbacks of 9' from the north property line, 5' from the west property line, 13.5' from the south property line and 5.5' from the eastern property line, allows for the proposed structure to be located on the northeast portion of the site, preserving the three Douglas fir trees, and allowing a small parking area and access for patrons of the commercial spaces.

The west, north and eastern frontages of the building sit within the required 30 foot rear and side yard setback. The western frontage consists of commercial space, while the northern frontage is primarily ground floor residential units, with a commercial space at the eastern edge. The eastern frontage consists of commercial spaces at each end of the building and active resident amenity spaces including a bike parking room and fitness room.

By design, the commercial spaces are located at key corners of the building, to provide visual emphasis and a slightly more urban character, as these are located along the bus

depot and turnaround. The architectural treatment at these areas features higher levels of glazing, promoting good visibility into and out of the tenant spaces. Locating these spaces closer to the property line is better from a retail perspective, as it assists with visibility and awareness, and promotes the long-term viability of these spaces from a tenant perspective. It also helps to make these areas appear more active and promote surveillance.

At the ground floor residential units along the north façade, careful attention has been given to properly screen these units from the sidewalk, via several layers of landscaping and a short 18" tall concrete wall in front of each unit. The windows are also recessed from the main façade to further provide a defensible space for residents.

The applicant argues the reduced setbacks will provide a high-quality architectural and urban character that meets the goals of the project and the City's Comprehensive Plan, while also meeting the purposes of the Planned Development Regulations and the Site Design Review.

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 (<i>Aggregate, accept where noted</i>)	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 City Code Section 8.317.
 - 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 LID facilities (Low Impact Development): provide plan and profile views of all LID 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 water quality 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 facilities are typically privately maintained they will be inspected by engineering, and the plans must be part of the Public Works Permit set.
 - q. Composite franchise utility plan.
 - r. City of Wilsonville detail drawings.
 - s. Illumination plan.
 - t. Striping and signage plan.
 - u. 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 City Code Section 8.317 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. The applicant shall be in conformance with all source control requirements for the proposed development per the Public Works Standards and Wilsonville City Code.
12. 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.
13. 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.

14. Storm water quality facilities shall have approved landscape planted and approved by the City of Wilsonville prior to paving.
15. 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.
16. 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.
17. Streetlights shall be in compliance with City dark sky, LED, and PGE Option B requirements.
18. Sidewalks, crosswalks and pedestrian linkages in the public right-of-way shall be in compliance with the requirements of the U.S. Access Board.
19. No surcharging of sanitary or storm water manholes is allowed.
20. 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.
21. 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.
22. 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.
23. 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.
24. Street and traffic signs shall have a hi-intensity prismatic finish meeting ASTM 4956 Spec Type 4 standards.

25. 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.
26. 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).
27. 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.
28. Applicant shall design interior streets and alleys to meet specifications of Tualatin Valley Fire & Rescue and Republic Services for access and use of their vehicles.
29. 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 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.
30. The applicant shall "loop" proposed waterlines by connecting to the existing City waterlines where applicable.
31. 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.
32. 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).

33. 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 in electronic formats: AutoCAD, current version, and a digitally signed PDF.



29799 SW Town Center Loop E, Wilsonville, OR 97070
 Phone: 503.682.4960 Fax: 503.682.7025
 Web: www.ci.wilsonville.or.us

Planning Division
 Development Permit Application

Item 5.

Final action on development application or zone change is required within 120 days per ORS 227.175 or as otherwise required by state or federal law for specific application types.

A pre application conference may be required.

The City will not accept applications for wireless communication facilities or similar facilities without a completed copy of a Wireless Facility Review Worksheet.

The City will not schedule incomplete applications for public hearing or send administrative public notice until all of the required materials are submitted.

Applicant:

Name: Robert Gibson
 Company: Palindrome Communities LLC
 Mailing Address: 412 NW 5th Ave, Suite 200
 City, State, Zip: Portland, OR 97209
 Phone: 503-288-6210 Ext 325 Fax: _____
 E-mail: rgibson@pacificap.com

Authorized Representative:

Name: Tim Schneider
 Company: YBA Architects
 Mailing Address: 3514 N Vancouver Ave, Suite 310
 City, State, Zip: Portland, OR 97227
 Phone: 701-400-0017 Fax: _____
 E-mail: tim@yb-a.com

Property Owner:

Name: Bryan Cosgrove, City Manager
 Company: City of Wilsonville
 Mailing Address: 29799 SW Town Center Loop E
 City, State, Zip: Wilsonville, OR 97070
 Phone: 503-570-1503 Fax: _____
 E-mail: cosgrove@ci.wilsonville.or.us

Property Owner's Signature:

Printed Name: Bryan Cosgrove Date: 8/8/23

Applicant's Signature: (if different from Property Owner)

Printed Name: Tim Schneider Date: 08/08/2023

Site Location and Description:

Project Address if Available: 9699 SW Barber St, Wilsonville, OR 97070 Suite/Unit _____
 Project Location: The site is located just to the south of the Trimet park & ride lot/bus turnaround, on SW Barber St.
 Tax Map #(s): _____ Tax Lot #(s): 31W14B 00703 County: Washington Clackamas

Request:

This proposal is for the development of a mixed-use affordable multi-family housing project featuring ~121 dwelling units, a local food bank, a Cafe/taproom, a Transit Welcome Center, as well as associated site improvements which include communal outdoor resident amenity spaces and landscaping.

Project Type: **Class I** **Class II** **Class III**

Residential Commercial Industrial Other: _____

Application Type(s):

- | | | | |
|--|---|---|---|
| <input type="checkbox"/> Annexation | <input type="checkbox"/> Appeal | <input type="checkbox"/> Comp Plan Map Amend | <input type="checkbox"/> Parks Plan Review |
| <input type="checkbox"/> Final Plat | <input type="checkbox"/> Major Partition | <input type="checkbox"/> Minor Partition | <input type="checkbox"/> Request to Modify Conditions |
| <input type="checkbox"/> Plan Amendment | <input type="checkbox"/> Planned Development | <input checked="" type="checkbox"/> Preliminary Plat | <input checked="" type="checkbox"/> Site Design Review |
| <input type="checkbox"/> Request for Special Meeting | <input type="checkbox"/> Request for Time Extension | <input checked="" type="checkbox"/> Signs | <input checked="" type="checkbox"/> Stage II Final Plan |
| <input type="checkbox"/> SROZ/SRIR Review | <input type="checkbox"/> Staff Interpretation | <input checked="" type="checkbox"/> Stage I Master Plan | <input type="checkbox"/> Variance |
| <input checked="" type="checkbox"/> Type C Tree Removal Plan | <input type="checkbox"/> Tree Permit (B or C) | <input type="checkbox"/> Temporary Use | <input type="checkbox"/> Other (describe) |
| <input type="checkbox"/> Villebois SAP | <input type="checkbox"/> Villebois PDP | <input type="checkbox"/> Villebois FDP | |
| <input type="checkbox"/> Zone Map Amendment | <input checked="" type="checkbox"/> Waiver(s) | <input type="checkbox"/> Conditional Use | |



Wilsonville TOD - Land Use Application

August 18, 2023



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Appendix A: Site Lighting Cutsheets

Team Information

Applicant:	Palindrome Communities LLC Robert Gibson 412 NW 5 th Ave, Suite 200 Portland, OR 97209 503-288-6210 Ext 325
Authorized Representative:	YBA Architects Tim Schneider 3514 N Vancouver Ave, Suite 310 Portland, OR 97227 701-400-0017
Design Team:	
Architect:	YBA Architects Alex Yale, Principal 3514 N Vancouver Ave, Suite 310 Portland, OR 97227 503-334-7392
Surveyor:	RQ4D Nathan Mayer, PLS 503-820-9593
Civil Engineer:	Emerio Design Steve Hansen, PE 6445 SW Fallbrook Place, Suite 100 Beaverton, OR 97008 503-746-8812
Landscape Architect:	Shapiro Didway Blair Didway 1204 SE Water Ave, Suite 21 Portland, OR 97214 206-501-9033
Arborist:	Teragan & Associates Peter van Oss 3145 Westview Circle Lake Oswego, OR 97034 971-231-4044

Project Narrative & Summary:

Site Address:	9749 SW Barber St Wilsonville, OR 97070
Taxlot ID:	31W14B 00703
Gross Site Area:	1.39 acres, ~60,695 sf
Zoning:	PDI Zone
Proposal:	5 stories, 133,575 sf 121 Residential Units 3,750 sf of commercial space (includes food bank and café/taproom) 1,150 sf SMART Transit Welcome Center 14 on-site vehicular parking stalls 26 short-term bicycle parking spaces 130 long-term bicycle parking spaces

The proposed development is comprised of 121 affordable residential units, commercial tenant space for a local Food Bank (Wilsonville Community Sharing), a designated welcome center for SMART Transit, as well as a café/taproom. It also features 14 on-site parking stalls for convenience parking for residents and the commercial uses, as well as 30 short-term bicycle parking stalls and ~130 long-term bicycle parking space, to encourage bicycle use and other alternative modes of transportation. The proposed site at 9749 SW Barber St is City-owned and currently shares the site with the existing bus depot and turnaround. Therefore, a tentative partition plat is included in this application. The development site will include the land area within the existing sidewalks on the west, north and east frontages, and will include the addition of new right-of-way improvements along Barber, featuring stormwater planters, street trees and a new sidewalk.

The site is zoned PDI, and the proposed commercial and residential uses are allowed (with restrictions), given that they are allowable uses in PDC and PDR zones. Additionally, the passage of Senate Bill 8 promotes the development of affordable housing on lands not specifically zoned for residential uses. This affordable housing project will play a significant role in the City of Wilsonville’s Equitable Housing Strategic Plan. The applicant has built on the City’s past community outreach and has continued that outreach to organizations such as Latino Network, to ensure this development is meeting the needs of the Wilsonville community and the goals of the Equitable Housing Strategic Plan.

The proposed building is ~60’-8” tall and will be constructed as 4 stories of Type VA construction over 1 story of Type IA construction, and will be fully sprinklered. The upper floors consist of entire residential units. The ground floor consists of residential units, resident amenity spaces (including community space, large bike storage rooms, leasing/social services offices, and mail/parcel lockers) as well as the Transit Welcome Center, Food Bank and Café/Taproom. The landscape & site design features ample resident/community gathering and seating areas, including covered BBQ areas, café/taproom seating, and a natural open space that is carefully crafted around the three mature douglas fir trees to remain.

The preservation of these trees is a prominent part of the site design, as their presence contributes to the sense of place and embraces the natural features of the Pacific Northwest.

Stormwater treatment of the building and site is proposed within planted stormwater facilities on the property, and in the new proposed ROW frontage along SW Barber St.

Being a transit-oriented development, the design concept of the building is strongly grounded in this fact, and takes inspiration from modern transportation design, and the idea of instilling movement within a stationary form. The massing design of the upper floors uses subtle angles to segment the building into smaller proportions to break down the scale, and features angled soffits and recesses clad in an accent material unique from the main facades.

The proposed cladding materials have been selected for their durability and aesthetics. The main materials proposed are brick, metal panel and a composite wood plank cladding. Two types of brick are proposed for the ground floor facades, including a dark blue glazed brick and a dark charcoal clinker brick, chosen for its textural surface and its sense of timelessness. The metal panel will have two main colors – dark blue or charcoal gray, depending on which mass of the building it occurs. At soffits or recesses, a composite wood plank cladding will be used as a distinct material, and to reinforce the overall massing concept for the building.


The applicant is requesting the following applications:

- **Stage 1 Master Plan**
- **Stage II Final Plan**
- **Preliminary Plat**
- **Site Design Review**
- **Type C Tree Removal Plan**

The applicant is requesting waivers to development code as listed and described in the Anticipated Waivers section of this document.

Proof of Ownership:

dated 1/11/2019 all previous version of this form are obsolete



Wilsonville Oregon

29799 SW Town Center Loop E, Wilsonville, OR 97070
 Phone: 503.682.4960 Fax: 503.682.7025
 Web: www.ci.wilsonville.or.us

Planning Division
Development Permit Application


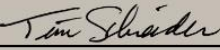
Final action on development application or zone change is required within 120 days per ORS 227.175 or as otherwise required by state or federal law for specific application types.

A pre application conference may be required.

The City will not accept applications for wireless communication facilities or similar facilities without a completed copy of a Wireless Facility Review Worksheet.

The City will not schedule incomplete applications for public hearing or send administrative public notice until all of the required materials are submitted.

<p>Applicant: Name: <u>Robert Gibson</u> Company: <u>Palindrome Communities LLC</u> Mailing Address: <u>412 NW 5th Ave, Suite 200</u> City, State, Zip: <u>Portland, OR 97209</u> Phone: <u>503-288-6210 Ext 325</u> Fax: _____ E-mail: <u>rgibson@pacificap.com</u></p>	<p>Authorized Representative: Name: <u>Tim Schneider</u> Company: <u>YBA Architects</u> Mailing Address: <u>3514 N Vancouver Ave, Suite 310</u> City, State, Zip: <u>Portland, OR 97227</u> Phone: <u>701-400-0017</u> Fax: _____ E-mail: <u>tim@yb-a.com</u></p>
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<p>Property Owner: Name: <u>Bryan Cosgrove, City Manager</u> Company: <u>City of Wilsonville</u> Mailing Address: <u>29799 SW Town Center Loop E</u> City, State, Zip: <u>Wilsonville, OR 97070</u> Phone: <u>503-570-1503</u> Fax: _____ E-mail: <u>cosgrove@ci.wilsonville.or.us</u></p>	<p>Property Owner's Signature:  Printed Name: <u>Bryan Cosgrove</u> Date: <u>8/8/23</u></p> <p>Applicant's Signature: (if different from Property Owner)  Printed Name: <u>Tim Schneider</u> Date: <u>08/08/2023</u></p>
---	--

Site Location and Description:
 Project Address if Available: 9699 SW Barber St, Wilsonville, OR 97070 Suite/Unit _____
 Project Location: The site is located just to the south of the Trimet park & ride lot/bus turnaround, on SW Barber St.
 Tax Map #(s): _____ Tax Lot #(s): 31W14B 00703 County: Washington Clackamas

Request:
 This proposal is for the development of a mixed-use affordable multi-family housing project featuring ~121 dwelling units, a local food bank, a Cafe/taproom, a Transit Welcome Center, as well as associated site improvements which include communal outdoor resident amenity spaces and landscaping.

Project Type: **Class I** **Class II** **Class III**
 Residential Commercial Industrial Other: _____

Application Type(s):

<input type="checkbox"/> Annexation	<input type="checkbox"/> Appeal	<input type="checkbox"/> Comp Plan Map Amend	<input type="checkbox"/> Parks Plan Review
<input type="checkbox"/> Final Plat	<input type="checkbox"/> Major Partition	<input type="checkbox"/> Minor Partition	<input type="checkbox"/> Request to Modify Conditions
<input type="checkbox"/> Plan Amendment	<input type="checkbox"/> Planned Development	<input checked="" type="checkbox"/> Preliminary Plat	<input checked="" type="checkbox"/> Site Design Review
<input type="checkbox"/> Request for Special Meeting	<input type="checkbox"/> Request for Time Extension	<input checked="" type="checkbox"/> Signs	<input checked="" type="checkbox"/> Stage II Final Plan
<input type="checkbox"/> SROZ/SRIR Review	<input type="checkbox"/> Staff Interpretation	<input checked="" type="checkbox"/> Stage I Master Plan	<input type="checkbox"/> Variance
<input checked="" type="checkbox"/> Type C Tree Removal Plan	<input type="checkbox"/> Tree Permit (B or C)	<input type="checkbox"/> Temporary Use	<input type="checkbox"/> Other (describe) _____
<input type="checkbox"/> Villebois SAP	<input type="checkbox"/> Villebois PDP	<input type="checkbox"/> Villebois FDP	
<input type="checkbox"/> Zone Map Amendment	<input checked="" type="checkbox"/> Waiver(s)	<input type="checkbox"/> Conditional Use	

TVFR Service Provider Permit Drawings:

See following attachments:

- **TVFR Permit Application**
- **Exhibit FS-1 – Fire Service Site Plan**
- **Exhibit FS-2 – Fire Service Exterior Elevations**
- **Fire Flow Testing Memo**



FIRE CODE / LAND USE / BUILDING REVIEW APPLICATION

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: YBA Architects - Tim Schneider, Address: 3514 N Vancouver Ave, Suite 310, Phone: 701-400-0017, Email: tim@yb-a.com, Site Address: 9749 SW Barber St, City: Wilsonville, Map & Tax Lot #: 31W14B 00703, Business Name: N/A, Land Use/Building Jurisdiction: City of Wilsonville, Land Use/ Building Permit #: not yet assigned. Project Description: 5 story mixed-use residential building totaling ~134,200 sf with 4 stories of type VA construction over 1 story of type IA construction. Permit/Review Type (check one): [X] 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 #: 2023-0111, Permit Type: SPP-Wilsonville, Submittal Date: 8/4/2023, Assigned To: MCGladrey, Due Date: 8/8/2023, Fees Due: N/A, Fees Paid: [initials]

Approval/Inspection Conditions (For Fire Marshal's Office Use Only). This section is for application approval only: [Signature] Fire Marshal or Designee, 8/8/2023 Date, Conditions: TVFR Final Inspection Required. 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

FOR
REFERENCE
ONLY

DATE: 12/10/19
SHEET: 001
PROJECT: TOD

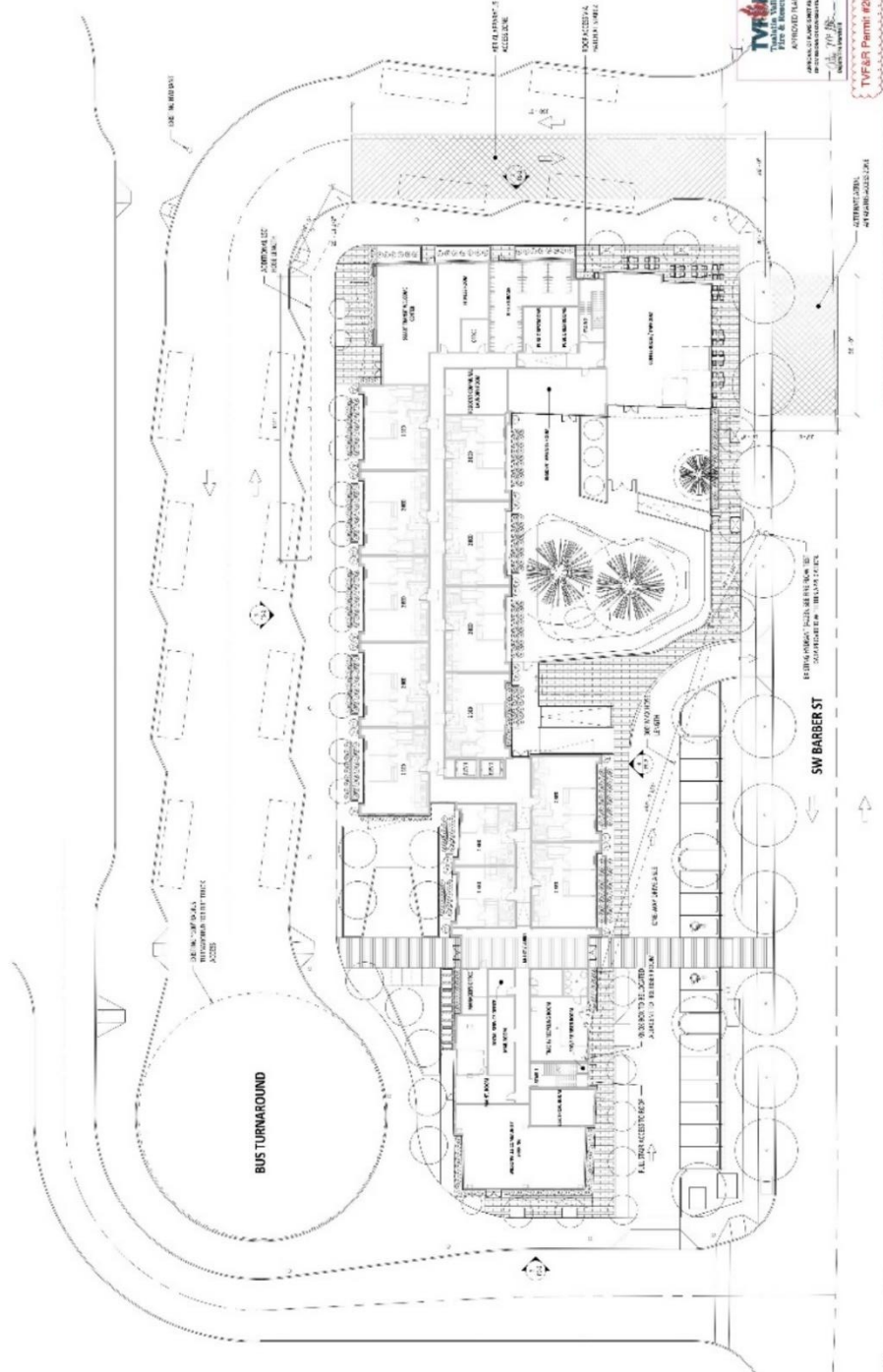
WILSONVILLE TOD

PREPARED BY: YBA ARCHITECTS
DATE: 12/10/19
SCALE: AS SHOWN
SHEET: 001 OF 001
PROJECT: TOD

FS-1

GENERAL NOTES:
1. THIS PLAN IS A PRELIMINARY DESIGN AND IS NOT TO BE USED FOR CONSTRUCTION.
2. ALL DIMENSIONS ARE TO FACE UNLESS OTHERWISE NOTED.
3. THE CLIENT SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS.
4. THE CLIENT SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY UTILITIES INFORMATION.
5. THE CLIENT SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY SURVEY DATA.
6. THE CLIENT SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY ENVIRONMENTAL INFORMATION.
7. THE CLIENT SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY HISTORIC PRESERVATION INFORMATION.
8. THE CLIENT SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY ARCHITECTURAL RECORD INFORMATION.
9. THE CLIENT SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY ENGINEERING INFORMATION.
10. THE CLIENT SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY LANDSCAPE ARCHITECTURE INFORMATION.
11. THE CLIENT SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY INTERIOR ARCHITECTURE INFORMATION.
12. THE CLIENT SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY MECHANICAL/ELECTRICAL/PLUMBING INFORMATION.
13. THE CLIENT SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY STRUCTURAL INFORMATION.
14. THE CLIENT SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY TRANSPORTATION INFORMATION.
15. THE CLIENT SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY UTILITIES INFORMATION.

REVISION	DATE	BY	DESCRIPTION
1	12/10/19	YBA	ISSUE FOR PERMITTING
2	12/10/19	YBA	ISSUE FOR PERMITTING
3	12/10/19	YBA	ISSUE FOR PERMITTING
4	12/10/19	YBA	ISSUE FOR PERMITTING
5	12/10/19	YBA	ISSUE FOR PERMITTING
6	12/10/19	YBA	ISSUE FOR PERMITTING
7	12/10/19	YBA	ISSUE FOR PERMITTING
8	12/10/19	YBA	ISSUE FOR PERMITTING
9	12/10/19	YBA	ISSUE FOR PERMITTING
10	12/10/19	YBA	ISSUE FOR PERMITTING



Note: A final inspection from TVFR is required for this project.

DATE: 12/10/19
SHEET: 001 OF 001
PROJECT: TOD

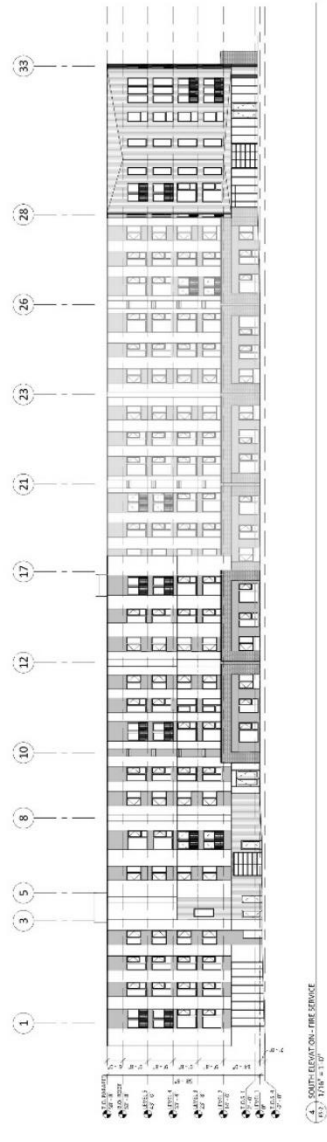
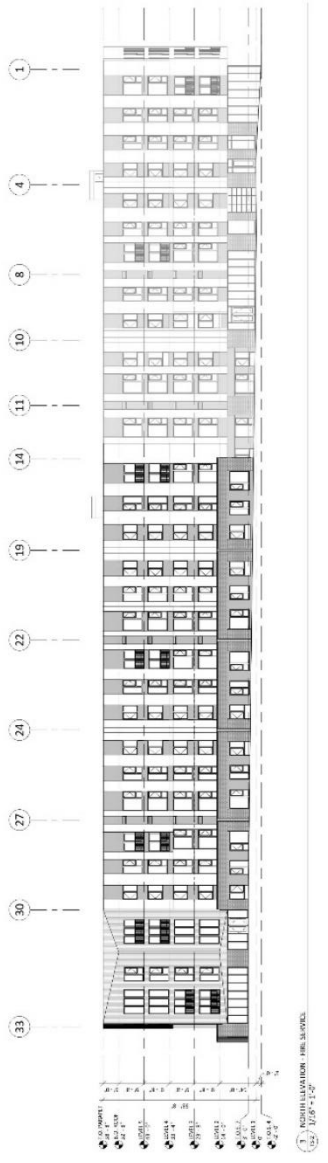
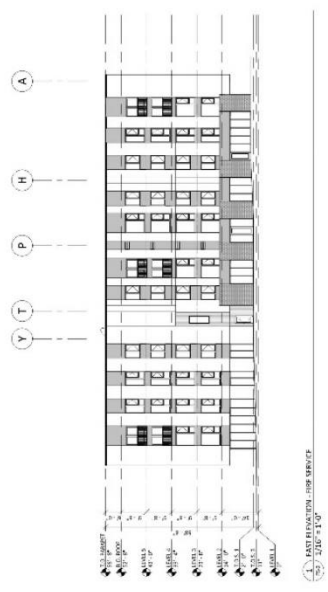
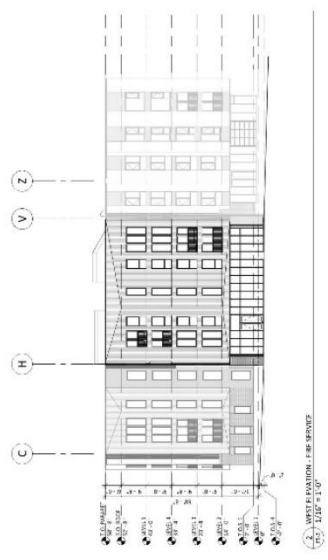
FOR
REFERENCE
ONLY

DATE: 08/14/2023
PROJECT: WILSONVILLE TOD

WILSONVILLE TOD

PAINTERWORK COMMUNITIES
LAND USE REVIEW
APPROVED PLANS
DATE: 08/14/2023
PROJECT: WILSONVILLE TOD
JOB NO: 2023-0111
PREPARED BY: YBA ARCHITECTS

FS-2





Memo

100 SW Main Street, Suite 1600
Portland, OR 97204
TEL 503.382.2266
FAX 503.382.2262
www.interfaceengineering.com

Project Number	2022-0486	Date	April 14, 2022
Project Name	City of Wilsonville Flow Testing		
To	Dan Carlson	Phone	503-227-3251
	City of Wilsonville 29799 SW Town Center Loop E Wilsonville, OR 97070		
From	Jarod Myrick, CET	@	Interface Engineering, Inc.
Distribution	Dan Carlson – Building Official, Ian Eglitis – Acting Utilities Supervisor		

Applies To Fire/Life Safety

Comments: Flow Test

A hydrant flow test was conducted for the subject project at your request. Test Results are:

Test Date and Time =	04/14/2022 @ 9:23am
Tester Names =	Jarod Myrick, Interface Engineering
Witnesses =	Chad Whiting, City of Wilsonville Water Dept. Chris Seward, City of Wilsonville Water Dept.

Test Conducted Per the National Fire Protection Association (NFPA), Recommended Practice #291.

Gauges Calibrations	Certified through February 18, 2023
Pressure Hydrant Location =	#4223 – Barber St
Pressure Hydrant is on a	<input checked="" type="checkbox"/> Circulating Main <input type="checkbox"/> Dead-End Main
Flow Hydrant #1 Location =	#4234 – Barber St
Flow Hydrant #1 is on a	<input checked="" type="checkbox"/> Circulating Main <input type="checkbox"/> Dead-End Main
Test Static Pressure =	108 psig
Test Residual Pressure =	105 psig
UL Certified Orifice Plate Pressure	55 psig
Test Nozzle =	(1) 4 1/2" Hose Monster, C=1.0
Corrected Flow =	2455 gpm
Calculated Available Fire Flow =	Theoretical: 15220 gpm at 20 psi. Contact City of Wilsonville for system limitations

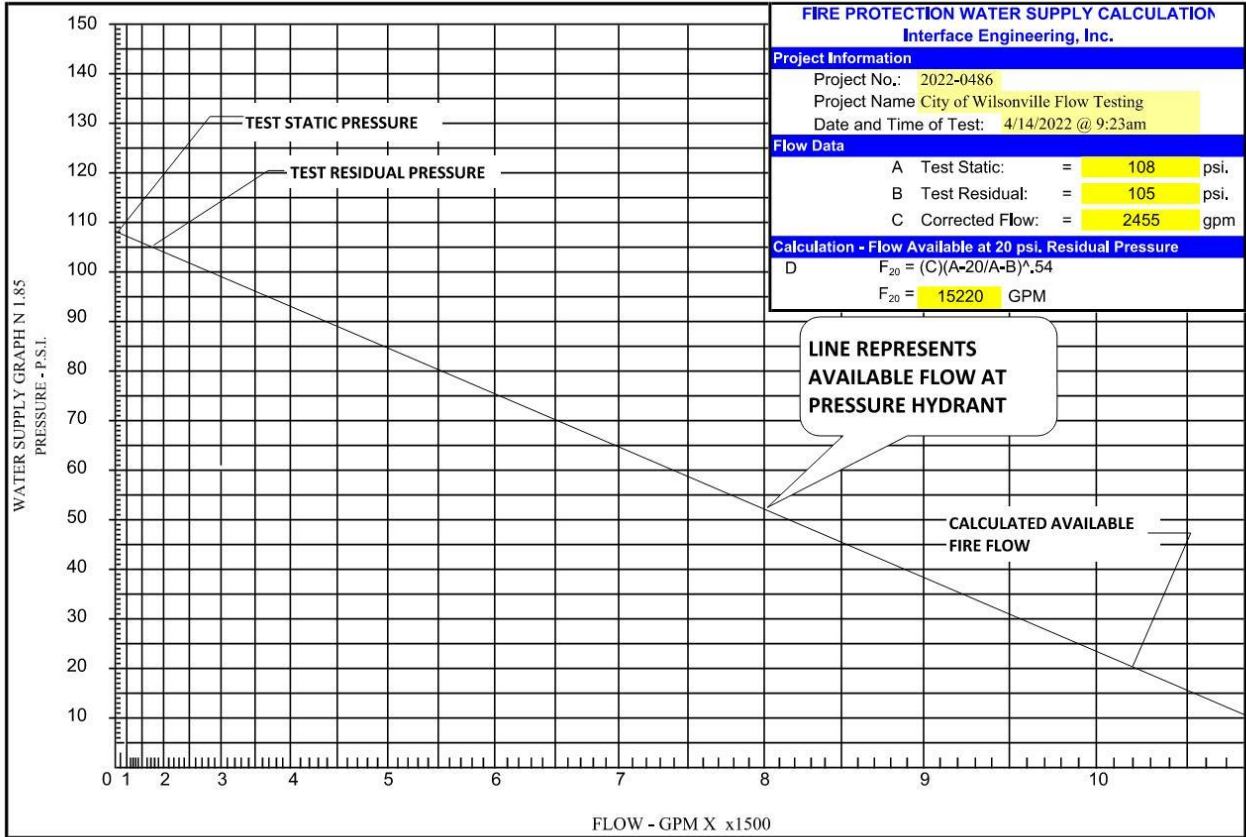
National Fire Protection Association (NFPA) Recommended Practice #291: "To obtain satisfactory test results of theoretical calculation of expected flows or rated capacities, sufficient discharge should be achieved to cause a drop in pressure at the residual hydrant of at least 25 percent, or to flow the total demand necessary for fire-fighting purposes."

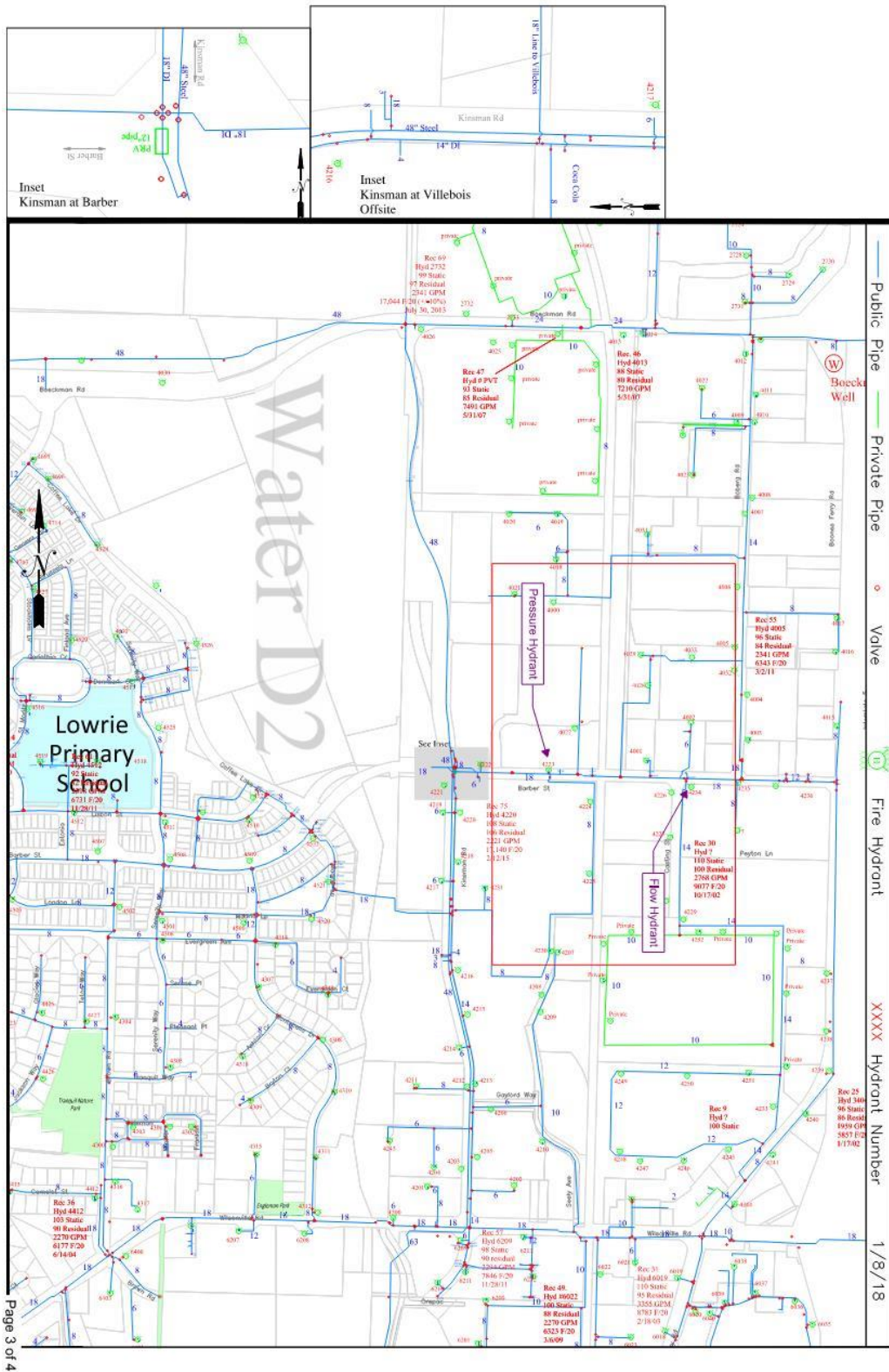
This test achieved:

- Flow of the total demand necessary for fire-fighting purposes.



EXPIRES: 12/31/23





Page 3 of 4



HOSE MONSTER™

4" & 4 ½" CONNECTION FLOW CHART

PSI	4"		PSI	4 ½"	
	GPM	GPM		GPM	GPM
10		1047	43		2171
11		1098	44		2196
12		1147	45		2221
13		1194	46		2245
14		1239	47		2270
15		1282	48		2294
16		1324	49		2317
17		1365	50		2341
18		1405	51		2364
19		1443	52		2387
20		1481	53		2410
21		1517	54		2433
22		1553	55		2455
23		1588	56		2478
24		1622	57		2500
25		1655	58		2521
26		1688	59		2543
27		1720	60		2564
28		1752	61		2586
29		1783	62		2607
30		1813	63		2628
31		1843	64		2649
32		1873	65		2669
33		1902	66		2690
34		1930	67		2710
35		1959	68		2730
36		1986	69		2750
37		2014	70		2770
38		2041	71		2790
39		2068	72		2809
40		2094	73		2829
41		2120	74		2848
42		2146	75		2867

The readings on this chart are based on the orifice plate diameter.

It is the user's responsibility to verify that the correct chart and column is being used.

- 4" Use this column if the connection to the Hose Monster is 4".

- 4 ½" Use this column if the connection to the Hose Monster is 4 ½".

This chart is FM Approved for flow rate accuracy. Please call us or instruct the Authority Having Jurisdiction to call us if there are any questions. Additional copies of flow charts are available at: www.hosemonster.com

FLOW TEST



HOSE MONSTER
COMPANY™

MANUFACTURED BY:
The Hose Monster Company
(888) 202-9987 Toll Free
(847) 434-0073 Fax
Service@FlowTest.com
www.HoseMonster.com

Republic Services Service Provider Letter:



1800 222-7622 FAX: 503 748-9272 WILSONVILLE, OR 97070
3031 70th Ave, Suite 100 Wilsonville, OR 97070 republicservices.com

August 17, 2023

Tim Schneider
YBA Architects

Re: WTOD
9749 SW Barber St.
Wilsonville, OR 97070

Dear Tim,

Thank you, for sending us the preliminary site plans for this proposed development in Wilsonville OR.

My Company: Republic Services of Clackamas and Washington Counties has the franchise agreement to service this area with the City of Wilsonville. We will provide complete commercial waste removal and recycling services as needed on a weekly basis for this location.

The properties ingress, service lane, and egress are adequate for our trucks to safely service this site. The level service lane with minimal grading for stormwater run-off is sufficient to safely service our receptacles. The trash-room at ground level with dimensions of 23’Ft. X 26’Ft. will accommodate three 3-yard trash, three 3-yard recycle, with space for an additional 3-yard container as needed. There is also sufficient space for four 65-gallon recycle roll carts. The 9’Ft. wide, roll-up trash-room service door will allow sufficient space to safely move our equipment through when servicing. It is agreed that the ramp between the trash-room and service lane will be a broomed concrete surface to allow our equipment to easily roll in and out during service. Front Load and Side Load service will be sufficient to maintain the anticipated waste levels generated for this site.

Service levels are available as follows:

- Trash – 6 days per week*
- Recycle – 5 days per week
- Food Waste – 5 days per week
- Glass – 1 day per week

*Manual or automated compacted trash is subject to additional service rate.

Thanks Tim, for your help and concerns for our services prior to this project being developed.

Sincerely,

Kelly Herrod
Operations Supervisor
Republic Services Inc.



SECTION 4.000 ADMINISTRATION

Section 4.035. Site Development Permits.

(.01) *Procedures for Processing Site Development Permit.*

- A. Unless the matter is subject to a public hearing process for a land development permit, an application for a Site Development Permit shall be processed through a Class I or II procedure as set forth below.
- B. When an application and proposed development plan is submitted, the Planning Director shall determine the appropriate procedure specified by the Code, together with the determination of affected departments, public agencies and property owners. Where there is a question as to the appropriate type of procedure, the Director may elect to process the application as a Class II Administrative Review item.
- C. The Planning Director shall be responsible for the coordination of the Development Permit application and decision-making procedure and shall only issue a Development Permit to an applicant whose application and proposed development are found to be in compliance with all of the applicable provisions set forth in the Comprehensive Plan and Chapter 4 of this Code. Before issuing the Development Permit, the Director shall be provided with the detail required to establish full compliance with the requirements of this Code.

(.02) *Class I—Administrative Review.* Consistent with the authority set forth in Section 4.030, a Class I application shall be processed without a public hearing or public notice, unless otherwise specifically required by this Code.

- A. Within 30 days of the date of receiving a complete Class I application, pursuant to Section 4.011, the Director shall approve, conditionally approve, or deny the Development Permit. The decision of the Director shall be based upon the application, the evidence, comments from referral agencies, and approvals required by others. The Director shall notify the applicant in writing of the disposition of the application. The notice shall indicate the date that the decision will take effect and describe the right of appeal pursuant to Section 4.022.
- B. The Development Permit shall be approved if applicable approvals by others have been granted and the proposed development otherwise conforms to the requirements of the Comprehensive Plan, and the remainder of Chapter 4.
 - 1. The Development Permit shall be denied if required approvals are not obtained or the application otherwise fails to comply with Code requirements. The notice shall describe the reason for denial.
 - 2. Upon taking action on a Class I Permit application, the Planning Director shall mail notice of the decision to the applicant. A decision of the Planning Director under this procedure may be appealed by the applicant in accordance with Sections 4.022 and 4.030. The hearing on the appeal shall be a review of the record supplemented by oral commentary relevant to the record presented on behalf of the applicant and the Planning Director.

(.03) *Class II—Administrative Review.* Consistent with the authority set forth in Section 4.030, a Class II application shall be processed without a public hearing, except as determined appropriate by the Director.

- A. Within ten calendar days of receiving a complete Class II Permit application, the Planning Director shall mail notice of the proposed development, pursuant to Section 4.012, to all property owners within 250 feet of the proposal. The notice shall summarize the standards and criteria that will be used to evaluate the application and shall be sent to the persons designated to receive notice by the relevant sections of this Code. The notice shall invite persons to submit information within ten calendar days, relevant to the standards pertinent to the proposal and giving reasons why the application should or should not be approved or proposing conditions the person believes are necessary for approval according to the standards. The notice shall also advise the person of the right to appeal the decision on the proposed development if the person's concerns are not resolved.

- B. If the Director anticipates that persons other than the applicant can be expected to question the application's compliance with the Comprehensive Plan or Development Standards, the Planning Director may initiate a public hearing.
- C. Within ten calendar days of the final response date, the Director shall review any information received under Subsection "A", above, and make a final decision. The final decision and supporting findings shall be forwarded to the applicant, affected parties required to be notified, and the Development Review Board. The decision shall be based upon a determination of whether the application complies with the standards and criteria listed above for Class I Administrative Reviews and the following additional standards:
1. The proposed development or use, including signage, is compatible with developments or uses permitted in the zone;
 2. The proposed development or use will not create a nuisance or result in a significant reduction in the value or usefulness of adjacent properties;
 3. If the proposed use is to be temporary, the length of time for which it is permitted shall be reasonable in terms of the purpose and nature of the use that is proposed;
 4. If the application involves a Variance, it shall be subject to the standards and criteria listed in Section 4.196;
 5. All of the relevant application filing requirements of Chapter 4 have been met.
- D. A decision of the Planning Director under a Class II procedure may be appealed by an affected party or may be called up for review by the Development Review Board, provided such action is taken by members of either panel of the Board as specified in Section 4.022.
- E. The Development Review Board, Planning Commission, or City Council may delegate specific actions or duties to be executed by the Planning Director. The body making the delegation shall specify the administrative review procedures that the Director is to follow in the process.

(.04) Site Development Permit Application.

- A. An application for a Site Development Permit shall consist of the materials specified as follows, plus any other materials required by this Code.
1. A completed Permit application form, including identification of the project coordinator, or professional design team.
 2. An explanation of intent, stating the nature of the proposed development, reasons for the Permit request, pertinent background information, information required by the development standards and other information specified by the Director as required by other sections of this Code because of the type of development proposal or the area involved or that may have a bearing in determining the action to be taken. As noted in Section 4.014, the applicant bears the burden of proving that the application meets all requirements of this Code.

Response: See 'Project Narrative and Summary' at the beginning of this written narrative.

3. Proof that the property affected by the application is in the exclusive ownership of the applicant, or that the applicant has the consent of all individuals or partners in ownership of the affected property.

Response: A DPA form has been provided with this application.

4. Legal description of the property affected by the application.

Response: See property description below (also provided on sheet 'A001 – Land Use Site Plan'.

SITE ADDRESS: 9749 SW Barber St, Wilsonville OR 97070
TAXLOT ID: 31W14B 00703
RECORD NUMBER: 5020822

5. 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, public facilities and adjacent properties; and except as otherwise specified in this Code, shall be accompanied by the following information,

Response: Building & site plans, sections, elevations and renderings are provided to accurately represent the impact of the development on the community.

6. Unless specifically waived by the Director, the submittal shall include: ten copies folded to 9" x 12" or (one set of full-sized scaled drawings and nine 8½" x 11" reductions of larger drawings) of the proposed Site Development Plan, including a small scale vicinity map and showing:
a. Streets, private drives, driveways, sidewalks, pedestrian ways, off-street parking, loading areas, garbage and recycling storage areas, power lines and railroad tracks, and shall indicate the 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.

Response: This information is provided on sheet 'A001 – Land Use Site Plan'.

b. The Site Plan shall indicate how utility service, including sanitary sewer, water and storm drainage, are to be provided. The Site Plan shall also show the following off-site features: distances from the subject property to any structures on adjacent properties and the locations and uses of streets, private drives, or driveways on adjacent properties.

Response: See sheet 'C3.00 – Utility Plan' for all utility services to the site/building, including location of proposed PGE vault/transformer. See sheet 'C2.00 – Site Grading Plan' for all stormwater drainage features. The site is bordered by SW Barber St to the south, a Trimet access road to the west, and a bus turnaround road to the north and east. There are no structures immediately adjacent to the property on any of the adjoining properties.

c. Location and dimensions of structures, utilization of structures, including activities and the number of living units.

Response: See sheets A001 & A101 for location and dimensions of the proposed building, as well as the area of proposed outdoor amenities. Sheet sheet 'L2 – Level 1 Materials Plan' for detailed landscape and site design information. The total number of living units is 121, and is also included on sheet A001 under the 'Land Use Summary' section.

d. Major existing landscaping features including trees to be saved, and existing and proposed contours.

Response: Three large doug fir trees are proposed to be retained with the development. These can be seen on sheet 'L1 – Existing Tree Inventory Plan'. See sheet 'C2.00 – Site Grading Plan' for all existing and proposed contours.

- e. Relevant operational data, drawings and/or elevations clearly establishing the scale, character and relationship of buildings, streets, private drives, and open space.

Response: A site plan, building elevations, and renderings are provided to indicate the proposed visual impact of the development to the site and surrounding environment. See sheets A001, A201-A203 & A900. A traffic impact analysis has also been performed to review the proposal's impact to the existing roadway infrastructure, and is included with this application.

- f. Topographic information sufficient to determine direction and percentage of slopes, drainage patterns, and in environmentally sensitive areas, e.g., flood plain, forested areas, steep slopes or adjacent to stream banks, the elevations of all points used to determine contours shall be indicated and said points shall be given to true elevation above mean sea level as determined by the City Engineer. The base data shall be clearly indicated and shall be compatible to City datum, if bench marks are not adjacent. The following intervals shall be shown:
- i. One foot contours for slopes of up to five percent;
 - ii. Two foot contours for slopes of from six percent to 12 percent;
 - iii. Five foot contours for slopes of from 12 percent to 20 percent. These slopes shall be clearly identified, and
 - iv. Ten foot contours for slopes exceeding 20 percent.

Response: Contours are provided in one-foot increments across the entirety of the site. See sheet 'C.200 – Site Grading Plan'.

- g. A tabulation of land area, in square feet, devoted to various uses such as building area (gross and net rentable), parking and paving coverage, landscaped area coverage and average residential density per net acre.

Response: The proposed project includes the following areas (also included on sheet A001 - Land Use Site Plan):

Gross Site Area: 60,695 sf (~1.39 acres)
Gross Building Area: ~133,575 sf
Net Rentable Area: ~106,025 sf
Commercial Use Area: ~4,900 sf
Residential Use Area: ~128,675 sf
Residential Density: ~87 units/acre
Parking Lot Area: 7,278 sf
Impermeable Paving Coverage: 9,910 sf
Building Footprint: 28,711 sf
Permeable Paving/Decking: 7,698 sf
Total Landscaped Area: 16,079 sf

- h. An application fee as set by the City Council.
- i. If there are trees in the development area, an arborist's report, as required in Section 4.600. This report shall also show the impacts of grading on the trees.

Response: An Arborist's Report is included with this application, as there are existing trees that will be removed, and three trees to be retained on site.

- j. A list of all owners of property within 250 feet of the subject property, printed on label format. The list is to be based on the latest available information from the County Assessor.
- (.05) *Complete Submittal Required.* Application materials shall be submitted to the Planning Director who shall have the date of submission indicated on each copy submitted. Within 30 calendar days from the date of submission, the Director shall determine whether an application is complete. An application is not complete unless accompanied by a traffic study, as prescribed by the City Engineer; except in cases where the requirement of a traffic study has been specifically waived by the Community Development Director.
- A. If the Director determines that the application is incomplete or otherwise does not conform to the provisions of this Code, the applicant shall immediately be notified in writing, conveying an explanation and a submittal deadline for completion or correction of the application. If the applicant fails or refuses to provide the necessary information, the application will be processed as specified in Section 4.011 (How Applications Are Processed) in order to assure that statutory time limits are met.
- B. If an application is determined to be complete and in conformance with the provisions of this Ordinance, the Director shall accept it and note the date of acceptance on the application form. The Director shall then schedule the appropriate review and notify the applicant of the date of the final decision or hearing as set forth in this Chapter.
- C. Materials submitted to the Planning Department staff after the preparation of the staff report shall be date-stamped and passed on to the appropriate decision makers. If there is insufficient time for the staff to prepare an analysis of such information, the decision-makers may choose to postpone action until such an analysis can be completed. If statutory time limits for action on the application preclude postponement, the decision makers may request a summary of the new information from the party presenting it. If information is received too late to be adequately evaluated within the legal time limits for action on the application, the decision-makers shall so state and shall make the decision, indicating within the adopted findings of fact the extent to which that information was considered in rendering the decision.
- D. Written testimony that is sent via mail, facsimile, or computer and received by the City Recorder or the Recorder's designee prior to a public hearing shall be included in the record and considered to be originals, provided the document bears the name of the person testifying. Persons sending such documents shall be responsible for verifying that the documents have been received by the intended recipient on City staff. The City will make all reasonable attempts to convert testimony sent by telecommunication to paper format but bears no responsibility for doing so.

SECTION 4.100

ZONING STANDARDS

Section 4.113. Standards Applying to Residential Developments in any Zone.

4.113 (.01) Open Space:

- A. *Purpose. The purposes of the following standards for open space are to provide adequate light, air, open space and usable recreational facilities to occupants of each residential development.*

Response: Care has been taken in the design of this project to provide open spaces that provide light & air as well as views out of the building from all residential units. Open Spaces provided include exterior resident BBQ/gathering spaces, landscaped/planted areas adjacent to the building, an outdoor seating area for a Café/Taproom, as well as a generous natural play area around some mature douglas fir trees to be retained on the site.

B. *Applicability.*

1. *The open space standards of this subsection shall apply to the following:*

- a. *Subdivisions.*
- b. *Planned Developments.*
- c. *Multi-family Development.*

2. *These standards do not apply to the following:*

- a. *Partitions for non-Multi-family development. However, serial or adjacent partitions shall not be used to avoid the requirements.*
- b. *Middle Housing Land Divisions.*

Response: The proposed development includes a multi-family building. Therefore, the Open Space standards apply.

4.113 (.01) C. *Area Required. The minimum open space area required in a development is an area equal to 25 percent of the size of the Gross Development Area except if reduced for shared parking pursuant to Subsection 4.155(.03)S.*

Response: The total development area of the proposed site is ~60,695 sf. The total required open space is equivalent to 15,173 sf (25% of gross development area). The proposed development provides various open spaces on the site for resident and public amenity – see description in response to section 4.133(.01)(A) above. The total open space provided is 18,818 sf. Therefore the criterion is met.

4.113 (.01) D. *Required Open Space Characteristics:*

1. *Size of Individual Open Spaces. For developments with ten or more lots buildable with dwelling units (or ten or more multi-family units) an open space area must be at least 2,000 square feet to be counted towards the 25 percent open space requirement. For developments with less than ten lots buildable with dwelling units (or less than ten multi-family units) an open space area must be at least 1,000 square feet to be counted towards the 25 percent open space requirement.*

Response: The proposed development includes greater than 10 multifamily units, therefore the individual open spaces must be greater than 2,000 square feet. The proposed open spaces include three separate areas of the site with the following square footages, meeting this criteria.

NW Resident Plaza/BBQ Area & Landscaping: 4,898 sf

Outdoor Resident amenity/Café Seating & Landscaping: 13,920 sf

2. *Types of Open Space and Ownership. The following types of areas count towards the minimum open space requirement if they are or will be owned by the City, a homeowners' association or similar joint ownership entity, or the property owner for Multi-family Development.*
- a. *Preserved wetlands and their buffers, natural and/or treed areas, including those within the SROZ*
 - b. *New natural/wildlife habitat areas*
 - c. *Non-fenced vegetated stormwater features*
 - d. *Play areas and play structures*
 - e. *Open grass area for recreational play*
 - f. *Swimming and wading areas*
 - g. *Other areas similar to a. through f. that are [publicly] accessible*
 - h. *Walking paths besides required sidewalks in the public right-of-way or along a private drive.*

Response: Several of the above types of open spaces are proposed with this development, including several large non-fenced stormwater planters, located in the Northwest corner of the site, near the resident loading area and near the outdoor resident amenity and seating area. These areas are designed to not only provide treatment for on-site stormwater runoff, but are also located strategically to buffer views between interior residential units and outdoor resident amenity or loading dock areas, while providing pleasant views for residents to enjoy while inhabiting the outdoor amenity areas.

The development also proposes the use of walking paths and open areas for recreational play. The main walking path running east-west along the on-site drive aisle will be paved with permeable pavers, to provide a walking path with a distinct character that differs from other typical concrete or asphalt surfaces. This path connects the main entry of the building with an outdoor open area, located beneath two of the three large doug fir trees being retained with the development. This open area (and preservation of the trees) is intended to provide a sense of place and heart of the development, which is deeply rooted in the natural landscape of the Pacific Northwest.

3. *Usable open space requirements. Half of the minimum open space area, an area equal to 12.5 percent of the size of the Gross Development Area, shall be located outside the SROZ and be usable open space programmed for active recreational use. Any open space considered usable open space programmed for active recreation use shall meet the following requirements.*
- a. *Be designed by a registered professional landscape architect with experience designing residential park areas. An affidavit of such professional's credentials shall be included in the development application material.*
 - b. *Be designed and programmed for a variety of age groups or other user groups.*

Response: The total required area of Usable Open Space is 7,587 sf (12.5% of the gross development area). The total area proposed is equivalent to 9,095 sf, and has been designed by a registered professional landscape architect. See landscape sheet L2 – Level 1 Materials Plan, included with this submission. Therefore, this criterion is met.

4. *Enhancing Existing Wildlife Habitat through Design of Open Space:*
- a. *Open space designed, as wildlife habitat shall be placed adjacent to and connect to existing, preserved wildlife habitat to the extent feasible.*
 - b. *To the extent feasible, open space shall create or enhance connections between existing wildlife habitat.*

Response: The proposed development includes the protection of three mature douglas fir trees in the center of the site, to minimize impacts to the existing wildlife in this area. The resident outdoor amenity and children's play area has been carefully designed around these trees, to protect and reduce construction impacts, in order to maintain the long-term health of these trees and any subsequent wildlife that depends these trees as part of their habitat.

4.113 (.01) G. *The open space requirements of this subsection are subject to adjustments in PDR zones pursuant to Subsection 4.124(.08).*

Response: The proposed site is zoned PDI. Therefore, the criterion is not applicable.

4.113 (.02) Building Setbacks *(for Fence Setbacks, see subsection .08). The following provisions apply unless otherwise provided for by the Code or a legislative master plan.*

4.113 (.02) A. *For lots over 10,000 square feet:*

1. *Minimum front yard setback: 20 feet.*

Response: As the proposed development is within the PDI zone, building setbacks set forth in the PDI zoning code (section 4.135) will apply. See response to that section within this narrative.

2. *Minimum side yard setback: Ten feet. In the case of a corner lot less than 100 feet in width, abutting more than one street or tract with a private drive, the side yard on the street or private drive side of such lot shall be not less than 20 percent of the width of the lot, but not less than ten feet.*

Response: As the proposed development is within the PDI zone, building setbacks set forth in the PDI zoning code (section 4.135) will apply. See response to that section within this narrative.

3. *In the case of a key lot, the front setback shall equal one-half the sum of depth of the required yard on the adjacent corner lot along the street or tract with a private drive upon which the key lot faces and the setback required on the adjacent interior lot.*

Response: The proposed site is not a key lot, therefore, the criterion is not applicable.

4. *No structure shall be erected within the required setback for any future street shown within the City's adopted Transportation Master Plan or Transportation Systems Plan.*

Response: There are no future streets planned through the site, therefore the criterion is not applicable.

5. *Minimum setback to garage door or carport entry: 20 feet. Except, however, in the case of an alley where garages or carports may be located no less than four feet from the property line adjoining the alley.*

Response: The proposed development is a mixed-use multifamily project, and does not include garage doors or car ports for parking. Therefore the criterion is not applicable.

6. *Minimum rear yard setback: 20 feet. Accessory buildings on corner lots must observe the same rear setbacks as the required side yard of the abutting lot.*

Response: The applicant requests a waiver to the minimum rear yard setback for the northern frontage of the proposed development. A setback varying between 8'-10" and 9'-3" is proposed at the ground floor. The upper floors are setback between 10'-11" & 12'-11" from the property line.

See 'Anticipated Waivers' section further in this narrative for additional information on this request.

7. *Cottage Cluster Setbacks: Setbacks in 1.—3. and 6. above do not apply to cottage clusters. For cottage clusters, minimum front, rear, and side setbacks are ten (10) feet.*

Response: No Cottage Clusters are proposed with this development. Therefore, the criterion is not applicable.

8. *Townhouse Setbacks: No setback is required along property lines where townhouses are attached.*

Response: No townhouses are proposed with this development. Therefore, the criterion is not applicable.

B. For lots not exceeding 10,000 square feet:

Response: The proposed lot exceeds 10,000 square feet. Therefore, this criterion is not applicable.

4.113 (.03) Height Guidelines. *The Development Review Board may regulate heights as follows:*

4.113 (.03) A. *Restrict or regulate the height or building design consistent with adequate provision of fire protection and fire-fighting apparatus height limitations.*

4.113 (.03) B. *To provide buffering of low density developments by requiring the placement of buildings more than two stories in height away from the property lines abutting a low density zone.*

4.113 (.03) C. *To regulate building height or design to protect scenic vistas of Mt. Hood or the Willamette River from greater encroachments than would occur if developed conventionally.*

Response: The proposed site is within the Planned Development Industrial zone (PDI), which features low-density light industrial development. It is bordered by a heavy rail line to the east, a bus turnaround and Trimet parking lot to the north, open space that is part of the SROZ to the west, and the Coca Cola production Plant to the south across SW Barber St. The proposed height for the building is 5 stories, at ~60'-8" tall. Due to the surrounding site conditions, the proposed building height does not limit access to light and air to any adjacent properties.

4.113 (.04) Residential uses for treatment or training:

Response: No Residential Homes or Residential Facilities are proposed with this development. Therefore, the criterion is not applicable.

4.113 (.05) Off Street Parking. *Off-street parking shall be provided as specified in Section 4.155.*

Response: See response to section 4.155 within this narrative.

4.113 (.06) Signs. *Signs shall be governed by the provisions of Sections 4.156.01—4.156.11.*

Response: See response to section 4.156 within this narrative.

4.113 (.07) Fences:

4.113 (.07) A. *The maximum height of a sight-obscuring fence located in the required front yard of a residential development shall not exceed four feet.*

Response: There are no sight-obscuring fences proposed with this development. The only fence proposed within the 20' front yard setback is a metal fence around the children's play area/open space to separate children from vehicular traffic exiting the on-site parking lot. The fence will have visibility through it, to promote safety and security of the site. Therefore, the criterion will be met.

4.113 (.07) B. *The maximum height of a sight-obscuring fence located in the side yard of a residential lot shall not exceed four feet forward of the building line and shall not exceed six feet in height in the rear yard, except as approved by the Development Review Board. Except, however, that a fence in the side yard of residential corner lot may be up to six feet in height, unless a greater restriction is imposed by the Development Review Board acting on an application. A fence of up to six feet in height may be constructed with no setback along the side, the rear, and in the front yard of a residential lot adjoining the rear of a corner lot as shown in the attached Figure.*

Response: No fences are proposed within the side yard setbacks of the proposed development.

4.113 (.07) C. *Notwithstanding the provisions of Section 4.122(10)(a) and (b), the Development Review Board may require such fencing as shall be deemed necessary to promote and provide traffic safety, noise mitigation, and nuisance abatement, and the compatibility of different uses permitted on adjacent lots of the same zone and on adjacent lots of different zones.*

Response: A fence is proposed between the drive aisle and children's play area – see response to section 4.133(.07)A above.

4.113 (.07) D. *Fences in residential zones shall not include barbed wire, razor wire, electrically charged wire, or be constructed of sheathing material such as plywood or flakeboard.*

Response: None of the restricted fencing materials are proposed with this project. Therefore, the criterion will be met.

4.113 (.08) Corner Vision. *Vision clearance shall be provided as specified in Section 4.177, or such additional requirements as specified by the City Engineer.*

Response: The proposed development will comply. See response to section 4.177 within this written narrative.

4.113 (.09) Prohibited Uses:

4.113 (.09) A. *Uses of structures and land not specifically permitted in the applicable zoning districts.*

Response: Noted. There will be no use of structures and land not permitted in the PDI district.

4.113 (.09) B. *The use of a trailer, travel trailer or mobile coach as a residence, except as specifically permitted in an approved RV park.*

Response: There will be no use of trailers or mobile coaches for residence within the proposed development.

4.113 (.09) C. *Outdoor advertising displays, advertising signs, or advertising structures except as provided in Sections 4.156.05, 4.156.07, 4.156.09, and 4.156.10.*

Response: All signage will comply with section 4.156 of the development code. See response to section 4.156 within this narrative.

4.113 (.10) *Accessory Dwelling Units:*

Response: Section is not applicable, as there are no Accessory Dwelling Units proposed with this development.

4.113 (.11) *Reduced Setback Agreements.*

Response: Section is not applicable, as this section is written for multiple contiguous residential homes. The proposed development includes a single mixed-use multifamily building.

4.113 (.12) *Bed and Breakfasts:*

Response: Section is not applicable, as there are no Bed and Breakfasts proposed with this development.

4.113 (.13) *The Planning Director and Development Review Board shall, in making their determination of compliance in attaching conditions, 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 cumulatively, have the effect of unnecessarily increasing the cost of housing or effectively excluding a needed housing type. However, consideration of these factors shall not prevent the Board or Planning Director from imposing conditions of approval necessary to meet the minimum requirements of the Comprehensive Plan and Code.*

Response: Noted.

4.113 (.14) *Design Standards for Detached Single-family and Middle Housing.*

Response: Section is not applicable, as there are no single-family or Middle Housing types proposed with this development. A single multi-family residential building is proposed with this development.

Section 4.116. Standards Applying to Commercial Developments in any Zone.

Any commercial use shall be subject to the applicable provisions of this Code and to the following, unless otherwise provided for by a specific zone, overlay zone or a legislative master plan:

4.116 (.01) *Commercial developments shall be planned in the form of centers or complexes as provided in the City's Comprehensive Plan. As noted in the Comprehensive Plan, Wilsonville's focus on centers or complexes is intended to limit strip commercial development. (.02) Where the land use map of Wilsonville's Comprehensive Plan calls for "Office Commercial" development, not less than 60 percent of the total square footage of the ground floors of buildings within the development shall be in office use. Total floor area dedicated to retail use shall not exceed 30 percent. On-site parking may be limited in order to control traffic generation.*

Response: The proposed project is a mixed-use affordable housing development that includes a ground floor Food Bank, Café/Taproom and Transit Welcome Center. These three spaces are spread throughout the ground floor (in addition to ground-floor residential units) and do not reflect a typical strip commercial development. The site is zoned PDI and is subject to the zoning requirements of section 4.135(.03)(O)(3), limiting the floor area of retail uses to 5,000 sf in a single building. During the Preapplication meeting, it was discussed that the SMART Transit Welcome Center will not be considered in the calculation of commercial space. Therefore, the Food Bank and Café/Taproom account for the total of 3,600 sf for commercial space proposed with this application, which is equivalent to ~2.7% of the total floor area of the building. Therefore, the criterion is met.

4.116 (.03) *Where the land use map of Wilsonville's Comprehensive Plan calls for "Commercial/Industrial mixed use" development, not more than 50 percent of the total floor area of the development shall consist of retail space.*

Response: The proposed site is considered "Industrial" per the Comprehensive Plan Map. Therefore, the criterion is not applicable.

4.116 (.04) *Where the land use map of Wilsonville's Comprehensive Plan calls for "Residential/Commercial mixed use" development, not less than 50 percent of the total floor area of the development shall consist of residential units.*

Response: The proposed site is considered "Industrial" per the Comprehensive Plan Map. Therefore, the criterion is not applicable.

4.116 (.05) *All businesses, service or processing, shall be conducted wholly within a completely enclosed building; except for:*

- A. *The sale of automotive fuel, lubricants, and fluids at service stations.*
- B. *Car washes and car vacuum bays.*
- C. *Off-street parking for customers and employees and off-street loading.*
- D. *Outdoor seating areas associated with food and drink establishments on private property, or on public easements, provided the area and activities conform to ADA standards and do not interfere with public uses, safety, access or circulation.*
- E. *Temporary staging of inventory, as shall be authorized through a site development permit, complying with the following additional minimum development and performance standards:*

1. *The staging area shall be screened by a fully sight obscuring fence or planting, high wall, high berm or high screen landscape standard as specified in Section 4.176—Landscaping Screening and Buffering;*
 2. *All parts of the staged inventory shall be completely concealed on all sides from public view at the right-of-way line; and*
 3. *The staged inventory shall be relocated into a completely enclosed structure of the primary retail operation within 48 hours of placement.*
- F. *Exterior sales that are specifically authorized through temporary use permit approval, subject to conditions of approval. Exterior sales that may be permitted are those that are limited in time duration, such as sidewalk sales, grand openings, or farmers' markets.*
- G. *Exterior sales areas, complying with the following minimum development and performance standards:*
1. *The sales area shall be accessory to, and shall not exceed five percent of the floor area of the primary retail operation.*
 2. *The sales area shall be completely covered by a permanent structure of a design, construction and architecture compatible with that of the structure of the primary retail operation.*
 3. *All required ADA and pedestrian access ways and circulation aisles shall remain clear at all times.*
 4. *For new development, the Development Review Board may grant a waiver to allow exterior sales area of up to ten percent of the floor area of the primary retail operation, provided that findings can be made that:*
 - a. *The expanded covered area has received approval through a Stage II/Site Design Review process.*
 - b. *The expanded area does not detract from the overall character of the development or the surrounding neighborhood.*
 - c. *Partial walls are required for screening large or bulky items.*
 5. *For Development existing on December 21, 2005, the Planning Director, pursuant to a Class II Administrative Review Process, may grant a waiver to allow exterior sales areas of up to ten percent of the floor area of the primary retail operation, provided that findings can be made that:*
 - a. *The expanded area does not detract from the overall character of the area,*
 - b. *Partial walls are required for screening large or bulky items.*

Response: All business activities will be contained to the interior of the building, aside from the Café/Taproom exterior seating area, which will be ADA accessible. This is allowable per subsection 'D'. Therefore, the criterion is met.

4.116 (.06) *In any Commercial Development directly across the street from any Residential District, the loading facilities shall be at least 20 feet from the street, shall be sited whenever practicable at the rear or side, and if facing a residential area, shall be properly screened. Screening shall be provided in a manner that is compatible with the adjacent residential development in terms of quality of materials and design. Such screening shall effectively minimize light glare and noise levels to those of adjacent residential areas.*

Response: The proposed development is not adjacent to any Residential District. Therefore, the criterion is not applicable.

4.116 (.07) *Uses shall be limited to those which will meet the performance standards specified in Section 4.135(.05), with the exception of 4.135(.05)(M.)(3.).*

Response: There will be no outdoor storage areas for the commercial tenants of this development. All storage will be located within the building. Therefore, the criterion is not applicable.

4.116 (.08) *Corner lots shall conform to the vision clearance standards set forth in Section 4.177.*

Response: The clear vision standards of section 4.177 will be met.

4.116 (.09) *Trailer, trailer houses, mobile coaches, or any altered variation thereof shall not be used for the purpose of conducting a trade or calling or for storage of material unless approved for such purpose as a temporary use.*

Response: None of the above will be used for business purposes or storage or materials on site. All business and storage will be contained within the building. Therefore, the criterion is met.

4.116 (.10) *Commercial developments generally:*

A. *[Right-of-way line.] No structure shall be erected closer than the right-of-way line then existing or the officially planned right-of-way of any public, county, or state road.*

Response: The proposed building will be set back from the right-of-way line.

B. *Minimum Front Yard Setback. None required except when front yard abuts a more restrictive district. When front yard abuts a more restrictive district, setbacks shall be the same as the abutting district.*

Response: The proposed site is zoned PDI, and it abuts PDI zones on all sides. Therefore, the front yard setback requirements will be governed by section 4.135(.06)(C). See response to that section within this narrative.

C. *Minimum Rear Yard Setback. None required except when rear yard abuts a more restrictive district. When rear yard abuts a more restrictive district, setbacks shall be the same as for the abutting district.*

Response: The proposed site is zoned PDI, and it abuts PDI zones on all sides. Therefore, the rear yard setback requirements will be governed by section 4.135(.06)(D). See response to that section within this narrative.

D. *Minimum Side Yard Setback. None required except when side yard abuts a more restrictive district. When side yard abuts a more restrictive district, setbacks shall be one and one-half times the setback required for the abutting district.*

Response: The proposed site is zoned PDI, and it abuts PDI zones on all sides. Therefore, the front yard setback requirements will be governed by section 4.135(.06)(D). See response to that section within this narrative.

E. *Maximum Building Height. 35 feet, unless taller buildings are specifically allowed in the zone.*

Response: The site is zoned PDI and does not have a height limit specified within section 4.135. The proposed building height is 5 stories and ~60'-8" tall, which is standard for a mixed-use multi-family development of this scale.

F. Minimum Lot Size. No limitation, save and except as may otherwise be affected by other provisions of this Code.

Response: Noted.

G. Maximum Lot Coverage. No limitation, save and except as may otherwise be affected by other provisions of this Code.

Response: Noted.

H. Minimum Street Frontage. No limitation, save and except as may be necessary to provide minimum access requirements.

Response: Noted.

4.116 (.11) Hotels or Motels:

A. Minimum Lot Size. 1,000 square feet for each unit.

B. Minimum Street Frontage. 100 feet.

C. Front Yard Setback. 30 feet, unless located in the Old Town overlay zone, in which case the standards of the overlay zone shall apply. Structures on corner lots shall observe the minimum setback on both streets or tracts with a private drive.

D. Minimum Rear Yard Setback. 30 feet.

E. Minimum Side Yard Setback. 24 feet.

Response: No hotels or motels are proposed with this development. Therefore, the criterion is not applicable.

4.116 (.12) Off-Street Parking is to be as specified in Section 4.155.

Response: All off-street parking will comply with section 4.115. See responses to that section within this narrative.

4.116 (.13) Signs are subject to the standards of Sections 4.156.01 through 4.156.11.

Response: Signs will comply with sections 4.156.01 – 4.156.11. See responses to those sections within this narrative.

4.116 (.14) Prohibited Uses:

A. The use of a trailer, trailer house, or mobile coach as a residence is prohibited except where approved within an RV park or approved as a temporary use during construction.

B. Any use that violates the performance standards of Section 4.135(.05), other than 4.135(.05)(M.)(3.) is prohibited within commercial developments.

Response: No trailers, trailer house, or mobile coaches are proposed with this development. No prohibited uses are proposed. Therefore, the criterion is met.

Section 4.118. Standards Applying to all Planned Development Zones.

4.118 (.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.*
- D. *In no case shall the height of duplexes, triplexes, fourplexes, or townhouses be limited to less than the maximum height allowed for detached single-family dwellings in the same zone. In addition, in no case shall the height of triplexes, fourplexes, or townhouses be limited to less than 25 feet.*

Response: The proposed site is within the Planned Development Industrial zone (PDI), which features low-density light industrial development. It is bordered by a heavy rail line to the east, a bus turnaround and Trimet parking lot to the north, open space that is part of the SROZ to the west, and the Coca Cola production Plant to the south across SW Barber St. The proposed height for the building is 5 stories, at ~60'-8" tall. Due to the surrounding site conditions, the proposed building height does not limit access to light and air to any adjacent properties.

4.118 (.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: Underground utilities will comply with section 4.300. All above ground utilities, such as vaults will be screened with plantings where possible. See sheet L4 – Level 1 Planting Plan for plantings.

4.118 (.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:*

4.118 (.03) 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;
15. On-site pedestrian access and circulation standards;
16. Solar access standards, as provided in section 4.137;
17. Open space in the Residential Neighborhood zone; and
18. Lot orientation.

Response: Noted.

4.118 (.03) 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, except that the Board may waive or reduce open space requirements in the Residential Neighborhood zone. Waivers in compliance with [Section] 4.127(.08)(B)(2)(d);
2. Minimum density standards of residential zones. The required minimum density may be reduced by the Board in the Residential Neighborhood zone in compliance with [Section] 4.127(.06) B; and
3. Minimum landscape, buffering, and screening standards.

Response: Noted.

4.118 (.03) 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.

4.118 (.03) 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: Noted.

4.118 (.03) E. Adopt other requirements or restrictions, inclusive of, but not limited to, the following, except that no additional requirements or restrictions can conflict with established clear and objective standards for residential development or be grounds for denying a residential development proposal when the applicant has selected the clear and objective path for approval:

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.*
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 110 percent 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: Noted.

Section 4.135. PDI—Planned Development Industrial Zone.

(.01) Purpose. *The purpose of the PDI zone is to provide opportunities for a variety of industrial operations and associated uses.*

Response: The primary use proposed is affordable multi-family residential, and a small amount of commercial retail. The passing of Senate Bill 8 lifts restrictions of affordable housing on sites not expressly zoned for residential use. The affordable housing component corresponds to the City's Equitable Strategic Housing Plan by providing much needed affordable housing for the community.

4.135 (.02) *The PDI Zone shall be governed by Section 4.140, Planned Development Regulations, and as otherwise set forth in this Code.*

Response: Noted.

4.135 (.03) Uses that are typically permitted:

4.135 (.03) A. *Warehouses and other buildings for storage of wholesale goods, including cold storage plants.*

4.135 (.03) B. *Storage and wholesale distribution of agricultural and other bulk products, provided that dust and odors are effectively contained within the site.*

4.135 (.03) C. *Assembly and packing of products for wholesale shipment.*

4.135 (.03) D. *Manufacturing and processing.*

4.135 (.03) E. *Motor vehicle services, or other services complementary or incidental to primary uses, and which support the primary uses by allowing more efficient or cost-effective operations.*

4.135 (.03) F. *Manufacturing and processing of electronics, technical instrumentation components and health care equipment.*

4.135 (.03) G. *Fabrication.*

4.135 (.03) H. *Office complexes—Technology.*

4.135 (.03) I. *Corporate headquarters.*

4.135 (.03) J. *Call centers.*

4.135 (.03) K. *Research and development.*

4.135 (.03) L. *Laboratories.*

4.135 (.03) M. *Repair, finishing and testing of product types manufactured or fabricated within the zone.*

4.135 (.03) N. *Industrial services.*

4.135 (.03) O. *Any use allowed in a PDC Zone, subject to the following limitations:*

- 1.** *Service Commercial uses (defined as professional services that cater to daily customers such as financial, insurance, real estate, legal, medical or dental offices) not to exceed 5,000 square feet of floor area in a single building, or 20,000 square feet of combined floor area within a multi-building development.*
- 2.** *Office Complex Use (as defined in Section 4.001) shall not exceed 30 percent of total floor area within a project site.*

3. Retail uses, not to exceed 5,000 square feet of indoor and outdoor sales, service or inventory storage area for a single building and 20,000 square feet of indoor and outdoor sales, service or inventory storage area for multiple buildings.

4. Combined uses under Subsections 4.135(.03)(O.)(1.) and (3.) shall not exceed a total of 5,000 square feet of floor area in a single building or 20,000 square feet of combined floor area within a multi-building development.

No 4.135 (.03) P. Training facilities whose primary purpose is to provide training to meet industrial needs.

4.135 (.03) Q. Public facilities.

4.135 (.03) R. Accessory uses, buildings and structures customarily incidental to any permitted uses.

4.135 (.03) S. Temporary buildings or structures for uses incidental to construction work. Such structures to be removed within 30 days of completion or abandonment of the construction work.

4.135 (.03) T. Other similar uses, which in the judgment of the Planning Director, are consistent with the purpose of the PDI Zone.

Response: The proposed uses for this site include residential & retail. Based on section (4.135 (.03) O), any allowable use within a PDC Zone is allowed, and section (4.131 (.01) A 5) allows any use allowed in a PDR Zone, with some limitations. Additionally, the passing of Senate Bill 8 lifts restrictions on affordable housing in areas that are not expressly zoned for Residential, and is the main mechanism to support the affordable housing component of this project on the publicly-owned land. Section 4.135 (.03) O 3) allows retail uses not to exceed 5,000 sf for a single building. The retail area proposed with this development is ~3,600 sf, and is comprised of two separate retail spaces: one for a Café/Taproom and one for a local Food Bank. The criterion is met.

4.135 (.04) Block and access standards. The PDI zone shall be subject to the same block and access standards as the PDC zone, Section 4.131(.02) and (.03).

4.131 (.03) Block and access standards:

1. The Development Review Board shall determine appropriate conditions of approval to assure that adequate connectivity results for pedestrians, bicyclists, and motor vehicle drivers. Consideration shall be given to the use of public transit as a means of meeting access needs.

2. Where a residential development, or mixed-use development including residential development, is proposed in a PDC zone, the Development Review Board shall assure that adequate connectivity is provided meeting the standards of Metro's Urban Growth Management Functional Plan.

3. Where a residential development, or mixed-use development including residential development, is proposed in a PDC zone, and the application includes a land division, the following standards shall be applied:

a. Maximum spacing between streets for local access: 530 feet, unless waived by the Development Review Board upon finding that barriers such as railroads, freeways, existing buildings, topographic variations, or designated Significant Resource Overlay Zone areas will prevent street extensions meeting this standard.

b. Maximum block length without pedestrian and bicycle crossing: 330 feet, unless waived by the Development Review Board upon finding that barriers such as railroads, freeways, existing buildings, topographic variations, or designated Significant Resource Overlay Zone areas will prevent pedestrian and bicycle facility extensions meeting this standard.

Response: The site for this development enjoys excellent access to various modes of public transit, and the proposed building design and programming seeks to augment and complement these existing amenities. Bicycle commuters have easy access to other parts of the city via the existing bike lanes along Barber St, and will have plenty of secured indoor bike parking within the building, as well as ample short-term bike parking located around the site. The building will feature a Welcome Center for SMART transit, which will cater to bus/train commuters.

The proposed site is roughly 190' in the north-south direction and 420' long in the east-west direction. No new pedestrian crossing is proposed in the north-south direction through the site, as the area is primarily industrial and existing pedestrian connections exist on both the east and west side of the site, allowing adequate access to the Bus Depot and Trimet parking lot to the north of the site. Additionally, the shallow 190' depth of the site as well as poor soil infiltration necessitating the need for large stormwater planters, limit the amount of site area available for a new N/S pedestrian connection. The building footprint proposed is necessary to provide adequate affordable housing options and services for those in need.

4.135 (.05) Performance Standards. *The following performance standards apply to all industrial properties and sites within the PDI 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.*

4.135 (.05) 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.*

4.135 (.05) 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 on which the use is located.*

4.135 (.05) C. *Emission of odorous gases or other odorous matter in quantities as detectable at any point on any boundary line of the property on which the use is located shall be prohibited.*

4.135 (.05) D. *Any open storage shall comply with the provisions of Section 4.176, and this Section.*

4.135 (.05) E. *No building customarily used for night operation, such as a baker or bottling and distribution station, shall have any opening, other than stationary windows or required fire exits, within 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 100 feet of any residential district.*

4.135 (.05) 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 directed away from adjacent residential properties. This is not intended to apply to street lighting.*

4.135 (.05) 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 for any adjacent land use or site shall be prohibited.*

4.135 (.05) H. *Liquid and Solid Wastes:*

1. *Any storage of wastes which would attract insects or rodents 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 in 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.*

4.135 (.05) I. *Noise. Noise generated by the use, with the exception of traffic noises 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.*

4.135 (.05) J. *Electrical Disturbances. Except for electrical facilities wherein the City is preempted by other governmental entities, electrical disturbances generated by uses within the PDI zone which interfere with the normal operation of equipment or instruments within the PDI Zone are prohibited. Electrical disturbances which routinely cause interference with normal activity in abutting residential use areas are also prohibited.*

4.135 (.05) K. *Discharge Standards. There shall be no emission of smoke, fallout, fly ash, dust, vapor, gases, or other forms of air pollution that may cause a nuisance or injury to human, plant, or animal life, or to property. Plans of 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 the request of the City shall provide quantitative and qualitative information regarding the discharge that will adequately and accurately describe operation conditions.*

4.135 (.05) L. *Open burning is prohibited.*

4.135 (.05) M. *Storage:*

1. *Outdoor storage must be maintained in an orderly manner at all times.*
2. *Outdoor storage area shall be gravel surface or better and shall be suitable 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 six feet in height.*

4.135 (.05) 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 things 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 blackberries, English ivy, cherry Laurel, reed canary grass or other identified invasive plants shall be removed and/or mowed at least annually to reduce fire hazard. These unused areas, located within 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: The proposed development will meet the performance standards A-M of this section, as there are no industrial uses proposed. The only uses proposed are residential and retail, including a Café/Taproom, a local Food Bank, and a welcome center for SMART transit. Therefore, the criterion is met.

4.135 (.06) Other Standards:

- 4.135 (.06) A.** *Minimum Individual Lot Size. No limit save and except as shall be consistent with the other provisions of this Code (e.g., landscaping, parking, etc.).*

Response: Noted.

- 4.135 (.06) B.** *Maximum Lot Coverage. No limit save and except as shall be consistent with the other provisions of this Code (e.g., landscaping, parking, etc.).*

Response: Noted.

- 4.135 (.06) 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 applicant requests a waiver to the minimum front yard setback required by this section. The southeast corner of the building is located less than 30 feet from the proposed property line. The ground floor is set back ~11'-5", while the upper story setback varies between 5'-6" and 10'-1". See 'Anticipated Waivers' section further in this narrative for additional information on this request.

- 4.135 (.06) D.** *Rear and Side Yard Setback. Thirty (30) feet. Structures on corner or through lots shall observe the minimum rear and side yard setbacks on both streets. Setbacks shall also be maintained from the planned rights-of-way shown on any adopted City street plan.*

Response: The applicant requests a waiver to the minimum side & rear yard setback for the eastern, northern and western frontages. The eastern building frontage at ground floor sits within the minimum setback of 30 feet, and varies from 5'-5" to 15'-6". The upper stories are set back between 10'-6" and 12'-8".

Due to the irregular shape of the existing sidewalk and resulting property line, the western frontage ground floor sits 5'-1" to 11'-2" back from the property line. The upper floors also vary between a 0' setback and a 9'-3" setback.

The northern frontage is set back between 8'-10" and 9'-3".

See 'Anticipated Waivers' section further in this narrative for additional information on this request.

- 4.135 (.06) E.** *No setback is required when side or rear yards abut on a railroad siding.*

Response: No side or rear yards abut on a railroad siding. Therefore this criterion is not applicable.

4.135 (.06) F. *Corner Vision: Corner lots shall have no sight obstruction to exceed the vision clearance standards of Section 4.177.*

Response: The vision clearance standards of section 4.177 will be met. See response to that section within this narrative.

4.135 (.06) G. *Off-Street Parking and Loading: As provided in Section 4.155.*

Response: See response to section 4.155 within this narrative.

4.135 (.06) H. *Signs: As provided in Sections 4.156.01 through 4.156.11.*

Response: See response to section 4.156.01 through 4.156.11 within this narrative.

Section 4.140. Planned Development Regulations.

4.140 (.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.*

Response: Noted.

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: Noted.

4.140 (.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" or specifically defined as a PD zone by this Code. All sites which are greater than two 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.

4.140 (.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.

4.140 (.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 meets the requirements of B1, B2 & B4 above by utilizing design services of a licensed architect (YBA Architects), a licensed landscape architect (Shapiro Didway) and a registered engineer (Emerio Design). YBA is the authorized representative of the applicant (Palindrome).

4.140 (.05) Planned Development Permit Process:

- A. All parcels of land exceeding two 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 Planning Director, 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 and Planning Director 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 or the Planning Director for properties within the Coffee Creek Industrial Design Overlay District. When a zone change is necessary, application for such change shall be made simultaneously with an application for preliminary approval; and
3. Final (Stage II) review by the Development Review Board or the Planning Director for properties within the Coffee Creek Industrial Design Overlay District.
4. In the case of a zone change and zone boundary amendment, City Council approval is required to authorize a Stage I preliminary plan except for properties within the Coffee Creek Industrial Design Overlay District, which may receive separate zone map amendment approvals.

4.140 (.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.

4.140 (.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: A Stage I Preliminary Approval is requested with this application. A mix of uses is proposed with the development, including affordable housing, and a small amount of commercial. 121 affordable residential units are proposed, a 1,600 sf Food Bank is proposed at the NW corner of the site, a Café/Taproom is proposed at the SE corner of the site, and a Welcome Center for SMART Transit is located at the NE corner of the site.

- 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. Developments within the RN zone shall show how the proposed number of units complies with the applicable maximum and minimum provisions of the RN zone.
4. A stage development schedule demonstrating that the developer intends receive Stage II approval within two years of receiving Stage I approval, and to commence construction within two 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: A current site survey, including topographic information, is included with this application – see sheet G101 – Existing Conditions/Survey. A tabulation of site areas and residential density proposed is located on sheet A001 – Land Use Site Plan. A Stage II Final Plan is part of this application, negating the need for a stage development schedule. The applicant will provide a performance bond or other acceptable security for the capital improvements required by the project.

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 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.

D. As provided in Section 4.134, an application for a Stage I approval within the Coffee Creek Industrial Design Overlay District may be considered by the Planning Director as follows:

1. A Class II—Administrative Review as provided in Section 4.035(.03).
2. After considering available information, the Planning Director 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 his or her judgment, necessary to ensure conformity to said criteria and regulations. In so doing, the Planning Director may, in his or her discretion, authorize submission of the final development plan in stages, corresponding to different units or elements of the development. The Planning Director shall do so only upon

receiving 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 12 days after the application is deemed complete unless a continuance is agreed upon by the applicant and the Planning Director.
4. The determination of the Planning Director shall become final at the end of the appeal period for the decision, unless appealed to the Development Review Board in accordance with Section 4.022 of this Code.

Response: The proposed project is not within the Coffee Creek Industrial Design Overlay District. Therefore, the criterion is not applicable.

4.140 (.09) Final Approval (Stage Two):

[Note: Outline Number is incorrect.]

- A. Unless an extension has been granted by the Development Review Board or Planning Director, as applicable, within two 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. As provided in Section 4.134, an application for a Stage II approval within the Coffee Creek Industrial Design Overlay District may be considered by the Planning Director without a public hearing as a Class II Administrative Review as provided in Section 4.035(.03).
- B. The Development Review Board or Planning Director, as applicable, 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;

Response: Water, sewage and drainage facilities are shown on sheet C3.00 – Utility Plan.

2. Preliminary building and landscaping plans and elevations, sufficient to indicate the general character of the development;

Response: Building plans and elevations are provided on sheets A101 - A105 & A201 – A203.
Landscaping plans are provided on sheets L1 – L4.

3. The general type and location of signs;

Response: Proposed building signage is indicated on sheet A002 – Exterior Signage Plan.

4. Topographic information as set forth in Section 4.035;

Response: Existing topographic information is provided on sheet G101 – Existing Conditions / Survey.

5. A map indicating the types and locations of all proposed uses; and

Response: See sheet A001 – Land Use Site Plan for all ground floor uses and locations.

6. A grading plan.

Response: Grading plan provided on sheet C2.00 – Site 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.
- E. Copies of legal documents required by the Development Review Board or Planning Director, as applicable, for dedication or reservation of public facilities, or for the creation of a non-profit homeowner's association, shall also be submitted.
- F. Within 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 or Planning Director, as applicable, shall not act on a final development plan until it has first received a report from the agencies or until more than 30 days have elapsed since the plan and application were sent to the agencies, whichever is the shorter period.
- G. Upon receipt of the final development plan, the Development Review Board or Planning Director, as applicable shall 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 or Planning Director, as applicable, permits the applicant to revise the plan, it shall be resubmitted as a final development plan within 60 days. If the Board or Planning Director 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.
- 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 or Planning Director, as applicable, may extend these expiration times for up to three additional periods of not more than one year each. Applicants seeking time extensions shall make their requests in writing at least 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 [section] 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.
- J. A planned development permit may be granted by the Development Review Board or Planning Director, as applicable, 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: This proposal is consistent with many of the goals set forth by the Comprehensive Plan for development within the City of Wilsonville, including goals regarding Housing, Transportation, Energy Conservation, Urbanization and Commercial Development.

The site is zoned PDI (Planned Development Industrial), and the proposed commercial and residential uses are allowed (with restrictions), given that they are allowable uses in PDC and PDR zones. The passage of Senate Bill 8 also promotes the development of affordable housing on lands not specifically zoned for residential uses. The base zone is not subject to the residential density limits of residential zoned land in other parts of the City. The proposal includes ~87 units/acre of affordable housing. This affordable housing project will also play a significant role in the City's Equitable Housing Strategic Plan by greatly expanding the amount and type of affordable housing in the City of Wilsonville, that has access to opportunities, services and amenities.

The site is within 'Area E', identified as an area of special concern by the Comprehensive Plan. The goals of this area are to support the City's transportation network, with the development of the heavy rail station and Trimet park & Ride lot, and maintaining affordable housing opportunities such as maintaining the existing mobile home park Walnut Park. This proposal meets all of these concerns by its close proximity to the rail station, bus depot, and the inclusion of 121 units of affordable housing that will expand the affordable housing opportunities within the City.

In addition to the affordable housing component, this proposal is for a transit-oriented-community that provides amenities for residents and creates a new node of activity in this historically industrial part of the City. The Comprehensive plan calls out the need for "complementary commercial uses within or near the industrial area of the City" as a way to provide a mix of uses, which can help promote activity and natural surveillance during more than just working hours. A Welcome Center for SMART Transit is proposed at the NE corner of the site, which will offer a warm place for transit riders to await their bus or train, purchase tickets, and receive information on the transit system with the help of customer service attendants. A Food Bank, run by Wilsonville Community Sharing, will operate out of the western part of the building, to provide food and other services for those in need. A Café/Taproom will anchor the SE corner of the site, and act as a focal point and a draw for the greater community to spend time here.

The building will be Earth Advantage Certified, with a goal of Gold level. This means that various energy efficiencies will be utilized within the design, such as energy efficient appliances, heating and cooling systems, and occupancy sensors for lighting fixtures. In addition, a thermally-efficient building envelope will be provided to ensure that the building's systems are able to work less to reduce the amount of greenhouse gas emissions the building produces over time.

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;*
 - 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.*
- b. *The following are exempt from meeting the Level of Service D criteria standard:*
- i. *A planned development or expansion thereof which generates three 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.*
- d. *Exemptions under 'b' of this subsection shall not exempt the development or expansion from payment of system development charges or other applicable regulations.*
- e. *In no case will development be permitted that creates an aggregate level of traffic at LOS "F".*

Response: A traffic study has been conducted by the City's traffic engineer, DKS Associates, and is included with this application. The study evaluates transportation impacts associated with the proposed commercial-retail use and multifamily residential use of this project. For this study, four existing intersections and one site access has been studied. There are 15 on-site parking stalls that will be serviced by a one-way drive aisle accessed via a single driveway entry on the western frontage of the site, and a driveway exit on SW Barber St.

In summary, the proposed project is expected to generate 71 PM peak hour vehicle trips. Traffic operations at the five studied intersections are expected to operate within the City's LOS standard under all future volume conditions.

The study notes that the entry driveway be extended to 20' min, to provide sufficient clear drive aisle length. This has been updated and is reflected in the site plan with this application. Regarding the driveway exit, the study refers to the City's Public Works Standard Section 201.2.23(h), which requires proposed driveways be aligned with existing streets, *unless topography, existing features (tree protection) or geographic conditions do not allow for it*. This traffic study does not identify any safety issues with the driveway offset as proposed, but rather notes that this is a Public Works Standard that will need to be addressed.

A key concern in this project is the preservation of three very large, mature douglas fir trees on the site, which is the sole reason the driveway offset is proposed. If they were to be aligned, one of the three trees would need to be removed, as the driveway would intrude upon the critical root zone and damage the health of the tree long-term. A memo illustrating the complexities of this issue, and the need to offset the driveway in order to preserve these trees is included with this application.

- 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.*

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.*

4.140 (.10) Adherence to Approved Plans, Modification.

A. *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.*

B. *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 30 days after the date of decision unless appealed to the City Council.*

C. *Approved plans and non-conforming status with updated zoning and development standards.*

1. *Approved plans are the basis of legal conforming status of development except where one of the following occurs, at which point, the approved planned development becomes legally non-conforming:*

a. *the zoning of land within the plan area has been changed since adoption of the plan; or*

b. *the zoning standards for the zone under which it was approved have been substantially modified (50 percent or more of the regulatory standards have been modified as determined by the Planning Director); or*

c. *the City Council declared all planned developments in a certain zone or zones to be legal non-conforming as part of an ordinance to update or replace zoning standards; or*

d. *the City Council declared, by a stand-alone ordinance, planned developments in a certain zone not complying with current standards to be legal non-conforming. The City Council may, in an ordinance establishing non-conforming status of a planned development, declare the entire planned development to be non-conforming or declare certain standards established in the planned development to be non-conforming (i.e., lot coverage, setbacks, stormwater standards).*

2. *If one of the conditions of subsection 1. is met, development that is consistent with the approved plan, but not complying with current zoning standards, shall be considered legal non-conforming and subject to the standards of Sections 4.189 thru 4.192.*

3. *In no case shall a planned development approved within the previous 24 months, or under a time-extension under WC Section 4.023, be considered non-conforming; but automatically will become non-conforming after 24-months, and the end of any extensions, if it otherwise would qualify as legally non-conforming or is so declared pursuant to this subsection.*

D. *The following are exempt from established residential density requirements beyond one unit per lot.*

1. *Accessory Dwelling Units.*

2. *Duplexes.*

3. *Triplexes.*

4. *Quadplexes.*

5. Cluster housing.

- E. For new townhouses in existing residential planned developments in residential zones, the allowed density shall be the lesser of: (1) Four times the maximum net density for the lot(s) or parcel(s) established in the approved plan, or (2) 25 units per acre.
- F. Notwithstanding Subsection C. above, single-family residential development built consistent with an approved master plan in the Planned Development Commercial or Planned Development Industrial zones prior to November 18, 2021 shall continue to be legal conforming uses. However, all lots within these master plans that allow for detached single-family must also allow all middle housing types with density exemptions and allowances consistent with D. and E. above. In addition, any lot coverage maximums established in the master plans less than those listed in Table 2 of Subsection 4.124(.07) are superseded by lot coverage standards in that table.

4.140 (.11) 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.

SECTION 4.154

GENERAL DEVELOPMENT REGULATIONS

Section 4.154. On-site Pedestrian Access and Circulation.

4.154 (.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.*

Response: The proposed development provides pedestrian pathways throughout the site that connect all parking/loading and resident amenity areas while also connecting to adjacent sidewalks, to ensure adequate and safe connectivity for pedestrians crossing through/around this site.

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: All pedestrian paths proposed are designed to be safe, direct and convenient for users, and connect the parking and main building entries to on-site amenities including resident gathering areas and children's play areas. Section (d) is not applicable, as the parking lot proposed is less than three acres in size.

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: Where the pedestrian pathway runs along the north side of the parking lot drive aisle, it will be raised 6" and be paved to contrast with the asphalt driveway. Therefore, the criteria are 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: There are two locations where pedestrian pathways cross vehicular drive lanes, both illustrated on sheet A001 – Land Use Site Plan. The main north/south pedestrian path connecting the parking to the main building entry, and the proposed sidewalk along the Barber St frontage, as it crosses the parking lot exit. Both will be paved with concrete to differentiate the path from the drive lane. Therefore, the criteria are 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 feet wide. Secondary pathways and pedestrian trails may have an alternative surface except as otherwise required by the ADA.*

Response: All pathways shall be 5' min in width and will be paved with concrete or masonry pavers. Therefore, the criteria are met.

6. *All pathways shall be clearly marked with appropriate standard signs.*

Response: All code-required signage for pathways will be provided. Documentation and specifications to be provided during building permit review.

Section 4.155. General Regulations—Parking, Loading and Bicycle Parking.

4.155 (.01) Purpose:

- A. *The design of parking areas is intended to enhance the use of the parking area as it relates to the site development as a whole, while providing efficient parking, vehicle circulation and attractive, safe pedestrian access.*
- B. *As much as possible, site design of impervious surface parking and loading areas shall address the environmental impacts of air and water pollution, as well as climate change from heat islands.*
- C. *The view from the public right-of-way and adjoining properties is critical to meet the aesthetic concerns of the community and to ensure that private property rights are met. Where developments are located in key locations such as near or adjacent to the I-5 interchanges, or involve large expanses of asphalt, they deserve community concern and attention.*

Response: The proposed on-site parking lot promotes efficient use of the small site area for parking by providing an efficient layout, and promoting safe pedestrian circulation through and around the parking area via designated pathways that differ in surface material from the drive aisle. All impervious parking lot areas are designed to drain into stormwater planters for treatment, reducing the environmental impacts of the impervious area proposed with this development. Trees are planted around the parking area as well, to provide shade and minimize the urban heat island affect. The parking lot is set back from SW Barber St approximately 22'-4", and includes an approximately 9'-4" landscaped buffer between the parking lot and the sidewalk at the right-of-way, providing adequate buffer/screening from the street.

4.155 (.02) General Provisions:

4.155 (.02) 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 finding 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 proposed development anticipates no waivers or variances to the parking, loading and bicycle parking standards. Based on OAC 660-012-0440, there will be no parking requirement for the development, as it is Affordable housing as defined in OAR 660-039-0010. The site is also located within ½ mile of SMART routes 4 & 2X, and is within ¼ mile of a WES station. With the proposed site's excellent access to alternative modes of transit, it is anticipated that many building users will utilize these modes of transit. However, there are 14 on-site parking stalls proposed, primarily for convenience parking for residents and patrons of the Food Bank, but also for patrons of the Café. Although not

required, a shared parking agreement will be made with Trimet to utilize a portion of their existing Park & Ride lot to the north of the site for future residents.

4.155 (.02) 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: On-site parking spaces and drive aisles are illustrated and dimensioned on drawing A001 – LAND USE SITE PLAN. Nine standard sized parking stalls are proposed, and 5 compact stalls are proposed (meeting for 40% max requirement for compact stalls). The standard stalls are dimensioned at 9 feet wide and 18 feet deep, with a 2 foot overhang of the adjacent landscape planting zone. Two of these will be accessible stalls (one van and one car) and will meet the requirements of OSSC Chapter 11. The compact stalls are dimensioned 8 feet wide by 18 feet deep, with a 2 foot overhang of the adjacent landscape planting zone, exceeding the minimum size of 7'-6"x15' for compact stalls. A one-way drive aisle is proposed, and is dimensioned at 20 feet wide. This drive aisle narrows to 15 feet wide at the driveway exit, to minimize the pedestrian crossing distance in the right-of-way.

4.155 (.02) 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 enlargement of a building or change of existing use is proposed. Therefore, the criterion is not applicable.

4.155 (.02) D. *In the event several uses occupy a single structure or lot, 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. Within the TC Zone, the cumulative number of parking spaces required by this subsection may be reduced by 25 percent.*

Response: Based on OAC 660-012-0440, there will be no parking requirement for the development, as it is Affordable housing as defined in OAR 660-039-0010. See response to section 4.155(.02)(A)(2) above.

4.155 (.02) E. *Owners of two or more uses, structures, or lots 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: A shared parking agreement will be pursued with Trimet to utilize a portion of parking stalls in their existing Park & Ride lot to the north of the site.

4.155 (.02) 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: Although a shared parking agreement will be pursued with Trimet, no parking will be required for the affordable housing portion of this development. See response to section 4.155(.02)(A)(2) above.

4.155 (.02) G. *Off-Site Parking. Except for single-family dwellings and middle housing, the vehicle parking spaces required by this Chapter may be located on another lot, provided the lot 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. Within the TC Zone there is no maximum distance to an off-site location provided the off-site parking is located within the TC Zone. 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. Within the TC zone, there is no maximum distance to an off-site location provided the off-site parking is located within the TC Zone.*

Response: All required parking of this section will be provided on-site. Therefore, the criterion is not applicable.

4.155 (.02) 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: Understood. There will not be any business activity on the parking spaces without an approved temporary use permit.

4.155 (.02) 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 feet in height.*

Response: The proposed parking lot is neither within nor does it adjoin a residential district. Therefore, the criterion is not applicable.

4.155 (.02) J. *Parking spaces along the boundaries of a parking lot over 650 square feet in area, excluding access areas, shall be provided with a sturdy bumper guard or curb at least six 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: The proposed parking spaces will have a 6" curb, and are located ~8'-6" back from the southern property line. The plantings within the landscaped area between the property line and the curb will be positioned outside of the 2' vehicular overhang. Therefore, the criterion will be met.

4.155 (.02) 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.*

Response: All parking and maneuvering areas of cars will be paved with asphalt or concrete. See sheet L2 – Level 1 Materials Plan, included in the drawings. Proper drainage of the parking area will be provided. See sheet C2.00 – Site Grading Plan, included with this application.

4.155 (.02) 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: Proposed outdoor lighting is illustrated on A003. The parking lot area will be illuminated via several pole-mounted fixtures along the length of the parking lot. Cut-offs to be provided on fixtures where within 3x the mounting height of the property line, to focus the light in the parking area only, and prevent shining onto adjacent areas or into the eyes of passers-by. Therefore, the criterion will be met.

4.155 (.02) 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: All proposed uses and structures are specifically listed in this Code. Therefore, the criterion is not applicable.

4.155 (.02) N. *Up to 40 percent of the off-street spaces may be compact car spaces as identified in Section 4.001 - "Definitions," and shall be appropriately identified.*

Response: 5 of the 14 proposed parking stalls (roughly 35%) are considered compact and meet the definition identified in Section 4.001 – “Definitions”, and will be appropriately marked as compact stalls. See sheet A001 – Land Use Site Plan. Therefore, the criterion is met.

4.155 (.02) 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 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 feet in depth.*

Response: The proposed parking area is illustrated on sheet A001. The stalls utilize a 2 foot overhang beyond the curb. The planting area adjacent varies from 8’-7” to 9’-5” in depth. Therefore, the criterion is met.

4.155 (.02) P. *Parklets are permitted within the TC Zone on up to two parking spaces per block and shall be placed in front of the business. Placement of parklet requires a temporary right-of-way use permit and approval by the City Engineer.*

Response: No parklets are proposed with this application. Therefore, the criterion is not applicable.

4.155 (.02) Q. *Residential garages shall not count towards minimum parking requirements unless all of the following criteria are met:*

1. *The garage contains an area, clear of any obstructions, equal to a standard size parking space (nine feet by 18 feet) for each counted parking space within the garage;*
2. *Nine square feet is provided either in the garage or in a screened area of the lot per container provided by the franchise hauler (solid waste, recycling, yard debris, etc.) to ensure they are not placed in the parking spaces;*
3. *A deed restriction is placed on the property requiring the space stay clear except for identified exceptions such as 30 days before and after a change of tenant or an equivalent restriction within the development's CC&R's;*

Response: No residential garages are proposed with this application. Therefore, the criterion is not applicable.

4.155 (.02) R. *Public sidewalks, public sidewalk easements or other public non-vehicle pedestrian easement areas shall not be counted towards the area of parking spaces or used for parking.*

Response: The proposed parking area is illustrated on sheet A001. All proposed parking spaces are off-street and no parking areas overlap the adjacent sidewalks or pedestrian areas. Therefore, the criterion is met.

4.155 (.02) S. *Shared visitor parking in certain residential areas:*

1. *In order to provide visitor parking in non-multi-family residential areas with limited parking, lot size and/or required open space may be reduced equal to the area of standard-sized parking spaces as described in 2. below if all the following criteria are met:*
 - a. *Ten percent or more of lots in the development do not have at least one adjacent on-street parking space that is at least 22 feet long.*
 - b. *Shared parking spaces are within 250 feet of a lot without an on-street parking space.*
 - c. *Shared parking spaces will be owned by an HOA and have enforceable covenants in place to ensure spaces are managed for visitor parking and not storage of extra vehicles or overflow parking of residents. This may include time limits on parking, limits on overnight parking, or other similar limits.*
2. *When shared visitor parking is provided that meets the standards of 1. above, lot size or open space area for the development may be reduced as provided below. The same visitor parking spaces cannot be used to reduce both lot size and open space area. To achieve both reductions, adequate visitor parking space must be provided to offset both lot size and open space area reductions.*
 - a. *Individual lot size may be reduced by up to 2.5 percent of the minimum lot size for the zone to allow an equal area to be developed as shared parking, as long as the shared parking space is within 250 feet of the reduced lot.*
 - b. *Open space required under Subsection 4.113 (.01) may be reduced by up to 2.5 percent of gross development area (from 25 percent down to as low as 22.5 percent) to allow an area equal to the reduced open space as shared parking. No more than 50 percent of the reduced open space area may be from the required usable open space. In the RN zone, the ten percent Open Space requirement for Small-Lot Subdistrict may be reduced to eight percent.*
 - c. *In order to reduce stormwater runoff and the need for stormwater facilities, shared visitor parking areas are encouraged to be constructed of pervious surfaces.*

Response: The proposed development is not located within a non-multi-family residential area and no on-street parking spaces are proposed with this application. Therefore, the criterion is not applicable.

4.155 (.03) Minimum and Maximum Off-Street Parking Requirements:

4.155 (.03) 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: The proposed parking lot is illustrated on A001. It features a one-way drive aisle entering the site from the private drive bordering the western edge of the site, and exiting onto SW Barber St. A single-loaded

row of parking stalls is located along the southern edge of the drive aisle. A designated pedestrian crossing with a concrete finish (differentiating it from the asphalt of the drive aisle & parking stalls) is provided to connect the parking to the main building entry, and to other pedestrian walkways that connect users to other areas of the site. A designated loading area is provided and accessed from the eastern end of the drive aisle. It is distinct from the drive aisle, allowing vehicles to enter/exit the parking lot while loading activities take place. Therefore, the criterion is met.

4.155 (.03) B. *Parking areas over 650 square feet, excluding access areas, 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 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 15 percent total landscaping required in Section 4.176.03 for the site development.*

Response: Parking lot = 7,278 sf x 10% = 727 sf screening required. 1,967 sf screening plantings is provided. Therefore, the criterion is met.

2. *Landscape tree planting areas shall be a minimum of eight feet in width and length and spaced every eight parking spaces or an equivalent aggregated amount.*

a. *Trees shall be planted in a ratio of one tree per eight parking spaces or fraction thereof, except in parking areas of more than 200 spaces where a ratio of one tree per six spaces shall be applied as noted in subsection [4.155](.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 feet clearance at maturity.*

Response: 14 parking spaces = $14/8 = 1.75 = 2$ landscape planting areas with trees required / 3 are provided. Therefore, the criterion is met.

3. *Due to their large amount of impervious surface, new development with parking areas of more than 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: The proposal includes 14 on-site parking spaces, therefore these standards are not applicable.

4.155 (.03) 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 50 standard spaces, provide one ADA-accessible parking space that is constructed to building code standards, Wilsonville Code 9.000.*

Response: The proposed parking lot area is illustrated on sheet A001. There are 14 parking stalls proposed, 2 of which will be accessible. All parking stalls to be constructed to building code standards.

4.155 (.03) 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: There are no adjacent parking areas to the proposed on-site parking area. Therefore, the criterion is not applicable.

4.155 (.03) 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: Parking layout/quantities for vehicles and bicycles is illustrated on sheet A001. The proposal provides on-site parking for 14 vehicles and 26 exterior parking spaces for bicycles – well above the requirement. A significant need for motorcycles and mopeds is not anticipated, however, vehicular/bicycle parking areas can be converted in the future as resident needs change.

4.155 (.03) F. *Except for single-family dwelling units and middle housing, 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 spaces are proposed with this application. Therefore, the criterion is not applicable.

4.155 (.03) G. *Tables 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: Based on OAC 660-012-0440, there will be no parking requirement for the development, as it is Affordable housing as defined in OAR 660-039-0010. See response to section 4.155(.02)(A)(2) above.

4.155 (.03) 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: Accommodations for electric vehicle charging stations will be provided for the on-site parking proposed, in compliance with the CFEC ruling. Therefore, the criteria will be met.

4.155 (.03) I. *Motorcycle parking:*

1. *Motorcycle parking may substitute for up to five spaces or five percent of required automobile parking, whichever is less. For every four motorcycle parking spaces provided, the automobile parking requirement is reduced by one space.*

2. *Each motorcycle space must be at least four feet wide and eight feet deep. Existing parking may be converted to take advantage of this provision.*

Response: No designated motorcycle parking is proposed with this application. Therefore, the criterion is not applicable.

4.155 (.04) Bicycle Parking:

4.155 (.04) 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: Bicycle parking is illustrated and calculated on sheet A001 Land Use Site Plan. For multiple-family dwelling units of ten or more units, 1 bike parking stall is required per dwelling unit. 130 bike parking stalls are provided for 121 residential units within the building. These are located inside bike rooms on each floor of the building. See sheets A101-A105 for bike room locations. There are also 10 additional exterior bike parking stalls provided near the main residential entry to the building.

Additionally, for commercial retail, 1 bike parking stall per 4,000 sf is required, with a minimum of 2. There are 4 bike parking stalls provided near the entry to the Food Bank, and 6 bike parking stalls provided near the entry to the Café/Taproom.

Therefore, the criterion is met.

4.155 (.04) B. Standards for Required Bicycle Parking:

1. *Each space must be at least two feet by six feet in area and be accessible without moving another bicycle.*
2. *An aisle at least five 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.*
6. *With Planning Director approval, on street vehicle parking can also be used for bicycle parking.*

Response: All exterior bicycle parking will be provided via bike hoops that are securely anchored to the pavement, and will be located within 30 feet of a building entry. Each space is 2 feet by 6 feet in area, and will have a min. 5 foot access aisle behind the space for maneuverability. See sheet A001 Land Use Site Plan for all exterior bike parking locations.

All interior bicycle parking will be provided via floor-mounted racks that will be securely mounted to the floor. A minimum 5 foot access aisle will be provided behind the racks, to allow for maneuverability. There is one large bike storage room on the ground floor, and two smaller bike rooms provided on levels 4 & 5. See sheets A101-A105 for all interior bike room locations and layouts.

The criterion will be met.

4.155 (.04) 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 or more bicycle parking spaces are required pursuant to Table 5, 50 percent 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 [subsection] B.5.

Response: Bicycle parking is illustrated and calculated on sheet A001 Land Use Site Plan. Table 5 requires a total of 123 bicycle parking spaces for Residential & Commercial uses, 50% or 62 of which are required to comply with the long-term bike parking criteria set forth in this section. All 130 bike parking spaces located within interior bike rooms in the building meet this requirement, exceeding the 62 stall requirement. Therefore, the criteria is met.

4.155 (.05) Minimum Off-Street Loading Requirements:

4.155 (.05) 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:
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:
3. A loading berth shall contain space 12 feet wide, 35 feet long, and have a height clearance of 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 development is summarized on sheet A001 and includes 121 residential units, and 3,750 sf of commercial space. Therefore, this criterion is not applicable.

4.155 (.06) Carpool and Vanpool Parking Requirements:

4.155 (.06) A. *Carpool and vanpool parking spaces shall be identified for the following uses:*

1. *New commercial and industrial developments with 75 or more parking spaces,*
2. *New institutional or public assembly uses, and*
3. *Transit park-and-ride facilities with 50 or more parking spaces.*

4.155 (.06) 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.*

4.155 (.06) 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.*

4.155 (.06) D. *Required carpool/vanpool spaces shall be clearly marked "Reserved - Carpool/Vanpool Only."*

Response: The proposed development is summarized on sheet A001 and includes 14 parking spaces, which is less than the threshold of 75 in this standard. Therefore, no carpool or vanpool parking is required or proposed.

4.155 (.07) Parking Area Redevelopment. *The number of parking spaces may be reduced by up to ten percent 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 proposed development is summarized on sheet A001. There are no existing parking areas on the site. Therefore, the criterion is not applicable.

Section 4.156.01. Sign Regulations Purpose and Objectives.

4.156.01 (.01) *Purpose.* The general purpose of the sign regulations are to provide one of the principal means of implementing the Wilsonville Comprehensive Plan by fostering an aesthetically pleasing, functional, and economically vital community, as well as promoting public health, safety, and well-being. The sign regulations strive to accomplish the above general purpose by meeting the needs of sign owners while maintaining consistency with the development and design standards elsewhere in Chapter 4. This Code regulates the design, variety, number, size, location, and type of signs, as well as the processes required to permit various types of signs. Sign regulations have one or more of the following specific objectives:

- A. Well-designed and aesthetically pleasing signs sufficiently visible and comprehensible from streets and rights-of-way that abut a site as to aid in wayfinding, identification and provide other needed information.
- B. Sign design and placement that is compatible with and complementary to the overall design and architecture of a site, along with adjoining properties, surrounding areas, and the zoning district.
- C. A consistent and streamlined sign review process that maintains the quality of sign development and ensures due process.
- D. Consistent and equitable application and enforcement of sign regulations.
- E. All signs are designed, constructed, installed, and maintained so that public safety, particularly traffic safety, are not compromised.
- F. Sign regulations are content neutral.

Section 4.156.02. Sign Review Process and General Requirements.

4.156.02 (.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.

4.156.02 (.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: The proposed development includes up to three non-residential tenants and per 4.156.02(.03) requires a Master Sign Plan for this review. All signage will be designed and permitted under future tenant improvements as Class 1 Sign Permits.

4.156.02 (.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: The proposed development includes up to three non-residential tenants and per 4.156.02(.03) requires a Master Sign Plan for this review. All signage will be designed and permitted under future tenant improvements as Class 1 Sign Permits.

4.156.02 (.04) Class I Sign Permit. Sign permit requests shall be processed as a Class I Sign Permit when the requested sign or signs conform to a Master Sign Plan or other previous sign approval. In addition, a Minor Adjustment to a Master Sign Plan or other previous sign approval may be approved in connection with a Class I Sign Permit.

Response: The proposed development requires a Master Sign Plan for this review. Therefore, the criterion is not applicable.

4.156.02 (.05) Class II Sign Permit. Sign permit requests for meeting one or more of the descriptions listed in A. through C. below shall be processed as a Class II Sign Permit when the request does not conform with a Master Sign Plan or other previous sign approval but meets the requirements of the applicable sign regulations, unless the request would modify a condition of approval specifically imposed by the DRB or City Council:

Response: The proposed development requires a Master Sign Plan. Therefore, the criterion is not applicable.

4.156.02 (.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 feet in height in a new location.

Response: The proposed development requires a Master Sign Plan for this review. Therefore, the criterion is not applicable.

4.156.02 (.07) Master Sign Plans. A Master Sign Plan is required for non-residential developments with three 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.

4.156.02 (.07) A. Master Sign Plan Submission Requirements. Applications for Master Sign Plans shall include ten paper and electronic copies of all the submission requirements for Class II and III Sign Permits and the following in addition to all required fees:

1. A written explanation of the flexibility of the Master Sign Plan for different potential tenant space configurations over time;
2. A written explanation of the extent to which different sign designs, including those incorporating logos, stylized letters, multiple lines of text, non-straight baselines, or different materials and illumination will be allowed and if allowed how the flexibility of the master sign plan will allow these different sign designs over time;

3. *A written explanation of how the sign plan provides for a consistent and compatible sign design throughout the subject development.*

Response: Proposed master signage guidelines, and locations in plan and elevation are illustrated and narrated on sheet A002 – Exterior Signage Plan. Proposed, flexible locations are illustrated in plan and elevation, and all guidelines for materials, format, font and lighting are provided in the ‘Master Sign Plan Documentation’ on sheet A002. As stated in the Master Sign Plan portion of the narrative on A002, the guidelines are established to allow tenants to highlight their product or service while reinforcing the design excellence of the development as a whole. Signage and logo design should express a refined urban sophistication through the use of clean and contemporary shapes and forms. Allowable materials are intended to harmoniously blend with the exterior materials of the building. Signage is anticipated in the zones shown in plan and elevation on A002. The guidelines provide numerous examples of ‘clean and contemporary’ signage, graphics, materials, and formats to meet a variety of commercial tenant and business needs and changes over time that remain consistent with the overall building character.

4.156.02 (.07) B. *Master Sign Plan Review Criteria.* In addition to the review criteria for Class II and Class III Sign Permits, Master Sign Plans shall meet the following criteria:

1. The Master Sign Plan provides for consistent and compatible design of signs throughout the development; and
2. The Master Sign Plan considers future needs, including potential different configurations of tenant spaces and different sign designs, if allowed.

Response: Proposed master signage guidelines, and locations in plan and elevation are illustrated and narrated on sheet A002 – Exterior Signage Plan. The ‘Master Sign Plan Documentation’ on this sheet sets the intent of the design and function of all future commercial tenant signage, and provides multiple, flexible design examples and material options or methods to ensure that a wide variety of needs can be met within a compatible design for the entire development over time.

4.156.02 (.07) C. *Modifications of a Master Sign Plan.* Modifications of a Master Sign Plan, other than Minor and Major Adjustments, shall be reviewed the same as a new Master Sign Plan.

Response: No modification of a Master Sign Plan is included in this application. Therefore, the criterion is not applicable.

4.156.02 (.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 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 20 percent 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: No waivers or variances are requested regarding the Master Sign Plan for the proposed development. Therefore, the criterion is not applicable.

4.156.02 (.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 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.*

(.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: No temporary sign permits are requested as a part of this application. Therefore, the criterion is not applicable.

Section 4.171. General Regulations—Protection of Natural Features and Other Resources.

4.171 (.01) *Purpose. It is the purpose of this Section to prescribe standards and procedures for the use and development of land to assure the protection of valued natural features and cultural resources. The requirements of this Section are intended to be used in conjunction with those of the Comprehensive Plan and other zoning standards. It is further the purpose of this Section:*

- A. *To protect the natural environmental and scenic features of the City of Wilsonville.*
- B. *To encourage site planning and development practices which protect and enhance natural features such as riparian corridors, streams, wetlands, swales, ridges, rock outcroppings, views, large trees and wooded areas.*
- C. *To provide ample open space and to create a constructed environment capable and harmonious with the natural environment.*

Response: The proposed project has been designed to provide ample open space for recreation and landscaped area, to result in a site plan that is in harmony with the natural environment. The preservation of the large douglas fir trees on site further the connection to the existing natural features, and makes them a prominent feature of the whole project and community as a whole.

4.171 (.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.*

Response: The Site is relatively flat, with existing slopes going from the NE to the SW Corner of the site. Proposed Grades will flow. Proposed Grades will match this layout. There are no significant landforms on or around this site.

- B. *All grading, filling and excavating done in connection with any development shall be in accordance with the Uniform Building Code.*

Response: The proposed project will comply.

- 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 grading of the site seeks to minimize soil disturbance and areas of cut and fill as much as possible, while accommodating the new building and access paths throughout the site. There will be some fill necessary along the northern frontage, as the existing grades show the middle of the site is sunken from the existing sidewalk, which will remain. Three large doug fir trees are being retained on the site and will be

protected during construction. Grading within the protection zone of these trees (12x the diameter of the tree itself) will need to remain as close as possible to the existing grades, with no more than 4" of cut/fill allowed. The site design allows this, by preserving a large natural area around these trees, with a gravel path for access, allowing the existing grades to remain. Grading Plan has been updated and tree protection notes have been added to sheet C2.00 to minimize grading around the three existing trees. An arborist's report has also been performed by Teragan & Associates and is included with this application.

4.171 (.03) Hillside. All developments proposed on slopes greater than 25 percent shall be limited to the extent that:

Response: The site is not sloped greater than 25 percent

4.171 (.04) Trees and Wooded Areas:

4.171 (.04) 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: This site is designed to retain three existing trees on site. All others shall be removed.

4.171 (.04) 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.
2. Providing for drainage and water and air filtration to the roots of trees which will be covered with impermeable surfaces.
3. Requiring, if necessary, the advisory expertise of a registered arborist/horticulturist both during and after site preparation.
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: All trees to be retained shall be protected per the recommendations of site arborist, per the arborist report provided by Teragan & Associates. See arborist report provided with this application.

4.171 (.05) High Voltage Powerline Easements and Right-of-Way and Petroleum Pipeline Easements:

4.171 (.05) 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.

4.171 (.05) 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: The proposed project will comply with this.

4.171 (.06) Hazards to Safety: Purpose.

4.171 (.06) A. *To protect lives and property from natural or human-induced geologic or hydrologic hazards and disasters.*

4.171 (.06) B. *To protect lives and property from damage due to soil hazards.*

4.171 (.06) C. *To protect lives and property from forest and brush fires.*

4.171 (.06) D. *To avoid financial loss resulting from development in hazard areas.*

Response: The development poses no hazards to safety. Therefore, the criterion is not applicable.

4.171 (.07) Standards for Earth Movement Hazard Areas:

4.171 (.07) 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.*

4.171 (.07) B. *Vegetative cover shall be maintained or established for stability and erosion control purposes.*

4.171 (.07) C. *Diversion of storm water into these areas shall be prohibited.*

4.171 (.07) 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: The project is not within any Earth Movement Hazard Areas. Therefore, the criterion is not applicable.

4.171 (.08) Standards for Soil Hazard Areas:

4.171 (.08) 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.*

4.171 (.08) B. *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: The project is not within any Soil Hazard Areas. Therefore, the criterion is not applicable.

4.171 (.09) Historic Protection: Purpose.

4.171 (.09) A. *To preserve structures, sites, objects, and areas within the City of Wilsonville having historic, cultural, or archaeological significance.*

4.171 (.09) B. *Standards:*

1. *All developments shall be planned, designed, constructed, and maintained to assure protection of any designated historic or cultural resource on or near the site. Restrictions on development may include:*
 - a. *Clustering of buildings and incorporation of historic and/or cultural resources into site design in a manner compatible with the character of such resource.*
 - b. *Limitations on site preparation and grading to avoid disturbance of areas within any historic or archaeological sites, monuments or objects of antiquity.*
 - c. *Provision of adequate setbacks and buffers between the proposed development and the designated resources.*
2. *The City may attach additional conditions with respect to the following design factors in protecting the unique character of historic/cultural resources:*
 - a. *Architectural compatibility;*
 - b. *Proposed intensity of development;*
 - c. *Relationship to designated open space;*
 - d. *Vehicular and pedestrian access; and*
 - e. *Proposed building or structural mass in relation to the designated resource.*

4.171 (.09) C. *Review Process:*

1. *The Development Review Board shall be the review body for:*
 - a. *All development which proposes to alter a designated historic, or cultural resource or resource site; and*
 - b. *All development which proposes to use property adjacent to a designated cultural resource; and*
 - c. *All applications requesting designation of a cultural or historic resource.*

2. *The application shall include the following:*
 - a. *A complete list of exterior materials, including color of these materials.*
 - b. *Drawings:*
 - i. *Side elevation for each side of any affected structure.*
 - ii. *Drawings shall show dimensions or be to scale.*
 - iii. *Photographs may be used as a substitute for small projects.*
 - c. *Plot plans shall be submitted for new structures, fences, additions exceeding 50`1 square feet, or any building relocation.*
3. *Any improvement proposed for property adjacent to a designated, cultural or historic resource site, shall be subject to the following provisions:*
 - a. *All uses and structures which are incompatible with the character of the cultural or historic resource are prohibited. The criteria used to determine incompatibility shall include the following:*
 - i. *The intensity and type of use when compared with the historic use patterns of the areas.*
 - ii. *The orientation, setback, alignment, spacing and placement of buildings.*
 - iii. *The scale, proportions, roof forms, and various architectural features of building design.*
 - b. *Setbacks may be required which are over and above those required in the base zone in order to protect the resource. Setbacks should be appropriate to the scale and function of the resource, but allow reasonable use of the adjacent property.*
 - c. *An appropriate buffer or screen may be required between the new or converting use on the adjacent property and the resource.*
4. *Nothing in this chapter shall be construed to prevent the ordinary maintenance or repair of any exterior architectural feature in or on any property covered by this chapter that does not involve a change in design, material or external reconstruction thereof, nor does this Code prevent the construction, reconstruction, alteration, restoration, demolition or removal of any such feature when the Building Official certifies to the Development Review Board that such action is required for the public safety due to an unsafe or dangerous condition which cannot be rectified through the use of acceptable building practices.*
5. *The owner, occupant or other person in actual charge of a cultural resource, or an improvement, building or structure in an historic district shall keep in good repair all of the exterior portions of such improvement, building or structure, all of the interior portions thereof when subject to control as specified in the designating ordinance or permit, and all interior portions thereof whose maintenance is necessary to prevent deterioration and decay or any exterior architectural feature.*

Response: No historic or cultural resources exist on the proposed site. Therefore, the criterion is not applicable.

4.171 (.10) Alteration and Development Criteria.

4.171 (.10) 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: No historic or cultural resources exist on the proposed site. Therefore, the criterion is not applicable.

4.171 (.11) Cultural Resource Designation Criteria. *A cultural resource may be designated and placed on the Cultural Resources Inventory if it meets the following criteria:*

4.171 (.11) A. *It exemplifies or reflects special elements of the City's cultural, social, economic, political, aesthetic, engineering or architectural history; or*

4.171 (.11) B. *It is identified with persons or events significant in local, state, or national history; or*

4.171 (.11) 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*

4.171 (.11) D. *It is representative of the notable work of a builder, designer, or architect.*

Response: No historic or cultural resources exist on the proposed site. Therefore, the criterion is not applicable.

Section 4.175. Public Safety and Crime Prevention.

4.175 (.01) *All developments shall be designed to deter crime and ensure public safety.*

Response: The proposed site plan is illustrated on A001. With this proposed mixed-use development, there will be 121 new residential dwelling units, as well as various commercial tenants. Mixed use development, such as this, is great for increasing public safety by increasing the ‘eyes on the street’ and bringing various users to the building at all hours of the day to keep all areas of the site informally monitored at all times. This greatly deters unwanted activity that would thrive in areas that are not monitored. Care has been taken in the landscape and building design of this project to avoid areas of hidden refuge, and exterior site lighting will be provided to adequately illuminate all areas of the site – see exterior lighting diagram on sheet A003.

4.175 (.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: Code-required signage, such as fire department connection signage, and building address signage will be designed in accordance with applicable codes and coordinated through the permitting process. Proposed signage is provided on sheet A002 – Exterior Signage Plan, and is being reviewed under a Sign Permit with this application.

4.175 (.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: The upper-floor residences will provide surveillance to all areas of the site & surrounding streets, and the ground floor residences & commercial spaces will provide surveillance and help activate the street and reduce criminal activity. The on-site parking area will be illuminated with light fixtures, and includes low landscape buffering, along with some trees, to help maintain visibility across the site. The main building entries will also have surveillance cameras, to further deter unwanted activity.

4.175 (.04) *Exterior lighting shall be designed and oriented to discourage crime.*

Response: The proposed site lighting is designed to illuminate key areas of the site to discourage crime. Site lighting locations and basis-of-design fixtures are illustrated on sheet A003 – Exterior Lighting Plan. Final fixture selection and code compliance will be illustrated with building permit review.

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.

4.176 (.01) Purpose. *This Section consists of landscaping and screening standards and regulations for use throughout the City. The regulations address materials, placement, layout, and timing of installation. The City recognizes the ecological and economic value of landscaping and requires the use of landscaping and other screening or buffering to:*

- A. *Promote the re-establishment of vegetation for aesthetic, health, erosion control, flood control and wildlife habitat reasons;*
- B. *Restore native plant communities and conserve irrigation water through establishment, or re-establishment, of native, drought-tolerant plants;*
- C. *Mitigate for loss of native vegetation;*
- D. *Establish and enhance a pleasant visual character which recognizes aesthetics and safety issues;*
- E. *Promote compatibility between land uses by reducing the visual, noise, and lighting impacts of specific development on users of the site and abutting sites or uses;*
- F. *Unify development and enhance and define public and private spaces;*
- G. *Promote the retention and use of existing topsoil and vegetation. Amended soils benefit stormwater retention and promote infiltration;*
- H. *Aid in energy conservation by providing shade from the sun and shelter from the wind; and*
- I. *Screen from public view the storage of materials that would otherwise be considered unsightly.*
- J. *Support crime prevention, create proper sight distance clearance, and establish other safety factors by effective landscaping and screening.*
- K. *Provide landscaping materials that minimize the need for excessive use of fertilizers, herbicides and pesticides, irrigation, pruning, and mowing to conserve and protect natural resources, wildlife habitats, and watersheds.*

Response: The Landscape Design Goal for the WTOD project is to provide outdoor spaces that will enhance the sense of being part of a modern, suburban community for residents, guests, customers and the community-at-large. Outdoor spaces have been designed to accommodate multi-level activities, including 2 outdoor, covered BBQ / eating spaces for residents, chess tables, charging stations, multiple seating forms and locations throughout the site, and a fenced trike track and natural play space for children that is visible and accessible from both the resident amenity space and from the outdoor dining space for the taproom / eatery. Special care has been taken around the existing Douglas Fir trees to allow activity near the trees while protecting their root zones through the strategic placement of raised decking at the both of the southern outdoor dining spaces and the trike track; holding the majority of activity above the root zones and lessening the likelihood of extreme soil compaction over time.

A vibrant, 4-season plant palette provides visual interest while defining user spaces. Tree species have been chosen to accentuate the spaces that they will occupy, providing shading, delineating spaces, and highlighting the architectural features of the building. Screening is provided for residents in ground level housing, at parking and utilities as required by code. Stormwater planters located throughout the site will feature native plants and trees from the city's approved list of plants and trees for fully-lined stormwater planters. All plants are generally long-lived, low-maintenance plants that should provide at least 3 seasons of visual interest with minimal care. The landscape for the WTOD development is designed to meet the requirements of the city's development code by:

- A. Promoting the re-establishment of vegetation for aesthetic, health, erosion control, flood control and wildlife habitat reasons;
- B. Restore native plant communities and conserve irrigation water through establishment of native and / or adapted, drought-tolerant plants;
- C. Establish and enhance a pleasant visual character which recognizes aesthetics and safety issues;
- D. Promote compatibility between land uses by reducing the visual, noise, and lighting impacts of specific development on users of the site and abutting sites or uses;
- E. Unify development and enhance and define public and private spaces;
- F. Aid in energy conservation by providing shade from the sun and shelter from the wind; and
- G. Support crime prevention, create proper sight distance clearance, and establish other safety factors by effective landscaping and screening.
- H. Provide landscaping materials that minimize the need for excessive use of fertilizers, herbicides and pesticides, irrigation, pruning, and mowing to conserve and protect natural resources, wildlife habitats, and watersheds.

4.176 (.02) Landscaping and Screening Standards:

4.176 (.02) A. 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.

4.176 (.02) B. 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 1,600 square feet shall have two trees if the standard calls for one tree per 800 square feet).

4.176 (.02) 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 proposed plantings, as shown on sheet L4 – Level 1 Planting Plan, meets the General Landscaping Standards for plant materials. Within the property line, there are 38 perimeter trees required; 36 new perimeter trees are provided and the project has 13 tree credits for retained trees.

Per section 4.176(.11) below, street trees are not typically part of the site landscaping requirement and would not need to meet the 30' linear spacing requirement. However, there are 8 new street trees proposed along SW Barber St to provide shade and a landscape buffer between the sidewalk and street.

4.176 (.02) 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 feet high and 95 percent 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 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: Low screening plantings have been provided for the on-site parking lot, plantings shall form a continuous screen three feet high and 95 percent opaque, year-round. Therefore, the criterion is met.

4.176 (.02) 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 high along the interior side of the landscaped area (see Figure 23: Low Berm Landscaping). If the berm is less than three 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 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: There are no berms proposed with this development. Therefore, the criterion is not applicable.

4.176 (.02) 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 feet high and 95 percent 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 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: There are no areas requiring high screening on this project. Therefore, the criterion is not applicable.

4.176 (.02) 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 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: There are no high wall requirements on this project. Therefore, the criterion is not applicable.

4.176 (.02) H. 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 feet high along the interior side of the landscaped area (see Figure 26: High Berm Landscaping). If the berm is less than six 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 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: There are no high berm requirements for this project. Therefore, the criterion is not applicable.

4.176 (.02) I. 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 feet high and at least 50 percent 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: There are no partially sight-obscuring fences required on this project. Therefore, the criterion is not applicable.

4.176 (.02) J. 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 feet high and 100 percent 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: There are no fully sight-obscuring fences required on this project. Therefore, the criterion is not applicable.

4.176 (.03) Landscape Area. *Not less than 15 percent) of the total lot area, shall be landscaped with vegetative plant materials. The ten percent parking area landscaping required by section 4.155.03(B)(1) is included in the 15 percent 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).*

Response: Total lot area = 60,695 sf x 15% = 9,104 sf required; 13,627sf provided. Therefore, the criterion is met.

4.176 (.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 feet high measured from soil surface at the outside of fenceline shall require Development Review Board approval.*

Response: The proposed PGE transformer, located at the SW corner of the site will have a ~48" tall fence to screen it from off-site view from adjacent streets and properties. It will also have shrubs in front of the fence, to help it

blend in naturally with the surrounding landscape. The domestic water vault and fire vaults will also have landscaping surrounding them, to screen them from off-site view. Therefore, the criterion is met.

4.176 (.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 110 percent of the cost of such fence or planting and its installation. (See Sections 4.400 to 4.470 for additional requirements.)*

Response: There are no requirements for sight-obscuring fence or plantings on this project. Therefore, the criterion is not applicable.

4.176 (.06) Plant Materials:

4.176 (.06) 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 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 ten inches to 12 inches 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 four feet on center minimum, four inch pot spaced two feet on center minimum, two one-fourth inch 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 percent of the bare soil in required landscape areas within three 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 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: All plant material meets or exceeds the minimum sizing required by this code. Therefore, the criterion will be met.

4.176 (.06) 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 two inch 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 1¾ inch to 2 inch 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 1¾ inch minimum caliper.
4. Large conifer trees such as Douglas Fir or Deodar Cedar shall be installed at a minimum height of eight 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 feet.

Response: All new trees shall meet or exceed the minimum sizing required by this code. Therefore, the criterion will be met.

4.176 (.06) C. Where a proposed development includes buildings larger than 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 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 feet; and
 - ii. Minimum trunk diameter (caliper) of two inches (measured at four and one-half feet above grade).
 - b. Evergreen trees: Minimum height of 12 feet.

Response: Streetspire Oak and Green Column Black Maple shall be a minimum of 10 feet tall at time of installation. Thereby, meeting this criterion.

4.176 (.06) 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—Three inches minimum caliper
 - b. Collector streets—Two inches minimum caliper.
 - c. Local streets or residential private access drives—1¾ inches minimum caliper.
 - d. Accent or median tree—1¾ inches 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 Macrophyllum* (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* (PinOak), *Tilia americana* (American Linden).
 - b. Trees under 50 feet mature height: *Acer rubrum* (Red Sunset Maple), *Cornus nuttallii* (Native Pacific 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: Barber Street is a collector street. The proposed street tree is a Crimson Sunset Maple, shall have a caliper of 2" at time of installation. The Crimson Sunset Maple is a deep purple-leaved, upright oval shaped tree, with a mature height of 30-35 foot. It is heat tolerant and should perform well in the limited space available for the root systems between stormwater planters. Therefore, the criterion is met.

4.176 (.06) 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: Plant selection has been based on these requirements. See sheet L4 – Level 1 Planting Plan . The criterion is met.

4.176 (.06) 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 growing season of notice.*

Response: 3 Douglas Fir are proposed for retention. Per the Tree Report and Sheet L1 Existing Tree Inventory Plan, there are a total of 13 tree credits to be earned. These tree credits are being applied to the perimeter tree and street tree requirements for the project.

4.176 (.06) G. Exceeding Standards. *Landscape materials that exceed the minimum standards of this Section are encouraged, provided that height and vision clearance requirements are met.*

4.176 (.06) 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: The proposed landscaping materials comply with the purposed and standards of this section.

4.176 (.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.*

Response: All plant material shall comply to current industry standards and shall be properly staked to assure survival; no support devices will be allowed to interfere with normal pedestrian or vehicular movement. The criterion will be met.

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.*

Response: Maintenance of the landscaped areas is the on-going responsibility of the property owner.

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.*

Response: A permanent, built-in irrigation system with an automatic controller will be included as part of the project. The system will be predominantly drip, with areas of spray as appropriate.

- C. *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: All required landscape areas shall be protected from potential damage by conflicting uses or activities.

4.176 (.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: All landscaping shall meet the vision clearance standards of Section 4.177.

4.176 (.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 (\pm two inches per week): small convoluted lawns, lawns under existing trees, annual and perennial flower beds, and temperamental shrubs;*
- B. *Moderate water usage areas (\pm one inch per week): large lawn areas, average water-using shrubs, and trees;*
- C. *Low water usage areas (Less than one 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: The information required from this section is shown on the landscape plans provided with this application. See sheets L1 – L4 for this information.

4.176 (.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: Noted.

4.176 (.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: Street trees (and stormwater planters) that are proposed within the new right-of-way along SW Barber St are not counted in the landscaping requirements of this section.

4.176 (.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 insuitable 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: 6 Native Douglas Firs removed are to be replaced with 6 new Native Douglas Fir, to be planted in the 'Mitigation Zone' as shown on sheet 'L-5 – Mitigation Plan'. Plant materials are subject to approval by the City of Wilsonville, OR. Plants must be as local as possible, nursery propagated or taken from a pre-approved transplantation area. Plant materials shall be of the type and size indicated on the mitigation plan drawings.

Pesticides, fungicides and fertilizers shall not be employed in mitigation areas unless specifically authorized and approved. Native plants shall be planted in suitable soil conditions. Trees shall be supported only when necessary because of extreme winds at the site. Where support is necessary, all stakes, guy wires and other measures are to be removed as soon as the plants can support themselves. Protect from animal and fowl predation and foraging until establishment. Temporary irrigation shall be provided within the mitigation zone by a dedicated drip zone. Temporary irrigation shall be provided within mitigation zone for a minimum of one complete growing season, or until trees become established, whichever is the longest. Once trees are established, zone shall be turned off, but shall remain in place for possible use in times of extreme drought in the future.

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.

4.177 (.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.*

4.177 (.02) Street Design Standards:

4.177 (.02) 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: There are no proposed street improvements or intersections. Therefore, the criterion is not applicable.

4.177 (.02) 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: SW Barber St is considered a Collector, and is comprised of a single lane of travel in each direction (east-west), along with a center turning lane, and a 6' bike lane on either side of the street. No adjustments to the street elements are proposed with this development. The frontage along SW Barber St will be updated per the standards for a Collector street – see response to section 4.177(.02)(C) below.

4.177 (.02) 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 right-of-way along SW Barber St will be recorded with the final plat and recorded with the County Assessor's office, as required. SW Barber is considered a Collector, therefore, the setback for future widening is not applicable.

4.177 (.02) D. Dead-end Streets. *New dead-end streets or culs-de-sac 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.*

Response: This project does not include any new roadway extensions or Dead End Streets. Therefore, the criterion is not applicable.

4.177 (.02) 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 six inch 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, ten 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: A clear vision area complying with the Public Works standard 201.2.22 is provided at the SE and SW corners of the site, as well as at the proposed driveway that exits onto SW Barber St. Street trees are located >30' from the nearest intersection and >10' from the proposed driveway. See sheet A001 – Land Use Site Plan. Therefore, the criterion is met.

4.177 (.02) F. Vertical clearance. *A minimum clearance of 12 feet above the pavement surface shall be maintained over all streets and access drives.*

Response: The proposal will maintain 12' clearance minimum above all streets and access drives. Therefore, the criterion is met.

4.177 (.02) 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.

Response: A street improvement is not proposed with this development. Therefore, the criterion is not applicable.

4.177 (.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: The proposed sidewalk will be constructed in the right-of-way along SW Barber St. It will be 6'-0" wide, meeting the criterion of this section.

4.177 (.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: There is an existing bike lane on both sides of SW Barber St, meeting the intent of the Transportation System Plan. There are no additional bicycle facilities proposed. Therefore, the criterion are not applicable.

4.177 (.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 multi-use paths are proposed with this development. Therefore, the criterion is not applicable.

4.177 (.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 requirements 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: There are existing bus stops located along the bus turnaround, which flanks the northern and eastern edges of the proposed site. The existing sidewalks along these frontages already include improvements for the bus stops, including shelters, lighting and trees. No changes are proposed to the existing sidewalk and transit facilities on these frontages.

4.177 (.07) Residential Private Access Drives. Residential Private Access Drives shall meet the following standards:

4.177 (.07) A. Residential Private Access Drives shall provide primary vehicular access to no more than four residential lots.

4.177 (.07) 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.*

4.177 (.07) 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.*

4.177 (.07) D. *Residential Private Access Drives shall meet or exceed the standards for access drives and travel lanes established in Subsection (.08) of this Section.*

Response: No residential Private Access Drives are proposed on this site, therefore the criterion is not applicable.

4.177 (.08) Access Drive and Driveway Approach Development Standards:

4.177 (.08) A. *An access drive to any proposed development shall be designed to provide a clear travel lane free from any obstructions.*

Response: The on-site drive aisle to access the parking area has been reviewed with the Traffic Report and is illustrated on sheet A001 – Land Use Site Plan. It will remain free from any obstructions. The Traffic report notes that the driveway entry shall be 20' min in length, which this proposal will meet. The driveway exit onto Barber St is subject to the City's Access Spacing Standards for Collectors. The minimum spacing allowed is 100' with a desired spacing of 300'. This application proposes a spacing of approximately 190' from the Trimet access road to the west, meeting this requirement.

4.177 (.08) B. *Access drive travel lanes shall be constructed with a hard surface capable of carrying a 23-ton load.*

Response: The on-site drive aisle is illustrated on sheet A001 – Land Use Site Plan, and will be constructed of asphalt/concrete, to support a 23-ton load. The criterion is met.

4.177 (.08) 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.*

Response: Fire apparatus access will occur along SW Barber and/or the bus turnaround access road on the east side of the building. See Fire Service Provider letter from TVF&R provided with this application. Therefore, the criterion does not apply to the proposed on-site drive aisle.

4.177 (.08) 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: Fire apparatus access will occur along SW Barber and/or the bus turnaround access road on the east side of the building. See Fire Service Provider letter from TVF&R provided with this application. Therefore, the criterion does not apply to the proposed on-site drive aisle.

4.177 (.08) E. *Minimum access requirements shall be adjusted commensurate with the intended function of the site based on vehicle types and traffic generation.*

Response: The proposed project will comply with this

4.177 (.08) 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: Driveway access to the on-site parking lot is provided from the Trimet access road on the western side of the site, which will have much lower levels of traffic than on Barber St. The drive-aisle exits onto SW Barber St roughly mid-block, and is subject to the 'City's Access Spacing Standards for Collectors'. The minimum spacing allowed is 100' with a desired spacing of 300'. This application proposes a spacing of approximately 190' from the Trimet access road to the west, meeting this requirement. This has been studied and approved with the Traffic Report, performed by the City's Traffic Engineer, DKS & Associates, and is included with this application.

4.177 (.08) 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: The driveways entering and exiting the on-site parking area have been analyzed as part of the Traffic Report, included with this application. Due to the low volume of vehicles exiting the on-site parking lot onto Barber, no safety or traffic operations concerns were raised as part of the Traffic Report. The driveway exit onto Barber complies with the City's Access Spacing Standards for Collectors – see response above.

4.177 (.08) H. *The City may require a driveway to extend to one or more edges of a lot and be designed to allow for future extension and inter-lot 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: Due to the existing site layout and the SMART bus turnaround bordering the site on the eastern and northern edges of the site, no future driveway connections to adjacent parcels are anticipated.

4.177 (.08) I. *Driveways shall accommodate all projected vehicular traffic on-site without vehicles stacking or backing up onto a street.*

Response: The proposal includes a one-way drive aisle with a driveway entry that is 20' min. long, to prevent vehicles backing up onto the Trimet access road as they wait to enter a parking stall. This has been recommended within the Traffic Report, and is the min. allowable length the City Engineer may approve with the supporting documentation of the Traffic Analysis.

4.177 (.08) 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 proposed driveways do not obstruct any public right-of-way, and have been analyzed as part of the Traffic Report, provided with this application.

4.177 (.08) 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 driveways are sized to meet Public Works standards, and to safely accommodate traffic and turning movements, and to minimize crossing distances for pedestrians. The entry driveway is 20' wide (same as the drive aisle width). The exit driveway onto Barber narrows to 15', in order to minimize pedestrian crossing distances along SW Barber St.

4.177 (.08) 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 proposed pedestrian crossing through the drive aisle is intended to be stamped concrete, to provide more awareness and safety for pedestrians crossing the parking lot.

4.177 (.08) 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: The proposed driveways and drive aisle are designed to avoid conflicts with pedestrians, parking and landscaping by clearly delineating the drive aisle from those other functions.

4.177 (.08) 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: The proposed driveway does not cross a culvert or drainage ditch. Therefore, the criterion is not applicable.

4.177 (.08) 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: A temporary driveway to access the site during construction will comply with this criteria.

4.177 (.08) 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: The proposed driveway exit on Barber St has been reviewed with the Traffic Report. This report refers to the City's Public Works Standard Section 201.2.23(h), which requires proposed driveways be

aligned with existing streets, *unless topography, existing features (tree protection) or geographic conditions do not allow for it.* This section also lists natural resources as an exception to this standard. This traffic study does not identify any safety issues with the driveway offset as proposed, but rather notes that this is a Public Works Standard that will need to be addressed.

A key concern in this project is the preservation of three very large, mature douglas fir trees on the site, which is the sole reason the driveway offset is proposed. If they were to be aligned, one of the three trees would need to be removed, as the driveway would intrude upon the critical root zone and damage the health of the tree long-term. A memo illustrating the complexities of this issue, and the need to offset the driveway in order to preserve these trees is included with this application.

4.177 (.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: No New streets are proposed with this development. Therefore, the criterion is not applicable.

4.177 (.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., one-way), turning restrictions (e.g., right in/out only), or other mitigation.*

Response: The driveway entrance from the Trimet access road and the driveway exit onto SW Barber St have been reviewed within the Traffic Report and meet the required spacing standards of this section.

Section 4.179. Mixed Solid Waste and Recyclables Storage in New Multi-Family Residential and Non-Residential Buildings

4.179(.01) *All site plans for multi-family 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.*

Response: The proposed waste and recyclable storage is illustrated on sheet A001. A shared trash/recycling storage room is located within the proposed building and is located on the ground floor adjacent to the parking lot drive aisle is provided. The room has been sized in coordination with Republic Services to appropriately accommodate the anticipated waste and recycling needs of the 121 residential units and proposed commercial spaces. See above Service Provider letter from Republic Services, included with this application. The criterion is met.

4.179(.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 storage area calculation is based on the predominant use of the building and quantity of residential units. See response to section 4.179(.03)-(.07) below.

4.179(.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 project summary and ground floor plan is illustrated on sheet A001. The project has a total of 134,235 gross square feet and is the predominant use is the 121 residential units and associated amenity spaces. Commercial use only accounts for 3,600 sf, or roughly 3% of the floor area. Therefore, the multi-family standard should be applied when calculating the storage area requirement for this project.

4.179(.04) *Storage areas for multiple uses on a single site may be combined and shared.*

Response: The proposal utilizes a shared waste and recycling storage room for both residential and retail as illustrated on sheet A001. Therefore, the criterion is met.

4.179(.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 proposed layout and quantity of storage containers is illustrated on sheet A101. There is no vertical stacked storage proposed.

4.179(.06) *The specific requirements for storage area are as follows:*

- A. *multi-family 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: The storage area provided for trash/recycling is equivalent to 1,100 sf of area. This includes a small trash/recycling room on each of the upper floors for residents, as well as a 600 sf shared trash/recycling room on the ground floor for residents as well as commercial tenants. Although the residential use calculation governs the size of the storage area required, the proposal provides storage area in excess of the residential and commercial space storage areas calculated separately, per below. Therefore, the criterion is met.

Residential Use storage area:

$$50 \text{ sf} + 111 \text{ units (above 10)} \times 5 \text{ sf} = 605 \text{ sf required}$$

Commercial Use storage area:

$$10 \text{ sf} / 1,000 \text{ sf} = \sim 36 \text{ sf required}$$

Proposed: 100 sf trash room & chute on each level 2-5 + 600 sf trash/recycling room on ground floor = 1,100 sf storage area

4.179(.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: See Service Provider Letter from Republic Services, included with this application, for approval of the proposed site plan and trash/recycling rooms. Sheet A001 shows the proposed site plan & sheet A101 shows enlarged plans of the designated waste and recycling rooms within the building.

4.179(.08) Existing multi-family 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-Family 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: Section not applicable, as this development will be all new construction.

Section 4.199. Outdoor Lighting.

Section 4.199.10. Outdoor Lighting In General.

4.199.10 (.01) Purpose. The purpose of this Code is to provide regulations for outdoor lighting that will:

- A. Permit reasonable uses of outdoor lighting for nighttime safety, utility, security, productivity, enjoyment and commerce.
- B. Conserve energy and resources to the greatest extent possible.
- C. Minimize glare, particularly in and around public rights-of-way; and reduce visual discomfort and improve visual acuity over large areas by avoiding "light islands" and "spotlighting" that result in reduced visual perception in areas adjacent to either the source of the glare or the area illuminated by the glare.
- D. Minimize light trespass, so that each owner of property does not cause unreasonable light spillover to other property.
- E. Curtail the degradation of the nighttime environment and the night sky.
- F. Preserve the dark night sky for astronomy and enjoyment.
- G. Protect the natural environment, including wildlife, from the damaging effects of night lighting from human sources.

4.199.10 (.02) Purpose Statement as Guidelines: Declaration of purpose statements are guidelines and not approval criteria in the application of WC Section 4.199.

Response: The proposed exterior lighting will be designed to promote nighttime safety in and around the site, minimize glare to adjacent areas and into residential dwelling units within the project, and to preserve the dark night sky and limit light pollution. See sheet A003 – Exterior Lighting Plan for proposed fixture type and location. Fixture cutsheets are included within Appendix A of this narrative.

Section 4.199.20. Applicability.

4.199.20 (.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 proposal consists of a new mixed-use multi-family housing development with a small amount of commercial space. Therefore, the criterion applies.

4.199.20 (.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.*

Section 4.199.40. Lighting Systems Standards for Approval.

4.199.40 (.01) Non-Residential Uses and Common Residential Areas.

4.199.40 (.01) A. All outdoor lighting shall comply with either the Prescriptive Option or the Performance Option below.

4.199.40 (.01) 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 three 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 three 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 three times the mounting height of the luminaire, or shall employ a house side shield to protect the natural resource area.

Response: See sheet A003 – Exterior Lighting Plan for proposed fixture type and location. Fixture cutsheets are included within Appendix A of this narrative. The proposal will comply with the requirements set forth here, as well as the LZ-2 requirements of Tables 7 & 8. There are three parking lot light fixtures that are located within the required setback, based on mounting height. These fixtures meet exception 3 above. There are several exterior wall-mounted sconces located along the northern and eastern facades that are located within the required mounting height setback. These fixtures meet exception 4 above. See additional documentation on the setbacks shown on sheet A003.

4.199.40 (.01) 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 percent 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: Proposed exterior lighting fixtures will be controlled by an automated system to illuminate the surrounding site areas for security and safety. The site occurs in Lighting Zone LZ2, which has a 10pm curfew per table 10.

Section 4.199.50. Submittal Requirements.

4.199.50 (.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.)
- 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 proposal will comply with the prescriptive performance option, and the development is within the LZ2 lighting overlay zone, per the City Map, shown on sheet A003 – Exterior Lighting Plan. An exterior lighting plan is also provided on sheet A003 and the location and fixture types are provided. No adjustable fixtures are proposed. Cutsheets for all fixtures proposed are provided in Appendix A of this written narrative.

4.199.50 (.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 three mounting height line to demonstrate compliance with the setback requirements. For luminaires mounted within three mounting heights of the property line the compliance exception or special shielding requirements shall be clearly indicated.

Response: See sheet A003 – Exterior Lighting Plan for proposed fixture type and location. Fixture cutsheets are included within Appendix A of this narrative. Lighting mounting heights and setback lines are shown on sheet A003. There are several L1 fixtures within the required setback along SW Barber St. These fixtures will include a shield to eliminate light trespass across the property line, and therefore, meets exception 3 of section 4.199.40(.01)(B) above. There are also several L4 exterior wall-mounted fixtures along the northern and eastern frontages that are located within the lighting setback distance. These fixtures meet exception 4 of section 4.199.40(.01)(B) above.

4.199.50 (.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 ten feet higher than the height of the tallest pole.
- C. Lighting plans shall be prepared by a qualified licensed engineer.

Response: The applicant will comply with the prescriptive method. Therefore, the criterion is not applicable.

4.199.50 (.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: No special permits are included with this application. Therefore, the criterion is not applicable.

4.199.50 (.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

SECTION 4.200

LAND DIVISIONS

Section 4.200. General—Purpose.

The City Council hereby finds and deems that it is reasonable and necessary, in order to accomplish the orderly development of land within the corporate limits of the City, and in order to promote the public health, safety and general welfare of the City, to enact these sections, to be hereinafter known as the "Land Division Regulations of the City of Wilsonville, Oregon," in order to provide rules, regulations and standards to govern the approval of plats for subdivisions, land partitions, condominium divisions, and plans for other property divisions, to carry out the development pattern and plan of the City and to promote the public health, safety and general welfare thereof, and in order to lessen congestion of streets, secure safety from fires, flood, pollution and other dangers and to provide adequate light and area, and to prevent overcrowding of land, improve connectivity from one part of the community to another, and to facilitate adequate provision for transportation, water supplies, sewage, drainage, education, recreation and other needs of the people of the City, and to prescribe procedures to be followed in submitting plans and plats of land divisions for approval by the City.

Section 4.202. General—Authorization.

- (.01) Pursuant to ORS Chapter 92, plans and plats must be approved by the Planning Director or Development Review Board (Board), as specified in Sections 4.030 and 4.031, before a plat for any land division may be filed in the county recording office for any land within the boundaries of the City, except that the Planning Director shall have authority to approve a final plat that is found to be substantially consistent with the tentative plat approved by the Board.
- (.02) The Development Review Board and Planning Director shall be given all the powers and duties with respect to procedures and action on tentative and final plans, plats and maps of land divisions specified in Oregon Revised Statutes and by this Code.
- (.03) Approval by the Development Review Board or Planning Director of divisions of land within the boundaries of the City, other than statutory subdivisions, is hereby required by virtue of the authority granted to the City in ORS 92.
- (.04) No person shall sell any lot or parcel in any condominium, subdivision, or land partition until a final condominium, subdivision or partition plat has been approved by the Planning Director as set forth in this Code and properly recorded with the appropriate county.
- A. No development permit shall be issued for any lot or parcel that is not legally created in accordance with this Code.
- B. It shall be a violation of this Code to divide a tract of land into a parcel smaller than the lot size required in the Zoning Sections of this Code unless specifically approved by the Development Review Board or City Council. No conveyance of any portion of a lot, for other than a public use, shall leave a structure on the remainder of the lot with less than the minimum lot size, width, depth, frontage, yard or setback requirements, unless specifically authorized through the Variance procedures of Section 4.196 or the waiver provisions of the Planned Development procedures of Section 4.118.
- (.05) Expedited land divisions and Middle Housing land divisions, pursuant to ORS 197, shall be processed as provided in Section 4.232.
- (.06) New condominium developments shall be subject to the planned development procedures of Section 4.118 and the standards of Section 4.140.
- (.07) Condominium conversions shall be subject to the standards and procedures applicable to land divisions, and the following.
- A. Upon application, formal notice shall be provided to tenants on the land and to adjacent landowners within 250 feet of the affected property. Not less than 30 days after the formal notice, a public hearing as set forth in Section 4.013 shall be held.

B. In the case of a conversion of apartments or rental units to condominiums, a minimum of 120 days' notice shall be afforded any tenants, prior to conversion. All the provisions of the Oregon Revised Statutes shall be met, and a plat, together with a homeowners' association agreement and By-Laws, shall be submitted for Development Review Board consideration as part of the public hearing process.

C. The owner will bear the burden of proving that there are an adequate number of vacant rental units available within Wilsonville, at approximately the same costs as the units that are proposed for conversion, to house those people who may be displaced as a result of the conversion.

(.08) Lot line adjustments shall be subject to the standards and procedures established in Sections 4.233. In no case shall the boundaries between adjoining lots or parcels be altered without compliance with those standards.

Section 4.210. Application Procedure.

(.01) Pre-application conference. Prior to submission of a tentative condominium, partition, or subdivision plat, a person proposing to divide land in the City shall contact the Planning Department to arrange a pre-application conference as set forth in Section 4.010.

A. Preparation of Tentative Plat. The Planning staff shall provide information regarding procedures and general information having a direct influence on the proposed development, such as elements of the Comprehensive Plan, existing and proposed streets, roads and public utilities. The applicant shall cause to be prepared a tentative plat, together with improvement plans and other supplementary material as specified in this Section. The Tentative Plat shall be prepared by an Oregon licensed professional land surveyor or engineer. An affidavit of the services of such surveyor or engineer shall be furnished as part of the submittal.

B. Tentative Plat Submission. The purpose of the Tentative Plat is to present a study of the proposed subdivision to the Planning Department and Development Review Board and to receive approval or recommendations for revisions before preparation of a final Plat. The design and layout of this plan plat shall meet the guidelines and requirements set forth in this Code. The Tentative Plat shall be submitted to the Planning Department with the following information:

1. Site development application form completed and signed by the owner of the land or a letter of authorization signed by the owner. A preliminary title report or other proof of ownership is to be included with the application form.
2. Application fees as established by resolution of the City Council.
3. Ten copies and one sepia or suitable reproducible tracing of the Tentative Plat shall be submitted with the application. Paper size shall be 18 inch by 24 inch, or such other size as may be specified by the City Engineer.
4. Name of the subdivision. No subdivision name shall duplicate or resemble the name of any other subdivision in Clackamas or Washington County. Names may be checked through the county offices.
5. Names, addresses, and telephone numbers of the owners and applicants, and engineer or surveyor.
6. Date, north point and scale of drawing.
7. Location of the subject property by Section, Township, and Range.
8. Legal road access to subject property shall be indicated as City, County, or other public roads.
9. Vicinity map showing the relationship to the nearest major highway or street.
10. Lots. Dimensions of all lots, minimum lot size, average lot size, and proposed lot and block numbers.

11. *Gross acreage in proposed plat.*
12. *Proposed uses of the property, including sites, if any, for multi-family dwellings, shopping centers, churches, industries, parks, and playgrounds or other public or semi-public uses.*
13. *Improvements: Statement of the improvements to be made or installed including streets, private drives, sidewalks, lighting, tree planting, and times such improvements are to be made or completed.*
14. *Trees. Locations, types, sizes, and general conditions of all existing trees, as required in Section 4.600.*
15. *Utilities such as electrical, gas, telephone, on and abutting the tract.*
16. *Easements: Approximate width, location, and purpose of all existing and proposed easements on, and known easements abutting the tract.*
17. *Deed Restrictions. Outline of proposed deed restrictions, if any.*
18. *Written Statement. Information which is not practical to be shown on the maps may be shown in separate statements accompanying the Tentative Plat.*
19. *If the subdivision is to be a "Planned Development," a copy of the proposed Home Owners Association By-Laws must be submitted at the time of submission of the application. The Tentative Plat shall be considered as the Stage I Preliminary Plan. The proposed By-Laws must address the maintenance of any parks, common areas, or facilities.*
20. *Any plat bordering a stream or river shall indicate areas subject to flooding and shall comply with the provisions of Section 4.172.*
21. *Proposed use or treatment of any property designated as open space by the City of Wilsonville.*
22. *A list of the names and addresses of the owners of all properties within 250 feet of the subject property, printed on self-adhesive mailing labels. The list shall be taken from the latest available property ownership records of the Assessor's office of the affected county.*
23. *A completed "liens and assessments" form, provided by the City Finance Department.*
24. *Locations of all areas designated as a Significant Resource Overlay Zone by the City, as well as any wetlands shall be shown on the tentative plat.*
25. *Locations of all existing and proposed utilities, including but not limited to domestic water, sanitary sewer, storm drainage, and any private utilities crossing or intended to serve the site. Any plans to phase the construction or use of utilities shall be indicated.*
26. *A traffic study, prepared under contract with the City, shall be submitted as part of the tentative plat application process, unless specifically waived by the Community Development Director.*

Response: See sheet G4 for Tentative Partition Plat. Existing easements within the site (Parcel 1) are shown. Proposed easements on the site, as well as existing easements on the rest of the parcel being subdivided (Parcel 2) will be added to the Final Plat.

See sheet G2 for Vicinity Map.

See sheet A001 for minimum lot size, lot dimensions, gross acreage of site & proposed uses and areas.

See sheet C3.00 for all ROW improvements along Barber St, all utilities abutting the tract, existing and proposed easements, locations of all existing and proposed utilities crossing or intended to serve the site.

See landscape sheets L1-L5 for all trees to be retained/removed and Arborist's report for health of all trees.

Section 4.236. General Requirements—Streets.

(.01) Conformity to the Transportation System Plan. Land divisions shall conform to and be in harmony with the Transportation Systems Plan, the Bicycle and Pedestrian Master Plan, and the Parks and Recreation Master Plan.

(.02) Relation to Adjoining Street System:

- A. A land division shall provide for the continuation of the principal streets existing in the adjoining area, or of their proper projection when adjoining property is not developed, and shall be of a width not less than the minimum requirements for streets set forth in these regulations. Where, in the opinion of the Planning Director or Development Review Board, topographic conditions make such continuation or conformity impractical, an exception may be made. In cases where the Board or Planning Commission has adopted a plan or plat of a neighborhood or area of which the proposed land division is a part, the subdivision shall conform to such adopted neighborhood or area plan.*
- B. Where the plat submitted covers only a part of the applicant's tract, a sketch of the prospective future street system of the unsubmitted part shall be furnished and the street system of the part submitted shall be considered in the light of adjustments and connections with the street system of the part not submitted.*
- C. At any time when an applicant proposes a land division and the Comprehensive Plan would allow for the proposed lots to be further divided, the City may require an arrangement of lots and streets such as to permit a later resubdivision in conformity to the street plans and other requirements specified in these regulations.*

Response: The proposed land division includes the subdivision of *Partition Parcel 3, Partition Plat 2008-033, Clackamas County Plat Records*, into two parcels. Parcel 2 will include the existing bus turnaround and associated sidewalk improvements, while Parcel 1 will include the area within the existing sidewalk improvements and is the subject site for the proposed development. This division will not affect or alter the existing street network and maintains conformity to the Transportation System Plan. See Tentative Partition Plat located on sheet G4 of the land use drawings.

(.03) All streets shall conform to the standards set forth in Section 4.177 and the block size requirements of the zone.

Response: See responses to section 4.177 within this narrative document.

(.04) Creation of Easements. The Planning Director or Development Review Board may approve an easement to be established without full compliance with these regulations, provided such an easement is the only reasonable method by which a portion of a lot large enough to allow partitioning into two parcels may be provided with

vehicular access and adequate utilities. If the proposed lot is large enough to divide into more than two parcels, a street dedication may be required.

Response: Existing sanitary sewer and waterline easements within Parcel 2 to remain, for access to the parcel to the north.

(.05) Topography. The layout of streets shall give suitable recognition to surrounding topographical conditions in accordance with the purpose of these regulations.

Response: No new streets are proposed. Therefore, the criterion does not apply.

(.06) Reserve Strips. The Planning Director or Development Review Board may require the applicant to create a reserve strip controlling the access to a street. Said strip is to be placed under the jurisdiction of the City Council, when the Director or Board determine that a strip is necessary:

- A. To prevent access to abutting land at the end of a street in order to assure the proper extension of the street pattern and the orderly development of land lying beyond the street; or*
- B. To prevent access to the side of a street on the side where additional width is required to meet the right-of-way standards established by the City; or*
- C. To prevent access to land abutting a street of the land division but not within the tract or parcel of land being divided; or*
- D. To prevent access to land unsuitable for building development.*

Response: Understood. No reserve strips are anticipated to be required with this development.

(.07) Future Expansion of Street. When necessary to give access to, or permit a satisfactory future division of, adjoining land, streets shall be extended to the boundary of the land division and the resulting dead-end street may be approved without a turn-around. Reserve strips and street plugs shall be required to preserve the objective of street extension. Notification that the street is planned for future extension shall be posted on the stub street.

Response: No future streets are planned around the site, based on the Transportation System Plan.

(.08) Existing Streets. Whenever existing streets adjacent to or within a tract are of inadequate width, additional right-of-way shall conform to the designated width in this Code or in the Transportation Systems Plan.

Response: The site borders SW Barber St to the south, which is classified and functions as a Collector Street and is of adequate width to meet the standards of the Transportation System Plan. No additional right-of-way is proposed with the development.

(.09) Street Names. No street names will be used which will duplicate or be confused with the names of existing streets, except for extensions of existing streets. Street names and numbers shall conform to the established name system in the City, and shall be subject to the approval of the City Engineer.

Response: No new streets are proposed with the land division. Therefore, the criterion does not apply.

(Ord. No. 682, 9-9-2010; Ord. No. 719, 6-17-2013)

Section 4.237. General Requirements—Other.**(.01) Blocks:**

- A. *The length, width, and shape of blocks shall be designed with due regard to providing adequate building sites for the use contemplated, consideration of needs for convenient access, circulation, control, and safety of pedestrian, bicycle, and motor vehicle traffic, and recognition of limitations and opportunities of topography.*
- B. *Sizes: Blocks shall not exceed the sizes and lengths specified for the zone in which they are located unless topographical conditions or other physical constraints necessitate larger blocks. Larger blocks shall only be approved where specific findings are made justifying the size, shape, and configuration.*

Response: The proposed development is within the PDI zone, which is subject to the same block and access standards as the PDC zone, found in section 4.131(.03). The existing block length and depth is not proposed to be changed with the land division. It is of adequate size to support the proposed mixed-use development, and maintains convenient access, circulation, control and safety of pedestrian, bicycle and motor vehicle traffic. A new driveway entrance to the proposed on-site parking lot is proposed on the western edge of the site, and a driveway exit is proposed roughly mid-block on SW Barber St. A traffic impact analysis has been performed and is included with this Land Use Application.

The length of the block in the east-west direction is ~420', and no new pedestrian crossing is proposed along Barber St, as this area is primarily industrial. An existing pedestrian crossing occurs at the intersection of SW Barber & SW Kinsman Rd, just west of the site. Also see response to section 4.135 (.04) *Block and Access Standards*, within this written narrative.

(.02) Easements:

- A. *Utility lines. Easements for sanitary or storm sewers, drainage, water mains, electrical lines or other public utilities shall be dedicated wherever necessary. Easements shall be provided consistent with the City's Public Works Standards, as specified by the City Engineer or Planning Director. All of the public utility lines within and adjacent to the site shall be installed within the public right-of-way or easement; with underground services extending to the private parcel constructed in conformance to the City's Public Works Standards. All franchise utilities shall be installed within a public utility easement. All utilities shall have appropriate easements for construction and maintenance purposes.*
- B. *Water courses. Where a land division is traversed by a water course, drainage way, channel or stream, there shall be provided a storm water easement or drainage right-of-way conforming substantially with the lines of the water course, and such further width as will be adequate for the purposes of conveying storm water and allowing for maintenance of the facility or channel. Streets or parkways parallel to water courses may be required.*

Response: The existing and proposed easements are shown on sheets G4 – Tentative Partition Plat, and sheet A001 – Land Use Site Plan. An existing 8' wide Public Utility Easements occurs along SW Barber St at the western edge of the site via Amendment 2016-026445 2016-04-14. An existing 6' wide Public Utility Easement occurs in the middle and eastern portion of the site – this easement is proposed to be widened to 8' to conform with the Public Works Standards for Collector Streets (101.8.14 Easements, Table 1.1). The Land division is not traversed by a water course, therefore section B of this standard does not apply.

(.03) Pedestrian and bicycle pathways. An improved public pathway shall be required to transverse the block near its middle if that block exceeds the length standards of the zone in which it is located.

- A. *Pathways shall be required to connect to culs-de-sac or to pass through unusually shaped blocks.*

- B. Pathways required by this subsection shall have a minimum width of ten feet unless they are found to be unnecessary for bicycle traffic, in which case they are to have a minimum width of six feet.

Response: The site is located along SW Barber St, and is flanked by an existing access road for the Trimet parking lot on the west, and by an existing access road to the Bus depot and turnaround on the east. The total block size is approximately 190 ft x 420 ft. No new pedestrian or bicycle pathway is proposed through the site, as there is ample connectivity that exists on either side of the site to access the Bus Depot and Trimet lot to the north. Additionally, no new pedestrian crossing is proposed along Barber St per section 4.135 (.04).

- (.04) Tree planting. Tree planting plans for a land division must be submitted to the Planning Director and receive the approval of the Director or Development Review Board before the planting is begun. Easements or other documents shall be provided, guaranteeing the City the right to enter the site and plant, remove, or maintain approved street trees that are located on private property.

Response: A tree planting plan is provided on sheet L4 – Level 1 Planting Plan, located in the Land Use Drawings. There are no proposed street trees on private property. All new street trees proposed are located within the right-of-way.

- (.05) Lot Size and shape. The lot size, width, shape and orientation shall be appropriate for the location of the land division and for the type of development and use contemplated. Lots shall meet the requirements of the zone where they are located.

- A. In areas that are not served by public sewer, an on-site sewage disposal permit is required from the City. If the soil structure is adverse to on-site sewage disposal, no development shall be permitted until sewer service can be provided.
- B. Where property is zoned or deeded for business or industrial use, other lot widths and areas may be permitted at the discretion of the Development Review Board. Depth and width of properties reserved or laid out for commercial and industrial purposes shall be adequate to provide for the off-street service and parking facilities required by the type of use and development contemplated.
- C. In approving an application for a Planned Development, the Development Review Board may waive the requirements of this section and lot size, shape, and density shall conform to the Planned Development conditions of approval.

Response: The proposed site is roughly 190' in the north-south direction and 420' long in the east-west direction. No new pedestrian crossing is proposed in the north-south direction through the site, as the area is primarily industrial and existing pedestrian connections exist on both the east and west sides of the site, allowing adequate access to the Bus Depot and Trimet parking lot to the north of the site. Additionally, the shallow 190' depth of the site, as well as poor soil infiltration necessitating the need for large stormwater planters, limit the amount of site area available for a new N/S pedestrian connection. The building footprint proposed is necessary to provide adequate affordable housing options and services for those in need.

- (.06) Access. The division of land shall be such that each lot shall have a minimum frontage on a street or private drive, as specified in the standards of the relative zoning districts. This minimum frontage requirement shall apply with the following exceptions:

- A. A lot on the outer radius of a curved street or tract with a private drive, or facing the circular end of a cul-de-sac shall have frontage of not less than 25 feet upon a street or tract with a private drive, measured on the arc.
- B. The Development Review Board may waive lot frontage requirements where in its judgment the waiver of frontage requirements will not have the effect of nullifying the intent and purpose of this regulation

or if the Board determines that another standard is appropriate because of the characteristics of the overall development.

Response: Per Section 4.116 (.10) for commercial developments, the proposed site does not have a minimum frontage requirement. However, the site has a frontage along SW Barber St of ~390', providing adequate access to the parcel.

(.07) Through lots. Through lots shall be avoided except where essential to provide separation of residential development from major traffic arteries or adjacent non-residential activity or to overcome specific disadvantages of topography and orientation. A planting screen easement of at least ten feet, across which there shall be no access, may be required along the line of lots abutting such a traffic artery or other disadvantageous use. Through lots with planting screens shall have a minimum average depth of 100 feet. The Development Review Board may require assurance that such screened areas be maintained as specified in Section 4.176.

Response: No through-lots are proposed with the land division. Therefore, the criterion is not applicable.

(.08) Lot side lines. The side lines of lots, as far as practicable for the purpose of the proposed development, shall run at right angles to the street or tract with a private drive upon which the lots face.

Response: The proposed land division includes side lines that run at right angles to the street or access road, wherever possible. At the NW corner of the parcel, the boundary follows the edge of the existing curved sidewalk around the bus turnaround.

(.09) Large lot land divisions. In dividing tracts which at some future time are likely to be re-divided, the location of lot lines and other details of the layout shall be such that re-division may readily take place without violating the requirements of these regulations and without interfering with the orderly development of streets. Restriction of buildings within future street locations shall be made a matter of record if the Development Review Board considers it necessary.

Response: The proposed Land Division is intended to create one parcel of land for the proposed multifamily development. No further subdivision of this parcel is anticipated in the future.

(.10) Building line. The Planning Director or Development Review Board may establish special building setbacks to allow for the future redivision or other development of the property or for other reasons specified in the findings supporting the decision. If special building setback lines are established for the land division, they shall be shown on the final plat.

Response: The proposed Land Division is intended to create one parcel of land that is not anticipated to have future redivisions. No special building setback lines are anticipated. See section 4.113 (.02) regarding the required and proposed building setbacks for this development.

(.11) Build-to line. The Planning Director or Development Review Board may establish special build-to lines for the development, as specified in the findings and conditions of approval for the decision. If special build-to lines are established for the land division, they shall be shown on the final plat.

Response: Understood. No special build-to lines are anticipated for the proposed development.

(.12) Land for public purposes. The Planning Director or Development Review Board may require property to be reserved for public acquisition, or irrevocably offered for dedication, for a specified period of time.

Response: Understood.

(.13) Corner lots. Lots on street intersections shall have a corner radius of not less than ten feet.

Response: The proposed parcel is bordered by private drives on the east and west sides of the parcel and SW Barber St to the south. Therefore, the criterion does not apply.

(Ord. No. 682, 9-9-2010)

SECTION 4.300

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 opening at 50,000 volts or more.

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.*

Response: All utilities will be located underground. The project will provide any necessary easements to accommodate the utility services.

(.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.*

Response: All utilities will be located underground. The project will provide any necessary easements to accommodate the utility services. Surface mounted transformers are shown on sheet A-001 – Land Use Site Plan.

(.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: All utilities will be located underground. The project will provide any necessary easements to accommodate the utility services.

SECTION 4.400

SITE DESIGN REVIEW

Section 4.400. Purpose.

4.400 (.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.*

Response: The proposed development utilizes high quality architectural & landscape design to achieve the purposes of this section. The building has a unique architectural expression, taking inspiration from modern vehicular and public transit design to create a striking piece of architecture that seeks to create a sense of place and destination in this light-industrial part of the city, centered around public transit. High-quality materials are proposed on the exterior, including standard and glazed brick, and metal panel arranged in a stylized pattern designed to invoke movement and visual interest.

4.400 (.02) *The City Council declares that the purposes and objectives of site development requirements and the site design review procedure are to:*

4.400 (.02) 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.*

Response: The proposed site plan features a small, efficient parking layout with an access drive aisle. Careful attention has been made to provide distinct pedestrian paths through and around the parking lot, that link pedestrians to all main entrances of the building and the adjacent sidewalks at the perimeter of the site. The exterior design of the building contributes to the presence of a high quality visual environment.

4.400 (.02) B. *Encourage originality, flexibility and innovation in site planning and development, including the architecture, landscaping and graphic design of said development;*

Response: The proposed development offers a mix of uses, including 121 affordable housing units, commercial retail space and a transit welcome center. Being a transit-oriented development, the architectural design takes inspiration from modern vehicular and transit design, and provides a high-quality architectural landmark within this industrial area of the City.

4.400 (.02) C. *Discourage monotonous, drab, unsightly, dreary and inharmonious developments;*

Response: The architectural design of the proposed project offers a unique and exciting visual character, which draws inspiration from modern transport design and the idea of create movement within a static architectural form.

4.400 (.02) 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;*

Response: Care has been taken to design the site plan and building around the three mature douglas fir trees, in order to maintain the natural beauty of the site and surrounding area. A children’s play area has been designed to make use of the natural area at the base of the trees, to further integrate these valued trees into the design and everyday functioning of the project. Much of the site has been designed as new planted areas, to further ground the architecture in the natural environment. The placement of all code-required site signage will be carefully considered to ensure that it blends in with the natural character of the development.

4.400 (.02) 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;*

Response: The proposed development includes a Café/taproom, which provides a great amenity to draw people in and make this a new destination hub within the City, which did not exist before. It’s convenient access to public transit will further the ability of this project to act as a destination, thereby promoting future investment and occupancy in business, commercial and industrial purposes.

4.400 (.02) F. *Stabilize and improve property values and prevent blighted areas and, thus, increase tax revenues;*

Response: The high-quality architectural design and materials, as well as the additional commercial functions of the Café/Taproom, Community Food Bank and Transit Welcome Center will improve property values and, thus, increase tax revenues while promoting future development.

4.400 (.02) 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.*

Response: Adequate public facilities will be provided to serve the proposed development, including underground utilities, trash/recycling collection, and fire department access. See sheet C.300 – Utility Plan for all site utilities as well as service provider permits from TVF&R and Republic Services, provided with this application.

4.400 (.02) 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;*

Response: The proposed development, with the addition of 121 new dwelling units and commercial space, will provide significant surveillance opportunities to prevent crime. The open spaces throughout the site remain visually open and sight-obscuring fences and the creation of hidden spaces not easily surveilled has been avoided on this project. The exterior resident amenity and children’s play area features a fence that separates this area from the rest of the site and allows only residents entry. The fence will have visibility through it, and will help promote safety and security for residents and their children.

4.400 (.02) 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;*

Response: The proposed project will offer much-needed affordable housing and social services to the City of Wilsonville, while featuring high-quality architectural and landscape design. By providing future residents new affordable housing opportunities, this will promote their sense of place and community and will help foster civic pride and community spirit.

4.400 (.02) 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 proposed project will offer attractive new affordable housing opportunities for residents, fulfilling a significant demand during this current housing shortage. The project plays a key part of the City's Equitable Strategic Housing Plan and will offer new housing opportunities to those that have not had access to housing.

Section 4.421. Criteria and Application of Design Standards.

4.421 (.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.)*

4.421 (.01) 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 aims to mitigate it's impact on the existing landscaping and grading of the site in a number of ways. The building itself has been designed around the three large douglas fir trees being maintained, and the building slabs are designed to follow the existing grades around the site as best possible, to reduce the necessary cut and fill. The area around the trees to remain needs to be as un-disturbed as possible, including any changes to grading, as any changes could affect the health of the trees (see arborist report included with this application). A raised, permeable deck is proposed around the trees to provide recreational and social opportunities for residents, and that is tied to the existing natural features of the site. Beyond this area, additional landscaped areas are proposed throughout the site plan for stormwater treatment, landscaping screening/buffering and general visual enjoyment. See sheets A001 – Land Use Site Plan & L2 – Level 1 Materials Plan.

4.421 (.01) 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: The site is gradually sloped across it's length, so there are no steep slopes present. Although some existing trees will be removed, more trees will be planted to replace them and restore any wildlife

habitat lost. The three largest douglas fir trees are proposed to be maintained, and the building is designed to wrap around them and create a unique natural-feeling outdoor resident amenity area, along with a children's play area. These trees will provide wildlife habitat and also be a focal point for this development, as this area will be the heart of the resident gathering area and social life of the residents. *See sheets G3 – Existing Conditions / Survey & A001 – Land Use Site Plan for reference.*

4.421 (.01) 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: A modest on-site parking lot with 15 parking stalls and a one-way drive aisle is proposed with this development. The entrance driveway is off of the private access road that leads to the Trimet parking lot to the north, and the drive aisle exits onto SW Barber St. The location of these two points is being analyzed as part of the Traffic Study, which is included with this application. The parking lot design features distinct pedestrian walkways through and around it, to separate pedestrians and vehicles, and is properly screened from the sidewalk at the right-of-way along Barber by landscaping and parking lot trees. *See sheet A001 – Land Use Site Plan & L4 – Level 1 Planting Plan.*

4.421 (.01) 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: All on-site impervious areas have been designed and graded to drain into new flow-through stormwater treatment planters. This will help capture and treat any contaminated runoff through natural infiltration, instead of draining directly into the public storm drainage system. *See sheet C2.00 – Site Grading Plan.*

4.421 (.01) 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: All above-ground utilities will be screened with landscaping, to maintain a harmonious relation to neighboring properties and the remainder of the site. The building sanitary sewer connection runs to the main line along SW Barber St, and the roof areas will collect stormwater and direct it to stormwater planters located throughout the site for infiltration/treatment. *See sheet C3.00 – Utility Plan.*

4.421 (.01) 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: All exterior signs and outdoor advertising structures shall be designed in harmony with the design of the proposed building and site. A Master Sign Plan is included with this application, and sets forth standards to ensure this goal is met.

4.421 (.01) 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: No exterior storage areas or exposed machinery installations are proposed with this development. A designated vehicular loading zone is proposed at the eastern edge of the drive aisle, located between the building and the outdoor resident amenity/children's play area. The loading area is enclosed on three sides by landscape plantings, including a generous stormwater planter with small trees. The intent is to screen this area from the building and the surrounding site, while providing a functional space for residents, which is separate from the on-site drive aisle and parking lot area.

4.421 (.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 applicant notes that Sections (a) through (g) will also apply to those elements listed here.

4.421 (.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: See responses provided for section 4.400 below.

4.421 (.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 notes that conditional approval may be required as part of this application.

4.421 (.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 notes that conditions of approval may be required with this application, although they shall not be used to unnecessarily increase the cost of housing for this much-needed affordable housing development.

4.421 (.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.*

Response: Exterior cladding materials & colors are illustrated on sheet A900 – Renderings & Exterior Materials.

4.421 (.06) 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.*

Response: The applicant understands that certain colors or exterior materials must be used if included as a condition of approval with this application.

4.421 (.06) 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 will be subject to the conditions of approval for this application in regards to any changes of color.

Section 4.440. Procedure.

4.440 (.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:*

4.440 (.01) 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.*

Response: See sheet A001 – Land Use Site Plan for general site layout, sheet C2.00 for site grading, and sheet C3.00 for all site utility connections. The existing and proposed PUEs, along with fire line easement, have been identified and dimensioned on sheet C3.00.

4.440 (.01) 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 four inch 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 is necessary.*

Response: A landscape planting plan is provided with this application. See sheet L4 – Level 1 Planting Plan, as well as additional information on landscape sheets L1, L2 & L3.

4.440 (.01) 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.*

Response: Architectural floor plans, exterior elevations, renderings and building sections are provided to illustrate the design of the proposed development. See sheets A001& A101 – A900.

4.440 (.01) 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.

Response: A color board/materials legend is provided on sheet A900.

4.440 (.01) E. A sign Plan, drawn to scale, showing the location, size, design, material, color and methods of illumination of all exterior signs.

Response: See sign plan provided on sheet A002.

4.440 (.01) F. The required application fee.

4.440 (.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.*

Section 4.430. Location, Design and Access Standards for Mixed Solid Waste and Recycling Areas.

4.430 (.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.*

4.430 (.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 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 proposed waste and recycling access and storage areas are illustrated on sheet A101 – Floor Plan – Level 1. All storage areas for trash and recycling are located within the building, and contain storage facilities for both waste and recycling, to encourage use. The storage areas consist of a small room on each upper floor (levels 2-5) for residents that contains a trash chute, as well as 2 co-mingle recycling bins. A common ground floor trash room is provided for all building users, including residents and commercial tenants. The storage areas and bin quantities have been sized according to section 4.179 as well as discussions with Republic Services. See service provider letter from Republic Services provided above in this narrative. Therefore, the criterion of A & C is met.

All storage areas will comply with Building and Fire code requirements, meeting criterion B. There are no exterior storage areas, therefore, criterion D, E & F are not applicable. The collection area is located within the drive aisle immediately adjacent to the ground floor trash room, for ease of access by the service provider.

4.430 (.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 feet in height. Gate openings for haulers shall be a minimum of ten 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 proposed waste and recycling access and storage areas are illustrated on sheet A101 – Floor Plan – Level 1. The applicant has also provided a service provider letter from Republic Services – see letter provided above in this narrative. The dimensions of the storage rooms & quantity/sizes of containers has been sized according to section 4.179 and has been reviewed and approved by Republic Services. Storage containers shall be designed to meet all building and fire code requirements. Therefore, criterion A & B is met. There are no exterior storage containers, therefore, criterion C is not applicable. Storage areas and containers will be clearly labeled to indicate the type of materials accepted, meeting the criterion of section D.

4.430 (.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 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 proposed waste and recycling access and storage areas are illustrated on sheet A101 – Floor Plan – Level 1. Access to the storage areas will be limited to building residents & tenants only, for security. The service provider (Republic Services) will be given access to the ground floor trash room via an overhead door opener, for times of collection. The storage area is located immediately adjacent to the proposed on-site drive aisle, to provide close proximity to the area of collection. The collection vehicle will utilize the one-way drive aisle on the site for collection purposes, which will not require backing out onto a public street. Adequate turning radius is provided along the drive aisle, to enable the collection vehicle to safely exit the site in a forward motion. Therefore, criterion A, B & C is met.

SECTION 4.600 TREE PRESERVATION & PROTECTION

Section 4.600. Purpose and Declaration.

(.01) Rapid growth, the spread of development, need for water and increasing demands upon natural resources have the effect of encroaching upon, despoiling, or eliminating many of the trees, other forms of vegetation, and natural resources and processes associated therewith which, if preserved and maintained in an undisturbed and natural condition, constitute important physical, aesthetic, recreational and economic assets to existing and future residents of the City of Wilsonville.

(.02) Specifically, the City Council finds that:

- A. Woodland growth protects public health through the absorption of air pollutants and contamination, through the reduction of excessive noise and mental and physical damage related to noise pollution, and through its cooling effect in the summer months, and insulating effects in winter;
- B. Woodlands provide for public safety through the prevention of erosion, siltation, and flooding; and
- C. Trees make a positive contribution to water quality and water supply by absorbing rainfall, controlling surface water run-off, and filtering and assisting in ground water recharge; and
- D. Trees and woodland growth are an essential component of the general welfare of the City of Wilsonville by producing play areas for children and natural beauty, recreation for all ages and an irreplaceable heritage for existing and future City residents.

Response: The proposal seeks a balance to providing necessary new development in the form of mixed-use affordable housing, with the preservation of the natural environment. Several trees are proposed to be maintained and featured as a key element of the exterior site design, and all other trees to be removed will be replaced on the site. Generous landscaped areas, including stormwater treatment planters, will also be provided to mitigate added impervious area proposed with this development, and treat stormwater naturally.

(.03) Therefore, the purposes of this subchapter are:

- A. To preserve Significant Resource Overlay Zone areas, recognizing that development can and will occur.
- B. To provide for the protection, preservation, proper maintenance and use of trees and woodlands in order to protect natural habitat and prevent erosion.
- C. To protect trees and other wooded areas for their economic contribution to local property values when preserved, and for their natural beauty and ecological or historical significance.
- D. To protect water quality, control surface water run-off, and protect ground water recharge.
- E. To reflect the public concern for these natural resources in the interest of health, safety and general welfare of Wilsonville residents.
- F. To encourage replanting where trees are removed.

Response: See response to section 4.600(.02) above.

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: This section applies to the development, as it is within the Wilsonville City limits, although the proposed site is not part of the SROZ or the Willamette River Greenway.

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.

Response: A Type C Tree Removal Permit is included with this application.

(.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: The proposal is not within the Willamette River Greenway. Therefore this criterion is not applicable.

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:

Response: No exceptions are being utilized for the proposed development. Therefore, this criterion is not applicable.

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 site plan 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 Type C Tree Removal Permit is requested with this application.

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.
- (.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.
- (.03) Reviewing Authority.
- A. Type A or B. Where site plan review or plat approval by the Development Review Board is not required by City ordinance, the grant or denial of the Tree Removal Permit application shall be the responsibility of the Planning Director. The Planning Director has the authority to refer a Type B permit application to the DRB under the Class II administrative review procedures of this Chapter. The decision to grant or deny a permit shall be governed by the applicable review standards enumerated in WC 4.610.10.
 - 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.
 - C. Type D. Type D permit applications shall be subject to the standards and procedures of Class I administrative review and shall be reviewed for compliance with the Oregon Forest Practice Rules and Statutes. The Planning Director shall make the decision to grant or deny an application for a Type D permit.
 - D. Review period for complete applications. Type A permit applications shall be reviewed within ten working days. Type B permit applications shall be reviewed by the Planning Director within 30 calendar days, except that the DRB shall review any referred application within 60 calendar days. Type C permit applications shall be reviewed within the time frame established by this Chapter. Type D permit applications shall be reviewed within 15 calendar days.
- (.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 250 feet 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.
- (.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.
- (.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: A Type C Tree Removal Permit is requested with this application.

Section 4.610.10. Standards for Tree Removal, Relocation or Replacement.

4.610.10 (.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:*

4.610.10 (.01) 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 proposed site is not part of the SROZ. Therefore, this section is not applicable.

4.610.10 (.01) 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 applicant takes great concern with tree preservation on this site, and has designed the project to maintain three mature douglas fir trees, and integrate them into the proposed outdoor landscaping and seating area as a prominent design feature.

4.610.10 (.01) 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: Careful consideration of the building footprint and on-site parking lot has been made in regards to the proposed development. Given the relatively small site and the desired level of affordable housing with this development, the proposed layout maximizes the functionality and preservation of open space and existing trees.

4.610.10 (.01) 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: The proposed development will limit land clearing to areas that are necessary for the construction of this project.

4.610.10 (.01) 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 includes a mixed-use affordable housing building. Ground floor units are screened from adjacent streets/rights-of-way by landscape shrubs, and there are perimeter

trees proposed that will screen the rest of the building from adjacent areas, thereby blending in with the natural landscape surroundings. See sheet L4 – Level 1 Planting Plan for landscape plantings.

4.610.10 (.01) F. Compliance With Statutes and Ordinances. The proposed activity shall comply with all applicable statutes and ordinances.

Response: The proposed development will comply with all applicable statutes and ordinances.

4.610.10 (.01) 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: The proposed development will comply with sections 4.620.00 & 4.620.10 – see responses to those section within this narrative.

4.610.10 (.01) 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 proposed site plan design locates the building primarily along the northern and eastern edges of the site, to preserve the large douglas fir trees near the center. Many of the other existing trees will need to be removed to accommodate other on-site improvements including the small parking lot, pedestrian walkways and exterior resident amenity areas. However, all trees being removed will be replaced with new trees throughout the site in order to maintain the same or greater level of tree coverage on this site.

4.610.10 (.01) 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 Maintenance & Protection Plan is provided within the Arborist's analysis & report, performed by Teragan & Associates dated 7/25/2023 and included with this application.

4.610.10 (.01) J. *Exemption.* Type D permit applications shall be exempt from review under standards D, E, H and I of this subsection.

Response: The applicant requests a Type C Tree permit. Therefore, this criterion is not applicable.

Section 4.610.40. Type C Permit.

4.610.40 (.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.*

4.610.40 (.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 equals 100 feet and which provides a) the location of all trees having six inches 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 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.

Response: A Tree Maintenance & Protection Plan is provided within the Arborist's analysis & report, performed by Teragan & Associates dated 7/25/2023 and included with this application.

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."*

Response: A Tree Maintenance & Protection Plan is provided within the Arborist's analysis & report, performed by Teragan & Associates dated 7/25/2023 and included with this application. This packet includes a tree survey, tree removal plan, and tree protection plan for the 3 large doug fir trees to remain. Therefore, criterion 1, 2 & 3 is met.

4. *Easements and Setbacks. Location and dimension of existing and proposed easements, as well as all setbacks required by existing zoning requirements.*

Response: The proposed project will comply with this. See sheet A001 – Land Use Site Plan for all required building setbacks and easements.

5. *Grade Changes. Designation of grade changes proposed for the property that may impact trees.*

Response: The proposed grading is shown on sheet C2.00 – Site Grading Plan. Care has been taken to minimize grading changes around the three trees being retained, as recommended in the Arborist Report.

6. *Cost of Replacement. A cost estimate for the proposed tree replacement program with a detailed explanation including the number, size and species.*

Response: All required replacement trees are being provided. See response to section 4.620.00 (.06) below.

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: All trees being retained will be identified by numbered metal tags, and are shown on the land use site plan and landscape tree inventory plan – see sheets A001 & L1.

Section 4.620.00. Tree Relocation, Mitigation, or Replacement.

4.620.00 (.01) *Requirement Established.* A Type B or C Tree Removal Permit grantee shall replace or relocate each removed tree having six inches or greater d.b.h. within one year of removal.

Response: There are 24 trees to be removed that are 6" d.b.h. or greater. Therefore, 24 replacement trees will be required. This development proposes the planting of 36 trees on the site to meet the perimeter tree requirement.

4.620.00 (.02) *Basis For Determining Replacement.* The permit grantee shall replace removed trees on a basis of one tree replanted for each tree removed. All replacement trees must measure two inches 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: Replacement trees will be provided on a 1:1 basis. See response to section 4.620(.01) above.

4.620.00 (.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 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: See sheet L4 – Level 1 Planting Plan for proposed tree locations and type.

4.620.00 (.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: The proposed trees will meet this requirement.

4.620.00 (.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: All replacement trees are proposed on-site, to preserve shading and natural amenities for the residents of this development. See sheet L4 – Level 1 Planting Plan for proposed locations.

4.620.00 (.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: All required replacement trees are being provided. Therefore, payment into the City Tree Fund will not be required.

4.620.00 (.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: The applicant is providing the required replacement trees and does not require an exception.

Section 4.620.10. Tree Protection During Construction.

4.620.10 (.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. *Rights-of-Way and Easements.* Street right-of-way and utility easements may be cordoned by placing stakes a minimum of 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: The proposed development will comply with this section as well as the Arborist's report, also provided with this application.

Section 4.620.20. Maintenance and Protection Standards.

4.620.20 (.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 proposal will comply with this section, as it relates to the protection of the existing trees to maintain.

Anticipated Waivers:

Waiver 1: Section 4.135 (.06)C – Front Yard Setback within PDI Zone

This section requires a 30 foot front yard setback for any development within the PDI Zone. The applicant requests that a reduced front yard setback of 11'-5" be allowed at the ground floor, and a 5'-6" min. setback at the upper floors of the building.

Per **4.135 (.02)**, the PDI Zone shall be governed by Section **4.140, Planned Development Regulations**. The Purpose of these regulations is listed below:

4.140 (.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.*

Additionally, this project is subject to Site Design Review, which has further goals listed below:

Section 4.400. Purpose.

- 4.400 (.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.
- 4.400 (.02)** The City Council declares that the purposes and objectives of site development requirements and the site design review procedure are to:
- 4.400 (.02) 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.
- 4.400 (.02) B.** Encourage originality, flexibility and innovation in site planning and development, including the architecture, landscaping and graphic design of said development;
- 4.400 (.02) C.** Discourage monotonous, drab, unsightly, dreary and inharmonious developments;
- 4.400 (.02) 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;
- 4.400 (.02) 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;
- 4.400 (.02) F.** Stabilize and improve property values and prevent blighted areas and, thus, increase tax revenues;
- 4.400 (.02) 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.
- 4.400 (.02) 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;
- 4.400 (.02) 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;
- 4.400 (.02) 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.

The purpose of section 4.140 (.01)(B)(4) allows flexibility of design and placement of buildings. The purpose of section 4.400 (.02)(B) also promotes originality, flexibility and innovation in site planning and development. The setback standards of the PDI zones are written for primarily industrial-uses as a way to buffer those uses from the street. While mixed-use residential is allowed on this site, per Senate Bill 8, the applicant feels strongly that reduced setbacks should be allowed to minimize areas of potential safety concerns around the perimeter of the building, in addition to providing a slightly more urban character of the development as a whole (particularly the commercial tenant frontages), which is typical of Transit-Oriented Developments. Additionally, high quality, durable materials are proposed at the ground floor to minimize the potential for damage and preserve the visual and architectural qualities of the proposed development.

The southeast corner of the building sits within the required 30 foot setback due to the prominence of this corner of the site and building, in relation to the surrounding area. The intent of the architectural and site design is to provide emphasis to this corner and make it a prominent landmark and public destination for residents throughout the City. It does this by placing the Café/Taproom close to the corner, along with a small plaza area for café seating, bike parking and a few trees. Locating the most active use at this corner will promote a sense of place and destination, and offers a slightly more urban character of the Barber street frontage, in contrast to a more suburban development which would have minimal mixed-use functions and greater setbacks from the street.

The applicant feels that the reduced setbacks will provide a high-quality architectural and urban character that meets the goals of the project and the City's Comprehensive Plan, while also meeting the purposes of the Planned Development Regulations and the Site Design Review.

Waiver 2: Section 4.135 (.06)D – Rear & Side Yard Setback within PDI Zone

This section requires a 30 foot rear and side yard setback for any development within the PDI Zone. The applicant requests that a reduced rear and side yard setback be allowed at the west, north and east frontages of the property per below:

West frontage: The applicant requests a reduced side yard setback of 5'-1" min. at ground floor, and a 0' min. setback at the upper floors of the building.

North frontage: The applicant requests a reduced rear yard setback of 8'-10" min. at ground floor, and a 11'-0" min. setback at the upper floors of the building.

East frontage: The applicant requests a reduced side yard setback of 5'-5" min. at ground floor, and a 10'-6" min. setback at the upper floors of the building.

Per **4.135 (.02)**, the PDI Zone shall be governed by Section **4.140, Planned Development Regulations**. The Purpose of these regulations is listed below:

4.140 (.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.*

Additionally, this project is subject to Site Design Review, which has further goals listed below:

Section 4.400. Purpose.

4.400 (.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.*

4.400 (.02) *The City Council declares that the purposes and objectives of site development requirements and the site design review procedure are to:*

4.400 (.02) 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.*

4.400 (.02) B. *Encourage originality, flexibility and innovation in site planning and development, including the architecture, landscaping and graphic design of said development;*

4.400 (.02) C. *Discourage monotonous, drab, unsightly, dreary and inharmonious developments;*

4.400 (.02) 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;*

4.400 (.02) 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;*

4.400 (.02) F. *Stabilize and improve property values and prevent blighted areas and, thus, increase tax revenues;*

4.400 (.02) 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.*

4.400 (.02) 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;*

4.400 (.02) 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;*

4.400 (.02) 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.*

The purpose of section 4.140 (.01)(B)(4) allows flexibility of design and placement of buildings. The purpose of section 4.400 (.02)(B) also promotes originality, flexibility and innovation in site planning and development. The setback standards of the PDI zones are written for primarily industrial-uses as a way to buffer those uses from the street. While mixed-use residential is allowed on this site, per Senate Bill 8, the applicant feels strongly that reduced setbacks should be allowed to minimize areas of potential safety concerns around the perimeter of the building, in addition to providing a slightly more urban character of the development as a whole (particularly the commercial tenant frontages), which is typical of Transit-Oriented Developments. Additionally, high quality, durable materials are proposed at the ground floor to minimize the potential for damage and preserve the visual and architectural qualities of the proposed development.

The west, north and eastern frontages of the building sit within the required 30 foot rear and side yard setback. The western frontage consists of commercial space, while the northern frontage is primarily ground floor residential units, with a commercial space at the eastern edge. The eastern frontage consists of commercial spaces at each end of the building and active resident amenity spaces including a bike parking room and fitness room.

By design, the commercial spaces are located at key corners of the building, to provide visual emphasis and a slightly more urban character, as these are located along the bus depot and turnaround. The architectural treatment at these areas features higher levels of glazing, promoting good visibility into and out of the tenant spaces. Locating these spaces closer to the property line is better from a retail perspective, as it assists with visibility and awareness, and promotes the long-term viability of these spaces from a tenant perspective. It also helps to make these areas appear more active and promote surveillance.

At the ground floor residential units along the north façade, careful attention has been given to properly screen these units from the sidewalk, via several layers of landscaping and a short 18" tall concrete wall in front of each unit. The windows are also recessed from the main façade to further provide a defensible space for residents.

The applicant feels that the reduced setbacks will provide a high-quality architectural and urban character that meets the goals of the project and the City's Comprehensive Plan, while also meeting the purposes of the Planned Development Regulations and the Site Design Review.

Appendix A: Site Lighting Cutsheets

FIXTURE L1

Project	Sunrise East	Catalog #		Type	
Prepared by		Notes		Date	



Lumark

Prevail LED

Area / Site Luminaire

Product Features

Interactive Menu

- Ordering Information page 2
- Mounting Details page 3, 4
- Optical Configurations page 5
- Product Specifications page 5
- Energy and Performance Data page 6, 7
- Control Options page 8

Product Certifications

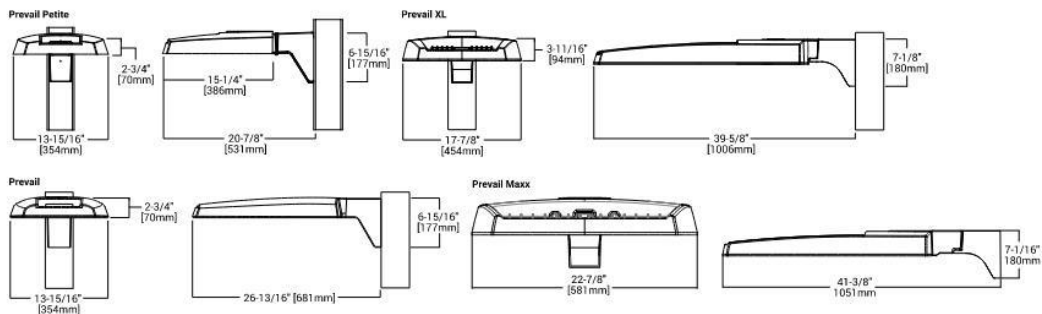
Quick Facts

- Lumen packages range from 4,800 - 84,000 lumens (35W - 588W)
- Replaces 70W up to 1,000W HID equivalents
- Efficacies up to 160 lumens per watt
- Energy and maintenance savings up to 85% versus HID solutions
- Standard universal quick mount arm with universal drill pattern

Connected Systems

- WaveLinX

Dimensional Details



NOTES:
 1. Visit <https://www.designlights.org/search/> to confirm qualification. Not all product variations are DLC qualified.
 2. IDA Certified for 3000K CCT and warmer only.



FIXTURE L1

Lumark

Prevail LED

Ordering Information

SAMPLE NUMBER: **PRV-XL-C75-D-UNV-T4-SA-BZ**

Product Family ^{1,2}	Light Engine ⁴	Driver	Voltage	Distribution	Mounting	Color
PRV-P=Prevail Petite BAA-PRV-P=Prevail Petite BAA Compliant ³ TAA-PRV-P=Prevail Petite TAA Compliant ³	C10=(1 LED) 4,900 Nominal Lumens C15=(1 LED) 6,900 Nominal Lumens C20=(1 LED) 9,800 Nominal Lumens C25=(1 LED) 11,800 Nominal Lumens	D=Dimming (0-10V)	UNV=Universal (120-277V) H=High Voltage, 347-480V 8=347V 9=480V DV=DuraVolt (277-480V) ^{1,4}	T2=Type II T3=Type III T4=Type IV T5=Type V	SA=QM Standard Versatile Arm MA=QM Mast Arm FMA= Fixed Mast Arm ¹⁸ WM=QM Wall Mount Arm ADJA-WM=Adjustable Arm-Wall Mount ²⁶ ADJA=Adjustable Arm-Pole Mount ²⁶ ADJS=Adjustable Arm-Slipfitter, 3" vertical tenon ²⁶ SPZ=Adjustable Arm-Slipfitter, 2 3/8" vertical tenon ²⁶	BZ=Bronze AP=Grey BK=Black DP=Dark Platinum GM=Graphite Metallic WH=White
PRV=Prevail BAA-PRV=Prevail BAA Compliant ³ TAA-PRV=Prevail TAA Compliant ³	C15=(1 LED) 7,100 Nominal Lumens C25=(2 LEDs) 13,100 Nominal Lumens C40=(2 LEDs) 17,100 Nominal Lumens C60=(2 LEDs) 20,000 Nominal Lumens					
PRV-XL=Prevail XL BAA-PRV-XL=Prevail XL BAA Compliant ³ TAA-PRV-XL=Prevail XL TAA Compliant ³	C75=(4 LED) 26,100 Nominal Lumens C100=(4 LED) 31,000 Nominal Lumens C125=(4 LED) 36,000 Nominal Lumens C150=(6 LED) 41,100 Nominal Lumens C175=(6 LED) 48,600 Nominal Lumens					
PRV-M=Prevail Maxx BAA-PRV-M=Prevail Maxx BAA Compliant ³ TAA-PRV-M=Prevail MaxxTAA Compliant ³	C200=(9 LED) 48,000 Nominal Lumens C225=(9 LED) 56,000 Nominal Lumens C250=(9 LED) 65,000 Nominal Lumens C275=(9 LED) 73,000 Nominal Lumens					
Options (Add as Suffix)			Accessories (Order Separately) ^{20,21}			
<p>7030=70 CRI / 3000K CCT ⁷ 7050=70 CRI / 5000K CCT ⁷ CC=Coastal Construction finish ²⁸ HSS=House Side Shield ⁸ L90=Optics Rotated 90° Left R90=Optics Rotated 90° Right 10K=10kV/10KA UL 1449 Fused Surge Protective Device 20MSP=20kV MOV Surge Protective Device 20K=20kV UL 1449 Fused Surge Protective Device HA=50°C High Ambient Temperature ⁹ PR=NEMA 3-PIN Twistlock Photocontrol Receptacle ¹¹ PR7=NEMA 7-PIN Twistlock Photocontrol Receptacle ¹¹ MS/DIM-L08=Dimming Motion and Daylight Sensor, IR Remote Programmable, < 8" Mounting Height ^{12,13,22,24} MS/DIM-L20=Dimming Motion and Daylight Sensor, IR Remote Programmable, 8" - 20" Mounting Height ^{12,13,22,24} MS/DIM-L40=Dimming Motion and Daylight Sensor, IR Remote Programmable, 21" - 40" Mounting ^{12,13}</p> <p>SPB1=Dimming Motion and Daylight Sensor, Bluetooth Programmable, < 8" Mounting Height ^{12,14,26,29} SPB2=Dimming Motion and Daylight Sensor, Bluetooth Programmable, 8" - 20" Mounting Height ^{12,14,26,29} SPB4=Dimming Motion and Daylight Sensor, Bluetooth Programmable, 21" - 40" Mounting Height ^{12,14} ZW=WaveLinx-enabled 4-PIN Twistlock Receptacle ^{12,15} ZD=DALI-enabled 4-PIN Twistlock Receptacle ¹² ZW-SWPD4XX=WaveLinx Pro, Dimming Motion and Daylight, WAC Programmable, 7" - 15" Mounting ^{12,15,16,31,22,24} ZW-SWPD5XX=WaveLinx Pro, Dimming Motion and Daylight, WAC Programmable, 15" - 40" Mounting ^{12,15,16,31} ZD-SWPD4XX= WaveLinx Pro, SR Driver, Dimming Motion and Daylight, WAC Programmable, 7" - 15" Mounting ^{12,15,16,31,22,24} ZD-SWPD5XX=WaveLinx Pro, SR Driver, Dimming Motion and Daylight, WAC Programmable, 15" - 40" Mounting ^{12,15,16,31}</p> <p>(See Table Below)=LumenSafe Integrated Network Security Camera ^{14,15}</p>			<p>PRVSA-XX=Standard Arm Mounting Kit ²² PRVMA-XX=Mast Arm Mounting Kit ²² PRVWM-XX=Wall Mount Kit ²² PRVADJA-XX=Adjustable Arm - Pole Mount Kit ²² PRVADJS-XX=Adjustable Arm - Slipfitter Kit ²² PRVADJA-WM-XX=Adjustable Arm - Wall Mount Kit ²² PRVXLSA-XX=Standard Arm Mounting Kit ²⁹ PRVXLMMA-XX=Mast Arm Mounting Kit ²⁹ PRVXLMW-XX=Wall Mount Kit ²⁹ PRVXLADJA-XX=Adjustable Arm - Pole Mount Kit ²⁹ PRVXLADJS-XX=Adjustable Arm - Slipfitter Kit ²⁹ PRVXLADJA-WM-XX=Adjustable Arm - Wall Mount Kit ²⁹ PRVMA-ADJA-XX=Adjustable Arm - Pole Mount Kit ²⁹ PRVMA-ADJS-XX=Adjustable Arm - Slipfitter Kit ²⁹ PRVMA-ADJA-WM-XX=Adjustable Arm - Wall Mount Kit ²⁹ MA1010-XX=Single Tenon Adapter for 3-1/2" O.D. Tenon MA1011-XX=2@180° Tenon Adapter for 3-1/2" O.D. Tenon</p> <p>MA1017-XX=Single Tenon Adapter for 2-3/8" O.D. Tenon MA1018-XX=2@180° Tenon Adapter for 2-3/8" O.D. Tenon SRA238=Tenon Adapter from 2-3/8" to 3" PRVLCOB-FDV=Full Drop Visor ²³ PRVXLCOB-FDV=Full Drop Visor ¹⁸ HSS/VERB=House Side Shield Kit ^{8,14,24} VGS-F/B= Vertical Glare Shield Kit, Front/Back ²⁴ VGS-SIDE=Vertical Glare Shield Kit, Side ²⁴ OA/RA1013=Photocontrol Shorting Cap OA/RA1014=NEMA Photocontrol - 120V OA/RA1016=NEMA Photocontrol - Multi-Tap 105-285V OA/RA1201=NEMA Photocontrol - 347V OA/RA1027=NEMA Photocontrol - 480V FSIR-100=Wireless Configuration Tool for Occupancy Sensor ²⁵ WOLC-7P-10A=WaveLinx Outdoor Control Module (7-PIN) ²⁷ SWPD4-XX=WaveLinx Sensor, Dimming Motion and Daylight, WAC Programmable, 7" - 15" Mounting ^{12,15,16,28} SWPD5-XX=WaveLinx Sensor, Dimming Motion and Daylight, WAC Programmable, 15" - 40" Mounting ^{12,15,16,28}</p>			
<p>NOTES:</p> <ol style="list-style-type: none"> DesignLights Consortium® Qualified. Refer to www.designlights.org Qualified Products List under Family Models for details. Customer is responsible for engineering analysis to confirm pole and fixture compatibility for all applications. Refer to installation instructions IBS00002EN and pole white paper WPS13001EN for additional support information. Only product configurations with these designated prefixes are built to be compliant with the Buy American Act of 1933 (BAA) or Trade Agreements Act of 1979 (TAA), respectively. Please refer to www.designlights.org for more information. Components shipped separately may be separately analyzed under domestic preference requirements. Standard 4000K CCT and 70CRI. 480V not to be used with ungrounded or impedance grounded systems. DuraVolt drivers feature added protection from power quality issues such as loss of neutral, transients and voltage fluctuations. Visit www.signtify.com/duravolt for more information. Use dedicated IES files on product website for non-standard CCTs. House Side Shield not suitable with T5 distribution. Not available with PRV-C60 lumen package. Not available with PRV-C60 lumen package. Not available with PRV-P-C25 lumen package. If DuraVolt (DV) is specified, use a photocontrol that matches the input voltage used. Control system is not available in combination with a photocontrol receptacle (PR & PER7) or another controls system (MS, SPB, ZD, or ZW). Option not available with DuraVolt (DV) voltage option. Utilizes the Wattstopper sensor FSP-211. Sensor color white unless specified otherwise via PDR. To field-configure, order FSIR-100 accessory separately. Utilizes the Wattstopper sensor FSP-3XX series. Sensor color determined by product finish. See Sensor Color Reference Table. Field-configures via mobile application. See Controls section for details. Sensor passive infrared (PIR) may be overly sensitive when operating below 20°C (-4°F). For the device to be field-configurable, requires WAC Gateway components WAC-PoE and WPDE-120 in appropriate quantities. Only compatible with WaveLinx system and software and requires system components to be installed for operation. See website for more WaveLinx application information. Replace XX with sensor color (WH, BZ, or BK). Only available in PRV-XL configurations C75, C100, C125, C150, or C175. Not available with 347V, 480V, DV, or HA options. Consult LumenSafe system product pages for additional details and compatibility information. Replace XX with paint color. For BAA or TAA requirements, Accessories sold separately will be separately analyzed under domestic preference requirements. Consult factory for further information. Not for use with PRV-XL or PRV-M configurations. Only for use with PRV. Not applicable to PRV-M, PRV-XL, or PRV-P. Must order one per optic/LED when ordering as a field-installable accessory (1, 2, 4, 6 or 9). This tool enables adjustment to Motion Sensor (MS) parameters including high and low modes, sensitivity, time delay, cutoff and more. Consult your lighting representative for more information. Requires 4 PIN twistlock receptacle (ZD or ZW) option. Requires 7-PIN NEMA twistlock photocontrol receptacle (PR & PER7) option. The WOLC-7 cannot be used in conjunction with other controls systems (MS, ZD, ZW or LWR). Operates on 120-347V input voltages. Only for use with PRV-M configurations. Only for use with PRV-XL configurations. Adjustable Arms QM for PRV-P, PRV, PRV-XL, Fixed for PRV-M. Coastal construction finish salt spray tested to over 5,000 hours per ASTM B117, with a scribe rating of 9 per ASTM D1654. 						

LumenSafe Integrated Network Security Camera Technology Options (Add as Suffix)

Product Family	Camera Type	Data Backhaul		
L=LumenSafe Technology	H=Dome Camera, High Res Z=Dome Camera, Remote PTZ	C=Cellular, Customer Installed SIM Card A=Cellular, Factory Installed AT&T SIM Card	V=Cellular, Factory Installed Verizon SIM Card S=Cellular, Factory Installed Sprint SIM Card	E=Ethernet Networking

Stock Ordering Information

Product Family ¹	Light Engine	Voltage	Distribution
PRVS=Prevail	C15=(1 LED) 7,100 Nominal Lumens C25=(2 LEDs) 13,100 Nominal Lumens C40=(2 LEDs) 17,100 Nominal Lumens C60=(2 LEDs) 20,000 Nominal Lumens	UNV=Universal (120-277V) 347=347V ¹	T3=Type III T4=Type IV
PRVS-XL=Prevail XL	C75=(4 LED) 26,100 Nominal Lumens C100=(4 LED) 31,000 Nominal Lumens C125=(4 LED) 36,000 Nominal Lumens C150=(6 LED) 41,100 Nominal Lumens C175=(6 LED) 48,600 Nominal Lumens		
<p>NOTES:</p> <ol style="list-style-type: none"> All stock configurations are standard 4000K/70CRI, bronze finish, and include the standard versatile mounting arm. Only available in PRVS configurations C15, C25, C40 or C60. 			

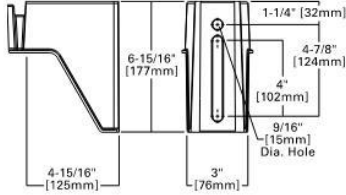


FIXTURE L1

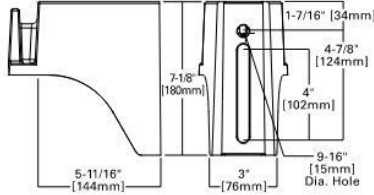
Lumark Prevail LED

Mounting Details

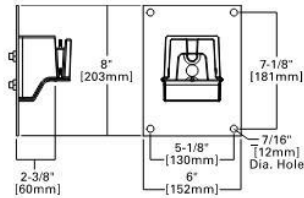
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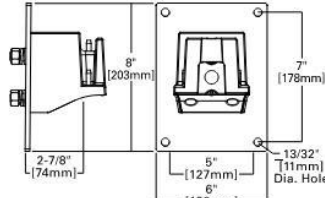
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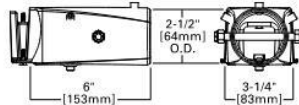
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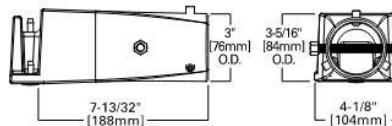
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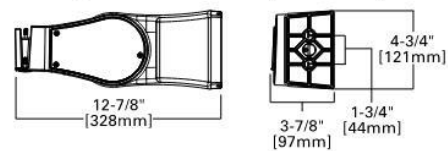
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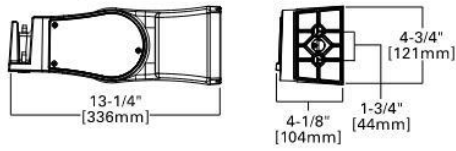
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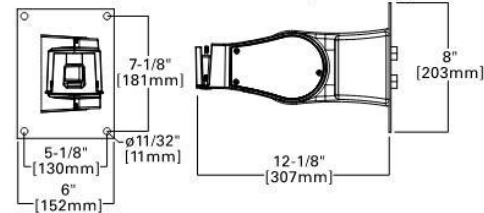
ADJA=Adjustable Arm Pole Mount (PRV & PRV-P)



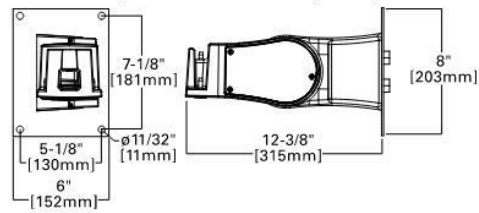
ADJA=Adjustable Arm Pole Mount (PRV-XL)



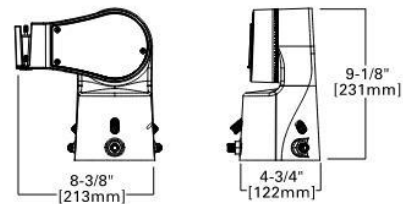
ADJA-WM=Adjustable Arm Wall Mount (PRV & PRV-P)



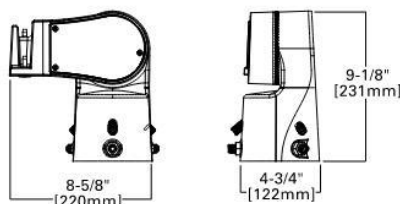
ADJA-WM=Adjustable Arm Wall Mount (PRV-XL)



ADJS=Adjustable Slipfitter 3 (PRV & PRV-P)



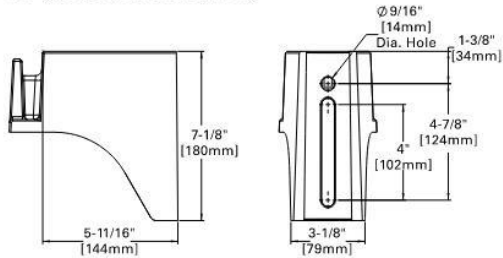
ADJS=Adjustable Slipfitter 3 (PRV-XL)



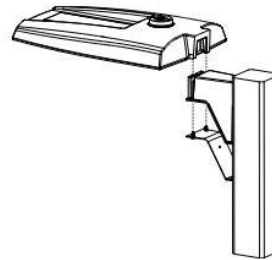
Lumark **FIXTURE L1** **Prevail LED**

Mounting Details

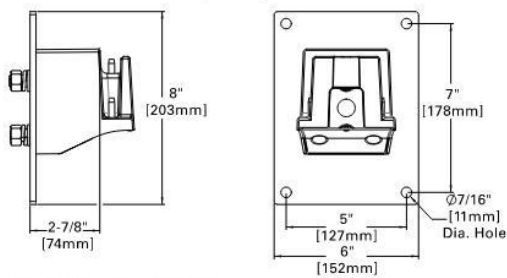
SA=QM Pole Mount Arm (PRV-M)



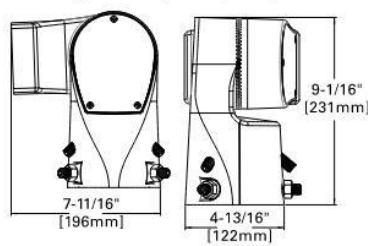
Versatile Mount System



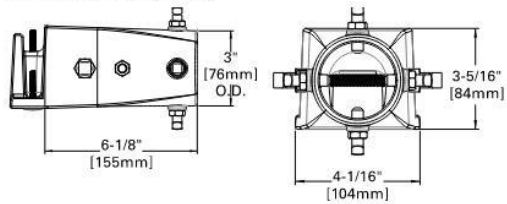
WM=QM Wall Mount Arm (PRV-M)



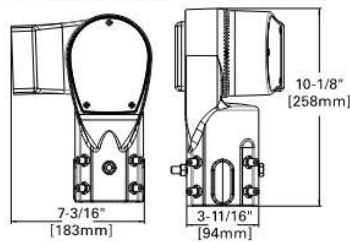
ADJS=Adjustable Slipfitter (PRV-M)



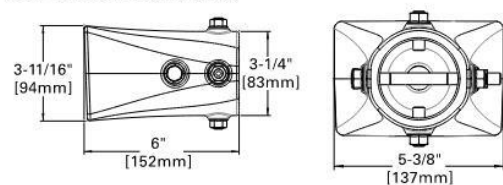
MA=QM Mast Arm (PRV-M)



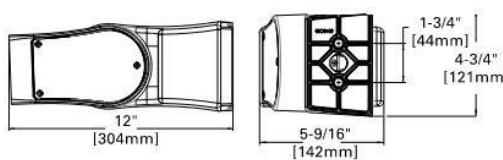
SP2=Adjustable Slipfitter 2-3/8" (PRV-M)



FMA=Fixed Mast Arm (PRV-M)



DM=Direct Pole Mount Arm (PRV-M)



Lumark Prevail LED

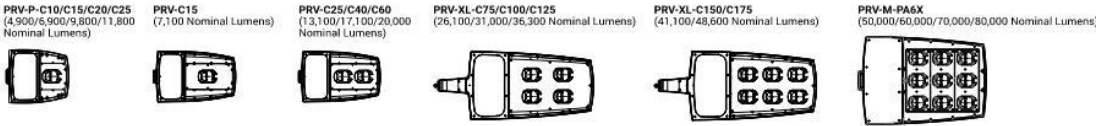
Mounting Details

Mounting Configurations and EPAs

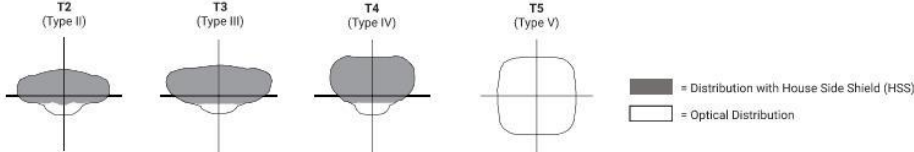
NOTE: For 2 PRV's mounted at 90°, requires minimum 3" square or 4" round pole for fixture clearance. For 2 PRV-XL's mounted at 90°, requires minimum 4" square or round pole for fixture clearance. Customer is responsible for engineering analysis to confirm pole and fixture compatibility for applications.

Housing Size	Tilt Angle (Degrees)	Arm Mount Single	Arm Mount 2 @ 180°	Arm Mount 2 @ 90°	Arm Mount 3 @ 90°	Arm Mount 4 @ 90°
Prevail Petite	0°	0.54	1.08	0.84	1.38	1.38
	60°	1.68	1.85	2.42	3.15	3.30
Prevail	0°	0.92	1.35	1.42	1.63	1.63
	60°	2.20	2.40	3.05	3.88	4.07
	60° + Full Drop Visor	2.20	2.40	3.25	4.28	4.47
Prevail XL	0°	1.12	2.25	2.13	2.52	2.52
	60°	3.99	4.30	5.26	6.51	6.79
	60° + Full Drop Visor	3.99	4.30	5.59	7.17	7.49
Prevail Maxx	0°	1.28	2.56	1.7	2.69	2.69
	60°	5.09	5.52	6.34	7.49	7.81

Optical Configurations



Optical Distributions



Product Specifications

Construction

- Single-piece die-cast aluminum housing
- Tethered die-cast aluminum door

Optics

- Dark Sky Approved (3000K CCT and warmer only)
- Precision molded polycarbonate optics

Electrical

- -40°C minimum operating temperature
- 40°C maximum operating temperature
- > .9 power factor
- <20% total harmonic distortion
- Class 1 electronic drivers have expected life of 100,000 hours with <1% failure rate
- 0-10V dimming driver is standard with leads external to the fixture
- Standard MOV surge protective device designed to withstand 10kV of transient line surge

Mounting

- Versatile, patented, standard mount arm accommodates multiple drill patterns ranging from 1-1/2" to 4-7/8" (Type M drilling recommended for new installations)
- A knock-out on the standard mounting arm enables round pole mounting
- Adjustable pole and wall mount arms adjust in 5° increments from 0° to 60°; Downward facing orientation only (Type N drilling required for ADJA mount)
- Adjustable slipfitter arm adjusts in 5° increments from -5° to 85°; Downward facing orientation only
- Adjustable Arms: 1.5G vibration rated
- Prevail and Prevail Petite: 3G vibration rated
- Prevail XL Mast Arm: 3G vibration rated
- Prevail XL Standard Arm: 1.5G vibration rated

Typical Applications

- Parking lots, Walkways, Roadways and Building Areas

Finish

- Five-stage super TGIC polyester powder coat paint, 2.5 mil nominal thickness
- Finish is compliant to 3,000 hour salt spray standard (per ASTM B117)

Shipping Data

- Prevail Petite: 18 lbs. (7.94 kgs.)
- Prevail: 20 lbs. (9.09 kgs.)
- Prevail XL: 45 lbs. (20.41 kgs.)
- Prevail Maxx: 49 lbs. (22.23 kgs.)

Warranty

- Five year limited warranty, consult website for details. www.cooperlighting.com/legal



FIXTURE L1

Lumark Prevail LED

Energy and Performance Data

[View PRV-P IES files](#)
 [View PRV IES files](#)
 [View PRV-XL IES files](#)

Power and Lumens

Product Family	Prevail Petite				Prevail				Prevail XL				Prevail Maxx					
	Light Engine	C10	C15	C20	C25	C15	C25	C40	C60	C75	C100	C125	C150	C175	C200	C225	C250	C275
Power (Watts)	35	49	73	94	52	96	131	153	176	217	264	285	346	346	418	487	588	
Input Current @ 120V (A)	0.29	0.41	0.61	0.79	0.43	0.80	1.09	1.32	1.50	1.84	2.21	2.38	2.92	2.89	3.49	4.06	4.90	
Input Current @ 277V (A)	0.13	0.18	0.27	0.35	0.19	0.35	0.48	0.57	0.66	0.82	0.97	1.04	1.25	1.26	1.51	1.72	2.06	
Input Current @ 347V (A)	0.11	0.16	0.23	0.29	0.17	0.30	0.41	0.48	0.54	0.66	0.79	0.84	1.02	1.00	1.21	1.40	1.70	
Input Current @ 480V (A)	0.08	0.12	0.17	0.22	0.12	0.22	0.30	0.35	0.40	0.48	0.57	0.62	0.74	0.73	0.88	1.00	1.21	
Distribution ¹																		
Type II	4000K Lumens	4,775	6,717	9,542	11,521	7,123	13,205	17,172	20,083	26,263	31,231	36,503	41,349	48,876	50,349	59,444	68,447	79,322
	BUG Rating	B1-U0-G1	B1-U0-G1	B2-U0-G2	B2-U0-G2	B2-U0-G2	B2-U0-G2	B3-U0-G3	B3-U0-G3	B3-U0-G3	B3-U0-G4	B4-U0-G4	B4-U0-G4	B4-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5	B5-U0-G5
	Lumens per Watt	138	137	131	122	137	138	131	131	149	144	138	145	141	146	142	141	135
	3000K Lumens ¹	4,869	6,595	9,369	11,312	6,994	12,965	16,860	19,718	25,786	30,664	35,840	40,598	47,989	49,437	58,368	67,208	77,886
Type III	4000K Lumens	4,782	6,727	9,556	11,538	7,111	13,183	17,144	20,050	26,120	31,061	36,304	41,124	48,610	50,162	59,223	68,193	79,027
	BUG Rating	B1-U0-G2	B1-U0-G2	B2-U0-G3	B2-U0-G3	B1-U0-G2	B2-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5	B5-U0-G5	B5-U0-G5
	Lumens per Watt	138	137	131	123	137	137	131	131	148	143	138	144	140	145	142	140	135
	3000K Lumens ¹	4,695	6,605	9,383	11,329	6,982	12,944	16,832	19,686	25,646	30,497	35,645	40,377	47,727	49,254	58,151	66,958	77,596
Type IV	4000K Lumens	4,880	6,865	9,752	11,774	7,088	13,140	17,087	19,984	26,098	31,035	36,274	41,089	48,569	50,575	59,711	68,754	79,678
	BUG Rating	B1-U0-G2	B1-U0-G2	B2-U0-G3	B2-U0-G3	B1-U0-G3	B2-U0-G4	B2-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5	B5-U0-G5
	Lumens per Watt	141	140	134	125	136	137	130	131	148	143	137	144	140	146	143	141	136
	3000K Lumens ¹	4,792	6,740	9,575	11,561	6,959	12,901	16,777	19,621	25,624	30,471	35,615	40,343	47,687	49,659	58,530	67,510	78,235
Type V	4000K Lumens	5,067	7,128	10,126	12,226	7,576	14,045	18,264	21,360	28,129	33,450	39,097	44,287	52,349	53,531	63,201	72,773	84,335
	BUG Rating	B3-U0-G2	B3-U0-G2	B4-U0-G3	B4-U0-G3	B3-U0-G3	B4-U0-G3	B4-U0-G4	B5-U0-G4	B5-U0-G5	B5-U0-G5	B5-U0-G5	B5-U0-G5	B5-U0-G5	B5-U0-G5	B5-U0-G5	B5-U0-G5	B5-U0-G5
	Lumens per Watt	146	145	139	130	146	146	139	140	160	154	148	155	151	155	151	150	144
	3000K Lumens ¹	4,975	6,999	9,942	12,004	7,438	13,790	17,932	20,972	27,618	32,843	38,387	43,483	51,398	52,562	62,057	71,455	82,808

¹ For 3000K, 5000K or HSS data, refer to published IES files.

Lumen Maintenance

Configuration	TM-21 Lumen Maintenance (50,000 Hours)	Theoretical L70 (Hours)
Prevail and Prevail Petite at 25°C	91.30%	> 194,000
Prevail and Prevail Petite at 40°C	87.59%	> 134,000
Prevail XL at 25°C	91.40%	> 204,000
Prevail XL at 40°C	89.41%	> 158,000
Prevail Maxx at 25°C	91.40%	> 204,000
Prevail Maxx at 40°C	89.41%	> 158,000

Sensor Color Reference Table (SPBx)

Housing Finish	Sensor Color
AP=Grey	Grey
BZ=Bronze	Bronze
BK=Black	Black
DP=Dark Platinum	Grey
GM=Graphite Metallic	Black
WH=White	White

Lumen Multiplier

Ambient Temperature	Lumen Multiplier
10°C	1.02
15°C	1.01
25°C	1.00
40°C	0.99

FIXTURE L1

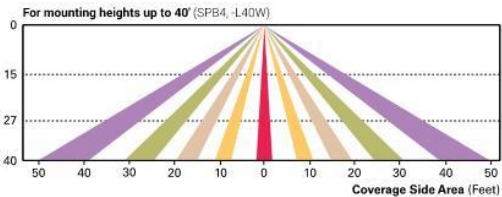
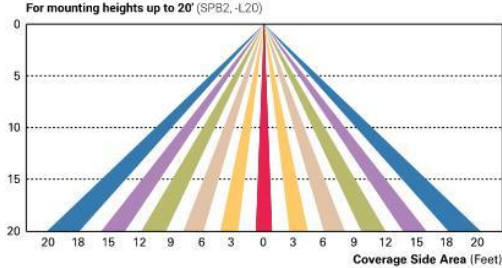
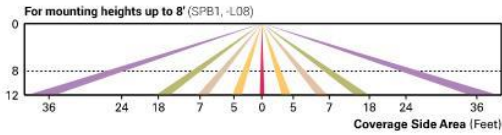
Lumark **Prevail LED**

Control Options

0-10V This fixture provides 0-10V dimming wire leads for use with a lighting control panel or other control method.

Photocontrol (PR and PER27) Photocontrol receptacles provide a flexible solution to enable "dusk-to-dawn" lighting by sensing light levels. Advanced control systems compatible with NEMA 7-PIN standards can be utilized with the PR and PER7 receptacles.

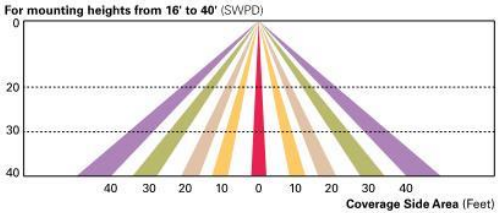
Dimming Occupancy Sensor (SPB, MS/DIM-LXX) These sensors are factory installed in the luminaire housing. When the SPB or MS/DIM sensor options are selected, the luminaire will dim down after five minutes of no activity detected. When activity is detected, the luminaire returns to full light output. These occupancy sensors include an integral photocell for "dusk-to-dawn" control or "daylight harvesting." Factory default is enabled for the MS sensors and disabled for the SPB. SPB motion sensors require the Sensor Configuration mobile application by Wattstopper to change factory default dimming level, time delay, sensitivity and other parameters. Available for iOS and Android devices. The SPB sensor is factory preset to dim down to approximately 10% power with a time delay of five minutes.



WaveLinx Wireless Control and Monitoring System Available in 7-PIN or 4-PIN configurations, the WaveLinx Outdoor control platform operates on a wireless mesh network based on IEEE 802.15.4 standards enabling wireless control of outdoor lighting. At least one Wireless Area Controller (WAC) is required for full functionality and remote communication (including adjustment of any factory pre-sets).

WaveLinx Outdoor Control Module (WOLC-7P-10A) A photocontrol that enables astronomic or time-based schedules to provide ON, OFF and dimming control of fixtures utilizing a 7-PIN receptacle. The out-of-box functionality is ON at dusk and OFF at dawn.

WaveLinx Wireless Sensor (SWPD4 and SWPD5) These outdoor sensors offer passive infrared (PIR) occupancy sensing and a photocell for closed-loop daylight sensing. These sensors can be factory installed or field-installed via simple, tool-less integration into luminaires equipped with the Zhaga Book 18 compliant 4-PIN receptacle (ZD or ZW). These sensors are factory preset to dim down to approximately 50 percent power after 15 minutes of no activity detected, and the photocell for "dusk-to-dawn" control is default enabled. A variety of sensor lenses are available to optimize the coverage pattern for mounting heights from 7'-40'.



LumenSafe (LD) The LumenSafe integrated network camera is a streamlined, outdoor-ready camera that provides high definition video surveillance. This IP camera solution is optimally designed to integrate into virtually any video management system or security software platform of choice. No additional wiring is needed beyond providing line power to the luminaire. LumenSafe features factory-installed power and networking gear in a variety of networking options allowing security integrators to design the optimal solution for active surveillance.

FIXTURE L3

Project		Catalog #		Type	
Prepared by		Notes		Date	



HALO

SMD6 Series

6" Round and Square Surface Mount
Downlight
SMD6R & SMD6S

Typical Applications
Residential

Interactive Menu

- Order Information page 2
- Product Specifications page 5
- Photometric Data page 6
- Energy Data page 5
- Product Warranty

Product Certification



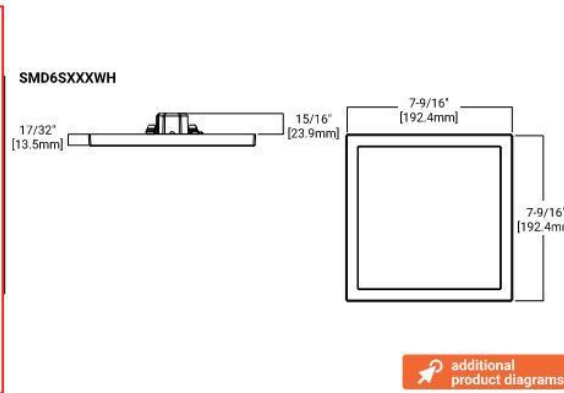
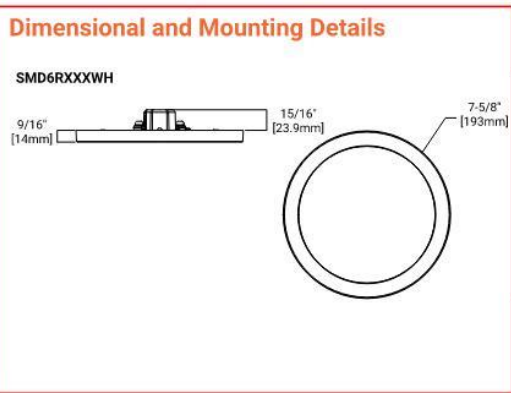
Refer to ENERGY STAR® Certified Products List.
Can be used to comply with California Title 24 High Efficacy requirements.
Certified to California Appliance Efficiency Database under JAB.

Product Features



Top Product Features

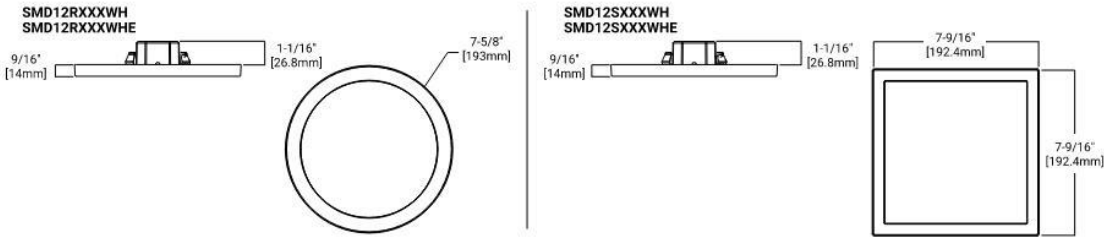
- Ultra-low profile surface luminaire with wide distribution
- Ceiling or wall mounting in compatible junction boxes
- 600 & 1200 lumen; 2700K, 3000K, 3500K, 4000K or 5000K CCT; 90 CRI
- 120V only and Universal Voltage 120V – 277V options
- Dimmable with 120V dimmers



FIXTURE L3

HALO
SMD6 Series

Dimensional and Mounting Details Continued



Ordering Information

SAMPLE NUMBER: **SMD6R6930WH** = 6" Round Surface Mount Downlight, 90CRI, 3000K
 Junction Box Installation: Order junction box separately, as supplied by others, to complete installation.
 Recessed Installation: Order Halo recessed housing separately to complete installation.

Models	Lumens	CRI/CCT	Finish	Voltage
Models	Lumens	CRI/CCT	Finish	Voltage
SMD6R = 6" Round Surface Mount Downlight SMD6S = 6" Square Surface Mount Downlight	6 = 600 lumen series (120V only) 12 = 1200 lumen series	927 = 90 CRI, 2700K 930 = 90 CRI, 3000K 935 = 90 CRI, 3500K 940 = 90 CRI, 4000K 950 = 90 CRI, 5000K	WH = Matte White	Blank = 120V standard E = UNV Universal 120-277V*

Accessories

Accessories	
<p>Designer Trims SMD6RTRMSN = 6" Round SMD Satin Nickel SMD6RTRMTBZ = 6" Round SMD Tuscan Bronze SMD6RTRMWH = 6" Round SMD White (paintable)</p> <p>SMD6STRMSN = 6" Square SMD Satin Nickel SMD6STRMTBZ = 6" Square SMD Tuscan Bronze SMD6STRMWH = 6" Square SMD White (paintable)</p> <p>T24HWKIT = Title 24 Cable harness kit used to convert incandescent and low voltage housings to LED HE26LED = E26 Screw base adapter for retrofit (included)</p>	 <p>T24HWKIT HE26LED E26 Screw base adapter for retrofit (included)</p>

* UNV voltage configuration is offered only in the 1200 lumen series

FIXTURE L3

HALO SMD6 Series

Housing Compatibility

The SMD6 is UL Certified in Halo recessed housings and for use with any 5 or 6 inch diameter recessed housing constructed of steel or aluminum with an internal volume that exceeds 107.9 in3 in addition to those noted below. **Note:** Some other's housings require installation with included friction clips.

Compatible Halo LED Housings with LED luminaire connector (high-efficacy compliant)	Compatible Halo Incandescent E26 Screwbase Housings
<p>Halo LED 5-inch H550ICAT = 5' LED, Insulated Ceiling, Air-Tite, New Construction Housing H550RICAT = 5' LED, Insulated Ceiling, Air-Tite, Remodel Housing E550ICAT = 5' LED, Insulated Ceiling, Air-Tite, New Construction Housing E550RICAT = 5' LED, Insulated Ceiling, Air-Tite, Remodel Housing</p> <p>Halo LED 6-inch H750ICAT = 6' LED, Insulated Ceiling, Air-Tite, New Construction Housing H750RICAT = 6' LED, Insulated Ceiling, Air-Tite, Remodel Housing H750T = 6' LED, Non-IC, Air-Tite, New Construction Housing H750TCP = 6' LED, Non-IC, New Construction/Remodel Chicago Plenum Housing H2750ICAT = 6' LED, Shallow, Insulated Ceiling, Air-Tite, New Construction (use with 691X, 694X, 696X trims only) H2750RICAT = 6' LED, Shallow, Insulated Ceiling, Air-Tite, Remodel (use with 691X, 694X, 696X trims only) E750ICAT = 6' LED, Insulated Ceiling, Air-Tite, New Construction Housing E750RICAT = 6' LED, Insulated Ceiling, Air-Tite, Remodel Housing</p> <p>Halo LED retrofit ML7E26RFX = 6' Retrofit Enclosure, Non-IC, E26 Screw base Interface ML7BXFK = 6' Retrofit Enclosure, Non-IC, BX Whip</p>	<p>Halo Standard Housings 5-inch HSICAT = 5' Insulated Ceiling, Air-Tite New Construction Housing HSRICAT = 5' Insulated Ceiling, Air-Tite Remodel Housing HSICATNB = 5' Insulated Ceiling, Air-Tite New Construction Housing, No Socket Bracket HST = 5' Non-IC, New Construction Housing HSRT = 5' Non-IC, Remodel Housing HS1NB = 5' Non-IC, New Construction Housing, No Socket Bracket H25ICAT = 5' Shallow, Insulated Ceiling, Air-Tite New Construction H25RICAT = 5' Shallow, Insulated Ceiling, Air-Tite Remodel H25ICATNB = 5' Shallow, Insulated Ceiling, Air-Tite New Construction, No Socket Bracket ESICAT = 5' Insulated Ceiling, Air-Tite New Construction Housing ESRICAT = 5' Insulated Ceiling, Air-Tite Remodel Housing ESICATNB = 5' Insulated Ceiling, Air-Tite New Construction Housing, No Socket Bracket ESTAT = 5' Non-IC, New Construction Housing ESRTAT = 5' Non-IC, Remodel Housing ESTATNB = 5' Non-IC, New Construction Housing, No Socket Bracket</p> <p>Halo Standard Housings 6-inch H7ICAT = 6' Insulated Ceiling, Air-Tite New Construction Housing H7RICAT = 6' Insulated Ceiling, Air-Tite Remodel Housing H7ICT = 6' Insulated Ceiling, New Construction Housing H7RICT = 6' Insulated Ceiling, Remodel Housing H7ICATNB = 6' Insulated Ceiling, Air-Tite New Construction Housing, No Socket Bracket H7ICTNB = 6' Insulated Ceiling, New Construction Housing, No Socket Bracket H7T = 6' Non-IC, New Construction Housing H7RT = 6' Non-IC, Remodel Housing H7TNB = 6' Non-IC, New Construction Housing, No Socket Bracket H7TCP = 6' Non-IC, Chicago Plenum, New Construction/Remodel Housing H7UCAT = 6' Insulated Ceiling, Universal, Air-Tite, New Construction Housing ETICAT = 6' Insulated Ceiling, Air-Tite New Construction Housing ETRICAT = 6' Insulated Ceiling, Air-Tite Remodel Housing ETICATNB = 6' Insulated Ceiling, Air-Tite New Construction Housing, No Socket Bracket ETAT = 6' Non-IC, New Construction Housing ETRTAT = 6' Non-IC, Remodel Housing ETATNB = 6' Non-IC, New Construction Housing, No Socket Bracket E27TAT = 6' Shallow, Non-IC, New Construction Housing E27TATNB = 6' Shallow, Non-IC, Remodel Housing</p>



HALO FIXTURE L3 SMD6 Series

JUNCTION BOX COMPATIBILITY

***Note:** SMD 120-277V UNV configuration is only compatible with junction boxes that provide a minimum depth of 2-1/8". Junction boxes meeting these requirements listed below.

EATON'S CROUSE-HINDS JUNCTION BOXES



TP316*
for non-metallic cable
4" x 4" x 2-1/8"
(102mm x 102mm x 54mm)



TP317*
for metal clad cable
4" x 4" x 2-1/8"
(102mm x 102mm x 54mm)

- **TP316** - for non-metallic cable
- **TP317** - for metal clad cable
- UL Listed
- Refer to www.crouse-hinds.com

OTHER'S JUNCTION BOXES*



4" octagon light fixture/fan steel box*
4" x 4" x 2-1/8"
(102mm x 102mm x 54mm)



4" octagon steel box
4" x 4" x 1-1/2"
(102mm x 102mm x 38mm)



4" square deep steel box*
4" x 4" x 2-1/8"
(102mm x 102mm x 54mm)



4" square standard steel box
4" x 4" x 1-1/2"
(102mm x 102mm x 38mm)



4" round new work non-metallic light fixture/fan box*
4" diameter x 2-3/16"
(102mm x 56mm)



3-1/2" round new work non-metallic ceiling box*
3-1/2" diameter x 2-3/4"
(89mm x 70mm)



3-1/2" round old work* non-metallic box
4-1/4" O.D. flange, 3-1/2" I.D. x 2-5/8"
(108mm O.D., 89mm I.D. x 67mm)



4" round surface mount box
4" diameter x 1-1/2"
(102mm x 38mm)
Requires SLD6RAD adapter



4" round new work non-metallic box with hanger bar assembly
4" diameter x 2-3/16" (102mm x 56mm)

*This is a representative list of compatible junction boxes only. Information contained in this literature about other manufacturers' products is from published information made available by the manufacturer and is deemed to be reliable, but has not been verified. Cooper Lighting Solutions makes no specific recommendation on product selection and there are no warranties of performance or compatibility implied. Installer must determine that site conditions are suitable to allow proper installation of the mounting bracket in the box.

FIXTURE L3

HALO

SMD6 Series

Energy Data

SMD6R6 SMD6S6

	Round	Square
Lumens (5000K models)	788	815
Input Power	9.6 W	9.9 W
Input Current	0.0811 A	0.085 A
Efficiency	82 lm/W	82 lm/W
THD	13.9	14.7
Input Voltage	120V	
Frequency	50/60 Hz	
CRI	90 CRI	
Power Factor	0.99	
T Ambient	-30 - +40°C	
Sound Rating	Class A	

SMD6R12 SMD6S12

	Round	Square
Lumens (5000K models)	1252	1235
Input Power	15.3	15.7
Input Current	0.133 A	0.132 A
Efficiency	82 lm/W	79 lm/W
THD	15.3	15.7
Input Voltage	120V	
Frequency	50/60 Hz	
CRI	92 CRI	
Power Factor	0.98	
T Ambient	-30 - +40°C	
Sound Rating	Class A	

SMD6R12-E SMD6S12-E

	Round	Square
Lumens (5000K models)	1200	1180
Input Power	15.3	16
Input Current	0.133 A - (120V) 0.061 A - (277V)	0.132 A - (120V) 0.061 A - (277V)
Efficiency	78	73
THD	15.3	15.7
Input Voltage	120 - 277V	
Frequency	60 Hz	
CRI	92 CRI	
Power Factor	0.99	
T Ambient	-30 - +40°C	
Sound Rating	Class A	

Product Specifications

Housing

- Non-electrically conductive polycarbonate frame.
- High impact diffuse polystyrene lens provides shielding to the light guide with no pixilation
- Stamped aluminum housing provides thermal cooling achieving L70 at 50,000 hours in IC and non-IC applications

Gaskets

- Closed cell gasket achieves restrictive airflow and wet location requirements without additional caulking

Optics

- Precision acrylic light guide organizes source flux into wide distribution with 1.2 - 1.4 spacing criteria useful for general area illumination

LED

- Mid power LED array provide a uniform source with high efficiency and long life
- Available in 90 CRI minimum, R9 greater than 50 and color accuracy within 3 SDCM provide color accuracy and uniformity

Driver

SMD 120V

- Integral 120V 50/60Hz constant current driver provides noise free operation
- Continuous, flicker-free dimming from 100% to 5% with select leading or trailing edge 120V phase cut dimmers
- Dimming to 5% is best assured using dimmers with low end trim adjustment. Consult dimmer manufacturer for compatibility and conditions of use. (Note some dimmers require a neutral in the wallbox.)
- Inline electrical quick connect and E26 adapter (provided) provides mains connections

SMD 120-277V

- Integrated 120-277V 60Hz constant current driver provides noise free operation
- SMD Universal Voltage (120-277V) configurations are recommended for use with compatible 0-10V DC
- low voltage dimmers only

Mounting/Retention

- Adjustable spider plate allows for quick installation into both junction boxes and recessed housings
- Torsion springs and friction blades included

Electrical Junction Box Mounting

- The SMD may be used in compatible electrical junction boxes in direct contact with insulation including spray foam insulation
- Suitable for installation in many 3-1/2" and 4" square, octagon, and round electrical junction boxes
Note: SMD120-277V UNV is only compatible with junction boxes that provide minimum depth of 2-1/8"
- Installer must ensure compatibility of fit, wiring and proper mounting in the electrical junction box. This includes all applicable national and local electrical and building coded

Recessed Housing Mounting

- May be installed in IC recessed housings in direct contact with insulation
Note: Not for use in recessed housing in direct contact with spray foam insulation. Refer to NEMA LSD 57-2013

Torsion Spring 5" & 6"

- Precision formed torsion spring bracket kit included
- The torsion springs adjust on the mounting plate to fit 5" or 6" compatible housings

Friction Blade 5" & 6"

- Precision formed friction blades included
- For retrofit in 5" and 6" housings without torsion springs mounting tabs
- Friction blade design allows the SMD to be installed in any position within the housing aperture (360 degrees)

DESIGNER SKINS (SOLD SEPARATELY)

- SMD skins are accessory rings in both round and square. These skins attach to the SMD for a permanent finish. Refer to the SMD accessories specification sheet for details
 - Matte White (Paintable)
 - Satin Nickel
 - Tuscan Bronze

Compliance

- cULus Certified for use with Halo housings and for use with other's housings, see instruction sheet for conditions of acceptability
- Wet and Damp Location listed, airtight per ASTM-E283
- Suitable for use in closets, compliant with NFPA® 70, NEC® Section 410.16 (A)(3) and 410.16 (C)(5)
- EMI/RFI emissions per FCC 47CFR Part 15B
- Contains no mercury or lead and RoHS compliant.
- Photometric testing in accordance with IES LM-79-08
- Lumen maintenance projections in accordance with IES LM-80-08 and TM-21-11
- Can be used for State of California Title 24 high efficacy luminaire compliance, reference the California Energy Commission Title 20 Appliance Efficiency Database for current listings
- Can be used for International Energy Conservation Code (IECC) and high efficiency luminaire compliance
- ENERGY STAR® listed, reference database for current listings

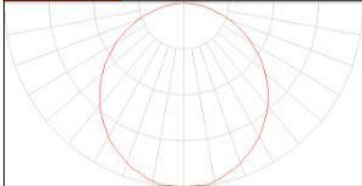
Warranty

- Five year limited warranty, consult website for details. www.cooperlighting.com/warranty

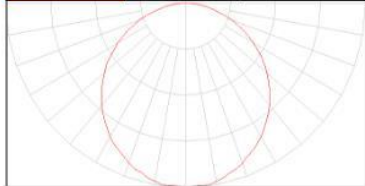
HALO FIXTURE L3 SMD6 Series

Photometric Data – SMD6 (120V)

SMD6R6927WH		
Luminaire lumens	750	
Input watts	9.4	
LER (LPW)	80	
Spacing Criteria	0-180	1.26
	90-270	1.26
	Diagonal	1.38
Beam angle (degrees)	112	
Field angle (degrees)	162	
Max. Candela	264	
Zonal lumen	Lumens	% Lumens
0-30	204	27.2%
0-40	334	44.5%
0-60	590	78.6%
0-90	750	100.00%



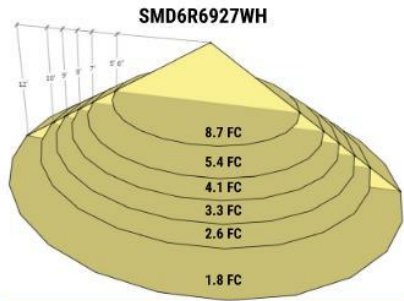
SMD6S6927WH		
Luminaire lumens	750	
Input watts	10.0	
LER (LPW)	75	
Spacing Criteria	0-180	1.24
	90-270	1.24
	Diagonal	1.36
Beam angle (degrees)	112	
Field angle (degrees)	162	
Max. Candela	271	
Zonal lumen	Lumens	% Lumens
0-30	207	27.6%
0-40	337	44.9%
0-60	590	78.6%
0-90	750	100.00%



Cat. No.	CRI	CCT	Lumens	Power (W)	LPW
SMD6R6927WH	93	2700	754	9.6	78.5
SMD6R6930WH	92	3000	758	9.6	78.7
SMD6R6935WH	95	3500	740	9.6	77.0
SMD6R6940WH	94	4000	792	9.8	80.5
SMD6R6950WH	92	5000	788	9.6	81.9
SMD6S6927WH	92	2700	750	10.0	75.0
SMD6S6930WH	92	3000	790	9.9	79.8
SMD6S6935WH	93	3500	740	10.0	74.0
SMD6S6940WH	93	4000	760	10.3	73.8
SMD6S6950WH	90	5000	815	9.9	82.3

Foot-candle Values at Nadir 0 degree Aiming Angle			
DD (FT)	SMD6R6927WH (FC)	SMD6S6927WH (FC)	DIA (FT)
5.5	8.7	9.0	16.3
7	5.4	5.5	20.9
8	4.1	4.2	23.8
9	3.3	3.3	26.8
10	2.6	2.7	29.7
12	1.8	1.9	35.7

DD = distance down to illuminated work plane
 FC = initial foot-candles at nadir
 DIA = diameter



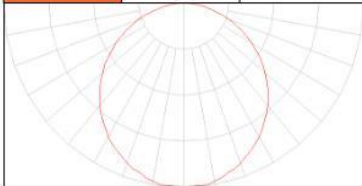
Multiplier Table					
CCT Option	2700K	3000K	3500K	4000K	5000K
CCT Multiplier	1.00	1.014	1.042	1.083	1.083



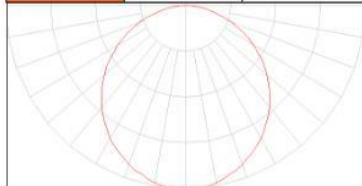
HALO FIXTURE L3 SMD6 Series

Photometric Data – SMD6-1200 (120V)

SMD6S12927WH		
Luminaire lumens	1187	
Input watts	15.9	
LER (LPW)	75	
Spacing Criteria	0-180	1.26
	90-270	1.26
	Diagonal	1.38
Beam angle (degrees)	113	
Field angle (degrees)	165	
Max. Candela	408	
Zonal lumen	Lumens	% Lumens
0-30	316	26.6%
0-40	518	43.7%
0-60	920	77.5%
0-90	1187	100.00%



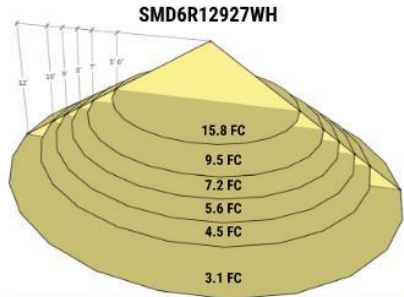
SMD6R12927WH		
Luminaire lumens	1235	
Input watts	15.9	
LER (LPW)	78	
Spacing Criteria	0-180	1.26
	90-270	1.26
	Diagonal	1.38
Beam angle (degrees)	113	
Field angle (degrees)	164	
Max. Candela	426	
Zonal lumen	Lumens	% Lumens
0-30	336	27.2%
0-40	550	44.5%
0-60	971	78.6%
0-90	1235	100.00%



Cat. No.	CRI	CCT	Lumens	Power (W)	LPW
SMD6R12927WH	92	2700	1244	15.7	79.0
SMD6R12930WH	92	3000	1242.0	15.1	82.1
SMD6R12935WH	92	3500	1264.1	15.3	82.8
SMD6R12940WH	92	4000	1223.0	15.3	79.9
SMD6R12950WH	92	5000	1252.0	15.3	81.9
SMD6S12927WH	92	2700	1190	15.7	76.0
SMD6S12930WH	92	3000	1180.3	15.6	75.6
SMD6S12935WH	92	3500	1237.3	15.6	79.5
SMD6S12940WH	92	4000	1215.9	15.8	76.9
SMD6S12950WH	92	5000	1235.6	15.7	78.9

Foot-candle Values at Nadir 0 degree Aiming Angle			
DD (FT)	SMD6R12927WH (FC)	SMD6S12927WH (FC)	DIA (FT)
5.5	15.8	15.1	16.6
7	9.5	9.1	21.1
8	7.2	6.9	24.2
9	5.6	5.4	27.2
10	4.5	4.3	30.2
12	3.1	3.0	36.2

DD = distance down to illuminated work plane
 FC = initial foot-candles at nadir
 DIA = diameter



Multiplier Table					
CCT Option	2700K	3000K	3500K	4000K	5000K
CCT Multiplier	1.000	0.997	1.039	1.021	1.037

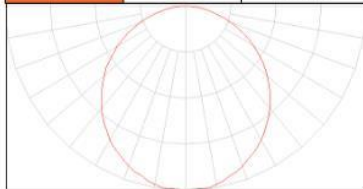


FIXTURE L3

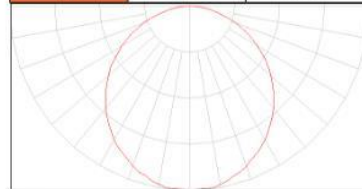
HALO SMD6 Series

Photometric Data – SMD6-1200-E (120V-277V)

SMD6R12927WHE		
Luminaire lumens	1210	
Input watts	15.4	
LER (LPW)	78.6	
Spacing Criteria	0-180	1.26
	90-270	1.26
	Diagonal	1.38
Beam angle (degrees)	112.8	
Field angle (degrees)	164	
Max. Candela	418.7	
Zonal lumen	Lumens	% Lumens
0-30	324	26.8%
0-40	531	43.9%
0-60	941	77.8%
0-90	1210	100.00%



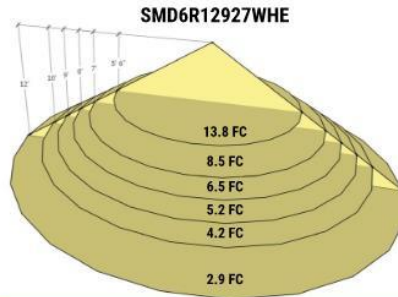
SMD6S12927WHE		
Luminaire lumens	1167	
Input watts	15.6	
LER (LPW)	74.8	
Spacing Criteria	0-180	1.26
	90-270	1.26
	Diagonal	1.38
Beam angle (degrees)	113.5	
Field angle (degrees)	165	
Max. Candela	402.1	
Zonal lumen	Lumens	% Lumens
0-30	284	24.3%
0-40	467	40.0%
0-60	838	71.8%
0-90	1167	100.00%



Cat. No.	CRI	CCT	Lumens	Power (W)	LPW
SMD6R12927WHE	92	2700	1210	15.4	78.6
SMD6R12930WHE	92	3000	1203.0	15.3	78.6
SMD6R12935WHE	92	3500	1200.0	15.4	77.9
SMD6R12940WHE	92	4000	1260.0	15.3	82.4
SMD6R12950WHE	92	5000	1200.0	15.3	78.4
SMD6S12927WHE	92	2700	1167	15.6	74.8
SMD6S12930WHE	92	3000	1135.0	15.9	71.4
SMD6S12935WHE	92	3500	1140.0	16.0	71.2
SMD6S12940WHE	92	4000	1155.0	15.9	72.6
SMD6S12950WHE	92	5000	1180.0	16.0	73.7

Foot-candle Values at Nadir 0 degree Aiming Angle			
DD (FT)	SMD6R12927WHE (FC)	SMD6S12927WHE (FC)	DIA (FT)
5.5	13.8	13.3	6.8
7	8.5	8.2	8.6
8	6.5	6.3	10
9	5.2	5.0	11.2
10	4.2	4.0	12.4
12	2.9	2.8	15

DD = distance down to illuminated work plane
 FC = initial foot-candles at nadir
 DIA = diameter



Multiplier Table					
CCT Option	2700K	3000K	3500K	4000K	5000K
CCT Multiplier	1.0000	0.994	0.992	1.041	0.992



Cooper Lighting Solutions
 1121 Highway 74 South
 Peachtree City, GA 30269
 P: 770-486-4800
 www.cooperlighting.com

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 Specifications and dimensions
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 February 22, 2023 9:26 AM

FIXTURE L4

TEGEL 18 OUTDOOR WALL

VISUAL COMFORT & Co.

PRODUCT FEATURES

- Powerful, long lasting (L70, 70,000 hours) dimmable LED tested against the highest quality standards to ensure it delivers consistent LED performance and color over time.
- Die-cast aluminum structure, powder coat finish, and stainless steel hardware for robust durability in harsh elements. appropriate for commercial use.
- Universal 120-277 volt driver with integral transient surge protection at 2.5KV per American National Standard (ANSI) and IEEE standards.
- Wet listed, IP65 (International Protection rating indicating resistance to dust and water. Suitable and safe for commercial use).
- Available up and down light OR down light only. Each with beam spread options of 10° or 36°. Available in modern finishes.
- 5-year Warranty. Go to www.techlighting.com for warranty details.



Black 18"



Bronze 18"

Charcoal 18"

Black 18"

ORDERING INFORMATION

7000WTEG	CRI	COLOR TEMP	BEAM SPREAD	LENGTH (A)	FINISH	VOLTAGE
	8 80 CRI	30 3000K 40 4000K 27 2700K	N 10° NARROW NN 10° UP & DOWN NW 10° & 36° W 36° WIDE WW 36° UP & DOWN	18 18"	B BLACK Z BRONZE H CHARCOAL	UNV 120V-277V

7000WTEG _____

JOB NAME _____

NOTES _____



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7400 Linder Avenue, Skokie, IL 60077
T 847.410.4400 | F 847.410.4500 | techlighting.com

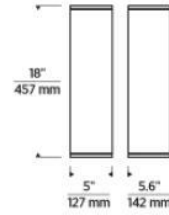
FIXTURE L4

TEGEL 18 OUTDOOR WALL

VISUAL COMFORT & Co.

SPECIFICATIONS

PRIMARY MATERIAL	Aluminum
SHADE MATERIAL	Aluminum
NET WEIGHT	8 lbs
HEIGHT	18in
WIDTH	5.6in
LENGTH	5in
WET LISTED	
DAMP LISTED	
DRY LISTED	
GENERAL LISTING	ETL Listed
INCLUDES	



LAMPING SPECIFICATIONS

	LED LAMP	INTEGRATED LED	NON LED	NO LAMP
DELIVERED LUMENS		1212 2369		
WATTS		15.6 31.2		
MAX WATTAGE PER BULB		15.6W		
		Universal 120V-277V 0-10, ELV		
CCT		2700K 3000K 4000K		
CRI		80 CRI		
LED LIFETIME		>60000		
AVERAGE BULB HOURS				
FIELD SERVICEABLE LED				
LAMP BASE		Integrated LED		
LAMP SHAPE		Integrated LED		
LAMP INCLUDED?		True		
WARRANTY**		5 Years		

* Dimming information available at www.techlighting.com/Downloads#dimming
 ** Visit techlighting.com for specific warranty limitations and details.

T20 / T24 / JA8 INFORMATION

	Integrated LED	Replacement LED Lamp	No Lamp *
This product can be used to comply with California Building Energy Efficiency Standards 2016 Title 24 Part 6 / JA8.	Yes		
This product can be used to comply with California Appliance Efficiency Standards 2016 Title 20 and may be shipped to and sold in California.	N/A		

* If a light fixture or component does not include a lamp or light source, it is the responsibility of the customer to select a lamp that meets the T24 and T20 requirements.



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FIXTURE L5

TOKISTAR Exhibitor



TOKISTAR LIGHTING

FIXTURE L5



Exhibitor™

Tokistar® Exhibitor Series is a wet-location festoon lighting system used in amusement parks, shopping centers, street decorations and promenades. Exhibitor fixtures may also be incorporated into signs or surface mounted to accent rooflines and other architectural features.

The EXC Series incorporates Exhibitor Series into an aluminum profile suitable for painting and use in all environments. This series can be wired for single circuit or chasing effects.

Our Exhibitor Pendants are independent sockets with a lead wire exiting the base. Fixtures are wet-location listed and may be suspended with liquid-tight strain relief fittings.

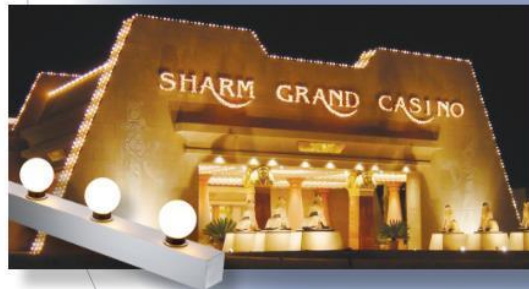
For a distinctive look, optional shades may be used with Exhibitor in festoon applications or with Exhibitor Pendants.

A wide selection of LEDs include our 1.8 watt Virtual Incandescent™ and Ultra Bright LEDs. We also offer energy-efficient 0.48 watt LEDs in a variety of colors.

Exhibitor is operated from 24 VAC magnetic transformers and capable of running great distances on a single secondary circuit.



Exhibitor with white LEDs along the River Thames.



EXC Series wired for four-channel chase dramatically highlights the contours of this casino perimeter.

Contents

- Introduction | 2-3
- Basic System / Mounting Options | 4
- Design Guidelines / Shades | 5
- EXC Series / Pendants | 6
- Fixture Lengths / Transformers Specifications | 7



Cover: Exhibitor with LEDs brightens open-air space.

Exhibitor Series is ETL Wet-Location Listed to UL Standards and marked in accordance with CE Standards.



Intertek

FIXTURE L5



Virtual Incandescent LEDs outline this structure.



Virtual Incandescent™ LED
1.8 watts / 24 VAC
Virtual Incandescent LEDs do a remarkable job of emulating traditional incandescent lamps.



Surface mounted Exhibitor outlines architectural features.



Ultra Bright LED
1.8 watts / 24 VAC
These LEDs have the brightness of much higher wattage incandescent lamps, with much greater life.



Exhibitor with Virtual Incandescent LEDs creates a radiant canopy of lights.



Three Exhibitor Globe Shapes
All styles are available in clear and frosted. The G-19 is also available in transparent Green, Amber, Blue, Red and Violet.

FIXTURE L5



The Basic System

The Exhibitor Series sockets are permanently sealed to flexible cable with shatterproof polycarbonate globes. Fixtures are wet-location listed and rated IP65. When specifying an Exhibitor Lighting System, take into consideration: Socket Spacing, LED Style and Globe Selection.

EXBK - 6 - VIWW - S14 - C

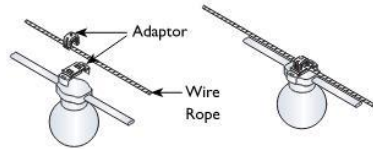
Cable / Socket Color		Socket Spacing		LED			Globe Style		Globe Color	
Code	Color	Code	Inches (mm)	Code	Color	Watts/Volts	Code	Style	Code	Color
BK	Black	6	6" (150 mm)	UBLW	2000K White	1.8 W / 24 VAC	G19	G-19	C	Clear
WH	White	12	12" (300 mm)	UBWW	2400K White	1.8 W / 24 VAC	G14	G-14	F	Frosted
		18	18" (450 mm)	UBIW	3000K White	1.8 W / 24 VAC	S14	S-14	G	Green
		24	24" (600 mm)	VILW	2000K White	1.8 W / 24 VAC	G-14 & S-14 in clear and frosted only		A	Amber
			Custom spacing is available.	VIWW	2400K White	1.8 W / 24 VAC			B	Blue
				VIIW	3000K White	1.8 W / 24 VAC			R	Red
				Virtual Incandescent (VILW, VIWW & VIIW) not for use with Frosted Globes					V	Violet
				WW	2500K White	0.48 W / 24 VAC			M	Multi-Color
				WH	5500K White	0.48 W / 24 VAC				
				BL	Blue	0.48 W / 24 VAC				
				GR	Green	0.48 W / 24 VAC				
				OR	Orange	0.48 W / 24 VAC				
				PL	Purple	0.48 W / 24 VAC				
				RD	Red	0.48 W / 24 VAC				
				YG	Yellow-Green	0.48 W / 24 VAC				
				(Any Combination of 0.48 Watt Colors is Possible)						
				Xenon Lamp						
				124	2500K	7.5 W / 24 VAC				
				Xenon lamp not for use with G-14 globes or Exhibitor Pendants						

Mounting Options

Festoon Mounting

Part# EX-MDA-WH (White)
Part# EX-MDA-BK (Black)

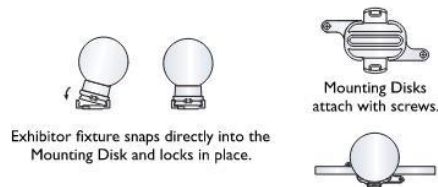
For festoon applications to a catenary cable, our wire-rope adaptors securely hold each socket in place to a 1/16" or 1/8" diameter wire rope. Wire rope and associated mounting hardware is not provided with the system.



Surface Mounting with Disks

Part# EX-MD-WH (White)
Part# EX-MD-BK (Black)

Exhibitor Series can be surface mounted to structures using mounting disks. One disk is required for mounting each socket. The socket can be snapped into the disk and screwed in place to the structure.



Surface Mounting with Straps

Part# EX-MS-WH (White)
Part# EX-MS-BK (Black)

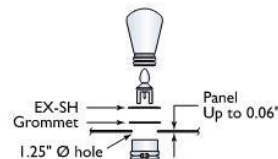
Exhibitor Series may be surface mounted to structures using our mounting straps. Two straps are required for mounting each socket. Straps are positioned on either side of the socket, and then screwed securely to the structure.



Panel/Extrusion Mounting

Part# EX-SH

For installations to flat panels or extrusions up to 0.06", we offer stainless-steel panel fasteners. The socket assembly is inserted from below, then the panel fastener and grommet are pressed in place from above.



FIXTURE L5



Design Guidelines

Socket Spacing

Consider line of sight and viewing perspective when deciding on socket spacing. More distant spacings (18"-24") are the best choice for most festoon applications. Closer spacings (6"-12") are appropriate for applications at closer viewing range. Any custom spacing is available on request.

Light Sources

Virtual Incandescent and Ultra Bright LEDs

Virtual Incandescent™ LEDs do a remarkable job of emulating traditional incandescent filaments. Ultra Bright LEDs do the same, and are typically used with frosted globes. Both LEDs consume 1.8 watts.

0.48 Watt LEDs

These lower wattage LEDs are the most energy-efficient choice. Typically they are used with frosted globes to create a very uniform and softer lighting effect.



Globe Selection

Three different shapes are available: G-19, G-14 and S-14. Clear globes have excellent clarity and will emphasize distinct points of light. Frosted globes diffuse light and have a softer appearance. Each globe includes two O-rings for a secure and weatherproof seal to the socket. G-19 transparent colored globes create vibrant color.



G-19 globes are available in transparent Green, Amber, Blue, Red and Violet.

Exhibitor Shades

For a distinctive look, these lightweight aluminum spinnings may be added to festoon applications or used with Exhibitor Pendants. Standard finish is black and custom finishes are available on request.



Select from one of our standard shapes or create your own design.

TOKISTAR LIGHTING | 5

FIXTURE L5

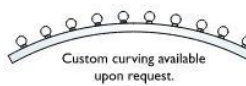


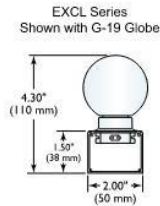
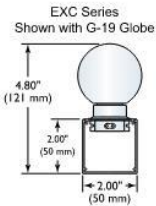
EXC Series

EXC Series is available in a 2" x 2" or 1.5" x 2" aluminum profile for use in all environments. Standard finish is satin aluminum, and custom finishes are available upon request. Fixtures can be wired for single circuit or chasing effects. Consult factory for custom curving.



EXC - 6 - UBIW - G19 - F

Extrusion Profile		Socket Spacing		LED			Globe Style		Globe Color	
Code	Size	Code	Inches (mm)	Code	Color	Watts/Volts	Code	Style	Code	Color
EXC	2" x 2"	6	6" (150 mm)	UBLW	2000K White	1.8 W / 24 VAC	G19	G-19	C	Clear
EXCL	1.5" x 2"	12	12" (300 mm)	UBWW	2400K White	1.8 W / 24 VAC	G14	G-14	F	Frosted
		18	18" (450 mm)	UBIW	3000K White	1.8 W / 24 VAC	S14	S-14	G	Green
		6C	6" Chase (150 mm)	VILW	2000K White	1.8 W / 24 VAC	G-14 & S-14 in clear and frosted only			
		12C	12" Chase (300 mm)	VIWW	2400K White	1.8 W / 24 VAC				
			Custom spacing is available.	VIIW	3000K White	1.8 W / 24 VAC	Virtual Incandescent (VILW, VIWW & VIIW) not for use with Frosted Globes			
				WW	2500K White	0.48 W / 24 VAC				
				WH	5500K White	0.48 W / 24 VAC				
				BL	Blue	0.48 W / 24 VAC				
				GR	Green	0.48 W / 24 VAC				
				OR	Orange	0.48 W / 24 VAC				
				PL	Purple	0.48 W / 24 VAC				
				RD	Red	0.48 W / 24 VAC				
				YG	Yellow-Green	0.48 W / 24 VAC				
				Xenon Lamp						
				124	2500K	7.5 W / 24 VAC	Xenon lamp not for use with G-14 globes or Exhibitor Pendants			

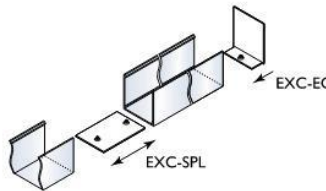


EXC Series

Part# EXC-SPL (Exhibitor Splice)

Part# EXC-EC (Exhibitor End Caps)

End Caps are required at the end and beginning of each run of fixture. When EXC fixtures are positioned end-to-end a splice seams them together.



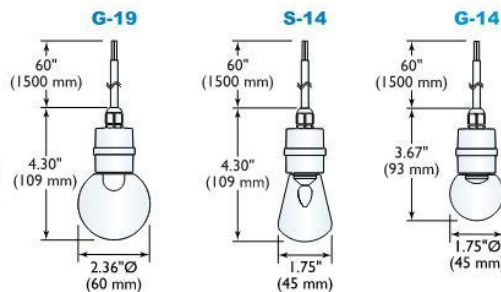
Exhibitor Pendants

These independent fixtures can be provided with the same light sources and globe styles as our basic Exhibitor System. Pendants are available with black cable and for use with Class 2 transformers only.



EX-PEND - VILW - S14 - C

LED	Globe Style	Globe Color
Select LED and globe options from other charts		



FIXTURE L5



Fixture Lengths

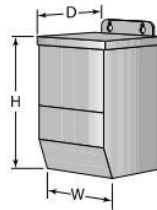
To minimize voltage drop and keep conductors safely within their ratings, do not exceed the maximum lengths shown for each independent fixture.

Maximum Run Lengths			
	0.48 W LEDs	UB & VI LEDs	Xenon Lamp
Socket Spacing	0.48 Watt / 24 VAC	1.8 Watt / 24 VAC	7.5 Watt / 24 VAC
6" (150 mm)	250' (76 M)	125' (38 M)	32' (10 M)
12" (300 mm)	350' (106 M)	200' (60 M)	56' (17 M)
18" (450 mm)	420' (128 M)	225' (68 M)	72' (22 M)
24" (600 mm)	500' (152 M)	250' (76 M)	80' (24 M)

Transformers

Tokistar transformers operate from a 120 VAC / 60 Hz input and are fully dimmable. They are provided in a Nema 3R enclosure. The secondary outputs are protected by circuit breakers. Transformers should be installed in an accessible location where there is free air circulation.

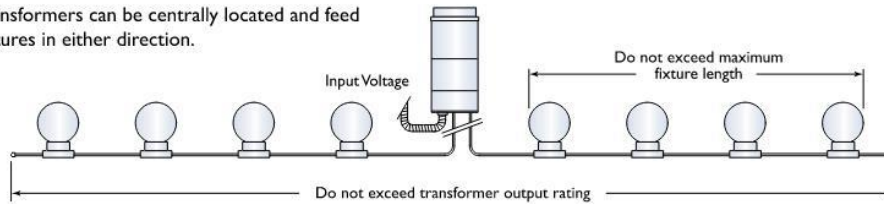
24 VAC Transformers					
Number	Outputs	D	H	W	Weight
C2-40-24V	1 @ 40 Watt / 24 VAC	2.25"	5.75"	2.25"	2 lbs
C2-96-24V	1 @ 96 Watt / 24 VAC	2.5"	6.5"	3.0"	3 lbs
T24-150	1 @ 150 Watt / 24 VAC	3.0"	9.0"	3.0"	5 lbs
T24-300	1 @ 300 Watt / 24 VAC	3.5"	9.5"	4.5"	8 lbs
T24-600	1 @ 600 Watt / 24 VAC	4.5"	10.5"	4.5"	15 lbs
T24-1200	2 @ 600 Watt / 24 VAC	5.0"	11.5"	7.0"	28 lbs



Exhibitor Pendants are for use with the C2-40-24V and C2-96-24V Class 2 transformers.

Consult factory for transformers with input voltages of 230 or 277 VAC. Sizes and weights shown are approximate and subject to change without notice.

Transformers can be centrally located and feed fixtures in either direction.



Specifications

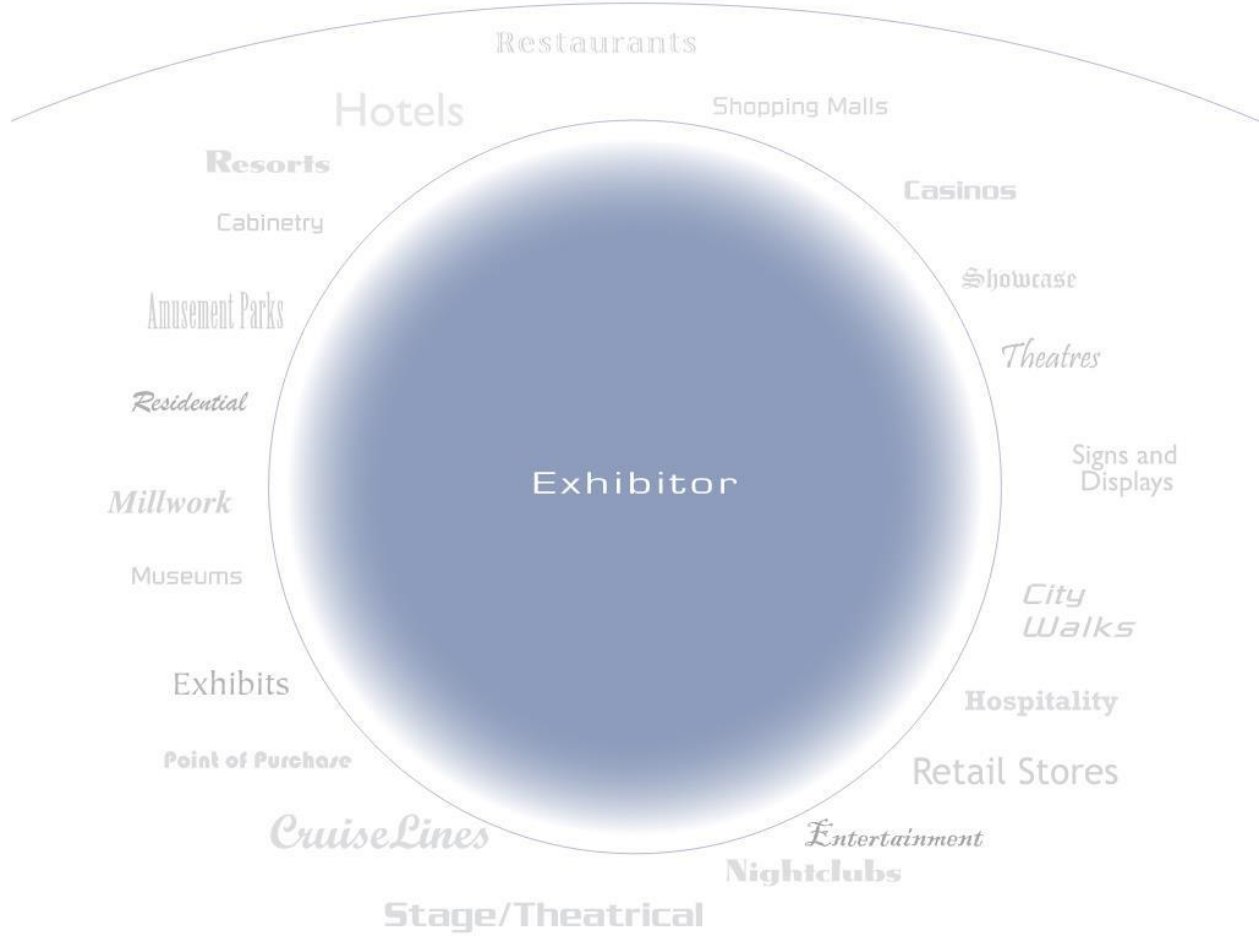


- Polycarbonate Globe** with flammability rating UL 94V-2
- Light Sources** include LED and Xenon lamps
- Flexible Conductors** #12 AWG stranded and plated wire
- Two O-Rings** on each globe for weatherproof seal
- Sockets** permanently fastened to cable with sealant
- Insulation** is flexible PVC with flammability rating UL 94 HB

Exhibitor Series is ETL Wet-Location Listed to UL Standards and marked in accordance with CE Standards.



FIXTURE L5



TOKISTAR® LIGHTING INC.

1015 E. Discovery Lane • Anaheim, CA 92801

Tel: 714.772.7005 • Fax: 714.772.7014 • Toll free in USA: 877.340.7633

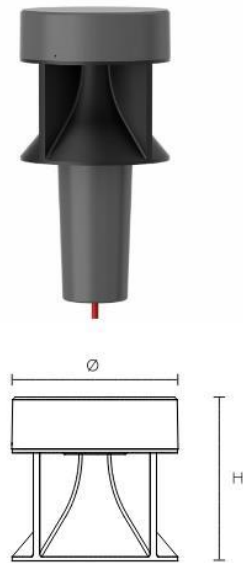
Email: info@tokistar.com • Website: www.tokistar.com

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FIXTURE L6

selux

Inula bollard head
SX 984 43-9



luminaire head

symm.

LED, 2100 lm, 3000 K, CRI > 80, electronic converter, Total power:
27 W

base tube to be ordered separately, luminaire housing made of die-
cast aluminium, powder-coated, without shielding

Optical system: free-form lens optics single, for precise light control
incl. 2m feed cable,

CE, IK10, IP65, Protection Class II, optional I

colour: Selux Graphite or special finish **Black finish**

Height H: 200 mm

Diameter Ø: 200 mm

Weight: 3,5 kg

Make: Selux, Type: SX 984 43-9



Modifications are possible due to the constant development and improvement of LED technology.

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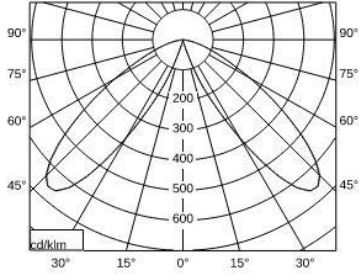
Selux GmbH, Volkmarstr. 18, 12099 Berlin, T +49 30 72001-0, F -100, info@selux.com, www.selux.com

FIXTURE L6



Inula bollard head
SX 984 43-9

Technics



Photometric data: 8602

Lamp

LED 2100lm, 27W, 3000 K, CRI > 80

Optic

symm.

Electrics

electronic converter · Total power: 27W ·
 2m feed cable
 control options:
 dynamic · DALI · fix value · CLT · HNS ·
 AmpDim · individual power reduction in 300
 lumen steps ex work ·

Luminous flux characteristics / Operating time of LED

Operating time LED	20000	40000	60000	80000
Lumen maintenance	93%	90%	87%	84%
LLMF*	0.93	0.9	0.87	0.84

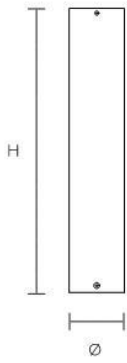
* = Lamp lumen maintenance factor

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 Selux GmbH, Volkmarstr. 18, 12099 Berlin, T +49 30 72001-0, F -100, info@selux.com, www.selux.com

FIXTURE L6

selux

Inula bollard tube
SX 97-628-9



base tube

exclusive flush door, light unit to be ordered separately, flange plate for mounting on a foundation or buried base, luminaire housing made of aluminium,
Optical system:

colour: Selux Graphite or special finish **Black finish**

for total height bollard 1000 mm
Height H: 796 mm
Diameter Ø: 200 mm
Weight: 5 kg

Make: Selux, Type: SX 97-628-9

Modifications are possible due to the constant development and improvement of LED technology.
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Selux GmbH, Volkmarstr. 18, 12099 Berlin, T +49 30 72001-0, F -100, info@selux.com, www.selux.com



YBA
architects

ADDRESS AT OCCUPANCY:

WILSONVILLE TOD

CONSTRUCTION PHASE DESIGNATION:

LAND USE SUBMISSION

08/18/23

GENERAL NOTES

1. APPLICABLE CODES: ALL WORK SHALL BE IN CONFORMANCE WITH ALL FEDERAL, STATE, AND LOCAL CODES. SPECIFICATIONS AND STANDARDS SHALL MEAN, AND ARE INTENDED TO BE, THE LATEST EDITION, AMENDMENT OR REVISION OF SUCH REFERENCES STANDARD AS OF THE DATE OF THE CONTRACT DOCUMENTS.
 - A. WITH REGARD TO ACCESSIBILITY, THE PROJECT SHALL COMPLY WITH THE 1998 FAIR HOUSING ACT DESIGN MANUAL (FHA DM), WITH REFERENCED ANSI A117.1 (2003 VERSION) FOR FHA REQUIREMENTS 1-2 – COMMON/PUBLIC USE AREAS. FHA DM WILL BE THE "SAFE HARBOR". THE PROJECT SHALL ALSO COMPLY WITH THE APPLICABLE ACCESSIBILITY PROVISIONS AND THE 2010 ADA STANDARDS, APPLICABLE ADDENDUMS TO THE PUBLIC ACCOMMODATIONS, TOGETHER, THE APPLICABLE PORTIONS OF THESE STANDARDS COMPRISE THE "ACCESSIBILITY REQUIREMENTS".
 - B. THE ARCHITECT IS NOT RESPONSIBLE FOR NON-COMPLIANCE WITH THE ACCESSIBILITY REQUIREMENTS IF THE CONTRACTOR FAILS TO INSTALL A PRODUCT PER THE CONTRACT DOCUMENTS AND/OR IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS OR INSTRUCTIONS.
2. GENERAL CONTRACTOR SHALL INDICATE BY WRITTEN DECLARATION (EMAIL TO YBA PROJECT MANAGER IS ACCEPTABLE) PRIOR TO COMMENCEMENT OF WORK THAT THEY HAVE REVIEWED AND ACHIEVED A SATISFACTORY LEVEL OF FAMILIARIZATION WITH THE ANS/ADA MATERIAL PROVIDED ON SHEETS G-601 – G-606.
3. USE DIMENSIONS SHOWN. IN NO CASE SHALL WORKING DIMENSIONS BE SCALED FROM DRAWINGS. IT SHALL BE THE GENERAL CONTRACTOR'S RESPONSIBILITY TO CROSS CHECK DETAILS AND DIMENSIONS SHOWN ON THE ARCHITECTURAL DRAWINGS WITH RELATED REQUIREMENTS ON THE CIVIL, STRUCTURAL, MECHANICAL, ELECTRICAL, PLUMBING AND OTHER DRAWINGS AS APPLICABLE. NOTIFY THE ARCHITECT OF ANY DISCREPANCIES BEFORE COMMENCING WORK.
 - A. ALL DIMENSIONS ARE TO FACE OF STUD, CENTER OF CONCRETE WALL, OR STRUCTURAL GRID, UNLESS NOTED OTHERWISE.
5. CONDITIONS AND DETAILS MARKED "TYPICAL" (TYP.) SHALL APPLY IN ALL CASES UNLESS SPECIFICALLY INDICATED OTHERWISE. TYPICAL DETAILS NOT REFERENCED ON DRAWINGS APPLY UNLESS NOTED OTHERWISE, BY SPECIFIC NOTES AND DETAILS. WHERE NO SPECIFIC DETAILS IS SHOWN, THE CONSTRUCTION SHALL BE IDENTICAL OR SIMILAR TO THAT INDICATED FOR THE TYPICAL CONSTRUCTION ON THE PROJECT.
6. WHERE NO SPECIFIC STANDARDS ARE APPLIED TO A MATERIAL OR METHOD OF CONSTRUCTION TO BE USED IN THE WORK, ALL SUCH MATERIALS AND METHODS ARE TO MAINTAIN THE STANDARDS OF THE INDUSTRY.
7. MATERIALS, EQUIPMENT, ETC. NOT INDICATED ON DRAWINGS OR SPECIFIED HEREIN, BUT REQUIRED FOR THE SUCCESSFUL AND EFFICIENT COMPLETION OF THE INSTALLATION, SHALL BE HELD TO BE IMPLIED AND SHALL BE FURNISHED AND INSTALLED FOR NO ADDITIONAL COST.
8. ERRORS OR OMISSIONS IN ANY SCHEDULE OR DRAWING DO NOT RELIEVE THE GENERAL CONTRACTOR FROM THE WORK INTENDED IN THE CONTRACT DRAWINGS OR DESCRIBED IN THE SPECIFICATIONS, EITHER EXPRESSED OR IMPLIED.
9. A COMPLETE, CURRENT SET OF THE APPROVED CONTRACT DOCUMENTS MUST BE ON THE JOB SITE WHENEVER CONSTRUCTION IS IN PROGRESS. A COMPLETE SET IS DEFINED AS THE ORIGINAL IFC (PERMIT SET)/ (AHJ COMMENTS) CONTRACT DOCUMENTS + ASI & RFI'S AND/OR ANY OTHER SUPPLEMENTAL MATERIAL ISSUED BY THE ARCHITECT. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ADEQUATE SAFEGUARDS, SAFETY DEVICES, PROTECTIVE EQUIPMENT, FLAGGERS, AND ANY OTHER NEEDED ACTIONS TO PROTECT THE LIFE, HEALTH, AND SAFETY OF THE PUBLIC, AND TO PROTECT PROPERTY IN CONNECTION WITH THE PERFORMANCE OF WORK COVERED BY THE CONTRACTOR.
 - A. DO NOT NOTCH OR DRILL JOISTS, BEAMS, OR LOAD BEARING STUDS WITHOUT THE PRIOR APPROVAL OF THE ARCHITECT AND STRUCTURAL ENGINEER, OR PER MANUFACTURER'S SPECIFICATIONS.
12. GENERAL CONTRACTOR TO PROTECT ALL EXTERIOR EXPOSED WORK TO BE INSTALLED IN A WEATHER TIGHT MANNER; CAULK AND PROVIDE WITH TEMPORARY COVER TO PREVENT WATER INFILTRATION INTO THE BUILDING INTERIOR OR WIND DAMAGE DURING CONSTRUCTION.
13. CONSTRUCTION MATERIALS SHALL BE SPREAD OUT IF PLACED ON FRAMED FLOORS OR ROOF. LOAD SHALL NOT EXCEED THE DESIGN LIVE LOAD PER SQUARE FOOT.
 - A. ALL EXPOSED METAL CONNECTIONS, FASTENERS, COVERS, AND RELATED APPURTENANCES TO BE NON-CORROSIVE.
15. ALL SEPARATING WALLS AND FLOOR-CEILING ASSEMBLIES, INCLUDING PENETRATIONS OR OPENINGS, SHALL PROVIDE AN AIRBORNE AND IMPACT SOUND INSULATION EQUAL TO SOUND TRANSMISSION CLASS AND IMPACT INSULATION CLASS REQUIRED BY GOVERNING AUTHORITIES; GENERAL CONTRACTOR SHALL PROVIDE CONSTRUCTION METHOD, ACCESSORIES, DEVICES AND APPURTENANCES AS REQUIRED FOR SAME. PROVIDE SEALANT AT ALL OPENINGS MADE IN WALL AND FLOOR SURFACES AND FRAMING FOR SUPPLY AND DRAIN LINES, PROVIDE SEALANT, PUTTY PADS OR OTHER APPROVED MATERIALS TO MAINTAIN ACOUSTICAL REQUIREMENTS AROUND ELECTRICAL OUTLETS AND JUNCTION BOXES. SEE ACOUSTICAL NOTES.
16. THE TOP OF SLAB DESIGNATION CORRESPONDS TO THE TOP OF CONCRETE SLAB OR CEMENTITIOUS UNDERLAYMENT AND DOES NOT ACCOUNT FOR THE THICKNESS OF THE FINISHES THEREON, UNLESS OTHERWISE NOTED.
17. GENERAL CONTRACTOR SHALL PROVIDE ALL WORK IDENTIFIED IN THESE CONSTRUCTION DOCUMENTS IN THE CONFIGURATION(S) SHOWN. GENERAL CONTRACTOR SHALL NOT DEVIATE FROM CONFIGURATIONS SHOWN WITHOUT THE EXPRESS PERMISSION OF THE ARCHITECT OF RECORD.
18. GENERAL CONTRACTOR TO PROTECT PROPERTY AND BUILDING MATERIALS FROM DAMAGE DUE TO CONSTRUCTION.
19. GENERAL CONTRACTOR SHALL PROVIDE ALL NECESSARY TESTING AND COORDINATE ALL REQUIRED OBSERVATIONS AND INSPECTIONS.
20. GENERAL CONTRACTOR TO PROTECT ALL EXISTING FINISHES, CLEAN ALL EXPOSED SURFACES, AND JOB SITE PRIOR TO TURNING SPACES OVER. ANY ELEMENTS OF THE DESIGN THAT ARE DAMAGED, MARKED OR OTHERWISE NOT IN PRISTINE CONDITION, OR OTHERWISE RENDERED OUT OF COMPLIANCE WITH THE DESIGN INTENT DURING AND/OR AS A RESULT OF CONSTRUCTION ACTIVITIES MUST BE REPAIRED OR REPLACED PRIOR TO HAND OVER. THE ARCHITECT RESERVES THE RIGHT TO MAKE ALL DETERMINATIONS OF COMPLIANCE WITH THIS PROVISING.
 - A. DUST CONTROL MEASURES SHALL BE MAINTAINED THROUGHOUT THE DURATION OF THE PROJECT.
22. STABILIZED CONSTRUCTION ENTRANCES SHALL BE INSTALLED AT THE BEGINNING OF CONSTRUCTION AND MAINTAINED FOR THE DURATION OF THE PROJECT. ADDITIONAL MEASURES, SUCH AS CONSTRUCTED WHEEL WASH SYSTEMS OR WASH PADS, MAY BE REQUIRED TO ENSURE THAT ALL PAVED AREAS ARE KEPT CLEAN AND TRACK OUT TO ROAD RIGHT OF WAY DOES NOT OCCUR FOR THE DURATION OF THE PROJECT.
23. PROVIDE FIRE PROTECTION AT PLUMBING CAVITIES OVER 1" IN DEPTH.
24. PROVIDE BLOCKING AS REQUIRED FOR LIGHTING, FIXTURES, AND/OR ANY FINISH MATERIALS AS REQUIRED.
25. ALL DRIP EDGES ON FLASHING SHALL BE 3/8", UNLESS NOTED OTHERWISE.
26. MEP DRAWINGS ARE INDICATIVE IN NATURE AND DO NOT SPECIFICALLY IDENTIFY PRECISE ROUTING OR EQUIPMENT LOCATIONS. IT IS THE RESPONSIBILITY OF THE GC TO COORDINATE WITH THE TRADES TO MAKE THE NECESSARY ADJUSTMENTS AS REQUIRED. IF AND WHEN THE DEVIATION BECOMES SO GREAT AS TO ALTER DESIGN INTENT, IT IS INCUMBRANT UPON THE GC TO COMMUNICATE WITH THE ARCHITECT AND WITH ALL TRADES.
 - A. ENSURE ALL EQUIPMENT, PRODUCTS, APPLIANCES, FIXTURES AND FITTINGS ARE INSTALLED ACCORDING TO THE MANUFACTURER'S INSTALLATION INSTRUCTIONS. GENERAL CONTRACTOR TO CAREFULLY REVIEW ANY AND ALL APPLICABLE MANUFACTURER'S INSTALLATION INSTRUCTIONS AND NOTIFY THE DESIGNER OF ANY CONFLICTS WITH THE DESIGN INDICATED IN THE CONTRACT DOCUMENTS PRIOR TO INSTALLATION OR EXECUTION OF THE WORK.
30. GENERAL CONTRACTOR IS RESPONSIBLE TO READ AND FOLLOW ALL REFERENCED STANDARDS FOR PRODUCTS, EQUIPMENT, FIXTURES AND SYSTEMS SPECIFIED FOR THE PROJECT, AND NOTIFY THE ARCHITECT OF ANY CONFLICTS WITH THE DESIGN INDICATED IN THE CONTRACT DOCUMENTS PRIOR TO INSTALLATION OR EXECUTION OF THE WORK.
31. THE GENERAL CONTRACTOR UNDERSTANDS THAT PRODUCTS, EQUIPMENT, FIXTURES AND SYSTEMS ARE REPRESENTED IN THE CONTRACT DOCUMENTS INDICATIVELY AND THAT THERE MAY BE SPECIFIC FEATURES, DIMENSIONS OR ELEMENTS THAT ARE NOT EXPLICITLY REPRESENTED IN THE DOCUMENTS AND WHICH MAY REQUIRE COORDINATION IN THE FIELD TO ENSURE INTENDED FUNCTION AND/OR AVOID CONFLICT WITH OTHER ELEMENTS IN THE PROJECT. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CAREFULLY REVIEW AND EVALUATE SUCH ELEMENTS PRIOR TO INSTALLATION AND TO COMMUNICATE TO THE ARCHITECT ANY DEVIATIONS IN THE ACTUAL ELEMENTS FROM WHAT IS REPRESENTED IN THE DRAWINGS.
32. THE CONTRACTOR UNDERSTANDS THAT THE AUTHORITY HAVING JURISDICTION (AHJ) HAS DISCRETION TO APPROVE WORK DURING INSPECTIONS AND MAY FAIL WORK THAT IN ITS VIEW DOES NOT MEET WORKMANSHIP QUALITY AND/OR CLEARANCES DESCRIBED OR IMPLIED IN REFERENCED STANDARDS, PER THE AHJ'S INTERPRETATION OF SUCH STANDARDS. THESE CONTRACT DOCUMENTS ENDEAVOR TO MEET CODE REQUIREMENTS AND TO SPECIFY RELEVANT REFERENCE STANDARDS, BUT DO NOT AND CANNOT PRE-FIGURE THE INTERPRETATIONS OF SUCH STANDARDS BY THE AHJ, WHERE STANDARDS OR CODES DO NOT EXPLICITLY SPECIFY QUANTITATIVE CRITERIA OR CRITERIA THAT CAN BE ABSOLUTELY INTERPRETED. IF AND WHERE AN AHJ INTERPRETS A STANDARD IN A WAY THAT REQUIRES EXPLICIT TOLERANCES OR WORKMANSHIP THAT ARE NOT EXPLICITLY INDICATED IN THE CODE OR REFERENCED STANDARDS OR EXPLICITLY REPRESENTED IN THE CONTRACT DOCUMENTS, IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO MEET THE AHJ'S INTERPRETATION, AND TO ALLOW CONTINGENCY FOR SUCH SITUATIONS AS IT DEEMS NECESSARY.
33. FOR ANY ELEMENTS IN THE PROJECT WHERE FINAL COLOR, TEXTURE, FINISH OR OTHER AESTHETIC CHARACTERISTICS ARE NOT EXPLICITLY INDICATED IN THE CONTRACT DOCUMENTS OR WHERE THEY ARE INDICATED AS TO BE DETERMINED BY THE ARCHITECT OR OTHER APPLICABLE DESIGN CONSULTANT, THE RESPONSIBILITY LIES SOLELY WITH THE GENERAL CONTRACTOR TO FORECAST AND DETERMINE A SCHEDULE FOR THE RENDERING OF SUCH DECISIONS BY THE ARCHITECT AND/OR CONSULTANTS DURING CONSTRUCTION, SO AS TO AVOID ANY RISK OF DELAY OR OTHER IMPACT TO THE CRITICAL PATH. THIS SCHEDULE SHALL ASSUME AND PROVIDE FOR A DESIGN MAKING PERIOD OF NO LESS THAN 14 CALENDAR DAYS FOR THE ARCHITECT AND/OR CONSULTANTS FROM THE DATE BEYOND WHICH A DELAY IN COMMUNICATING DECISIONS MAY IMPACT THE CONSTRUCTION SCHEDULE. THE GENERAL CONTRACTOR SHALL CLEARLY INTEGRATE THIS SCHEDULE OF DECISIONS AND DESIGN MAKING PERIODS INTO THE OVERALL CONSTRUCTION SCHEDULE, REVIEW AND UPDATE IT PERIODICALLY AS REQUIRED AND COMMUNICATE IT IN WRITING TO THE ARCHITECT.
34. PROTOCOLS AND RESPONSE PERIODS FOR ALL FORMAL COMMUNICATION DURING THE CONSTRUCTION PHASE ARE INDICATED IN DIVISION 01 OF THE PROJECT MANUAL AND/OR ARE AS FOLLOWS:
 - A. EXCLUDING TIME FOR DELIVERY OF COMMUNICATION TO AND FROM THE CONTRACTOR TO THE ARCHITECT, THE ARCHITECT SHALL RESPOND WITH REASONABLE PROMPTNESS TO ALL REQUESTS FOR INFORMATION, REQUESTS FOR SUBSTITUTION, SUBMITTALS, RE-SUBMITTALS OR OTHER FORMAL COMMUNICATIONS ISSUED BY THE CONTRACTOR WHICH REQUIRE A RESPONSE FROM THE ARCHITECT. THE SAME RESPONSE PERIOD SHALL EXTEND TO ANY OF THE ARCHITECT'S CONSULTANTS.
 - B. THE CONTRACTOR SHALL ALLOW SUFFICIENT TIME IN THE PROJECT CONSTRUCTION SCHEDULE FOR ARCHITECT'S AND ARCHITECT'S CONSULTANTS' REVIEW AND RESPONSE PERIODS, INCLUDING TIME FOR RE-REVIEW IF A QUESTION IS POSED IN RESPONSE TO THE CONTRACTOR'S COMMUNICATION THAT REQUIRES A RESPONSE IN TURN BY THE CONTRACTOR.
37. CONTRACTOR SHALL COMMUNICATE AND COOPERATE WITH THE AUTHORITY HAVING JURISDICTION (AHJ) TO SCHEDULE ANY PRE-CONSTRUCTION MEETINGS REQUIRED BY THE AHJ, NOTIFY THE ARCHITECT, OWNER AND ANY OTHER RELEVANT PARTIES OF SUCH MEETINGS, PARTICIPATE IN SUCH MEETINGS AND RECORD AND DISTRIBUTE COPIES OF MINUTES OF SUCH MEETINGS TO THE OWNER AND ARCHITECT WITHIN 2 DAYS.
38. CONTRACTOR SHALL COMMUNICATE WITH THE AHJ DURING THE MOBILIZATION PERIOD AND PREPARE ANY SPECIFIC PLANS AND/OR PROTOCOLS REQUIRED BY THE AHJ WITH RESPECT TO MEANS AND METHODS, AND COMPLIANCE WITH THE AHJ'S REGULATIONS PERTAINING TO CONSTRUCTION ACTIVITIES AND CONSTRUCTION SITE FIRE AND LIFE SAFETY. THIS MAY INCLUDE, FOR EXAMPLE, COMPLETION OF A FIRE-FIRE PROTECTION PLAN, "FIRE WATCH" PLAN AND/OR SITE ACCESS AND SECURITY PLAN.
39. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CAREFULLY REVIEW AND UNDERSTAND THE DESIGN INTENT EXPRESSED IN THE ARCHITECTURAL DOCUMENTS AND PERFORM NECESSARY COORDINATION AMONG IT'S SUBCONTRACTORS AND TRADES TO ENSURE THAT THEIR WORK IS IN ALIGNMENT WITH THE SAME. IF THERE APPEARS TO BE A DISCREPANCY OR LACK OF INFORMATION BETWEEN THE DESIGN INTENT EXPRESSED IN THE ARCHITECTURAL DOCUMENTS AND OTHER DOCUMENTS, THE CONTRACTOR MUST PREPARE AN RFI IDENTIFYING THE ISSUE(S).
40. WHERE DETAILS ARE PROVIDED THAT APPLY TO MULTIPLE SIMILAR (I.E. "SIM") CONDITIONS, NOT ALL SIMILAR INSTANCES MAY BE TAGGED IN THE DOCUMENTS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO BUILD TO THE SIMILAR CONDITION OR ISSUE A REQUEST FOR INFORMATION IN A TIMELY MANNER TO CONFIRM IF AND WHERE A SIMILAR DETAIL MAY APPLY TO A CONDITION THAT IS NOT SPECIFICALLY DETAILED AND/OR TAGGED.

WILSONVILLE TOD

CONSTRUCTION PHASE DESIGNATION:

ADDRESS AT OCCUPANCY:

50% CONSTRUCTION DOCUMENTS 12/8/23

GENERAL FINISH NOTES

1. DIMENSIONS SHOWN AS 'L1' SHALL BE VERIFIED BY THE GENERAL CONTRACTOR IN THE FIELD LAYING OUT THE PARTITIONS. CONTRACTOR SHALL NOTIFY DESIGNER OF ANY DISCREPANCY IN DIMENSIONS PRIOR TO PROCEEDING WITH THE WORK IN THAT AREA.
2. PRIOR TO PURCHASE OR INSTALLATION OF FINISH MATERIALS PER SUBMITTAL LOG, SUBMIT SAMPLES TO DESIGNER FOR REVIEW IN CONFORMANCE WITH SPECIFIED PROCEDURES. ALLOW TIME FOR SUBMITTAL REVIEW AND FOR RESUBMITTAL, IF REQUIRED.
3. ALL EXPOSED GYPSUM BOARD TO BE LEVEL 1 FINISH UNLESS OTHERWISE SPECIFIED.
4. DIMENSIONS LOCATING DOOR EDGE ARE TO THE INSIDE EDGE OF THE JAMB FRAMING UNLESS OTHERWISE NOTED.
5. TRANSITION OF FLOOR MATERIALS TO BE LOCATED AT THE CENTER OF DOOR LEAVES IN CLOSED POSITION UNLESS OTHERWISE NOTED.
6. ENSURE SURFACES TO RECEIVE FINISHES ARE CLEAN, TRUE, AND FREE OF IRREGULARITIES. DO NOT PROCEED WITH WORK UNTIL UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED.
7. ALL CODE REQUIRED LABELS SUCH AS 'UL', 'FACTORY MUTUAL, OR ANY OTHER EQUIPMENT IDENTIFICATION, PERFORMANCE RATING, NAME OR NOMENCLATURE PLATES SHALL REMAIN READABLE AND NOT PAINTED.
8. PAINT BACK SIDES OF REMOVABLE ACCESS PANELS AND HINGED COVERS TO MATCH EXPOSED SURFACE.
9. ENSURE ALL EQUIPMENT, PRODUCTS, APPLIANCES, FIXTURES AND FITTINGS ARE INSTALLED ACCORDING TO THE MANUFACTURER'S INSTALLATION INSTRUCTIONS. GENERAL CONTRACTOR TO CAREFULLY REVIEW ANY AND ALL APPLICABLE MANUFACTURER'S INSTALLATION INSTRUCTIONS AND NOTIFY THE DESIGNER OF ANY CONFLICTS WITH THE DESIGN INDICATED IN THE CONTRACT DOCUMENTS PRIOR TO INSTALLATION OR EXECUTION OF THE WORK.
10. ALL VISIBLE FACES OF FLASHINGS SHALL BE PAINTED THE SAME FINISH COLOR, INCLUDING THE BACK SIDE OF FLASHINGS OR UNDERSIDE OF FLASHINGS WHERE THOSE FACES ARE VISIBLE. WHERE A FLASHING HAS A FACTORY FINISH AT ONE SIDE, AND THE NON-FACTORY FINISH IS VISIBLE, THE NON-FACTORY FINISH SIDE SHALL BE PAINTED TO MATCH. AT THE DISCRETION OF THE ARCHITECT AND AT NO ADDITIONAL COST.
11. ALL SPRINKLER HEADS AND ACCORDING ESCUSSION PLATES WHERE VISIBLE AT EXTERIOR LOCATIONS SHALL BE BLACK, UNLESS OTHERWISE NOTED. FIRE SUPPRESSION SYSTEM SUBMITTALS SHALL CLEARLY INDICATE THE COLOR OF HEADS AND ESCUSSION WHERE THEY ARE VISIBLE. ALL VISIBLE SPRINKLER PIPES SHALL BE PAINTED AT THE DISCRETION OF THE ARCHITECT AND AT NO ADDITIONAL COST.

GENERAL BUILDING CODE NOTES

1. THE MEANS OF EGRESS, INCLUDING THE EXIT DISCHARGE, SHALL BE ILLUMINATED AT ALL TIMES THE BUILDING IS OCCUPIED. EGRESS LIGHTING WILL BE PROVIDED SO THAT IT ILLUMINATES THE EGRESS PATH TO 1 FT CANDLE MEASURED AT THE FLOOR. THE POWER SUPPLY FOR THE EGRESS LIGHTING SHALL BE PROVIDED BY THE PREMISES ELECTRICAL SUPPLY. EMERGENCY POWER SUPPLY PROVIDED TO MEET OR EXCEED 90 MINUTES IN OPERATIONAL DURATION.
2. EXITS AND EXIT ACCESS SHALL BE MARKED WITH APPROVED EXIT SIGNS THAT ARE READILY VISIBLE FROM ANY DIRECTION OF TRAVEL. IN INSTANCES WHERE THE EXIT OR THE EXIT PATH IS/NOT IMMEDIATELY VISIBLE, ADDITIONAL EXIT SIGNS SHALL BE ADDED.
3. THE FLOORS OF TOILET AND SHOWER ROOMS SHALL HAVE A SMOOTH, HARD, NON-ABSORBENT SURFACE. THE INTERSECTION OF SUCH FLOORS WITH WALLS SHALL HAVE A SMOOTH, HARD, NON-ABSORBENT VERTICAL BASE THAT EXTENDS UPWARDS AT LEAST 4". WALLS AND PARTITIONS WITHIN 2 FEET OF SERVICE SINKS, URINALS, AND WATER CLOSETS SHALL HAVE A SMOOTH, HARD, NON-ABSORBENT SURFACE TO A HEIGHT OF 4 FEET ABOVE THE FLOOR.
4. ELEVATORS WILL MAINTAIN A MINIMUM 10 FOOT CANDLES AT FLOOR LEVEL IN FRONT OF THE ELEVATOR DOOR AT EACH FLOOR LEVEL LANDING AND MINIMUM 18 FOOT CANDLES AT ELEVATOR CONTROL PANELS AND SHALL COMPLY WITH ALL CURRENTLY APPLICABLE CODES.
5. FIRE BLOCKING SHALL BE INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS DESCRIBED IN THE OSBC. SPECIAL ATTENTION SHALL BE PAID TO CONCEALED WALL SPACES (DOUBLE WALLS, FURRED WALLS, STAGGERED STUDS, ETC.) THAT EXCEED 1" IN EITHER HORIZONTAL OR VERTICAL DIMENSIONS. IT IS INCUMBRANT UPON THE GC TO VERIFY CODE COMPLIANT BLOCKING HAS BEEN INSTALLED THAT "BREAKS" THE CONCEALED SPACES INTO AREAS NO GREATER THAN 1X1X1".
6. DRYWALL AT ALL RESTROOMS, ROOMS CONTAINING HOT WATER HEATERS AND MOP SINKS SHALL BE MOISTURE RESISTANT, UNLESS SPECIFIED OTHERWISE.
7. AT ALL RESIDENTIAL UNITS, BLOCKING FOR GRAB BARS SHALL BE PROVIDED FOR BOTH 'ANSI TYPE A' AND 'ANSI TYPE B' UNITS REGARDLESS OF WHETHER GRAB BARS ARE ACTUALLY TO BE INSTALLED.

GENERAL FIRE SAFETY NOTES

1. SEPARATE PERMITS SHALL BE OBTAINED FROM THE CITY OF GRESHAM'S PERMIT CENTER FOR ALTERATIONS TO THE FIRE ALARM AND FIRE SPRINKLER SYSTEM.
2. A MINIMUM ONE ZALORC RATED PORTABLE FIRE EXTINGUISHERS SHALL BE INSTALLED PER THE REQUIREMENTS OF THE FIRE MARSHALL AND THE OREGON FIRE CODE (OFC).
3. EVERY ROOM OR SPACE THAT IS AN ASSEMBLY OCCUPANCY SHALL HAVE AN OCCUPANT LOAD OF THE ROOM OR SPACE POSTED IN A CONSPICUOUS PLACE.
4. FIRE BLOCKING SHALL BE PROVIDED IN ACCORDANCE WITH THE REQUIREMENTS OF THE 2014 OREGON STRUCTURAL SPECIALTY CODE (OSCC) AND THE OREGON FIRE CODE (OFC).
5. ALL PERMITS ARE TO BE OBTAINED FROM THE GRESHAM PERMIT CENTER, NOT THE FIRE MARSHAL'S OFFICE INFORMATION, PROCEDURES, MATERIALS, & TECHNIQUES FOR COMPLIANT FIRE SAFING & CALCUING FOR PENETRATIONS OF FIRE RATED ASSEMBLIES IS ENUMERATED IN THE PROJECT MANUAL SECTION 07 84 13-3.
7. TEMPORARY ADDRESSES OF 'B' SHALL BE PROVIDED AT EACH CONSTRUCTION ENTRANCE PRIOR TO ANY CONSTRUCTION MATERIAL OR WORKERS ON SITE. OFC 505 & 3301
8. THE BUILDING ADDRESSING SHALL MEET THE GRESHAM FIRE ADDRESSING POLICY. OFC 505.1
9. FIRE HYDRANT LOCATIONS SHALL BE IDENTIFIED BY THE INSTALLATION OF BLUE REFLECTIVE MARKERS, LOCATED ADJACENT AND TO THE SIDE OF THE CENTERLINE OF THE ACCESS ROAD WAY THAT THE FIRE HYDRANT IS LOCATED ACCORDINGLY. OFC 508.5.4
10. "NO PARKING FIRE LANE" SIGNAGE OR CURB MARKING IS REQUIRED PER OFC D 103.6
11. ALL FIRE DEPARTMENT ACCESS ROADS SHALL BE CONSTRUCTED AND MAINTAINED PRIOR TO AND DURING CONSTRUCTION. OFC 1410
12. ACCESS ROADS SHALL NOT EXCEED 10% GRADE. OFC 503.7
13. CONTRACTOR WILL SUPPLY A HAZARDOUS MATERIAL INVENTORY STATEMENT (HMIS) SHOWING TYPES AND QUANTITIES OF ALL HAZARDOUS MATERIAL. OFC 407.5/5001.5.2
14. FIRE APPARATUS ACCESS SHALL COMPLY WITH THE REQUIREMENTS OF OFC 503 AND SHALL EXTEND TO WITHIN 150 FEET OF ALL PORTIONS OF THE FACILITY AND ALL PORTIONS OF THE EXTERIOR WALLS OF THE FIRST STORY OF THE BUILDING AS MEASURED BY AN APPROVED ROUTE AROUND THE EXTERIOR OF THE BUILDING. OFC 503.1.1

PROJECT TEAM

OWNER
Palindrome Communities
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503-288-6210 Ext. 325
rgibson@pacificap.com

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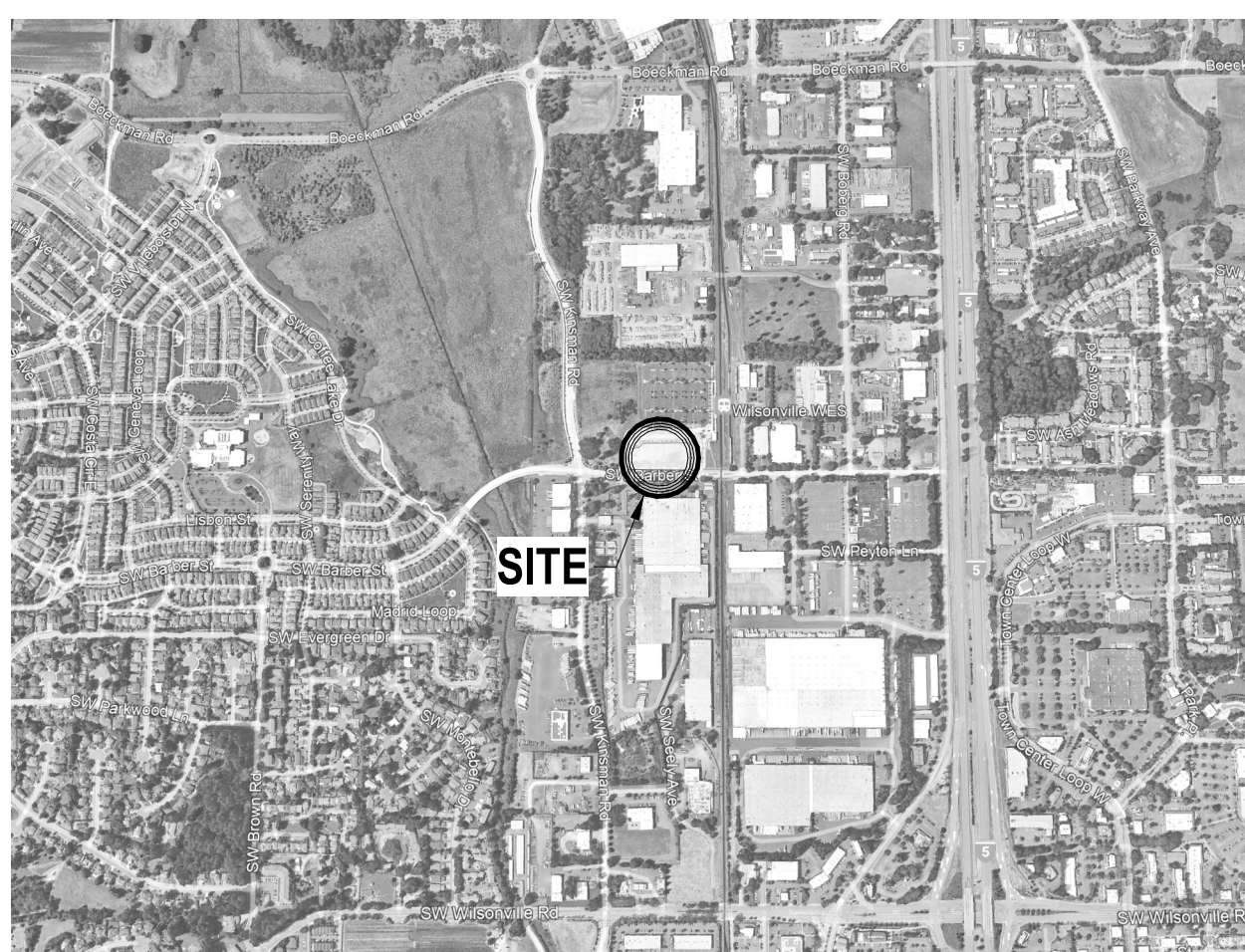
MECHANICAL
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andrew@oceanpm.com

ELECTRICAL
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CONTACT: Gerry Linnell
360-816-8408
glinnell@coscofire.com

AREA MAP



DRAWING LIST

SHEET #	SHEET TITLE
GENERAL	
G1	COVER SHEET
G2	PROJECT INDEX - LAND USE
G3	EXISTING CONDITIONS / SURVEY
G4	TESENTATIVE PARTITION PLAT
CIVIL	
C1.00.	EXISTING CONDITIONS AND DEMOLITION PLAN
C2.00.	SITE GRADING PLAN
C2.11.	SITE GRADING PLAN AT EXISTING TREES
C3.00.	UTILITY PLAN
C3.13.	ROW STORMWATER PLANTERS
LANDSCAPE	
L1.	EXISTING TREE INVENTORY PLAN
L2.	LEVEL 1 MATERIALS PLAN
L3.	LEVEL 2 LANDSCAPE PLANS
L4.	LEVEL 1 PLANTING PLAN
L5.	MITIGATION PLAN
ARCHITECTURAL	
A001.	LAND USE SITE PLAN
A002.	EXTERIOR SIGNAGE PLAN
A003.	EXTERIOR LIGHTING PLAN
A101.	FLOOR PLAN - LEVEL 1 (LU)
A102.	FLOOR PLAN - LEVEL 2 (LU)
A103.	FLOOR PLAN - LEVEL 3 (LU)
A104.	FLOOR PLAN - LEVEL 4 (LU)
A105.	FLOOR PLAN - LEVEL 5 (LU)
A106.	ROOF PLAN (LU)
A201.	EXTERIOR ELEVATIONS (LU)
A202.	EXTERIOR ELEVATIONS (LU)
A203.	EXTERIOR ELEVATIONS (LU)
A301.	BUILDING SECTIONS (LU)
A302.	BUILDING SECTIONS (LU)
A900.	RENDERINGS & EXTERIOR MATERIALS

SHEET #	SHEET TITLE
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SHEET #	SHEET TITLE
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STAMP

FOR
REFERENCE
ONLY

SHEET REVISION REVISION
REVISION NO. EVENT DATE

WILSONVILLE TOD

PALINDROME COMMUNITIES

ISSUANCE

LAND USE REVIEW

220120

PROJECT NUMBER

08/18/23

DATE

FULL SHEET SIZE

30 X 42

DRAWING TITLE

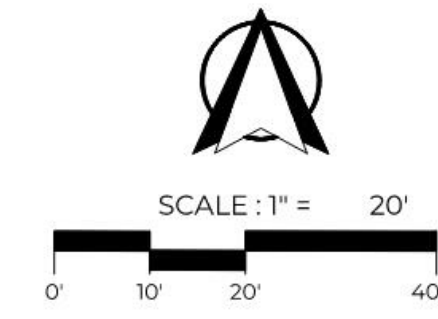
PROJECT INDEX - LAND USE

SHEET NUMBER

G2

TOPOGRAPHIC SURVEY

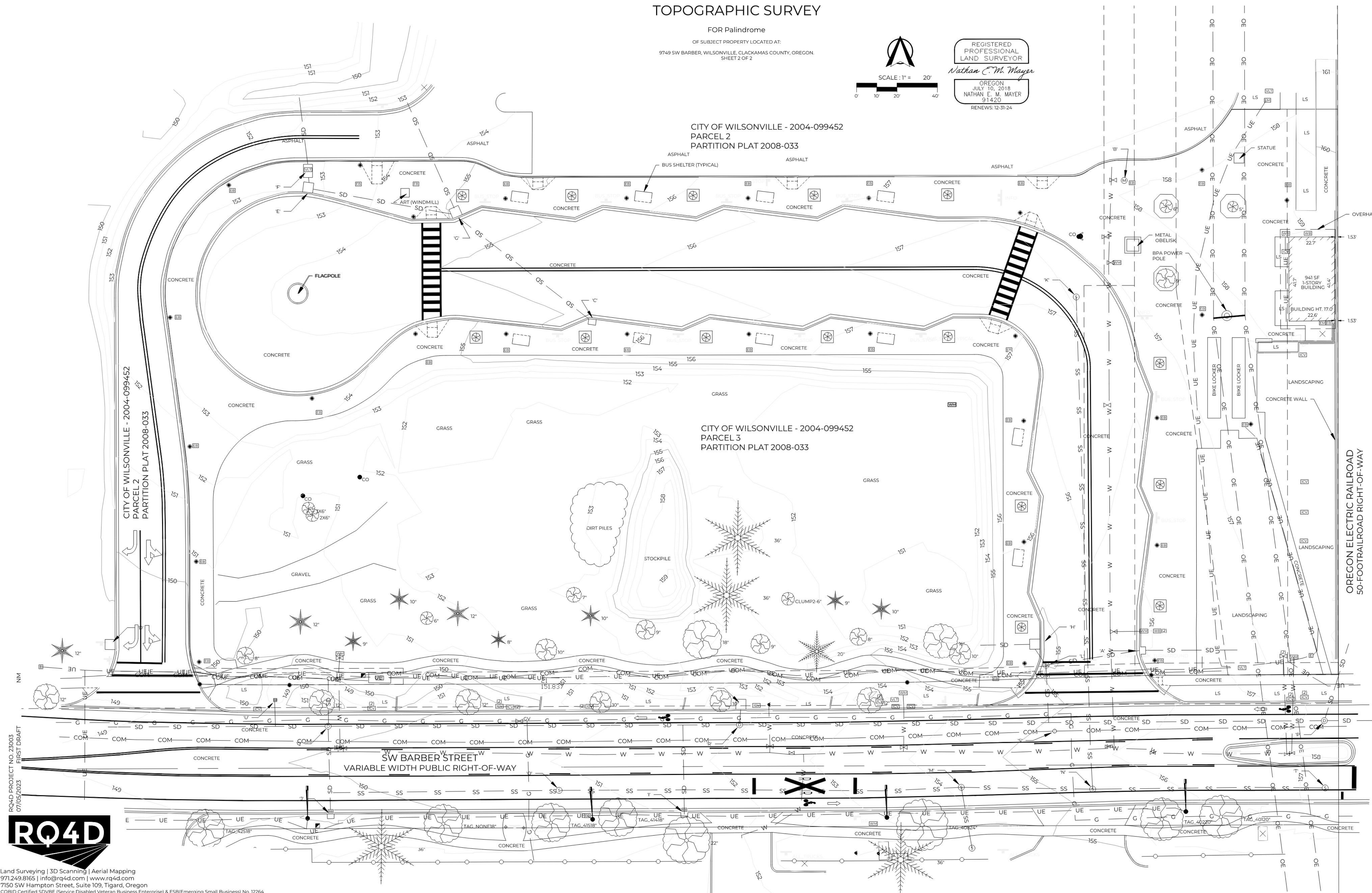
FOR Palindrome
 OF SUBJECT PROPERTY LOCATED AT:
 9749 SW BARBER, WILSONVILLE, CLACKAMAS COUNTY, OREGON.
 SHEET 2 OF 2



REGISTERED PROFESSIONAL LAND SURVEYOR
Nathan E. M. Mayer
 OREGON
 JULY 19, 2018
 NATHAN E. M. MAYER
 91420
 RENEWS: 12-31-24

CITY OF WILSONVILLE - 2004-099452
 PARCEL 2
 PARTITION PLAT 2008-033

CITY OF WILSONVILLE - 2004-099452
 PARCEL 3
 PARTITION PLAT 2008-033



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FOR REFERENCE ONLY

SHEET REVISION NO.	REVISION EVENT	REVISION DATE

RQ4D PROJECT NO. 220120
 07/18/2023
 FIRST DRAFT

Land Surveying | 3D Scanning | Aerial Mapping
 971.249.8165 | info@rq4d.com | www.rq4d.com
 7150 SW Hampton Street, Suite 109, Tigard, Oregon
 COBD Certified SDVBE (Service Disabled Veteran Business Enterprise) & ESBI (Emerging Small Business) No. 12264

TRUE NORTH

WILSONVILLE TOD

PALINDROME COMMUNITIES

ISSUANCE
LAND USE REVIEW
 PROJECT NUMBER
220120
 DATE
08/18/23
 FULL SHEET SIZE
30 X 42
 DRAWING TITLE
EXISTING CONDITIONS / SURVEY

SURVEYOR'S NARRATIVE

THE PURPOSE OF THIS SURVEY: TO PARTITION PARCEL 3, PARTITION PLAT 2008-033, CLACKAMAS COUNTY PLAT RECORDS, INTO TWO PARCELS.

BASIS OF BEARINGS: THE BASIS OF BEARINGS IS THE RECORD RELATIONSHIP BETWEEN FOUND MONUMENTS (503) AND (504), REFERENCE DOCUMENT [1], WHERE THE BEARING IS HELD TO BE S 89°46'47" W.

BOUNDARY PROCEDURE:

THE SURVEY OF SAID PARCEL 3 WAS RETRACED. ALL MONUMENTS WERE FOUND ALONG THE SOUTHERLY LINES, SOUTHERLY CURVE AND THE EASTERLY LINE. THE WESTERLY AND NORTHERLY LINES AND CURVES MONUMENTS WERE FOUND TO BE OBLITERATED BY CONSTRUCTION; HOWEVER, SAID LINES AND CURVES GENERALLY COINCIDE WITH EXISTING CONCRETE CURB. SAID FOUND MONUMENTS WERE FOUND TO BE IN HARMONY WITH THE RECORD GEOMETRY OF REFERENCE DOCUMENT [1]. THE BOUNDARY IS RESOLVED HOLDING SAID FOUND MONUMENTS AND RECORD GEOMETRY.

CURVE TABLE					
CURVE	DELTA	RADIUS	LENGTH	CHORD	CHORD BRG
C1	89°57'53"	12.00	18.84	16.97	N45°06'49"W
C2	46°36'04"	39.00	31.72	30.85	S66°36'13"W
C3	47°05'58"	64.00	52.61	51.14	S66°51'09"W
C4	90°43'34"	40.00	63.34	56.93	S45°02'21"W
C5	0°54'41"	1961.50	31.20	31.20	S89°46'16"E
C10 [1]	60°30'00"	49.50	52.27	49.87	S59°41'11"W
C11 [1]	35°57'02"	29.50	16.51	16.21	S71°57'39"W
C12 [1]	35°57'02"	12.50	7.84	7.72	S71°57'39"W
C13 [1]	29°55'35"	30.50	15.93	15.75	N75°06'02"W
C14 [1]	29°55'35"	29.50	15.41	15.23	N75°06'02"W
C15 [1]	97°38'07"	65.50	111.62	98.59	S41°07'07"W
C16 [1]	7°38'07"	300.50	40.04	40.02	S3°52'53"E
C17 [1]	33°08'48"	29.50	17.07	16.83	S16°38'14"E
C18	0°23'24"	1961.50	13.35	13.35	S89°07'14"E
C19	0°54'41"	1961.50	31.20	31.20	S89°46'16"E

FOUND MONUMENTS	
#	DESCRIPTION
500	1-1/16-INCH BRASS DISC STAMPED "S3760", FLUSH, GOOD CONDITION
501	5/8-INCH IR WYPC, UP 0.4, CAP SPLIT
502	5/8-INCH IR WYPC STAMPED "PLS53760", FLUSH, GOOD CONDITION
503	1-1/16-INCH BRASS DISC STAMPED "S3760", FLUSH, GOOD CONDITION
504	1-1/16-INCH BRASS DISC STAMPED "S3760", FLUSH, GOOD CONDITION
599	5/8-INCH IR WYPC STAMPED "DEHASS & ASSOC. INC", UP 0.3, GOOD CONDITION

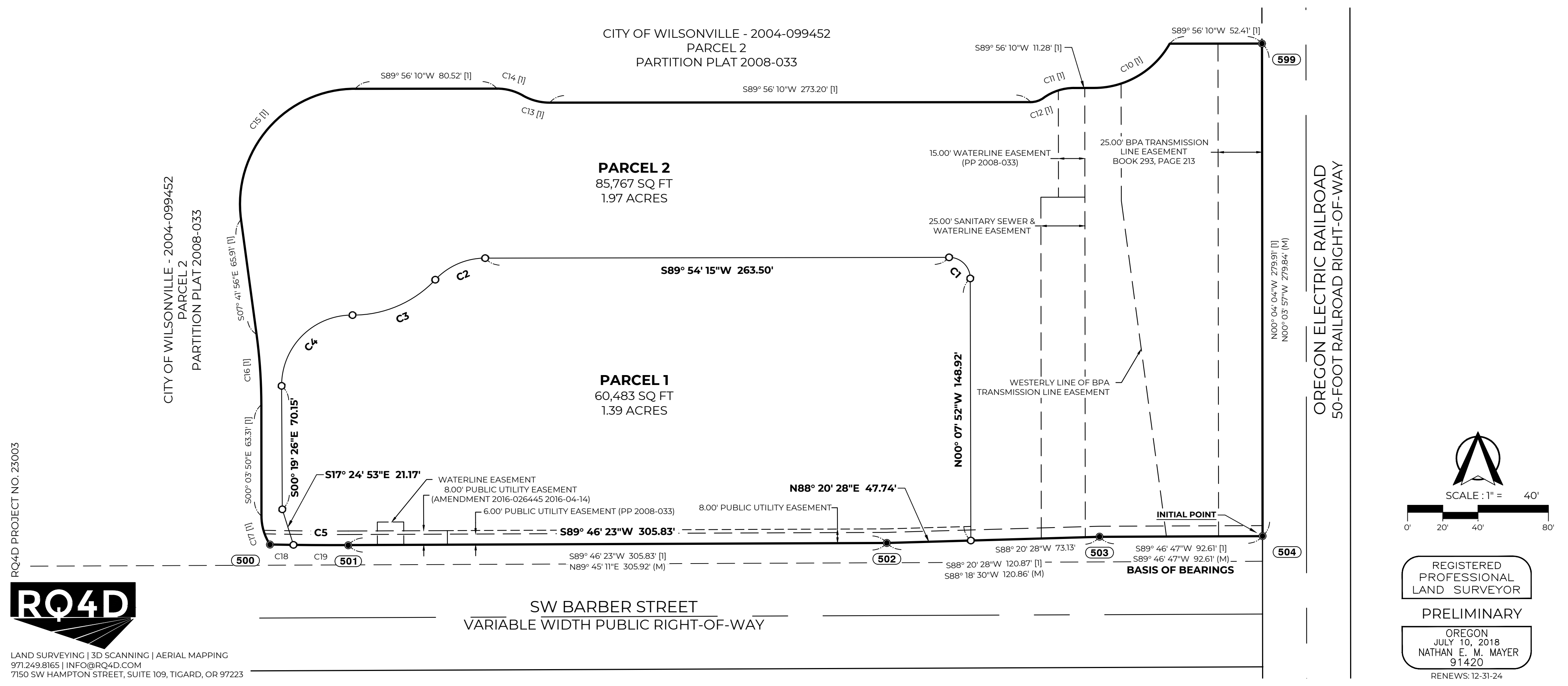
PARTITION PLAT NO. _____

BEING A PORTION OF THE NW 1/4 OF SECTION 14, TOWNSHIP 3 SOUTH, RANGE 1 WEST OF THE WILLAMETTE MERIDIAN, CITY OF WILSONVILLE, CLACKAMAS COUNTY, OREGON

CITY OF WILSONVILLE PLANNING FILE NO. XXXXXX
 DECEMBER 11, 2023
 SHEET 1 OF 2

- LEGEND:**
- FOUND MONUMENT AS NOTED
 - SET 5/8-INCH IR 30-INCH LONG WITH AN ORANGE PLASTIC CAP STAMPED "RQ4D 91420" UNLESS OTHERWISE NOTED ON xx xxxxxx xx
 - [#] DOCUMENT REFERENCE NUMBER
 - [###] MONUMENT REFERENCE NUMBER
 - (#) MONUMENT REFERENCE NUMBER
 - (M) MEASURED
 - IR IRON ROD
 - WYPC WITH YELLOW PLASTIC CAP

REFERENCE DOCUMENTS:
 [1] PARTITION PLAT, PP2008-033, CLACKAMAS COUNTY, OREGON



TRUE NORTH PLAN NORTH

SCALE: 1" = 40'

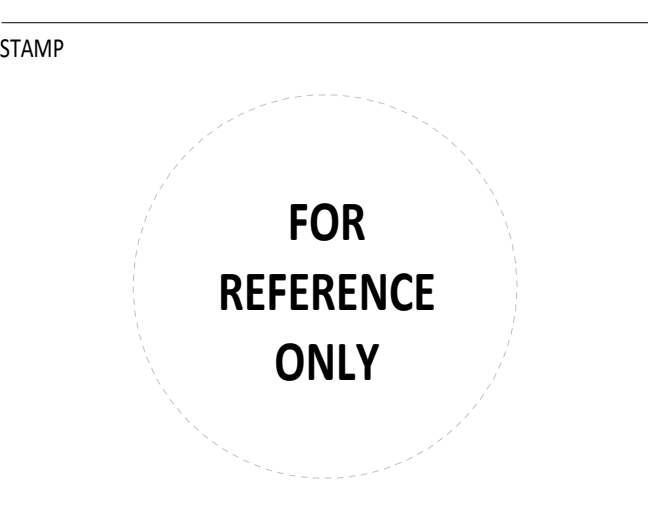
REGISTERED PROFESSIONAL LAND SURVEYOR

PRELIMINARY

OREGON JULY 10, 2018 NATHAN E. MAYER 91420 RENEWS: 12-31-24

RQ4D

LAND SURVEYING | 3D SCANNING | AERIAL MAPPING
 971.249.8163 | INFO@RQ4D.COM
 7192 SW HAMPTON STREET, SUITE 109, TIGARD, OR 97223

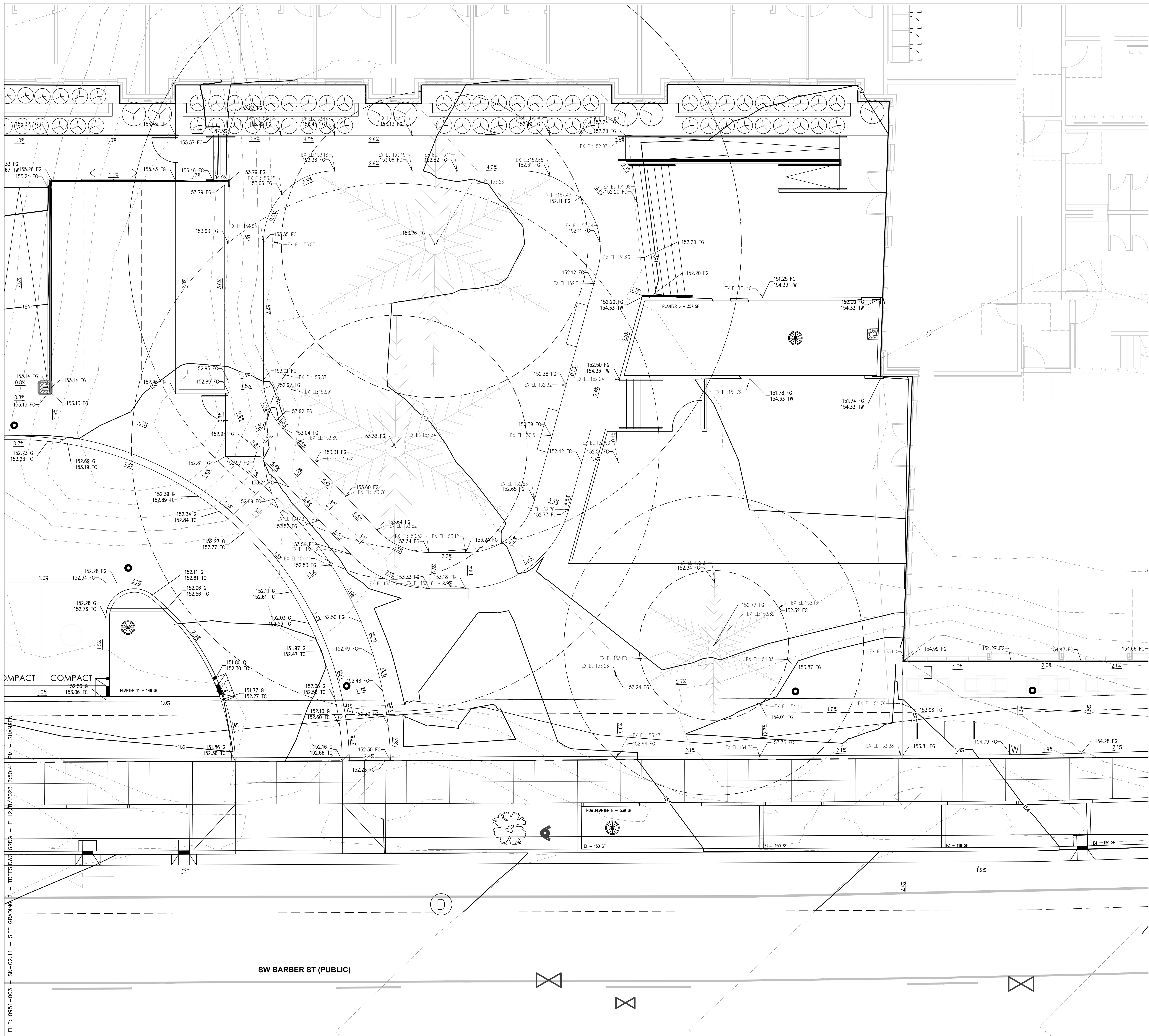


SHEET	REVISION	REVISION
NO.	EVENT	DATE

WILSONVILLE TOD

PALINDROME COMMUNITIES

ISSUANCE
LAND USE REVIEW
 PROJECT NUMBER
220120
 DATE
08/18/23
 FULL SHEET SIZE
30 X 42
 DRAWING TITLE
TENTATIVE PARTITION PLAT



GENERAL NOTES:

1. EARTHWORK SHALL BE PERFORMED IN ACCORDANCE WITH THE GEOTECHNICAL REPORT PREPARED BY CENTRAL GEOTECHNICAL SERVICES, "PRELIMINARY GEOTECHNICAL INVESTIGATION: BLUE LAKE PARK MAINTENANCE AND OPERATIONS FACILITY", DATED JULY 6, 2022.
2. EXISTING MATERIALS MAY BE REUSED AS SUBBASE AND PARKING AREAS IF APPROVED BY GEOTECHNICAL ENGINEER.
3. SEE SHEET C-500 FOR PAVEMENT SECTIONS

LEGEND

- FG FINISH GRADE
- G GUTTER
- TC TOP OF CURB
- CURB LINE
- DRIVE AISLE ASPHALT PAVEMENT
- PARKING STALL ASPHALT PAVEMENT
- - - - - EXISTING CONTOUR
- — — — — PROPOSED CONTOUR

Item 5.
YBA architects
 3514 N VANCOUVER AVE SUITE 310 - PORTLAND, OR 97227
 T: 971.888.5107 - E: MAIL: INFO@YB-A.COM

EMERIO
 ENGINEERING • SURVEYING • DESIGN
 64869 HWY 101, SUITE 100, ASTORIA, OR 97103
 TEL: (503) 746-8812
 FAX: (503) 639-8922
 www.emeriodesign.com

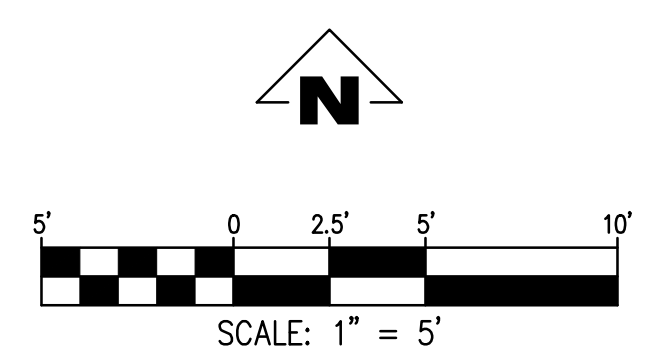
STAMP

 REGISTERED PROFESSIONAL ENGINEER
 FOR
 REFERENCE ONLY
 STEVEN WELLS HANSEN
 LICENSE NO. 123456789
 STATE OF OREGON

SHEET REVISION NO.	REVISION EVENT	REVISION DATE

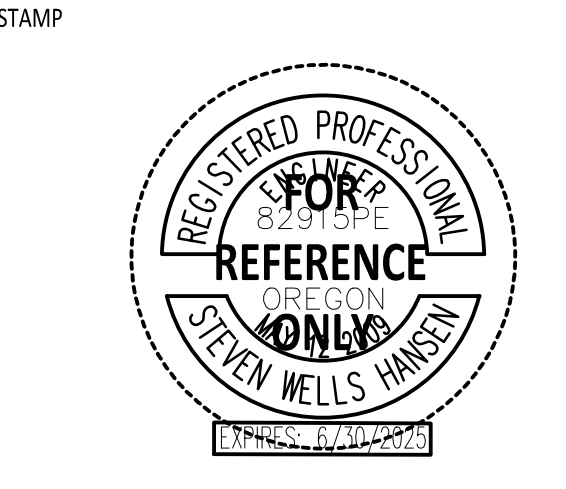
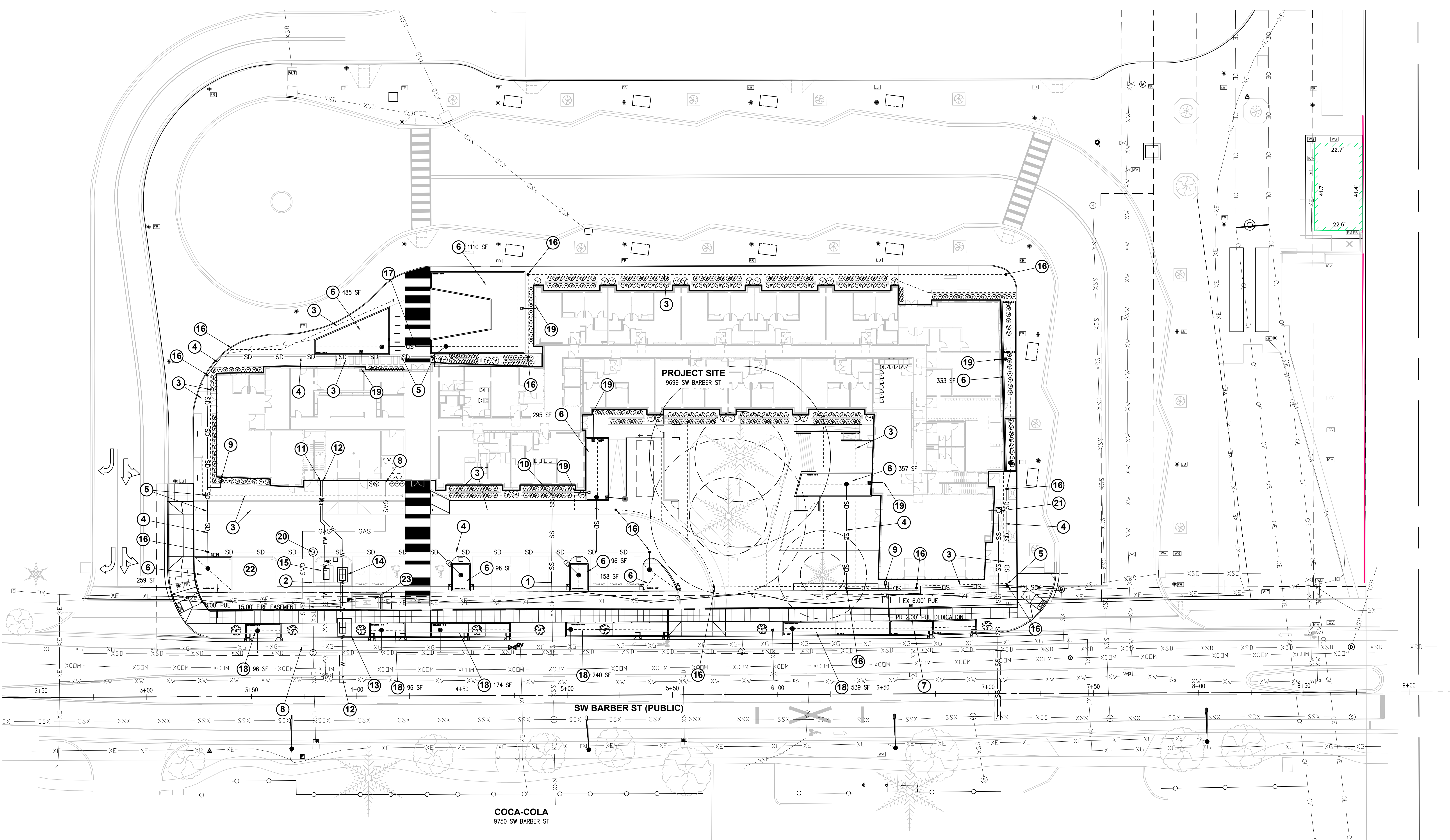
TRUE NORTH PLAN NORTH
WILSONVILLE TOD

ISSUANCE
LAND USE REVIEW
 PROJECT NUMBER
220120
 DATE
08/18/23
 FULL SHEET SIZE
30 X 42
 DRAWING TITLE
SITE GRADING PLAN AT EXISTING TREES



FILE: 0951-003 - SK-C2.11 - SITE GRADING 2 - TREES.DWG
 12/13/2023 2:50:41 PM - SHAWNER

SW BARBER ST (PUBLIC)

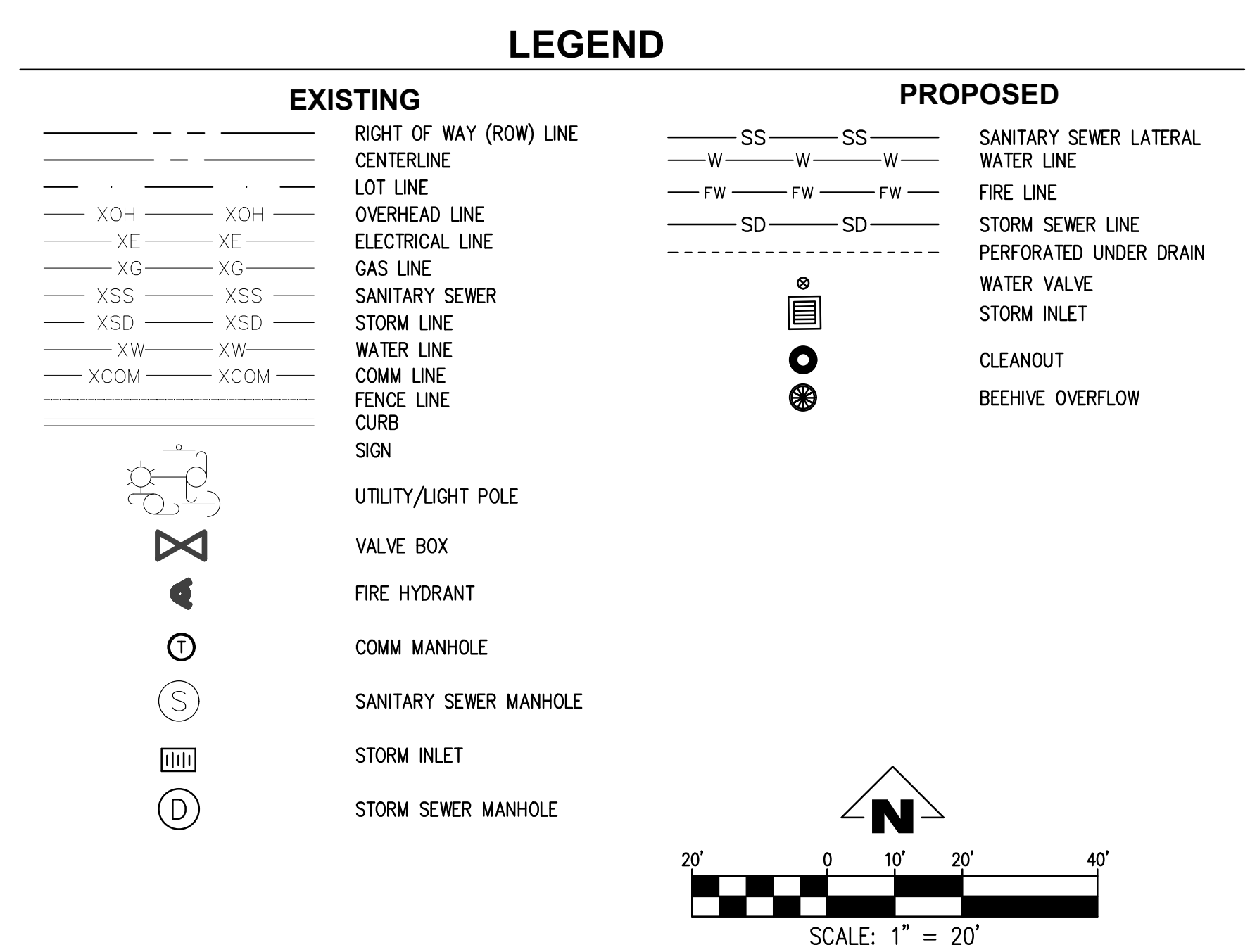


SHEET	REVISION	REVISION	REVISION
REVISION NO.	EVENT	DATE	

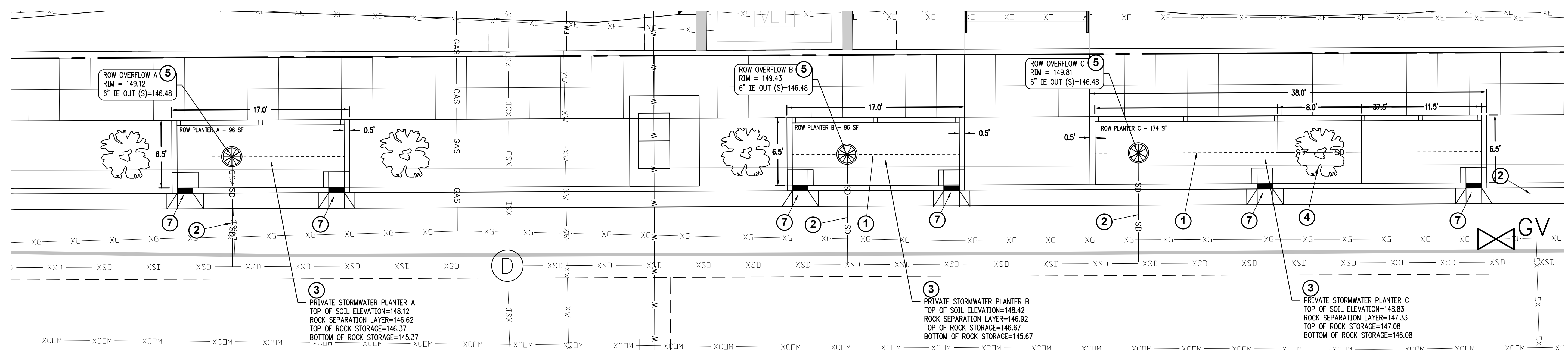
FIXTURE	QTY	DFU	TOTAL
3-COMPARTMENT SINK	1	3.0	3.0
HAND SINK	4	1.0	4.0
SERVICE SINK	1	2.0	2.0
FLOOR DRAIN	3	2.0	6.0
MOP SINK	1	0.5	0.5
DISHWASHER	1	2.0	2.0
TOTAL DFU			17.5

PER TABLE 10-2, OSPC:
 8 DFUs = 20 GPM GREASE INTERCEPTOR
 10 DFUs = 25 GPM GREASE INTERCEPTOR
 13 DFUs = 35 GPM GREASE INTERCEPTOR
 20 DFUs = 50 GPM GREASE INTERCEPTOR
 35 DFUs = 75 GPM GREASE INTERCEPTOR

- CONSTRUCTION NOTES**
- CONNECT TO EXISTING 8" SANITARY SEWER LATERAL.
 - CONNECT TO EXISTING 18" STORM SEWER LATERAL.
 - 6" PERFORATED PIPE UNDER PERVIOUS SURFACING (S=1.0% MIN)
 - 6" PVC STORM COLLECTOR LINE FROM PLANTERS (S=1.0% MIN)
 - 6" PERF PIPE CONNECTION TO 6" PVC SOLID PIPE COLLECTOR LINE
 - CONSTRUCT PRIVATE FILTRATION PLANTER WITH PERFORATED 4" PVC PIPE PER CITY OF WILSONVILLE STANDARD DETAIL ST-6005
 - REROUTE EXISTING 1.5-INCH WATER LINE UNDER PROPOSED STORMWATER PLANTER AND PROVIDE LINEAR ADJUSTMENT OF METER FOR LANDSCAPE IRRIGATION. SEE LANDSCAPE PLANS FOR CONTINUATION
 - NATURAL GAS CONNECTION
 - INSTALL 3" NOS BACKWATER VALVE IN OLDCASTLE VALVE BOX PER DETAILS ON SHEET C7.06. INSTALL 3" PERFORATED FOOTING DRAIN PIPE PER STRUCTURAL DETAILS AND GEOTECHNICAL REPORT
 - 8" ASTM D 3034 PVC SANITARY SEWER. S=1.0% MIN
 - 6" FIRE LINE CONNECTION
 - 4" DOMESTIC WATER LINE CONNECTION
 - 4" WATER METER IN OLDCASTLE 687-WA VAULT PER CITY OF WILSONVILLE DETAIL WT-3110.
 - 4" DOMESTIC WATER DOUBLE CHECK BACK FLOW PREVENTOR DEVICE IN OLDCASTLE 577-LA VAULT PER DETAIL B-4005
 - CONNECT 6" FIRE LINE TO EXISTING 8" WATER KUBE TAP. INSTALL 6" FIRE WATER DCVA WITH FDC IN OLDCASTLE 676-WA VAULT PER DETAIL B-4005.
 - INSTALL CLEANOUT.
 - 6" PRIVATE STORMWATER PLANTER CONNECTOR PIPE
 - PUBLIC WATER QUALITY FLOW THROUGH PLANTER WITH OVERFLOW.
 - ROOF DRAIN CONNECTION
 - INSTALL 48" DIA MH WITH 18" OUTFALL PIPE.
 - INSTALL 50 GPM GREASE INTERCEPTOR, SCHIER MODEL "GB-50" OR APPROVED EQUAL. ONLY FIXTURES LISTED IN THE GREASE INTERCEPTOR SELECTION TABLE WILL BE CONNECTED DIRECTLY TO SEWER LATERAL. RISERS MAY EXCEED 12". IF RISERS EXCEED 12" A VAULT MUST BE PROVIDED. RISERS FOR THE GREASE INTERCEPTOR MAY NOT EXCEED 12 INCHES IN HEIGHT.
 - PGE TRANSFORMER
 - EXISTING PGE SWITCH VAULT TO REMAIN AND BE PROTECTED. CONSTRUCT KEYSTONE RETAINING WALL AROUND EXISTING VAULT TO MAINTAIN EXISTING GRADE.



FILE: 0951-003 - C3.00 - SITE UTIL.DWG UTIL 12/28/2023 3:23:21 PM - SHANSEN



- CONSTRUCTION NOTES**
- 6" PERFORATED PIPE UNDERDRAIN (S=1.0% MIN)
 - 6" PVC STORM LINE FROM PLANTERS (S=1.0% MIN)
 - PUBLIC WATER QUALITY FLOW THROUGH PLANTER WITH OVERFLOW AND PERFORATED 4" PVC PIPE PER CITY OF WILSONVILLE STANDARD DETAIL ST-6005
 - STREET TREE IN ROW PLANTER PER DETAIL ON SHEET C5.03
 - BEEHIVE FLOW CONTROL STRUCTURE PER CITY OF WILSONVILLE STD DWG ST-6120. SEE DETAIL ON SHEET C5.03
 - 4" DRAINAGE NOTCH
 - SWALE INLET PER STD DWG ST-6012
 - CHECK DAM
 - RE-ROUTE 1.5" IRRIGATION WATER SERVICE LINE UNDERNEATH STORMWATER PLANTER

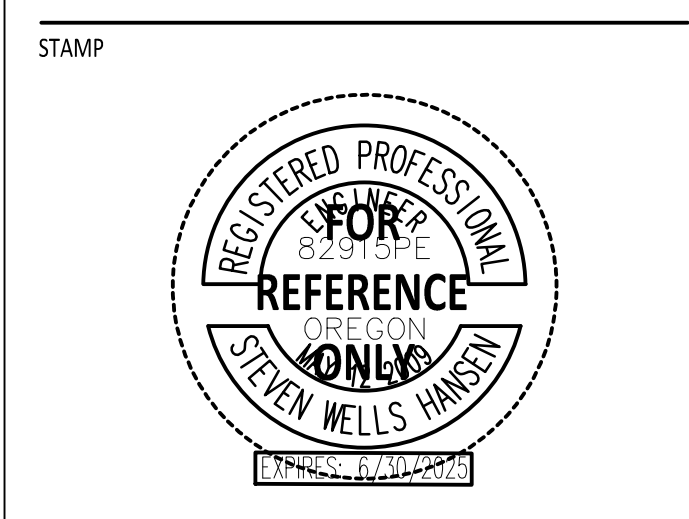
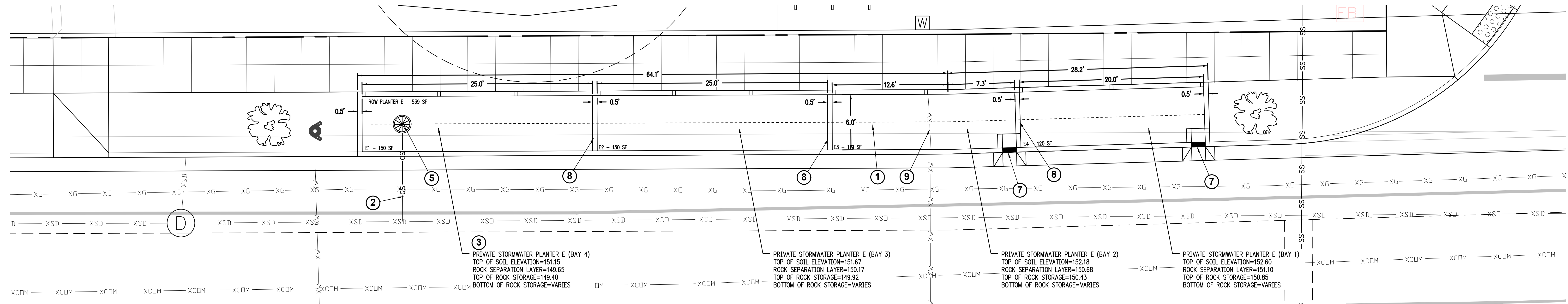
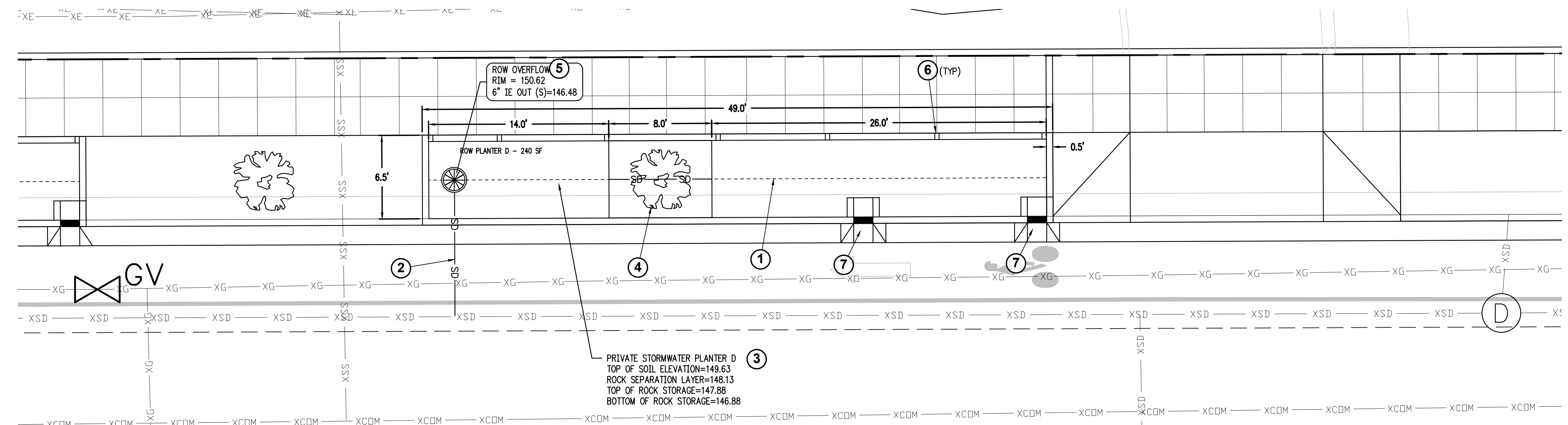
STORMWATER PLANTER DESIGN DATA

PLANTER NUMBER	DRAINAGE BASIN (SF)	FACILITY SIZE (SF)	ORIFICE SIZE (IN)
PLANTER A	694	96	0.2
PLANTER B	1,366	96	0.4
PLANTER C	2,457	174	.05
PLANTER D	3,272	229	0.5
PLANTER E	7,659	539	0.8

STORMWATER PLANTER MEDIA DEPTH DATA

PLANTER NUMBER	GROWING MEDIUM (IN)	ROCK SEPARATION LAYER (IN)	ROCK STORAGE DEPTH (IN)
PLANTER A	18"	3"	12"
PLANTER B	18"	3"	12"
PLANTER C	18"	3"	12"
PLANTER D	18"	3"	12"
PLANTER E	18"	3"	VARIES (12" MIN)

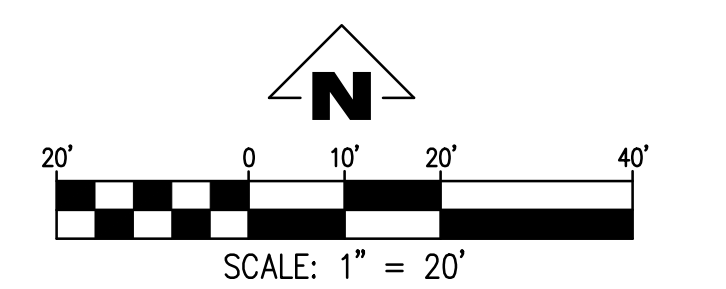
- ABBREVIATIONS**
- G = GUTTER OR PROJECTED GUTTER ELEVATION
 - DG = DEPRESSED GUTTER ELEVATION
 - DN = DRAINAGE NOTCH ELEVATION
 - FG = FINISHED GRADE ELEVATION PLANTER
 - SW = FINISHED GRADE SIDEWALK ELEVATION
 - TW = TOP OF WALL ELEVATION
 - TC = TOP OF CURB OR PROJECTED CURB ELEVATION

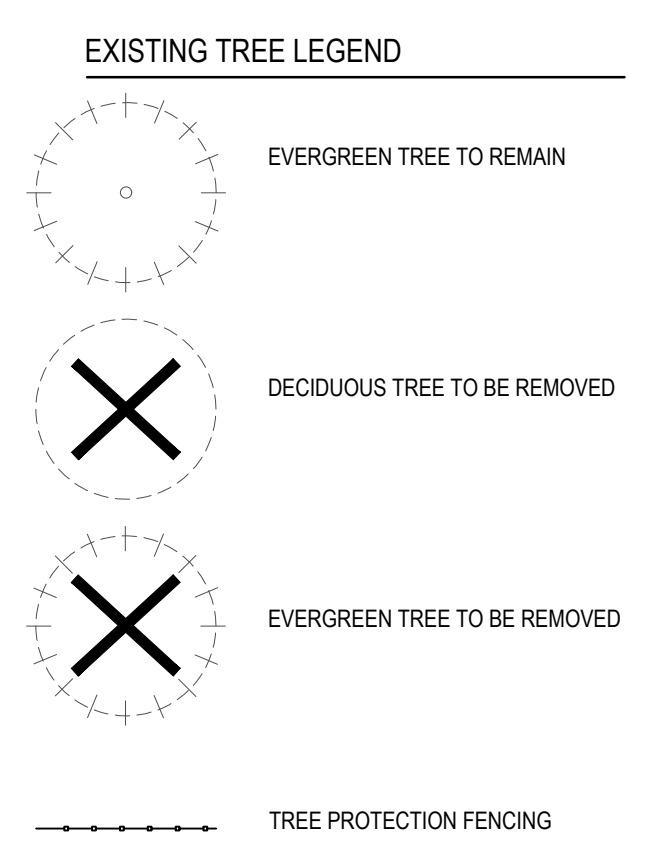


SHEET REVISION REVISION
 REVISION NO. EVENT DATE



ISSUANCE
LAND USE REVIEW
 PROJECT NUMBER
220120
 DATE
08/18/23
 FULL SHEET SIZE
30 X 42
 DRAWING TITLE
ROW STORMWATER PLANTERS



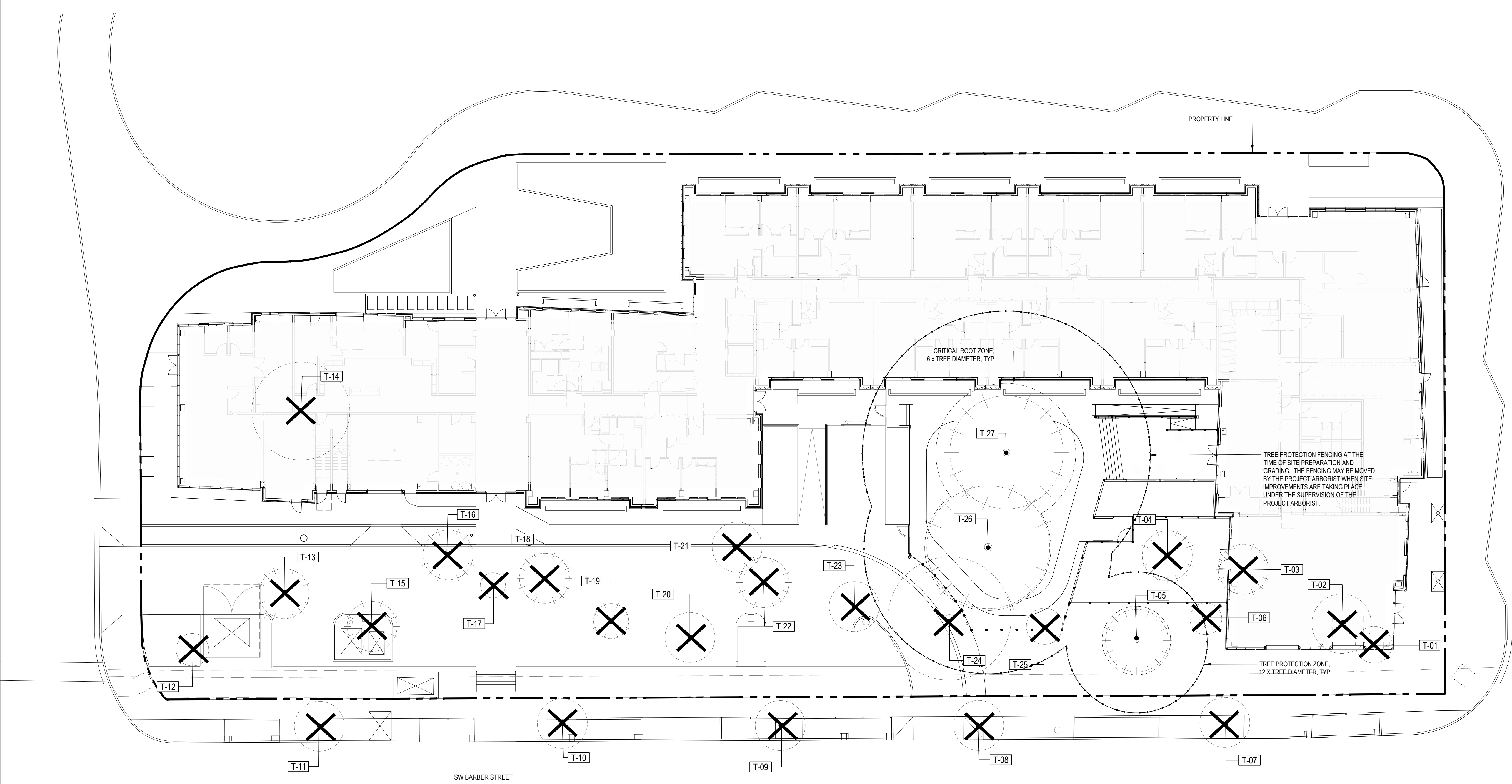


EXISTING TREE SCHEDULE

SYMBOL	DESCRIPTION	DBH	ACTION	CONDITION	TREE CREDITS	HEALTH
T-01	ZELKOVA SERRATA	11"	REMOVE			GOOD
T-02	PRUNUS AVIUM	15"	REMOVE	NUISANCE		GOOD
T-03	PSEUDOTSUGA MENZIESII	12"	REMOVE			EXCELLENT
T-04	PINUS RESINOSA	10"	REMOVE			FAIR
T-05	PSEUDOTSUGA MENZIESII	21"	PROTECT	2-FOOT LOWER THAN SIDEWALK	3 CREDITS	EXCELLENT
T-06	ZELKOVA SERRATA	9"	REMOVE	CENTER STEM DEAD		FAIR
T-07	ZELKOVA SERRATA	12"	REMOVE	LOW CANOPY		EXCELLENT
T-08	ZELKOVA SERRATA	11"	REMOVE	LOW CANOPY		EXCELLENT
T-09	ZELKOVA SERRATA	11"	REMOVE	LOW CANOPY		EXCELLENT
T-10	ZELKOVA SERRATA	12"	REMOVE	LOW CANOPY		POOR
T-11	ZELKOVA SERRATA	12"	REMOVE	LOW CANOPY		GOOD
T-12	ZELKOVA SERRATA	9"	REMOVE			EXCELLENT
T-13	PSEUDOTSUGA MENZIESII	14"	REMOVE	SAP Ooze		GOOD
T-14	CRATAEGUS MONOGYNA	15"	REMOVE	80% CROWN DIE BACK		VERY POOR
T-15	PSEUDOTSUGA MENZIESII	10"	REMOVE			EXCELLENT
T-16	PINUS RESINOSA	15"	REMOVE	CODOMINATE AT 3'		GOOD
T-17	ZELKOVA SERRATA	7"	REMOVE	30% CROWN DIE BACK		FAIR
T-18	PSEUDOTSUGA MENZIESII	13"	REMOVE	SNOW ICE DAMAGED BRANCHES		GOOD
T-19	PSEUDOTSUGA MENZIESII	9"	REMOVE	SNOW ICE DAMAGED BRANCHES		GOOD
T-20	ZELKOVA SERRATA	10"	REMOVE	TWIG DIE BACK		GOOD
T-21	ZELKOVA SERRATA	8"	REMOVE			GOOD
T-22	PSEUDOTSUGA MENZIESII	12"	REMOVE			GOOD
T-23	ZELKOVA SERRATA	10"	REMOVE			GOOD
T-24	ACER PLATANOIDES	19"	REMOVE	LEANING		GOOD
T-25	CRATAEGUS MONOGYNA	8"	REMOVE	DEAD		DEAD
T-26	PSEUDOTSUGA MENZIESII	37"	PROTECT	DEAD WOOD IN CROWN	5 CREDITS	GOOD
T-27	PSEUDOTSUGA MENZIESII	43"	PROTECT	DEAD WOOD IN CROWN	5 CREDITS	GOOD

- TREE PROTECTION NOTES**
- PROTECT ALL TREES INDICATED TO REMAIN, INCLUDING BARK AND ROOT ZONES.
 - FENCING SHALL BE INSTALLED PER THE TREE PROTECTION PLAN. FINAL LAYOUT SHALL BE REVIEWED AND APPROVED BY THE PROJECT ARBORIST AND/OR LANDSCAPE ARCHITECT.
 - ALL WORK WITHIN THE TREE PROTECTION ZONE SHALL BE PERFORMED WITH HANDHELD TOOLS OR AIR SPADE. EXCAVATE THE MINIMUM AMOUNT NECESSARY TO ACCOMPLISH PURPOSE FOR EXCAVATION. ROOTS OVER 4" DIAMETER SHALL BE CUT BY THE PROJECT ARBORIST.
 - THE FOLLOWING IS PROHIBITED WITHIN THE ROOT PROTECTION ZONE OF EACH TREE OR OUTSIDE THE LIMITS OF THE DEVELOPMENT IMPACT AREA:
 - GROUND DISTURBANCE OR CONSTRUCTION ACTIVITY INCLUDING VEHICLE OR EQUIPMENT ACCESS (BUT EXCLUDING ACCESS ON EXISTING STREETS OR DRIVEWAYS)
 - STORAGE OF EQUIPMENT OR MATERIALS INCLUDING SOIL, TEMPORARY OR PERMANENT STOCKPILING, PROPOSED BUILDINGS, IMPERVIOUS SURFACES, UNDERGROUND UTILITIES, EXCAVATION OR FILL, TRENCHING OR OTHER WORK ACTIVITIES
 - PROTECTIVE FENCE SHALL BE INSTALLED BEFORE ANY GROUND DISTURBING ACTIVITIES INCLUDING CLEARING AND GRADING, OR CONSTRUCTION STARTS, AND SHALL REMAIN IN PLACE UNTIL FINAL INSPECTION.
 - SIGNAGE DESIGNATING THE PROTECTION ZONE AND PENALTIES FOR VIOLATIONS SHALL BE SECURED IN A PROMINENT LOCATION ON EACH PROTECTION FENCE.
 - TREE PROTECTION ZONE SHALL REMAIN FREE OF ALL CHEMICALLY INJURIOUS MATERIALS AND LIQUIDS.

- MAINTENANCE NOTES FOR EXISTING TREES**
- WASH OFF FOLIAGE WHICH BECOMES SOILED DURING CONSTRUCTION.
 - WATER TREES AND OTHER VEGETATION WHICH ARE TO REMAIN AS NECESSARY TO MAINTAIN THEIR HEALTH DURING THE COURSE OF THE WORK. RATE AND FREQUENCY OF APPLICATION TO BE DETERMINED BY PROJECT ARBORIST.
 - ALL PRUNING SHALL BE PERFORMED BY A CURRENT ARBORIST LICENSED WITHIN THE STATE/COUNTY/CITY WHERE THE WORK IS TO BE COMPLETED.



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SHEET	REVISION	REVISION
REVISION NO.	EVENT	DATE

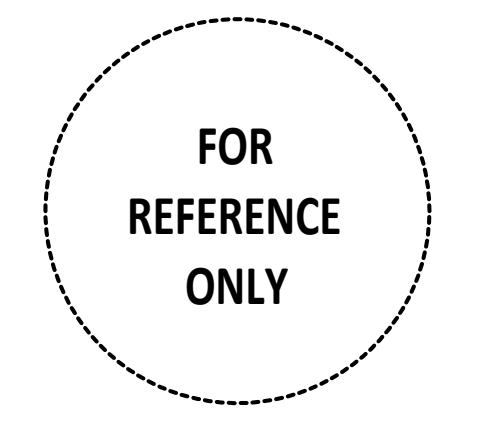
TRUE NORTH PLAN NORTH

WILSONVILLE TOD

PALINDROME COMMUNITIES

ISSUANCE
LAND USE REVIEW
 PROJECT NUMBER
220120
 DATE
08/18/23
 FULL SHEET SIZE
30 X 42
 DRAWING TITLE
EXISTING TREE INVENTORY PLAN

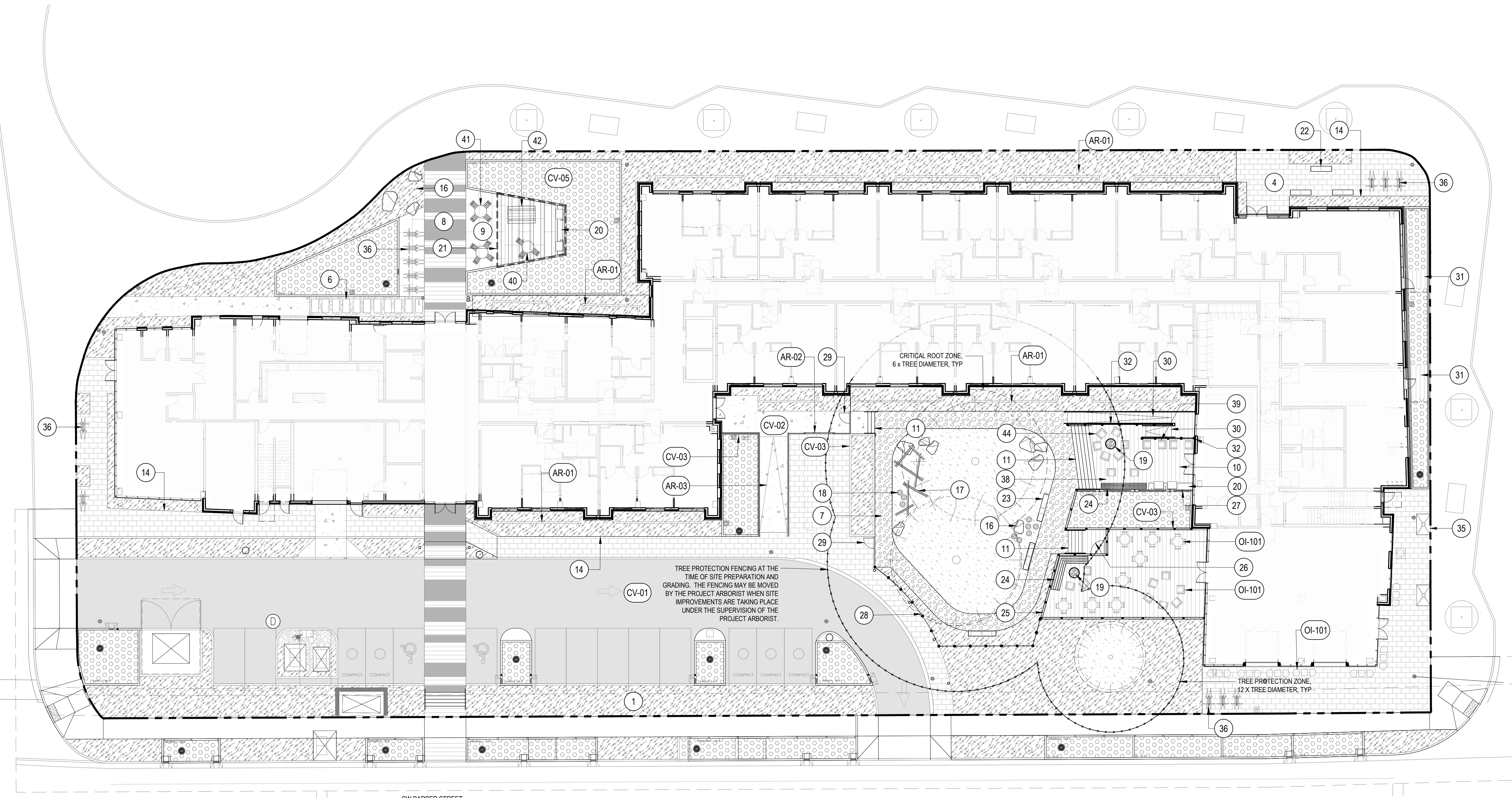
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SHEET REVISION NO.	REVISION EVENT	REVISION DATE

REFERENCE NOTES SCHEDULE

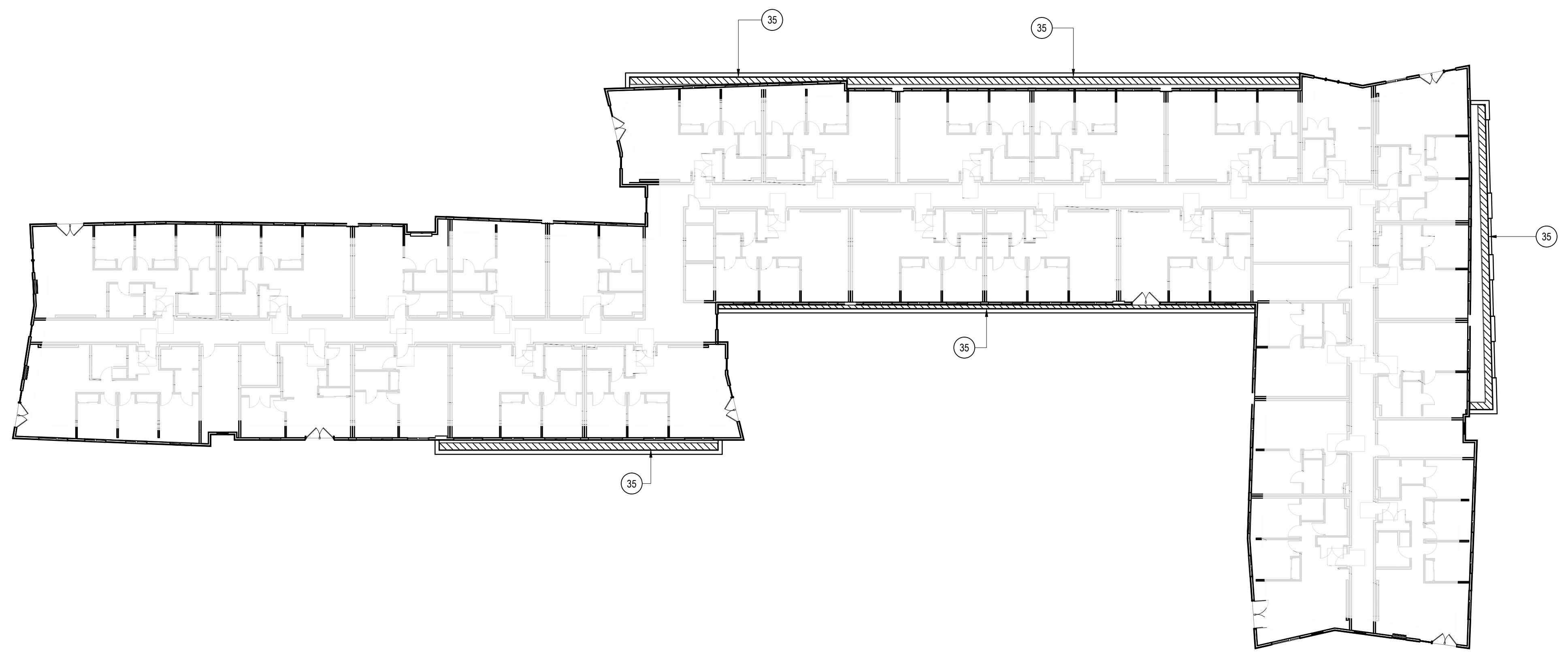
SYMBOL	DESCRIPTION
	1 PLANTING AREA, TYP. SEE LANDSCAPE DRAWINGS / DETAILS / SPECS
	4 PAVER TYPE I - PERMEABLE BELGARD AQUA LINE 3x12 COLOR: DARK CHARCOAL
	6 PAVER TYPE II WAUSAU TILE EXPRESSIONS 24x48 COLOR: DARK CHARCOAL
	7 PAVER TYPE IV - GEO-GRID WITH GRAVEL
	8 CONCRETE SURFACING TYPE II ETCHED / STAMPED CONCRETE
	9 CONCRETE SURFACING TYPE III EXPOSED AGGREGATE SURFACING
	10 POST AND BEAM DECKING CEDAR OR THERMALLY MODIFIED WOOD CONCRETE CAST-IN-PLACE FOOTINGS OR HELICAL PIER AND DECK FOOTING SUPPORT SYSTEM TBD
	11 STAIRS TO MATCH DECKING
	12 3/4-INCH GRAY RIVER COBBLE
	14 METAL EDGE RESTRAINT
	15 4" MULCH TYPE II CEDAR PLAY CHIPS
	16 LANDSCAPE BOULDERS CAMAS GRAY BASALT, ANGULAR APPEARANCE
	17 LOG SCRAMBLE TIMBERS WEATHERIZED LOGS PINNED TOGETHER AND TO GROUND
	18 LOG ROUND WEATHERIZED 16-18 INCH ROUND LOG PLACED ON END
	19 FIRE TABLE, TYP. SEE ELECTRICAL DRAWINGS FOR ELECTRICAL HOOKUP SEE CIVIL DRAWINGS FOR PROPANE HOOK UP
	20 BBQ ENCLOSURE - CONCRETE COUNTER TOP AND THERMALLY MODIFIED WOOD CLADDING. SEE CIVIL DRAWINGS FOR PROPANE HOOKUP SEE ELECTRICAL DRAWINGS FOR ELECTRICAL HOOKUP
	21 POLYGON TRELLIS CEDAR LATILLA ON STEEL FRAME
	22 FIR LOG BENCH 24" DIA. 8-FOOT LONG
	23 FIR LOG BENCH 24" DIA. 8-FOOT LONG
	24 CUSTOM CORNER BENCH CEDAR SLATS ON METAL FRAME
	25 KNOTWOOD ALUMINUM FENCE: SQ. BLACK POSTS, 4" WIDE, WOODGRAIN COLORED; VERTICAL SLATS, W/ 4" GAPS
	26 KNOTWOOD ALUMINUM FENCE: GATE TO MATCH FENCE, ONE-WAY OPEN WITH INTERIOR LOCKING MECHANISM
	27 6.5' TALL KNOTWOOD ALUMINUM FENCE: 4" SQ. POSTS WITH 6" WIDE HORIZONTAL SLATS, WOODGRAIN COLORED
	28 4" DECORATIVE METAL PICKET FENCE POWDER-COATED BLACK
	29 4" DECORATIVE METAL PICKET GATE WITH RESIDENT PASS-KEY MECHANISM, POWDER-COATED BLACK
	30 WOOD DECK RAMP ON STEEL FRAME, NON-SLIP PAINT, TUBE STEEL HANDRAILS
	31 CEDAR OR THERMALLY MODIFIED WOOD PLANK BRIDGE ON STEEL FRAME; BLACK METAL RAILINGS
	32 42" RAILPRO CONTEMPORARY SQUARE PICKET RAILING, BLACK
	35 TREE GRATE CITY STANDARD 4' X 6'
	36 BIKE RACK HUNTO RAMBLER - FLAT PROFILE, BLACK
	38 LANDSCAPE FORMS 28" SQUARE PARK CENTRE BENCH, COLOR TBD
	39 LANDSCAPE FORMS HARPO 24" BACKED BENCH - STEEL FRAME / WIDE WOOD SLATS, EXTERIOR FINISH
	40 DUMOR 42" ROUND STEEL ADA TABLE WITH THREE ATTACHED SEATS - COLOR TBD
	41 DUMOR 42" ROUND STEEL TABLE WITH FOUR ATTACHED SEATS - COLOR TBD
	42 DUMOR 6' ALUMINUM PICNIC TABLE WITH ATTACHED BENCHES - COLOR TBD
	44 LANDSCAPE FORMS HARPO LOUNGE CHAIR - STEEL FRAME WITH WOOD SLATS
	SEE ARCHITECTURAL DRAWINGS / DETAILS / SPECS DESCRIPTION
	18" CONCRETE WALL, TYP
	METAL FENCE & MOVEABLE GATES SEE ARCHITECTURE
	CONCRETE RAMP AND HANDRAILS
	SEE CIVIL DRAWINGS / DETAILS / SPECS DESCRIPTION
	ASPHALT PAVING
	CONCRETE SURFACING TYPE I
	RAISED CONCRETE PLANTER
	STORMWATER AREA, TYP. SEE LANDSCAPE FOR PLANTINGS SEE CIVIL DRAWINGS / DETAILS / SPECS FOR ADDITIONAL INFORMATION
	OWNER FURNISHED, OWNER INSTALLED DESCRIPTION
	MOVEABLE TABLE & CHAIRS




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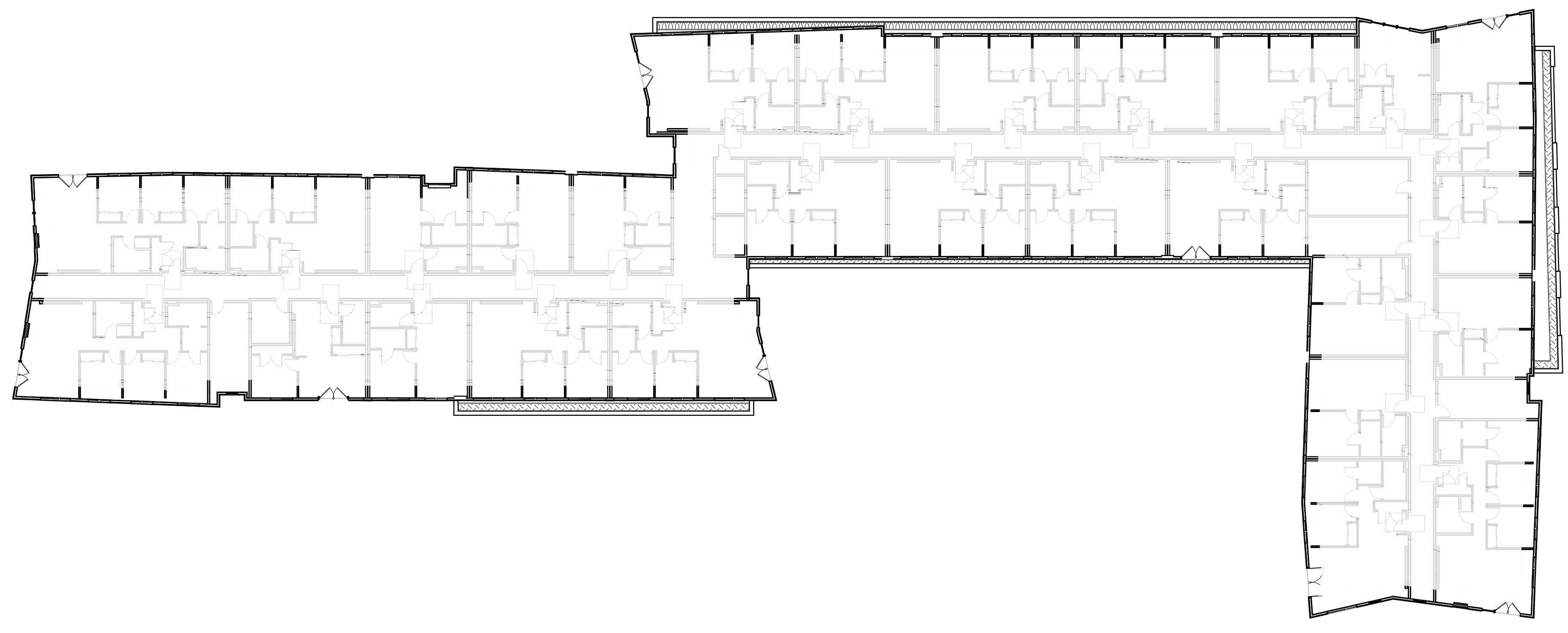
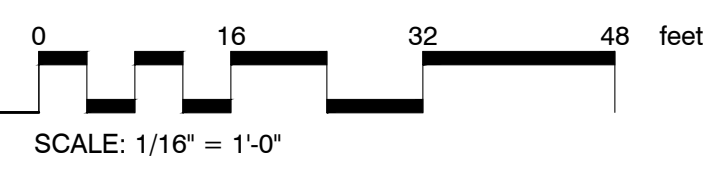
SHEET REVISION REVISION
 REVISION NO. EVENT DATE





SOILS SCHEDULE

SYMBOL	DESCRIPTION
	INTENSIVE PLANTING MIX - 1' DEPTH

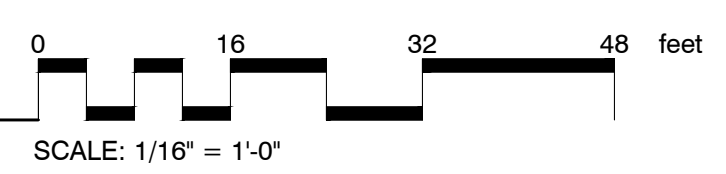
01 LEVEL 2 MATERIALS PLAN



PLANT SCHEDULE

GROUND COVERS	CODE	BOTANICAL / COMMON NAME	SIZE	SPACING
	COVE	CAREX OSHIMENSIS EVERLITE / EVERCOLOR® EVERLITE JAPANESE SEDGE	1 GAL	12' o.c.
	PANG	PENNISETUM ALOPECUROIDES HAMELY / HAMELY FOUNTAIN GRASS	1 GAL	18' o.c.

01 LEVEL 2 PLANTING PLAN



WILSONVILLE TOD

PALINDROME COMMUNITIES

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LAND USE REVIEW
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220120
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08/18/23
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30 X 42
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LEVEL 2 LANDSCAPE PLANS

SHEET NUMBER

L3

PLANT SCHEDULE ON-SITE

TREES	CODE	BOTANICAL / COMMON NAME	SIZE	HT	CAL	WATER NEEDS
AV	ACER CIRCINATUM / VINE MAPLE MULTI-STEM (3-5 STEM)	B&B	8'-10"		MOD.	
AG	ACER NIGRUM 'GREENCOLUMN' / GREENCOLUMN BLACK MAPLE	B&B	2" CAL		MOD.	
AL	AMELANCHIER LAEVIS 'JFS-ARB' / SPRING FLURRY® ALLEGHENY SERVICEBERRY	B&B	1.75" CAL		MOD.	
CM	CUPRESSUS SEMPERVIRENS 'MONSHEL' / TINY TOWER® ITALIAN CYPRESS	B&B	5'-6"		MOD.	
FL	FRAXINUS LATIFOLIA / OREGON ASH	B&B	2" CAL		MOD.	
MJ	MAGNOLIA VIRGINIANA 'JIM WILSON' / MOONGLOW® SWEETBAY MAGNOLIA	B&B	1.75" CAL		MOD.	
PP	PARROTIA PERSICA 'L COLUMNAR' / PERSIAN SPIRE™ PARROTIA	B&B	2" CAL		MOD.	
PO	PSEUDOTSUGA MENZIESII / DOUGLAS FIR MITIGATION TREE	B&B	8'-10"		MOD.	
OK	QUERCUS ROBUR X ALBA 'JFS-KW1QX' / STREETSPIRE® OAK	B&B	2" CAL		MOD.	

SHRUBS	CODE	BOTANICAL / COMMON NAME	SIZE	HT	WATER NEEDS
CR	CHOISYA TERNATA 'AZTEC PEARL' / AZTEC PEARL MEXICAN ORANGE	3 GAL	2'-3"		MOD.
EU	EUONYMUS JAPONICUS 'GREEN SPIRE' / GREEN SPIRE JAPANESE EUONYMUS	5 GAL	4'-5"		MOD.
HI	HYDRANGEA ARBORESCENS 'NCHAS' / INVINCIBELLE® WEE WHITE HYDRANGEA	3 GAL			MOD.
HL	HYDRANGEA MACROPHYLLA 'HORTMAVI' / SEASIDE SERENADE® MARTHA'S VINEYARD HYDRANGEA	2 GAL			MOD.
LO	LEUCOTHOE FONTANESIANA 'LITTLE FLAMES' / LEAFSCAPE LITTLE FLAMES LEUCOTHOE	2 GAL			MOD.
LI	LOROPETALUM CHINENSE RUBRUM 'KUROBUN' / CERISE CHARM™ FRINGE FLOWER	2 GAL			MOD.
LS	LOROPETALUM CHINENSE RUBRUM 'SUZANNE' / SUZANNE FRINGE FLOWER	3 GAL	3'-4"		MOD.
MQ	MAHONIA AQUIFOLIUM / OREGON GRAPE	3 GAL			MOD.
MX	MAHONIA X 'SOFT CARESS' / SOFT CARESS MAHONIA	3 GAL	2'-3"		MOD.
PO	PHYSCARPUS OPILOFOLIUS 'SMPOBLR' / GINGER WINE® NINEBARK	3 GAL			MOD.
PL	PRUNUS LAUROCERASUS 'OTTO LUYKEN' / OTTO LUYKEN ENGLISH LAUREL	3 GAL	2'-3"		MOD.
RH	RHOODODENDRON X 'HARDY GARDENIA' / SNOWBALL AZALEA	2 GAL			MOD.
SD	SPIRAEA JAPONICA 'TRACY' / DOUBLE PLAY BIG BANG® SPIREA	3 GAL	3'-4"		MOD.

GRASSES / SEDGES / RUSHES	CODE	BOTANICAL / COMMON NAME	SIZE	WATER NEEDS
CL	CAREX OSHIMENSIS 'EVERGLOW' / EVERCOLOR® EVERGLOW JAPANESE SEDGE	1 GAL		MOD.
DB	DRYOPTERIS ERYTHROSORA 'BRILLIANCE' / BRILLIANCE AUTUMN FERN	1 GAL		MOD.
HE	HELICTOTRICHON SEMPERVIRENS 'SAPPHIRE' / SAPPHIRE BLUE OAT GRASS	1 GAL		LOW
PM	POLYSTICHUM MUNITUM / WESTERN SWORD FERN	1 GAL		LOW
HP	HEMEROCALLIS X 'RUBY SPIDER' / RUBY SPIDER DAYLILY	1 GAL		LOW
HD	HEMEROCALLIS X 'STELLA DE ORO' / STELLA DE ORO DAYLILY	1 GAL		LOW
HB	HEUCHERA X 'RED LIGHTNING' / RED LIGHTNING CORAL BELLS	1 GAL		LOW
HT	HEUCHERA X 'TINEUNER' / NORTHERN EXPOSURE™ RED CORAL BELLS	1 GAL		LOW
RE	RUDBECKIA FULGIDA 'EARLY BIRD GOLD' / EARLY BIRD GOLD CONEFLOWER	1 GAL		LOW

PERENNIALS	CODE	BOTANICAL / COMMON NAME	SIZE	WATER NEEDS
APUJ	ARCTOSTAPHYLOS UVA-URSI / KINNIKINNICK	1 GAL		LOW
COEE	CAREX OSHIMENSIS 'EVERGLOW' / EVERCOLOR® EVERGLOW JAPANESE SEDGE	1 GAL		MOD.
COEV	CAREX OSHIMENSIS 'EVERLITE' / EVERCOLOR® EVERLITE JAPANESE SEDGE	1 GAL		MOD.
DCNL	DESCHAMPSIA CESPITOSA 'NORTHERN LIGHTS' / NORTHERN LIGHTS TUFTED HAIR GRASS	1 GAL		MOD.
LMPE	LIRIOPE MISCARI 'EXC 052' / PURPLE EXPLOSION™ LILYTURF	1 GAL		LOW
LLBM	LOMANDRA LONGIFOLIA 'LM300' / BREEZE™ MAT RUSH	1 GAL		LOW
MRRD	MAHONIA REPENS 'MONRWS' / DARKSTAR® CREEPING OREGON GRAPE	1 GAL		LOW
OFTA	OPHIPOGON FORMOSANUM / TAIWAN MONDO GRASS	1 GAL		LOW
PAHG	PENNISETUM ALOPECUROIDES 'HAMELN' / HAMELN FOUNTAIN GRASS	1 GAL		LOW
PALG	PENNISETUM ALOPECUROIDES 'JS JOMMENIK' / LUMEN GOLD™ DWARF FOUNTAIN GRASS	1 GAL		LOW

GROUND COVERS	CODE	BOTANICAL / COMMON NAME	SIZE	SPACING	WATER NEEDS
APUJ	ARCTOSTAPHYLOS UVA-URSI / KINNIKINNICK	1 GAL		18" o.c.	LOW
COEE	CAREX OSHIMENSIS 'EVERGLOW' / EVERCOLOR® EVERGLOW JAPANESE SEDGE	1 GAL		18" o.c.	MOD.
COEV	CAREX OSHIMENSIS 'EVERLITE' / EVERCOLOR® EVERLITE JAPANESE SEDGE	1 GAL		12" o.c.	MOD.
DCNL	DESCHAMPSIA CESPITOSA 'NORTHERN LIGHTS' / NORTHERN LIGHTS TUFTED HAIR GRASS	1 GAL		12" o.c.	MOD.
LMPE	LIRIOPE MISCARI 'EXC 052' / PURPLE EXPLOSION™ LILYTURF	1 GAL		12" o.c.	LOW
LLBM	LOMANDRA LONGIFOLIA 'LM300' / BREEZE™ MAT RUSH	1 GAL		18" o.c.	LOW
MRRD	MAHONIA REPENS 'MONRWS' / DARKSTAR® CREEPING OREGON GRAPE	1 GAL		24" o.c.	LOW
OFTA	OPHIPOGON FORMOSANUM / TAIWAN MONDO GRASS	1 GAL		12" o.c.	LOW
PAHG	PENNISETUM ALOPECUROIDES 'HAMELN' / HAMELN FOUNTAIN GRASS	1 GAL		18" o.c.	LOW
PALG	PENNISETUM ALOPECUROIDES 'JS JOMMENIK' / LUMEN GOLD™ DWARF FOUNTAIN GRASS	1 GAL		24" o.c.	LOW

STORMWATER FACILITY PLANTING TYPES I & II

HERBACEOUS PLANTS - 115 PLANTS PER 100SF	SIZE	HEIGHT	SPACING	WATER NEEDS
CAREX OSHIMENSIS 'EVERGLOW' / EVERCOLOR® EVERGLOW JAPANESE SEDGE	1 GAL	1' 0"	1' 0"	LOW
CAREX RUPESTRIS / CURLY SEDGE	1 GAL	1' 0"	1' 0"	LOW
CAREX TESTACEA 'PRAIRIE FIRE' / PRAIRIE FIRE ORANGE SEDGE	1 GAL	1' 0"	1' 0"	LOW
JUNCUS PATENS 'ELK BLUE' / SPREADING RUSH	1 GAL	1' 0"	1' 0"	LOW

SHRUBS / GROUNDCOVER - 4 PER 100SF	SIZE	HEIGHT	SPACING	WATER NEEDS
CORNUS SERICEA 'KELSEY' / KELSEY'S DWARF RED TWIG DOGWOOD	1 GAL	2' 0"		LOW
MAHONIA AQUIFOLIUM / OREGON GRAPE	1 GAL	3' 0"		LOW
PHYSCARPUS CAPITATUS 'PACIFIC NINEBARK' / PACIFIC NINEBARK	1 GAL	3' 0"		LOW
POLYSTICHUM MUNITUM / WESTERN SWORD FERN	1 GAL	2' 0"		LOW

LARGE SHRUBS / SMALL TREES - 3 PER 100SF	SIZE	HEIGHT	SPACING	WATER NEEDS
SALIX PURPUREA 'NANA' / DWARF PURPLE OSIER WILLOW	3 GAL	2'-6"	6' 0"	LOW
SPIRAEA DOUGLASSI / WESTERN SPIREA	1 GAL	2'-6"	4' 0"	LOW
VIBURNUM EDULE / HIGHBUSH CRANBERRY	1 GAL	2'-6"	4' 0"	LOW

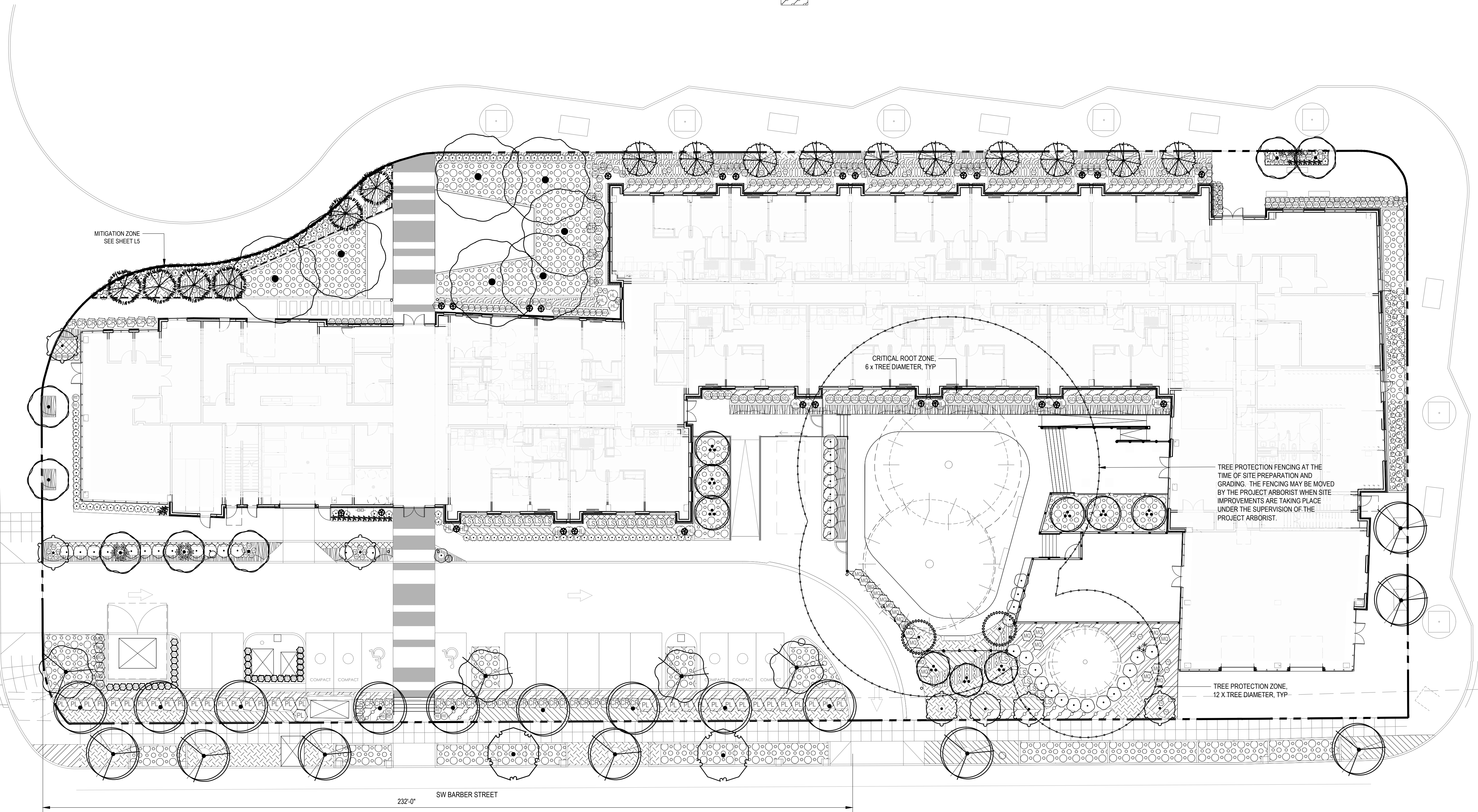
STORMWATER FACILITY PLANTINGS TYPE II TREE SCHEDULE

TREES	CODE	BOTANICAL / COMMON NAME	SIZE	HT	CAL	WATER NEEDS
AC	ACER CIRCINATUM / VINE MAPLE	B&B	5'-6"			MOD.
AB	ACER RUBRUM 'BOWHALL' / BOWHALL RED MAPLE	B&B	1.75" CAL			MOD.
AF	ACER RUBRUM 'FRANKRED' / RED SUNSET® MAPLE	B&B	2" CAL			MOD.

PLANT SCHEDULE ROW

TREES	CODE	BOTANICAL / COMMON NAME	SIZE	CAL	WATER NEEDS
AG	ACER NIGRUM 'GREENCOLUMN' / GREENCOLUMN BLACK MAPLE	B&B	2" CAL		MOD.

GROUND COVERS	CODE	BOTANICAL / COMMON NAME	SIZE	SPACING	WATER NEEDS
APUJ	ARCTOSTAPHYLOS UVA-URSI / KINNIKINNICK	1 GAL		18" o.c.	LOW
LLBM	LOMANDRA LONGIFOLIA 'LM300' / BREEZE™ MAT RUSH	1 GAL		18" o.c.	LOW
PAHG	PENNISETUM ALOPECUROIDES 'HAMELN' / HAMELN FOUNTAIN GRASS	1 GAL		18" o.c.	LOW



FOR REFERENCE ONLY

SHAPIRO DIDWAY
1204 SE Water Ave
Portland, Oregon 97214
+1 503 237 0520
www.shaprodidway.com

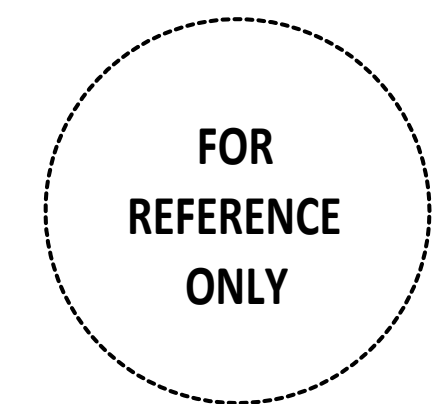
SHEET	REVISION	REVISION
REVISION NO.	EVENT	DATE

TRUE NORTH PLAN NORTH
WILSONVILLE TOD

PALINDROME COMMUNITIES

ISSUANCE
LAND USE REVIEW
PROJECT NUMBER
220120
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08/18/23
FULL SHEET SIZE
30 X 42
DRAWING TITLE
LEVEL 1 PLANTING PLAN

STAMP

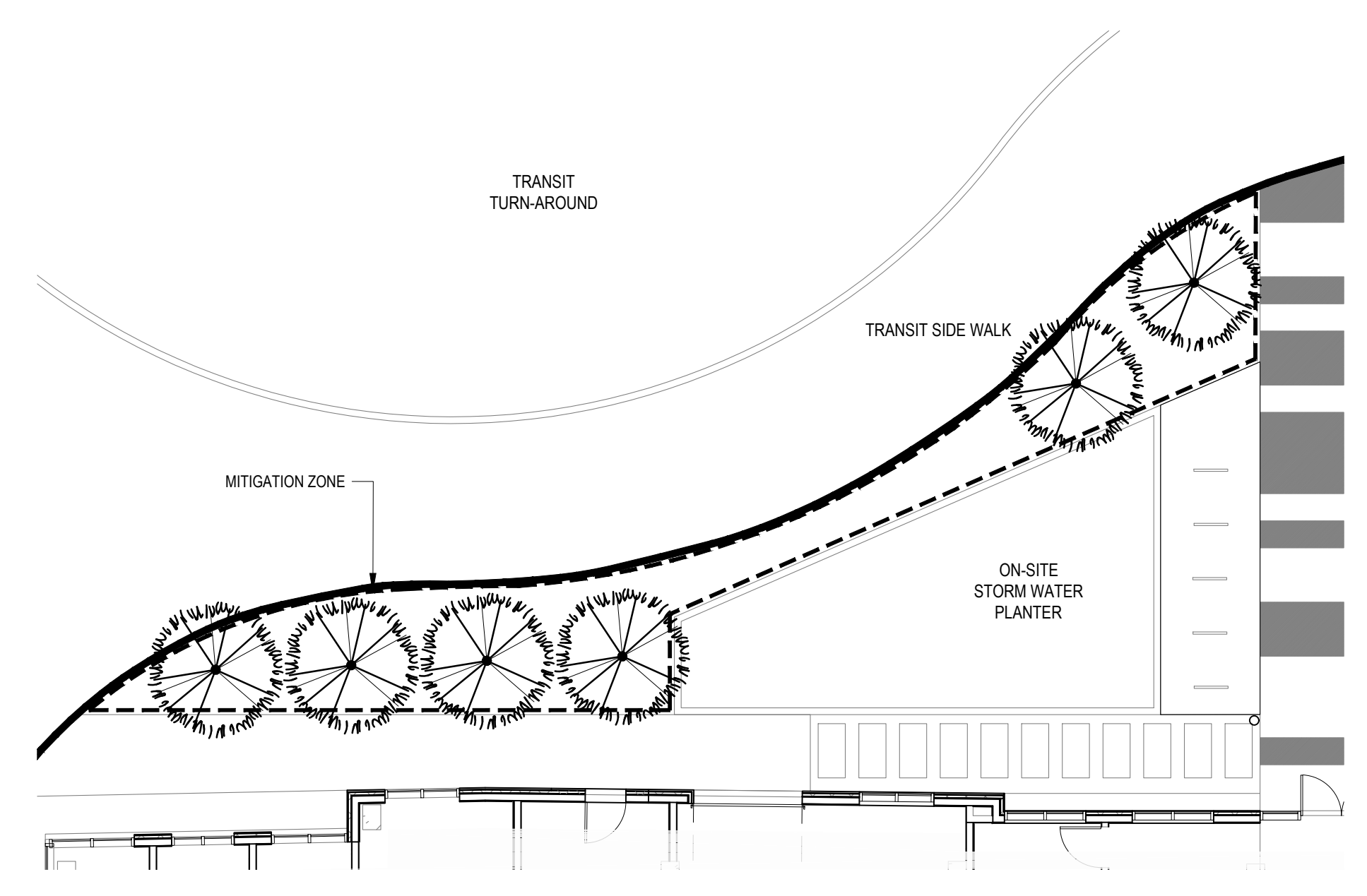


SHEET	REVISION	REVISION
REVISION NO.	EVENT	DATE

MITIGATION NOTES

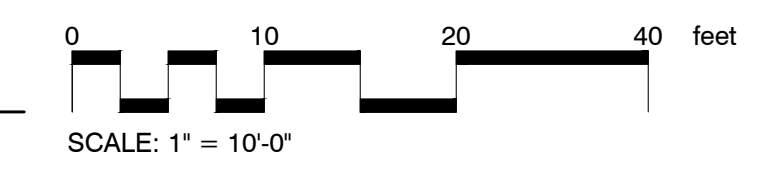
- A. PLANT MATERIALS ARE TO BE NATIVE AND ARE SUBJECT TO APPROVAL BY THE CITY OF WILSONVILLE, OREGON. PLANTS MUST BE AS LOCAL AS POSSIBLE, NURSERY PROPAGATED OR TAKEN FROM A PRE-APPROVED TRANSPLANTATION AREA. PLANT MATERIALS SHALL BE OF THE TYPE AND SIZE INDICATED ON THE MITIGATION PLAN DRAWINGS.
- B. PESTICIDES, FUNGICIDES AND FERTILIZERS SHALL NOT BE EMPLOYED IN MITIGATION AREAS UNLESS SPECIFICALLY AUTHORIZED AND APPROVED.
- C. NATIVE PLANTS SHALL BE PLANTED IN SUITABLE SOIL CONDITIONS. TREES SHALL BE SUPPORTED ONLY WHEN NECESSARY BECAUSE OF EXTREME WINDS AT THE SITE. WHERE SUPPORT IS NECESSARY, ALL STAKES, GUY WIRES AND 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. TEMPORARY IRRIGATION SHALL BE PROVIDED WITHIN THE MITIGATION ZONE BY A DEDICATED DRIP ZONE. TEMPORARY IRRIGATION SHALL BE PROVIDED WITHIN MITIGATION ZONE FOR A MINIMUM OF ONE COMPLETE GROWING SEASON, OR UNTIL TREES BECOME ESTABLISHED, WHICHEVER IS THE LONGEST. ONCE TREES ARE ESTABLISHED, ZONE SHALL BE TURNED OFF, BUT SHALL REMAIN IN PLACE FOR POSSIBLE USE IN TIMES OF EXTREME DROUGHT IN THE FUTURE.
- E. 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.

CITY OF WILSONVILLE, OREGON PLANNING AND DEVELOPMENT CODE LANDSCAPED AREAS		
MITIGATION PLAN		
1 NEW NATIVE TREE FOR EACH NATIVE TREE REMOVED	EXISTING NATIVE TREES REMOVED	NEW NATIVE TREES PROVIDED
	6	6



MITIGATION TREE SCHEDULE					
TREES	CODE	BOTANICAL / COMMON NAME	SIZE	HT	QTY
	PD	PSEUDOTSUGA MENZIESII / DOUGLAS FIR	B&B	8'-10'	6

01 MITIGATION PLAN



WILSONVILLE TOD

PALINDROME COMMUNITIES

ISSUANCE

LAND USE REVIEW

PROJECT NUMBER

220120

DATE

08/18/23

FULL SHEET SIZE

30 X 42

DRAWING TITLE

MITIGATION PLAN

SHEET NUMBER

L5

LAND USE SUMMARY

PROJECT INFORMATION		PROPOSED USES		OFF-STREET PARKING (4.155(.03))	
SITE ADDRESS:	9749 SW Barber St, Wilsonville OR 97070	MULTI-FAMILY RESIDENTIAL	121 UNITS	RESIDENTIAL (MULTIFAMILY):	QTY. 121 UNITS
TAXLOT ID:	31W148 00703	COMMERCIAL TENANTS (ASSUMED):		COMMERCIAL (EXCLUDES SMART TRANSIT CENTER):	REQ. NONE
RECORD NUMBER:	5020822	FOOD BANK	~1,600 SF		PROVIDED 7
GROSS SITE AREA:	60,695 SF (~1.39 ACRES)	CAFE/TAPROOM	~2,150 SF	ADA STALLS:	2
		SMART TRANSIT CENTER	~1,150 SF	STANDARD STALLS (INCLUDES ADA):	9
				COMPACT (40% MAX):	5
BASE ZONE:	PLANNED DEVELOPMENT INDUSTRIAL (PDI)			REQUIRED BICYCLE PARKING (4.155(.04))	
MINIMUM LOT SIZE:	NO LIMIT	SITE AREAS:		RESIDENTIAL:	QTY. 121 UNITS
MAXIMUM LOT COVERAGE:	NO LIMIT	PARKING LOT AREA:	7,278 SF	COMMERCIAL:	REQ. 121
FRONT YARD SETBACK:	30'	IMPERMEABLE PAVING COVERAGE:	9,910 SF		PROVIDED 140
REAR AND SIDE YARD SETBACK:	30'	PERMEABLE PAVING AREA:	7,698 SF	LOCATED IN INTERNAL BIKE ROOMS:	130
OVERLAY ZONES:	LIGHTING ZONE 2 (L22)			EXTERIOR/SITE:	26
BUILDING DATA:	5 STORIES, 80'-8" BUILDING HEIGHT	OPEN SPACE (4.133(.01)(C))		LONG-TERM PARKING SPACES:	50%
	TYPE VIA OVER TYPE IA CONSTRUCTION	REQ. 25% GROSS SITE AREA (15,174 SF)	PROVIDED 20,518 SF		62
GROSS AREA:	~133,575 SF	USABLE OPEN SPACE (4.133(.01)(C))			130
NET RENTABLE:	~106,025 SF	REQ. 12.5% GROSS SITE AREA (7,587 SF)	PROVIDED 9,095 SF		
BUILDING FOOTPRINT:	~28,711 SF	LANDSCAPE AREA (4.176(.03))			
COMMERCIAL USE:	~4,900 SF	REQ. 15% GROSS SITE AREA (9,104 SF)	PROVIDED 16,079 SF		
RESIDENTIAL USE:	~128,675 SF				
DENSITY:	~87 UNITS/ACRE				

KEY NOTES

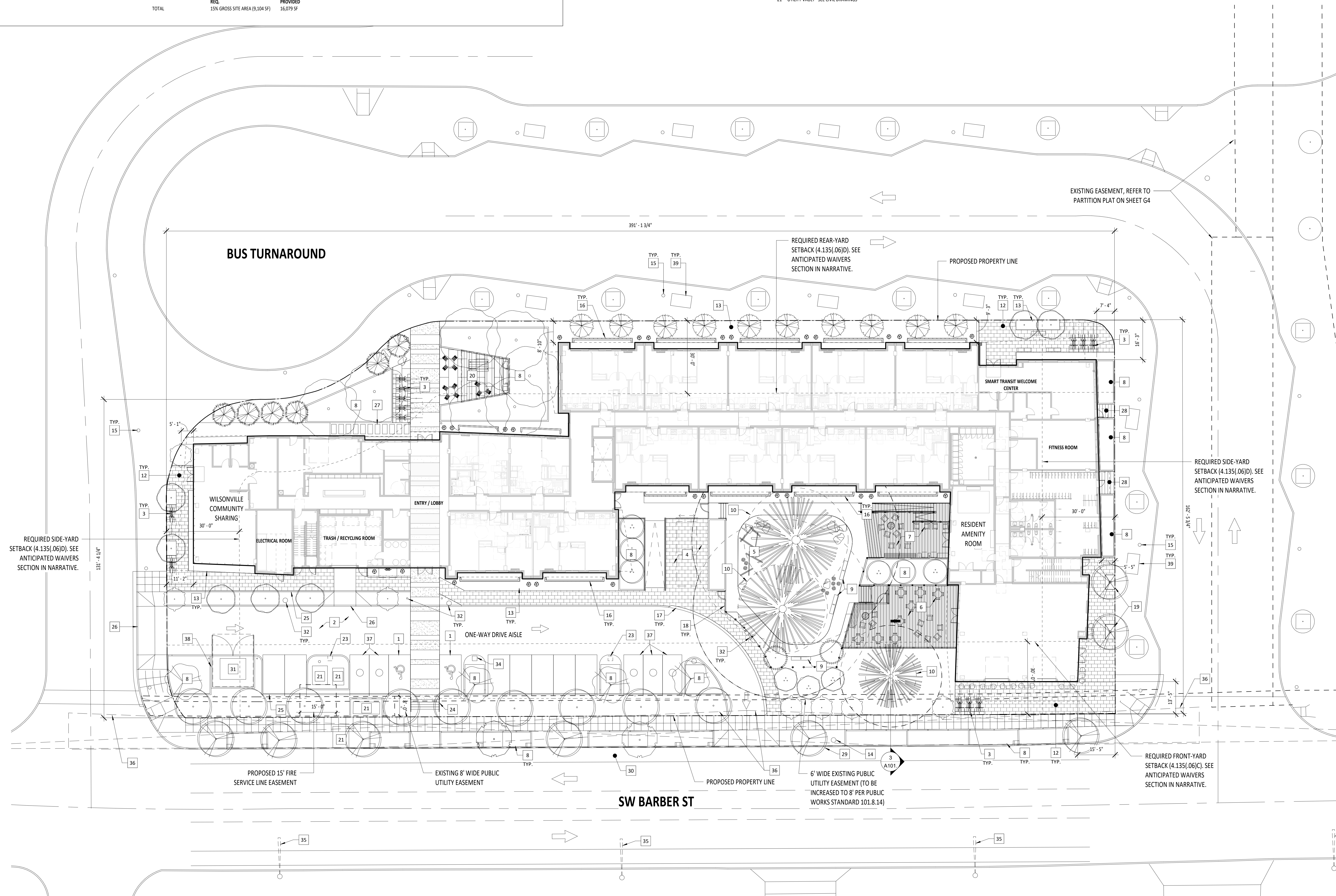
- ADA PARKING STALL
- TRASH/RECYCLING PICKUP ZONE - SEE SHEET A101. FOR ADDITIONAL INFORMATION
- SHORT-TERM BICYCLE PARKING HOOP (2'X6' ZONE WITH 5' DEEP ACCESS BEHIND) - SEE LANDSCAPE DRAWINGS
- RESIDENT LOADING ZONE
- NATURAL PLAY AREA - SEE LANDSCAPE DRAWINGS
- CAFE SEATING ON RAISED DECK - SEE LANDSCAPE
- RESIDENT AMENITY SPACE ON RAISED DECK - SEE LANDSCAPE
- STORMWATER PLANTER - SEE CIVIL DRAWINGS
- BENCH SEATING - SEE LANDSCAPE DRAWINGS
- CRITICAL ROOT ZONE AT TREE TO REMAIN
- PERMEABLE PAVERS - SEE LANDSCAPE DRAWINGS
- AT-GRADE PLANTER - SEE LANDSCAPE DRAWINGS
- EXISTING FIRE HYDRANT, TO REMAIN
- EXISTING STREET LIGHT
- 18" TALL BOWARD-FORMED CONCRETE WALL AT GROUND FLOOR UNITS
- ROLLED CURB - SEE CIVIL DRAWINGS
- FENCE - SEE LANDSCAPE DRAWINGS
- TREE GRATE - SEE LANDSCAPE DRAWINGS
- RESIDENT PLAZA/BBQ AREA - SEE LANDSCAPE DRAWINGS
- UTILITY VAULT - SEE CIVIL DRAWINGS
- FUTURE EV CHARGING STATION LOCATION, REFER TO ELECTRICAL. CONDUIT TO BE RUN TO THIS LOCATION FOR FUTURE INSTALLATION OF EV CHARGER.
- STEPS WITH 1-1/2" DIA STEEL, POWDERCOATED HANDRAILS
- LOW RETAINING WALL/CURB - SEE CIVIL DRAWINGS
- CURB CUT - SEE CIVIL DRAWINGS
- PRECAST CONCRETE PAVERS WITH GRAVEL INFILL, SEE LANDSCAPE DRAWINGS
- WOOD PLANK BRIDGE OVER STORMWATER PLANTER - SEE LANDSCAPE DRAWINGS
- STREET TREE - SEE CIVIL & LANDSCAPE DRAWINGS
- EXISTING BIKE LANE
- PGE VAULT AND SURFACE-MOUNTED TRANSFORMER
- EXTERIOR SITE LIGHTING - SEE SHEET A003
- DUAL-HEAD EV CHARGING STATION - SEE ELECTRICAL DRAWINGS
- STORMWATER PLANTER - SEE CIVIL DRAWINGS
- CLEAR VISION AREA COMPLYING WITH PUBLIC WORKS STANDARD 2012.22
- COMPACT PARKING STALL
- 80" TALL FENCE SCREENING ELECTRICAL TRANSFORMER, TO BE MADE OF STEEL STUD FRAMING AND CEMENTITIOUS PLANK SIDING. GATE TO FULLY OPEN TO PROVIDE 10' ACCESS CLEARANCE AT TRANSFORMER
- EXISTING BUS SHELTER

GENERAL NOTES - SITE PLAN

- FIELD VERIFY ALL INFORMATION PRIOR TO CONSTRUCTION. IF SITE CONDITIONS VARY FROM CONTRACT DOCUMENTS, NOTIFY ARCHITECT IN WRITING IMMEDIATELY.

SITE PLAN LEGEND

RAISED DECK, SEE LANDSCAPE DRAWINGS



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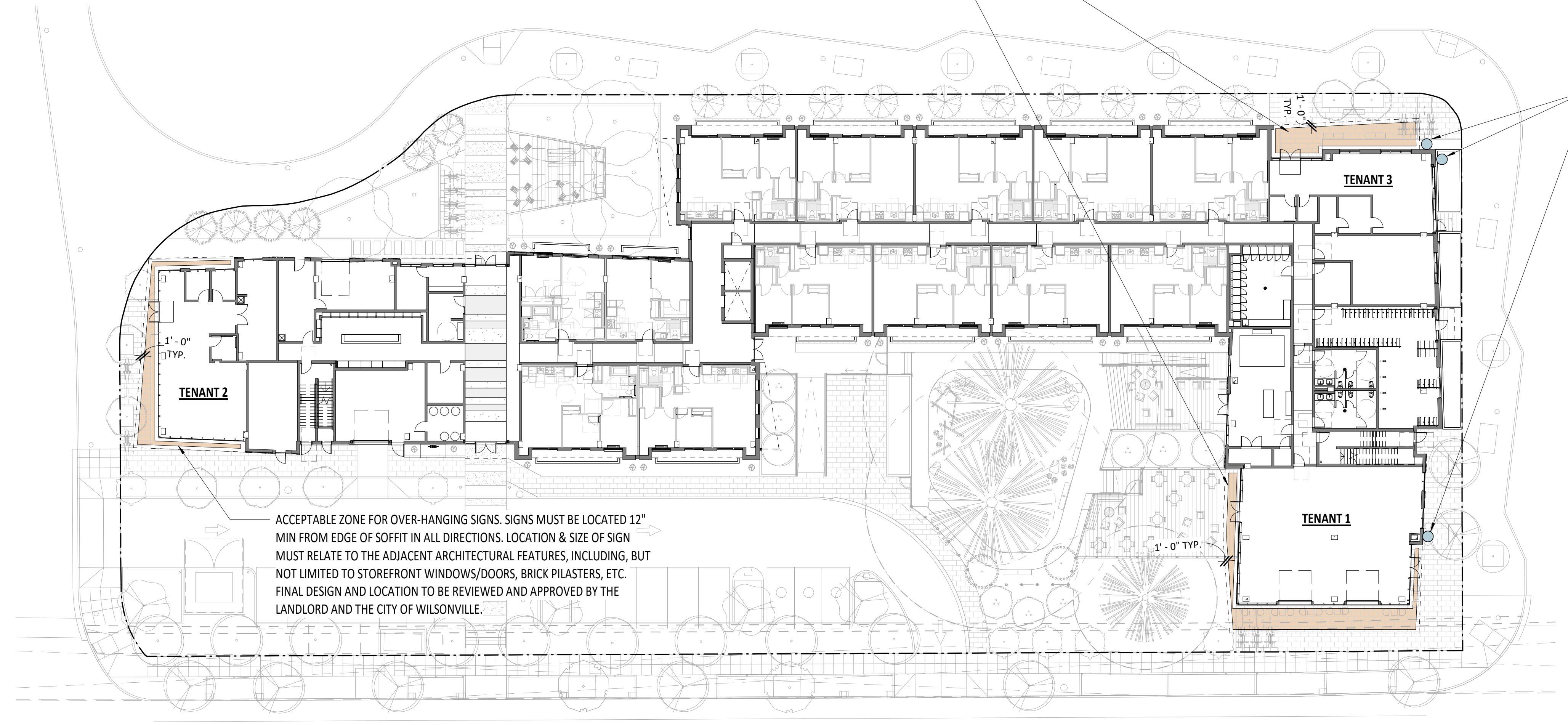
PALINDROME COMMUNITIES

ISSUANCE
LAND USE REVIEW
PROJECT NUMBER
220120
DATE
08/18/23
FULL SHEET SIZE
30 X 42
DRAWING TITLE
LAND USE SITE PLAN

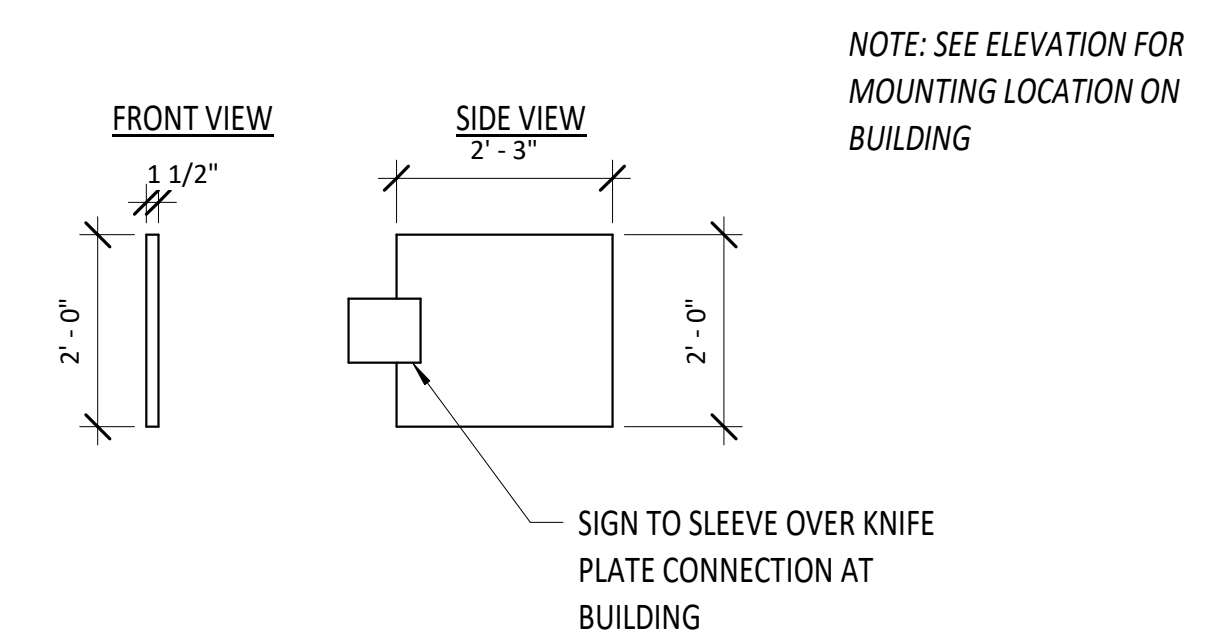
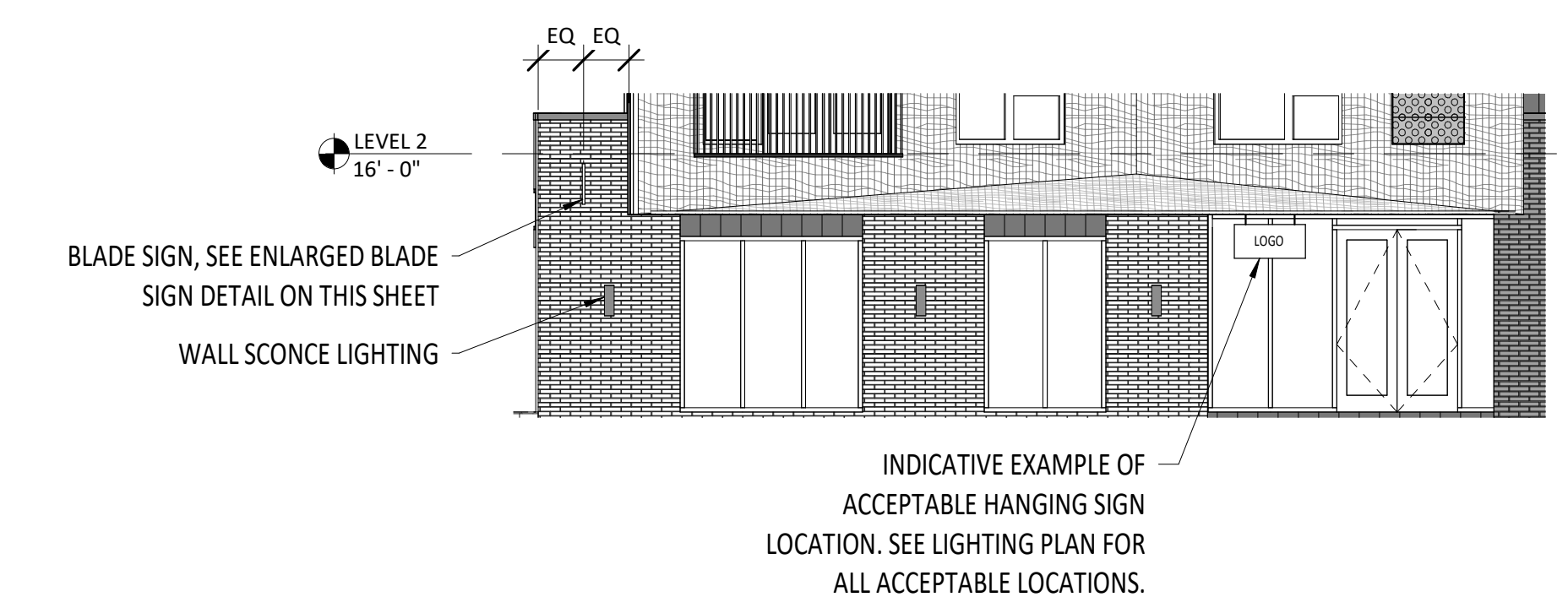
- GENERAL NOTES - SIGNAGE PLAN**
1. ALL SIGNAGE DEFERRED TO FUTURE PERMITS AND TO ADHERE TO THE MASTER SIGN PLAN AND DEVELOPER'S APPROVED GUIDELINES.
 2. REFER TO MASTER SIGN PLAN DOCUMENTATION ON SHEET A002 FOR DESIGN GUIDELINES AND MATERIALS.
 3. FUTURE TENANT SIGNAGE LOCATIONS INDICATED ON DRAWINGS 1/A002 & 2/A002. EACH TENANT WILL BE LIMITED TO TWO SIGNS - EITHER TWO OVER-HANGING SIGNS OR ONE OVER-HANGING SIGN AND ONE BLADE SIGN.

ACCEPTABLE ZONE FOR OVER-HANGING SIGNS. SIGNS MUST BE LOCATED 12" MIN FROM EDGE OF SOFFIT IN ALL DIRECTIONS. LOCATION & SIZE OF SIGN MUST RELATE TO THE ADJACENT ARCHITECTURAL FEATURES, INCLUDING, BUT NOT LIMITED TO STOREFRONT WINDOWS/DOORS, BRICK PILASTERS, ETC. FINAL DESIGN AND LOCATION TO BE REVIEWED AND APPROVED BY THE LANDLORD AND THE CITY OF WILSONVILLE.

ACCEPTABLE BLADE SIGN LOCATIONS. SEE ELEVATION FOR ADDITIONAL INFORMATION.



1 EXTERIOR SIGNAGE PLAN
A002 / 3/64" = 1'-0"



2 COMMERCIAL TENANT SIGNAGE
A002 / 1/8" = 1'-0"

3 BLADE SIGN
A002 / 1/2" = 1'-0"

MASTER SIGN PLAN DOCUMENTATION

MASTER SIGN PLAN

To ensure design & visual integrity of the Wilsonville Transit-Oriented-Development project (W TOD), all procedural guidelines for Tenant signage work as specified will be required. All proposed design solutions must be reviewed and approved by the Landlord and the City of Wilsonville prior to fabrication. It will be the Tenant's responsibility to provide a copy of these guidelines to the Sign Contractor. The Tenant is responsible for applying for building and/or sign permits as required by the City of Wilsonville.

These guidelines have been established to assist future tenants in creating a retail design solution that highlights their product or service while also reinforcing the design excellence of the W TOD project as a whole. This criterion aims to support tenants throughout the design review process and establish baseline standards and objectives for the visual appearance of the buildings and site. All signage should fulfill both the communicative purposes of a sign and its aesthetic integration with the overall retail concept.

The signage and logos of tenants located within the W TOD project should express a refined urban sophistication through the use of clean and contemporary shapes and forms. It is recommended to use the same building materials for the signage as the rest of the structure to create a seamless transition between the building and the tenant space. The design of tenant signage should be suitable and indicative of the tenant's business activities. The tenant sign designs should complement and enhance the building's overall character by using appropriate scale, color, materials, and lighting levels.

Signage zones are shown on the plans and elevations as indicated, and is the specific area in which Tenant signage must be installed. All signs are to meet the City of Wilsonville, Section 4.156.08 Sign Regulations in the PDC, TC, PDI, and PF Zones.

STOREFRONT SIGNAGE CRITERIA

EXTERIOR SIGNAGE

All signage designed for exterior identification of a retail space shall be designed for complete compatibility with building finishes, color scheme, and lighting levels, to maintain a design standard throughout the building. All primary signage will be limited to trade names and logos.

FORMAT, FABRICATION, COLOR & LIGHTING OF SIGNAGE

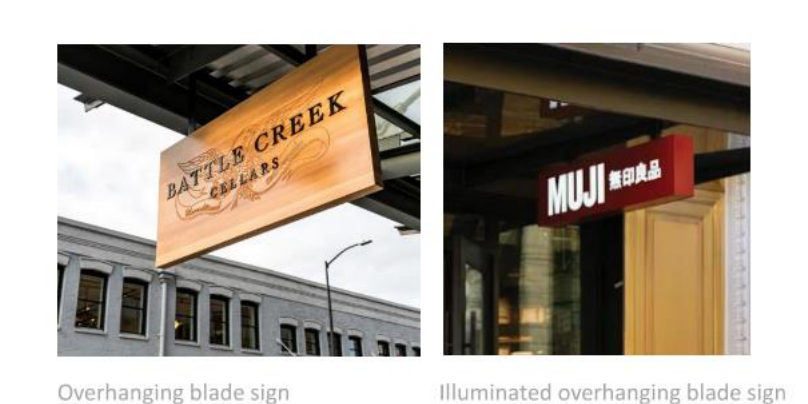
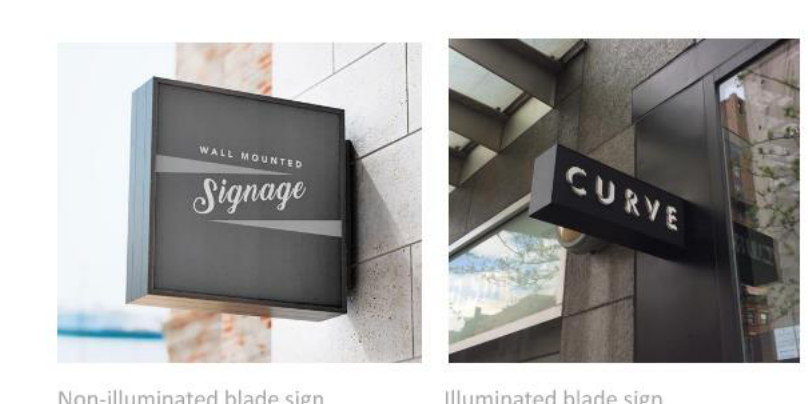
The design format, construction techniques, and intricacies of a retail sign program facilitate it's seamless integration into the building, while also enabling the Tenant's branding identity to be distinctly visible. Adhering to the aforementioned standards, as well as those listed below, will ensure that the Tenant establishes a vital connection between their design statement and signage program.

ACCEPTABLE LOCATIONS

Pre-approved location, hanging signs, and blade signs. These locations follow the specific height and placement limitations as outlined in the plan & elevations.

ACCEPTABLE FORMAT AND PROPORTIONS FOR SIGNS

Building standard letter height and sign format area are determined by signage guidelines based on the architectural design and City sign codes. General limitations are outlined in the images below.



ACCEPTABLE FABRICATION METHODS AND MATERIALS FOR SIGNAGE

Signs shall be constructed of high-quality, durable materials. All materials used should relate to the architectural character and material of the building.

ACCEPTABLE COLORS

- Any colors that are integral to the Tenant logo, or word mark, and are limited to use within the graphic sign field. Colors that are indigenous to the sign material, as in finished metals.
- All sign structure colors/finishes should be complementary to the building.

- Paint finish and architectural metals that connect to the building architecture should reflect the materials/color palette of the building.
- Color Material finishes will be reviewed and approved by the Landlord.

UNACCEPTABLE LIGHTING

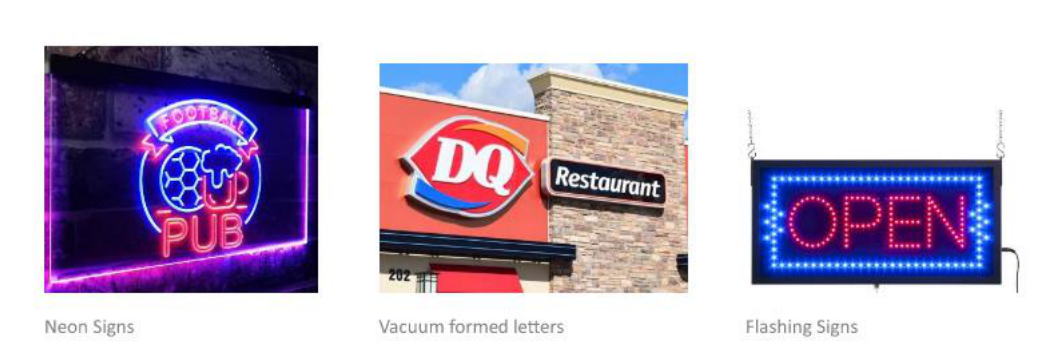
- Custom armature with integrated light fixtures.
- Internally illuminated sign cabinets that illuminate the logo or word mark and not the overall sign panel.
- All signs shall use energy-efficient lighting: LED.
- Blade Signs can be non-illuminated or illuminated.

UNACCEPTABLE LOCATIONS

Any signage applied directly to the building that does not comply with the outlined standard of this Master Sign Plan.

UNACCEPTABLE FORMAT, LETTER, AND HEIGHTS FOR SIGNS

Refer to sample images below. In addition, no freestanding or ground mounted signs will be allowed. A-frame signage is not covered in these guidelines.



UNACCEPTABLE FABRICATION METHODS AND MATERIALS

- Unpainted steel or other unfinished metals, aside from stainless steel.
- Vacuum formed plastic letters, logos, and word marks.
- Any fabrication with exposed fasteners, unless architecturally integral to the sign and relates to the architectural design of the building. Sign must be reviewed and approved by the Landlord.
- There should be limited visibility of exposed conduits, tubing and raceways. Transformers or related equipment shall be concealed whenever possible, and not visible to the public.

UNACCEPTABLE COLORS

- Day-Glo or reflective paints.

UNACCEPTABLE LIGHTING

- Signs with flashing or strobing lights, or lighting that changes color.

STAMP

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SHEET REVISION NO.	REVISION EVENT	REVISION DATE

PALINDROME COMMUNITIES

ISSUANCE

LAND USE REVIEW

PROJECT NUMBER
220120

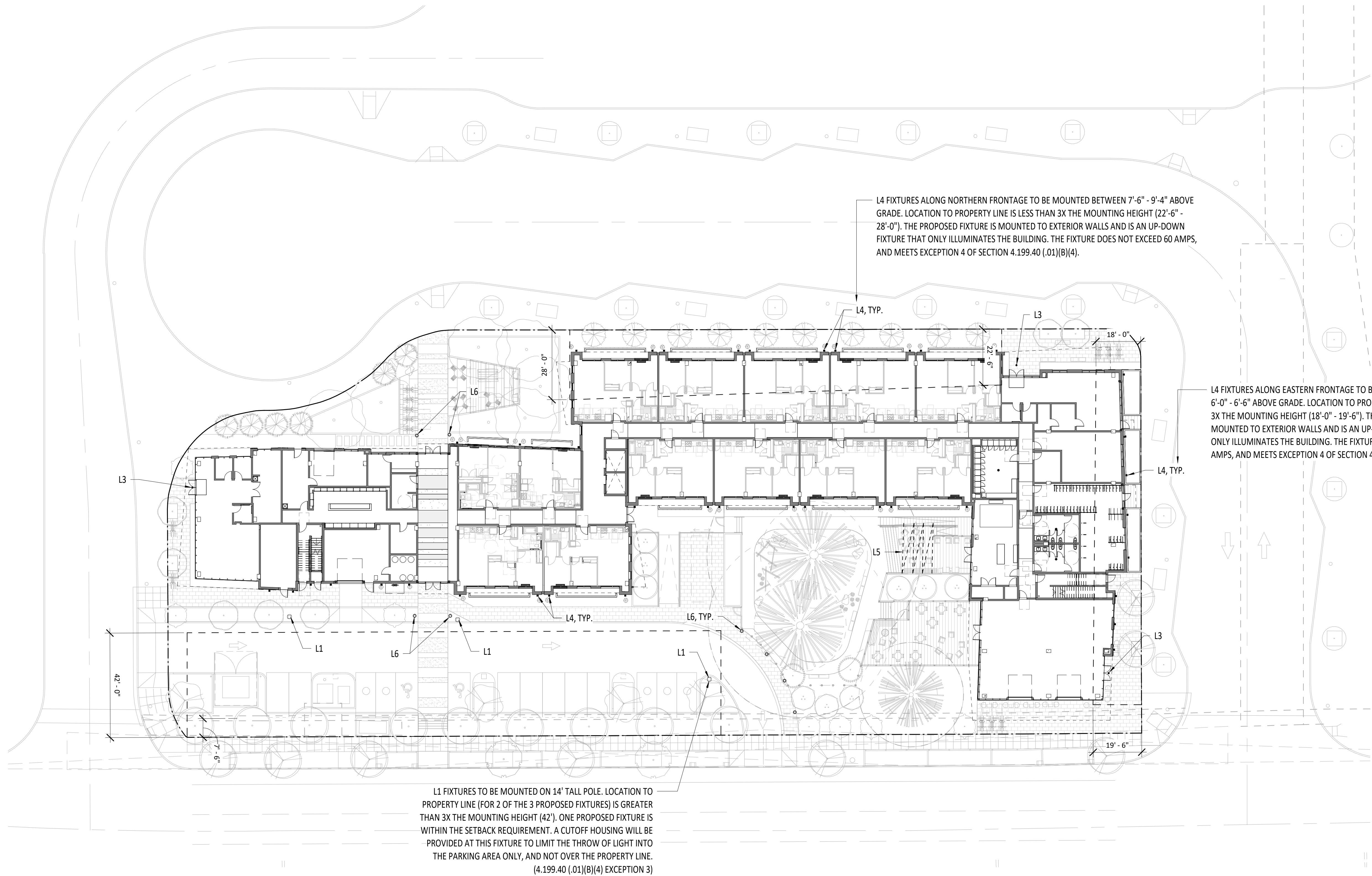
DATE
08/18/23

FULL SHEET SIZE
30 X 42

DRAWING TITLE
EXTERIOR SIGNAGE PLAN

SHEET NUMBER

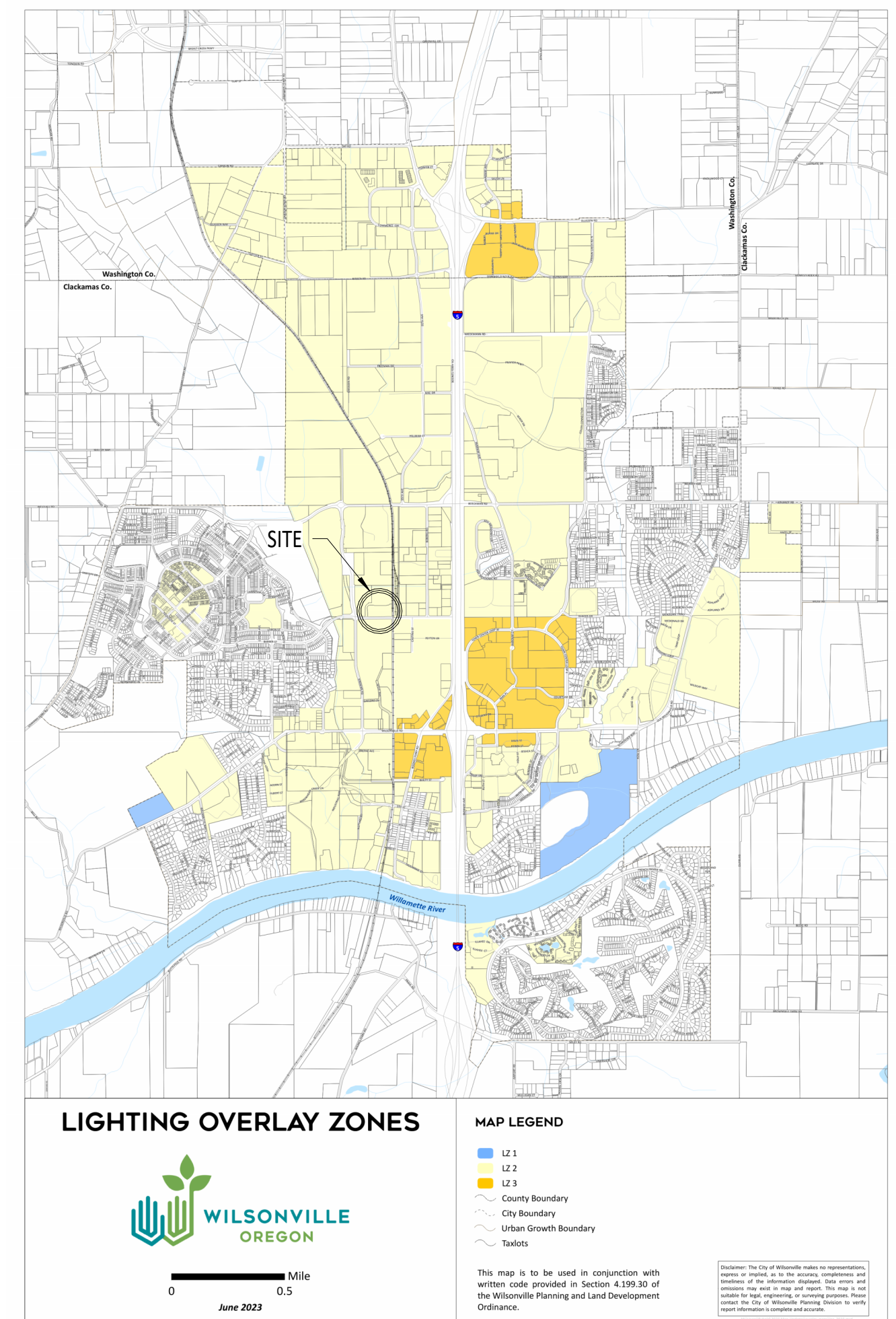
A002



EXTERIOR LIGHT FIXTURE LEGEND

PLAN SYMBOL	NOTE: SEE LIGHTING CUTSHEETS FOR THESE FIXTURES, PROVIDED IN APPENDIX 'A' OF THE WRITTEN NARRATIVE PORTION OF THIS APPLICATION.
	L1: LUMARK PREVAL (PRV-C15-D-UNV-T4-R2) AREA AND ROADWAY LUMINAIRE, 70 CRI, 4,000 LED AND TYPE IV OPTIC, BLACK FINISH. TO BE MOUNTED ON 14" TALL POLE.
	L3: COOPER - HALO (SMD6R1293WH) 6" ROUND SURFACE MOUNT PUCK LIGHT AT EXTERIOR SOFFITS, 3,000K CCT, 90 CRI LEDS, TUSCAN BRONZE TRIM FINISH.
	L4: GENERATION BRANDS (7000WTEG18UDWVCUNV830V) 18" TALL WALL-MOUNTED UP/DOWN LUMINAIRE, 3000K, 80 CRI, LED, BLACK FINISH.
	L5: TOKSTAR - EXHIBITOR (UB-EX_IW_G19-F) STRING LIGHTS AT COVERED RESIDENT AMENITY AREAS, 3000K, BLACK CABLE & SOCKET COLOR.
	L6: SELUX - INULA BOLLARD (IBL-X-4QS-30-XX-UNV) LIGHTED BOLLARDS AT MAIN RESIDENTIAL BUILDING ENTRIES & AT BIKE PARKING ALONG BARBER. 3,000K, >80 CRI, LED, BLACK FINISH.

1 EXTERIOR LIGHTING PLAN
 A003 3/64" = 1'-0"



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TRUE NORTH PLAN NORTH

WILSONVILLE TOD

PALINDROME COMMUNITIES

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PROJECT NUMBER
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DATE
08/18/23

FULL SHEET SIZE
30 X 42

DRAWING TITLE
EXTERIOR LIGHTING PLAN

KEY NOTES

- 2 BUILDING OVERHANG ABOVE
- 9 TRASH CHUTE EXHAUST SHAFT
- 13 30" DIAMETER TRASH CHUTE

GENERAL NOTES - PLANS

- 1. FIELD VERIFY ALL INFORMATION PRIOR TO CONSTRUCTION. IF SITE CONDITIONS VARY FROM CONTRACT DOCUMENTS, NOTIFY ARCHITECT IN WRITING IMMEDIATELY.
- 2. PROVIDE BLOCKING FOR ALL WALL MOUNTED FIXTURES AND CABINETS. PROVIDE BLOCKING AT FUTURE GRAB BAR LOCATIONS. SEE ANSI DESIGN STANDARDS FOR GRAB BAR LOCATIONS.
- 3. ALL INTERIOR DOOR ROUGH OPENINGS ARE TO BE 4" FROM FACE OF STUD OF THE CLOSEST ADJACENT WALL, UNLESS NOTED OTHERWISE.
- 4. REFER TO CIVIL DRAWINGS FOR GRADING AND HORIZONTAL CONTROL DRAWINGS.
- 5. REFER TO LANDSCAPE DRAWINGS FOR ALL SITE MATERIALS, LAYOUT, AND ACCESS COMPLIANCE SITE PATH OF TRAVEL DRAWINGS.
- 6. MAINTAIN 7'-0" CLEAR OVERHEAD AT VAN ACCESSIBLE PARKING, PEDESTRIAN CIRCULATION, AND VEHICULAR DRIVE LANES AND MANEUVERING AREAS.
- 7. STAGGER ELECTRICAL OUTLETS IN DIFFERENT STUD BAYS TO AVOID BACK TO BACK CONDITIONS.
- 8. INSTALL CEMENTITIOUS BACKER BOARD AT ALL TILE LOCATIONS.
- 9. REFER TO STRUCTURAL DRAWINGS FOR DIMENSIONS AND ELEVATIONS OF STRUCTURAL SLAB AND WALL ELEMENTS.
- 10. REFER TO EXTERIOR ELEVATIONS FOR VINYL WINDOW / DOOR LOCATIONS.
- 11. REFER TO ENLARGED UNIT & FINISH PLANS BEGINNING ON SHEET A410 FOR ADDITIONAL INFORMATION.
- 12. REFER TO SHEETS A500 - A580 FOR TYPICAL BUILDING DETAILS.
- 13. DASHED FFE TO BE PROVIDED BY TENANT.
- 14. SEE SHEET G011 FOR BUILDING AND DWELLING UNIT GROSS AREAS.

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TRUE PLAN
NORTH NORTH
WILSONVILLE TOD

PALINDROME COMMUNITIES

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LAND USE REVIEW

PROJECT NUMBER
220120

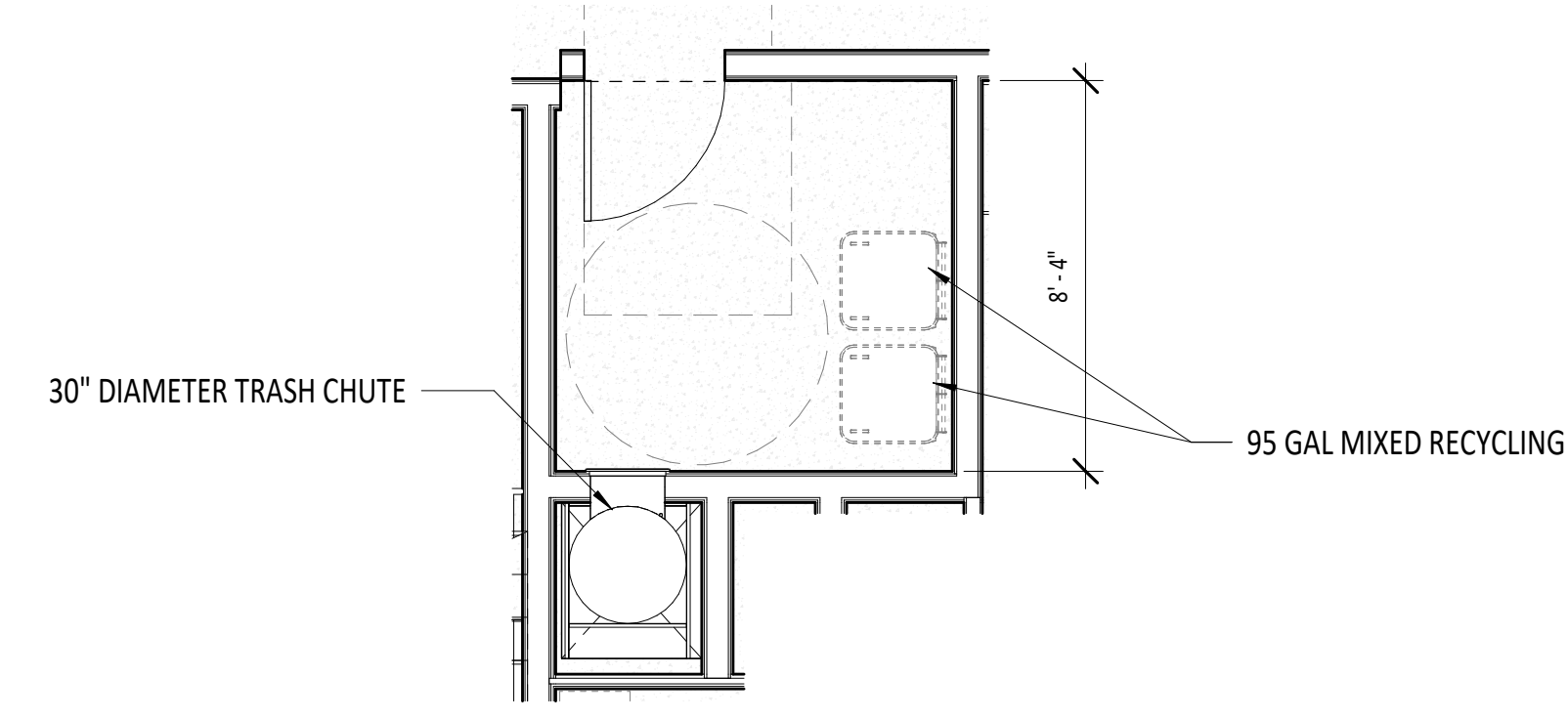
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FULL SHEET SIZE
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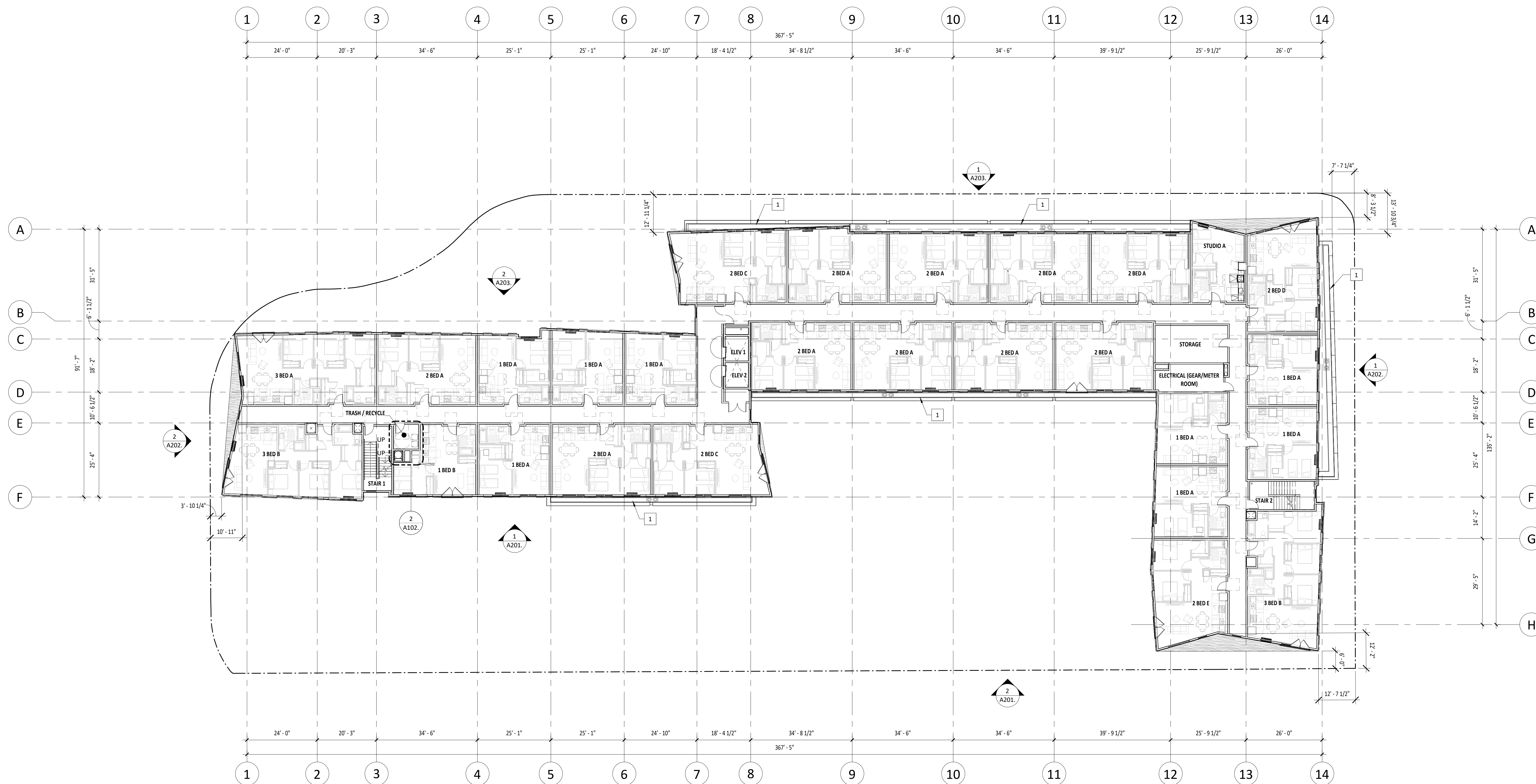
DRAWING TITLE
FLOOR PLAN - LEVEL 2 (LU)

SHEET NUMBER

A102.



2 TRASH ROOM - UPPER FLOOR, TYP. (LU)
 A102. 1/4" = 1'-0"



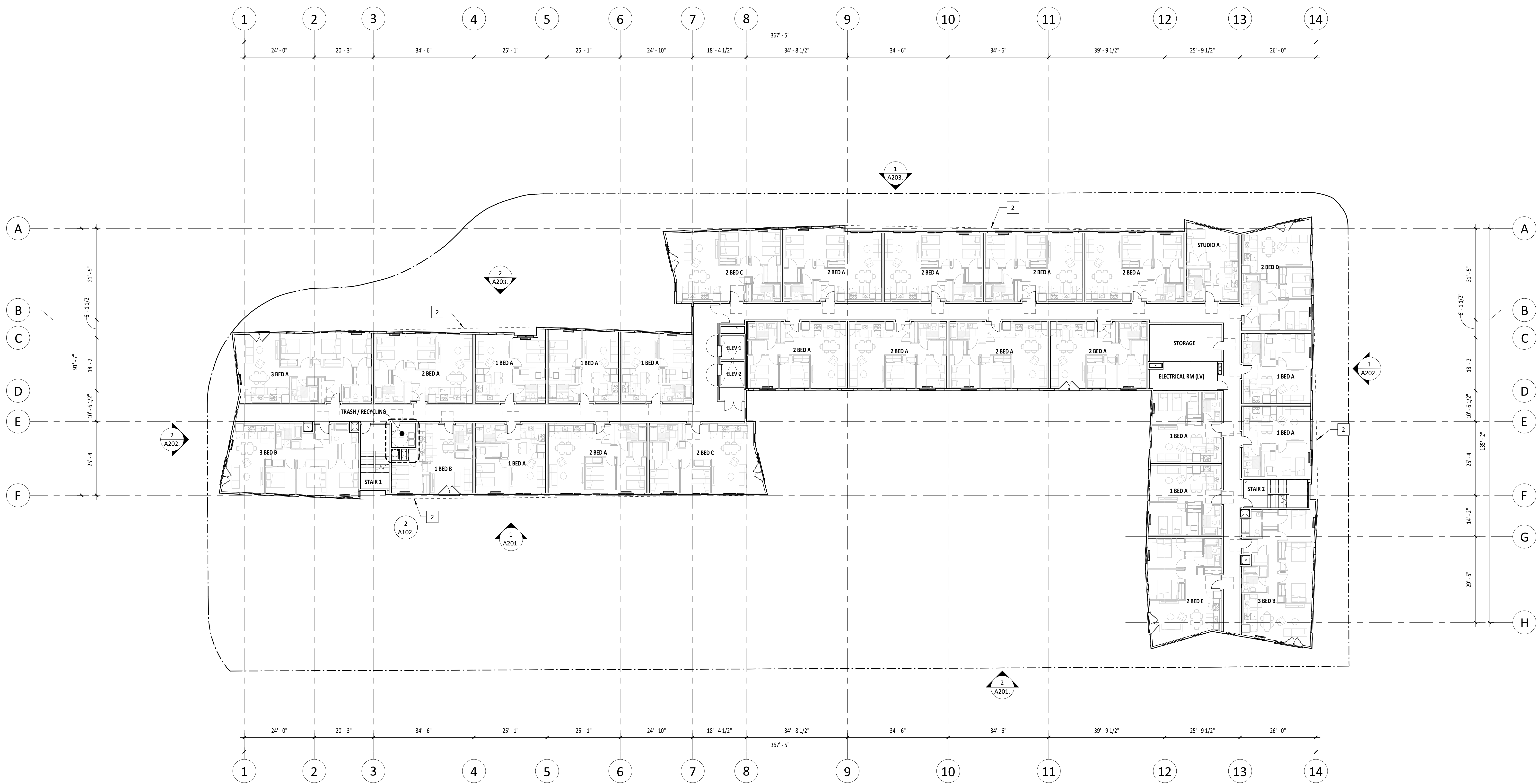
1 FLOOR PLAN - LEVEL 2 (LU)
 A102. 1/16" = 1'-0"

KEY NOTES

- 1 PREFABRICATED PLANTER - SEE LANDSCAPE DRAWINGS
- 2 BUILDING OVERHANG ABOVE
- 3 RECESSED MAILBOX, TYPE 4CADD-10
- 4 PARCEL PENDING LOCKERS
- 5 MOP SINK, REFERENCE PLUMBING DRAWINGS
- 6 WATER HEATER, REFERENCE PLUMBING DRAWINGS
- 7 FLOOR-MOUNT BIKE HOOP
- 8 FLOOR-MOUNT HANGING BIKE RACK
- 9 TRASH CHUTE EXHAUST SHAFT
- 10 MECHANICAL SHAFT, REFERENCE MECHANICAL
- 11 TYPE I HOOD SHAFT
- 12 STANDPIPE, FINAL LOCATION TO BE DETERMINED BY FIRE MARSHALL
- 13 30" DIAMETER TRASH CHUTE
- 14 JULIET BALCONY RAILING, REFERENCE ELEVATIONS
- 15 GAS METERS, REFERENCE CIVIL AND PLUMBING DRAWINGS
- 16 HANDRAIL, 1-1/2" DIAMETER STEEL, INSTALL 36" ABOVE RAMP.
- 17 ELECTRICAL SHAFT, REFERENCE ELECTRICAL DRAWINGS
- 18 DAS SHAFT, REFERENCE LOW VOLTAGE DRAWINGS

GENERAL NOTES - PLANS

1. FIELD VERIFY ALL INFORMATION PRIOR TO CONSTRUCTION. IF SITE CONDITIONS VARY FROM CONTRACT DOCUMENTS, NOTIFY ARCHITECT IN WRITING IMMEDIATELY.
2. PROVIDE BLOCKING FOR ALL WALL MOUNTED FIXTURES AND CABINETS. PROVIDE BLOCKING AT FUTURE GRAB BAR LOCATIONS. SEE ANS DESIGN STANDARDS FOR GRAB BAR LOCATIONS.
3. ALL INTERIOR DOOR ROUGH OPENINGS ARE TO BE 4" FROM FACE OF STUD OF THE CLOSEST ADJACENT WALL, UNLESS NOTED OTHERWISE.
4. REFER TO CIVIL DRAWINGS FOR GRADING AND HORIZONTAL CONTROL DRAWINGS.
5. REFER TO LANDSCAPE DRAWINGS FOR ALL SITE MATERIALS, LAYOUT, AND ACCESS COMPLIANCE SITE PATH OF TRAVEL DRAWINGS.
6. MAINTAIN 7'-0" CLEAR OVERHEAD AT VAN ACCESSIBLE PARKING, PEDESTRIAN CIRCULATION, AND VEHICULAR DRIVE LANES AND MANEUVERING AREAS.
7. STAGGER ELECTRICAL OUTLETS IN DIFFERENT STUD BAYS TO AVOID BACK TO BACK CONDITIONS.
8. INSTALL CEMENTITIOUS BACKER BOARD AT ALL TILE LOCATIONS.
9. REFER TO STRUCTURAL DRAWINGS FOR DIMENSIONS AND ELEVATIONS OF STRUCTURAL SLAB AND WALL ELEMENTS.
10. REFER TO EXTERIOR ELEVATIONS FOR VINYL WINDOW / DOOR LOCATIONS.
11. REFER TO ENLARGED UNIT & FINISH PLANS BEGINNING ON SHEET A410 FOR ADDITIONAL INFORMATION.
12. REFER TO SHEETS A500 - A580 FOR TYPICAL BUILDING DETAILS.
13. DASHED FFE TO BE PROVIDED BY TENANT.



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 PROJECT NUMBER
220120
 DATE
08/18/23
 FULL SHEET SIZE
30 X 42
 DRAWING TITLE
FLOOR PLAN - LEVEL 3 (LU)

SHEET NUMBER
A103.

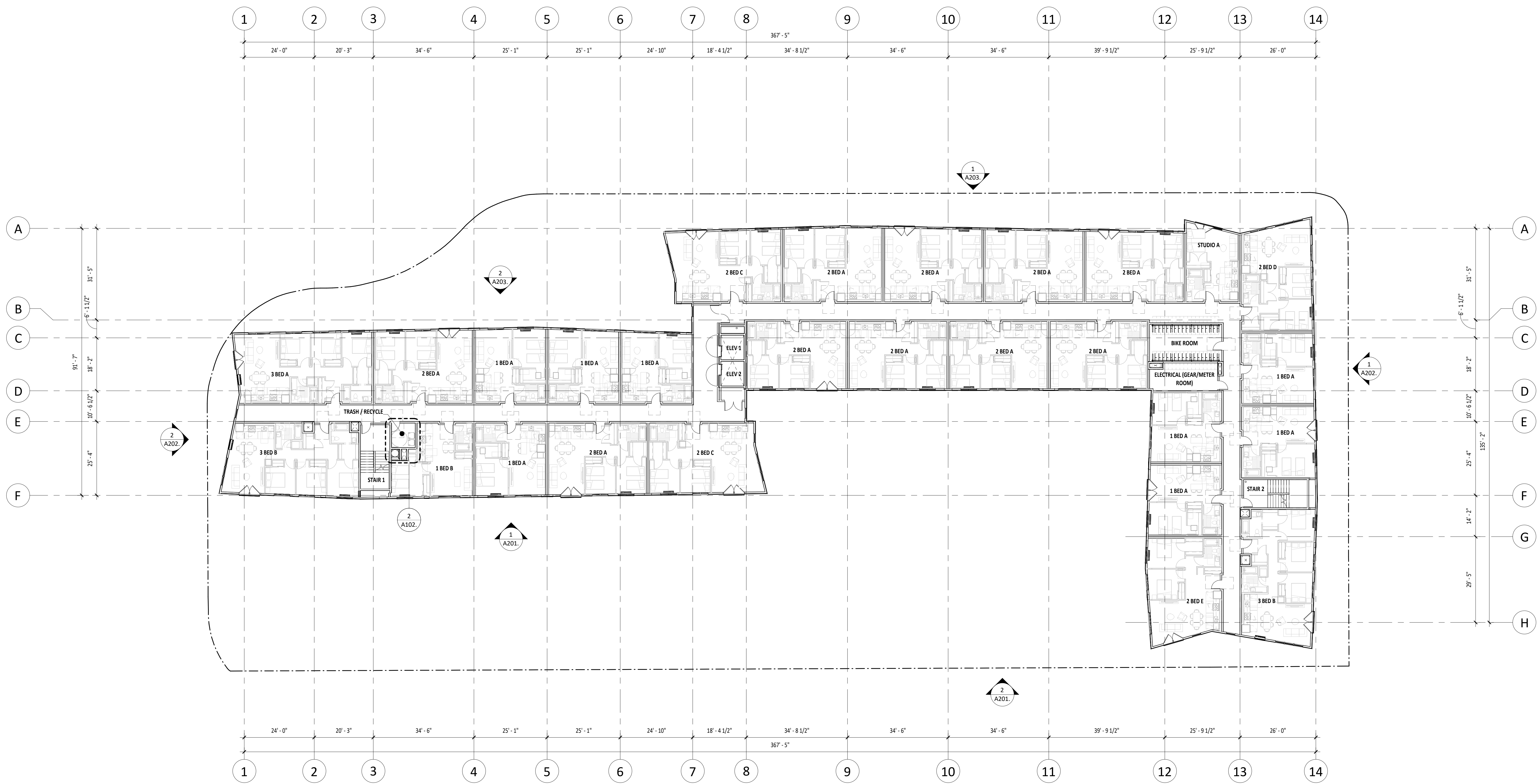
1 FLOOR PLAN - LEVEL 3 (LU)
 1/16" = 1'-0"

KEY NOTES

- 1 PREFABRICATED PLANTER - SEE LANDSCAPE DRAWINGS
- 2 BUILDING OVERHANG ABOVE
- 3 RECESSED MAILBOX, TYPE 4CADD-10
- 4 PARCEL PENDING LOCKERS
- 5 MOP SINK, REFERENCE PLUMBING DRAWINGS
- 6 WATER HEATER, REFERENCE PLUMBING DRAWINGS
- 7 FLOOR-MOUNT BIKE HOOP
- 8 FLOOR-MOUNT HANGING BIKE RACK
- 9 TRASH CHUTE EXHAUST SHAFT
- 10 MECHANICAL SHAFT, REFERENCE MECHANICAL
- 11 TYPE I HOOD SHAFT
- 12 STANDPIPE, FINAL LOCATION TO BE DETERMINED BY FIRE MARSHALL
- 13 30" DIAMETER TRASH CHUTE
- 14 JULIET BALCONY RAILING, REFERENCE ELEVATIONS
- 15 GAS METERS, REFERENCE CIVIL AND PLUMBING DRAWINGS
- 16 HANDRAIL, 1-1/2" DIAMETER STEEL, INSTALL 36" ABOVE RAMP.
- 17 ELECTRICAL SHAFT, REFERENCE ELECTRICAL DRAWINGS
- 18 DAS SHAFT, REFERENCE LOW VOLTAGE DRAWINGS

GENERAL NOTES - PLANS

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2. PROVIDE BLOCKING FOR ALL WALL MOUNTED FIXTURES AND CABINETS. PROVIDE BLOCKING AT FUTURE GRAB BAR LOCATIONS. SEE ANSI DESIGN STANDARDS FOR GRAB BAR LOCATIONS.
3. ALL INTERIOR DOOR ROUGH OPENINGS ARE TO BE 4" FROM FACE OF STUD OF THE CLOSEST ADJACENT WALL, UNLESS NOTED OTHERWISE.
4. REFER TO CIVIL DRAWINGS FOR GRADING AND HORIZONTAL CONTROL DRAWINGS.
5. REFER TO LANDSCAPE DRAWINGS FOR ALL SITE MATERIALS, LAYOUT, AND ACCESS COMPLIANCE SITE PATH OF TRAVEL DRAWINGS.
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10. REFER TO EXTERIOR ELEVATIONS FOR VINYL WINDOW / DOOR LOCATIONS.
11. REFER TO ENLARGED UNIT & FINISH PLANS BEGINNING ON SHEET A410 FOR ADDITIONAL INFORMATION.
12. REFER TO SHEETS A500 - A580 FOR TYPICAL BUILDING DETAILS.
13. DASHED FFE TO BE PROVIDED BY TENANT.



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WILSONVILLE TOD

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ISSUANCE
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220120
 DATE
08/18/23
 FULL SHEET SIZE
30 X 42
 DRAWING TITLE
FLOOR PLAN - LEVEL 4 (LU)

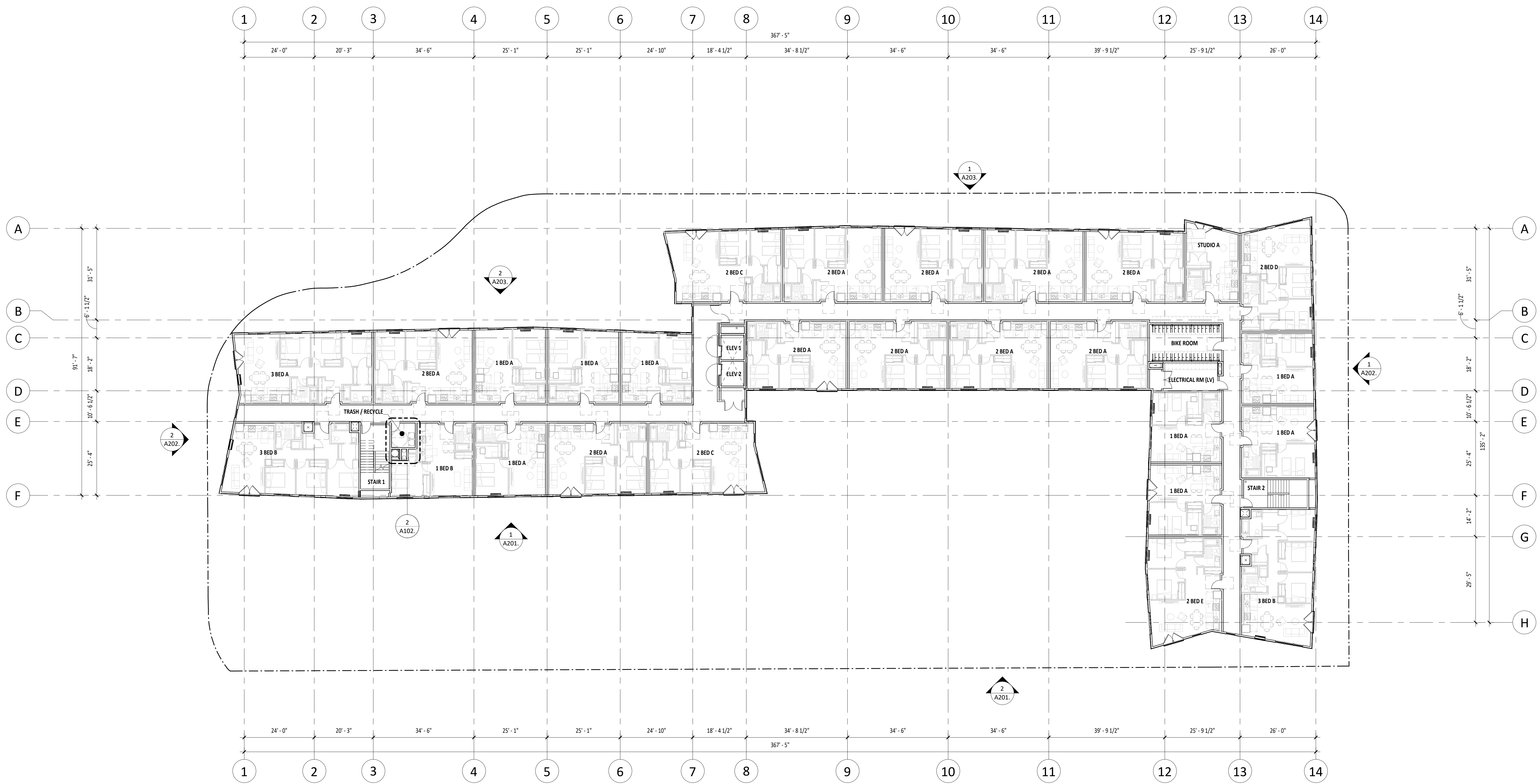
1 FLOOR PLAN - LEVEL 4 (LU)
 A104. 1/16" = 1'-0"

KEY NOTES

- 1 PREFABRICATED PLANTER - SEE LANDSCAPE DRAWINGS
- 2 BUILDING OVERHANG ABOVE
- 3 RECESSED MAILBOX, TYPE 4CADD-10
- 4 PARCEL PENDING LOCKERS
- 5 MOP SINK, REFERENCE PLUMBING DRAWINGS
- 6 WATER HEATER, REFERENCE PLUMBING DRAWINGS
- 7 FLOOR-MOUNT BIKIE HOOP
- 8 FLOOR-MOUNT HANGING BIKE RACK
- 9 TRASH CHUTE EXHAUST SHAFT
- 10 MECHANICAL SHAFT, REFERENCE MECHANICAL
- 11 TYPE I HOOD SHAFT
- 12 STANDPIPE, FINAL LOCATION TO BE DETERMINED BY FIRE MARSHALL
- 13 30" DIAMETER TRASH CHUTE
- 14 JULIET BALCONY RAILING, REFERENCE ELEVATIONS
- 15 GAS METERS, REFERENCE CIVIL AND PLUMBING DRAWINGS
- 16 HANDRAIL, 1-1/2" DIAMETER STEEL, INSTALL 36" ABOVE RAMP.
- 17 ELECTRICAL SHAFT, REFERENCE ELECTRICAL DRAWINGS
- 18 DAS SHAFT, REFERENCE LOW VOLTAGE DRAWINGS

GENERAL NOTES - PLANS

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3. ALL INTERIOR DOOR ROUGH OPENINGS ARE TO BE 4" FROM FACE OF STUD OF THE CLOSEST ADJACENT WALL, UNLESS NOTED OTHERWISE.
4. REFER TO CIVIL DRAWINGS FOR GRADING AND HORIZONTAL CONTROL DRAWINGS.
5. REFER TO LANDSCAPE DRAWINGS FOR ALL SITE MATERIALS, LAYOUT, AND ACCESS COMPLIANCE SITE PATH OF TRAVEL DRAWINGS.
6. MAINTAIN 7'-0" CLEAR OVERHEAD AT VAN ACCESSIBLE PARKING, PEDESTRIAN CIRCULATION, AND VEHICULAR DRIVE LANES AND MANEUVERING AREAS.
7. STAGGER ELECTRICAL OUTLETS IN DIFFERENT STUD BAYS TO AVOID BACK TO BACK CONDITIONS.
8. INSTALL CEMENTITIOUS BACKER BOARD AT ALL TILE LOCATIONS.
9. REFER TO STRUCTURAL DRAWINGS FOR DIMENSIONS AND ELEVATIONS OF STRUCTURAL SLAB AND WALL ELEMENTS.
10. REFER TO EXTERIOR ELEVATIONS FOR VINYL WINDOW / DOOR LOCATIONS.
11. REFER TO ENLARGED UNIT & FINISH PLANS BEGINNING ON SHEET A410 FOR ADDITIONAL INFORMATION.
12. REFER TO SHEETS A500 - A580 FOR TYPICAL BUILDING DETAILS.
13. DASHED FFE TO BE PROVIDED BY TENANT.



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SHEET REVISION NO.	REVISION EVENT	PLAN REVISION DATE



PALINDROME COMMUNITIES

ISSUANCE
LAND USE REVIEW
 PROJECT NUMBER
220120
 DATE
08/18/23
 FULL SHEET SIZE
30 X 42
 DRAWING TITLE
FLOOR PLAN - LEVEL 5 (LU)

SHEET NUMBER
A105.

1 FLOOR PLAN - LEVEL 5 (LU)
 A105. 1/16" = 1'-0"

KEY NOTES

- 1 ROOF ACCESS HATCH
- 2 ELEVATOR OVERRUN
- 3 ROOF DRAIN WITH OVERFLOW, REFERENCE PLUMBING
- 4 PV ARRAY
- 5 STAIR OVERRUN - FULL STAIR ACCESS TO ROOF
- 6 MECHANICAL CURB
- 7 MECHANICAL ROOFTOP UNIT, REFERENCE MECHANICAL
- 8 MECHANICAL DUCT, REFERENCE MECHANICAL
- 9 36" WIDE NON-SUP WALKING SURFACE

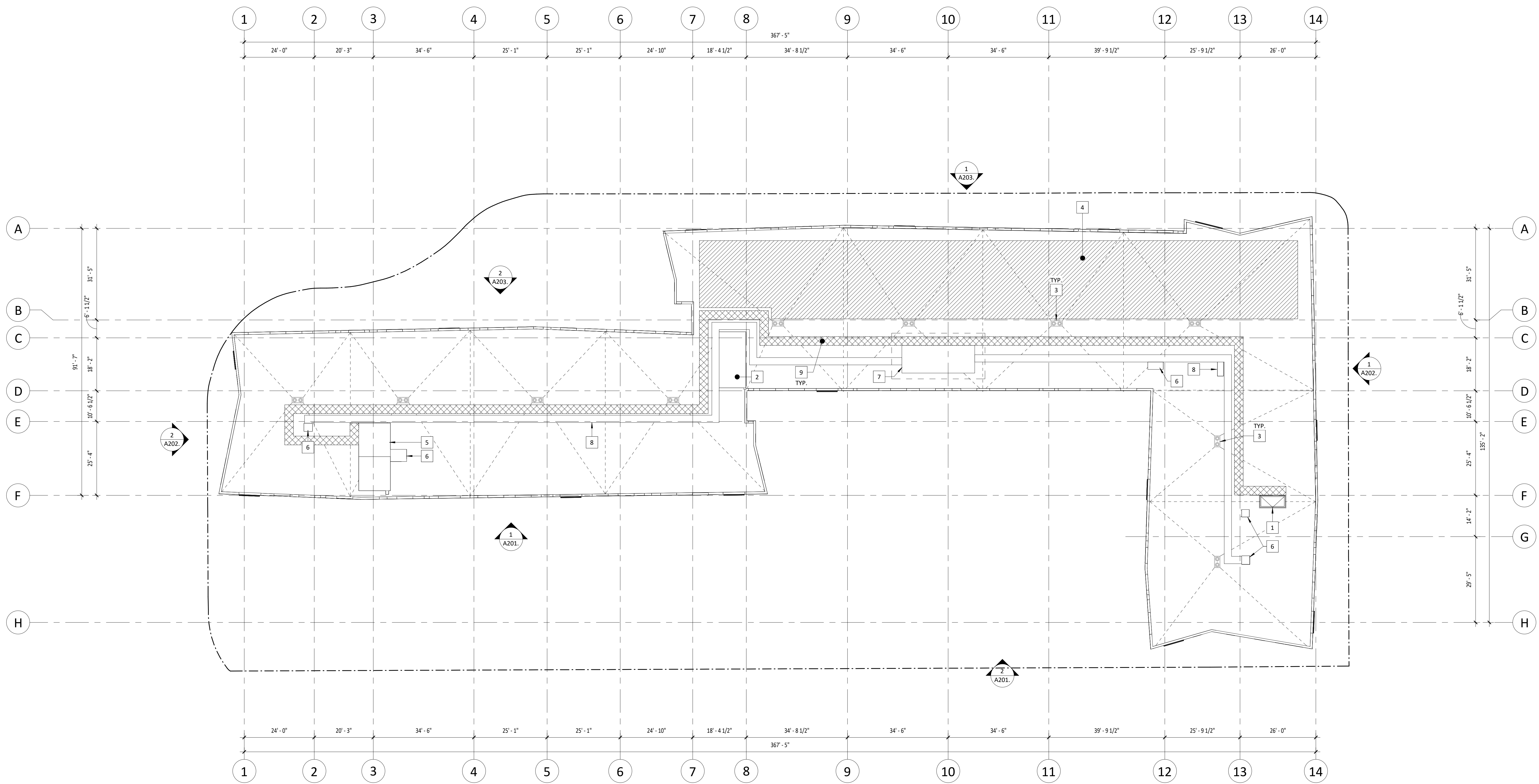
GENERAL NOTES - PLANS

1. FIELD VERIFY ALL INFORMATION PRIOR TO CONSTRUCTION. IF SITE CONDITIONS VARY FROM CONTRACT DOCUMENTS, NOTIFY ARCHITECT IN WRITING IMMEDIATELY.
2. PROVIDE BLOCKING FOR ALL WALL MOUNTED FIXTURES AND CABINETS. PROVIDE BLOCKING AT FUTURE GRAB BAR LOCATIONS. SEE ANS DESIGN STANDARDS FOR GRAB BAR LOCATIONS.
3. ALL INTERIOR DOOR ROUGH OPENINGS ARE TO BE 4" FROM FACE OF STUD OF THE CLOSEST ADJACENT WALL, UNLESS NOTED OTHERWISE.
4. REFER TO CIVIL DRAWINGS FOR GRADING AND HORIZONTAL CONTROL DRAWINGS.
5. REFER TO LANDSCAPE DRAWINGS FOR ALL SITE MATERIALS, LAYOUT, AND ACCESS COMPLIANCE SITE PATH OF TRAVEL DRAWINGS.
6. MAINTAIN 7'-0" CLEAR OVERHEAD AT VAN ACCESSIBLE PARKING, PEDESTRIAN CIRCULATION, AND VEHICULAR DRIVE LANES AND MANEUVERING AREAS.
7. STAGGER ELECTRICAL OUTLETS IN DIFFERENT STUD BAYS TO AVOID BACK TO BACK CONDITIONS.
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9. REFER TO STRUCTURAL DRAWINGS FOR DIMENSIONS AND ELEVATIONS OF STRUCTURAL SLAB AND WALL ELEMENTS.
10. REFER TO EXTERIOR ELEVATIONS FOR VINYL WINDOW / DOOR LOCATIONS.
11. REFER TO ENLARGED UNIT & FINISH PLANS BEGINNING ON SHEET A410 FOR ADDITIONAL INFORMATION.
12. REFER TO SHEETS A500 - A580 FOR TYPICAL BUILDING DETAILS.
13. DASHED FEE TO BE PROVIDED BY TENANT.

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TRUE NORTH PLAN NORTH
WILSONVILLE TOD

PALINDROME COMMUNITIES

ISSUANCE
LAND USE REVIEW
 PROJECT NUMBER
220120
 DATE
08/18/23
 FULL SHEET SIZE
30 X 42
 DRAWING TITLE
ROOF PLAN (LU)

KEYNOTES

NOTE: SEE SHEET A500 FOR IMAGES OF PROPOSED EXTERIOR MATERIALS & ADDITIONAL INFORMATION NOT SHOWN HERE.

1. BRICK VENEER 1
2. BRICK VENEER 2
3. METAL PANEL 1
4. METAL PANEL 2
5. METAL PANEL 3
6. COMPOSITE WOOD PLANK CLADDING
7. 18" TALL BOARD-FORMED CONCRETE WALL, STAINED BLACK
8. PERFORATED METAL PANEL AT UNIT INTAKE VENT SLOTS & PTHP EXHAUST
9. MECHANICAL LOUVER, BLACK
10. EXTERIOR WALL SCIENCE, BLACK
11. VINYL WINDOW, BLACK
12. VINYL SWING DOOR, BLACK
13. STEEL PICKET BALCONY RAILING, BLACK
14. ALUMINUM STOREFRONT SYSTEM, BLACK
15. STEEL PLATE CANOPY, BLACK
16. RAISED DECK PLANTER AT LEVEL 2 - SEE LANDSCAPE DRAWINGS
17. GLAZED OVERHEAD DOOR
18. METAL FENCE, REFERENCE LANDSCAPE DRAWINGS

GENERAL NOTES - EXTERIOR ELEVATIONS

1. REFER TO CIVIL DRAWINGS FOR GRADING.
2. FIELD VERIFY ALL INFORMATION PRIOR TO CONSTRUCTION, IF SITE CONDITIONS VARY FROM CONTRACT DOCUMENTS, NOTIFY ARCHITECT IN WRITING IMMEDIATELY.
3. SEE PLANS FOR ALL DOOR TAGS.



1 SOUTH ELEVATION 1 - LAND USE REVIEW
A201 / 1/8" = 1'-0"



2 SOUTH ELEVATION 2 - LAND USE REVIEW
A201 / 1/8" = 1'-0"

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TRUE NORTH
WILSONVILLE TOD

PALINDROME COMMUNITIES

ISSUANCE
LAND USE REVIEW
 PROJECT NUMBER
220120
 DATE
08/18/23
 FULL SHEET SIZE
30 X 42
 DRAWING TITLE
EXTERIOR ELEVATIONS

SHEET NUMBER
A201

KEYNOTES

NOTE: SEE SHEET A500 FOR IMAGES OF PROPOSED EXTERIOR MATERIALS & ADDITIONAL INFORMATION NOT SHOWN HERE.

- 1. BRICK VENEER 1
- 2. BRICK VENEER 2
- 3. METAL PANEL 1
- 4. METAL PANEL 2
- 5. METAL PANEL 3
- 6. COMPOSITE WOOD PLANK CLADDING
- 7. 18" TALL BOARD-FORMED CONCRETE WALL, STAINED BLACK
- 8. PERFORATED METAL PANEL AT UNIT INTAKE VENT SLOTS & PTHP EXHAUST
- 9. MECHANICAL LOUVER, BLACK
- 10. EXTERIOR WALL SCONCE, BLACK
- 11. VINYL WINDOW, BLACK
- 12. VINYL SWING DOOR, BLACK
- 13. STEEL PICKET BALCONY RAILING, BLACK
- 14. ALUMINUM STOREFRONT SYSTEM, BLACK
- 15. STEEL PLATE CANOPY, BLACK
- 16. RAISED DECK PLANTER AT LEVEL 2 - SEE LANDSCAPE DRAWINGS
- 17. GLAZED OVERHEAD DOOR
- 18. METAL FENCE, REFERENCE LANDSCAPE DRAWINGS

GENERAL NOTES - EXTERIOR ELEVATIONS

- 1. REFER TO CIVIL DRAWINGS FOR GRADING.
- 2. FIELD VERIFY ALL INFORMATION PRIOR TO CONSTRUCTION, IF SITE CONDITIONS VARY FROM CONTRACT DOCUMENTS, NOTIFY ARCHITECT IN WRITING IMMEDIATELY.
- 3. SEE PLANS FOR ALL DOOR TAGS.

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SHEET	REVISION	REVISION	REVISION
REVISION NO.	EVENT	DATE	DATE



1 EAST ELEVATION - LAND USE REVIEW
A202 1/8" = 1'-0"



2 WEST ELEVATION - LAND USE REVIEW
A202 1/8" = 1'-0"

TRUE
NORTH
WILSONVILLE TOD

PALINDROME COMMUNITIES

ISSUANCE
LAND USE REVIEW
 PROJECT NUMBER
220120
 DATE
08/18/23
 FULL SHEET SIZE
30 X 42
 DRAWING TITLE
EXTERIOR ELEVATIONS

SHEET NUMBER
A202

KEYNOTES

NOTE: SEE SHEET A500 FOR IMAGES OF PROPOSED EXTERIOR MATERIALS & ADDITIONAL INFORMATION NOT SHOWN HERE.

1. BRICK VENEER 1
2. BRICK VENEER 2
3. METAL PANEL 1
4. METAL PANEL 2
5. METAL PANEL 3
6. COMPOSITE WOOD PLANK CLADDING
7. 18" TALL BOARD-FORMED CONCRETE WALL, STAINED BLACK
8. PERFORATED METAL PANEL AT UNIT INTAKE VENT SLOTS & PTHP EXHAUST
9. MECHANICAL LOUVER, BLACK
10. EXTERIOR WALL SCIENCE, BLACK
11. VINYL WINDOW, BLACK
12. VINYL SWING DOOR, BLACK
13. STEEL PICKET BALCONY RAILING, BLACK
14. ALUMINUM STOREFRONT SYSTEM, BLACK
15. STEEL PLATE CANOPY, BLACK
16. RAISED DECK PLANTER AT LEVEL 2 - SEE LANDSCAPE DRAWINGS
17. GLAZED OVERHEAD DOOR
18. METAL FENCE, REFERENCE LANDSCAPE DRAWINGS

GENERAL NOTES - EXTERIOR ELEVATIONS

1. REFER TO CIVIL DRAWINGS FOR GRADING.
2. FIELD VERIFY ALL INFORMATION PRIOR TO CONSTRUCTION, IF SITE CONDITIONS VARY FROM CONTRACT DOCUMENTS, NOTIFY ARCHITECT IN WRITING IMMEDIATELY.
3. SEE PLANS FOR ALL DOOR TAGS.



1 NORTH ELEVATION 1 - LAND USE REVIEW
1/8" = 1'-0"



2 NORTH ELEVATION 2 - LAND USE REVIEW
1/8" = 1'-0"

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WILSONVILLE TOD

PALINDROME COMMUNITIES

ISSUANCE
LAND USE REVIEW

PROJECT NUMBER
220120

DATE
08/18/23

FULL SHEET SIZE
30 X 42

DRAWING TITLE
EXTERIOR ELEVATIONS

SHEET NUMBER

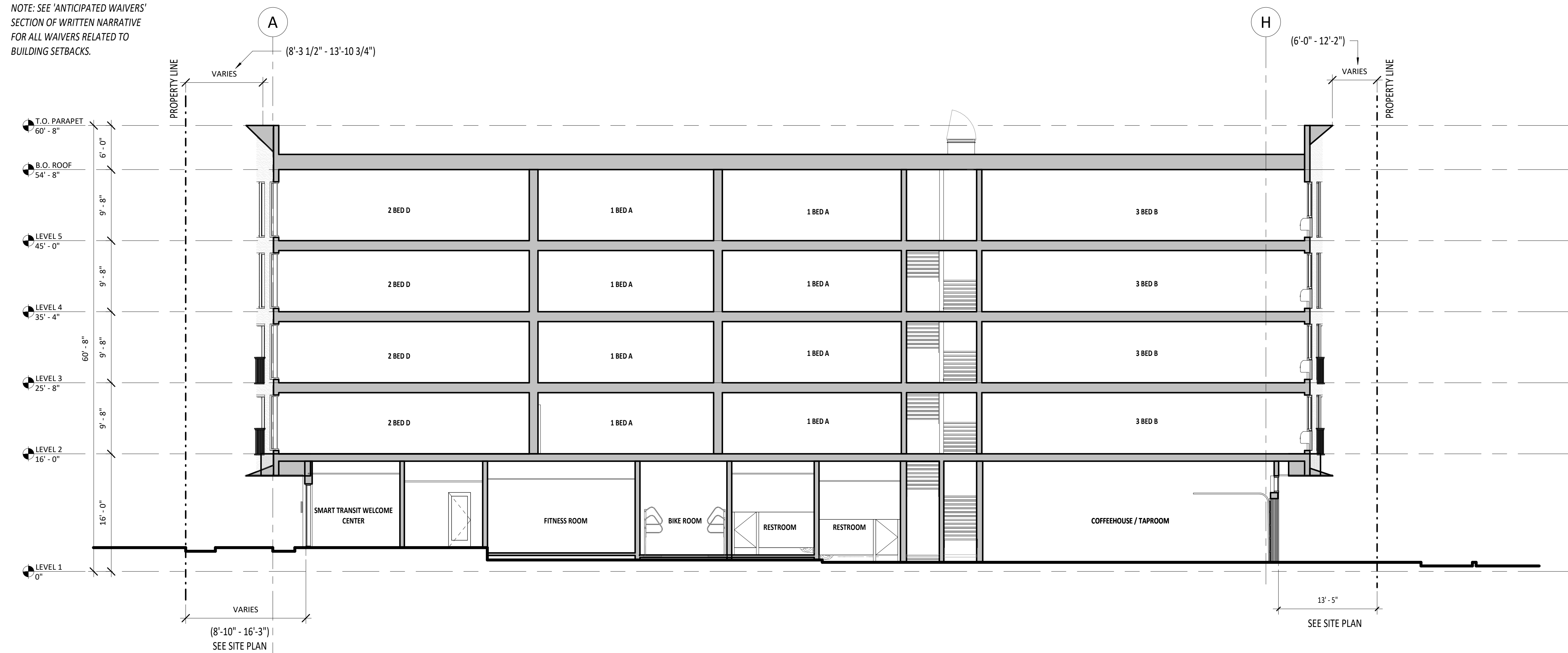
A203

GENERAL NOTES - BUILDING SECTIONS

1. FIELD VERIFY ALL INFORMATION PRIOR TO CONSTRUCTION. IF SITE CONDITIONS VARY FROM CONTRACT DOCUMENTS, NOTIFY ARCHITECT IN WRITING IMMEDIATELY.
2. ALL STAIRS, HANDRAILS AND GUARDRAILS ARE TO MEET CODE REQUIREMENTS. MAXIMUM STAIR RISE = 7". MINIMUM STAIR RUN = 11".
3. ALL STRUCTURAL MEMBERS SHOWN HERE ARE DIAGRAMMATIC - SEE STRUCTURAL DRAWINGS FOR CODE SUMMARY AND EXTENT OF FIRE-RATED CONSTRUCTION.
4. REFER TO G-000 SERIES DRAWINGS FOR CODE SUMMARY AND EXTENT OF FIRE-RATED CONSTRUCTION.
5. REFER TO CIVIL DRAWINGS FOR GRADING AND HORIZONTAL CONTROL DRAWINGS.
6. REFER TO LANDSCAPE DRAWINGS FOR ALL SITE MATERIALS, LAYOUT, AND ACCESS COMPLIANCE SITE PATH OF TRAVEL DRAWINGS.

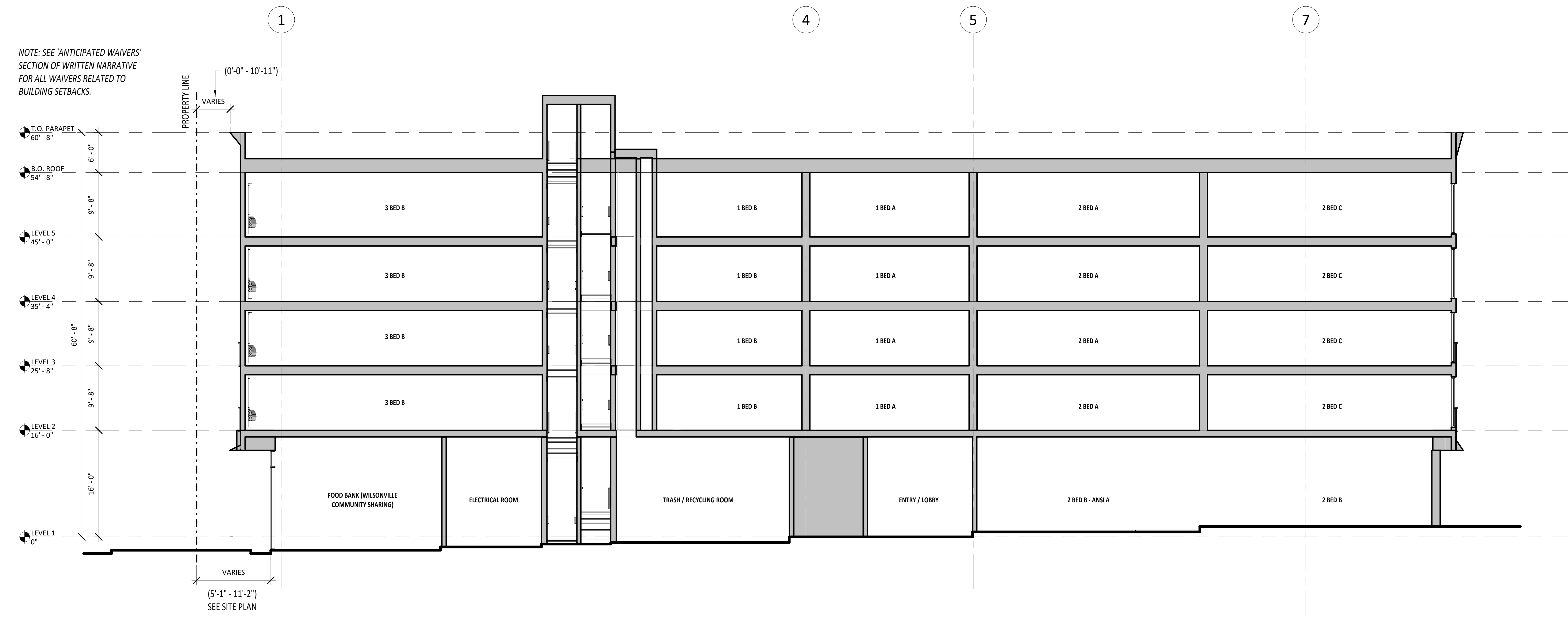
KEY NOTES

NOTE: SEE 'ANTICIPATED WAIVERS' SECTION OF WRITTEN NARRATIVE FOR ALL WAIVERS RELATED TO BUILDING SETBACKS.



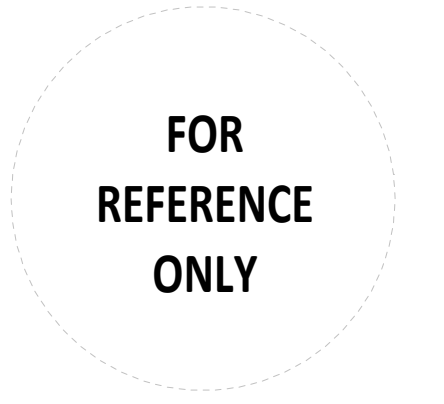
3 BUILDING SECTION A (LU)
 A301. 1/8" = 1'-0"

NOTE: SEE 'ANTICIPATED WAIVERS' SECTION OF WRITTEN NARRATIVE FOR ALL WAIVERS RELATED TO BUILDING SETBACKS.



2 BUILDING SECTION B (LU)
 A301. 1/8" = 1'-0"

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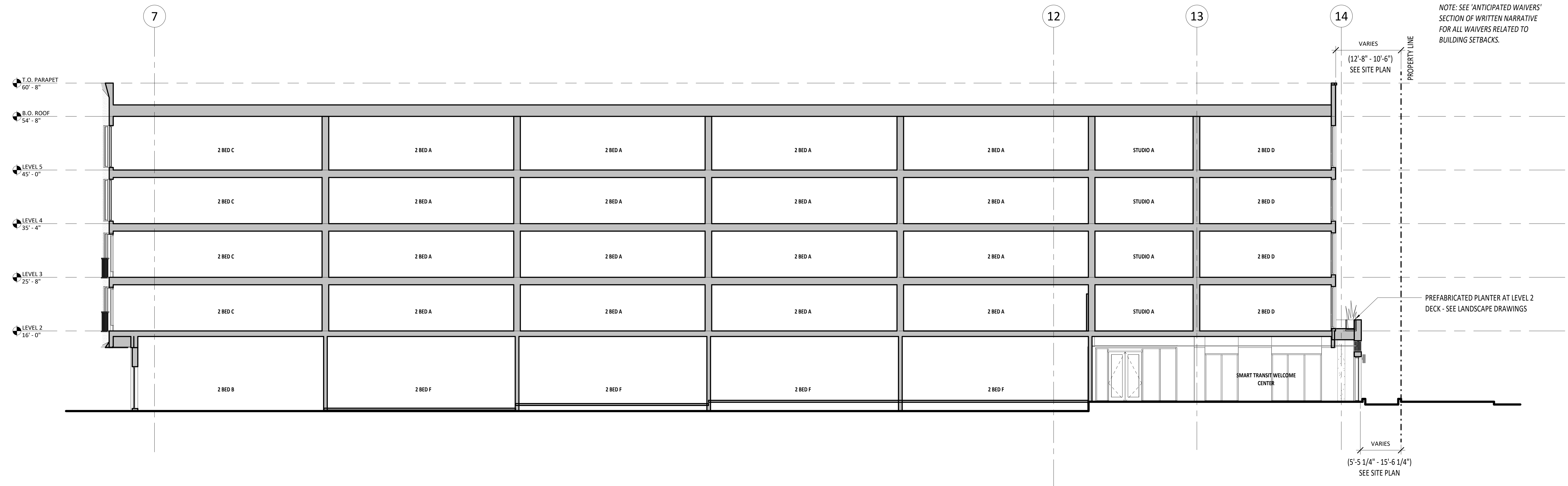


PALINDROME COMMUNITIES

ISSUANCE
LAND USE REVIEW
 PROJECT NUMBER
220120
 DATE
08/18/23
 FULL SHEET SIZE
30 X 42
 DRAWING TITLE
BUILDING SECTIONS (LU)

GENERAL NOTES - BUILDING SECTIONS

1. FIELD VERIFY ALL INFORMATION PRIOR TO CONSTRUCTION. IF SITE CONDITIONS VARY FROM CONTRACT DOCUMENTS, NOTIFY ARCHITECT IN WRITING IMMEDIATELY.
2. ALL STAIRS, HANDRAILS AND GUARDRAILS ARE TO MEET CODE REQUIREMENTS. MAXIMUM STAIR RISE = 7". MINIMUM STAIR RUN = 11".
3. ALL STRUCTURAL MEMBERS SHOWN HERE ARE DIAGRAMMATIC - SEE STRUCTURAL DRAWINGS.
4. REFER TO G-000 SERIES DRAWINGS FOR CODE SUMMARY AND EXTENT OF FIRE-RATED CONSTRUCTION.
5. REFER TO CIVIL DRAWINGS FOR GRADING AND HORIZONTAL CONTROL DRAWINGS.
6. REFER TO LANDSCAPE DRAWINGS FOR ALL SITE MATERIALS, LAYOUT, AND ACCESS COMPLIANCE SITE PATH OF TRAVEL DRAWINGS.



1 BUILDING SECTION C (LU)
 A302. 1/8" = 1'-0"

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PALINDROME COMMUNITIES

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LAND USE REVIEW
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220120
 DATE
08/18/23
 FULL SHEET SIZE
30 X 42
 DRAWING TITLE
BUILDING SECTIONS (LU)

SHEET NUMBER
A302.



VIEW FROM SOUTHEAST CORNER


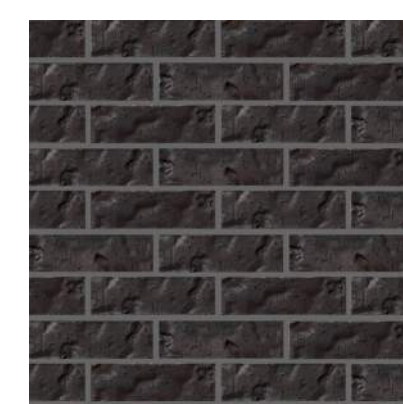




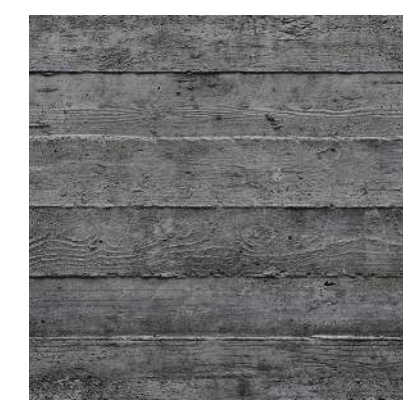

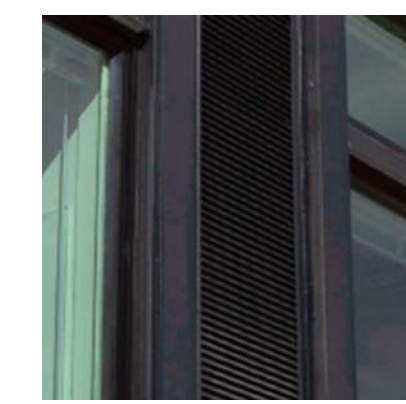


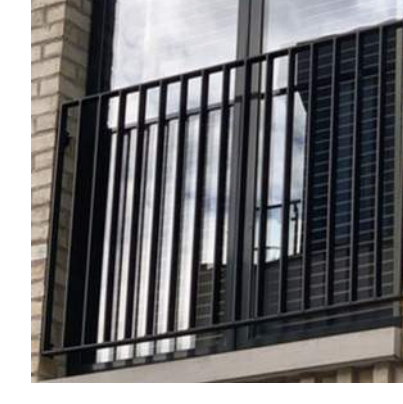




VIEW FROM NORTHEAST



VIEW FROM NORTHWEST

MATERIAL LEGEND

				
BRICK VENEER 1: FULL BRICK FINISH: GLAZED, BLUE COLOR LOCATION: GROUND FLOOR MAIN FACADES	BRICK VENEER 2: FULL BRICK FINISH: CLINKER, CHARCOAL COLOR LOCATION: GROUND FLOOR MAIN FACADES	METAL PANEL 1: 18-20 GAUGE METAL PANEL FINISH: BLUE LOCATION: UPPER FLOOR FACADES	METAL PANEL 2: 18-20 GAUGE METAL PANEL FINISH: CHARCOAL GRAY LOCATION: UPPER FLOOR FACADES	METAL PANEL 3: 18-20 GAUGE METAL PANEL FINISH: BLACK LOCATION: METAL PANEL BETWEEN WINDOWS, AND AT UNIT VENTING SLOTS
				
COMPOSITE WOOD PLANK CLADDING 4"-6" WIDE PLANK LOCATION: UPPER FLOOR PROMINENT FACADES, BUILDING ENTRIES/EXITS, EXTERIOR SOFFITS	BOARD-FORMED CONCRETE, STAINED LOCATION: GROUND FLOOR UNIT PLANTER/ LOW SCREENING WALLS	PERFORATED METAL PANEL LOCATION: UPPER FLOOR FACADES, USED TO CONCEAL UNIT INTAKE VENTS	CUSTOM LOUVER BLACK FINISH LOCATION: EXHAUST VENTS FOR RESIDENTIAL UNITS & GENERAL BUILDING VENTING	EXTERIOR WALL SCONCE - UP/DOWN LIGHT BLACK FINISH
				
RESIDENTIAL WINDOWS / DOORS VINYL, BLACK	RESIDENTIAL JULIET BALCONY RAILINGS PICKET RAILING, BLACK	ALUMINUM STOREFRONT SYSTEM, BLACK LOCATION: RETAIL/COMMERCIAL TENANT SPACES, GROUND FLOOR COMMON RESIDENTIAL SPACES	STEEL PLATE CANOPIES BLACK TO MATCH STOREFRONTS	

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REVISION NO.	EVENT	DATE

TRUE NORTH PLAN NORTH
WILSONVILLE TOD

PALINDROME COMMUNITIES

ISSUANCE
LAND USE REVIEW
PROJECT NUMBER
220120
DATE
08/18/23
FULL SHEET SIZE
30 X 42
DRAWING TITLE
RENDERINGS & EXTERIOR MATERIALS

SHEET NUMBER
A900.



TREE PROTECT PLAN
for
PALINDROME WILSONVILLE LP.
for the
WILSONVILLE TOD PROJECT

9699 SW BARBER STREET,
WILSONVILLE, OR 97070

Submitted by

Peter van Oss PN-8145A

Date Tuesday, July 25, 2023

Teragan and Associates, Inc.™
Arboricultural Consultants
3145 Westview Circle, Lake Oswego, OR 97034
503-697-1975 | info@teragan.com



City of Wilsonville
Exhibit B4 DB23-0011

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Purpose and Use of the Report	2
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Summary

Teragan and Associates has been contracted with Palindrome Wilsonville Limited Partnership to provide arboricultural consulting services. This report is the tree protection plan for the proposed multiuse development project located at 9699 SW Barber Street, Wilsonville, OR 97070. The site is currently a vacant lot that abuts the Wilsonville Transit Center. The lot is treed with a mixture of younger landscape trees and established mature Douglas-firs (*Pseudotsuga menziesii*). Most of the trees will be in the footprint of the proposed development and are proposed for removal. The three large Douglas-firs, trees #5, #26, and #27, are proposed to be retained. The retention of the trees will be challenging and the protection measures in this report must be adhered to. Failure to adhere to the protection mitigation in this report may make the trees hazardous due to root impacts and will result in the removal of the three (3) trees. This tree plan meets and exceeds the criterion set forth in the City of Wilsonville Code – Chapter 4.610.40 – Type C Permit.

Background

The plans propose the development of a multiuse property at the Wilsonville Transit Center. The lot is currently a vacant treed lot. Most trees are in the footprint of the proposed development and/or will be impacted extensively outside of acceptable thresholds and are proposed for removal. There are three (3) trees that are proposed for retention. Given the topography difference of the property and the surrounding area, retention of the trees will require alternative construction methods.

Tree Inventory

I completed the inventory during the site visit on June 2, 2023. The tree diameters were recorded using a diameter tape. The health and conditions of the trees are determined by the plant species profiles compared to the current condition the trees present. Attributes that can negatively impact the ratings are growing conditions, bark inclusions, broken branches, poor vigor...etc. All trees are tagged with aluminum tags that have the corresponding numbers scribed on them except for trees that were not accessible due to accessibility restrictions.

Rating Category	Condition Components			
	Health	Structure	Form	
Excellent	High vigor and nearly perfect health with little or no twig dieback, discoloration, or defoliation	Nearly ideal and free of defects	Nearly ideal for the species. Generally symmetric. Consistent with the intended use.	Healthy trees that will live to maturity
Good	Vigor is normal for the species. No significant damage due to diseases or pests. Any twig dieback, defoliation, or discoloration is minor	Well developed structure. Defects are minor and can be corrected.	Minor asymmetries/deviations from species norm. Mostly consistent with the intended use. Function and aesthetics are not compromised	
Fair	Reduced Vigor. Damage due to insects or diseases may be significant and associated with defoliation but is not likely to be fatal. Twig dieback, defoliation, discoloration, and/or dead branches may comprise up to 50% of the crown.	A single defect of a significant nature or multiple moderate defects. Defects are not practical to correct or would require multiple treatments over several years.	Major asymmetries/deviations from species norm and/or aesthetics are compromised.	
Poor	Unhealthy and declining in appearance. Poor vigor. Low foliage density and poor foliage color are present. Potentially fatal pest infestation. Extensive twig and/or branch dieback.	A single serious defect to multiple significant defects. Recent change in tree orientation. Observed structural problems cannot be corrected. Failure may occur at any time.	Largely asymmetric. Abnormal. Detracts from intended use and/or aesthetics to a significant degree.	Trees that are likely to fail in the near future
Very Poor	Poor vigor. Appears to be dying and in the last stages of life. Little live foliage.	Single or multiple severe defects. Failure is probable or imminent.	Visually unappealing. Provides little or no function in the landscape.	
Dead/Dying				

Table from the 'Guide for Plant Appraisal, 10th Edition'

Teragan and Associates, Inc.
 Arboricultural Consultants
 3145 Westview Circle, Lake Oswego, OR 97034
 503-697-1975 | info@teragan.com

Purpose and Use of the Report

The purpose of this report is to establish a narrative for the removal of the trees and tree protection measures that will need to be adhered to during the construction project to ensure a positive outcome of the retention efforts. This report may be used by the owner to establish communications between the city planning department, the contractors, and sub-contractors regarding the tree protection efforts of the project.

Limits of the Report

The trees were visually assessed from the ground only, no tools were used to assess any of the tree parts. The point data was collected with the use of a Trimble DA-2 GNSS receiver and ArcGIS Software. The data was not collected by a licensed surveyor. The GPS accuracy was 3.6-feet at the time of the data collection. The plans provided in this report should not be used for architectural, engineering, or construction purposes. The plans in this report are meant as reference only.

Observations

The trees proposed for retention are located on a property that is currently a vacant lot and it is fair to assume that they have not been maintained in recent years. It is recommendable to prune the trees to remove any deadwood prior to the start of the project given the proximity of the site improvements and the intended use of the property within the dripline of the retained trees.

The property has a significant topographical difference between the public sidewalk south, east, and north of the property itself. The trees proposed to be retained are much lower than the surrounding paving. The site plans provided by YBA Architects, labeled A080, show that site improvements are proposed well within the tree protection zones of the retained trees. It will be extremely important to minimize the grade changes within the tree protection zones as much as possible, and to work with the tree roots in terms of site improvement placement. The success of the tree retention will depend on the impacts the trees receive. If the trees are significantly impacted, they may experience bio-mechanical strength loss and become hazardous. If the trees are impacted too significantly, the trees will need to be removed for safety reasons.

Site Specific Tree Protection

Before Construction Begins

It is recommended that the site improvements are staked out by the surveyor to show the extent of the proposed improvements. The improvements closest to the retained trees are recommended to be explored with the use of pneumatic excavation to locate the roots of the trees. The roots should be recorded and mapped indicating the size of the roots and their depths. Foreseeable impacts from the development should be considered and a decision should be made if retention of the trees is achievable. Alternative construction methods should be incorporated if it is determined that the trees could be retained, e.g., bridging and gapping the foundation to allow for the roots to remain or permeable “floating” paving surfaces.

Since the trees have not been maintained, it is recommended that the trees are pruned to mitigate hanging broken branches, and deadwood. Deadwood and broken branches could pose a risk to persons working or otherwise being present within the dripline of the trees.

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The initial fencing shall be placed as shown in appendix C – Tree Protection indicated by the blue fencing symbol. The project arborist shall discuss the tree protection approaches with the contractors and sub-contractors before work commences within the tree protection zones. The fencing shall only be moved to allow the site improvements within the tree protection zones after the project arborist has agreed to the final fencing placement location in writing.

Given the difficulty of the retention efforts, it may be recommendable to bond the trees with the use of *The Guide for Plant Appraisal, 10th Edition, Revised* in case of malicious and/or accidental damaging of the trees that results in the removal of the trees.

During Construction

Trees that are retained should be protected at the recommended distance of 12 inches per diameter inch of the trees. This means that the soil disturbance should be 12 inches per diameter inch away from the tree in circumference of the tree unless the project arborist approves of- and supervises the ground disturbing activities.

Fill and/or cutting of grades should be less than four inches. Any fill greater than four inches will result in soil compaction and is likely to result in tree mortality. It is recommended that the flatwork is installed as close to the existing grade as possible and that the materials used are permeable to ensure that the hydrology of the property does not significantly change. Any roots greater than two inches in diameter should be retained and the site improvements should be altered to allow for the roots to remain with the existing soil functionable.

Since root impacts are likely, it is recommended that the project arborist monitors the trees for changes in health and condition. Plant health care and/or watering should be prescribed as needed if the trees show signs of decline.

The attached existing conditions plan provided has been marked up to scale. The blue circles indicate the tree protection zone at 12X the diameter and the orange circles indicate the critical root zones at 6X the tree diameter.

Additional Tree Protection Mitigation in Appendix E

Conclusion

My professional opinion is that the location of the development should be staked out and exploratory pneumatic excavation should be performed prior to the start of the project. The foreseeable impacts must be considered to determine if retention of trees #5, #26, and #27 is feasible. If the determination is that the trees can be retained with the use of alternative construction methods, close collaboration with the project arborist will be needed to ensure that retention efforts are successful. The tree protection measures set forth in this tree plan can suffice in the protection of the trees during construction. It is important to adhere to the standards in this report to ensure that the retention goals are successful.

Please feel free to contact me with any questions or concerns.

Sincerely,

Peter van Oss

Peter van Oss | Senior Associate

ISA Certified Arborist PN-8145A

Tree Risk Assessment Qualified

ASCA Member

Enclosures:

- Appendix A: Certification of Performance
- Appendix B: Assumptions and Limiting Conditions
- Appendix C: Site Plan Fencing Placement and Proposed Removals
- Appendix D: Inventory
- Appendix E: Tree Protection Standards

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Appendix A: Certification of Performance

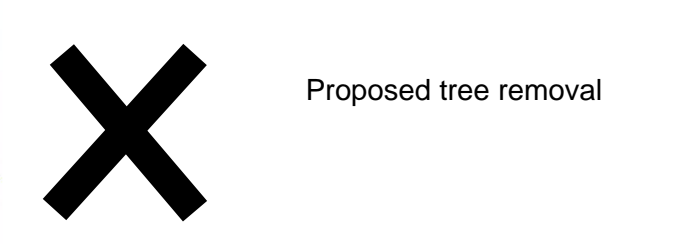
I, Peter van Oss, certify that:

- I have personally inspected the trees and the property referred to in this report and have stated my findings accurately. The extent of the evaluation or appraisal is stated in the attached report and the Terms of the Assignment.
- I have no current or prospective interest in the vegetation or the property that is subject of this report and have no personal interest or bias with respect to the parties involved.
- The analysis, opinions and conclusions stated herein are my own and are based on current professional procedures and facts.
- My analysis, opinions and conclusions were developed, and this report has been prepared according to commonly accepted arboricultural practices.
- No one provided significant professional assistance to me, except as indicated in the report.
- My compensation is not contingent upon reporting of a predetermined conclusion that favors the cause of the client or any other party nor upon the results of the assessment, the attainment of stipulated results, or the occurrence of any subsequent events.

I further certify that I am a member of, and certified as an arborist by the ISA. I have been involved in the arboricultural field in a full- time capacity for a period of 17 years.

Appendix B: Assumptions and Limiting Conditions

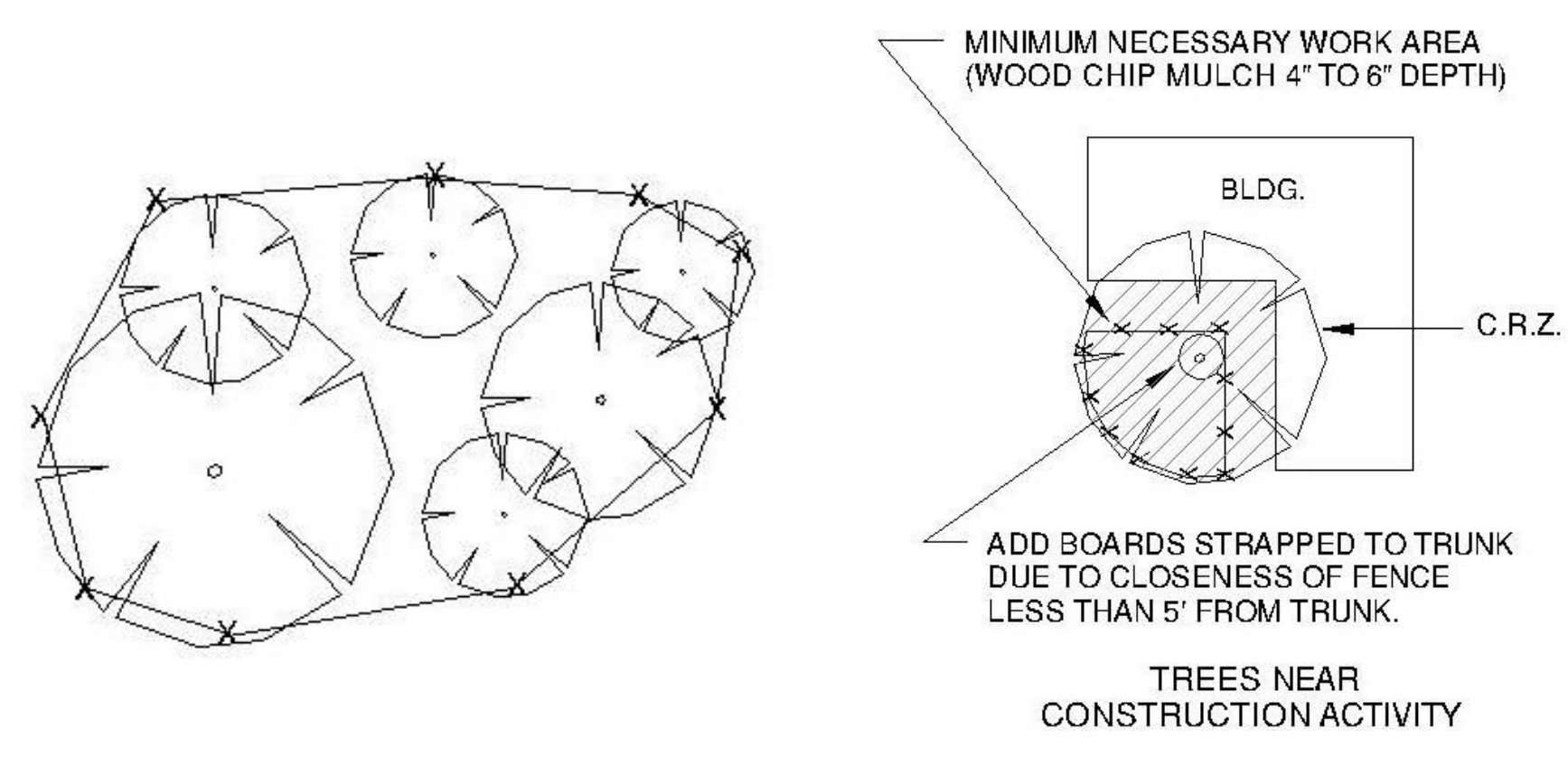
1. A field examination of the site was made. My observations and conclusions are as of that date.
2. Care has been taken to obtain all information from a reliable source, however the arborist can neither guarantee nor be responsible for accuracy of information provided by others.
3. Unless stated otherwise, information contained in this report covers only those trees that were examined and reflects the condition of those trees at the time of inspection. The inspection is limited to visual examination of the subject trees without dissection, excavation, probing, or coring. There is no warranty or guarantee that problems or deficiencies of the subject tree may not arise in the future.
4. This report and any values/opinions expressed herein represents my opinion as an arborist. Inaction on the part of those receiving the report is not the responsibility of the arborist.
5. Loss or alteration of this report invalidates the entire report.
6. Any legal description provided to the consultant/ appraiser is assumed to be correct. Any titles and ownerships to any property are assumed to be good and marketable. No responsibility is assumed for matters legal in character. All property is appraised or evaluated as though free and clear, under responsible ownership and competent management.
7. The consultant/ appraiser shall not be required to give testimony or attend court by reason of this report unless subsequent contractual arrangements are made, including payment for such services.
8. Possession of this report does not imply right of publication or use for any other purpose by any other than the person to whom it is addressed, without the prior expressed written consent of the consultant/ appraiser.



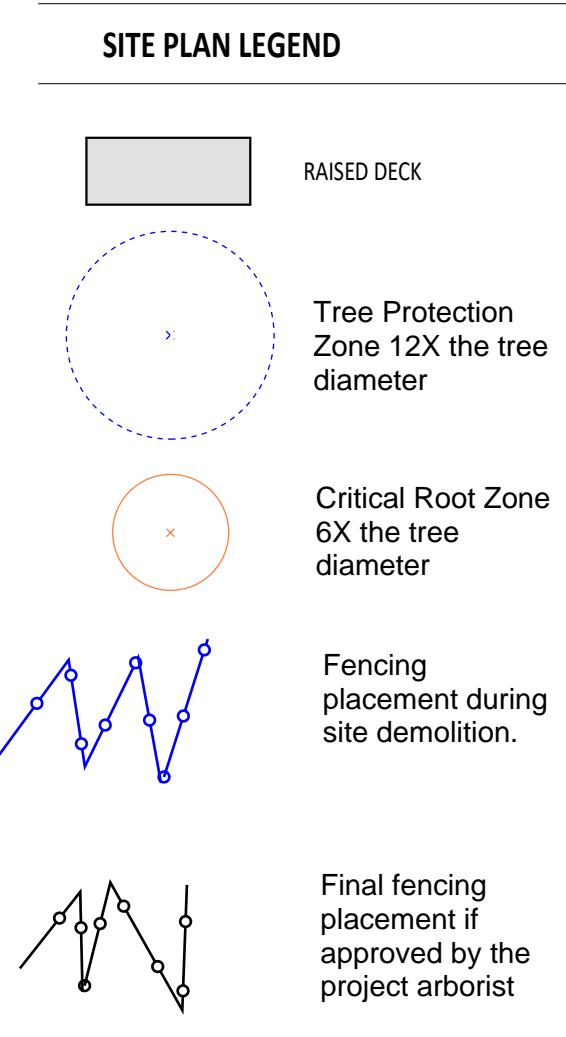
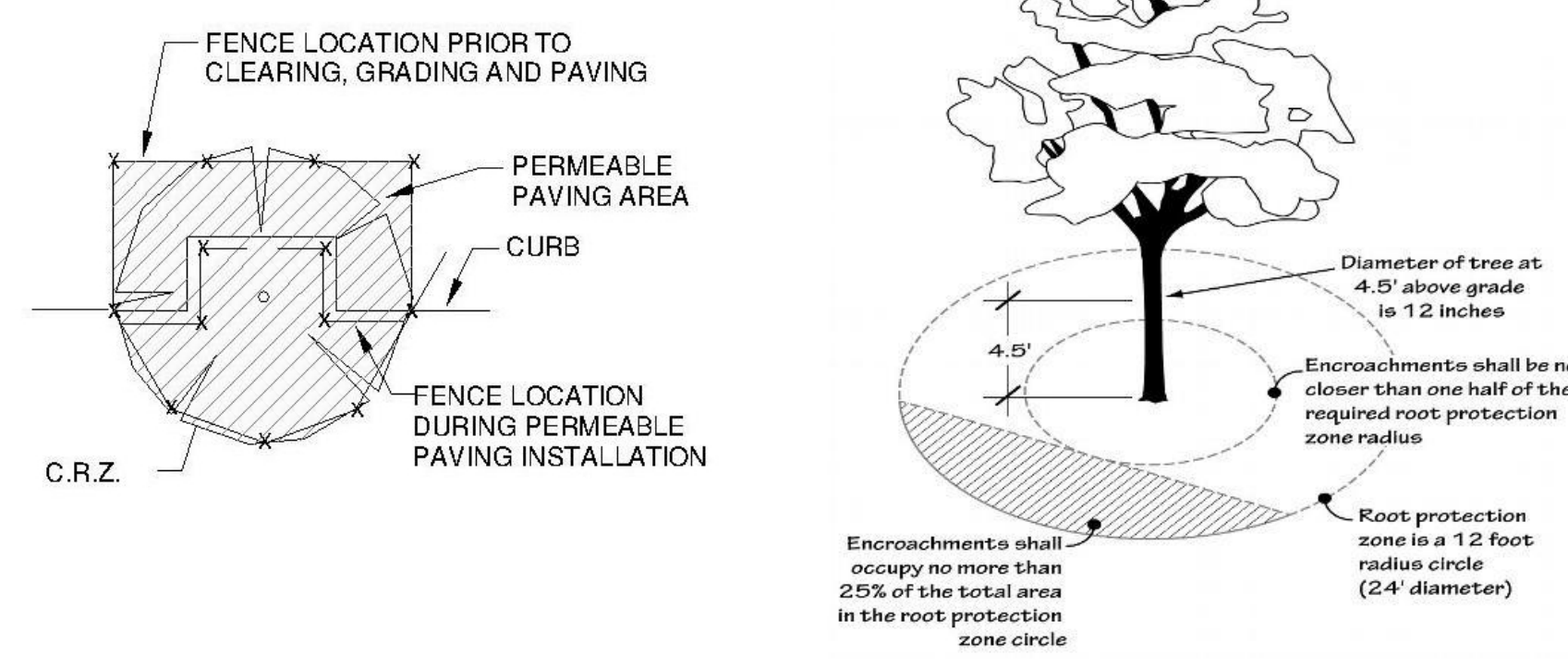
ObjectID	Common and Scientific Name	DBH	Condition	Health	Condition	Structure	Field Notes / Comments
1	Zelkova (Zelkova serrata)	11	Good	Good			
2	sweet cherry (Prunus avium)	15	Good	Good			invasive/nuisance
3	Douglas-Fir (Pseudotsuga menziesii)	12	Excellent	Excellent			
4	red pine (Pinus resinosa)	10	Fair	Good			
5	Douglas-Fir (Pseudotsuga menziesii)	21	Excellent	Excellent			approximately 2 feet lower than sidewalk
6	Zelkova (Zelkova serrata)	9	Fair	Fair			center stem dead, large decay pockets on trunk
7	Zelkova (Zelkova serrata)	12	Excellent	Good			low canopy over road
8	Zelkova (Zelkova serrata)	11	Excellent	Good			low canopy over road
9	Zelkova (Zelkova serrata)	11	Excellent	Good			low canopy over road
10	Zelkova (Zelkova serrata)	12	Poor	Fair			low canopy over road
11	Zelkova (Zelkova serrata)	12	Good	Good			low canopy over road
12	Zelkova (Zelkova serrata)	9	Excellent	Good			
13	Douglas-Fir (Pseudotsuga menziesii)	14	Good	Fair			sap ooze from lower portion of trunk
14	English-hawthorn (Crataegus monogyna)	15	Very Poor	Very Poor			80% crown die back
15	Douglas-Fir (Pseudotsuga menziesii)	10	Excellent	Excellent			
16	red pine (Pinus resinosa)	15	Good	Fair			codominant at 3 feet
17	Zelkova (Zelkova serrata)	7	Fair	Fair			30% crown die back
18	Douglas-Fir (Pseudotsuga menziesii)	13	Good	Good			snow/ice damaged branches
19	Douglas-Fir (Pseudotsuga menziesii)	9	Good	Good			snow/ice damaged branches
20	Zelkova (Zelkova serrata)	10	Good	Fair			twig die back
21	Zelkova (Zelkova serrata)	8	Good	Good			
22	Douglas-Fir (Pseudotsuga menziesii)	12	Good	Good			
23	Zelkova (Zelkova serrata)	10	Good	Good			
24	Norway-maple (Acer platanoides)	19	Good	Good			leaning trunk, small deadwood
25	English-hawthorn (Crataegus monogyna)	8	Dead	Dead			
26	Douglas-Fir (Pseudotsuga menziesii)	37	Good	Good			small to medium deadwood throughout crown (shading)
27	Douglas-Fir (Pseudotsuga menziesii)	43	Good	Good			small to medium deadwood throughout crown (shading)

Trees that are removed which share tree protection zones with retained trees shall be removed by means of felling.

Appendix C - Tree Removals

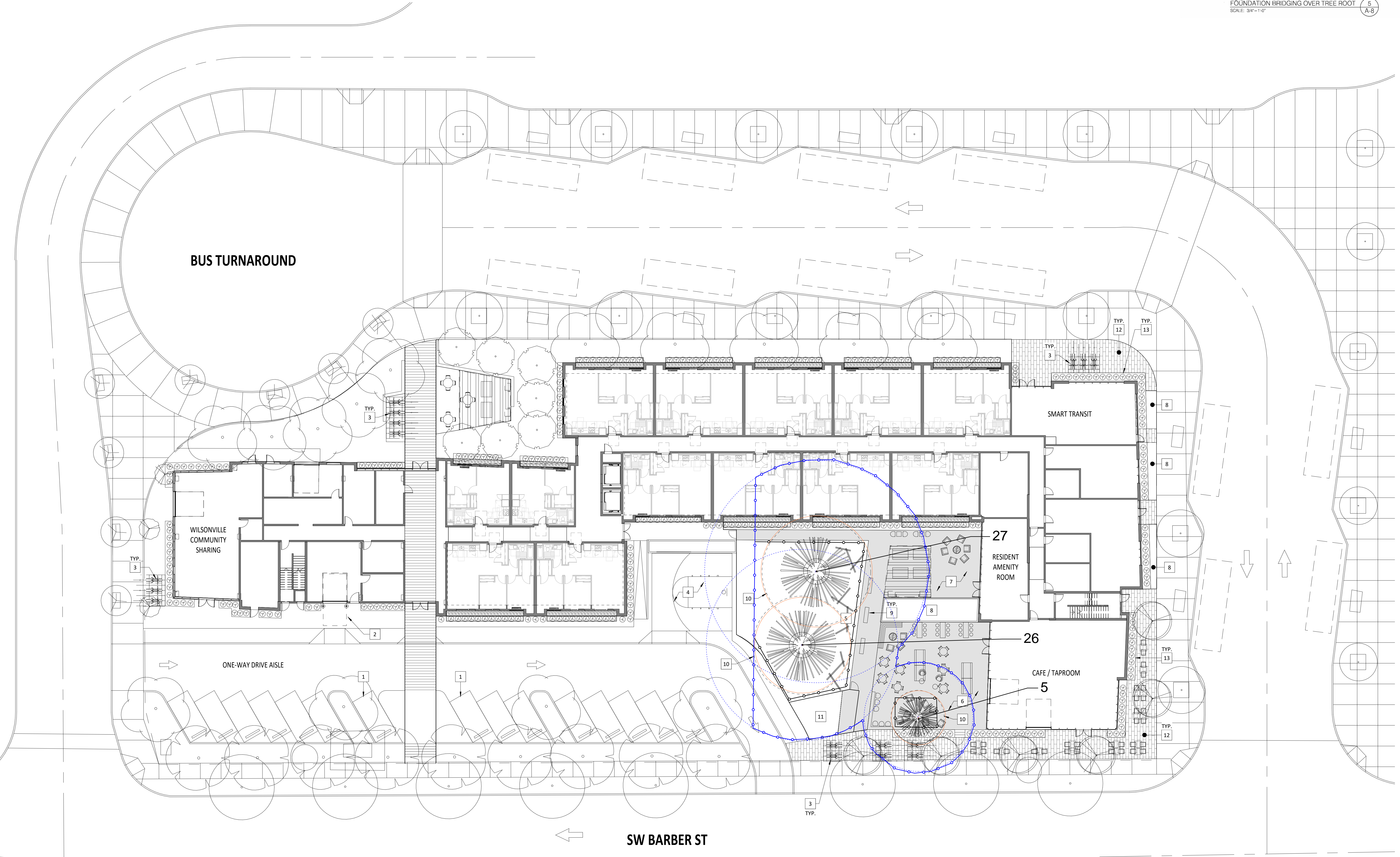
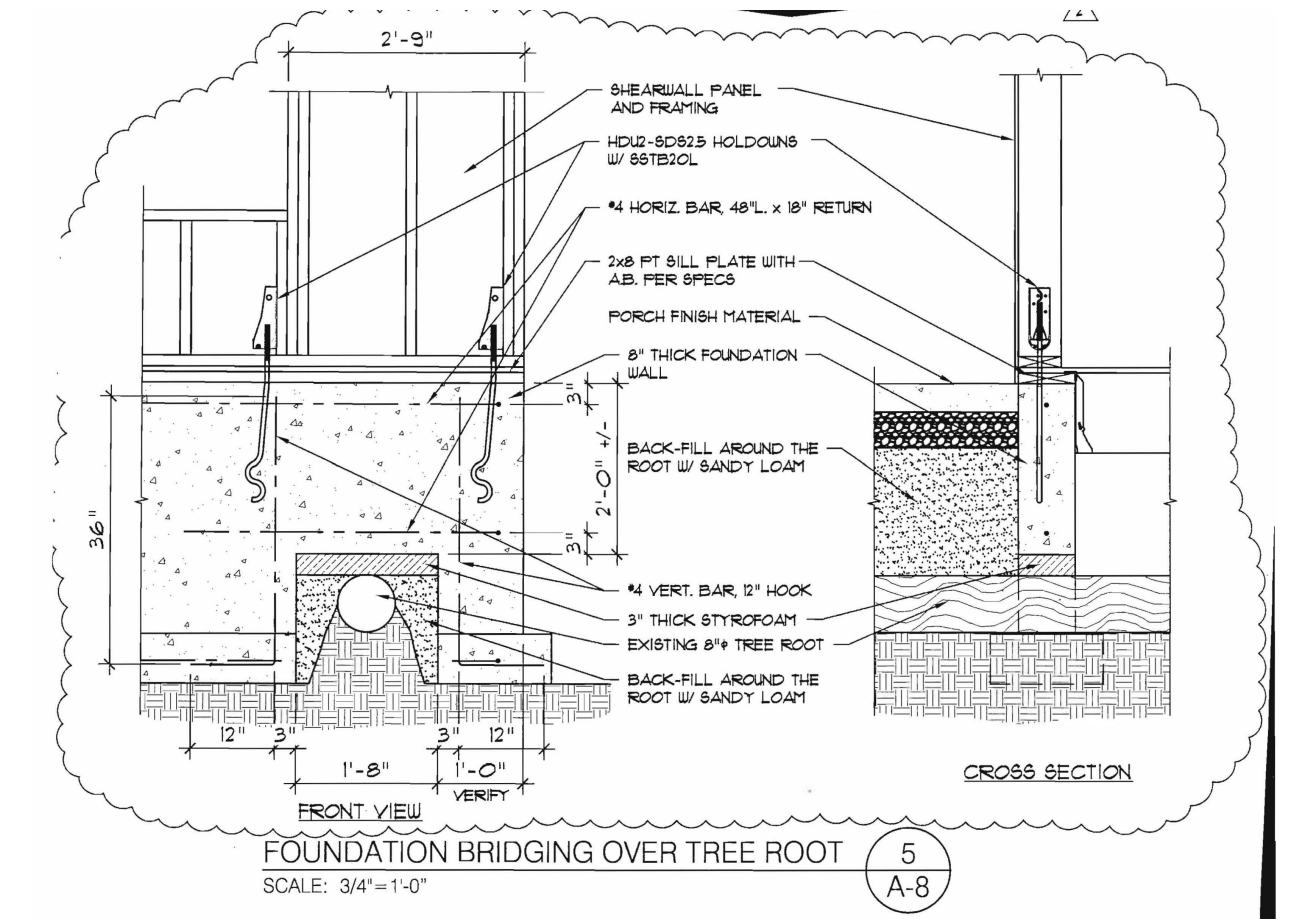


GROUP OF TREES



- KEY NOTES**
- ADA PARKING STALL
 - TRASH/RECYCLING PICKUP ZONE
 - SHORT-TERM BICYCLE PARKING
 - BASKETBALL COURT / RESIDENT LOADING ZONE
 - CHILDREN'S PLAY AREA
 - CAFE SEATING ON RAISED DECK
 - RESIDENT AMENITY SPACE ON RAISED DECK
 - STORMWATER PLANTER
 - BENCH SEATING
 - CRITICAL ROOT ZONE AT TREE TO REMAIN
 - DOG RUN
 - PERMEABLE PAVERS
 - AT-GRADE PLANTER

- GENERAL NOTES - SITE PLAN**
- FIELD VERIFY ALL INFORMATION PRIOR TO CONSTRUCTION. IF SITE CONDITIONS VARY FROM CONTRACT DOCUMENTS, NOTIFY ARCHITECT IN WRITING IMMEDIATELY.



STAMP

FOR REFERENCE ONLY

SHEET REVISION NO.	REVISION EVENT	REVISION DATE

TRUE NORTH PLAN NORTH

WILSONVILLE TOD

PALINDROME COMMUNITIES

ISSUANCE
 100% SCHEMATIC DESIGN

PROJECT NUMBER
 220120

DATE
 06/05/23

FULL SHEET SIZE
 30 X 42

DRAWING TITLE
 ARCHITECTURAL SITE PLAN

Appendix C - Tree Protection

Inventory by:
 Peter van Oss
 Certified Arborist #PN-8145A
 Inventory Date:
 06/02/2023



ObjectID	Common and Scientific Name	DBH	Condition Health	Condition Structure	Bird nest present	Tree Details	Crown Radius	Status	Field Notes/ Comments
1	Zelkova (Zelkova serrata)	11	Good	Good	No	Included Bark	17	Remove	
2	sweet cherry (Prunus avium)	15	Good	Good	No		15	Remove	invasive/nuisance
3	Douglas-fir (Pseudotsuga menziesii)	12	Excellent	Excellent	No		12	Remove	
4	red pine (Pinus resinosa)	10	Fair	Good	No	boring insects present	8	Remove	
5	Douglas-fir (Pseudotsuga menziesii)	21	Excellent	Excellent	No		15	Protected	approximately 2 feet lower than sidewalk
6	Zelkova (Zelkova serrata)	9	Fair	Fair	No	Included Bark	15	Remove	center stem dead. large decay pockets on trunk
7	Zelkova (Zelkova serrata)	12	Excellent	Good	No	Included Bark	17	Remove	low canopy over road
8	Zelkova (Zelkova serrata)	11	Excellent	Good	No	Included Bark	17	Remove	low canopy over road
9	Zelkova (Zelkova serrata)	11	Excellent	Good	No	Included Bark	17	Remove	low canopy over road
10	Zelkova (Zelkova serrata)	12	Poor	Fair	No	large area of damaged bark from car accident.	17	Remove	low canopy over road
11	Zelkova (Zelkova serrata)	12	Good	Good	No	small deadwood	17	Remove	low canopy over road
12	Zelkova (Zelkova serrata)	9	Excellent	Good	No	Included Bark	10	Remove	
13	Douglas-fir (Pseudotsuga menziesii)	14	Good	Fair	No	Broken Branches	12	Remove	sap ooze from lower portion of trunk
14	English-hawthorn (Crataegus leavigata)	15	Very Poor	Very Poor	No	large deadwood	12	Remove	80% crown die back
15	Douglas-fir (Pseudotsuga menziesii)	10	Excellent	Excellent	No		10	Remove	
16	red pine (Pinus resinosa)	15	Good	Fair	No	Codominant Tree	8	Remove	codominant at 3 feet
17	Zelkova (Zelkova serrata)	7	Fair	Fair	No	Included Bark	7	Remove	30% crown die back
18	Douglas-fir (Pseudotsuga menziesii)	13	Good	Good	No	Broken Branches	15	Remove	snow/ice damaged branches
19	Douglas-fir (Pseudotsuga menziesii)	9	Good	Good	Yes	Broken Branches	15	Remove	snow/ice damaged branches
20	Zelkova (Zelkova serrata)	10	Good	Fair	Yes	Included Bark	15	Remove	twig die back
21	Zelkova (Zelkova serrata)	8	Good	Good	No	Included Bark	15	Remove	
22	Douglas-fir (Pseudotsuga menziesii)	12	Good	Good	Yes	Broken Branches	15	Remove	
23	Zelkova (Zelkova serrata)	10	Good	Good	Yes	Included Bark	17	Remove	
24	Norway-maple (Acer platanoides)	19	Good	Good	No		25	Remove	leaning trunk. small deadwood
25	English-hawthorn (Crataegus leavigata)	8	Dead					Remove	
26	Douglas-fir (Pseudotsuga menziesii)	37	Good	Good	No		20	Protected	small to medium deadwood throughout crown (shading)
27	Douglas-fir (Pseudotsuga menziesii)	43	Good	Good	No		20	Protected	small to medium deadwood throughout crown (shading)

Teragan Associates, Inc.
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 Lake Oswego, OR 97034
 503-697-1975 | info@teragan.com

Appendix E: Tree Protection Specifications

It is critical that the following steps be taken to ensure that they are retained and protected.

Before Construction Begins

1. **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.
 - 1.1. Hold a Tree Protection meeting with all contractors to fully explain the goals of tree protection.
 - 1.2. 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*.
2. **Migratory Bird Act of 1918.** If trees are removed between Feb 1 – Aug 1, the trees shall be inspected for the presence of active bird nests. If active nests are present, the proper steps shall be taken to ensure compliance with the Federal Law. Nests with young shall be preserved and a buffer must be created in accordance with the species. If active nests must be moved, a plan prepared by a certified biologist must be enacted and executed under the supervision of the biologist.
3. **Fencing.**
 - 3.1. Establish fencing around each tree or grove of trees to be retained as shown on the tree protection site plan.
 - 3.2. 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. The 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.
 - 3.3. Fencing is to be placed at the edge of the root protection zone as shown on the Tree Protection Plan (Appendix C). Root protection zones are established by the project arborist based on the needs of the site and the tree to be protected.
 - 3.4. “Protection fencing consisting of a minimum 6-foot-high metal chain-link fencing, secured with 8-foot metal posts shall be established at the edge of the root protection zone and permissible encroachment area on the development site. If construction fencing is used it is recommended that the panels are secured to prevent movement of the fencing during construction.
 - 3.5. Fencing is to remain in the position that is established by the project arborist and not to be moved without written permission from the project arborist until the end of the project after the final inspection has been completed.
4. **Signage**
 - 4.1. All tree protection fencing should have signage clearly indicating that the area is a vegetation protection zone (Signage provided with the tree protection application).
 - 4.2. Signage should be placed as to be visible from all sides of a tree protection area and spaced every 35 feet.

During Construction

5. Protection guidelines within the Root Protection Zone

- 5.1. No traffic shall be allowed within the root protection zone. No vehicle, heavy equipment, or even repeated foot traffic.
- 5.2. No storage of materials including but not limited to soil, construction material, or waste from the site.
- 5.3. Waste includes but is not limited to concrete wash out, gasoline, diesel, paint, cleaner, thinners, etc.
- 5.4. Construction trailers are not to be parked / placed within the root protection zone without written clearance from the project arborist.
- 5.5. No vehicles shall be allowed to park within the root protection areas.
- 5.6. No activity shall be allowed that will cause soil compaction within the root protection zone.
- 5.7. The use of straw wattles is strongly recommended instead of silt fencing to avoid the need for trenching within the root protection zones.

6. Landscaping

- 6.1. Landscaping within the tree protection zones at a distance of 12X the diameter of the tree may commence after approval from the project arborist.
- 6.2. Inground irrigation systems must be avoided, and it is recommended that only above ground irrigation systems are used. Temporary systems and/or drip irrigation are preferred.
- 6.3. Any hardscapes within the tree protection zones shall be approved by the project arborist prior to soil disturbance taking place.
- 6.4. Landscape vegetation can be installed inside of the tree protection zones by pocket planting only. It is not recommended that soils are amended unless laboratory testing indicates that soil amelioration is needed.
- 6.5. No more than 4" of fill is allowed within the tree protection zone measured at a distance of 12X the diameter in circumference of the trees. No more than 25% of the tree protection zone may be impacted without the consent of the project arborist.
- 6.6. It is highly recommended that nutrient rich mulch or arborist woodchips are used in the planter areas. The material may be enriched with nitrogen to enhance the nutrient uptake by the soils.
7. **Tree protection.** Retained trees shall be protected from any cutting, skinning, or breaking of branches, trunks, or roots.
8. **Root pruning.** The 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.
9. **Grade changes.** No grade change should be allowed within the root protection zone.
10. **Root protection zone changes.** Any necessary deviation of the root protection zone shall be cleared by the project consulting arborist in writing.
11. **Watering.** Provide water to trees during the summer months as needed. Tree(s) that will have had root system(s) cut back will need supplemental water to overcome the loss of ability to absorb necessary moisture during the summer months.
12. **Utilities.** Any necessary passage of utilities through the root protection zone shall be by means of tunneling under roots by hand digging or boring.
13. **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.

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Arboricultural Consultants
3145 Westview Circle, Lake Oswego, OR 97034
503-697-1975 | info@teragan.com

After Construction

- 14. Fences are to remain standing until the final inspection has been completed by the city for the project.
- 15. Provide for or ensure that adequate drainage will occur around the retained trees.
- 16. Pruning of the existing trees should be completed as one of the last steps of the landscaping process before the final placement of trees, shrubs, ground covers, mulch, or turf.
- 17. Trees that are retained may need to be fertilized as called for by the project arborist if acceptable thresholds are exceeded. Lab analysis may be required.
- 18. The existing trees should be monitored for decline for a period of three years post construction. Proper care should be prescribed if the trees start to show signs of stress.

If there are any questions or concerns regarding the proper protection of the trees during the construction process, contact the project arborist.

MEMORANDUM

DATE: Monday, November 6, 2023
TO: Tim Schneider | YBA Architects
FROM: Peter van Oss, ASCA RCA #826 | ISA Certified Arborist, PN-8145A
RE: Tree protection for the civil plan set at the Wilsonville TOD project.

Introduction

Teragan & Associates, Inc. was contacted by Tim Schneider, to assess the final plans for the Wilsonville TOD project that is proposed at 9699 SW Barber Street, Wilsonville, Oregon. The plans indicate that three larger diameter Douglas-firs (*Pseudotsuga menziesii*) are proposed to be retained during this project.

The site is planned and designed with the retention of the trees in mind. Some questions arose by the City of Wilsonville planning department during the planning meeting, and I was asked to review the latest plans and provide my professional opinion. This memorandum states the conclusions of my findings regarding the proposed site development.

Observations

The plans for the Wilsonville TOD project include the retention of three larger diameter Douglas-fir trees, specifically trees #5, #26, and #27. Careful consideration has been given to designing the site improvements in a way that will promote the long-term health and survival of these trees. I have reviewed the plans and provided feedback to minimize the impact on the root systems of the trees.

Discussion and Recommendations

The proposed improvements within the tree protection zones of the trees are designed to minimize root impacts as much as possible. The decking around tree #5 can be installed at the existing ground level and the footings can be located between the roots of the trees to ensure that impacts are within acceptable limits.

Most of the proposed site improvements within the tree protection zones of trees #26 and #27 consist of permeable materials installed close to the existing grade. Using permeable materials will minimize the impact on soil hydrology. According to the provided plans, the encroachments of the foundation footings and impervious materials are within acceptable thresholds. Page L2 – level 1 materials shows the approximate percentages of the encroachments. The impervious materials and foundation footings within the tree protection zones of the retained trees are as follows:

- Tree #5: bicycle parking and sidewalk, totaling 10% of the total tree protection zone.
- Tree #26: parking exit, totaling 10% of the total tree protection zone.
- Tree #27: foundation and walkway, totaling 26% of the total tree protection zone.

Although the encroachment on tree #26 is slightly higher than the acceptable threshold, alternative construction methods can be used to minimize root impacts. The roots of the trees can be incorporated into the crawl space of the structure by bridging or gapping the roots, which will allow them to remain and reduce the overall percentage of impacts.

There is a gravel walkway planned within the critical root protection zone of the trees, and Geo Cell materials can be used to minimize soil compaction. The Geo Cell materials allow for the gravel path to be installed at the existing ground level without the need for compaction or additional edging materials.

The area underneath the dripline of the trees is planned to be covered with wood chips, which will provide beneficial nutrients to the soil and benefit the trees. Based on the review of the plans, the following recommendations are made:

- Explore the ground disturbing impacts of the proposed site improvements using pneumatic excavation before starting the project. This will allow for adjustments to be made, if necessary, particularly in relation to foundation footings and pier locations to accommodate the root systems of the trees.
- Place the tree protection fencing in phases throughout the project. Start by placing the fencing at the edge of the tree protection zones at the beginning of the project and during grading. This will clearly mark the protected area and set the standard for tree protection on-site.
- Any work in the tree protection zones of the trees must be approved and supervised by the project arborist.

Conclusion

Based on my observations and the information provided, it is my professional opinion that the proposed plans can be completed while retaining the three trees. It is imperative that the tree protection plan recommendations are adhered to during the project. The special considerations in this memorandum must be incorporated into the tree protection plan as well.

If you have any further questions or require additional information, please do not hesitate to contact me.

Sincerely,

Peter van Oss

Peter van Oss | Senior Associate

 RCA #826
Registered Consulting Arborist*

Member, American Society of Consulting Arborists

ISA Certified Arborist PN-8145A

ISA Tree Risk Assessment Qualified

E: peter@teragan.com | C: 971-231-4044

Enclosures:

- Appendix A Assumptions and Limitations
- Appendix B Certification of Performance
- Appendix C Site Map with Recommendations

Appendix A - Assumptions and Limitations

1. A field examination of the site was made. My observations and conclusions are as of that date.
2. Care has been taken to obtain all information from a reliable source, however the arborist can neither guarantee nor be responsible for accuracy of information provided by others.
3. Unless stated otherwise, information contained in this report covers only those trees that were examined and reflects the condition of those trees at the time of inspection. The inspection is limited to visual examination of the subject trees without dissection, excavation, probing, or coring. There is no warranty or guarantee that problems or deficiencies of the subject tree may not arise in the future.
4. This report and any values/opinions expressed herein represents my opinion as an arborist. Inaction on the part of those receiving the report is not the responsibility of the arborist.
5. Loss or alteration of this report invalidates the entire report.
6. Any legal description provided to the consultant/ appraiser is assumed to be correct. Any titles and ownerships to any property are assumed to be good and marketable. No responsibility is assumed for matters legal in character. All property is appraised or evaluated as though free and clear, under responsible ownership and competent management.
7. The consultant/ appraiser shall not be required to give testimony or attend court by reason of this report unless subsequent contractual arrangements are made, including payment for such services.
8. Possession of this report does not imply right of publication or use for any other purpose by any other than the person to whom it is addressed, without the prior expressed written consent of the consultant/ appraiser.

Appendix B - Certification of Performance

I, Peter van Oss, certify that:

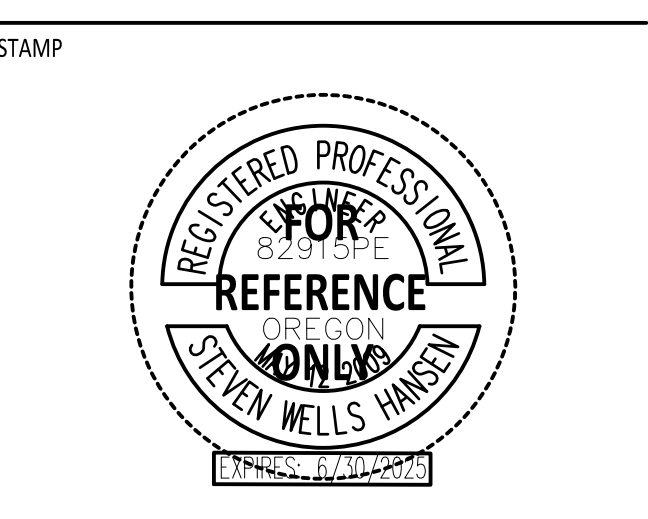
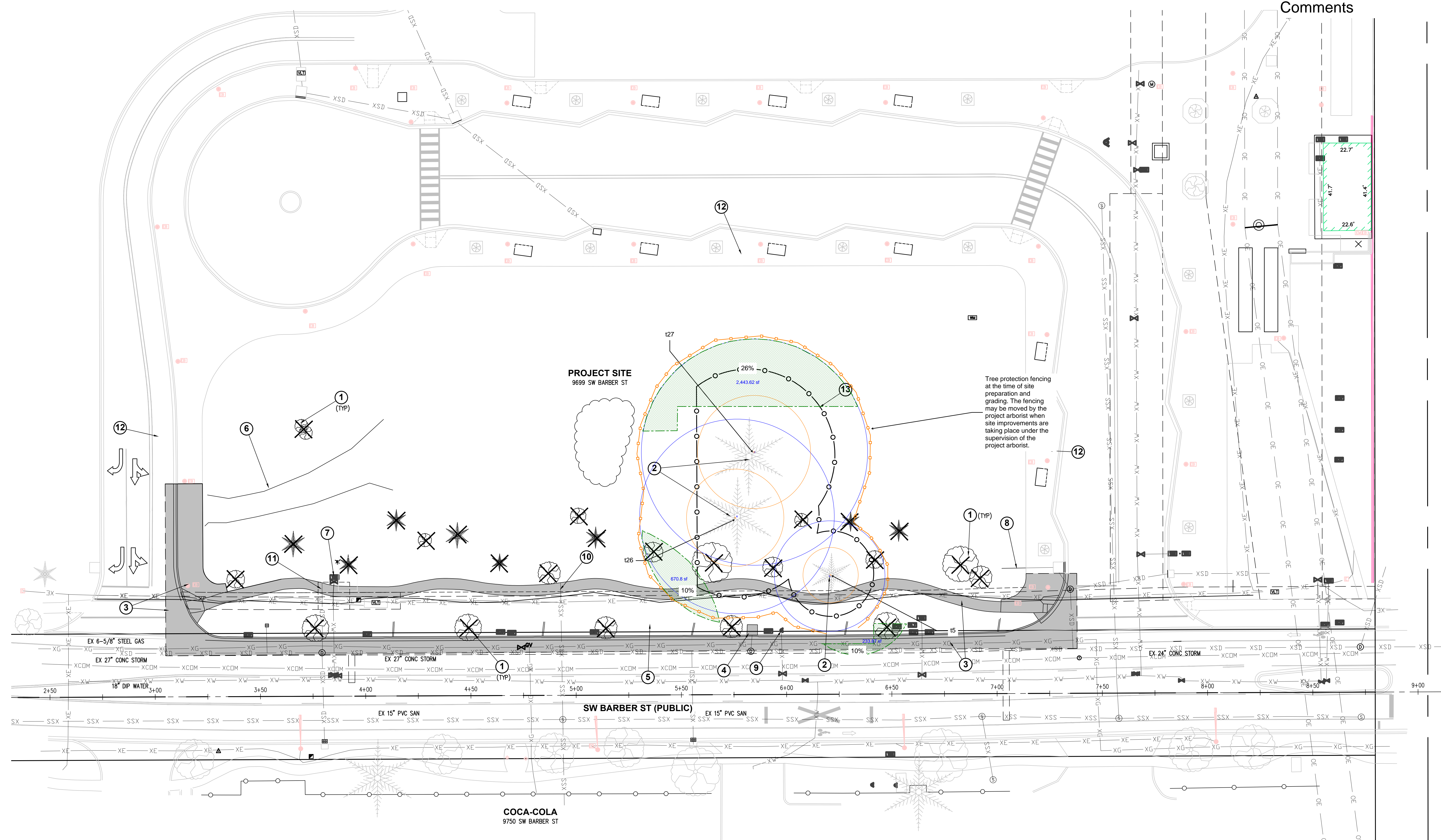
- I have personally inspected the trees and the property referred to in this report and have stated my findings accurately. The extent of the evaluation or appraisal is stated in the attached report and the Terms of the Assignment.
- I have no current or prospective interest in the vegetation or the property that is the subject of this report and have no personal interest or bias with respect to the parties involved.
- The analysis, opinions and conclusions stated herein are my own and are based on current professional procedures and facts.
- My analysis, opinions and conclusions were developed, and this report has been prepared according to commonly accepted arboricultural practices.
- No one provided significant professional assistance to me, except as indicated in the report.
- My compensation is not contingent upon reporting of a predetermined conclusion that favors the cause of the client or any other party nor upon the results of the assessment, the attainment of stipulated results, or the occurrence of any subsequent events.

I further certify that I am a member of, and certified as, an arborist by the ISA. I have been involved in the arboricultural field in a full-time capacity for a period of 17 years.

Peter van Oss | Senior Associate

 RCA #826
Registered Consulting Arborist*

Member, American Society of Consulting Arborists
ISA Certified Arborist PN-8145A
ISA Tree Risk Assessment Qualified
E: peter@teragan.com | C: 971-231-4044

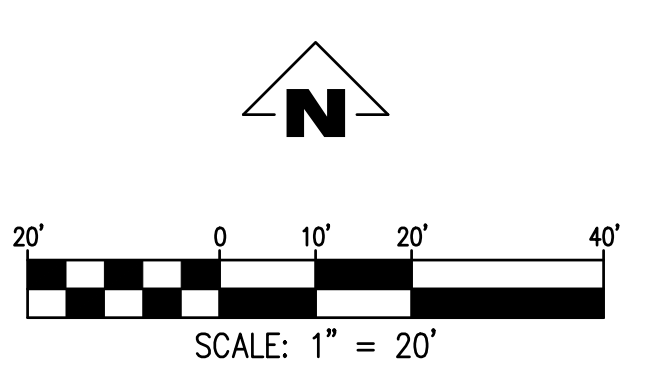


SHEET REVISION NO.	REVISION EVENT	REVISION DATE

- DEMOLITION NOTES**
- EXISTING TREE TO BE REMOVED AND DISPOSED OF OFF SITE.
 - EXISTING TREE TO REMAIN AND BE PROTECTED.
 - SAWCUT AND REMOVE EXISTING SIDEWALK, CURB AND GUTTER
 - EXISTING INLET TO BE REMOVED. EXISTING INLET LEAD TO BE CAPPED AND ABANDONED
 - EXISTING STORMWATER PLANTER SYSTEM TO BE DEMOLISHED, INCLUDING CURB INLETS, IRRIGATION SYSTEM, AND IRRIGATION CONTROL VALVES
 - EXISTING GRAVEL DRIVEWAY TO BE REMOVED
 - EXISTING WATERLINE AND STRUCTURES TO BE DEMOLISHED AND CAPPED AT PROPERTY LINE
 - EXISTING STORM LINE TO BE CAPPED AND ABANDONED
 - EXISTING HYDRANT TO REMAIN AND BE PROTECTED
 - EXISTING SANITARY SEWER LATERAL TO REMAIN AND BE PROTECTED
 - EXISTING STORM DRAIN LATERAL TO REMAIN AND BE PROTECTED/
 - EXISTING SIDEWALK TO REMAIN AND BE PROTECTED
 - INSTALL TREE PROTECTIVE FENCING. ROOT PROTECTION ZONE FENCING CONSISTING OF SIX-FOOT METAL CHAIN-LINK FENCE SECURED WITH 8-FOOT METAL POSTS IN THE GROUND MUST BE PLACED ALONG THE EDGE OF THE ROOT PROTECTION ZONE.

GENERAL NOTES:

- SEE ARBORIST REPORT & TREE PROTECTION PLAN BY PETER VAN OSS OF TERAGAN & ASSOCIATES, INC. "WILSONVILLE TOD PROJECT" DATED JULY 25, 2023, FOR MORE INFORMATION ON TREE PROTECTION



FILE: 0951-003 - C1.00 - EXTG-DEMOLDING EXTG & DEMO 10/16/2023 3:26:17 PM - SHANSEN

TRUE NORTH PLAN NORTH

WILSONVILLE TOD

PALINDROME COMMUNITIES

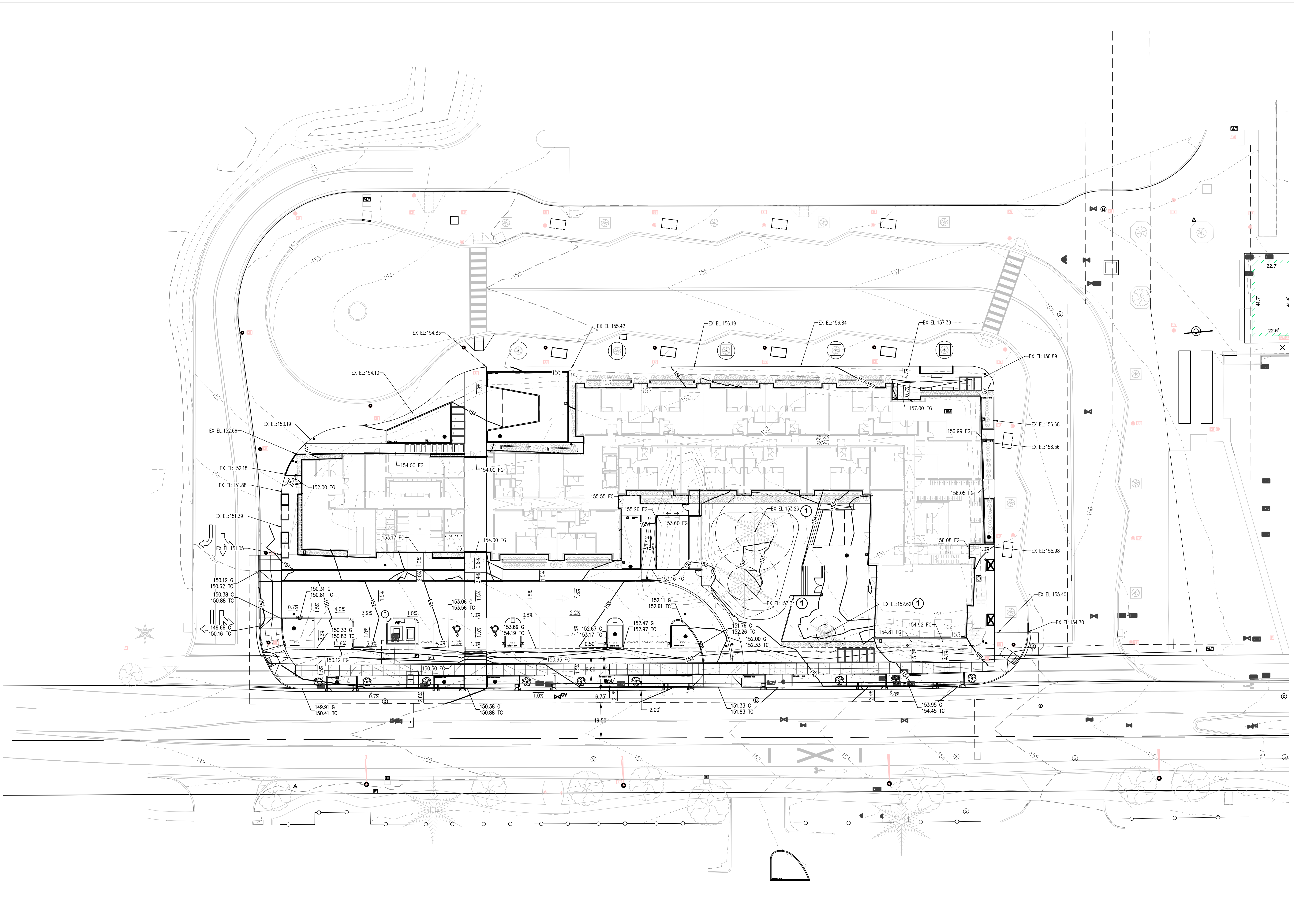
ISSUANCE
LAND USE REVIEW

PROJECT NUMBER
220120

DATE
08/18/23

FULL SHEET SIZE
30 X 42

DRAWING TITLE
EXISTING CONDITIONS AND DEMOLITION PLAN

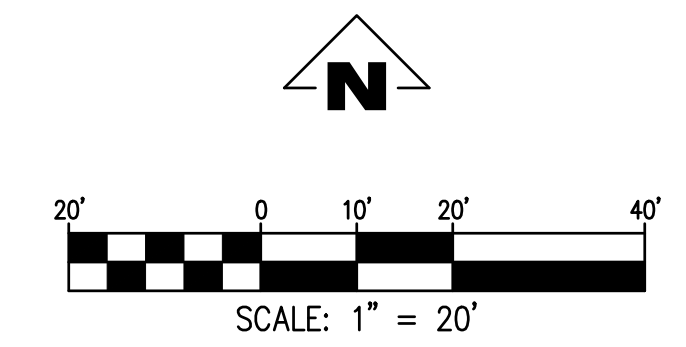


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CONSTRUCTION NOTES

① CONTRACTOR TO MINIMIZE SITE GRADING AROUND EXISTING TREES TO REMAIN
 PROTECTION ZONE MEASURED AT A DISTANCE OF 12X THE DIAMETER IN CIRCUMFERENCE OF THE TREES. NO MORE THAN 25% OF THE TREE PROTECTION ZONE MAY BE IMPACTED WITHOUT THE CONSENT OF THE PROJECT ARBORIST.

SEE ARBORIST REPORT & TREE PROTECTION PLAN BY PETER VAN OSS OF TERAGAN & ASSOCIATES, INC. "WILSONVILLE TOD PROJECT" DATED JULY 25, 2023, FOR MORE INFORMATION ON TREE PROTECTION



STAMP

SHEET NO.	REVISION NO.	REVISION EVENT	REVISION DATE

WILSONVILLE TOD

PALINDROME COMMUNITIES

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LAND USE REVIEW

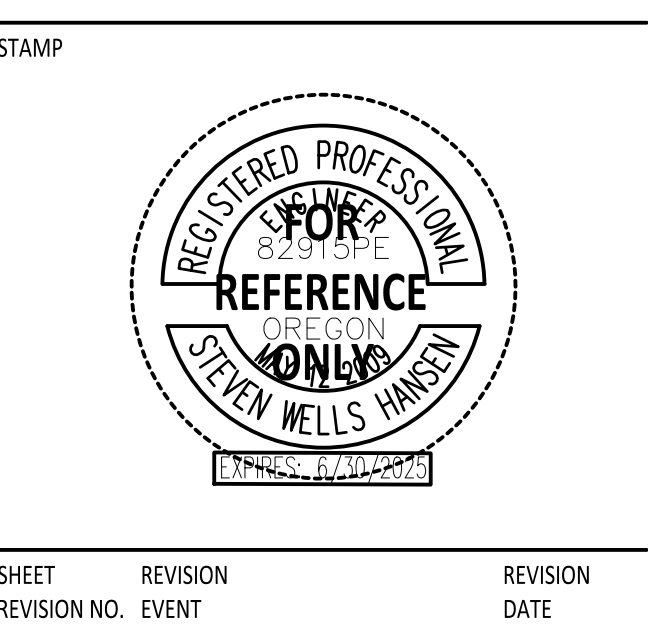
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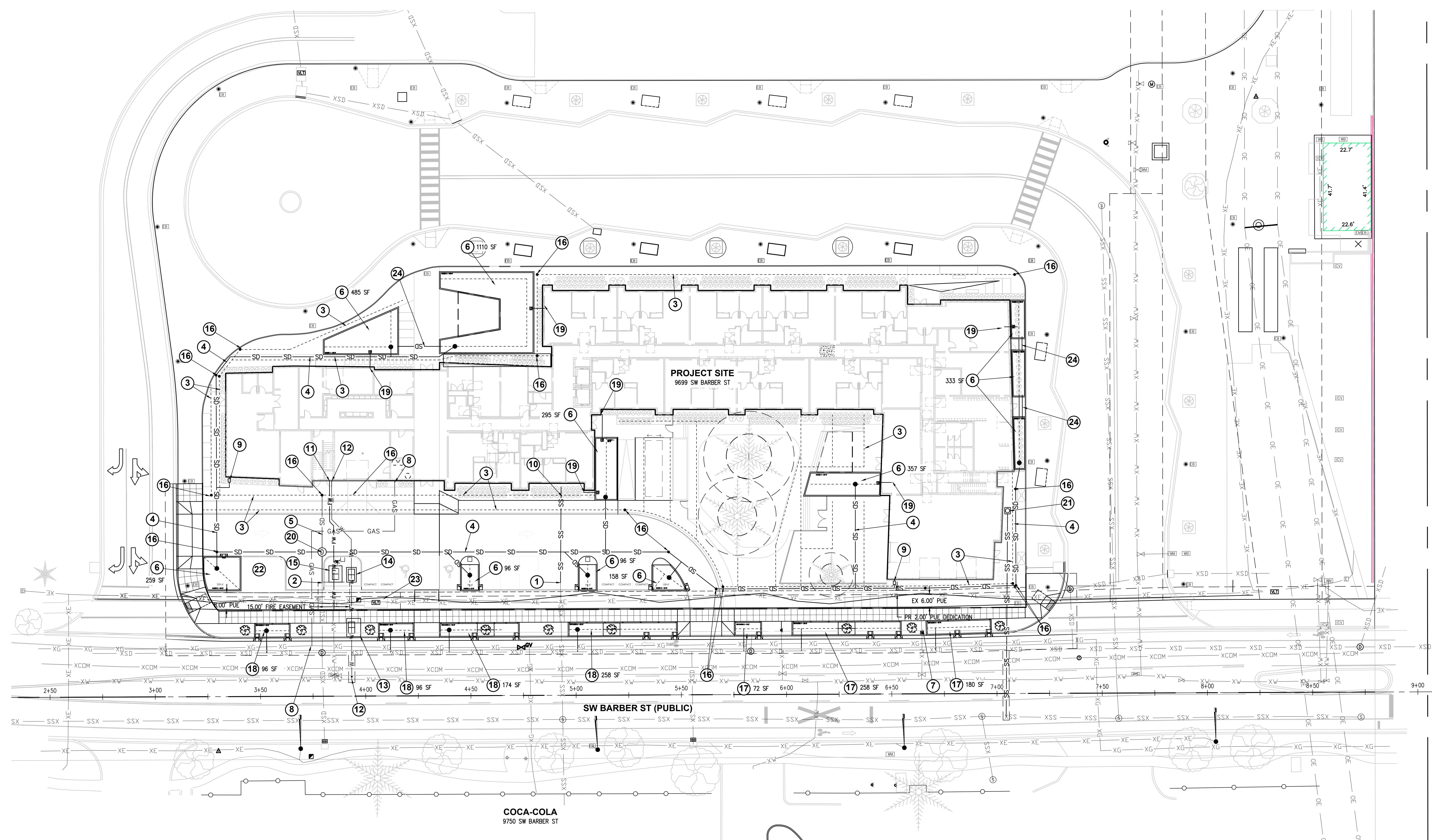
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DRAWING TITLE
SITE GRADING PLAN

SHEET NUMBER
C2.00



SHEET	REVISION	REVISION NO.	EVENT	REVISION DATE

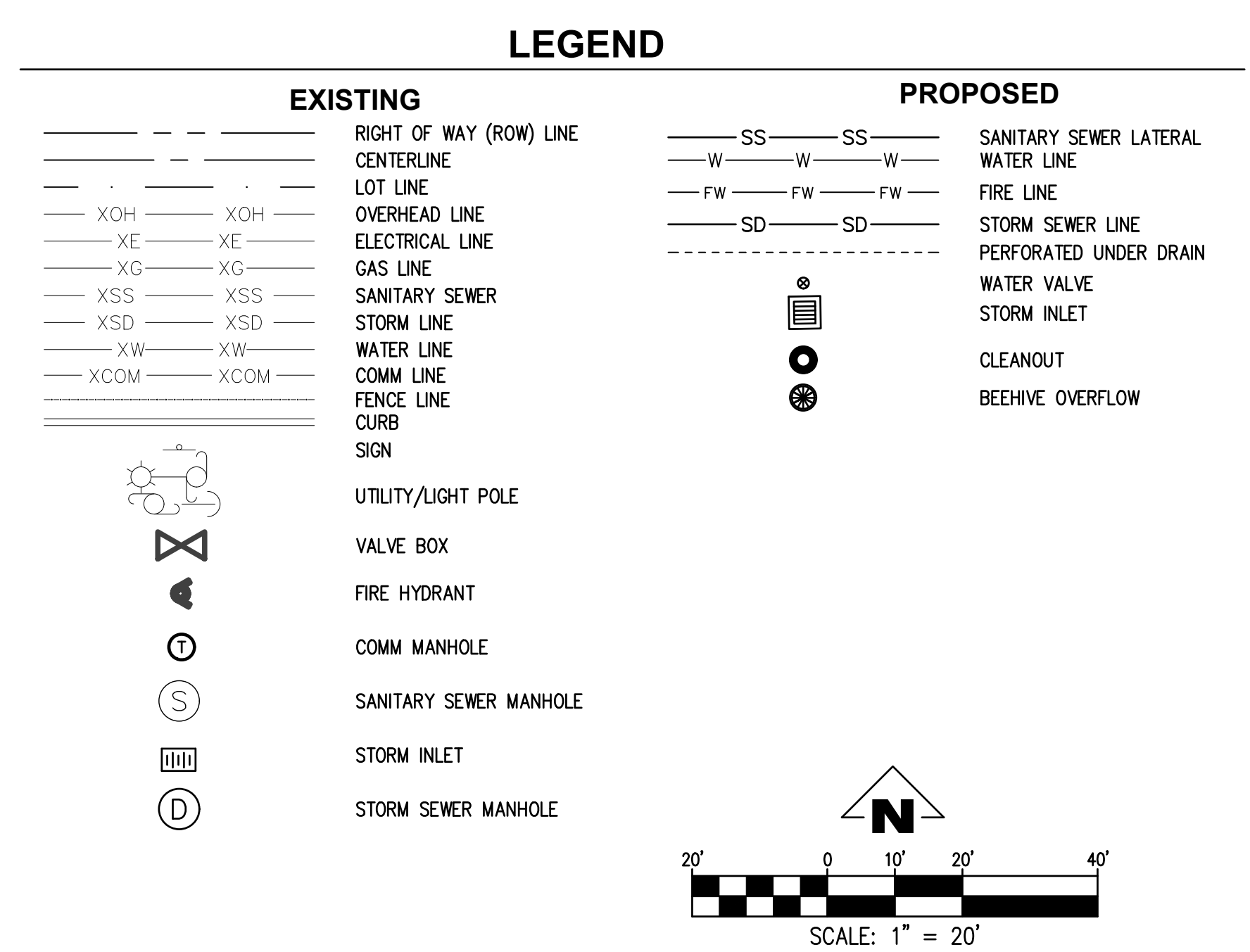


GREASE INTERCEPTOR SELECTION

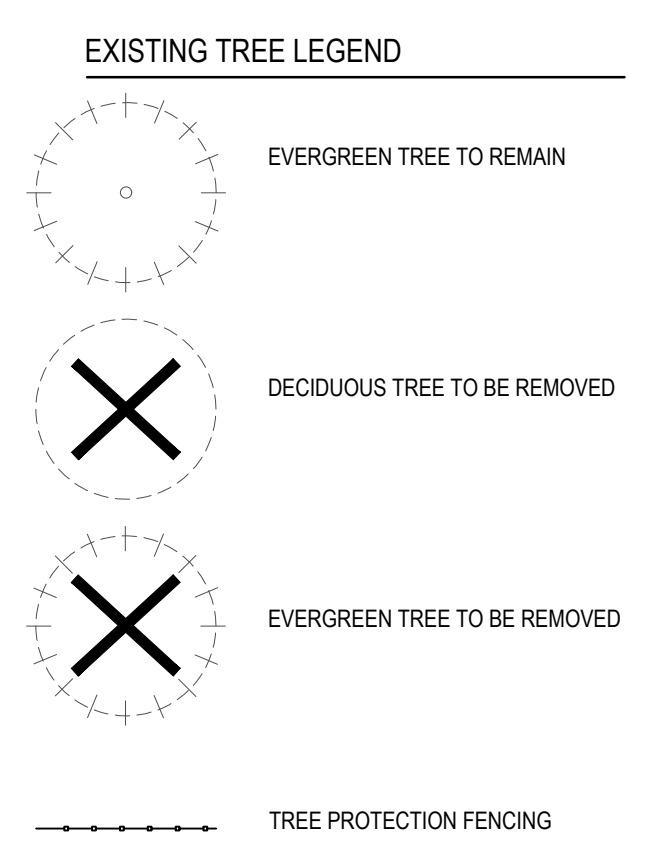
FIXTURE	QTY	DFU	TOTAL
3-COMPARTMENT SINK	1	3.0	3.0
HAND SINK	4	1.0	4.0
SERVICE SINK	1	2.0	2.0
FLOOR DRAIN	3	2.0	6.0
MOP SINK	1	0.5	0.5
DISHWASHER	1	2.0	2.0
TOTAL DFU			17.5

PER TABLE 10-2, OSPC:
 8 DFUs = 20 GPM GREASE INTERCEPTOR
 10 DFUs = 25 GPM GREASE INTERCEPTOR
 13 DFUs = 35 GPM GREASE INTERCEPTOR
 20 DFUs = 50 GPM GREASE INTERCEPTOR
 35 DFUs = 75 GPM GREASE INTERCEPTOR

- CONSTRUCTION NOTES**
- CONNECT TO EXISTING 8" SANITARY SEWER LATERAL
 - CONNECT TO EXISTING 18" STORM SEWER LATERAL
 - 6" PERFORATED PIPE UNDER PERVIOUS SURFACING (S=1.0% MIN)
 - 6" PVC STORM LINE FROM PLANTERS (S=1.0% MIN)
 - 6" PVC COLLECTOR STORM LINE FROM PERF PIPE (S=1.0% MIN)
 - CONSTRUCT PRIVATE FILTRATION PLANTER WITH PERFORATED 4" PVC PIPE PER CITY OF WILSONVILLE STANDARD DETAIL ST-6005
 - PROVIDE LINEAR ADJUSTMENT OF EXISTING 1.5-INCH WATER METER FOR LANDSCAPE IRRIGATION. SEE LANDSCAPE PLANS FOR CONTINUATION
 - NATURAL GAS CONNECTION
 - INSTALL 3" NDS BACKWATER VALVE IN OLDCASTLE VALVE BOX PER DETAILS ON SHEET C7.06. INSTALL 3" PERFORATED FOOTING DRAIN PIPE PER STRUCTURAL DETAILS AND GEOTECHNICAL REPORT
 - 8" ASTM D 3034 PVC SANITARY SEWER. S=1.0% MIN
 - 6" FIRE LINE CONNECTION
 - 4" DOMESTIC WATER LINE CONNECTION
 - 4" WATER METER IN OLDCASTLE 687-WA VAULT PER CITY OF WILSONVILLE DETAIL WT-3110.
 - 4" DOMESTIC WATER DOUBLE CHECK BACK FLOW PREVENTOR DEVICE IN OLDCASTLE 577-LA VAULT PER DETAIL B-4005
 - CONNECT 6" FIRE LINE TO EXISTING 8" WATER KUBE TAP. INSTALL 6" FIRE WATER DCVA WITH FDC IN OLDCASTLE 676-WA VAULT PER DETAIL B-4005.
 - INSTALL CLEANOUT.
 - PUBLIC WATER QUALITY FLOW THROUGH PLANTER.
 - PUBLIC WATER QUALITY FLOW THROUGH PLANTER WITH OVERFLOW.
 - ROOF DRAIN CONNECTION
 - INSTALL 48" DIA MH WITH 18" OUTFALL PIPE.
 - INSTALL 50 GPM GREASE INTERCEPTOR, SCHIER MODEL "GB-50" OR APPROVED EQUAL. ONLY FIXTURES LISTED IN THE GREASE INTERCEPTOR SELECTION TABLE WILL BE ROUTED TO THE GREASE INTERCEPTOR. ALL OTHER FIXTURES WILL BE CONNECTED DIRECTLY TO SEWER LATERAL. RISERS MAY NOTE EXCEED 12". IF RISERS EXCEED 12" A VAULT MUST BE PROVIDED. RISERS FOR THE GREASE INTERCEPTOR MAY NOT EXCEED 12 INCHES IN HEIGHT.
 - PGE TRANSFORMER
 - EXISTING PGE SWITCH VAULT TO REMAIN AND BE PROTECTED
 - 6" PRIVATE STORMWATER PLANTER CONNECTOR PIPE



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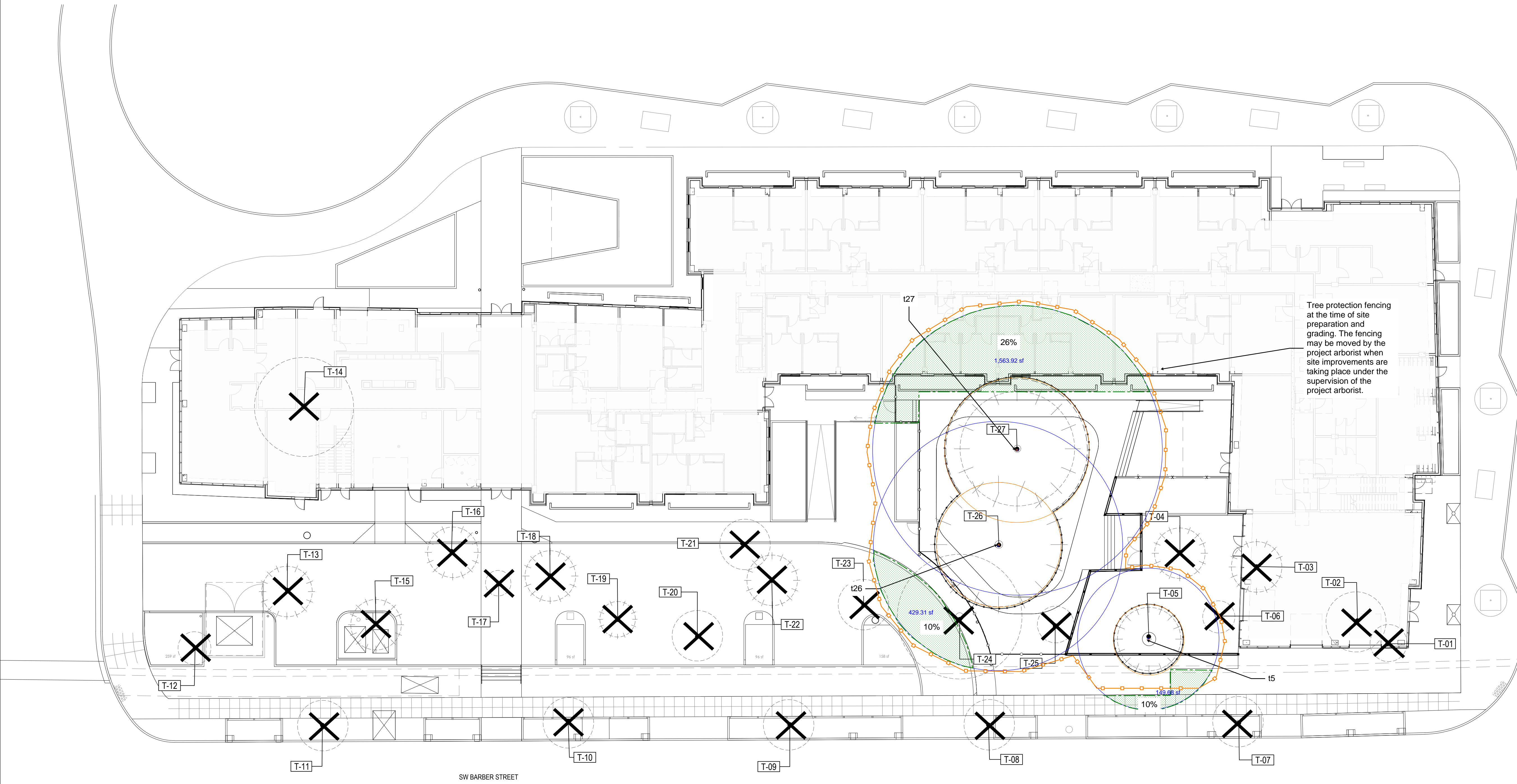


EXISTING TREE SCHEDULE

SYMBOL	DESCRIPTION	DBH	ACTION	CONDITION	TREE CREDITS	HEALTH
T-01	ZELKOVA SERRATA	11"	REMOVE			GOOD
T-02	PRUNUS AVIUM	15"	REMOVE	NUISANCE		GOOD
T-03	PSEUDOTSUGA MENZIESII	12"	REMOVE			EXCELLENT
T-04	PINUS RESINOSA	10"	REMOVE			FAIR
T-05	PSEUDOTSUGA MENZIESII	21"	PROTECT	2-FOOT LOWER THAN SIDEWALK	3 CREDITS	EXCELLENT
T-06	ZELKOVA SERRATA	9"	REMOVE	CENTER STEM DEAD		FAIR
T-07	ZELKOVA SERRATA	12"	REMOVE	LOW CANOPY		EXCELLENT
T-08	ZELKOVA SERRATA	11"	REMOVE	LOW CANOPY		EXCELLENT
T-09	ZELKOVA SERRATA	11"	REMOVE	LOW CANOPY		EXCELLENT
T-10	ZELKOVA SERRATA	12"	REMOVE	LOW CANOPY		POOR
T-11	ZELKOVA SERRATA	12"	REMOVE	LOW CANOPY		GOOD
T-12	ZELKOVA SERRATA	9"	REMOVE			EXCELLENT
T-13	PSEUDOTSUGA MENZIESII	14"	REMOVE	SAP Ooze		GOOD
T-14	CRATAEGUS MONOGYNA	15"	REMOVE	80% CROWN DIE BACK		VERY POOR
T-15	PSEUDOTSUGA MENZIESII	10"	REMOVE			EXCELLENT
T-16	PINUS RESINOSA	15"	REMOVE	CODOMINATE AT 3'		GOOD
T-17	ZELKOVA SERRATA	7"	REMOVE	30% CROWN DIE BACK		FAIR
T-18	PSEUDOTSUGA MENZIESII	13"	REMOVE	SNOW/ICE DAMAGED BRANCHES		GOOD
T-19	PSEUDOTSUGA MENZIESII	9"	REMOVE	SNOW/ICE DAMAGED BRANCHES		GOOD
T-20	ZELKOVA SERRATA	10"	REMOVE	TWIG DIE BACK		GOOD
T-21	ZELKOVA SERRATA	8"	REMOVE			GOOD
T-22	PSEUDOTSUGA MENZIESII	12"	REMOVE			GOOD
T-23	ZELKOVA SERRATA	10"	REMOVE			GOOD
T-24	ACER PLATANOIDES	19"	REMOVE	LEANING		GOOD
T-25	CRATAEGUS MONOGYNA	8"	REMOVE	DEAD		DEAD
T-26	PSEUDOTSUGA MENZIESII	37"	PROTECT	DEAD WOOD IN CROWN	5 CREDITS	GOOD
T-27	PSEUDOTSUGA MENZIESII	43"	PROTECT	DEAD WOOD IN CROWN	5 CREDITS	GOOD

- TREE PROTECTION NOTES**
- PROTECT ALL TREES INDICATED TO REMAIN, INCLUDING BARK AND ROOT ZONES.
 - FENCING SHALL BE INSTALLED PER THE TREE PROTECTION PLAN. FINAL LAYOUT SHALL BE REVIEWED AND APPROVED BY THE PROJECT ARBORIST AND/OR LANDSCAPE ARCHITECT.
 - ALL WORK WITHIN THE TREE PROTECTION ZONE SHALL BE PERFORMED WITH HANDHELD TOOLS OR AIR SPADE.
 - EXCAVATION WITHIN THE TREE PROTECTION ZONE SHALL BE PERFORMED WITH HANDHELD TOOLS OR AIR SPADE. EXCAVATE THE MINIMUM AMOUNT NECESSARY TO ACCOMPLISH PURPOSE FOR EXCAVATION. ROOTS OVER 4" DIAMETER SHALL BE CUT BY THE PROJECT ARBORIST.
 - THE FOLLOWING IS PROHIBITED WITHIN THE ROOT PROTECTION ZONE OF EACH TREE OR OUTSIDE THE LIMITS OF THE DEVELOPMENT IMPACT AREA:
 - GROUND DISTURBANCE OR CONSTRUCTION ACTIVITY INCLUDING VEHICLE OR EQUIPMENT ACCESS (BUT EXCLUDING ACCESS ON EXISTING STREETS OR DRIVEWAYS)
 - STORAGE OF EQUIPMENT OR MATERIALS INCLUDING SOIL, TEMPORARY OR PERMANENT STOCKPILING, PROPOSED BUILDINGS, IMPERVIOUS SURFACES, UNDERGROUND UTILITIES, EXCAVATION OR FILL, TRENCHING OR OTHER WORK ACTIVITIES
 - PROTECTIVE FENCE SHALL BE INSTALLED BEFORE ANY GROUND DISTURBING ACTIVITIES INCLUDING CLEARING AND GRADING, OR CONSTRUCTION STARTS, AND SHALL REMAIN IN PLACE UNTIL FINAL INSPECTION.
 - SIGNAGE DESIGNATING THE PROTECTION ZONE AND PENALTIES FOR VIOLATIONS SHALL BE SECURED IN A PROMINENT LOCATION ON EACH PROTECTION FENCE.
 - TREE PROTECTION ZONE SHALL REMAIN FREE OF ALL CHEMICALLY INJURIOUS MATERIALS AND LIQUIDS.

- MAINTENANCE NOTES FOR EXISTING TREES**
- WASH OFF FOLIAGE WHICH BECOMES SOILED DURING CONSTRUCTION.
 - WATER TREES AND OTHER VEGETATION WHICH ARE TO REMAIN AS NECESSARY TO MAINTAIN THEIR HEALTH DURING THE COURSE OF THE WORK. RATE AND FREQUENCY OF APPLICATION TO BE DETERMINED BY PROJECT ARBORIST.
 - ALL PRUNING SHALL BE PERFORMED BY A CURRENT ARBORIST LICENSED WITHIN THE STATE/COUNTY/CITY WHERE THE WORK IS TO BE COMPLETED.



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FOR
REFERENCE
ONLY

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REVISION NO.	EVENT	DATE

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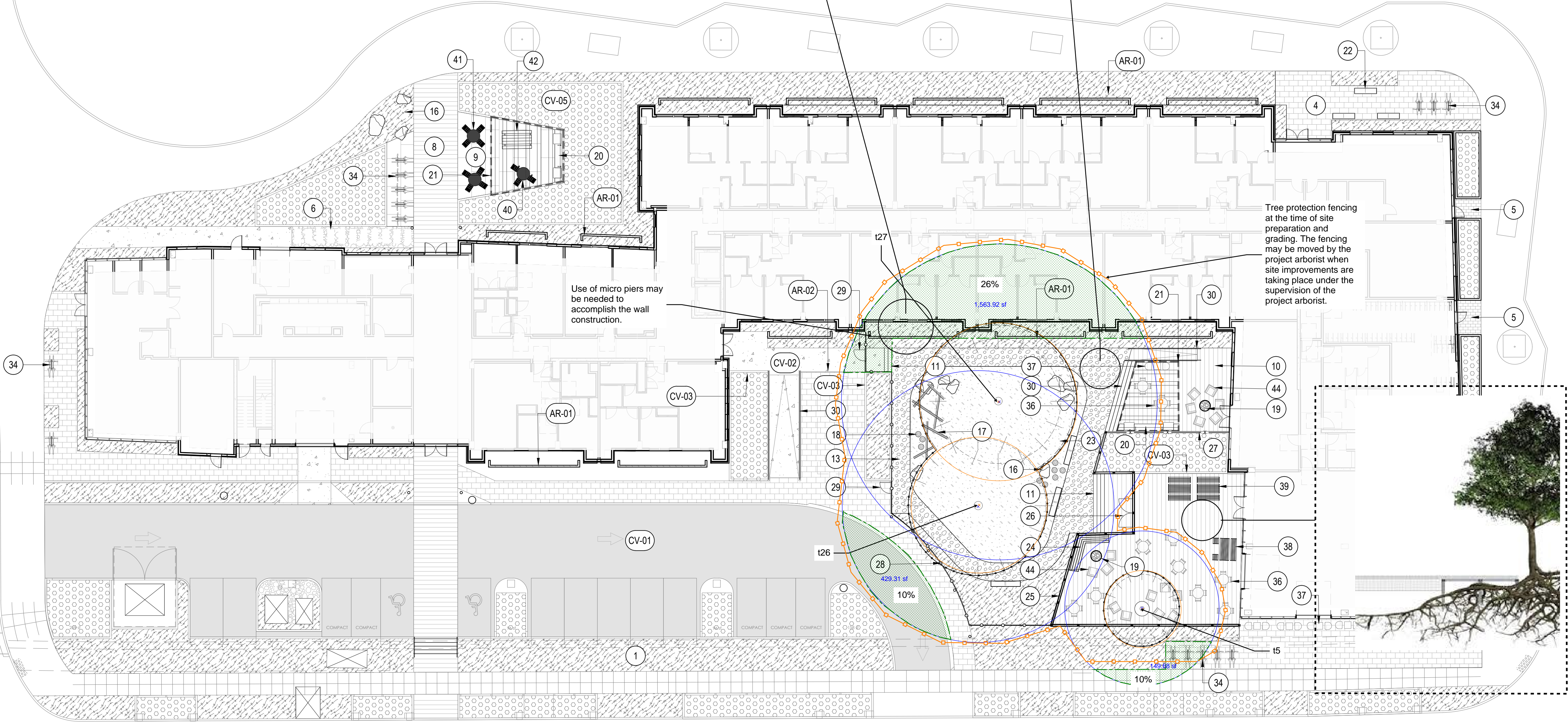
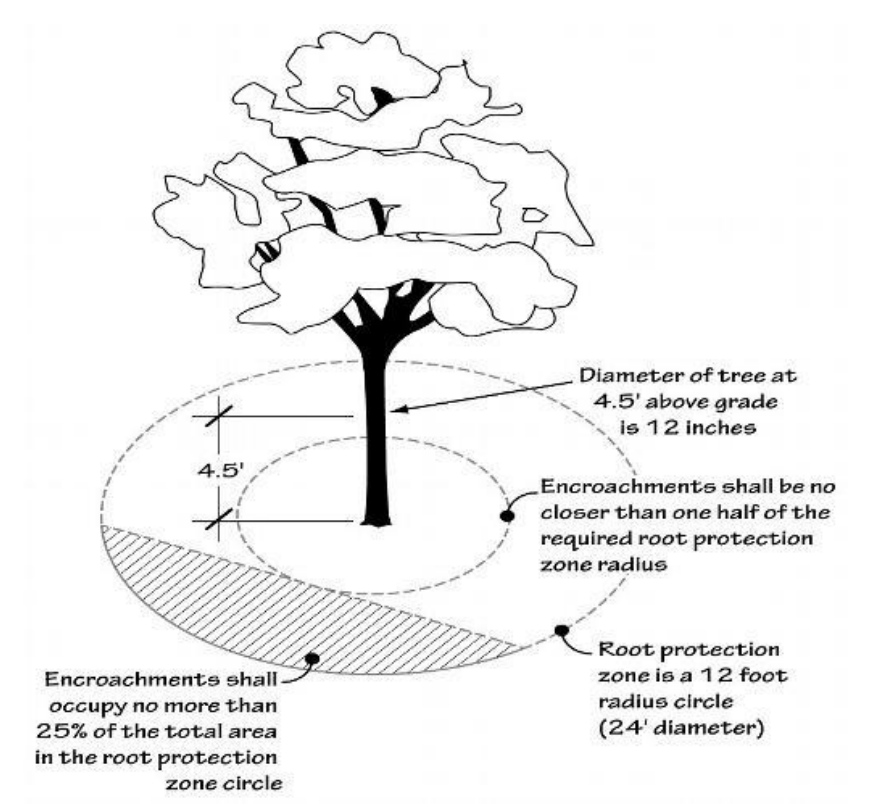
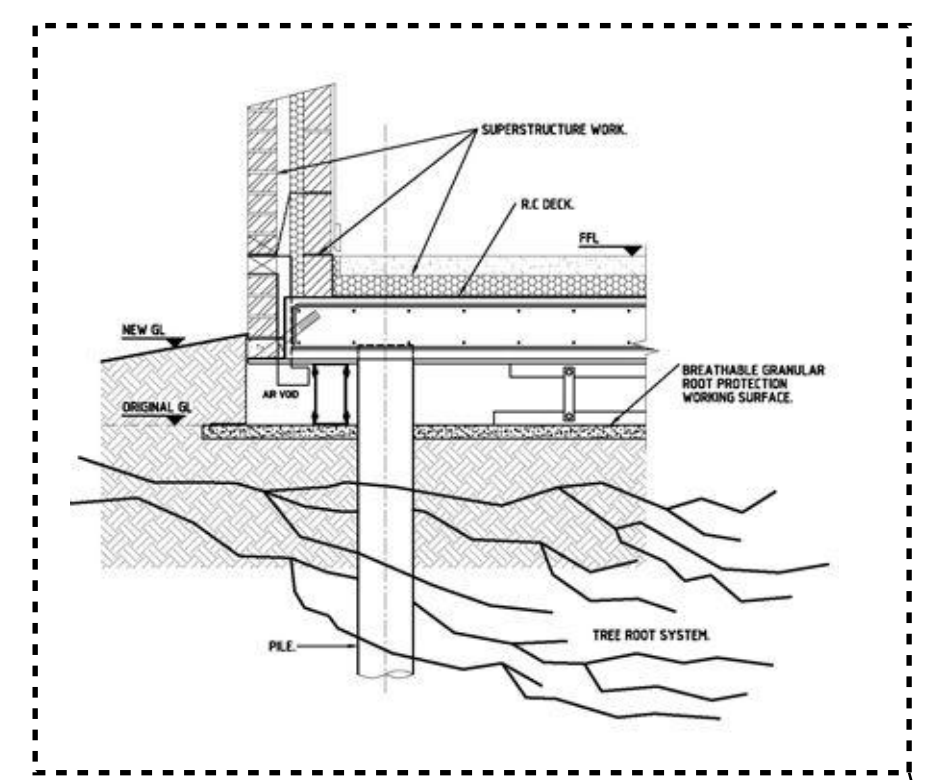
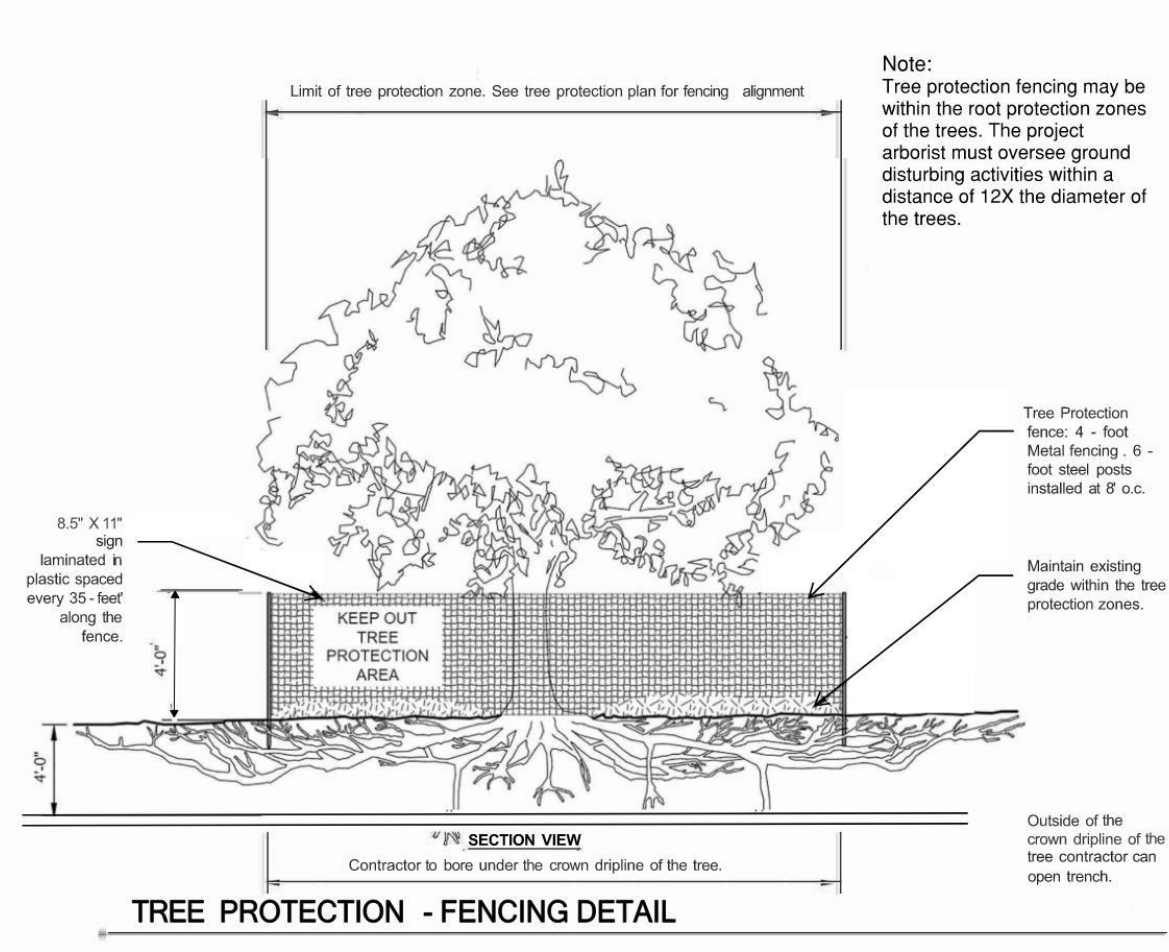
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 EXISTING TREE INVENTORY PLAN

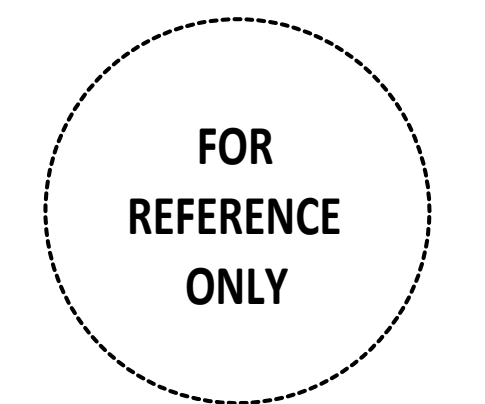
REFERENCE NOTES SCHEDULE

SYMBOL	DESCRIPTION
	1 PLANTING AREA, TYP. SEE LANDSCAPE DRAWINGS / DETAILS / SPECS
	4 PAVER TYPE I - PERMEABLE BELGARD AQUA LINE 3x12 COLOR: DARK CHARCOAL
	5 PAVER TYPE II WAUSAU TILE EXPRESSIONS 6x16 COLOR: DARK CHARCOAL
	6 PAVER TYPE II WAUSAU TILE EXPRESSIONS 24x48 COLOR: DARK CHARCOAL
	8 CONCRETE SURFACING TYPE II COLORED / STAMPED CONCRETE
	9 CONCRETE SURFACING TYPE III COLORED CONCRETE
	10 CEDAR OR THERMALLY MODIFIED WOOD POST AND BEAM DECKING. CONCRETE CAST-IN-PLACE FOOTINGS OR HELICAL PIER AND DECK FOOTING
	11 STAIRS TO MATCH DECKING
	12 AGGREGATE SURFACING TYPE I 3/4-INCH GRAY RIVER COBBLE
	13 AGGREGATE SURFACING TYPE II DECOMPOSED GRANITE
	15 CEDAR PLAY CHIPS
	16 LANDSCAPE BOULDERS CAMAS GRAY BASALT, ANGULAR APPEARANCE
	17 WEATHERIZED LOGS PINNED TOGETHER AND TO GROUND
	18 WEATHERIZED 16-18 INCH ROUND LOG PLACED ON END
	19 FIRE TABLE, TYP. SEE CIVIL DRAWINGS FOR PROPANE HOOK UP SEE ELECTRICAL DRAWINGS FOR ELECTRICAL HOOKUP
	20 BBQ ENCLOSURE - CONCRETE COUNTER TOP AND THERMALLY MODIFIED WOOD CLADDING SEE CIVIL FOR PROPANE HOOKUP SEE ELECTRICAL FOR ELECTRICAL HOOKUP
	21 POLYGON TRELLIS CEDAR LATH ON STEEL FRAME
	22 FIR LOG BENCH 24" DIA. 6-FOOT LONG
	23 FIR LOG BENCH 24" DIA. 8-FOOT LONG
	24 CUSTOM CORNER BENCH CEDAR SLATS ON METAL FRAME
	25 KNOTWOOD ALUMINUM FENCE, SO. BLACK POSTS, 6" WIDE, WOODGRAIN COLORED, VERTICAL SLATS, W/ 1" GAPS
	26 KNOTWOOD ALUMINUM FENCE, GATE TO MATCH FENCE, ONE-WAY OPEN WITH INTERIOR LOCKING MECHANISM
	27 6.5" TALL KNOTWOOD ALUMINUM FENCE, 4" SO. POSTS WITH 6" WIDE, HORIZONTAL SLATS, WOODGRAIN COLORED
	28 42" CUSTOM METAL PICKET FENCING POWDER-COATED BLACK
	29 42" CUSTOM METAL PICKET GATE, GATE TO MATCH FENCE, ONE-WAY OPEN WITH RESIDENT PASS-CARD MECHANISM
	30 CUSTOM METAL RAILING TO MATCH PICKET FENCING, ADA COMPLIANT
	33 TREE GRATE CITY STANDARD 4' X 6'
	34 BIKE RACK HUNTCO RAMBLER - FLAT PROFILE, BLACK
	36 GROSFILLEX 38" ROUND PEDESTAL TABLE AND MOVEABLE CHAIRS - COLORS TBD
	37 GROSFILLEX 28" SQUARE BAR HEIGHT TABLE AND BACKED BAR STOOLS - COLORS TBD
	38 DUMOR 6" STEEL AND IPE ADA PICNIC TABLE WITH ONE BENCH AND TWO STOOLS FRAME COLOR TBD
	39 DUMOR 6" STEEL AND IPE ADA PICNIC TABLE WITH TWO BENCHES - FRAME COLOR TBD
	40 DUMOR 42" ROUND STEEL ADA TABLE WITH THREE ATTACHED SEATS - COLOR TBD
	41 DUMOR 42" ROUND STEEL TABLE WITH FOUR ATTACHED SEATS - COLOR TBD
	42 DUMOR 6" ALUMINUM PICNIC TABLE WITH ATTACHED BENCHES - COLOR TBD
	43 DUMOR 6" ALUMINUM ADA PICNIC TABLE WITH ATTACHED BENCHES - COLOR TBD
	44 LOUNGE CHAIR
	AR-01 SEE ARCHITECTURAL DRAWINGS / DETAILS / SPECS DESCRIPTION 18" CONCRETE WALL, TYP
	AR-02 METAL FENCE & MOVEABLE GATES SEE ARCHITECTURE
	CV-01 SEE CIVIL DRAWINGS / DETAILS / SPECS DESCRIPTION ASPHALT PAVING
	CV-02 CONCRETE SURFACING TYPE I
	CV-03 RAISED CONCRETE PLANTER

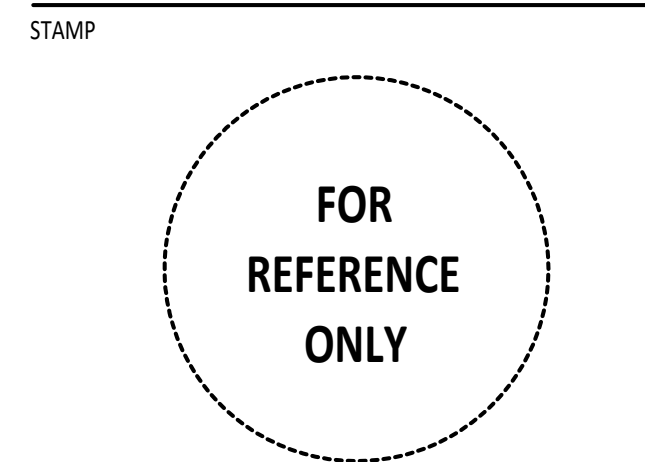


SW BARBER STREET

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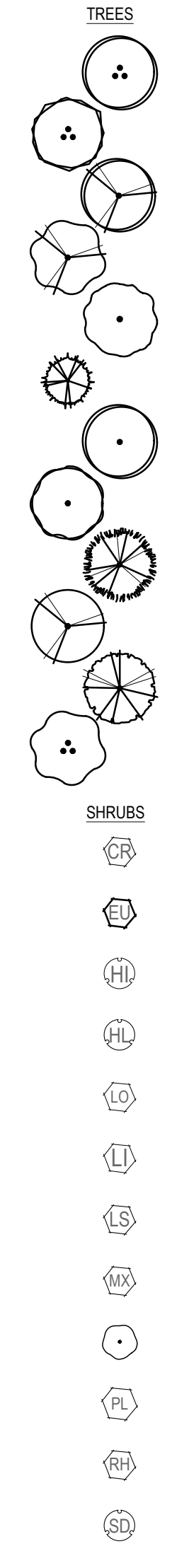
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PLANT SCHEDULE



TREES	CODE	BOTANICAL / COMMON NAME	SIZE	HT	CAL	WATER NEEDS
AC	ACER CIRCINATUM / VINE MAPLE STORMWATER TREE / MULTI STEM (3 STEM MIN)	B&B	5'-6"	1" CAL	MOD.	
AV	ACER CIRCINATUM / VINE MAPLE MULTI-STEM (3-5 STEM)	B&B	8'-10"		MOD.	
AG	ACER NIGRUM 'GREENCOLUMN' / GREENCOLUMN BLACK MAPLE	B&B	10'	2" CAL	MOD.	
AB	ACER RUBRUM 'BOWHALL' / BOWHALL RED MAPLE STORMWATER / PARKING TREE	B&B	1.75' CAL	MOD.		
AF	ACER RUBRUM 'FRANKSRED' / RED SUNSET® MAPLE STORMWATER TREE	B&B	2" CAL	MOD.		
CM	CUPRESSUS SEMPERVIRENS 'MONSHEL' / TINY TOWER® ITALIAN CYPRESS	B&B	5'-6"		MOD.	
FL	FRAXINUS LATIFOLIA / OREGON ASH	B&B	2" CAL	MOD.		
MU	MAGNOLIA VIRGINIANA 'JIM WILSON' / MOONGLOW® SWEETBAY MAGNOLIA	B&B	8'-10"	1.75' CAL	MOD.	
PO	PSEUDOTSUGA MENZIESII / DOUGLAS FIR MITIGATION TREE	B&B	8'-10"		MOD.	
PY	PYRUS CALLERYANA 'CHANTICLEER' / CHANTICLEER CALLERY PEAR	B&B	1.75' CAL	MOD.		
OK	QUERCUS ROBUR X ALBA 'JFS-KW10X' / STREETSPIRE® OAK	B&B	10'	2" CAL	MOD.	
RP	RHAMNUS PURSHIANA / CASCARA	B&B	1.75' CAL	MOD.		
SHRUBS	CODE	BOTANICAL / COMMON NAME	SIZE	HT	WATER NEEDS	
CR	CHOISYA TERNATA 'AZTEC PEARL' / AZTEC PEARL MEXICAN ORANGE	3 GAL	2'-3"		MOD.	
EJ	EJONYMIUS JAPONICUS 'GREEN SPIRE' / GREEN SPIRE JAPANESE EJONYMIUS	5 GAL	4'-5"		MOD.	
HI	HYDRANGEA ARBORESCENS 'NCHAS' / INVINCIBELLE® WEE WHITE HYDRANGEA	3 GAL			MOD.	
HL	HYDRANGEA MACROPHYLLA 'HORTMAVI' / SEASIDE SERENADE® MARTHA'S VINEYARD HYDRANGEA	2 GAL			MOD.	
LO	LEUCOTHOE FONTANESIANA 'LITTLE FLAMES' / LEAFSCAPE LITTLE FLAMES LEUCOTHOE	2 GAL			MOD.	
LI	LOROPETALUM CHINENSE RUBRUM 'KIROBUIKI' / CHERISE CHARM™ FRINGE FLOWER	2 GAL			MOD.	
LS	LOROPETALUM CHINENSE RUBRUM 'SUZANNE' / SUZANNE FRINGE FLOWER	3 GAL	3'-4"		MOD.	
MX	MAHONIA X 'SOFT CARESS' / SOFT CARESS MAHONIA	3 GAL	2'-3"		MOD.	
PO	PHYSCARPUS OPULIFOLIUS 'SMPF0BLR' / GINGER WINE® NINEBARK	3 GAL			MOD.	
PL	PRUNUS LAUROCERASUS 'OTTO LUYKEN' / OTTO LUYKEN ENGLISH LAUREL	3 GAL	2'-3"		MOD.	
RH	RHOODODENDRON X 'HARDY GARDENIA' / SNOWBALL AZALEA	2 GAL			MOD.	
SD	SPIRAEA JAPONICA 'TRACY' / DOUBLE PLAY BIG BANG® SPIREA	3 GAL	3'-4"		MOD.	

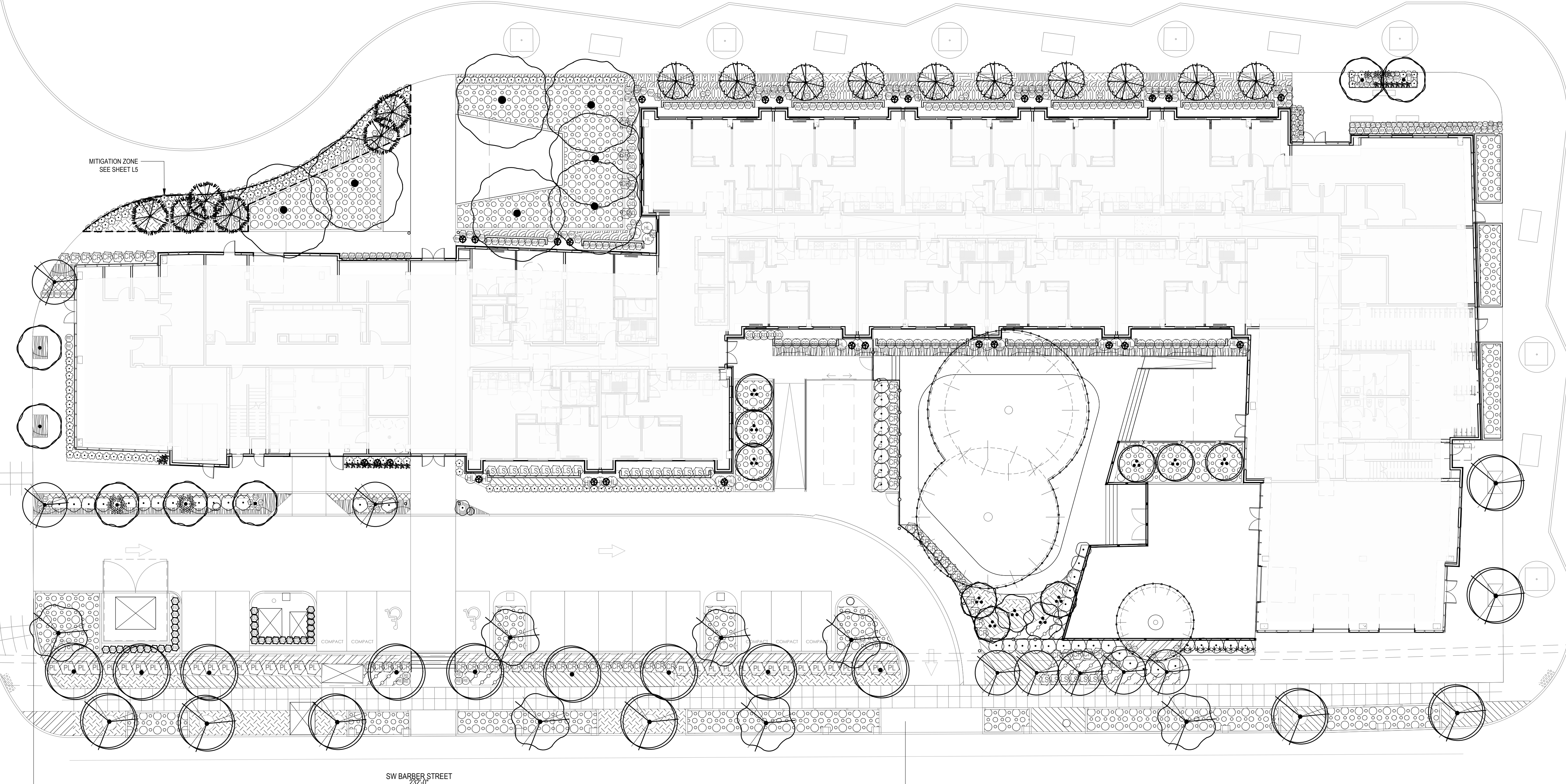
GRASSES / SEDGES / RUSHES	CODE	BOTANICAL / COMMON NAME	SIZE	HT	WATER NEEDS		
CL	CAREX OSHIMENSIS 'EVERGLOW' / EVERCOLOR® EVERGLOW JAPANESE SEDGE	1 GAL			MOD.		
DB	DRYOPTERIS ERYTHROSORA 'BRILLIANCE' / BRILLIANCE AUTUMN FERN	1 GAL			MOD.		
HE	HELICTOTRICHON SEMPERVIRENS 'SAPPHIRE' / SAPPHIRE BLUE OAT GRASS	1 GAL			LOW		
PM	POLYSTICHUM MUNITUM / WESTERN SWORD FERN	1 GAL			LOW		
PERENNIALS	CODE	BOTANICAL / COMMON NAME	SIZE	HT	WATER NEEDS		
HP	HEMEROCALLIS X 'RUBY SPIDER' / RUBY SPIDER DAYLILY	1 GAL			LOW		
HD	HEMEROCALLIS X 'STELLA DE ORO' / STELLA DE ORO DAYLILY	1 GAL			LOW		
HB	HEUCHERA X 'RED LIGHTNING' / RED LIGHTNING CORAL BELLS	1 GAL			LOW		
HT	HEUCHERA X 'TNEUNER' / NORTHERN EXPOSURE™ RED CORAL BELLS	1 GAL			LOW		
RE	RUDBECKIA FULGIDA 'EARLY BIRD GOLD' / EARLY BIRD GOLD CONEFLOWER	1 GAL			LOW		
GROUND COVERS	CODE	BOTANICAL / COMMON NAME	SIZE	HT	APP	SPACING	WATER NEEDS
APUJ	ARCTOSTAPHYLOS UVA-URSI / KINKINNICK	1 GAL				18" o.c.	LOW
COEE	CAREX OSHIMENSIS 'EVERGLOW' / EVERCOLOR® EVERGLOW JAPANESE SEDGE	1 GAL				18" o.c.	MOD
COEV	CAREX OSHIMENSIS 'EVERLITE' / EVERCOLOR® EVERLITE JAPANESE SEDGE	1 GAL				12" o.c.	MOD
DCNL	DESCHAMPSIA CESPITOSA 'NORTHERN LIGHTS' / NORTHERN LIGHTS TUFTED HAIR GRASS	1 GAL				12" o.c.	MOD
LMPE	LIRIOPE MISCARI 'EXC 052' / PURPLE EXPLOSION™ LILYTURF	1 GAL				12" o.c.	LOW
LLBM	LOMANDRA LONGIFOLIA 'LM300' / BREEZE™ MAT RUSH	1 GAL				18" o.c.	LOW
MRDS	MAHONIA REPENS 'MONRWS' / DARKSTAR® CREEPING OREGON GRAPE	1 GAL				24" o.c.	LOW
OKTA	ORPHOPOGON FORMOSANUM / TAIWAN MONDO GRASS	1 GAL				12" o.c.	LOW
PAHG	PENNISETUM ALOPECUROIDES 'HAMELN' / HAMELN FOUNTAIN GRASS	1 GAL				18" o.c.	LOW
PALG	PENNISETUM ALOPECUROIDES 'JUS JOMMENIK' / LUMEN GOLD™ DWARF FOUNTAIN GRASS	1 GAL				24" o.c.	LOW

STORMWATER FACILITY PLANTING TYPES I & II

HERBACEOUS PLANTS - 115 PLANTS PER 100SF	SIZE	HEIGHT	SPACING	WATER NEEDS
CAREX GINSA / GINSE SEDGE	1 GAL	1' 0"		LOW
CAREX RUPESTRIS / CURLY SEDGE	1 GAL	1' 0"		LOW
CAREX TESTACEA 'PRAIRIE FIRE' / PRAIRIE FIRE ORANGE SEDGE	1 GAL	1' 0"		LOW
JUNCUS PATENS 'ELK BLUE' / SPREADING RUSH	1 GAL	1' 0"		LOW
SHRUBS / GROUNDCOVER - 4 PER 100SF	SIZE	HEIGHT	SPACING	WATER NEEDS
CORNUS SERICEA 'KELSEY' / KELSEY'S DWARF RED TWIG DOGWOOD	1 GAL	2' 0"		LOW
MAHONIA AQUIFOLIUM / OREGON GRAPE	1 GAL	3' 0"		LOW
PHYSCARPUS CAPITATUS / PACIFIC NINEBARK	1 GAL	3' 0"		LOW
POLYSTICHUM MUNITUM / WESTERN SWORD FERN	1 GAL	2' 0"		LOW
LARGE SHRUBS / SMALL TREES - 3 PER 100SF	SIZE	HEIGHT	SPACING	WATER NEEDS
SALIX PURPUREA 'NANA' / DWARF PURPLE OSIER WILLOW	3 GAL	2'-6"	6' 0"	LOW
SPIRAEA DOUGLASHI / WESTERN SPIREA	1 GAL	2'-6"	4' 0"	LOW
VIBURNUM EDULE / HIGHBUSH CRANBERRY	1 GAL	2'-6"	4' 0"	LOW

STORMWATER FACILITY PLANTING TYPE II - TREES

TREES	BOTANICAL / COMMON NAME	SIZE	HT	CAL	WATER NEEDS
AC	ACER CIRCINATUM / VINE MAPLE STORMWATER TREE / MULTI STEM (3 STEM MIN)	B&B	5'-6"	1" CAL	MOD.
AB	ACER RUBRUM 'BOWHALL' / BOWHALL RED MAPLE STORMWATER / PARKING TREE	B&B	1.75' CAL	MOD.	
AF	ACER RUBRUM 'FRANKSRED' / RED SUNSET® MAPLE STORMWATER TREE	B&B	2" CAL	MOD.	



LAND USE SUMMARY

PROJECT INFORMATION		PROPOSED USES		OFF-STREET PARKING (4.155(.03))	
SITE ADDRESS:	9749 SW Barber St, Wilsonville OR 97070	MULTI-FAMILY RESIDENTIAL	121 UNITS	RESIDENTIAL (MULTIFAMILY):	QTY. 121 UNITS
TAXLOT ID:	31W148 00703	COMMERCIAL TENANTS (ASSUMED):		COMMERCIAL (EXCLUDES SMART TRANSIT CENTER):	REQ. NONE
RECORD NUMBER:	5020822	FOOD BANK	~1,600 SF		PROVIDED 7
GROSS SITE AREA:	60,695 SF (~1.39 ACRES)	CAFE/TAPROOM	~2,150 SF	ADA STALLS:	2
		SMART TRANSIT CENTER	~1,150 SF	STANDARD STALLS (INCLUDES ADA):	9
				COMPACT (40% MAX):	5
BASE ZONE:	PLANNED DEVELOPMENT INDUSTRIAL (PDI)			REQUIRED BICYCLE PARKING (4.155(.04))	
MINIMUM LOT SIZE:	NO LIMIT	SITE AREAS:		RESIDENTIAL:	QTY. 121 UNITS
MAXIMUM LOT COVERAGE:	NO LIMIT	PARKING LOT AREA:	7,278 SF	COMMERCIAL:	REQ. 121
FRONT YARD SETBACK:	30'	IMPERMEABLE PAVING COVERAGE:	9,910 SF		PROVIDED 140
REAR AND SIDE YARD SETBACK:	30'	PERMEABLE PAVING AREA:	7,698 SF	LOCATED IN INTERNAL BIKE ROOMS:	30
OVERLAY ZONES:	LIGHTING ZONE 2 (L22)			EXTERIOR/SITE:	
BUILDING DATA:	5 STORIES, 80'-8" BUILDING HEIGHT	OPEN SPACE (4.133(.01)(C))		LONG-TERM PARKING SPACES:	50%
	TYPE VIA OVER TYPE IA CONSTRUCTION	REQ. 25% GROSS SITE AREA (15,174 SF)	PROVIDED 20,518 SF		62
GROSS AREA:	~133,575 SF	USABLE OPEN SPACE (4.133(.01)(C))			130
NET RENTABLE:	~106,025 SF	REQ. 12.5% GROSS SITE AREA (7,587 SF)	PROVIDED 9,095 SF		30
BUILDING FOOTPRINT:	~28,711 SF	LANDSCAPE AREA (4.176(.03))			
COMMERCIAL USE:	~4,900 SF	REQ. 15% GROSS SITE AREA (9,104 SF)	PROVIDED 16,079 SF		
RESIDENTIAL USE:	~128,675 SF				
DENSITY:	~87 UNITS/ACRE				

KEY NOTES

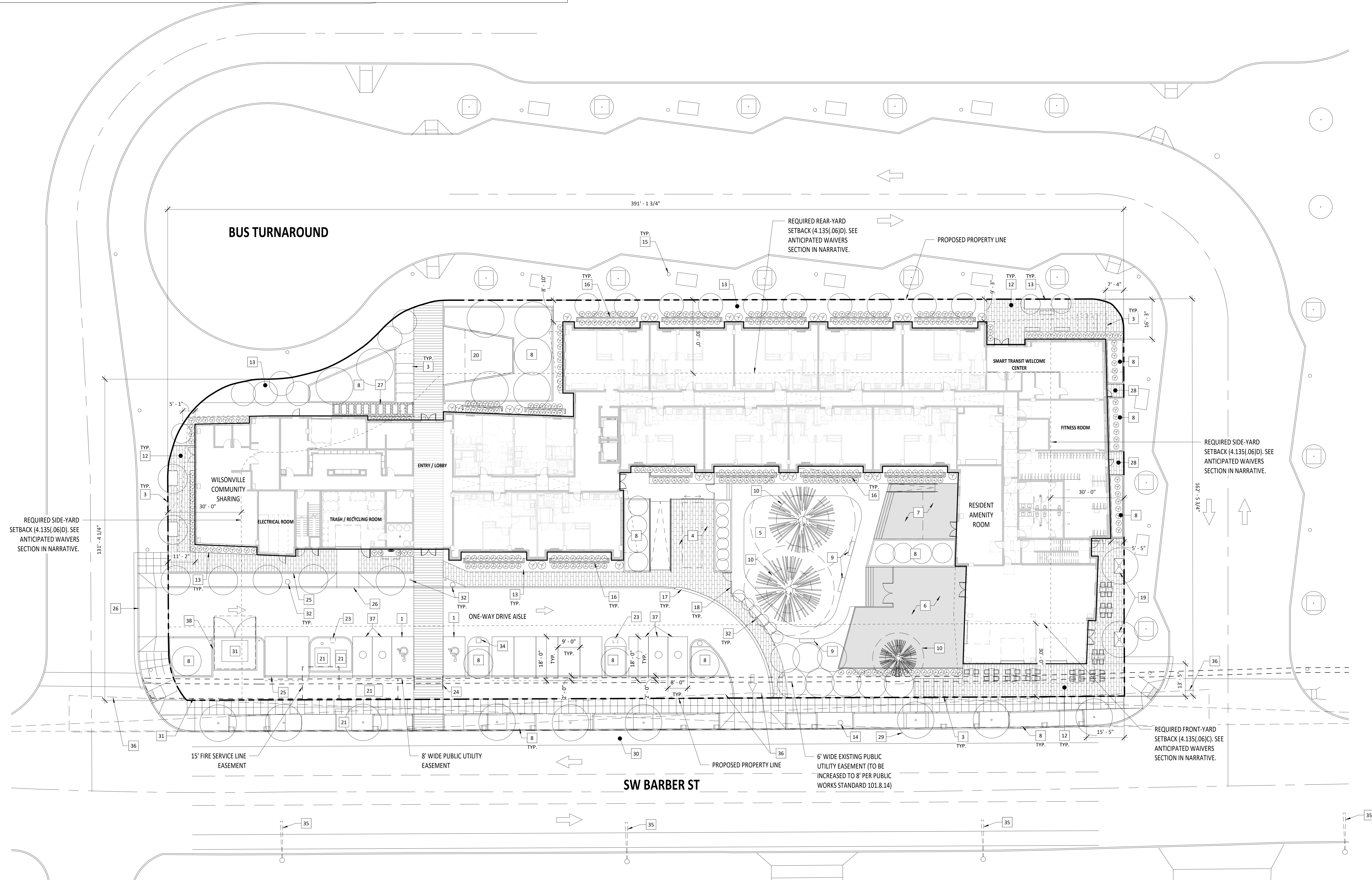
- ADA PARKING STALL
- TRASH/RECYCLING PICKUP ZONE
- SHORT-TERM BICYCLE PARKING HOOP (2'X6' ZONE WITH 5' DEEP ACCESS BEHIND) - SEE LANDSCAPE DRAWINGS
- RESIDENT LOADING ZONE
- NATURAL PLAY AREA - SEE LANDSCAPE DRAWINGS
- CAFE SEATING ON RAISED DECK - SEE LANDSCAPE
- RESIDENT AMENITY SPACE ON RAISED DECK - SEE LANDSCAPE
- STORMWATER PLANTER - SEE CIVIL DRAWINGS
- BENCH SEATING - SEE LANDSCAPE DRAWINGS
- CRITICAL ROOT ZONE AT TREE TO REMAIN
- PERMEABLE PAVERS - SEE LANDSCAPE DRAWINGS
- AT-GRADE PLANTER - SEE LANDSCAPE DRAWINGS
- EXISTING FIRE HYDRANT
- EXISTING STREET LIGHT
- 8" TALL BOARD-FORMED CONCRETE WALL AT GROUND FLOOR UNITS
- ROLLED CURB
- FENCE - SEE LANDSCAPE DRAWINGS
- TREE GRATE - SEE LANDSCAPE DRAWINGS
- RESIDENT PLAZA/BBQ AREA - SEE LANDSCAPE DRAWINGS
- UTILITY VAULT - SEE CIVIL DRAWINGS
- FUTURE EV CHARGING STATION LOCATION, REFER TO ELECTRICAL
- STEPS WITH 1-1/2" DIA STEEL, POWDERCOATED HANDRAILS
- LOW RETAINING WALL/CURB - SEE CIVIL DRAWINGS
- CURB CUT - SEE CIVIL DRAWINGS
- PRECAST CONCRETE PAVERS WITH GRAVEL INFILL
- NON-PERMEABLE PAVERS - SEE LANDSCAPE
- STREET TREE - SEE CIVIL & LANDSCAPE DRAWINGS
- EXISTING BIKE LANE
- PGE VAULT AND SURFACE-MOUNTED TRANSFORMER
- EXTERIOR SITE LIGHTING - SEE SHEET A003
- SLIDING STEEL GATE/GUARDRAIL AT LOADING DOCK. PROVIDE STEEL ANGLE EMBED AT CONCRETE LEDGE AND BUMPER GUARDS BELOW.
- DUAL-HEAD EV CHARGING STATION - SEE ELECTRICAL DRAWINGS
- STORMWATER PLANTER - SEE CIVIL DRAWINGS
- CLEAR VISION AREA COMPLYING WITH PUBLIC WORKS STANDARD 2012.22
- COMPACT PARKING STALL
- 88" TALL FENCE SCREENING ELECTRICAL TRANSFORMER. TO BE MADE OF STEEL STUD FRAMING AND CEMENTITIOUS PLANK SIDING. GATE TO FULLY OPEN TO PROVIDE 10' ACCESS CLEARANCE AT TRANSFORMER

GENERAL NOTES - SITE PLAN

- FIELD VERIFY ALL INFORMATION PRIOR TO CONSTRUCTION. IF SITE CONDITIONS VARY FROM CONTRACT DOCUMENTS, NOTIFY ARCHITECT IN WRITING IMMEDIATELY.

SITE PLAN LEGEND

RAISED DECK



3514 N VANCOUVER AVE SUITE 310 - PORTLAND, OR 97227
T: 971.888.5107 - E-MAIL: INFO@YB-A.COM

STAMP

FOR REFERENCE ONLY

SHEET REVISION NO.	REVISION EVENT	REVISION DATE
1		



PALINDROME COMMUNITIES

ISSUANCE
100% DESIGN DEVELOPMENT

PROJECT NUMBER
220120

DATE
10/6/23

FULL SHEET SIZE
30 X 42

DRAWING TITLE
LAND USE SITE PLAN

Geotechnical Site Investigation

**Barber Street Housing
Development**

Wilsonville, Oregon

May 18, 2023

11917 NE 95th Street
Vancouver, Washington
98682
Phone: 360-823-2900

Geotechnical ■ Environmental ■ Special Inspections

Columbia West

Engineering, Inc



**GEOTECHNICAL SITE INVESTIGATION
BARBER STREET HOUSING DEVELOPMENT
WILSONVILLE, OREGON**

Prepared For: Palindrome Wilsonville Limited Partnership
Attn: Jason Ellis
412 NW 5th Avenue
Portland, Oregon 97201

Site Location: 9699 SW Barber Street
Wilsonville, Oregon 97070

Prepared By: Columbia West Engineering, Inc.
11917 NE 95th Street
Vancouver, Washington 98682
Phone: 360-823-2900
Work Order Number 23122

Date Prepared: May 18, 2023

EXECUTIVE SUMMARY

This executive summary presents the primary geotechnical considerations associated with the proposed Barber Street Housing Development project located in Wilsonville, Oregon. Our conclusions and recommendations are based upon the subsurface information presented in this report and proposed development information provided by the design team. Detailed discussion of the geotechnical considerations summarized here is presented in respective sections of the report.

- Based on subsurface exploration and testing, site soils are not susceptible to liquefaction under design levels of ground shaking.
- Foundations designed in accordance with this report should be sized based on an allowable soil bearing capacity of 2,500 psf and are expected to experience a post construction settlement of less than one inch. Differential post construction settlement between comparably-loaded footing elements is not expected to exceed 0.5 inches.
- Undocumented fill was encountered in two borings located on the northwest portion of the site to depths between approximately 3 and 6.5 feet below ground surface (BGS). Though not observed within the proposed building footprint, undocumented fill and should be completely removed if encountered under footings. There is also a risk of premature pavement distress if existing fill is left in place beneath future pavements. Additional discussions and our recommendations are provided in the report.
- Groundwater was not observed within the borings to the maximum explored depth of 31.5 feet BGS, however the driller indicated heaving soils at approximately 15 feet BGS in boring B-1. Review of information in our files and nearby well logs presented in Appendix B indicates that groundwater could range from 10 to 20 feet BGS in the vicinity of the site.
- Moisture conditioning (drying) of existing fill and native soil may be required to use the material as structural fill. Addition of moisture may also be necessary during periods of warm, dry weather. If moisture conditioning is not feasible, soils may require cement-amendment to be used as structural fill.
- Fine-grained soils will be sensitive to disturbance and softening when at a moisture content that is above optimum. Haul roads and staging areas will be necessary to minimize damage to exposed subgrade soils during construction. Subgrade protection is discussed in Section 8.2, *Construction Traffic and Staging*.
- Based on fine-textured materials and results of in situ infiltration testing, infiltration is likely not feasible for stormwater management.

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GEOTECHNICAL SITE INVESTIGATION BARBER STREET HOUSING DEVELOPMENT WILSONVILLE, OREGON

1.0 INTRODUCTION

Columbia West Engineering, Inc. (Columbia West) was retained by Palindrome Wilsonville Limited Partnership to conduct a geotechnical site investigation for use in design and construction of the proposed Barber Street Housing Development located in Wilsonville, Oregon. This report is subject to the limitations expressed in Section 9.0, *Conclusion and Limitations*, and Appendix E.

1.1 General Site Information

As indicated on Figures 1 and 2, the subject site is located west of Interstate 5 and northeast of the intersection at SW Barber Street and SW Kinsman in Wilsonville, Oregon. The site is comprised of portions of tax lots 31W14B00702 and 31W14B00703 totaling approximately 2.28 acres. The approximate latitude and longitude are N 45° 18' 40" and W 122° 46' 36". The regulatory jurisdictional agency is the City of Wilsonville.

1.2 Project Understanding

Based on client correspondence and review of the preliminary site plan shown on Figure 2A, proposed development includes construction of an approximately 114,000 square-foot, 5-story residential structure. The construction type has yet to be determined, however it is anticipated to either consist of 5 floors of conventional wood framing or 4 floors of conventional wood framing over 1 concrete podium. The foundation system is expected to be shallow spread footings.

Foundation loads were not available at the time of this report. We have assumed maximum column and wall loads for the building will be less than 250 kips and 4 kips per foot, respectively. Maximum floor slab loading is expected to be 100 psf. Proposed development also includes associated asphalt parking areas and drive aisles, subsurface utilities, stormwater management facilities, and landscaping. We have also assumed that cuts and fills will be no greater than 3 feet each.

2.0 SCOPE OF SERVICES

Columbia West's scope of services was outlined in a proposal dated April 4, 2023. In accordance with our proposal, we performed the following geotechnical services:

- Reviewed information available in our files from previous geological and geotechnical studies conducted in the vicinity of the site.
- Reviewed preliminary plans provided by the design team.
- Conducted subsurface exploration program at the site that included:
 - One boring drilled to depth of 30 feet BGS within the proposed building footprint
 - Three borings drilled to depths of 6.5 feet BGS within proposed future parking areas
 - Infiltration testing was conducted in two borings
- Collected disturbed soil samples from the borings for laboratory analysis.

- Classified and logged observed soil conditions.
- Prepared this geotechnical site investigation report for the proposed development, which includes:
 - Summary of soil index properties, regional geology, soil conditions, and observed groundwater conditions
 - Summary of geologic and seismic literature research used to evaluate relevant seismic risks, including locations of faults, earthquake magnitudes
 - Infiltration test results
 - Liquefaction analysis and predicted seismic settlement
 - Fill- and load-induced settlement potential
 - Geotechnical design and construction recommendations for:
 - Shallow foundations
 - Slab subgrade preparation
 - Retaining walls, including drainage, backfill, and lateral earth pressures
 - Site preparation and grading, organic stripping, fill placement and compaction, over-excavation, and construction monitoring and testing
 - Structural fill materials, onsite soil suitability, and import aggregate specifications
 - Utility trench excavation and backfill
 - Drainage and management of groundwater conditions
 - Asphaltic concrete pavement construction for access roads and parking lots, including section thicknesses for base aggregate and asphalt layers
 - Seismic design parameters in accordance with the 2022 *State of Oregon Specialty Code*

3.0 REGIONAL GEOLOGY AND SOIL CONDITIONS

The subject site lies within the Willamette Valley/Puget Sound Lowland, a wide physiographic depression flanked by the mountainous Coast Range on the west and the Cascade Range on the east. Inclined or uplifted structural zones within the Willamette Valley/Puget Sound Lowland constitute highland areas and depressed structural zones form sediment-filled basins. The site is located in the north-central portion of the Portland/Vancouver Basin, an open, somewhat elliptical, northwest-trending syncline approximately 60 miles wide.

According to the *Geology and Geologic Hazards of Northwest Clackamas County* (Schlicker and Finlayson, ODGMI, 1979), near-surface soils are expected to consist of Pleistocene-aged, unconsolidated, cross-bedded to graded sedimentary beds of fine sandy silt and clay deposited by glacial floods (Qws) up to 100 feet thick.

The *Web Soil Survey* (USDA, NRCS, 2023 Website) identifies surface soils as Aloha, Salem, and Woodburn silt loam. Aloha, Salem, and Woodburn silt loam series soils are generally fine-textured clays and silts with very low permeability, moderate to high water capacity, and low shear strength. Aloha, Salem, and Woodburn soils are generally moisture sensitive, somewhat compressible, and described as having moderate shrink-swell potential. The erosion hazard is slight primarily based upon slope grade.

4.0 REGIONAL SEISMOLOGY

4.1 Regional Seismic Sources

The CSZ is the region where the Juan de Fuca Plate is being subducted beneath the North American Plate. This subduction is occurring in the coastal region between Vancouver Island and northern California. Evidence has accumulated suggesting that this subduction zone has generated eight great earthquakes in the last 4,000 years, with the most recent event occurring approximately 300 years ago (Weaver and Shedlock, 1991). The fault trace is mapped approximately 50 to 120 km off the Oregon and Washington Coast. Two types of subduction zone earthquakes are possible:

1. An interface event earthquake on the seismogenic part of the interface between the Juan de Fuca Plate and the North American Plate on the CSZ. This source is reportedly capable of generating earthquakes with a moment magnitude of between 8.5 and 9.0.
2. A deep intraplate earthquake on the seismogenic part of the subducting Juan de Fuca Plate. These events typically occur at depths of between 30 and 60 km. This source is capable of generating an event with a moment magnitude of up to 7.5.

4.2 Local Seismic Sources

A significant earthquake could occur on a local fault near the site within the design life of the building. Such an event would cause ground shaking at the site that could be more intense than the CSZ events, although the duration would be shorter. The three closest mapped to the site are: Canby-Mollala Fault, Damascus-Tickle Creek Fault Zone, Beaverton Fault Zone.

Canby-Molalla Fault

The mapped trace of the north-northwest-striking Canby-Molalla fault is based on a linear series of northeast-trending discontinuous aeromagnetic anomalies that probably represent significant offset of Eocene basement and volcanic rocks of the Miocene Columbia River Basalt beneath Neogene sediments that fill the northern Willamette River basin. The fault has little geomorphic expression across the gently sloping floor of the Willamette Valley, but a small, laterally restricted berm associated with the fault may suggest young deformation. Deformation of probable Missoula flood deposits in a high-resolution seismic reflection survey conducted across the aeromagnetic anomaly east of Canby suggests possible Holocene deformation. Sense of displacement of the Canby-Molalla fault is poorly known, but the fault shows apparent right-lateral separation of several transverse magnetic anomalies, and down-west vertical displacement is also apparent in water well logs.

Damascus-Tickle Creek Fault Zone

The Damascus-Tickle Creek fault zone consists of numerous short northeast- and northwest-trending faults that form a broad, northeast-trending fault zone; these faults fold and offset rocks of the Pliocene Troutdale Formation, Plio-Pleistocene Springwater Formation, and Pleistocene Boring Lava. The area is on the southern margin of the Portland basin, and is the location of numerous eruptive vents of the Boring Lava, some of which may have been localized along faults in the zone. Most faults in the zone are buried by latest Pleistocene Missoula flood deposits, but at least one fault strand may have deformed these deposits. Most of these faults are thought to be near-vertical reverse faults with a significant component of right-lateral strike-slip.

Beaverton Fault Zone

The east-west-striking Beaverton fault zone forms the southern margin of the main part of the Tualatin basin, an isolated extension of the Willamette lowland forearc basin in northwestern Oregon. The Beaverton fault zone is not shown on most published geologic maps of the area, but is marked by a linear aeromagnetic anomaly and has been mapped in the subsurface where it offsets Miocene Columbia River Basalt Group rocks and overlying Pliocene to Pleistocene sediments. The late Neogene Tualatin basin may be a pull-apart basin, with subsidence driven by dextral shear on the nearby Gales Creek fault zone. The fault trace is buried by a thick sequence of sediment deposited by the 12.7–13.3 ka Missoula floods, but offsets middle Pleistocene and possibly younger sediments in the subsurface.

5.0 GEOTECHNICAL AND GEOLOGIC FIELD INVESTIGATION

A geotechnical field investigation consisting of visual reconnaissance, four drilled borings (B-1 through B-4), and two infiltration tests was conducted at the site on April 28, 2023.

Samples were collected from the borings using 1½-inch diameter split-barrel (SPT) samples in general accordance with ASTM D1586. The samplers were driven into the soil with a 140-pound hammer free falling 30 inches. The sampler was 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 log, unless otherwise noted. The hammer was lifted using an automatic hammer with a reported efficiency of 77.7 percent. Sampling methods and intervals are shown on the exploration logs. Subsurface soil profiles were logged in accordance with Unified Soil Classification System (USCS) specifications. Disturbed soil samples were collected at representative depth intervals.

Analytical laboratory test results are presented in Appendix A. Exploration locations are shown on Figure 2. Boring logs are presented in Appendix B. Soil descriptions and classification information are provided in Appendix C. A photo log is presented in Appendix D.

5.1 Surface Investigation and Site Description

As indicated on Figures 2 and 2A, the subject site consists of portions of tax lots 31W14B00703 and 31W14B00702. It is bound to the south by SW Barber Street, to the west by an open grassy field, to the east by Wilsonville WES station and associated train tracks, and to the north by Oldcastle buildings and associated infrastructure. The northern half of the development area is generally characterized by asphalt parking areas and drive aisles and sparse landscape tree coverage associated with the existing park-in-ride. The asphalt parking area appears to be raised between 2 to 5 feet compared to surrounding terrain.

The southern half of the site adjacent to SW Barber Street (future building location) consists primarily of open grassy areas with isolated areas of manicured landscape to the south. There is an existing stockpile of organic material in the center of the southern portion of the site as depicted on Figure 2A. Field reconnaissance and review of site topographic mapping indicates that the site is relatively flat and characterized by grades of 0 to 5 percent.

5.2 Subsurface Conditions

Borings were drilled to a maximum depth of 31.5 feet BGS. Exploration locations were selected to observe subsurface soil characteristics in proximity to proposed development areas and are shown on Figure 2. Field logs and observed stratigraphy for encountered materials are presented in Appendix B, *Subsurface Exploration Program*.

5.2.1 Soil Type Description

The geologic units described below were observed during our subsurface exploration: existing pavement section, root zone, undocumented fill, gravel mixtures.

Existing Paved Areas

Pavement sections in existing parking areas and drive aisles were observed to consist of 4 to 6 inches of asphalt underlain by 7 to 12 inches of crushed aggregate.

Root Zone

The grassy area in the southern portion of the site consists of 2 inches of grass and roots. A full topsoil section was not observed and was likely stripped during prior construction activities.

Undocumented Fill

Undocumented fill was observed underlying the pavement section in borings B-2 and B-3. Observed fill consisted of brown, gray, orange, dense sand with silt and gravel and extended to depths of 3 to 6.5 feet BGS. Additional recommendations pertaining to undocumented fill are presented in Section 8.1.2, *Undocumented Fill*.

Gravel Mixtures

Underlying the above materials, native dense to very dense clayey and silty gravels and medium stiff to hard silt and clays with varying proportions of sands and gravels were observed to the maximum explored depth of 31.5 feet BGS. The native deposits had moisture contents ranging from 17 to 30 percent and exhibited low-plasticity behavior.

5.2.2 Groundwater

Groundwater was not observed within the borings to the maximum explored depth of 31.5 feet BGS, however the driller indicated heaving soils at approximately 15 feet BGS in boring B-1. Review of information in our files and nearby well logs presented in Appendix B indicates that groundwater could range from 10 to 20 feet BGS in the vicinity of the site.

Note that groundwater levels are subject to seasonal variance and may rise during extended periods of increased precipitation. Perched groundwater may also be present in localized areas, as indicated. Seeps and springs may become evident during site grading, primarily along slopes or in areas cut below existing grade. Structures, pavements, and drainage design should be planned accordingly.

5.2.3 Infiltration Testing

Infiltration potential of site soils was evaluated through in situ infiltration testing within borings B-1 and B-4. Single-ring, falling head infiltration testing was performed by embedding a drill auger into undisturbed native soil, filling the apparatus with water, and measuring time relative to changes in hydraulic head. Representative soil samples were collected from select test locations and submitted for laboratory analysis. Results of in situ infiltration testing are presented in Table 1.

Table 1. Infiltration Test Results

Test Number	Location (See Figure 2)	Test Depth (feet bgs)	USCS Soil Type (*Indicates Visual Classification)	Passing No. 200 Sieve (%)	Approximate Depth to Groundwater on 04-28-23 (feet bgs)	Measured Infiltration Rate
IT-1.1	SB-1	4.0	GC. Clayey GRAVEL with Sand*	-	Not Encountered to 31.5	Negligible
IT-1.2		7.5	GC. Clayey GRAVEL with Sand	24		Negligible
IT-4.1	SB-4	4.5	SM, Silty SAND with Gravel	20	Not Encountered to 6	Negligible

Based on the presence of fine-textured, low permeability site soils, infiltration is not a feasible option for stormwater management.

6.0 SEISMIC HAZARDS

6.1 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 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. Our subsurface exploration program did not encounter soils that are susceptible to liquefaction under design levels of ground shaking.

6.2 Lateral Spreading

Lateral spreading is a liquefaction-related seismic hazard that occurs on gently sloping or flat sites underlain by liquefiable sediment adjacent to an open face, such as a riverbank. Liquefied soil adjacent to an open face can flow toward the open face, resulting in lateral ground displacement.

Since the site soils are not susceptible to liquefaction, lateral spreading is not considered a hazard.

7.0 DESIGN RECOMMENDATIONS

The geotechnical site investigation suggests the proposed development is generally compatible with surface and subsurface soils, provided the recommendations presented in this report are incorporated in design and implemented during construction. The primary geotechnical considerations for the project were summarized previously in the *Executive Summary*. Specific design and construction recommendations are presented in the following sections.

7.1 Areal Settlement Considerations

A grading plan was not available at the time of this report. We have assumed cuts and fills at the site will be less than 3 feet each. Our experience indicates that fills not exceeding 3 feet above existing grade combined with anticipated footing and floor slab loads are unlikely to exceed the static settlement tolerances of the buildings.

7.2 Shallow Foundation Support

We anticipate maximum column and wall loads for the buildings will be less than 250 kips and 4 kips per foot, respectively. Provided maximum floor slab loading is less than 100 psf, the proposed buildings can be supported by conventional spread footings bearing on firm native soil or engineered structural fill. Provided fills are generally less than 3 feet, foundation construction may occur immediately after fill placement.

Foundations should not be supported by topsoil or undocumented fill material. If encountered, these materials should be improved or removed and replaced with structural fill. If footings are constructed during wet-weather conditions or when footing subgrade soils are above their optimum moisture content, we recommend that a minimum of 6 inches of compacted aggregate be placed over exposed subgrade soils. The aggregate pad should extend 6 inches beyond the edge of the foundations and consist of imported granular material as described in Section 8.1.1, *Structural Fill*. Columbia West should observe exposed subgrade conditions prior to placement of crushed aggregate to verify adequate subgrade support.

7.2.1 Bearing Capacity

Continuous perimeter wall and isolated spread footings should have minimum width dimensions of 18 and 24 inches, respectively. The base of exterior footings should bear at least 18 inches below the lowest adjacent exterior grade. The base of interior footings should bear at least 12 inches below the base of the floor slab.

Footings bearing on subgrade prepared as recommended above should be sized based on an allowable bearing pressure of 2,500 psf. As the allowable bearing pressure is a net bearing pressure, the weight of the footing and associated backfill may be ignored when calculating footing sizes. The recommended allowable bearing pressure applies to the total of dead plus long-term live loads and may be increased by 50 percent for transient lateral forces such as seismic or wind.

7.2.2 Settlement

Foundations designed in accordance with this report are expected to experience a post construction settlement of less than one inch. Differential post construction settlement between comparably-loaded footing elements is not expected to exceed 0.5 inches.

7.2.3 Resistance to Sliding

Lateral foundation loads can be resisted by passive earth pressure on the sides of the footing and by friction at the base of the footings. Recommended passive earth pressure for footings confined by native soil or engineered structural fill is 350 pcf. The upper 12 inches of soil should be neglected when calculating passive pressure resistance. Adjacent floor slabs and pavement, if present, should also be neglected from the analysis. The recommended passive pressure resistance assumes that a minimum horizontal clearance of 10 feet is maintained between the footing face and adjacent downgradient slopes.

The estimated coefficient of friction between in situ native soil or engineered structural fill and in-place poured concrete is 0.35. The estimated coefficient of friction between compacted crushed aggregate and in-place poured concrete is 0.4.

7.2.4 Subgrade Observation

Footings and floor subgrade soils should be evaluated by Columbia West prior to placing forms or reinforcing bar to verify subgrade support conditions are as anticipated in this report. Subgrade observation should confirm that all disturbed material, organic debris, unsuitable fill, remnant topsoil zones, and softened subgrades (if present) have been removed. Over-excavation of footing subgrade soils may be required to remove deleterious material, particularly if footings are constructed during wet-weather conditions.

7.2.5 Floor Slabs

Floor slabs can be supported on firm, competent, native soil or engineered structural fill prepared as described in this report. Disturbed soils and unsuitable fills in proposed slab locations, if encountered, should be removed and replaced with structural fill. Floor slab settlement and seismic risks were discussed previously in Section 7.1, *Areal Settlement Considerations* and Section 6.0, *Seismic Hazards*.

To provide a capillary break, slabs should be underlain by at least 6 inches of compacted crushed aggregate that has less than 5 percent by dry weight passing the No. 200 Sieve. Geotextile may be used below the crushed aggregate layer to increase subgrade support. Recommendations for floor slab base aggregate and subgrade geotextile are discussed in Section 8.6, *Materials*.

Some flooring manufacturers will only warranty their product if a vapor barrier is installed. Selection of an appropriate vapor barrier should be selected by consulting with the design team. Slab thickness and reinforcement should be designed by an experienced structural engineer assuming a modulus of subgrade reaction, k, of 125 pci.

7.3 Seismic Design Considerations

Seismic design for proposed structures is prescribed by the 2022 *Oregon Structural Special Code (OSSC)* which refers to *ASCE 7-16*. Based on results of subsurface exploration, site soils meet the criteria for Site Class D. Seismic design parameters for Site Class D are presented in Table 3.9.

Table 3. ASCE 7-16 Seismic Design Parameters¹

	Short Period (T _s = 0.2 s)	1 Second Period (T ₁ = 1.0 s)
MCE Spectral Acceleration	0.818	0.383
Site Class	D ²	
Site Coefficient	F _a = 1.173	F _v = 1.92
Adjusted Spectral Response Acceleration	S _{MS} = 0.96	S _{M1} = 0.74
Design Spectral Response Acceleration	S _{DS} = 0.64	S _{D1} = 0.49

1. The structural engineer should evaluate *ASCE 7-16* code requirements and exceptions to determine if these parameters are valid for design.

For Site Class D sites with mapped maximum considered earthquake spectral response acceleration parameter S₁ greater than 0.2, a ground motion hazard analysis may be required

according to *ASCE 7-16, Section 11.4.8* unless the seismic response coefficient, C_s , is calculated in accordance with *ASCE 7-16 Section 11.4.8, Exception 2*. However, if an alternative method is utilized to determine the seismic response coefficient, the structure is seismically isolated, or structural damping systems are proposed, *ASCE 7-16* requires a ground motion hazard analysis be conducted. Columbia West recommends that the project structural engineer evaluate these requirements and exceptions to determine if a site-specific ground motion hazard evaluation will be required for proposed structures.

7.4 Retaining Structures

Lateral earth pressures should be considered during design of retaining walls and below-grade structures. Hydrostatic pressure and additional surcharge loading should also be considered. Wall foundation construction and bearing capacity should adhere to specifications provided previously in Section 7.2, *Shallow Foundation Support*.

Permanent retaining walls that are not restrained from rotation should be designed for active earth pressures using an equivalent fluid pressure of 35 pcf. Walls that are restrained from rotation should be designed for an at-rest, equivalent fluid pressure of 55 pcf. The recommended earth pressures assume a maximum wall height of 10 feet with well-drained, level backfill. These values also assume that adequate drainage is provided behind retaining walls to prevent hydrostatic pressures from developing. Lateral earth pressures induced by surcharge loads may be estimated using the criteria presented on Figure 3.

Seismic forces may be calculated by superimposing a uniform lateral force of $7H^2$ pounds per lineal foot of wall, where H is the total wall height in feet. The force should be applied as a distributed load with the resultant located at $0.6H$ from the base of the wall.

7.4.1 Wall Drainage and Backfill

A minimum 4-inch-diameter, perforated collector pipe should be placed at the base of retaining walls. The pipe should be embedded in a minimum 2-foot-wide zone of angular drain rock that is wrapped in a drainage geotextile fabric and extends up the back of the wall to within 1 foot of finished grade. The drain rock and geotextile drainage fabric should meet the specifications provided in Section 8.6, *Materials*. The perforated collector pipes should discharge at an appropriate location away from the base of the wall. The discharge pipe(s) should not be tied directly into stormwater drainage systems, unless measures are taken to prevent backflow into the drainage system of the wall.

Backfill material placed behind the walls and extending a horizontal distance of $\frac{1}{2} H$, where H is the height of the retaining wall, should consist of select granular material placed and compacted as described in Section 8.5.1, *Structural Fill*.

Settlement of up to 1 percent of the wall height commonly occurs immediately adjacent to the wall as the wall rotates and develops active lateral earth pressures. Consequently, we recommend that construction of flatwork adjacent to retaining walls be delayed at least four weeks after placement of wall backfill, unless survey data indicates that settlement is complete prior to that time.

7.5 Pavement Design

7.5.1 Design Parameters and Traffic

Pavement should be installed on firm, competent native subgrade soil or engineered structural fill prepared as described in this report. Our pavement recommendations are based on the following design parameters and assumptions:

- 12 inches of subgrade soil directly below the pavement sections are compacted to at least 95 percent of maximum dry density, as determined by *AASHTO T-99*.
- Resilient moduli for subgrade soil and aggregate base materials were assumed to be 4,500 psi and 20,000 psi, respectively.
- Pavement design life of 20 years with no expected traffic growth.
- Initial and terminal serviceability indices of 4.2 and 2.5, respectively.
- Reliability of 85 percent and standard deviation of 0.4.
- Pavement may be exposed to a fire apparatus load of 75,000 pounds on an infrequent basis.

The specific type and frequency of traffic was not available at the time we prepared this report. Based on experience, we assume that heavy truck traffic will consist of approximately 40 percent FHWA Class Group 6 type trucks (4-axle, single unit) and 60 percent FHWA Class Group 8 type trucks (tractor/trailer 2- to 3-axle). Lightly-loaded drive aisles and parking stalls are expected to service typical passenger vehicle traffic.

7.5.2 Asphaltic Concrete (AC) Pavement Design Sections

Pavement design recommendations for a range of traffic conditions and loading scenarios are presented in Table 4. Material properties and compaction recommendations for asphalt surfacing and crushed aggregate base layers are presented in Section 8.5, *Materials*.

Table 4. Recommended AC Pavement Sections Constructed over Native Soil or Engineered Fill

Traffic	Trucks Per Day	Equivalent Single-Axle Loads (ESALs)	AC Thickness (in)	Base Aggregate Thickness (in)
Passenger Vehicle Parking	0	10,000	2.5	8
Passenger Vehicle Drive Aisles	0	20,000	3	9
Heavy Truck Areas	10	92,000	4	10.5
	25	229,000	4.5	12.5
	50	458,000	5	14
	100	916,000	5.5	16.5

Pavement sections may be reduced in areas where subgrade soils are cement-amended to a minimum depth of 12 inches with a minimum of 6 percent cement by weight. Provided the cement-amended subgrade soil achieves a seven-day unconfined compressive strength of 100 psi, AC pavement sections may be constructed as presented in Table 5.

Table 5. Recommended AC Pavement Sections Constructed over Cement-Amended Subgrade Soil

Traffic	Trucks Per Day	Equivalent Single-Axle Loads (ESALs)	AC Thickness (in)	Base Aggregate Thickness (in)	Cement-Amendment Thickness (in)
Passenger Vehicle Parking	0	10,000	2.5	4	12
Passenger Vehicle Drive Aisles	0	20,000	3	4	
Heavy Truck Areas	10	92,000	4	4	
	25	229,000	4.5	4	
	50	458,000	5	4	
	100	916,000	5.5	6	

7.5.3 General Pavement Recommendations

Recommended pavement section thicknesses are intended to be minimum acceptable values and do not include construction traffic loading. The recommendations assume that pavement construction will be completed during an extended period of warm, dry weather. Wet weather construction may require an increased thickness of base aggregate as discussed later in Section 8.2, *Construction Traffic and Staging*.

Cement-amended soil should be allowed to cure for at least four days prior to aggregate base placement or exposure to construction traffic. Prior to construction traffic access, the cement-amended subgrade should be protected by a minimum 4-inch-thick layer of compacted crushed aggregate. Construction traffic should be limited to dedicated haul roads or non-structural, unpaved portions of the site. Construction traffic should not be permitted on new pavement, unless accounted for in the pavement design section. Base aggregate and cement-amended soils supporting pavement are also not intended for construction traffic. Haul roads and staging areas supporting construction traffic are discussed later in Section 8.2, *Construction Traffic and Staging*.

Asphalt paving is generally not recommended during cold weather conditions where ambient air temperatures are less than 40 degrees Fahrenheit. Compacting asphalt in low-temperature conditions can result in low relative density of the asphalt layer and premature pavement distress.

Asphalt mix designs have a recommended compaction temperature range that is specific to the AC binder used. In low-temperature conditions, maintaining the temperature of the AC mix is difficult as heat can be lost during transport, placement, and compaction. The ambient air temperature during paving should be at least 40 degrees Fahrenheit for a lift thickness greater than 2.5 inches and at least 50 degrees Fahrenheit for a lift thickness between 2 and 2.5 inches. If AC paving must take place during cold-weather construction as defined in this section, the contractor and design team should discuss options for minimizing risk to pavement serviceability.

7.6 Drainage

At a minimum, site drainage should include surface water collection and conveyance to properly designed stormwater management structures and facilities. Drainage design in general should

conform to City of Wilsonville regulations. Finished site grading should be conducted with positive drainage away from structures at a minimum 2 percent slope for a distance of at least 10 feet. Depressions or shallow areas that may retain ponding water should be avoided.

Site improvements construction may occur in areas where springs or seepage is present. If encountered during construction, footing drains or subdrains beneath slabs-on-grades can be installed. Figure 4 shows a typical foundation drain detail. Figure 5 shows a typical under slab drainage detail. Figure 6 shows a typical trench detail. A typical drainage mate is shown on Figure 7. Columbia West should determine drainage mat location, extent, and thickness when subsurface conditions are exposed.

8.0 CONSTRUCTION RECOMMENDATIONS

8.1 Site Preparation and Grading

A root zone of 2 inches was observed in the southern grassy area of the site. Root zones approaching 12 inches may be present in other areas of thick vegetation, trees, and shrubs. Approximately 4 to 6 inches of asphalt underlain by 7 to 12 inches of crushed aggregate was observed in existing paved areas of the site. Vegetation, organic material, unsuitable fill, and deleterious material that may be encountered should be cleared from areas identified for structures and site grading. Vegetation, root zones, organic material, and debris should be removed from the site. Stripped topsoil should also be removed or used only as landscape fill in nonstructural areas with slopes less than 25 percent. The post-construction maximum depth of landscape fill placed or spread at any location onsite should not exceed one foot.

The required stripping depth may increase in areas of existing fill or previously-existing structures. Actual stripping depths should be determined based upon visual observations made during construction when soil conditions are exposed.

Previously disturbed soil, debris, or undocumented fill encountered during grading or construction activities should be removed completely and thoroughly from structural areas. This includes old remnant foundations, basement walls, utilities, associated soft soils, and debris. Excavation areas should be backfilled with engineered structural fill.

Site grading activities should be performed in accordance with requirements specified in the *2018 International Building Code (IBC)*, Chapter 18 and Appendix J, with exceptions noted in the text herein. Site preparation, soil stripping, and grading activities should be observed and documented by Columbia West.

8.1.1 Undocumented Fill

Undocumented fill was observed underlying the existing pavement section at the locations of borings B-2 and B-3. The fill is reported to be between 1.5 and 5 feet thick and generally consisted of sand with varying amounts of silt and gravel.

Existing fill and other previously disturbed soils or debris are not suitable for supporting structures in their current state and should be removed completely removed from the influence zone of foundations. Areas of the site where additional fill is planned, existing fill should be removed until firm native soils are encountered prior to the placement of additional fill.

To minimize long-term risk of adverse impacts to pavement structures, existing fill should also be thoroughly removed from proposed pavement areas. If existing fill is left in place, pavement

structures may experience a reduction in long-term serviceability due to premature pavement distress which could include asphalt cracking, localized grade depressions, and inadequate drainage. The decision to construct pavements over existing fill and acceptance of the associated risk should be made by the owner and project stakeholders.

Partial mitigation of premature pavement distress risk may be accomplished by over-excavation and backfill with granular structural fill or application of cement amended materials. Identification of specific engineered mitigation plans is beyond the scope of this report. If this option is selected, Columbia West should be contacted for additional analysis and study, but would likely consist of improving the upper 18-inches of undocumented fill. This can be accomplished by scarifying and compacting it in place, cement emending it, or removing it and replacing it with structural fill.

Based upon Columbia West's investigation, existing fill soils as described appear to be acceptable for reuse as structural fill, provided materials are observed to exhibit index properties similar to those observed during this investigation and that construction adheres to the specifications presented in this report. Note that the limited scope of exploration conducted for this investigation cannot wholly eliminate uncertainty regarding the presence of unsuitable soils in areas not explored.

8.1.2 Subgrade Evaluation

Upon completion of stripping and prior to the placement of structural fill or pavement improvements, exposed subgrade soil should be evaluated by proof rolling with a fully-loaded dump truck or similar heavy, rubber tire construction equipment. When the subgrade is too wet for proof rolling, a foundation probe may be used to identify areas of soft, loose, or unsuitable soil. Subgrade evaluation should be performed by Columbia West. If soft or yielding subgrade areas are identified during evaluation, we recommend the subgrade be over-excavated and backfilled with compacted imported granular fill.

8.2 Construction Traffic and Staging

Near-surface silt and clay will be easily disturbed during construction. If not carefully executed, site preparation, excavation, and grading can create extensive soft areas resulting in significant repair costs. Earthwork planning should include considerations for minimizing subgrade disturbance, particularly during wet-weather conditions.

If construction occurs during wet-weather conditions, or if the moisture content of the surficial soil is more than a few percentage points above optimum, site stripping and cutting may need to be accomplished using track-mounted equipment. Under these conditions, granular haul roads and staging areas will also be necessary provide a firm support base and sustain construction equipment.

The recommended base aggregate thickness for pavement sections is intended to support post-construction design traffic loads and will not provide adequate support for construction traffic. Staging areas and haul roads will require an increased base thickness during wet weather conditions. The configuration of staging and haul road areas, as well as the required thickness of granular material, will vary with the contractor's means and methods. Therefore, design and construction of staging areas and haul roads should be the responsibility of the contractor. Based on our experience, between 12 and 18 inches of imported granular material is generally required

in staging areas and between 18 and 24 inches in haul road areas. In areas of heavy construction traffic, geotextile separation fabric may be placed between the subgrade soil and imported granular material to increase subgrade support and minimize silt migration into the base aggregate layer.

As an alternative to thickened aggregate sections, haul roads and staging areas may be constructed using a combination of cement-amended subgrade and crushed aggregate surfacing. If cement-amendment is used, the base aggregate thickness for staging areas and haul roads can typically be reduced to between 6 and 9 inches, respectively. This recommendation is based on a minimum seven-day unconfined compressive strength of 100 psi for the cement-amended soil with a treatment depth of 12 to 16 inches. Based on experience, 6 to 7 percent cement by weight is typically required to achieve the indicated compressive strength.

Project stakeholders should understand that wet weather construction is risky and costly. Proper construction methods and techniques are critical to overall project integrity and should be observed and documented by Columbia West.

8.3 Cut and Fill Slopes

Fill slopes should consist of structural fill material as discussed in Section 8.5.1, *Structural Fill*. Fill placed on existing grades steeper than 5H:1V should be horizontally benched at least 10 feet into the slope. Fill slopes greater than six feet in height should be vertically keyed into existing subsurface soil. A typical fill slope cross-section is shown in Figure 8. Drainage implementations, including subdrains or perforated drainpipe trenches, may also be necessary in proximity to cut and fill slopes if seeps or springs are encountered. Drainage design may be performed on a case-by-case basis. Extent, depth, and location of drainage may be determined in the field by Columbia West during construction when soil conditions are exposed. Failure to provide adequate drainage may result in soil sloughing, settlement, or erosion.

Final cut or fill slopes at the site should not exceed 2H:1V or 10 feet in height without individual slope stability analysis. The values above assume a minimum horizontal setback for loads of 10 feet from top of cut or fill slope face or overall slope height divided by three (H/3), whichever is greater. A minimum slope setback detail for structures is presented in Figure 9.

Concentrated drainage or water flow over the face of slopes should be prohibited, and adequate protection against erosion is required. Fill slopes should be overbuilt, compacted, and trimmed at least two feet horizontally to provide adequate compaction of the outer slope face. Proper cut and fill slope construction is critical to overall project stability and should be observed and documented by Columbia West.

8.4 Excavation

The site was explored to a maximum depth of 31.5 feet BGS with a drill rig. Conventional earthmoving equipment in proper working condition should be capable of making necessary site excavations.

Groundwater was not observed in the borings. Review of information in our files and nearby well logs presented in Appendix B indicates that groundwater could range from 10 to 20 feet BGS in the vicinity of the site.

Temporary excavation sidewalls should maintain a vertical cut to a depth of approximately 4 feet in the near-surface silt and clay, provided groundwater seepage is not present in the sidewalls. In sandy soil, excavations will likely slough and cave, even at shallow depths. Open-cut excavation techniques may be used to excavate trenches between 4 and 8 feet deep, provided the walls of the excavation are cut at a maximum slope of 1H:1V and groundwater seepage is not present. Excavation slopes should be reduced to 1.5H:1V or 2H:1V if excessive sloughing or raveling occurs.

Shoring may be required if open-cut excavations are infeasible or if excavations are proposed adjacent to existing infrastructure. Typical methods for stabilizing excavations consist of soldier piles and timber lagging, sheet pile walls, tiebacks and shotcrete, or pre-fabricated hydraulic shoring. As a wide variety of shoring and dewatering systems are available, we recommend that the contractor be responsible for selecting the appropriate shoring and dewatering systems.

The contractor should be held responsible for site safety, sloping, and shoring. All excavation activity should be conducted in accordance with applicable OSHA requirements. Columbia West is not responsible for contractor activities and in no case should excavation be conducted in excess of applicable local, state, and federal laws.

8.5 Materials

8.5.1 Structural Fill

Areas proposed for fill placement should be appropriately prepared as described in Section 8.1, *Site Preparation and Grading*. Engineered fill placement should be observed by Columbia West. Compaction of engineered structural fill should be verified by nuclear gauge field compaction testing performed in accordance with *ASTM D6938*. Field compaction testing should be performed for each vertical foot of engineered fill placed.

Various materials may be acceptable for use as structural fill. Structural fill should be free of organic material or other unsuitable material and meet specifications provided in the following sections. Representative samples of proposed engineered structural fill should be submitted for laboratory analysis and approval by Columbia West prior to placement.

8.5.1.1 Onsite Soil

Most onsite native soil will be suitable for use as structural fill if adequately dried or moisture-conditioned to achieve recommended compaction specifications. Native clay soil with a plasticity index greater than 25, if encountered, should be evaluated and approved by Columbia West prior to use as structural fill. Laboratory analysis indicated that the moisture content of site soil was above optimum at the time of exploration. Moisture conditioning will likely be necessary to dry the soil prior to applying compaction effort. In addition, the near-surface silt and clay will be moisture sensitive and difficult, if not impossible, to compact during wet weather conditions. Therefore, structural fill placement using onsite soil should be performed during dry summer months if possible. Onsite soil may also require addition of moisture during extended periods of dry weather.

Onsite soil used as structural fill should be placed in loose lifts not exceeding 8 inches in depth and compacted using standard conventional compaction equipment. The soil moisture content should be within a few percentage points of optimum conditions. The soil should be compacted to at least 95 percent of maximum dry density as determined by the modified Proctor moisture-

density relationship test (*ASTM D1557*). Compacted onsite fill soils should be covered shortly after placement.

Onsite soil will likely expand during excavation and transport and consolidate during compaction. Development of site-specific expansion and consolidation factors is beyond the scope of this investigation. We can provide site-specific factors upon request.

8.5.1.2 Imported Granular Material

Imported granular material should consist of pit- or quarry-run rock, crushed rock, or crushed gravel and sand. The imported granular material should also be durable, angular, and fairly well graded between coarse and fine material; should have less than 5 percent fines (material passing the U.S. Standard No. 200 sieve) by dry weight; and should have at least two mechanically fractured faces. Imported granular material should be placed in loose lifts not exceeding 12 inches in depth and compacted to at least 95 percent of maximum dry density as determined by the modified Proctor moisture-density relationship test (*ASTM D1557*). During wet-weather conditions or where wet subgrade conditions are present, the initial loose lift of granular fill should be approximately 18 inches thick and should be compacted with a smooth-drum roller operating in static mode.

8.5.1.3 Stabilization Material

Stabilization material should consist of durable, 4- or 6-inch-minus pit- or quarry-run rock, crushed rock, or crushed gravel and sand that is free of organics and other deleterious material. The material should have a maximum particle size of 6 inches with less than 5 percent by dry weight passing the U.S. Standard No. 4 sieve. The material should have at least two mechanically-fractured faces.

Stabilization material should be placed in loose lifts between 12 and 24 inches thick and be compacted to a firm, unyielding condition. Equipment with vibratory action should not be used when compacting stabilization material over wet, fine-textured soils. If stabilization material is used to stabilize soft subgrade below pavement or construction haul roads, a subgrade geotextile should be placed as a separation barrier between the soil subgrade and the stabilization material.

8.5.1.4 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 jurisdiction. 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.

8.5.1.5 Floor Slab Base Aggregate

Imported granular material used as base rock for building floor slabs should consist of $\frac{3}{4}$ - or $1\frac{1}{2}$ -inch-minus material (depending on the application). In addition, the aggregate should have less than 5 percent fines by dry weight and 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*.

8.5.1.6 Pavement Base Aggregate

Imported granular material used as base rock for pavement should consist of $\frac{3}{4}$ - or $1\frac{1}{2}$ -inch-minus material (depending on the application). In addition, the aggregate should have less than 5 percent fines by dry weight and 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*.

8.5.1.7 Retaining Wall Backfill

Backfill material placed behind retaining walls and extending a horizontal distance of $\frac{1}{2}H$, 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. 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 that the upper 2 feet of material be compacted to 95 percent of the maximum dry density, as determined by *ASTM D1557*.

8.5.1.8 Retaining Wall Leveling Pad

Imported granular material placed at the base of retaining wall footings should consist of select granular material. The granular material should be $\frac{3}{4}$ - to 1-inch-minus aggregate size and should have at least two mechanically fractured faces. The leveling pad material should be placed in a 6- to 12-inch-thick lift and compacted to not less than 95 percent of the maximum dry density, as determined by *ASTM D1557*.

8.5.1.9 Drain Rock

Drain rock should consist of angular, granular material with a maximum particle size of 2 inches and less than 2 percent by weight passing the No. 200 sieve. Drain rock should be free of roots, organic debris, and other unsuitable material and should have at least two mechanically-fractured faces. Drain rock should be compacted to a firm, unyielding condition. Drain rock

should be completely wrapped in a geotextile drainage fabric meeting the requirements presented below.

8.5.1.10 Existing Concrete and Crushed Rock

Concrete and crushed rock from the existing pavement areas and improvements can be used in general structural fill, provided particles greater than 3 inches are not present, it is thoroughly mixed and well graded so that there are no voids between the fragments, and the resulting mix is moisture conditioned for compaction. This material can be used as trench backfill if it meets the requirements for imported granular material, which would require a smaller maximum particle size. The 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*.

8.5.2 Geotextile Fabric

8.5.2.1 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.

8.5.2.2 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.

8.5.3 Soil Amendment with Cement

The on-site soil can be amended with Portland cement to obtain suitable properties for use as wet-weather structural fill or subbase for pavement. The effectiveness of soil amendment is highly dependent on proper mixing techniques, soil moisture conditioning, and the quantity of cement. The quantity of cement applied during amendment should be based on an assumed dry unit weight of 100 pcf for site soil.

8.5.3.1 Subbase Stabilization

Specific recommendations for soil amendment should be based on exposed site conditions at the time of construction. For preliminary design purposes, we recommend cement-amended subgrade for building pads and pavement subbase (below the base aggregate layer) achieve a target strength of 100 psi. The quantity of cement required to achieve the target strength will vary with moisture content and soil type. Laboratory testing of cement-amended soil should be used to confirm design expectations.

Based on our experience, near-surface silt and clay will require approximately 6 to 7 percent cement by weight to achieve the target strength of 100 psi. This cement percentage assumes that the soil moisture content does not exceed 20 percent at the time of amendment. If the soil moisture content is in the range of 25 to 35 percent, 7 to 8 percent cement by weight may be required to achieve the target strength. The amount of cement added to the soil at the time of construction should be based on observed field conditions and subgrade performance. During extended periods of dry weather, water may need to be applied during the amendment and tilling process to achieve the optimum moisture content required for compaction.

Cement-amendment of the agricultural till zone will likely require higher quantities of cement due to the organic content and high-plasticity characteristics of the material. A minimum cement percentage of 7 to 8 percent by weight should be assumed for till zone soil. In addition, increased mixing effort and tilling passes will likely be required to adequately blend the cement into the high plasticity material.

Cement-amendment equipment should have balloon tires to minimize softening, rutting, and disturbance of fine-grained site soil. A sheepsfoot or segmented pad roller with a minimum static weight of 40,000 pounds should be used for initial compaction. Rollers with vibratory action should not be used to compact fine-grained, cement-amended soil. Final compaction should be conducted with a smooth-drum roller with a minimum applied linear force of 700 pounds per inch. The amended soil should be compacted to at least 95 percent of the maximum dry density as determined by *ASTM D558*.

Following cement amendment, a minimum curing time of four days is required prior to exposure to construction traffic. Construction traffic should not be allowed on unprotected, cement-amended subgrade. To protect cement-amended areas from damage, the finished surface should be covered with 4 to 6 inches of imported granular material. The protective layer of crushed rock often becomes contaminated with soil during construction, particularly in staging and haul road areas. Contaminated aggregate, where present, should be removed and replaced with clean crushed aggregate prior to construction of pavement or other permanent site improvements supported by base aggregate.

Cement amendment should not be attempted during moderate to heavy precipitation or when the ambient air temperature is below 40 degrees Fahrenheit. Cement should not be placed in areas of standing water or where saturated subgrade conditions exist.

8.5.3.2 Cement-Amended Structural Fill

If adequate compaction is not achievable with onsite silt and clay due to moisture or weather conditions, the soil may be cement-amended and placed as general structural fill. Prior to placement of cement-amended fill, subgrade soils should be prepared as described in Section 8.1, *Site Preparation and Grading*. Where multiple lifts of cement-amended fill are necessary to meet finished grade, consecutive lifts may be placed immediately following amendment and compaction of the underlying lift. However, where the final lift of cement-amended fill will serve as building pad or pavement subbase material, the four-day cure period as discussed above is recommended.

8.5.3.3 Verification Testing

Cement-amendment of site soils should be observed and tested by Columbia West to document conformance with design recommendations. Cement spread rate should be verified with a pan sample test conducted at one random location per lift per 20,000 square-feet of cement-amended fill. Treatment depth should be verified through excavation of a small test pit and measurement at one random location per lift of cement-amended fill. Adequate compaction and moisture content should be verified by conducting nuclear gauge density testing at a frequency of approximately one test per 5,000 square feet of cement-amended fill in accordance with *ASTM D6938*. At least one representative sample should be collected per day of cement-amendment, cured for 7 days, and tested for unconfined compressive strength in accordance

with ASTM D1633. The tested samples should have a minimum 7-day, unconfined compressive strength of 100 psi.

8.5.3.4 Drainage Considerations

Cement-amended soil will be poorly-drained and will not be suitable for planting areas. The material may also be difficult to excavate with light-duty landscaping equipment. Proposed landscape areas should not be cement-amended unless accommodations are made for drainage and planting.

Cement-amendment within building pad areas should consider the potential for trapped water below the floor slab. Columbia West should be consulted to provide appropriate recommendations if cement-amendment is proposed within building pad areas.

8.5.4 Pavement

8.5.4.1 Asphaltic Concrete

Asphaltic concrete should be Level 2, ½-inch, dense ACP according to OSSC 00744 (Asphalt Concrete Pavement) and compacted to 91 percent of the theoretical maximum density of the mix, as determined by AASHTO T 209. The minimum and maximum lift thicknesses are 2 and 3 inches, respectively, for ½-inch ACP. Asphalt binder should be performance graded and conform to PG 64-22 or better. The binder grade should be adjusted depending on the aggregate gradation and amount of recycled asphalt pavement and/or recycled asphalt shingles in the contractor's mix design submittal.

8.6 Erosion Control Measures

Soil at this site is susceptible to erosion by wind and water; therefore, erosion control measures should be carefully planned and installed before construction begins. Surface water runoff should be collected and directed away from sloped areas to prevent water from running down the slope face. Measures that can be employed to reduce erosion include the use of silt fences, hay bales, buffer zones of natural growth, sedimentation ponds, and granular haul roads. All erosion control methods should be in accordance with local jurisdiction standards.

9.0 CONCLUSION AND LIMITATIONS

This geotechnical site investigation report was prepared in accordance with accepted standard conventional principles and practices of geotechnical engineering. This investigation pertains only to material tested and observed as of the date of this report and is based upon proposed site development as described in the text herein. This report is a professional opinion containing recommendations established by engineering interpretations of subsurface soils based upon conditions observed during site exploration. Soil conditions may differ between tested locations or over time. Slight variations may produce impacts to the performance of structural facilities if not adequately addressed. This underscores the importance of diligent QA/QC construction observation and testing to verify soil conditions are as anticipated in this report.


Therefore, this report contains several recommendations for field observation and testing by Columbia West personnel during construction activities. Columbia West cannot accept responsibility for deviations from recommendations described in this report. Future performance of structural facilities is often related to the degree of construction observation by qualified personnel. These services should be performed to the full extent recommended.

This report is not an environmental assessment and should not be construed as a representative warranty of site subsurface conditions. The discovery of adverse environmental conditions, or subsurface soils that deviate from those described in this report, should immediately prompt further investigation. The above statements are in lieu of all other statements expressed or implied.

This report was prepared solely for the client and is not to be reproduced without prior authorization from Columbia West. Final engineering plans and specifications for the project should be reviewed and approved by Columbia West as they relate to geotechnical and grading issues prior to final design approval. Columbia West is not responsible for independent conclusions or recommendations made by other parties based upon information presented in this report. Unless a particular service was expressly included in the scope, it was not performed and there should be no assumptions based upon services not provided. Additional report limitations and important information about this document are presented in Appendix E. This information should be carefully read and understood by the client and other parties reviewing this document.

Sincerely,

COLUMBIA WEST ENGINEERING, Inc.



Jason F. Merritt, P.E.
Senior Project Engineer



Brett A. Shipton, PE, GE
Principal



REFERENCES

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ASCE 7-16, Minimum Design Loads for Buildings and Other Structures, American Society of Civil Engineers, 2016.

Geomatrix Consultants, *Seismic Design Mapping, State of Oregon*, January 1995.

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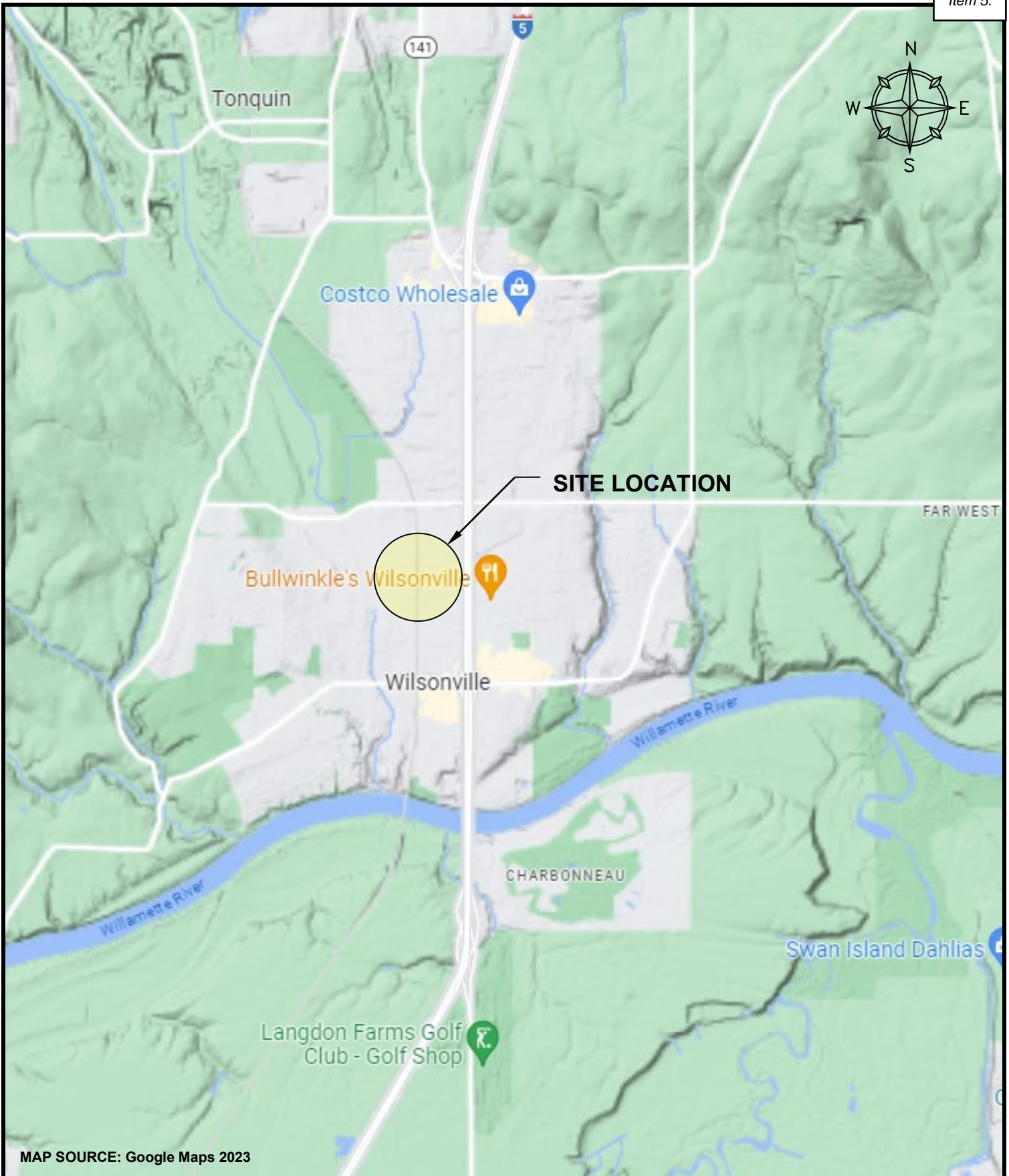
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FIGURES



MAP SOURCE: Google Maps 2023

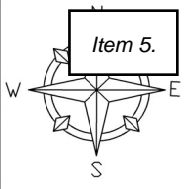


Job No: 23122
 Date: 05/01/23
 Drawn: EMU
 Checked: JFM

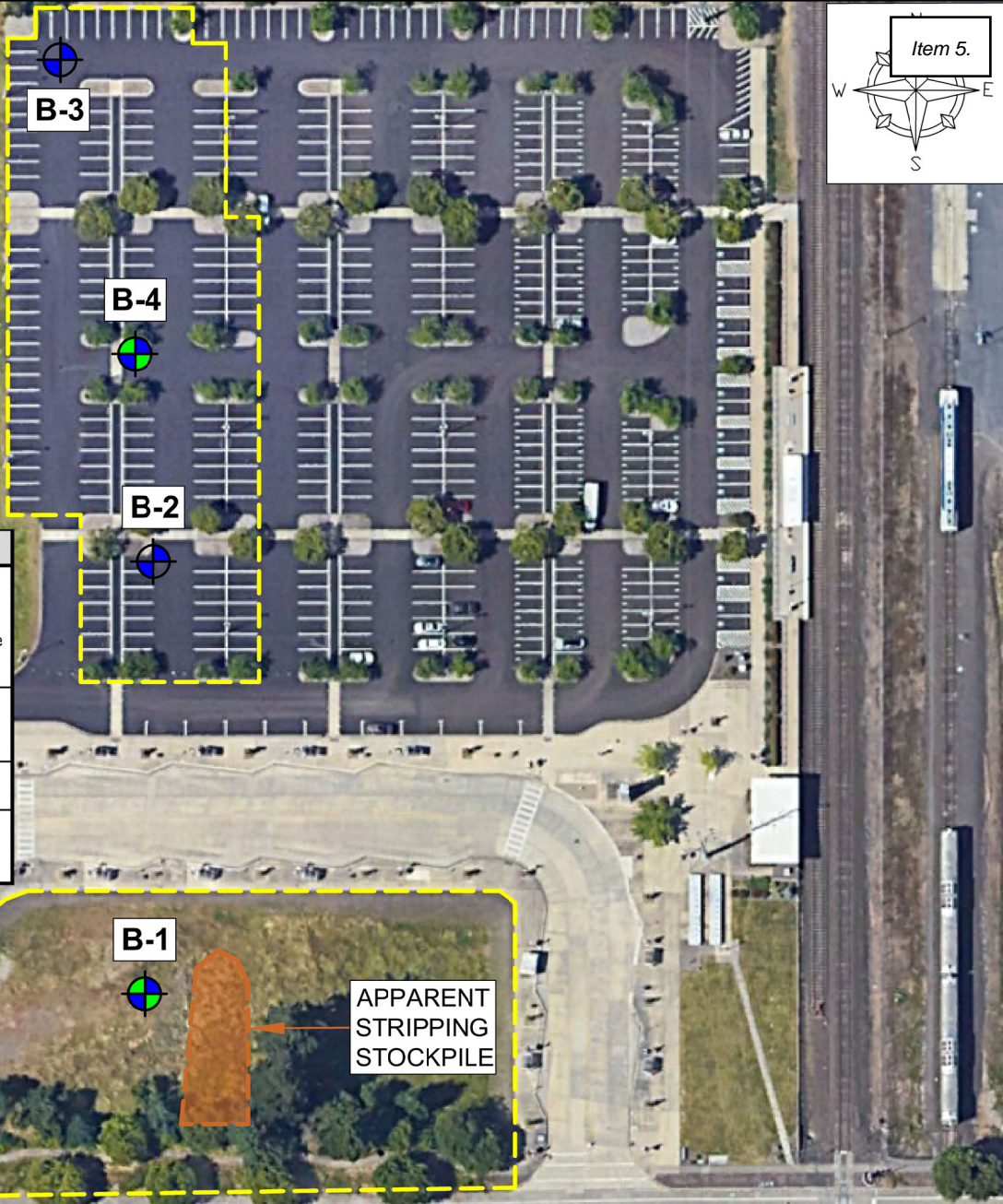
SITE LOCATION MAP
 BARBER STREET HOUSING DEVELOPMENT
 WILSONVILLE, OREGON

FIGURE
 1

SW KINSMAN ROAD



Infiltration Test Results						
Test Number	Location	Approximate Test Depth (feet bgs)	USCS Soil Type (*Indicates Visual Classification)	Passing No. 200 Sieve (%)	Depth of Groundwater on 04/28/23 (feet bgs)	Measured Infiltration Rate
IT-1.1	SB-1	4.0	GC, Clayey GRAVEL with Sand*	-	Not Encountered to 31.5	Negligible
IT-1.2		7.5	GC, Clayey GRAVEL with Sand	24		Negligible
IT-4.1	SB-4	4.5	SM, Silty SAND with Gravel	20	Not Encountered to 6	Negligible



SW BARBER STREET

--- APPROXIMATE STUDY AREA

APPROXIMATE LOCATION OF BORING

APPROXIMATE LOCATION OF BORING WITH INFILTRATION TEST

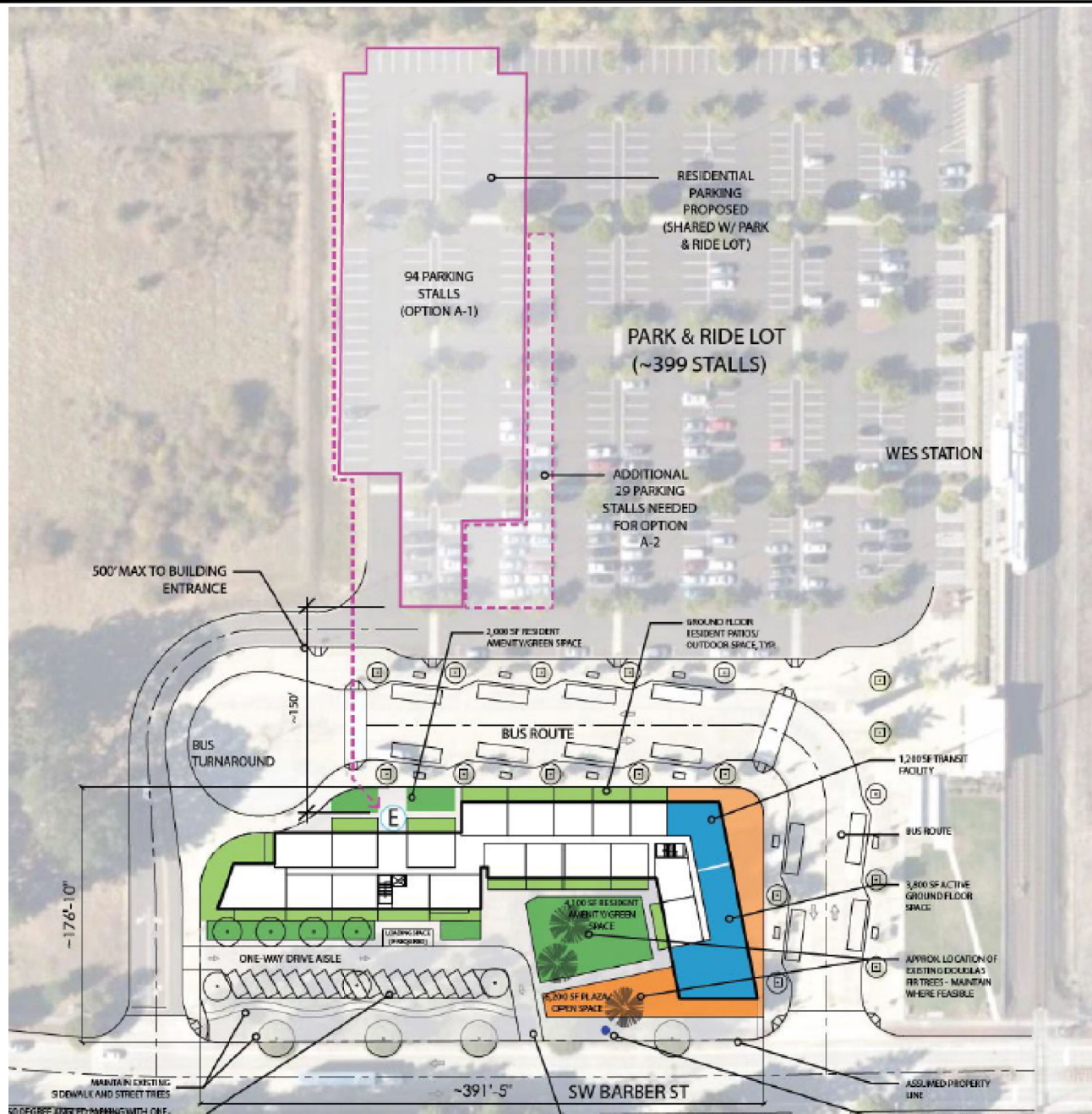
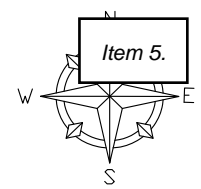


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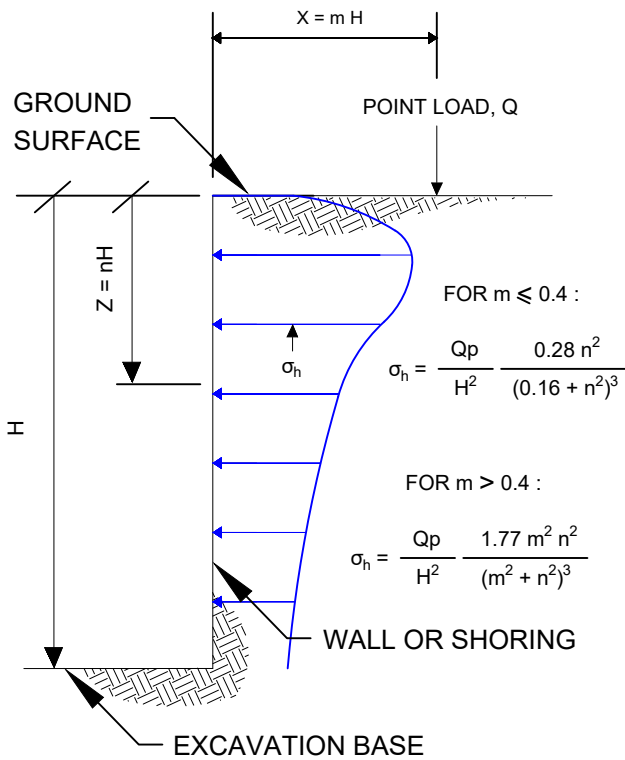
EXPLORATION LOCATION MAP
BARBER STREET HOUSING
DEVELOPMENT

- NOTES:
1. SITE LOCATION: 9699 SW BARBER STREET IN WILSONVILLE, OREGON
 2. SITE CONSISTS OF PORTIONS OF TAX PARCELS 31W14B00703 AND 31W14B00702, TOTALING APPROXIMATELY 2.28 ACRES.
 3. AERIAL PHOTO SOURCED FROM GOOGLE EARTH.
 4. EXPLORATION LOCATIONS ARE APPROXIMATE AND NOT SURVEYED.
 5. BORINGS BACKFILLED WITH BENTONITE ON APRIL 28, 2023.
 6. BORINGS B-2, B-3, AND B-4 WHERE CAPPED WITH COLD PATCH ASPHALT ON APRIL 28, 2023.

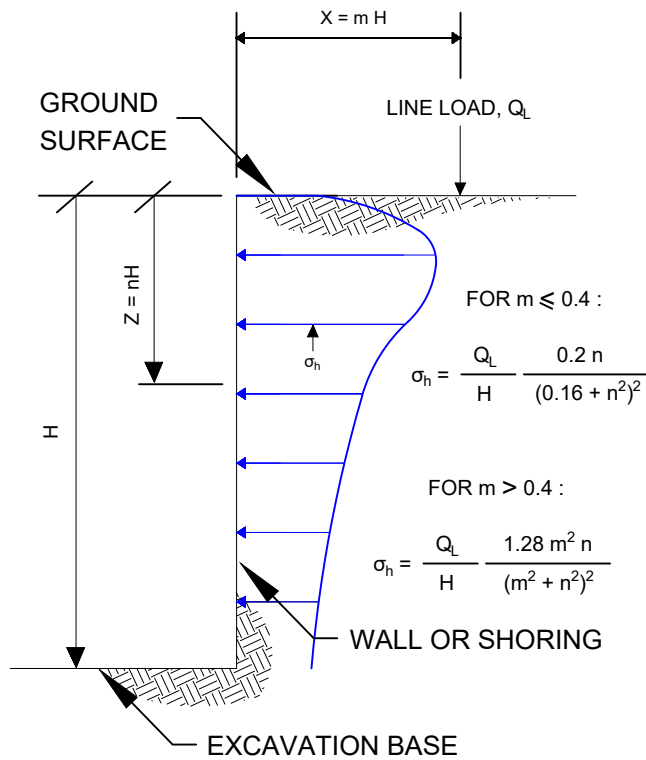
FIGURE
453



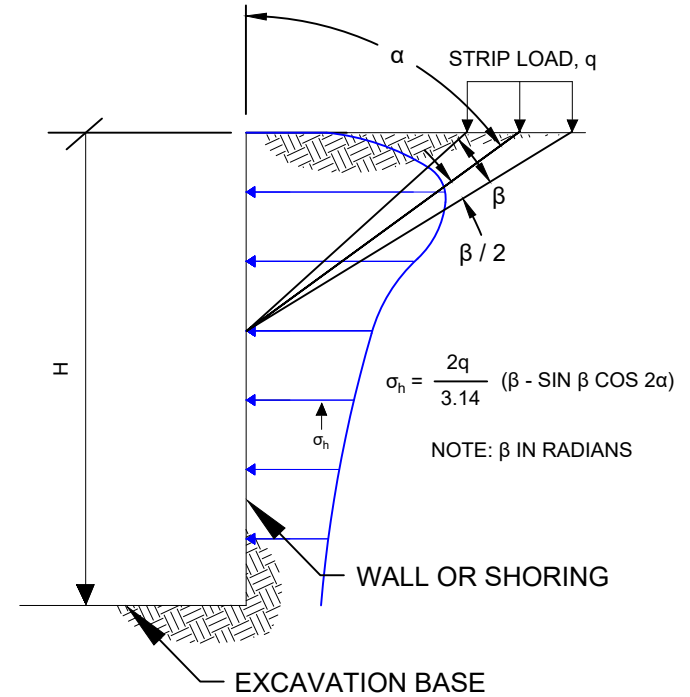
VERTICAL POINT LOAD



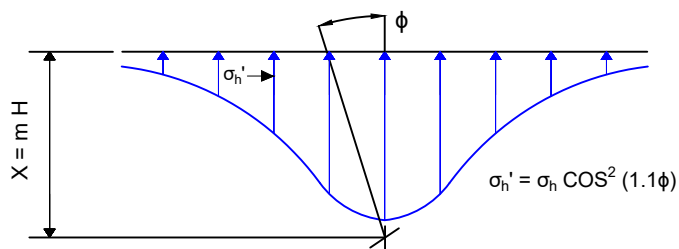
LINE LOAD PARALLEL TO WALL



STRIP LOAD PARALLEL TO WALL

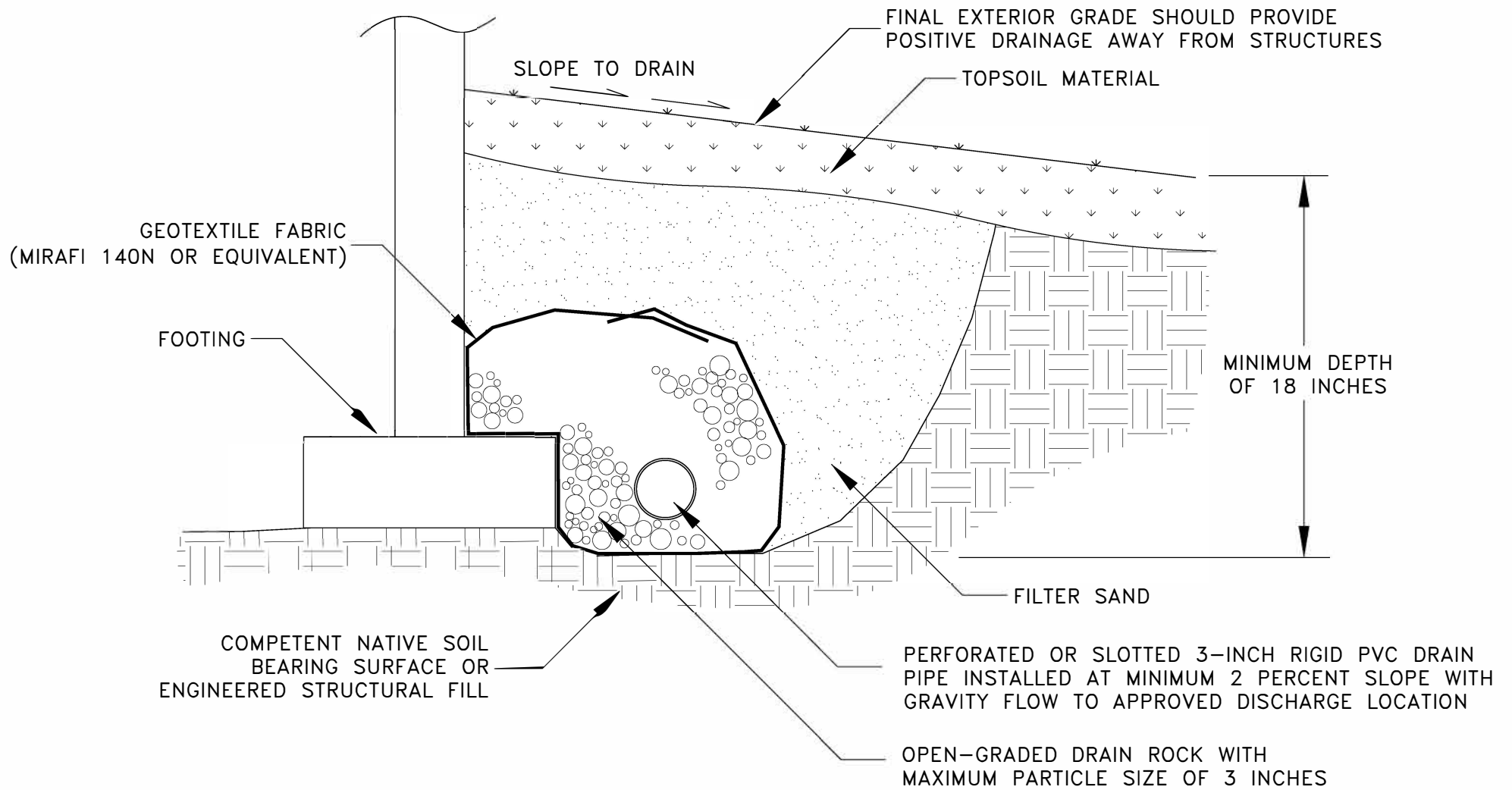


**VERTICAL POINT LOAD
HORIZONTAL PRESSURE DISTRIBUTION**

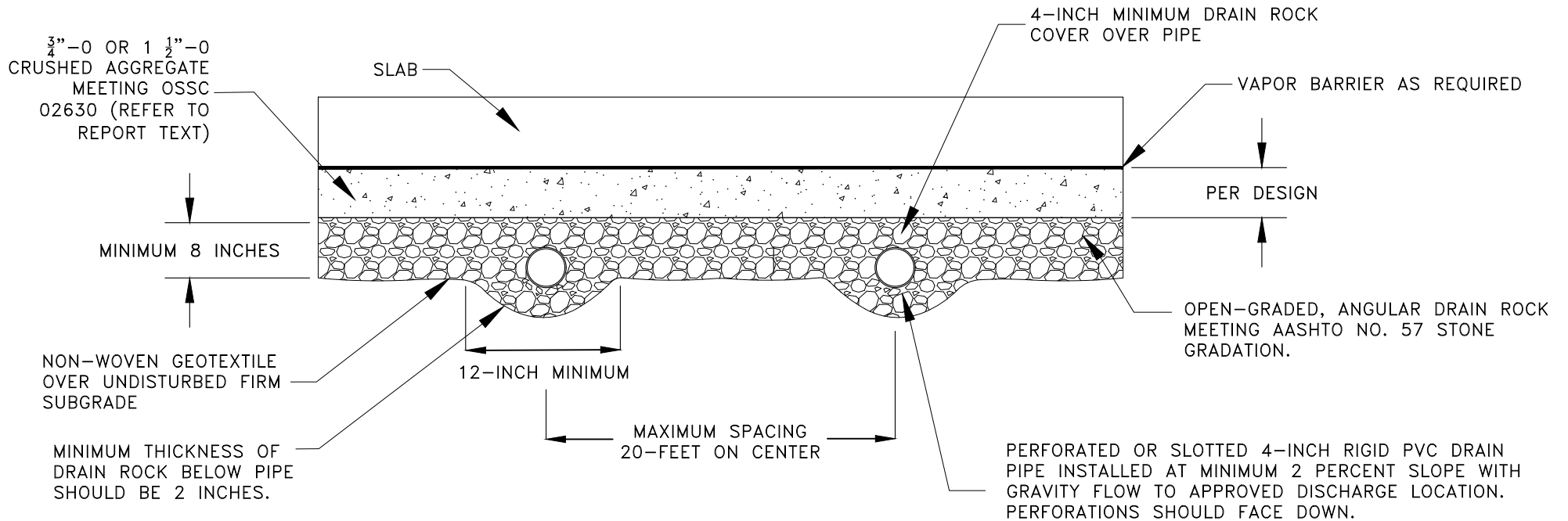


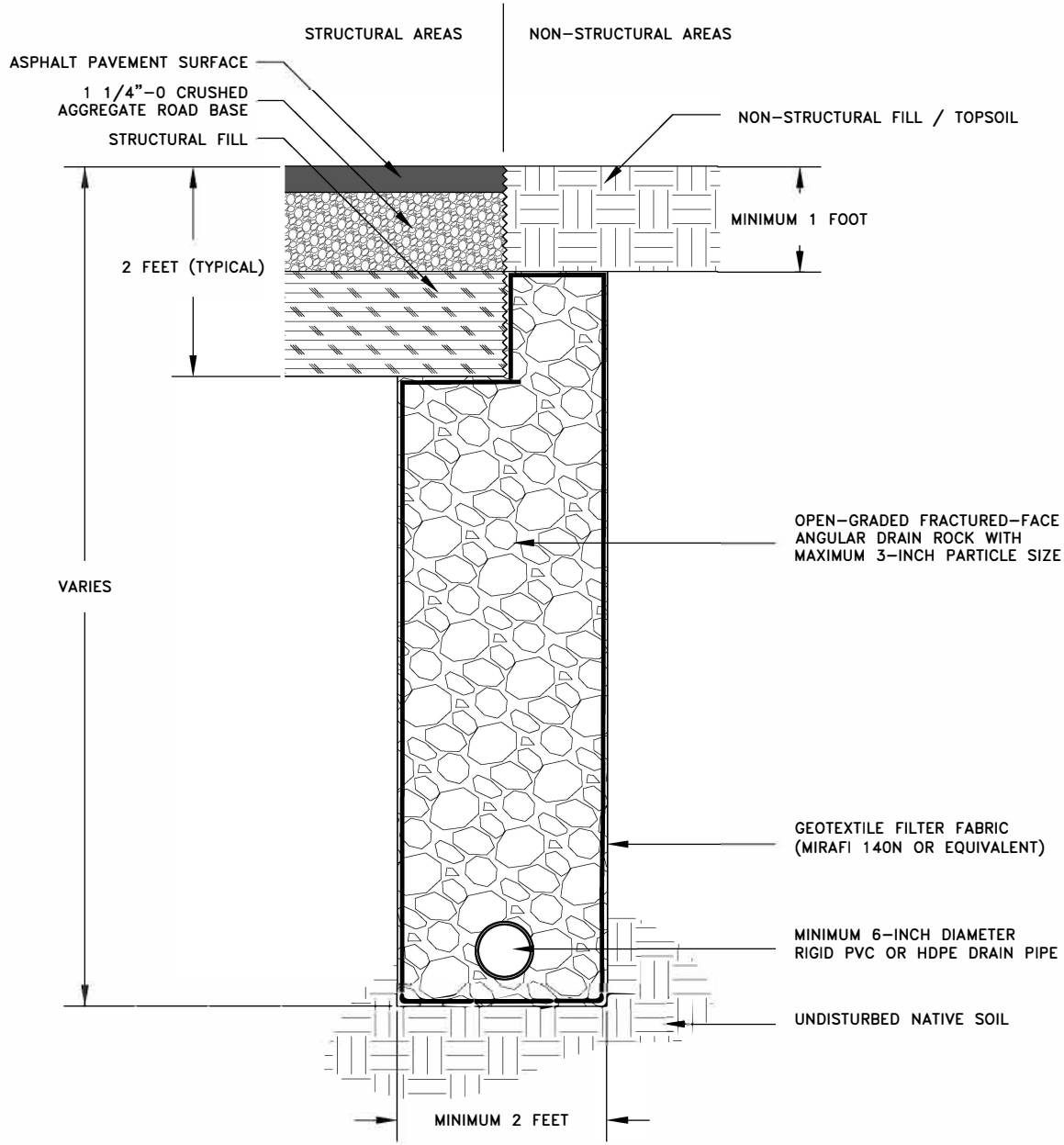
NOTES:

1. FIGURE SHOULD BE USED JOINTLY WITH RECOMMENDATIONS PRESENTED IN THE REPORT TEXT.
2. LATERAL EARTH PRESSURES ASSUME RIGID WALLS WITH BACKFILL MATERIALS HAVING A POISSON'S RATIO OF 0.5.
3. TOTAL LATERAL EARTH PRESSURES RESULTING FROM COMBINED LOADS MAY BE CALCULATED USING SUPERPOSITION.
4. DRAWING IS NOT TO SCALE.



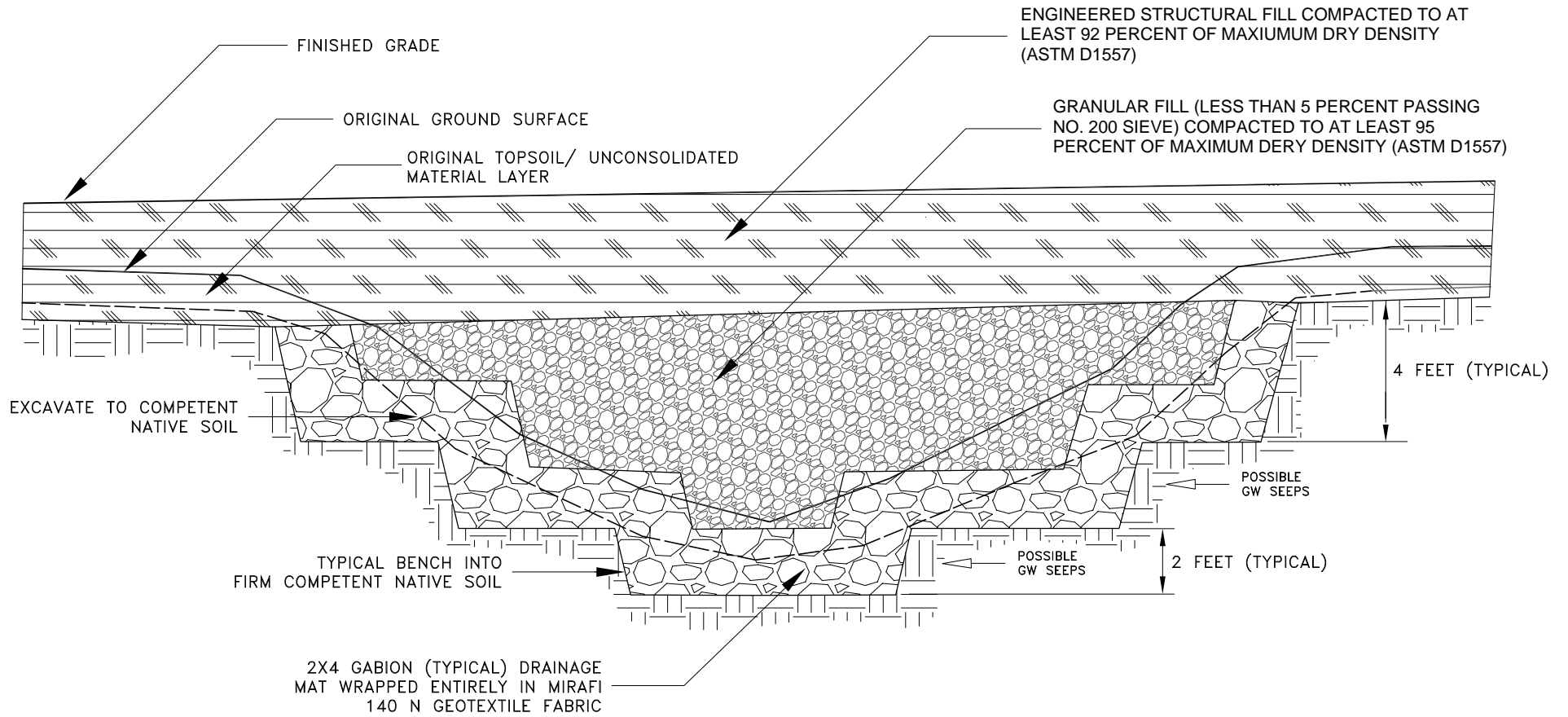
TYPICAL UNDER SLAB DRAINAGE DETAIL

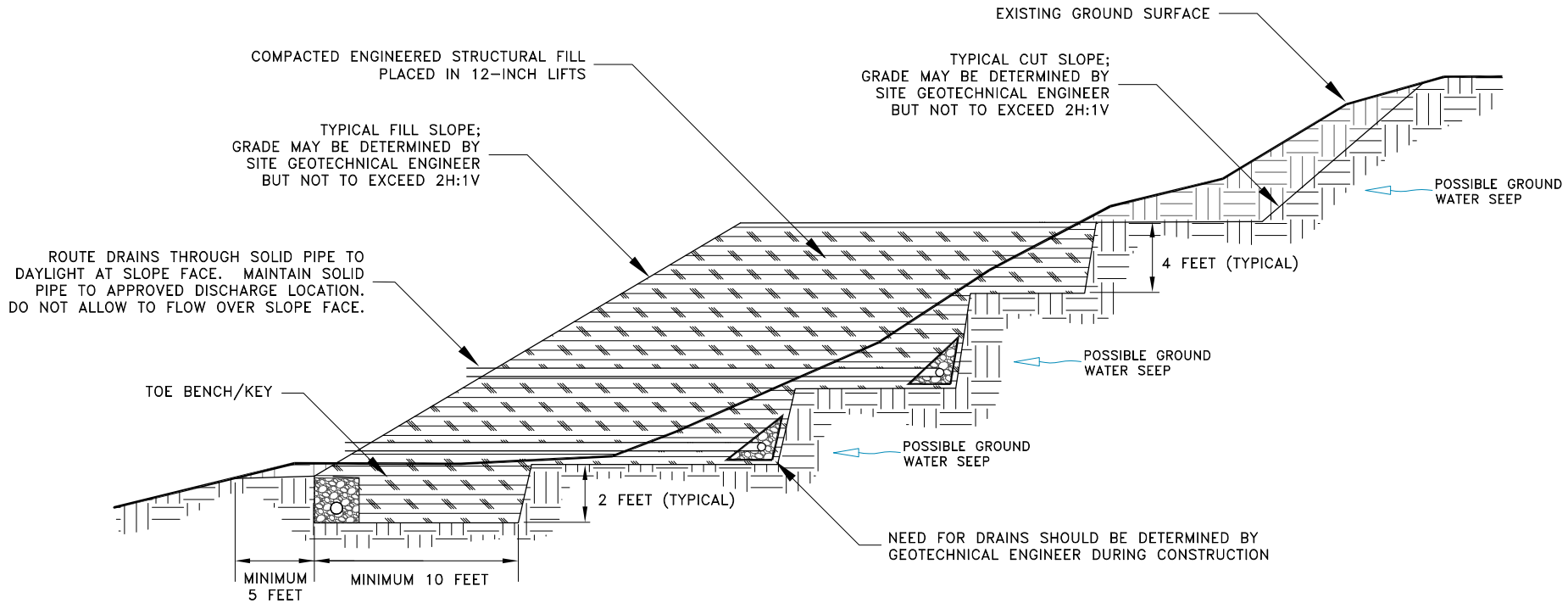




NOTE: LOCATION, INVERT ELEVATION, DEPTH OF TRENCH, AND EXTENT OF PERFORATED PIPE REQUIRED MAY BE MODIFIED BY THE GEOTECHNICAL ENGINEER DURING CONSTRUCTION BASED UPON FIELD OBSERVATION AND SITE-SPECIFIC SOIL CONDITIONS.

TYPICAL DRAINAGE MAT CROSS-SECTION



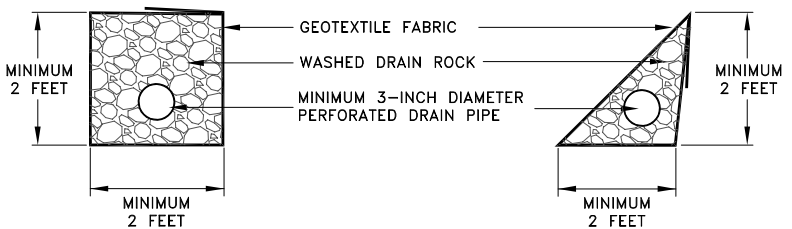


DRAIN SPECIFICATIONS

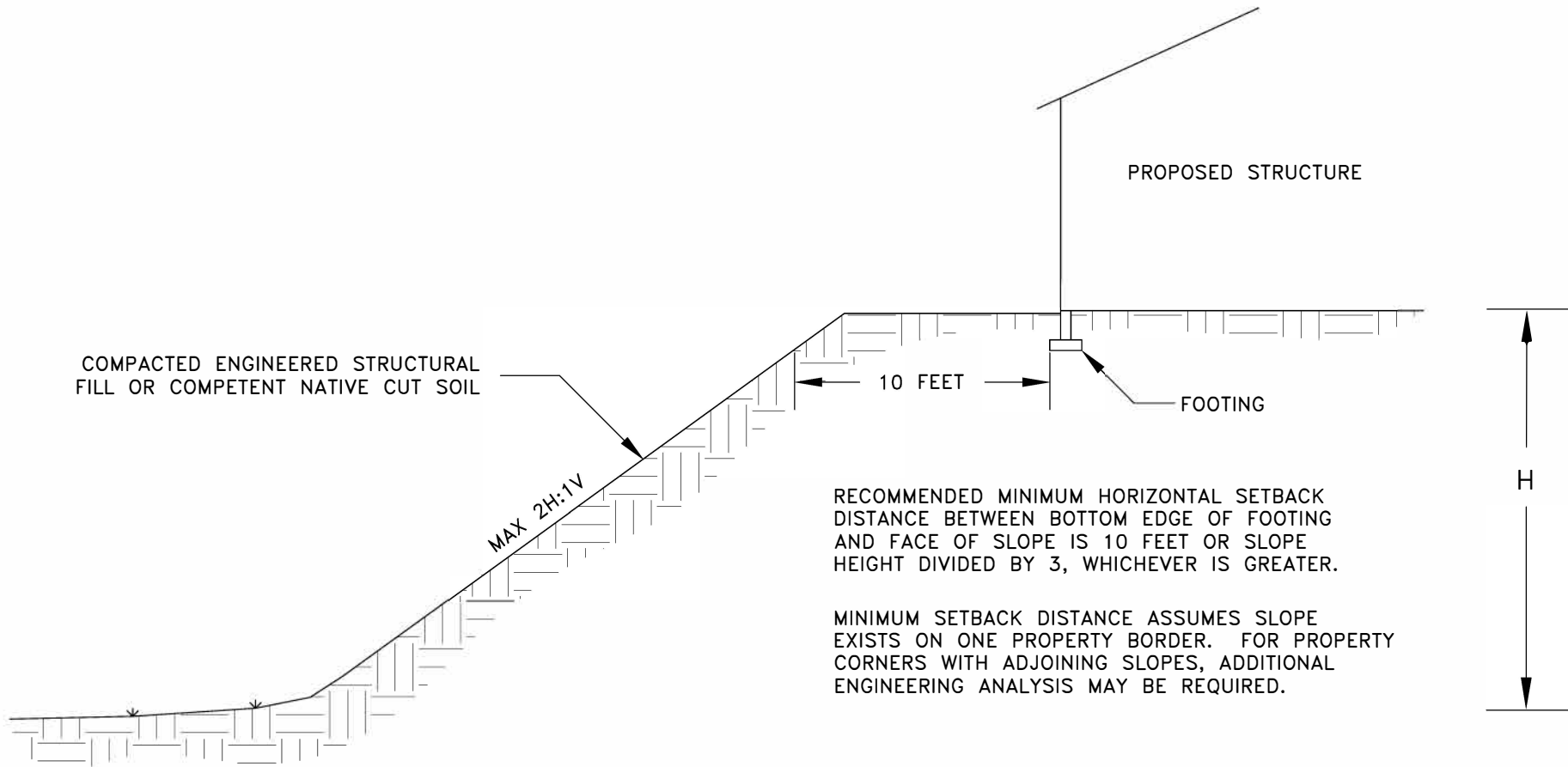
GEOTEXTILE FABRIC SHALL CONSIST OF MIRAFI 140N OR APPROVED EQUIVALENT WITH AOS BETWEEN No. 70 AND No. 100 SIEVE.

WASHED DRAIN ROCK SHALL BE OPEN-GRADED ANGULAR DRAIN ROCK WITH LESS THAN 2 PERCENT PASSING THE No. 200 SIEVE AND A MAXIMUM PARTICLE SIZE OF 3 INCHES.

TYPICAL DRAIN SECTION DETAIL



NOTES:
 1. DRAWING IS NOT TO SCALE.
 2. DRAWING REPRESENTS TYPICAL CUT AND FILL SLOPE CROSS SECTION AND MAY NOT BE SITE-SPECIFIC.



APPENDIX A

LABORATORY TESTING RESULTS

CLASSIFICATION

The soil samples collected in the field were classified in the laboratory to confirm field classifications. The laboratory classifications are shown on the exploration logs if those classifications differed from the field classifications.

MOISTURE CONTENT

We determined the natural moisture content of select soil samples in general accordance with ASTM D2216. The natural moisture content is a ratio of the weight of the water to soil in a test sample and is expressed as a percentage. The test results are presented in this appendix.

PARTICLE-SIZE ANALYSIS

We completed particle-size analyses on select soil samples in general accordance with ASTM D6913. This test is a quantitative determination of the soil particle size distribution expressed as a percentage of dry soil weight. The test results are presented in this appendix.

ATTERBERG LIMITS

We determined the Atterberg Limits on selected samples in general accordance with ASTM D4318. Atterberg limits include the liquid limit, plastic limit, and the plasticity index of soils. These index properties are used to classify soils and for correlation with other engineering properties of soils. The test results are presented in this appendix.

MOISTURE CONTENT, PERCENT PASSING NO. 200 SIEVE BY WASHING

PROJECT Barber Street Housing Development Wilsonville, Oregon	CLIENT Palindrome Communities, LLC 412 NW 5th Avenue Portland, Oregon 97209	PROJECT NO. 23122	REPORT DATE 05/12/23
		DATE SAMPLED 04/28/23	
		SAMPLED BY EMU	

LABORATORY TEST DATA

TEST PROCEDURE
 ASTM D2216 - Method A, ASTM D1140

LAB ID	CONTAINER MASS	MOIST MASS + PAN	DRY MASS + PAN	AFTER WASH DRY MASS + PAN	MATERIAL DESCRIPTION	FIELD ID	SAMPLE DEPTH	MOISTURE CONTENT	PASSING NO. 200 SIEVE
S23-0533	215.29	889.64	793.23	638.12	brown-gray Clayey SAND with Gravel	B1.1	2.5 feet	17%	27%
S23-0534	302.14	992.44	890.34	sieved sample	brown Clayey GRAVEL with Sand	B1.3	7.5 feet	17%	24%
S23-0535	341.17	1,063.41	960.29	884.39	brown Silty GRAVEL with Sand	B1.5	15 feet	17%	12%
S23-0536	208.54	513.08	443.02	231.97	blue-gray-brown Lean CLAY	B1.8	30 feet	30%	90%
S23-0537	231.30	1,077.77	1,014.25	n/a	gray-brown SAND with Silt and Gravel	B2.1	1 foot	8%	n/a
S23-0538	243.68	808.64	767.14	n/a	gray-brown SAND with Silt and Gravel	B3.1	1.5 feet	8%	n/a
S23-0539	204.28	957.94	828.11	705.40	brown-gray Silty SAND with Gravel	B4.3	4.5 feet	21%	20%

NOTES: Sample weights received for Lab ID: S23-0533, 0534, 0537 and 0538 did not meet the minimum size requirements; entire sample used for analysis.	DATE TESTED 05/10/23	TESTED BY KMS

PARTICLE-SIZE ANALYSIS REPORT

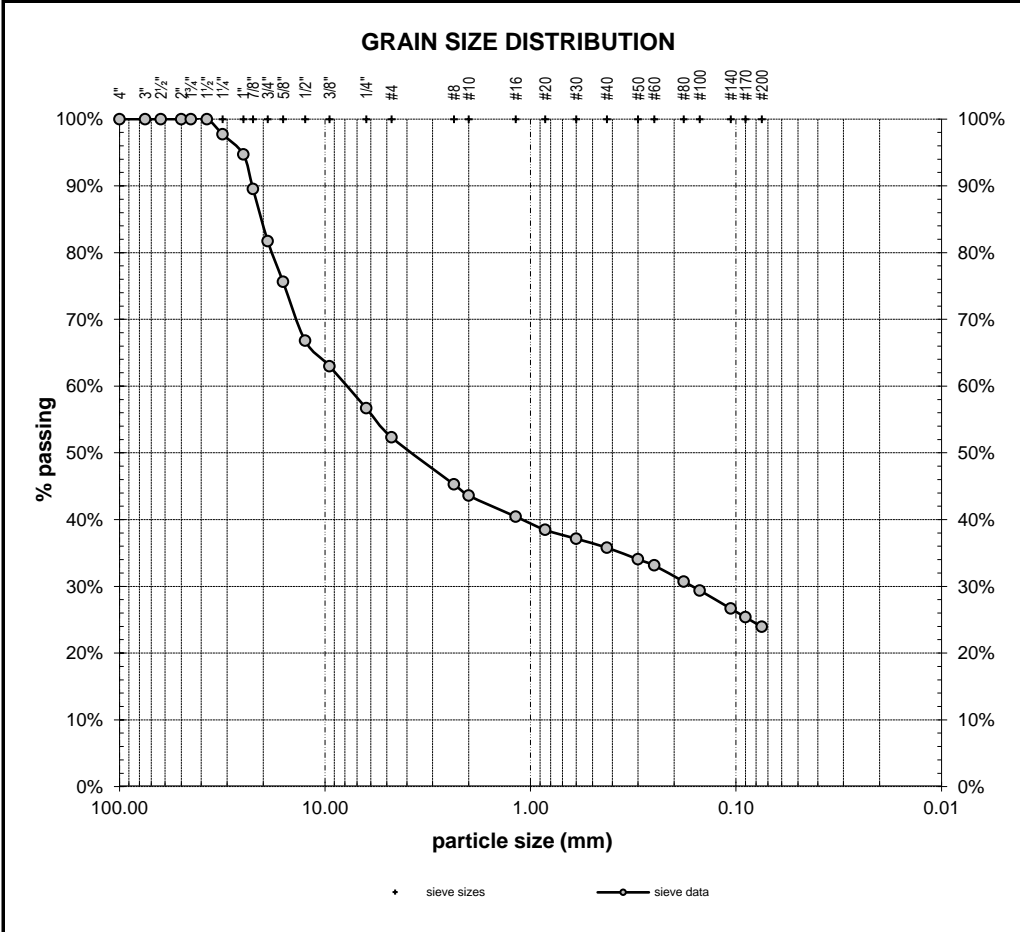
PROJECT Barber Street Housing Development Wilsonville, Oregon	CLIENT Palindrome Communities, LLC 412 NW 5th Avenue Portland, Oregon 97209	PROJECT NO. 23122	LAB ID S23-0534
		REPORT DATE 05/12/23	FIELD ID B1.3
		DATE SAMPLED 04/28/23	SAMPLED BY EMU

MATERIAL DATA	
MATERIAL SAMPLED brown Clayey GRAVEL with Sand	MATERIAL SOURCE Boring B-01 depth = 7.5 feet
SPECIFICATIONS none	USCS SOIL TYPE GC, Clayey Gravel with Sand
AASHTO CLASSIFICATION A-2-4(0)	

LABORATORY TEST DATA	
LABORATORY EQUIPMENT Rainhart "Mary Ann" Sifter, air-dried prep, hand washed, composite sieve - #4 split	TEST PROCEDURE ASTM D6913, Method A

ADDITIONAL DATA	
initial dry mass (g) = 588.15 as-received moisture content = 17% liquid limit = 31 plastic limit = 21 plasticity index = 10 fineness modulus = n/a	coefficient of curvature, C_c = n/a coefficient of uniformity, C_u = n/a effective size, $D_{(10)}$ = n/a $D_{(30)}$ = 0.163 mm $D_{(60)}$ = 7.828 mm
NOTES: Entire sample used for analysis; did not meet minimum size required.	

SIEVE DATA			
		% gravel = 47.7%	
		% sand = 28.4%	
		% silt and clay = 23.9%	
		PERCENT PASSING	
SIEVE SIZE		SIEVE	SPECS
US	mm	act.	interp.
		max	min



GRAVEL	6.00"	150.0	100%	
	4.00"	100.0	100%	
	3.00"	75.0	100%	
	2.50"	63.0	100%	
	2.00"	50.0	100%	
	1.75"	45.0	100%	
	1.50"	37.5	100%	
	1.25"	31.5	98%	
	1.00"	25.0	95%	
	7/8"	22.4	90%	
	3/4"	19.0	82%	
	5/8"	16.0	76%	
	1/2"	12.5	67%	
	3/8"	9.50	63%	
	1/4"	6.30	57%	
#4	4.75	52%		
SAND	#8	2.36	45%	
	#10	2.00	44%	
	#16	1.18	40%	
	#20	0.850	38%	
	#30	0.600	37%	
	#40	0.425	36%	
	#50	0.300	34%	
	#60	0.250	33%	
	#80	0.180	31%	
	#100	0.150	29%	
#140	0.106	27%		
#170	0.090	25%		
#200	0.075	24%		
DATE TESTED 05/10/23		TESTED BY KMS		

ATTERBERG LIMITS REPORT

PROJECT Barber Street Housing Development Wilsonville, Oregon	CLIENT Palindrome Communities, LLC 412 NW 5th Avenue Portland, Oregon 97209	PROJECT NO.	LAB ID
		23122	S23-0534
		REPORT DATE	FIELD ID
		05/12/23	B1.3
		DATE SAMPLED	SAMPLED BY
		04/28/23	EMU

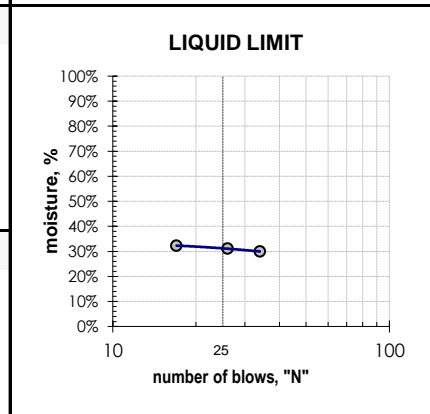
ATERIAL DATA

MATERIAL SAMPLED brown Clayey GRAVEL with Sand	MATERIAL SOURCE Boring B-01 depth = 7.5 feet	USCS SOIL TYPE GC, Clayey Gravel with Sand
--	---	--

LABORATORY TEST DATA

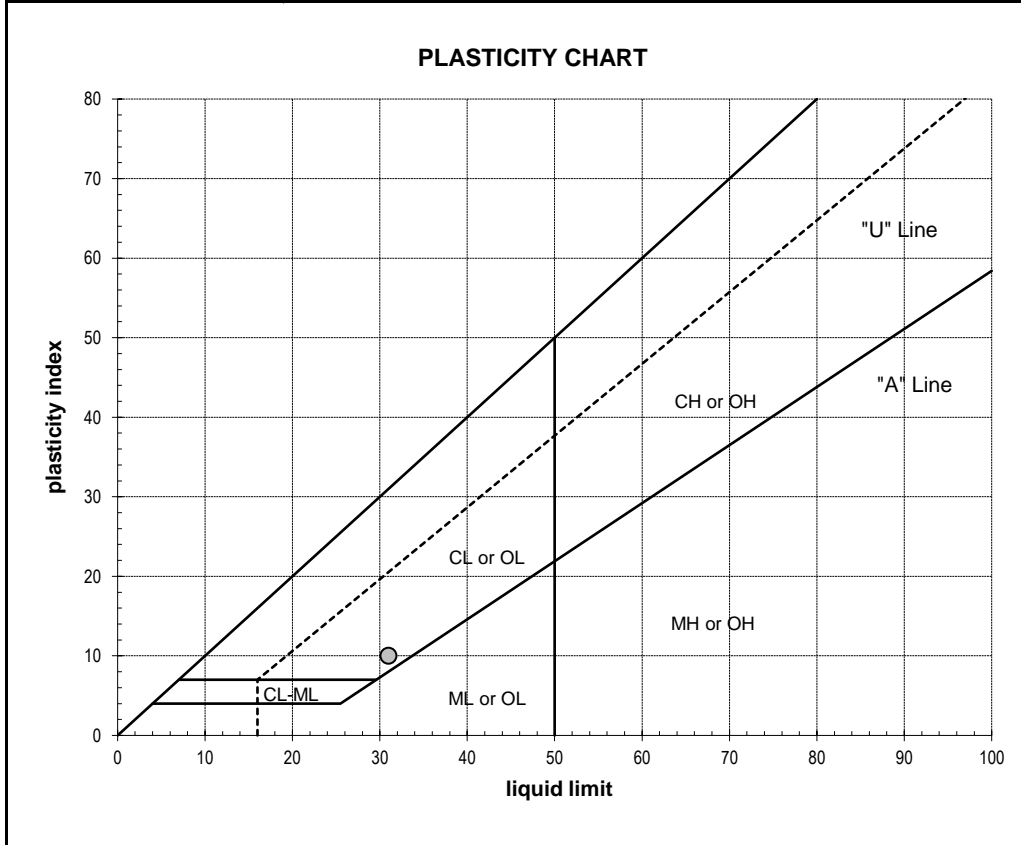
LABORATORY EQUIPMENT Liquid Limit Machine, Hand Rolled	TEST PROCEDURE ASTM D4318
--	-------------------------------------

ATTERBERG LIMITS	LIQUID LIMIT DETERMINATION				
liquid limit = 31	wet soil + pan weight, g =	①	②	③	④
plastic limit = 21	dry soil + pan weight, g =	32.18	33.02	32.90	
plasticity index = 10	pan weight, g =	29.60	30.16	30.00	
	N (blows) =	20.98	20.97	21.02	
	moisture, % =	34	26	17	
		29.9 %	31.1 %	32.3 %	



SHRINKAGE	PLASTIC LIMIT DETERMINATION				
shrinkage limit = n/a	wet soil + pan weight, g =	①	②	③	④
shrinkage ratio = n/a	dry soil + pan weight, g =	27.90	27.48		
	pan weight, g =	26.66	26.24		
	moisture, % =	20.87	20.42		
		21.4 %	21.3 %		

ADDITIONAL DATA	
% gravel =	47.7%
% sand =	28.4%
% silt and clay =	23.9%
% silt =	n/a
% clay =	n/a
moisture content =	17%



DATE TESTED	TESTED BY
05/10/23	MRS/KMS

Janet Curtis

APPENDIX B

SUBSURFACE EXPLORATION PROGRAM

GENERAL

We explored subsurface conditions at the site by drilling four borings using a truck-mounted drill rig. The borings were drilled by Western States Soil Conservation, Inc. on April 28, 2023, to a maximum depth of 31.5 feet BGS. The boring logs are presented in this appendix.

SOIL SAMPLING

Disturbed samples were collected from the boring at representative depth intervals using 1½-inch diameter split-barrel (SPT) samples in general accordance with ASTM D1586. The sampler was driven into the soil with a 140-pound hammer free falling 30 inches. The sampler was 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 log, unless otherwise noted. The hammer was lifted using an automatic hammer with a reported efficiency of 77.7 percent. A copy of the hammer calibration report is on file at our office. Sampling methods and intervals are shown on the exploration log.

SOIL CLASSIFICATION

The soil samples were classified in accordance with the Unified Soil Classification System presented in Appendix C. The exploration log indicates the depths at which the soil or their characteristics change, although the change actually could be gradual. If the change occurred between sample locations, the depth was interpreted. Soil classifications are shown on the exploration logs.

NEARBY WELL LOGS

Relevant well logs in the vicinity of the site are presented following the boring logs. Well logs were obtained from the Oregon Water Resource Department.

SOIL BORING LOG

PROJECT NAME Baber Street Housing Development		CLIENT Palindrome Wilsonville Limited Partnership		PROJECT NO. 23122	BORING NO. SB-1
PROJECT LOCATION Wilsonville, Oregon		DRILLING CONTRACTOR Western States	DRILL RIG CME75 Truck 9	TECHNICIAN EMU	PAGE NO. 1 of 1
BORING LOCATION See Figure 2		DRILLING METHOD HSA	SAMPLING METHOD SPT	START DATE 04/28/23	START TIME 0820
REMARKS None		GROUNDWATER DEPTH Not encountered		FINISH DATE 04/28/23	FINISH TIME 1130

Depth (ft)	Field ID + Sample Type	SPT N-value (uncorrected) 0 20 40 60	USCS Soil Type	AASHTO Soil Type	Graphic Log	LITHOLOGIC DESCRIPTION AND REMARKS	Infiltration (in/hr)	Moisture Content (%)	Passing No. 200 Sieve (%)	Liquid Limit	Plasticity Index
0			GC			2-inch root zone.					
2	SPT	51				Clayey GRAVEL with sand, brown and gray, damp, very dense, clay is nonplastic to low plasticity, fine- to medium-textued sand, fractured gravels.		17	27		
3	SB1.1 SPT	50				Infiltration test run prior to SPT at 4 feet.	Neg.				
4	SB1.2										
6											
7.5	SPT	32				Infiltration test run prior to SPT at 7.5 feet. Becomes dense at 7.5 feet.	Neg.	17	24	31	10
8	SB1.3										
10	SPT	28									
11	SB1.4										
12											
13			GM			Drill started to grind on gravel at 13 feet.					
14						Silty GRAVEL with sand, brown, very moist, dense, silt is nonplastic to low plasticity, fine- to coarse-textured sand, fine- to coarse-textued gravel.		17	12		
15	SPT	34				Driller indicated heaving at 15 feet.					
16	SB1.5										
18											
19						Driller indicated auger was spinning on cobble or boulder at 19 feet.					
20	SPT	50				Becomes very dense at 20 feet.					
21	SB1.6										
22											
24											
25	SPT	43	CL			Lean CLAY, blue and brown, moist, hard, low to medium plasticity, fine-textured sand.					
26	SB1.7										
28											
30	SPT	21				Becomes blue-gray and brown and very stiff at 30 feet.		30	90		
31	SB1.8										
32						Boring completed at 31.5 feet bgs. Groundwater not observed on 4/28/23.					
34											

SOIL BORING LOG

PROJECT NAME Baber Street Housing Development		CLIENT Palindrome Wilsonville Limited Partnership		PROJECT NO. 23122	BORING NO. SB-2
PROJECT LOCATION Wilsonville, Oregon		DRILLING CONTRACTOR Western States	DRILL RIG CME75 Truck 9	TECHNICIAN EMU	PAGE NO. 1 of 1
BORING LOCATION See Figure 2		DRILLING METHOD HSA	SAMPLING METHOD SPT	START DATE 04/28/23	START TIME 1150
REMARKS None		GROUNDWATER DEPTH Not encountered		FINISH DATE 04/28/23	FINISH TIME 1218

Depth (ft)	Field ID + Sample Type	SPT N-value (uncorrected) 0 20 40 60	USCS Soil Type	AASHTO Soil Type	Graphic Log	LITHOLOGIC DESCRIPTION AND REMARKS	Infiltration (in/hr)	Moisture Content (%)	Passing No. 200 Sieve (%)	Liquid Limit	Plasticity Index
0					[Cross-hatched pattern]	Approximately 4-inches of asphalt underlain by 8-inches of crushed aggregate.					
1.5	SPT	46			[Cross-hatched pattern]	FILL. SAND with Silt and Gravel, gray and brown, damp, dense, silt is nonplastic, fine- to coarse-textured sand, fractured gravel.		8			
2.5	SB2.1				[Cross-hatched pattern]						
5.5	SPT	8			[Cross-hatched pattern]	Becomes black and brown, moist, and loose at 5 feet.					
6.5	SB2.2				[Cross-hatched pattern]	Boring completed at 6.5 feet bgs. Groundwater not observed on 4/28/23.					
10											

SOIL BORING LOG

PROJECT NAME Baber Street Housing Development	CLIENT Palindrome Wilsonville Limited Partnership	PROJECT NO. 23122	BORING NO. SB-3
PROJECT LOCATION Wilsonville, Oregon	DRILLING CONTRACTOR Western States	DRILL RIG CME75 Truck 9	TECHNICIAN EMU
BORING LOCATION See Figure 2	DRILLING METHOD HSA	SAMPLING METHOD SPT	START DATE 04/28/23
REMARKS None	GROUNDWATER DEPTH Not encountered	FINISH DATE 04/28/23	FINISH TIME 1258

Depth (ft)	Field ID + Sample Type	SPT N-value (uncorrected) 0 20 40 60	USCS Soil Type	AASHTO Soil Type	Graphic Log	LITHOLOGIC DESCRIPTION AND REMARKS	Infiltration (in/hr)	Moisture Content (%)	Passing No. 200 Sieve (%)	Liquid Limit	Plasticity Index
0					[Cross-hatched pattern]	Approximately 6-inches of asphalt underlain by 12-inches of crushed aggregate.					
2	SPT SB3.1	36			[Cross-hatched pattern]	FILL. SAND with Silt and Gravel, gray, orange, and brown, damp, dense, silt is nonplastic, fine-to coarse-textured sand, fractured gravel.		8			
4	SPT SB3.2	10	ML		[Vertical lines pattern]	Sandy SILT with gravel, black and brown, moist, stiff, low plasticity, fine-textured sand, fine-textured gravel.					
6	SPT SB3.3	6			[Vertical lines pattern]	Becomes Sandy SILT and medium stiff at 5 feet.					
6.5					[Vertical lines pattern]	Boring completed at 6.5 feet bgs. Groundwater not observed on 4/28/23.					
10					[Vertical lines pattern]						

SOIL BORING LOG

PROJECT NAME Baber Street Housing Development	CLIENT Palindrome Wilsonville Limited Partnership	PROJECT NO. 23122	BORING NO. SB-4
PROJECT LOCATION Wilsonville, Oregon	DRILLING CONTRACTOR Western States	DRILL RIG CME75 Truck 9	TECHNICIAN EMU
BORING LOCATION See Figure 2	DRILLING METHOD HSA	SAMPLING METHOD SPT	START DATE 04/28/23
REMARKS None	GROUNDWATER DEPTH Not encountered	FINISH DATE 04/28/23	FINISH TIME 1400

Depth (ft)	Field ID + Sample Type	SPT N-value (uncorrected) 0 20 40 60	USCS Soil Type	AASHTO Soil Type	Graphic Log	LITHOLOGIC DESCRIPTION AND REMARKS	Infiltration (in/hr)	Moisture Content (%)	Passing No. 200 Sieve (%)	Liquid Limit	Plasticity Index
0					[Cross-hatched pattern]	Approximately 5-inches of asphalt underlain by 7-inches of crushed aggregate.					
1	SPT		ML		[Vertical lines pattern]	SILT with Sand, brown and gray, moist, medium stiff, low plasticity, fine-textured sand.					
2		7			[Vertical lines pattern]						
3	SB4.1 SPT				[Vertical lines pattern]	Becomes brown and medium stiff to stiff at 2.5 feet.					
4		8			[Vertical lines pattern]						
5	SB4.2				[Vertical lines pattern]	Infiltration test performed before SPT at 4.5 feet.					
6	SPT		SM		[Vertical lines pattern]	Silty SAND with gravel, brown and gray, moist, dense, silt is nonplastic to low plasticity, fine- to coarse-textured sand, fine-textured gravels.	Neg.	21	20		
7		36			[Vertical lines pattern]						
8	SB4.3				[Vertical lines pattern]	Boring completed at 6 feet bgs. Groundwater not observed on 4/28/23.					
10					[Vertical lines pattern]						

**APPENDIX C
SOIL AND ROCK CLASSIFICATION INFORMATION**

SOIL DESCRIPTION AND CLASSIFICATION GUIDELINES

Particle-Size Classification

COMPONENT	ASTM/USCS		AASHTO	
	size range	sieve size range	size range	sieve size range
Cobbles	> 75 mm	greater than 3 inches	> 75 mm	greater than 3 inches
Gravel	75 mm – 4.75 mm	3 inches to No. 4 sieve	75 mm – 2.00 mm	3 inches to No. 10 sieve
	Coarse 75 mm – 19.0 mm	3 inches to 3/4-inch sieve	-	-
	Fine 19.0 mm – 4.75 mm	3/4-inch to No. 4 sieve	-	-
Sand	4.75 mm – 0.075 mm	No. 4 to No. 200 sieve	2.00 mm – 0.075 mm	No. 10 to No. 200 sieve
	Coarse 4.75 mm – 2.00 mm	No. 4 to No. 10 sieve	2.00 mm – 0.425 mm	No. 10 to No. 40 sieve
	Medium 2.00 mm – 0.425 mm	No. 10 to No. 40 sieve	-	-
	Fine 0.425 mm – 0.075 mm	No. 40 to No. 200 sieve	0.425 mm – 0.075 mm	No. 40 to No. 200 sieve
Fines (Silt and Clay)	< 0.075 mm	Passing No. 200 sieve	< 0.075 mm	Passing No. 200 sieve

Consistency for Cohesive Soil

CONSISTENCY	SPT N-VALUE (BLOWS PER FOOT)	D&M N-VALUE (BLOWS PER FOOT)	POCKET PENETROMETER (UNCONFINED COMPRESSIVE STRENGTH, tsf)
Very Soft	Less than 2	Less than 3	less than 0.25
Soft	2 to 4	3 to 6	0.25 to 0.50
Medium Stiff	4 to 8	6 to 12	0.50 to 1.0
Stiff	8 to 15	12 to 25	1.0 to 2.0
Very Stiff	15 to 30	25 to 65	2.0 to 4.0
Hard	30 to 60	65 to 145	greater than 4.0
Very Hard	greater than 60	greater than 145	-

RELATIVE DENSITY	SPT N-VALUE (BLOWS PER FOOT)	D&M N-VALUE (BLOWS PER FOOT)
Very Loose	0 to 4	0 to 11
Loose	4 to 10	11 to 26
Medium Dense	10 to 30	26 to 74
Dense	30 to 50	74 to 120
Very Dense	more than 50	More than 120

Relative Density for Granular Soil

Moisture Designations

TERM	FIELD IDENTIFICATION
Dry	No moisture. Dusty or dry.
Damp	Some moisture. Cohesive soils are usually below plastic limit and are moldable.
Moist	Grains appear darkened, but no visible water is present. Cohesive soils will clump. Sand will bulk. Soils are often at or near plastic limit.
Wet	Visible water on larger grains. Sand and silt exhibit dilatancy. Cohesive soil can be readily remolded. Soil leaves wetness on the hand when squeezed. Soil is much wetter than optimum moisture content and is above plastic limit.

Additional Constituents

Percent	Silt and Clay In:		Percent	Sand and Gravel In:	
	Fine-Grained Soil	Coarse-Grained Soil		Fine-Grained Soil	Coarse-Grained Soil
< 5	trace	trace	< 5	trace	trace
5 – 12	minor	with	5 – 15	minor	minor
> 12	some	silty/clayey	15 – 30	with	with
			> 30	sandy/gravelly	with Indicate approx. percentage

AASHTO SOIL CLASSIFICATION SYSTEM

TABLE 1. Classification of Soils and Soil-Aggregate Mixtures

General Classification	Granular Materials (35 Percent or Less Passing .075 mm)				Silt-Clay Materials (More than 35 Percent Passing 0.075)		
	A-1	A-3	A-2	A-4	A-5	A-6	A-7
Sieve analysis, percent passing:							
2.00 mm (No. 10)	-	-	-	-	-	-	-
0.425 mm (No. 40)	50 max	51 min	-	-	-	-	-
0.075 mm (No. 200)	25 max	10 max	35 max	36 min	36 min	36 min	36 min
<u>Characteristics of fraction passing 0.425 mm (No. 40)</u>							
Liquid limit				40 max	41 min	40 max	41 min
Plasticity index	6 max	N.P.		10 max	10 max	11 min	11 min
General rating as subgrade	Excellent to good				Fair to poor		

Note: The placing of A-3 before A-2 is necessary in the "left to right elimination process" and does not indicate superiority of A-3 over A-2.

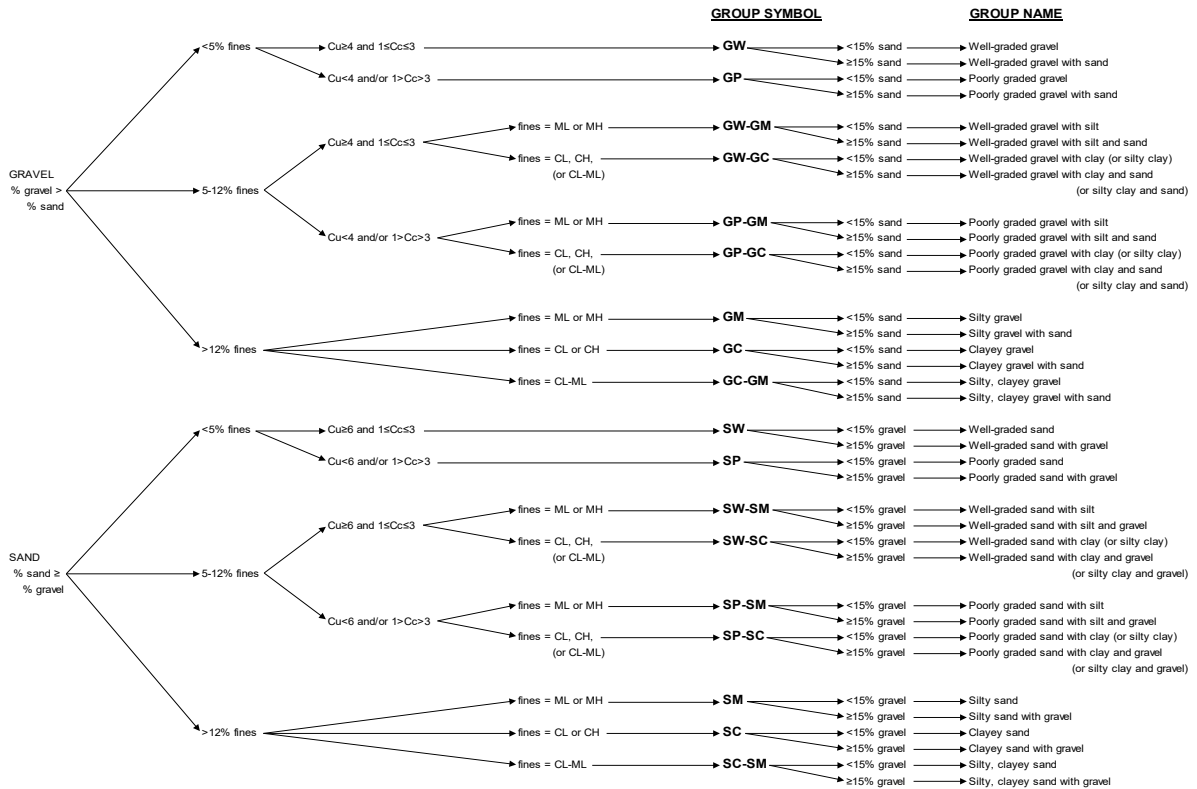
TABLE 2. Classification of Soils and Soil-Aggregate Mixtures

General Classification	Granular Materials (35 Percent or Less Passing 0.075 mm)							Silt-Clay Materials (More than 35 Percent Passing 0.075 mm)			
	A-1		A-2					A-7			
Group Classification	A-1-a	A-1-b	A-3	A-2-4	A-2-5	A-2-6	A-2-7	A-4	A-5	A-6	A-7-5, A-7-6
Sieve analysis, percent passing:											
2.00 mm (No. 10)	50 max	-	-	-	-	-	-	-	-	-	-
0.425 mm (No. 40)	30 max	50 max	51 min	-	-	-	-	-	-	-	-
0.075 mm (No. 200)	15 max	25 max	10 max	35 max	35 max	35 max	35 max	36 min	36 min	36 min	36 min
<u>Characteristics of fraction passing 0.425 mm (No. 40)</u>											
Liquid limit				40 max	41 min	40 max	41 min	40 max	41 min	40 max	41 min
Plasticity index	6 max		N.P.	10 max	10 max	11 min	11 min	10 max	10 max	11 min	11 min
Usual types of significant constituent materials	Stone fragments, gravel and sand		Fine sand	Silty or clayey gravel and sand				Silty soils		Clayey soils	
General ratings as subgrade	Excellent to Good							Fair to poor			

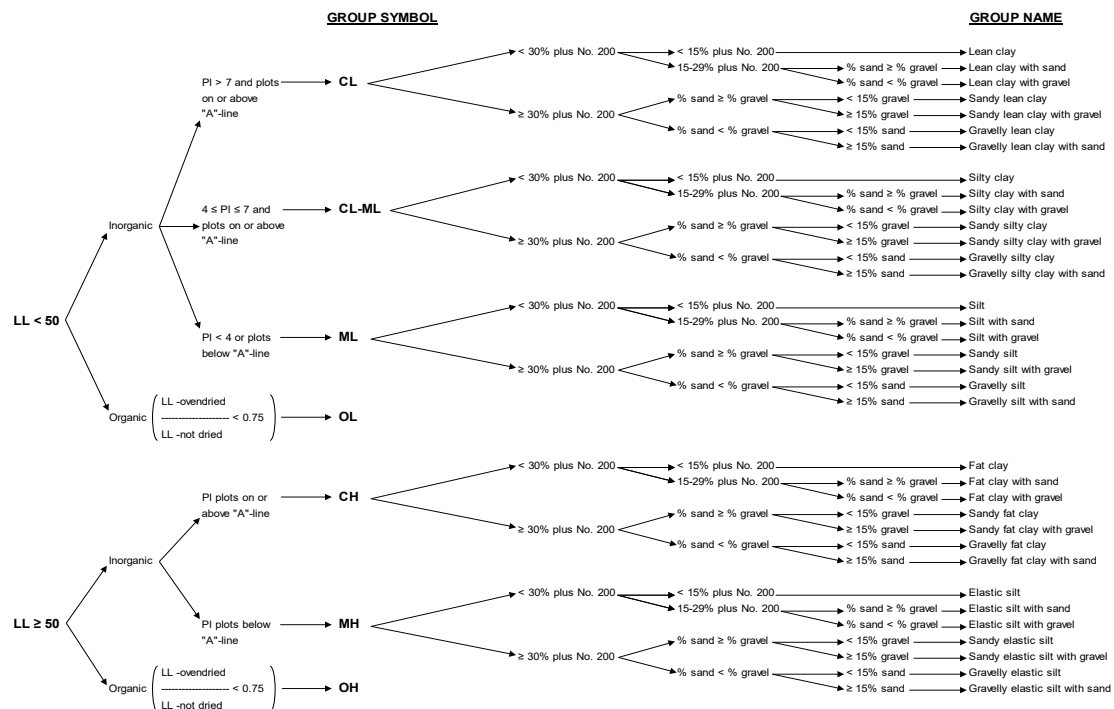
Note: Plasticity index of A-7-5 subgroup is equal to or less than LL minus 30. Plasticity index of A-7-6 subgroup is greater than LL minus 30 (see Figure 2).

AASHTO = American Association of State Highway and Transportation Officials

UNIFIED SOIL CLASSIFICATION SYSTEM



Flow Chart for Classifying Coarse-Grained Soils (More Than 50% Retained on No. 200 Sieve)



Flow Chart for Classifying Fine-Grained Soil (50% or More Passes No. 200 Sieve)

ROCK CLASSIFICATION INFORMATION

ROCK HARDNESS	DESCRIPTION	UNCONFINED COMPRESSIVE STRENGTH (PSI)	
Extremely Soft (R0)	Easily indented and scratched by fingernail - soil like texture	<100	
Very Soft (R1)	Scratched with fingernail, peeled by knife, indented by rock pick	100 - 200	
Soft (R2)	Peeled by knife, indented by rock pick (moderate difficulty)	200 - 800	
Moderately Soft (R3)	Peeled by knife, indented by rock pick (with difficulty)	800 - 1,800	
Moderately Hard (R4)	Scratched by knife or rock pick, cannot be peeled	1,800 - 7,300	
Hard (R5)	Scratched by knife or rock pick (with difficulty)	7,300 - 14,500	
Very Hard (R6)	Cannot be scratched with knife or rock pick	14,500 - 36,300	
Extremely Hard (R7)	Can only be chipped, not broken by repeated blows with rock pick	> 36,300	
ROCK WEATHERING	DESCRIPTION	ROCK QUALITY	RQD (%)
Decomposed	Completely decomposed - mass structure is disintegrated to a soil	Very poor (Completely weathered rock)	<25%
Completely Weathered	Completely decomposed - mass structure is largely intact	Poor (Weathered rocks)	25 to 50%
Highly Weathered	> 50% of rock is decomposed, fresh or discolored rock is present	Fair (Moderately weathered rocks)	51 to 75%
Moderately Weathered	< 50% of rock is decomposed, fresh or discolored rock is present	Good (Hard Rock)	76 to 90%
Slightly Weathered	Discoloration indicates weathering and discontinuity surfaces	Very Good (Fresh rocks)	91 to 100%
Fresh	No visible weathering, slight discoloration on discontinuity surfaces		
ROCK JOINT SPACING	DESCRIPTION	Rock Quality Designation (RQD) is a measure of quality of rock core taken from a borehole. The length of core pieces is measured along center line of the pieces. All pieces of intact rock core equal to or greater than 100 mm (4 in.) long are summed and divided by the total length of the core run to obtain RQD value	
Very Close	< 0.2 foot		
Close	0.2 foot - 1 foot		
Moderately Close	1 foot - 3 feet		
Wide	3 feet - 10 feet		
Very Wide	> 10 feet		
ROCK FRACTURING	DESCRIPTION		
Very Intensely Fractured	Chips, fragments, with scattered short core lengths		
Intensely Fractured	0.1 foot - 0.3 foot with scattered fragments		
Moderately Fractured	0.3 foot - 1 foot		
Slightly Fractured	1 foot - 3 feet		
Very Slightly Fractured	> 3 feet		
Unfractured	No fractures observed		
ROCK HEALING	DESCRIPTION		
Not Healed	Discontinued surface, fractured zone, sheared material, filling is not cemented		
Partly Healed	Fractured/sheared material - bonded is < 50%		
Moderately Healed	Fractured/sheared material - bonded is > 50%		
Totally Healed	All fragments are bonded		

**APPENDIX D
PHOTO LOG**

Barber Street Housing Project

April, 2023

Wilsonville, Oregon



North Site Area, Facing North

Barber Street Housing Project

April, 2023

Wilsonville, Oregon



Southwestern Site Area, Facing East

Barber Street Housing Project

April, 2023

Wilsonville, Oregon



Southeastern Site Area, Facing West

Barber Street Housing Project

April, 2023

Wilsonville, Oregon



Split Spoon Sample, SB1.3 Depth 7.5 feet

Barber Street Housing Project

April, 2023

Wilsonville, Oregon



Split Spoon Sample, SB3.3 Depth 5 feet

APPENDIX E
REPORT LIMITATIONS AND IMPORTANT INFORMATION

Date: May 18, 2023
Project: Barber Street Housing Development
Wilsonville, Oregon

Geotechnical and Environmental Report Limitations and Important Information

Report Purpose, Use, and Standard of Care

This report has been prepared in accordance with standard fundamental principles and practices of geotechnical engineering and/or environmental consulting, and in a manner consistent with the level of care and skill typical of currently practicing local engineers and consultants. This report has been prepared to meet the specific needs of specific individuals for the indicated site. It may not be adequate for use by other consultants, contractors, or engineers, or if change in project ownership has occurred. It should not be used for any other reason than its stated purpose without prior consultation with Columbia West Engineering, Inc. (Columbia West). It is a unique report and not applicable for any other site or project. If site conditions are altered, or if modifications to the project description or proposed plans are made after the date of this report, it may not be valid. Columbia West cannot accept responsibility for use of this report by other individuals for unauthorized purposes, or if problems occur resulting from changes in site conditions for which Columbia West was not aware or informed.

Report Conclusions and Preliminary Nature

This geotechnical or environmental report should be considered preliminary and summary in nature. The recommendations contained herein have been established by engineering interpretations of subsurface soils based upon conditions observed during site exploration. The exploration and associated laboratory analysis of collected representative samples identifies soil conditions at specific discreet locations. It is assumed that these conditions are indicative of actual conditions throughout the subject property. However, soil conditions may differ between tested locations at different seasonal times of the year, either by natural causes or human activity. Distinction between soil types may be more abrupt or gradual than indicated on the soil logs. This report is not intended to stand alone without understanding of concomitant instructions, correspondence, communication, or potential supplemental reports that may have been provided to the client.

Because this report is based upon observations obtained at the time of exploration, its adequacy may be compromised with time. This is particularly relevant in the case of natural disasters, earthquakes, floods, or other significant events. Report conclusions or interpretations may also be subject to revision if significant development or other manmade impacts occur within or in proximity to the subject property. Groundwater conditions, if presented in this report, reflect observed conditions at the time of investigation. These conditions may change annually, seasonally or as a result of adjacent development.

Additional Investigation and Construction QA/QC

Columbia West should be consulted prior to construction to assess whether additional investigation above and beyond that presented in this report is necessary. Even slight variations in soil or site conditions may produce impacts to the performance of structural facilities if not adequately addressed. This underscores the importance of diligent QA/QC construction observation and testing to verify soil conditions do not differ materially or significantly from the interpreted conditions utilized for preparation of this report.

Therefore, this report contains several recommendations for field observation and testing by Columbia West personnel during construction activities. Actual subsurface conditions are more readily observed and discerned during the earthwork phase of construction when soils are exposed. Columbia West cannot accept responsibility for deviations from recommendations described in this report or future

performance of structural facilities if another consultant is retained during the construction phase or Columbia West is not engaged to provide construction observation to the full extent recommended.

Collected Samples

Uncontaminated samples of soil or rock collected in connection with this report will be retained for thirty days. Retention of such samples beyond thirty days will occur only at client's request and in return for payment of storage charges incurred. All contaminated or environmentally impacted materials or samples are the sole property of the client. Client maintains responsibility for proper disposal.

Report Contents

This geotechnical or environmental report should not be copied or duplicated unless in full, and even then only under prior written consent by Columbia West, as indicated in further detail in the following text section entitled *Report Ownership*. The recommendations, interpretations, and suggestions presented in this report are only understandable in context of reference to the whole report. Under no circumstances should the soil boring or test pit excavation logs, monitor well logs, or laboratory analytical reports be separated from the remainder of the report. The logs or reports should not be redrawn or summarized by other entities for inclusion in architectural or civil drawings, or other relevant applications.

Report Limitations for Contractors

Geotechnical or environmental reports, unless otherwise specifically noted, are not prepared for the purpose of developing cost estimates or bids by contractors. The extent of exploration or investigation conducted as part of this report is usually less than that necessary for contractor's needs. Contractors should be advised of these report limitations, particularly as they relate to development of cost estimates. Contractors may gain valuable information from this report, but should rely upon their own interpretations as to how subsurface conditions may affect cost, feasibility, accessibility and other components of the project work. If believed necessary or relevant, contractors should conduct additional exploratory investigation to obtain satisfactory data for the purposes of developing adequate cost estimates. Clients or developers cannot insulate themselves from attendant liability by disclaiming accuracy for subsurface ground conditions without advising contractors appropriately and providing the best information possible to limit potential for cost overruns, construction problems, or misunderstandings.

Report Ownership

Columbia West retains the ownership and copyright property rights to this entire report and its contents, which may include, but may not be limited to, figures, text, logs, electronic media, drawings, laboratory reports, and appendices. This report was prepared solely for the client, and other relevant approved users or parties, and its distribution must be contingent upon prior express written consent by Columbia West. Furthermore, client or approved users may not use, lend, sell, copy, or distribute this document without express written consent by Columbia West. Client does not own nor have rights to electronic media files that constitute this report, and under no circumstances should said electronic files be distributed or copied. Electronic media is susceptible to unauthorized manipulation or modification, and may not be reliable.

Consultant Responsibility

Geotechnical and environmental engineering and consulting is much less exact than other scientific or engineering disciplines, and relies heavily upon experience, judgment, interpretation, and opinion often based upon media (soils) that are variable, anisotropic, and non-homogenous. This often results in unrealistic expectations, unwarranted claims, and uninformed disputes against a geotechnical or environmental consultant. To reduce potential for these problems and assist relevant parties in better understanding of risk, liability, and responsibility, geotechnical and environmental reports often provide definitive statements or clauses defining and outlining consultant responsibility. The client is encouraged to read these statements carefully and request additional information from Columbia West if necessary.

December 7, 2023

Palindrome Wilsonville Limited Partnership
412 NW 5th Avenue
Portland, Oregon 97209

Attn: Jason Ellis

**Re: Report of Geotechnical Engineering Services
Barber Street Housing Development
Supplemental Infiltration Testing
9699 SW Barber Street
Wilsonville, Oregon
CWE Project: Palindrome-3-01-1**

INTRODUCTION

Columbia West Engineering, Inc. (Columbia West) is pleased to submit this report of geotechnical engineering services for the Barber Street Housing Development located at 9699 SW Barber Street in Wilsonville, Oregon. Columbia West previously prepared the following geotechnical documents for the project:

- Columbia West Engineering, Inc., *Geotechnical Site Investigation, Barber Street Housing Development, Wilsonville, Oregon, May 18, 2023.*
- Columbia West Engineering, Inc., *Infiltration Feasibility, Barber Street Housing Development, Wilsonville, Oregon, June 20, 2023.*

The City of Wilsonville has requested additional infiltration testing at the locations of proposed stormwater facilities to meet applicable stormwater design code requirements.

INFILTRATION TESTING

Infiltration potential of site soils was evaluated through in situ infiltration testing in boring B-1 (Columbia West, May 18, 2023) and in hand auger borings HA-1 through HA-7 conducted for this current supplemental investigation. The approximate locations of the boring and hand augers are shown on Figure 1. Exploration logs are presented in Appendix A.

Stand pipe, falling head infiltration testing was performed by embedding a hollow stem auger in boring B-1 and steel pipe in HA-1 through HA-7 in undisturbed native soil, filling the apparatus with water, and measuring time relative to changes in hydraulic head. Representative soil samples were collected from select test locations and submitted for laboratory analysis. Laboratory test reports are presented in Appendix B. Results of in situ infiltration testing are presented below in Table 1.

Table 1. Infiltration Test Results

Test Number	Location	Depth (feet BGS)	Passing No. 200	Depth to Groundwater (feet BGS)	Measured Infiltration Rate (in/hr)
IT-1.1	B-1	4.0	-	Not Encountered to 31.5	Negligible
IT-1.2	B-1	7.5	24	Not Encountered to 31.5	Negligible
HA-1.1	HA-1	2.0	64	Not Encountered to 2.0	Negligible
HA-2.1	HA-2	1.0	-	Not Encountered to 1.0	Negligible
HA-3.1	HA-3	0.75	31	Not Encountered to 0.75	Negligible
HA-4.1	HA-4	2.25	-	Not Encountered to 2.25	Negligible
HA-5.1	HA-5	1	-	Not Encountered to 1.0	Negligible
HA-6.1	HA-6	2.75	-	Not Encountered to 2.75	Negligible
HA-7.1	HA-7	2.25	-	Not Encountered to 2.25	Negligible

Based on the presence of fine-textured, very dense, low permeability site soils, infiltration is not a feasible option for stormwater management.

LIMITATIONS

We have prepared this report for use by Palindrome Wilsonville Limited Partnership and members of the design and construction team for the proposed project. The data and report can be used for design 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.

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 the 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 the 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.

Sincerely,
Columbia West Engineering, Inc.



Jason F. Merritt, PE
Senior Project Engineer



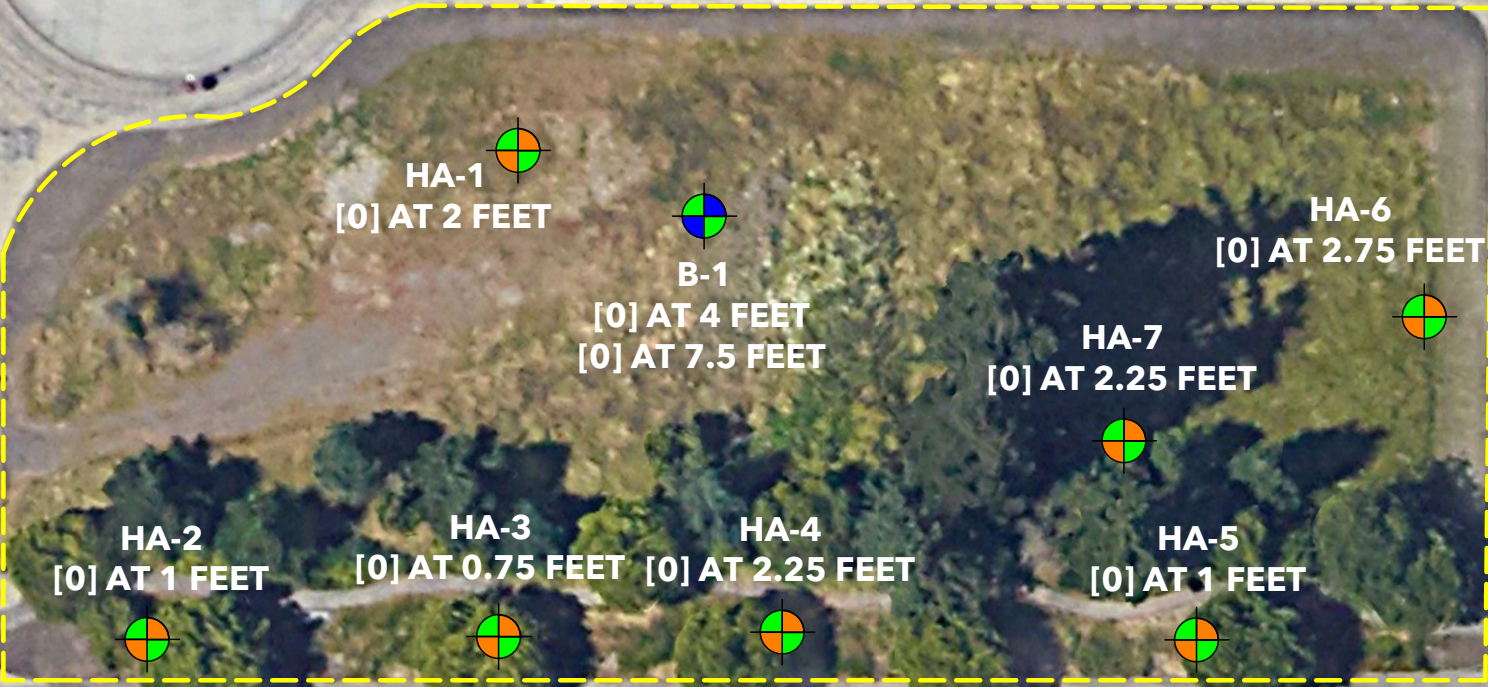
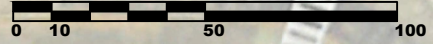
Brett A. Shipton, PE, GE
Principal

JFM:BAS




Attachments

Document ID:Palindrome-3-01-1-120723-geol





LEGEND

-  APPROXIMATE SITE BOUNDARY
-  BORING WITH INFILTRATION LOCATION
[X] UNFACTORED INFILTRATION RATE [IN/HR]
-  HAND AUGER WITH INFILTRATION LOCATION
[X] UNFACTORED INFILTRATION RATE [IN/HR]

PROJECT: PALINDROME-3-01-1
 DATE: 12-01-23
 DRAWN: EMU
 CHECKED: JFM

EXPLORATION MAP
 BARBER STREET HOUSING
 DEVELOPMENT

- NOTES:**
1. SITE LOCATION: 9699 SW BARBER STREET IN WILSONVILLE, OREGON.
 2. SITE CONSISTS OF TAX PARCEL 31W14B00703 TOTALING APPROXIMATELY 3.36 ACRES.
 3. AERIAL PHOTO SOURCED FROM GOOGLE EARTH.
 4. EXPLORATION LOCATIONS ARE APPROXIMATE AND NOT SURVEYED.
 5. BORING BACKFILLED WITH BETONITE ON APRIL 28, 2023.
 6. HAND AUGERS BACKFILLED WITH ONSITE SOIL ON NOVEMBER 30, 2023.

APPENDIX A EXPLORATION LOGS




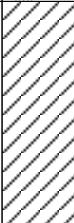
SOIL BORING LOG

PROJECT NAME Barber Street Housing Development		CLIENT Palindrome Wilsonville Limited Partnership		PROJECT NO. 23122	BORING NO. SB-1
PROJECT LOCATION Wilsonville, Oregon		DRILLING CONTRACTOR Western States	DRILL RIG CME75 Truck 9	TECHNICIAN EMU	PAGE NO. 1 of 1
BORING LOCATION See Figure 2		DRILLING METHOD HSA	SAMPLING METHOD SPT	START DATE 04/28/23	START TIME 0820
REMARKS None		GROUNDWATER DEPTH Not encountered		FINISH DATE 04/28/23	FINISH TIME 1130

Depth (ft)	Field ID + Sample Type	SPT N-value (uncorrected) 0 20 40 60	USCS Soil Type	AASHTO Soil Type	Graphic Log	LITHOLOGIC DESCRIPTION AND REMARKS	Infiltration (in/hr)	Moisture Content (%)	Passing No. 200 Sieve (%)	Liquid Limit	Plasticity Index
0			GC			2-inch root zone.					
2	SPT	51				Clayey GRAVEL with sand, brown and gray, damp, very dense, clay is nonplastic to low plasticity, fine- to medium-textured sand, fractured gravels.		17	27		
4	SB1.1 SPT	50				Infiltration test run prior to SPT at 4 feet.	Neg.				
6	SB1.2										
8	SPT	32				Infiltration test run prior to SPT at 7.5 feet. Becomes dense at 7.5 feet.	Neg.	17	24	31	10
10	SB1.3 SPT	28									
12	SB1.4										
14			GM			Drill started to grind on gravel at 13 feet.					
16	SPT	34				Silty GRAVEL with sand, brown, very moist, dense, silt is nonplastic to low plasticity, fine- to coarse-textured sand, fine- to coarse-textured gravel. Driller indicated heaving at 15 feet.		17	12		
18	SB1.5										
20	SPT	50				Driller indicated auger was spinning on cobble or boulder at 19 feet. Becomes very dense at 20 feet.					
22	SB1.6										
24											
26	SPT	43	CL			Lean CLAY, blue and brown, moist, hard, low to medium plasticity, fine-textured sand.					
28	SB1.7										
30	SPT	21				Becomes blue-gray and brown and very stiff at 30 feet.		30	90		
32	SB1.8										
34						Boring completed at 31.5 feet bgs. Groundwater not observed on 4/28/23.					

HAND AUGER LOG

PROJECT NAME Barber Street Housing Development	CLIENT Palindrome Wilsonville Limited Partnership	PROJECT NO. Palindrome-3-01-1	BORING NO. HA-1
PROJECT LOCATION Willsonville, Oregon	CONTRACTOR N/A	EQUIPMENT Hand Auger	TECHNICIAN EMU
TEST PIT LOCATION See Figure 2	GROUNDWATER DEPTH Not Observed	START TIME 0845	FINISH TIME 1326

Depth (feet)	Sample Field ID	SCS Soil Survey Description	AASHTO Soil Type	USCS Soil Type	Graphic Log	LITHOLOGIC DESCRIPTION AND REMARKS	Moisture Content (%)	Passing No. 200 Sieve (%)	Liquid Limit	Plasticity Index	Infiltration Testing
0	HA1.1					Approximately 6-inches topsoil (2-inch root zone).	35	64			
				CL		Brown, lean CLAY with sand, moist, stiff, low plasticity, fine sand.					
						Rounded gravels at 2 feet. Infiltration test performed at 2 feet.					
						Hand auger terminated at 2 feet due to dense gravels. Groundwater not observed on 11/30/23.					
5											
10											


HAND AUGER LOG

PROJECT NAME Barber Street Housing Development	CLIENT Palindrome Wilsonville Limited Partnership	PROJECT NO. Palindrome-3-01-1	BORING NO. HA-2
PROJECT LOCATION Willsonville, Oregon	CONTRACTOR N/A	EQUIPMENT Hand Auger	TECHNICIAN EMU
TEST PIT LOCATION See Figure 2	GROUNDWATER DEPTH Not Observed	START TIME 0900	FINISH TIME 1035

Depth (feet)	Sample Field ID	SCS Soil Survey Description	AASHTO Soil Type	USCS Soil Type	Graphic Log	LITHOLOGIC DESCRIPTION AND REMARKS	Moisture Content (%)	Passing No. 200 Sieve (%)	Liquid Limit	Plasticity Index	Infiltration Testing
0						Approximately 9-inches topsoil (2-inch root zone).					
				CL		Brown, lean CLAY with sand and gravel, moist, stiff, low plasticity, fine sand, fine to coarse gravel. Infiltration test performed at 1 foot. Hand auger terminated at 1 feet due to dense gravels. Groundwater not observed on 11/30/23.					
5											
10											


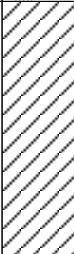
HAND AUGER LOG

PROJECT NAME Barber Street Housing Development	CLIENT Palindrome Wilsonville Limited Partnership	PROJECT NO. Palindrome-3-01-1	BORING NO. HA-3
PROJECT LOCATION Willsonville, Oregon	CONTRACTOR N/A	EQUIPMENT Hand Auger	TECHNICIAN EMU
TEST PIT LOCATION See Figure 2	GROUNDWATER DEPTH Not Observed	START TIME 0930	FINISH TIME 1320

Depth (feet)	Sample Field ID	SCS Soil Survey Description	AASHTO Soil Type	USCS Soil Type	Graphic Log	LITHOLOGIC DESCRIPTION AND REMARKS	Moisture Content (%)	Passing No. 200 Sieve (%)	Liquid Limit	Plasticity Index	Infiltration Testing
0	HA3.1					Approximately 8-inches topsoil (2-inch root zone).	39	31			
						Infiltration test performed at 0.75 feet.					
5						Hand auger terminated at 0.75 feet due to dense gravels. Groundwater not observed on 11/30/23.					
10											



HAND AUGER LOG

PROJECT NAME Barber Street Housing Development	CLIENT Palindrome Wilsonville Limited Partnership	PROJECT NO. Palindrome-3-01-1	BORING NO. HA-4
PROJECT LOCATION Willsonville, Oregon	CONTRACTOR N/A	EQUIPMENT Hand Auger	TECHNICIAN EMU
TEST PIT LOCATION See Figure 2	GROUNDWATER DEPTH Not Observed	START TIME 0940	FINISH TIME 1338

Depth (feet)	Sample Field ID	SCS Soil Survey Description	AASHTO Soil Type	USCS Soil Type	Graphic Log	LITHOLOGIC DESCRIPTION AND REMARKS	Moisture Content (%)	Passing No. 200 Sieve (%)	Liquid Limit	Plasticity Index	Infiltration Testing
0						Approximately 6-inches topsoil (2-inch root zone).					
				CL		Brown, lean CLAY with sand and gravel, moist, stiff, low plasticity, fine sand, fine to coarse gravel.					
						Infiltration test performed at 2.25 feet.					
						Hand auger terminated at 2.25 feet due to dense gravels. Groundwater not observed on 11/30/23.					
5											
10											

HAND AUGER LOG

PROJECT NAME Barber Street Housing Development	CLIENT Palindrome Wilsonville Limited Partnership	PROJECT NO. Palindrome-3-01-1	BORING NO. HA-5
PROJECT LOCATION Willsonville, Oregon	CONTRACTOR N/A	EQUIPMENT Hand Auger	TECHNICIAN EMU
TEST PIT LOCATION See Figure 2	GROUNDWATER DEPTH Not Observed	START TIME 1007	FINISH TIME 1245

Depth (feet)	Sample Field ID	SCS Soil Survey Description	AASHTO Soil Type	USCS Soil Type	Graphic Log	LITHOLOGIC DESCRIPTION AND REMARKS	Moisture Content (%)	Passing No. 200 Sieve (%)	Liquid Limit	Plasticity Index	Infiltration Testing
0						Approximately 12-inches topsoil (2-inch root zone).					
				CL		Brown, lean CLAY with sand and gravel, moist, stiff, low plasticity, fine sand, fine to coarse gravel.					
5						Infiltration test performed at 1.25 feet. Hand auger terminated at 1.25 feet due to dense gravels. Groundwater not observed on 11/30/23.					
10											




HAND AUGER LOG

PROJECT NAME Barber Street Housing Development	CLIENT Palindrome Wilsonville Limited Partnership	PROJECT NO. Palindrome-3-01-1	BORING NO. HA-6
PROJECT LOCATION Willsonville, Oregon	CONTRACTOR N/A	EQUIPMENT Hand Auger	TECHNICIAN EMU
TEST PIT LOCATION See Figure 2	GROUNDWATER DEPTH Not Observed	START TIME 1038	FINISH TIME 1355

Depth (feet)	Sample Field ID	SCS Soil Survey Description	AASHTO Soil Type	USCS Soil Type	Graphic Log	LITHOLOGIC DESCRIPTION AND REMARKS	Moisture Content (%)	Passing No. 200 Sieve (%)	Liquid Limit	Plasticity Index	Infiltration Testing
0						Approximately 8-inches topsoil (2-inch root zone).					
				CL		Brown, lean CLAY with sand, moist, stiff, low plasticity, fine sand.					
						Infiltration test performed at 2.75 feet.					
						Hand auger terminated at 2.75 feet due to dense gravels. Groundwater not observed on 11/30/23.					
5											
10											

HAND AUGER LOG

PROJECT NAME Barber Street Housing Development	CLIENT Palindrome Wilsonville Limited Partnership	PROJECT NO. Palindrome-3-01-1	BORING NO. HA-7
PROJECT LOCATION Willsonville, Oregon	CONTRACTOR N/A	EQUIPMENT Hand Auger	TECHNICIAN EMU
TEST PIT LOCATION See Figure 2	GROUNDWATER DEPTH Not Observed	START TIME 1105	FINISH TIME 1347

Depth (feet)	Sample Field ID	SCS Soil Survey Description	AASHTO Soil Type	USCS Soil Type	Graphic Log	LITHOLOGIC DESCRIPTION AND REMARKS	Moisture Content (%)	Passing No. 200 Sieve (%)	Liquid Limit	Plasticity Index	Infiltration Testing
0						Approximately 8-inches topsoil (2-inch root zone).					
				CL		Brown, lean CLAY with sand, moist, stiff, low plasticity, fine sand.					
						Fine to coarse gravels at 2 feet. Infiltration test performed at 2.25 feet.					
						Hand auger terminated at 2.25 feet due to dense gravels. Groundwater not observed on 11/30/23.					
5											
10											

APPENDIX B LABORATORY TEST REPORTS



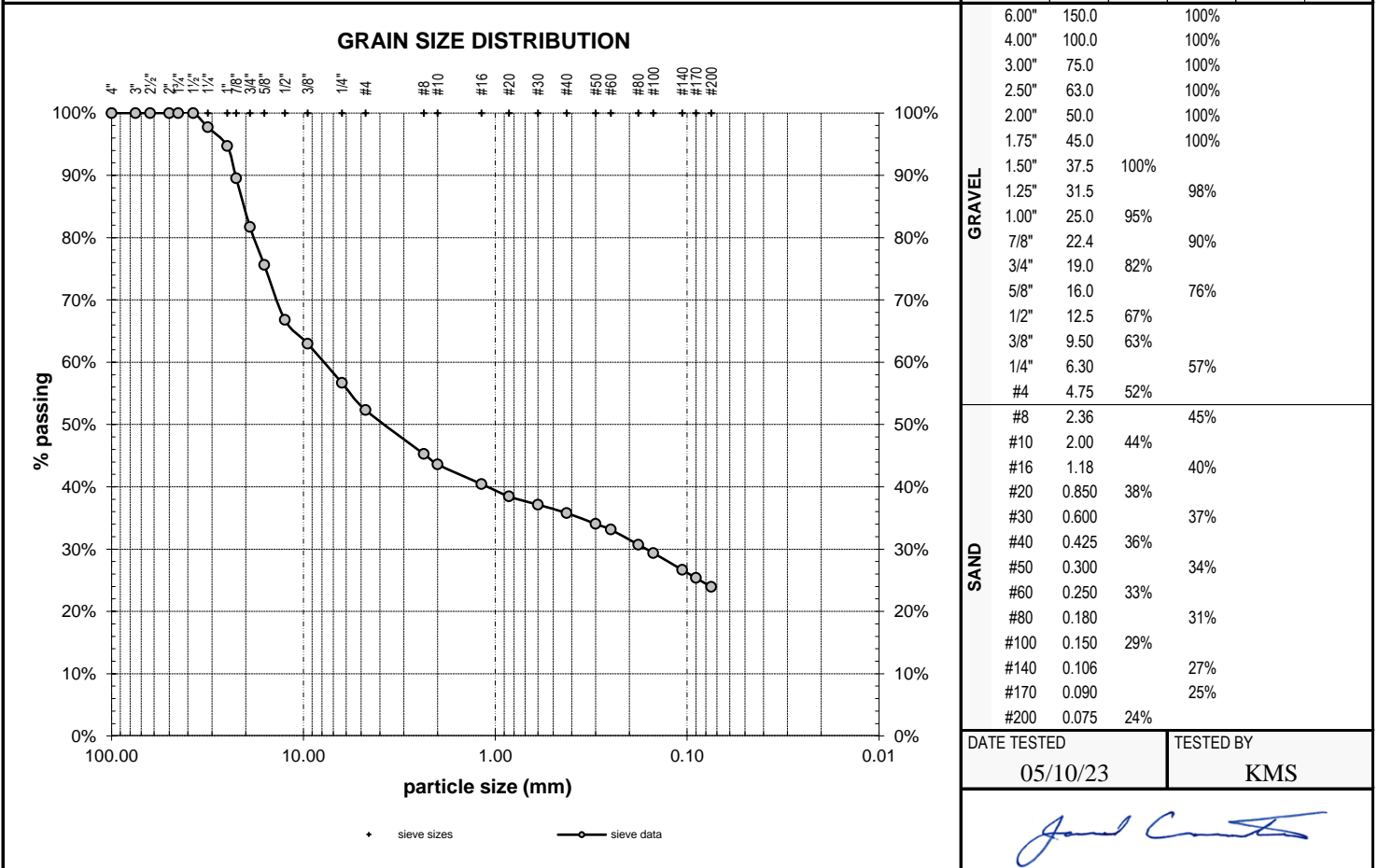
PARTICLE-SIZE ANALYSIS REPORT

PROJECT Barber Street Housing Development Wilsonville, Oregon	CLIENT Palindrome Communities, LLC 412 NW 5th Avenue Portland, Oregon 97209	PROJECT NO.	23122	LAB ID	S23-0534
		REPORT DATE	05/12/23	FIELD ID	B1.3
		DATE SAMPLED	04/28/23	SAMPLED BY	EMU

MATERIAL DATA					
MATERIAL SAMPLED brown Clayey GRAVEL with Sand		MATERIAL SOURCE Boring B-01 depth = 7.5 feet		USCS SOIL TYPE GC, Clayey Gravel with Sand	
SPECIFICATIONS none				AASHTO CLASSIFICATION A-2-4(0)	

LABORATORY TEST DATA					
LABORATORY EQUIPMENT Rainhart "Mary Ann" Sifter, air-dried prep, hand washed, composite sieve - #4 split				TEST PROCEDURE ASTM D6913, Method A	

ADDITIONAL DATA					
initial dry mass (g) = 588.15		coefficient of curvature, C_c = n/a		SIEVE DATA % gravel = 47.7% % sand = 28.4% % silt and clay = 23.9%	
as-received moisture content = 17%		coefficient of uniformity, C_u = n/a			
liquid limit = 31		effective size, $D_{(10)}$ = n/a			
plastic limit = 21		$D_{(30)}$ = 0.163 mm			
plasticity index = 10		$D_{(60)}$ = 7.828 mm			
fineness modulus = n/a					
NOTES: Entire sample used for analysis; did not meet minimum size required.					



DATE TESTED 05/10/23	TESTED BY KMS

ATTERBERG LIMITS REPORT

PROJECT Barber Street Housing Development Wilsonville, Oregon	CLIENT Palindrome Communities, LLC 412 NW 5th Avenue Portland, Oregon 97209	PROJECT NO. 23122	LAB ID S23-0534
		REPORT DATE 05/12/23	FIELD ID B1.3
		DATE SAMPLED 04/28/23	SAMPLED BY EMU

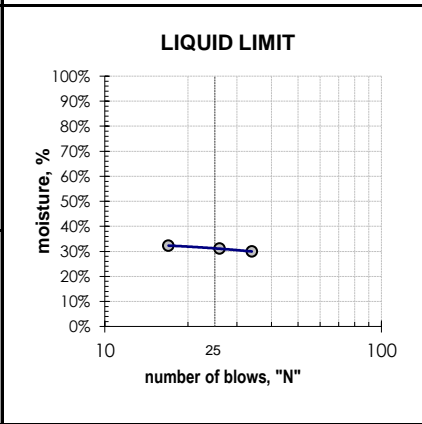
MATERIAL DATA

MATERIAL SAMPLED brown Clayey GRAVEL with Sand	MATERIAL SOURCE Boring B-01 depth = 7.5 feet	USCS SOIL TYPE GC, Clayey Gravel with Sand
---	--	---

LABORATORY TEST DATA

LABORATORY EQUIPMENT Liquid Limit Machine, Hand Rolled	TEST PROCEDURE ASTM D4318
---	------------------------------

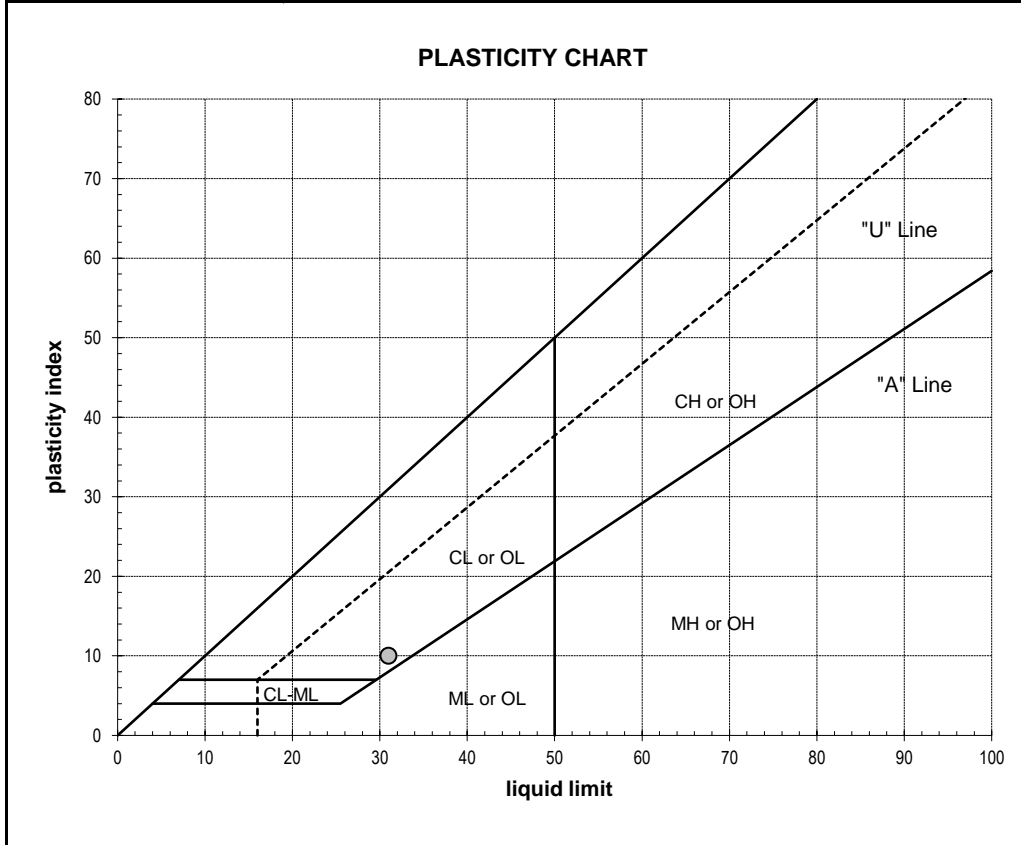
ATTERBERG LIMITS	LIQUID LIMIT DETERMINATION	1	2	3	4
liquid limit = 31	wet soil + pan weight, g =	32.18	33.02	32.90	
plastic limit = 21	dry soil + pan weight, g =	29.60	30.16	30.00	
plasticity index = 10	pan weight, g =	20.98	20.97	21.02	
	N (blows) =	34	26	17	
	moisture, % =	29.9 %	31.1 %	32.3 %	



SHRINKAGE	PLASTIC LIMIT DETERMINATION	1	2	3	4
shrinkage limit = n/a	wet soil + pan weight, g =	27.90	27.48		
shrinkage ratio = n/a	dry soil + pan weight, g =	26.66	26.24		
	pan weight, g =	20.87	20.42		
	moisture, % =	21.4 %	21.3 %		

ADDITIONAL DATA

% gravel =	47.7%
% sand =	28.4%
% silt and clay =	23.9%
% silt =	n/a
% clay =	n/a
moisture content =	17%



DATE TESTED 05/10/23	TESTED BY MRS/KMS
-------------------------	----------------------

Janet Curtis

Preliminary Stormwater Management Plan
For Wilsonville TOD
Mixed-Use Apartments
Wilsonville, Oregon
(TL 703, Tax Map 31W14B)

Emerio Project Number: 0951-003
City of Wilsonville Permit Number: TBD
Date: 11/29/2023



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List of Appendices:

APPENDIX A – Site Information

- (1) Vicinity Map
- (2) Onsite Soils Maps – “Soils Survey for Clackamas County”
- (3) Curve Number Table
- (4) Geotechnical Report (Columbia West Engineering, Inc., May 18, 2023)

APPENDIX B – Storm Facility Sizing & Analysis

- (1) WES BMP Sizing Report

APPENDIX C – Site & Basin Maps

- (1) Pre-Developed Site Map
- (2) Post-Developed Basin Map

Project Overview and Description:

Size and location of project site: The current site is located approximately 320 feet west of the intersection of SW Kinsman Road and SW Barber Street. The site will be developed into mixed use apartments, which will include onsite parking areas, walkways, and landscape areas, along with frontage improvements along SW Barber Street. The site address is 9749 SW Barber Street, see Appendix A(1) for a map of the site location.

Type of Development: The proposed development is primarily composed of multi-family residential apartments with the previously described amenities. The proposed onsite buildings will also include a coffee shop/tap house. Frontage improvements will include new sidewalk and landscaped areas.

Existing vs. post-construction conditions: Currently the site is made up of a primarily grassed and undeveloped lot with some trees and shrubs along the southern border of the site. In the post-developed condition, the previously described proposed apartments and associated walkways and parking areas will make up most of the site. Some of the existing trees will be preserved, while others will be removed.

Watershed Description: The site currently sheet flows toward the southwest corner of the site. In the post-developed condition, onsite impervious areas will be collected by onsite planter facilities, then routed to the existing storm system along SW Barber Road via a piped storm system. Onsite pervious areas will also route to this public storm system via overland flow or via the onsite piped storm system. Frontage improvement areas will have a similar pattern to the onsite areas, with runoff being collected by proposed planters then piped to the existing storm system along SW Barber Road.

Soil Classification:

The NRCS soil survey of Clackamas County, Oregon classifies the onsite soils as Salem Silt Loam, Willamette Silt Loam, and Woodburn Silt Loam. The associated hydrologic groups for these soils are B, B, and C respectively. Due to low onsite infiltration rates, HSG C will be used for the purposes of sizing all onsite and frontage planters. For the future analysis of the proposed storm pipe network, a curve number of 86 will be used for pervious surfaces, and a curve number of 98 will be used for impervious surfaces. See Appendix A(2) for a soil classification map and A(3) for a curve number table.

Infiltration Testing:

Onsite infiltration testing was conducted by Columbia West Engineering, Inc. on April 28 and December 7, 2023. The testing revealed that there was negligible infiltration on the site and that designing infiltration facilities is unfeasible. See Appendix A(4) for the full geotechnical report.

Onsite Treatment Methodology:

Onsite stormwater runoff from impervious areas will be addressed by filtration planters and porous pavement. All proposed roof and parking areas will route runoff to onsite filtration planters, along with some walkway areas. All walkway areas that do not route runoff to planters will be constructed of porous pavement.

The City of Wilsonville approves the use of the WES BMP Sizing Tool to size the filtration planter facilities. Per conversations with City of Wilsonville and the absence of measurable onsite infiltration rates, all planters will be sized using Hydrologic Soil Group (HSG) C. Planters in areas designated as HSG B (see Appendix A(2)) that meet infiltration setback

requirements will be designed with open bottoms to allow for any extraneous infiltration. Planters facilities that meet these criteria are Planters 8, 9, 10, and 11.

Some onsite planter volumes are hydraulically connected via pipes and will operate as a single facility. The planters that will operate under this design are Planters 1 & 2 to the northwest of the proposed building and Planters 3, 4, & 5 to the west of the proposed building, see Appendix C(2).

See the following table for the basin areas routing to each facility and both the required and provided planter sizes.

Basin ID	Facility ID	Total Basin Area (SF)	Facility Area Required (SF)	Facility Area Provided (SF)	Orifice Size (in)
A	Planters 1 & 2	19,855	1,389.9	1,595.0	1.3
B	Planters 3, 4, & 5	3,766	263.6	333.0	0.6
C	Planter 6	4,697	328.8	357.0	0.7
D	Planter 7	1,124	78.7	295.0	0.3
E	Planter 8	3,668	256.8	259.0	0.6
F	Planter 9	1,305	91.4	96.0	0.3
G	Planter 10	1,096	76.7	96.0	0.3
H	Planter 11	1,928	135.0	146.0	0.4

As shown in the table above, all proposed facilities were appropriately sized to meet water quality and detention standards. See Appendix C(2) for the basin delineation map and Appendix B(1) for the BMP sizing report.

Offsite Treatment Methodology:

All new impervious areas along SW Barber Road will route to proposed filtration planters along SW Barber Road. The proposed planter facilities replace an existing treatment facility and will provide treatment to all previously treated existing impervious area along SW Barber Road.

A large portion of the existing impervious area that requires treatment is upstream of the proposed planter locations. The furthest upstream planter (ROW Planter E) will be constructed with adequate capacity to treat this existing upstream impervious area by implementing check dams into the planter design.

ROW Planters C, & D contain street trees. A 6 ft x 8 ft area around these trees will not be considered as treatment area.

See the following table for the basin areas going to each facility and both the required and provided planter sizes.

Basin ID	Facility ID	Total Basin Area (SF)	Facility Area Required (SF)	Facility Area Provided (SF)	Orifice Size (in)
I	ROW Planter A	694	48.6	96.0	0.2
J	ROW Planter B	1,366	95.6	96.0	0.4
K	ROW Planter C	2,457	172.0	174.0	0.5
L	ROW Planter D	3,272	229.0	229.0	0.5
M	ROW Planter E	7,659	536.1	539.0	0.8

As shown in the table above, all proposed facilities were appropriately sized to meet water quality and detention standards. See Appendix C(2) for the basin delineation map and Appendix B(1) for the BMP sizing report.

Conclusion:

The design of the proposed site satisfies the stormwater design standards set by the City of Wilsonville.

Appendix A

Appendix A(1)
Vicinity Map



Appendix A(2)
Soil Classification Map



Tables — Hydrologic Soil Group — Summary By Map Unit

Summary by Map Unit — Clackamas County Area, Oregon (OR610)

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
76B	Salem silt loam, 0 to 7 percent slopes	B	0.7	44.2%
87A	Willamette silt loam, gravelly substratum, 0 to 3 percent slopes	B	0.0	1.1%
91A	Woodburn silt loam, 0 to 3 percent slopes	C	0.8	54.7%
Totals for Area of Interest			1.5	100.0%

Appendix A(3)
Curve Number Table

RUNOFF CURVE NUMBERS (TR55)					
Table 2-2a: Runoff curve numbers for urban areas ¹					
Cover description		CN for hydrologic soil group			
Cover type and hydrologic condition	Average percent impervious area ²	A	B	C	D
		<i>Fully developed urban areas (vegetation established)</i>	Use CN = 86 for Onsite and Offsite Pervious Areas		
Open space (lawns, parks, golf courses, cemeteries, etc.) ³ :					
Poor condition (grass cover <50%)	68	79		86	89
Fair condition (grass cover 50% to 75%)	49	69		79	84
Good condition (grass cover >75%)	39	61	74	80	
Impervious areas:					
Paved parking lots, roofs, driveways, etc. (excluding right-of-way)		98	98	98	98
Streets and roads:					
Paved; curbs and storm sewers (excluding right-of-way)				98	98
Paved; open ditches (including right-of-way)				92	93
Gravel (including right-of-way)		76	85	89	91
Dirt (including right-of-way)		72	82	87	89
Western desert urban areas:					
Natural desert landscaping (pervious areas only) ⁴		63	77	85	88
Artificial desert landscaping (impervious weed barrier, desert shrub with 1- to 2-inch sand or gravel mulch and basin borders)		96	96	96	96
Urban districts:					
Commercial and business	85	89	92	94	95
Industrial	72	81	88	91	93
Residential districts by average lot size:					
1/8 acre or less (town houses)	65	77	85	90	92
1/4 acre	38	61	75	83	87
1/3 acre	30	57	72	81	86
1/2 acre	25	54	70	80	85
1 acre	20	51	68	79	84
2 acres	12	46	65	77	82

Geotechnical Site Investigation

**Barber Street Housing
Development**

Wilsonville, Oregon

May 18, 2023

11917 NE 95th Street
Vancouver, Washington
98682
Phone: 360-823-2900

Geotechnical ■ Environmental ■ Special Inspections





**GEOTECHNICAL SITE INVESTIGATION
BARBER STREET HOUSING DEVELOPMENT
WILSONVILLE, OREGON**

Prepared For: Palindrome Wilsonville Limited Partnership
Attn: Jason Ellis
412 NW 5th Avenue
Portland, Oregon 97201

Site Location: 9699 SW Barber Street
Wilsonville, Oregon 97070

Prepared By: Columbia West Engineering, Inc.
11917 NE 95th Street
Vancouver, Washington 98682
Phone: 360-823-2900
Work Order Number 23122

Date Prepared: May 18, 2023

EXECUTIVE SUMMARY

This executive summary presents the primary geotechnical considerations associated with the proposed Barber Street Housing Development project located in Wilsonville, Oregon. Our conclusions and recommendations are based upon the subsurface information presented in this report and proposed development information provided by the design team. Detailed discussion of the geotechnical considerations summarized here is presented in respective sections of the report.

- Based on subsurface exploration and testing, site soils are not susceptible to liquefaction under design levels of ground shaking.
- Foundations designed in accordance with this report should be sized based on an allowable soil bearing capacity of 2,500 psf and are expected to experience a post construction settlement of less than one inch. Differential post construction settlement between comparably-loaded footing elements is not expected to exceed 0.5 inches.
- Undocumented fill was encountered in two borings located on the northwest portion of the site to depths between approximately 3 and 6.5 feet below ground surface (BGS). Though not observed within the proposed building footprint, undocumented fill and should be completely removed if encountered under footings. There is also a risk of premature pavement distress if existing fill is left in place beneath future pavements. Additional discussions and our recommendations are provided in the report.
- Groundwater was not observed within the borings to the maximum explored depth of 31.5 feet BGS, however the driller indicated heaving soils at approximately 15 feet BGS in boring B-1. Review of information in our files and nearby well logs presented in Appendix B indicates that groundwater could range from 10 to 20 feet BGS in the vicinity of the site.
- Moisture conditioning (drying) of existing fill and native soil may be required to use the material as structural fill. Addition of moisture may also be necessary during periods of warm, dry weather. If moisture conditioning is not feasible, soils may require cement-amendment to be used as structural fill.
- Fine-grained soils will be sensitive to disturbance and softening when at a moisture content that is above optimum. Haul roads and staging areas will be necessary to minimize damage to exposed subgrade soils during construction. Subgrade protection is discussed in Section 8.2, *Construction Traffic and Staging*.
- Based on fine-textured materials and results of in situ infiltration testing, infiltration is likely not feasible for stormwater management.

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5	Typical Under Slab Drainage Detail
6	Typical Perforated Drainpipe Trench Detail
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8	Typical Cut and Fill Slope Cross-Section
9	Minimum Foundation Slope Setback Detail

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B	Subsurface Exploration Program
C	Soil and Rock Classification Information
D	Photo Log
E	Report Limitations and Important Information



GEOTECHNICAL SITE INVESTIGATION BARBER STREET HOUSING DEVELOPMENT WILSONVILLE, OREGON

1.0 INTRODUCTION

Columbia West Engineering, Inc. (Columbia West) was retained by Palindrome Wilsonville Limited Partnership to conduct a geotechnical site investigation for use in design and construction of the proposed Barber Street Housing Development located in Wilsonville, Oregon. This report is subject to the limitations expressed in Section 9.0, *Conclusion and Limitations*, and Appendix E.

1.1 General Site Information

As indicated on Figures 1 and 2, the subject site is located west of Interstate 5 and northeast of the intersection at SW Barber Street and SW Kinsman in Wilsonville, Oregon. The site is comprised of portions of tax lots 31W14B00702 and 31W14B00703 totaling approximately 2.28 acres. The approximate latitude and longitude are N 45° 18' 40" and W 122° 46' 36". The regulatory jurisdictional agency is the City of Wilsonville.

1.2 Project Understanding

Based on client correspondence and review of the preliminary site plan shown on Figure 2A, proposed development includes construction of an approximately 114,000 square-foot, 5-story residential structure. The construction type has yet to be determined, however it is anticipated to either consist of 5 floors of conventional wood framing or 4 floors of conventional wood framing over 1 concrete podium. The foundation system is expected to be shallow spread footings.

Foundation loads were not available at the time of this report. We have assumed maximum column and wall loads for the building will be less than 250 kips and 4 kips per foot, respectively. Maximum floor slab loading is expected to be 100 psf. Proposed development also includes associated asphalt parking areas and drive aisles, subsurface utilities, stormwater management facilities, and landscaping. We have also assumed that cuts and fills will be no greater than 3 feet each.

2.0 SCOPE OF SERVICES

Columbia West's scope of services was outlined in a proposal dated April 4, 2023. In accordance with our proposal, we performed the following geotechnical services:

- Reviewed information available in our files from previous geological and geotechnical studies conducted in the vicinity of the site.
- Reviewed preliminary plans provided by the design team.
- Conducted subsurface exploration program at the site that included:
 - One boring drilled to depth of 30 feet BGS within the proposed building footprint
 - Three borings drilled to depths of 6.5 feet BGS within proposed future parking areas
 - Infiltration testing was conducted in two borings
- Collected disturbed soil samples from the borings for laboratory analysis.

- Classified and logged observed soil conditions.
- Prepared this geotechnical site investigation report for the proposed development, which includes:
 - Summary of soil index properties, regional geology, soil conditions, and observed groundwater conditions
 - Summary of geologic and seismic literature research used to evaluate relevant seismic risks, including locations of faults, earthquake magnitudes
 - Infiltration test results
 - Liquefaction analysis and predicted seismic settlement
 - Fill- and load-induced settlement potential
 - Geotechnical design and construction recommendations for:
 - Shallow foundations
 - Slab subgrade preparation
 - Retaining walls, including drainage, backfill, and lateral earth pressures
 - Site preparation and grading, organic stripping, fill placement and compaction, over-excavation, and construction monitoring and testing
 - Structural fill materials, onsite soil suitability, and import aggregate specifications
 - Utility trench excavation and backfill
 - Drainage and management of groundwater conditions
 - Asphaltic concrete pavement construction for access roads and parking lots, including section thicknesses for base aggregate and asphalt layers
 - Seismic design parameters in accordance with the 2022 *State of Oregon Specialty Code*

3.0 REGIONAL GEOLOGY AND SOIL CONDITIONS

The subject site lies within the Willamette Valley/Puget Sound Lowland, a wide physiographic depression flanked by the mountainous Coast Range on the west and the Cascade Range on the east. Inclined or uplifted structural zones within the Willamette Valley/Puget Sound Lowland constitute highland areas and depressed structural zones form sediment-filled basins. The site is located in the north-central portion of the Portland/Vancouver Basin, an open, somewhat elliptical, northwest-trending syncline approximately 60 miles wide.

According to the *Geology and Geologic Hazards of Northwest Clackamas County* (Schlicker and Finlayson, ODGMI, 1979), near-surface soils are expected to consist of Pleistocene-aged, unconsolidated, cross-bedded to graded sedimentary beds of fine sandy silt and clay deposited by glacial floods (Qws) up to 100 feet thick.

The *Web Soil Survey* (USDA, NRCS, 2023 Website) identifies surface soils as Aloha, Salem, and Woodburn silt loam. Aloha, Salem, and Woodburn silt loam series soils are generally fine-textured clays and silts with very low permeability, moderate to high water capacity, and low shear strength. Aloha, Salem, and Woodburn soils are generally moisture sensitive, somewhat compressible, and described as having moderate shrink-swell potential. The erosion hazard is slight primarily based upon slope grade.

4.0 REGIONAL SEISMOLOGY

4.1 Regional Seismic Sources

The CSZ is the region where the Juan de Fuca Plate is being subducted beneath the North American Plate. This subduction is occurring in the coastal region between Vancouver Island and northern California. Evidence has accumulated suggesting that this subduction zone has generated eight great earthquakes in the last 4,000 years, with the most recent event occurring approximately 300 years ago (Weaver and Shedlock, 1991). The fault trace is mapped approximately 50 to 120 km off the Oregon and Washington Coast. Two types of subduction zone earthquakes are possible:

1. An interface event earthquake on the seismogenic part of the interface between the Juan de Fuca Plate and the North American Plate on the CSZ. This source is reportedly capable of generating earthquakes with a moment magnitude of between 8.5 and 9.0.
2. A deep intraplate earthquake on the seismogenic part of the subducting Juan de Fuca Plate. These events typically occur at depths of between 30 and 60 km. This source is capable of generating an event with a moment magnitude of up to 7.5.

4.2 Local Seismic Sources

A significant earthquake could occur on a local fault near the site within the design life of the building. Such an event would cause ground shaking at the site that could be more intense than the CSZ events, although the duration would be shorter. The three closest mapped to the site are: Canby-Mollala Fault, Damascus-Tickle Creek Fault Zone, Beaverton Fault Zone.

Canby-Molalla Fault

The mapped trace of the north-northwest-striking Canby-Molalla fault is based on a linear series of northeast-trending discontinuous aeromagnetic anomalies that probably represent significant offset of Eocene basement and volcanic rocks of the Miocene Columbia River Basalt beneath Neogene sediments that fill the northern Willamette River basin. The fault has little geomorphic expression across the gently sloping floor of the Willamette Valley, but a small, laterally restricted berm associated with the fault may suggest young deformation. Deformation of probable Missoula flood deposits in a high-resolution seismic reflection survey conducted across the aeromagnetic anomaly east of Canby suggests possible Holocene deformation. Sense of displacement of the Canby-Molalla fault is poorly known, but the fault shows apparent right-lateral separation of several transverse magnetic anomalies, and down-west vertical displacement is also apparent in water well logs.

Damascus-Tickle Creek Fault Zone

The Damascus-Tickle Creek fault zone consists of numerous short northeast- and northwest-trending faults that form a broad, northeast-trending fault zone; these faults fold and offset rocks of the Pliocene Troutdale Formation, Plio-Pleistocene Springwater Formation, and Pleistocene Boring Lava. The area is on the southern margin of the Portland basin, and is the location of numerous eruptive vents of the Boring Lava, some of which may have been localized along faults in the zone. Most faults in the zone are buried by latest Pleistocene Missoula flood deposits, but at least one fault strand may have deformed these deposits. Most of these faults are thought to be near-vertical reverse faults with a significant component of right-lateral strike-slip.

Beaverton Fault Zone

The east-west-striking Beaverton fault zone forms the southern margin of the main part of the Tualatin basin, an isolated extension of the Willamette lowland forearc basin in northwestern Oregon. The Beaverton fault zone is not shown on most published geologic maps of the area, but is marked by a linear aeromagnetic anomaly and has been mapped in the subsurface where it offsets Miocene Columbia River Basalt Group rocks and overlying Pliocene to Pleistocene sediments. The late Neogene Tualatin basin may be a pull-apart basin, with subsidence driven by dextral shear on the nearby Gales Creek fault zone. The fault trace is buried by a thick sequence of sediment deposited by the 12.7–13.3 ka Missoula floods, but offsets middle Pleistocene and possibly younger sediments in the subsurface.

5.0 GEOTECHNICAL AND GEOLOGIC FIELD INVESTIGATION

A geotechnical field investigation consisting of visual reconnaissance, four drilled borings (B-1 through B-4), and two infiltration tests was conducted at the site on April 28, 2023.

Samples were collected from the borings using 1½-inch diameter split-barrel (SPT) samples in general accordance with ASTM D1586. The samplers were driven into the soil with a 140-pound hammer free falling 30 inches. The sampler was 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 log, unless otherwise noted. The hammer was lifted using an automatic hammer with a reported efficiency of 77.7 percent. Sampling methods and intervals are shown on the exploration logs. Subsurface soil profiles were logged in accordance with Unified Soil Classification System (USCS) specifications. Disturbed soil samples were collected at representative depth intervals.

Analytical laboratory test results are presented in Appendix A. Exploration locations are shown on Figure 2. Boring logs are presented in Appendix B. Soil descriptions and classification information are provided in Appendix C. A photo log is presented in Appendix D.

5.1 Surface Investigation and Site Description

As indicated on Figures 2 and 2A, the subject site consists of portions of tax lots 31W14B00703 and 31W14B00702. It is bound to the south by SW Barber Street, to the west by an open grassy field, to the east by Wilsonville WES station and associated train tracks, and to the north by Oldcastle buildings and associated infrastructure. The northern half of the development area is generally characterized by asphalt parking areas and drive aisles and sparse landscape tree coverage associated with the existing park-in-ride. The asphalt parking area appears to be raised between 2 to 5 feet compared to surrounding terrain.

The southern half of the site adjacent to SW Barber Street (future building location) consists primarily of open grassy areas with isolated areas of manicured landscape to the south. There is an existing stockpile of organic material in the center of the southern portion of the site as depicted on Figure 2A. Field reconnaissance and review of site topographic mapping indicates that the site is relatively flat and characterized by grades of 0 to 5 percent.

5.2 Subsurface Conditions

Borings were drilled to a maximum depth of 31.5 feet BGS. Exploration locations were selected to observe subsurface soil characteristics in proximity to proposed development areas and are shown on Figure 2. Field logs and observed stratigraphy for encountered materials are presented in Appendix B, *Subsurface Exploration Program*.

5.2.1 Soil Type Description

The geologic units described below were observed during our subsurface exploration: existing pavement section, root zone, undocumented fill, gravel mixtures.

Existing Paved Areas

Pavement sections in existing parking areas and drive aisles were observed to consist of 4 to 6 inches of asphalt underlain by 7 to 12 inches of crushed aggregate.

Root Zone

The grassy area in the southern portion of the site consists of 2 inches of grass and roots. A full topsoil section was not observed and was likely stripped during prior construction activities.

Undocumented Fill

Undocumented fill was observed underlying the pavement section in borings B-2 and B-3. Observed fill consisted of brown, gray, orange, dense sand with silt and gravel and extended to depths of 3 to 6.5 feet BGS. Additional recommendations pertaining to undocumented fill are presented in Section 8.1.2, *Undocumented Fill*.

Gravel Mixtures

Underlying the above materials, native dense to very dense clayey and silty gravels and medium stiff to hard silt and clays with varying proportions of sands and gravels were observed to the maximum explored depth of 31.5 feet BGS. The native deposits had moisture contents ranging from 17 to 30 percent and exhibited low-plasticity behavior.

5.2.2 Groundwater

Groundwater was not observed within the borings to the maximum explored depth of 31.5 feet BGS, however the driller indicated heaving soils at approximately 15 feet BGS in boring B-1. Review of information in our files and nearby well logs presented in Appendix B indicates that groundwater could range from 10 to 20 feet BGS in the vicinity of the site.

Note that groundwater levels are subject to seasonal variance and may rise during extended periods of increased precipitation. Perched groundwater may also be present in localized areas, as indicated. Seeps and springs may become evident during site grading, primarily along slopes or in areas cut below existing grade. Structures, pavements, and drainage design should be planned accordingly.

5.2.3 Infiltration Testing

Infiltration potential of site soils was evaluated through in situ infiltration testing within borings B-1 and B-4. Single-ring, falling head infiltration testing was performed by embedding a drill auger into undisturbed native soil, filling the apparatus with water, and measuring time relative to changes in hydraulic head. Representative soil samples were collected from select test locations and submitted for laboratory analysis. Results of in situ infiltration testing are presented in Table 1.

Table 1. Infiltration Test Results

Test Number	Location (See Figure 2)	Test Depth (feet bgs)	USCS Soil Type (*Indicates Visual Classification)	Passing No. 200 Sieve (%)	Approximate Depth to Groundwater on 04-28-23 (feet bgs)	Measured Infiltration Rate
IT-1.1	SB-1	4.0	GC. Clayey GRAVEL with Sand*	-	Not Encountered to 31.5	Negligible
IT-1.2		7.5	GC. Clayey GRAVEL with Sand	24		Negligible
IT-4.1	SB-4	4.5	SM, Silty SAND with Gravel	20	Not Encountered to 6	Negligible

Based on the presence of fine-textured, low permeability site soils, infiltration is not a feasible option for stormwater management.

6.0 SEISMIC HAZARDS

6.1 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 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. Our subsurface exploration program did not encounter soils that are susceptible to liquefaction under design levels of ground shaking.

6.2 Lateral Spreading

Lateral spreading is a liquefaction-related seismic hazard that occurs on gently sloping or flat sites underlain by liquefiable sediment adjacent to an open face, such as a riverbank. Liquefied soil adjacent to an open face can flow toward the open face, resulting in lateral ground displacement.

Since the site soils are not susceptible to liquefaction, lateral spreading is not considered a hazard.

7.0 DESIGN RECOMMENDATIONS

The geotechnical site investigation suggests the proposed development is generally compatible with surface and subsurface soils, provided the recommendations presented in this report are incorporated in design and implemented during construction. The primary geotechnical considerations for the project were summarized previously in the *Executive Summary*. Specific design and construction recommendations are presented in the following sections.

7.1 Areal Settlement Considerations

A grading plan was not available at the time of this report. We have assumed cuts and fills at the site will be less than 3 feet each. Our experience indicates that fills not exceeding 3 feet above existing grade combined with anticipated footing and floor slab loads are unlikely to exceed the static settlement tolerances of the buildings.

7.2 Shallow Foundation Support

We anticipate maximum column and wall loads for the buildings will be less than 250 kips and 4 kips per foot, respectively. Provided maximum floor slab loading is less than 100 psf, the proposed buildings can be supported by conventional spread footings bearing on firm native soil or engineered structural fill. Provided fills are generally less than 3 feet, foundation construction may occur immediately after fill placement.

Foundations should not be supported by topsoil or undocumented fill material. If encountered, these materials should be improved or removed and replaced with structural fill. If footings are constructed during wet-weather conditions or when footing subgrade soils are above their optimum moisture content, we recommend that a minimum of 6 inches of compacted aggregate be placed over exposed subgrade soils. The aggregate pad should extend 6 inches beyond the edge of the foundations and consist of imported granular material as described in Section 8.1.1, *Structural Fill*. Columbia West should observe exposed subgrade conditions prior to placement of crushed aggregate to verify adequate subgrade support.

7.2.1 Bearing Capacity

Continuous perimeter wall and isolated spread footings should have minimum width dimensions of 18 and 24 inches, respectively. The base of exterior footings should bear at least 18 inches below the lowest adjacent exterior grade. The base of interior footings should bear at least 12 inches below the base of the floor slab.

Footings bearing on subgrade prepared as recommended above should be sized based on an allowable bearing pressure of 2,500 psf. As the allowable bearing pressure is a net bearing pressure, the weight of the footing and associated backfill may be ignored when calculating footing sizes. The recommended allowable bearing pressure applies to the total of dead plus long-term live loads and may be increased by 50 percent for transient lateral forces such as seismic or wind.

7.2.2 Settlement

Foundations designed in accordance with this report are expected to experience a post construction settlement of less than one inch. Differential post construction settlement between comparably-loaded footing elements is not expected to exceed 0.5 inches.

7.2.3 Resistance to Sliding

Lateral foundation loads can be resisted by passive earth pressure on the sides of the footing and by friction at the base of the footings. Recommended passive earth pressure for footings confined by native soil or engineered structural fill is 350 pcf. The upper 12 inches of soil should be neglected when calculating passive pressure resistance. Adjacent floor slabs and pavement, if present, should also be neglected from the analysis. The recommended passive pressure resistance assumes that a minimum horizontal clearance of 10 feet is maintained between the footing face and adjacent downgradient slopes.

The estimated coefficient of friction between in situ native soil or engineered structural fill and in-place poured concrete is 0.35. The estimated coefficient of friction between compacted crushed aggregate and in-place poured concrete is 0.4.

7.2.4 Subgrade Observation

Footings and floor subgrade soils should be evaluated by Columbia West prior to placing forms or reinforcing bar to verify subgrade support conditions are as anticipated in this report. Subgrade observation should confirm that all disturbed material, organic debris, unsuitable fill, remnant topsoil zones, and softened subgrades (if present) have been removed. Over-excavation of footing subgrade soils may be required to remove deleterious material, particularly if footings are constructed during wet-weather conditions.

7.2.5 Floor Slabs

Floor slabs can be supported on firm, competent, native soil or engineered structural fill prepared as described in this report. Disturbed soils and unsuitable fills in proposed slab locations, if encountered, should be removed and replaced with structural fill. Floor slab settlement and seismic risks were discussed previously in Section 7.1, *Areal Settlement Considerations* and Section 6.0, *Seismic Hazards*.

To provide a capillary break, slabs should be underlain by at least 6 inches of compacted crushed aggregate that has less than 5 percent by dry weight passing the No. 200 Sieve. Geotextile may be used below the crushed aggregate layer to increase subgrade support. Recommendations for floor slab base aggregate and subgrade geotextile are discussed in Section 8.6, *Materials*.

Some flooring manufacturers will only warranty their product if a vapor barrier is installed. Selection of an appropriate vapor barrier should be selected by consulting with the design team. Slab thickness and reinforcement should be designed by an experienced structural engineer assuming a modulus of subgrade reaction, *k*, of 125 pci.

7.3 Seismic Design Considerations

Seismic design for proposed structures is prescribed by the 2022 *Oregon Structural Special Code (OSSC)* which refers to *ASCE 7-16*. Based on results of subsurface exploration, site soils meet the criteria for Site Class D. Seismic design parameters for Site Class D are presented in Table 3.9.

Table 3. ASCE 7-16 Seismic Design Parameters¹

	Short Period (T _s = 0.2 s)	1 Second Period (T ₁ = 1.0 s)
MCE Spectral Acceleration	0.818	0.383
Site Class	D ²	
Site Coefficient	F _a = 1.173	F _v = 1.92
Adjusted Spectral Response Acceleration	S _{MS} = 0.96	S _{M1} = 0.74
Design Spectral Response Acceleration	S _{DS} = 0.64	S _{D1} = 0.49

1. The structural engineer should evaluate *ASCE 7-16* code requirements and exceptions to determine if these parameters are valid for design.

For Site Class D sites with mapped maximum considered earthquake spectral response acceleration parameter S₁ greater than 0.2, a ground motion hazard analysis may be required

according to *ASCE 7-16, Section 11.4.8* unless the seismic response coefficient, C_s , is calculated in accordance with *ASCE 7-16 Section 11.4.8, Exception 2*. However, if an alternative method is utilized to determine the seismic response coefficient, the structure is seismically isolated, or structural damping systems are proposed, *ASCE 7-16* requires a ground motion hazard analysis be conducted. Columbia West recommends that the project structural engineer evaluate these requirements and exceptions to determine if a site-specific ground motion hazard evaluation will be required for proposed structures.

7.4 Retaining Structures

Lateral earth pressures should be considered during design of retaining walls and below-grade structures. Hydrostatic pressure and additional surcharge loading should also be considered. Wall foundation construction and bearing capacity should adhere to specifications provided previously in Section 7.2, *Shallow Foundation Support*.

Permanent retaining walls that are not restrained from rotation should be designed for active earth pressures using an equivalent fluid pressure of 35 pcf. Walls that are restrained from rotation should be designed for an at-rest, equivalent fluid pressure of 55 pcf. The recommended earth pressures assume a maximum wall height of 10 feet with well-drained, level backfill. These values also assume that adequate drainage is provided behind retaining walls to prevent hydrostatic pressures from developing. Lateral earth pressures induced by surcharge loads may be estimated using the criteria presented on Figure 3.

Seismic forces may be calculated by superimposing a uniform lateral force of $7H^2$ pounds per lineal foot of wall, where H is the total wall height in feet. The force should be applied as a distributed load with the resultant located at $0.6H$ from the base of the wall.

7.4.1 Wall Drainage and Backfill

A minimum 4-inch-diameter, perforated collector pipe should be placed at the base of retaining walls. The pipe should be embedded in a minimum 2-foot-wide zone of angular drain rock that is wrapped in a drainage geotextile fabric and extends up the back of the wall to within 1 foot of finished grade. The drain rock and geotextile drainage fabric should meet the specifications provided in Section 8.6, *Materials*. The perforated collector pipes should discharge at an appropriate location away from the base of the wall. The discharge pipe(s) should not be tied directly into stormwater drainage systems, unless measures are taken to prevent backflow into the drainage system of the wall.

Backfill material placed behind the walls and extending a horizontal distance of $\frac{1}{2} H$, where H is the height of the retaining wall, should consist of select granular material placed and compacted as described in Section 8.5.1, *Structural Fill*.

Settlement of up to 1 percent of the wall height commonly occurs immediately adjacent to the wall as the wall rotates and develops active lateral earth pressures. Consequently, we recommend that construction of flatwork adjacent to retaining walls be delayed at least four weeks after placement of wall backfill, unless survey data indicates that settlement is complete prior to that time.

7.5 Pavement Design

7.5.1 Design Parameters and Traffic

Pavement should be installed on firm, competent native subgrade soil or engineered structural fill prepared as described in this report. Our pavement recommendations are based on the following design parameters and assumptions:

- 12 inches of subgrade soil directly below the pavement sections are compacted to at least 95 percent of maximum dry density, as determined by *AASHTO T-99*.
- Resilient moduli for subgrade soil and aggregate base materials were assumed to be 4,500 psi and 20,000 psi, respectively.
- Pavement design life of 20 years with no expected traffic growth.
- Initial and terminal serviceability indices of 4.2 and 2.5, respectively.
- Reliability of 85 percent and standard deviation of 0.4.
- Pavement may be exposed to a fire apparatus load of 75,000 pounds on an infrequent basis.

The specific type and frequency of traffic was not available at the time we prepared this report. Based on experience, we assume that heavy truck traffic will consist of approximately 40 percent FHWA Class Group 6 type trucks (4-axle, single unit) and 60 percent FHWA Class Group 8 type trucks (tractor/trailer 2- to 3-axle). Lightly-loaded drive aisles and parking stalls are expected to service typical passenger vehicle traffic.

7.5.2 Asphaltic Concrete (AC) Pavement Design Sections

Pavement design recommendations for a range of traffic conditions and loading scenarios are presented in Table 4. Material properties and compaction recommendations for asphalt surfacing and crushed aggregate base layers are presented in Section 8.5, *Materials*.

Table 4. Recommended AC Pavement Sections Constructed over Native Soil or Engineered Fill

Traffic	Trucks Per Day	Equivalent Single-Axle Loads (ESALs)	AC Thickness (in)	Base Aggregate Thickness (in)
Passenger Vehicle Parking	0	10,000	2.5	8
Passenger Vehicle Drive Aisles	0	20,000	3	9
Heavy Truck Areas	10	92,000	4	10.5
	25	229,000	4.5	12.5
	50	458,000	5	14
	100	916,000	5.5	16.5

Pavement sections may be reduced in areas where subgrade soils are cement-amended to a minimum depth of 12 inches with a minimum of 6 percent cement by weight. Provided the cement-amended subgrade soil achieves a seven-day unconfined compressive strength of 100 psi, AC pavement sections may be constructed as presented in Table 5.

Table 5. Recommended AC Pavement Sections Constructed over Cement-Amended Subgrade Soil

Traffic	Trucks Per Day	Equivalent Single-Axle Loads (ESALs)	AC Thickness (in)	Base Aggregate Thickness (in)	Cement-Amendment Thickness (in)
Passenger Vehicle Parking	0	10,000	2.5	4	12
Passenger Vehicle Drive Aisles	0	20,000	3	4	
Heavy Truck Areas	10	92,000	4	4	
	25	229,000	4.5	4	
	50	458,000	5	4	
	100	916,000	5.5	6	

7.5.3 General Pavement Recommendations

Recommended pavement section thicknesses are intended to be minimum acceptable values and do not include construction traffic loading. The recommendations assume that pavement construction will be completed during an extended period of warm, dry weather. Wet weather construction may require an increased thickness of base aggregate as discussed later in Section 8.2, *Construction Traffic and Staging*.

Cement-amended soil should be allowed to cure for at least four days prior to aggregate base placement or exposure to construction traffic. Prior to construction traffic access, the cement-amended subgrade should be protected by a minimum 4-inch-thick layer of compacted crushed aggregate. Construction traffic should be limited to dedicated haul roads or non-structural, unpaved portions of the site. Construction traffic should not be permitted on new pavement, unless accounted for in the pavement design section. Base aggregate and cement-amended soils supporting pavement are also not intended for construction traffic. Haul roads and staging areas supporting construction traffic are discussed later in Section 8.2, *Construction Traffic and Staging*.

Asphalt paving is generally not recommended during cold weather conditions where ambient air temperatures are less than 40 degrees Fahrenheit. Compacting asphalt in low-temperature conditions can result in low relative density of the asphalt layer and premature pavement distress.

Asphalt mix designs have a recommended compaction temperature range that is specific to the AC binder used. In low-temperature conditions, maintaining the temperature of the AC mix is difficult as heat can be lost during transport, placement, and compaction. The ambient air temperature during paving should be at least 40 degrees Fahrenheit for a lift thickness greater than 2.5 inches and at least 50 degrees Fahrenheit for a lift thickness between 2 and 2.5 inches. If AC paving must take place during cold-weather construction as defined in this section, the contractor and design team should discuss options for minimizing risk to pavement serviceability.

7.6 Drainage

At a minimum, site drainage should include surface water collection and conveyance to properly designed stormwater management structures and facilities. Drainage design in general should

conform to City of Wilsonville regulations. Finished site grading should be conducted with positive drainage away from structures at a minimum 2 percent slope for a distance of at least 10 feet. Depressions or shallow areas that may retain ponding water should be avoided.

Site improvements construction may occur in areas where springs or seepage is present. If encountered during construction, footing drains or subdrains beneath slabs-on-grades can be installed. Figure 4 shows a typical foundation drain detail. Figure 5 shows a typical under slab drainage detail. Figure 6 shows a typical trench detail. A typical drainage mate is shown on Figure 7. Columbia West should determine drainage mat location, extent, and thickness when subsurface conditions are exposed.

8.0 CONSTRUCTION RECOMMENDATIONS

8.1 Site Preparation and Grading

A root zone of 2 inches was observed in the southern grassy area of the site. Root zones approaching 12 inches may be present in other areas of thick vegetation, trees, and shrubs. Approximately 4 to 6 inches of asphalt underlain by 7 to 12 inches of crushed aggregate was observed in existing paved areas of the site. Vegetation, organic material, unsuitable fill, and deleterious material that may be encountered should be cleared from areas identified for structures and site grading. Vegetation, root zones, organic material, and debris should be removed from the site. Stripped topsoil should also be removed or used only as landscape fill in nonstructural areas with slopes less than 25 percent. The post-construction maximum depth of landscape fill placed or spread at any location onsite should not exceed one foot.

The required stripping depth may increase in areas of existing fill or previously-existing structures. Actual stripping depths should be determined based upon visual observations made during construction when soil conditions are exposed.

Previously disturbed soil, debris, or undocumented fill encountered during grading or construction activities should be removed completely and thoroughly from structural areas. This includes old remnant foundations, basement walls, utilities, associated soft soils, and debris. Excavation areas should be backfilled with engineered structural fill.

Site grading activities should be performed in accordance with requirements specified in the *2018 International Building Code (IBC)*, Chapter 18 and Appendix J, with exceptions noted in the text herein. Site preparation, soil stripping, and grading activities should be observed and documented by Columbia West.

8.1.1 Undocumented Fill

Undocumented fill was observed underlying the existing pavement section at the locations of borings B-2 and B-3. The fill is reported to be between 1.5 and 5 feet thick and generally consisted of sand with varying amounts of silt and gravel.

Existing fill and other previously disturbed soils or debris are not suitable for supporting structures in their current state and should be removed completely removed from the influence zone of foundations. Areas of the site where additional fill is planned, existing fill should be removed until firm native soils are encountered prior to the placement of additional fill.

To minimize long-term risk of adverse impacts to pavement structures, existing fill should also be thoroughly removed from proposed pavement areas. If existing fill is left in place, pavement

structures may experience a reduction in long-term serviceability due to premature pavement distress which could include asphalt cracking, localized grade depressions, and inadequate drainage. The decision to construct pavements over existing fill and acceptance of the associated risk should be made by the owner and project stakeholders.

Partial mitigation of premature pavement distress risk may be accomplished by over-excavation and backfill with granular structural fill or application of cement amended materials. Identification of specific engineered mitigation plans is beyond the scope of this report. If this option is selected, Columbia West should be contacted for additional analysis and study, but would likely consist of improving the upper 18-inches of undocumented fill. This can be accomplished by scarifying and compacting it in place, cement emending it, or removing it and replacing it with structural fill.

Based upon Columbia West's investigation, existing fill soils as described appear to be acceptable for reuse as structural fill, provided materials are observed to exhibit index properties similar to those observed during this investigation and that construction adheres to the specifications presented in this report. Note that the limited scope of exploration conducted for this investigation cannot wholly eliminate uncertainty regarding the presence of unsuitable soils in areas not explored.

8.1.2 Subgrade Evaluation

Upon completion of stripping and prior to the placement of structural fill or pavement improvements, exposed subgrade soil should be evaluated by proof rolling with a fully-loaded dump truck or similar heavy, rubber tire construction equipment. When the subgrade is too wet for proof rolling, a foundation probe may be used to identify areas of soft, loose, or unsuitable soil. Subgrade evaluation should be performed by Columbia West. If soft or yielding subgrade areas are identified during evaluation, we recommend the subgrade be over-excavated and backfilled with compacted imported granular fill.

8.2 Construction Traffic and Staging

Near-surface silt and clay will be easily disturbed during construction. If not carefully executed, site preparation, excavation, and grading can create extensive soft areas resulting in significant repair costs. Earthwork planning should include considerations for minimizing subgrade disturbance, particularly during wet-weather conditions.

If construction occurs during wet-weather conditions, or if the moisture content of the surficial soil is more than a few percentage points above optimum, site stripping and cutting may need to be accomplished using track-mounted equipment. Under these conditions, granular haul roads and staging areas will also be necessary provide a firm support base and sustain construction equipment.

The recommended base aggregate thickness for pavement sections is intended to support post-construction design traffic loads and will not provide adequate support for construction traffic. Staging areas and haul roads will require an increased base thickness during wet weather conditions. The configuration of staging and haul road areas, as well as the required thickness of granular material, will vary with the contractor's means and methods. Therefore, design and construction of staging areas and haul roads should be the responsibility of the contractor. Based on our experience, between 12 and 18 inches of imported granular material is generally required

in staging areas and between 18 and 24 inches in haul road areas. In areas of heavy construction traffic, geotextile separation fabric may be placed between the subgrade soil and imported granular material to increase subgrade support and minimize silt migration into the base aggregate layer.

As an alternative to thickened aggregate sections, haul roads and staging areas may be constructed using a combination of cement-amended subgrade and crushed aggregate surfacing. If cement-amendment is used, the base aggregate thickness for staging areas and haul roads can typically be reduced to between 6 and 9 inches, respectively. This recommendation is based on a minimum seven-day unconfined compressive strength of 100 psi for the cement-amended soil with a treatment depth of 12 to 16 inches. Based on experience, 6 to 7 percent cement by weight is typically required to achieve the indicated compressive strength.

Project stakeholders should understand that wet weather construction is risky and costly. Proper construction methods and techniques are critical to overall project integrity and should be observed and documented by Columbia West.

8.3 Cut and Fill Slopes

Fill slopes should consist of structural fill material as discussed in Section 8.5.1, *Structural Fill*. Fill placed on existing grades steeper than 5H:1V should be horizontally benched at least 10 feet into the slope. Fill slopes greater than six feet in height should be vertically keyed into existing subsurface soil. A typical fill slope cross-section is shown in Figure 8. Drainage implementations, including subdrains or perforated drainpipe trenches, may also be necessary in proximity to cut and fill slopes if seeps or springs are encountered. Drainage design may be performed on a case-by-case basis. Extent, depth, and location of drainage may be determined in the field by Columbia West during construction when soil conditions are exposed. Failure to provide adequate drainage may result in soil sloughing, settlement, or erosion.

Final cut or fill slopes at the site should not exceed 2H:1V or 10 feet in height without individual slope stability analysis. The values above assume a minimum horizontal setback for loads of 10 feet from top of cut or fill slope face or overall slope height divided by three (H/3), whichever is greater. A minimum slope setback detail for structures is presented in Figure 9.

Concentrated drainage or water flow over the face of slopes should be prohibited, and adequate protection against erosion is required. Fill slopes should be overbuilt, compacted, and trimmed at least two feet horizontally to provide adequate compaction of the outer slope face. Proper cut and fill slope construction is critical to overall project stability and should be observed and documented by Columbia West.

8.4 Excavation

The site was explored to a maximum depth of 31.5 feet BGS with a drill rig. Conventional earthmoving equipment in proper working condition should be capable of making necessary site excavations.

Groundwater was not observed in the borings. Review of information in our files and nearby well logs presented in Appendix B indicates that groundwater could range from 10 to 20 feet BGS in the vicinity of the site.

Temporary excavation sidewalls should maintain a vertical cut to a depth of approximately 4 feet in the near-surface silt and clay, provided groundwater seepage is not present in the sidewalls. In sandy soil, excavations will likely slough and cave, even at shallow depths. Open-cut excavation techniques may be used to excavate trenches between 4 and 8 feet deep, provided the walls of the excavation are cut at a maximum slope of 1H:1V and groundwater seepage is not present. Excavation slopes should be reduced to 1.5H:1V or 2H:1V if excessive sloughing or raveling occurs.

Shoring may be required if open-cut excavations are infeasible or if excavations are proposed adjacent to existing infrastructure. Typical methods for stabilizing excavations consist of soldier piles and timber lagging, sheet pile walls, tiebacks and shotcrete, or pre-fabricated hydraulic shoring. As a wide variety of shoring and dewatering systems are available, we recommend that the contractor be responsible for selecting the appropriate shoring and dewatering systems.

The contractor should be held responsible for site safety, sloping, and shoring. All excavation activity should be conducted in accordance with applicable OSHA requirements. Columbia West is not responsible for contractor activities and in no case should excavation be conducted in excess of applicable local, state, and federal laws.

8.5 Materials

8.5.1 Structural Fill

Areas proposed for fill placement should be appropriately prepared as described in Section 8.1, *Site Preparation and Grading*. Engineered fill placement should be observed by Columbia West. Compaction of engineered structural fill should be verified by nuclear gauge field compaction testing performed in accordance with *ASTM D6938*. Field compaction testing should be performed for each vertical foot of engineered fill placed.

Various materials may be acceptable for use as structural fill. Structural fill should be free of organic material or other unsuitable material and meet specifications provided in the following sections. Representative samples of proposed engineered structural fill should be submitted for laboratory analysis and approval by Columbia West prior to placement.

8.5.1.1 Onsite Soil

Most onsite native soil will be suitable for use as structural fill if adequately dried or moisture-conditioned to achieve recommended compaction specifications. Native clay soil with a plasticity index greater than 25, if encountered, should be evaluated and approved by Columbia West prior to use as structural fill. Laboratory analysis indicated that the moisture content of site soil was above optimum at the time of exploration. Moisture conditioning will likely be necessary to dry the soil prior to applying compaction effort. In addition, the near-surface silt and clay will be moisture sensitive and difficult, if not impossible, to compact during wet weather conditions. Therefore, structural fill placement using onsite soil should be performed during dry summer months if possible. Onsite soil may also require addition of moisture during extended periods of dry weather.

Onsite soil used as structural fill should be placed in loose lifts not exceeding 8 inches in depth and compacted using standard conventional compaction equipment. The soil moisture content should be within a few percentage points of optimum conditions. The soil should be compacted to at least 95 percent of maximum dry density as determined by the modified Proctor moisture-

density relationship test (*ASTM D1557*). Compacted onsite fill soils should be covered shortly after placement.

Onsite soil will likely expand during excavation and transport and consolidate during compaction. Development of site-specific expansion and consolidation factors is beyond the scope of this investigation. We can provide site-specific factors upon request.

8.5.1.2 Imported Granular Material

Imported granular material should consist of pit- or quarry-run rock, crushed rock, or crushed gravel and sand. The imported granular material should also be durable, angular, and fairly well graded between coarse and fine material; should have less than 5 percent fines (material passing the U.S. Standard No. 200 sieve) by dry weight; and should have at least two mechanically fractured faces. Imported granular material should be placed in loose lifts not exceeding 12 inches in depth and compacted to at least 95 percent of maximum dry density as determined by the modified Proctor moisture-density relationship test (*ASTM D1557*). During wet-weather conditions or where wet subgrade conditions are present, the initial loose lift of granular fill should be approximately 18 inches thick and should be compacted with a smooth-drum roller operating in static mode.

8.5.1.3 Stabilization Material

Stabilization material should consist of durable, 4- or 6-inch-minus pit- or quarry-run rock, crushed rock, or crushed gravel and sand that is free of organics and other deleterious material. The material should have a maximum particle size of 6 inches with less than 5 percent by dry weight passing the U.S. Standard No. 4 sieve. The material should have at least two mechanically-fractured faces.

Stabilization material should be placed in loose lifts between 12 and 24 inches thick and be compacted to a firm, unyielding condition. Equipment with vibratory action should not be used when compacting stabilization material over wet, fine-textured soils. If stabilization material is used to stabilize soft subgrade below pavement or construction haul roads, a subgrade geotextile should be placed as a separation barrier between the soil subgrade and the stabilization material.

8.5.1.4 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 jurisdiction. 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.

8.5.1.5 Floor Slab Base Aggregate

Imported granular material used as base rock for building floor slabs should consist of $\frac{3}{4}$ - or $1\frac{1}{2}$ -inch-minus material (depending on the application). In addition, the aggregate should have less than 5 percent fines by dry weight and 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*.

8.5.1.6 Pavement Base Aggregate

Imported granular material used as base rock for pavement should consist of $\frac{3}{4}$ - or $1\frac{1}{2}$ -inch-minus material (depending on the application). In addition, the aggregate should have less than 5 percent fines by dry weight and 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*.

8.5.1.7 Retaining Wall Backfill

Backfill material placed behind retaining walls and extending a horizontal distance of $\frac{1}{2}H$, 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. 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 that the upper 2 feet of material be compacted to 95 percent of the maximum dry density, as determined by *ASTM D1557*.

8.5.1.8 Retaining Wall Leveling Pad

Imported granular material placed at the base of retaining wall footings should consist of select granular material. The granular material should be $\frac{3}{4}$ - to 1-inch-minus aggregate size and should have at least two mechanically fractured faces. The leveling pad material should be placed in a 6- to 12-inch-thick lift and compacted to not less than 95 percent of the maximum dry density, as determined by *ASTM D1557*.

8.5.1.9 Drain Rock

Drain rock should consist of angular, granular material with a maximum particle size of 2 inches and less than 2 percent by weight passing the No. 200 sieve. Drain rock should be free of roots, organic debris, and other unsuitable material and should have at least two mechanically-fractured faces. Drain rock should be compacted to a firm, unyielding condition. Drain rock

should be completely wrapped in a geotextile drainage fabric meeting the requirements presented below.

8.5.1.10 Existing Concrete and Crushed Rock

Concrete and crushed rock from the existing pavement areas and improvements can be used in general structural fill, provided particles greater than 3 inches are not present, it is thoroughly mixed and well graded so that there are no voids between the fragments, and the resulting mix is moisture conditioned for compaction. This material can be used as trench backfill if it meets the requirements for imported granular material, which would require a smaller maximum particle size. The 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*.

8.5.2 Geotextile Fabric

8.5.2.1 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.

8.5.2.2 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.

8.5.3 Soil Amendment with Cement

The on-site soil can be amended with Portland cement to obtain suitable properties for use as wet-weather structural fill or subbase for pavement. The effectiveness of soil amendment is highly dependent on proper mixing techniques, soil moisture conditioning, and the quantity of cement. The quantity of cement applied during amendment should be based on an assumed dry unit weight of 100 pcf for site soil.

8.5.3.1 Subbase Stabilization

Specific recommendations for soil amendment should be based on exposed site conditions at the time of construction. For preliminary design purposes, we recommend cement-amended subgrade for building pads and pavement subbase (below the base aggregate layer) achieve a target strength of 100 psi. The quantity of cement required to achieve the target strength will vary with moisture content and soil type. Laboratory testing of cement-amended soil should be used to confirm design expectations.

Based on our experience, near-surface silt and clay will require approximately 6 to 7 percent cement by weight to achieve the target strength of 100 psi. This cement percentage assumes that the soil moisture content does not exceed 20 percent at the time of amendment. If the soil moisture content is in the range of 25 to 35 percent, 7 to 8 percent cement by weight may be required to achieve the target strength. The amount of cement added to the soil at the time of construction should be based on observed field conditions and subgrade performance. During extended periods of dry weather, water may need to be applied during the amendment and tilling process to achieve the optimum moisture content required for compaction.

Cement-amendment of the agricultural till zone will likely require higher quantities of cement due to the organic content and high-plasticity characteristics of the material. A minimum cement percentage of 7 to 8 percent by weight should be assumed for till zone soil. In addition, increased mixing effort and tilling passes will likely be required to adequately blend the cement into the high plasticity material.

Cement-amendment equipment should have balloon tires to minimize softening, rutting, and disturbance of fine-grained site soil. A sheepsfoot or segmented pad roller with a minimum static weight of 40,000 pounds should be used for initial compaction. Rollers with vibratory action should not be used to compact fine-grained, cement-amended soil. Final compaction should be conducted with a smooth-drum roller with a minimum applied linear force of 700 pounds per inch. The amended soil should be compacted to at least 95 percent of the maximum dry density as determined by *ASTM D558*.

Following cement amendment, a minimum curing time of four days is required prior to exposure to construction traffic. Construction traffic should not be allowed on unprotected, cement-amended subgrade. To protect cement-amended areas from damage, the finished surface should be covered with 4 to 6 inches of imported granular material. The protective layer of crushed rock often becomes contaminated with soil during construction, particularly in staging and haul road areas. Contaminated aggregate, where present, should be removed and replaced with clean crushed aggregate prior to construction of pavement or other permanent site improvements supported by base aggregate.

Cement amendment should not be attempted during moderate to heavy precipitation or when the ambient air temperature is below 40 degrees Fahrenheit. Cement should not be placed in areas of standing water or where saturated subgrade conditions exist.

8.5.3.2 Cement-Amended Structural Fill

If adequate compaction is not achievable with onsite silt and clay due to moisture or weather conditions, the soil may be cement-amended and placed as general structural fill. Prior to placement of cement-amended fill, subgrade soils should be prepared as described in Section 8.1, *Site Preparation and Grading*. Where multiple lifts of cement-amended fill are necessary to meet finished grade, consecutive lifts may be placed immediately following amendment and compaction of the underlying lift. However, where the final lift of cement-amended fill will serve as building pad or pavement subbase material, the four-day cure period as discussed above is recommended.

8.5.3.3 Verification Testing

Cement-amendment of site soils should be observed and tested by Columbia West to document conformance with design recommendations. Cement spread rate should be verified with a pan sample test conducted at one random location per lift per 20,000 square-feet of cement-amended fill. Treatment depth should be verified through excavation of a small test pit and measurement at one random location per lift of cement-amended fill. Adequate compaction and moisture content should be verified by conducting nuclear gauge density testing at a frequency of approximately one test per 5,000 square feet of cement-amended fill in accordance with *ASTM D6938*. At least one representative sample should be collected per day of cement-amendment, cured for 7 days, and tested for unconfined compressive strength in accordance

with ASTM D1633. The tested samples should have a minimum 7-day, unconfined compressive strength of 100 psi.

8.5.3.4 Drainage Considerations

Cement-amended soil will be poorly-drained and will not be suitable for planting areas. The material may also be difficult to excavate with light-duty landscaping equipment. Proposed landscape areas should not be cement-amended unless accommodations are made for drainage and planting.

Cement-amendment within building pad areas should consider the potential for trapped water below the floor slab. Columbia West should be consulted to provide appropriate recommendations if cement-amendment is proposed within building pad areas.

8.5.4 Pavement

8.5.4.1 Asphaltic Concrete

Asphaltic concrete should be Level 2, ½-inch, dense ACP according to OSSC 00744 (Asphalt Concrete Pavement) and compacted to 91 percent of the theoretical maximum density of the mix, as determined by AASHTO T 209. The minimum and maximum lift thicknesses are 2 and 3 inches, respectively, for ½-inch ACP. Asphalt binder should be performance graded and conform to PG 64-22 or better. The binder grade should be adjusted depending on the aggregate gradation and amount of recycled asphalt pavement and/or recycled asphalt shingles in the contractor's mix design submittal.

8.6 Erosion Control Measures

Soil at this site is susceptible to erosion by wind and water; therefore, erosion control measures should be carefully planned and installed before construction begins. Surface water runoff should be collected and directed away from sloped areas to prevent water from running down the slope face. Measures that can be employed to reduce erosion include the use of silt fences, hay bales, buffer zones of natural growth, sedimentation ponds, and granular haul roads. All erosion control methods should be in accordance with local jurisdiction standards.

9.0 CONCLUSION AND LIMITATIONS

This geotechnical site investigation report was prepared in accordance with accepted standard conventional principles and practices of geotechnical engineering. This investigation pertains only to material tested and observed as of the date of this report and is based upon proposed site development as described in the text herein. This report is a professional opinion containing recommendations established by engineering interpretations of subsurface soils based upon conditions observed during site exploration. Soil conditions may differ between tested locations or over time. Slight variations may produce impacts to the performance of structural facilities if not adequately addressed. This underscores the importance of diligent QA/QC construction observation and testing to verify soil conditions are as anticipated in this report.


Therefore, this report contains several recommendations for field observation and testing by Columbia West personnel during construction activities. Columbia West cannot accept responsibility for deviations from recommendations described in this report. Future performance of structural facilities is often related to the degree of construction observation by qualified personnel. These services should be performed to the full extent recommended.

This report is not an environmental assessment and should not be construed as a representative warranty of site subsurface conditions. The discovery of adverse environmental conditions, or subsurface soils that deviate from those described in this report, should immediately prompt further investigation. The above statements are in lieu of all other statements expressed or implied.


This report was prepared solely for the client and is not to be reproduced without prior authorization from Columbia West. Final engineering plans and specifications for the project should be reviewed and approved by Columbia West as they relate to geotechnical and grading issues prior to final design approval. Columbia West is not responsible for independent conclusions or recommendations made by other parties based upon information presented in this report. Unless a particular service was expressly included in the scope, it was not performed and there should be no assumptions based upon services not provided. Additional report limitations and important information about this document are presented in Appendix E. This information should be carefully read and understood by the client and other parties reviewing this document.

Sincerely,

COLUMBIA WEST ENGINEERING, Inc.



Jason F. Merritt, P.E.
Senior Project Engineer



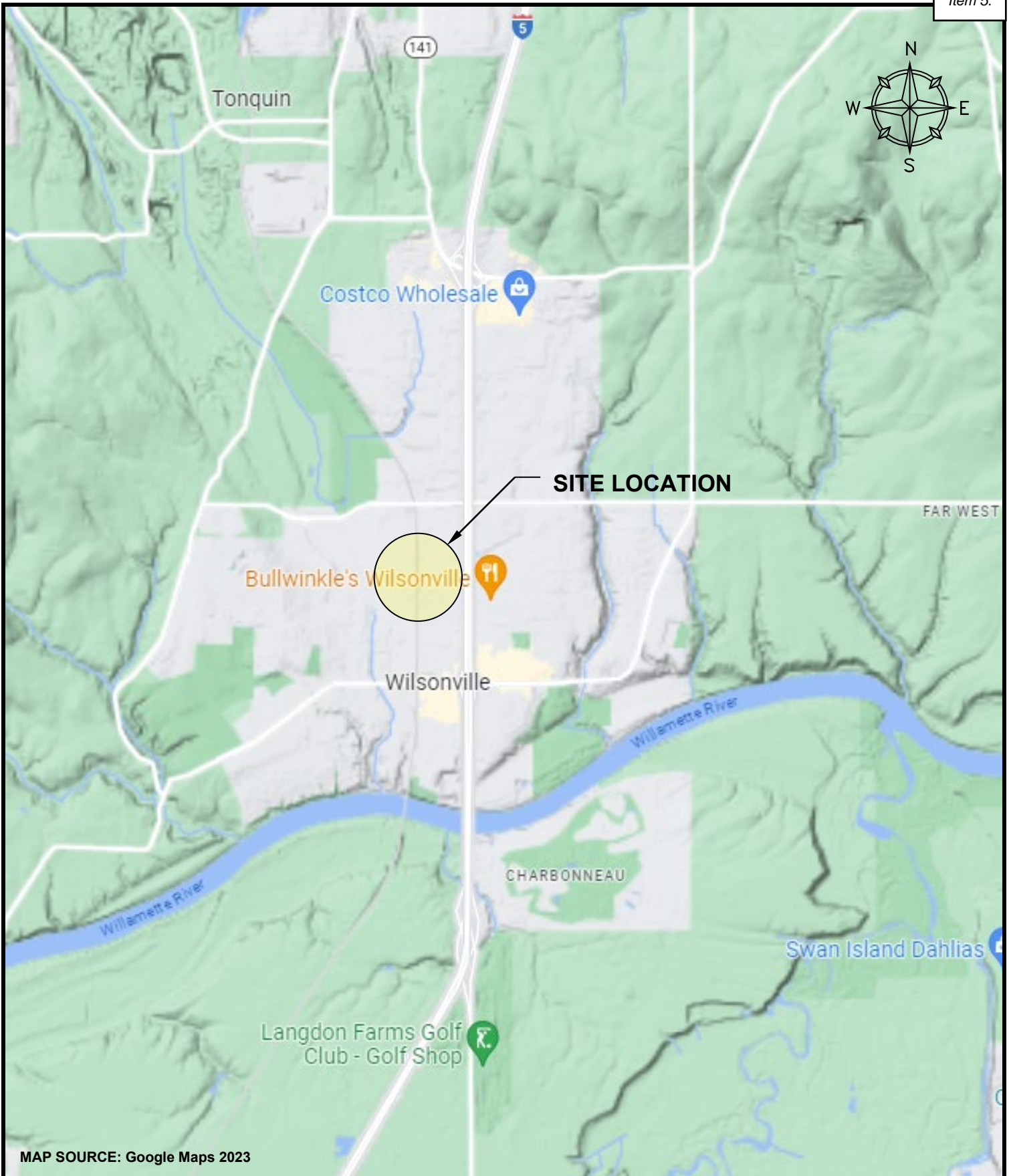
Brett A. Shipton, PE, GE
Principal



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- ASCE 7-16, Minimum Design Loads for Buildings and Other Structures*, American Society of Civil Engineers, 2016.
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- Web Soil Survey*, Natural Resources Conservation Service, United States Department of Agriculture, website (<http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm>).
- Wong, Ivan, et al, *Earthquake Scenario and Probabilistic Earthquake Ground Shaking Maps for the Portland, Oregon, Metropolitan Area*, IMS-16, Oregon Department of Geology and Mineral Industries, 2000.

FIGURES



MAP SOURCE: Google Maps 2023

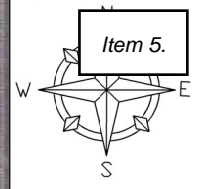


Job No: 23122
 Date: 05/01/23
 Drawn: EMU
 Checked: JFM

SITE LOCATION MAP
 BARBER STREET HOUSING DEVELOPMENT
 WILSONVILLE, OREGON

FIGURE
 1

SW KINSMAN ROAD



Infiltration Test Results						
Test Number	Location	Approximate Test Depth (feet bgs)	USCS Soil Type (*Indicates Visual Classification)	Passing No. 200 Sieve (%)	Depth of Groundwater on 04/28/23 (feet bgs)	Measured Infiltration Rate
IT-1.1	SB-1	4.0	GC, Clayey GRAVEL with Sand*	-	Not Encountered to 31.5	Negligible
IT-1.2		7.5	GC, Clayey GRAVEL with Sand	24		Negligible
IT-4.1	SB-4	4.5	SM, Silty SAND with Gravel	20	Not Encountered to 6	Negligible



SW BARBER STREET

--- APPROXIMATE STUDY AREA

APPROXIMATE LOCATION OF BORING

APPROXIMATE LOCATION OF BORING WITH INFILTRATION TEST

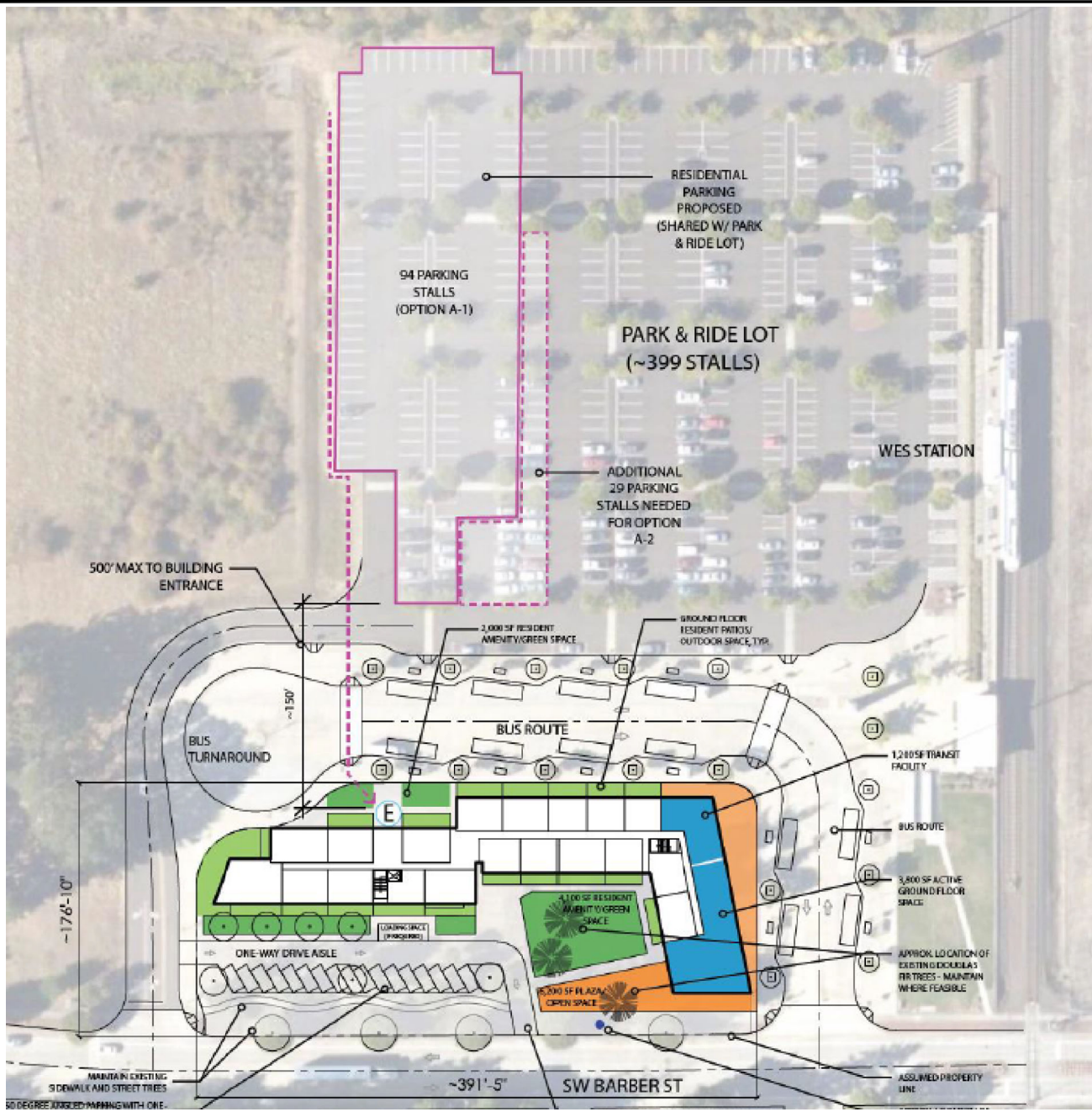
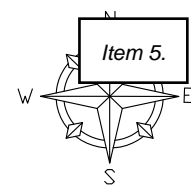


Job No: 23122
Date: 05/18/23
Drawn: EMU
Checked: JFM

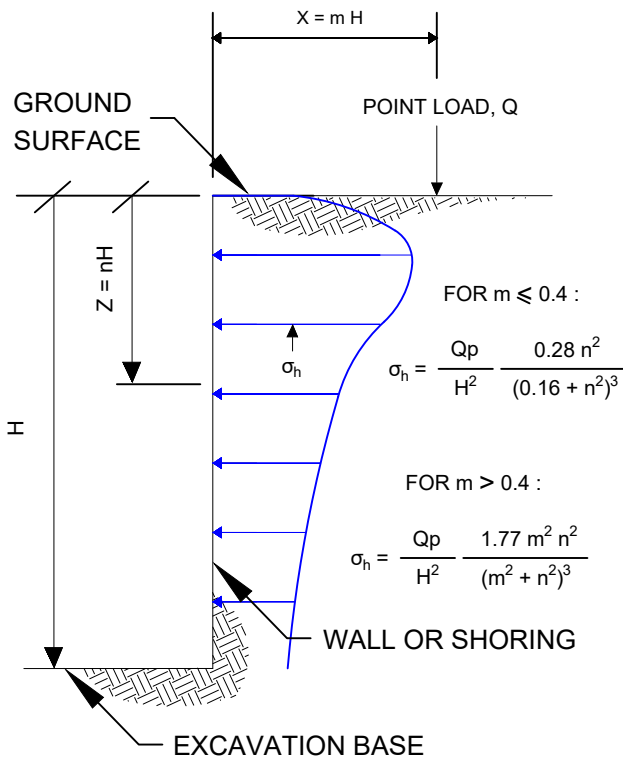
EXPLORATION LOCATION MAP
BARBER STREET HOUSING
DEVELOPMENT

- NOTES:
1. SITE LOCATION: 9699 SW BARBER STREET IN WILSONVILLE, OREGON
 2. SITE CONSISTS OF PORTIONS OF TAX PARCELS 31W14B00703 AND 31W14B00702, TOTALING APPROXIMATELY 2.28 ACRES.
 3. AERIAL PHOTO SOURCED FROM GOOGLE EARTH.
 4. EXPLORATION LOCATIONS ARE APPROXIMATE AND NOT SURVEYED.
 5. BORINGS BACKFILLED WITH BENTONITE ON APRIL 28, 2023.
 6. BORINGS B-2, B-3, AND B-4 WHERE CAPPED WITH COLD PATCH ASPHALT ON APRIL 28, 2023.

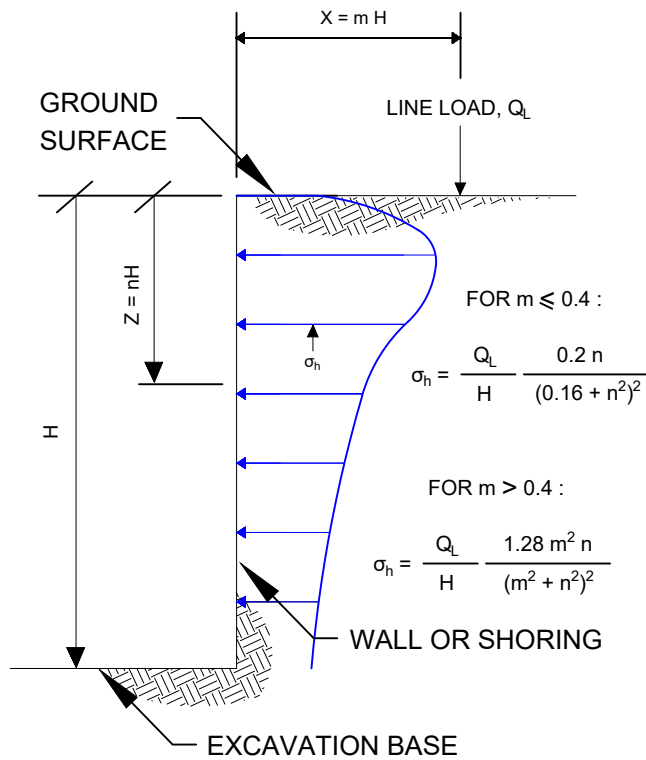
FIGURE
541



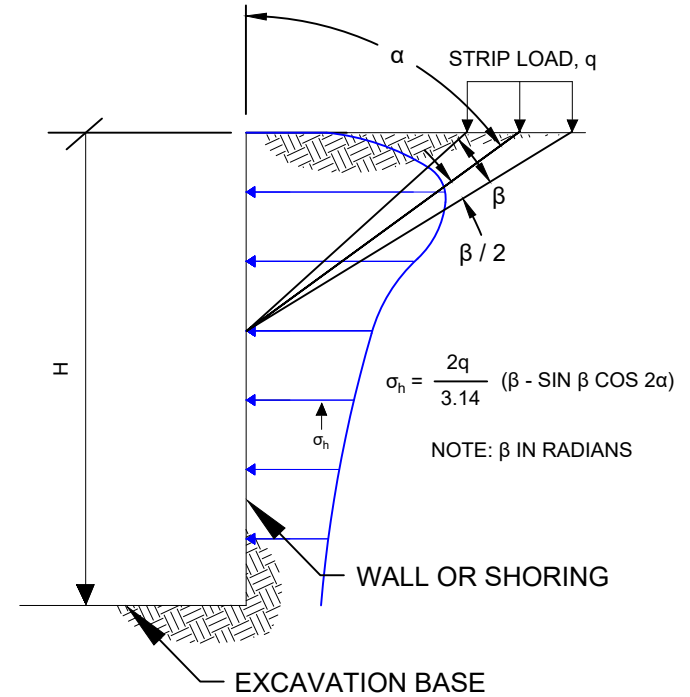
VERTICAL POINT LOAD



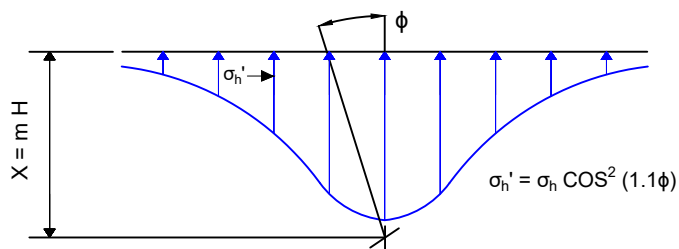
LINE LOAD PARALLEL TO WALL



STRIP LOAD PARALLEL TO WALL

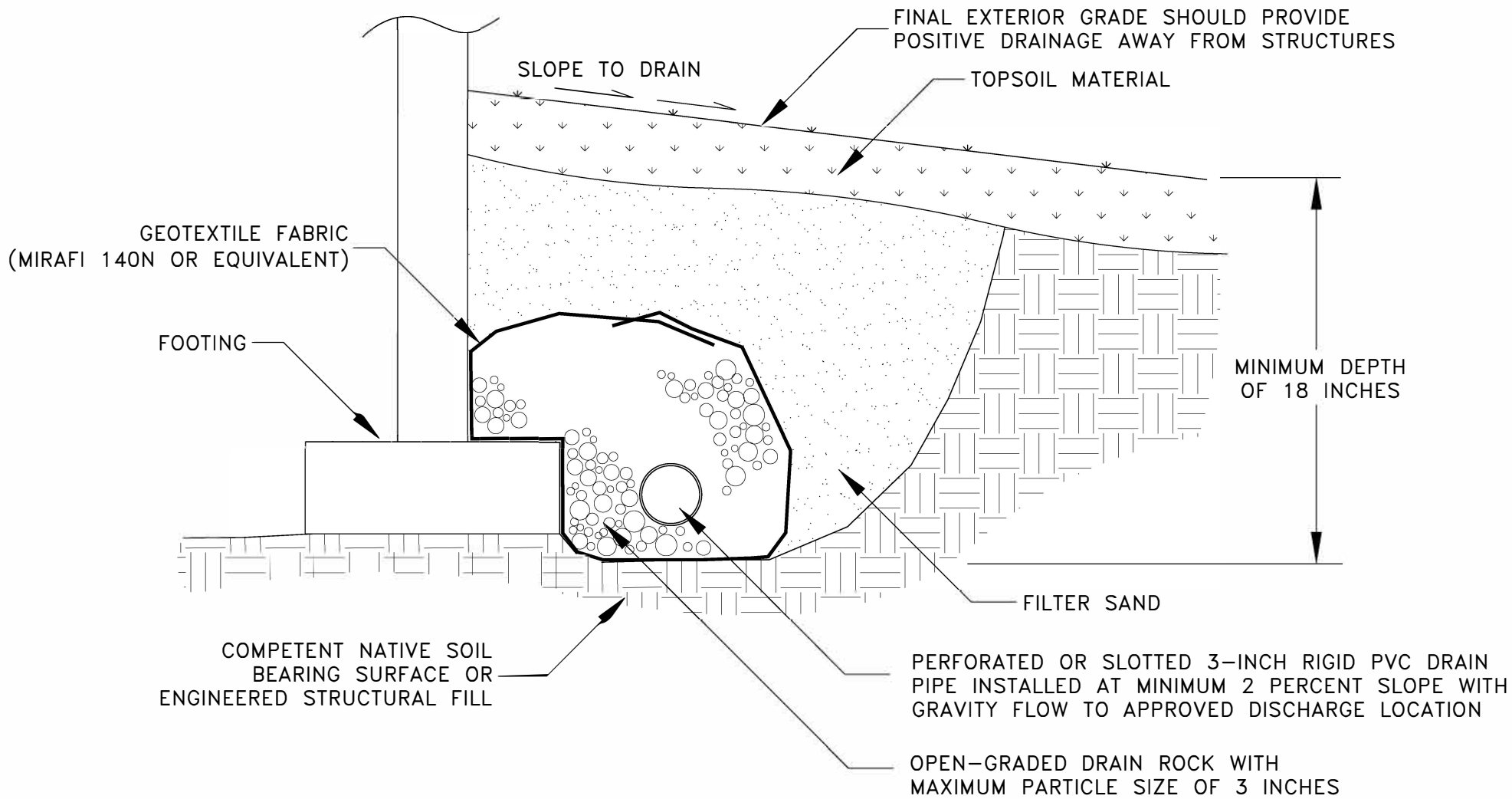


**VERTICAL POINT LOAD
HORIZONTAL PRESSURE DISTRIBUTION**

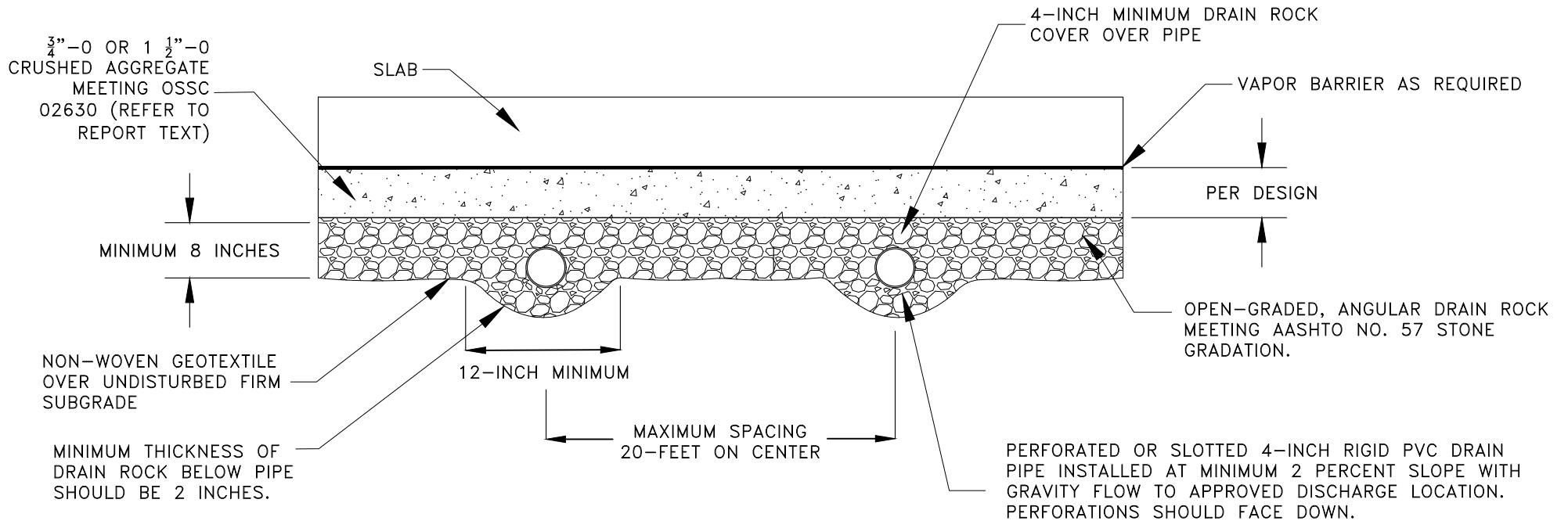


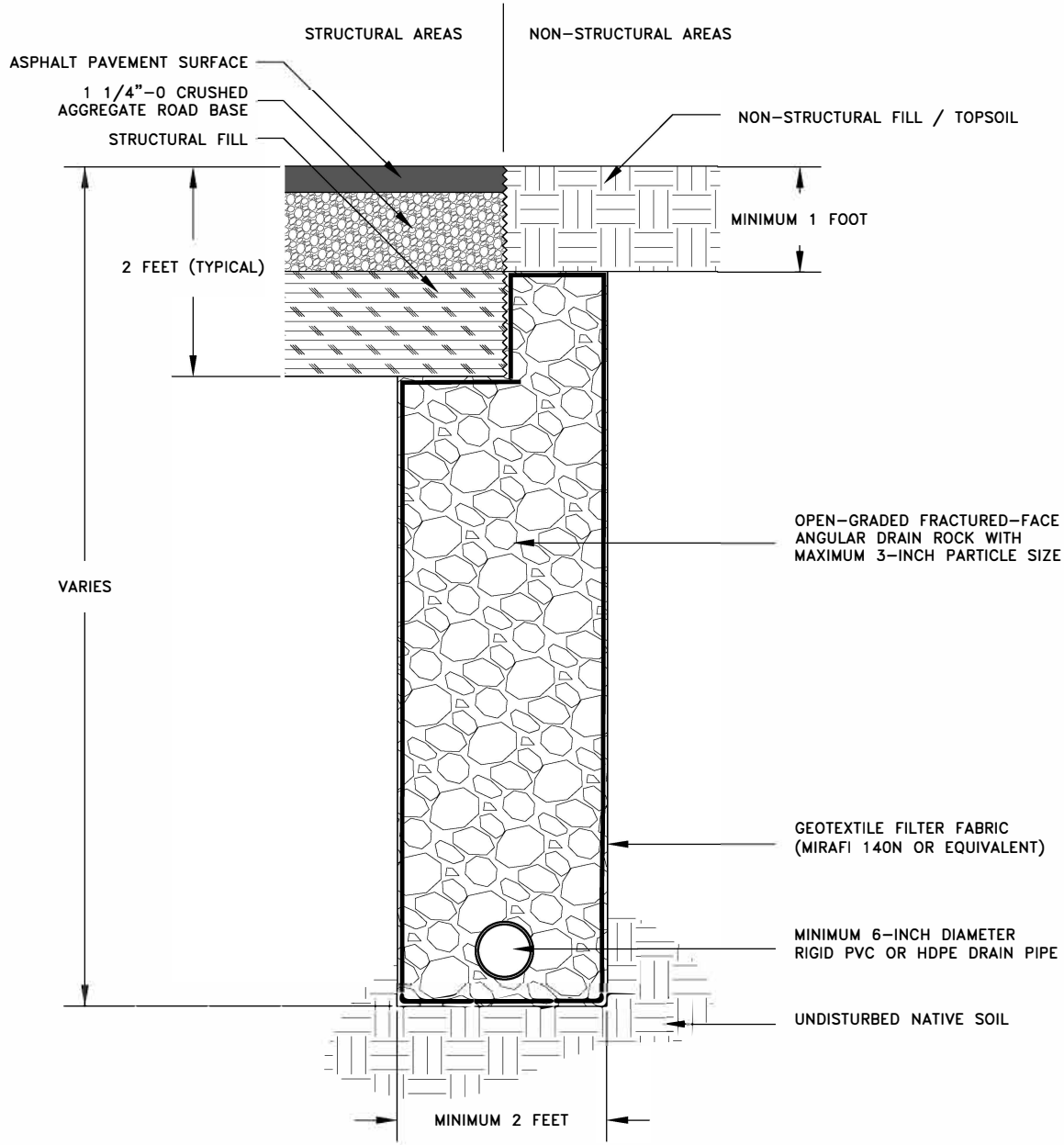
NOTES:

1. FIGURE SHOULD BE USED JOINTLY WITH RECOMMENDATIONS PRESENTED IN THE REPORT TEXT.
2. LATERAL EARTH PRESSURES ASSUME RIGID WALLS WITH BACKFILL MATERIALS HAVING A POISSON'S RATIO OF 0.5.
3. TOTAL LATERAL EARTH PRESSURES RESULTING FROM COMBINED LOADS MAY BE CALCULATED USING SUPERPOSITION.
4. DRAWING IS NOT TO SCALE.



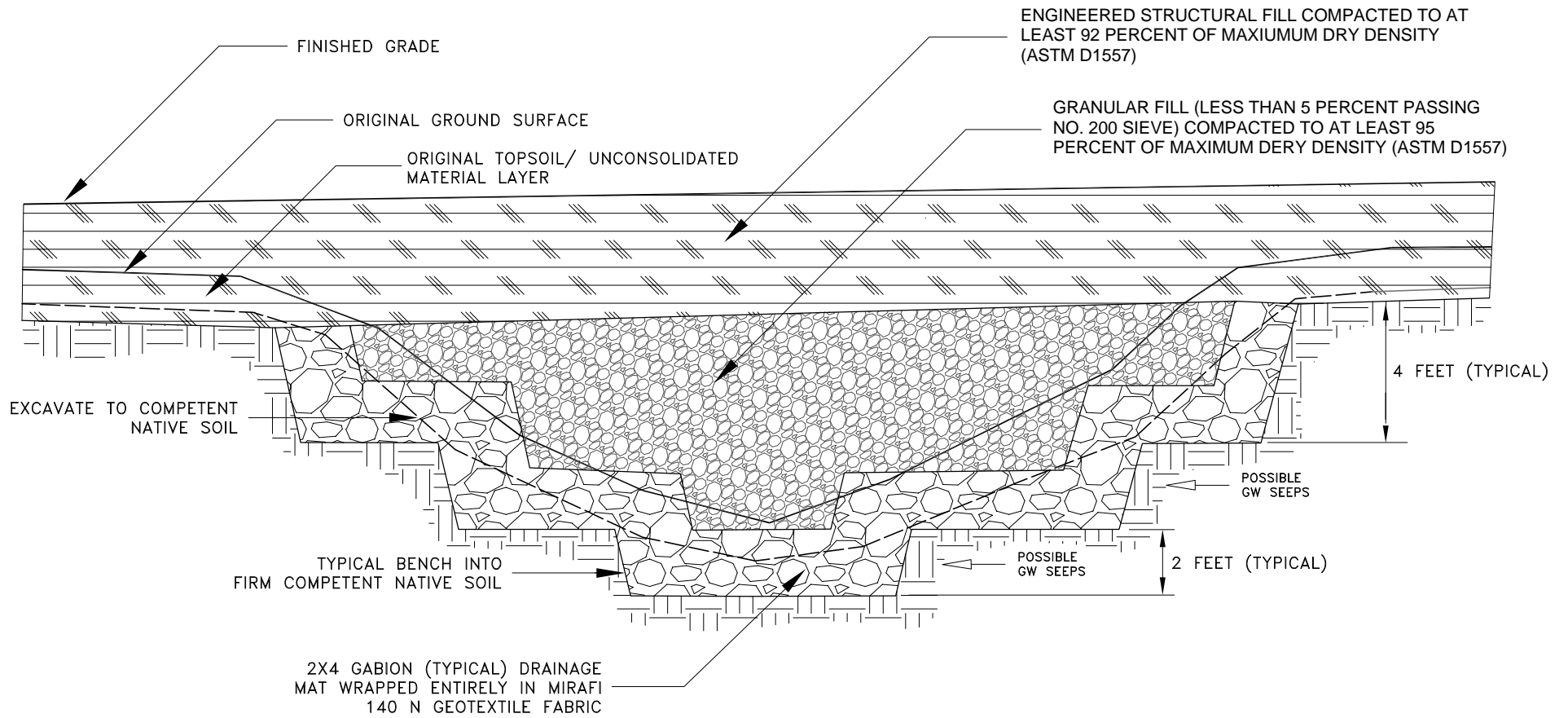
TYPICAL UNDER SLAB DRAINAGE DETAIL

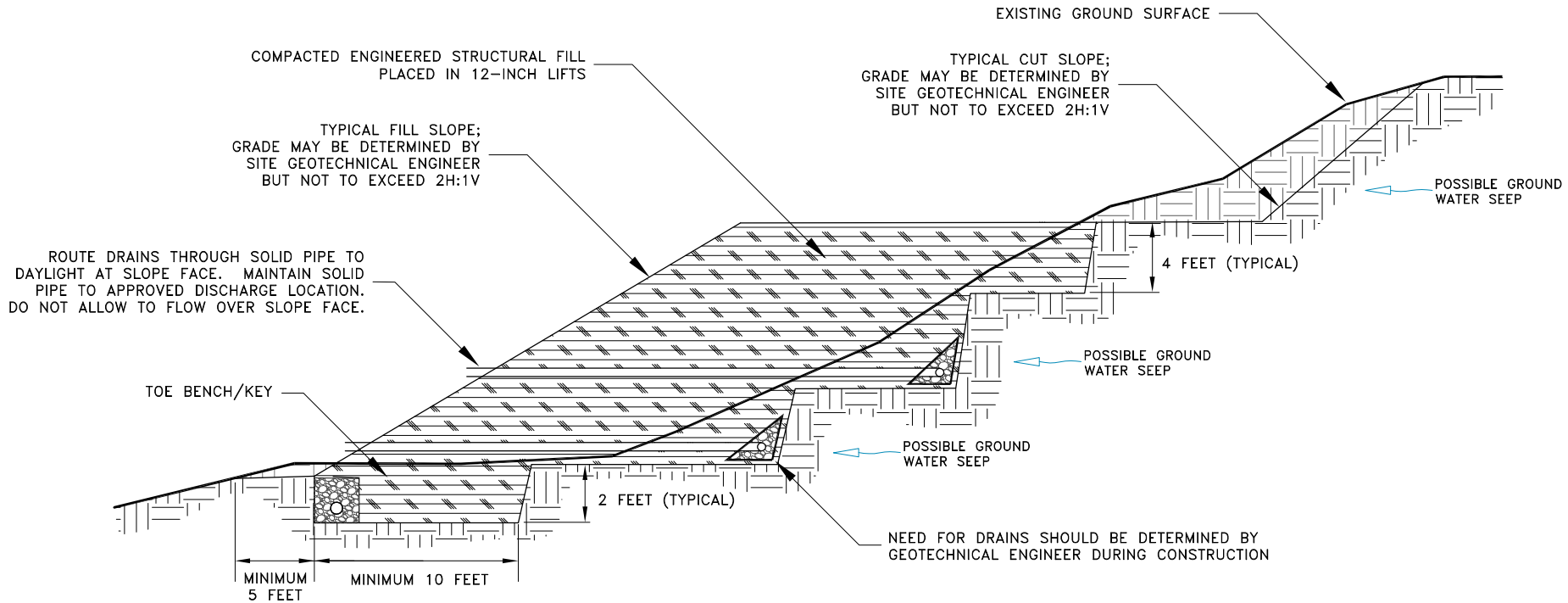




NOTE: LOCATION, INVERT ELEVATION, DEPTH OF TRENCH, AND EXTENT OF PERFORATED PIPE REQUIRED MAY BE MODIFIED BY THE GEOTECHNICAL ENGINEER DURING CONSTRUCTION BASED UPON FIELD OBSERVATION AND SITE-SPECIFIC SOIL CONDITIONS.

TYPICAL DRAINAGE MAT CROSS-SECTION



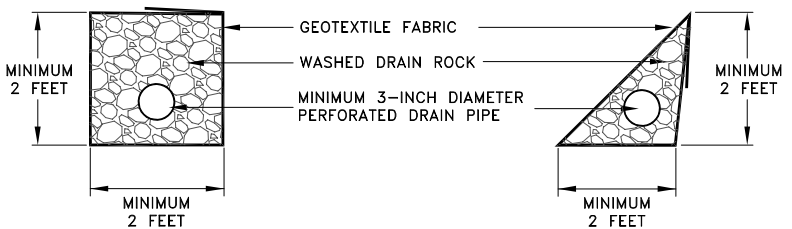


DRAIN SPECIFICATIONS

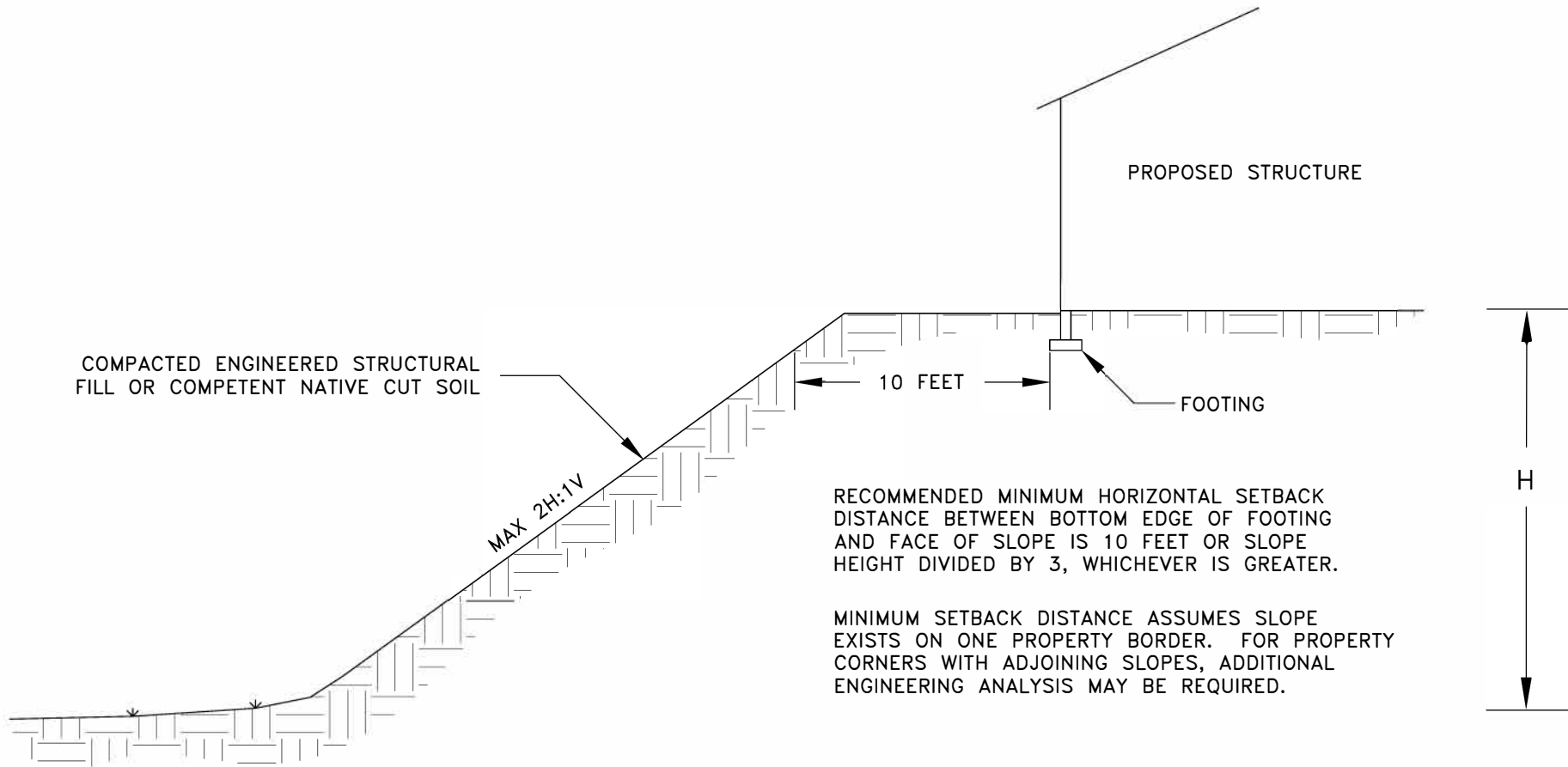
GEOTEXTILE FABRIC SHALL CONSIST OF MIRAFI 140N OR APPROVED EQUIVALENT WITH AOS BETWEEN No. 70 AND No. 100 SIEVE.

WASHED DRAIN ROCK SHALL BE OPEN-GRADED ANGULAR DRAIN ROCK WITH LESS THAN 2 PERCENT PASSING THE No. 200 SIEVE AND A MAXIMUM PARTICLE SIZE OF 3 INCHES.

TYPICAL DRAIN SECTION DETAIL



- NOTES:
 1. DRAWING IS NOT TO SCALE.
 2. DRAWING REPRESENTS TYPICAL CUT AND FILL SLOPE CROSS SECTION AND MAY NOT BE SITE-SPECIFIC.



APPENDIX A

LABORATORY TESTING RESULTS

CLASSIFICATION

The soil samples collected in the field were classified in the laboratory to confirm field classifications. The laboratory classifications are shown on the exploration logs if those classifications differed from the field classifications.

MOISTURE CONTENT

We determined the natural moisture content of select soil samples in general accordance with ASTM D2216. The natural moisture content is a ratio of the weight of the water to soil in a test sample and is expressed as a percentage. The test results are presented in this appendix.

PARTICLE-SIZE ANALYSIS

We completed particle-size analyses on select soil samples in general accordance with ASTM D6913. This test is a quantitative determination of the soil particle size distribution expressed as a percentage of dry soil weight. The test results are presented in this appendix.

ATTERBERG LIMITS

We determined the Atterberg Limits on selected samples in general accordance with ASTM D4318. Atterberg limits include the liquid limit, plastic limit, and the plasticity index of soils. These index properties are used to classify soils and for correlation with other engineering properties of soils. The test results are presented in this appendix.

MOISTURE CONTENT, PERCENT PASSING NO. 200 SIEVE BY WASHING

PROJECT Barber Street Housing Development Wilsonville, Oregon	CLIENT Palindrome Communities, LLC 412 NW 5th Avenue Portland, Oregon 97209	PROJECT NO. 23122	REPORT DATE 05/12/23
		DATE SAMPLED 04/28/23	
		SAMPLED BY EMU	

LABORATORY TEST DATA

TEST PROCEDURE									
ASTM D2216 - Method A, ASTM D1140									
LAB ID	CONTAINER MASS	MOIST MASS + PAN	DRY MASS + PAN	AFTER WASH DRY MASS + PAN	MATERIAL DESCRIPTION	FIELD ID	SAMPLE DEPTH	MOISTURE CONTENT	PASSING NO. 200 SIEVE
S23-0533	215.29	889.64	793.23	638.12	brown-gray Clayey SAND with Gravel	B1.1	2.5 feet	17%	27%
S23-0534	302.14	992.44	890.34	sieved sample	brown Clayey GRAVEL with Sand	B1.3	7.5 feet	17%	24%
S23-0535	341.17	1,063.41	960.29	884.39	brown Silty GRAVEL with Sand	B1.5	15 feet	17%	12%
S23-0536	208.54	513.08	443.02	231.97	blue-gray-brown Lean CLAY	B1.8	30 feet	30%	90%
S23-0537	231.30	1,077.77	1,014.25	n/a	gray-brown SAND with Silt and Gravel	B2.1	1 foot	8%	n/a
S23-0538	243.68	808.64	767.14	n/a	gray-brown SAND with Silt and Gravel	B3.1	1.5 feet	8%	n/a
S23-0539	204.28	957.94	828.11	705.40	brown-gray Silty SAND with Gravel	B4.3	4.5 feet	21%	20%

NOTES: Sample weights received for Lab ID: S23-0533, 0534, 0537 and 0538 did not meet the minimum size requirements; entire sample used for analysis.	DATE TESTED 05/10/23	TESTED BY KMS

PARTICLE-SIZE ANALYSIS REPORT

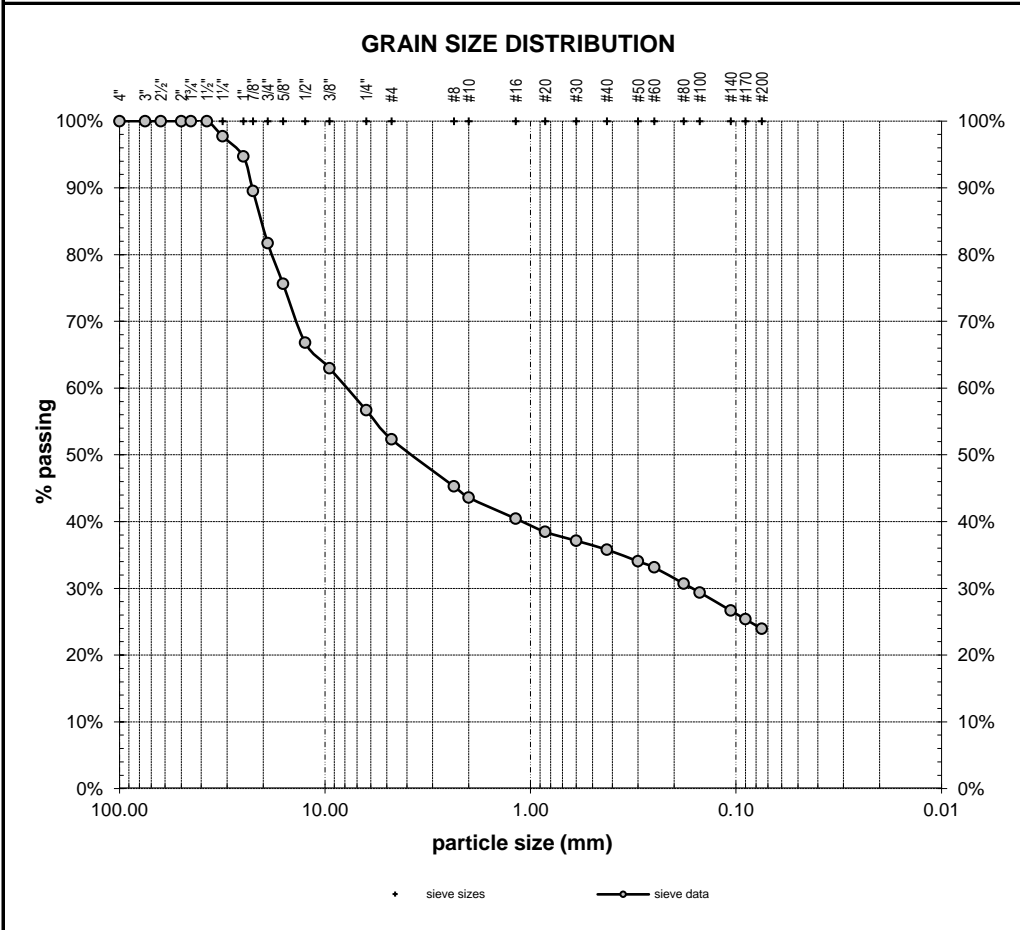
PROJECT Barber Street Housing Development Wilsonville, Oregon	CLIENT Palindrome Communities, LLC 412 NW 5th Avenue Portland, Oregon 97209	PROJECT NO. 23122	LAB ID S23-0534
		REPORT DATE 05/12/23	FIELD ID B1.3
		DATE SAMPLED 04/28/23	SAMPLED BY EMU

MATERIAL DATA	
MATERIAL SAMPLED brown Clayey GRAVEL with Sand	MATERIAL SOURCE Boring B-01 depth = 7.5 feet
SPECIFICATIONS none	USCS SOIL TYPE GC, Clayey Gravel with Sand
AASHTO CLASSIFICATION A-2-4(0)	

LABORATORY TEST DATA	
LABORATORY EQUIPMENT Rainhart "Mary Ann" Sifter, air-dried prep, hand washed, composite sieve - #4 split	TEST PROCEDURE ASTM D6913, Method A

ADDITIONAL DATA	
initial dry mass (g) = 588.15 as-received moisture content = 17% liquid limit = 31 plastic limit = 21 plasticity index = 10 fineness modulus = n/a	coefficient of curvature, C_c = n/a coefficient of uniformity, C_u = n/a effective size, $D_{(10)}$ = n/a $D_{(30)}$ = 0.163 mm $D_{(60)}$ = 7.828 mm
NOTES: Entire sample used for analysis; did not meet minimum size required.	

SIEVE DATA			
		% gravel = 47.7%	
		% sand = 28.4%	
		% silt and clay = 23.9%	
		PERCENT PASSING	
SIEVE SIZE	US	mm	SIEVE
			act. interp. max min



GRAVEL	6.00"	150.0	100%
	4.00"	100.0	100%
	3.00"	75.0	100%
	2.50"	63.0	100%
	2.00"	50.0	100%
	1.75"	45.0	100%
	1.50"	37.5	100%
	1.25"	31.5	98%
	1.00"	25.0	95%
	7/8"	22.4	90%
3/4"	19.0	82%	
5/8"	16.0	76%	
1/2"	12.5	67%	
3/8"	9.50	63%	
1/4"	6.30	57%	
#4	4.75	52%	
SAND	#8	2.36	45%
	#10	2.00	44%
	#16	1.18	40%
	#20	0.850	38%
	#30	0.600	37%
	#40	0.425	36%
	#50	0.300	34%
	#60	0.250	33%
	#80	0.180	31%
	#100	0.150	29%
#140	0.106	27%	
#170	0.090	25%	
#200	0.075	24%	

DATE TESTED 05/10/23	TESTED BY KMS
-------------------------	------------------

James C. Smith

ATTERBERG LIMITS REPORT

PROJECT Barber Street Housing Development Wilsonville, Oregon	CLIENT Palindrome Communities, LLC 412 NW 5th Avenue Portland, Oregon 97209	PROJECT NO. 23122	LAB ID S23-0534
		REPORT DATE 05/12/23	FIELD ID B1.3
		DATE SAMPLED 04/28/23	SAMPLED BY EMU

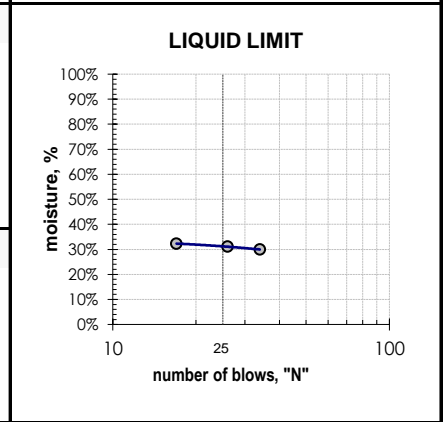
MATERIAL DATA

MATERIAL SAMPLED brown Clayey GRAVEL with Sand	MATERIAL SOURCE Boring B-01 depth = 7.5 feet	USCS SOIL TYPE GC, Clayey Gravel with Sand
---	--	---

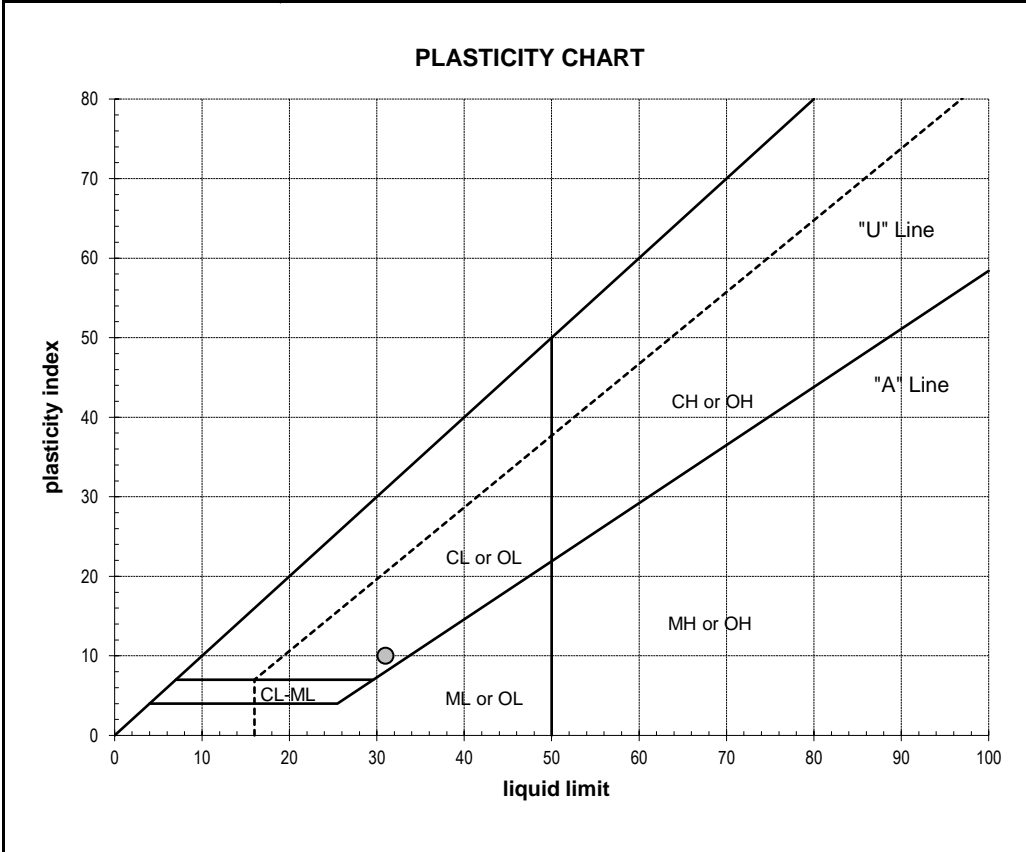
LABORATORY TEST DATA

LABORATORY EQUIPMENT Liquid Limit Machine, Hand Rolled	TEST PROCEDURE ASTM D4318
---	------------------------------

ATTERBERG LIMITS	LIQUID LIMIT DETERMINATION																															
liquid limit = 31																																
plastic limit = 21																																
plasticity index = 10																																
		<table border="1" style="margin: auto;"> <tr> <th></th> <th>1</th> <th>2</th> <th>3</th> <th>4</th> </tr> <tr> <td>wet soil + pan weight, g =</td> <td>32.18</td> <td>33.02</td> <td>32.90</td> <td></td> </tr> <tr> <td>dry soil + pan weight, g =</td> <td>29.60</td> <td>30.16</td> <td>30.00</td> <td></td> </tr> <tr> <td>pan weight, g =</td> <td>20.98</td> <td>20.97</td> <td>21.02</td> <td></td> </tr> <tr> <td>N (blows) =</td> <td>34</td> <td>26</td> <td>17</td> <td></td> </tr> <tr> <td>moisture, % =</td> <td>29.9 %</td> <td>31.1 %</td> <td>32.3 %</td> <td></td> </tr> </table>		1	2	3	4	wet soil + pan weight, g =	32.18	33.02	32.90		dry soil + pan weight, g =	29.60	30.16	30.00		pan weight, g =	20.98	20.97	21.02		N (blows) =	34	26	17		moisture, % =	29.9 %	31.1 %	32.3 %	
	1	2	3	4																												
wet soil + pan weight, g =	32.18	33.02	32.90																													
dry soil + pan weight, g =	29.60	30.16	30.00																													
pan weight, g =	20.98	20.97	21.02																													
N (blows) =	34	26	17																													
moisture, % =	29.9 %	31.1 %	32.3 %																													



SHRINKAGE	PLASTIC LIMIT DETERMINATION																										
shrinkage limit = n/a																											
shrinkage ratio = n/a																											
		<table border="1" style="margin: auto;"> <tr> <th></th> <th>1</th> <th>2</th> <th>3</th> <th>4</th> </tr> <tr> <td>wet soil + pan weight, g =</td> <td>27.90</td> <td>27.48</td> <td></td> <td></td> </tr> <tr> <td>dry soil + pan weight, g =</td> <td>26.66</td> <td>26.24</td> <td></td> <td></td> </tr> <tr> <td>pan weight, g =</td> <td>20.87</td> <td>20.42</td> <td></td> <td></td> </tr> <tr> <td>moisture, % =</td> <td>21.4 %</td> <td>21.3 %</td> <td></td> <td></td> </tr> </table>		1	2	3	4	wet soil + pan weight, g =	27.90	27.48			dry soil + pan weight, g =	26.66	26.24			pan weight, g =	20.87	20.42			moisture, % =	21.4 %	21.3 %		
	1	2	3	4																							
wet soil + pan weight, g =	27.90	27.48																									
dry soil + pan weight, g =	26.66	26.24																									
pan weight, g =	20.87	20.42																									
moisture, % =	21.4 %	21.3 %																									



ADDITIONAL DATA	
% gravel = 47.7%	
% sand = 28.4%	
% silt and clay = 23.9%	
% silt = n/a	
% clay = n/a	
moisture content = 17%	

DATE TESTED 05/10/23	TESTED BY MRS/KMS
-------------------------	----------------------

Janet Curtis

APPENDIX B

SUBSURFACE EXPLORATION PROGRAM

GENERAL

We explored subsurface conditions at the site by drilling four borings using a truck-mounted drill rig. The borings were drilled by Western States Soil Conservation, Inc. on April 28, 2023, to a maximum depth of 31.5 feet BGS. The boring logs are presented in this appendix.

SOIL SAMPLING

Disturbed samples were collected from the boring at representative depth intervals using 1½-inch diameter split-barrel (SPT) samples in general accordance with ASTM D1586. The sampler was driven into the soil with a 140-pound hammer free falling 30 inches. The sampler was 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 log, unless otherwise noted. The hammer was lifted using an automatic hammer with a reported efficiency of 77.7 percent. A copy of the hammer calibration report is on file at our office. Sampling methods and intervals are shown on the exploration log.

SOIL CLASSIFICATION

The soil samples were classified in accordance with the Unified Soil Classification System presented in Appendix C. The exploration log indicates the depths at which the soil or their characteristics change, although the change actually could be gradual. If the change occurred between sample locations, the depth was interpreted. Soil classifications are shown on the exploration logs.

NEARBY WELL LOGS

Relevant well logs in the vicinity of the site are presented following the boring logs. Well logs were obtained from the Oregon Water Resource Department.

SOIL BORING LOG

PROJECT NAME Baber Street Housing Development		CLIENT Palindrome Wilsonville Limited Partnership		PROJECT NO. 23122	BORING NO. SB-1
PROJECT LOCATION Wilsonville, Oregon		DRILLING CONTRACTOR Western States	DRILL RIG CME75 Truck 9	TECHNICIAN EMU	PAGE NO. 1 of 1
BORING LOCATION See Figure 2		DRILLING METHOD HSA	SAMPLING METHOD SPT	START DATE 04/28/23	START TIME 0820
REMARKS None		GROUNDWATER DEPTH Not encountered		FINISH DATE 04/28/23	FINISH TIME 1130

Depth (ft)	Field ID + Sample Type	SPT N-value (uncorrected) 0 20 40 60	USCS Soil Type	AASHTO Soil Type	Graphic Log	LITHOLOGIC DESCRIPTION AND REMARKS	Infiltration (in/hr)	Moisture Content (%)	Passing No. 200 Sieve (%)	Liquid Limit	Plasticity Index
0			GC			2-inch root zone.					
2	SPT	51				Clayey GRAVEL with sand, brown and gray, damp, very dense, clay is nonplastic to low plasticity, fine- to medium-textured sand, fractured gravels.		17	27		
4	SB1.1 SPT	50				Infiltration test run prior to SPT at 4 feet.	Neg.				
6	SB1.2										
8	SPT	32				Infiltration test run prior to SPT at 7.5 feet. Becomes dense at 7.5 feet.	Neg.	17	24	31	10
10	SB1.3 SPT	28									
12	SB1.4										
14			GM			Drill started to grind on gravel at 13 feet. Silty GRAVEL with sand, brown, very moist, dense, silt is nonplastic to low plasticity, fine- to coarse-textured sand, fine- to coarse-textured gravel.		17	12		
16	SB1.5 SPT	34				Driller indicated heaving at 15 feet.					
18											
20	SB1.6 SPT	50				Driller indicated auger was spinning on cobble or boulder at 19 feet. Becomes very dense at 20 feet.					
22											
24											
26	SB1.7 SPT	43	CL			Lean CLAY, blue and brown, moist, hard, low to medium plasticity, fine-textured sand.					
28											
30	SB1.8 SPT	21				Becomes blue-gray and brown and very stiff at 30 feet.		30	90		
32											
34						Boring completed at 31.5 feet bgs. Groundwater not observed on 4/28/23.					

SOIL BORING LOG

PROJECT NAME Baber Street Housing Development	CLIENT Palindrome Wilsonville Limited Partnership	PROJECT NO. 23122	BORING NO. SB-2
PROJECT LOCATION Wilsonville, Oregon	DRILLING CONTRACTOR Western States	DRILL RIG CME75 Truck 9	TECHNICIAN EMU
BORING LOCATION See Figure 2	DRILLING METHOD HSA	SAMPLING METHOD SPT	START DATE 04/28/23
REMARKS None	GROUNDWATER DEPTH Not encountered	FINISH DATE 04/28/23	FINISH TIME 1218

Depth (ft)	Field ID + Sample Type	SPT N-value (uncorrected) 0 20 40 60	USCS Soil Type	AASHTO Soil Type	Graphic Log	LITHOLOGIC DESCRIPTION AND REMARKS	Infiltration (in/hr)	Moisture Content (%)	Passing No. 200 Sieve (%)	Liquid Limit	Plasticity Index
0					[Cross-hatched pattern]	Approximately 4-inches of asphalt underlain by 8-inches of crushed aggregate.					
1.5	SPT	46			[Cross-hatched pattern]	FILL. SAND with Silt and Gravel, gray and brown, damp, dense, silt is nonplastic, fine- to coarse-textured sand, fractured gravel.		8			
2.5	SB2.1				[Cross-hatched pattern]						
5.5	SPT	8			[Cross-hatched pattern]	Becomes black and brown, moist, and loose at 5 feet.					
6.5	SB2.2				[Cross-hatched pattern]	Boring completed at 6.5 feet bgs. Groundwater not observed on 4/28/23.					
10					[Cross-hatched pattern]						

SOIL BORING LOG

PROJECT NAME Baber Street Housing Development		CLIENT Palindrome Wilsonville Limited Partnership		PROJECT NO. 23122	BORING NO. SB-3
PROJECT LOCATION Wilsonville, Oregon		DRILLING CONTRACTOR Western States	DRILL RIG CME75 Truck 9	TECHNICIAN EMU	PAGE NO. 1 of 1
BORING LOCATION See Figure 2		DRILLING METHOD HSA	SAMPLING METHOD SPT	START DATE 04/28/23	START TIME 1219
REMARKS None		GROUNDWATER DEPTH Not encountered		FINISH DATE 04/28/23	FINISH TIME 1258

Depth (ft)	Field ID + Sample Type	SPT N-value (uncorrected) 0 20 40 60	USCS Soil Type	AASHTO Soil Type	Graphic Log	LITHOLOGIC DESCRIPTION AND REMARKS	Infiltration (in/hr)	Moisture Content (%)	Passing No. 200 Sieve (%)	Liquid Limit	Plasticity Index
0					[Cross-hatched pattern]	Approximately 6-inches of asphalt underlain by 12-inches of crushed aggregate.					
2	SPT	36			[Cross-hatched pattern]	FILL. SAND with Silt and Gravel, gray, orange, and brown, damp, dense, silt is nonplastic, fine-to coarse-textured sand, fractured gravel.		8			
4	SB3.1 SPT	10	ML		[Vertical lines pattern]	Sandy SILT with gravel, black and brown, moist, stiff, low plasticity, fine-textured sand, fine-textured gravel.					
6	SB3.2 SPT	6			[Vertical lines pattern]	Becomes Sandy SILT and medium stiff at 5 feet.					
6.5	SB3.3				[Vertical lines pattern]	Boring completed at 6.5 feet bgs. Groundwater not observed on 4/28/23.					
10											

SOIL BORING LOG

PROJECT NAME Baber Street Housing Development	CLIENT Palindrome Wilsonville Limited Partnership	PROJECT NO. 23122	BORING NO. SB-4
PROJECT LOCATION Wilsonville, Oregon	DRILLING CONTRACTOR Western States	DRILL RIG CME75 Truck 9	TECHNICIAN EMU
BORING LOCATION See Figure 2	DRILLING METHOD HSA	SAMPLING METHOD SPT	START DATE 04/28/23
REMARKS None	GROUNDWATER DEPTH Not encountered	FINISH DATE 04/28/23	FINISH TIME 1400

Depth (ft)	Field ID + Sample Type	SPT N-value (uncorrected) 0 20 40 60	USCS Soil Type	AASHTO Soil Type	Graphic Log	LITHOLOGIC DESCRIPTION AND REMARKS	Infiltration (in/hr)	Moisture Content (%)	Passing No. 200 Sieve (%)	Liquid Limit	Plasticity Index
0						Approximately 5-inches of asphalt underlain by 7-inches of crushed aggregate.					
1	SPT		ML			SILT with Sand, brown and gray, moist, medium stiff, low plasticity, fine-textured sand.					
2	SB4.1	7				Becomes brown and medium stiff to stiff at 2.5 feet.					
3	SPT										
4	SB4.2	8									
5	SPT		SM			Infiltration test performed before SPT at 4.5 feet. Silty SAND with gravel, brown and gray, moist, dense, silt is nonplastic to low plasticity, fine- to coarse-textured sand, fine-textured gravels.					
6	SB4.3	36					Neg.	21	20		
7											
8											
10						Boring completed at 6 feet bgs. Groundwater not observed on 4/28/23.					

APPENDIX C

SOIL AND ROCK CLASSIFICATION INFORMATION

SOIL DESCRIPTION AND CLASSIFICATION GUIDELINES

Particle-Size Classification

COMPONENT	ASTM/USCS		AASHTO	
	size range	sieve size range	size range	sieve size range
Cobbles	> 75 mm	greater than 3 inches	> 75 mm	greater than 3 inches
Gravel	75 mm – 4.75 mm	3 inches to No. 4 sieve	75 mm – 2.00 mm	3 inches to No. 10 sieve
Coarse	75 mm – 19.0 mm	3 inches to 3/4-inch sieve	-	-
Fine	19.0 mm – 4.75 mm	3/4-inch to No. 4 sieve	-	-
Sand	4.75 mm – 0.075 mm	No. 4 to No. 200 sieve	2.00 mm – 0.075 mm	No. 10 to No. 200 sieve
Coarse	4.75 mm – 2.00 mm	No. 4 to No. 10 sieve	2.00 mm – 0.425 mm	No. 10 to No. 40 sieve
Medium	2.00 mm – 0.425 mm	No. 10 to No. 40 sieve	-	-
Fine	0.425 mm – 0.075 mm	No. 40 to No. 200 sieve	0.425 mm – 0.075 mm	No. 40 to No. 200 sieve
Fines (Silt and Clay)	< 0.075 mm	Passing No. 200 sieve	< 0.075 mm	Passing No. 200 sieve

Consistency for Cohesive Soil

CONSISTENCY	SPT N-VALUE (BLOWS PER FOOT)	D&M N-VALUE (BLOWS PER FOOT)	POCKET PENETROMETER (UNCONFINED COMPRESSIVE STRENGTH, tsf)
Very Soft	Less than 2	Less than 3	less than 0.25
Soft	2 to 4	3 to 6	0.25 to 0.50
Medium Stiff	4 to 8	6 to 12	0.50 to 1.0
Stiff	8 to 15	12 to 25	1.0 to 2.0
Very Stiff	15 to 30	25 to 65	2.0 to 4.0
Hard	30 to 60	65 to 145	greater than 4.0
Very Hard	greater than 60	greater than 145	-

RELATIVE DENSITY	SPT N-VALUE (BLOWS PER FOOT)	D&M N-VALUE (BLOWS PER FOOT)
Very Loose	0 to 4	0 to 11
Loose	4 to 10	11 to 26
Medium Dense	10 to 30	26 to 74
Dense	30 to 50	74 to 120
Very Dense	more than 50	More than 120

Relative Density for Granular Soil

Moisture Designations

TERM	FIELD IDENTIFICATION
Dry	No moisture. Dusty or dry.
Damp	Some moisture. Cohesive soils are usually below plastic limit and are moldable.
Moist	Grains appear darkened, but no visible water is present. Cohesive soils will clump. Sand will bulk. Soils are often at or near plastic limit.
Wet	Visible water on larger grains. Sand and silt exhibit dilatancy. Cohesive soil can be readily remolded. Soil leaves wetness on the hand when squeezed. Soil is much wetter than optimum moisture content and is above plastic limit.

Additional Constituents

Percent	Silt and Clay In:		Percent	Sand and Gravel In:	
	Fine-Grained Soil	Coarse-Grained Soil		Fine-Grained Soil	Coarse-Grained Soil
< 5	trace	trace	< 5	trace	trace
5 – 12	minor	with	5 – 15	minor	minor
> 12	some	silty/clayey	15 – 30	with	with
			> 30	sandy/gravelly	with Indicate approx. percentage

AASHTO SOIL CLASSIFICATION SYSTEM

TABLE 1. Classification of Soils and Soil-Aggregate Mixtures

General Classification	Granular Materials (35 Percent or Less Passing .075 mm)				Silt-Clay Materials (More than 35 Percent Passing 0.075)		
	A-1	A-3	A-2	A-4	A-5	A-6	A-7
Sieve analysis, percent passing:							
2.00 mm (No. 10)	-	-	-	-	-	-	-
0.425 mm (No. 40)	50 max	51 min	-	-	-	-	-
0.075 mm (No. 200)	25 max	10 max	35 max	36 min	36 min	36 min	36 min
<u>Characteristics of fraction passing 0.425 mm (No. 40)</u>							
Liquid limit				40 max	41 min	40 max	41 min
Plasticity index	6 max	N.P.		10 max	10 max	11 min	11 min
General rating as subgrade	Excellent to good				Fair to poor		

Note: The placing of A-3 before A-2 is necessary in the "left to right elimination process" and does not indicate superiority of A-3 over A-2.

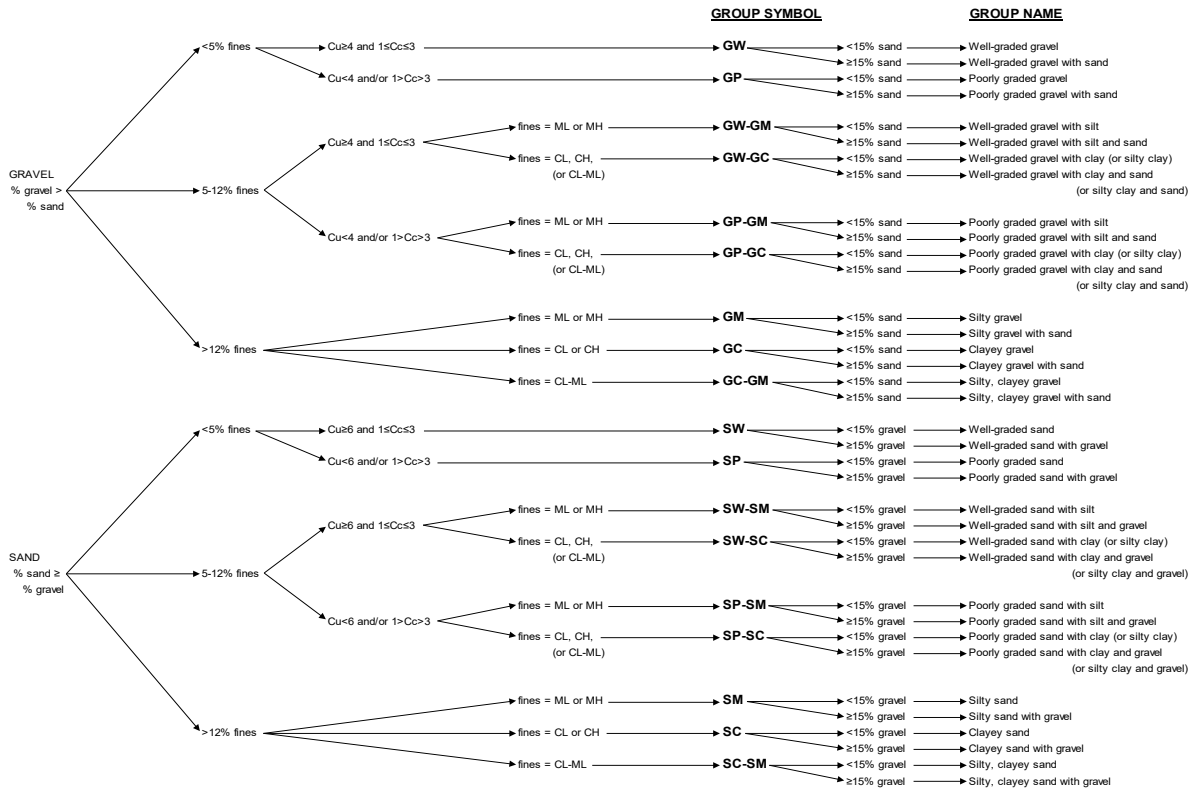
TABLE 2. Classification of Soils and Soil-Aggregate Mixtures

General Classification	Granular Materials (35 Percent or Less Passing 0.075 mm)							Silt-Clay Materials (More than 35 Percent Passing 0.075 mm)			
	A-1		A-2					A-7			
Group Classification	A-1-a	A-1-b	A-3	A-2-4	A-2-5	A-2-6	A-2-7	A-4	A-5	A-6	A-7-5, A-7-6
Sieve analysis, percent passing:											
2.00 mm (No. 10)	50 max	-	-	-	-	-	-	-	-	-	-
0.425 mm (No. 40)	30 max	50 max	51 min	-	-	-	-	-	-	-	-
0.075 mm (No. 200)	15 max	25 max	10 max	35 max	35 max	35 max	35 max	36 min	36 min	36 min	36 min
<u>Characteristics of fraction passing 0.425 mm (No. 40)</u>											
Liquid limit				40 max	41 min	40 max	41 min	40 max	41 min	40 max	41 min
Plasticity index	6 max		N.P.	10 max	10 max	11 min	11 min	10 max	10 max	11 min	11 min
Usual types of significant constituent materials	Stone fragments, gravel and sand		Fine sand	Silty or clayey gravel and sand				Silty soils		Clayey soils	
General ratings as subgrade	Excellent to Good							Fair to poor			

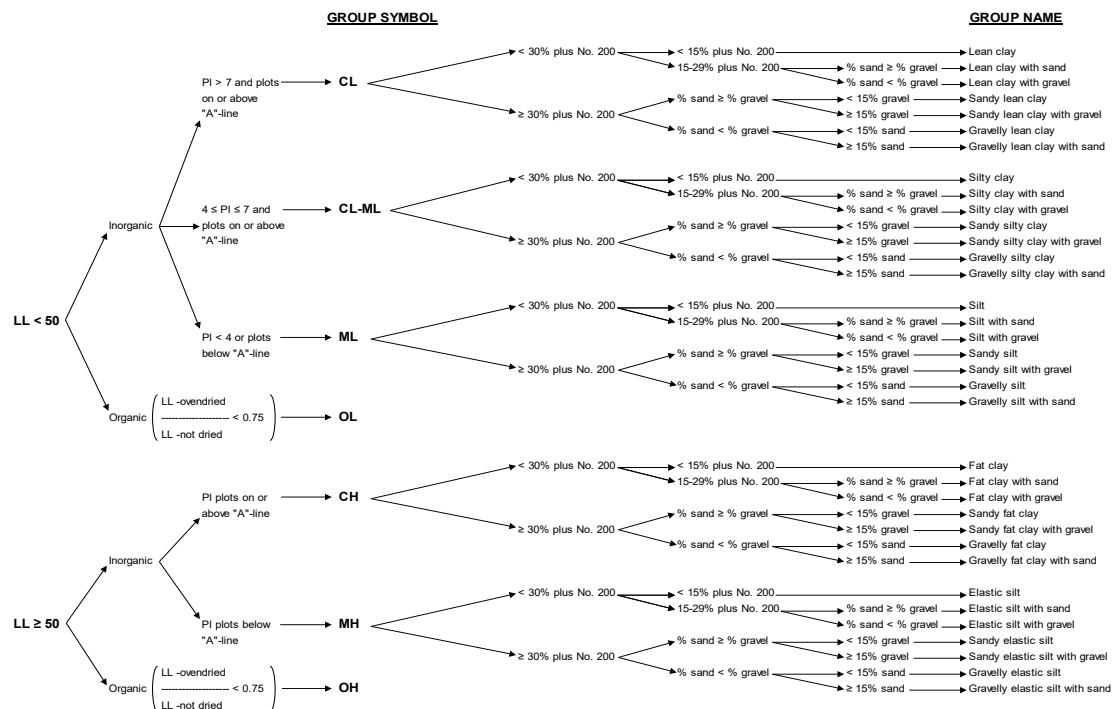
Note: Plasticity index of A-7-5 subgroup is equal to or less than LL minus 30. Plasticity index of A-7-6 subgroup is greater than LL minus 30 (see Figure 2).

AASHTO = American Association of State Highway and Transportation Officials

UNIFIED SOIL CLASSIFICATION SYSTEM



Flow Chart for Classifying Coarse-Grained Soils (More Than 50% Retained on No. 200 Sieve)



Flow Chart for Classifying Fine-Grained Soil (50% or More Passes No. 200 Sieve)

ROCK CLASSIFICATION INFORMATION

ROCK HARDNESS	DESCRIPTION	UNCONFINED COMPRESSIVE STRENGTH (PSI)	
Extremely Soft (R0)	Easily indented and scratched by fingernail - soil like texture	<100	
Very Soft (R1)	Scratched with fingernail, peeled by knife, indented by rock pick	100 - 200	
Soft (R2)	Peeled by knife, indented by rock pick (moderate difficulty)	200 - 800	
Moderately Soft (R3)	Peeled by knife, indented by rock pick (with difficulty)	800 - 1,800	
Moderately Hard (R4)	Scratched by knife or rock pick, cannot be peeled	1,800 - 7,300	
Hard (R5)	Scratched by knife or rock pick (with difficulty)	7,300 - 14,500	
Very Hard (R6)	Cannot be scratched with knife or rock pick	14,500 - 36,300	
Extremely Hard (R7)	Can only be chipped, not broken by repeated blows with rock pick	> 36,300	
ROCK WEATHERING	DESCRIPTION	ROCK QUALITY	RQD (%)
Decomposed	Completely decomposed - mass structure is disintegrated to a soil	Very poor (Completely weathered rock)	<25%
Completely Weathered	Completely decomposed - mass structure is largely intact	Poor (Weathered rocks)	25 to 50%
Highly Weathered	> 50% of rock is decomposed, fresh or discolored rock is present	Fair (Moderately weathered rocks)	51 to 75%
Moderately Weathered	< 50% of rock is decomposed, fresh or discolored rock is present	Good (Hard Rock)	76 to 90%
Slightly Weathered	Discoloration indicates weathering and discontinuity surfaces	Very Good (Fresh rocks)	91 to 100%
Fresh	No visible weathering, slight discoloration on discontinuity surfaces		
ROCK JOINT SPACING	DESCRIPTION	Rock Quality Designation (RQD) is a measure of quality of rock core taken from a borehole. The length of core pieces is measured along center line of the pieces. All pieces of intact rock core equal to or greater than 100 mm (4 in.) long are summed and divided by the total length of the core run to obtain RQD value	
Very Close	< 0.2 foot		
Close	0.2 foot - 1 foot		
Moderately Close	1 foot - 3 feet		
Wide	3 feet - 10 feet		
Very Wide	> 10 feet		
ROCK FRACTURING	DESCRIPTION		
Very Intensely Fractured	Chips, fragments, with scattered short core lengths		
Intensely Fractured	0.1 foot - 0.3 foot with scattered fragments		
Moderately Fractured	0.3 foot - 1 foot		
Slightly Fractured	1 foot - 3 feet		
Very Slightly Fractured	> 3 feet		
Unfractured	No fractures observed		
ROCK HEALING	DESCRIPTION		
Not Healed	Discontinued surface, fractured zone, sheared material, filling is not cemented		
Partly Healed	Fractured/sheared material - bonded is < 50%		
Moderately Healed	Fractured/sheared material - bonded is > 50%		
Totally Healed	All fragments are bonded		

**APPENDIX D
PHOTO LOG**

Barber Street Housing Project

April, 2023

Wilsonville, Oregon



North Site Area, Facing North

Barber Street Housing Project

April, 2023

Wilsonville, Oregon



Southwestern Site Area, Facing East

Barber Street Housing Project

April, 2023

Wilsonville, Oregon



Southeastern Site Area, Facing West

Barber Street Housing Project

April, 2023

Wilsonville, Oregon



Split Spoon Sample, SB1.3 Depth 7.5 feet

Barber Street Housing Project

April, 2023

Wilsonville, Oregon



Split Spoon Sample, SB3.3 Depth 5 feet

APPENDIX E
REPORT LIMITATIONS AND IMPORTANT INFORMATION

Date: May 18, 2023
Project: Barber Street Housing Development
Wilsonville, Oregon

Geotechnical and Environmental Report Limitations and Important Information

Report Purpose, Use, and Standard of Care

This report has been prepared in accordance with standard fundamental principles and practices of geotechnical engineering and/or environmental consulting, and in a manner consistent with the level of care and skill typical of currently practicing local engineers and consultants. This report has been prepared to meet the specific needs of specific individuals for the indicated site. It may not be adequate for use by other consultants, contractors, or engineers, or if change in project ownership has occurred. It should not be used for any other reason than its stated purpose without prior consultation with Columbia West Engineering, Inc. (Columbia West). It is a unique report and not applicable for any other site or project. If site conditions are altered, or if modifications to the project description or proposed plans are made after the date of this report, it may not be valid. Columbia West cannot accept responsibility for use of this report by other individuals for unauthorized purposes, or if problems occur resulting from changes in site conditions for which Columbia West was not aware or informed.

Report Conclusions and Preliminary Nature

This geotechnical or environmental report should be considered preliminary and summary in nature. The recommendations contained herein have been established by engineering interpretations of subsurface soils based upon conditions observed during site exploration. The exploration and associated laboratory analysis of collected representative samples identifies soil conditions at specific discreet locations. It is assumed that these conditions are indicative of actual conditions throughout the subject property. However, soil conditions may differ between tested locations at different seasonal times of the year, either by natural causes or human activity. Distinction between soil types may be more abrupt or gradual than indicated on the soil logs. This report is not intended to stand alone without understanding of concomitant instructions, correspondence, communication, or potential supplemental reports that may have been provided to the client.

Because this report is based upon observations obtained at the time of exploration, its adequacy may be compromised with time. This is particularly relevant in the case of natural disasters, earthquakes, floods, or other significant events. Report conclusions or interpretations may also be subject to revision if significant development or other manmade impacts occur within or in proximity to the subject property. Groundwater conditions, if presented in this report, reflect observed conditions at the time of investigation. These conditions may change annually, seasonally or as a result of adjacent development.

Additional Investigation and Construction QA/QC

Columbia West should be consulted prior to construction to assess whether additional investigation above and beyond that presented in this report is necessary. Even slight variations in soil or site conditions may produce impacts to the performance of structural facilities if not adequately addressed. This underscores the importance of diligent QA/QC construction observation and testing to verify soil conditions do not differ materially or significantly from the interpreted conditions utilized for preparation of this report.

Therefore, this report contains several recommendations for field observation and testing by Columbia West personnel during construction activities. Actual subsurface conditions are more readily observed and discerned during the earthwork phase of construction when soils are exposed. Columbia West cannot accept responsibility for deviations from recommendations described in this report or future

performance of structural facilities if another consultant is retained during the construction phase or Columbia West is not engaged to provide construction observation to the full extent recommended.

Collected Samples

Uncontaminated samples of soil or rock collected in connection with this report will be retained for thirty days. Retention of such samples beyond thirty days will occur only at client's request and in return for payment of storage charges incurred. All contaminated or environmentally impacted materials or samples are the sole property of the client. Client maintains responsibility for proper disposal.

Report Contents

This geotechnical or environmental report should not be copied or duplicated unless in full, and even then only under prior written consent by Columbia West, as indicated in further detail in the following text section entitled *Report Ownership*. The recommendations, interpretations, and suggestions presented in this report are only understandable in context of reference to the whole report. Under no circumstances should the soil boring or test pit excavation logs, monitor well logs, or laboratory analytical reports be separated from the remainder of the report. The logs or reports should not be redrawn or summarized by other entities for inclusion in architectural or civil drawings, or other relevant applications.

Report Limitations for Contractors

Geotechnical or environmental reports, unless otherwise specifically noted, are not prepared for the purpose of developing cost estimates or bids by contractors. The extent of exploration or investigation conducted as part of this report is usually less than that necessary for contractor's needs. Contractors should be advised of these report limitations, particularly as they relate to development of cost estimates. Contractors may gain valuable information from this report, but should rely upon their own interpretations as to how subsurface conditions may affect cost, feasibility, accessibility and other components of the project work. If believed necessary or relevant, contractors should conduct additional exploratory investigation to obtain satisfactory data for the purposes of developing adequate cost estimates. Clients or developers cannot insulate themselves from attendant liability by disclaiming accuracy for subsurface ground conditions without advising contractors appropriately and providing the best information possible to limit potential for cost overruns, construction problems, or misunderstandings.

Report Ownership

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December 7, 2023

Palindrome Wilsonville Limited Partnership
412 NW 5th Avenue
Portland, Oregon 97209

Attn: Jason Ellis

**Re: Report of Geotechnical Engineering Services
Barber Street Housing Development
Supplemental Infiltration Testing
9699 SW Barber Street
Wilsonville, Oregon
CWE Project: Palindrome-3-01-1**

INTRODUCTION

Columbia West Engineering, Inc. (Columbia West) is pleased to submit this report of geotechnical engineering services for the Barber Street Housing Development located at 9699 SW Barber Street in Wilsonville, Oregon. Columbia West previously prepared the following geotechnical documents for the project:

- Columbia West Engineering, Inc., *Geotechnical Site Investigation, Barber Street Housing Development, Wilsonville, Oregon, May 18, 2023.*
- Columbia West Engineering, Inc., *Infiltration Feasibility, Barber Street Housing Development, Wilsonville, Oregon, June 20, 2023.*

The City of Wilsonville has requested additional infiltration testing at the locations of proposed stormwater facilities to meet applicable stormwater design code requirements.

INFILTRATION TESTING

Infiltration potential of site soils was evaluated through in situ infiltration testing in boring B-1 (Columbia West, May 18, 2023) and in hand auger borings HA-1 through HA-7 conducted for this current supplemental investigation. The approximate locations of the boring and hand augers are shown on Figure 1. Exploration logs are presented in Appendix A.

Stand pipe, falling head infiltration testing was performed by embedding a hollow stem auger in boring B-1 and steel pipe in HA-1 through HA-7 in undisturbed native soil, filling the apparatus with water, and measuring time relative to changes in hydraulic head. Representative soil samples were collected from select test locations and submitted for laboratory analysis. Laboratory test reports are presented in Appendix B. Results of in situ infiltration testing are presented below in Table 1.

Table 1. Infiltration Test Results

Test Number	Location	Depth (feet BGS)	Passing No. 200	Depth to Groundwater (feet BGS)	Measured Infiltration Rate (in/hr)
IT-1.1	B-1	4.0	-	Not Encountered to 31.5	Negligible
IT-1.2	B-1	7.5	24	Not Encountered to 31.5	Negligible
HA-1.1	HA-1	2.0	64	Not Encountered to 2.0	Negligible
HA-2.1	HA-2	1.0	-	Not Encountered to 1.0	Negligible
HA-3.1	HA-3	0.75	31	Not Encountered to 0.75	Negligible
HA-4.1	HA-4	2.25	-	Not Encountered to 2.25	Negligible
HA-5.1	HA-5	1	-	Not Encountered to 1.0	Negligible
HA-6.1	HA-6	2.75	-	Not Encountered to 2.75	Negligible
HA-7.1	HA-7	2.25	-	Not Encountered to 2.25	Negligible

Based on the presence of fine-textured, very dense, low permeability site soils, infiltration is not a feasible option for stormwater management.

LIMITATIONS

We have prepared this report for use by Palindrome Wilsonville Limited Partnership and members of the design and construction team for the proposed project. The data and report can be used for design 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.

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 the 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 the 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.

Sincerely,
Columbia West Engineering, Inc.



Jason F. Merritt, PE
Senior Project Engineer



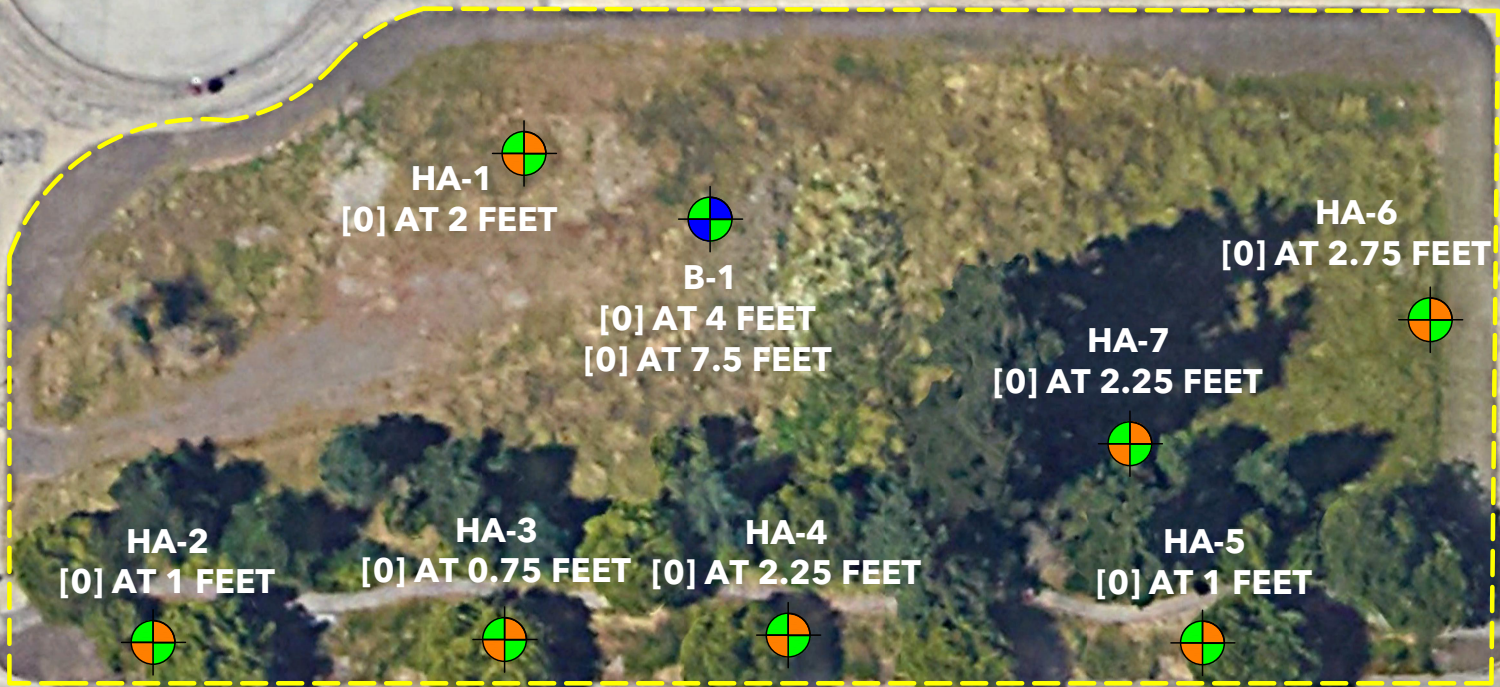
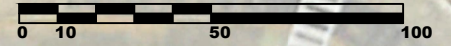
Brett A. Shipton, PE, GE
Principal

JFM:BAS

Attachments

Document ID:Palindrome-3-01-1-120723-geol





SW BARBER STREET

LEGEND

- APPROXIMATE SITE BOUNDARY
- BORING WITH INFILTRATION LOCATION
[X] UNFACTORED INFILTRATION RATE [IN/HR]
- HAND AUGER WITH INFILTRATION LOCATION
[X] UNFACTORED INFILTRATION RATE [IN/HR]

APPENDIX A EXPLORATION LOGS




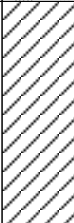
SOIL BORING LOG

PROJECT NAME Barber Street Housing Development		CLIENT Palindrome Wilsonville Limited Partnership		PROJECT NO. 23122	BORING NO. SB-1
PROJECT LOCATION Wilsonville, Oregon		DRILLING CONTRACTOR Western States	DRILL RIG CME75 Truck 9	TECHNICIAN EMU	PAGE NO. 1 of 1
BORING LOCATION See Figure 2		DRILLING METHOD HSA	SAMPLING METHOD SPT	START DATE 04/28/23	START TIME 0820
REMARKS None		GROUNDWATER DEPTH Not encountered		FINISH DATE 04/28/23	FINISH TIME 1130

Depth (ft)	Field ID + Sample Type	SPT N-value (uncorrected) 0 20 40 60	USCS Soil Type	AASHTO Soil Type	Graphic Log	LITHOLOGIC DESCRIPTION AND REMARKS	Infiltration (in/hr)	Moisture Content (%)	Passing No. 200 Sieve (%)	Liquid Limit	Plasticity Index
0			GC			2-inch root zone.					
2	SPT SB1.1	51				Clayey GRAVEL with sand, brown and gray, damp, very dense, clay is nonplastic to low plasticity, fine- to medium-textured sand, fractured gravels.		17	27		
4	SPT SB1.2	50				Infiltration test run prior to SPT at 4 feet.	Neg.				
6											
8	SPT SB1.3	32				Infiltration test run prior to SPT at 7.5 feet. Becomes dense at 7.5 feet.	Neg.	17	24	31	10
10	SPT SB1.4	28									
12											
14			GM			Drill started to grind on gravel at 13 feet.					
16	SPT SB1.5	34				Silty GRAVEL with sand, brown, very moist, dense, silt is nonplastic to low plasticity, fine- to coarse-textured sand, fine- to coarse-textured gravel. Driller indicated heaving at 15 feet.		17	12		
18											
20	SPT SB1.6	50				Driller indicated auger was spinning on cobble or boulder at 19 feet. Becomes very dense at 20 feet.					
22											
24											
26	SPT SB1.7	43	CL			Lean CLAY, blue and brown, moist, hard, low to medium plasticity, fine-textured sand.					
28											
30	SPT SB1.8	21				Becomes blue-gray and brown and very stiff at 30 feet.		30	90		
32											
34						Boring completed at 31.5 feet bgs. Groundwater not observed on 4/28/23.					

HAND AUGER LOG

PROJECT NAME Barber Street Housing Development	CLIENT Palindrome Wilsonville Limited Partnership	PROJECT NO. Palindrome-3-01-1	BORING NO. HA-1
PROJECT LOCATION Willsonville, Oregon	CONTRACTOR N/A	EQUIPMENT Hand Auger	TECHNICIAN EMU
TEST PIT LOCATION See Figure 2	GROUNDWATER DEPTH Not Observed	START TIME 0845	FINISH TIME 1326

Depth (feet)	Sample Field ID	SCS Soil Survey Description	AASHTO Soil Type	USCS Soil Type	Graphic Log	LITHOLOGIC DESCRIPTION AND REMARKS	Moisture Content (%)	Passing No. 200 Sieve (%)	Liquid Limit	Plasticity Index	Infiltration Testing
0	HA1.1					Approximately 6-inches topsoil (2-inch root zone).	35	64			
				CL		Brown, lean CLAY with sand, moist, stiff, low plasticity, fine sand.					
						Rounded gravels at 2 feet. Infiltration test performed at 2 feet.					
						Hand auger terminated at 2 feet due to dense gravels. Groundwater not observed on 11/30/23.					
5											
10											


HAND AUGER LOG

PROJECT NAME Barber Street Housing Development	CLIENT Palindrome Wilsonville Limited Partnership	PROJECT NO. Palindrome-3-01-1	BORING NO. HA-2
PROJECT LOCATION Willsonville, Oregon	CONTRACTOR N/A	EQUIPMENT Hand Auger	TECHNICIAN EMU
TEST PIT LOCATION See Figure 2	GROUNDWATER DEPTH Not Observed	START TIME 0900	FINISH TIME 1035

Depth (feet)	Sample Field ID	SCS Soil Survey Description	AASHTO Soil Type	USCS Soil Type	Graphic Log	LITHOLOGIC DESCRIPTION AND REMARKS	Moisture Content (%)	Passing No. 200 Sieve (%)	Liquid Limit	Plasticity Index	Infiltration Testing
0						Approximately 9-inches topsoil (2-inch root zone).					
				CL		Brown, lean CLAY with sand and gravel, moist, stiff, low plasticity, fine sand, fine to coarse gravel. Infiltration test performed at 1 foot. Hand auger terminated at 1 feet due to dense gravels. Groundwater not observed on 11/30/23.					
5											
10											


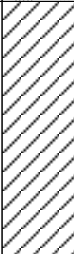
HAND AUGER LOG

PROJECT NAME Barber Street Housing Development	CLIENT Palindrome Wilsonville Limited Partnership	PROJECT NO. Palindrome-3-01-1	BORING NO. HA-3
PROJECT LOCATION Willsonville, Oregon	CONTRACTOR N/A	EQUIPMENT Hand Auger	TECHNICIAN EMU
TEST PIT LOCATION See Figure 2	GROUNDWATER DEPTH Not Observed	START TIME 0930	FINISH TIME 1320

Depth (feet)	Sample Field ID	SCS Soil Survey Description	AASHTO Soil Type	USCS Soil Type	Graphic Log	LITHOLOGIC DESCRIPTION AND REMARKS	Moisture Content (%)	Passing No. 200 Sieve (%)	Liquid Limit	Plasticity Index	Infiltration Testing
0	HA3.1					Approximately 8-inches topsoil (2-inch root zone).	39	31			
						Infiltration test performed at 0.75 feet.					
5						Hand auger terminated at 0.75 feet due to dense gravels. Groundwater not observed on 11/30/23.					
10											



HAND AUGER LOG

PROJECT NAME Barber Street Housing Development	CLIENT Palindrome Wilsonville Limited Partnership	PROJECT NO. Palindrome-3-01-1	BORING NO. HA-4
PROJECT LOCATION Willsonville, Oregon	CONTRACTOR N/A	EQUIPMENT Hand Auger	TECHNICIAN EMU
TEST PIT LOCATION See Figure 2	GROUNDWATER DEPTH Not Observed	START TIME 0940	FINISH TIME 1338

Depth (feet)	Sample Field ID	SCS Soil Survey Description	AASHTO Soil Type	USCS Soil Type	Graphic Log	LITHOLOGIC DESCRIPTION AND REMARKS	Moisture Content (%)	Passing No. 200 Sieve (%)	Liquid Limit	Plasticity Index	Infiltration Testing
0						Approximately 6-inches topsoil (2-inch root zone).					
				CL		Brown, lean CLAY with sand and gravel, moist, stiff, low plasticity, fine sand, fine to coarse gravel.					
						Infiltration test performed at 2.25 feet.					
						Hand auger terminated at 2.25 feet due to dense gravels. Groundwater not observed on 11/30/23.					
5											
10											

HAND AUGER LOG

PROJECT NAME Barber Street Housing Development	CLIENT Palindrome Wilsonville Limited Partnership	PROJECT NO. Palindrome-3-01-1	BORING NO. HA-5
PROJECT LOCATION Willsonville, Oregon	CONTRACTOR N/A	EQUIPMENT Hand Auger	TECHNICIAN EMU
TEST PIT LOCATION See Figure 2	GROUNDWATER DEPTH Not Observed	START TIME 1007	FINISH TIME 1245

Depth (feet)	Sample Field ID	SCS Soil Survey Description	AASHTO Soil Type	USCS Soil Type	Graphic Log	LITHOLOGIC DESCRIPTION AND REMARKS	Moisture Content (%)	Passing No. 200 Sieve (%)	Liquid Limit	Plasticity Index	Infiltration Testing
0						Approximately 12-inches topsoil (2-inch root zone).					
				CL		Brown, lean CLAY with sand and gravel, moist, stiff, low plasticity, fine sand, fine to coarse gravel.					
5						Infiltration test performed at 1.25 feet. Hand auger terminated at 1.25 feet due to dense gravels. Groundwater not observed on 11/30/23.					
10											




HAND AUGER LOG

PROJECT NAME Barber Street Housing Development	CLIENT Palindrome Wilsonville Limited Partnership	PROJECT NO. Palindrome-3-01-1	BORING NO. HA-6
PROJECT LOCATION Willsonville, Oregon	CONTRACTOR N/A	EQUIPMENT Hand Auger	TECHNICIAN EMU
TEST PIT LOCATION See Figure 2	GROUNDWATER DEPTH Not Observed	START TIME 1038	FINISH TIME 1355

Depth (feet)	Sample Field ID	SCS Soil Survey Description	AASHTO Soil Type	USCS Soil Type	Graphic Log	LITHOLOGIC DESCRIPTION AND REMARKS	Moisture Content (%)	Passing No. 200 Sieve (%)	Liquid Limit	Plasticity Index	Infiltration Testing
0						Approximately 8-inches topsoil (2-inch root zone).					
				CL		Brown, lean CLAY with sand, moist, stiff, low plasticity, fine sand.					
						Infiltration test performed at 2.75 feet.					
						Hand auger terminated at 2.75 feet due to dense gravels. Groundwater not observed on 11/30/23.					
5											
10											

HAND AUGER LOG

PROJECT NAME Barber Street Housing Development	CLIENT Palindrome Wilsonville Limited Partnership	PROJECT NO. Palindrome-3-01-1	BORING NO. HA-7
PROJECT LOCATION Willsonville, Oregon	CONTRACTOR N/A	EQUIPMENT Hand Auger	TECHNICIAN EMU
TEST PIT LOCATION See Figure 2	GROUNDWATER DEPTH Not Observed	START TIME 1105	FINISH TIME 1347

Depth (feet)	Sample Field ID	SCS Soil Survey Description	AASHTO Soil Type	USCS Soil Type	Graphic Log	LITHOLOGIC DESCRIPTION AND REMARKS	Moisture Content (%)	Passing No. 200 Sieve (%)	Liquid Limit	Plasticity Index	Infiltration Testing
0						Approximately 8-inches topsoil (2-inch root zone).					
				CL		Brown, lean CLAY with sand, moist, stiff, low plasticity, fine sand.					
						Fine to coarse gravels at 2 feet. Infiltration test performed at 2.25 feet.					
						Hand auger terminated at 2.25 feet due to dense gravels. Groundwater not observed on 11/30/23.					
5											
10											

APPENDIX B LABORATORY TEST REPORTS



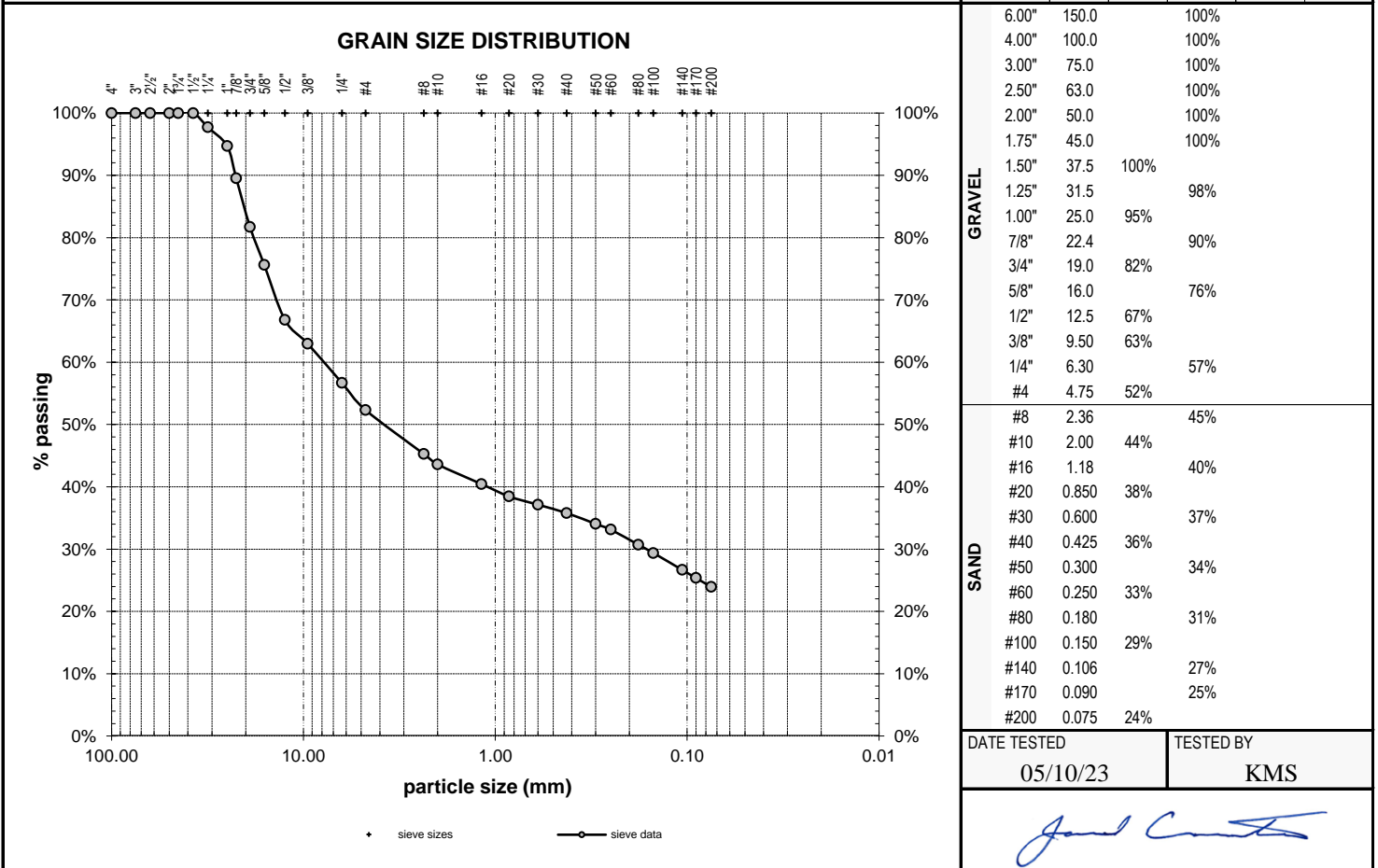
PARTICLE-SIZE ANALYSIS REPORT

PROJECT Barber Street Housing Development Wilsonville, Oregon	CLIENT Palindrome Communities, LLC 412 NW 5th Avenue Portland, Oregon 97209	PROJECT NO.	23122	LAB ID	S23-0534
		REPORT DATE	05/12/23	FIELD ID	B1.3
		DATE SAMPLED	04/28/23	SAMPLED BY	EMU

MATERIAL DATA					
MATERIAL SAMPLED brown Clayey GRAVEL with Sand		MATERIAL SOURCE Boring B-01 depth = 7.5 feet		USCS SOIL TYPE GC, Clayey Gravel with Sand	
SPECIFICATIONS none				AASHTO CLASSIFICATION A-2-4(0)	

LABORATORY TEST DATA					
LABORATORY EQUIPMENT Rainhart "Mary Ann" Sifter, air-dried prep, hand washed, composite sieve - #4 split				TEST PROCEDURE ASTM D6913, Method A	

ADDITIONAL DATA						SIEVE DATA					
initial dry mass (g) = 588.15			coefficient of curvature, C_c = n/a			% gravel = 47.7%					
as-received moisture content = 17%			coefficient of uniformity, C_u = n/a			% sand = 28.4%					
liquid limit = 31			effective size, $D_{(10)}$ = n/a			% silt and clay = 23.9%					
plastic limit = 21			$D_{(30)}$ = 0.163 mm								
plasticity index = 10			$D_{(60)}$ = 7.828 mm								
fineness modulus = n/a											
NOTES: Entire sample used for analysis; did not meet minimum size required.											



DATE TESTED 05/10/23	TESTED BY KMS

ATTERBERG LIMITS REPORT

PROJECT Barber Street Housing Development Wilsonville, Oregon	CLIENT Palindrome Communities, LLC 412 NW 5th Avenue Portland, Oregon 97209	PROJECT NO. 23122	LAB ID S23-0534
		REPORT DATE 05/12/23	FIELD ID B1.3
		DATE SAMPLED 04/28/23	SAMPLED BY EMU

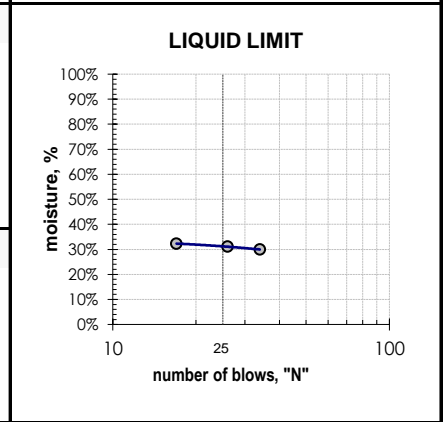
MATERIAL DATA

MATERIAL SAMPLED brown Clayey GRAVEL with Sand	MATERIAL SOURCE Boring B-01 depth = 7.5 feet	USCS SOIL TYPE GC, Clayey Gravel with Sand
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LABORATORY TEST DATA

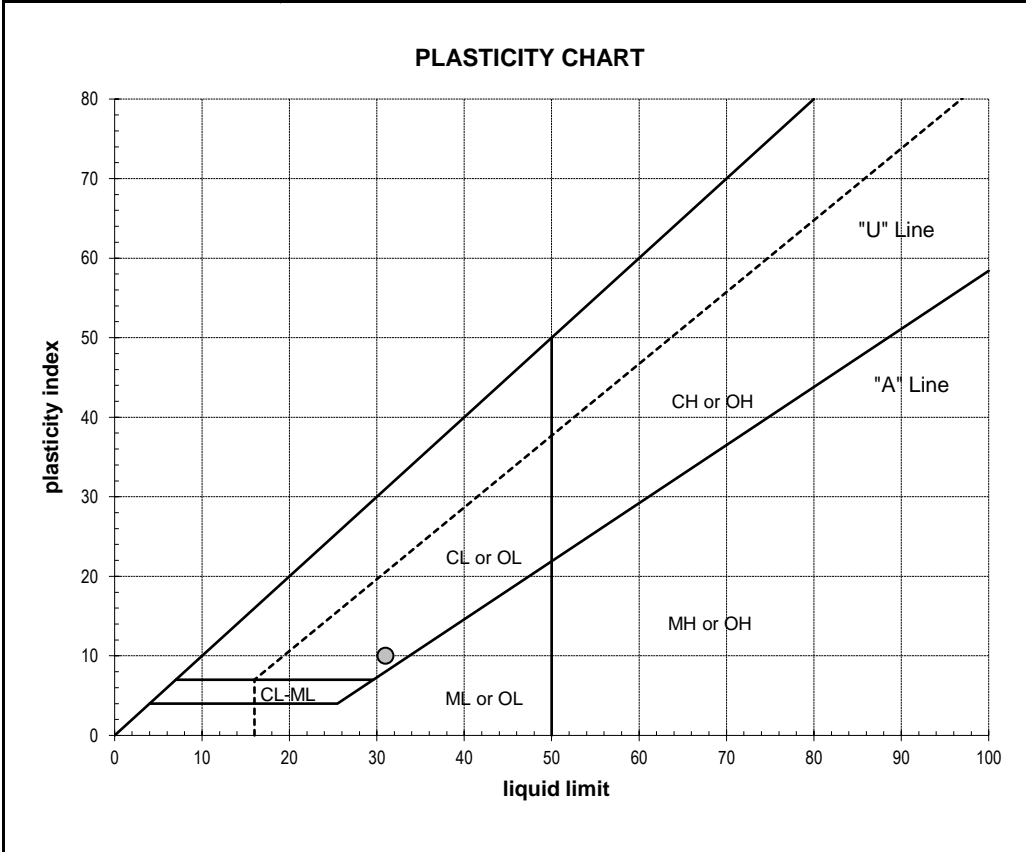
LABORATORY EQUIPMENT Liquid Limit Machine, Hand Rolled	TEST PROCEDURE ASTM D4318
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ATTERBERG LIMITS	LIQUID LIMIT DETERMINATION																															
liquid limit = 31																																
plastic limit = 21																																
plasticity index = 10																																
	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th></th> <th style="text-align: center;">1</th> <th style="text-align: center;">2</th> <th style="text-align: center;">3</th> <th style="text-align: center;">4</th> </tr> <tr> <td>wet soil + pan weight, g =</td> <td style="text-align: center;">32.18</td> <td style="text-align: center;">33.02</td> <td style="text-align: center;">32.90</td> <td style="text-align: center;"></td> </tr> <tr> <td>dry soil + pan weight, g =</td> <td style="text-align: center;">29.60</td> <td style="text-align: center;">30.16</td> <td style="text-align: center;">30.00</td> <td style="text-align: center;"></td> </tr> <tr> <td>pan weight, g =</td> <td style="text-align: center;">20.98</td> <td style="text-align: center;">20.97</td> <td style="text-align: center;">21.02</td> <td style="text-align: center;"></td> </tr> <tr> <td>N (blows) =</td> <td style="text-align: center;">34</td> <td style="text-align: center;">26</td> <td style="text-align: center;">17</td> <td style="text-align: center;"></td> </tr> <tr> <td>moisture, % =</td> <td style="text-align: center;">29.9 %</td> <td style="text-align: center;">31.1 %</td> <td style="text-align: center;">32.3 %</td> <td style="text-align: center;"></td> </tr> </table>		1	2	3	4	wet soil + pan weight, g =	32.18	33.02	32.90		dry soil + pan weight, g =	29.60	30.16	30.00		pan weight, g =	20.98	20.97	21.02		N (blows) =	34	26	17		moisture, % =	29.9 %	31.1 %	32.3 %		
	1	2	3	4																												
wet soil + pan weight, g =	32.18	33.02	32.90																													
dry soil + pan weight, g =	29.60	30.16	30.00																													
pan weight, g =	20.98	20.97	21.02																													
N (blows) =	34	26	17																													
moisture, % =	29.9 %	31.1 %	32.3 %																													



SHRINKAGE	PLASTIC LIMIT DETERMINATION																										
shrinkage limit = n/a																											
shrinkage ratio = n/a																											
	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th></th> <th style="text-align: center;">1</th> <th style="text-align: center;">2</th> <th style="text-align: center;">3</th> <th style="text-align: center;">4</th> </tr> <tr> <td>wet soil + pan weight, g =</td> <td style="text-align: center;">27.90</td> <td style="text-align: center;">27.48</td> <td style="text-align: center;"></td> <td style="text-align: center;"></td> </tr> <tr> <td>dry soil + pan weight, g =</td> <td style="text-align: center;">26.66</td> <td style="text-align: center;">26.24</td> <td style="text-align: center;"></td> <td style="text-align: center;"></td> </tr> <tr> <td>pan weight, g =</td> <td style="text-align: center;">20.87</td> <td style="text-align: center;">20.42</td> <td style="text-align: center;"></td> <td style="text-align: center;"></td> </tr> <tr> <td>moisture, % =</td> <td style="text-align: center;">21.4 %</td> <td style="text-align: center;">21.3 %</td> <td style="text-align: center;"></td> <td style="text-align: center;"></td> </tr> </table>		1	2	3	4	wet soil + pan weight, g =	27.90	27.48			dry soil + pan weight, g =	26.66	26.24			pan weight, g =	20.87	20.42			moisture, % =	21.4 %	21.3 %			
	1	2	3	4																							
wet soil + pan weight, g =	27.90	27.48																									
dry soil + pan weight, g =	26.66	26.24																									
pan weight, g =	20.87	20.42																									
moisture, % =	21.4 %	21.3 %																									

ADDITIONAL DATA	
% gravel = 47.7%	
% sand = 28.4%	
% silt and clay = 23.9%	
% silt = n/a	
% clay = n/a	
moisture content = 17%	



DATE TESTED 05/10/23	TESTED BY MRS/KMS

MOISTURE CONTENT, PERCENT PASSING NO. 200 SIEVE BY WASHING

PROJECT Barber Street Housing Development Supplemental Infiltration Testing 9699 SW Barber Street Wilsonville, Oregon 97070	CLIENT Palindrome Wilsonville Limited Partnership 412 NW 5th Avenue Portland, Oregon 97209	PROJECT NO. Palindrome-3-01-1	REPORT DATE 12/05/23
		SAMPLED BY EMU	PAGE 1 of 1
		DATE SAMPLED 11/30/23	

LABORATORY TEST DATA

TEST PROCEDURE
 ASTM D2216 - Method A, ASTM D1140

LAB ID	CONTAINER MASS (g)	MOIST MASS + CONTAINER (g)	DRY MASS + CONTAINER (g)	AFTER WASH DRY MASS + CONTAINER (g)	FIELD ID	SAMPLE DEPTH (ft)	PERCENT MOISTURE CONTENT	PERCENT PASSING NO. 200 SIEVE
S23-1573	301.33	1,530.31	1,213.76	630.12	HA1.1	2	35%	64%
S23-1574	547.88	804.25	731.84	674.05	HA3.1	0.75	39%	31%

NOTES: Sample weights received for Lab ID: S23-1573 and 1574 did not meet the minimum size requirements; entire sample used for analysis.	DATE TESTED 12/04/23	TESTED BY MRS

Appendix B

WES BMP Sizing Software Version 1.6.0.2, May 2018

WES BMP Sizing Report

Project Information

Project Name	Wilsonville TOD Apartments
Project Type	MultiFamily
Location	9749 SW Barber Street
Stormwater Management Area	52893
Project Applicant	Emerio Design
Jurisdiction	OutofDistrict

Drainage Management Area

Name	Area (sq-ft)	Pre-Project Cover	Post-Project Cover	DMA Soil Type	BMP
A	19,855	Grass	Roofs	C	Planters 1 & 2
B	3,766	Grass	Roofs	C	Planters 3, 4, & 5
C	4,697	Grass	Roofs	C	Planter 6
D	1,124	Grass	Roofs	C	Planter 7
E	3,668	Grass	ConventionalConcrete	C	Planter 8
F	1,305	Grass	ConventionalConcrete	C	Planter 9
G	1,096	Grass	ConventionalConcrete	C	Planter 10
H	1,928	Grass	ConventionalConcrete	C	Planter 11
I	694	Grass	ConventionalConcrete	C	ROW Planter A
J	1,366	Grass	ConventionalConcrete	C	ROW Planter B
K	2,457	Grass	ConventionalConcrete	C	ROW Planter C
L	3,272	Grass	ConventionalConcrete	C	ROW Planter D
M	7,659	Grass	ConventionalConcrete	C	ROW Planter E

LID Facility Sizing Details

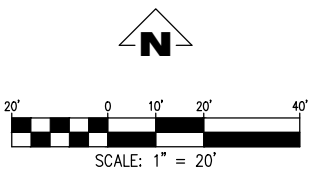
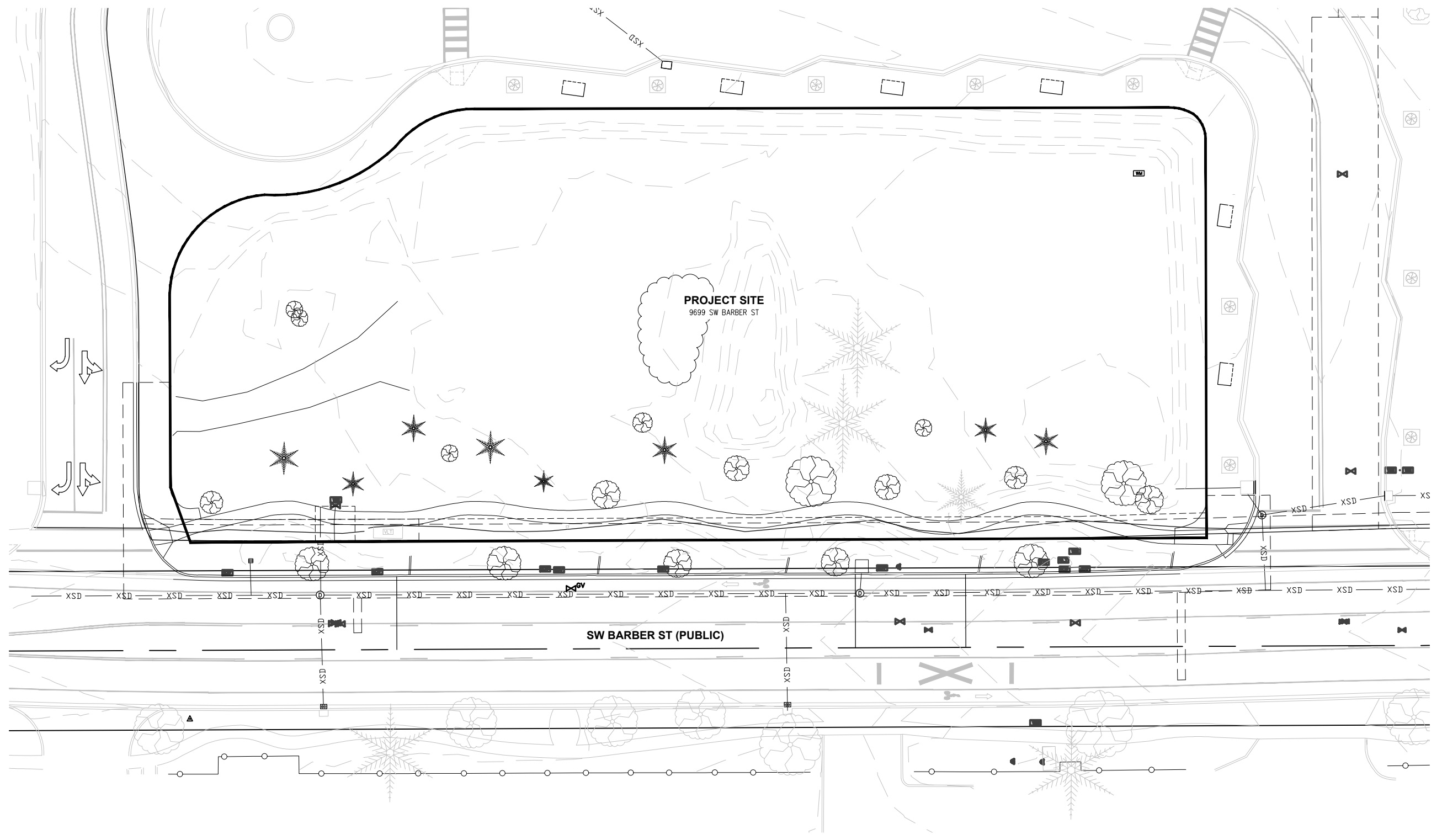
LID ID	Design Criteria	BMP Type	Facility Soil Type	Minimum Area (sq-ft)	Planned Areas (sq-ft)	Orifice Diameter (in)
Planters 1 & 2	FlowControlAndTreatment	Stormwater Planter - Filtration	Lined	1,389.9	1,595.0	1.3
Planters 3, 4, & 5	FlowControlAndTreatment	Stormwater Planter - Filtration	Lined	263.6	333.0	0.6
Planter 6	FlowControlAndTreatment	Stormwater Planter - Filtration	Lined	328.8	357.0	0.7
Planter 7	FlowControlAndTreatment	Stormwater Planter - Filtration	Lined	78.7	295.0	0.3
Planter 8	FlowControlAndTreatment	Stormwater Planter - Filtration	Lined	256.8	259.0	0.6
Planter 9	FlowControlAndTreatment	Stormwater Planter - Filtration	Lined	91.4	96.0	0.3
Planter 10	FlowControlAndTreatment	Stormwater Planter - Filtration	Lined	76.7	96.0	0.3
Planter 11	FlowControlAndTreatment	Stormwater Planter - Filtration	Lined	135.0	146.0	0.4
ROW Planter A	FlowControlAndTreatment	Stormwater Planter - Filtration	Lined	48.6	96.0	0.2
ROW Planter B	FlowControlAndTreatment	Stormwater Planter - Filtration	Lined	95.6	96.0	0.4
ROW Planter C	FlowControlAndTreatment	Stormwater Planter - Filtration	Lined	172.0	174.0	0.5
ROW Planter D	FlowControlAndTreatment	Stormwater Planter - Filtration	Lined	229.0	229.0	0.5
ROW Planter E	FlowControlAndTreatment	Stormwater Planter - Filtration	Lined	536.1	539.0	0.8

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 C



WILSONVILLE TOD APARTMENTS
TAX MAP 31W14B
TAX LOT 703
WILSONVILLE, OREGON

PRE-DEVELOPED SITE MAP

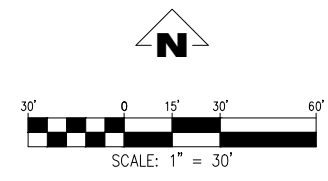
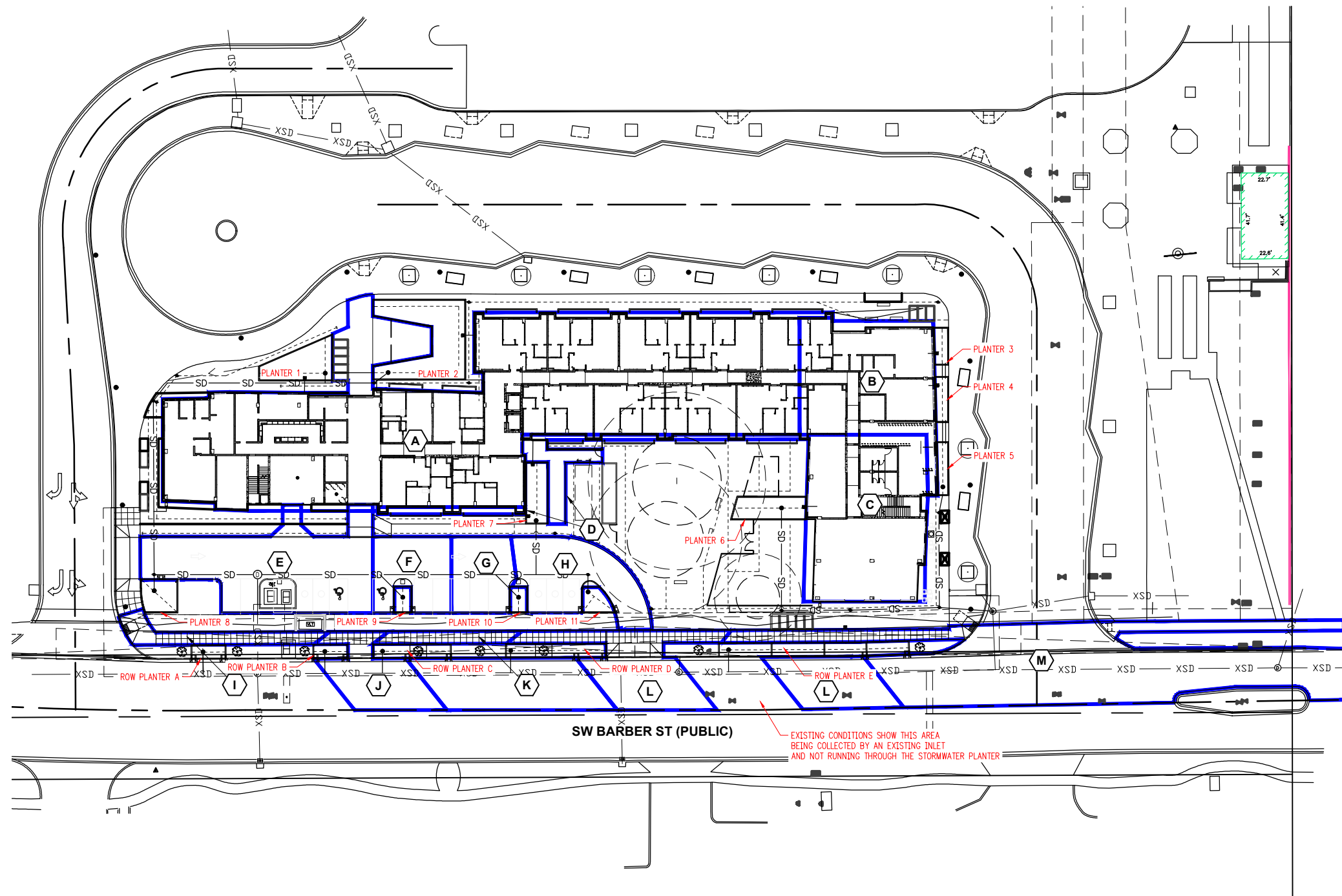
NO.	DATE	DESCRIPTION

EMERIO
ENGINEERING • SURVEYING • DESIGN
 6446 SW FALLBROOK PL. SUITE 100
 BEAVERTON, OREGON 97008
 TEL: (503) 748-8812
 FAX: (503) 639-9592
 www.emeriodesign.com

FILE-P:\0951-003 Wilsonville TOD Mixed Use Apartments\docs\civ\STORM\CAD\0951-003 Pre-Dev_Layout: EYTG & DEMO, Plot Date: 11/29/2023 9:30 AM, by: Steve Hansen

SHEET
1
 OF
595

Item 5.



WILSONVILLE TOD APARTMENTS
 TAX MAP 31W14B
 TAX LOT 703
 WILSONVILLE, OREGON

POST-DEVELOPED BASIN
 MAP

NO.	DATE	REVISIONS	DESCRIPTION

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 ENGINEERING • SURVEYING • DESIGN
 6448 SW FALLBROOK PLACE, SUITE 100
 BEAVERTON, OREGON 97008
 TEL: (503) 748-8812
 FAX: (503) 639-9592
 www.emeriodesign.com

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Item 5.

WILSONVILLE BARBER STREET MULTIFAMILY DEVELOPMENT TRAFFIC IMPACT ANALYSIS (TIA)

SEPTEMBER 22, 2023



PREPARED FOR
CITY OF WILSONVILLE



Amy Pepper, PE

PREPARED BY
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 APPENDIX G: HCM REPORT - EXISTING + PROJECT + STAGE II G

INTRODUCTION

This study evaluates the transportation impacts associated with the proposed commercial-retail (first floor) and multifamily residential building located at the South Metro Area Regional Transit (SMART) center in Wilsonville, Oregon. The property is an approximately 1.28-acre empty plot of land on the north side of Barber St and east of Kinsman Rd. The proposed development is a five-story building consisting of 121 affordable housing units and a brew pub/coffee shop and a community space on the ground floor. Because the project site is currently publicly owned land, no zone change will be required even though the site is currently zoned as Planned Development Industrial (PDI) which does not allow residential land use.

There is one existing site access and one proposed site access that will be used for exiting the property onto Barber St only. The existing site access is just west of the project site and leads to the existing parking lot north of the property. The new site access will be used to exit a proposed parking lot that is entered via the existing site access.

The purpose of this transportation study is to conduct a traffic impact analysis (TIA), which will identify any potential mitigation measures that might be needed to offset transportation impacts that the proposed development may have on the nearby transportation network in the near-term.



FIGURE 1: STUDY AREA

TRAFFIC IMPACT ANALYSIS (TIA)

The traffic impact analysis is focused on four existing intersections and one site access, which were selected for evaluation in coordination with City staff. The intersections are listed on the following page and shown in Figure 1. Important characteristics of the study area and proposed project are listed in Table 1.

1. SW Barber St / SW Kinsman Rd
2. SW Barber St / SMART Driveway
3. SW Barber St / SW Boones Ferry Rd
4. SW Wilsonville Rd / SW Kinsman Rd
5. SW Boones Ferry Rd / SW Wilsonville Rd

TABLE 1: STUDY AREA & DEVELOPMENT CHARACTERISTICS

STUDY AREA	
NUMBER OF STUDY INTERSECTIONS	Four existing intersections One existing site access
ANALYSIS PERIODS	Weekday PM peak hour (one hour between 4pm – 6pm)
PROPOSED DEVELOPMENT	
EXISTING LAND USE	Vacant
PROPOSED LAND USE	Commercial-retail and affordable housing
PROJECT TRIPS	71 total PM Peak Hour Trips (45 in, 26 out)
VEHICULAR ACCESS POINTS	One existing access point on Barber Street One proposed access point exit only onto Barber St

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 and their existing characteristics in the study area are summarized in Table 2. The functional classifications for City of Wilsonville streets are provided in the City of Wilsonville Transportation System Plan (TSP).^a

TABLE 2: STUDY AREA ROADWAY CHARACTERISTICS

ROADWAY	FUNCTIONAL CLASS	OWNER	LANES	POSTED SPEED	SIDE-WALKS	BICYCLE FACILITIES	ON-STREET PARKING
SW BARBER ST	Collector	City of Wilsonville	2	35 mph	Yes	Yes	No
SW WILSONVILLE RD	Major Arterial ^b	City of Wilsonville	4 ^c	25 mph	Yes	Yes	No
SW BOONES FERRY RD	Collector	City of Wilsonville	2	35 mph	Partial	Partial	No
SW KINSMAN RD	Minor Arterial	City of Wilsonville	2	40 mph	Yes	Yes	No

Bicycle and Pedestrian Facilities

Near the project site, there are full on-street bicycle lanes along Barber St, Kinsman Rd, and Wilsonville Rd. On Boones Ferry Rd, there is only a bicycle lane on the west side of the Rd, however there is a shoulder on the east side of the road that bicycles could travel on. Additionally, the bicycle lanes on Wilsonville Rd, west of Kinsman Rd are buffered.

Sidewalks are present on Barber St, Kinsman Rd, and Wilsonville Rd. On Boones Ferry Rd, there is only a sidewalk on the west side of the road.

Public Transit Service

South Metro Area Regional Transit (SMART) provides public transportation services within Wilsonville and outlying areas. The Wilsonville Transit Center is located directly north of the project site. SMART provides bus service to Salem, Canby, and Tualatin. Additionally, Cherriots provides transit service from Keizer that stops in Woodburn and Wilsonville.

The Westside Express Service (WES) is a public commuter rail line that services Beaverton, Tigard, Tualatin, and Wilsonville. The WES station in Wilsonville shares a parking lot with the SMART Wilsonville Transit Center.

PLANNED PROJECTS

^a Chapter 3: The Standards, Wilsonville Transportation System Plan, City of Wilsonville, Amended November 2020.

^b Wilsonville Rd is classified as a Minor Arterial west of Kinsman Rd

^c Wilsonville Rd in the project area has 2 travel lanes in both directions and includes additional turning lanes at intersections

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.

- BW-03 (Boberg Road Bicycle Upgrade) – Fill in gaps in the sidewalk network on the east side of the roadway from Boeckman Road to Barber Street, and construct transit stop improvements.
- BW-09 (I-5 Bike / Pedestrian Bridge) - Construct Bike/Pedestrian Bridge over I-5 approximately aligned with Barber Street to improve connectivity of Town Center area with businesses and neighborhoods on west side of I-5; include aesthetic design treatments.
- SI-06 (Kinsman Road Sport Improvements) - Rebuild the northwest corner of the Wilsonville Road/Kinsman Road intersection to accommodate truck turning movements and improve pedestrian safety. Requires right-of-way acquisition, widening, pedestrian ramp replacement, and traffic signal pole relocation.

EXISTING TRAFFIC VOLUMES

New intersection turning movement count data was collected during the weekday PM peak period (4:00pm – 6:00pm) on Tuesday, August 8th, 2023, at the study intersections. Wilsonville experiences higher volumes during the school year, so historical counts collected on March 27th, 2023, were used to adjust the volumes to better represent true PM Peak Hour volumes. A 6.2% growth was applied to all the study intersection summer volumes.

Figure 2 shows the adjusted Existing PM peak hour traffic volumes for the study intersections, along with the lane configurations and traffic control.

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 of LOS D for the PM peak period.

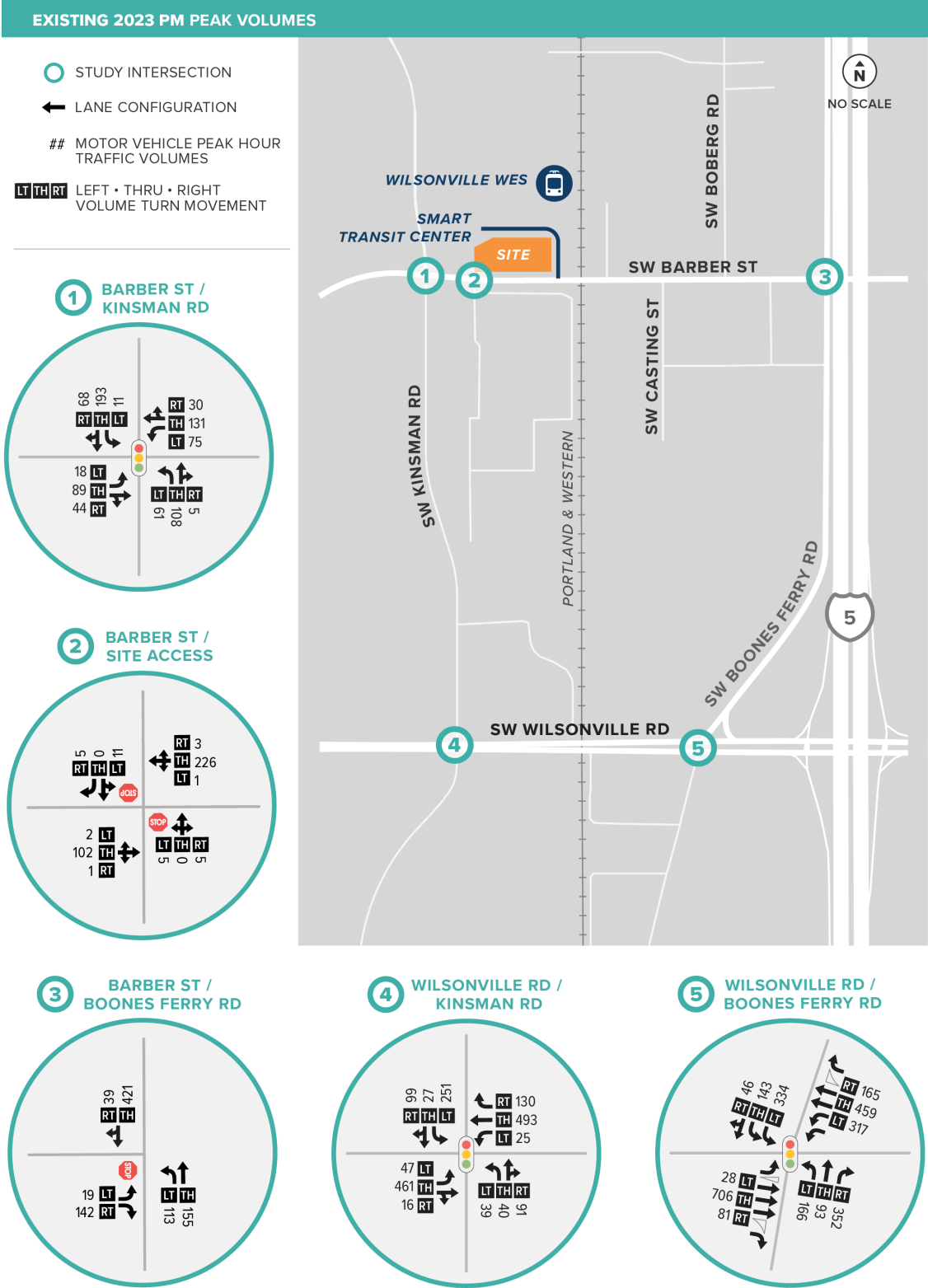


FIGURE 2: EXISTING PM PEAK HOUR TRAFFIC VOLUMES

EXISTING INTERSECTION OPERATIONS

Intersection operations were analyzed for the PM peak hour at all study intersections for the existing conditions using Highway Capacity Manual (HCM) 6th Edition methodology.^d The volume to capacity (v/c) ratio, delay, and level of service (LOS) of each study intersection are listed in Table 3. As shown, all study intersections meet the applicable operating standards under existing conditions.

TABLE 3: EXISTING (2023) INTERSECTION OPERATIONS (PM PEAK)

INTERSECTION	OPERATING STANDARD	EXISTING PM PEAK HOUR		
		V/C	DELAY	LOS
SIGNALIZED				
BARBER RD / KINSMAN RD	LOS D	0.38	14	B
WILSONVILLE RD / BOONES FERRY RD	LOS D	0.58	34	C
WILSONVILLE RD / KINSMAN RD	LOS D	0.63	18	B
TWO-WAY STOP-CONTROLLED				
BARBER RD / BOONES FERRY RD	LOS D	0.32	15	C
BARBER RD / DRIVEWAY	LOS D	0.02	11.3	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)		

PROJECT IMPACTS

This chapter reviews the impacts that the proposed development may have on the transportation system within the study area. This analysis includes trip generation, trip distribution, future traffic volume development, and operations analysis for the study intersections.

PROPOSED DEVELOPMENT

The proposed development is a new mixed-use building with affordable housing and commercial-retail space on the first floor located at 9749 SW Barber Street in Wilsonville. This development is adjacent to the Wilsonville SMART Transit Center and the Wilsonville WES Station. The building is a five-story transit-oriented development (TOD) consisting of 121 affordable housing units and a proposed brew pub/coffee shop and a community space on the ground floor.

^d Highway Capacity Manual, 6th Edition, Transportation Research Board, 2017.

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 + Project
- Existing + Stage II
- Existing + Project + Stage II

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, which are based on the list of currently approved Stage II developments provided by City staff.^e

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 (e.g., PM peak hour). The Institute of Transportation Engineers (ITE) publishes trip generation rates for the various land uses that can be applied to determine estimated traffic volumes.^f

The public transit services that share a parking lot with the development impact the trip generation for the project. The Affordable Housing land use (ITE code 223) best describes the type of housing with this project but does not account for the nearby public transit. However, the Multifamily Housing land use (ITE code 221) does account for the nearby rail transit. To produce an accurate trip generation, the average between the two land uses were used.

TABLE 4: VEHICLE TRIP GENERATION RATES

LAND USE	ITE CODE	PM PEAK HOUR TRIP GENERATION RATE
Affordable Housing	223	0.46 trips per dwelling unit
Mid-Rise Multifamily Housing (close to rail transit)	221	0.29 trips per dwelling unit
Average	221/223	0.375 trips per dwelling unit

Table 4 shows the calculation of the final trip generation rate for the housing portion of the development. The average of ITE codes 223 and 221 produces a final trip generation rate of 0.375 trips per dwelling unit.

Table 5 shows the final trip generation. The High-Turnover (Sit-Down) Restaurant code (932) was used for the proposed brew pub/coffee shop on the ground floor. There is also a dedicated community space on the first floor, however given the hours of operation, this space is not anticipated to generate any trips during the PM peak hour. For the residential space, the average

^e Provided via email from Daniel Pauly, City of Wilsonville, August 8th, 2023.

^f Trip Generation Manual, 11th Edition, Institute of Transportation Engineers, 2021.

trip generation rate shown in Table 4 was used. The proposed project is estimated to generate a total of 71 new PM peak hour trips (45 in, 26 out).

TABLE 5: PROJECT VEHICLE TRIP GENERATION

LAND USE	ITE CODE	PM PEAK HOUR TRIP GENERATION RATE	PM PEAK HOUR VEHICLE TRIPS			
			SIZE	IN	OUT	TOTAL
Affordable / Mid-Rise Multifamily Housing	221/223	0.375 trips per dwelling unit	121 units	29	16	45
High-Turnover Restaurant	932	9.05 trips per KSF	2.85 KSF	16	10	26
TOTAL TRIPS				45	26	71

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 for the passenger car trips was based on the existing volumes and traffic patterns.

The vehicle trips generated by the site expansion were distributed as follows:

- 60% east of the project site (to/from I-5, Wilsonville Road, etc)
- 10% south of the project site via Boones Ferry Road near Fred Meyer
- 10% north of the project site via Boones Ferry Road towards Boeckman Road
- 10% north of the project site via Kinsman Road towards Boeckman Road
- 5% west of the project site via Barber Street
- 5% west of the project site via Wilsonville Rd towards Brown Road

Project Trips Through City of Wilsonville I-5 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 60% of the vehicle project trips (43 trips) are expected to travel through the I-5/Wilsonville Road interchange area and approximately 0% of the project trips are expected to travel through the I-5/Elligsen Road interchange.

FUTURE TRAFFIC VOLUMES

Traffic volumes were estimated at the study intersections for the three future analysis scenarios previously listed using the various combinations of the three traffic types: Existing, Project, and Stage II. Figure 4 shows the Existing + Stage II PM peak hour traffic volumes. Figure 5 shows the Existing + Project PM peak hour traffic volumes. Figure 6 shows the Existing + Project + Stage II PM peak hour traffic volumes.

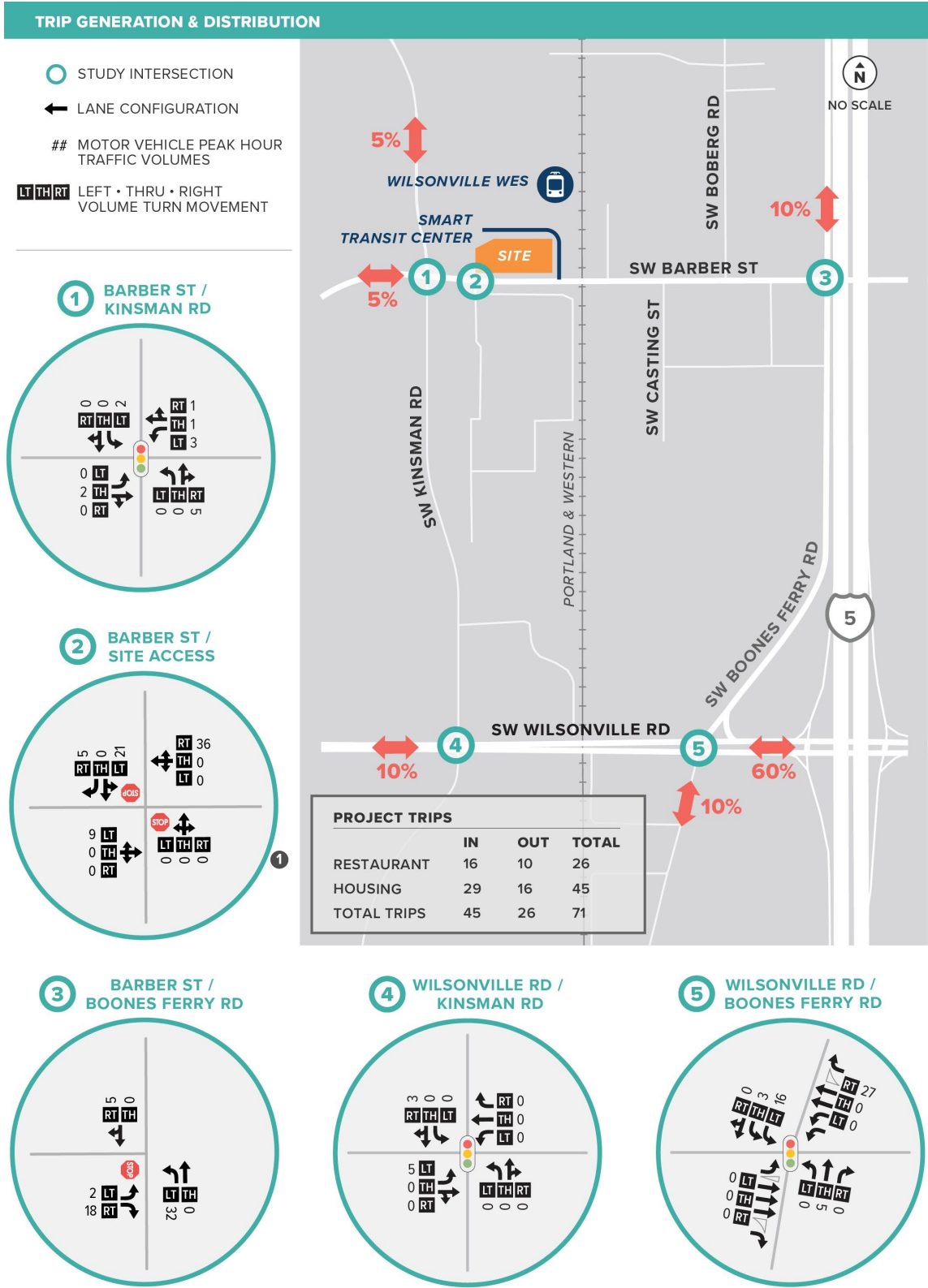


FIGURE 3: PROJECT TRIPS & TRIP DISTRIBUTION

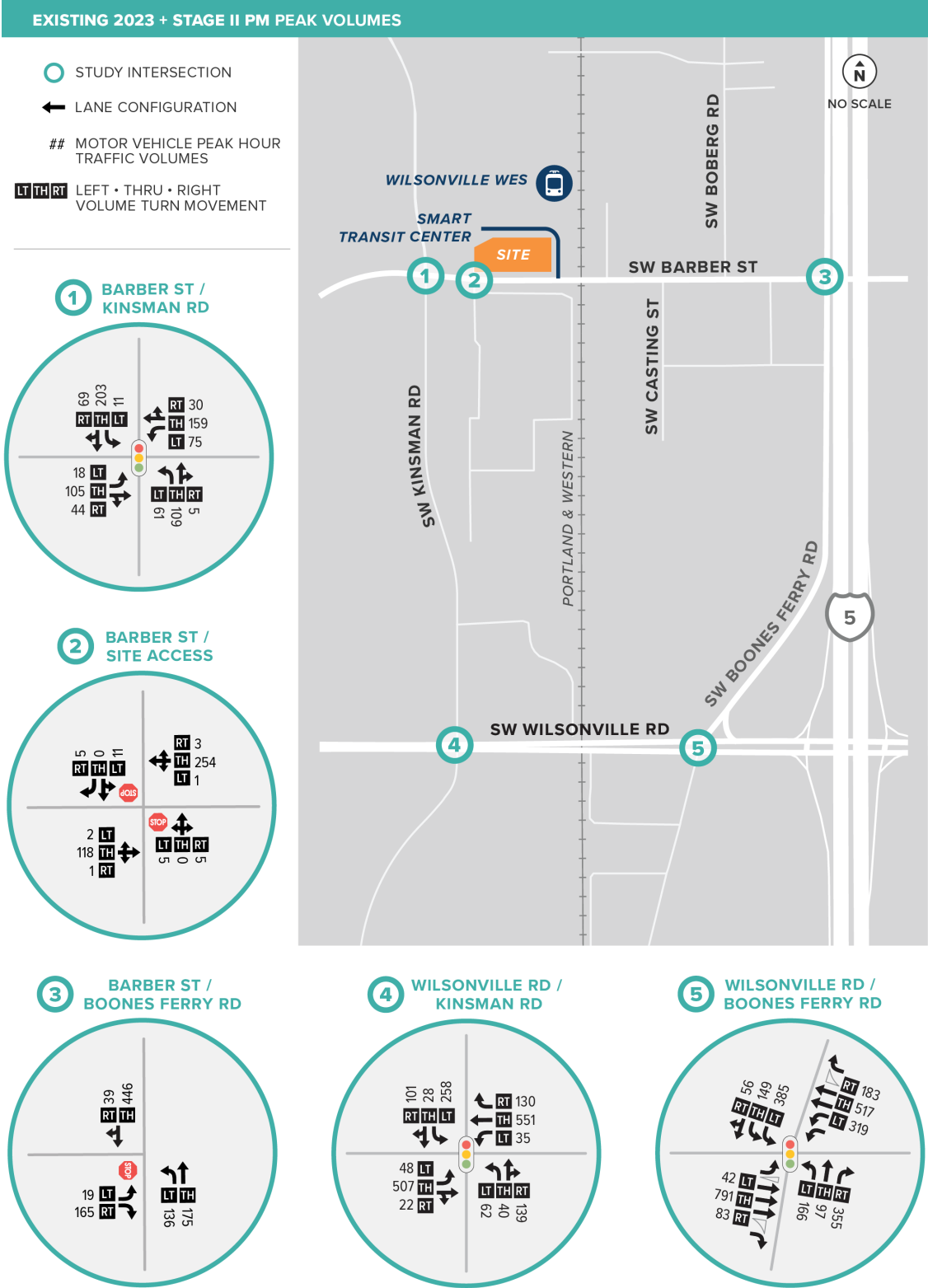


FIGURE 4: EXISTING + STAGE II TRAFFIC VOLUMES



FIGURE 5: EXISTING + PROJECT TRAFFIC VOLUMES

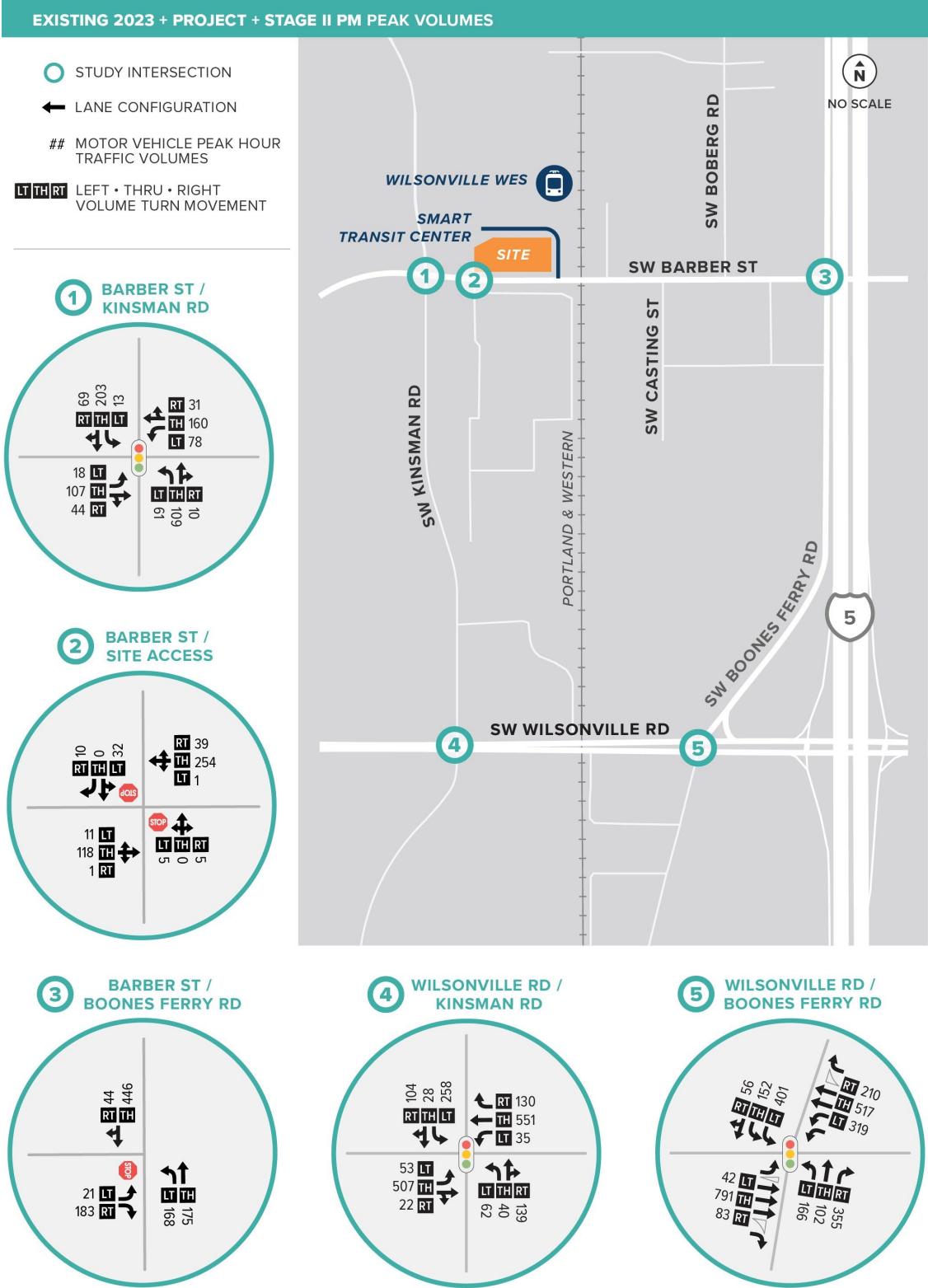


FIGURE 6: EXISTING + PROJECT + STAGE II TRAFFIC VOLUMES

FUTURE INTERSECTION OPERATIONS

Intersection operations were analyzed for the PM peak hour at all study intersections for the future scenarios using Highway Capacity Manual (HCM) 6th Edition methodology.⁷ The volume to capacity (v/c) ratio, delay, and level of service (LOS) of each study intersection are listed in Table 6.

As shown, all study intersections meet the applicable operating standards under all future analysis scenarios.

TABLE 6: FUTURE INTERSECTION OPERATIONS (PM PEAK)

INTERSECTION	OPERATING STANDARD	EXISTING + STAGE II			EXISTING + PROJECT			EXISTING + STAGE II + PROJECT		
		V/C	DELAY	LOS	V/C	DELAY	LOS	V/C	DELAY	LOS
SIGNALIZED										
BARBER RD / KINSMAN RD	LOS D	0.40	14.4	B	0.38	14	B	0.40	14.3	B
WILSONVILLE RD / BOONES FERRY RD	LOS D	0.62	35.2	D	0.58	35	C	0.62	35.4	D
WILSONVILLE RD / KINSMAN RD	LOS D	0.69	19.6	B	0.64	18	B	0.73	21.1	C
TWO-WAY STOP-CONTROLLED										
BARBER RD / BOONES FERRY RD	LOS D	0.38	17	C	0.37	16	C	0.43	18	C
BARBER RD / DRIVEWAY	LOS D	0.02	12	B	0.06	12	B	0.07	13	B
SIGNALIZED INTERSECTION:		TWO-WAY STOP-CONTROLLED INTERSECTION:								
Delay = Average Intersection Delay (secs)		Delay = Critical Movement Delay (secs)								
v/c = Total Volume-to-Capacity Ratio		v/c = Critical Movement Volume-to-Capacity Ratio								
LOS = Total Level of Service		LOS = Critical Levels of Service (Major/Minor Road)								

⁷ Highway Capacity Manual, 6th Edition, Transportation Research Board, 2017.

SITE PLAN REVIEW

This section reviews the project site plan for consistency with the Wilsonville Transportation System Plan and other applicable transportation standards, including the Wilsonville Development Code and Wilsonville Public Works Standards. The purpose of this review is to help identify any major site plan design concerns that could impact the greater project goals and could necessitate overall site plan changes. The site plan is provided in the appendix.

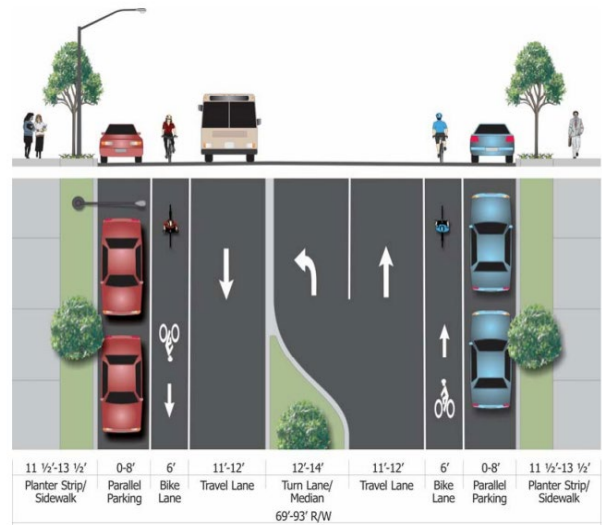
VEHICULAR SITE ACCESS

There are two proposed site accesses (driveway) for the project. One access is located on the existing driveway that currently provides access to the parking lot for the SMART Transit Center and the WES Rail Station. This access will be entry only. The second proposed site access will be an exit only onto Barber Street.

The exit only access point is required to meet the City’s Access Spacing Standards for Collectors.⁸ The access spacing for collectors is to be a minimum of 100 feet from centerline to centerline, but the desired spacing is 300 feet. The proposed exit only site access is approximately 190 feet from the SMART bus driveway to the west. The proposed spacing meets the minimum requirement.

DRIVEWAY ALIGNMENT

According to the City Public Works Standards Section 201.2.23(h), the City requires that proposed driveways be aligned with existing streets unless topography, existing features (tree protection) or geographic conditions doesn’t allow for it. The proposed exit-only driveway on Barber Street does not align with the existing Coca Cola driveway on the south side of Barber Street based on the current site plan. Unless there are constraints due to existing features or geographic conditions, the driveway will need to be shifted to the east to align with the existing driveway.



COLLECTOR CROSS SECTION STANDARD

FRONTAGE IMPROVEMENTS

The project site shall provide street frontage improvements on Barber Street consistent with the City of Wilsonville’s collector cross section standard, for which the roadways are classified as such.⁹ Today, Barber Street fronting the project site has two travel lanes with a center turn lane, planter strip, sidewalk, and marked bike lanes fronting the project site. Based on the standards, the site

⁹ Figure 3-8, Transportation System Plan, City of Wilsonville, Amended November 2020.

⁹ Figure 3-8, Transportation System Plan, City of Wilsonville, Amended November 2020.

frontage is consistent with the cross section standard for collector streets. On-street parking is allowed on Collectors, but is not recommended for Barber Street.

ON-SITE CIRCULATION

The City requires that all modes of transportation have safe and convenient on-site circulation to the highest degree that the site practically allows.¹⁰ There is a proposed one-way drive aisle on the south side of the project site that travels from the existing SMART driveway to an exit on Barber St. The one-way drive aisle contains 16 vehicle parking spaces and a crosswalk. Each area should maintain adequate circulation and safety for both vehicles and pedestrians. There appears to be adequate sidewalk surrounding the project site and crosswalks throughout parking areas.

For the existing parking lot, there appears to be sufficient aisle widths and turning radii to accommodate safe vehicle backing and parking maneuvers on site.

DRIVEWAY AISLE LENGTH

The City has minimum driveway aisle length standards.¹¹ For driveways with more than 100 average daily traffic (ADT), the drive aisle must be clear of parking stalls and intersecting drive aisles within 100 feet from the back of sidewalk. The proposed intersecting drive aisle appears to be approximately 4-6 feet from the back of the sidewalk. It is recommended that the driveway aisle be extended to provide a minimum of 20 feet (approximately one car length) so that an inbound vehicle will not block the SMART driveway if stopped in the drive aisle.

SUMMARY

The key findings of the transportation impact analysis (TIA).

- The proposed project is a mixed-use development consisting of a five-story building with 121 housing units and a proposed brew pub/coffee shop and a community space on the ground floor..
- The proposed development is expected to generate 71 (45 in, 26 out) PM peak hour vehicle trips, and 60% of those trips (43 vehicles) are expected to travel through the Wilsonville Road / I-5 interchange.
- The traffic operations at the five study intersections are expected to operate within the City's LOS standard under all future volume conditions.
- The proposed exit only driveway on Barber Street will need to be shifted to the east to align with the existing driveway unless there are constraints due to existing features or geographic conditions.
- It is recommended that the driveway aisle be extended to provide a minimum of 20 feet (approximately one car length) to provide sufficient clear drive aisle length.

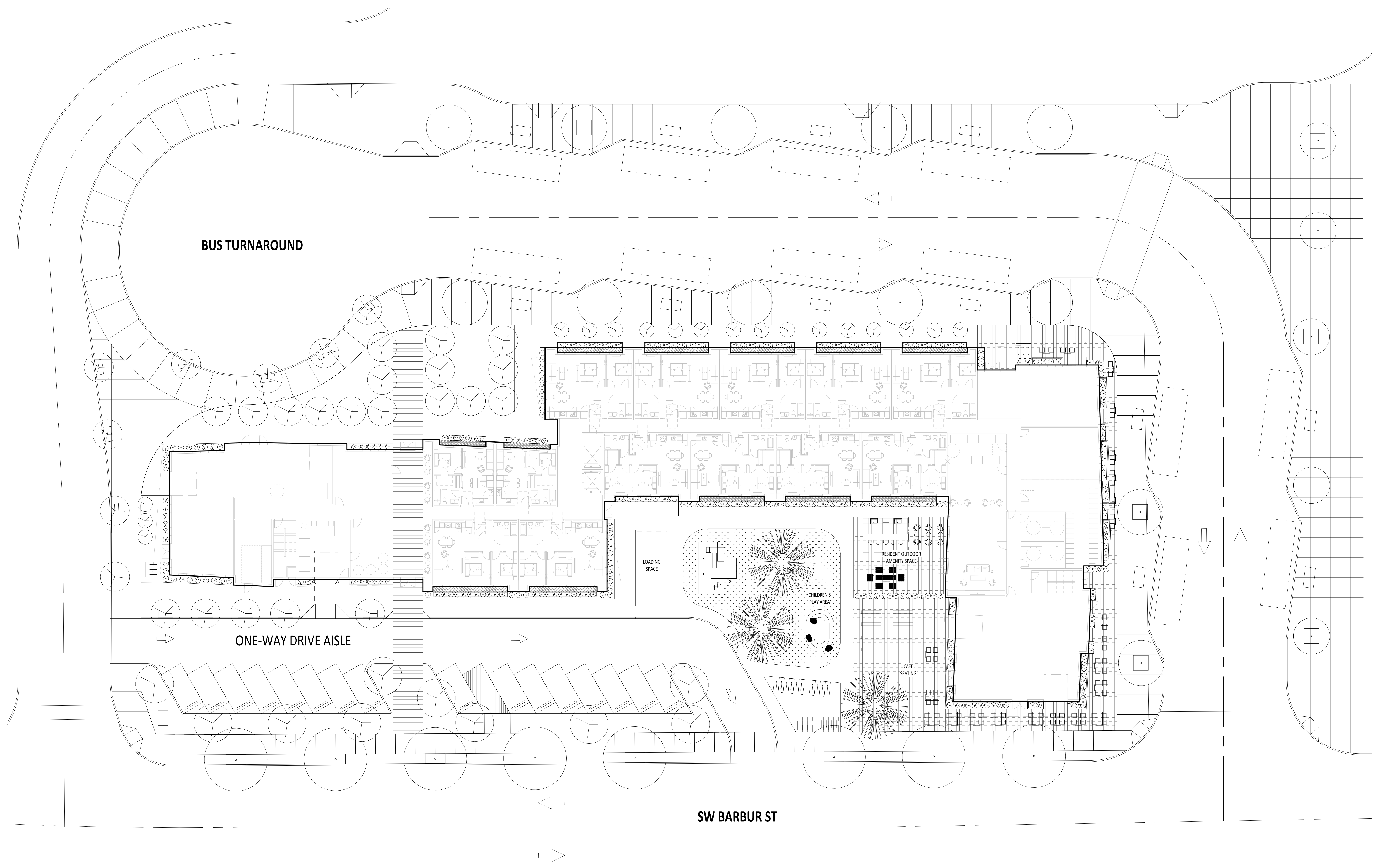
¹⁰ Section 4.421, Wilsonville Development Code, Updated March 2023.

¹¹ Section 201.2.23 (Driveways), Public Works Standards, City of Wilsonville, Revised September 2017.

APPENDIX

APPENDIX A: SITE PLAN

- 1. FIELD VERIFY ALL INFORMATION PRIOR TO CONSTRUCTION. IF SITE CONDITIONS VARY FROM CONTRACT DOCUMENTS, NOTIFY ARCHITECT IN WRITING IMMEDIATELY.



STAMP

FOR
REFERENCE
ONLY

SHEET REVISION NO.	REVISION EVENT	REVISION DATE

TRUE NORTH PLAN NORTH

WILSONVILLE TOD

PALINDROME COMMUNITIES

ISSUANCE
100% SCHEMATIC DESIGN

PROJECT NUMBER
220120

DATE
06/05/23

FULL SHEET SIZE
30 X 42

DRAWING TITLE
ARCHITECTURAL SITE PLAN

APPENDIX B: TRAFFIC COUNT DATA



ALL TRAFFIC DATA SERVICES

(303) 216-2439

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Location: 1 SOUTHWEST KINSMAN ROAD & SOUTHWEST BARBER STREET PM

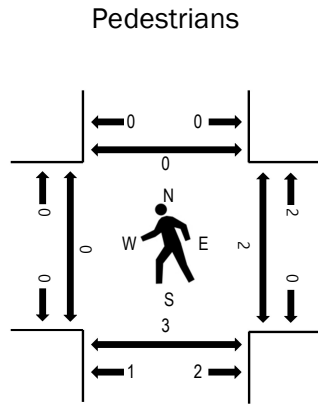
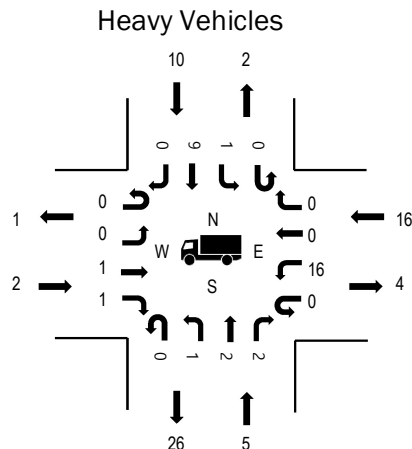
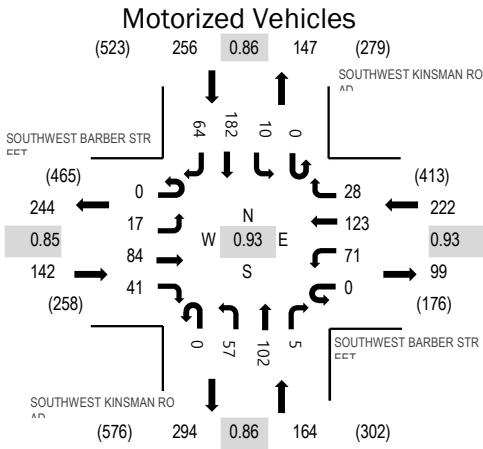
Date: Tuesday, August 1, 2023

Peak Hour: 04:40 PM - 05:40 PM

Peak 15-Minutes: 05:20 PM - 05:35 PM

Item 5.

Peak Hour



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	1.4%	0.85
WB	7.2%	0.93
NB	3.0%	0.86
SB	3.9%	0.86
All	4.2%	0.93

Traffic Counts - Motorized Vehicles

Interval Start Time	SOUTHWEST BARBER STREET Eastbound				SOUTHWEST BARBER STREET Westbound				SOUTHWEST KINSMAN ROAD Northbound				SOUTHWEST KINSMAN ROAD Southbound				Total	Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
4:00 PM	0	3	8	3	0	7	13	1	0	4	5	2	0	1	13	0	60	762
4:05 PM	0	3	0	3	0	5	12	1	0	3	9	1	0	0	10	3	50	757
4:10 PM	0	2	5	3	0	7	14	3	0	3	7	0	0	0	23	9	76	769
4:15 PM	0	2	6	1	0	7	11	4	0	4	6	0	0	0	17	6	64	756
4:20 PM	0	3	3	2	0	4	8	0	0	4	13	0	0	1	20	3	61	747
4:25 PM	0	3	4	0	0	5	5	4	0	4	9	0	0	1	18	5	58	769
4:30 PM	0	2	7	4	0	4	7	4	0	3	8	0	0	1	17	7	64	776
4:35 PM	0	0	3	3	0	8	6	2	0	5	10	2	0	0	20	4	63	775
4:40 PM	0	1	11	3	0	8	16	2	0	4	7	0	0	0	17	5	74	784
4:45 PM	0	0	8	5	0	3	7	3	0	4	7	0	0	1	14	8	60	763
4:50 PM	0	0	9	5	0	10	9	2	0	4	6	3	0	1	11	4	64	759
4:55 PM	0	2	7	3	0	5	9	0	0	7	11	0	0	2	19	3	68	746
5:00 PM	0	0	6	3	0	8	6	2	0	3	12	1	0	1	10	3	55	734
5:05 PM	0	2	6	1	0	8	7	5	0	2	8	1	0	0	16	6	62	
5:10 PM	0	0	7	3	0	5	15	1	0	5	9	0	0	1	16	1	63	
5:15 PM	0	3	1	4	0	1	14	2	0	8	7	0	0	0	10	5	55	
5:20 PM	0	3	7	3	0	3	9	3	0	7	14	0	0	2	21	11	83	
5:25 PM	0	1	9	5	0	5	9	3	0	4	10	0	0	1	16	2	65	
5:30 PM	0	1	9	3	0	7	9	2	0	4	5	0	0	0	15	8	63	
5:35 PM	0	4	4	3	0	8	13	3	0	5	6	0	0	1	17	8	72	
5:40 PM	0	2	6	4	0	5	9	0	0	3	6	0	0	1	7	10	53	
5:45 PM	0	0	5	3	0	4	7	3	0	6	5	0	0	1	14	8	56	
5:50 PM	0	2	8	4	0	3	6	1	0	7	1	1	0	1	11	6	51	
5:55 PM	0	1	8	0	0	3	6	2	0	2	5	0	0	1	20	8	56	
Count Total	0	40	147	71	0	133	227	53	0	105	186	11	0	18	372	133	1,496	
Peak Hour	0	17	84	41	0	71	123	28	0	57	102	5	0	10	182	64	784	

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles on Crosswalk

Item 5.

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	1	1	1	1	4	4:00 PM	0	0	0	0	0	4:00 PM	0	0	0	0	0
4:05 PM	0	1	1	0	2	4:05 PM	0	0	0	0	0	4:05 PM	0	0	0	0	0
4:10 PM	0	0	1	2	3	4:10 PM	0	0	0	0	0	4:10 PM	0	0	0	0	0
4:15 PM	1	0	2	0	3	4:15 PM	0	0	0	0	0	4:15 PM	0	0	0	0	0
4:20 PM	0	0	1	2	3	4:20 PM	0	0	0	0	0	4:20 PM	0	0	0	0	0
4:25 PM	0	0	2	1	3	4:25 PM	0	0	0	1	1	4:25 PM	0	0	0	0	0
4:30 PM	0	0	0	3	3	4:30 PM	0	0	0	0	0	4:30 PM	0	1	0	0	1
4:35 PM	1	2	2	1	6	4:35 PM	0	0	0	1	1	4:35 PM	0	0	1	0	1
4:40 PM	1	0	0	1	2	4:40 PM	0	0	0	0	0	4:40 PM	0	1	1	0	2
4:45 PM	0	0	0	2	2	4:45 PM	0	0	1	1	2	4:45 PM	0	0	0	0	0
4:50 PM	0	1	1	2	4	4:50 PM	0	0	0	0	0	4:50 PM	1	1	0	0	2
4:55 PM	1	1	2	0	4	4:55 PM	0	0	0	0	0	4:55 PM	0	0	0	0	0
5:00 PM	0	1	1	0	2	5:00 PM	0	0	0	0	0	5:00 PM	0	0	0	0	0
5:05 PM	0	1	2	1	4	5:05 PM	0	0	0	1	1	5:05 PM	0	0	0	0	0
5:10 PM	0	0	1	0	1	5:10 PM	0	1	0	1	2	5:10 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0	5:15 PM	0	0	0	0	0	5:15 PM	0	0	0	0	0
5:20 PM	0	0	2	2	4	5:20 PM	0	0	1	1	2	5:20 PM	0	0	0	0	0
5:25 PM	0	1	2	1	4	5:25 PM	0	0	0	0	0	5:25 PM	0	0	1	0	1
5:30 PM	0	0	2	0	2	5:30 PM	0	0	0	0	0	5:30 PM	0	1	0	0	1
5:35 PM	0	0	3	1	4	5:35 PM	0	0	0	1	1	5:35 PM	0	0	0	0	0
5:40 PM	0	0	0	0	0	5:40 PM	0	0	0	0	0	5:40 PM	0	0	0	0	0
5:45 PM	0	0	0	2	2	5:45 PM	0	0	0	0	0	5:45 PM	0	0	0	0	0
5:50 PM	0	0	0	0	0	5:50 PM	0	0	0	0	0	5:50 PM	0	0	0	0	0
5:55 PM	0	0	1	1	2	5:55 PM	0	0	0	1	1	5:55 PM	0	1	0	0	1
Count Total	5	9	27	23	64	Count Total	0	1	2	8	11	Count Total	1	5	3	0	9
Peak Hour	2	5	16	10	33	Peak Hour	0	1	2	5	8	Peak Hour	1	3	2	0	6



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Location: 2 SOUTHWEST BOONES FERRY ROAD & SOUTHWEST BARBER STREET PM

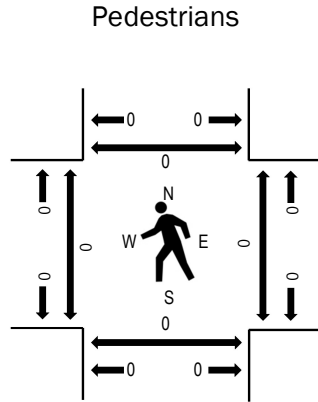
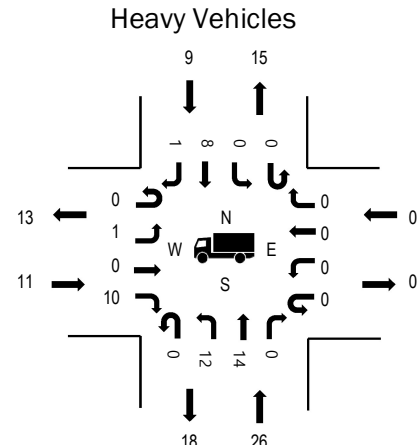
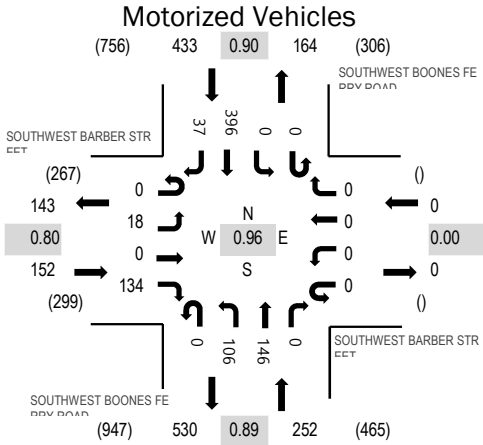
Item 5.

Date: Tuesday, August 1, 2023

Peak Hour: 04:05 PM - 05:05 PM

Peak 15-Minutes: 04:30 PM - 04:45 PM

Peak Hour



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	7.2%	0.80
WB	0.0%	0.00
NB	10.3%	0.89
SB	2.1%	0.90
All	5.5%	0.96

Traffic Counts - Motorized Vehicles

Interval Start Time	SOUTHWEST BARBER STREET Eastbound				SOUTHWEST BARBER STREET Westbound				SOUTHWEST BOONES FERRY ROAD Northbound				SOUTHWEST BOONES FERRY ROAD Southbound				Total	Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
4:00 PM	0	2	0	8	0	0	0	0	0	11	7	0	0	0	24	2	54	819
4:05 PM	0	2	0	16	0	0	0	0	0	11	14	0	0	0	26	2	71	837
4:10 PM	0	2	0	12	0	0	0	0	0	8	9	0	0	0	38	4	73	831
4:15 PM	0	2	0	8	0	0	0	0	0	14	8	0	0	0	30	6	68	824
4:20 PM	0	2	0	7	0	0	0	0	0	12	10	0	0	0	42	1	74	815
4:25 PM	0	0	0	6	0	0	0	0	0	11	16	0	0	0	39	1	73	793
4:30 PM	0	0	0	14	0	0	0	0	0	6	9	0	0	0	36	2	67	780
4:35 PM	0	2	0	13	0	0	0	0	0	7	11	0	0	0	36	5	74	794
4:40 PM	0	0	0	10	0	0	0	0	0	9	19	0	0	0	38	1	77	779
4:45 PM	0	3	0	12	0	0	0	0	0	9	7	0	0	0	25	2	58	754
4:50 PM	0	2	0	7	0	0	0	0	0	6	12	0	0	0	32	4	63	748
4:55 PM	0	1	0	15	0	0	0	0	0	6	19	0	0	0	21	5	67	727
5:00 PM	0	2	0	14	0	0	0	0	0	7	12	0	0	0	33	4	72	701
5:05 PM	0	2	0	12	0	0	0	0	0	10	10	0	0	0	26	5	65	
5:10 PM	0	2	0	13	0	0	0	0	0	7	12	0	0	0	29	3	66	
5:15 PM	0	2	0	6	0	0	0	0	0	8	16	0	0	0	26	1	59	
5:20 PM	0	0	0	8	0	0	0	0	0	9	9	0	0	0	22	4	52	
5:25 PM	0	5	0	15	0	0	0	0	0	7	6	0	0	0	25	2	60	
5:30 PM	0	4	0	14	0	0	0	0	0	12	13	0	0	0	36	2	81	
5:35 PM	0	0	0	13	0	0	0	0	0	10	15	0	0	0	20	1	59	
5:40 PM	0	2	0	10	0	0	0	0	0	6	7	0	0	0	22	5	52	
5:45 PM	0	2	0	10	0	0	0	0	0	5	10	0	0	0	23	2	52	
5:50 PM	0	1	0	8	0	0	0	0	0	3	10	0	0	0	19	1	42	
5:55 PM	0	1	0	7	0	0	0	0	0	6	4	0	0	0	21	2	41	
Count Total	0	41	0	258	0	0	0	0	0	200	265	0	0	0	689	67	1,520	
Peak Hour	0	18	0	134	0	0	0	0	0	106	146	0	0	0	396	37	837	

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles on Crosswalk

Item 5.

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	0	0	2	4:00 PM	0	0	0	0	0	4:00 PM	0	0	0	0	0
4:05 PM	3	2	0	1	6	4:05 PM	0	0	0	0	0	4:05 PM	0	0	0	0	0
4:10 PM	0	3	0	1	4	4:10 PM	0	0	0	0	0	4:10 PM	0	0	0	0	0
4:15 PM	0	4	0	1	5	4:15 PM	0	0	0	0	0	4:15 PM	0	0	0	0	0
4:20 PM	0	1	0	3	4	4:20 PM	0	0	0	0	0	4:20 PM	0	0	0	0	0
4:25 PM	0	4	0	1	5	4:25 PM	0	0	0	0	0	4:25 PM	0	0	0	0	0
4:30 PM	1	0	0	1	2	4:30 PM	0	0	0	0	0	4:30 PM	0	0	0	0	0
4:35 PM	2	0	0	0	2	4:35 PM	0	0	0	0	0	4:35 PM	0	0	0	0	0
4:40 PM	1	3	0	0	4	4:40 PM	0	0	0	0	0	4:40 PM	0	0	0	0	0
4:45 PM	0	4	0	0	4	4:45 PM	0	0	0	0	0	4:45 PM	0	0	0	0	0
4:50 PM	0	2	0	0	2	4:50 PM	0	0	0	0	0	4:50 PM	0	0	0	0	0
4:55 PM	2	2	0	1	5	4:55 PM	0	0	0	0	0	4:55 PM	0	0	0	0	0
5:00 PM	2	1	0	0	3	5:00 PM	0	0	0	0	0	5:00 PM	0	0	0	0	0
5:05 PM	1	2	0	0	3	5:05 PM	0	0	0	0	0	5:05 PM	0	0	0	0	0
5:10 PM	0	3	0	0	3	5:10 PM	0	0	0	0	0	5:10 PM	0	0	0	0	0
5:15 PM	0	5	0	0	5	5:15 PM	0	0	0	0	0	5:15 PM	0	0	0	0	0
5:20 PM	0	3	0	2	5	5:20 PM	0	0	0	0	0	5:20 PM	0	0	0	0	0
5:25 PM	0	2	0	0	2	5:25 PM	0	0	0	0	0	5:25 PM	0	0	0	0	0
5:30 PM	1	4	0	0	5	5:30 PM	0	0	0	0	0	5:30 PM	0	0	0	0	0
5:35 PM	1	0	0	0	1	5:35 PM	0	0	0	0	0	5:35 PM	0	0	0	0	0
5:40 PM	0	1	0	1	2	5:40 PM	0	0	0	0	0	5:40 PM	0	0	0	0	0
5:45 PM	0	4	0	1	5	5:45 PM	0	0	0	0	0	5:45 PM	0	0	0	0	0
5:50 PM	0	1	0	0	1	5:50 PM	0	0	0	0	0	5:50 PM	0	0	0	0	0
5:55 PM	0	0	0	0	0	5:55 PM	0	0	0	0	0	5:55 PM	0	0	0	0	0
Count Total	14	53	0	13	80	Count Total	0	0	0	0	0	Count Total	0	0	0	0	0
Peak Hour	11	26	0	9	46	Peak Hour	0	0	0	0	0	Peak Hour	0	0	0	0	0



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Location: 3 SOUTHWEST KINSMAN ROAD & SOUTHWEST WILSONVILLE ROAD PM

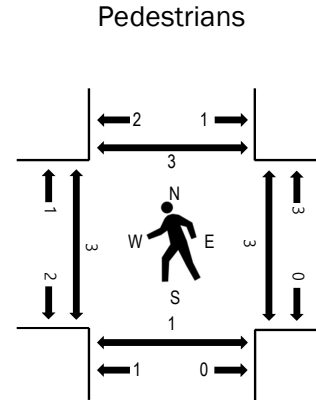
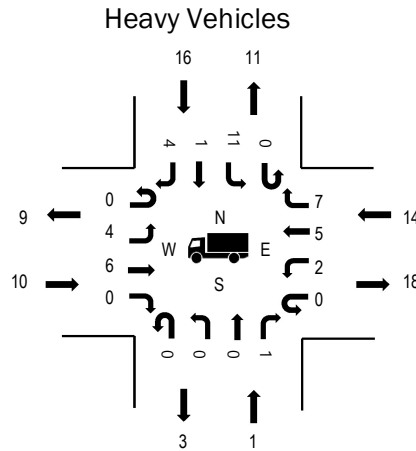
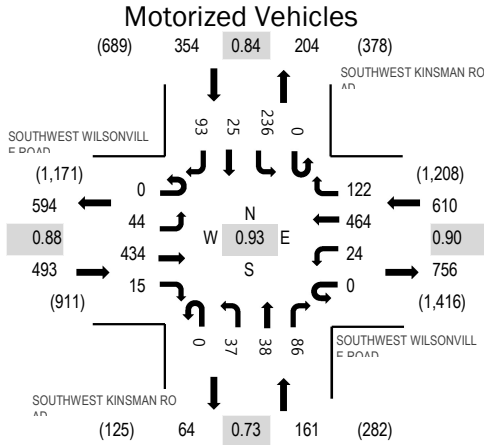
Date: Tuesday, August 1, 2023

Peak Hour: 04:35 PM - 05:35 PM

Peak 15-Minutes: 05:05 PM - 05:20 PM

Item 5.

Peak Hour



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	2.0%	0.88
WB	2.3%	0.90
NB	0.6%	0.73
SB	4.5%	0.84
All	2.5%	0.93

Traffic Counts - Motorized Vehicles

Interval Start Time	SOUTHWEST WILSONVILLE East Road				SOUTHWEST WILSONVILLE West Road				SOUTHWEST KINSMAN North Road				SOUTHWEST KINSMAN South Road				Total	Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
4:00 PM	0	3	44	0	0	0	45	8	0	5	4	18	0	16	4	10	157	1,534
4:05 PM	0	2	26	4	0	3	40	9	0	0	4	14	0	10	0	11	123	1,491
4:10 PM	0	5	33	4	0	1	39	10	0	0	2	6	0	28	4	10	142	1,514
4:15 PM	0	2	30	0	0	2	39	12	0	1	2	6	0	16	2	7	119	1,518
4:20 PM	0	1	27	0	0	4	35	8	0	1	2	2	0	28	2	7	117	1,543
4:25 PM	0	2	31	1	0	0	46	11	0	3	2	7	0	10	4	6	123	1,570
4:30 PM	0	2	27	0	0	2	22	9	0	5	1	5	0	16	5	3	97	1,586
4:35 PM	0	7	43	1	0	0	38	11	0	5	5	5	0	21	2	10	148	1,618
4:40 PM	0	1	35	0	0	5	41	12	0	3	0	7	0	17	1	7	129	1,610
4:45 PM	0	6	35	6	0	1	40	10	0	2	1	7	0	20	1	10	139	1,613
4:50 PM	0	3	40	2	0	2	28	10	0	2	1	7	0	19	2	6	122	1,580
4:55 PM	0	2	31	0	0	4	33	11	0	0	4	8	0	14	3	8	118	1,565
5:00 PM	0	5	27	0	0	0	36	10	0	0	4	6	0	14	1	11	114	1,556
5:05 PM	0	2	29	1	0	2	38	8	0	6	6	15	0	27	3	9	146	
5:10 PM	0	2	42	2	0	2	49	10	0	7	3	2	0	20	1	6	146	
5:15 PM	0	6	41	1	0	2	39	10	0	6	4	6	0	24	3	2	144	
5:20 PM	0	1	45	0	0	3	44	12	0	2	3	9	0	16	0	9	144	
5:25 PM	0	4	32	1	0	2	36	11	0	3	2	8	0	25	5	10	139	
5:30 PM	0	5	34	1	0	1	42	7	0	1	5	6	0	19	3	5	129	
5:35 PM	0	7	34	1	0	2	37	10	0	2	2	4	0	29	2	10	140	
5:40 PM	0	4	43	0	0	0	50	10	0	0	1	2	0	11	0	11	132	
5:45 PM	0	1	25	0	0	1	35	8	0	2	2	4	0	17	4	7	106	
5:50 PM	0	1	33	1	0	3	36	9	0	0	0	1	0	13	2	8	107	
5:55 PM	0	5	19	0	0	2	40	10	0	1	3	7	0	18	1	3	109	
Count Total	0	79	806	26	0	44	928	236	0	57	63	162	0	448	55	186	3,090	
Peak Hour	0	44	434	15	0	24	464	122	0	37	38	86	0	236	25	93	1,618	

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles on Crosswalk

Item 5.

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	2	0	0	4	6	4:00 PM	0	0	0	0	0	4:00 PM	0	1	0	0	1
4:05 PM	0	2	3	0	5	4:05 PM	0	0	0	0	0	4:05 PM	0	0	0	0	0
4:10 PM	1	0	3	3	7	4:10 PM	0	0	0	0	0	4:10 PM	0	3	0	0	3
4:15 PM	2	0	1	1	4	4:15 PM	0	0	0	0	0	4:15 PM	0	1	0	3	4
4:20 PM	0	0	1	1	2	4:20 PM	0	0	0	0	0	4:20 PM	0	0	0	1	1
4:25 PM	0	1	1	2	4	4:25 PM	0	0	0	0	0	4:25 PM	0	1	0	0	1
4:30 PM	2	0	1	2	5	4:30 PM	0	0	0	0	0	4:30 PM	0	0	2	0	2
4:35 PM	2	1	1	3	7	4:35 PM	0	0	0	0	0	4:35 PM	1	1	0	0	2
4:40 PM	2	0	2	0	4	4:40 PM	0	0	0	0	0	4:40 PM	0	0	0	0	0
4:45 PM	1	0	1	1	3	4:45 PM	0	0	0	0	0	4:45 PM	0	0	1	1	2
4:50 PM	0	0	1	1	2	4:50 PM	0	0	0	0	0	4:50 PM	0	0	0	4	4
4:55 PM	0	0	2	1	3	4:55 PM	0	1	0	0	1	4:55 PM	1	1	0	0	2
5:00 PM	1	0	4	2	7	5:00 PM	0	0	0	0	0	5:00 PM	0	0	0	0	0
5:05 PM	2	0	2	1	5	5:05 PM	0	0	0	0	0	5:05 PM	0	1	0	0	1
5:10 PM	0	0	0	1	1	5:10 PM	0	0	0	0	0	5:10 PM	0	0	1	0	1
5:15 PM	1	0	1	0	2	5:15 PM	0	0	0	2	2	5:15 PM	0	0	1	0	1
5:20 PM	1	0	0	2	3	5:20 PM	2	0	0	0	2	5:20 PM	0	0	0	0	0
5:25 PM	0	0	0	2	2	5:25 PM	0	0	0	0	0	5:25 PM	2	0	0	0	2
5:30 PM	0	0	0	2	2	5:30 PM	0	0	0	0	0	5:30 PM	0	0	0	0	0
5:35 PM	1	0	0	1	2	5:35 PM	0	0	0	0	0	5:35 PM	0	0	0	0	0
5:40 PM	0	0	0	2	2	5:40 PM	0	0	0	0	0	5:40 PM	0	0	0	0	0
5:45 PM	1	1	2	0	4	5:45 PM	0	0	0	0	0	5:45 PM	0	0	2	0	2
5:50 PM	0	0	0	1	1	5:50 PM	0	0	0	0	0	5:50 PM	0	0	0	0	0
5:55 PM	0	0	2	2	4	5:55 PM	0	0	0	0	0	5:55 PM	0	0	0	0	0
Count Total	19	5	28	35	87	Count Total	2	1	0	2	5	Count Total	4	9	7	9	29
Peak Hour	10	1	14	16	41	Peak Hour	2	1	0	2	5	Peak Hour	4	3	3	5	15



ALL TRAFFIC DATA SERVICES

(303) 216-2439

www.alltrafficdata.net

Location: 4 SOUTHWEST BOONES FERRY ROAD & SOUTHWEST WILSONVILLE ROAD

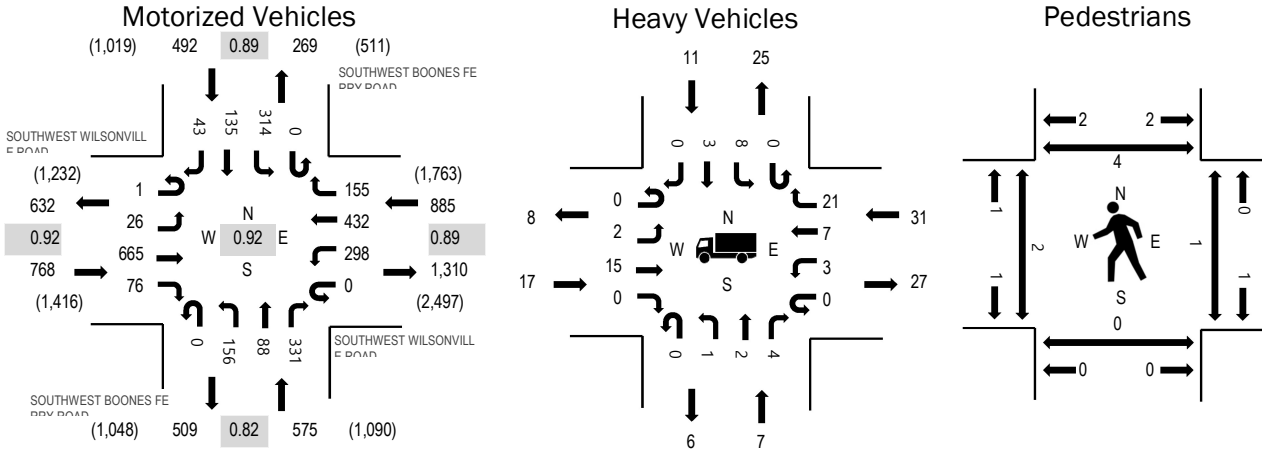
Item 5.

Date: Tuesday, August 1, 2023

Peak Hour: 04:35 PM - 05:35 PM

Peak 15-Minutes: 05:05 PM - 05:20 PM

Peak Hour



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	2.2%	0.92
WB	3.5%	0.89
NB	1.2%	0.82
SB	2.2%	0.89
All	2.4%	0.92

Traffic Counts - Motorized Vehicles

Interval Start Time	SOUTHWEST WILSONVILLE ROAD Eastbound				SOUTHWEST WILSONVILLE ROAD Westbound				SOUTHWEST BOONES FERRY ROAD Northbound				SOUTHWEST BOONES FERRY ROAD Southbound				Total	Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
4:00 PM	0	0	48	2	0	26	38	16	0	11	10	34	0	29	9	4	227	2,645
4:05 PM	0	1	58	3	0	23	30	18	0	10	6	31	0	26	11	5	222	2,637
4:10 PM	0	1	57	2	0	21	48	12	0	8	5	27	0	19	22	4	226	2,680
4:15 PM	0	1	53	5	0	36	36	9	0	14	6	31	0	26	14	2	233	2,704
4:20 PM	0	4	34	2	0	24	33	15	0	9	8	33	0	19	23	4	208	2,694
4:25 PM	0	0	53	3	0	17	35	3	0	14	7	18	0	38	20	5	213	2,704
4:30 PM	0	3	47	3	0	32	30	14	0	10	5	27	0	28	16	2	217	2,704
4:35 PM	0	2	64	7	0	22	38	10	0	14	6	23	0	25	12	5	228	2,720
4:40 PM	0	4	42	2	0	28	25	5	0	15	13	24	0	26	18	4	206	2,710
4:45 PM	0	1	45	3	0	22	41	16	0	10	4	31	0	20	17	2	212	2,716
4:50 PM	0	2	72	3	0	42	39	12	0	12	6	29	0	20	10	5	252	2,700
4:55 PM	1	1	46	4	0	17	29	14	0	8	10	30	0	25	8	8	201	2,659
5:00 PM	0	2	47	11	0	20	19	11	0	23	8	30	0	30	15	3	219	2,643
5:05 PM	0	1	65	10	0	27	37	16	0	14	5	32	0	42	11	5	265	
5:10 PM	0	3	62	4	0	27	42	13	0	16	13	43	0	15	10	2	250	
5:15 PM	0	4	50	11	0	20	26	16	0	13	8	26	0	33	13	3	223	
5:20 PM	0	1	58	12	0	19	48	8	0	13	5	20	0	25	7	2	218	
5:25 PM	0	3	66	5	0	19	46	21	0	6	3	15	0	20	7	2	213	
5:30 PM	0	2	48	4	0	35	42	13	0	12	7	28	0	33	7	2	233	
5:35 PM	0	6	47	11	0	32	22	6	0	9	6	22	0	30	23	4	218	
5:40 PM	0	0	47	8	0	15	48	14	0	12	4	18	0	27	16	3	212	
5:45 PM	1	2	48	8	0	24	38	14	0	6	6	25	0	17	6	1	196	
5:50 PM	0	2	42	7	0	29	35	15	0	16	4	24	0	30	7	0	211	
5:55 PM	0	0	32	7	0	19	36	15	0	15	4	20	0	22	13	2	185	
Count Total	2	46	1,231	137	0	596	861	306	0	290	159	641	0	625	315	79	5,288	
Peak Hour	1	26	665	76	0	298	432	155	0	156	88	331	0	314	135	43	2,720	

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles on Crosswalk

Item 5.

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	1	1	3	1	6	4:00 PM	0	0	0	0	0	4:00 PM	2	0	0	0	2
4:05 PM	3	0	4	2	9	4:05 PM	0	0	0	0	0	4:05 PM	0	0	1	2	3
4:10 PM	2	1	3	2	8	4:10 PM	0	0	0	0	0	4:10 PM	1	0	0	1	2
4:15 PM	2	1	3	1	7	4:15 PM	0	0	0	0	0	4:15 PM	0	0	0	0	0
4:20 PM	0	2	3	2	7	4:20 PM	0	0	0	0	0	4:20 PM	0	1	1	1	3
4:25 PM	2	0	2	0	4	4:25 PM	0	0	0	0	0	4:25 PM	0	0	0	0	0
4:30 PM	1	1	2	2	6	4:30 PM	0	0	0	0	0	4:30 PM	0	0	0	0	0
4:35 PM	2	0	1	3	6	4:35 PM	0	0	0	0	0	4:35 PM	0	0	1	0	1
4:40 PM	4	0	5	1	10	4:40 PM	0	0	0	0	0	4:40 PM	0	0	0	0	0
4:45 PM	2	1	3	1	7	4:45 PM	0	0	0	0	0	4:45 PM	1	0	0	2	3
4:50 PM	0	2	2	0	4	4:50 PM	0	0	0	0	0	4:50 PM	0	0	0	1	1
4:55 PM	1	0	2	1	4	4:55 PM	0	0	0	0	0	4:55 PM	0	0	0	0	0
5:00 PM	1	1	3	1	6	5:00 PM	0	0	0	0	0	5:00 PM	0	0	0	0	0
5:05 PM	2	0	3	1	6	5:05 PM	0	0	0	0	0	5:05 PM	0	0	0	0	0
5:10 PM	2	0	2	1	5	5:10 PM	0	0	0	0	0	5:10 PM	0	0	0	0	0
5:15 PM	0	2	5	0	7	5:15 PM	0	0	0	0	0	5:15 PM	1	0	0	0	1
5:20 PM	1	0	0	1	2	5:20 PM	0	0	0	0	0	5:20 PM	0	0	0	0	0
5:25 PM	1	0	4	0	5	5:25 PM	0	0	0	0	0	5:25 PM	0	0	0	0	0
5:30 PM	1	1	1	1	4	5:30 PM	0	0	0	0	0	5:30 PM	0	0	0	1	1
5:35 PM	1	0	0	1	2	5:35 PM	0	0	0	0	0	5:35 PM	0	0	0	0	0
5:40 PM	2	0	5	1	8	5:40 PM	0	0	0	0	0	5:40 PM	2	0	0	0	2
5:45 PM	2	2	4	1	9	5:45 PM	0	0	0	0	0	5:45 PM	0	0	1	0	1
5:50 PM	2	0	3	1	6	5:50 PM	0	0	0	0	0	5:50 PM	0	0	0	0	0
5:55 PM	0	1	3	0	4	5:55 PM	0	0	1	0	1	5:55 PM	0	0	0	1	1
Count Total	35	16	66	25	142	Count Total	0	0	1	0	1	Count Total	7	1	4	9	21
Peak Hour	17	7	31	11	66	Peak Hour	0	0	0	0	0	Peak Hour	2	0	1	4	7

APPENDIX C: STAGE II LIST

Updated by D. Pauly 08.09.23

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
Town Center Ph III and trip dedication to Miller Point 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-Frog Pond Meadows (Phase 3B, 4A, 4B of 10/18 Study)	Residential	Partially Built, 69 homes built and occupied	74 units				3	2	5
Frog Pond Ridge	Residential	Under construction, no homes occupied	71 units				43	28	71
Frog Pond Crossing	Residential	Under construction, no homes occupied	29 units				19	9	28
Frog Pond Estates	Residential	Approved	17 units				11	7	18
Frog Pond Oaks	Residential	Under construction, no homes occupied	41 units				27	14	41
Frog Pond Vista	Residential	Under construction, no homes occupied	38 units				27	17	44
Frog Pond Overlook	Residential	Approved	12 Units				8	5	13
Frog Pond Terrace	Residential	Approved	19 Units				12	8	20
Canyon Creek III	Residential	Under Construction	5 units (traffic study was for 11)				2	3	5
PW Complex on Boberg	Public	Under Construction	15,800 office, 17,900 warehouse				11	39	50
DAS North Valley Complex	Public/Industrial	Under Construction	174,700 sf				5	15	20
Black Creek Group-Garden Acres	Industrial	Under Construction	148,500 sf warehouse	178			69	109	178
Boones Ferry Gas Station/Convenience Store	Commercial	Under Construction	3,460 sf store, 12 gas pumps	240		134	53	53	106
Boones Ferry Construction Storage Yard	Industrial	Under Construction	1.25 acres	5			1	4	5
Frog Pond Primary School	Public	Under Construction	550 students	88			39	48	87
Delta Logistics	Industrial	Approved	56,100 sf warehouse	33			9	24	33
Building W5 Boeckman and Kinsman	Industrial	Approved	80,000 sf manufacturing	54			17	37	54
Precision Countertops	Industrial	Approved	65800 square feet	43			13	30	43
Town Center Mixed Use	Mixed Use Residential/Commercial	Approved	114 units, 4,000 square feet retail	55			31	24	55

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	451								53	34	87
Central	Residential	Partially Built, 991 homes (102 single family, 319 condo/row homes, 365 apartments) occupied	102	391	510						60	30	90
FOR REFERENCE SAP EAST			537	42									
REFERENCE SAP SOUTH (Includes PDP 7 Grande Pointe)								560					

Pending Projects for Which Traffic Analysis has been completed										
Project	Land Use	Status	Size	Total PM Peak	Trip Allocation Percentage			Net New (Primary) PM Peak Hour Trips		
					Internal	Pass-By	Diverted	In	Out	Total
Frog Pond Cottage Park Place	Residential	Under review	34 attached units	16				8	7	15
Frog Pond Petras	Residential	Under review	22 attached units	9				5	4	9
Parkway Woods Expansion	Public	under review	80,000 sf manufac	52				16	36	52

Import Counts	Export	Total Vehicle Volumes											
		Northbound			Southbound			Eastbound			Westbound		
		NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
Intersection													
Stage II Trips - PM Peak													
Barber Street/Kinsman Road		0	1	0	0	10	1	0	16	0	0	28	0
Barber Street/Boones Ferry Road		23	20	0	0	25	0	0	0	23	0	0	0
Wilsonville Road/Kinsman Road		23	0	48	7	1	2	1	46	6	10	58	0
Wilsonville Rd/Boones Ferry Road		0	4	3	51	6	10	14	85	2	2	58	18
Barber Street/Transit Center Driveway		0	0	0	0	0	0	0	16	0	0	28	0

APPENDIX D: HCM REPORT - EXISTING

Intersection						
Int Delay, s/veh	3.9					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W		W	↑	↑	
Traffic Vol, veh/h	19	142	113	155	421	39
Future Vol, veh/h	19	142	113	155	421	39
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	6	7	11	10	2	3
Mvmt Flow	20	148	118	161	439	41

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	857	460	480	0	0
Stage 1	460	-	-	-	-
Stage 2	397	-	-	-	-
Critical Hdwy	6.46	6.27	4.21	-	-
Critical Hdwy Stg 1	5.46	-	-	-	-
Critical Hdwy Stg 2	5.46	-	-	-	-
Follow-up Hdwy	3.554	3.363	2.299	-	-
Pot Cap-1 Maneuver	323	591	1037	-	-
Stage 1	627	-	-	-	-
Stage 2	671	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	286	591	1037	-	-
Mov Cap-2 Maneuver	286	-	-	-	-
Stage 1	556	-	-	-	-
Stage 2	671	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	15	3.8	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1037	-	525	-	-
HCM Lane V/C Ratio	0.114	-	0.319	-	-
HCM Control Delay (s)	8.9	-	15	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0.4	-	1.4	-	-

Intersection												
Int Delay, s/veh	0.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↕	↕			↕		↕	↕	
Traffic Vol, veh/h	2	102	1	1	226	3	5	0	5	11	0	5
Future Vol, veh/h	2	102	1	1	226	3	5	0	5	11	0	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	150	-	-	-	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	0	2	0	0	2	0	0	0	0	0	0	0
Mvmt Flow	2	113	1	1	251	3	6	0	6	12	0	6

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	254	0	0	114	0	0	376	374	114	376	373	253
Stage 1	-	-	-	-	-	-	118	118	-	255	255	-
Stage 2	-	-	-	-	-	-	258	256	-	121	118	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1323	-	-	1488	-	-	585	560	944	585	561	791
Stage 1	-	-	-	-	-	-	891	802	-	754	700	-
Stage 2	-	-	-	-	-	-	751	699	-	888	802	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1323	-	-	1488	-	-	580	558	944	580	559	791
Mov Cap-2 Maneuver	-	-	-	-	-	-	580	558	-	580	559	-
Stage 1	-	-	-	-	-	-	889	800	-	752	699	-
Stage 2	-	-	-	-	-	-	745	698	-	881	800	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.1			0			10.1			10.8		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	719	1323	-	-	1488	-	-	580	791
HCM Lane V/C Ratio	0.015	0.002	-	-	0.001	-	-	0.021	0.007
HCM Control Delay (s)	10.1	7.7	0	-	7.4	-	-	11.3	9.6
HCM Lane LOS	B	A	A	-	A	-	-	B	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0.1	0

Intersection ID and Name	NB PhasingType	SB PhasingType	EB PhasingType	WB PhasingType	Cycle Leng	Lost Tim	Use Overlap	Calculator	NBR Ovr	SBR Ovr	EBR Ovr	WBR Ovr
1: Barber St & Kinsman Rd	Protected	Protected	Protected	Protected	80	16	No				Yes	
3: Kinsman Rd & Wilsonville Rd	Protected	Protected	Protected	Protected	90	20	No					
4: Wilsonville Rd & Boones Ferry Rd	Split	Split	Protected	Protected	110	16	Yes		Yes			

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		WBL/EBT	EBL/WBT	NBL/SBT	SBL/NBT	V/S E/W	V/S N/S
Adj Flow Rate, veh/	19	96	15	81	141	18	66	116	3	12	208	57	Protected	0.12	0.10	0.19	0.07		
Sat Flow, veh/h	1810	1583	247	1485	1644	210	1781	1814	47	1668	1371	376	Permitted or Split	0.06	0.09	0.15	0.06		
V/S	0.01	0.06	0.06	0.05	0.09	0.09	0.04	0.06	0.06	0.01	0.15	0.15	selected phasing	0.12	0.10	0.19	0.07	0.12	0.19
Adj Flow Rate, veh/	51	496	16	27	530	45	42	43	4	270	29	21	Protected	0.29	0.31	0.05	0.18		
Sat Flow, veh/h	1682	1814	59	1697	1885	1528	1810	1707	159	1739	977	707	Permitted or Split	0.27	0.28	0.16	0.03		
V/S	0.03	0.27	0.27	0.02	0.28	0.03	0.02	0.03	0.03	0.16	0.03	0.03	selected phasing	0.29	0.31	0.05	0.18	0.31	0.18
Adj Flow Rate, veh/	30	767	0	345	499	0	180	101	383	363	155	37	Protected	0.24	0.16	0.21	0.35		
Sat Flow, veh/h	1697	5274	0	3483	3554	1434	1795	1870	1593	3428	1458	348	Permitted or Split	0.15	0.14	0.11	0.24		
V/S	0.02	0.15	0.00	0.10	0.14	0.00	0.10	0.05	0.24	0.11	0.11	0.11	selected phasing	0.24	0.16	0.11	0.24	0.24	0.35

	NBR OV	NB OV V/S	SBR OV	SB OV V/S	EBR OV	EB OV V/S	WBR OV	WB OV V/S	V/S Overlap	Intersection V	HCM 6th Ctrl Dela	HCM 6th LO: Synchro ID	
Right Turn Overlap	No	0.00 No	0.00 No	0.00 Yes	0.06 No	0.00 No	0.00 No	0.00 No	0.27				
Right Turn Approach Phasing	Protected	0.04 Protected	0.04 Protected	0.04 Protected	0.05 Protected	0.05 Protected	0.05 Protected	0.05 EB					
Overlap Approach Phasing	Protected	0.09 Protected	0.09 Protected	0.09 Protected	0.15 Protected	0.15 Protected	0.15 Protected	0.15 Use OV V/S		0.38	14	B	1
Right Turn Overlap	No	0.00 No	0.00 No	0.00 No	0.00 No	0.00 No	0.00 No	0.00 No	0.00				
Right Turn Approach Phasing	Protected	0.16 Protected	0.16 Protected	0.16 Protected	0.03 Protected	0.03 Protected	0.03 Protected	0.03 No OV					
Overlap Approach Phasing	Protected	0.28 Protected	0.28 Protected	0.28 Protected	0.03 Protected	0.03 Protected	0.03 Protected	0.03 N/A		0.63	18	B	3
Right Turn Overlap	Yes	0.24 No	0.00 No	0.00 No	0.00 No	0.00 No	0.00 No	0.00 No	0.49				
Right Turn Approach Phasing	Split	0.11 Split	0.24 Protected	0.10 Protected	0.10 Protected	0.10 Protected	0.10 Protected	0.10 NB					
Overlap Approach Phasing	Protected	0.15 Protected	0.15 Split	0.11 Split	0.11 Split	0.11 Split	0.11 Split	0.24 Use OV V/S		0.58	34	C	4

HCM 6th Signalized Intersection Summary
1: Barber St & Kinsman Rd

Wilsonville Barber St T Item 5.
Existing 2023 PM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	18	89	44	75	131	30	61	108	5	11	193	68
Future Volume (veh/h)	18	89	44	75	131	30	61	108	5	11	193	68
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	0.99		0.97	1.00		0.98	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	1885	1870	1559	1900	1900	1870	1870	1307	1752	1826	1900
Adj Flow Rate, veh/h	19	96	15	81	141	18	66	116	3	12	208	57
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	1	2	23	0	0	2	2	40	10	5	0
Cap, veh/h	279	188	29	299	262	33	623	882	23	702	617	169
Arrive On Green	0.02	0.12	0.12	0.06	0.16	0.16	0.05	0.49	0.49	0.01	0.45	0.45
Sat Flow, veh/h	1810	1583	247	1485	1644	210	1781	1814	47	1668	1371	376
Grp Volume(v), veh/h	19	0	111	81	0	159	66	0	119	12	0	265
Grp Sat Flow(s),veh/h/ln	1810	0	1830	1485	0	1854	1781	0	1861	1668	0	1747
Q Serve(g_s), s	0.5	0.0	2.8	2.3	0.0	3.9	1.0	0.0	1.7	0.2	0.0	4.9
Cycle Q Clear(g_c), s	0.5	0.0	2.8	2.3	0.0	3.9	1.0	0.0	1.7	0.2	0.0	4.9
Prop In Lane	1.00		0.14	1.00		0.11	1.00		0.03	1.00		0.22
Lane Grp Cap(c), veh/h	279	0	217	299	0	295	623	0	904	702	0	786
V/C Ratio(X)	0.07	0.00	0.51	0.27	0.00	0.54	0.11	0.00	0.13	0.02	0.00	0.34
Avail Cap(c_a), veh/h	392	0	815	332	0	826	682	0	904	816	0	849
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	18.6	0.0	20.4	17.7	0.0	19.1	6.7	0.0	7.0	7.2	0.0	8.8
Incr Delay (d2), s/veh	0.1	0.0	1.9	0.5	0.0	1.5	0.1	0.0	0.3	0.0	0.0	0.3
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	0.2	0.0	1.2	0.8	0.0	1.6	0.3	0.0	0.6	0.1	0.0	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.7	0.0	22.3	18.2	0.0	20.6	6.8	0.0	7.3	7.2	0.0	9.1
LnGrp LOS	B	A	C	B	A	C	A	A	A	A	A	A
Approach Vol, veh/h		130			240			185			277	
Approach Delay, s/veh		21.8			19.8			7.1			9.0	
Approach LOS		C			B			A			A	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	4.6	28.0	6.9	9.9	6.4	26.2	4.9	11.9				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	4.0	24.0	4.0	22.0	4.0	24.0	4.0	22.0				
Max Q Clear Time (g_c+I1), s	2.2	3.7	4.3	4.8	3.0	6.9	2.5	5.9				
Green Ext Time (p_c), s	0.0	0.5	0.0	0.5	0.0	1.4	0.0	0.7				
Intersection Summary												
HCM 6th Ctrl Delay				13.7								
HCM 6th LOS				B								

HCM 6th Signalized Intersection Summary
3: Kinsman Rd & Wilsonville Rd

Wilsonville Barber St T Item 5.
Existing 2023 PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	47	461	16	25	493	130	39	40	91	251	27	99
Future Volume (veh/h)	47	461	16	25	493	130	39	40	91	251	27	99
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	0.98		0.97	0.99		0.97
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	1767	1885	1900	1781	1885	1811	1900	1900	1885	1826	1841	1841
Adj Flow Rate, veh/h	51	496	16	27	530	45	42	43	4	270	29	21
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	9	1	0	8	1	6	0	0	1	5	4	4
Cap, veh/h	267	647	21	272	644	522	305	137	13	499	208	151
Arrive On Green	0.04	0.36	0.36	0.02	0.34	0.34	0.03	0.08	0.08	0.17	0.21	0.21
Sat Flow, veh/h	1682	1814	59	1697	1885	1528	1810	1707	159	1739	977	707
Grp Volume(v), veh/h	51	0	512	27	530	45	42	0	47	270	0	50
Grp Sat Flow(s),veh/h/ln	1682	0	1873	1697	1885	1528	1810	0	1865	1739	0	1684
Q Serve(g_s), s	1.0	0.0	13.1	0.6	13.9	1.1	1.1	0.0	1.3	7.1	0.0	1.3
Cycle Q Clear(g_c), s	1.0	0.0	13.1	0.6	13.9	1.1	1.1	0.0	1.3	7.1	0.0	1.3
Prop In Lane	1.00		0.03	1.00		1.00	1.00		0.09	1.00		0.42
Lane Grp Cap(c), veh/h	267	0	668	272	644	522	305	0	150	499	0	359
V/C Ratio(X)	0.19	0.00	0.77	0.10	0.82	0.09	0.14	0.00	0.31	0.54	0.00	0.14
Avail Cap(c_a), veh/h	325	0	1181	356	1189	963	376	0	761	531	0	875
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	12.6	0.0	15.4	12.4	16.3	12.0	21.6	0.0	23.4	16.4	0.0	17.2
Incr Delay (d2), s/veh	0.3	0.0	1.9	0.2	2.7	0.1	0.2	0.0	1.2	1.0	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	5.1	0.2	5.6	0.3	0.5	0.0	0.6	2.6	0.0	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.9	0.0	17.2	12.6	19.0	12.1	21.8	0.0	24.6	17.4	0.0	17.4
LnGrp LOS	B	A	B	B	B	B	C	A	C	B	A	B
Approach Vol, veh/h		563			602			89			320	
Approach Delay, s/veh		16.8			18.2			23.3			17.4	
Approach LOS		B			B			C			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.3	24.2	6.9	16.5	7.1	23.4	14.0	9.3				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	4.0	34.0	4.0	28.0	4.0	34.0	10.0	22.0				
Max Q Clear Time (g_c+I1), s	2.6	15.1	3.1	3.3	3.0	15.9	9.1	3.3				
Green Ext Time (p_c), s	0.0	2.1	0.0	0.2	0.0	2.4	0.1	0.1				
Intersection Summary												
HCM 6th Ctrl Delay				17.8								
HCM 6th LOS				B								

HCM 6th Signalized Intersection Summary
4: Wilsonville Rd & Boones Ferry Rd

Wilsonville Barber St T Item 5.
Existing 2023 PM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	28	706	81	317	459	165	166	93	352	334	143	46
Future Volume (veh/h)	28	706	81	317	459	165	166	93	352	334	143	46
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		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	1781	1870	1900	1885	1870	1693	1885	1870	1885	1856	1870	1900
Adj Flow Rate, veh/h	30	767	0	345	499	0	180	101	383	363	155	37
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	8	2	0	1	2	14	1	2	1	3	2	0
Cap, veh/h	37	1978		426	1733		375	391	528	466	198	47
Arrive On Green	0.02	0.39	0.00	0.12	0.49	0.00	0.21	0.21	0.21	0.14	0.14	0.14
Sat Flow, veh/h	1697	5274	0	3483	3554	1434	1795	1870	1593	3428	1458	348
Grp Volume(v), veh/h	30	767	0	345	499	0	180	101	383	363	0	192
Grp Sat Flow(s),veh/h/ln	1697	1702	0	1742	1777	1434	1795	1870	1593	1714	0	1806
Q Serve(g_s), s	1.9	11.9	0.0	10.6	9.2	0.0	9.7	5.0	23.0	11.3	0.0	11.3
Cycle Q Clear(g_c), s	1.9	11.9	0.0	10.6	9.2	0.0	9.7	5.0	23.0	11.3	0.0	11.3
Prop In Lane	1.00		0.00	1.00		1.00	1.00		1.00	1.00		0.19
Lane Grp Cap(c), veh/h	37	1978		426	1733		375	391	528	466	0	245
V/C Ratio(X)	0.81	0.39		0.81	0.29		0.48	0.26	0.72	0.78	0.00	0.78
Avail Cap(c_a), veh/h	170	1978		697	1733		375	391	528	748	0	394
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.72	0.72	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	53.6	24.3	0.0	47.0	16.8	0.0	38.2	36.4	32.4	45.9	0.0	46.0
Incr Delay (d2), s/veh	16.5	0.4	0.0	2.3	0.4	0.0	0.6	0.2	4.5	1.8	0.0	3.4
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	1.0	4.9	0.0	4.8	3.9	0.0	4.3	2.3	9.5	4.8	0.0	5.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	70.1	24.7	0.0	49.3	17.2	0.0	38.8	36.6	36.9	47.7	0.0	49.3
LnGrp LOS	E	C		D	B		D	D	D	D	A	D
Approach Vol, veh/h		797			844			664			555	
Approach Delay, s/veh		26.4			30.3			37.4			48.3	
Approach LOS		C			C			D			D	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	17.5	46.6		18.9	6.4	57.7		27.0				
Change Period (Y+Rc), s	4.0	5.0		4.0	4.0	5.0		4.0				
Max Green Setting (Gmax), s	22.0	24.0		24.0	11.0	35.0		23.0				
Max Q Clear Time (g_c+I1), s	12.6	13.9		13.3	3.9	11.2		25.0				
Green Ext Time (p_c), s	0.8	4.0		1.3	0.0	3.7		0.0				

Intersection Summary												
HCM 6th Ctrl Delay				34.4								
HCM 6th LOS				C								

Notes
 User approved pedestrian interval to be less than phase max green.
 Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

APPENDIX E: HCM REPORT – EXISTING + PROJECT

Intersection						
Int Delay, s/veh	4.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	21	160	145	155	421	44
Future Vol, veh/h	21	160	145	155	421	44
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	6	7	11	10	2	3
Mvmt Flow	22	167	151	161	439	46

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	925	462	485	0	-	0
Stage 1	462	-	-	-	-	-
Stage 2	463	-	-	-	-	-
Critical Hdwy	6.46	6.27	4.21	-	-	-
Critical Hdwy Stg 1	5.46	-	-	-	-	-
Critical Hdwy Stg 2	5.46	-	-	-	-	-
Follow-up Hdwy	3.554	3.363	2.299	-	-	-
Pot Cap-1 Maneuver	294	589	1033	-	-	-
Stage 1	626	-	-	-	-	-
Stage 2	625	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	251	589	1033	-	-	-
Mov Cap-2 Maneuver	251	-	-	-	-	-
Stage 1	535	-	-	-	-	-
Stage 2	625	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	16.2	4.4	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1033	-	509	-	-
HCM Lane V/C Ratio	0.146	-	0.37	-	-
HCM Control Delay (s)	9.1	-	16.2	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0.5	-	1.7	-	-

Intersection												
Int Delay, s/veh	1.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↕	↕			↕		↕	↕	
Traffic Vol, veh/h	11	102	1	1	226	39	5	0	5	32	0	10
Future Vol, veh/h	11	102	1	1	226	39	5	0	5	32	0	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	150	-	-	-	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	0	2	0	0	2	0	0	0	0	0	0	0
Mvmt Flow	12	113	1	1	251	43	6	0	6	36	0	11

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	294	0	0	114	0	0	418	434	114	416	413	273
Stage 1	-	-	-	-	-	-	138	138	-	275	275	-
Stage 2	-	-	-	-	-	-	280	296	-	141	138	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1279	-	-	1488	-	-	549	518	944	551	532	771
Stage 1	-	-	-	-	-	-	870	786	-	736	686	-
Stage 2	-	-	-	-	-	-	731	672	-	867	786	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1279	-	-	1488	-	-	537	512	944	543	526	771
Mov Cap-2 Maneuver	-	-	-	-	-	-	537	512	-	543	526	-
Stage 1	-	-	-	-	-	-	861	778	-	729	685	-
Stage 2	-	-	-	-	-	-	720	671	-	853	778	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.8			0			10.3			11.5		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	685	1279	-	-	1488	-	-	543	771
HCM Lane V/C Ratio	0.016	0.01	-	-	0.001	-	-	0.065	0.014
HCM Control Delay (s)	10.3	7.8	0	-	7.4	-	-	12.1	9.7
HCM Lane LOS	B	A	A	-	A	-	-	B	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0.2	0

Item 5.

Intersection ID and Name	NB PhasingType	SB PhasingType	EB PhasingType	WB PhasingType	Cycle Length	Lost Time	Use Overlap Calculator	NBR Overlap	SBR Overlap	EBR Overlap
1: Barber St & Kinsman Rd	Protected	Protected	Protected	Protected	80	16	No			No
3: Kinsman Rd & Wilsonville Rd	Protected	Protected	Protected	Protected	90	20	No			
4: Wilsonville Rd & Boones Ferry Rd	Split	Split	Protected	Protected	110	16	Yes	Yes		

	1	3	4	5	6	7	8	9	10	11	12	13	14	Critical Flow Calculator				V/S E/W	V/S N/S
	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		WBL/EBT	EBL/WBT	NBL/SBT	SBL/NBT		
Adj Flow Rate, veh/l	19	98	16	84	142	19	66	116	8	14	208	57	Protected	0.12	0.10	0.19	0.08		
Sat Flow, veh/h	1810	1571	257	1485	1634	219	1781	1727	119	1668	1371	376	Permitted or Split	0.06	0.09	0.15	0.07		
V/S	0.01	0.06	0.06	0.06	0.09	0.09	0.04	0.07	0.07	0.01	0.15	0.15	selected phasing	0.12	0.10	0.19	0.08	0.12	0.19
Adj Flow Rate, veh/l	56	496	16	27	530	48	42	43	4	270	29	21	Protected	0.29	0.31	0.05	0.18		
Sat Flow, veh/h	1682	1814	59	1697	1885	1528	1810	1707	159	1739	977	707	Permitted or Split	0.27	0.28	0.16	0.03		
V/S	0.03	0.27	0.27	0.02	0.28	0.03	0.02	0.03	0.03	0.16	0.03	0.03	selected phasing	0.29	0.31	0.05	0.18	0.31	0.18
Adj Flow Rate, veh/l	30	767	0	345	499	0	180	107	383	380	159	38	Protected	0.24	0.16	0.21	0.35		
Sat Flow, veh/h	1697	5274	0	3483	3554	1434	1795	1870	1593	3428	1458	348	Permitted or Split	0.15	0.14	0.11	0.24		
V/S	0.02	0.15	0.00	0.10	0.14	0.00	0.10	0.06	0.24	0.11	0.11	0.11	selected phasing	0.24	0.16	0.11	0.24	0.24	0.35

Overlap Critical Flow Calculator	NBR OV	NB OV V/S	SBR OV	SB OV V/S	EBR OV	EB OV V/S	WBR OV	WB OV V/S	V/S Overlap	Intersection V/C	HCM 6th Ctrl Delay	HCM 6th LOS	Synchro ID
Right Turn Overlap	No	0.00	No	0.00	No	0.00	No	0.00	0.00	0.00			
Right Turn Approach Phasing	Protected	0.04	Protected	0.04	Protected	0.06	Protected	0.06	No OV				
Overlap Approach Phasing	Protected	0.09	Protected	0.09	Protected	0.15	Protected	0.15	N/A	0.38	14	B	1
Right Turn Overlap	No	0.00	No	0.00	No	0.00	No	0.00	0.00				
Right Turn Approach Phasing	Protected	0.16	Protected	0.16	Protected	0.03	Protected	0.03	No OV				
Overlap Approach Phasing	Protected	0.28	Protected	0.28	Protected	0.03	Protected	0.03	N/A	0.64	18	B	3
Right Turn Overlap	Yes	0.24	No	0.00	No	0.00	No	0.00	0.50				
Right Turn Approach Phasing	Split	0.11	Split	0.24	Protected	0.10	Protected	0.10	NB				
Overlap Approach Phasing	Protected	0.15	Protected	0.15	Split	0.11	Split	0.24	Use OV V/S	0.58	35	C	4

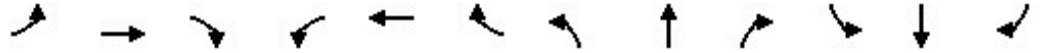
HCM 6th Signalized Intersection Summary
1: Barber St & Kinsman Rd

Wilsonville Barber St T Item 5.
Existing + Stage 2 + Project PM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	18	107	44	78	160	31	61	109	10	13	203	69
Future Volume (veh/h)	18	107	44	78	160	31	61	109	10	13	203	69
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.97	0.99		0.97	1.00		0.98	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	1885	1870	1559	1900	1900	1870	1870	1307	1752	1826	1900
Adj Flow Rate, veh/h	19	115	16	84	172	19	66	117	8	14	218	58
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	1	2	23	0	0	2	2	40	10	5	0
Cap, veh/h	270	210	29	299	289	32	602	824	56	686	612	163
Arrive On Green	0.02	0.13	0.13	0.06	0.17	0.17	0.05	0.48	0.48	0.01	0.44	0.44
Sat Flow, veh/h	1810	1611	224	1485	1675	185	1781	1728	118	1668	1381	367
Grp Volume(v), veh/h	19	0	131	84	0	191	66	0	125	14	0	276
Grp Sat Flow(s),veh/h/ln	1810	0	1835	1485	0	1860	1781	0	1846	1668	0	1749
Q Serve(g_s), s	0.5	0.0	3.4	2.4	0.0	4.8	1.0	0.0	1.9	0.2	0.0	5.3
Cycle Q Clear(g_c), s	0.5	0.0	3.4	2.4	0.0	4.8	1.0	0.0	1.9	0.2	0.0	5.3
Prop In Lane	1.00		0.12	1.00		0.10	1.00		0.06	1.00		0.21
Lane Grp Cap(c), veh/h	270	0	239	299	0	321	602	0	880	686	0	775
V/C Ratio(X)	0.07	0.00	0.55	0.28	0.00	0.60	0.11	0.00	0.14	0.02	0.00	0.36
Avail Cap(c_a), veh/h	380	0	802	327	0	813	658	0	880	795	0	834
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	18.5	0.0	20.5	17.5	0.0	19.2	7.1	0.0	7.4	7.5	0.0	9.3
Incr Delay (d2), s/veh	0.1	0.0	2.0	0.5	0.0	1.8	0.1	0.0	0.3	0.0	0.0	0.3
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	0.2	0.0	1.4	0.8	0.0	2.0	0.3	0.0	0.7	0.1	0.0	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.6	0.0	22.5	18.0	0.0	21.0	7.1	0.0	7.7	7.5	0.0	9.5
LnGrp LOS	B	A	C	B	A	C	A	A	A	A	A	A
Approach Vol, veh/h		150			275			191			290	
Approach Delay, s/veh		22.0			20.1			7.5			9.4	
Approach LOS		C			C			A			A	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	4.7	28.0	7.1	10.5	6.4	26.3	4.9	12.7				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	4.0	24.0	4.0	22.0	4.0	24.0	4.0	22.0				
Max Q Clear Time (g_c+I1), s	2.2	3.9	4.4	5.4	3.0	7.3	2.5	6.8				
Green Ext Time (p_c), s	0.0	0.6	0.0	0.6	0.0	1.5	0.0	0.9				
Intersection Summary												
HCM 6th Ctrl Delay			14.3									
HCM 6th LOS			B									

HCM 6th Signalized Intersection Summary
3: Kinsman Rd & Wilsonville Rd

Wilsonville Barber St T Item 5.
Existing + Stage 2 + Project PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	53	507	22	35	551	130	62	40	139	258	28	104
Future Volume (veh/h)	53	507	22	35	551	130	62	40	139	258	28	104
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	0.99		0.97	1.00		0.97
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	1767	1885	1900	1781	1885	1811	1900	1900	1885	1826	1841	1841
Adj Flow Rate, veh/h	57	545	23	38	592	48	67	43	55	277	30	23
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	9	1	0	8	1	6	0	0	1	5	4	4
Cap, veh/h	241	671	28	251	687	557	341	78	100	465	213	163
Arrive On Green	0.04	0.37	0.37	0.03	0.36	0.36	0.04	0.11	0.11	0.16	0.22	0.22
Sat Flow, veh/h	1682	1793	76	1697	1885	1528	1810	745	953	1739	951	729
Grp Volume(v), veh/h	57	0	568	38	592	48	67	0	98	277	0	53
Grp Sat Flow(s),veh/h/ln	1682	0	1869	1697	1885	1528	1810	0	1698	1739	0	1680
Q Serve(g_s), s	1.3	0.0	16.7	0.8	17.8	1.3	2.0	0.0	3.4	8.1	0.0	1.5
Cycle Q Clear(g_c), s	1.3	0.0	16.7	0.8	17.8	1.3	2.0	0.0	3.4	8.1	0.0	1.5
Prop In Lane	1.00		0.04	1.00		1.00	1.00		0.56	1.00		0.43
Lane Grp Cap(c), veh/h	241	0	699	251	687	557	341	0	179	465	0	376
V/C Ratio(X)	0.24	0.00	0.81	0.15	0.86	0.09	0.20	0.00	0.55	0.60	0.00	0.14
Avail Cap(c_a), veh/h	282	0	1037	309	1046	848	378	0	610	465	0	768
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	14.0	0.0	17.2	13.7	18.0	12.8	23.0	0.0	26.0	18.1	0.0	19.0
Incr Delay (d2), s/veh	0.5	0.0	3.1	0.3	4.8	0.1	0.3	0.0	2.6	2.1	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	7.0	0.3	7.8	0.4	0.8	0.0	1.4	3.2	0.0	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.5	0.0	20.4	14.0	22.9	12.8	23.3	0.0	28.6	20.2	0.0	19.2
LnGrp LOS	B	A	C	B	C	B	C	A	C	C	A	B
Approach Vol, veh/h		625			678			165				330
Approach Delay, s/veh		19.8			21.7			26.5				20.0
Approach LOS		B			C			C				C
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.9	27.9	7.7	18.7	7.5	27.3	15.0	11.5				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	4.0	34.0	4.0	28.0	4.0	34.0	10.0	22.0				
Max Q Clear Time (g_c+I1), s	2.8	18.7	4.0	3.5	3.3	19.8	10.1	5.4				
Green Ext Time (p_c), s	0.0	2.3	0.0	0.2	0.0	2.5	0.0	0.4				
Intersection Summary												
HCM 6th Ctrl Delay			21.2									
HCM 6th LOS			C									

HCM 6th Signalized Intersection Summary
4: Wilsonville Rd & Boones Ferry Rd

Wilsonville Barber St T
Existing + Stage 2 + Project PM

Item 5.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↑↑↑		↖↖	↑↑	↖	↖	↑	↖	↖↖	↖	
Traffic Volume (veh/h)	42	791	83	319	517	210	166	102	355	401	152	56
Future Volume (veh/h)	42	791	83	319	517	210	166	102	355	401	152	56
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		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	1781	1870	1900	1885	1870	1693	1885	1870	1885	1856	1870	1900
Adj Flow Rate, veh/h	46	860	0	347	562	0	180	111	386	436	165	48
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	8	2	0	1	2	14	1	2	1	3	2	0
Cap, veh/h	58	1870		428	1617		375	391	529	536	217	63
Arrive On Green	0.03	0.37	0.00	0.12	0.45	0.00	0.21	0.21	0.21	0.16	0.16	0.16
Sat Flow, veh/h	1697	5274	0	3483	3554	1434	1795	1870	1593	3428	1391	405
Grp Volume(v), veh/h	46	860	0	347	562	0	180	111	386	436	0	213
Grp Sat Flow(s),veh/h/ln	1697	1702	0	1742	1777	1434	1795	1870	1593	1714	0	1796
Q Serve(g_s), s	3.0	14.1	0.0	10.7	11.3	0.0	9.7	5.5	23.0	13.5	0.0	12.5
Cycle Q Clear(g_c), s	3.0	14.1	0.0	10.7	11.3	0.0	9.7	5.5	23.0	13.5	0.0	12.5
Prop In Lane	1.00		0.00	1.00		1.00	1.00		1.00	1.00		0.23
Lane Grp Cap(c), veh/h	58	1870		428	1617		375	391	529	536	0	281
V/C Ratio(X)	0.79	0.46		0.81	0.35		0.48	0.28	0.73	0.81	0.00	0.76
Avail Cap(c_a), veh/h	170	1870		697	1617		375	391	529	748	0	392
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	0.60	0.60	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	52.7	26.6	0.0	47.0	19.4	0.0	38.2	36.6	32.4	44.9	0.0	44.4
Incr Delay (d2), s/veh	8.6	0.5	0.0	2.3	0.6	0.0	0.6	0.2	4.7	3.9	0.0	4.0
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	1.4	5.8	0.0	4.8	4.8	0.0	4.3	2.5	9.6	6.0	0.0	5.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	61.3	27.1	0.0	49.3	20.0	0.0	38.8	36.8	37.1	48.7	0.0	48.5
LnGrp LOS	E	C		D	C		D	D	D	D	A	D
Approach Vol, veh/h		906			909			677			649	
Approach Delay, s/veh		28.8			31.2			37.5			48.6	
Approach LOS		C			C			D			D	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	17.5	44.3		21.2	7.8	54.0		27.0				
Change Period (Y+Rc), s	4.0	5.0		4.0	4.0	5.0		4.0				
Max Green Setting (Gmax), s	22.0	24.0		24.0	11.0	35.0		23.0				
Max Q Clear Time (g_c+I1), s	12.7	16.1		15.5	5.0	13.3		25.0				
Green Ext Time (p_c), s	0.8	3.7		1.5	0.0	4.2		0.0				

Intersection Summary

HCM 6th Ctrl Delay	35.5
HCM 6th LOS	D

Notes

- User approved pedestrian interval to be less than phase max green.
- Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

APPENDIX F: HCM REPORT – EXISTING + STAGE II

Intersection						
Int Delay, s/veh	4.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	19	165	136	175	446	39
Future Vol, veh/h	19	165	136	175	446	39
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	6	7	11	10	2	3
Mvmt Flow	20	172	142	182	465	41

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	952	486	506	0	-	0
Stage 1	486	-	-	-	-	-
Stage 2	466	-	-	-	-	-
Critical Hdwy	6.46	6.27	4.21	-	-	-
Critical Hdwy Stg 1	5.46	-	-	-	-	-
Critical Hdwy Stg 2	5.46	-	-	-	-	-
Follow-up Hdwy	3.554	3.363	2.299	-	-	-
Pot Cap-1 Maneuver	283	571	1014	-	-	-
Stage 1	610	-	-	-	-	-
Stage 2	623	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	243	571	1014	-	-	-
Mov Cap-2 Maneuver	243	-	-	-	-	-
Stage 1	525	-	-	-	-	-
Stage 2	623	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	16.6	4	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1014	-	501	-	-
HCM Lane V/C Ratio	0.14	-	0.383	-	-
HCM Control Delay (s)	9.1	-	16.6	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0.5	-	1.8	-	-

Intersection

Int Delay, s/veh 0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↕	↕			↕		↕	↕	
Traffic Vol, veh/h	2	118	1	1	254	3	5	0	5	11	0	5
Future Vol, veh/h	2	118	1	1	254	3	5	0	5	11	0	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	150	-	-	-	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	0	2	0	0	2	0	0	0	0	0	0	0
Mvmt Flow	2	131	1	1	282	3	6	0	6	12	0	6

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	285	0	0	132
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.1	-	-	4.1
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.2	-	-	2.2
Pot Cap-1 Maneuver	1289	-	-	1466
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	1289	-	-	1466
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0	10.4	11.2
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	680	1289	-	-	1466	-	-	539	760
HCM Lane V/C Ratio	0.016	0.002	-	-	0.001	-	-	0.023	0.007
HCM Control Delay (s)	10.4	7.8	0	-	7.5	-	-	11.8	9.8
HCM Lane LOS	B	A	A	-	A	-	-	B	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.1	0

Intersection ID and Name	NB PhasingType	SB PhasingType	EB PhasingType	WB PhasingType	Cycle Leng	Lost Tim	Use Overlap	Calculator	NBR Ovr	SBR Ovr	EBR Ovr	WBR Ovr
1: Barber St & Kinsman Rd	Protected	Protected	Protected	Protected	80	16	No				Yes	
3: Kinsman Rd & Wilsonville Rd	Protected	Protected	Protected	Protected	90	20	No					
4: Wilsonville Rd & Boones Ferry Rd	Split	Split	Protected	Protected	110	16	Yes	Yes				

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		WBL/EBT	EBL/WBT	NBL/SBT	SBL/NBT	V/S E/W	V/S N/S
Adj Flow Rate, veh/h	19	113	20	81	171	20	66	117	3	12	218	58	Protected	0.13	0.11	0.20	0.07		
Sat Flow, veh/h	1810	1550	274	1485	1663	195	1781	1814	47	1668	1381	367	Permitted or Split	0.07	0.10	0.16	0.06		
V/S	0.01	0.07	0.07	0.05	0.10	0.10	0.04	0.06	0.06	0.01	0.16	0.16	selected phasing	0.13	0.11	0.20	0.07	0.13	0.20
Adj Flow Rate, veh/h	52	545	22	38	592	45	67	43	15	277	30	24	Protected	0.33	0.34	0.07	0.19		
Sat Flow, veh/h	1682	1797	73	1697	1885	1529	1810	1333	465	1739	931	745	Permitted or Split	0.30	0.31	0.16	0.04		
V/S	0.03	0.30	0.30	0.02	0.31	0.03	0.04	0.03	0.03	0.16	0.03	0.03	selected phasing	0.33	0.34	0.07	0.19	0.34	0.19
Adj Flow Rate, veh/h	46	860	0	347	562	0	180	105	386	418	162	47	Protected	0.26	0.19	0.22	0.36		
Sat Flow, veh/h	1697	5274	0	3483	3554	1434	1795	1870	1593	3428	1392	404	Permitted or Split	0.16	0.16	0.12	0.24		
V/S	0.03	0.16	0.00	0.10	0.16	0.00	0.10	0.06	0.24	0.12	0.12	0.12	selected phasing	0.26	0.19	0.12	0.24	0.26	0.36

	NBR OV	NB OV V/S	SBR OV	SB OV V/S	EBR OV	EB OV V/S	WBR OV	WB OV V/S	V/S Overlap	Intersection V/C	HCM 6th Ctrl Delay	HCM 6th LOS	Synchro ID
Right Turn Overlap	No	0.00	No	0.00	Yes	0.07	No	0.00	0.29				
Right Turn Approach Phasing	Protected	0.04	Protected	0.04	Protected	0.05	Protected	0.05	EB				
Overlap Approach Phasing	Protected	0.10	Protected	0.10	Protected	0.16	Protected	0.16	Use Ov V/S	0.40	14	B	1
Right Turn Overlap	No	0.00	No	0.00	No	0.00	No	0.00	0.00				
Right Turn Approach Phasing	Protected	0.16	Protected	0.16	Protected	0.03	Protected	0.03	No OV				
Overlap Approach Phasing	Protected	0.31	Protected	0.31	Protected	0.03	Protected	0.03	N/A	0.69	20	B	3
Right Turn Overlap	Yes	0.24	No	0.00	No	0.00	No	0.00	0.53				
Right Turn Approach Phasing	Split	0.12	Split	0.24	Protected	0.10	Protected	0.10	NB				
Overlap Approach Phasing	Protected	0.16	Protected	0.16	Split	0.12	Split	0.24	Use Ov V/S	0.62	35	D	4

HCM 6th Signalized Intersection Summary
1: Barber St & Kinsman Rd

Wilsonville Barber St T Item 5.
Existing + Stage 2 PM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	18	105	44	75	159	30	61	109	5	11	203	69
Future Volume (veh/h)	18	105	44	75	159	30	61	109	5	11	203	69
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.97	0.99		0.97	1.00		0.98	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	1885	1870	1559	1900	1900	1870	1870	1307	1752	1826	1900
Adj Flow Rate, veh/h	19	113	20	81	171	20	66	117	3	12	218	58
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	1	2	23	0	0	2	2	40	10	5	0
Cap, veh/h	270	204	36	297	286	33	602	868	22	690	611	163
Arrive On Green	0.02	0.13	0.13	0.06	0.17	0.17	0.05	0.48	0.48	0.01	0.44	0.44
Sat Flow, veh/h	1810	1550	274	1485	1663	195	1781	1814	47	1668	1381	367
Grp Volume(v), veh/h	19	0	133	81	0	191	66	0	120	12	0	276
Grp Sat Flow(s),veh/h/ln	1810	0	1824	1485	0	1858	1781	0	1861	1668	0	1749
Q Serve(g_s), s	0.5	0.0	3.4	2.3	0.0	4.8	1.0	0.0	1.8	0.2	0.0	5.2
Cycle Q Clear(g_c), s	0.5	0.0	3.4	2.3	0.0	4.8	1.0	0.0	1.8	0.2	0.0	5.2
Prop In Lane	1.00		0.15	1.00		0.10	1.00		0.03	1.00		0.21
Lane Grp Cap(c), veh/h	270	0	241	297	0	319	602	0	890	690	0	774
V/C Ratio(X)	0.07	0.00	0.55	0.27	0.00	0.60	0.11	0.00	0.13	0.02	0.00	0.36
Avail Cap(c_a), veh/h	380	0	800	328	0	815	658	0	890	802	0	837
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	18.4	0.0	20.4	17.5	0.0	19.2	7.0	0.0	7.3	7.5	0.0	9.3
Incr Delay (d2), s/veh	0.1	0.0	2.0	0.5	0.0	1.8	0.1	0.0	0.3	0.0	0.0	0.3
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	0.2	0.0	1.5	0.8	0.0	2.0	0.3	0.0	0.6	0.1	0.0	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.5	0.0	22.4	18.0	0.0	21.0	7.1	0.0	7.6	7.5	0.0	9.5
LnGrp LOS	B	A	C	B	A	C	A	A	A	A	A	A
Approach Vol, veh/h		152			272			186			288	
Approach Delay, s/veh		21.9			20.1			7.4			9.4	
Approach LOS		C			C			A			A	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	4.6	28.0	6.9	10.6	6.4	26.2	4.9	12.6				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	4.0	24.0	4.0	22.0	4.0	24.0	4.0	22.0				
Max Q Clear Time (g_c+I1), s	2.2	3.8	4.3	5.4	3.0	7.2	2.5	6.8				
Green Ext Time (p_c), s	0.0	0.5	0.0	0.6	0.0	1.5	0.0	0.9				
Intersection Summary												
HCM 6th Ctrl Delay			14.4									
HCM 6th LOS			B									

HCM 6th Signalized Intersection Summary
3: Kinsman Rd & Wilsonville Rd

Wilsonville Barber St T Item 5.
Existing + Stage 2 PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	48	507	22	35	551	130	62	40	139	258	28	101
Future Volume (veh/h)	48	507	22	35	551	130	62	40	139	258	28	101
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	0.98		0.97	0.99		0.97
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	1767	1885	1900	1781	1885	1811	1900	1900	1885	1826	1841	1841
Adj Flow Rate, veh/h	52	545	22	38	592	45	67	43	15	277	30	24
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	9	1	0	8	1	6	0	0	1	5	4	4
Cap, veh/h	249	675	27	261	694	563	314	107	37	481	189	151
Arrive On Green	0.04	0.38	0.38	0.03	0.37	0.37	0.05	0.08	0.08	0.17	0.20	0.20
Sat Flow, veh/h	1682	1797	73	1697	1885	1529	1810	1333	465	1739	931	745
Grp Volume(v), veh/h	52	0	567	38	592	45	67	0	58	277	0	54
Grp Sat Flow(s),veh/h/ln	1682	0	1870	1697	1885	1529	1810	0	1799	1739	0	1675
Q Serve(g_s), s	1.1	0.0	15.8	0.8	16.8	1.1	2.0	0.0	1.8	7.9	0.0	1.5
Cycle Q Clear(g_c), s	1.1	0.0	15.8	0.8	16.8	1.1	2.0	0.0	1.8	7.9	0.0	1.5
Prop In Lane	1.00		0.04	1.00		1.00	1.00		0.26	1.00		0.44
Lane Grp Cap(c), veh/h	249	0	703	261	694	563	314	0	144	481	0	340
V/C Ratio(X)	0.21	0.00	0.81	0.15	0.85	0.08	0.21	0.00	0.40	0.58	0.00	0.16
Avail Cap(c_a), veh/h	299	0	1094	324	1103	894	356	0	681	488	0	807
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.1	0.0	16.3	12.8	16.9	12.0	23.1	0.0	25.4	17.9	0.0	19.1
Incr Delay (d2), s/veh	0.4	0.0	2.5	0.3	3.9	0.1	0.3	0.0	1.8	1.6	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	6.3	0.3	7.1	0.3	0.8	0.0	0.8	3.1	0.0	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.6	0.0	18.8	13.1	20.8	12.0	23.4	0.0	27.2	19.6	0.0	19.3
LnGrp LOS	B	A	B	B	C	B	C	A	C	B	A	B
Approach Vol, veh/h		619			675			125				331
Approach Delay, s/veh		18.4			19.8			25.2				19.5
Approach LOS		B			B			C				B
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.8	26.8	7.6	16.8	7.3	26.4	14.8	9.7				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	4.0	34.0	4.0	28.0	4.0	34.0	10.0	22.0				
Max Q Clear Time (g_c+I1), s	2.8	17.8	4.0	3.5	3.1	18.8	9.9	3.8				
Green Ext Time (p_c), s	0.0	2.3	0.0	0.2	0.0	2.6	0.0	0.2				
Intersection Summary												
HCM 6th Ctrl Delay				19.6								
HCM 6th LOS				B								

HCM 6th Signalized Intersection Summary
4: Wilsonville Rd & Boones Ferry Rd

Wilsonville Barber St T Item 5.
Existing + Stage 2 PM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	42	791	83	319	517	183	166	97	355	385	149	56
Future Volume (veh/h)	42	791	83	319	517	183	166	97	355	385	149	56
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		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	1781	1870	1900	1885	1870	1693	1885	1870	1885	1856	1870	1900
Adj Flow Rate, veh/h	46	860	0	347	562	0	180	105	386	418	162	47
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	8	2	0	1	2	14	1	2	1	3	2	0
Cap, veh/h	58	1896		428	1635		375	391	529	519	211	61
Arrive On Green	0.03	0.37	0.00	0.12	0.46	0.00	0.21	0.21	0.21	0.15	0.15	0.15
Sat Flow, veh/h	1697	5274	0	3483	3554	1434	1795	1870	1593	3428	1392	404
Grp Volume(v), veh/h	46	860	0	347	562	0	180	105	386	418	0	209
Grp Sat Flow(s),veh/h/ln	1697	1702	0	1742	1777	1434	1795	1870	1593	1714	0	1796
Q Serve(g_s), s	3.0	14.0	0.0	10.7	11.2	0.0	9.7	5.2	23.0	13.0	0.0	12.3
Cycle Q Clear(g_c), s	3.0	14.0	0.0	10.7	11.2	0.0	9.7	5.2	23.0	13.0	0.0	12.3
Prop In Lane	1.00		0.00	1.00		1.00	1.00		1.00	1.00		0.22
Lane Grp Cap(c), veh/h	58	1896		428	1635		375	391	529	519	0	272
V/C Ratio(X)	0.79	0.45		0.81	0.34		0.48	0.27	0.73	0.81	0.00	0.77
Avail Cap(c_a), veh/h	170	1896		697	1635		375	391	529	748	0	392
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	0.60	0.60	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	52.7	26.1	0.0	47.0	19.1	0.0	38.2	36.5	32.4	45.1	0.0	44.8
Incr Delay (d2), s/veh	8.6	0.5	0.0	2.3	0.6	0.0	0.6	0.2	4.7	3.3	0.0	4.0
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	1.4	5.8	0.0	4.8	4.8	0.0	4.3	2.4	9.6	5.7	0.0	5.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	61.3	26.6	0.0	49.3	19.6	0.0	38.8	36.7	37.1	48.4	0.0	48.9
LnGrp LOS	E	C		D	B		D	D	D	D	A	D
Approach Vol, veh/h		906			909			671			627	
Approach Delay, s/veh		28.4			31.0			37.5			48.5	
Approach LOS		C			C			D			D	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	17.5	44.8		20.6	7.8	54.6		27.0				
Change Period (Y+Rc), s	4.0	5.0		4.0	4.0	5.0		4.0				
Max Green Setting (Gmax), s	22.0	24.0		24.0	11.0	35.0		23.0				
Max Q Clear Time (g_c+I1), s	12.7	16.0		15.0	5.0	13.2		25.0				
Green Ext Time (p_c), s	0.8	3.8		1.4	0.0	4.2		0.0				

Intersection Summary												
HCM 6th Ctrl Delay				35.2								
HCM 6th LOS				D								

Notes
 User approved pedestrian interval to be less than phase max green.
 Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

APPENDIX G: HCM REPORT – EXISTING + PROJECT + STAGE II

Intersection						
Int Delay, s/veh	5.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	21	183	168	175	446	44
Future Vol, veh/h	21	183	168	175	446	44
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	6	7	11	10	2	3
Mvmt Flow	22	191	175	182	465	46

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	1020	488	511	0	0
Stage 1	488	-	-	-	-
Stage 2	532	-	-	-	-
Critical Hdwy	6.46	6.27	4.21	-	-
Critical Hdwy Stg 1	5.46	-	-	-	-
Critical Hdwy Stg 2	5.46	-	-	-	-
Follow-up Hdwy	3.554	3.363	2.299	-	-
Pot Cap-1 Maneuver	258	570	1010	-	-
Stage 1	609	-	-	-	-
Stage 2	581	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	213	570	1010	-	-
Mov Cap-2 Maneuver	213	-	-	-	-
Stage 1	504	-	-	-	-
Stage 2	581	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	18	4.6	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1010	-	486	-	-
HCM Lane V/C Ratio	0.173	-	0.437	-	-
HCM Control Delay (s)	9.3	-	18	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0.6	-	2.2	-	-

HCM 6th TWSC
5: Barber St & Transit Center Driveway

Wilsonville Barber St T
Existing + Stage 2 + Project PM

Item 5.

Intersection												
Int Delay, s/veh	1.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↕	↕			↕		↕	↕	
Traffic Vol, veh/h	11	118	1	1	254	39	5	0	5	32	0	10
Future Vol, veh/h	11	118	1	1	254	39	5	0	5	32	0	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	150	-	-	-	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	0	2	0	0	2	0	0	0	0	0	0	0
Mvmt Flow	12	131	1	1	282	43	6	0	6	36	0	11

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	325	0	0	132	0	0	467	483	132	465	462	304
Stage 1	-	-	-	-	-	-	156	156	-	306	306	-
Stage 2	-	-	-	-	-	-	311	327	-	159	156	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1246	-	-	1466	-	-	509	486	923	511	500	740
Stage 1	-	-	-	-	-	-	851	772	-	708	665	-
Stage 2	-	-	-	-	-	-	704	651	-	848	772	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1246	-	-	1466	-	-	497	481	923	504	495	740
Mov Cap-2 Maneuver	-	-	-	-	-	-	497	481	-	504	495	-
Stage 1	-	-	-	-	-	-	842	764	-	701	664	-
Stage 2	-	-	-	-	-	-	693	650	-	834	764	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.7			0			10.7			12		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	646	1246	-	-	1466	-	-	504	740
HCM Lane V/C Ratio	0.017	0.01	-	-	0.001	-	-	0.071	0.015
HCM Control Delay (s)	10.7	7.9	0	-	7.5	-	-	12.7	9.9
HCM Lane LOS	B	A	A	-	A	-	-	B	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.2	0

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Intersection ID and Name	use dropdown NB PhasingType	use dropdown SB PhasingType	use dropdown EB PhasingType	use dropdown WB PhasingType	Cycle Length	Lost Time	use dropdown Use Overlap Calculator	use dropdown NBR Overlap	use dropdown SBR Overlap	use dropdown EBR Overlap
1: Barber St & Kinsman Rd	Protected	Protected	Protected	Protected	80	16	No			No
3: Kinsman Rd & Wilsonville Rd	Protected	Protected	Protected	Protected	90	20	No			
4: Wilsonville Rd & Boones Ferry Rd	Split	Split	Protected	Protected	110	16	Yes	Yes		

	1	3	4	5	6	7	8	9	10	11	12	13	14	Critical Flow Calculator					
	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		WBL/EBT	EBL/WBT	NBL/SBT	SBL/NBT	V/S E/W	V/S N/S
Adj Flow Rate, veh/l	19	115	16	84	172	19	66	117	8	14	218	58	Protected	0.13	0.11	0.20	0.08		
Sat Flow, veh/h	1810	1611	224	1485	1675	185	1781	1728	118	1668	1381	367	Permitted or Split	0.07	0.10	0.16	0.07		
V/S	0.01	0.07	0.07	0.06	0.10	0.10	0.04	0.07	0.07	0.01	0.16	0.16	selected phasing	0.13	0.11	0.20	0.08	0.13	0.20
Adj Flow Rate, veh/l	57	545	23	38	592	48	67	43	55	277	30	23	Protected	0.33	0.35	0.07	0.22		
Sat Flow, veh/h	1682	1793	76	1697	1885	1528	1810	745	953	1739	951	729	Permitted or Split	0.30	0.31	0.16	0.06		
V/S	0.03	0.30	0.30	0.02	0.31	0.03	0.04	0.06	0.06	0.16	0.03	0.03	selected phasing	0.33	0.35	0.07	0.22	0.35	0.22
Adj Flow Rate, veh/l	46	860	0	347	562	0	180	111	386	436	165	48	Protected	0.26	0.19	0.22	0.37		
Sat Flow, veh/h	1697	5274	0	3483	3554	1434	1795	1870	1593	3428	1391	405	Permitted or Split	0.16	0.16	0.13	0.24		
V/S	0.03	0.16	0.00	0.10	0.16	0.00	0.10	0.06	0.24	0.13	0.12	0.12	selected phasing	0.26	0.19	0.13	0.24	0.26	0.37

Overlap Critical Flow Calculator	NBR OV	NB OV V/S	SBR OV	SB OV V/S	EBR OV	EB OV V/S	WBR OV	WB OV V/S	V/S Overlap	Intersection V/C	HCM 6th Ctrl Delay	HCM 6th LOS	Synchro ID
Right Turn Overlap	No	0.00	No	0.00	No	0.00	No	0.00	0.00	0.00			
Right Turn Approach Phasing	Protected	0.04	Protected	0.04	Protected	0.06	Protected	0.06	No OV				
Overlap Approach Phasing	Protected	0.10	Protected	0.10	Protected	0.16	Protected	0.16	N/A	0.40	14	B	1
Right Turn Overlap	No	0.00	No	0.00	No	0.00	No	0.00	0.00				
Right Turn Approach Phasing	Protected	0.16	Protected	0.16	Protected	0.03	Protected	0.03	No OV				
Overlap Approach Phasing	Protected	0.31	Protected	0.31	Protected	0.06	Protected	0.06	N/A	0.73	21	C	3
Right Turn Overlap	Yes	0.24	No	0.00	No	0.00	No	0.00	0.53				
Right Turn Approach Phasing	Split	0.13	Split	0.24	Protected	0.10	Protected	0.10	NB				
Overlap Approach Phasing	Protected	0.16	Protected	0.16	Split	0.13	Split	0.24	Use OV V/S	0.62	36	D	4

HCM 6th Signalized Intersection Summary
1: Barber St & Kinsman Rd

Wilsonville Barber St T
Existing + Stage 2 + Project PM

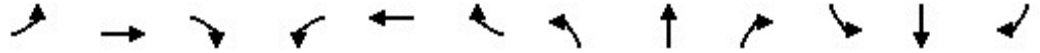
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	18	107	44	78	160	31	61	109	10	13	203	69
Future Volume (veh/h)	18	107	44	78	160	31	61	109	10	13	203	69
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.97	0.99		0.97	1.00		0.98	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	1885	1870	1559	1900	1900	1870	1870	1307	1752	1826	1900
Adj Flow Rate, veh/h	19	115	16	84	172	19	66	117	8	14	218	58
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	1	2	23	0	0	2	2	40	10	5	0
Cap, veh/h	270	210	29	299	289	32	602	824	56	686	612	163
Arrive On Green	0.02	0.13	0.13	0.06	0.17	0.17	0.05	0.48	0.48	0.01	0.44	0.44
Sat Flow, veh/h	1810	1611	224	1485	1675	185	1781	1728	118	1668	1381	367
Grp Volume(v), veh/h	19	0	131	84	0	191	66	0	125	14	0	276
Grp Sat Flow(s),veh/h/ln	1810	0	1835	1485	0	1860	1781	0	1846	1668	0	1749
Q Serve(g_s), s	0.5	0.0	3.4	2.4	0.0	4.8	1.0	0.0	1.9	0.2	0.0	5.3
Cycle Q Clear(g_c), s	0.5	0.0	3.4	2.4	0.0	4.8	1.0	0.0	1.9	0.2	0.0	5.3
Prop In Lane	1.00		0.12	1.00		0.10	1.00		0.06	1.00		0.21
Lane Grp Cap(c), veh/h	270	0	239	299	0	321	602	0	880	686	0	775
V/C Ratio(X)	0.07	0.00	0.55	0.28	0.00	0.60	0.11	0.00	0.14	0.02	0.00	0.36
Avail Cap(c_a), veh/h	380	0	802	327	0	813	658	0	880	795	0	834
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	18.5	0.0	20.5	17.5	0.0	19.2	7.1	0.0	7.4	7.5	0.0	9.3
Incr Delay (d2), s/veh	0.1	0.0	2.0	0.5	0.0	1.8	0.1	0.0	0.3	0.0	0.0	0.3
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	0.2	0.0	1.4	0.8	0.0	2.0	0.3	0.0	0.7	0.1	0.0	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.6	0.0	22.5	18.0	0.0	21.0	7.1	0.0	7.7	7.5	0.0	9.5
LnGrp LOS	B	A	C	B	A	C	A	A	A	A	A	A
Approach Vol, veh/h		150			275			191			290	
Approach Delay, s/veh		22.0			20.1			7.5			9.4	
Approach LOS		C			C			A			A	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	4.7	28.0	7.1	10.5	6.4	26.3	4.9	12.7				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	4.0	24.0	4.0	22.0	4.0	24.0	4.0	22.0				
Max Q Clear Time (g_c+I1), s	2.2	3.9	4.4	5.4	3.0	7.3	2.5	6.8				
Green Ext Time (p_c), s	0.0	0.6	0.0	0.6	0.0	1.5	0.0	0.9				
Intersection Summary												
HCM 6th Ctrl Delay				14.3								
HCM 6th LOS				B								

HCM 6th Signalized Intersection Summary
3: Kinsman Rd & Wilsonville Rd

Wilsonville Barber St T Item 5.
Existing + Stage 2 + Project PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	53	507	22	35	551	130	62	40	139	258	28	104
Future Volume (veh/h)	53	507	22	35	551	130	62	40	139	258	28	104
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	0.99		0.97	1.00		0.97
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	1767	1885	1900	1781	1885	1811	1900	1900	1885	1826	1841	1841
Adj Flow Rate, veh/h	57	545	23	38	592	48	67	43	55	277	30	23
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	9	1	0	8	1	6	0	0	1	5	4	4
Cap, veh/h	241	671	28	251	687	557	341	78	100	465	213	163
Arrive On Green	0.04	0.37	0.37	0.03	0.36	0.36	0.04	0.11	0.11	0.16	0.22	0.22
Sat Flow, veh/h	1682	1793	76	1697	1885	1528	1810	745	953	1739	951	729
Grp Volume(v), veh/h	57	0	568	38	592	48	67	0	98	277	0	53
Grp Sat Flow(s),veh/h/ln	1682	0	1869	1697	1885	1528	1810	0	1698	1739	0	1680
Q Serve(g_s), s	1.3	0.0	16.7	0.8	17.8	1.3	2.0	0.0	3.4	8.1	0.0	1.5
Cycle Q Clear(g_c), s	1.3	0.0	16.7	0.8	17.8	1.3	2.0	0.0	3.4	8.1	0.0	1.5
Prop In Lane	1.00		0.04	1.00		1.00	1.00		0.56	1.00		0.43
Lane Grp Cap(c), veh/h	241	0	699	251	687	557	341	0	179	465	0	376
V/C Ratio(X)	0.24	0.00	0.81	0.15	0.86	0.09	0.20	0.00	0.55	0.60	0.00	0.14
Avail Cap(c_a), veh/h	282	0	1037	309	1046	848	378	0	610	465	0	768
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	14.0	0.0	17.2	13.7	18.0	12.8	23.0	0.0	26.0	18.1	0.0	19.0
Incr Delay (d2), s/veh	0.5	0.0	3.1	0.3	4.8	0.1	0.3	0.0	2.6	2.1	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	7.0	0.3	7.8	0.4	0.8	0.0	1.4	3.2	0.0	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.5	0.0	20.4	14.0	22.9	12.8	23.3	0.0	28.6	20.2	0.0	19.2
LnGrp LOS	B	A	C	B	C	B	C	A	C	C	A	B
Approach Vol, veh/h		625			678			165				330
Approach Delay, s/veh		19.8			21.7			26.5				20.0
Approach LOS		B			C			C				C
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.9	27.9	7.7	18.7	7.5	27.3	15.0	11.5				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	4.0	34.0	4.0	28.0	4.0	34.0	10.0	22.0				
Max Q Clear Time (g_c+I1), s	2.8	18.7	4.0	3.5	3.3	19.8	10.1	5.4				
Green Ext Time (p_c), s	0.0	2.3	0.0	0.2	0.0	2.5	0.0	0.4				
Intersection Summary												
HCM 6th Ctrl Delay			21.2									
HCM 6th LOS			C									

HCM 6th Signalized Intersection Summary
4: Wilsonville Rd & Boones Ferry Rd

Wilsonville Barber St T Item 5.
Existing + Stage 2 + Project PM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	42	791	83	319	517	210	166	102	355	401	152	56
Future Volume (veh/h)	42	791	83	319	517	210	166	102	355	401	152	56
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		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	1781	1870	1900	1885	1870	1693	1885	1870	1885	1856	1870	1900
Adj Flow Rate, veh/h	46	860	0	347	562	0	180	111	386	436	165	48
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	8	2	0	1	2	14	1	2	1	3	2	0
Cap, veh/h	58	1870		428	1617		375	391	529	536	217	63
Arrive On Green	0.03	0.37	0.00	0.12	0.45	0.00	0.21	0.21	0.21	0.16	0.16	0.16
Sat Flow, veh/h	1697	5274	0	3483	3554	1434	1795	1870	1593	3428	1391	405
Grp Volume(v), veh/h	46	860	0	347	562	0	180	111	386	436	0	213
Grp Sat Flow(s),veh/h/ln	1697	1702	0	1742	1777	1434	1795	1870	1593	1714	0	1796
Q Serve(g_s), s	3.0	14.1	0.0	10.7	11.3	0.0	9.7	5.5	23.0	13.5	0.0	12.5
Cycle Q Clear(g_c), s	3.0	14.1	0.0	10.7	11.3	0.0	9.7	5.5	23.0	13.5	0.0	12.5
Prop In Lane	1.00		0.00	1.00		1.00	1.00		1.00	1.00		0.23
Lane Grp Cap(c), veh/h	58	1870		428	1617		375	391	529	536	0	281
V/C Ratio(X)	0.79	0.46		0.81	0.35		0.48	0.28	0.73	0.81	0.00	0.76
Avail Cap(c_a), veh/h	170	1870		697	1617		375	391	529	748	0	392
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	0.60	0.60	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	52.7	26.6	0.0	47.0	19.4	0.0	38.2	36.6	32.4	44.9	0.0	44.4
Incr Delay (d2), s/veh	8.6	0.5	0.0	2.3	0.6	0.0	0.6	0.2	4.7	3.9	0.0	4.0
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	1.4	5.8	0.0	4.8	4.8	0.0	4.3	2.5	9.6	6.0	0.0	5.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	61.3	27.1	0.0	49.3	20.0	0.0	38.8	36.8	37.1	48.7	0.0	48.5
LnGrp LOS	E	C		D	C		D	D	D	D	A	D
Approach Vol, veh/h		906			909			677			649	
Approach Delay, s/veh		28.8			31.2			37.5			48.6	
Approach LOS		C			C			D			D	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	17.5	44.3		21.2	7.8	54.0		27.0				
Change Period (Y+Rc), s	4.0	5.0		4.0	4.0	5.0		4.0				
Max Green Setting (Gmax), s	22.0	24.0		24.0	11.0	35.0		23.0				
Max Q Clear Time (g_c+I1), s	12.7	16.1		15.5	5.0	13.3		25.0				
Green Ext Time (p_c), s	0.8	3.7		1.5	0.0	4.2		0.0				

Intersection Summary												
HCM 6th Ctrl Delay				35.5								
HCM 6th LOS				D								

Notes
 User approved pedestrian interval to be less than phase max green.
 Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

October 17, 2023

Amy Pepper
Development Engineering Manager
City of Wilsonville
29799 SW Town Center Loop E
Wilsonville, OR 97070

Subject: Driveway alignment for the proposed on-site parking lot serving the future Wilsonville TOD affordable mixed-use project at 9749 SW Barber St, Wilsonville OR, 97070 (DB23-0011).

Wilsonville TOD

Dear Amy,

Please accept this request for an Alternative Design & Construction Standard to Section 201.2.23(h) of the Public Works Standards, regarding driveway alignment for the on-site parking lot serving the Wilsonville TOD project. This project is currently under review by the City of Wilsonville Planning Department (DB23-0011). This Public Works Standard requires driveways that intersect an existing Collector Street align with existing opposing streets or major driveways, unless topography, existing features, or geographic conditions prohibit this alignment. We request that the proposed driveway is allowed to be offset ~22'-6" (centerline to centerline) from the existing driveway across the street on the south side of SW Barber Street. This Alternative Design is needed to provide vital functions of the project and to protect three existing trees that are crucial to the character of the project.

The development proposal for this site includes 121 units of affordable housing, as well as various commercial/retail spaces including a Transit Welcome Center, Food Bank (Wilsonville Community Sharing), and a Café/Taproom. While there are no parking requirements for this site, a small 15-stall on-site parking lot is proposed to serve residents and the public. It will be accessed by a one-way drive aisle that enters the site from the Trimet access road to the west and exits onto SW Barber street. The on-site parking stalls provide an important service to residents and visitors to the social services offered on site, including the Wilsonville Community Sharing food bank, services provided by Latino Network, and leasing affordable housing units. Providing this convenience, especially the two ADA accessible parking spaces that serve people with mobility issues, is crucial to enhancing equity and reducing barriers to people in need of these services.

Additionally, the driveway creates access for a number of essential functions, including garbage and recycling pickup, resident and food bank loading and unloading, and deliveries for the Café/Taproom. These functions would be impossible without the driveway, and it is therefore crucial to the day-to-day function and long-term viability of the project.

The primary issue preventing full alignment of the new driveway with the existing driveway across Barber is the retention of three large existing Douglas Fir trees on the site. Due to their potential to offer a sense of place and identity, the project has been carefully designed to retain the trees and preserve their health. Wilsonville's City Council has expressly requested that these trees be retained as part of this project. With the expertise of an arborist, the design team has developed a strategy to create a large, natural open space beneath the trees, bordered by a raised outdoor seating area for residents and patrons of the Café.



These trees and the surrounding open space comprise the heart of this development and are key to the identity and sense of place this project will create. If the driveways are required to align, the health of the middle tree would be compromised, and it would need to be removed. The health of the other two trees would also be endangered.

The design team considered eliminating the driveway to Barber St altogether, but in working with the garbage and recycling service provider, Republic Services, it became clear that this was not an option. The on-site drive aisle is the only feasible location for garbage and recycling collection, due to the presence of the SMART bus turnaround depot on the east and northern frontages of the building. The site is too small to allow Republic Services to turn around, and a design with only one driveway on the Trimet access road would require their trucks to back out into that road. Republic Services will not allow this, noting significant safety concerns associated with their trucks backing out into traffic. Therefore, they will require a driveway on Barber St for their trucks to exit safely.

A traffic study, performed on 10/22/23 and included with the land use application associated with this request, has also reviewed the proposed on-site parking lot & drive aisle, including the driveway entry from the Trimet access road and the driveway exit onto Barber Street. The total anticipated traffic volume for this development is only 71 PM peak hour vehicle trips. The report references the Public Works Standard that requires driveway alignment, and notes that there are exceptions for existing features (tree protection) or geographic conditions that do not permit driveways to align. It does not identify any safety concerns with the offset driveway.

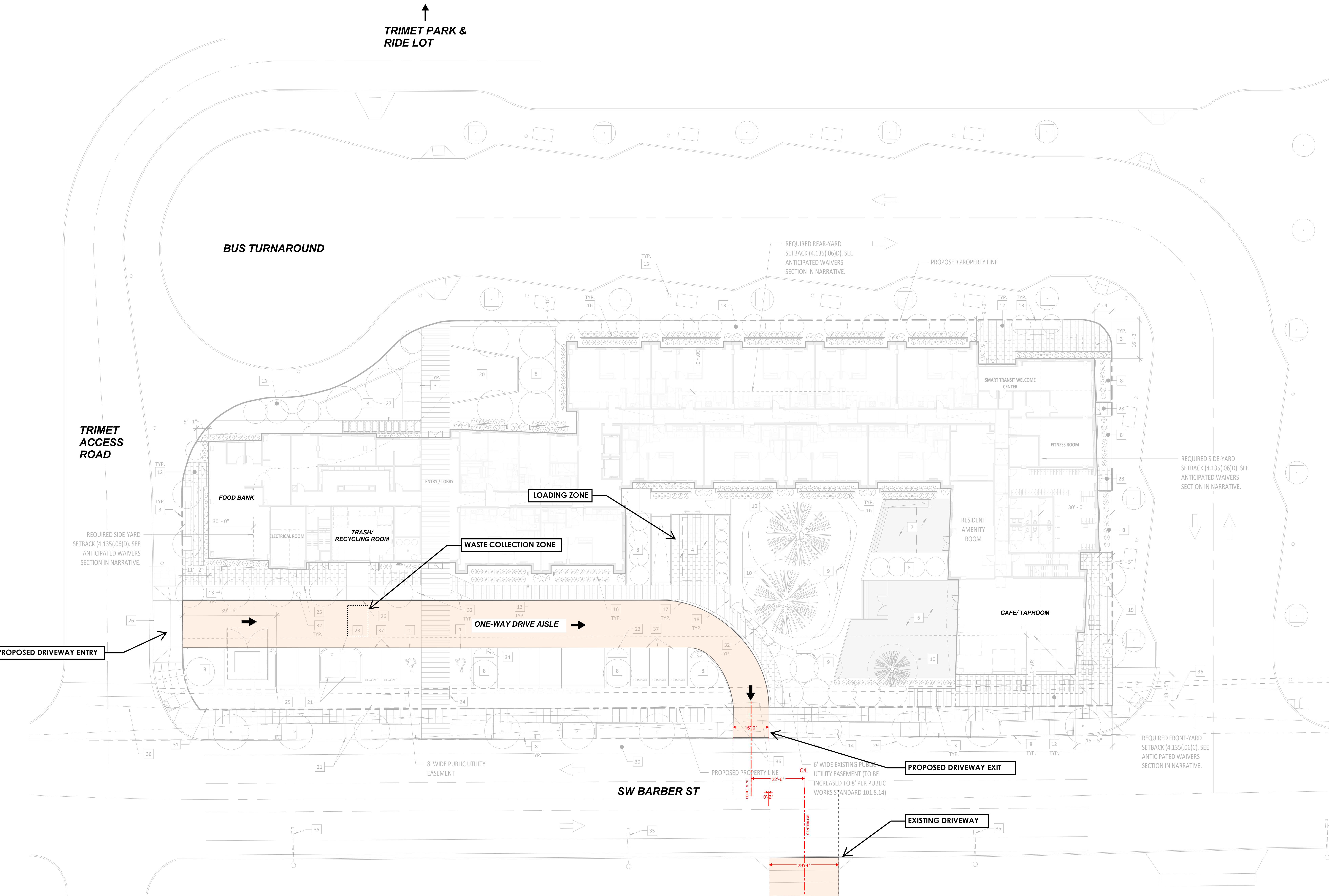
The design team has revised the site plan to achieve closer alignment of the new driveway with the existing driveway across Barber, while still maintaining the health of the existing trees. The original proposal showed a ~36'-6" offset of the driveways (centerline to centerline), while the revised proposal is for a ~22'-6" offset (centerline to centerline). This results in the edge of the new proposed driveway being only ~2" offset from the edge of the existing driveway. Please refer to Exhibit A included with this letter, illustrating the proposed offset.

Due to the importance of retaining the existing trees and providing a functional drive aisle for convenience parking, essential site functions, and garbage and recycling collection, as well as the absence of any safety concerns regarding the driveway offset in the Traffic Analysis, we kindly request that an Alternative Design to Public Works Standard 201.2.23(h) be granted to allow the proposed offset of the driveway.

Sincerely,

Tim Schneider, NCARB
Architect
YBA Architects, PC

**EXHIBIT A:
(ALTERNATIVE DESIGN TO PUBLIC WORKS STANDARD SECTION 201.2.23(h))**



1 SITE PLAN (LU)
A001 1/16" = 1'-0"

KEY NOTES

- 1 ADA PARKING STALL
- 2 TRASH/RECYCLING PICKUP ZONE
- 3 SHORT-TERM BICYCLE PARKING HOOP (2'X6' ZONE WITH 5' DEEP ACCESS BEHIND) - SEE LANDSCAPE DRAWINGS
- 4 RESIDENT LOADING ZONE
- 5 NATURAL PLAY AREA - SEE LANDSCAPE DRAWINGS
- 6 CAFE SEATING ON RAISED DECK - SEE LANDSCAPE
- 7 RESIDENT AMENITY SPACE ON RAISED DECK - SEE LANDSCAPE
- 8 STORMWATER PLANTER - SEE CIVIL DRAWINGS
- 9 BENCH SEATING - SEE LANDSCAPE DRAWINGS
- 10 CRITICAL ROOT ZONE AT TREE TO REMAIN
- 12 PERMEABLE PAVERS - SEE LANDSCAPE DRAWINGS
- 13 AT-GRADE PLANTER - SEE LANDSCAPE DRAWINGS
- 14 EXISTING FIRE HYDRANT
- 15 EXISTING STREET LIGHT
- 16 18" TALL BOARD-FORMED CONCRETE WALL AT GROUND FLOOR UNITS
- 17 ROLLED CURB
- 18 FENCE - SEE LANDSCAPE DRAWINGS
- 19 TREE GRATE - SEE LANDSCAPE DRAWINGS
- 20 RESIDENT PLAZA/BBQ AREA - SEE LANDSCAPE DRAWINGS
- 21 UTILITY VAULT - SEE CIVIL DRAWINGS
- 23 FUTURE EV CHARGING STATION, REFER TO ELECTRICAL
- 24 STEPS WITH HANDRAILS
- 25 LOW RETAINING WALL/CURB - SEE CIVIL DRAWINGS
- 26 CURB CLIT - SEE CIVIL DRAWINGS
- 27 PRECAST CONCRETE PAVERS WITH GRAVEL INFILL
- 28 NON-PERMEABLE PAVERS - SEE LANDSCAPE
- 29 STREET TREE - SEE CIVIL & LANDSCAPE DRAWINGS
- 30 EXISTING BIKE LANE
- 31 PGE VAULT AND SURFACE-MOUNTED TRANSFORMER
- 32 EXTERIOR SITE LIGHTING - SEE SHEET A003
- 33 SLIDING STEEL GATE/GUARDRAIL AT LOADING DOCK. PROVIDE STEEL ANGLE EMBED AT CONCRETE LEDGE AND BUMPER GUARDS BELOW.
- 34 DUAL-HEAD EV CHARGING STATION - SEE ELECTRICAL DRAWINGS
- 35 STORMWATER PLANTER - SEE CIVIL DRAWINGS
- 36 CLEAR VISION AREA COMPLYING WITH PUBLIC WORKS STANDARD 201.2.22
- 37 COMPACT PARKING STALL

GENERAL NOTES - SITE PLAN

1. FIELD VERIFY ALL INFORMATION PRIOR TO CONSTRUCTION. IF SITE CONDITIONS VARY FROM CONTRACT DOCUMENTS, NOTIFY ARCHITECT IN WRITING IMMEDIATELY.

SITE PLAN LEGEND



STAMP

**FOR
REFERENCE
ONLY**

SHEET REVISION NO.	REVISION EVENT	PLAN NORTH	REVISION DATE

DEVELOPMENT REVIEW BOARD MEETING

**MONDAY, JANUARY 22, 2024
6:30 PM**

Board Member Communications:

6. Results of the December 11, 2023 DRB Panel A meeting

City of Wilsonville

Development Review Board Panel A Meeting Meeting Results

DATE:	DECEMBER 11, 2023	
LOCATION:	29799 SW TOWN CENTER LOOP EAST, WILSONVILLE, OR	
TIME START:	6:30 P.M.	TIME END: 8:57 P.M.

ATTENDANCE LOG

BOARD MEMBERS	STAFF
Jean Svadlenka	Daniel Pauly
Clark Hildum	Amanda Guile-Hinman
Jordan Herron	Miranda Bateschell
Yara Alatawy	Kimberly Rybold
	Amy Pepper
	Georgia McAlister
	Cindy Luxhoj
	Zach Weigel
	Stephanie Davidson
	Shelley White

AGENDA RESULTS

AGENDA	ACTIONS
CITIZENS' INPUT	None
CONSENT AGENDA	
1. Approval of minutes of the August 14, 2023 DRB Panel A meeting	1. Unanimously accepted as presented.
PUBLIC HEARING	
2. Resolution No. 422. ParkWorks Industrial Building and Partition. The applicant is requesting approval of a Stage I Preliminary Plan, Stage 2 Final Plan, Site Design Review, Type C Tree Removal Plan and Tentative Partition Plat for development of an industrial spec building with accessory office space and associated road and site improvements at 26600 SW Parkway Avenue. Case Files: DB22-0009 ParkWorks Industrial Building and Partition -Stage 1 Preliminary Plan (STG122-0007) -Stage 2 Final Plan (STG222-0009) -Site Design Review (SDR22-0009) -Type C Tree Removal Plan (TPLN22-0007) -Tentative Partition Plat (PART22-0002)	2. Resolution No. 422 was unanimously continued to January 8, 2023 date certain.
3. Resolution No. 423 Frog Pond Petras Homes Subdivision. The applicant is requesting approval of Annexation to the City of Wilsonville and rezoning of approximately 2.02 acres, a Stage 1	3. Unanimously adopted Resolution No. 423 with approval of the amended Staff report.

Preliminary Plan, Stage 2 Final Plan, Site Design Review of parks and open space, Tentative Subdivision Plat, Middle Housing Land Division, and Waiver for an 11-lot residential subdivision.

Case Files:

- DB23-0008 Frog Pond Petras Homes Subdivision
- Annexation (ANNX23-0002)
- Zone Map Amendment (ZONE23-0002) -Stage 1 Preliminary Plan (STG123-0003)
- Stage 2 Final Plan (STG223-0005)
- Site Design Review of Parks and Open Space (SDR23-0006)
- Tentative Subdivision Plat (SUBD23-0002)
- Middle Housing Land Division (MHLD23-0002)
- Waiver (WAIV23-0003)

The DRB Action on the Annexation and Zone Map Amendment is a recommendation to the City Council.

BOARD MEMBER COMMUNICATIONS	
4. Results of the September 25, 2023 DRB Panel B meeting	4. No comments.
5. Recent City Council Action Minutes	5. No comments.
STAFF COMMUNICATIONS	
	None.

DEVELOPMENT REVIEW BOARD MEETING

**MONDAY, JANUARY 22, 2024
6:30 PM**

Board Member Communications:

7. Results of the January 8, 2024 DRB Panel A meeting

City of Wilsonville

Development Review Board Panel A Meeting Meeting Results

DATE: JANUARY 8, 2024	
LOCATION: 29799 SW TOWN CENTER LOOP EAST, WILSONVILLE, OR	
TIME START: 6:31 P.M.	TIME END: 8:36 P.M.

ATTENDANCE LOG

BOARD MEMBERS	STAFF
Clark Hildum	Daniel Pauly
Rob Candrian	Amanda Guile-Hinman
John Andrews (DRB-Panel B)	Kimberly Rybold
	Amy Pepper
	Cindy Luxhoj
	Sarah Pearlman
	Shelley White

AGENDA RESULTS

AGENDA	ACTIONS
CITIZENS' INPUT	None
ELECTION OF 2023 CHAIR AND VICE-CHAIR	
1. Chair	1. Tabled to February DRB-A meeting
2. Vice-Chair	2. Tabled to February DRB-A meeting
CONSENT AGENDA	
3. Approval of minutes of the January 9, 2024 DRB Panel A meeting	3. Tabled to the February DRB-A meeting
PUBLIC HEARING	Order of Agenda was Amended
6. Resolution No. 422. ParkWorks Industrial Building and Partition. The applicant is requesting approval of a Stage I Preliminary Plan, Stage 2 Final Plan, Site Design Review, Type C Tree Removal Plan and Tentative Partition Plat for development of an industrial spec building with accessory office space and associated road and site improvements at 26600 SW Parkway Avenue Case Files: DB22-0009 ParkWorks Industrial Building and Partition -Stage 1 Preliminary Plan (STG122-0007) -Stage 2 Final Plan (STG222-0009) -Site Design Review (SDR22-0009) -Type C Tree Removal Plan (TPLN22-0007) -Tentative Partition Plat (PART22-0002) <i>This item was continued to this date certain at the December 11, 2023 DRB Panel A meeting. The applicant has requested a continuance to the February 12, 2024 DRB Panel A meeting.</i>	6. Unanimously continued to the February 12, 2024 DRB A meeting

<p>4. Resolution No. 424. Short Term Rental Home Business. The applicant is requesting approval of a Conditional Use Permit for the use of a residential property as a short-term rental home business.</p> <p>Case Files: DB23-0013 Short Term Rental Home Business -Conditional Use Permit (CUP23-0002)</p> <p>5. Resolution No. 425 Frog Pond Cottage Park Place Subdivision. The applicant is requesting approval of Annexation to the City of Wilsonville and rezoning of approximately 5.00 acres, a Stage 1 Preliminary Plan, Stage 2 Final Plan, Site Design Review of parks and open space, Tentative Subdivision Plat, Type C Tree Removal Plan, Middle Housing Land Division, and Waiver for a 17-lot residential subdivision.</p> <p>Case Files: DB12-0004 Frog Pond Cottage Park Place Subdivision -Annexation (ANNX23-0001) -Zone Map Amendment (ZONE23-0001) -Stage 1 Preliminary Plan (STG123-0002) -Stage 2 Final Plan (STG223-0003) -Site Design Review of Parks and Open Space (SDR23-0003) -Tentative Subdivision Plat (SUBD23-0001) -Middle Housing Land Division (MHLD23-0003) -Waiver (WAIV23-0005)</p> <p><i>The DRB Action on the Annexation and Zone Map Amendment is a recommendation to the City Council.</i></p>	<p>4. Resolution No. 424 was unanimously approved with the amended Staff report, which included new Exhibits B3 and D1.</p> <p>5. Resolution No. 425 was adopted with Staff report amended to include new Exhibit A3 by a 2 to 1 vote with Rob Candrian opposed.</p>
<p>BOARD MEMBER COMUNICATIONS</p>	
<p>6. Recent City Council Action Minutes</p>	<p>5. No comments.</p>
<p>STAFF COMMUNICATIONS</p>	
<p>None.</p>	

DEVELOPMENT REVIEW BOARD MEETING

**MONDAY, JANUARY 22, 2024
6:30 PM**

Board Member Communications:

8. Recent City Council Action Minutes

City Council Meeting Action Minutes
September 18, 2023

COUNCILORS PRESENT

Mayor Fitzgerald
Council President Akervall
Councilor Linville
Councilor Berry
Councilor Dunwell

Andy Stone, IT Director
Zoe Mombert, Assistant to the City Manager
Dwight Brashear, Transit Director
Matt Lorenzen, Economic Development Manager
Stephanie Davidson, Assistant City Attorney
Cindy Luxhoj, Associate Planner
Miranda Bateschell, Planning Director
Georgia McAlister, Associate Planner
Chris Neamtzu, Community Development Director
Kimberly Rybold, Senior Planner
Mark Ottenad, Public/Government Affairs Director

STAFF PRESENT

Amanda Guile-Hinman, City Attorney
Kimberly Veliz, City Recorder
Jeanna Troha, Assistant City Manager
Beth Wolf, Senior Systems Analyst

AGENDA ITEM	ACTIONS
WORK SESSION	START: 5:00 p.m.
A. Information Technology Strategic Plan	Staff and consultants introduced the newly updated Information Technology (IT) Strategic Plan to Council.
B. Town Center Urban Renewal Feasibility Study	Council heard an update on the Town Center Urban Renewal Feasibility Study.
C. Coffee Creek Code Assessment	Staff shared they had initiated an assessment of the Coffee Creek Industrial Design Overlay District form-based code and sought input from Council on the direction of possible Development Code amendments to the form-based code standards and review process.
D. Proposed Updates to Solid Waste Franchise Agreement and related Administrative Rules	Staff informed Council of potential policy changes on proposed updates to the solid waste collection franchise agreement with Republic Services.
REGULAR MEETING	
<u>Mayor's Business</u>	
A. Upcoming Meetings	Upcoming meetings were announced by the Mayor as well as the regional meetings she attended on behalf of the City.

<p><u>Communications</u></p> <p>A. Mediterranean Oak Borer</p>	<p>Staff reported on a new pest called the Mediterranean Oak Borer that had been found in Wilsonville.</p>
<p><u>Consent Agenda</u></p> <p>A. <u>Resolution No. 3085</u> A Resolution Of The City Of Wilsonville Authorizing The City Manager To Enter Into An Intergovernmental Agreement With Metro For Receipt Of Local Share Funds.</p> <p>B. <u>Resolution No. 3086</u> A Resolution Of The City Of Wilsonville Authorizing The City Manager To Execute The Tri-County Metropolitan Transportation District Of Oregon (TriMet) Subrecipient Agreement.</p> <p>C. Minutes of the August 21, 2023 City Council Meeting.</p>	<p>The Consent Agenda was approved 5-0.</p>
<p><u>New Business</u></p> <p>A. None.</p>	
<p><u>Continuing Business</u></p> <p>A. None.</p>	
<p><u>Public Hearing</u></p> <p>A. <u>Ordinance No. 881</u> An Ordinance Of The City Of Wilsonville Adopting Wilsonville Code Sections 10.800 Through 10.870 Governing Parking In City-Owned Parking Lots.</p> <p>B. <u>Ordinance No. 882</u> An Ordinance Of The City Of Wilsonville Amending The Text Of The Development Code To Clarify Review Processes And Correct Inconsistencies.</p>	<p>After a public hearing was conducted, Ordinance No. 881 was approved on first reading by a vote of 5-0.</p> <p>After a public hearing was conducted, Ordinance No. 882 was approved on first reading by a vote of 5-0.</p>
<p><u>City Manager's Business</u></p>	<p>The Assistant City Manager announced the following upcoming events:</p> <ul style="list-style-type: none"> • Story Walk on October 13, 2023 • Emergency Preparedness Fair on October 28, 2023
<p><u>Legal Business</u></p>	<p>No report.</p>
<p>EXECUTIVE SESSION</p>	<p>Council met in Executive Session pursuant to ORS 192.660(2)(a) and ORS 192.660(2)(h).</p>
<p>ADJOURN</p>	<p>9:38 p.m.</p>

City Council Meeting Action Minutes
October 2, 2023

Item 8.

COUNCILORS PRESENT

Mayor Fitzgerald
Council President Akervall – Arrived 7:01 p.m.
Councilor Linville
Councilor Berry
Councilor Dunwell - Excused

Kimberly Veliz, City Recorder
Zoe Mombert, Assistant to the City Manager
Lyanna Hoang, Comm. & Marketing Coordinator
Matt Lorenzen, Economic Development Manager
Katherine Smith, Assistant Finance Director
Andrew Barrett, Capital Projects Eng. Manager
Zach Weigel, City Engineer
Keith Katko, Finance Director
Marissa Rauthause, Civil Engineer

STAFF PRESENT

Bryan Cosgrove, City Manager
Amanda Guile-Hinman, City Attorney

AGENDA ITEM	ACTIONS
WORK SESSION	START: 5:06 p.m.
A. Proposed Updates to Solid Waste Franchise Agreement and related Administrative Rules	Council heard the details of the continued progress toward renewing the waste and recycling hauler’s franchise agreement with Republic Services and administrative rules.
B. VHDZ/Town Center Urban Renewal Feasibility Study Follow Up Questions	Staff and Council resumed discussion from the prior Work Session to discuss components of the City's Vertical Housing Development Zone (VHDZ) program and the urban renewal plan for Town Center.
URBAN RENEWAL AGENCY	
<u>URA Consent Agenda</u> A. Minutes of the July 17, 2023 URA Meeting.	The URA Consent Agenda was approved 3-0.
<u>New Business</u> A. None.	
<u>URA Public Hearing</u> A. <u>URA Resolution No. 339</u> A Resolution Of The City Of Wilsonville Urban Renewal Agency Authorizing A Supplemental Budget Adjustment For Fiscal Year 2023-24.	After a public hearing was conducted, URA Resolution No. 339 was approved 3-0.
<u>New Business</u> A. None.	

Continuing Business

A. **Ordinance No. 881**
An Ordinance Of The City Of Wilsonville Adopting Wilsonville Code Sections 10.800 Through 10.870 Governing Parking In City-Owned Parking Lots.

B. **Ordinance No. 882**
An Ordinance Of The City Of Wilsonville Amending The Text Of The Development Code To Clarify Review Processes And Correct Inconsistencies.

Ordinance No. 881 was adopted on second reading by a vote of 4-0.

Ordinance No. 882 was adopted on second reading by a vote of 4-0.

Public Hearing

A. **Resolution No. 3084**
A Resolution Of The City Of Wilsonville Authorizing A Supplemental Budget Adjustment For Fiscal Year 2023-24.

After a public hearing was conducted, Resolution No. 3084 was approved 4-0.

City Manager’s Business

A. November 20, 2023 City Council Meeting

B. Opioid Settlement Funds

C. Mediterranean Oak Borer

Council tentatively agreed to cancel the November 20, 2023 City Council meeting.

Council granted permission for the City Manager to convene a group of staff, and other local agencies to determine how to best allocate opioid settlement funds.

Council heard details of ongoing work by staff and partner agencies to mitigate the Mediterranean Oak Borer, a destructive pest threatening the health of oak trees.

Legal Business

No report.

ADJOURN

7:57 p.m.

City Council Meeting Action Minutes
October 16, 2023

COUNCILORS PRESENT

Mayor Fitzgerald – Left 6:25 p.m. & Returned 7:02 p.m.
Council President Akervall – Arrived 7:01 p.m.
Councilor Linville
Councilor Berry
Councilor Dunwell

Kimberly Veliz, City Recorder
Jeanna Troha, Assistant City Manager
Stephanie Davidson, Assistant City Attorney
Amy Pepper, Engineering Manager
Zach Weigel, City Engineer
Delora Kerber, Public Works Director
Martin Montalvo, Public Works Ops. Manager
Mark Ottenad, Public/Government Affairs Director
Chris Neamtzu, Community Development Director
Zoe Mombert, Assistant to the City Manager

STAFF PRESENT

Bryan Cosgrove, City Manager
Amanda Guile-Hinman, City Attorney

AGENDA ITEM	ACTIONS
WORK SESSION	
START: 5:01 p.m.	
A. 2023 Transportation Performance Monitoring Report	Staff along with consultants summarized the 2023 transportation performance monitoring report, a process undertaken every two years to inform the City’s Transportation System Plan (TSP).
B. Community Service Block Master Plan Update	Staff and consultants briefed Council on the progress of the Community Service Block Master Plan, a project to identify optimal long-term use of the 5.3-acre parcel of City-owned property on Town Center Loop E.
C. Proposed Updates to Solid Waste Franchise Agreement and Related Administrative Rules	Staff sought the Council’s guidance to inform the framework of a new franchise agreement and administrative rules with Republic Services, the City’s waste and recycling hauler.
REGULAR MEETING	
<u>Mayor’s Business</u>	
A. Upcoming Meetings	Upcoming meetings were announced by the Mayor as well as the regional meetings she attended on behalf of the City.
B. Declaration of State of Emergency - Mediterranean Oak Borer (MOB)	Council made a motion to ratify the Declaration of State of Emergency for the Mediterranean Oak Borer (MOB) response, which concludes/expires 5:00 p.m. on Friday, December 29, 2023 Unless it is extended at that time. It was approved 5-0.

<u>Communications</u> A. None.	
<u>Consent Agenda</u> A. Resolution No. 3017 A Resolution Of The City Of Wilsonville Authorizing An Intergovernmental Agreement For The Frog Pond Primary Site Infrastructure Between The City Of Wilsonville And West Linn-Wilsonville School District. B. Resolution No. 3023 A Resolution Of The City Of Wilsonville Authorizing The City Manager To Enter Into The Third Amendment To Communications Site Lease Agreement With New Cingular Wireless PCS, LLC. C. Minutes of the October 2, 2023 City Council Meeting.	The Consent Agenda was approved 5-0.
<u>New Business</u> A. None.	
<u>Continuing Business</u> A. None.	
<u>Public Hearing</u> A. None.	
<u>City Manager's Business</u>	No report.
<u>Legal Business</u>	No report.
EXECUTIVE SESSION	Pursuant to ORS 192.660(2)(e) Real Property Transactions
ADJOURN	8:24 p.m.

City Council Meeting Action Minutes
November 6, 2023

COUNCILORS PRESENT

Mayor Fitzgerald
Council President Akervall – Arrived 7:00 p.m.
Councilor Linville
Councilor Berry
Councilor Dunwell – Arrived 5:07 p.m.

Erika Valentine, Arts & Culture Program Coordinator
Jeanna Troha, Assistant City Manager
Kerry Rappold, Natural Resources Manager
Kimberly Veliz, City Recorder
Kris Ammerman, Parks and Recreation Director
Mark Ottenad, Public/Government Affairs Director
Mike Nacrelli, Civil Engineer
Stephanie Davidson, Assistant City Attorney
Zach Weigel, City Engineer
Zack Morse, Parks Maintenance Specialist
Zoe Mombert, Assistant to the City Manager

STAFF PRESENT

Bryan Cosgrove, City Manager
Amanda Guile-Hinman, City Attorney
Dan Pauly, Planning Manager
Delora Kerber, Public Works Director
Dustin Schull, Parks Supervisor

AGENDA ITEM	ACTIONS
WORK SESSION	START: 5:06 p.m.
A. Wastewater Treatment Plant Master Plan Update	Staff shared analysis that informs an updated draft of the Wastewater Treatment Plant Master Plan.
B. Stormwater Master Plan Update – Executive Summary and Capital Improvement Project	Staff presented an executive summary of the draft Stormwater Master Plan, a 20-year plan detailing the City’s work plan and identifying capital needs to effectively maintain, restore and enhance local watersheds and to meet engineering, environmental and land use needs.
C. Frog Pond East and South Development Code	Staff sought the Council’s feedback to inform development code amendments drafted for the Frog Pond East and South Master Plan.
D. Boones Ferry Park Projects Update	Staff provided a combined presentation on Resolution Nos. 3088 and 3089, both of which provide upgrades to Boones Ferry Park.
REGULAR MEETING	
<u>Mayor’s Business</u>	
A. Upcoming Meetings	Upcoming meetings were announced by the Mayor as well as the regional meetings she attended on behalf of the City.

<p>B. Proclamation</p>	<p>The Mayor read a proclamation declaring November 2023 as National American Indian Heritage month.</p>
<p><u>Communications</u> A. None.</p>	
<p><u>Consent Agenda</u></p> <p>A. <u>Resolution No. 3088</u> A Resolution Of The City Of Wilsonville Approving A Construction Contract With Romtec, Inc. For The Boones Ferry Restroom Construction Project.</p> <p>B. <u>Resolution No. 3089</u> A Resolution Of The City Of Wilsonville Approving A Construction Contract With Buell Recreation LLC For The Boones Ferry Playground Project.</p> <p>C. <u>Resolution No. 3090</u> A Resolution Of The City Of Wilsonville Authorizing The City Manager To Execute A Master Services Agreement With OpenGov, Inc. For Asset Management Software Services.</p> <p>D. <u>Resolution No. 3092</u> A Resolution Of The City Of Wilsonville Authorizing The City Manager To Execute A Professional Services Agreement With Century West Engineering For Engineering Consulting Services For The 2024 Street Maintenance Project (Capital Improvement Project No. 4014, 4118, 4725).</p> <p>E. <u>Resolution No. 3093</u> A Resolution Of The City Of Wilsonville Accepting The Jurisdictional Surrender For A Portion Of SW Stafford Road And SW Frog Pond Lane By Clackamas County Pursuant To Oregon Revised Statute 373.270.</p> <p>F. Minutes of the October 16, 2023 City Council Meeting.</p>	<p>The Consent Agenda was adopted 5-0.</p>
<p><u>New Business</u></p> <p>A. <u>Resolution No. 3081</u> A Resolution Of The City Of Wilsonville Approving The City Of Wilsonville Public Art Policy And Guidelines.</p>	<p>Resolution No. 3081 was adopted 5-0.</p>

<p>B. <u>Resolution No. 3083</u> A Resolution Of The City Of Wilsonville Adopting The Arts, Culture, And Heritage Commission (ACHC) FY 2023/24 Five-Year Action Plan And Annual One-Year Implementation Plan.</p> <p>C. <u>Resolution No. 3091</u> A Resolution Of The City Of Wilsonville Adopting The Findings And Recommendations Of The “Solid Waste Collection Rate Report, October 2023” And Modifying The Current Republic Services Rate Schedule For Collection And Disposal Of Solid Waste, Recyclables, Organic Materials And Other Materials, Effective January 1, 2024.</p>	<p>Resolution No. 3083 was adopted 5-0.</p> <p>Resolution No. 3091 was tabled until the December 4, 2023 City Council meeting.</p>
<p><u>Continuing Business</u></p> <p>A. None.</p>	
<p><u>Public Hearing</u></p> <p>A. <u>Ordinance No. 883</u> An Ordinance Of The City Of Wilsonville Adopting A Franchise Agreement For Solid Waste Management And Collection Within The City And Repealing Ordinance No. 814.</p>	<p>After a public hearing was conducted, Ordinance No. 883 was adopted on first and second reading by a vote of 5-0.</p>
<p><u>City Manager’s Business</u></p>	<p>The City Manager shared staff would arrange a training for Council to prepare them for their trip to Kitakata, Japan.</p>
<p><u>Legal Business</u></p>	<p>The City Attorney, who is also a running coach at the Coffee Creek Correctional Facility, shared some feedback from adults in custody who participate in the running program.</p>
<p>ADJOURN</p>	<p>10:10 p.m.</p>

City Council Meeting Action Minutes
December 4, 2023

COUNCILORS PRESENT

Mayor Fitzgerald
Council President Akervall
Councilor Linville - Excused
Councilor Berry
Councilor Dunwell

Dwight Brashear, Transit Director
Kimberly Veliz, City Recorder
Jeanna Troha, Assistant City Manager
Kerry Rappold, Natural Resources Manager
Mark Ottenad, Public/Government Affairs Director
Marissa Rauthause, Civil Engineer
Matt Lorenzen, Economic Development Manager
Nancy Kraushaar, PE, Civil Engineer
Andy Stone, IT Director
Zach Weigel, City Engineer
Zoe Mombert, Assistant to the City Manager

STAFF PRESENT

Bryan Cosgrove, City Manager
Amanda Guile-Hinman, City Attorney
Andrew Barrett, Capital Projects Eng. Manager
Bill Evans, Communications & Marketing Manager
Chris Neamtzu, Community Development Director
Dan Pauly, Planning Manager

AGENDA ITEM	ACTIONS
WORK SESSION	START: 5:00 p.m.
A. Boeckman Road Corridor Project	Staff informed Council of the Boeckman Road Corridor Project, Resolution No. 3022, and URA Resolution No. 338. The resolutions authorize the City Manager to execute Guaranteed Maximum Price amendment no. 3 to the progressive design-build agreement for the Boeckman Road Corridor Project with Tapani Sundt A Joint Venture.
B. Town Center Urban Renewal Feasibility Study (Update)	Staff provided an update on the nearly complete Urban Renewal Feasibility Study for Town Center. The Council reviewed the list of projects that would – if funded through a future Urban Renewal Plan – create the infrastructure that would stimulate walkable, private development as envisioned by the community in the 2019 Town Center Plan.
C. Frog Pond East and South Development Code	Council’s input was sought on development standards to be established within the Frog Pond East and South Master Plan area to regulate the size and location of new buildings to provide more flexibility for developers to meet objectives set forth in the Frog Pond East and South Master Plan and other housing policies, including the Equitable Housing Strategic Plan.

REGULAR MEETING

Mayor’s Business

- A. Wilsonville Wildcats Week Proclamation

- B. Employment Contract Renewal for Municipal Court Judge Fred Weinhouse

- C. Upcoming Meetings

The Mayor read a proclamation declaring December 4 -8, 2023 as Wilsonville Wildcats Week and presented proclamations to coaches and members of the Wilsonville Wildcats Girls Varsity Soccer Team.

Council made a motion to approve the extension of Fred Weinhouse’s employment agreement as Municipal Court Judge from January 5, 2024 to January 5, 2026 as outlined in the employment agreement. Passed 4-0.

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

- A. **Resolution No. 3094**
A Resolution Of The City Of Wilsonville Authorizing The Sole Source Selection Of Friends Of Trees For FY 23-24 Through FY 25-26.

- B. **Resolution No. 3095**
A Resolution Of The City Of Wilsonville Adopting The Updated South Metro Area Regional Transit Public Transportation Agency Safety Plan.

- C. **Resolution No. 3098**
A Resolution Of The City Of Wilsonville Authorizing Acquisition Of Property And Property Interests Related To Construction Of The Priority 1B Water Distribution Improvements Project.

- D. **Resolution No. 3100**
A Resolution Of The City Of Wilsonville Authorizing The Sole Source Selection Of The Backyard Habitat Certification Program For FY 23-24 Through FY 25-26.

- E. **Resolution No. 3101**
A Resolution Of The City Of Wilsonville Acting In Its Capacity As The Local Contract Review Board Authorizing The City Manager To Execute A Contract

The Consent Agenda was adopted 4-0.

With Absco Solutions For Updating Card Access And Security Cameras At The Library.

F. **Resolution No. 3102**

A Resolution Of The City Of Wilsonville Acting In Its Capacity As The Local Contract Review Board Authorizing The City Manager To Execute A Contract With CompuNet, Inc. For Refresh Of The Virtual Computing Environment.

G. Minutes of the November 6, 2023 Council Meeting.

New Business

A. **Resolution No. 3022**

A Resolution Of The City Of Wilsonville Authorizing The City Manager To Execute Guaranteed Maximum Price (GMP) Amendment No. 3 To The Progressive Design-Build Agreement For The Boeckman Road Corridor Project With Tapani Sundt|A Joint Venture

Resolution No. 3022 was adopted 4-0.

Continuing Business

A. **Resolution No. 3091**

A Resolution Of The City Of Wilsonville Adopting The Findings And Recommendations Of The Solid Waste Collection Rate Report Date October 2023 And Modifying The Current Republic Services Rate Schedule For Collection And Disposal Of Solid Waste, Recyclables, Organic Materials And Other Materials, Effective February 1, 2024.

Council made a motion to table Resolution No. 3091 until the next City Council meeting, December 18, 2023. Approved 4-0.

Public Hearing

A. None.

City Manager’s Business

The City Manager reminded Council to respond to the email regarding training for the Council’s trip to Kitakata, Japan. Once, responses were received staff would create an itinerary for the training.

Legal Business

Council moved to approve the public contracting solicitation thresholds, stated in Senate Bill (SB) 1047 for the City of Wilsonville, beginning January 1, 2024. Passed 4-0.

URBAN RENEWAL AGENCY

URA Consent Agenda

The URA Consent Agenda was adopted 4-0.

<p>A. <u>URA Resolution No. 338</u> A Resolution Of The City Of Wilsonville Urban Renewal Agency Authorizing The City Manager To Execute Guaranteed Maximum Price (GMP) Amendment No. 3 To The Progressive Design-Build Agreement For The Boeckman Road Corridor Project With Tapani Sundt A Joint Venture.</p> <p>B. Minutes of the October 2, 2023 URA Meeting.</p>	
<p><u>New Business</u> A. None.</p>	
<p><u>Continuing Business</u> A. None.</p>	
<p><u>URA Public Hearing</u> A. None.</p>	
<p>ADJOURN</p>	<p>8:05 p.m.</p>

City Council Meeting Action Minutes
December 18, 2023

Item 8.

COUNCILORS PRESENT

Mayor Fitzgerald
Council President Akervall
Councilor Linville
Councilor Berry
Councilor Dunwell

Chris Neamtzu, Community Development Director
Dan Pauly, Planning Manager
Jeanna Troha, Assistant City Manager
Kimberly Rybold, Senior Planner
Kimberly Veliz, City Recorder
Mark Ottenad, Public/Government Affairs Director
Matt Lorenzen, Economic Development Manager
Scott Simonton, Fleet Services Manager
Stephanie Davidson, Assistant City Attorney
Zoe Mombert, Assistant to the City Manager

STAFF PRESENT

Amanda Guile-Hinman, City Attorney
Bryan Cosgrove, City Manager
Cindy Luxhoj, Associate Planner

AGENDA ITEM	ACTIONS
WORK SESSION	START: 5:00 p.m.
A. Town Center Urban Renewal Feasibility Study	Staff discussed preparing a resolution that, if adopted, would place an advisory vote on the May 2024 ballot that asks voters to consider whether the City should utilize Urban Renewal as a mechanism to fund infrastructure development to activate the Town Center Plan.
B. Frog Pond East and South Development Code	Staff sought guidance on the development of code amendments that would define development standards in Frog Pond East and South.
C. Coffee Creek Draft Assessment	Staff provided Council with an update on the status of the Coffee Creek Industrial Design Overlay District form-based code assessment, and sought Council input on possible modifications to the form-based code standards.
D. Transit-Oriented Development (TOD) Financing	Staff presented on Resolution No. 3096, which authorizes applying the Current Parks System Development Charge To The Multifamily Portion Of The Wilsonville Transit Center Transit-Oriented Development Project.

REGULAR MEETING

Mayor’s Business

A. Reappointments / Appointment

Arts, Culture, and Heritage Commission – Appointment

Appointment of Nadine Elbitar to the Arts, Culture, and Heritage Commission for a term beginning 1/1/2024 to 6/30/2024. Passed 5-0.

Budget Committee – Appointment

Appointment of Christopher Moore to the Budget Committee for a term beginning 1/1/2024 to 12/31/2024. Passed 5-0.

Budget Committee – Appointment

Appointment of Tabi Traughber and Tyler Beach to the Budget Committee for a term beginning 1/1/2024 to 12/31/2026. Passed 5-0.

DRB – Reappointment

Reappointment of John Andrews and Megan Chuinard to the Development Review Board for a term beginning 1/1/2024 to 12/31/2025. Passed 5-0.

DRB – Appointment

Appointment of Kamran Mesbah to the Development Review Board for a term beginning 1/1/2024 to 12/31/2025. Passed 5-0.

DEI Committee – Reappointment

Reappointment of David Siha, Tracy (Tre) Hester and Fay Gyapong-Porter to the Diversity, Equity and Inclusion Committee for a term beginning 1/1/2024 to 12/31/2026. Passed 5-0.

DEI Committee – Appointment

Appointment of Justin Brown to the Diversity, Equity and Inclusion Committee for a term beginning 1/1/2024 to 12/31/2024. Passed 5-0.

DEI Committee – Appointment

Appointment of Carolina Wilde to the Diversity, Equity and Inclusion Committee for a term beginning 1/1/2024 to 12/31/2026. Passed 5-0.

DEI Committee – Student Appointment

Reappointment of George Luo and Aasha Patel to the Diversity, Equity and Inclusion Committee for a term beginning 1/1/2024 to 12/31/2024. Passed 5-0.

Kitakata Sister City Advisory Board – Reappointment

Reappointment of John (Michael) Bohlen and Adrienne Scritsmier to the Kitakata Sister City Advisory Board for a term beginning 1/1/2024 to 12/31/2026. Passed 5-0.

Kitakata Sister City Advisory Board – Appointment

Appointment of Karen Kreitzer to the Kitakata Sister City Advisory Board for a term beginning 1/1/2024 to 12/31/2026. Passed 5-0.

Parks and Recreation Board – Appointment

Appointment of Bill Bagnall and Paul Diller to the Parks and Recreation Board for a term beginning 1/1/2024 to 12/31/2027. Passed 5-0.

Planning Commission – Reappointment

Reappointment of Jennifer Willard to the Planning Commission for a term beginning 1/1/2024 to 12/31/2027. Passed 5-0.

Planning Commission – Appointment

Appointment of Matt Constantine, Sam Scull and Yana Semenova to the Planning Commission for a term beginning 1/1/2024 to 12/31/2027. Passed 5-0.

Tourism Promotion Committee – Appointment

Appointment of Lynn Sanders to the Tourism Promotion Committee for a term beginning 1/1/2024 to 6/30/2026. Passed 5-0.

Upcoming meetings were announced by the Mayor as well as the regional meetings she attended on behalf of the City.

B. Upcoming Meetings

Consent Agenda

A. Resolution No. 3096

A Resolution Of The City Of Wilsonville Authorizing Applying The Current Parks System Development Charge To The Multifamily Portion Of The Wilsonville Transit Center Transit-Oriented Development Project.

B. Resolution No. 3097

A Resolution Of The City Of Wilsonville Authorizing The City Manager To Execute A Construction Contract With Tapani, Inc. For The Charbonneau Lift Station Rehabilitation Project (Capital Improvement Project #2106).

C. Resolution No. 3104

A Resolution Of The City Council Revising Section 4.E. Of The Diversity, Equity And Inclusion (DEI) Committee Charter.

D. Resolution No. 3105

A Resolution Of The City Of Wilsonville Authorizing The Purchase Of One Asphalt Patch Truck From Premier Truck Group Of Portland.

E. Minutes of the December 4, 2023 Council Meeting.

The Consent Agenda was approved 5-0.

New Business

A. None.

Continuing Business

A. Resolution No. 3091

A Resolution Of The City Of Wilsonville Adopting The Findings And Recommendations Of The Solid Waste Collection Rate Report Date October 2023 And Modifying The Current Republic Services Rate

Resolution No. 3091 was adopted by a vote of 4-1.

<p>Schedule For Collection And Disposal Of Solid Waste, Recyclables, Organic Materials And Other Materials, Effective February 1, 2024.</p>	
<p><u>Public Hearing</u></p> <p>A. <u>Ordinance No. 884</u> An Ordinance Of The City Of Wilsonville Annexing Approximately 2.02 Acres Of Property Located At The Northwest Corner Of SW Frog Pond Lane And SW Stafford Road For Development Of An 11-Lot Residential Subdivision</p> <p>B. <u>Ordinance No. 885</u> An Ordinance Of The City Of Wilsonville Approving A Zone Map Amendment From The Clackamas County Rural Residential Farm Forest 5-Acre (RRFF-5) Zone To The Residential Neighborhood (RN) Zone On Approximately 2.02 Acres Located At The Northwest Corner Of SW Frog Pond Lane And SW Stafford Road For Development Of An 11-Lot Residential Subdivision.</p>	<p>After a public hearing was conducted, Ordinance No. 884 was adopted on first reading by a vote of 5-0.</p> <p>After a public hearing was conducted, Ordinance No. 885 was adopted on first reading by a vote of 5-0.</p>
<p><u>City Manager’s Business</u></p>	<p>Councilors discussed the materials in the monthly City Manager reports.</p>
<p><u>Legal Business</u></p>	<p>No report.</p>
<p><u>Communications</u></p> <p>A. Polling on Tolling Request</p>	<p>West Linn Mayor Rory Bialostosky discussed collaboration among local jurisdictions to better understand resident attitudes toward tolling and requested Council contribute \$5,000 towards the administration of a statistically valid survey. Passed 5-0.</p>
<p>ADJOURN</p>	<p>9:00 p.m.</p>

City Council Meeting Action Minutes
January 4, 2024

COUNCILORS PRESENT

Mayor Fitzgerald – Present at Training Only
Council President Akervall
Councilor Linville
Councilor Berry
Councilor Dunwell

Brian Stevenson, Program Manager
Bryan Cosgrove, City Manager
Chris Neamtzu, Community Development Director
Georgia McAlister, Associate Planner
Jeanna Troha, Assistant City Manager
Kimberly Veliz, City Recorder
Kris Ammerman, Parks and Recreation Director
Mike Nacrelli, Civil Engineer
Zach Weigel, City Engineer
Zoe Mombert, Assistant to the City Manager

STAFF PRESENT

Amanda Guile-Hinman, City Attorney
Bill Evans, Communications & Marketing Manager

AGENDA ITEM	ACTIONS
TRAINING SESSION	START: 3:37 p.m.
A. Pursuant to ORS 192.630(4)(b)	
REGULAR MEETING	
<u>Mayor’s Business</u> A. Wilsonville Wildcats Week Proclamation	The Council President read a proclamation declaring January 1 -5 2024 as Wilsonville Wildcats Week. After a few words from the head coach and a couple of players, photos were taken of the Council and the Wilsonville Wildcats Varsity Football Team.
B. Upcoming Meetings	Upcoming meetings were announced by the Council President as well as the regional meetings she attended on behalf of the City.
<u>Communications</u> A. Certificate of Appreciation to Greg Caldwell, Honorary Counsel for Republic of Korea	A Certificate of Appreciation was presented to Greg Caldwell for his 10 years of service as Northern Oregon’s outgoing Honorary Consul for the Republic of Korea.
B. Mediterranean Oak Borer Update	Staff shared an update on the City’s work to mitigate the Mediterranean Oak Borer (MOB) pest.
<u>Consent Agenda</u> A. Resolution No. 3087 A Resolution to Allocate Community Cultural Events and Programs Grant Funds for Fiscal Year 2023/2024.	The Consent Agenda was approved 4-0.

B. Minutes of the December 18, 2023 Council Meeting.	
<u>New Business</u> A. None.	
<u>Continuing Business</u> A. Ordinance No. 884 An Ordinance Of The City Of Wilsonville Annexing Approximately 2.02 Acres Of Property Located At The Northwest Corner Of SW Frog Pond Lane And SW Stafford Road For Development Of An 11-Lot Residential Subdivision B. Ordinance No. 885 An Ordinance Of The City Of Wilsonville Approving A Zone Map Amendment From The Clackamas County Rural Residential Farm Forest 5-Acre (RRFF-5) Zone To The Residential Neighborhood (RN) Zone On Approximately 2.02 Acres Located At The Northwest Corner Of SW Frog Pond Lane And SW Stafford Road For Development Of An 11-Lot Residential Subdivision.	Ordinance No. 884 was adopted on second reading by a vote of 4-0. Ordinance No. 885 was adopted on second reading by a vote of 4-0.
<u>Public Hearing</u> A. Ordinance No. 888 An Ordinance Of The City Of Wilsonville To Adopt The 2023 Wastewater Treatment Plant Master Plan As A Sub-Element To The City Of Wilsonville Comprehensive Plan And The Wastewater Treatment Plant Capital Improvement Project List.	After a public hearing was conducted, Ordinance No. 888 was adopted on first reading by a vote of 4-0.
<u>City Manager's Business</u>	Mentioned staff was aware of the email Council had received from SSI Shredding Systems, Inc. regarding concerns with the Willamette Water Supply" project on 95 th . Council was reminded the City of Wilsonville Employee Winter Fest was scheduled for Friday, January 12, 2024.
<u>Legal Business</u>	No report.
ADJOURN	8:59 p.m.