



# DEVELOPMENT REVIEW BOARD PANEL A AGENDA

April 10, 2023 at 6:30 PM

Wilsonville City Hall & Remote Video Conferencing

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## PARTICIPANTS MAY ATTEND THE MEETING AT:

City Hall, 29799 SW Town Center Loop East, Wilsonville, Oregon

Zoom: <https://us02web.zoom.us/j/85843043229>

## TO PROVIDE PUBLIC TESTIMONY:

Individuals must submit a testimony card online:

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

and e-mail testimony regarding Resolution Nos. 413 and 415

to Cindy Luxhoj ACIP, Associate Planner at

[luxhoj@ci.wilsonville.or.us](mailto:luxhoj@ci.wilsonville.or.us)

by 2:00 PM on April 10, 2023.

## CALL TO ORDER

## CHAIR'S REMARKS

## ROLL CALL

Yara Alatawy     Rob Candrian  
Jordan Herron     Clark Hildum  
Jean Svadlenka

## CITIZEN INPUT

## CONSENT AGENDA

1. [Approval of minutes of the March 13, 2023 DRB Panel A meeting](#)

## PUBLIC HEARINGS

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



Case Files:

DB22-0011 Precision Countertops

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

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

Case Files:

DB22-0012 Frog Pond Primary School

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

**BOARD MEMBER COMMUNICATIONS**

4. Results of the March 27, 2023 DRB Panel B meeting
5. 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  
APRIL 10, 2023  
6:30 PM

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Item 1.

Consent Agenda:

1. Approval of minutes of March 13, 2023 DRB Panel A meeting



**DEVELOPMENT REVIEW BOARD PANEL A  
MEETING MINUTES**

**March 13, 2023 at 6:30 PM**

**Wilsonville City Hall & Remote Video Conferencing**

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**CALL TO ORDER**

A regular meeting of the Development Review Board Panel A was held at City Hall beginning at 6:30 p.m. on Monday, March 13, 2023. Chair Jean Svadlenka called the meeting to order at 6:25 p.m.

**CHAIR'S REMARKS** — None.

**ROLL CALL**

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

Staff present: Daniel Pauly, Kimberly Rybold, Amy Pepper, and Shelley White

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

**CONSENT AGENDA**

1. Approval of Minutes of the February 13, 2023 DRB Panel A meeting

**Rob Candrian moved to approve the February 13, 2023 DRB Panel A meeting minutes as presented. Clark Hildum seconded the motion, which passed unanimously.**

**PUBLIC HEARINGS** — None.

**BOARD MEMBER COMMUNICATIONS**

2. Results of the February 27, 2023 DRB Panel B meeting
3. Recent City Council Action Minutes

There were no comments.

**STAFF COMMUNICATIONS**

**Daniel Pauly, Planning Manager**, announced the next meeting's agenda would include a couple substantial items.

The meeting was adjourned prior to the DRB Member Training.

4. DRB Member Training: Transportation

**ADJOURN**

The meeting adjourned at 6:30 p.m. and the Board returned to Staff Communications DRB Member Training: Transportation.

Respectfully submitted,

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

Public Hearing:

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

Case Files:

DB22-0011 Precision Countertops

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

**DEVELOPMENT REVIEW BOARD  
RESOLUTION NO. 413**

**A RESOLUTION ADOPTING FINDINGS AND CONDITIONS OF APPROVAL, APPROVING A STAGE 1 PRELIMINARY PLAN, STAGE 2 FINAL PLAN, SITE DESIGN REVIEW, WAIVER, CLASS 3 SIGN PERMIT, AND TYPE C TREE REMOVAL PLAN FOR DEVELOPMENT OF A 66,000 SQUARE FOOT CORPORATE HEADQUARTERS AND FABRICATION FACILITY ON PROPERTY LOCATED AT 25540 SW GARDEN ACRES ROAD.**

WHEREAS, an application, together with planning exhibits for the above-captioned development, has been submitted by authorized representative MDG Architecture/Interiors on behalf of the owner/applicant, PCT NW Properties OR, LLC, dba Precision Countertops, Inc., in accordance with the procedures set forth in Section 4.008 of the Wilsonville Code, and

WHEREAS, the subject site is located at 25540 SW Garden Acres Road on Tax Lot 500, Section 2C, Township 3 South, Range 1 West, Willamette Meridian, City of Wilsonville, Washington County, Oregon, and

WHEREAS, the Planning Staff has prepared the staff report on the above-captioned subject dated April 3, 2023, and

WHEREAS, said planning exhibits and staff report were duly considered by the Development Review Board Panel A at a scheduled meeting conducted on April 10, 2023, at which time exhibits, together with findings and public testimony were entered into the public record, and

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

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

NOW, THEREFORE, BE IT RESOLVED that the Development Review Board of the City of Wilsonville does hereby adopt the staff report dated April 3, 2023, attached hereto as Exhibit A1, with findings and recommendations contained therein, and authorizes the Planning Director to issue permits consistent with said recommendations for:

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

ADOPTED by the Development Review Board of the City of Wilsonville at a regular meeting thereof this 10<sup>th</sup> day of April, 2023, and filed with the Planning Administrative Assistant on \_\_\_\_\_. This resolution is final on the 15<sup>th</sup> calendar day after the postmarked date of the written notice of decision per *WC Sec 4.022(.09)* unless appealed per *WC Sec 4.022(.02)* or called up for review by the Council in accordance with *WC Sec 4.022(.03)*.

\_\_\_\_\_  
Jean Svadlenka, Chair - Panel A  
Wilsonville Development Review Board

Attest:

\_\_\_\_\_  
Shelley White, Planning Administrative Assistant



Exhibit A1  
Staff Report  
Wilsonville Planning Division  
Precision Countertops  
Development Review Board Panel 'A'  
Quasi-Judicial Public Hearing

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<b>Hearing Date:</b>	April 10, 2023
<b>Date of Report:</b>	April 3, 2023
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<b>Application No.:</b>	DB22-0011 Precision Countertops
<b>Request/Summary:</b>	The requests before the Development Review Board include a Stage 1 Preliminary Plan, Stage 2 Final Plan, Site Design Review, Waiver, Class 3 Sign Permit, and Type C Tree Removal Plan.
<b>Location:</b>	25540 SW Garden Acres Road. The property is specifically known as Tax Lot 500, Section 2C, Township 3 South, Range 1 West, Willamette Meridian, Washington County, Oregon
<b>Owner/Applicant:</b>	PCT NW Properties OR, LLC, dba Precision Countertops, Inc. (Contact: Robert Hausserman)
<b>Authorized Representative:</b>	MDG Architecture/Interiors (Contact: Simone O'Halloran)
<b>Comprehensive Plan Designation:</b>	Industrial
<b>Zone Map Classification (Current):</b>	Future Development 20 Acre (FD-20; Washington County)
<b>Zone Map Classification (Proposed):</b>	Planned Development Industrial-Regionally Significant Industrial Area (PDI-RSIA)
<b>Staff Reviewers:</b>	Cindy Luxhoj AICP, Associate Planner Amy Pepper, Development Engineering Manager Kerry Rappold, Natural Resources Program Manager

Staff Recommendation: **Approve with conditions** the requested Stage 1 Master Plan, Stage 2 Final Plan, Site Design Review, Waiver, Class 3 Sign Permit, and Type C Tree Removal Plan. Approval of these applications is contingent upon City Council approval of the Annexation and Zone Map Amendment requests currently under review.

**Applicable Review Criteria:**

<b><u>Development Code:</u></b>	
Section 4.008	Application Procedures-In General
Section 4.009	Who May Initiate Application
Section 4.010	How to Apply
Section 4.011	How Applications are Processed
Section 4.014	Burden of Proof
Section 4.031	Authority of the Development Review Board
Subsection 4.035 (.04)	Site Development Permit Application
Subsection 4.035 (.05)	Complete Submittal Requirement
Section 4.110	Zones
Section 4.118	Standards Applying to Planned Development Zones
Section 4.117 and 4.135.5	Planned Development Industrial - RSIA Zone and Industrial Standards
Section 4.134	Coffee Creek Industrial Design Overlay District
Section 4.140	Planned Development Regulations
Section 4.154	On-site Pedestrian Access and Circulation
Section 4.155	Parking, Loading, and Bicycle Parking
Section 4.167	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
Sections 4.199.20 through 4.199.60	Outdoor Lighting
Sections 4.300 through 4.320	Underground Utilities
Sections 4.400 through 4.440 as applicable	Site Design Review
Sections 4.600-4.640.20	Tree Preservation and Protection
<b><u>Other Planning Documents:</u></b>	
Wilsonville Comprehensive Plan	
Coffee Creek Master Plan	
Coffee Creek Industrial Design Overlay District Pattern Book	



### Vicinity Map



### Background:

The subject area has long been rural/semi-rural adjacent to the growing City of Wilsonville. Metro added the +/-216 gross acre area now known as the Coffee Creek Industrial Area to the Urban Growth Boundary in 2002 to accommodate future industrial growth. To guide development of the area, the City of Wilsonville adopted the Coffee Creek Industrial Master Plan in 2007. In 2018, the City adopted the Coffee Creek Industrial Area Form-based Code and accompanying Pattern Book to establish clear and objective regulations and guidelines for the street design and connectivity, site design, circulation, building form and architecture, and landscaping for future development in Coffee Creek. As part of this adoption, the Development Code was amended to enable administrative review of applications meeting all of the Form-based Code standards. Projects requesting one or more waivers are reviewed by the Development Review Board. The City also modified procedures governing City Council review of annexations and Zone Map amendments in Coffee Creek, allowing for City Council review of these requests without prior review or recommendation by the Development Review Board. This modification allows for the concurrent processing of the annexation and Zone Map amendment requests with the other related development permit applications.

The applicant, PCT NW Properties OR, LLC, dba Precision Countertops, Inc., proposes to construct a 65,800 square foot headquarters and countertop fabrication facility with a showroom, office space, storage, and fabrication spaces. The proposed development will occupy approximately 4.73 acres of the overall 9.33-acre site (after 0.30 acre right-of-way dedication for SW Garden Acres Road), leaving the eastern portion of the site undeveloped at this time with the

possibility of future expansion. Operations will primarily include receiving, unloading, storing, cutting, and delivering kitchen countertops. The proposed development is the fourth to be reviewed under the Coffee Creek standards.

The Development Review Board will review these land use applications since the applicant is requesting a waiver to Form-based Code standards. City Council held public hearings for the annexation (ANNX22-0004) and Zone Map amendment (ZONE22-0005) requests on March 20, 2023, adopting ordinances approving these requests on first reading. Second reading of these ordinances will occur on April 3, 2023. The annexation and Zone Map amendment ordinances will expire 120 days from City Council adoption if the Stage 2 Final Plan application is not approved by the Development Review Board.

### **Summary:**

#### Stage 1 Preliminary Plan

The Stage 1 Preliminary Plan proposes a corporate headquarters/fabrication facility for Precision Countertops, Inc. The overall development and layout are consistent with the Coffee Creek Master Plan, Industrial Design Overlay District and Pattern Book.

#### Stage 2 Final Plan

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

#### Site Design Review

The proposed building is consistent with the building design standards in the Coffee Creek Industrial Design Overlay District, with an exception as noted in the waiver request. The applicant proposes a corporate headquarters/fabrication facility that contains a showroom and office space on the front façade of the building facing SW Garden Acres Road. The project will provide landscape plantings to create a natural character along the SW Garden Acres Road, including an industrial wayside in the west central part of the site consistent with the Coffee Creek Industrial Design Overlay District requirements.

Waivers

As shown in the table below, the applicant requests a waiver from Section 4.134 (.11) Development Standards Table CC-3 Site Design.

Waiver Request	
Waiver 1: Table CC-3 1. Parcel Access/Parcel Driveway Width/Supporting Streets	
<b>Standard:</b> 24 feet maximum, or complies with Supporting Street Standards; allowed adjustment: 10%	<b>Request:</b> The applicant proposes to increase the width of the east driveway to 40 feet to accommodate truck turning movements into the site from the Supporting Street, exceeding the maximum allowed width.

Class 3 Sign Permit

The subject property has frontage on SW Garden Acres Road (to west) and a public building entrance and parking area on the west side of the building. One (1) building sign is proposed on the west sign-eligible elevation of the building. No ground-mounted sign is proposed on the site.

Type C Tree Removal Plan

The subject property is generally flat, with trees located on the northwest part of the site where a house and outbuildings were located and in the north central and southeast, with numerous mature trees on the south property boundary both on and off site. A discussion of proposed tree removal is included in the Discussion Points – Verifying Compliance with the Standards section, below.

Public Comments:

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

Discussion Points – Verifying Compliance with Standards:

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

Coffee Creek Land Use Review Process

Development Code Section 4.134 (Coffee Creek Industrial Design Overlay District) was written to contain clear and objective standards intended to result in automatic project approval if all criteria are met. The standards were written to allow for limited adjustments to some of the

building and site design standards. Projects meeting these standards, including any limited adjustments, are reviewed and approved by the Planning Director under the Class 2 Administrative Review Process (Clear and Objective Track). The Development Code acknowledges there may be instances where proposed development is generally consistent with the goals of the Coffee Creek Industrial Design Overlay District, but flexibility may be desired by the applicant for one or more of the clear and objective standards. In this instance, applicants may elect to request waivers to these standards, which are then reviewed by the Development Review Board (Waiver Track). When choosing the Waiver Track the applicant must demonstrate that the waiver request is consistent with the intent of the Coffee Creek Industrial Design Pattern Book and the guidelines contained therein. As this project meets all other standards intended to be clear and objective, the primary focus of the Development Review Board’s review should be the waiver requested by the applicant.

Traffic

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

- SW Garden Acres Road/SW Ridder Road/SW Clutter Street
- SW Ridder Road/SW 95<sup>th</sup> Avenue

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

**TABLE 3: EXISTING 2021 STUDY INTERSECTION OPERATIONS**

INTERSECTION	OPERATING STANDARD	PM PEAK HOUR		
		V/C	DELAY	LOS
<b>UNSIGNALIZED</b>				
SW GARDEN ACRES ROAD/SW RIDDER ROAD/SW CLUTTER STREET*	LOS D	0.29	9.8	A/A
<b>SIGNALIZED</b>				
SW RIDDER ROAD/SW 95TH AVENUE	LOS D	0.69	21.0	C
<b>*TWO-WAY STOP INTERSECTIONS:</b> Delay = Average Stopped Delay per Vehicle (sec) at Worst Movement LOS = Level of Service of Major Street/Minor Street v/c = Volume-to-Capacity Ratio of Worst Movement		<b>SIGNALIZED INTERSECTION:</b> Delay = Average Intersection Delay (secs) v/c = Total Volume-to-Capacity Ratio LOS = Total Level of Service		

**TABLE 5: FUTURE INTERSECTION OPERATIONS**

INTERSECTION	OPERATING STANDARD	EXISTING + PROJECT PM			EXISTING + STAGE II PM			EXISTING + STAGE II + PROJECT PM		
		V/C	DELAY	LOS	V/C	DELAY	LOS	V/C	DELAY	LOS
<b>UNSIGNALIZED</b>										
SW GARDEN ACRES RD/SW RIDDER RD/SW CLUTTER ST*	LOS D	0.31	10.3	A/B	0.29	9.8	A/A	0.31	10.3	A/B
<b>SIGNALIZED</b>										
SW RIDDER ROAD/SW 95TH AVENUE	LOS D	0.72	21.2	C	0.72	22.0	C	0.74	22.2	C

**\*TWO-WAY STOP INTERSECTIONS:**

Delay = Average Stopped Delay per Vehicle (sec) at Worst Movement  
 LOS = Level of Service of Major Street/Minor Street  
 v/c = Volume-to-Capacity Ratio of Worst Movement

**SIGNALIZED INTERSECTION:**

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

The project will add an additional 43 PM peak hour trips (13 in, 30 out) with a total of 294 daily trips. Of the additional trips, 19 new PM peak hour trips are estimated to pass through the I-5/Elligsen Road interchange area and 2 PM peak hour trips through the I-5/Wilsonville Road interchange area.

**TABLE 4: VEHICLE TRIP GENERATION**

LAND USE	LAND USE CODE	SIZE (KSF <sup>A</sup> )	PM PEAK HOUR			DAILY TRIPS
			ENTER TRIPS	EXIT TRIPS	TOTAL TRIPS	
MANUFACTURING <sup>B</sup>	140	18.0	5	9	14	86
OFFICE	710	7.8	4	16	20	126
FURNITURE STORE <sup>B</sup>	890	3.0	1	1	2	19
WAREHOUSE/STORAGE <sup>B</sup>	150	37.0	3	4	7	63
<b>TOTAL</b>		<b>65.8</b>	<b>13</b>	<b>30</b>	<b>43</b>	<b>294</b>

<sup>A</sup> KSF = 1,000 square feet

<sup>B</sup> Number of trips is based on the average rate.

### Industrial Performance Standards

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

### Vehicular and Bicycle Parking

The Precision Countertops project requires a minimum of 62 vehicle parking spaces and, as it contains a planned manufacturing component, no maximum limit exists for the number of spaces. The applicant proposes 71 stalls, 15 in the west parking area at the front of the building and 56 in the east parking area for employees, the exceeding the minimum amount required.

Required bicycle parking is calculated as the sum of the requirements for the individual primary uses. The applicant proposes 13 bicycle parking spaces, six (6) at the front of the building and seven (7) long-term spaces inside the warehouse portion of the building, which is three (3) fewer than the minimum required for the project. A condition of approval has been included to ensure 16 spaces are provided consistent with the standard.

### Tree Removal and Replacement

Of 22 inventoried on-site trees, four (4) are stumps, two (2) are dead, nine (9) in the west part of the site are proposed for removal, and seven (7) will be retained on the east side of the site where development is expected to occur in the future. Of an additional 57 inventoried trees along the south property boundary, most are off-site, but some have not been determined to be on-site or off-site. All 57 trees are proposed to be retained and protected during construction (see Exhibit B6). The Tree Removal Plan in the applicant's plan set (Sheet L1.1 in Exhibit B2 and Exhibit B6) includes tree protection fencing around the root protection zone of the retained trees in the development area (west half of the site) for the current application to protect them during construction.

### 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.

#### Waiver to Coffee Creek Industrial Design Overlay District Standards

The applicant requests to waive the driveway width standards from the Coffee Creek Design Overlay District for the east site access from the Supporting Street. This driveway is proposed to be 40 feet wide to accommodate truck turning movements into the site from the Supporting Street. This requires a waiver from Subsection 4.134 (.11) Table CC-3 1. Parcel Access/Parcel Driveway Width/Supporting Streets, which allows a driveway width of 24 feet maximum or compliance with the Supporting Street standards. This is the only waiver requested by the applicant to the Coffee Creek Design Overlay District standards. The waiver request is outlined in the Summary section, above, and discussed in detail under Request D, later in this staff report.



## Conclusion and Conditions of Approval:

Staff has reviewed the applicant's analysis of compliance with the applicable criteria. The Staff Report adopts the applicant's responses as Findings of Fact except as noted in the Findings. Based on the Findings of Fact and information included in this Staff Report, and information received from a duly advertised public hearing, staff recommends that the Development Review Board approve, with the conditions below, the proposed Stage 1 Preliminary Plan, Stage 2 Final Plan, Site Design Review, Waiver, Class 3 Sign Permit, and Type C Tree Plan (DB22-0011).

### Planning Division Conditions:

#### Request A: Stage 1 Preliminary Plan (STG122-0006)

**PDA 1. General:** Minor changes in an approved preliminary development plan may be approved by the Planning Director through the Class 1 Administrative Review Process if such changes are consistent with the purposes and general character of the development plan and other changes as authorized by the Development Code to be reviewed through a Class 2 Administrative Review Process. All other modifications, including extension or revision of the staged development schedule, shall be processed in the same manner as the original application and shall be subject to the same procedural requirements.

#### Request B: Stage 2 Final Plan (STG222-0007)

**PDB 1. General:** The approved final plan and staged development schedule shall control the issuance of all building permits and shall restrict the nature, location and design of all uses. Minor changes in an approved final development plan may be approved by the Planning Director through the Class 1 Administrative Review Process if such changes are consistent with the purposes and general character of the development plan and other changes as authorized by the Development Code to be reviewed through a Class 2 Administrative Review Process. All other modifications, including extension or revision of the staged development schedule, shall be processed in the same manner as the original application and shall be subject to the same procedural requirements.

**PDB 2. Prior to Final Occupancy:** All exterior, roof and ground mounted, mechanical and utility equipment shall be screened from ground level off-site view from adjacent streets or properties. See Finding B40.

**PDB 3. Prior to Non-Grading Building Permit Issuance:** The applicant shall provide an additional three (3) bicycle parking spaces, one (1) of which shall be long-term, in addition to the 13 spaces shown on the site plans, to comply with the required 16 spaces based on proposed mix of uses within the building. The applicant shall provide details of the long-term (interior) bicycle racks and demonstrate how the racks will meet dimensional, spacing, and anchoring standards. See Findings B81 through B90.

**PDB 4. Prior to Final Occupancy:** All travel lanes shall be constructed to be capable of carrying a twenty-three (23) ton load. See Finding B113.

## Request C: Site Design Review (SDR22-0007)

PDC 1.	<b>Ongoing:</b> Construction, site development, and landscaping shall be carried out in substantial accord with the DRB-approved plans, drawings, sketches, and other documents. Minor revisions may be approved by the Planning Director through administrative review pursuant to Section 4.030.
PDC 2.	<b>Prior to Temporary Occupancy:</b> All landscaping required and approved by the DRB shall be installed prior to occupancy of the proposed development unless security equal to one hundred and ten percent (110%) of the cost of the landscaping as determined by the Planning Director is filed with the City assuring such installation within six (6) months of occupancy. "Security" is cash, certified check, time certificates of deposit, assignment of a savings account or such other assurance of completion as shall meet with the approval of the City Attorney. In such cases the developer shall also provide written authorization, to the satisfaction of the City Attorney, for the City or its designees to enter the property and complete the landscaping as approved. If the installation of the landscaping is not completed within the six-month period, or within an extension of time authorized by the DRB, the security may be used by the City to complete the installation. Upon completion of the installation, any portion of the remaining security deposited with the City will be returned to the applicant. See Finding C27.
PDC 3.	<b>Ongoing:</b> The approved landscape plan is binding upon the applicant/owner. Substitution of plant materials, irrigation systems, or other aspects of an approved landscape plan shall not be made without official action of the Planning Director or DRB, pursuant to the applicable sections of Wilsonville's Development Code. See Findings C28 and C30.
PDC 4.	<b>Ongoing:</b> All landscaping shall be continually maintained, including necessary watering, weeding, pruning, and replacing, in a substantially similar manner as originally approved by the DRB, unless altered as allowed by Wilsonville's Development Code. See Finding C29.
PDC 5.	<b>Prior to Temporary Occupancy:</b> The following requirements for planting of shrubs and ground cover shall be met: <ul style="list-style-type: none"> <li>• Non-horticultural plastic sheeting or other impermeable surface shall not be placed under landscaping mulch.</li> <li>• Native topsoil shall be preserved and reused to the extent feasible.</li> <li>• 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.</li> <li>• All shrubs shall be well branched and typical of their type as described in current AAN Standards and shall be equal to or better than 2-gallon containers and 10- to 12-inch spread.</li> <li>• Shrubs shall reach their designed size for screening within 3 years of planting.</li> <li>• 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</li> </ul>



	<p>minimum, 4-inch pot spaced 2 feet on center minimum, 2-1/4-inch pots spaced at 18 inches on center minimum.</p> <ul style="list-style-type: none"> <li>• No bare root planting shall be permitted.</li> <li>• Ground cover shall be sufficient to cover at least 80% of the bare soil in required landscape areas within 3 years of planting.</li> <li>• Appropriate plant materials shall be installed beneath the canopies of trees and large shrubs to avoid the appearance of bare ground in those locations.</li> <li>• Compost-amended topsoil shall be integrated in all areas to be landscaped, including lawns. See Finding C36.</li> </ul>
<b>PDC 6.</b>	<b><u>Prior to Temporary Occupancy:</u></b> All trees shall be balled and burlapped, and conform in grade to “American Standards for Nursery Stock” current edition. Tree size shall be a minimum of two (2)-inch caliper. See Finding C37.
<b>PDC 7.</b>	<b><u>Prior to Temporary Occupancy:</u></b> Plant materials shall be installed and irrigated to current industry standards and be properly staked to ensure survival. Plants that die shall be replaced in kind, within one growing season, unless appropriate substitute species are approved by the City. See Finding C42.
<b>PDC 8.</b>	<b><u>Prior to Non-Grading Building Permit Issuance:</u></b> Final review of the proposed building lighting’s conformance with the Outdoor Lighting Ordinance will be determined at the time of Building Permit issuance. See Findings C45 through C53.

Request D: Waiver (WAIV22-0003)

No conditions for this request

Request E: Class 3 Sign Review (SIGN22-0011)

<b>PDE 1.</b>	<b><u>Ongoing:</u></b> The approved sign shall be installed in a manner substantially similar to the plans approved by the DRB and stamped approved by the Planning Division.
<b>PDE 2.</b>	<b><u>Prior to Sign Installation/Ongoing:</u></b> The applicant/owner of the property shall obtain all necessary building and electrical permits for the approved sign, prior to installation, and shall ensure that the sign is maintained in a commonly-accepted, professional manner.
<b>PDE 3.</b>	<b><u>Prior to Sign Installation/Ongoing:</u></b> The applicant/owner of the property shall apply for a Class 1 Sign Permit to determine compliance of the proposed wall sign with the standard for placement within a definable sign band, fascia, or architectural feature that allows a definable space between the sign and the top and bottom of the sign band, fascia, or architectural feature; and with the standard for allowed area, based on length of the west building façade, use of the individual elements measurement method, and Site Design Review standards. See Findings E8, E9 and E12.

## Request F: Type C Tree Removal Plan (TPLN22-0006)

PDF 1.	<b>General:</b> This approval for removal applies only to the nine (9) on-site trees identified in the applicant's submitted materials. All other trees on the property and off-site along the south property boundary shall be maintained unless removal is approved through separate application.
PDF 2.	<b>Prior to Grading Permit Issuance:</b> The applicant shall submit an application for a Type 'C' Tree Removal Permit, together with the applicable fee. In addition to the application form and fee, the applicant shall provide the City's Planning Division an accounting of trees to be removed within the project site, corresponding to the approval of the DRB. The applicant shall not remove any trees from the project site until the tree removal permit, including the final tree removal plan, have been approved by Planning Division staff.
PDF 3.	<b>Prior to Temporary Occupancy/Ongoing:</b> The permit grantee or the grantee's successors-in-interest shall cause the replacement trees to be staked, fertilized and mulched, and shall guarantee the trees for two (2) years after the planting date. A "guaranteed" tree that dies or becomes diseased during the two (2) years after planting shall be replaced. See Findings F10 through F12.
PDF 4.	<b>Prior to Commencing Site Grading:</b> Prior to site grading or other site work that could damage trees, the applicant/owner shall install 6-foot-tall chain-link fencing around the drip line of preserved trees. Removal of the fencing around the identified trees shall only occur if it is determined the trees are not feasible to retain. The fencing shall comply with Wilsonville Public Works Standards Detail Drawing RD-1230. Fencing shall remain until authorized in writing to be removed by Planning Division. See Finding F13.

*The following Conditions of Approval are provided by the Engineering, Natural Resources, or Building Divisions of the City's Community Development Department or Tualatin Valley Fire and Rescue, all of which have authority over development approval. A number of these Conditions of Approval are not related to land use regulations under the authority of the Development Review Board or Planning Director. Only those Conditions of Approval related to criteria in Chapter 4 of Wilsonville Code and the Comprehensive Plan, including but not limited to those related to traffic level of service, site vision clearance, recording of plats, performance standards, and concurrency, are subject to the Land Use review and appeal process defined in Wilsonville Code and Oregon Revised Statutes and Administrative Rules. Other Conditions of Approval are based on City Code chapters other than Chapter 4, state law, federal law, or other agency rules and regulations. Questions or requests about the applicability, appeal, exemption or non-compliance related to these other Conditions of Approval should be directed to the City Department, Division, or non-City agency with authority over the relevant portion of the development approval.*

### Engineering Division Conditions:

PFA 1.	<b><u>Prior to Issuance of Public Works Permit:</u></b> Public Works Plans and Public Improvements shall conform to the “Public Works Plan Submittal Requirements and Other Engineering Requirements” in Exhibit C1.
PFA 2.	<b><u>Prior to Issuance of Public Works Permit:</u></b> Submit site plans to Engineering showing street improvements including the driveway approach along SW Garden Acres Road, public water main and hydrants, and stormwater facilities. Improvements shall be constructed in accordance with the Public Works Standards.
PFA 3.	<b><u>With the Public Works Permit:</u></b> The construction drawings shall show all necessary temporary water line looping to avoid long dead-end water lines.
PFA 4.	<b><u>Prior to the Issuance of Public Works Permit:</u></b> A final stormwater report shall be submitted for review and approval. The stormwater report shall include information and calculations to demonstrate how the proposed development meets the treatment and flow control requirements.
PFA 5.	<b><u>Prior to Issuance of any City Permits:</u></b> Applicant shall obtain an NPDES 1200C permit from the Oregon Department of Environmental Quality and a Local Erosion Control Permit from the City of Wilsonville. All erosion control measures shall be in place prior to starting any construction work, including any demolition work. Permits shall remain active until all construction work is complete and the site has been stabilized.
PFA 6.	<b><u>With the Building Permit:</u></b> The construction drawings shall show the location of any existing septic system(s). <b><u>Prior to Final Building Certificate of Occupancy:</u></b> Submit documentation that any existing on-site septic system(s) were properly decommissioned per the requirements of OAR 340-071-0185.
PFA 7.	<b><u>With the Building Permit:</u></b> The construction drawings shall show the location of the existing well(s). <b><u>Prior to Final Building Certificate of Occupancy:</u></b> Submit documentation that the existing well serving this property was properly abandoned in accordance with OAR 690-240 and the Water Resources Department requirements.
PFA 8.	<b><u>Prior to Final Building Certificate of Occupancy:</u></b> The applicant shall record a public access and utility easement agreement over the Supporting Street.
PFA 9.	<b><u>Prior to Final Building Certificate of Occupancy:</u></b> The applicant shall dedicate all necessary 15-foot water line easements. All fire hydrants and water lines serving those fire hydrants shall be publicly owned. Any portion of that system that is located outside of the right-of-way shall be located in a 15-foot easement.
PFA 10.	<b><u>Prior to Issuance of Any Occupancy Permits:</u></b> All public infrastructure improvements including but not limited to street, stormwater drainage, water quality and flow control, sanitary sewer, and water facilities shall be substantially complete with approval from the Community Development Director pursuant to Section 4.220 of the Development Code.
PFA 11.	<b><u>Prior to Issuance of Final Building Certificate of Occupancy:</u></b> The applicant shall provide a site distance certification by an Oregon Registered Professional Engineer for all driveway access per the Traffic Impact Study.

**PFA 12. Prior to Issuance of Final Building Certificate of Occupancy:** A 12-inch public water main extension along the Supporting Street shall be constructed and completed. Oversized water mains larger than 8 inches are eligible for System Development Charge (SDC) Credits. When eligible, SDC credits will be issued in accordance with City Code Section 11.110.

**PFA 13. Prior to Any Paving:** Onsite stormwater facilities must be constructed and vegetated facilities planted. **Prior Issuance of Final Building Certificate of Occupancy:** The applicant must execute and record with the County a Stormwater Maintenance and Access Easement Agreement with the City.

## Master Exhibit List:

Entry of the following exhibits into the public record by the DRB confirms its consideration of the application as submitted. The exhibit list below includes exhibits for Planning Case File DB22-0011 and reflects the electronic record posted on the City's website and retained as part of the City's permanent electronic record. Any inconsistencies between printed or other electronic versions of the same Exhibits are inadvertent and the version on the City's website and retained as part of the City's permanent electronic record shall be controlling for all purposes.

### Planning Staff Materials

- A1. Staff report and findings (this document)
- A2. Staff's Presentation Slides for Public Hearing (to be presented at Public Hearing)
- A3. Staff Memorandum to Development Review Board Dated March 27, 2023

### Materials from Applicant

- B1. **Applicant's Narrative and Materials** – *Available Under Separate Cover*
  - Land Use Application Form
  - Land Use Narrative
  - Development Schedule
  - Stage 1 Site Plan
  - Materials Board
  - Drainage Analysis and Geotechnical Report
  - Letter Regarding Maintenance of Stormwater Facility
  - Memorandum Regarding Gravel Access Road
  - Transportation Impact Study
  - Republic Services Provider Letter
  - TVF&R Permit
  - Inventory of South Boundary Trees
- B2. **Applicant's Drawings and Plans** – *Available Under Separate Cover*
- B3. Incompleteness Response Dated November 9, 2022
- B4. Compliance Response Dated January 6, 2023
- B5. 120-day Waiver Request Dated 02.09.2023
- B6. Memorandum with Supplemental Information Dated April 3, 2023

### Development Review Team Correspondence

- C1. Public Works Plan Submittal and Other Engineering Requirements

### Other Correspondence

None Received

**Procedural Statements and Background Information:**

1. The statutory 120-day time limit applies to this application. The application was received on July 8, 2022. Staff conducted a completeness review within the statutorily allowed 30-day review period and found the application to be incomplete on August 5, 2022. The applicant submitted additional materials on November 14, 2022. Staff conducted a second completeness review within the statutorily allowed 30-day review period and deemed the application complete on December 14, 2022. Based on this completeness date, the 120-day period within which the City must render a final decision for the request, including any appeals, was April 13, 2023. However, on February 9, 2023, the applicant requested a waiver of the 120-day rule to allow additional time for the City to process their land use application, extending the review period to and through May 3, 2023.
2. Surrounding land uses are as follows:

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

3. Previous Planning Approvals:
  - ANNX22-0004 Annexation (under concurrent review by City Council; Ordinance No. 875)
  - ZONE22-0005 Zone Map Amendment (under concurrent review by City Council; Ordinance No. 876)
4. The applicant has complied with Sections 4.008 through 4.011, 4.013-4.031, 4.034 and 4.035 of the Wilsonville Code, said sections pertaining to review procedures and submittal requirements. The required public notices have been sent and all proper notification procedures have been satisfied.

## Findings of Fact:

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

### General Information

#### Application Procedures-In General

Section 4.008

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

#### Initiating Application

Section 4.009

The application has been submitted on behalf of the property owner, PCT NW Properties OR, LLC, dba Precision Countertops, Inc., and is signed by an authorized representative.

#### Pre-Application Conference

Subsection 4.010 (.02)

A pre-application conference was held on July 22, 2021 (PA21-0019) in accordance with this subsection.

#### Lien Payment before Approval

Subsection 4.011 (.02) B.

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

#### General Submission Requirements

Subsection 4.035 (.04) A.

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

#### Zoning-Generally

Section 4.110

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

## Request A: Stage 1 Preliminary Plan (STG122-0006)

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

### Planned Development Regulations

#### Planned Development Purpose & Lot Qualifications

Subsections 4.140 (.01) and (.02)

**A1.** The property is of sufficient size to be developed in a manner consistent the purposes and objectives of Section 4.140. The subject property is greater than 2 acres and is designated for industrial development in the Comprehensive Plan. Concurrent with the request for a Stage 1 Preliminary Plan, the applicant has requested annexation of the property and rezoning to PDI-RSIA (Planned Development Industrial-Regionally Significant Industrial Area). These requests were approved on 1<sup>st</sup> Reading by the City Council on March 20, 2023, and are scheduled for 2<sup>nd</sup> Reading on April 3, 2023 (Ordinances No. 875 (ANNX22-0004) and No. 876 (ZONE22-0005)). The property will be developed as a planned development in accordance with this subsection.

#### Ownership Requirements

Subsection 4.140 (.03)

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

#### Professional Design Team

Subsection 4.140 (.04)

**A3.** As can be found in the applicant's submitted materials, appropriate professionals have been involved in the planning and permitting process. Simone O'Halloran, with MDG Architecture/Interiors, is the applicant's representative.

#### Planned Development Permit Process

Subsection 4.140 (.05)

**A4.** The subject property is greater than two (2) acres, is designated for industrial development in the Comprehensive Plan, and is proposed to be zoned Planned Development Industrial-Regionally Significant Industrial Area (PDI-RSIA); see Finding A1. The property will be developed as a planned development in accordance with this subsection.

#### Consistency with Comprehensive Plan and Other Applicable Plans

Subsection 4.140 (.06) and 4.140 (.09) J. 1.

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



## Application Requirements

Subsection 4.140 (.07)

- A6.** Review of the proposed Stage 1 Preliminary Plan has been scheduled for a public hearing before the Development Review Board, in accordance with this subsection, and the applicant has met all the applicable submission requirements as follows:
- The property affected by the Stage 1 Preliminary Plan is under the sole ownership of PCT NW Properties OR, LLC, dba Precision Countertops, Inc., and the application has been signed by the property owners.
  - The application for a Stage 1 Preliminary Plan has been submitted on a form prescribed by the City.
  - The professional design team and coordinator have been identified. See Findings A3 and B3.
  - The applicant has stated the various uses involved in the Stage 1 Preliminary Plan and their locations.
  - The boundary affected by the Stage 1 Preliminary Plan has been clearly identified and legally described.
  - Sufficient topographic information has been submitted.
  - Information on the land area to be devoted to various uses has been provided.
  - Any necessary performance bonds will be required.
  - Waiver information has been submitted.

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

Purpose of PDI-RSIA

Subsection 4.135.5 (.01)

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

Uses Typically Permitted

Subsection 4.135.5 (.03)

- A8.** The proposed development consists of a corporate headquarters/fabrication facility where the intended uses include showroom, office, storage, and fabrication spaces for receiving, unloading, storing, cutting, and delivering kitchen countertops. These uses are consistent with the uses typically permitted in the PDI-RSIA zone and are, therefore, allowed uses.

Prohibited Uses

Subsection 4.135.5 (.04)

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

## Block and Access Standards

Subsections 4.135.5 (.05) and 4.131 (.03)

**A10.** The subject property is located within the Coffee Creek Design Overlay District and, therefore, subject to the Regulating Plan in Figure CC-1, which identifies SW Garden Acres Road as “Existing/Planned Addressing Street” and “Required Supporting Streets” along the property’s north and east boundaries. No additional required Supporting Streets are identified abutting the subject property. Therefore, no additional streets are required at this location to satisfy the applicable block and access standards.

## PDI -RSIA Performance Standards

### Industrial Performance Standards

Subsections 4.135 (.06) A. through N.

**A11.** The Stage 1 Preliminary Plan enables conformance with the industrial performance standards. Final compliance will be reviewed with the Stage 2 Final Plans. See Finding B26.

## Other Standards for PDI -RSIA Zone

### Lot Size

Subsections 4.135.5 (.07) A.

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

### Setbacks

Subsections 4.135.5 (.07) C. through E.

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

## Coffee Creek Industrial Design Overlay District

### Purpose of Coffee Creek Industrial Design Overlay District – High Quality Site Design

Subsection 4.134 (.01) A.

**A14.** The proposed development features a high-quality industrial building as a corporate headquarters/fabrication facility for a single tenant. The proposed site plan responds to the existing site by orienting the building and circulation areas to occupy roughly the western half of the subject site, maintaining the eastern half in its undeveloped state until it is developed in the future. Proposed high quality landscaping is consistent with the Coffee Creek Design Overlay District by providing a dense planted area along SW Garden Acres Road, along with a wayside area that has been designed to connect with the public sidewalk system and provide sightlines into the seating area for additional safety. Dense landscaping along the Supporting Street helps to soften the profile of the building along the street and obscure views of the truck maneuvering and loading berth area located on the east side of the proposed building.

## Purpose of Coffee Creek Industrial Design Overlay District – Multi-Modal Transportation Network

Subsection 4.134 (.01) B.

**A15.** Street improvements, including sidewalks and a buffered bike lane providing multi-modal access to the site, were recently constructed on the east side of SW Garden Acres Road as part of a City-funded capital improvement project. The applicant proposes on-site landscaping and circulation that integrate with these improvements consistent with the SW Garden Acres Road cross-section as prescribed in the Coffee Creek Industrial Design Pattern Book. The applicant also proposes Supporting Street improvements on the north side of the property to the eastern extent of the developed area in two phases, including an interim driveway access on SW Garden Acres Road that will transition to a driveway off the Supporting Street when the property to the north develops in the future. The proposed Supporting Street cross-section is consistent with that prescribed in the Coffee Creek Industrial Design Pattern Book. The east half of the Supporting Street along the north property boundary and the Supporting Street along the east boundary will be constructed when the remainder of the site is developed in the future.

## Purpose of Coffee Creek Industrial Design Overlay District – Preservation of Natural Features

Subsection 4.134 (.01) C.

**A16.** The site contained a house and outbuildings for residential and agricultural use on the western portion of the property; however, these structures have since been demolished by the property owner. There is an open area in the center and mature trees in the western and eastern parts of the property. As described in the applicant's narrative, in an effort to maintain and create habitat-friendly development, the applicant has elected to leave more than half the overall site in a natural grassy state until future development occurs and maintained existing trees where possible, concentrated in the site's southeast corner.

## Purpose of Coffee Creek Industrial Design Overlay District – Minimize Adverse Impacts

Subsection 4.134 (.01) D.

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

## Purpose of Coffee Creek Industrial Design Overlay District – Minimize Visibility of Parking and Circulation Areas

Subsection 4.134 (.01) E.

**A18.** The applicant has minimized the visibility of parking, circulation, and loading areas to the greatest extent possible by including plantings along SW Garden Acres Road and the Supporting Street. Vehicular parking areas have been provided along the west and east sides of the property and are screened by landscaping from adjacent properties.

Purpose of Coffee Creek Industrial Design Overlay District – Pleasant and Functional Industrial District

Subsection 4.134 (.01) F.

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

Purpose of Coffee Creek Industrial Design Overlay District – Timely and Predictable Process

Subsection 4.134 (.01) G.

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

Applicability of Coffee Creek Industrial Design Overlay District

Subsection 4.134 (.02) A.-D.

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

Exceptions to Coffee Creek Industrial Design Overlay District

Subsection 4.134 (.03) A.-D.

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

Uses Typically Permitted

Subsection 4.134 (.04)

**A23.** The proposed use as a corporate headquarters/fabrication facility is permitted per Section 4.135.5 (.03). See Finding A8.

Prohibited Uses

Subsection 4.134 (.05)

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

## Request B: Stage 2 Final Plan (STG222-0007)

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

### Planned Development Regulations-Generally

#### Planned Development Purpose and Lot Qualifications

Subsections 4.140 (.01) and (.02)

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

designated for industrial development in the Comprehensive Plan. Concurrently with the request for a Stage 2 Final Plan, the applicant proposes to rezone the property to PDI-RSIA (Planned Development Industrial-Regionally Significant Industrial Area); see 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 ownership of PCT NW Properties OR, LLC, dba Precision Countertops, Inc. and the application has been signed by an authorized representative.

#### Professional Design Team

Subsection 4.140 (.04)

- B3.** As can be found in the applicant's submitted materials, appropriate professionals have been involved in the planning and permitting process. Simone O'Halloran, with MDG Architecture/Interiors, has been designated the coordinator for the planning portion of the project.

#### Planned Development Permit Process

Subsection 4.140 (.05)

- B4.** The subject property is greater than two (2) acres, is designated for industrial development in the Comprehensive Plan, and is intended to be zoned PDI-RSIA. The property will be developed as a planned development in accordance with this subsection.

### Stage 2 Final Plan Submission Requirements and Process

#### Timing of Submission

Subsection 4.140 (.09) A.

- B5.** The applicant is requesting both Stage 1 Preliminary Plan and Stage 2 Final Plan approval, together with Site Design Review, as part of this application. The Stage 2 Final Plan provides sufficient information regarding conformance with both the Stage 1 Preliminary Plan and Site Design Review.

#### Development Review Board Role

Subsection 4.140 (.09) B.

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

## Stage 1 Conformance, Submission Requirements

Subsection 4.140 (.09) C.

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

## Stage 2 Final Plan Detail

Subsection 4.140 (.09) D.

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

## Submission of Legal Documents

Subsection 4.140 (.09) E.

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

## Expiration of Approval

Subsection 4.140 (.09) I. and Section 4.023

- B10.** The Stage 2 Final Plan approval, along with other associated applications, will expire two (2) years after approval, unless an extension is approved in accordance with these subsections. The applicant intends to construct the proposed building in one (1) implementation phase promptly after land use approval, and well within the allotted time period.

## Consistency with Plans

Subsection 4.140 (.09) J. 1.

- B11.** As documented in the applicant's materials, the proposed development of a corporate headquarters/fabrication facility is consistent with the planned economic uses and activities and the form of development the City's planning work has been designed to foster and support. This project is the fourth project in the Coffee Creek Master Plan area that is being reviewed with the Coffee Creek Industrial Design Overlay District and Pattern Book. The property is intended to be zoned Planned Development Industrial-Regionally Significant Industrial Area (PDI-RSIA) consistent with the Industrial designation in the Comprehensive Plan. To staff's knowledge, the location, design, size, and uses are consistent with other applicable plans, maps, and ordinances, or will be by specific conditions of approval.

### Traffic Concurrency

Subsection 4.140 (.09) J. 2.

- B12.** As shown in Traffic Impact Study, included in Exhibit B1, the LOS D standard will continue to be met by existing street improvements at the studied intersections with existing, planned, and this proposed development as follows:
- SW Garden Acres Road/SW Ridder Road/SW Clutter Street: LOS A/B, Volume-to-Capacity Ratio 0.31
  - SW Ridder Road/SW 95th Avenue: LOS C, Volume-to-Capacity Ratio 0.74

### Facilities and Services Concurrency

Subsection 4.140 (.09) J. 3.

- B13.** The proposed development will be adequately served by existing or immediately planned facilities and services as required by this standard. Frontage improvements were previously completed as part of the SW Garden Acres capital improvement project and right-of-way dedications in SW Garden Acres Road and the new Supporting Street along the north property boundary are required by Engineering conditions of approval consistent with City design sections for these streets. These facilities will provide access to the site consistent with access spacing requirements that apply to SW Garden Acres Road and will enable the property to the north and east to obtain access via the Supporting Street without adding driveways on this SW Garden Acres Road. Utility services capable of serving the site are in place in SW Garden Acres Road. Extensions and connections will be made pursuant to Public Works standards and permitting.

### Adherence to Approved Plans

Subsection 4.140 (.10) A.

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

## Standards Applying in All Planned Development Zones

### Additional Height Guidelines

Subsection 4.118 (.01)

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

### Underground Utilities

Subsection 4.118 (.02)

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

### Waivers

Subsection 4.118 (.03)

- B17.** The applicant is requesting one (1) waiver, see Request D.

### Other Requirements or Restrictions

Subsection 4.118 (.03) E.

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

### Impact on Development Cost

Subsection 4.118 (.04)

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

### Requiring Tract Dedications

Subsection 4.118 (.05)

- B20.** No additional tracts are being required. A public access and utility easement agreement is required over the Supporting Street per Engineering conditions of approval.

### Habitat Friendly Development Practices

Subsection 4.118 (.09)

- B21.** Grading will be limited to that needed for the proposed improvements, no significant native vegetation would be retained by an alternative site design, the City's stormwater standards will be met limiting adverse hydrological impacts on water resources, and no impacts on significant wildlife corridors or fish passages have been identified.

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

### Purpose of PDI-RSIA

Subsection 4.135.5 (.01)

- B22.** The proposed development consists of a corporate headquarters/fabrication facility where the intended uses include showroom, office, storage, and fabrication spaces for receiving, unloading, storing, cutting, and delivering kitchen countertops. This meets the purpose statement of the PDI-RSIA zone as it provides for a regionally significant industrial operation and employment opportunities on an underutilized industrial site.

### Uses Typically Permitted

Subsection 4.135.5 (.03)

- B23.** A corporate headquarters/fabrication facility with showroom, office, storage, and fabrication spaces is consistent with the permitted uses in the PDI-RSIA zone.



## Prohibited Uses

Subsection 4.135.5 (.04)

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

## Block and Access Standards

Subsections 4.135.5 (.05) and 4.131 (.03)

**B25.** The subject property is in the Coffee Creek Industrial Design Overlay District and, therefore, subject to the Regulating Plan in Figure CC-1, which identifies SW Garden Acres as an existing/planned Addressing Street. The regulating plan also identifies future required Supporting Streets bordering the subject property along its north and east boundaries.

## PDI -RSIA Performance Standards

### Industrial Performance Standards

Subsections 4.135 (.06) A. through N.

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

- **Pursuant to Standard A** (enclosure of uses and activities), all non-parking/loading activities and uses are completely enclosed within the proposed building.
- **Pursuant to Standard B** (vibrations), there is no indication that the proposed development will produce vibrations detectable off site without instruments; as described by the applicant, fabrication cutting tools will be installed on raised sleepers and sound dampeners to ensure vibration or sound of machinery is not detectable off-site.
- **Pursuant to Standard C** (emissions), there is no indication that odorous gas or other odorous matter will be produced by the proposed use; as described in the applicant's narrative, water used to assist with cutting will reduce particles going airborne.
- **Pursuant to Standard D** (open storage), there are no open storage areas proposed.
- **Pursuant to Standard E** (operations and residential areas), no residential districts exist within 100 feet of building openings and proposed loading zones and, as described by the applicant, operations will be limited to typical business hours of 9:00 am to 4:00 pm.
- **Pursuant to Standard F** (heat and glare, exterior lighting), per the applicant's narrative, the proposed building has been designed with exterior materials chosen and incorporated to eliminate heat or glare; operations are wholly enclosed and will not produce glare or heat impacting the surrounding area; exterior lighting is required to meet outdoor lighting standards as is not expected to produce light on adjacent properties.
- **Pursuant to Standard G** (dangerous substances), there are no prohibited dangerous substances expected on the development site.
- **Pursuant to Standard H** (liquid and solid wastes), there is no evidence that the standards for liquid and solid waste will be violated.
- **Pursuant to Standard I** (noise), there is no evidence that noise generated from the proposed operations will violate the City's Noise Ordinance. Noises produced in

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

- **Pursuant to Standard J** (electrical disturbances), no functions or construction methods are proposed that would interfere with electrical systems, and any construction activity that may require temporary electrical disruption for safety or connection reasons will be limited to the project site and coordinated with appropriate utilities.
- **Pursuant to Standard K** (discharge of air pollutants), there is no evidence that any prohibited discharge will be produced by the proposed project.
- **Pursuant to Standard L** (open burning), no open burning is proposed on the development site.
- **Pursuant to Standard M** (outdoor storage), no outdoor storage is proposed on the development site.
- **Pursuant to Standard N** (unused area landscaping), the west portion of the subject property will be completely developed with buildings, circulation areas, and landscaping; the east portion of the property, which is not proposed for development in the current application, will be maintained through the applicant's landscape maintenance program until future development occurs.

### Other Standards for PDI-RSIA Zone

#### Lot Size

Subsections 4.135.5 (.07) A.

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

#### Setbacks and Corner Vision

Subsections 4.135.5 (.07) C. through F.

- B28.** The proposed building is setback at least 30 feet on all sides of the property. The Supporting Street required by the Coffee Creek Regulating Plan (Figure CC-1) will be constructed in a public access and utility easement along the north property boundary rather than in a public right-of-way. The northwest property corner is an identified intersection, and landscape plantings and maintenance practices at this location will ensure that adequate sight distances are maintained for safe operations. See Finding B40 for additional information on setbacks within the Coffee Creek Industrial Design Overlay District.

### Coffee Creek Design Overlay District Standards

#### Regulating Plan

Subsection 4.134 (.06) A.

- B29.** As shown below, the proposed development, indicated with a red star, fronts on SW Garden Acres Road (primary frontage), which is classified as an Addressing Street on the Regulating Plan. A Required Supporting Street is proposed along the north boundary of the property to the east extent of the developed area as an access easement providing connection to SW Garden Acres Road for the subject property and the one to the north. The

remainder of this Supporting Street and a second Supporting Street on the property's east boundary will be constructed in the future when the eastern part of the property is developed.



Figure CC-1 - Regulating Plan

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

**B30.** The proposed development has primary frontage on SW Garden Acres Road, an Addressing Street. There are two required Supporting Streets on the north and east sides of the property, and no Through Connections shown on Figure CC-4 adjacent to the property.

Review Process  
Subsection 4.134 (.07)

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

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

**B32.** The applicant requests one (1) waiver in accordance with this subsection. See Request D.

## Coffee Creek Design Overlay District Regulating Plan

### Addressing Streets

Subsection 4.134 (.09) A. 1.

- B33.** The project abuts SW Garden Acres Road on west, which is designated an Addressing Street on the Regulating Plan, and the building's designated primary frontage faces this street.

### Overlay District

Subsection 4.134 (.09) A. 2.

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

### Connectivity Standards

Subsection 4.134 (.10) A.

- B35.** The subject property is not located within the area shown on Figure CC-1 bounded by Addressing Streets; however, it must meet the connectivity standards for Addressing and Supporting Streets in the Regulating Plan. It is bounded on the west by Addressing Street SW Garden Acres Road. Pursuant to this standard, Figure CC-1 and Figure CC-2, the applicant will construct a Supporting Street within a public access and utility easement along the north boundary of the site, to the east extent of the site development area. Initially the Supporting Street will include an interim driveway access on SW Garden Acres Road; this will transition to a driveway off the Supporting Street when the property to the north develops in the future, meeting the minimum driveway spacing and curb-to-curb distance requirements on the primary frontage and creating the planned intersection at SW Garden Acres Road and the Supporting Street. The Supporting Street will be extended in the future to intersect with a second Supporting Street on the site's east boundary when that half of the property is developed.

### Street Types

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

- B36.** The subject property abuts Addressing Street SW Garden Acres Road and two (2) required Supporting Streets along the north and east property boundaries. Frontage improvements meeting Addressing Street requirements already have been constructed along the SW Garden Acres Road frontage. The Supporting Street requirements along the north boundary of the site to the east extent of the development area also will be met.

### Planned Pathways

Subsection 4.134 (.10) B.

- B37.** The subject property is not located near a planned pathway as shown in the Transportation System Plan or Figure CC-1 – Regulating Plan.

### Maximum Connection Spacing

Subsection 4.134 (.10) C.

**B38.** A Supporting Street on the north property boundary is proposed that meets the maximum connection spacing requirements as shown in Finding B40.

### Connectivity Master Plan Requirement

Subsection 4.134 (.02) D.

**B39.** The applicant's site plans (Sheet A1.1 and A1.2 in Exhibit B2) provide the information necessary to determine compliance with applicable connectivity requirements. Frontage improvements have already been made along the east side of SW Garden Acres Road, along the property's west boundary, including interim driveway access to existing rural residential development that may not meet driveway spacing standards for this arterial street. This driveway will be closed and access taken from the proposed Supporting Street as development occurs in the future. As the fourth project within the Coffee Creek Industrial Design Overlay District, there are no existing walkways, waysides or other features located near the subject property.

### Development Standards

Subsection 4.134 (.11)

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

<b>Table CC-1 Street Design and Connectivity</b>		
	<b>Addressing Streets</b>	<b>Supporting Streets</b>
General	Development Standards within this table are not adjustable.	
<p><u>Response:</u> The applicant does not propose any adjustments to the standards within Table CC-1 Street Design and Connectivity.</p>		
Connection Spacing	Not applicable, Addressing Streets exist or are planned	600 feet, maximum, centerline to centerline.  Supporting Streets and Through Connections shall intersect with Garden Acres Road as shown on Figure CC-1, Regulating Plan; or if the Addressing Street is Day Road, no less than 1,000 feet apart, centerline to centerline.
<p><u>Response:</u> The proposed development abuts Addressing Street SW Garden Acres Road and the connection spacing standards are not applicable to this street. The proposed development also abuts Required Supporting Streets along its north and east sides consistent with the connections and intersection spacing shown on Figure CC-1.</p>		
Connection Type	Addressing Streets are Day Road, Grahams Ferry Road, Cahalin Road, Garden Acres Road, Garden Acres Road, and "Future" Street.	Supporting Streets are those meeting Specifications, Figure CC-2.  A Required Supporting Street is one that intersects with an Addressing Street. The exact location and design of these connections will be determined at the time of development review.
<p><u>Response:</u> The proposed development abuts Addressing Street SW Garden Acres Road on its west side, and Required Supporting Streets on its north and east sides, consistent with Figure CC-1.</p>		
Connection Hierarchy and Primary Frontage	<p>If one of the streets or connections bounding a parcel is an Addressing Street, the Addressing Street shall be the Primary Frontage.</p> <p>If none of the bounding streets or connections is an Addressing Street, a Supporting Street shall be the Primary Frontage.</p> <p>See Figure CC-5.</p>	
<p><u>Response:</u> The building is designed to face Addressing Street SW Garden Acres Road as the primary frontage. The Required Supporting Street on the property's north side provides a connection to this Addressing Street as well as driveway access to the interior of the site and, in the future, to a second Required Supporting Street on the property's east boundary.</p>		

Table CC-2 District Wide Planning and Landscaping		
	Addressing Streets	Supporting Streets
General	The following provisions apply: <ul style="list-style-type: none"> <li>• Section 4.176 for landscaping standards</li> <li>• Section 4.610.10 for tree removal, relocation or replacement.</li> <li>• Section 4.610.10 (.01) C. for consideration of development alternatives to preserve wooded areas &amp; trees.</li> </ul>	
<p><u>Response:</u> The applicant has addressed the above provisions in responses to the applicable code criteria. The project’s planting plan meets or exceeds the General Landscaping standard along SW Garden Acres Road, and provides a range of Low Screen to High Screen landscaping along this Addressing Street and the Supporting Street on the north side of the property. See Request F for the Type C Tree Removal Plan.</p>		

Table CC-3 Site Design		
	Addressing Streets	Supporting Streets
<b>1. Parcel Access</b>		
General	Unless noted otherwise below, the following provisions apply: <ul style="list-style-type: none"> <li>• Section 4.177 (.02) for street design;</li> <li>• Section 4.177 (.03) to (.10) for sidewalks, bike facilities, pathways, transit improvements, access drives &amp; intersection spacing.</li> </ul> The following Development Standards are adjustable: <ul style="list-style-type: none"> <li>• Parcel Driveway Spacing: 20%</li> <li>• Parcel Driveway Width: 10%</li> </ul>	
<p><u>Response:</u> Two (2) driveways are proposed on the northern Supporting Street, near the northwest and northeast corners of the building. Each of the driveways is designed with a location, width, and configuration suitable to accommodate turning movements by all types of vehicles, including trucks via the east driveway at the back of the building. The applicant has requested a waiver to address proposed width of the east driveway. With the requested waiver, the project complies. See Request D.</p>		
Parcel Driveway Access	Not applicable	Limited by connection spacing standards Parcel Driveway Access may be employed to meet required connectivity, if it complies with Supporting Street Standards for Connection Spacing and Connection Type, see Figure CC-6. Subject to approval by City Engineer

Table CC-3 Site Design		
	Addressing Streets	Supporting Streets
<p><u>Response:</u> Two (2) driveways are proposed on the northern Supporting Street, therefore, this standard applies.</p>		
Parcel Driveway Spacing	Not applicable	150 feet, minimum See Figure CC-6
<p><u>Response:</u> The two (2) proposed driveways on the northern Supporting Street are spaced approximately 425 feet apart, which exceeds this standard.</p>		
Parcel Driveway Width	Not applicable	24 feet, maximum or complies with Supporting Street Standards
<p><u>Response:</u> As discussed above, two (2) driveways are proposed on the northern Supporting Street. The applicant has requested a waiver to increase the width of the east driveway to accommodate truck turning movements to access the loading area on the east side of the building. With the requested waiver, the project complies. See Request D.</p>		
2. Parcel Pedestrian Access		
General	<p>Unless noted otherwise below, the following provisions apply:</p> <ul style="list-style-type: none"> <li>Section 4.154 (.01) for separated &amp; direct pedestrian connections between parking, entrances, street right-of-way &amp; open space</li> <li>Section 4.167 (.01) for points of access</li> </ul>	
<p><u>Response:</u> General parcel pedestrian access standards are addressed in this staff report in Findings B54-63.</p>		
Parcel Pedestrian Access Spacing	No restriction	
<p><u>Response:</u> There is approximately 100 feet between parcel pedestrian access points at the north and center of the site on the primary frontage on SW Garden Acres Road. As there is no spacing restriction, this standard is met.</p>		
Parcel Pedestrian Access Width	8 feet wide minimum	
<p><u>Response:</u> The applicant provides one 8-foot-wide pedestrian access from the sidewalk at SW Garden Acres Road into the site at the center front of the building (west of the main entry) and from the sidewalk of the Supporting Street north of the main building entry, consistent with this requirement.</p>		



Table CC-3 Site Design		
	Addressing Streets	Supporting Streets
Parcel Pedestrian Access to Transit	Provide separated & direct pedestrian connections between transit stops and parking, entrances, street right-of-way & open space.	
<p><u>Response:</u> Walkways between the public sidewalk and the main building entrance fronting on SW Garden Acres Road are located at the center and northwest corner of the building. Routing avoids conflict with driveways and provides drive aisle crossings at locations near the primary building entrance that have good visibility for safety. These connections provide direct and separated pedestrian access to SW Garden Acres Road, which connects to the closest existing transit service in SW Grahams Ferry Road, as well as to any other transit stops that may serve the area in the future.</p>		
<b>3. Parcel Frontage</b>		
Parcel Frontage, Defined	Parcel Frontage shall be defined by the linear distance between centerlines of the perpendicular Supporting Streets and Through-Parcel Connections. Where Parcel Frontage occurs on a curved segment of a street, Parcel Frontage shall be defined as the linear dimension of the Chord.	
<p><u>Response:</u> The distance along the primary frontage, SW Garden Acres Road, between the centerline of the Supporting Street on the property’s north side and south property boundary is approximately 330 feet.</p>		
Primary Frontage, Defined	The Primary Frontage is the Parcel Frontage on an Addressing Street. If the parcel is not bounded by Addressing Streets, it is the Parcel Frontage on a Supporting Street. See Figure CC-5.	
<p><u>Response:</u> The site has Addressing Street SW Garden Acres Road on its west side, which is designated as the Primary Frontage.</p>		
Parcel Frontage Occupied by a Building	<p>A minimum of 100 feet of the Primary Frontage shall be occupied by a building.</p> <p>The maximum Primary Frontage occupied by a building shall be limited only by required side yard setbacks.</p>	No minimum
<p><u>Response:</u> The proposed building is sited with its short axis parallel to the Addressing Street, SW Garden Acres Road, and its long access parallel to the Supporting Street along its north boundary. Its front (primary) façade is roughly 240 feet long, with the west wall of the proposed building extending practically the full available length of the frontage, except to the extent needed to provide landscaping and emergency access, parking, and circulation around the building.</p>		
<b>4. Parking Location and Design</b>		

Table CC-3 Site Design		
	Addressing Streets	Supporting Streets
General	<p>Unless noted otherwise below, the following provisions apply:</p> <ul style="list-style-type: none"> <li>• Section 4.155 (03) Minimum and Maximum Off-Street Parking Requirements</li> <li>• Section 4.155 (04) Bicycle Parking</li> <li>• Section 4.155 (06) Carpool and Vanpool Parking Requirements</li> <li>• Section 4.176 for Parking Perimeter Screening and Landscaping - permits the parking landscaping and screening standards as multiple options</li> </ul> <p>The following Development Standards are adjustable:</p> <ul style="list-style-type: none"> <li>• Parking Location and Extent: up to 20 spaces permitted on an Addressing Street</li> </ul>	
<p><u>Response:</u> The proposed 15 passenger vehicle parking stalls shown on the site plan along the Addressing Street SW Garden Acres Road frontage are within the allowance for up to 20 spaces to be located in this area.</p>		
Parking Location and Extent	Limited to one double-loaded bay of parking, 16 spaces, maximum, designated for short-term (1 hour or less), visitor, and disabled parking only between right-of-way of Addressing Street and building.	Parking is permitted between right-of-way of Supporting Street and building.
<p><u>Response:</u> The parking area near the northwest corner of the building, generally between the Primary Building Entrance and SW Garden Acres Road, an Addressing Street, provides 15 of the site’s 71 proposed parking spaces in a double-loaded bay designated for short-term, visitor, and disabled parking.</p>		
Parking Setback	20 feet minimum from the right-of-way of an Addressing Street.	15 feet minimum from the right-of-way of a Supporting Street.
<p><u>Response:</u> The west parking area near the Primary Building Entrance (northwest), between the building and Addressing Street SW Garden Acres Road is set back 20 feet from the right-of-way line, and the east parking area on the south side of the Supporting Street is set back more than 15 feet from the right-of-way, consistent with the standard.</p>		
Parking Lot Sidewalks	Where off-street parking areas are designed for motor vehicles to overhang beyond curbs, sidewalks adjacent to the curbs shall be increased to a minimum of seven (7) feet in depth.	Where off-street parking areas are designed for motor vehicles to overhang beyond curbs, planted areas adjacent to the curbs shall be increased to a minimum of nine (9) feet in depth.

Table CC-3 Site Design		
	Addressing Streets	Supporting Streets
<p><u>Response:</u> The parking bays adjacent to the public entrance of the proposed building on Addressing Street SW Garden Acres Road and one bay of parking in the east parking area adjacent to the Supporting Street are locations where motor vehicles may overhang beyond the curb. The sidewalk shown adjacent to parking spaces at the front of the building is eight (8) feet deep, which exceeds the seven (7)-foot minimum depth. The landscape area adjacent to parking spaces along the Supporting Street in the east parking area is 17 feet deep, which exceeds the nine (9) foot minimum.</p>		
Parking Perimeter Screening and Landscaping	<p>Screen parking area from view from Addressing Streets and Supporting Streets by means of one or more of the following:</p> <ul style="list-style-type: none"> <li>a. General Landscape Standard, Section 4.176 (.02) C.</li> <li>b. Low Berm Standard, Section 4.176 (.02) E., except within 50 feet of a perpendicular Supporting Street or Through Connection as measured from the centerline.</li> </ul>	
<p><u>Response:</u> The proposed project includes dense landscape plantings to screen parking areas from view from Addressing Street SW Garden Acres Road. One exception is that low screening is proposed where high screening would conflict with the Design Standard requiring a direct line of sight to the Primary Building Entrance at the northwest corner of the building. The Supporting Street will meet the requirements of Low and High Screen Landscape Standards in accordance with Section 4.176 (.02) D. The criteria have been addressed under Findings B105-110 and C32-44.</p>		
Off-Street Loading Berth	<p>One loading berth is permitted on the front façade of a building facing an Addressing Street. The maximum dimensions for a loading berth are 16 feet wide and 18 feet tall. A clear space 35 feet, minimum is required in front of the loading berth.</p> <p>The floor level of the loading berth shall match the main floor level of the primary building. No elevated loading docks or recessed truck wells are permitted.</p> <p>Access to a Loading Berth facing an Addressing Street may cross over, but shall not interrupt or alter, a required pedestrian path or sidewalk. All transitions necessary to accommodate changes in grade between access aisles and the loading berth shall be integrated into adjacent site or landscape areas.</p>	<p>No limitation. Shall meet minimum standards in Section 4.155(.05).</p>

<b>Table CC-3 Site Design</b>		
	<b>Addressing Streets</b>	<b>Supporting Streets</b>
	Architectural design of a loading berth on an Addressing Street shall be visually integrated with the scale, materials, colors, and other design elements of the building.	
<u>Response:</u> The front façade (west elevation) of the building faces SW Garden Acres Road and does not propose loading berths. All loading berths are located at the rear (east side) of the building, parallel to the Supporting Street.		
Carpool and Vanpool Parking	No limitation	
<u>Response:</u> Of the four (4) proposed ADA accessible parking spaces, one (1) is designated to be van accessible; however, none of the other proposed passenger vehicle parking spaces is or required to be designated for vanpool/carpool parking.		
<b>5. Grading and Retaining Walls</b>		
General	The following Development Standards are adjustable: <ul style="list-style-type: none"> <li>Retaining Wall Design: 20%</li> </ul>	
<u>Response:</u> No retaining walls are needed as the site is fairly flat and does not require substantial grading.		
Maximum height	Where site topography requires adjustments to natural grades, landscape retaining walls shall be 48 inches tall maximum. Where the grade differential is greater than 30 inches, retaining walls may be stepped.	
Required Materials	Materials for retaining walls shall be unpainted cast-in-place, exposed-aggregate, or board-formed concrete; brick masonry; stone masonry; or industrial-grade, weathering steel plate.	
Retaining Wall Design	Retaining walls longer than 50 linear feet shall introduce a 5-foot, minimum horizontal offset to reduce their apparent mass.	
<u>Response:</u> No retaining walls are proposed.		
<b>6. Planting</b>		
General	Unless noted otherwise below, the following provisions apply: <ul style="list-style-type: none"> <li>Section 4.176 Landscaping and Screening Standards</li> </ul>	

Table CC-3 Site Design		
	Addressing Streets	Supporting Streets
Landscaping Standards Permitted	General Landscape Standard, Section 4.176 (.02) C. Low Berm Standard, Section 4.176 (.02) E., except within 50 feet of a perpendicular Supporting Street or Through Connection as measured from the centerline	General Landscape Standard, Section 4.176(.02)C. Low Screen Landscape Standard, Section 4.176(.02)D. Screen loading areas with High Screen Landscaping Standard, Section 4.176(.02)F., and High Wall Standard, Section 4.176(.02)G.
<p><u>Response:</u> The applicant has prepared landscaping plans that comply with or exceed the General Landscape or Low Screen Landscape standard along SW Garden Acres Road and the Required Supporting Street. Loading berths will be screened with High Screen Landscaping or, where located indoors, to the High Wall standard.</p>		
<p><b>7. Location and Screening of Utilities and Services</b></p>		
General	<p>Unless noted otherwise below, the following provisions apply:</p> <ul style="list-style-type: none"> <li>Sections 4.179 and 4.430. Mixed Solid Waste and Recyclables Storage in New Multi-Unit Residential and Non-Residential Buildings</li> </ul>	
<p><u>Response:</u> The applicant has addressed the standards for trash/recycling storage and provided correspondence from Republic Services supporting the proposed configuration. See Findings B111 – B112 and C20-C24.</p>		
Location and Visibility	Site and building service, equipment, and outdoor storage of garbage, recycling, or landscape maintenance tools and equipment is not permitted	Site and building service, utility equipment, and outdoor storage of garbage, recycling, or landscape maintenance tools and equipment is not permitted within the setback
<p><u>Response:</u> The proposed trash/recycling area is located at the back (east side) of the building and not visible from Addressing Street SW Garden Acres Road or within the setback from the Supporting Street on the property's north side.</p>		
Required Screening	Not permitted	High Screen Landscaping Standard, Section 4.176(.02)F. and/or High Wall Standard, Section 4.176 (.02) G.
<p><u>Response:</u> The trash/recycling area at the back (east side) of the building is screened to the High Screen Landscaping or High Wall standard consistent with this requirement.</p>		

Table CC-4 Building Design		
	Addressing Streets	Supporting Streets
<b>1. Building Orientation</b>		
Front Façade	<p>Buildings shall have one designated front façade and two designated side façades. If one of the streets or connections bounding a parcel is an Addressing Street, the front façade of the building shall face the Addressing Street.</p> <p>If two of the streets or connections bounding a parcel are Addressing Streets, the front façade of the building may face either Addressing Street, except when one of the Addressing Streets is Day Road. In that case, the front façade must face Day Road.</p> <p>If none of the bounding streets or connections is an Addressing Street, the front façade of the building shall face a Supporting Street.</p> <p>See Figure CC-5.</p>	
<p><u>Response:</u> The front façade of the proposed building faces Addressing Street SW Garden Acres Road and the north side of the proposed building faces a Required Supporting Street. The south and east sides of the building face rural residential or undeveloped land.</p>		
Length of Front Façade	<p>A minimum of 100 feet of the Primary Frontage shall be occupied by a building. The maximum Primary Frontage occupied by a building shall be limited only by required side yard setbacks.</p>	
<p><u>Response:</u> The building frontage faces Addressing Street SW Garden Acres Road and is roughly 240 feet long, which is well in excess of the minimum standard of 100 feet.</p>		
Articulation of Front Façade	<p>Applies to a Front Façade longer than 175 feet that has more than 5,250 square feet of street-facing façade area:</p> <p>At least 10% of the street-facing façade of a building facing an Addressing Street must be divided into façade planes that are offset by at least 2 feet from the rest of the façade. Façade area used to meet this standard may be recessed behind, or project out from, the primary façade plane.</p>	
<p><u>Response:</u> The front façade of the proposed building is approximately 240 feet long with roughly 7,400 sf of street-facing façade area. The office area, which is most forward portion of the building, occupies roughly 3,500 sf or 47% of the front façade area. The building entry and showroom, with about 1,500 sf or 20% of the front façade area, is recessed by about 4.5 feet behind the office area. The fabrication and warehouse area, which is roughly 2,300 sf or 31% of the front façade, is recessed behind the building entry and showroom by 60 feet and the office area by 65 feet. The front building plane, comprised of the entry/showroom and office occupy a total of roughly 5,000 sf or 67% of façade area, demonstrating compliance with this standard.</p>		

Table CC-4 Building Design		
	Addressing Streets	Supporting Streets
<b>2. Primary Building Entrance</b>		
General	The following Development Standards are adjustable: <ul style="list-style-type: none"> <li>• Required Canopy: 10%</li> <li>• Transparency: 20%</li> </ul>	
<p><u>Response:</u> The proposed Primary Building Entrance is at the northwest corner of the proposed building facing Addressing Street SW Garden Acres Road. The entrance area is designed to meet the required horizontal dimensions for canopy coverage (i.e., width and depth) as well as the transparency requirement, without adjustment.</p>		
Accessible Entrance	The Primary Building Entrance shall be visible from, and accessible to, an Addressing Street (or a Supporting Street if there is no Addressing Street frontage). A continuous pedestrian pathway shall connect from the sidewalk of an Addressing Street to the Primary Building Entrance with a safe, direct and convenient path of travel that is free from hazards and provides a reasonably smooth and consistent surface consistent with the requirements of Americans with Disabilities Act (ADA).  The Primary Building Entrance shall be 15 feet wide, minimum and 15 feet tall, minimum.	
<p><u>Response:</u> A continuous pedestrian pathway from the sidewalk in SW Garden Acres Road to the primary building entrance is safe, direct and convenient with good visibility for pedestrian safety. A second pathway from the Supporting Street also provides access to the primary building entrance. The primary building entrance is 20.5 ft wide and 16 ft tall, exceeding the standard.</p>		
Location	150 feet, maximum from right-of-way of an Addressing Street, see Figure CC-7.	150 feet, maximum from right-of-way of a Supporting Street, if there is no Addressing Street Frontage, see Figure CC-7.
<p><u>Response:</u> The Primary Building Entrance, at the northwest building corner, is within 150 feet from SW Garden Acres Road, an Addressing Street.</p>		
Visibility	Direct line of sight from an Addressing Street to the Primary Building Entrance.	
<p><u>Response:</u> The proposed public entrance is visible from points along the SW Garden Acres Road frontage.</p>		
Accessibility	Safe, direct, and convenient path from adjacent public sidewalk.	
<p><u>Response:</u> Proposed paths provide direct connections from the sidewalk to the primary building entrance.</p>		

<b>Table CC-4 Building Design</b>		
	<b>Addressing Streets</b>	<b>Supporting Streets</b>
Required Canopy	Protect the Primary Building Entrance with a canopy with a minimum vertical clearance of 15 feet and an all-weather protection zone that is 8 feet deep, minimum and 15 feet wide, minimum.	
<u>Response:</u> The canopy over the main entry doorways will cover the minimum 8-foot by 15-foot horizontal area at the Primary Building Entrance with a canopy height of 16 feet.		
Transparency	Walls and doors of the Primary Building Entrance shall be a minimum of 65% transparent.	
<u>Response:</u> The applicant’s plans (Sheet A3.2) indicate glazing provided at the primary building entrance of 256 sf, which is 80% of the wall area of 320 sf, exceeding the requirement.		
Lighting	The interior and exterior of the Primary Building Entrance shall be illuminated to extend the visual connection between the sidewalk and the building interior from day to night. Pathway lighting connecting the Primary Building Entrance to the adjacent sidewalk on an Addressing Street shall be scaled to the needs of the pedestrian.  Comply with Outdoor Lighting, Section 4.199	
<u>Response:</u> Per the applicant’s narrative, the interior and exterior of the primary building entrance will be illuminated with a variety of lighting types to provide visual connection between the entry plaza and public sidewalk and entry lobby. The lighting design includes bollard lighting, pathway lighting, and wall mounted lighting. The lighting design will promote nighttime safety, security, enjoyment, and commerce while minimizing glare, light islands, and spotlighting. The plan will also preserve dark night sky to protect natural environments and habitat. The proposed lighting plan is designed to comply with the outdoor lighting requirements of Section 4.199; see Findings C45 – C53.		
<b>3. Overall Building Massing</b>		
General	The following Development Standards are adjustable: <ul style="list-style-type: none"> <li>• Required Minimum Height: 10%</li> <li>• Ground Floor Height: 10%</li> <li>• Base, Body, and Top Dimensions: 10%</li> <li>• Base Design: 10%</li> <li>• Top Design: 10%</li> </ul>	
<u>Response:</u> As noted below, the proposed building elevations meet the requirements for Overall Building Massing without the need for adjustments.		
Front Setback	30 feet, minimum, except as provided below	30 feet maximum



<b>Table CC-4 Building Design</b>		
	<b>Addressing Streets</b>	<b>Supporting Streets</b>
<p><u>Response:</u> Proposed setbacks range from approximately 30 feet from the south property boundary, to 50 feet on the north, 85 feet on the west and in excess of 800 feet from the east property. All setbacks either meet or are well in excess of the 30 feet minimum requirement.</p>		
<p>Allowance of Primary Building Entrance</p>	<p>Where the Primary Building Entrance is located on an Addressing Street it may extend into the required front yard setback by 15 feet maximum provided that:</p> <ul style="list-style-type: none"> <li>a. It has a two-story massing with a minimum height of 24 feet;</li> <li>b. The Parcel Frontage on the Addressing Street is limited to 100 feet;</li> <li>c. The building extension is 65% transparent, minimum;</li> <li>d. The entrance is protected with a weather-protecting canopy with a minimum vertical clearance of 15 feet; and</li> </ul> <p>The standards for site design and accessibility are met.</p>	<p>Not applicable</p>
<p><u>Response:</u> This section is not applicable as the building does not extend into the front setback.</p>		
<p>Required Minimum Height</p>	<p>30 feet minimum.</p>	
<p><u>Response:</u> The proposed building height 30 feet to the office area parapet and 36 feet to the roof peak of the manufacturing/fabrication area, exceeding the 30-foot height minimum. Height to the parapet of the entry/showroom area is 27 feet, which is within the allowed adjustment of 10% of the required minimum height.</p>		
<p>Ground Floor Height</p>	<p>The Ground Floor height shall measure 15 feet, minimum from finished floor to finished ceiling (or 17.5 feet from finished floor to any exposed structural member).</p>	
<p><u>Response:</u> The proposed building meets or exceeds the ground floor height standard of 15 feet.</p>		
<p>Base, Body, and Top Dimensions</p>	<p>Buildings elevations shall be composed of a clearly demarcated base, body and top.</p> <ul style="list-style-type: none"> <li>a. For Buildings 30 feet in height (unless lower by adjustment):                             <ul style="list-style-type: none"> <li>i. The base shall be 30 inches, minimum.</li> </ul> </li> </ul>	

Table CC-4 Building Design		
	Addressing Streets	Supporting Streets
	<ul style="list-style-type: none"> <li>ii. The body shall be equal to or greater than 75% of the overall height of the building.</li> <li>iii. The top of the building shall be 18 inches, minimum.</li> </ul> <ul style="list-style-type: none"> <li>b. For Buildings between 30 feet and 5 stories in height:                             <ul style="list-style-type: none"> <li>i. The base shall be 30 inches, minimum; 2 stories, maximum.</li> <li>ii. The body shall be equal to or greater than 75% of the overall height of the building.</li> <li>iii. The top of the building shall be 18 inches, minimum.</li> </ul> </li> <li>c. For Buildings greater than 6 stories in height:                             <ul style="list-style-type: none"> <li>i. The base shall be 1 story, minimum, 3 stories, maximum.</li> <li>ii. The body shall be equal to or greater than 75% of the overall height of the building.</li> <li>iii. The top of the building shall be 18 inches, minimum.</li> </ul> </li> </ul>	
<p><u>Response:</u> The proposed building height varies from 27 feet at the entry/showroom (with allowed adjustment) to 30 feet at the offices area and 36 feet to the roof peak (or roughly 31 feet to the mid-point of the gable) of the fabrication/warehouse area. Therefore, subparagraph b. is applicable to the development. With respect to subparagraph b.i., a 30-inch base of insulated metal panel with granistone surfacing is provided at the base of the front façade on Addressing Street SW Garden Acres Road and the side façade facing the Supporting Street. With respect to subparagraph b.ii., the body height, which ranges from 22.5 feet on the front façade to 24 feet on the north side, calculates to approximately 75% to 83% of the overall building height, meeting or exceeding the required 75%. In compliance with subparagraph b.iii., the entry/showroom has a top of metal cap flashing 24 inches wide, there is a similar 5-foot-wide cap flashing top to the office area, and the sloped roof along the north side of the building provides a top element 9.5 feet wide, exceeding the minimum 18-inch requirement.</p>		
Base Design	<p>The design of the building Base shall:</p> <ul style="list-style-type: none"> <li>a. Use a material with a distinctive appearance, easily distinguished from the building Body expressed by a change in material, a change in texture, a change in color or finish;</li> <li>b. Create a change in surface position where the Base projects beyond the Body of the building by 1 -1/2 inches, minimum; and/ or</li> <li>c. Low Berm Landscape Standard, Section 4.176 (.02) E.</li> </ul>	
<p><u>Response:</u> The base of insulated metal panel with granistone surfacing in a medium gray provides a distinctive color, material, and texture change consistent with subparagraph a., and the base projects 1.5 inches from the wall surface creating a change in surface position, consistent with subparagraph b.</p>		

Table CC-4 Building Design		
	Addressing Streets	Supporting Streets
Top Design	<p>Building Tops define the skyline.</p> <p>The design of the Building Top shall:</p> <ul style="list-style-type: none"> <li>a. Use a material with a distinctive appearance, easily distinguished from the building Body expressed by a change in material, a change in texture, a change in color or finish; and/ or</li> <li>b. Create a change in surface position where the Top projects beyond, or recesses behind, the Body of the building by 1 -1/2 inches, minimum.</li> </ul>	
<p><u>Response:</u> The metal cap flashing at the top of the entry/showroom and offices areas on the front façade provides a change in material and color from the walls, consistent with subparagraph a., and the flashing projects 2 inches from the wall surface, consistent with subparagraph b. On the north facing side of the building, the metal cap flashing wraps the corner of the entry/showroom area, while the eave of the sloped roof of the fabrication/warehouse area projects from the building wall and the roof surface slopes away from the wall surface toward the roof peak, providing a distinctive appearance through change in materials and color, as well as surface position, consistent with subparagraphs a. and b.</p>		
Required Screening of Roof-mounted Equipment	<p>Screen roof-mounted equipment with architectural enclosures using the materials and design of the building Body and/ or the building Top. No roof-mounted equipment shall be visible from an Addressing Street or Supporting Street.</p>	
<p><u>Response:</u> As noted in the applicant’s narrative, the building elevations illustrate that the design incorporates a series of pitched roof assemblies and parapets, thus the roof-mounted equipment is wholly within the structure of the building and not visible from the adjacent Addressing or Supporting Streets. A condition of approval ensures any rooftop mechanical equipment will be screened in compliance with this standard.</p>		

**Waysides**

Waysides Purpose

Subsection 4.134 (.12) A.

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

Waysides Applicability

Subsection 4.134 (.12) B.

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

Table CC-5: Waysides			
Parcel Area	Required Wayside Area	Number of Waysides	Enhanced Transit Plaza ‡
Greater than 8.0 acres, less than or equal to 13.0 acres	600 square feet, minimum	One	Not permitted
<p>Response: The net site area (less right-of-way) is 9.33 acres, therefore the provisions that apply to the site require a 600 square foot minimum wayside area. The proposed wayside is rectangular in design, measuring roughly 20 feet by 30 feet, providing 600 sf of passive recreation space. It is located at the front of the building on the south side of the pedestrian path between the primary building entrance and the east sidewalk of SW Garden Acres Road.</p>			
<p>‡ In the future when SMART serves Coffee Creek, Industrial Waysides may comply with the standards for Enhanced Transit Plazas. See Table CC-5 in Subsection 4.134 (.12) B. for sites greater than 13.0 acres in size.</p>			

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

**B43.** The proposed wayside is exclusive of the required landscape screening and has at least one minimum dimension of 20 feet.

**Waysides – Criteria**

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

**B44.** The wayside is landscaped on the west, south, and east sides, with the north side opening onto the pedestrian pathway from the sidewalk in SW Garden Acres Road to the primary building entrance. Dense landscaping is provided on the north side of the pedestrian pathway to visually screen the parking area at the northwest corner of the site for users of the wayside. The plantings are designed to visually define and enclose the wayside, while not obscuring views of the wayside, thus allowing visual access into the wayside for safety.

**Visibility**  
 Subsection 4.134 (.12) D. 2.

**B45.** The proposed wayside abuts Addressing Street SW Garden Acres Road and is visible and accessible from the frontage, consistent with this standard.

### Accessible Pathway

Subsection 4.134 (.12) D. 3.

- B46.** The pedestrian pathway on the north side that connects the wayside to the public sidewalk along SW Garden Acres Road is a concrete-paved walking surface 8 feet wide, exceeding the minimum width requirement of 5 feet for wayside access.

### Accessible Surface

Subsection 4.134 (.12) D. 4.

- B47.** The wayside provides an accessible surface between benches that is roughly 24.5 feet by 16.5 feet, or 400 sf, exceeding the minimum 100 sf area and 10 feet length dimensions.

### Required Amenities

Subsection 4.134 (.12) D. 5.

- B48.** The wayside is required to include one (1) linear foot of seating for each 40 sf of plaza; therefore, the 600-sf wayside in the current application requires 15 linear feet of seating. As shown in the plans, the wayside includes four (4) freestanding benches, each six (6) feet long, providing 24 linear feet of seating area, exceeding the requirement. The wayside is landscaped on three sides as required, and illumination is provided by bollards on the east and west sides. A waste/recycling receptacle is located near the northeast corner of the plaza.

### Installation and Maintenance

Subsection 4.134 (.12) D. 6.

- B49.** As required, per the applicant's narrative, the wayside will be installed and maintained at the owner's expense, and the landscaped areas of the property will be placed under a maintenance and repair schedule to keep the property organized and free from waste and unsanitary conditions.

### Solar Access

Subsection 4.134 (.12) D. 7.

- B50.** The applicant provided a sunlight study (Sheet LT3.0 in Exhibit B2) showing that the wayside will receive partial to full sun exposure from 10:00 am – 5:00 pm throughout the year, consistent with this standard.

### Lighting

Subsection 4.134 (.12) D. 8.

- B51.** Four (4) bollard lights are included in the wayside in close proximity to the benches on the east and west sides of the plaza to permit reasonable use, utility, security, and nighttime safety. As shown in the lighting cut sheets (Sheet LT2.0 in Exhibit B2), the 42-inch-tall bollards are L-shaped with downward facing lights on the underside of the light arm, and arranged and shielded so as not to shine into adjacent areas or cause any undue glare or reflection on adjoining streets or property.

## Optional Amenities

Subsection 4.134 (.12) E.

- B52.** No optional amenities, such as picnic tables, arbors, drinking fountains, works of art, bicycle repair stations, exercise stations, or pet waste stations are proposed as part of the wayside.

## Signs

### Signs – General Requirements

Subsection 4.134 (.13) B.

- B53.** The proposed development contains one (1) wall-mounted sign on the front façade facing SW Garden Acres Road. No monument signs are proposed. Signage is addressed in the staff report in Request E.

## On-site Pedestrian Access and Circulation

### Conformance with Standards

Section 4.154 (.01) B. 1.

- B54.** All of the on-site pedestrian access and circulation standards are being applied to the proposed development.

### Continuous Pathway System

Section 4.154 (.01) B. 1.

- B55.** A continuous pathway system will connect from the proposed public sidewalk improvements on SW Garden Acres Road with two (2) pedestrian paths to the primary building entrance: one from the SW Garden Acres Road sidewalk and a second from the Supporting Street sidewalk. Internal walkways connect to adjacent sidewalks and extend throughout the development site on all sides of the proposed building.

### Safe, Direct, and Convenient

Section 4.154 (.01) B. 2.

- B56.** The plans show the two (2) pedestrian connections from SW Garden Acres Road and the Supporting Street to the primary building entrance. The pathways are reasonably direct and convenient. Lighting is shown along the pathways ensuring safety for all users.

### Free from Hazards/Smooth Surface

Section 4.154 (.01) B. 2. a.

- B57.** The proposed pathways are planned to be free from hazards and will be a smooth hard surface.

### Reasonably Direct

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

- B58.** Proposed pathways provide a direct connection to the primary building entrance and do not involve a significant amount of unnecessary out-of-direction travel.

### Building Entrance Connectivity/Meets ADA

Section 4.154 (.01) B. 2. c.

- B59.** Direct pathways connect the visitor parking area at northwest corner of the site and the sidewalks in SW Garden Acres Road and the Supporting Street to the primary building entrance and are consistent with ADA requirements.

### Vehicle/Pathway Separation

Section 4.154 (.01) B. 3.

- B60.** All pedestrian facilities, besides crosswalks, are raised to provide vertical separation or horizontally separated by landscaping.

### Crosswalks

Section 4.154 (.01) B. 4.

- B61.** Where pathways cross parking areas or drives contrasting material and striping is proposed to clearly mark the crosswalks.

### Pathway Width and Surface

Section 4.154 (.01) B. 5.

- B62.** All internal proposed pathways are constructed of concrete and have a minimum width of six (6) feet. As required by the Coffee Creek standards, a parcel pedestrian access width of eight (8) feet is provided on the primary building frontage from the sidewalk in SW Garden Acres Road and the sidewalk in the Supporting Street to the primary building entrance.

### Pathway Signs

Section 4.154 (.01) B. 6.

- B63.** No pathways needing directional signage are proposed.

## Parking Area Design Standards

### Minimum and Maximum Parking

Subsection 4.155 (.03) G.

- B64.** The proposed project requires a minimum of 62 parking spaces and, because the project contains one use without a parking maximum, there are no limits on maximum parking spaces. The applicant proposes 71 parking spaces, exceeding the minimum. The calculation of parking spaces is as follows:

Use and Parking Standard	Square Feet	Minimum Off-street Spaces Required	Maximum Off-street Spaces Allowed	Proposed Off-street Spaces	Minimum Bicycle Parking Spaces	Proposed Bicycle Parking Spaces
<b>Manufacturing (Fabrication)</b>	15,600 sf	1.6 per 1,000 = 25	No limit	--	1.0 per 10,000 sf (min 6) = 6	--
<b>Warehouse</b>	39,800 sf	0.3 per 1,000 = 12	0.5 per 1,000 = 20	--	1.0 per 20,000 sf (min 2) = 6	--
<b>Retail/Showroom</b>	3,000 sf	1.67 per 1,000 = 5	6.2 per 1,000 = 19		1.0 per 8,000 sf (min 2) = 2	
<b>Office</b>	7,400 sf	2.7 per 1,000 = 20	4.1 per 1,000 = 30		1.0 per 5,000 sf (min 2) = 2	
<b>Total</b>	<b>65,800 sf</b>	<b>62</b>	<b>No limit</b>	<b>71</b>	<b>16</b>	<b>12</b>

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

**B65.** 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"/>	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"/>	Parking area is surrounded by a six (6)-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"/>	Eight (8) of 71 proposed parking spaces are compact, or 11%, are compact, which is less than the allowed maximum



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
<b>Subsection 4.155 (.03) General Standards</b>		
A. Access and maneuvering areas adequate.	<input checked="" type="checkbox"/>	Access to the parking areas is adequate and maneuvering area is plentiful
A.1. Loading and delivery areas and circulation separate from customer/employee parking and pedestrian areas.	<input checked="" type="checkbox"/>	Applicant proposes employee parking at east side of building. ADA and short-term parking is proposed along front (west side) of building away from loading and delivery areas.
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 four (4) ADA parking spaces and 67 standard spaces, eight (8) of which are compact spaces
D. Where possible, parking areas connect to adjacent sites.	<input checked="" type="checkbox"/>	New parking area is part of a single development
Efficient on-site parking and circulation	<input checked="" type="checkbox"/>	Proximity to destination and pedestrian connections, and adequate maneuvering area make circulation efficient

**Other Parking Standards and Policies and Procedures**

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

**B66.** The applicant has not requested variances or waivers pursuant to this subsection.

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

**B67.** The review considers all proposed uses including retail/showroom, office, manufacturing (fabrication), and warehousing for the purpose of parking calculations.

Shared Parking  
 Subsection 4.155 (.02) E.

**B68.** The review only considers the proposed new use and no shared parking as described by this subsection is proposed.

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

**B69.** No off-site parking was used for calculating the parking spaces provided.

## Non-Parking Use of Parking Areas

Subsection 4.155 (.02) H.

**B70.** All parking areas are expected to be maintained and kept clear for parking unless a temporary use permit is granted or the Stage 2 Final Plan approval is revised. Particularly no container or other storage is permitted in the parking areas.

## Parking for Uses Not Listed

Subsection 4.155 (.02) M.

**B71.** The parking calculation is based on the listed uses of retail/showroom, office, manufacturing (fabrication), and warehousing.

## On-Street Parking for Parking Calculations

Subsection 4.155 (.03) F.

**B72.** The parking calculations do not include any on-street parking.

## Electrical Vehicle Charging Stations

Subsection 4.155 (.03) H.

**B73.** The applicant does not propose electrical charging stations; however, as required by Oregon Administrative Rules (OAR) 918-460-0200, the applicant has included electric vehicle charging infrastructure adjacent to parking spaces in parking areas on the west and east sides of the building.

## Substituting Motorcycle Parking for Vehicle Parking

Subsection 4.155 (.03) I.

**B74.** The applicant does not propose motorcycle parking.

## Parking Area Landscaping

### Minimizing Visual Dominance of Parking

Subsection 4.155 (.03) B.

**B75.** As described by the applicant and illustrated on Sheet L1.0 (Exhibit B2), the site's landscaping seeks to minimize the visual dominance of the parking and loading areas. Overall site landscaping of 55,509 square feet, or 26.9%, of the 206,217-square-foot site development area is provided, which exceeds the 15% landscaping standard. As indicated in the applicant's materials, the west parking area is roughly 5,936 square feet in area of which 1,569 square feet (26.4%) is landscaped. Approximately 3,054 square feet (18.8%) of the east parking area of 16,197 square feet is landscaped. Parking area landscaping has been counted as contributing to overall site landscaping, consistent with this provision. The visual appearance of the parking and circulation areas is sufficiently minimized by the proposed landscaping.

### 10% Parking Area Landscape Requirement

Subsection 4.155 (.03) B. 1.

**B76.** As stated above, the landscaping provided within the parking areas is 4,623 square feet, which is 20.9% of the 22,133 square feet of the site dedicated to parking area.

### Landscape Screening of Parking

Subsection 4.155 (.03) B. 1.

**B77.** Proposed landscaping will substantially shield the parking area from view from the public right-of-way.

### Tree Planting Area Dimensions

Subsection 4.155 (.03) B. 2.

**B78.** All tree planting areas meet or exceed the 8-foot minimum width and length.

### Parking Area Tree Requirement

Subsection 4.155 (.03) B. 2. and 2. a.

**B79.** For a parking lot with a total of 71 parking spaces, one (1) tree per eight (8) parking spaces is required for a total of 8.9 rounded to 9 total trees. Fifteen (15) trees are shown within the landscaped islands within the parking areas, which exceeds the requirement.

### Parking Area Tree Clearance

Subsection 4.155 (.03) B. 2. b.

**B80.** All trees planting in the parking area are varieties that could typically be maintained to provide a 7-foot clearance.

## Bicycle Parking-General Provisions

### Determining Minimum Bicycle Parking

Subsection 4.155 (.04) A. 1.

**B81.** As shown in the parking calculations table in Finding B64, above, the proposed building will include retail/showroom, office, manufacturing (fabrication), and warehousing uses. Table 5 indicates that retail/showroom uses require one (1) bicycle space per 8,000 square feet with a minimum of two (2) spaces, office uses required one (1) bicycle space per 5,000 square feet with a minimum of two (2) spaces, manufacturing (fabrication) uses require one (1) bicycle space per 10,000 square feet with a minimum of six (6) spaces, and warehousing uses require one (1) bicycle space per 20,000 square feet with a minimum of six (6) spaces. Based on the proportion of these uses within the proposed building, 16 bicycle parking spaces are required, of which 50% or eight (8) spaces must be long-term, secure spaces. The applicant proposes six (6) short-term bicycle parking spaces south of the primary building entrance and seven (7) long-term spaces inside the north wall adjacent to one of the access doors to the warehouse portion of the building (see Sheet A1.1 in Exhibit B2) for a total of 13 spaces, which is three (3) fewer than the required 16. A condition of approval will ensure the requirement is met.

### Bicycle Parking for Multiple Uses

Subsection 4.155 (.04) A. 3.

**B82.** As noted in Finding B81, the required bicycle parking is the sum of the requirements for all uses on site. Based on this, a total of 16 spaces is required and 13 spaces are provided. A condition of approval will ensure the requirement is met.

### Bicycle Parking Waivers

Subsection 4.155 (.04) A. 4.

**B83.** The applicant proposes no waivers to bicycle parking.

## Bicycle Parking Standards

### Bicycle Parking Space Dimensions

Subsection 4.155 (.04) B. 1.

**B84.** The bicycle parking details (see Sheet A1.3 in Exhibit B2) demonstrate that short-term spaces comply with the two (2) foot by six (6) foot spacing dimension for short-term parking. However, a detail is not provided for the long-term parking racks inside the building. Therefore, a condition of approval ensures the long-term bicycle parking spaces provide the appropriate spacing.

### Access to Bicycle Parking Spaces

Subsection 4.155 (.04) B. 1.

**B85.** All short-term bicycle parking spaces provide adequate space to be accessible without moving another bicycle. A detail is not provided for long-term spaces; therefore, a condition of approval ensures these spaces provide adequate accessible space.

### Bicycle Maneuvering Area

Subsection 4.155 (.04) B. 2.

**B86.** An aisle at least five (5) feet wide is shown behind the required short-term bicycle parking to allow room for bicycle maneuvering. Long-term bicycle parking spaces are located on the north wall of the open warehouse area and, therefore, provide adequate space for maneuvering.

### Spacing of Bicycle Racks

Subsection 4.155 (.04) B. 3.

**B87.** Both short-term and long-term bicycle parking, as shown on the site plan (Sheet A1.1 in Exhibit B2), provide enough space between the racks and any obstructions to use the space property.

## Bicycle Racks and Lockers Anchoring

Subsection 4.155 (.04) B. 4.

**B88.** The bicycle parking details (see Sheet A1.3 in Exhibit B2) demonstrate that short-term spaces will be securely anchored. However, a detail is not provided for the long-term parking racks inside the building. Therefore, a condition of approval ensures the long-term bicycle parking racks are securely anchored.

## Bicycle Parking Location

Subsection 4.155 (.04) B. 5.

**B89.** As shown on the site plan (Sheet A1.1 in Exhibit B2), the short-term bicycle parking is located within 30 feet of the main building entrance, and long-term parking is provided inside the building in a location that is easily accessible for bicyclists.

## Long-term Bicycle Parking

### Required Long-term Bicycle Parking

Subsection 4.155 (.04) C. 1. and 2.

**B90.** As the proposed building includes retail/showroom and office uses and requires six (6) or more bicycle parking spaces, 50% of the required spaces must be provided in a weather-protected, secure place for employees. As discussed in Finding B81, the applicant proposes seven (7) long-term bicycle parking spaces inside the north wall of the warehousing portion of the building. As 16 bicycle parking spaces are required, at least eight (8) must be provided as long-term spaces; therefore, at least one (1) additional long-term space must be provided. A condition of approval ensures this requirement is met.

## Minimum Off-Street Loading Requirements

### Determining Required Loading Berths

Subsection 4.155 (.05) A. 1.-2.

**B91.** The proposed development is an industrial development with 65,800 square feet of floor area, therefore, a minimum of two (2) loading berths is required. The applicant proposes at least two (2) loading berths at the back (east side) of the building, exceeding the standard.

### Loading Berth Dimensions

Subsection 4.155 (.05) A. 3.

**B92.** As shown in the applicant's plan set, no loading berths are proposed on the front façade of the building facing SW Garden Acres Road. All proposed loading berths, as well as roll-up delivery doors, are located at the back (east side) of the building. As shown in the table below from the applicant's narrative and demonstrated in Sheets A2.1 and A3.1 (Exhibit B2), at least two (2) of the loading berths meet the minimum dimensional standards of 12 feet wide by 35 feet long with a height clearance of 14 feet.

Proposed Loading Berths		
Loading area	Size (Length, width, height)	Meets Standards
2	16x40x16'	Yes
3	12x53x14'	Yes
1	9x40x10'	No

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

**B93.** There are no existing uses or loading berths on the subject property.

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

**B94.** Off-street parking areas are not proposed to be used for loading and unloading operations.

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

**B95.** No loading area adjacent to or within a street right-of-way is proposed.

**Access, Ingress, and Egress**

Access at Defined Points  
 Subsection 4.167 (.01)

**B96.** As illustrated on the applicant’s plans, the site will initially take access from the existing driveway on SW Garden Acres Road at the northwest corner of the site, which connects to two (2) driveways from the Supporting Street at the northwest and northeast parts of the site. When the property to the north develops and the Supporting Street is fully constructed, the driveway on SW Garden Acres Road will be closed and access limited to the two (2) driveways from the Supporting Street (see Sheets A1.1 and A1.2 in Exhibit B2). All driveways are at defined access points approved by the City.

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

**B97.** By virtue of meeting applicable standards of Chapter 4, as well as being required to meet Public Works Standards, the access points will be consistent with the public’s health, safety and general welfare.

Approval of Access Points  
 Subsection 4.167 (.01)

**B98.** The Engineering Division is reviewing and approving all points of access to public streets.

## Other Development Standards

### Double-Frontage Lots

Section 4.169

**B99.** The site is not a double-frontage lot, no homeowners association is appropriate for this industrial property, and the applicant intends to comply with all applicable landscaping and maintenance regulations.

## Natural Features and Other Resources

Section 4.171

**B100.** The subject property is not located in a regulated flood hazard area. It is generally flat, sloping gently from the west and east toward the center of the site by approximately six (6) feet in elevation. Removal of on-site trees will not result in unstable slopes or other erosive impacts. Tree removal is being limited to the extent possible and trees in the southeastern part of the site, which will not be developed with the current application, are being retained. No hillsides, power line easements, or other resources needing protection exist on the site.

## Public Safety and Crime Prevention

### Design for Public Safety

Subsection 4.175 (.01)

**B101.** The proposed site plan is designed to provide visibility of active use parts of the building from points in SW Garden Acres Road and the Supporting Street right-of-ways. This facilitates surveillance by law enforcement, and also enables citizens passing by on the public streets to observe activity within the site. Security fencing around the loading dock area on the east side of the building and lighting throughout the site, including in parking/circulation areas and along pedestrian pathways, contribute to safety during hours of darkness.

### Addressing and Directional Signing

Subsection 4.175 (.02)

**B102.** Addressing will be as required by Tualatin Valley Fire and Rescue.

### Surveillance and Access

Subsection 4.175 (.03)

**B103.** As discussed in Finding B101, the proposed site plan is designed to facilitate surveillance and access. Further, by locating the loading and docking area where it can be surveilled from the Supporting Street, and proposing a wrought iron fence that is visually permeable, the design facilitates routine surveillance by police without requiring them to enter and circulate within the secure area of the site. Parking areas, located on the west and east sides of the building, can be observed from points along SW Garden Acres Road and the Supporting Street, and all parts of the site are easily accessible from both right-of-ways.

## Lighting to Discourage Crime

### Subsection 4.175 (.04)

**B104.** Lighting has been designed 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)

**B105.** 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.

**B106.** No waivers or variances to landscape standards have been requested. Thus all landscaping and screening must comply with standards of this section.

### Intent and Required Materials

#### Subsections 4.176 (.02) C. through I.

**B107.** As shown on Sheet L1.0 (Exhibit B2), landscape areas are located on all sides of the proposed building. The project's landscape plan meets or exceeds the General Landscaping standard along SW Garden Acres Road, and provides a range of Low Screen to High Screen landscaping along this Addressing Street and the Supporting Street on the north side of the property to screen parking and loading areas. Required materials will be provided as follows.

- **Area Description:** Along all sides of the subject property
- **Landscaping Standard:** General, Low Screen, High Screen (west, central east)
- **Comments on Intent:** Screens development from adjoining sites and Addressing Street right-of-way
- **Required Materials:** General Standard: shrubs, trees every 30 feet or one tree per 800 square feet of area. Low Screen: three-foot hedge 95% opaque year round, trees every 30 feet or as required to provide canopy over landscape area. High Screen: six-foot hedge 95% opaque year round, trees every 30 feet or as required to provide canopy over landscape area.
- **Materials Provided:** Tree and understory plantings. Predominant new tree species include maple (along SW Garden Acres Road), Alaskan cedar, dogwood (as street trees on the Supporting Street), tupelo (in west parking area, along loading area and parking on Supporting Street), cherry, and Zelkova (in east parking area). No trees are proposed along the south property boundary along the south side of the building as numerous mature off-site trees, including Ponderosa pine, Douglas-fir, grand fir, madrone, and giant sequoia, which will be retained, reduce the likelihood that newly planted trees will grow or thrive in the understory of these



trees. Shrubs include a variety of species such as abelio, rockrose, myrtle, nandina, pieris, spirea, yew, and viburnum. Groundcover includes reed and maiden grass kinnick, lily turf, honeysuckle, Oregon grape, and amber rose. A condition of approval ensures specific code requirements are met.

### Landscape Area and Locations

Subsection 4.176 (.03)

**B108.** Landscaping is proposed in more than three (3) distinct areas within the site, including the wayside area, surrounding the parking lot and circulation areas, along the SW Garden Acres and Supporting Street right-of-ways, and perimeter landscaping on the south side of the building. Overall site landscaping of 55,509 square feet, or 26.9%, of the 206,217-square-foot site development area is provided, which exceeds the 15% landscaping standard.

### Buffering and Screening

Subsection 4.176 (.04)

**B109.** The subject property's location in the Coffee Creek Industrial Area, with industrially-zoned neighboring properties, does not require buffering and screening to protect adjacent sensitive uses. The building's parapet-roof design provides screening of rooftop mechanical equipment from view from adjacent streets or properties and the site plan does not include any outdoor storage areas. To secure the loading area on the east side of the building, an 8-foot-high wrought iron fence and access-control gates is proposed (see details on Sheet A1.3 in Exhibit B2). As described in Findings B40 and B105, the applicant has prepared landscaping plans that comply with or exceed the General Landscape standard along SW Garden Acres Road and the Supporting Street.

### Landscape Plans

Subsection 4.176 (.09)

**B110.** Sufficient information has been provided regarding landscaping and a condition of approval ensures final construction landscape plans meet the City's objective landscape standards.

## Mixed Solid Waste and Recyclables Storage

### DRB Review of Adequate Storage Area, Minimum Storage Area

Subsections 4.179 (.01)

**B111.** As described by the applicant, the proposed development has 65,800 square feet of gross floor area (GFA), of which warehouse/manufacturing is the primary use. Other uses include office and retail/showroom, but these uses do not make up 20% of the overall building square footage. Therefore, the project requires at least 405 square feet of solid waste/recyclables storage area (10 square feet plus  $65,800/1,000 \times 6$  square feet = 404.8 square feet). The proposed storage area is at the back of the building as shown on the site plan (Sheets A1.0-A1.1 and G3.0 in Exhibit B2), contained within a covered area located on the east side of the building.

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

**B112.** The applicant's Exhibit B1 includes a letter from Republic Services indicating coordination with the franchised hauler, and that the proposed storage area and site plan meets Republic Services requirements.

### Other Development Standards

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

**B113.** These criteria are satisfied or will be satisfied by conditions of approval:

- All access drives are designed to provide a clear travel lane, free from obstructions.
- All travel lanes will be asphalt. A condition of approval will ensure they are capable of carrying a 23-ton load.
- Emergency access lanes are improved to a minimum of 12 feet and the development design has been reviewed and approved by Tualatin Valley Fire and Rescue (Sheet FS1.0 in Exhibit B2).

Outdoor Lighting  
Sections 4.199.20 through 4.199.60

**B114.** The proposal is required to meet the Outdoor Lighting Standards. See Findings C45 through C53.

Underground Installation  
Sections 4.300-4.320

**B115.** Utilities will be installed underground.

## Request C: Site Design Review (SDR22-0007)

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 proposed corporate headquarters/fabrication facility is attractively designed with emphasis on the office and retail/showroom areas at the front of the building and provides color and material changes to add interest to all visible sides of the

building.

- **Inappropriate or Poor Design of Signs:** One (1) building sign is proposed. The sign is designed to visually fit in with the building architecture and appropriately sized.
- **Lack of Proper Attention to Site Development:** The appropriate professional services have been used to design the site, demonstrating appropriate attention being given to site development.
- **Lack of Proper Attention to Landscaping:** Landscaping is provided exceeding the area requirements, has been professionally designed by a landscape architect, and includes a variety of plant materials, all demonstrating appropriate attention being given to landscaping.

## Objectives of Site Design Review

### Proper Functioning of the Site

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

- C2. The applicant does not propose any functional site changes affecting proper function of the site as part of this application.

### High Quality Visual Environment

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

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

### Encourage Originality, Flexibility, and Innovation

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

- C4. The applicant proposes a corporate headquarters/fabrication facility that contains office and retail/showroom on the front façade (west side of the building). This adds significantly more visual interest and originality than a typical industrial development, thus providing a flexible and innovative design.

### Discourage Inharmonious Development

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

- C5. The project is the fourth development within the Coffee Creek Industrial Area to be reviewed under the Coffee Creek Industrial Design Overlay District and Pattern Book. This project will continue the positive design precedent set by the Coffee Creek Logistics Center and Black Creek Group Industrial developments in the area to encourage future harmonious industrial development.

### Proper Relationships with Site and Surroundings

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

- C6. The applicant's proposed building and site improvements have been designed with thoughtful consideration of their relationship with the environment. As described by the applicant and shown on the site plan (Sheets A1.0-A1.1 in Exhibit B2), the building is

located at the northwest corner of the site, close to the intersection of SW Garden Acres Road and future Supporting Street. This is the most urbanized area of the site, where, according to the Coffee Creek DOD Connectivity Plan, an Addressing Street intersects with a Supporting Street. The rest of the site, including the entire eastern half, is allowed to remain in its undeveloped state. The building is set back from SW Garden Acres Road to provide space for the large LIDA planters that will treat the site's stormwater. The site does not contain any steep slopes or other significant wildlife habitat areas. The lot to the south is wholly undeveloped at this time. To buffer that lot from the proposed development, the majority of the site activity, including access, the building main entrance, loading and most of the parking, are oriented as far north as possible on the subject site.

#### Attention to Exterior Appearances

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

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

#### Protect and Enhance City's Appeal

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

- C8.** The proposal adds future jobs to the City and enhances the appeal of SW Garden Acres Road by providing a high quality industrial development in the Coffee Creek Industrial Area.

#### Stabilize Property Values/Prevent Blight

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

- C9.** The site is located on SW Garden Acres Road, and adding services and amenities with a quality design add value to the Coffee Creek Industrial Area properties and prevent blight.

#### Adequate Public Facilities

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

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

#### Pleasing Environments and Behavior

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

- C11.** Adding a new industrial development to the Coffee Creek Industrial Area with a quality design and wayside area will provide a pleasing environment and much needed pedestrian amenities.

#### Civic Pride and Community Spirit

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

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

### Favorable Environment for Residents

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

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

### Jurisdiction and Power of the DRB for Site Design Review

#### Development Must Follow DRB Approved Plans

Section 4.420

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

### Design Standards

#### Harmony of Proposed Buildings to Environment

Subsection 4.421 (.01) B.

- C15.** The proposed site design preserves off-site trees along the south property boundary and at the southeast corner of the project site, integrating to the extent possible with existing tree groves, and provides additional landscaping features that harmonize with the surrounding natural environment. See also Finding C6.

#### Advertising Features Do Not Detract

Subsection 4.421 (.01) F.

- C16.** No advertising features are proposed as part of the development. The building sign is sized and located appropriately to not detract from the design of the proposed structure and existing development on surrounding properties. See also Request E.

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

Subsection 4.421 (.02)

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

#### Conditions of Approval to Ensure Proper and Efficient Function

Subsection 4.421 (.05)

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

#### Color or Materials Requirements

Subsection 4.421 (.06)

- C19.** As described by the applicant and illustrated in their materials and renderings (Sheets G2.0 through G2.2, and A3.1-3.2 in Exhibit B2), the proposed development presents an alternative approach to industrial building design, utilizing an architectural palette of

materials that provides a more approachable, enjoyable aesthetic experience than what is typically seen in nearby industrial spaces. The project will incorporate wood accent siding, and accent slats over glazing elements. The exterior components of the project are shown in four different colors that blend with the natural landscape: Cool Dark Bronze (roof, lobby area walls, wall accent panels), Cool Zinc Gray (office area walls, walls at manufacturing and storage area), Teton Gray (wall base), and Dark Bronze (door and window frames, canopies, parapet cap, flashing). The colors and materials chosen are appropriate for the development. Staff does not recommend any additional requirements or conditions related to colors and materials.

## **Standards for Mixed Solid Waste and Recycling Areas**

### Mixed Solid Waste and Recycling Areas Colocation

Subsection 4.430 (.02) A.

**C20.** The proposal provides the required storage area for solid waste and recyclables located at the back (east side) of the proposed building in the loading/receiving area.

### Exterior vs Interior Storage, Fire Code, Number of Locations

Subsections 4.430 (.02) C.-F.

**C21.** The applicant proposes a single location on the east side of the building. The area is appropriately screened. Review of the Building Permit will ensure that the building and fire code standards are met.

### Collection Vehicle Access, Not Obstruct Traffic or Pedestrians

Subsections 4.430 (.02) G.

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

### Dimensions Adequate to Accommodate Planned Containers

Subsections 4.430 (.03) A.

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

### 6-Foot Screen, 10-Foot Wide Gate

Subsections 4.430 (.03) C.

**C24.** The solid waste and recyclables storage area is screened by a wall and landscaping in the loading area on the east side of the building and exceeds the minimum standards (Sheet G3.0 in Exhibit B2).

## Site Design Review Submission Requirements

### Submission Requirements

Section 4.440

**C25.** The applicant submitted a site plan drawn to scale, digital renderings and physical materials illustrating proposed finishes and paint colors.

## Time Limit on Site Design Review Approvals

Void after 2 Years

Section 4.442

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

## Installation of Landscaping

### Landscape Installation or Bonding

Subsection 4.450 (.01)

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

### Approved Landscape Plan

Subsection 4.450 (.02)

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

### Landscape Maintenance and Watering

Subsection 4.450 (.03)

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

### Modifications of Landscaping

Subsection 4.450 (.04)

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

## Natural Features and Other Resources

### Protection

#### Section 4.171

- C31.** The proposed design of the site provides for protection of natural features and other resources consistent with the proposed Stage 2 Final Plan for the site, as well as the purpose and objectives of Site Design Review.

## Landscaping

### Landscape Standards Code Compliance

#### Subsection 4.176 (.02) B.

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

### Intent and Required Materials

#### Subsections 4.176 (.02) C. through I.

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

### Landscape Area and Locations

#### Subsection 4.176 (.03)

- C34.** As indicated in the applicant's narrative and plan set, overall site landscaping of 55,509 square feet, or 26.9%, of the 206,217-square-foot site development area is provided, which exceeds the 15% landscaping standard. In addition, the landscaping provided within the parking areas is 4,623 square feet, which is 20.9% of the 22,133 square feet of the site dedicated to parking area.

### Buffering and Screening

#### Subsection 4.176 (.04)

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

### Shrubs and Groundcover Materials

#### Subsection 4.176 (.06) A.

- C36.** All of the proposed shrubs on the applicant's Landscape Plans (Sheet L1.0 in Exhibit B2) meet the required two (2)-gallon minimum. A condition of approval will ensure that the detailed requirements of this subsection are met.



### Plant Materials-Trees

Subsection 4.176 (.06) B.

- C37.** Not all trees in the applicant's landscape plan (Sheet L1.0) are proposed to be two (2)-inch caliper (deciduous); therefore, a condition of approval will ensure the requirement is met. Conifers as proposed to be eight (8) feet in height, exceeding the six (6)-foot requirement of this subsection. A condition of approval will require all trees to be balled and burlapped (B&B), well-branched and typical of their type as described in current American Association of Nurserymen (AAN) Standards.

### Plant Materials-Buildings Larger than 24 Feet in Height or Greater than 50,000 Square Feet in Footprint Area

Subsection 4.176 (.06) C.

- C38.** The proposed building, as shown on Sheets A3.1-A3.2 (Exhibit B2), is 36 feet tall to the roof peak of the warehouse/fabrication area and exceeds 50,000 square feet in footprint area, which meets the threshold for requiring larger or more mature plant materials as defined by this subsection. However, the design provides architectural interest by using a variety of materials in landscape areas surrounding the building. In addition, the applicant's plans propose to include numerous trees in the parking areas and around the site perimeter that soften views of the building from surrounding areas. It is staff's professional opinion that larger or more mature plant materials are not needed to achieve the intent of this subsection.

### Types of Plant Species

Subsection 4.176 (.06) E.

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

### Tree Credit

Subsection 4.176 (.06) F.

- C40.** The proposed number of trees in the landscape plans exceeds the minimum landscaping requirements and the applicant has not applied eligible tree credits.

### Exceeding Plant Standards

Subsection 4.176 (.06) G.

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

### Landscape Installation and Maintenance

Subsection 4.176 (.07)

- C42.** Conditions of approval ensure that installation and maintenance standards are or will be met including that plant materials be installed to current industry standards and properly staked to ensure survival, and that plants that die are required to be replaced in kind, within

one (1) growing season, unless appropriate substitute species are approved by the City. Notes on the applicant’s Sheet L1.0 (Exhibit B2) provide for an irrigation system.

Landscape Plans  
Subsection 4.176 (.09)

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

Completion of Landscaping  
Subsection 4.176 (.10)

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

**Outdoor Lighting**

Applicability  
Sections 4.199.20 and 4.199.60

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

Outdoor Lighting Zones  
Section 4.199.30

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

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

C47. The applicant has elected to comply with the Prescriptive Option.

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

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

Table 7: Maximum Wattage And Required Shielding				
Lighting Zone	Fully Shielded	Shielded	Partly Shielded	Unshielded
LZ 2	100	35	39	Low voltage landscape lighting 50 watts or less

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

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

**Mounting Height**

Subsection 4.199.40 (.01) B. 3.

**C50.** All exterior mounted lighting on the building is less than 40 feet high as shown on Sheets LT1.0 and LT1.2 in Exhibit B2. Pole-mounted fixtures are at 30 feet above grade and wall-mounted fixtures are at 14 feet above the building’s finish floor elevation (FFE) to maintain a consistent level on all sides of the building. The maximum pole or mounting height complies with Table 8. A condition of approval will ensure the requirements of the Outdoor Lighting Ordinance are met at the time of building permit issuance.

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

**Luminaire Setback**

Subsection 4.199.40 (.01) B. 4.

**C51.** The subject property is bordered by the same base zoning and the same lighting zone on all sides. Staff understands the three (3) times mounting height setback to only apply where the property abuts a lower lighting district. A condition of approval will ensure the requirements of the Outdoor Lighting Ordinance are met at the time of building permit issuance.

**Lighting Curfew**

Subsection 4.199.40 (.02) D.

**C52.** As stated by the applicant, the proposed development will comply with the curfew requirements to either initiate operation at dusk and extinguish lighting one (1) hour after close or at the curfew time of 10:00 pm specified in Table 10; or reduce lighting intensity one (1) hour after close or at the curfew time to not more than 50% of the requirements set forth in the OEESC unless waived by the DRB; and to extinguish or reduce lighting on holidays as required except for Building Code lighting, lighting of pedestrian ramps, steps, and stairs, or due to special circumstances requiring the business to operate continuously or periodically after curfew.

**Standards and Submittal Requirements**

Sections 4.199.40 and 4.199.50

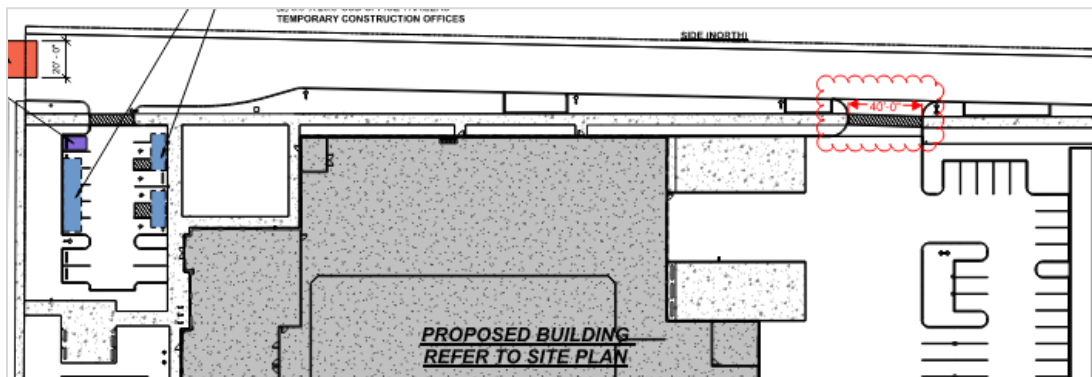
**C53.** All required materials have been submitted.

## Request D: Waiver (WAIV22-0003)

### Waiver: Parcel Driveway Width on Supporting Street

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

- D1.** The applicant requests to waive the parcel driveway width standards from the Coffee Creek Design Overlay District for the east site access from the Supporting Street. This driveway is proposed to be 40 feet wide to accommodate truck turning movements into the site from the Supporting Street. This requires a waiver from Subsection 4.134 (.11) Table CC-3 1. Parcel Access/Parcel Driveway Width/Supporting Streets, which allows a driveway width of 24 feet maximum or compliance with the Supporting Street standards. The applicant states the rationale for requesting this waiver as follows: the 40-foot-wide driveway is necessary to accommodate truck operations for turning requirements, movement, circulation, and safety considerations. This is the only waiver requested by the applicant to the Coffee Creek Design Overlay District standards.



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

- D2.** Pursuant to Subsection 4.118 (.03) A., waivers must implement or better implement the purpose and objectives listed in this subsection. The project is designed to conform to the Regulating Plan with Addressing Street SW Garden Acres Road on the west and a Supporting Street on the north property boundary. As the Coffee Creek Design Overlay District standards do not allow driveways on Addressing Streets, the site must take access from the Supporting Street. To accommodate truck traffic and turning movements at the east driveway, it must be wider than the allowed 24-foot maximum. A narrower driveway would constrain truck turning movements leading to congestion in the Supporting Street from wide turns and/or queuing as trucks wait to enter the driveway. A wider driveway allows the site to achieve its function efficiently, practically, and safely for its intended industrial use. Therefore, the applicant specifically requests this waiver to allow flexibility in the design that responds to site-specific features and conditions of the project site.

## Request E: Class 3 Sign Permit (SIGN22-0011)

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

### Sign Review and Submission

#### Class 2 Sign Permits Reviewed by DRB

Subsection 4.031 (.01) M. and Subsection 4.156.02 (.03)

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

#### What Requires Class 3 Sign Permit Review

Subsection 4.156.02 (.06)

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

#### Signs Exempt from Sign Permit Requirements

Subsection 4.156.05 (.01) C.

- E3.** Flags displayed from permanently-located freestanding or wall-mounted flag poles that are designed to allow raising and lowering of flags are exempt from permit requirements of the Code and do not require sign permit. One (1) site may have up to two (2) exempt flags and no exempt flag may be more than 30 feet in height. The applicant proposes two (2) flag poles near the building entrance on the west elevation at a height of 20 feet, which meets the standard.

#### Class 3 Sign Permit Submission Requirements

Subsection 4.156.02 (.06) A.

- E4.** As indicated in the table below the applicant has satisfied the submission for Class 3 sign permits, which includes the submission requirements for Class 2 sign permits:

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

**Class 3 Sign Permit and Waiver Review Criteria**

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

E5. 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.

E6. The applicant is proposing one (1) sign on the west façade of the building facing SW Garden Acres Road. The proposed sign is generally typical of, proportional to, and compatible with development in the PDI-RSIA zone. No evidence has been presented, nor testimony received, demonstrating the subject sign would detract from the visual appearance of the surrounding development.

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

E7. There is no evidence, and no testimony has been received, suggesting the proposed sign 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.

E8. The sign does not conflict with the design or placement of other site elements, landscaping, or building architecture reviewed as part of this application. The appropriate placement of the signs will be ensured by conditions of approval.

**Sign Measurement**

Measurement of Individual Element Signs  
Subsection 4.156.03 (.01) B.

E9. The sign measurements use individual elements, as allowed by this subsection. However, the calculations of sign area shown on the applicant’s sign plan Sheet A3.3 in Exhibit B2 are incorrect. The standard requires that a sign constructed of individual elements such as letters, figures, etc., attached to a building wall be measured using the summed area of up to three squares, rectangles, circles, or triangles drawn around all sign elements. The applicant has measured the area of each individual letter rather than using three or fewer rectangles drawn around the letters or words in the sign. A condition of approval ensures that the sign will be measured correctly and adjusted as needed to comply with the standard as the time of application for sign approval.

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

General Allowance  
Subsection 4.156.08 (.01) A.

E10. The subject site has frontage on SW Garden Acres Road of sufficient length to be sign eligible; however, the applicant does not proposed a freestanding or ground mounted sign in the current application.

**Building Signs in the PDC, PDI , and PF Zones**

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

E11. All facades of the proposed building are sign eligible as follows:

Façade	Sign Eligible	Criteria Making Sign Eligible
North	Yes	Frontage on a street
East	No	
South	No	
West	Yes	Entrance open to the general public, frontage on a street, façade adjacent to primary parking area for building

The proposed building is anticipated to have up to one (1) tenant and the building design has one (1) entrance open to the general public. The primary building entrance faces

Addressing Street SW Garden Acres Road on the west façade in the northwest building corner.

#### Building Sign Area Allowed

Subsection 4.156.08 (.02) B. 1.

**E12.** The west façade of the proposed office and retail/showroom of the building is roughly 170 feet (ft) in length, with the entire west facing building elevation being 240 linear ft. For facades greater than 72 linear ft, the allowed sign area is 36 square feet (sf) plus 12 sf for each 24 linear feet or portion thereof greater than 72 ft up to a maximum of 200 sf. Therefore, the allowed sign area is 36 sf plus 84 sf ( $240\text{ft} - 72\text{ft} = 168\text{ft} / 24\text{ft} \times 12\text{sf} = 84\text{sf}$ ), or a total of 120 sf. As shown on the sign plan (Sheet A3.2 in Exhibit B2), the proposed sign area measured in two rectangles is 125 sf ( $50\text{sf} + 75\text{sf} = 125\text{sf}$ ), which is five (5) square feet more than the allowed area. A condition of approval has been added to require the applicant to reduce the size of the sign area by five (5) sf consistent with the standard.

#### Building Sign Length Not to Exceed 75 Percent of Façade Length

Subsection 4.156.08 (.02) C.

**E13.** The overall building sign length is approximately 59 feet, which is 35% of the office and retail/showroom façade and 25% of the entire west facing façade length, which does not exceed 75% of the length of the façade.

#### Building Sign Height Allowed

Subsection 4.156.08 (.02) D.

**E14.** The proposed building sign is within a definable architectural feature; however, it is unclear whether there is a definable space between the sign and the top and bottom of the architectural feature. A condition of approval ensures the standard is met.

#### Building Sign Types Allowed

Subsection 4.156.08 (.02) E.

**E15.** The proposed building sign is a fascia sign, which is an allowed sign type in this subsection.

### Site Design Review

#### Excessive Uniformity, Inappropriate Design

Subsection 4.400 (.01)

**E16.** With quality materials and design, the proposed sign 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)

**E17.** The sign is scaled and designed appropriately related to the subject site and the appropriate amount of attention has been given to visual appearance. The sign will provide local emergency responders and other individuals reference for the location of this development.

### Design Standards

Subsection 4.421 (.01)

**E18.** The proposed location and approximate size of proposed sign and detail about design, color, texture, lighting, or materials is included in the applicant's sign plan Sheet A3.3 in Exhibit B2. The sign is proposed to be white letters held 3.5 inches off the building face that will be backlit, which will complement the design of the proposed building and surrounding properties, consistent with the design standards of this section.

### Design Standards and Signs

Subsection 4.421 (.02)

**E19.** Design standards have been applied to the proposed signs, as applicable, see Findings E16-E18, above.

### Color or Materials Requirements

Subsection 4.421 (.06)

**E20.** As stated under Finding E18, above, information about the proposed coloring of the signs is included in the applicant's materials, and appear appropriate for the sign.

### Site Design Review-Procedures and Submittal Requirements

Section 4.440

**E21.** The applicant has submitted a sign plan as required by this section.

## **Request F: Type C Tree Removal Plan (TPLN22-0006)**

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

### **Type C Tree Removal-General**

#### Exception from Tree Removal Permit Requirement

Subsection 4.600.40 (.01) A.

**F0.** The applicant is not requesting exemptions from tree removal permit requirements.

### Review Authority

Subsection 4.610.00 (.03) B.

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

### Conditions of Approval

Subsection 4.610.00 (.06) A.

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

### Completion of Operation

Subsection 4.610.00 (.06) B.

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

### Security for Permit Compliance

Subsection 4.610.00 (.06) C.

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

### Tree Removal Standards

Subsection 4.610.10 (.01)

- F5.** The standards of this subsection are met as follows:
- Standard for the Significant Resource Overlay Zone: The proposed tree removal is not within the Significant Resource Overlay Zone.
  - Preservation and Conservation: The applicant has taken tree preservation into consideration, and has limited tree removal to trees that are necessary to remove for development. Several trees in the southeast part of the site, which is not proposed for development in the current application, will be retained, as well as numerous off-site trees along the property's south boundary. Removal of some of the south boundary trees may be necessary; however, their removal is contingent upon agreement between the applicant and owners of the neighboring property to the south.
  - Development Alternatives: No significant wooded areas or trees would be preserved by practical design alternatives.
  - Land Clearing: The applicant has limited clearing of land to areas necessary for the construction of buildings, structures and other site improvements.
  - Residential Development: The proposed activity does not involve residential development, therefore this criteria does not apply.
  - Compliance with Statutes and Ordinances: The necessary tree replacement and protection is planned according to the requirements of the tree preservation and protection ordinance.

- Relocation or Replacement: The applicant proposes to plant 47 trees as replacement for the nine (9) on-site trees proposed for removal, exceeding the one-for-one (1:1) replacement requirement.
- Limitation: Tree removal is limited to where it is necessary for construction or to address nuisances or where the health of the trees warrants removal.
- Tree Survey: A tree survey has been provided.

#### Review Process

Subsection 4.610.40 (.01)

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

#### Tree Maintenance and Protection Plan

Section 4.610.40 (.02)

**F7.** The applicant has submitted the necessary copies of a Tree Maintenance and Protection Plan. See the applicant's Sheet L1.1 in Exhibit B2.

### Replacement and Mitigation

#### Tree Replacement Requirement

Subsection 4.620.00 (.01)

**F8.** As noted in Finding F5, the applicant is planting 47 trees, substantially exceeding the one-to-one ratio required by this subsection.

#### Basis for Determining Replacement

Subsection 4.620.00 (.02)

**F9.** The applicant proposes removing nine (9) trees and potentially an additional seven (7) trees on the south property boundary, for a total of 16 trees, and planting 47 trees. Replacement trees will meet the minimum caliper requirement or will be required to by condition of approval.

#### Replacement Tree Requirements

Subsection 4.620.00 (.03)

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

#### Replacement Tree Stock Requirements

Subsection 4.620.00 (.04)

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

#### Replacement Trees Locations

Subsection 4.620.00 (.05)

**F12.** The applicant is proposing tree planting along SW Garden Acres Road as part of screening and the wayside area, as well as along the Supporting Street, and in the parking areas on the west and east sides of the site. The applicant is also planting trees in parking lot islands

in accordance with the requirements of Section 4.155. The proposed tree locations are appropriate for the development.

### **Protection of Preserved Trees**

#### Tree Protection During Construction

Section 4.620.10

**F13.** Tree protection is required. All trees required to be protected must be clearly labeled as such, and suitable barriers to protect remaining trees must be erected, maintained, and remain in place until the City authorizes their removal or issues a final certificate of occupancy. A condition of approval will ensure the applicable requirements of this section are met.



## Planning Division Memorandum

**From:** Cindy Luxhoj AICP, Associate Planner  
**To:** Development Review Board Panel B  
**Date:** March 27, 2023  
**RE:** DB22-0011 Precision Countertops – Request to Reschedule Public Hearing

The DB22-0011 Precision Countertops application includes the following requests:

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

This application was originally scheduled for public hearing before Development Review Board (DRB) Panel B on March 27, 2023. In reviewing the applicant’s materials during preparation of the DRB staff report, City staff identified issues with the proposed site plan and met with the applicant on March 9, 2023, to address these concerns. Because achieving compliance with the Code will result in revisions to the submitted materials, delaying the DRB public hearing to a future date is necessary to provide adequate time for changes to be made.

The applicant previously requested to extend the 120-day review period on this application to May 3, 2023. However, if needed, the review period could be extended to December 14, 2023, which is 365 days from to date the application was deemed complete. Therefore, rescheduling the DRB public hearing to a future date is well within the extended 120-day review period.

November 9, 2022



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412 NW Couch St. #405  
Portland, Oregon 97209  
t: 503-764-9692  
www.firstfortyfeet.com

## Project Memorandum

Precision Countertop Building  
Site Design and Architectural Design  
Application Numbers: AR22-0008 Precision Countertops

**Proposal:** Annexation, Zone Map Amendment, Stage 1 Master Plan, Stage 2 Final Plan, Site Design Review, Type C Tree Plan.

**Location/Legal:** 25540 SW Garden Acres Road. Tax Lot 500, Section 2C, Township 3 South, Range 1 West, Willamette Meridian, Washington County, Oregon

This memorandum addresses responses to the missing items 1-15 highlighted under the Incompleteness Letter dated August 5, 2022.

1. *Indicate proposed future expansion area on Stage 1 Master Plan diagram.*

**Response:** The project will not have a future expansion nor future phasing at this time. The approach for the remaining land holdings is undetermined. The proposed project will not be seeking a land partition of the eastern-most portion of the property.

2. *Provide phased development schedule.*

**Response:** There will only be one phase of the project. Please refer to the Development Schedule provided by PHI Construction, illustrating the pre-construction planning schedule, starting from Land Feasibility to 100% Construction Set Drawings in 2024.

3. *Provide physical materials/color board (or samples) displaying specifications of type, color, and texture of exterior surfaces of proposed architectural features of the building.*

**Response:** The project team has provided physical materials and color board samples displaying specification of type, color, and texture of exterior surfaces of proposed architectural features of the building. The team has include all samples with labels.

4. *Clearly indicate on plans the location of proposed fences on the site.*

**Response:** The proposed fence is clearly indicated in blue color on Sheet A1.1 and labeled <SP-031>. The fence will be ornamental black bar at 6'-0" in height and have



one ornamental gate that is 20' clear width and two pedestrian doors. The location of the Knox box will be coordinated with the Fire Marshal. The proposal has included details of the fence design on sheet A1.3.

5. *Clearly indicate on plans how proposed on-site improvements integrate with recently constructed public right-of-way frontage improvements on SW Garden Acres Road*  
**Response:** Please reference sheet A1.2 Site Plan. This exhibit illustrates the on-site improvements of Garden Acres and future Java Road and how the public right-of-way frontage improvements will be constructed. The site plan shows how the proposed development will establish pedestrian connections and pathways from the proposed building to the Addressing Street and how the development will reconcile the intersection of Garden Acres Road and the future Java Road, including parking access and landscaping design.
  
6. *Provide a sign plan and cut sheets of proposed design, material, color and methods of illumination of all exterior signs*  
**Response:** The application includes a sign plan and cut sheets of the proposed sign design, including design, material, color, and methods of illumination of building sign. See refer to sheet A3.3 for the building signage detail and section through the signage. The building signage will be 170 linear feet and 36 square feet in area. Please refer to sheet A3.2 for sign location on the building. Please refer to sheet G2.0 for a perspective image of the building sign installation.
  
7. *Indicate conformance method used for outdoor lighting and provide drawings/cut sheets with details of luminaire type, mounting method, height, watts, shielding, etc., and calculations demonstrating compliance with Oregon Energy Efficiency Specialty Code, Exterior Lighting. Demonstrate how light spill-over to adjacent properties will be minimized*  
**Response:** Please refer to sheet LT1.0 and LT1.2 Lighting Plans, Statistics, Schedules, LT2.0, and LT2.1 Lighting Cut Sheets illustrating the conformance method used for outdoor lighting, including luminaire type, mounting method, height recommendation, wattage, shielding, and code compliance. The photometric plan also demonstrates how light spill-over to adjacent properties will be minimized.
  
8. *Include the Tree Removal Plan and inventory in the combined plan set, and indicate, for all trees in survey table in Arborist Report, whether each tree will be removed or retained.*  
**Response:** Please reference sheet L1.1 Tree Removal Plan and inventory indicating all trees in Arborist Report and survey table that shall be removed and retained. The sheet includes the Arborist Tree Survey and tree protection fencing approach.
  
9. *Indicate on plans how pathways crossing parking areas or driveways will be clearly marked with contrasting paint or paving materials*  
**Response:** Please reference sheet A1.2 Site Plan. The proposed development will provide high contrasted pedestrian pathways across the driveways marked with paint. These areas occur at two locations where new pedestrian crossings will be installed.

10. Calculate bicycle parking using the same mix of uses as for passenger vehicle parking spaces (Fabrication, Warehouse, Retail, Office). Indicate locations and dimensions of maneuvering areas for proposed bicycle parking on plans

**Response:** The Cover Sheet indicates the calculation of bicycle parking using the mix of uses as for passenger vehicle parking spaces. The table outlines the number of required parking spaces and the number of proposed parking based on Fabrication, Warehouse/Storage, Retail/Showroom, and Office use. The proposed development includes 6 short term and 6 long term bicycle parking. Please reference sheet A1.1 locating the 6 short term bicycle parking located directly outside the building entry. The reference detail is on sheet A1.3 indicating the dimensions of maneuvering areas for the proposed bicycle parking on the site plan.

11. Indicate dimensions of all loading berths on plans

**Response:** Please reference sheet A1.1 Enlarged Site Plan for dimensions of all loading berths.

12. Include the approved site plan attachment with the Service Provider Letter from Republic Services. Provide cut sheets of dimensions, design, and materials of commingled recyclables area

**Response:** Please reference sheet G3.0 Recycling Flow & Details illustrating location, dimensions, design, and materials of the commingled recycling area.

13. Provide sufficient findings and materials addressing standards of the Coffee Creek Industrial DOD including, but not limited to, the following:

- a. Provide additional renderings of building architecture, wayside area, and landscaping along the Addressing and Supporting Streets to demonstrate compliance with requirements of Coffee Creek Industrial Design Overlay District (DOD).

**Response:** Please reference sheet G2.0 and G2.1 Renderings for additional renderings of the building architecture, wayside areas, and landscape design along both the Addressing Street and Supporting Street.

- b. Table CC-3 Site Design, 1. Parcel Access, Parcel Driveway Width. Demonstrate how the 24-foot maximum driveway width from the proposed Supporting Street is met. Staff notes that the plans show a west driveway width of 30 feet and east driveway width of 40 feet, which exceeds the maximum.

**Response:** The driveway width will be the only waiver of the proposed development. Please reference sheet A1.1 for the driveway width. There are two access points from the future Java Road; the first is 24'-0" and is within the allowable drive access width; however, the second driveway access width is 40'0". The increased width is proposed in order to accommodate truck maneuvering and safe access.

- c. Table CC-3 Site Design, 2. Parcel Pedestrian Access, General. Explain how required pedestrian access from the Supporting Street right-of-way will be provided to the site in the first phase of the project (before the street is fully built). Staff notes that no direct connection to the Supporting Street is shown in the first phase of development.



**Response:** Please reference sheet A1.2 Site Plan. This sheet illustrates how pedestrian access from the future Java Road will be constructed. Note that there is only one phase of this development.

- d. *Table CC-3 Site Design, 2. Parcel Pedestrian Access, Parcel Pedestrian Access Width. Demonstrate how the minimum 8-foot walkway width from the Addressing and Supporting Streets is met. Staff notes that the plans show a walkway width of 7 feet at the sidewalk on the Addressing Street and no direct access to the Supporting Street.*

**Response:** Please reference sheet A1.1. This sheet illustrates how the minimum 8-foot walkway width from Garden Acres Road and the future Java Road are met. The proposed development includes an 8'-0" sidewalk from Garden Acres road to the building entrance. The proposed development also includes an 8'-9" wide sidewalk from the future Java Road to the building entrance.

- e. *Table CC-3 Site Design, 4. Parking Location and Design, Parking Setback. Demonstrate how the 15-foot minimum parking setback from the right-of-way of the Supporting Street is met. Staff notes the setback appears to be less than 15 feet for both the front and rear parking areas; however, it is difficult to determine the actual extent of right-of-way in relation to the parking areas.*

**Response:** Please reference sheet A1.0 illustrating the parking setback dimension from the right-of-way of Garden Acres Road and future Java Road. The parking setback dimension along the Addressing Street is 33'-0". The parking setback along future Supporting Street is greater than 15'-0".

- f. *Table CC-3 Site Design, 4. Parking Location and Design, Parking Lot Sidewalks. Demonstrate how the minimum 9-foot depth for planted areas adjacent to off-street parking areas is met. Staff notes that landscape areas adjacent to parking along the Supporting Street appear to be less than 9 feet wide.*

**Response:** Please reference sheet A1.1 illustrating a 11'-8" depth of planting area adjacent to the off-street parking areas along Garden Acres Road and a 15'-0" depth of planning and stormwater facilities adjacent to the off-setter parking areas along future Java Road.

- g. *Table CC-3 Site Design, 6. Planting, Landscaping Standards Permitted. Demonstrate how loading areas at the east side of the building that are along the Supporting Street are screened to the High Screen or High Wall Standard.*

**Response:** Please reference sheet A1.1 illustrating a 6ft screening located on the north side of the building's loading areas along the Supporting Street. Sheet G2.1 rendering (loading dock view – future Java Road condition) illustrates the 6ft high screen wall.

- h. *Table CC-3 Site Design, 7. Location and Screening of Utilities and Services, Required Screening. Demonstrate how the commingled recycling area is screened to the High Screen or High Wall Standard.*

**Response:** Please reference sheet A1.1 illustrating a 6ft screening located on the north side of the building's recycling areas along the Supporting Street. Sheet G2.1

rendering (loading dock view – future Java Road condition) illustrates the 6ft high screen wall.

- i. *Table CC-4 Building Design, 2. Primary Building Entrance, Visibility. Demonstrate how direct line of sight from the Addressing Street to the Primary Building Entrance is achieved. Staff notes that it appears that landscaping between the street and entry may partially obscure view of the entry.*

**Response:** Please reference sheet A4.1 Building Sections demonstrating how the design ensures direct line of sight from Garden Acres Road to the building's entrance. Please reference sheet G2.0 renderings illustrating how the design protects the line of sight from Garden Acres Road.

- j. *Table CC-4 Building Design, 3. Overall Building Massing, Base, Body, and Top Dimensions; Base Design; Top Design. Demonstrate how a clearly demarcated base, body, and top of the building on the Addressing and Supporting Streets is achieved. Include an additional drawing of these elevations that defines the base, body, and top dimensions as defined in the Coffee Creek Industrial DOD. Demonstrate how the base and top create a change in surface position related to the body of the building.*

**Response:** Please reference sheet A3.2 and detail No. 5 and No. 2 illustrating how the building design clearly demarcated base, body, and top of the building on the Addressing and Supporting Streets. The building base (WB1), building wall body (WP1), and the top of building (WP3) demarcate unique materials and create a change in surface position related to the body of the building. Please reference the physical materials provided.

- k. *Table CC-3 Building Design, 3. Overall Building Massing, Required Screening of Roof-mounted Equipment. Demonstrate that any roof-top mechanical equipment will be screened from ground-level view from rights-of-way or adjacent properties at the property line. Demonstrate that no roof-top mechanical equipment will be visible from an Addressing and Supporting Streets.*

**Response:** Please reference sheet A4.1, section No. 2 illustrating how the building will screen the roof-top mechanical equipment from ground-level view and from the public right of way. Please also reference sheet G2.0 renderings showing how the building design will screen all mechanical units.

- l. *Waysides: Demonstrate how all required wayside amenities including seating, landscaping, lighting, and recycling/waste receptacle are provided. Staff notes that seating and landscaping are shown; however lighting and a receptacle are not included. Provide cut sheets/details of all required and optional amenities. Demonstrate how solar access and exposure to sunlight between the hours of 10 am and 2 pm is achieved. Staff notes that the narrative lists a steel trellis as an optional amenity in the wayside; however, the plans do not include a trellis.*

**Response:** Please reference sheet A1.1 Site Plan and G2.0 renderings illustrating seating, landscape design, lighting, and receptacles provided in key locations of the building entrance and entry plaza. Reference sheet L3.0 Wayside Sunlight Study illustrating how the design ensures solar access and sunlight exposure during the hours of 10am and 2pm throughout the year.

- m. *Request waivers, as appropriate, for all proposed deviations from development standards and/or DOD standards and adjustment allowances. Please note that if waivers are requested, the application will no longer be eligible for Administrative Review and will require review by the Development Review Board.*

**Response:** The proposed development will be requesting a waiver for an increased driveway width dimension, noted on sheet A1.1. The eastern-most driveway access off future Java Road will need to be 40'-0" for safety and maneuvering of trucks.

14. *Address how upstream stormwater will be handled in the Stormwater Report. Incorporate design elements necessary to address source control issues (hydraulically isolated loading dock, etc.).*

**Response:** Revised plans and drainage analysis include inlets and piping to collect storm runoff from adjacent parcel to north and from future east site development area. Separate inlets have been provided in the various truck docks to collect runoff from a 3 ft. width along the building. This runoff is directed to the site sanitary sewer system

15. *Incorporate stormwater facilities throughout the design, rather than in one large facility as proposed. Staff notes that it is unclear why facilities were not incorporated into the Supporting Street improvements in the landscaping areas and/or into the landscaping areas in the parking lot. The Geotech Report states that groundwater was shallow but did not identify a depth. The infiltration tests must be performed in the location and to the base depth of the proposed facility (only shallow infiltration testing performed).*

**Response:** Based on several discussions with staff, the storm treatment and flow control facilities have been reconfigured to provide four LID rain gardens along the northern portion of the development area, a LID planter at the east side of the development area and a LID planter west of the proposed building. Staff has indicated this configuration is acceptable. Staff has not indicated further infiltration testing is required.

## Planning Comments

- A. *The project narrative document has comments in it by/for the applicant; these should be removed when the document is resubmitted. Please provide both Word and PDF versions of the narrative with the resubmittal.*

**Response:** The narrative has been updated.

- B. *The rendering of the front of the building shows two flag poles. If flag poles are proposed, indicate this on the site plan and provide dimensions and sign drawing details in the sign plan.*

**Response:** Please reference sheet A1.1 Site Plan and G2.0 renderings illustrating the location and height of the building's two flag poles.

- C. *It would facilitate staff's review to separate the site plan from the fire service plan, which are combined on sheet A1.0 in the plan set. Engineering and Natural Resources Comments (in addition to incomplete items included above)*

**Response:** Please reference sheet FS1.0 Fire Service Site Plan illustrating pedestrian path connections, fire apparatus access, gate access, hydrant locations, driveway and aisle width, etc.

### Engineering and Natural Resources Comments

- D. *The water system shall be looped to the extent feasible. There is an existing stub to the south and to the north of the property that should be used to serve this property. This can be resolved during Building Permit review. The property shall be served by separate irrigation, domestic and fire suppression lines.*

**Response:** As staff has mandated significant changes to the storm and sanitary systems, the final configuration requires two storm pipes and two sanitary sewer pipes virtually along the entirety of the development area south boundary, sufficient additional width is not available for a second public water main along the south property boundary (in addition to the public water main mandated in the private drive along the north property boundary).

- E. *Applicant should evaluate whether depth of sewer is adequate to serve future phases by gravity when the eastern portion of the property develops.*

**Response** A separate private sanitary sewer pipe is shown along the development area south property boundary to serve future development at the east portion of the property.

### Building Comments

- G. *Effective July 1, 2022, new commercial buildings are required to comply with electric vehicle charging infrastructure requirements for parking areas in accordance with OAR 918-460-0200.*

**Response:** Please reference sheet A1.1 Site Plan locating electric vehicle charging infrastructure per OAR 918-460-0200. Keynote <SP-041>

January 6, 2023



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412 NW Couch St. #405  
Portland, Oregon 97209  
t: 503-764-9692  
www.firstfortyfeet.com

# Project Memorandum

## **City of Wilsonville, Oregon**

### **Development Review Application –Comment Response to City Comments and Corrections**

Precision Countertop Building  
Site Design and Architectural Design  
Application Numbers: DB22-0011 Precision Countertops

#### **Proposal:**

Annexation (ANNX22-0004), Zone Map Amendment (ZONE22-0005), Stage 1 Master Plan (STG122-0006), Stage 2 Final Plan (STG222-0007), Site Design Review (SDR22-0007), Waiver (WAIV22-0003), Type C Tree Plan (TPLN22-0006), Class 3 Sign Plan (SIGN22-0011)

#### **Location/Legal:**

25540 SW Garden Acres Road. Tax Lot 500, Section 2C, Township 3 South, Range 1 West, Willamette Meridian, Washington County, Oregon.

This memorandum addresses comments and corrections related to compliance to be addressed in the final set of application material:

#### **Planning Comments**

- A. Revise Development Permit Application form to show correct property owner and have the owner sign and date the form before resubmittal. Staff notes that the form on file shows the property owner as Glen Wetzel, while the narrative and other materials show the owner/applicant as PCT NW Properties OR LLC.

**Response:** *The team have revised the Development Permit Application form to show correct property owner and includes the property owner's signature.*

- B. Include a column in the tree survey table on Sheet L1.1 that indicates for each tree whether it will be removed or retained.



*Response:* Sheet L1.1 includes the Tree Inventory Table from the Arborist Tree Survey. The table now includes a column indicating whether the tree is slated for remove or to be retained.

C. Provide sufficient findings and materials addressing standards of the Coffee Creek Industrial DOD including, but not limited to, the following:

- a. Table CC-3 Site Design, 2. Parcel Pedestrian Access, General. Explain how separate and direct pedestrian connections between parking, entrances, and street right-of-way are provided along the Supporting Street between the Addressing Street and the east portion of the site not currently proposed for development. Staff notes that the sidewalk along the Supporting Street doesn't directly connect to the Addressing Street right-of-way or extend to the east past the proposed development area.

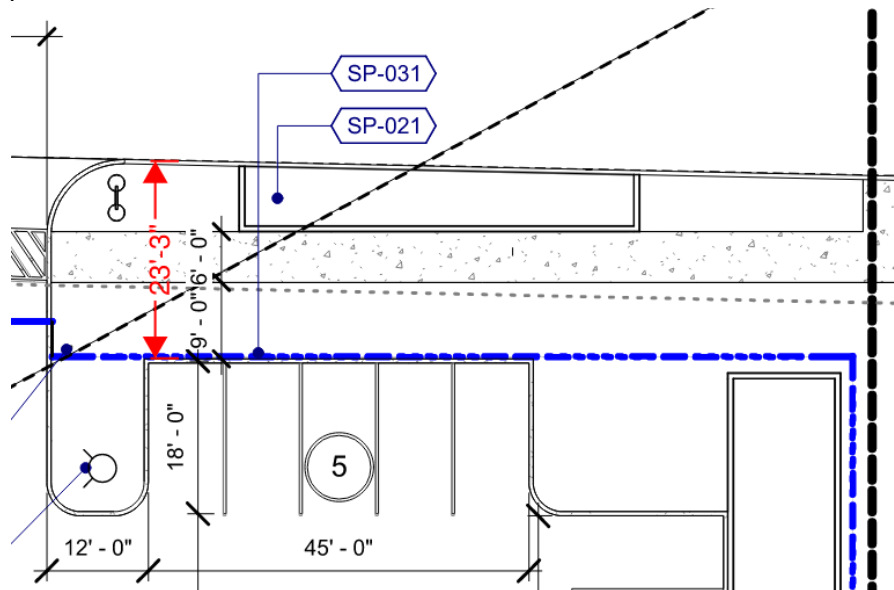
*Response:* The following excerpt from the proposed site plan illustrates the extension of the sidewalk past the proposed development area to the east. An additional pedestrian connection has been added along the supporting street to allow direct access to the addressing street right-of-way. A painted pedestrian path has been added where the connection crosses the west parking lot drive aisle.





- b. Table CC-3 Site Design, 4. Parking Location and Design, Parking Setback. Demonstrate how the 20-foot minimum parking setback from the right-of-way of the Addressing Street is met; the measurement is from the edge of right-of-way, not the edge of pavement as shown on Sheet A1.1. Demonstrate how the 15-foot minimum parking setback from the right-of-way of the Supporting Street is met; the edge of right-of-way is unclear on Sheets A1.1 and A1.2, thus it is difficult to determine the actual extent of right-of-way in relation to the parking area.

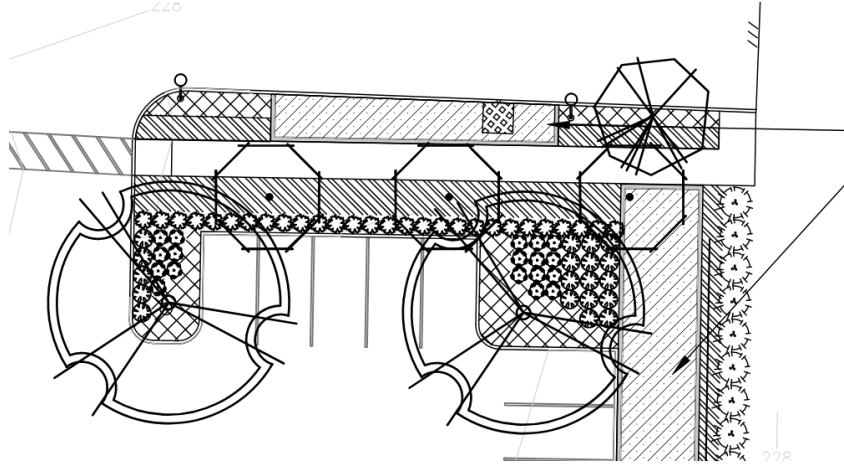
**Response:** The Dimension of 20' parking setback from ROW from addressing street has been added to A1.1. Dimension of 15' parking setback from ROW of Supporting Street has been added to A1.1. The following exhibit illustrates a setback up to 23ft from the parking area to the right-of-way of the Supporting Street. This also includes 9'-0" of landscaping between the parking area and the 6ft pedestrian sidewalk.



- c. Table CC-3 Site Design, 4. Parking Location and Design, Parking Lot Sidewalks and Parking Perimeter Screening and Landscaping. Demonstrate how the minimum 9-foot depth for planted areas adjacent to off-street parking areas and the General Landscape Standard or Low Berm Standard (see Section 4.176 (.02) C. and F.) are met for the east parking area on the Supporting Street. There doesn't appear to be any landscaping to screen parking from the Supporting Street in this area, as the sidewalk is curb-tight to the parking.

**Response:** The proposed development includes a 9ft landscaped planted area adjacent to the northeast parking area on the

*Supporting Street. Dimension has been added to A1.1 noting the depth of landscaped area. The following exhibit shows that all General Landscaping standard have been met.*



- d. Table CC-3 Site Design, 5. Grading and Retaining Walls, Maximum Height, Required Materials, Retaining Wall Design. Demonstrate how the standards are met for the retaining wall along the Supporting Street shown on Sheet C3.0.

**Response:** *The proposed development has been revised, removing all retaining walls along the Supporting Street. Requirement no longer applied.*

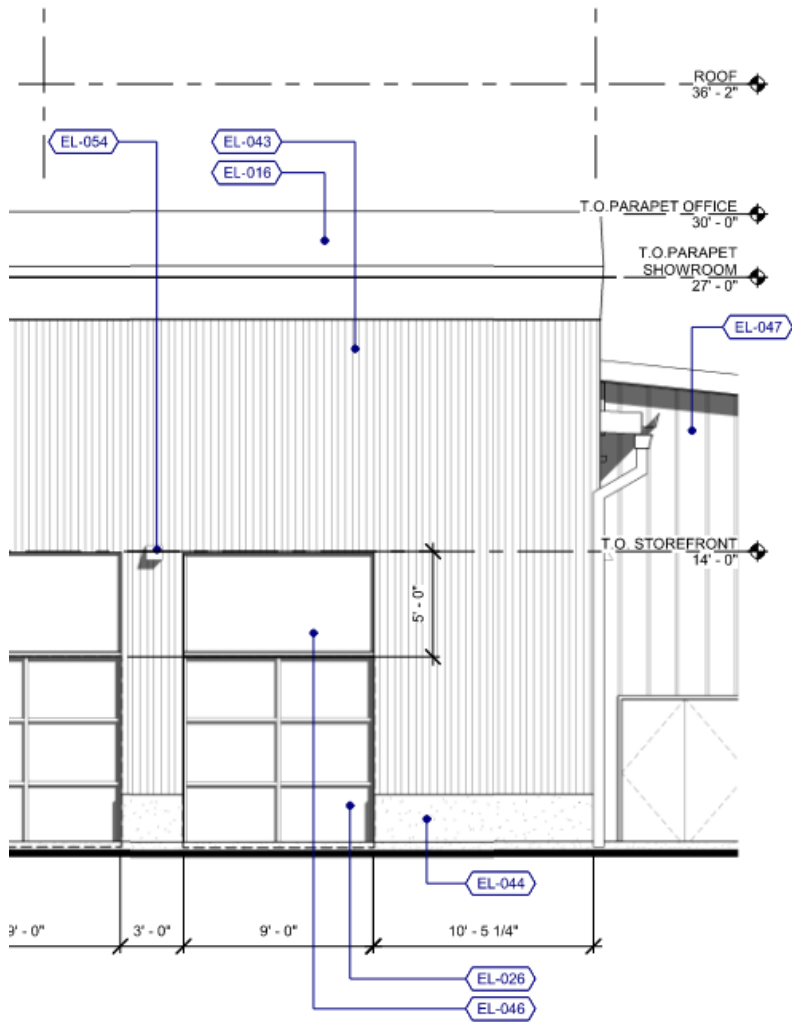
- e. Table CC-3 Site Design, 6. Planting, Landscaping Standards Permitted. Demonstrate how loading areas at the east side of the building that are along the Supporting Street are screened to the High Screen or High Wall Standard. Staff notes that both standards include landscaping trees and groundcover as part of the required materials (see Section 4.176 (.02) F. and G.).

**Response:** *The revised Landscape Plan addresses the screening provision as much as possible; however, the proposed development does not incorporate High Screen landscaping, because visual separation is not required between uses and developments. This is accomplished through distance from potential development north of the Supporting Street and the other landscaping provided that meets the standards of this code.*

- f. Table CC-4 Building Design, 3. Overall Building Massing, Base, Body, and Top Dimensions; Base Design; Top Design. Demonstrate how a clearly demarcated base and top that meets the standards are provided on the west and north elevations of the entry/showroom portion of the building. Clarify whether the roof is considered the top along the north elevation of the building and explain how it meets the standard.



**Response:** The revised development proposal demarcates base, middle, and top of the building’s massing and material. Along the Supporting Street, the roof meets all criteria of Table CC-4, Building Design, Top Design. The roofing panel is a different color and change in texture and rib pattern than the wall panel which satisfies portions of top design. The roof creates a change in surface position as it slopes back away from the plane of the wall, by at least 1½”, which satisfies the portions of the top design.



- g. Waysides: Provide cut sheet/detail of the proposed trash receptacle; staff notes that keynote SP-058 on Sheet A1.1 directs to Detail 8/A1.3, however the detail isn't included on the plan sheet. Explain how the perimeter landscaping on three sides of the wayside meets the Low Screen, Low Berm, or High Screen Landscaping standard (Section 4.176 (.02) D., E., or F.) to a depth of 20 feet, minimum.

**Response:** The following cut sheets has been added to 8/A1.3 for the trash receptacle. The proposed development revisions



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incorporate landscaping that now meet the 'low screen' standard along street lot lines for Garden Acres Road and Java Road, including additional dimension and landscaping on either side of the sidewalk along the Supporting Street. Per our conversation, the sidewalk along the Supporting Street has now been located to allow more landscape features on either side of the pedestrian pathway; the landscaping will soften the impact of the development upon entry and from neighboring developments. In addition, low screen is implemented between each of the two parking areas and Java Road. The landscape plan also uses low shrubs to help screen portion of the building operations.



D. Request additional waivers, as appropriate, for all proposed deviations from development standards and/or Coffee Creek Industrial DOD standards and adjustment allowances and provide supporting Code response narrative. Staff notes that a waiver has already been requested for driveway width on the Supporting Street.

**Response:** There are no additional requests for waivers.

E. Correct inconsistencies in the plans with respect to sidewalk placement on the north elevation of the building along the Supporting Street. While the majority of plans show the sidewalk immediately adjacent to the building with no landscape separation, the Fire Service Site Plan (Sheet FS1.0), Lighting Plans (Sheets LT1.0 and LT1.2), and Recycling Flow &

Details (Sheet G3.0) all show a landscape area between the building and sidewalk.

**Response:** *The Sheets FS1.0, LT1.0, LT1.2, G3.0 have been updated and are consistent with respects to all design elements, including sidewalk placement, setbacks, building floor plan, dimensions, access, etc.*

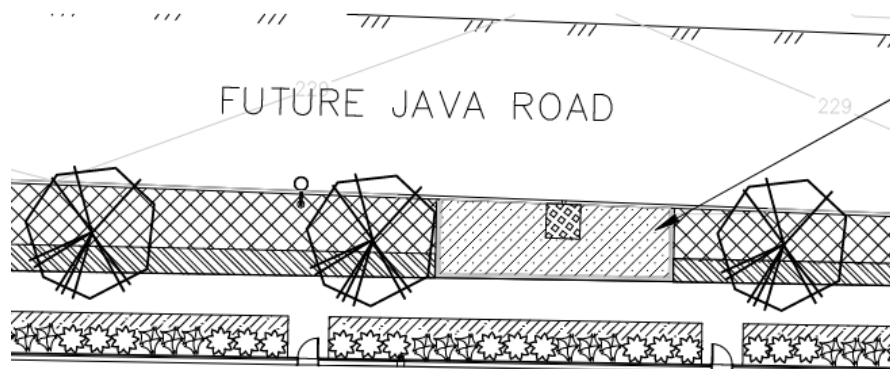
- F. Staff notes there are two person doors on the north elevation of the building that open onto the sidewalk immediately adjacent, which leaves only 2.5 feet of clearance on the sidewalk when the doors are opened. Explain what measures will be taken to ensure that this isn't a safety hazard for people using the sidewalk along the Supporting Street.

**Response:** *The Reference re-designed frontage along the supporting street, the sidewalk has been pushed 6'-0" away from the building which allow for landscaping along the building and clearance for the doors to open.*

**Engineering and Natural Resources Comments**

- G. Demonstrate how the sidewalk along the Supporting Street is separated from the building in accordance with Figure CC-2 (Section 4.134(.10)). Demonstrate how required street trees are provided on the Supporting Street. Consider using narrower stormwater planters in lieu of proposed rain gardens along the Supporting Street as they allow the sidewalk to be separated from the building with landscaping. Extend the sidewalk to the east boundary of the developed area of the site in addition to extending it to the parking area as shown on the plans.

**Response:** The proposed development has been revised to address Figure CC-2, Section 4.134 through reconfiguring the stormwater planters in lieu of rain gardens. This approach allows for more dimension for street trees and separated sidewalk along the Supporting Street.



- H. Demonstrate how the water system is looped to the extent feasible. Staff notes that there are existing stubs to the south and north of the property that should be used to serve this property. Demonstrate how the

property is served by separate irrigation, domestic, and fire suppression lines.

**Response:** *Additional public water main has been added south of the building and connected to system in supporting street, creating the requested loop. One of the existing stubs is north of the north property boundary and on an adjacent parcel and consequently not available to this development, therefore, the previously shown new connection to the existing water main in Garden Acres Road remains shown on the plans. Plans continue to show separate fire and domestic service connections to the new public water main in the supporting street. An irrigation service and meter have been added, also connected to the proposed new public water main in the supporting street.*

- I. Demonstrate how loading dock areas, which staff notes are shown as hydraulically isolated with a catch basin connected to sewer, will be covered in accordance with the Source Control section of the Public Works Standards to prevent stormwater from entering the sewer system. All storm facilities must be a minimum of 10 feet from foundations of the building. All stormwater facilities should have a high flow overflow in addition to perf pipe connection to the storm system. Explain how all-weather access, at a minimum to within 10 feet of inlet and outlet structures, will be provided for maintenance of the stormwater facility at the southwest corner of the project.

**Response:** *Architectural plans show canopies over the area of the docks. The surface of the dock paving will continue to be shown to drain to the previously shown isolation areas. All storm treatment and flow control facilities are a minimum of 10 ft, from the building. Plans continue to show the City of Wilsonville drawings ST 6005, 6020, and 6120, which show the planter and rain garden overflow outlet structures, with high flow outlets. The plans also continue to show curb outlets for secondary overflow along the curb of the supporting street or parking area (planters and NW rain garden) or overland (west rain garden). Secondary overflow is ultimately overland, following historic flow paths, generally southwest to Garden Acres Road. Plans show a graveled access to the west rain garden. This alignment and proximity to the rain garden has been reviewed and approved by staff. Gravel paving design has been provided by the project geotechnical engineer, demonstrating the gravel surfacing will provide all weather access for a 30-ton maintenance vehicle.*

### **Building Comments**

- J. Correct inconsistencies in the plans with respect to location of hydrants and FDC as shown on the Grading Plan (Sheet C2.0) and Fire Service Site Plan (Sheet FS1.0)

**Response:** *Please see revised C2.0 and FS1.0 that reflect the proposed locations of hydrants and the FDC.*



APPLICANT REQUEST FOR WAIVER OF 120-DAY RULE (ORS 227.178(5))

Precision Countertops

Project Name, Description

Robert Hausserman

Applicant's Name

DB22-0011

City of Wilsonville File Number

I have a pending land use application with the City for the file number identified above. I request a waiver of the 120-day rule to allow additional time for the City to process my land use application, as allowed by ORS 227.178. As a result, I am giving the City the period of time through and including the date of May 3rd, 2023<sup>1</sup> to make a final decision on my land use application. Unless, an additional waiver is given by me, I understand the City will make a final decision on my land use application on or before the date specified in this letter.

Robert Hausserman

Applicant's Signature

February 9th, 2023

Date



City of Wilsonville  
Exhibit B5 DB22-0011

<sup>1</sup> In no event may the total amount of time, including all extensions, exceed 365 days from the date the application is deemed complete. Example: an application deemed complete on March 1, 2020, cannot be extended beyond March 1, 2021, and the City must make a final decision on or before March 1, 2021.

April 3, 2023



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# Project Memorandum

## **City of Wilsonville, Oregon**

### **Development Review Application –Comment Response to City Comments and Corrections**

Precision Countertop Building  
Site Design and Architectural Design  
Application Numbers: DB22-0011 Precision Countertops

#### **Proposal:**

Annexation (ANNX22-0004), Zone Map Amendment (ZONE22-0005), Stage 1 Master Plan (STG122-0006), Stage 2 Final Plan (STG222-0007), Site Design Review (SDR22-0007), Waiver (WAIV22-0003), Type C Tree Plan (TPLN22-0006), Class 3 Sign Plan (SIGN22-0011)

#### **Location/Legal:**

25540 SW Garden Acres Road. Tax Lot 500, Section 2C, Township 3 South, Range 1 West, Willamette Meridian, Washington County, Oregon.

This memorandum addresses comments and corrections related to compliance to be addressed in the final review of the proposed development:

#### **Planning Comments & Questions**

- A. Are the proposed lighting specifications developed under a ‘prescriptive’ or ‘performance’ criteria?

**Response:** *The proposed lighting specifications and design standards have been developed under a prescriptive specifications methodology and criteria, per the municipal code requirements and guidelines.*

- B. Please confirm all trees to be removed along the southern property line.

**Response:** *The team have updated and confirmed the number of trees slated for removal. All trees on the adjacent property will remain and a select number of trees will be removed per the Arborist recommendations. Please see drawing exhibit –*





Planning  
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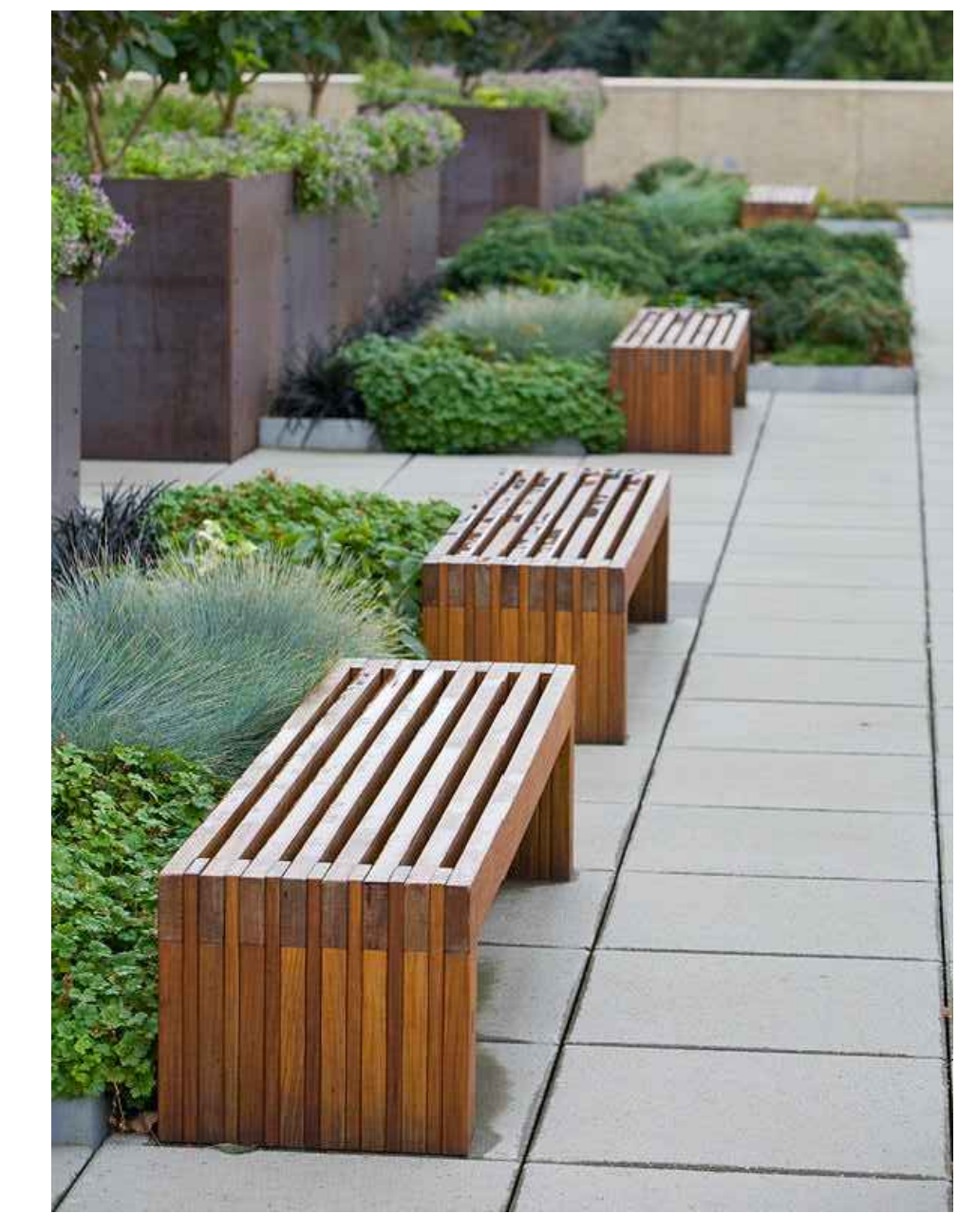
C. *Please include the existing trees from the survey on the final landscape plan to allow the reviewers to understand the context of the tree inventory.*

**Response:** *The landscape plan (L1.1) has been updated to illustrate the existing trees from the survey and trees to remain.*

D. *Please include the 'drip line' on the tree inventory report.*

**Response:** *The drip line for each tree to remain has been included in the tree inventory report and exhibits.*





**PROPOSED BENCHES**

MANUFACTURER: FORMS + SURFACES  
MODEL: 6' HUDSON BENCH, SURFACE MOUNT

PLANT LIST: GENERAL LANDSCAPING

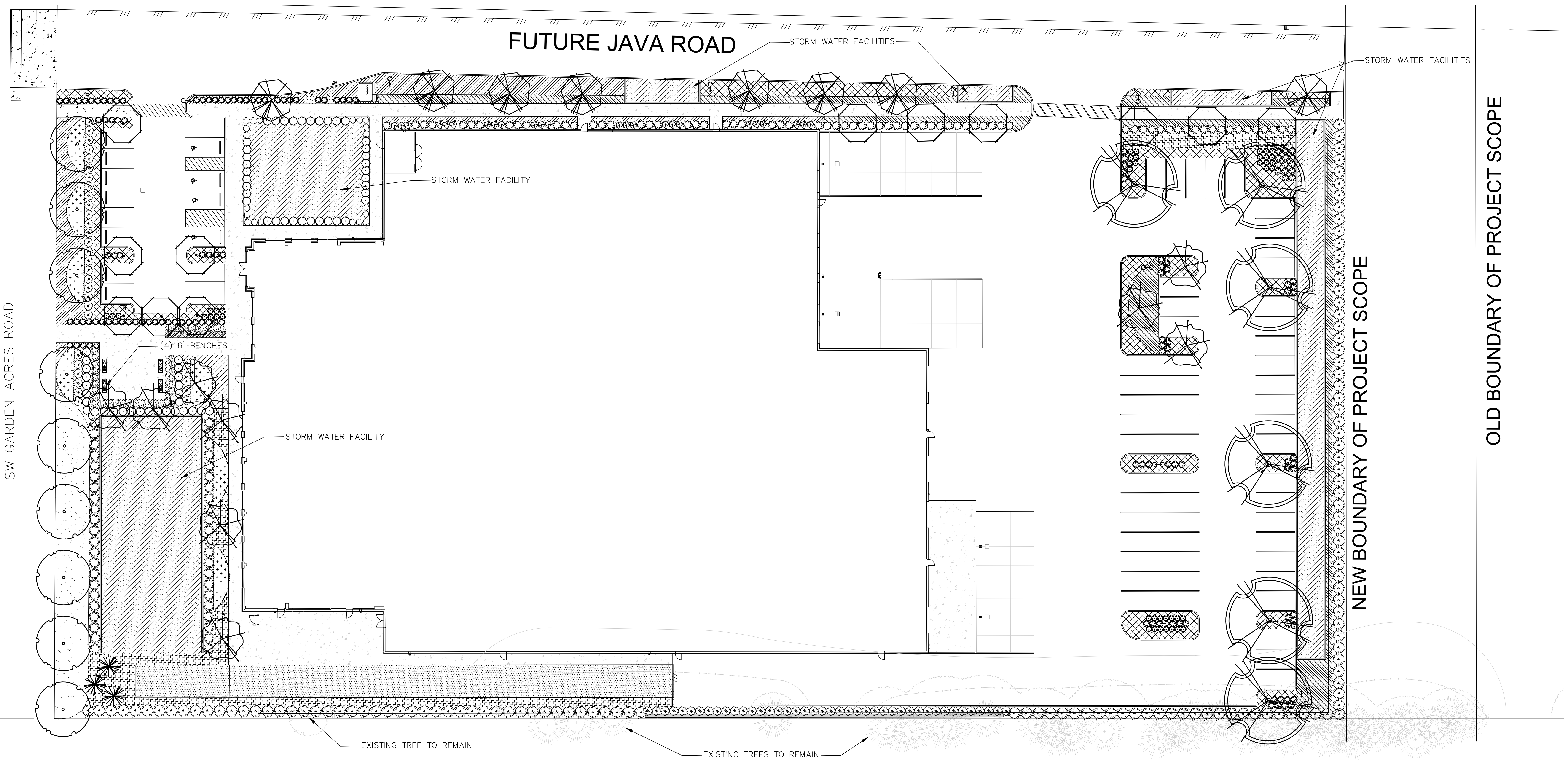
SYMBOL	#	LATIN/COMMON NAME TREES	SIZE	SPACING	WATER USE
TREES					
	9	ACER RUBRUM 'ARMSTRONG' Armstrong Red Maple	2" cal.	As shown	Moderate
	3	CHAMAECYPARIS NOOT. 'GLAUCA PENDULA' Blue Weeping Alaskan Cedar	8' ht.	As shown	Low
	8	CORNUS 'EDDIE'S WHITE WONDER' Eddies White Wonder Dogwood	1-1/2" cal.	As shown	Moderate
	12	NYSSA SYLVATICA Black Tupelo	1-1/2" cal.	As shown	Moderate
	9	PRUNUS SERRULATA 'MOUNT FUJI' Mount Fuji Flowering Cherry	1-1/2" cal.	As shown	Moderate
	6	ZELKOVA SERRATA 'GREEN VASE' Green Vase Zelkova	2" cal.	As shown	Low

PLANT LIST: GENERAL LANDSCAPING

SYMBOL	#	LATIN/COMMON NAME TREES	SIZE	SPACING	WATER USE
SHRUBS (WITH MIN. 10"-12" SPREAD)					
	28	ABELIA 'LUCKY LOTS' Twist of Lime Abelia	5 gal.	4' o.c.	Low
	44	CISTUS LADANIFER Crimson Spot Rockrose	5 gal.	5' o.c.	Low
	125	MYRICA CALIFORNICA Pacific Wax Myrtle	5 gal.	5' o.c.	Low
	74	NANDINA DOMESTICA 'GULF STREAM' Gulf Stream Nandina	2 gal.	3' o.c.	Low
	71	PIERIS JAPONICA 'CABERNET' Enchanted Forest Pieris	5 gal.	4' o.c.	Low
	42	SPIRAEA X BUM. "GOLDMOUND" Goldmound Spiraea	2 gal.	3' o.c.	Low
	24	TAXUS BACCATA 'STRICTA' Irish Yew	5 gal.	4' o.c.	Low
	64	VIBURNUM DAVIDII David Viburnum	2 gal.	3' o.c.	Moderate
	75	VIBURNUM TINUS 'SPRING BOUQUET' Spring Bouquet Viburnum	5 gal.	4' o.c.	Moderate
GRASSES					
	37	CALAMAGROSTIS 'KARL FOERSTER' Feather Reed Grass	1 gal.	2' o.c.	Low
	20	MISCANTHUS SINENSIS 'YAKUSHIMA' Dwarf Maiden Grass	2 gal.	3' o.c.	Low

PLANT LIST: GENERAL LANDSCAPING

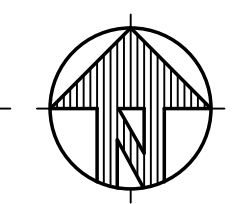
SYMBOL	#	LATIN/COMMON NAME TREES	SIZE	SPACING	WATER USE
GROUND COVER					
	561	ARCTOSTAPHYLOS UVA-URSI "MASS." Massachusetts Kinnikinnick	1 gal.	3' o.c.	Low
	320	LIRIOPE MUSCARI Big Blue Lily Turf	1 gal.	2' o.c.	Moderate
	160	LONICERA PILEATA Box Honeysuckle	1 gal.	4' o.c.	Low
	263	MAHONIA REPENS Creeping Oregon Grape	1 gal.	30" o.c.	Low
	119	ROSA 'FLOWER CARPET AMBER' Flower Carpet Amber Rose	2 gal.	3' o.c.	Moderate
OTHER					
		FINE LAWN SEED MIX See Specifications			Moderate
		STORMWATER FACILITY PLANTING Per City of Wilsonville Standards			Moderate



**GENERAL NOTES:**  
1. Contractor is to verify all plant quantities.  
2. Adjust plantings in the field as necessary.  
3. Project is to be irrigated by an automatic, underground system, which will provide full coverage for all plant material. System is to be design/ build by Landscape Contractor. Guarantee system for a minimum one year. Show drip systems as alternate bid only.  
4. All plants are to be fully foliated, well branched and true to form.  
5. Contractor is to notify Landscape Architect or Owner's Representative of any site changes or unforeseen conditions that may be detrimental to plant health, or cause future problems to any structural elements of the project.

**LANDSCAPE PLAN**

SCALE 1" = 20'-0"



DESIGN REVIEW SET 03/20/2023

Client/ Owner:

Project:  
**PRECISION COUNTERTOP**

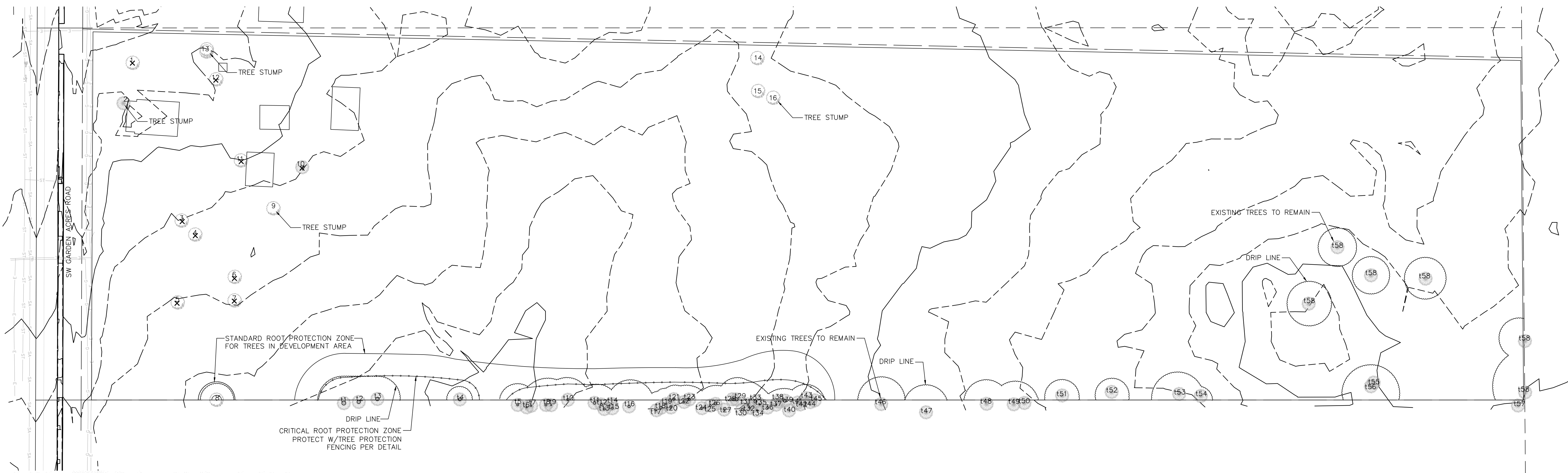
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Sheet Title:  
**LANDSCAPE PLAN**

Revisions:  
# Description Date

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Date: 04/03/2023  
Job Number: 121036  
Sheet

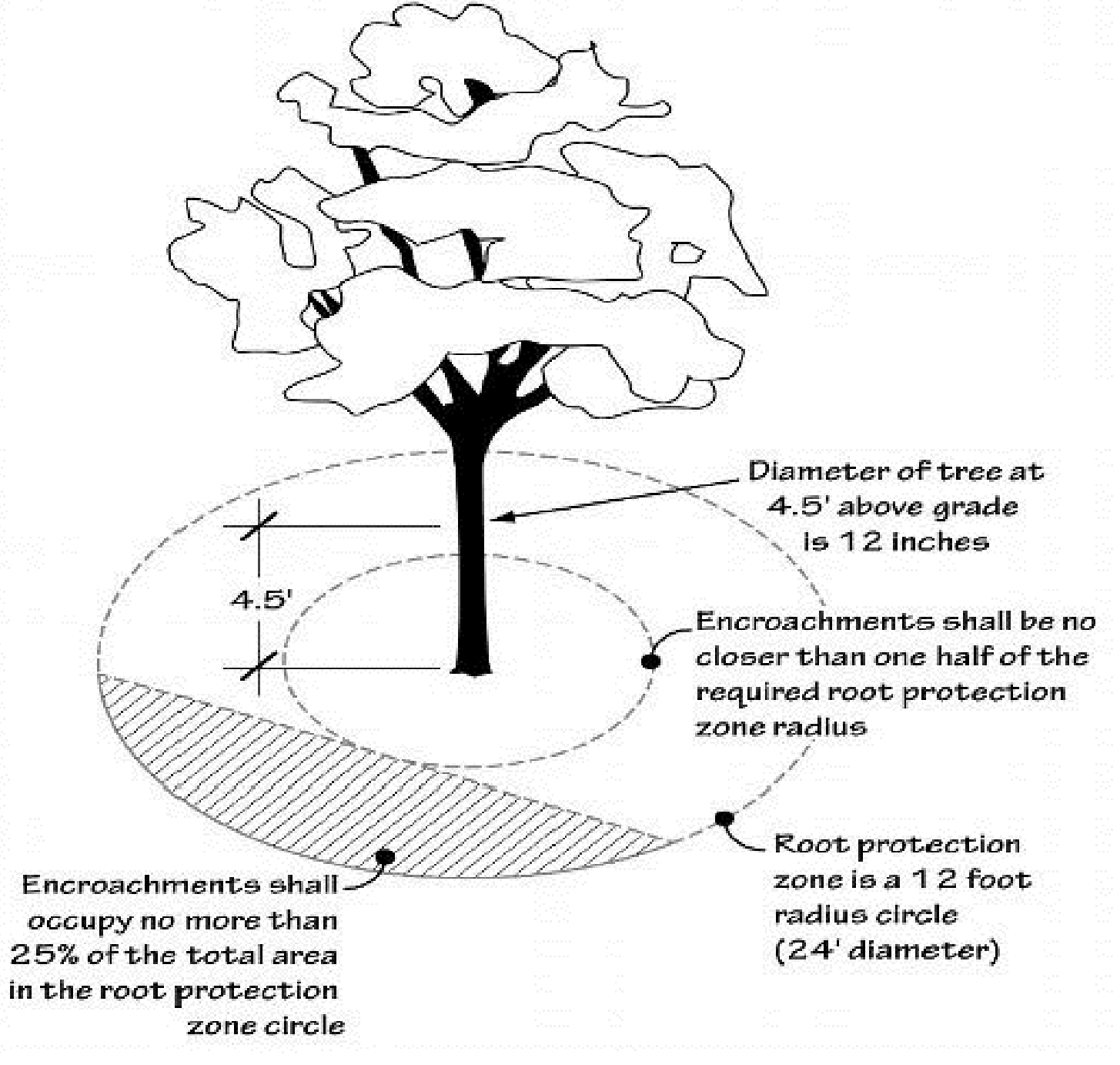




**TREE REMOVAL AND PROTECTION PLAN**

X TREES TO BE REMOVED

SCALE 1" = 40'-0"



**TREE ROOT ZONE DETAIL**

N.T.S.

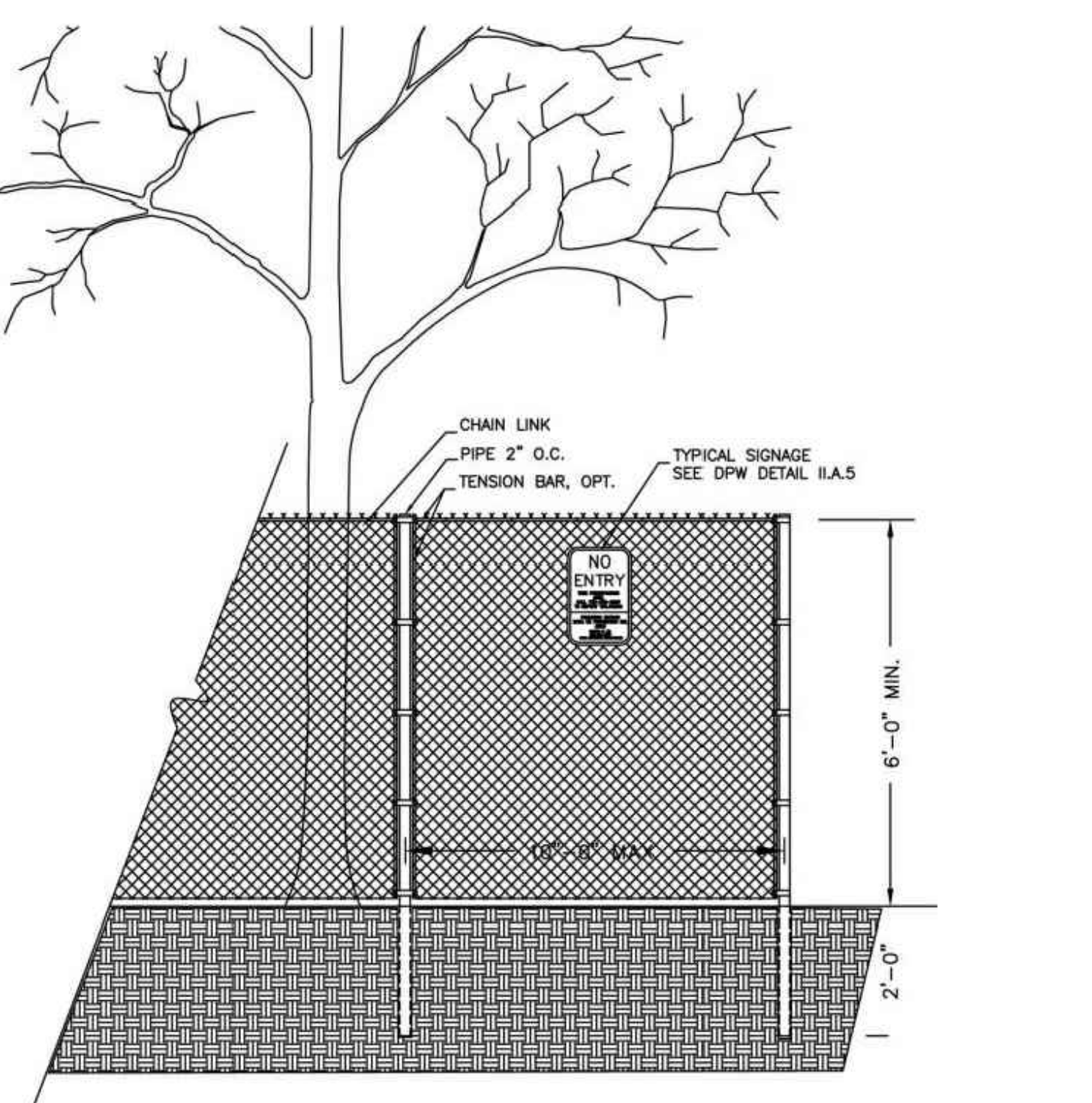
- NOTES:**
- ALL EXISTING TREES DESIGNATED TO BE PRESERVED SHALL BE PROTECTED BY FENCING, AS ILLUSTRATED.
  - INSTALL TREE PROTECTION FENCE AT TREE DRIP LINE OR AT EDGE OF DISTURBED AREA, AS SHOWN ON PLANS, OR PER ARBORIST DIRECTION.
  - AVOID DAMAGE TO CRITICAL ROOT ZONE. DO NOT DAMAGE OR SEVER LARGE ROOTS WHEN INSTALLING POSTS.
  - THERE SHALL BE NO CONSTRUCTION ACTIVITY OR STORAGE OF MATERIAL WITHIN THE BOUNDARIES OF THE TREE PROTECTION FENCING.
  - TREE PROTECTION FENCING SHALL BE INSTALLED PRIOR TO CONSTRUCTION AND MAINTAINED THROUGHOUT THE DURATION OF THE PROJECT.
  - SIGNAGE DESIGNATING THE TREE PROTECTION ZONE SHALL BE SECURED IN A PROMINENT LOCATION ON EACH PROTECTION FENCE.
  - PROJECT ARBORIST TO BE ON SITE WHEN DIGGING OCCURS WITHIN STANDARD ROOT ZONE SOUTH GRAVEL ROAD AND PARKING LOT.
  - SEE ARBORIST REPORT FOR FURTHER TREE PROTECTION SPECIFICATIONS.
  - ALL ATTEMPTS WILL BE MADE TO PRESERVE EXISTING TREES. ANY TREE NEGATIVELY IMPACTED BY DEVELOPMENT WILL BE MITIGATED.

**Tree Inventory - 25540 SW Garden Acres Rd, Sherwood, OR 97140**  
Conducted on 9/21/2021

Tree No.	Common Name	Botanical Name	DBH* (in)	Crown Radius (ft)	Health**	Structural Condition**	Comments
1	bigleaf maple	<i>Acer macrophyllum</i>	32	25	Good	Good	
2	incense cedar	<i>Calocedrus decurrens</i>	32	0	Dead	Dead	
3	apple	<i>Malus domestica</i>	12	12	Fair	Fair	Thin, deadwood.
4	apple	<i>Malus domestica</i>	26	20	Poor	Poor	Diameter measured at 2.5', codominant leaders at 4', deadwood, thin.
5	English walnut	<i>Juglans regia</i>	15	20	Good	Fair	Diameter measured at 2.75', multiple leaders at 4', grafted.
6	plum	<i>Prunus sp.</i>	13	12	Fair	Poor	Codominant leaders 8.8; split trunk, decay, broken branches.
7	plum	<i>Prunus sp.</i>	15	15	Good	Poor	Codominant leaders: 11.9, 6; stem decay, broken branches, wounds.
8	Norway maple	<i>Acer platanoides</i>	7	5	Fair	Fair	Blackened bark, heavy sap-sucker holes, deadwood.
9	onesced hawthorn	<i>Crataegus monogyna</i>	15	10	Good	Poor	Diameter at ground level, multiple leaders 2.3" in diameter at 1' above ground level.
10	western redcedar	<i>Thuja plicata</i>	36	20	Poor	Very poor	Codominant leaders at 15'; dead top, broken top, thin.
11	Douglas fir	<i>Pseudotsuga menziesii</i>	49	28	Good	Fair	Large 3x1' mechanical damage on west side of trunk.
12	spruce	<i>Picea mariana</i>	17	12	Good	Good	
13	cherry	<i>Prunus sp.</i>	23	8	Poor	Poor	Codominant leaders: 18.15; twist trunk, dead top.
14	Douglas fir	<i>Pseudotsuga menziesii</i>	46	0	Dead	Dead	
15	Douglas fir	<i>Pseudotsuga menziesii</i>	49	0	Dead	Dead	
16	Douglas fir	<i>Pseudotsuga menziesii</i>	44	0	Dead	Dead	
17	Douglas fir	<i>Pseudotsuga menziesii</i>	38	18	Good	Fair	Sweeping trunk, lost and regrow top.
18	Douglas fir	<i>Pseudotsuga menziesii</i>	36	18	Good	Good	
19	Douglas fir	<i>Pseudotsuga menziesii</i>	38	20	Good	Good	
20	Douglas fir	<i>Pseudotsuga menziesii</i>	39	20	Good	Good	
21	Douglas fir	<i>Pseudotsuga menziesii</i>	36	22	Good	Fair	Unbalanced to the west.
22	Douglas fir	<i>Pseudotsuga menziesii</i>	37	20	Good	Fair	Unbalanced to the west.

\*DBH (Diameter at Breast Height): The trunk diameter measured at industry standard, 4.5 feet above ground.  
\*\*Health and Structural Condition ratings range from Good, Fair, Poor, Very Poor, to Dead.

**ARBORIST TREE SURVEY**



**TREE PROTECTION FENCING**

N.T.S.

Survey Number	Common and Scientific Name	DBH	Condition Health	Condition Structure	Field Notes/ Comments
t 1	Pinus palustris	42	Good	Good	
t 2	Pinus palustris	36	Good	Good	
t 3	Pinus palustris	38	Good	Good	low canopy
t 4	Pinus palustris	32	Good	Good	
t 5	Pinus palustris	20	Good	Good	
t 6	Pinus palustris	13	Good	Good	
t 7	Pinus palustris	13	Good	Good	
t 8	Pinus palustris	22	Good	Good	
t 9	Douglas-fir (Pseudotsuga menziesii)	10	Good	Good	
t 10	Douglas-fir (Pseudotsuga menziesii)	25	Good	Good	
t 11	Douglas-fir (Pseudotsuga menziesii)	29	Fair	Fair	
t 12	Douglas-fir (Pseudotsuga menziesii)	24	Fair	Poor	
t 13	Douglas-fir (Pseudotsuga menziesii)	21	Fair	Poor	
t 14	madrone (Arbutus menziesii)	8	Fair	Poor	
t 15	Douglas-fir (Pseudotsuga menziesii)	21	Fair	Poor	
t 16	Douglas-fir (Pseudotsuga menziesii)	27	Fair	Poor	
t 17	Douglas-fir (Pseudotsuga menziesii)	12	Fair	Poor	heavy lean
t 18	Douglas-fir (Pseudotsuga menziesii)	27	Fair	Poor	
t 19	Douglas-fir (Pseudotsuga menziesii)	16	Fair	Fair	
t 20	grand-fir (Abies grandis)	19	Fair	Fair	
t 21	grand-fir (Abies grandis)	27	Fair	Fair	
t 22	Douglas-fir (Pseudotsuga menziesii)	11	Fair	Fair	
t 23	Douglas-fir (Pseudotsuga menziesii)	24	Fair	Fair	
t 24	grand-fir (Abies grandis)	22	Fair	Fair	poison oak
t 25	grand-fir (Abies grandis)	20	Fair	Fair	
t 26	grand-fir (Abies grandis)	23	Fair	Fair	
t 27	madrone (Arbutus menziesii)	14	Fair	Poor	
t 28	grand-fir (Abies grandis)	26	Fair	Fair	
t 29	grand-fir (Abies grandis)	17	Fair	Fair	
t 30	grand-fir (Abies grandis)	23	Fair	Fair	
t 31	grand-fir (Abies grandis)	16	Fair	Fair	
t 32	Douglas-fir (Pseudotsuga menziesii)	16	Fair	Fair	
t 33	Douglas-fir (Pseudotsuga menziesii)	31	Fair	Fair	
t 34	grand-fir (Abies grandis)	16	Fair	Fair	
t 35	grand-fir (Abies grandis)	16	Dead/Dying	Failed/Failing	
t 36	grand-fir (Abies grandis)	18	Fair	Fair	
t 37	grand-fir (Abies grandis)	10	Fair	Failed/Failing	broken top
t 38	Douglas-fir (Pseudotsuga menziesii)	8	Fair	Failed/Failing	broken top
t 39	giant-sequoia (Sequoiadendron giganteum)	34	Good	Good	
t 40	grand-fir (Abies grandis)	18	Fair	Poor	heavy lean
t 41	grand-fir (Abies grandis)	16	Good	Good	
t 42	grand-fir (Abies grandis)	16	Good	Good	
t 43	grand-fir (Abies grandis)	24	Good	Good	
t 44	grand-fir (Abies grandis)	17	Fair	Fair	
t 45	red pine (Pinus resinosa)	20	Poor	Poor	
t 46	grand-fir (Abies grandis)	29	Fair	Fair	
t 47	Douglas-fir (Pseudotsuga menziesii)	40	Fair	Fair	
t 48	Douglas-fir (Pseudotsuga menziesii)	36	Fair	Fair	
t 49	Douglas-fir (Pseudotsuga menziesii)	36	Fair	Fair	
t 50	Douglas-fir (Pseudotsuga menziesii)	24	Fair	Fair	
t 51	Douglas-fir (Pseudotsuga menziesii)	36	Fair	Fair	
t 52	Douglas-fir (Pseudotsuga menziesii)	28	Fair	Fair	
t 53	Douglas-fir (Pseudotsuga menziesii)	18	Fair	Fair	
t 54	Douglas-fir (Pseudotsuga menziesii)	42	Fair	Fair	
t 55	Douglas-fir (Pseudotsuga menziesii)	24	Fair	Fair	
t 56	Douglas-fir (Pseudotsuga menziesii)	46	Fair	Fair	
t 57	Douglas-fir (Pseudotsuga menziesii)	34	Fair	Fair	
t 58	Douglas-fir (Pseudotsuga menziesii)	40	Fair	Fair	
t 59	Douglas-fir (Pseudotsuga menziesii)	40	Fair	Fair	
t 60	Douglas-fir (Pseudotsuga menziesii)	38	Fair	Fair	
t 61	Douglas-fir (Pseudotsuga menziesii)	38	Fair	Fair	
t 62	Douglas-fir (Pseudotsuga menziesii)	38	Fair	Fair	
t 63	Douglas-fir (Pseudotsuga menziesii)	38	Fair	Fair	

Client/ Owner:

**PRECISION COUNTERTOP**

25540 SW Garden Acres Road  
Wilsonville OR 97140

Sheet Title:

**TREE REMOVAL AND PROTECTION PLAN**

Revisions:

#	Description	Date
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**OUTLINE SPECIFICATIONS PLANTING AND SEEDING:**

**GENERAL:** All plants shall conform to all applicable standards of the latest edition of the "American Association of Nurserymen Standards", A.N.S.I. Z60.1 - 1973. Meet or exceed the regulations and laws of Federal, State, and County regulations, regarding the inspection of plant materials, certified as free from hazardous insects, disease, and noxious weeds, and certified fit for sale in Oregon.

The apparent silence of the Specifications and Plans as to any detail, or the apparent omission from them of a detailed description concerning any point, shall be regarded as meaning that only the best general practice is to prevail and that only material and workmanship of first quality are to be used. All interpretations of these Specifications shall be made upon the basis above stated.

Landscape contractor shall perform a site visit prior to bidding to view existing conditions.

**PERFORMANCE QUALITY ASSURANCE:** Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary horticultural practices and who are completely familiar with the specified requirements and methods needed for the proper performance of the work of this section.

**NOTIFICATION:** Give Landscape Architect minimum of 2 days advance notice of times for inspections. Inspections at growing site does not preclude Landscape Architect's right of rejection of deficient materials at project site. Each plant failing to meet the above mentioned "Standards" or otherwise failing to meet the specified requirements as set forth shall be rejected and removed immediately from the premises by the Contractor and at his expense, and replaced with satisfactory plants or trees conforming to the specified requirements.

**SUBSTITUTIONS:** Only as approved by the Landscape Architect or the Owner's Representative.

**GUARANTEE AND REPLACEMENT:** All plant material shall be guaranteed from final acceptance for one full growing season or one year, whichever is longer. During this period the Contractor shall replace any plant material that is not in good condition and producing new growth (except that material damaged by severe weather conditions, due to Owner's negligence, normally unforeseen peculiarities of the planting site, or lost due to vandalism). Guarantee to replace, at no cost to Owner, unacceptable plant materials with plants of some variety, age, size and quality as plant originally specified. Conditions of guarantee on replacement plant shall be same as for original plant.

Landscape Contractor shall keep on site for Owner's Representative's inspection, all receipts for soil amendment and topsoil deliveries.

**PROTECTION** Protect existing roads, sidewalks, and curbs, landscaping, and other features remaining as final work. Verify location of underground utilities prior to doing work. Repair and make good any damage to service lines, existing features, etc. caused by landscaping installation.

**PLANT QUALITY ASSURANCE:** Deliver direct from nursery. Maintain and protect roots of plant material from drying or other possible injury. Store plants in shade and protect them from weather immediately upon delivery, if not to be planted within four hours.

Nursery stock shall be healthy, well branched and rooted, formed true to variety and species, full foliated, free of disease, injury, defects, insects, weeds, and weed roots. Trees shall have straight trunks, symmetrical tips, and have an intact single leader. Any trees with double leaders will be rejected upon inspection. All Plants: True to name, with one of each bundle or lot tagged with the common and botanical name and size of the plants in accordance with standards of practice of the American Association of Nurserymen, and shall conform to the Standardized Plant Names, 1942 Edition.

Container grown stock: Small container-grown plants, furnished in removable containers, shall be well rooted to ensure healthy growth. **Grow container plants in containers a minimum of one year** prior to delivery, with roots filling container but not root bound. Bare root stock: Roots well-branched and fibrous. Balled and burlapped (B&B): Ball shall be of natural size to ensure healthy growth. Ball shall be firm and the burlap sound. No loose or made ball will be acceptable.

**TOPSOIL AND FINAL GRADES:** Landscape Contractor is to supply and place 12" of topsoil in planting beds and 6" in lawn areas. Landscape Contractor is to verify with the General Contractor if the on-site topsoil is or is not conducive to proper plant growth. The topsoil shall be a sandy loam, free of all weeds and debris inimical to lawn or plant growth. Furnish soil analysis by a qualified soil testing laboratory stating percentages of organic matter, gradation of sand, silt and clay content; cation exchange capacity; deleterious material; pH; and plant nutrient content of the topsoil. Report suitability of topsoil for plant growth and recommended quantities of nitrogen, phosphorus and potash nutrients and soil amendments (including compost) to be added to produce satisfactory topsoil. If stockpiled topsoil on site is not conducive to proper plant growth, the Landscape Contractor shall import the required amount.

Landscaping shall include finished grades and even distribution of topsoil to meet planting requirements. Grades and slopes shall be as indicated. Planting bed grades shall be approximately 3" below adjacent walks, paving, finished grade lines, etc., to allow for bark application. Finish grading shall remove all depressions or low areas to provide positive drainage throughout the area.

**PLANTING SPECIFICATIONS:**

**HERBICIDES:** Prior to soil preparation, all areas showing any undesirable weed or grass growth shall be treated with Round-up in strict accordance with the manufacturer's instructions.

**SOIL PREPARATION:** Work all areas by rototilling to a minimum depth of 8". Remove all stones (over 1 1/2" size), sticks, mortar, large clumps of vegetation, roots, debris, or extraneous matter turned up in working. Soil shall be of a homogeneous fine texture. Level, smooth and lightly compact area to plus or minus .10 of required grades.

In groundcover areas add 2" of compost (or as approved) and till in to the top 6" of soil.

**PLANTING HOLE:** Lay out all plant locations and excavate all soils from planting holes to 2 1/2 times the root ball or root system width. Loosen soil inside bottom of plant hole. Dispose of any "subsoil" or debris from excavation. Check drainage of planting hole with water, and adjust any area showing drainage problems.

**SOIL MIX:** Prepare soil mix in each planting hole by mixing:  
 2 part native topsoil (no subsoil)  
 1 part compost (as approved)

Thoroughly mix in planting hole and add fertilizers at the following rates:

- Small shrubs - 1/8 lb./plant
- Shrubs - 1/3 to 1/2 lb./plant
- Trees - 1/3 to 1 lb./plant

**FERTILIZER:** For trees and shrubs use Commercial Fertilizer "A" Inorganic (5-4-3) with micro-nutrients and 50% slow releasing nitrogen. For initial application in fine seed lawn areas use Commercial Fertilizer "B" (8-16-8) with micro-nutrients and 50% slow-releasing nitrogen. For lawn maintenance use Commercial Fertilizer "C" (22-16-8) with micro-nutrients and 50% slow-releasing nitrogen. DO NOT apply fertilizer to Water Quality Swale.

**PLANTING TREES AND SHRUBS:** Plant upright and face to give best appearance or relationship to adjacent plants and structures. Place 6" minimum, lightly compacted layer of prepared planting soil under root system. Loosen and remove twine binding and burlap from top 1/2 of root balls. Cut off cleanly all broken or frayed roots, and spread roots out. Stagger Plants in rows. Backfill planting hole with soil mix while working each layer to eliminate voids.

When approximately 2/3 full, water thoroughly, then allow water to soak away. Place remaining backfill and dish surface around plant to hold water. Final grade should keep root ball slightly above surrounding grade, not to exceed 1". Water again until no more water is absorbed. Initial watering by irrigation system is not allowed.

**STAKING OF TREES:** Stake or guy all trees. Stakes shall be 2" x 2" (nom.) quality tree stakes with point. They shall be of Douglas Fir, clear and sturdy. Stake to be minimum 2/3 the height of the tree, not to exceed 8'-0". Drive stake firmly 1'-6" below the planting hole. Tree ties for deciduous trees shall be "Chainlock" (or better). For Evergreen trees use "Gro-Strait" Tree Ties (or a reinforced rubber hose and guy wires) with guy wires of a minimum 2 strand twisted 12 ga. wire. Staking and guying shall be loose enough to allow movement of tree while holding tree upright. Tree stakes shall be removed after one year.

**MULCHING OF PLANTINGS:** Mulch planting areas with dark, aged, medium grind fir or hemlock bark (aged at least 6 months) to a depth of 2" in ground cover areas and 2 1/2" in shrub beds. Apply evenly, not higher than grade of plant as it came from the nursery, and rake to a smooth finish. Water thoroughly, then hose down planting area with fine spray to wash leaves of plants.

**FINE LAWN AREAS:** In fine lawn area apply Commercial Fertilizer Mix "B" at 4.5 lbs. Per 1,000 sq.ft. and rake into soil surface. Establish an even, fine textured seeded meeting grades, surfaces and texture. Sow seed with a mechanical spreader at the uniform rates as noted below. Rake seed lightly to provide cover.

**SEED:** Blueoat grass seed conforming to applicable State laws. No noxious weed seeds. Submit Guaranteed analysis.

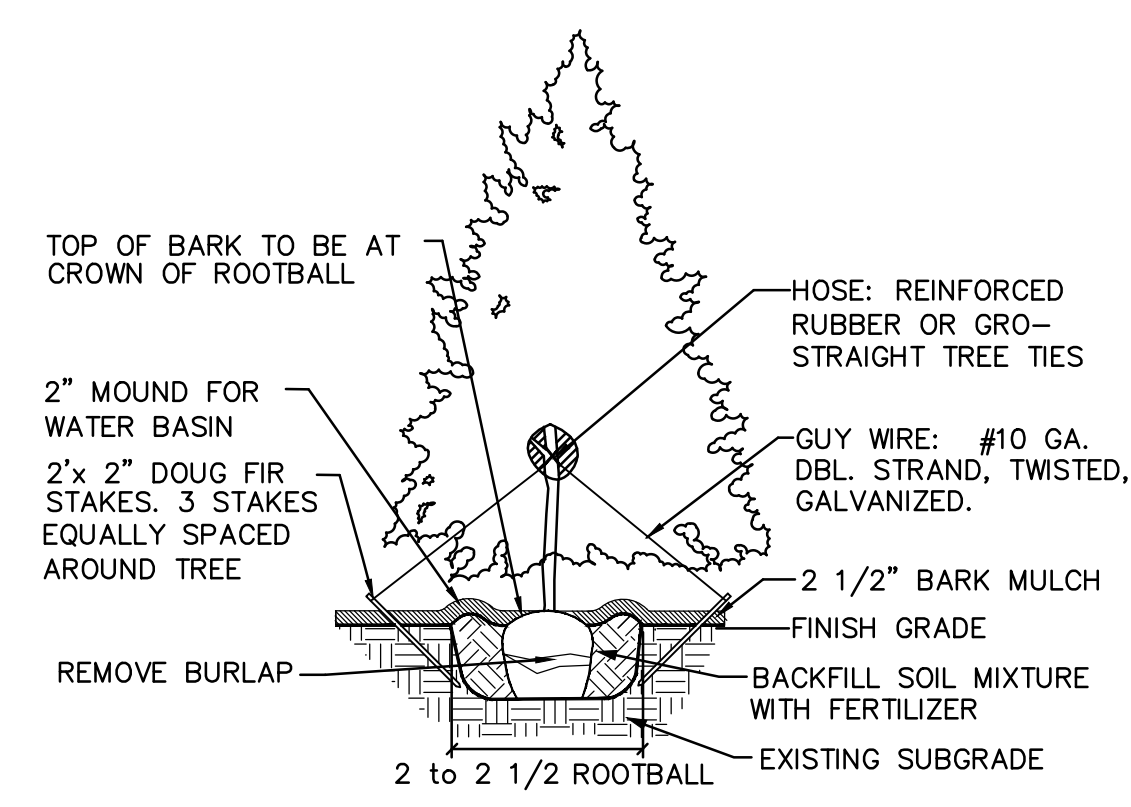
**Fine Lawn Seed Mix:** To contain: 50% Top Hat Perennial Ryegrass, 30% Derby Supreme Ryegrass, 20% Longfellow Chewings Fescue (Hobbs and Hopkins Pro-Time 303 Lawn Mix or as approved). Sow Seed at 5 lbs. / 1000 sq. ft.

**Rough Seed Mix:** To contain: 60% Perennial Ryegrass, 15% Eureka Hard Fescue, and 20% Herbaceous Plants and Clover (Hobbs and Hopkins Pro-Time 705 PDX, or approved equal). Sow at 2 lbs. Per 1,000 sq.ft.

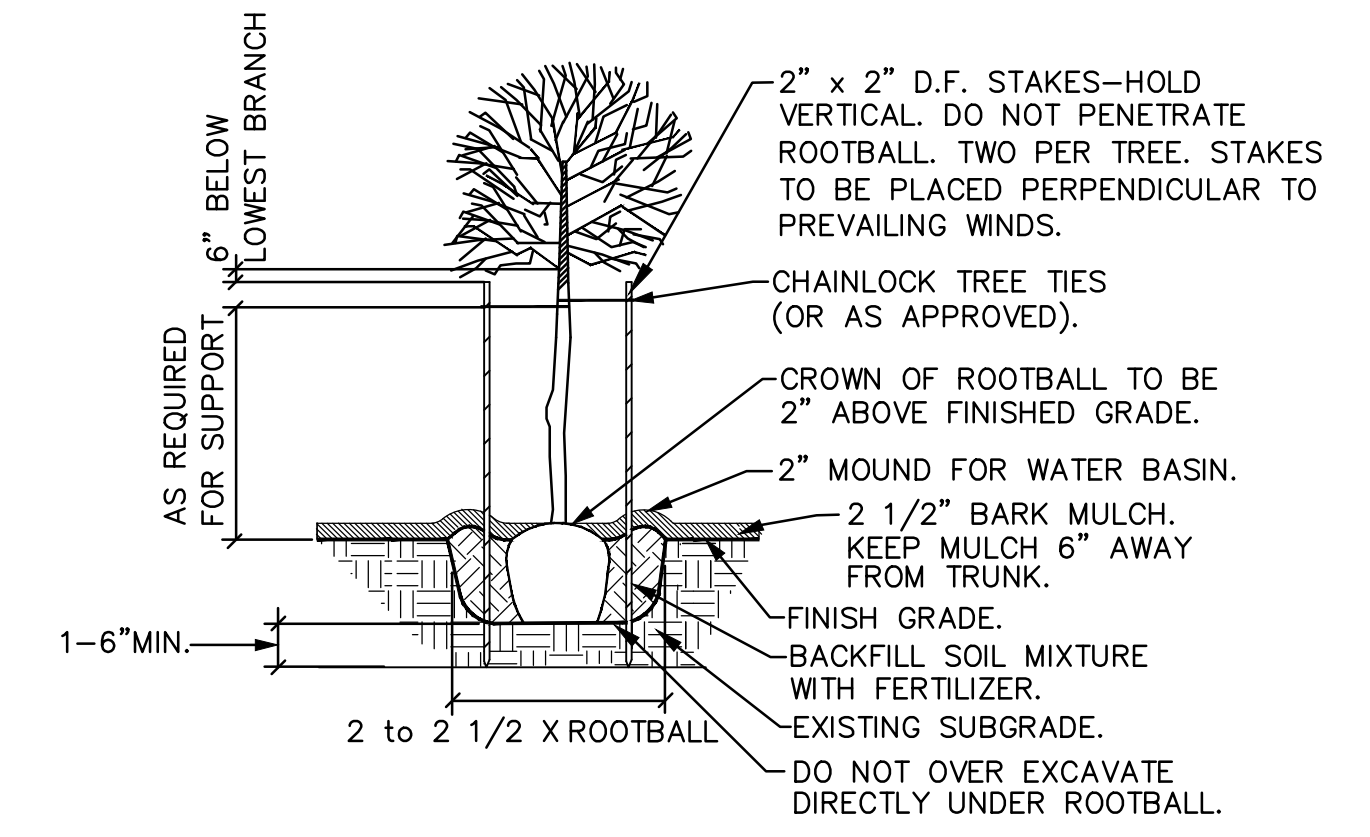
**MAINTENANCE OF SEEDED AREAS:**  
**Fine Lawn Areas:** The lawn areas shall be maintained by watering, mowing, reseeding, and weeding for a minimum of 60 days after seeding. After 30 days, or after the second mowing, apply Commercial Fertilizer Mix "C" at 5 lbs. per 1,000 sq. ft. Mow and keep at 1 1/2" to 2" in height. Remove clippings and dispose of off site.

**GENERAL MAINTENANCE:** Protect and maintain work described in these specifications against all defects of materials and workmanship, through final acceptance. Replace plants not in normal healthy condition at the end of this period. Water, weed, cultivate, mulch, reset plants to proper grade or upright position, remove dead wood and do necessary standard maintenance operations. Irrigate when necessary to avoid drying out of plant materials, and to promote healthy growth.

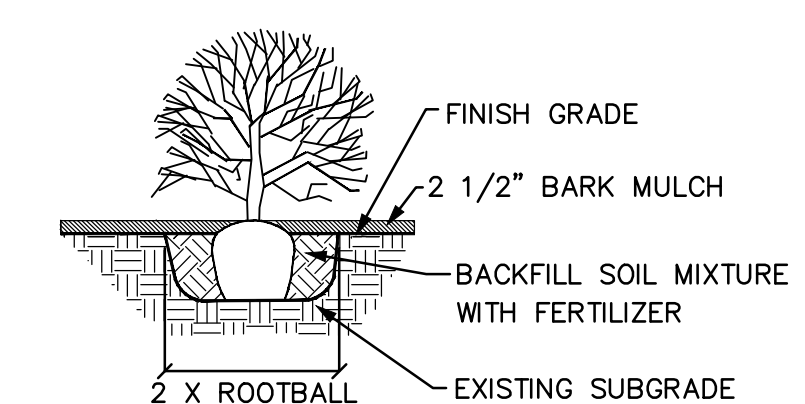
**CLEAN-UP:** At completion of each division of work all extra material, supplies, equipment, etc., shall be removed from the site. All walks, paving, or other surfaces shall be swept clean, mulch areas shall have debris removed and any soil cleared from surface. All areas of the project shall be kept clean, orderly and complete.



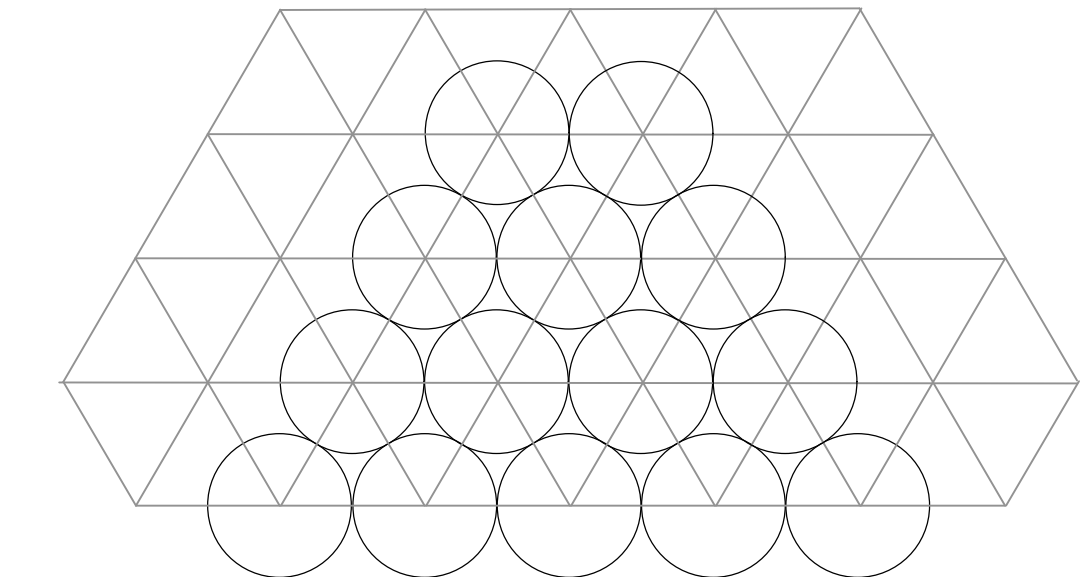
EVERGREEN TREE STAKING DETAIL  
 NOT TO SCALE



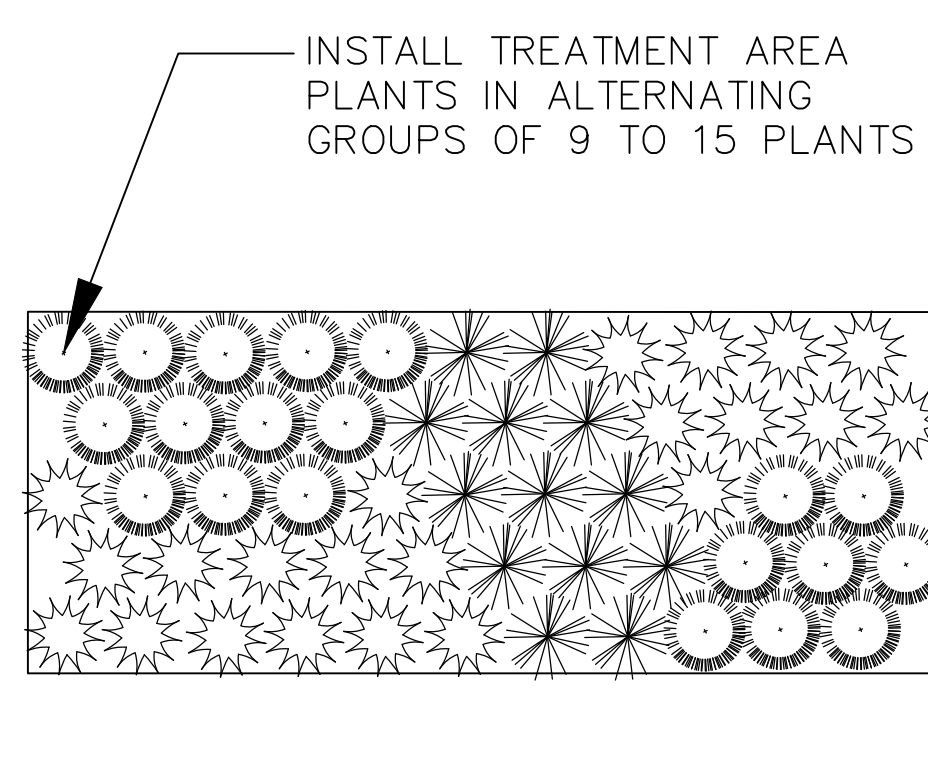
GENERAL DECIDUOUS TREE PLANTING DETAIL  
 NOT TO SCALE



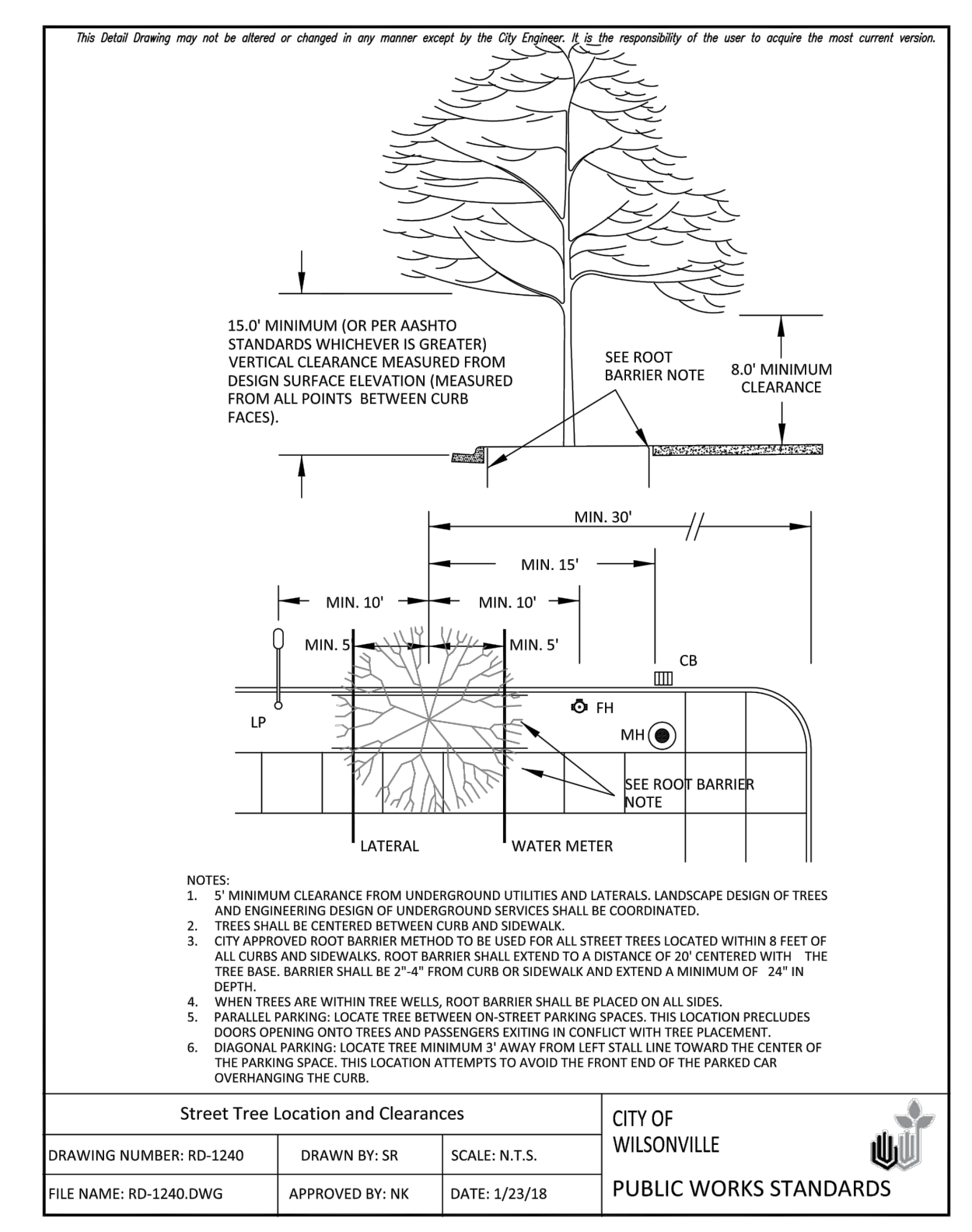
SHRUB PLANTING DETAIL  
 NOT TO SCALE



GROUNDCOVER PLANTING DETAIL  
 NOT TO SCALE



STORMWATER FACILITY PLANTING DETAIL  
 NOT TO SCALE



Street Tree Location and Clearances		CITY OF WILSONVILLE	
DRAWING NUMBER: RD-1240	DRAWN BY: SR	SCALE: N.T.S.	PUBLIC WORKS STANDARDS
FILE NAME: RD-1240.DWG	APPROVED BY: NK	DATE: 1/23/18	

- NOTES:
- 5' MINIMUM CLEARANCE FROM UNDERGROUND UTILITIES AND LATERAL LANDSCAPE DESIGN OF TREES AND ENGINEERING DESIGN OF UNDERGROUND SERVICES SHALL BE COORDINATED.
  - TREES SHALL BE CENTERED BETWEEN CURB AND SIDEWALK.
  - CITY APPROVED ROOT BARRIER METHOD TO BE USED FOR ALL STREET TREES LOCATED WITHIN 8 FEET OF ALL CURBS AND SIDEWALKS. ROOT BARRIERS SHALL EXTEND A DISTANCE OF 2' CENTERED WITH THE TREE BASE. BARRIER SHALL BE 2'-4" FROM CURB OR SIDEWALK AND EXTEND A MINIMUM OF 34" IN DEPTH.
  - WHEN TREES ARE WITHIN TREE WELLS, ROOT BARRIER SHALL BE PLACED ON ALL SIDES.
  - PARALLEL PARKING: LOCATE TREE BETWEEN STREET PARKING SPACES. THIS LOCATION PRECLUDES DOORS OPENING ONTO TREES AND PASSENGERS EXITING IN CONFLICT WITH TREE PLACEMENT.
  - DANGEROUS PARKING: LOCATE TREE MINIMUM 4' AWAY FROM LEFT STALL LINE TOWARD THE CENTER OF THE PARKING SPACE. THIS LOCATION ATTEMPTS TO AVOID THE FRONT END OF THE PARKED CAR OVERHANGING THE CURB.

Client/ Owner:

Project:  
**PRECISION COUNTERTOP**

25540 SW Garden Acres Road  
 Wilsonville OR 97140

Sheet Title:

**LANDSCAPE SPECIFICATIONS & DETAILS**

Revisions:

#	Description	Date
---	-------------	------



Exhibit C1  
Public Works Plan Submittal Requirements  
and Other Engineering Requirements

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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:

<b>Coverage</b> ( <i>Aggregate, accept where noted</i> )	<b>Limit</b>
<b><u>Commercial General Liability:</u></b>	
▪ 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
<b><u>Business Automobile Liability Insurance:</u></b>	
▪ Each Occurrence	\$1,000,000
▪ Aggregate	\$2,000,000
<b><u>Workers Compensation Insurance</u></b>	\$500,000

3. No construction of, or connection to, any existing or proposed public utility/improvements will be permitted until all plans are approved by Staff, all fees have been paid, all necessary permits, right-of-way and easements have been obtained and Staff is notified a minimum of 24 hours in advance.
4. All public utility/improvement plans submitted for review shall be based upon a 22" x 34" format and shall be prepared in accordance with the City of Wilsonville Public Work's Standards.
5. Plans submitted for review shall meet the following general criteria:
  - a. Utility improvements that shall be maintained by the public and are not contained within a public right-of-way shall be provided a maintenance access acceptable to the City. The public utility improvements shall be centered in a minimum 15-ft. wide public easement for single utilities and a minimum 20-ft wide public easement for two parallel utilities and shall be conveyed to the City on its dedication forms.
  - b. Design of any public utility improvements shall be approved at the time of the issuance of a Public Works Permit. Private utility improvements are subject to review and approval by the City Building Department.
  - c. In the plan set for the PW Permit, existing utilities and features, and proposed new private utilities shall be shown in a lighter, grey print. Proposed public improvements shall be shown in bolder, black print.



- d. All elevations on design plans and record drawings shall be based on NAVD 88 Datum.
  - e. All proposed on and off-site public/private utility improvements shall comply with the State of Oregon and the City of Wilsonville requirements and any other applicable codes.
  - f. Design plans shall identify locations for street lighting, gas service, power lines, telephone poles, cable television, mailboxes and any other public or private utility within the general construction area.
  - g. As per City of Wilsonville Ordinance No. 615, all new gas, telephone, cable, fiber-optic and electric improvements etc. shall be installed underground. Existing overhead utilities shall be undergrounded wherever reasonably possible.
  - h. Any final site landscaping and signing shall not impede any proposed or existing driveway or interior maneuvering sight distance.
  - i. Erosion Control Plan that conforms to City of Wilsonville Ordinance No. 482.
  - j. Existing/proposed right-of-way, easements and adjacent driveways shall be identified.
  - k. All engineering plans shall be printed to PDF, combined to a single file, stamped and digitally signed by a Professional Engineer registered in the State of Oregon.
  - l. All plans submitted for review shall be in sets of a digitally signed PDF and three printed sets.
6. Submit plans in the following general format and order for all public works construction to be maintained by the City:
- a. Cover sheet
  - b. City of Wilsonville construction note sheet
  - c. Land Use Conditions of Approval sheet
  - d. General construction note sheet
  - e. Existing conditions plan.
  - f. Erosion control and tree protection plan.
  - g. Site plan. Include property line boundaries, water quality pond boundaries, sidewalk improvements, right-of-way (existing/proposed), easements (existing/proposed), and sidewalk and road connections to adjoining properties.
  - h. Grading plan, with 1-foot contours.
  - i. Composite utility plan; identify storm, sanitary, and water lines; identify storm and sanitary manholes.
  - j. Detailed plans; show plan view and either profile view or provide i.e.'s at all utility crossings; include laterals in profile view or provide table with i.e.'s at crossings; vertical scale 1"= 5', horizontal scale 1"= 20' or 1"= 30'.
  - k. Street plans.
  - l. Storm sewer/drainage plans; number all lines, manholes, catch basins, and cleanouts for easier reference.
  - m. Stormwater LIDA facilities (Low Impact Development): provide plan and profile views of all LIDA facilities.
  - n. Water and sanitary sewer plans; plan; number all lines, manholes, and cleanouts for easier reference.

- o. Where depth of water mains are designed deeper than the 3-foot minimum (to clear other pipe lines or obstructions), the design engineer shall add the required depth information to the plan sheets.
  - p. Detailed plan for storm water detention facility (both plan and profile views), including water quality orifice diameter and manhole rim elevations. Provide detail of inlet structure and energy dissipation device. Provide details of drain inlets, structures, and piping for outfall structure. Note that although storm water detention facilities are typically privately maintained they will be inspected by engineering, and the plans must be part of the Public Works Permit set.
  - q. Detailed plan for water quality facility (both plan and profile views). Note that although storm water quality facilities are typically privately maintained they will be inspected by Natural Resources, and the plans must be part of the Public Works Permit set.
  - r. Composite franchise utility plan.
  - s. City of Wilsonville detail drawings.
  - t. Illumination plan.
  - u. Striping and signage plan.
  - v. Landscape plan.
7. Design engineer shall coordinate with the City in numbering the sanitary and stormwater sewer systems to reflect the City's numbering system. Video testing and sanitary manhole testing will refer to City's numbering system.
8. The applicant shall install, operate and maintain adequate erosion control measures in conformance with the standards adopted by the City of Wilsonville Ordinance No. 482 during the construction of any public/private utility and building improvements until such time as approved permanent vegetative materials have been installed.
9. Applicant shall work with City Engineering before disturbing any soil on the respective site. If 5 or more acres of the site will be disturbed applicant shall obtain a 1200-C permit from the Oregon Department of Environmental Quality. If 1 to less than 5 acres of the site will be disturbed a 1200-CN permit from the City of Wilsonville is required.
10. The applicant shall be in conformance with all stormwater and flow control requirements for the proposed development per the Public Works Standards.
11. A storm water analysis prepared by a Professional Engineer registered in the State of Oregon shall be submitted for review and approval by the City.
12. The applicant shall be in conformance with all water quality requirements for the proposed development per the Public Works Standards. If a mechanical water quality system is used, prior to City acceptance of the project the applicant shall provide a letter from the system manufacturer stating that the system was installed per specifications and is functioning as designed.

13. Storm water quality facilities shall have approved landscape planted and/or some other erosion control method installed and approved by the City of Wilsonville prior to paving.
14. The applicant shall contact the Oregon Water Resources Department and inform them of any existing wells located on the subject site. Any existing well shall be limited to irrigation purposes only. Proper separation, in conformance with applicable State standards, shall be maintained between irrigation systems, public water systems, and public sanitary systems. Should the project abandon any existing wells, they shall be properly abandoned in conformance with State standards.
15. All survey monuments on the subject site, or that may be subject to disturbance within the construction area, or the construction of any off-site improvements shall be adequately referenced and protected prior to commencement of any construction activity. If the survey monuments are disturbed, moved, relocated or destroyed as a result of any construction, the project shall, at its cost, retain the services of a registered professional land surveyor in the State of Oregon to restore the monument to its original condition and file the necessary surveys as required by Oregon State law. A copy of any recorded survey shall be submitted to Staff.
16. Streetlights shall be in compliance with City dark sky, LED, and PGE Option C requirements.
17. Sidewalks, crosswalks and pedestrian linkages in the public right-of-way shall be in compliance with the requirements of the U.S. Access Board.
18. No surcharging of sanitary or storm water manholes is allowed.
19. The project shall connect to an existing manhole or install a manhole at each connection point to the public storm system and sanitary sewer system.
20. A City approved energy dissipation device shall be installed at all proposed storm system outfalls. Storm outfall facilities shall be designed and constructed in conformance with the Public Works Standards.
21. The applicant shall provide a 'stamped' engineering plan and supporting information that shows the proposed street light locations meet the appropriate AASHTO lighting standards for all proposed streets and pedestrian alleyways.
22. All required pavement markings, in conformance with the Transportation Systems Plan and the Bike and Pedestrian Master Plan, shall be completed in conjunction with any conditioned street improvements.
23. Street and traffic signs shall have a hi-intensity prismatic finish meeting ASTM 4956 Spec Type 4 standards.

24. The applicant shall provide adequate sight distance at all project driveways by driveway placement or vegetation control. Specific designs to be submitted and approved by the City Engineer. Coordinate and align proposed driveways with driveways on the opposite side of the proposed project site.
25. The applicant shall provide adequate sight distance at all project street intersections, alley intersections and commercial driveways by properly designing intersection alignments, establishing set-backs, driveway placement and/or vegetation control. Coordinate and align proposed streets, alleys and commercial driveways with existing streets, alleys and commercial driveways located on the opposite side of the proposed project site existing roadways. Specific designs shall be approved by a Professional Engineer registered in the State of Oregon. As part of project acceptance by the City the Applicant shall have the sight distance at all project intersections, alley intersections and commercial driveways verified and approved by a Professional Engineer registered in the State of Oregon, with the approval(s) submitted to the City (on City approved forms).
26. Access requirements, including sight distance, shall conform to the City's Transportation Systems Plan (TSP) or as approved by the City Engineer. Landscaping plantings shall be low enough to provide adequate sight distance at all street intersections and alley/street intersections.
27. Applicant shall design interior streets and alleys to meet specifications of Tualatin Valley Fire & Rescue and Allied Waste Management (United Disposal) for access and use of their vehicles.
28. The applicant shall provide the City with a Stormwater Maintenance and Access Easement Agreement (on City approved forms) for City inspection of those portions of the storm system to be privately maintained. Applicant shall provide City with a map exhibit showing the location of all stormwater facilities which will be maintained by the Applicant or designee. Stormwater or rainwater LID facilities may be located within the public right-of-way upon approval of the City Engineer. Applicant shall maintain all LID storm water components and private conventional storm water facilities; maintenance shall transfer to the respective homeowners association when it is formed.
29. The applicant shall "loop" proposed waterlines by connecting to the existing City waterlines where applicable.
30. Applicant shall provide a minimum 6-foot Public Utility Easement on lot frontages to all public right-of-ways. An 8-foot PUE shall be provided along Collectors. A 10-ft PUE shall be provided along Minor and Major Arterials.
31. For any new public easements created with the project the Applicant shall be required to produce the specific survey exhibits establishing the easement and shall provide the City with the appropriate Easement document (on City approved forms).

### 32. Mylar Record Drawings:

At the completion of the installation of any required public improvements, and before a 'punch list' inspection is scheduled, the Engineer shall perform a record survey. Said survey shall be the basis for the preparation of 'record drawings' which will serve as the physical record of those changes made to the plans and/or specifications, originally approved by Staff, that occurred during construction. Using the record survey as a guide, the appropriate changes will be made to the construction plans and/or specifications and a complete revised 'set' shall be submitted. The 'set' shall consist of an electronic copy in AutoCAD, current version, and a digitally signed PDF of the drawings.



Planning Division  
Development Permit Application



29799 SW Town Center Loop E, Wilsonville, OR 97070  
Phone: 503.682.4960 Fax: 503.682.7025  
Web: [www.ci.wilsonville.or.us](http://www.ci.wilsonville.or.us)

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: 07/28/2021

**Incomplete applications will not be scheduled for public hearing until all of the required materials are submitted.**

**Applicant:**

Name: Robert Hausserman  
Company: Precision Countertops, Inc  
Mailing Address: 26200 SW 95th Ave, Suite 303  
City, State, Zip: Wilsonville, Oregon 97070  
Phone: 503-680-9301 Fax: \_\_\_\_\_  
E-mail: robert.h@precisioncountertops.com

**Authorized Representative:**

Name: Simone M. O'Halloran  
Company: MDG Architecture / Interiors  
Mailing Address: 4875 SW Griffith Drive, Suite 300  
City, State, Zip: Beaverton, Oregon 97005  
Phone: 503-244-0552 Fax: \_\_\_\_\_  
E-mail: simone@mdgpc.com

**Property Owner:**

Name: Robert Hausserman  
Company: Precision Countertops, Inc  
Mailing Address: 26200 SW 95th Ave, Suite 303  
City, State, Zip: Wilsonville, Oregon 97070  
Phone: 503-680-9301 Fax: \_\_\_\_\_  
E-mail: robert.h@precisioncountertops.com

**Property Owner's Signature:**

Printed Name: Robert Hausserman Date: 2/3/2023

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

Printed Name: \_\_\_\_\_ Date: \_\_\_\_\_

**Site Location and Description:**

Project Address if Available: 25540 SW Garden Acres Road, Wilsonville, Oregon Suite/Unit \_\_\_\_\_  
Project Location: 25540 SW Garden Acres Road, Wilsonville, Oregon  
Tax Map #(s): 3S102CO Tax Lot #(s): \_\_\_\_\_ County:  Washington  Clackamas

**Request:**

This application is for the site and design review to construct a headquarters and fabrication facility for precision countertops

**Project Type:** Class I  Class II  Class III

Residential  Commercial  Industrial  Other: \_\_\_\_\_

**Application Type(s):**

- Annexation
- Final Plat
- Plan Amendment
- Request for Special Meeting
- SROZ/SRIR Review
- Type C Tree Removal Plan
- Villebois SAP
- Zone Map Amendment
- Appeal
- Major Partition
- Planned Development
- Request for Time Extension
- Staff Interpretation
- Tree Permit ~~X~~ or C)
- Villebois PDP
- Waiver(s)
- Comp Plan Map Amend
- Minor Partition
- Preliminary Plat
- Signs class 3
- Stage I Master Plan
- Temporary Use
- Villebois FDP
- Conditional Use
- Parks Plan Review
- Request to Modify Conditions
- Site Design Review
- Stage II Final Plan
- Variance
- Other (describe)





**DEVELOPMENT REVIEW APPLICATION [UPDATE]**

Stage I Master Plan/Stage II Final Plan  
Site Design Review  
Class III Sign Plan  
Type C Tree Removal and Protection Plan

***Prepared for:***

Precision Countertops  
26200 SW 95th Ave Suite 303  
Wilsonville, OR 97070

***Prepared by:***

MDG Architecture  
4875 SW Griffith Drive, Suite 300  
Beaverton, Oregon  
[simone@mdgpc.com](mailto:simone@mdgpc.com)

First Forty Feet  
412 NW Couch Street, Suite, #405  
[will@firstfortyfeet.com](mailto:will@firstfortyfeet.com)

***ReSubmitted on:***

January 3, 2023

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## List of Exhibits

1. Copy of Application Form
2. Project Narrative
3. Plan Set
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  - G1.0 Site Survey
  - G1.2 Construction Staging
  - G2.0 Rendering
  - G2.1 Rendering
  - G3.0 Recycling Flow and Details

### Civil

- C0 General Notes and Legends
- C1 Existing Conditions Plan
- C1.1 Existing Conditions Plan
- C2 Grading Plan
- C2.1 Grading Plan
- C3 Stormwater Plan
- C3.1 Stormwater Plan
- C4 Water and Sanitary Sewer Plan
- C4.1 Water and Sanitary Sewer Plan
- C5 Details
- C5.1 Details
- C5.2 Details

### Landscape

- L1.0 Landscape Plan
- L1.1 Tree Removal Plan
- L2.0 Landscape Details

### Architectural

- A1.0 Overall Site Plan
- A1.1 Enlarged Site Plan
- A1.2 Future Site Plan
- A1.3 Site Details
- A1.4 Site Details
- A2.1 Floor Plans
- A2.3 Roof Plan
- A3.1 Building Elevations
- A3.2 Signage, Entry, Glazing Calculation
- A3.3 Signage
- A4.1 Building Sections

### Supporting Plans

- LT1.0 Lighting Plan, Statistics, Schedules
- LT1.2 Lighting Plan, Statistics, Schedule
- LT2.0 Lighting Specifications
- LT2.1 Lighting Specifications
- LT3.0 Wayside Sunlight Study
- FS1.0 Fire Service Site Plan



## Summary of Proposal

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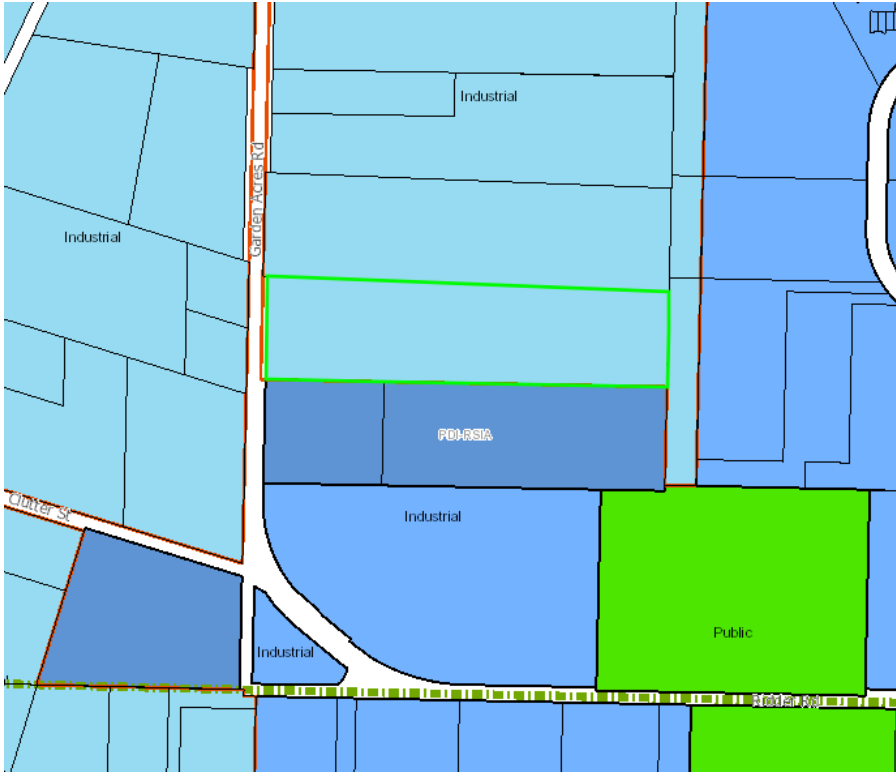
<b>Applicant:</b>	Precision Countertops 26200 SW 95th Ave Suite 303 Wilsonville, OR 97070
<b>Property Owner:</b>	PCT NW Properties OR LLC 26200 SW 95th Avenue, Suite 303 Wilsonville, OR 97070
	Contact: Robert Hausserman (503) 680-9301 robert.h@precisioncountertops.com
<b>Site Address:</b>	25540 SW Garden Acres Road
<b>Tax Lot:</b>	3S102C0 00500 A PORTION OF LOT 12, GARDEN ACRES, LOCATED IN THE WEST 1/2 OF THE WEST 1/2, OF SECTION 2, TOWNSHIP 3 SOUTH, RANGE 1 WEST, OF THE WILLAMETTE MERIDIAN, WASHINGTON COUNTY, OREGON
<b>Site Size:</b>	406,233 SF – 9.33 acres
<b>Zoning:</b>	PDI-RSIA - Planned Development Industrial – Regionally Significant Industrial Area (Pending current Annexation and Zoning Map Amendment)
<b>Overlay:</b>	Coffee Creek Industrial Design Overlay District

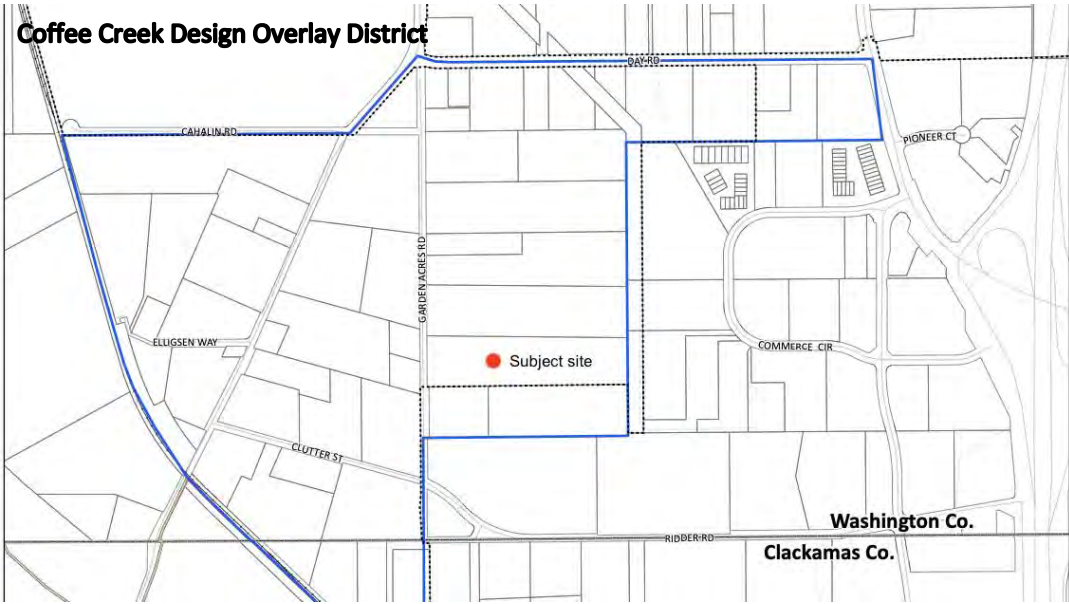
**Existing Site Description:** The site is relatively flat and open. One existing house and accessory structures on a relatively flat lot

**Proposed Development:** The proposed project consists of the construction of a headquarters and countertop fabrication facility for Precision Countertops. The proposed building is 65,800 SF, and includes a showroom, office space, storage, and fabrication spaces. The proposed development will occupy approximately 4.73 acres of the overall 9.34 acre site with the eastern portion of the site being left undeveloped at this time with the possibility of future expansion. The facility will primarily warehouse raw materials for custom countertops. The operations will primarily be receiving, unloading, storing, cutting, and delivering kitchen countertops. The showroom will display products and inventory to customers. Fabrication is defined as cutting to fixed specifications and dimensions. Office spaces will be used to conduct business operations and administration.

Key Site Data	
Proposed Building Size	65,800 SF
Site Size	406,233 SF
Proposed Site Development Area	206,217 SF
Site Building Coverage	16.1%
Overall Building Height	36'-2" (measured to top of roof)
Landscaped Area	55,509 SF or 26.9% of proposed site development area (15% minimum)
Proposed Parking	71 stalls (includes 3 ADA Spaces)
Construction Type:	II-B, Occupancy B, F1, and S1

**Zoning Map**





## Background Information

The applicant requests approval for a Site Plan Review, Stage I Master Plan and Stage II Final Plan, Site Design Review, Class III Sign Plan and Type C Tree Removal and Protection Plan for the new construction of a new headquarters and countertop fabrication facility for Precision Countertops. **The application will be requesting Waivers.** The driveway width will be the only waiver of the proposed development. Please reference sheet A1.1 for the driveway width. There are two access points from the future Java Road; the first is 24'-0" and is within the allowable drive access width; however, the second driveway access width is 40'0". The increased width is proposed in order to accommodate truck maneuvering and safe access.

The site is located along Garden Acres Road at the planned future intersection with Java Road. It is currently located outside of the Wilsonville City Limits, but inside the City's Urban Growth Boundary. A concurrent Annexation and Zoning Map Amendment application has been submitted and this application is being submitted with the assumption that these applications will be approved.

Existing development on the site consists of a farmhouse (which has since been demolished with approved permitting through the County) and a few agriculture structures with most of the 9.34 acres being undeveloped. The subject site is located within the Coffee Creek Industrial Design Overlay District. The Coffee Creek DOD includes the provision for Java Road, a Supporting Street to be built in conjunction with the planned development. This development proposal includes a dedication of area (public easement) along the northern boundary for construction of the future Java Road alignment as well as half street improvements for Java Road. Because the planned intersection of Garden Acres Road and Java Road will not be fully realized until the parcel north of the subject site is developed, temporary access to the site will be taken from Garden Acres Road and will be closed off once the final intersection is constructed.

## Key Issues

***Concurrent Annexation and Zoning Map Amendment:*** The subject site is currently located outside of the Wilsonville City Limits, but inside the City's Urban Growth Boundary. A concurrent Annexation and Zoning Map Amendment application has been submitted and this application is being submitted with the assumption that these applications will be approved.

***Transportation/Java Road:*** Half street improvements for planned Java Road will be constructed as part of this project. Java Road will be an east-west Supporting Street with the centerline being the subject site's northern property line, consistent with the Coffee Creek DOD. It will be constructed and maintained as a private street in a dedicated public access easement. Java Road Cross Sections are illustrated on Exhibit 3, Sheet A1.1 of this submittal package.

***Access:*** A temporary access point from Garden Acres Road will be constructed to provide access to the site until the parcel to the north is developed and the final planned intersection with Java Road can be developed. The proposal will be constructing new on-site stormwater mitigation to address the impacts of this curb cut. Site access is illustrated on the Site Plan, included as Exhibit 3, Sheet A1.0 and A1.1 of this submittal package.

***Fire:*** The proposed development consists of **65,800 GSF** of new construction. The development anticipates a fire flow test to be completed prior to building permitting to determine the baseline for



water flow for firefighting. Access: the site has good circulation with a dedicated and approved fire access drive, paved with asphalt. The proposal has dedicated several access points from the new Java Road. The Fire Service Plan is included as Exhibit 10 and FS1.0 of this submittal package.

**Stormwater Management:** The stormwater design will be decentralized by providing facilities in several areas on the development, including landscape areas, planters, and swales providing Low Impact Development to the extent practicable. The Stormwater Report is included as Exhibit 5 and sheet C3.1 of this submittal package.

**Outdoor Waste Storage:** All outdoor recycling and refuse storage containers will be hydrological isolated and screened and covered.

## Applicable Code Criteria

<b>Industrial Development Standards and Industrial Zoning</b>	Sections 4.117, 4.135 through 4.135.5: Planned Development Residential (PDI) Zones and Industrial Standards
<b>Planned Development Standards and Regulations for all Planned Development (PD) Zones</b>	Section 4.118: Standards applying to all Planned Development (PD) Zones Section 4.140: Planned Development Regulations
<b>Overlay Zones</b>	Section 4.134: Coffee Creek Industrial Design Overlay District
<b>General Development Regulations and Standards</b>	Section 4.154: On-Site Pedestrian Access and Circulation Section 4.155: Parking, Loading, and Bicycle Parking Section 4.171: Protection of Natural and Other Features 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 through 4.199.60: Outdoor Lighting Sections 4.300 through 4.320: Underground Utilities:
Site Design Review	Sections 4.400 through 4.450: Site Design Review
Signs	Sections 4.156.01 through 4.156.11: Signs

Tree Removal

Tree Preservation and Protection: Sections 4.600 through 4.640.20

## RESPONSE FINDINGS TO CODE CRITERIA

### Industrial Development Standards and Industrial Zoning

#### Section 4.117. Standards Applying To Industrial Developments In Any Zone.

(.01) *All industrial developments, uses, or activities are subject to performance standards. If not otherwise specified in the Planning and Development Code, industrial developments, uses, and activities shall be subject to the performance standards specified in Section 4.135 (.05) (PDI Zone).*

**Response:** The proposed development and proposal narrative reflect the performance standards specified in the following Section 4.135.

#### 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.*

(.02) *The PDI Zone shall be governed by Section 4.140, Planned Development Regulations, and as otherwise set forth in this Code.*

(.03) *Uses that are typically permitted:*

A. *Warehouses and other buildings for storage of wholesale goods.*

C. *Assembly and packing of products for wholesale shipment*

I. *Corporate headquarters*

M. *Repair, finishing and testing of product types manufactured or fabricated within the zone.*

O. *Any use allowed in a PDC Zone, subject to the following limitations:*

4. *Combined uses under Subsections 4.135(.03)(O.)(1.) and (3.) shall not exceed a total of 5000 square feet of floor area in a single building or 20,000 square feet of combined floor area within a multi-building development.*

**Response:** The primary proposed use is Warehouse. All uses for the proposed development are permitted uses that fall under Sections A, C, I, M, and O. The proposed project will consist of the construction of a new headquarters and countertop fabrication facility for precision countertops. The fabrication will be limited to custom cutting of countertop material. The proposed 65,800 GSF project consists of the sub-uses shown in the table below:

Proposed Sub-Uses		
Use	Area	Percentage
Fabrication	15,600 SF	23.7%
Warehouse	39,800 SF	60.5%
Retail & Showroom	3,000 SF	3.6%
Office	7,400 SF	11.3%
<b>Total</b>	<b>65,800 SF</b>	<b>100%</b>

The proposed development will be constructed and will occupy approximately five (4.73)-acres of the overall nine (9.32)-acre site, with the remaining eastern portion of the site being held for future development expansion.

As shown in the table above, the proposed development includes 3,000 of retail and showroom, which is less than the 5,000 SF maximum allowed.

These standards are met.

*(.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).*

**Response:** The proposed development does not include a residential use. As illustrated on the Site Plan (Exhibit 3 Sheet A1.0), the addition of the Java Road Supporting Street ensures adequate block access and connectivity for all modes of transportation, including pedestrian, bike, and motor vehicles by providing a sidewalk, bike facilities and travel lanes. Further, the proposed project provides safe and clear access to and from transit stops via the network of sidewalks.

*(.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.*

*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.*

**Response:** All activities related to the proposed development will be contained and conducted wholly within the completely enclosed building; as shown on the Site Plan (Exhibit 3 Sheet A1.0).

*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.*

**Response:** The proposed operations and fabrication will not create ground vibrations perceptible without instruments. The fabrication cutting tools will be installed on raised sleepers and sound dampeners to ensure that there is no vibration or sound of machinery.

*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.*

**Response:** The proposed operations and fabrication will not create odorous gases or odorous matter. The cutting tools use water to assist with cutting and will reduce particles from going airborne.

*D. Any open storage shall comply with the provisions of Section 4.176, and this Section.*

**Response:** The proposed development does not contain outdoor storage or open storage. All products and materials will be stored in completely enclosed warehouse and storage areas. This standard does not apply.

- 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 one hundred (100) feet of any residential district and any space used for loading or unloading commercial vehicles in connection with such an operation shall not be within one hundred (100) feet of any residential district.*

**Response:** Operations will be limited to typical business hours, from 9 am to 4 pm.

- 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.*

**Response:** The proposed building has been designed with exterior materials chosen and incorporated to eliminate heat or glare. Operations are wholly enclosed and will not produce glare or heat impacting neighboring community or other businesses.

- 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.*

**Response:** There will be no use of hazardous material or dangerous substances as described above, on-site.

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.*

**Response:** The nature of the proposed fabrication and operations will not attract insects or rodents. All storage will be secured and fully contained in a manner not to attract or aid the propagation of insects and rodents. Waste products resulting from fabrication and operations will be securely contained, reused, or properly disposed. Waste streams will be kept separate from and will not impact the public sewer system or storm sewer system. All operations will conform with City standards and ordinances as applied to sanitary and storm sewer discharges. These standards are met.

- 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.*

**Response:** All proposed uses comply with the OSDEQ standards Chapter 340, Division 35, Noise Control Regulations and City noise ordinance TMC 6-14. This standard is met.

- 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.*

**Response:** The proposed development does not use 'out of the ordinary' equipment or instruments that would cause interference or electrical disturbances. This standard is met.

- 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.*

**Response:** All proposed uses, and development will comply with the most recent air quality standards adopted by the Oregon Department of Environmental Quality. Plans of construction and operations comply with the recommendations and regulations of the State Department of Environmental Quality. This standard is met.

- L. Open burning is prohibited.*

**Response:** No burning will occur on this property. This standard is met.

*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 (6) feet in height.*

**Response:** The proposed development does not contain outdoor storage or open storage. All products and materials will be stored in a completely enclosed warehouse and storage areas. This standard is met.

*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:** As illustrated on the Site Plan (Exhibit 3 Sheet A1.0), and Landscape Plan (Exhibit 3 Sheet L1.0), areas not developed will be landscaped extensively and maintained through the applicant’s landscape maintenance program. The areas surrounding the building will be improved and landscaped using a variety of non-invasive plantings, grasses, trees, and lawn. The east side of the property will not be planted as extensively due to the anticipated future development. This standard is met.

*(.06) Other Standards:*

- 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.).*
- 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.).*
- 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.*
- 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.*
- E. *No setback is required when side or rear yards abut on a railroad siding.*
- F. *Corner Vision: Corner lots shall have no sight obstruction to exceed the vision clearance standards of Section 4.177.*
- H. *Signs: As provided in Sections 4.156.01 through 4.156.11.*

**Response:** The proposed development is located along Garden Acres Road and at the corner of Garden Acres Road and the future Java Road. The façade of the building, including the main entry and the front yard are located along Garden Acres Road (West elevation). The proposed and minimum required building setbacks are as follows:

<b>Setbacks</b>	<b>Proposed Setback</b>	<b>Minimum Setback</b>
Front Yard	77'-6"	30'
Side Yard (North)	35'-2"	30'
Side Yard (South)	35'-2"	30'
Rear Yard	711'-9"	30'

The proposed project maintains clear vision areas; with the following exemption of street and site trees. Off Street Parking is addressed later in this narrative with responses to Section 4.155.



## Planned Development Standards and Regulations for all Planned Development (PD) Zones

### Section 4.118. Standards applying to all Planned Development Zones:

(.01) *Height Guidelines: In "S" overlay zones, the solar access provisions of Section 4.137 shall be used to determine maximum building heights. In cases that are subject to review by the Development Review Board, the Board may further regulate heights as follows:*

- A. *Restrict or regulate the height or building design consistent with adequate provision of fire protection and fire-fighting apparatus height limitations.*
- B. *To provide buffering of low-density developments by requiring the placement of three or more story buildings away from the property lines abutting a low density zone.*
- C. *To regulate building height or design to protect scenic vistas of Mt. Hood or the Willamette River.*

**Response:** As shown on the Elevations (Exhibit 3 Sheet A3.1), the proposed development will be limited to one-story, 36'-2" feet in height. The height of the building was determined by the nature of operations within the building and provisions of fire protection and fire access. The design of the building has considered neighboring developments and their access to daylight, view of landscape and vistas. These standards are met.

(.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:** As shown on the Utility Plan (Exhibit 3 Sheet C3.0-C3.1), all proposed utilities will be located underground in order to limit adverse impacts on the site and neighboring properties.

(.03) *Notwithstanding the provisions of Section 4.140 to the contrary, the Development Review Board, in order to implement the purposes and objectives of Section 4.140, and based on findings of fact supported by the record may:*

- A. *Waive the following typical development standards:*
  1. *minimum lot area;*
  2. *lot width and frontage;*
  3. *height and yard requirements;*
  4. *lot coverage;*
  5. *lot depth;*
  6. *street widths;*
  7. *sidewalk requirements;*
  8. *height of buildings other than signs;*
  9. *parking space configuration and drive aisle design;*
  10. *minimum number of parking or loading spaces;*
  11. *shade tree islands in parking lots, provided that alternative shading is provided;*
  12. *fence height;*
  13. *architectural design standards;*
  14. *transit facilities; and*
  15. *On-site pedestrian access and circulation standards; and*
  16. *Solar access standards, as provided in section 4.137.*



- B. *The following shall not be waived by the Board, unless there is substantial evidence in the whole record to support a finding that the intent and purpose of the standards will be met in alternative ways:*
1. *open space requirements in residential areas;*
  2. *minimum density standards of residential zones;*
  3. *minimum landscape, buffering, and screening standards;*
- 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.*
- D. *Locate individual building, accessory buildings, off-street parking and loading facilities, open space and landscaping and screening without reference to lot lines; and*
- E. *Adopt other requirements or restrictions, inclusive of, but not limited to, the following:*
1. *Percent coverage of land by buildings and structures in relationship to property boundaries to provide stepped increases in densities away from low-density development.*
  2. *Parking ratios and areas expressed in relation to use of various portions of the property and/or building floor area.*
  3. *The locations, width and improvement of vehicular and pedestrian access to various portions of the property, including portions within abutting street or private drive.*
  4. *Arrangement and spacing of buildings and structures to provide appropriate open spaces around buildings.*
  5. *Location and size of off-street loading areas and docks.*
  6. *Uses of buildings and structures by general classification, and by specific designation when there are unusual requirements for parking, or when the use involves noise, dust, odor, fumes, smoke, vibration, glare or radiation incompatible with present or potential development of surrounding property. Such incompatible uses may be excluded in the amendment approving the zone change or the approval of requested permits.*
  7. *Measures designed to minimize or eliminate noise, dust, odor, fumes, smoke, vibration, glare, or radiation which would have an adverse effect on the present or potential development on surrounding properties.*
  8. *Schedule of time for construction of the proposed buildings and structures and any stage of development thereof to insure consistency with the City's adopted Capital Improvements Plan and other applicable regulations.*
  9. *A waiver of the right of remonstrance by the applicant to the formation of a Local Improvement District (LID) for streets, utilities and/or other public purposes.*
  10. *Modify the proposed development in order to prevent congestion of streets and/or to facilitate transportation.*
  11. *Condition the issuance of an occupancy permit upon the installation of landscaping or upon a reasonable scheduling for completion of the installation of landscaping. In the latter event, a posting of a bond or other security in an amount equal to one hundred ten percent (110%) of the cost of the landscaping and installation may be required.*

12. *A dedication of property for streets, pathways, and bicycle paths in accordance with adopted Facilities Master Plans or such other streets necessary to provide proper development of adjacent properties.*

**Response:** The applicant understands the abilities and limitations of the DRB to waive and not waive and adopt additional requirements listed in the sections above. The applicant is not requesting modifications from the provisions and objectives set forth in Section 4.140.

- (.04) *The Planning Director and Development Review Board shall, in making their determination of compliance in attaching conditions, consider the effects of this action on availability and cost. The provisions of this section shall not be used in such a manner that additional conditions, either singularly or cumulatively, have the effect of unnecessarily increasing the cost of development. However, consideration of these factors shall not prevent the Board from imposing conditions of approval necessary to meet the minimum requirements of the Comprehensive Plan and Code.*
- (.05) *The Planning Director, Development Review Board, or on appeal, the City Council, may as a condition of approval for any development for which an application is submitted, require that portions of the tract or tracts under consideration be set aside, improved, conveyed or dedicated for the following uses:*
- A. *Recreational Facilities: The Director, Board, or Council, as the case may be, may require that suitable area for parks or playgrounds be set aside, improved or permanently reserved for the owners, residents, employees or patrons of the development consistent with adopted Park standards and Parks and Recreation Master Plan.*
  - B. *Open Space Area: Whenever private and/or common open space area is provided, the City shall require that an association of owners or tenants be established which shall adopt such Articles of Incorporation, By-Laws or other appropriate agreement, and shall adopt and impose such Declaration of Covenants and Restrictions on such open space areas and/or common areas that are acceptable to the Development Review Board. Said association shall be formed and continued for the purpose of maintaining such open space area. Such an association, if required, may undertake other functions. It shall be created in such a manner that owners of property shall automatically be members and shall be subject to assessments levied to maintain said open space area for the purposes intended. The period of existence of such association shall be not less than twenty (20) years and it shall continue thereafter and until a majority vote of the members shall terminate it, and the City Council formally votes to accept such termination.*
  - C. *Easements: Easements necessary to the orderly extension of public utilities, and the protection of open space, may be required as a condition of approval. When required, such easements must meet the requirements of the City Attorney prior to recordation.*

**Response:** The applicant understands the abilities and limitations of the Planning Director and DRB to apply conditions of approval for any development for which an application is submitted, requiring that portions of the tract or tracts under consideration be set aside, improved, conveyed or dedicated for the uses listed in the section above.

- (.06) *Nothing in this Code shall prevent the owner of a site that is less than two (2) acres in size from filing an application to rezone and develop the site as a Planned Development. Smaller properties may or may not be suitable for such development, depending upon their particular sizes, shapes, locations, and the nature of the proposed development, but Planned Developments shall be encouraged at any appropriate location.*

- (.07) Density Transfers. *In order to protect significant open space or resource areas, the Development Review Board may authorize the transfer of development densities from one portion of a proposed development to another. Such transfers may go to adjoining properties, provided that those properties are considered to be part of the total development under consideration as a unit.*
- (.08) Wetland Mitigation and other mitigation for lost or damaged resources. *The Development Review Board may, after considering the testimony of experts in the field, allow for the replacement of resource areas with newly created or enhanced resource areas. The Board may specify the ratio of lost to created and/or enhanced areas after making findings based on information in the record. As much as possible, mitigation areas shall replicate the beneficial values of the lost or damaged resource areas.*
- (.09) Habitat-Friendly Development Practices. *To the extent practicable, development and construction activities of any lot shall consider the use of habitat-friendly development practices, which include:*
- A. *Minimizing grading, removal of native vegetation, disturbance and removal of native soils, and impervious area;*
  - B. *Minimizing adverse hydrological impacts on water resources, such as using the practices described in Part (a) of Table NR-2 in Section 4.139.03, unless their use is prohibited by an applicable and required state or federal permit, such as a permit required under the federal Clean Water Act, 33 U.S.C. §§1251 et seq., or the federal Safe Drinking Water Act, 42 U.S.C. §§300f et seq., and including conditions or plans required by such permit;*
  - C. *Minimizing impacts on wildlife corridors and fish passage, such as by using the practices described in Part (b) of Table NR-2 in Section 4.139.03; and*
  - D. *Using the practices described in Part (c) of Table NR-2 in Section 4.139.03. [Section 4.118(.09) added by Ord. # 674 11/16/09]*

**Response:** In an effort to maintain and create habitat-friendly development, the applicant has elected to leave more than half of the overall 9.32-acre site in a natural grassy state. In addition, the applicant has maintained existing trees where possible and will plant additional trees throughout the site. Finally, the Stormwater Plan (Exhibit 5) details how Low Impact Development methods such as streetscape planters, will be used for Stormwater Management, which will help to create conditions where habitat can thrive. These standards are met.

#### Section 4.140. Planned Development Regulations.

- (.01) Purpose.
- A. *The provisions of Section 4.140 shall be known as the Planned Development Regulations. The purposes of these regulations are to encourage the development of tracts of land sufficiently large to allow for comprehensive master planning, and to provide flexibility in the application of certain regulations in a manner consistent with the intent of the Comprehensive Plan and general provisions of the zoning regulations and to encourage a harmonious variety of uses through mixed use design within specific developments thereby promoting the economy of shared public services and facilities and a variety of complimentary activities consistent with the land use designation on the Comprehensive*

*Plan and the creation of an attractive, healthful, efficient and stable environment for living, shopping or working.*

*B. It is the further purpose of the following Section:*

- 1. To take advantage of advances in technology, architectural design, and functional land use design;*
- 2. To recognize the problems of population density, distribution and circulation and to allow a deviation from rigid established patterns of land uses, but controlled by defined policies and objectives detailed in the comprehensive plan;*
- 3. To produce a comprehensive development equal to or better than that resulting from traditional lot land use development.*
- 4. To permit flexibility of design in the placement and uses of buildings and open spaces, circulation facilities and off-street parking areas, and to more efficiently utilize potentials of sites characterized by special features of geography, topography, size or shape or characterized by problems of flood hazard, severe soil limitations, or other hazards;*
- 5. To permit flexibility in the height of buildings while maintaining a ratio of site area to dwelling units that is consistent with the densities established by the Comprehensive Plan and the intent of the Plan to provide open space, outdoor living area and buffering of low-density development.*
- 6. To allow development only where necessary and adequate services and facilities are available or provisions have been made to provide these services and facilities.*
- 7. To permit mixed uses where it can clearly be demonstrated to be of benefit to the users and can be shown to be consistent with the intent of the Comprehensive Plan.*
- 8. To allow flexibility and innovation in adapting to changes in the economic and technological climate.*

**Response:** As illustrated on the Site Plan, Landscape Plan and Building Elevations (Exhibit 3 Sheets A1.0, L1.0 and A3.1), the proposed development presents an alternative approach to industrial building design, which is consistent with the purposes of this section. The project utilizes an architectural palette of materials that provides a more approachable, enjoyable aesthetic experience than what is typically seen in nearby industrial spaces. The project will incorporate wood accent siding, and accent slats over glazing elements.

The proposed development has been designed in a thoughtful way as an attractive building that represents Precision's high-quality products and mission to create a better world through their work. The site design provides clear circulation, abundant and high-quality open spaces and landscapes, special features such as the entry plaza and transparent showroom, and an architectural massing to provide a sense of place and human scale. The design meets the purpose of the Planned Development Regulations section. These requirements are met.

*(.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 (2) acres in size, and designated in the Comprehensive Plan for commercial, residential, or industrial use shall be developed as Planned Developments, unless approved for other uses permitted by the Development Code. Smaller sites may also be developed through the City’s PD procedures, provided that the location, size, lot configuration, topography, open space and natural vegetation of the site warrant such development.

**Response:** The size of the proposed site is greater than two acres, as broken down in the table below. Therefore, the project anticipates being a Planned Development.

Proposed Development	Square Feet	Acres
Property	406,233	9.32
Proposed site area	206,217	4.73
Building area	65,800	1.51

(.03) Ownership.

- A. *The tract or tracts of land included in a proposed Planned Development must be in one (1) ownership or control or the subject of a joint application by the owners of all the property included. The holder of a written option to purchase, with written authorization by the owner to make applications, shall be deemed the owner of such land for the purposes of Section 4.140.*
- B. *Unless otherwise provided as a condition for approval of a Planned Development permit, the permittee may divide and transfer units or parcels of any development. The transferee shall use and maintain each such unit or parcel in strict conformance with the approval permit and development plan.*

**Response:** The proposed development ownership consists of three partners: Marcus Neff, Robert Hausserman and Steve Mast under an Oregon LLC called “PCT NW Properties Oregon LLC.” The individuals have closed on the land ownership.

(.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 proposed development has been designed by a professional architect licensed by the State of Oregon and landscape architect registered by the State of Oregon. Mildren Design Group will be

designated to confer with city planning staff with respect to concept details of the plan. First Forty Feet LLC will be administering the land-use planning and coordination of land-use approval. These requirements are met.

*(.05) Planned Development Permit Process.*

- A. All parcels of land exceeding two (2) acres in size that are to be used for residential, commercial or industrial development, shall, prior to the issuance of any building permit:
 
  - 1. Be zoned for planned development;*
  - 2. Obtain a planned development permit; and*
  - 3. Obtain 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.**

**Response:** The proposed development exceeds two acres and is requesting a Planned Development permit with Stage I and II review and approval by the Development Review Board. The site is located in the Coffee Creek Industrial Design Overlay district. A concurrent related zoning map amendment and annexation was submitted in April 2022 to change the site's zoning from Unincorporated Washington County Future Development 20-acre District (FD-20) to City of Wilsonville Zoning Planned Development Industrial-RSIA (PDI-RSIA). The development review request and these narrative responses are being submitted with the assumption that the Zoning map change and annexation have been approved as per what City policy allows. Additionally, a pre-application conference with the Planning Department took place on July 28, 2021. See Pre-Application Conference notes for details (Exhibit 11).



## Overlay Zones

### Section 4.134 Coffee Creek Industrial Design Overlay District

(.01) **Purpose.** *The Coffee Creek Industrial Design Overlay District (Coffee Creek DOD) is an overlay district within the Planned Development Industrial - Regionally Significant Industrial Area (RSIA) Zone Section 4.135.5. The purpose of this Coffee Creek DOD is to implement the Coffee Creek Industrial Area Master Plan (2007) by establishing standards for street design and connectivity, site design and circulation, building form, and building architecture and landscape for all development located within the master plan area. These standards are intended to result in:*

- A. *An industrial district featuring cohesive and high-quality site, landscape, and building design that is well integrate d with adjacent streetscapes and other public spaces.*
- B. *A multi-modal transportation network accommodating pedestrians, bicyclists, transit riders, motorists, and freight in the context of a modern light industrial district.*
- C. *Preservation of trees and natural features.*
- D. *Minimization of adverse impacts to adjacent properties from development that detracts from the character and appearance of the area.*
- E. *Minimization of the off-site visibility of vehicular parking, circulation and loading areas.*
- F. *Creation of a pleasant and functional industrial district for employees and visitors.*
- G. *A predictable and timely process for reviewing light industrial development applications.*

**Response:** The proposed development is located in and conforms to the Coffee Creek Industrial DOD within the Planned Development Industrial-RSIA zone. The following responses describe the intent of the proposed development and how the design addresses Coffee Creek DOD standards for street design, connectivity, site design, circulation, building form, massing, architecture, and landscape architecture.

(.02) **Applicability.** *The Coffee Creek DOD shall apply to all properties within the Coffee Creek Industrial Area Master Plan as shown in the Regulating Plan (Figure CC-1). The provisions of this section shall apply to:*

- A. *All new building construction.*
- B. *Any exterior modifications to existing, non-residential buildings, subject to Section 4.134 (.03).*
- C. *All development of site improvements including but not limited to new paved parking lots, outdoor storage, display areas, signs, and landscaping.*
- D. *All building expansions greater than 1,250 square feet.*

**Response:** The proposed project is for new development within the Coffee Creek DOD. Therefore, this section applies.

(.03) **Exceptions.** *This section does not apply to the following:*

- A. *Maintenance of the exterior of an existing industrial/employment structure, such as painting to the approved color palette, reroofing, or residing with the same or similar materials.*
- B. *Interior remodeling.*
- C. *Maintenance of existing dwellings and accessory buildings.*
- D. *Maintenance of agricultural buildings.*

(.04) Uses that Are Typically Permitted. The uses permitted shall be governed by Section 4.135.5 (.03).

**Response:** The proposed project consists of new construction of a headquarters for Precision Countertops, a countertop fabrication facility. As described under the response to Section 4.135.5 earlier in this narrative, the area of the proposed building is 65,800 SF consisting of warehouse space, retail and showroom, office space, storage, and fabrication, which are all permitted uses. This requirement is met.

(.05) Prohibited Uses. The uses prohibited shall be governed by Section 4.135.5 (.04).

(.06) Overview of Coffee Creek DOD Standards.

A. Section 4.134 (.09) Regulating Plan. The Regulating Plan organizes all existing and future streets, drives, and shared-use paths within the Coffee Creek Industrial Area into a hierarchy of Addressing Streets, Supporting Streets and Through Connections.

**Response:** The proposed development incorporates the planned Java Road alignment, categorized as a Supporting Street in Figure CC-1 of the Regulating Plan. Java Road will connect east-west through the site along the northern boundary, meeting the design specifications of a Supporting Street. Half street improvements will be constructed as part of this project (See Exhibit 3 Sheets A1.0-A1.1).



Figure CC-1 - Regulating Plan



B. Section 4.134 (.10) Connectivity Standards.

1. New Supporting Streets and Through Connections are required within the Coffee Creek DOD to meet Connectivity Requirements as shown on Figure CC-4.

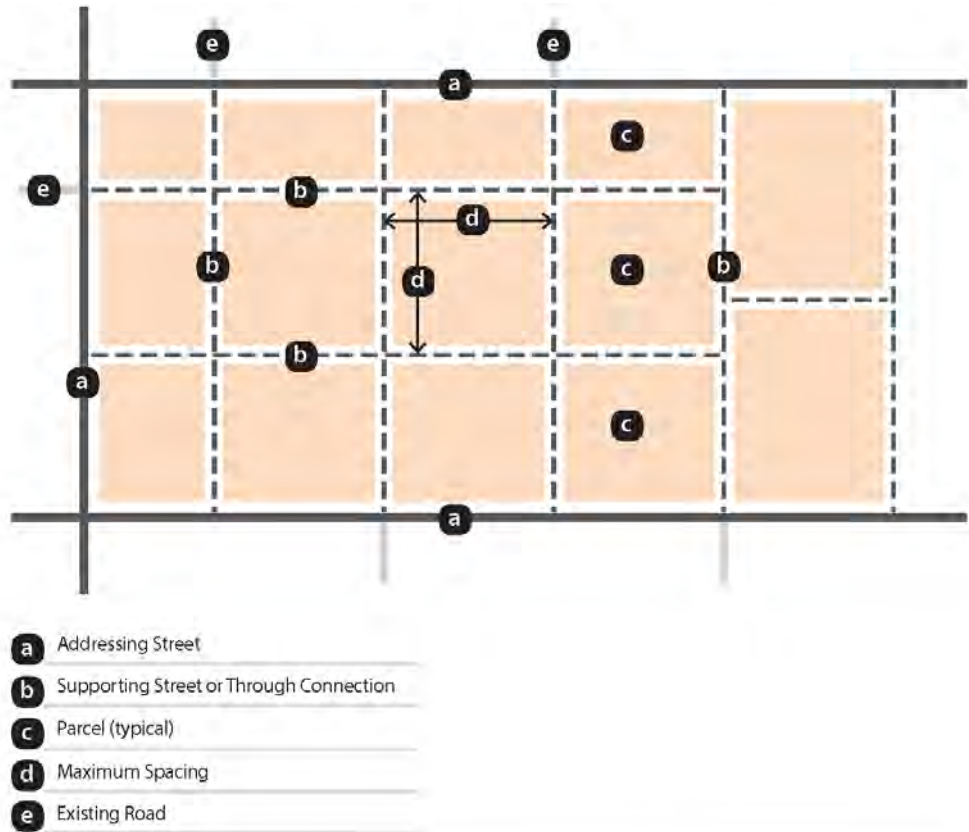


Figure CC-4 - Connectivity Standards

**Response:** As shown on the Site Plan (Exhibit 3 Sheet A1.10), the proposed project conforms to the connectivity standards outlined in the Coffee Creek DOD, specifically 'Addressing Streets' (Garden Acres Road) and 'Supporting Streets' (Java Road), with the building façade and entry along the Garden Acres Road frontage and ensuring adequate parcel and street spacing consistent with Figure CC-4. This standard is met.

C. Section 4.134 (.11) Development Standards Table.

1. The Development Standards Table provides an overview of all applicable development standards. The development standards for any given parcel are determined by the existing or future street or shared-use path type on which the parcel fronts, as detailed in Table CC-1.
2. Areas bounded by new Supporting Streets and Through Connections are designated as Parcels and are required to comply with Development Standards governing site design, building orientation and frontage. The development standards for site design, building

*façade and landscape design are intended to work in tandem with the street types to create a cohesive and unified public realm.*

3. *Adjustments to Development Standards may be granted by the Planning Director for quantifiable provisions, as noted in Tables CC-1 through CC-4, if the Planning Director finds that the adjusted Development Standard will perform as well as the Development Standard.*

**Response:** The proposed development conforms with the objectives and details in Table CC-1. As shown on the Site Plan (Exhibit 3 Sheet A1.10), it will incorporate the required 'Addressing Street' on which the parcel and building fronts and 'Supporting Street' (Java Road) on which the parcel fronts. The development complies with Development Standards governing site design, building façade, and landscape design, working in tandem with the street type. The aim is to enhance the existing Garden Acres Road streetscape and create an active, interesting and safe new streetscape along Java Road, the 'Supporting Street'. No adjustments are needed. These standards are met.

- D. *Coffee Creek DOD Pattern Book. The Coffee Creek DOD Pattern Book provides supplemental design guidelines, which are intended to allow more flexibility in design than the Development Standards while satisfying the purpose of the Coffee Creek DOD.*

*(.07) Review Process. Development applications shall follow the application review process described in:*

- A. *Section 4.197 Zone Changes and Amendments.*
- B. *Section 4.198 Comprehensive Plan Changes.*
- C. *Section 4.700 Annexation and Urban Growth Boundary Amendments*
- D. *Section 4.140 Planned Development Regulations.*

*(.08) Waivers. The Development Review Board may waive standards as listed in Section 4.134 (.11), consistent with the provisions of Section 4.118 (.03).*

- A. *The following standards shall not be waived, unless there is substantial evidence in the whole record to support a finding that the intent and purpose of the standards will be met in alternative ways:*
  1. *Required minimum building height as provided in Section 4.134 (.11) Table CC-4;*
  2. *Parking location and design along addressing streets in Section 4.134 (.11) Table CC-3; and*
  3. *Parcel pedestrian access as listed in Section 4.134 (.11) Table CC-3.*

**Response:** The proposed development will request one waiver for the proposed site development. The team requests a 40ft wide access drive to accommodate truck operations for turning requirements, movement, circulation, safety considerations.

- B. *In addition to meeting the purposes and objectives of Section 4.140, any waivers granted in the Coffee Creek DOD must be found to be consistent with the intent of the Coffee Creek DOD Pattern Book.*

**Response:** The proposed development will request one waiver for the proposed site development. The team requests a 40ft wide access drive to accommodate truck operations for turning requirements, movement, circulation, safety considerations.

(.09) Coffee Creek DOD Regulating Plan, Figure CC-1.

A. *Components of the Regulating Plan Map*

1. *Addressing Streets. Existing and planned streets within the Regulating Plan Area are called Addressing Streets and include Cahalin Road, Day Road, Clutter Street, Grahams Ferry Road, Garden Acres Road, and "Future" Street.*
2. *Overlay District. Land area identified within the Coffee Creek DOD on Figure CC-1 is subject to additional Connectivity Standards as detailed in Figure CC-4 and Table CC-1.*

**Response:** (1) As shown on the Site Plan (Exhibit 3 Sheet A1.1), the proposed development is located at the intersection of existing Garden Acres Road, an 'Addressing Street' and future Java Road, a 'Supporting Street' according to Figure CC-1.

(2) The proposed development will address all connectivity standards as detailed in Figure CC-4 and Table CC-1, ensuring that Java Road intersects with Garden Acres Road.

(.10) Coffee Creek Connectivity Standards

- A. *Street Types, Figure CC-1. Within the land area bounded by Addressing Streets, connectivity shall be provided through new streets or private drives and shared use paths. The location, alignment, and cross-section of required streets or private drives and shared-use paths is flexible, as long as they comply with spacing and minimum cross section standards. New connections may be one of the following types:*
1. *Supporting Streets. Supporting Streets are new public streets or public easements. They shall meet the development standards set out in Figure CC-2.*
    - a. *A Required Supporting Street is one that intersects with an Addressing Street as shown on Figure CC-1. The exact location and design of these connections will be determined at the time of development review.*
    - b. *Planned Intersections are locations where Existing and Planned Addressing Streets intersect with required Supporting Streets, and Planned Pathways, as generally shown in Figure CC-1.*
  2. *Through Connections. Through Connections are new public streets or public easements with multi-use paths, or streets or public easements that combine characteristics of streets and multi-use paths. They shall meet the Development Standards set out in Figure CC-3.*

**Response:** The main façade frontage of the proposed development is along Garden Acres Road, an existing 'Addressing Street' and is located at its intersection with future Java Rd, a required 'Supporting Street.' The intersection of existing Garden Acres Road and future Java Road is a Planned Intersection as per Figure CC-1, which will be finalized when the parcel to the north is developed. The temporary access from Garden Acres Road will be closed at that time.

As shown on Exhibit 3 Sheets A1.0 and A1.1, Java Road will feature a network of bike, pedestrian, and motor vehicle connectivity, including half street improvements of 12' travel lane width, 8' parallel parking lane, 6' pedestrian sidewalk and 6' planting strip. This cross-section design is consistent with Figure CC-2, Supporting Streets Standards. The connectivity plan has been satisfied.

- B. Planned Pathways are multi-use paths or pedestrian connections that are planned in the Transportation Systems Plan to occur in the location generally shown in Figure CC-1. A Planned Pathway may be employed to meet required connectivity, if it complies with Through Connection Standards for Connection Spacing and Connection Type, see Figure CC-6.*

**Response:** Java Road will be constructed as a Required Supporting Street, therefore a Planned Pathway is not required as part of this project. This requirement does not apply.

- C. Maximum Connection Spacing.*

- 1. Addressing Streets. When intersecting with an Addressing Street, new Supporting Streets and Through Connections shall meet maximum spacing standards as set out in Table CC-1.*
- 2. Internal Supporting Streets and Through Connections. See Figure CC-4 and Table CC-1.*

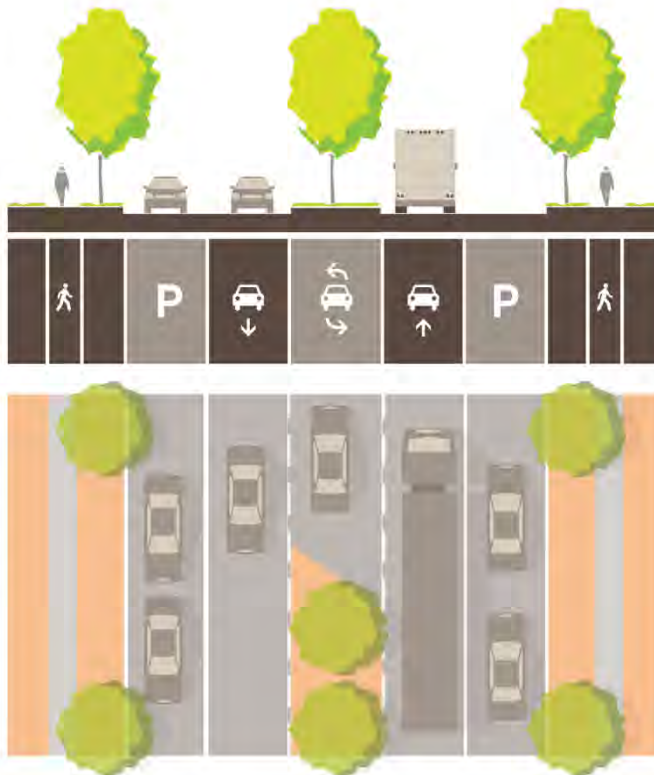
**Response:** As shown on the Site Plan (Exhibit 3 Sheet A1.1), the proposed development is consistent with the maximum connection spacing requirements for Addressing Streets, which, according to Table CC-1 is 600 ft. from centerline to centerline. The location of Java Road and its spacing has been determined by the Coffee Creek Regulating Plan. This standard has been met.

- D. Required Connectivity Master Plan. Connectivity Master Plans are required for all development within the Coffee Creek DOD. Development proposals shall show conceptually how the Connectivity Requirements will be met. In addition, the Connectivity Master Plan should generally indicate how parking, driveways, walkways, waysides, etc., will relate or connect to adjacent parcels.*

**Response:** The elements of the Required Connectivity Master Plan are illustrated on the Site Plan (Exhibit 3 Sheet A1.0), which conceptually shows how the connectivity requirements in this section will be met. It also shows how parking, driveways, walkways, and waysides will relate to or connect to adjacent parcels.

**Specifications for Supporting Streets**

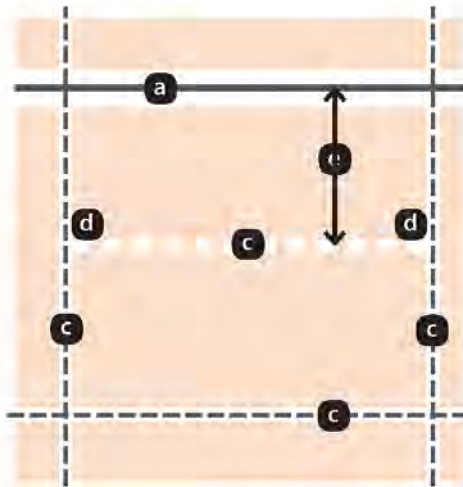
Type	Multimodal Connection*
Aesthetic Character / Identity	Minor Addressing Street
Role in Network	Bike, Pedestrian and Local Vehicular Connectivity
Design Speed	under 20 mph
Right-of-Way / Easement	Varies
Curb-to-Curb Width	24-54 feet
Travel Lanes (number)	2
Travel Lane Width	10-12 feet
Center Turn Lane Width	14 feet, max. (optional)
Parking Lane Width	8 feet (optional)
Bike Facilities	Shared Street
Sidewalk Width	6 feet (minimum)
Planting Strip Width	6 feet (minimum)
Planted Median Width	14 (minimum, optional)



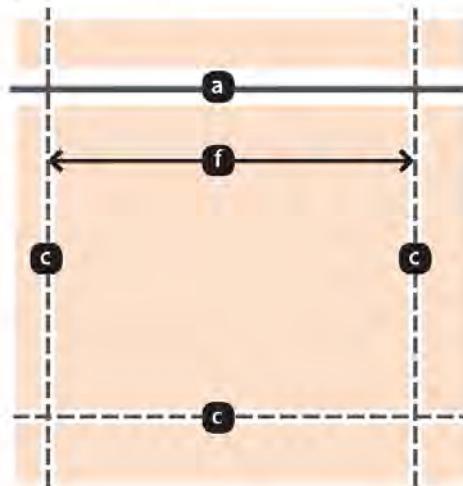
\*The Regulating Plan (Figure CC-1) illustrates the general location of planned multimodal connections. These are labeled as *Required Supporting Streets*. Within 300 feet of an Addressing Street, the exact location and design of these connections will be determined at the time of development review.

Figure CC-2 - Supporting Streets Standards

Parcel Access



Parcel Frontage



- a** Addressing Street
- b** Supporting Street
- c** Supporting Street or Through Connection
- d** Parcel Driveway Access
- e** Parcel Driveway Spacing
- f** Parcel Frontage

Figure CC-6 - Site Design - Parcel Access



(.11) *Development Standards Table. Areas bounded by Addressing Streets, Supporting Streets and Through Connections shall be designated as a Parcel and subject to the Development Standards in Tables CC-1 through CC-4.*

**Response:** The project is bounded by an ‘Addressing Street’ (Garden Acres Road) and a ‘Supporting Street’ (Java Road). Therefore, the standards in Tables CC-1 through CC-4 apply.

Table CC-1: Street Design and Connectivity			
	Addressing Streets	Supporting Streets	Through Connections
General	Development Standards within this table are not adjustable.		
Connection Spacing	Not applicable, Addressing Streets exist or are planned	600 feet, maximum, centerline to centerline. Supporting Streets and Through Connections shall intersect with Garden Acres Road as shown on Figure CC-1, Regulating Plan; or if the Addressing Street is Day Road, no less than 1,000 feet apart, centerline to centerline.	
Connection Type	Addressing Streets are Day Road, Grahams Ferry Road, Cahalin Road, Garden Acres Road, Clutter Street, and "Future" Street.	Supporting Streets are those meeting Specifications, Figure CC-2. A Required Supporting Street is one that intersects with an Addressing Street. The exact location and design of these connections will be determined at the time of development review.	Through Connections are those meeting Specifications, Figure CC- 3. Through Connections may be multimodal or used exclusively for bicycle and pedestrian access.
Connection Hierarchy and Primary Frontage	If one of the streets or connections bounding a parcel is an Addressing Street, the Addressing Street shall be the Primary Frontage. If none of the bounding streets or connections is an Addressing Street, a Supporting Street shall be the Primary Frontage. See Figure CC-5.		

**Response:** The proposed development includes a Required Supporting Street (Java Road) and is located along the frontage of an Addressing Street (Garden Acres Road). The project will include half street improvements for Java Road designed to the specifications of a Supporting Street in Figure CC-2,

within the regulating plan area. Details of the half street improvements are illustrated on Exhibit 3 Sheet A1.1.

Connection Spacing: As shown on the Site Plan (Exhibit 3 Sheet A1.0), connection spacing for Java Road (a Required Supporting Street) will not exceed the maximum distance of 600' from centerline to centerline. Java Road intersects with Garden Acres Road, defined as an Addressing Street, consistent with Figure CC-1, Regulating Plan. Connection spacing does not apply to Garden Acres Road.

Connection Type: The proposed development is located at the intersection of Garden Acres Road (an Addressing Street) and Java Road, a Supporting Street. Therefore, Java Road is also a Required Supporting Street.

Connection Hierarchy and Primary Frontage: The proposal intends to address all connectivity standards as detailed in Figure CC-4 and Table CC-1, ensuring that Java Road intersects with Garden Acres Road. Garden Acres Road will be the primary frontage. The building main entry and showroom have been designed to address the 'Addressing Street' and establish a clear front door to the development.

<b>Table CC-3: Site Design</b>			
	<b>Addressing Streets</b>	<b>Supporting Streets</b>	<b>Through Connections</b>
<b>1. Parcel Access</b>			
General	Unless noted otherwise below, the following provisions apply: <ul style="list-style-type: none"> <li>• Section 4.177 (.02) for street design;</li> <li>• Section 4.177 (.03) to (.10) for sidewalks, bike facilities, pathways, transit improvements, access drives &amp; intersection spacing.</li> </ul> The following Development Standards are adjustable: <ul style="list-style-type: none"> <li>• Parcel Driveway Spacing: 20%</li> <li>• Parcel Driveway Width: 10%</li> </ul>		
Parcel Driveway Access	Not applicable	Limited by connection spacing standards Parcel Driveway Access may be employed to meet required connectivity, if it complies with Supporting Street Standards for Connection Spacing and Connection Type, see Figure CC-6. Subject to approval by City Engineer	Limited by connection standards for motorized vehicle access. Parcel Driveway Access may be employed to meet required connectivity, if it complies with Through Connection Standards for Connection Spacing and Connection Type, see Figure CC-6. Subject to approval by City Engineer
Parcel Driveway Spacing	Not applicable	150 feet, minimum See Figure CC-6	150 feet, minimum See Figure CC-6
Parcel Driveway Width	Not applicable	24 feet, maximum or complies with Supporting Street Standards	24 feet, maximum or complies with Through Connection Standards



**Response:****(1) Parcel Access**

Parcel Driveway Access: Proposed parcel driveway access is provided on both the Addressing Street and Supporting Street, as shown on the Site Plan (Exhibit 3 Sheet A1.0). When the intersection of Java Road and Garden Acres Road is developed in the future, parcel access will be limited to Java Road.

Parcel Driveway Spacing: The two proposed access points from the Supporting Street (Java Road) meet the minimum driveway spacing standard of 150.'

Parcel Driveway Width: The single access point from Garden Acres Road has a driveway width of 30'. Two access points are placed off the east/west running Supporting Street (Java Road) with a driveway width of 30' each. The driveway width is considered temporary until the full road can be completed. Upon completion of Java Road, the driveways will meet the 24' driveway width standard.

Table CC-3: Site Design			
	Addressing Streets	Supporting Streets	Through Connections
<b>2. Parcel Pedestrian Access</b>			
General	Unless noted otherwise below, the following provisions apply: <ul style="list-style-type: none"> <li>Section 4.154 (.01) for separated &amp; direct pedestrian connections between parking, entrances, street right-of-way &amp; open space</li> <li>Section 4.167 (.01) for points of access</li> </ul>		
Parcel Pedestrian Access Spacing	No restriction		
Parcel Pedestrian Access Width	8 feet wide minimum		
Parcel Pedestrian Access to Transit	Provide separated & direct pedestrian connections between transit stops and parking, entrances, street right-of-way & open space.		
<b>3. Parcel Frontage</b>			
Parcel Frontage, Defined	Parcel Frontage shall be defined by the linear distance between centerlines of the perpendicular Supporting Streets and Through-Parcel Connections. Where Parcel Frontage occurs on a curved segment of a street, Parcel Frontage shall be defined as the linear dimension of the Chord.		
Primary Frontage, Defined	The Primary Frontage is the Parcel Frontage on an Addressing Street. If the parcel is not bounded by Addressing Streets, it is the Parcel Frontage on a Supporting Street. See Figure CC-5.		
Parcel Frontage Occupied by a Building	A minimum of 100 feet of the Primary Frontage shall be occupied by a building. The maximum Primary Frontage occupied by a building shall be limited only by required side yard setbacks.	No minimum	
<b>4. Parking Location and Design</b>			
General	Unless noted otherwise below, the following provisions apply: <ul style="list-style-type: none"> <li>Section 4.155 (03) Minimum and Maximum Off-Street Parking Requirements</li> <li>Section 4.155 (04) Bicycle Parking</li> <li>Section 4.155 (06) Carpool and Vanpool Parking Requirements</li> <li>Section 4.176 for Parking Perimeter Screening and Landscaping - permits the parking landscaping and screening standards as multiple options</li> </ul> The following Development Standards are adjustable: <ul style="list-style-type: none"> <li>Parking Location and Extent: up to 20 spaces permitted on an Addressing Street</li> </ul>		

**Response:**

(2) Parcel Pedestrian Access

Parcel Pedestrian Access Width: Pedestrian access points to the parcel are illustrated on the Site Plan, Exhibit 3 Sheet A1.0. The proposed development includes pedestrian access points from Garden Acres Road and Java Road. The pedestrian access from the Addressing Street, Garden Acres Road is an 6’ wide pedestrian connection that leads directly to the building’s main entrance. The pedestrian access from

the Supporting Street, Java Road, connects the 6' wide Java Road sidewalk with an 6' pedestrian connection leading to the building's main entrance.

Parcel Pedestrian Access to Transit: While no direct pedestrian connections between transit stops occur within the subject site, the applicant has provided direct pedestrian connections from the proposed building to Garden Acres Road, the Addressing Street, which is connected to transit. This standard is met.

### (3) Parcel Frontage

Primary Frontage Defined: The parcel is bounded by a Garden Acres Road, an Addressing Street. Therefore, it is the Primary Frontage.

Parcel Frontage Occupied by a Building: As shown on the Site Plan (Exhibit 3 Sheet A1.0), at least 100' of the Primary Frontage is occupied by the building design.

Table CC-3: Site Design			
	Addressing Streets	Supporting Streets	Through Connections
Parking Location and Extent	Limited to one double-loaded bay of parking, 16 spaces, maximum, designated for short-term (1 hour or less), visitor, and disabled parking only between right-of-way of Addressing Street and building.	Parking is permitted between right-of-way of Supporting Street and building.	Parking is permitted between right-of-way of Through Connection and building.
Parking Setback	20 feet minimum from the right-of-way of an Addressing Street.	15 feet minimum from the right-of-way of a Supporting Street.	10 feet minimum from the right-of-way of a Through Connection.
Parking Lot Sidewalks	Where off-street parking areas are designed for motor vehicles to overhang beyond curbs, sidewalks adjacent to the curbs shall be increased to a minimum of seven (7) feet in depth.	Where off-street parking areas are designed for motor vehicles to overhang beyond curbs, planted areas adjacent to the curbs shall be increased to a minimum of nine (9) feet in depth.	
Parking Perimeter Screening and Landscaping	Screen parking area from view from Addressing Streets and Supporting Streets by means of one or more of the following: a. General Landscape Standard, Section 4.176 (.02) C. b. Low Berm Standard, Section 4.176 (.02) E., except within 50 feet of a perpendicular Supporting Street or Through Connection as measured from the centerline.		Screen parking area from view from Through Connections by means of a. Low Screen Landscape Standard, Section 4.176 (.02) D., or b. High Screen Landscaping Standard, Section 4.176 (.02) F., or c. High Wall Standard, Section 4.176 (.02) G., or d. Partially Sight-obscuring Fence Standard, Section 4.176 (.02) I.
Off-Street Loading Berth	One loading berth is permitted on the front façade of a building facing an Addressing Street. The maximum dimensions for a loading are 16 feet wide and 18 feet tall. A clear space 35 feet, minimum is required in front of the loading berth.	No limitation. Shall meet minimum standards in Section 4.155 (.05).	

Table CC-3: Site Design			
	Addressing Streets	Supporting Streets	Through Connections
	<p>The floor level of the loading berth shall match the main floor level of the primary building. No elevated loading docks or recessed truck wells are permitted.</p> <p>Access to a Loading Berth facing an Addressing Street may cross over, but shall not interrupt or alter, a required pedestrian path or sidewalk. All transitions necessary to accommodate changes in grade between access aisles and the loading berth shall be integrated into adjacent site or landscape areas.</p> <p>Architectural design of a loading berth on an Addressing Street shall be visually integrated with the scale, materials, colors, and other design elements of the building.</p>		
Carpool and Vanpool Parking	No limitation		
<b>5. Grading and Retaining Walls</b>			
General	<p>The following Development Standards are adjustable:</p> <ul style="list-style-type: none"> <li>Retaining Wall Design: 20%</li> </ul>		
Maximum height	<p>Where site topography requires adjustments to natural grades, landscape retaining walls shall be 48 inches tall maximum.</p> <p>Where the grade differential is greater than 30 inches, retaining walls may be stepped.</p>		
Required Materials	<p>Materials for retaining walls shall be unpainted cast-in-place, exposed-aggregate, or board-formed concrete; brick masonry; stone masonry; or industrial-grade, weathering steel plate.</p>		
Retaining Wall Design	<p>Retaining walls longer than 50 linear feet shall introduce a 5-foot, minimum horizontal offset to reduce their apparent mass.</p>		

(4) Parking Location and Design

The General Requirements for Parking Locations and Design provisions are addressed under General Development Regulations and Standards of this narrative.

Parking Location and Extent: Proposed parking for this project will be located at the northwest corner of the site between the proposed building and Garden Acres Road (an Addressing Street) as well as Java Road, a Supporting Street. This parking area contains 15 spaces, and is limited to **short term, visitor,**

and ADA accessible parking. An additional parking area containing 56 parking spaces are located at the east end of the site. The standard is met. See Exhibit 3 Sheet A1.0 (Site Plan).

Parking Setback: The standard for parking lot setbacks is 20' minimum from the ROW of an Addressing Street. As shown on the Site Plan (Exhibit 3 Sheet A1.0), the parking area with 15 spaces in the northwest corner of the site meets this standard. The standard for parking lot setbacks is 15' minimum from the ROW of a Supporting Street. The Site Plan also shows that the main parking area adjacent to Java Road, east of the building with 56 spaces, meets this standard. These standards are met.

Parking Lot Sidewalks: As shown on the Landscape Plan (Exhibit 3 Sheet L1.0), the planted areas along Java Road between the off-street parking and public streets are sized to allow for the overhang of motor vehicles. The development does not have parking areas along Garden Acres Road. This standard is met.

Parking Perimeter Screening and Landscaping: As shown on Exhibit 3 Sheets L1.0-L1.1, the landscape plan provides landscape screening of the north/northeast parking area from view from Java Road using low and high screen landscape elements, including low shrubs and high street trees.

Off-Street Loading Berth: The building square footage is 65,800 GSF thus requires (2) two loading berths. Three off-street loading berths are provided, and they are located behind the building and are not visible from Garden Acres Road. Therefore, there is no limitation on the location or size or the loading berths except that they need to meet meet the general code requirements for loading in Section 4.155 on page 55 of this narrative.

#### (5) Grading and Retaining Walls

The site is fairly flat and will not require retaining walls or significant grading. See Grading Plan for more details (Exhibit 3 Sheet C2.1). These standards do not apply.

Table CC-3: Site Design			
	Addressing Streets	Supporting Streets	Through Connections
<b>6. Planting</b>			
General	Unless noted otherwise below, the following provisions apply: <ul style="list-style-type: none"> <li>Section 4.176 Landscaping and Screening Standards</li> </ul>		
Landscaping Standards Permitted	General Landscape Standard, Section 4.176 (.02) C. Low Berm Standard, Section 4.176 (.02) E., except within 50 feet of a perpendicular Supporting Street or Through Connection as measured from the centerline	General Landscape Standard, Section 4.176 (.02) C. Low Screen Landscape Standard, Section 4.176 (.02) D. Screen loading areas with High Screen Landscaping Standard, Section 4.176 (.02) F., and High Wall Standard, Section 4.176 (.02) G.	
<b>7. Location and Screening of Utilities and Services</b>			
General	Unless noted otherwise below, the following provisions apply: <ul style="list-style-type: none"> <li>Sections 4.179 and 4.430. Mixed Solid Waste and Recyclables Storage in New Multi-Unit Residential and Non-Residential Buildings</li> </ul>		
Location and Visibility	Site and building service, equipment, and outdoor storage of garbage, recycling, or landscape maintenance tools and equipment is not permitted	Site and building service, utility equipment, and outdoor storage of garbage, recycling, or landscape maintenance tools and equipment is not permitted within the setback	No limitation
Required Screening	Not permitted	High Screen Landscaping Standard, Section 4.176 (.02) F. and/ or High Wall Standard, Section 4.176 (.02) G.	

(6) Planting

General: The General Requirements for Planting provisions are addressed under General Development Regulations and Standards: Landscaping, Screening, and Buffering: Section 4.176 of this narrative.

Landscape Standards Permitted: As shown on the Landscape Plan (Exhibit 3 Sheet L1.0), a mix of General Landscape and Low Screen type landscaping will be utilized consistent with the standards of Table CC-3. Loading berths will be screened with High Screen type landscaping, or, where located indoors, High Wall. These standards have been met.

(7) Location and Screening of Utilities and Services

General: The General Requirements for Utility and Services provisions are addressed under General Development Regulations and Standards of this narrative (see page 79).



Location and Visibility: As shown on the Site Plan (Exhibit 3 Sheet A1.0), the site and building service, utility equipment, and outdoor storage of recycling, garbage or landscape maintenance tools will not be located in the required setback areas. This standard has been met.

Required Screening: As shown on the Landscape Plan (Exhibit 3 Sheet L1.0), all site and building services, utility equipment, and outdoor storage of recycling, garbage or landscape maintenance tools will be screened to the High Screen Landscape standard. This standard has been met.

Table CC-4: Building Design			
	Addressing Streets	Supporting Streets	Through Connections
<b>1. Building Orientation</b>			
Front Façade	<p>Buildings shall have one designated front façade and two designated side façades.</p> <p>If one of the streets or connections bounding a parcel is an Addressing Street, the front façade of the building shall face the Addressing Street.</p> <p>If two of the streets or connections bounding a parcel are Addressing Streets, the front façade of the building may face either Addressing Street, except when one of the Addressing Streets is Day Road. In that case, the front façade must face Day Road.</p> <p>If none of the bounding streets or connections is an Addressing Street, the front façade of the building shall face a Supporting Street.</p> <p>See Figure CC-5.</p>		
Length of Front Façade	<p>A minimum of 100 feet of the Primary Frontage shall be occupied by a building.</p> <p>The maximum Primary Frontage occupied by a building shall be limited only by required side yard setbacks.</p>		
Articulation of Front Façade	<p>Applies to a Front Façade longer than 175 feet that has more than 5,250 square feet of street-facing façade area:</p> <p>At least 10% of the street-facing façade of a building facing an Addressing Street must be divided into façade planes that are offset by at least 2 feet from the rest of the façade.</p> <p>Façade area used to meet this standard may be recessed behind, or project out from, the primary façade plane.</p>		
<b>2. Primary Building Entrance</b>			
General	<p>The following Development Standards are adjustable:</p> <ul style="list-style-type: none"> <li>• Required Canopy: 10%</li> <li>• Transparency: 20%</li> </ul>		
Accessible Entrance	<p>The Primary Building Entrance shall be visible from, and accessible to, an Addressing Street (or a Supporting Street if there is no Addressing Street frontage). A continuous pedestrian pathway shall connect from the sidewalk of an Addressing Street to the Primary Building Entrance with a safe, direct and convenient path of travel that is free from hazards and provides a reasonably smooth and consistent surface consistent with the requirements of Americans with Disabilities Act (ADA).</p> <p>The Primary Building Entrance shall be 15 feet wide, minimum and 15 feet tall, minimum.</p>		
Location	150 feet, maximum from right-of-way of an Addressing Street, see Figure CC-7.	150 feet, maximum from right-of-way of a Supporting Street, if there is no Addressing Street Frontage, see Figure CC-7.	
Visibility	Direct line of sight from an Addressing Street to the Primary Building Entrance.		
Accessibility	Safe, direct, and convenient path from adjacent public sidewalk.		

**Response to Table CC-4:**

(1) Building Orientation

Front Façade: As shown on the Elevations (Exhibit 3 Sheet A3.1), the building design has one designated front façade oriented to Garden Acres Road, showcasing a 3,000 SF interior showroom. The

entry element has been designed to a welcoming pedestrian scale incorporating warm natural materials scaled for the pedestrian. This standard is met.

Length of Front Façade: The length of the primary building entry façade is 170' and meeting the minimum required front façade length of 100'. See Exhibit 3 Sheet A1.0 (Site Plan). This design standard has been met.

Articulation of Front Façade: The proposed building is 170' long and doesn't meet the 175' length that triggers this requirement. See Exhibit 3 Sheet A3.1 (Building Elevations). This design standard does not apply.

## (2) Primary Building Entrance

General: The design of the entry includes a covered entry canopy with 80% of the main entrance being transparent, and 20% of the overall façade being transparent, with views into the showroom. No adjustments to these design standards are being requested.

Accessible Entrance: The primary entry to the proposed building is visible from, and accessible to, Green Acres Road. As shown on Exhibit 3 Sheet A1.0, the site design proposes a continuous pedestrian pathway from the sidewalk of Green Acres Road to the Primary Building Entrance, providing a pathway that is safe, direct, and convenient, free from hazards and made from a smooth, ADA accessible surface. The primary building entrance is 24'-4" wide and 16' tall (see Exhibit 3 Sheet A3.1 – Building Elevations).

Location: The building entry is located approximately 78' from the right-of-way of Garden Acres Road, meeting the 150' maximum distance allowed (see Exhibit 3 Sheet A1.0 – Site Plan).

Visibility: The building entry is in direct view and line of sight from Garden Acres Road (see Exhibit 3 Sheet A1.0 – Site Plan).

Accessibility: The proposed building main entrance is accessible through a safe, direct, and convenient path from the adjacent public sidewalk along Garden Acres Road and from the future Java Road (a Supporting Street), as shown on Exhibit 3 Sheet A1.0 – Site Plan.

Required Canopy: The building's primary building entrance is protected with a canopy of 16' vertical height and 8' depth for all-weather protection. The protection zone of the canopy is 24'4' wide.

Transparency: The building's primary entrance will include transparency and glass covering 80% (256 SF of the 320 4,908 SF main entrance). In addition, the building frontage includes transparency and glass covering 20% (985 SF of the 4,908 SF building wall at the Addressing Street), which exceeds the 20% minimum required standard. This design standard has been met. See Exhibit 3 Sheet A3.2 for Glazing Calculations.

Lighting: As illustrated on the Lighting Plan (Exhibit 3 Sheets 1 of 2 and 2 of 2), the interior and exterior of the primary building entrance will be illuminated with a variety of lighting types to provide visual connection between the entry plaza and the public sidewalk and the entry lobby. The lighting design includes bollard lighting, pathway lighting, and wall mounted lighting. The lighting design will promote nighttime safety, security, enjoyment, and commerce while minimizing glare, light islands, and spotlighting. The plan will also preserve dark night sky to protect natural environments and habitat. These design standards have been met.

<b>Table CC-4: Building Design</b>			
	<b>Addressing Streets</b>	<b>Supporting Streets</b>	<b>Through Connections</b>
Required Canopy	Protect the Primary Building Entrance with a canopy with a minimum vertical clearance of 15 feet and an all-weather protection zone that is 8 feet deep, minimum and 15 feet wide, minimum.		
Transparency	Walls and doors of the Primary Building Entrance shall be a minimum of 65% transparent.		
Lighting	The interior and exterior of the Primary Building Entrance shall be illuminated to extend the visual connection between the sidewalk and the building interior from day to night. Pathway lighting connecting the Primary Building Entrance to the adjacent sidewalk on an Addressing Street shall be scaled to the needs of the pedestrian. Comply with Outdoor Lighting, Section 4.199		
<b>3. Overall Building Massing</b>			
General	The following Development Standards are adjustable: <ul style="list-style-type: none"> <li>• Required Minimum Height: 10%</li> <li>• Ground Floor Height: 10%</li> <li>• Base, Body, and Top Dimensions: 10%</li> <li>• Base Design: 10%</li> <li>• Top Design: 10%</li> </ul>		
Front Setback	30 feet, minimum, except as provided below	30 feet maximum	30 feet maximum
Allowance of Primary Building Entrance	Where the Primary Building Entrance is located on an Addressing Street it may extend into the required front yard setback by 15 feet maximum provided that: <ol style="list-style-type: none"> <li>a. It has a two-story massing with a minimum height of 24 feet;</li> <li>b. The Parcel Frontage on the Addressing Street is limited to 100 feet;</li> <li>c. The building extension is 65% transparent, minimum;</li> <li>d. The entrance is protected with a weather-protecting canopy with a minimum vertical clearance of 15 feet; and</li> <li>e. The standards for site design and accessibility are met.</li> </ol>	Not applicable	Not applicable

(3) Overall Building Massing

General: The proposed building design is within 10% of the Development Standard provisions noted in Table CC-4.

Front Setback: The front setback of the building is located along Garden Acres Road is 77'-6", meeting the 30' minimum required setback standard for Addressing Streets. See Exhibit 3 Sheet A1.0 – Site Plan. This design standard is met.

Allowance of Primary Building Entrance: These standards do not apply.

<b>Table CC-4: Building Design</b>			
	<b>Addressing Streets</b>	<b>Supporting Streets</b>	<b>Through Connections</b>
Required Minimum Height	30 feet minimum.		
Ground Floor Height	The Ground Floor height shall measure 15 feet, minimum from finished floor to finished ceiling (or 17.5 feet from finished floor to any exposed structural member).		
Base, Body, and Top Dimensions	<p>Buildings elevations shall be composed of a clearly demarcated base, body and top.</p> <p>a. For Buildings 30 feet in height (unless lower by adjustment):</p> <ol style="list-style-type: none"> <li>i. The base shall be 30 inches, minimum.</li> <li>ii. The body shall be equal to or greater than 75% of the overall height of the building.</li> <li>iii. The top of the building shall be 18 inches, minimum.</li> </ol> <p>b. For Buildings between 30 feet and 5 stories in height:</p> <ol style="list-style-type: none"> <li>i. The base shall be 30 inches, minimum; 2 stories, maximum.</li> <li>ii. The body shall be equal to or greater than 75% of the overall height of the building.</li> <li>iii. The top of the building shall be 18 inches, minimum.</li> </ol> <p>c. For Buildings greater than 6 stories in height:</p> <ol style="list-style-type: none"> <li>i. The base shall be 1 story, minimum, 3 stories, maximum.</li> <li>ii. The body shall be equal to or greater than 75% of the overall height of the building.</li> <li>iii. The top of the building shall be 18 inches, minimum.</li> </ol>		
Base Design	<p>The design of the building Base shall:</p> <ol style="list-style-type: none"> <li>a. Use a material with a distinctive appearance, easily distinguished from the building Body expressed by a change in material, a change in texture, a change in color or finish;</li> <li>b. Create a change in surface position where the Base projects beyond the Body of the building by 1 -1/2 inches, minimum; and/ or</li> <li>c. <del>Low Berm Landscape Standard, Section 4.176 (.02) E.</del></li> </ol>		
Top Design	<p>Building Tops define the skyline.</p> <p>The design of the Building Top shall:</p> <ol style="list-style-type: none"> <li>a. Use a material with a distinctive appearance, easily distinguished from the building Body expressed by a change in material, a change in texture, a change in color or finish; and/ or</li> <li>b. Create a change in surface position where the Top projects beyond, or recesses behind, the Body of the building by 1 -1/2 inches, minimum.</li> </ol>		
Required Screening of Roof-mounted Equipment	Screen roof-mounted equipment with architectural enclosures using the materials and design of the building Body and/ or the building Top. No roof-mounted equipment shall be visible from an Addressing Street or Supporting Street.		

**Required Minimum Height:** The building design roofscape presents various heights but all structures are at greater than 30'. The dimension of the tallest building will be 36'-2". See Exhibit 3 Sheets A3.1 and A3.2 – Elevations. This design standard has been met.

Ground Floor Height: The proposed building will meet the 15' minimum requirement for finished floor to finished ceiling height. See Exhibit 3 Sheet A4.1 – Building Sections.

Base, Body, and Top Dimensions: As illustrated on the Building Elevations (Exhibit 3 Sheets A3.1 and A3.2) and Exhibit 3 Sheet G0.4 Material/Color Board, the building design is composed of a clearly demarcated base, body, and top. The design includes a band of Granitestone Quartz base material that is 30 inches, while the body material (insulated metal panel with a tight wave texture) is 76.2% (or 22'-10") of the overall height of the building, the façade of which is 30'. The project includes an accent panel on the showroom structure. These design standards have been met.

Base Design: As illustrated on the Building Elevations (Exhibit 3 Sheet A1.0), the design of the building's base contrasts with the body of the building's material and presents a distinguished transition. The material changes from granite texture to horizontal metal profile and color provides a break in scale and more pedestrian-friendly experience. The base material projects beyond the body at least 1-1/2". The design also provides low berm landscaping and groundcover along the base of the building. See Exhibit 3 Sheet L1.0 (Landscape Plan). This design standard has been met.

Top Design: As illustrated on the Building Elevations (Exhibit 3 Sheet A3.1), the building top defines the skyline in the area. The building roofscape provides a variety of scales and heights to break down the massing of the operations. The main structure includes a change in materials define it from the building body. The change in surface position and recesses behind is in-line with the intent of the code. This design standard has been met.

Required Screening of Roof-mounted equipment: As illustrated on the Building Elevations (Exhibit 3 Sheet A3.1), the building design incorporates a series of pitched roof assemblies; thus the roof-mounted equipment is wholly within the structure of the building and not visible from the adjacent streets. This standard has been met.

(.12) Waysides.

A. *Purpose. This section consists of standards and regulations for use throughout the Coffee Creek Design Overlay District. The regulations address materials, placement, layout, installation, and maintenance of Industrial Waysides. The City recognizes the need to:*

1. *Provide multiple, distributed destinations for passive and active recreation for the public and employees along a network of streets and trails;*
2. *Be convenient, usable and accessible. Industrial Waysides should be physically and visually accessible from the adjacent Addressing Street, Supporting Street or Through Connection;*
3. *Connect Industrial Waysides to transit;*
4. *Be inviting. Inviting open spaces feature designs that encourage users to explore the Industrial Wayside and design elements that support a sense of the human scale. These elements include landscaping, benches and other seating areas, and pedestrian-scaled lighting.*
5. *Provide access. Provide access to the employees and the public between the hours of 6:00am and 8:00pm;*
6. *Be safe. Safe open spaces incorporate principles of natural surveillance, lighting, and prominent entrances;*
7. *Provide facilities appropriate for the scale of the proposed development; and*
8. *Be easy to maintain. Industrial Waysides should be constructed of commercial grade materials that will endure and are readily maintainable.*

**Response:** The proposed project has provided design strategies and elements to address the intent of the Coffee Creek Design Overlay District. See the Site Plan for proposed Wayside location (Exhibit 3 Sheet A1.0).

- B. Applicability. All projects in the Coffee Creek Master Plan Area shall provide waysides according to the standards in Table CC-5.*

**Response:** This section applies to the proposed development. See Responses to Table CC-5 for specific information.

- C. General. The following development standards apply to all Waysides:*

- 1. Required Wayside Area is exclusive of required landscape screening.*
- 2. Required Minimum Dimension of 20 feet (either width or depth).*

**Response:** As shown on the Site Plan (Exhibit 3 Sheet A1.0), the proposed wayside measures 20' x 30' for a total of 600 SF, and is located in the northwest corner of the site. This measurement is exclusive of any landscape screening. These standards are met.

- D. Criteria. Waysides shall meet the following criteria:*

- 1. Perimeter Landscaping. In addition to the minimum size and dimensions, landscape three sides of the Industrial Wayside to a depth of 20 feet, minimum according to Section 4.176 (.02). Permitted screening includes: Section 4.176 (.02) D. Low Screen Landscaping Standard; Section 4.176 (.02) E. Low Berm Standard; or Section 4.176 (.02) F. High Screen Landscaping Standard. Perimeter landscaping shall not obscure visual access to the Industrial Wayside. Unscreened surface parking lots, chain link fencing, or service yards are prohibited adjacent to Industrial Waysides.*

**Response:** As shown on the Site Plan (Exhibit 3 Sheet A1.0), the proposed development includes perimeter landscaping along at least three sides of the proposed wayside to a depth greater than 20'. The proposed wayside is located adjacent to the pedestrian connection with easy access to Garden Acres Road. The parking area located to the north will be screened to the 'high screen' standard so as to buffer the wayside from that use.

- 2. Visibility. Industrial Waysides shall be visible from and accessible to Addressing Streets.*

**Response:** The proposed development is adjacent to an Addressing Street (Garden Acres Road). The proposed Wayside elements will be visible from the Addressing Street as shown on the Site Plan (Exhibit 3 Sheet A1.0). This design standard has been met.

- 3. Accessible Pathway. A paved walking surface, width: 5 feet, minimum, meeting ADA standards is required to connect Industrial Wayside with Addressing Street.*

**Response:** As shown on the Site Plan (Exhibit 3 Sheet A1.0), the proposed development provides clear and safe walking surfaces meeting ADA requirements connecting the building to the Addressing Street. This design standard has been met.

- 4. Accessible Surface. Industrial Waysides shall have an accessible surface, 100 square feet, minimum; dimensions 10 feet, minimum meeting ADA standards.*



**Response:** The proposed Wayside includes an ADA accessible surface, meeting the minimum required area of 100 SF and minimum depth of 10'. The Wayside measures 20' x 30' with a total accessible surface of 600 SF. See Exhibit 3 Sheet A1.0 (Site Plan). This standard has been met.

5. *Required Amenities.*

- a) *Seating. Outdoor seating shall be provided. Publicly accessible plazas, courtyards, and pocket parks shall include at least one linear foot of seating per each 40 square feet of plaza, courtyard or pocket park space on site. Outdoor seating shall be in the form of:*
  - 1) *Free standing outdoor benches consistent with the standards; or*
  - 2) *Seating incorporated into low walls, berms, or raised planters.*
- b) *Landscaping. The landscaping must be planted and maintained according to Section 4.176 (.02) C.*
- c) *Lighting.*
- d) *Recycling/ Waste Receptacle. Locate waste and recycling stations nearest to the accessible path and away from stormwater facilities.*

**Response:** The proposed development includes a Wayside that will include outdoor seating, lighting, landscaping and a recycling/waste receptable. The Wayside provides 24 linear feet of seating in the form of freestanding outdoor benches. See Exhibit 3 Sheets L1.0, A1.0 and A1.1 for details. These design standards have been met.

- 6. *Installation and Maintenance. Industrial Waysides shall be programmed, planned, constructed, and maintained at the expense of the applicant. The landscaping must be planted and maintained according to Section 4.176 (.07). Recycling, waste receptacles, and pet waste stations shall be serviced at an acceptable professional interval to prevent being over filled or creating unsanitary or visually messy appearances.*

**Response:** The applicant understands that the industrial Wayside will be installed and maintained at the expense of the property owner. The grounds will be placed under a maintenance and repair schedule in order to keep the property tidy and free from waste, and unsanitary conditions in accordance with Section 4.176 (.07). This design standard has been met.

- 7. *Solar Access. Exposure to sunlight. Southern exposure is encouraged. Design facilities to permit direct sunlight to enter the Industrial Wayside and strike the required accessible surface between the hours of 10:00am and 2:00pm local time.*

**Response:** Solar Access and south sun is limited due to the requirements of the Supporting Street provisions. The proposed Wayside will receive sunlight from 1p-5p. This design standard has been met.

- 8. *Lighting. Lighting for Industrial Waysides is required to permit reasonable use, utility, security, and nighttime safety. Lighting installed in Industrial Waysides shall conform to the requirements of Section 4.199. All outside lighting shall be so arranged and shielded so as not to shine into adjacent areas and to prevent any undue glare or reflection and any nuisance, inconvenience, and hazardous interference of any kind on adjoining streets or property.*

**Response:** As shown on the Lighting Plan (Exhibit 3), the proposed Wayside provides appropriate lighting that conforms with the requirements of Section 4.199 and will be arranged so as not to shine into adjacent areas and prevent undue nuisance to adjoining streets or properties. This design standard has been met.

E. *Optional Amenities include the following:*

- 1. *Picnic tables and benches. Locate picnic tables and benches on the Accessible Surface;*
- 2. *Arbors or trellises;*
- 3. *Drinking Fountains. Locate drinking fountains and benches on the Accessible Surface;*
- 4. *Sculpture and other works of art;*

5. *Bicycle repair stations;*
6. *Exercise stations; or*
7. *Pet waste stations. Locate pet waste stations nearest to the accessible path and away from stormwater facilities.*

**Response:** The proposed Wayside provides optional site amenities, including outdoor benches and a steel trellis.

<b><i>Table CC-5: Waysides</i></b>			
<b><i>Parcel Area</i></b>	<b><i>Required Wayside Area</i></b>	<b><i># of Waysides</i></b>	<b><i>Enhanced Transit Plaza</i></b>
<i>Greater than 8.0 acres, less than or equal to 13.0 acres</i>	<i>600 square feet, minimum</i>	<i>One</i>	<i>Not permitted</i>

**Response:** The proposed development is greater than 8.0 acres, less than or equal to 13.0 acres, thus requiring one Wayside Area measuring at least 600 SF. As shown on the Site Plan (Exhibit 3 Sheet A1.0), the proposed development includes a Wayside in the northwest portion of the site in a pleasant location adjacent to the stormwater planters and close to the Supporting Street, future Java Road, measuring < 600 SF. The site also includes a network of accessible surfaces and inviting open space features that encourage users to explore the Industrial Wayside. This design standard has been met.

*(.13) Signs.*

- A. *Applicability. PDI Zone requirements of Section 4.156.01 through 4.156.11 apply to the Coffee Creek DOD with the following modifications and adjustments.*
- B. *General.*
  1. *Site Frontage as described in Section 4.156.08 is the Primary Frontage.*
  2. *Monument-style signs are required. Pole-style freestanding signs are not permitted.*
  3. *Maximum area for signs on buildings is based on linear length (in feet) of the façade adjacent to the Primary Frontage.*
  4. *Directional and Wayfinding Signs shall be placed at the intersection of Supporting Streets and Through Connections.*

**Response:** The building’s wall mounted signage will be located on the building entry volume attached to the solid panel which is most visible from Garden Acres Road. The application includes a sign plan and cut sheets of the proposed sign design, including design, material, color, and methods of illumination of building sign. See refer to sheet A3.3 for the building signage detail and section through the signage. The building signage will be 170 linear feet and 36 square feet in area. Please refer to sheet A3.2 for sign location on the building. Please refer to sheet G2.0 for a perspective image of the building sign installation.

## General Development Regulations and Standards

### Section 4.154. On-site Pedestrian Access and Circulation.

#### (.01) On-site Pedestrian Access and Circulation

- A. *The purpose of this section is to implement the pedestrian access and connectivity policies of the Transportation System Plan. It is intended to provide for safe, reasonably direct, and convenient pedestrian access and circulation.*
- B. *Standards. Development shall conform to all of the following standards:*
1. *Continuous Pathway System. A pedestrian pathway system shall extend throughout the development site and connect to adjacent sidewalks, and to all future phases of the development, as applicable.*

**Response:** As illustrated on the Site Plan (Exhibit 3 Sheet A1.0) the proposed development provides a clear and continuous pathway system throughout the site, connecting the perimeter pathway from the building to adjacent sidewalks and parking areas. The pathways are at least 5' wide and has been designed to provide for accessibility meeting ADA standards. This standard is met.

2. *Safe, Direct, and Convenient. Pathways within developments shall provide safe, reasonably direct, and convenient connections between primary building entrances and all adjacent parking areas, recreational areas/playgrounds, and public rights-of-way and crosswalks based on all of the following criteria:*
  - a. *Pedestrian pathways are designed primarily for pedestrian safety and convenience, meaning they are free from hazards and provide a reasonably smooth and consistent surface.*
  - b. *The pathway is reasonably direct. A pathway is reasonably direct when it follows a route between destinations that does not involve a significant amount of unnecessary out-of-direction travel.*
  - c. *The pathway connects to all primary building entrances and is consistent with the Americans with Disabilities Act (ADA) requirements.*
  - d. *All parking lots larger than three acres in size shall provide an internal bicycle and pedestrian pathway pursuant to Section 4.155(.03)(B.)(3.)(d.).*

**Response:** As illustrated on the Site Plan (Exhibit 3 Sheet A1.0) the proposed site design provides safe, direct, and convenient pathways linking the building's main entrance on the west façade with the public rights-of-way to the west along Garden Acres Road, and to the Java Road sidewalks connecting to the parking areas at the eastern end of the site. These pathways provide reasonably direct connections and do not require any unnecessary out of direction travel. They are free from pedestrian hazards and are smooth surface concrete. All parking areas are less than 3 acres. These standards are met.

3. *Vehicle/Pathway Separation. Except as required for crosswalks, per subsection 4, below, where a pathway abuts a driveway or street it shall be vertically or horizontally separated from the vehicular lane. For example, a pathway may be vertically raised six inches above the abutting travel lane, or horizontally separated by a row of bollards.*

**Response:** As shown on the Site Plan (Exhibit 3 Sheet A1.0) all pedestrian pathways have been designed with vertical separation of at least six inches from vehicular lanes. This standard is met.

4. *Crosswalks. Where a pathway crosses a parking area or driveway, it shall be clearly marked with contrasting paint or paving materials (e.g., pavers, light-color concrete inlay between asphalt, or similar contrast).*

**Response:** The site design includes several locations where pedestrians cross vehicular circulation. These crosswalks will be clearly marked with contrasting paint and street markings. These markings are illustrated on the Site Plan (Exhibit 3 Sheet A1.0). This standard is met.

5. *Pathway Width and Surface. Primary pathways shall be constructed of concrete, asphalt, brick/masonry pavers, or other durable surface, and not less than five (5) feet wide. Secondary pathways and pedestrian trails may have an alternative surface except as otherwise required by the ADA.*

**Response:** As shown on the Site Plan (Exhibit 3 Sheet A1.0), all primary on-site pedestrian pathways will be constructed of concrete and will measure at least 5' wide consistent with the requirements of the Coffee Creek DOD. All pathways connecting the main entrance to the public right-of-way along Garden Acres Road will measure 6'-0" wide. This standard is met.

6. *All pathways shall be clearly marked with appropriate standard signs.*

**Response:** All primary pathways will be clearly marked with standard wayfinding signs. This standard is met.

#### Section 4.155. General Regulations - Parking, Loading and Bicycle Parking.

##### (.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.*

##### (.02) General Provisions:

- A. *The provision and maintenance of off-street parking spaces is a continuing obligation of the property owner. The standards set forth herein shall be considered by the Development Review Board as minimum criteria.*
  1. *The Board shall have the authority to grant variances or planned development waivers to these standards in keeping with the purposes and objectives set forth in the Comprehensive Plan and this Code.*

2. *Waivers to the parking, loading, or bicycle parking standards shall only be issued upon a findings that the resulting development will have no significant adverse impact on the surrounding neighborhood, and the community, and that the development considered as a whole meets the purposes of this section.*
- 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.*
- 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.*
- D. *In the event several uses occupy a single structure or parcel of land, the total requirement for off-street parking shall be the sum of the requirements of the several uses computed separately, except as modified by subsection "E," below. Within the TC Zone, the cumulative number of parking spaces required by this subsection may be reduced by 25 percent.*
- E. *Owners of two (2) or more uses, structures, or parcels of land may utilize jointly the same parking area when the peak hours of operation do not overlap, provided satisfactory legal evidence is presented in the form of deeds, leases, or contracts securing full and permanent access to such parking areas for all the parties jointly using them.*
- 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.*
- G. *Off-Site Parking. Except for single-family dwellings, the vehicle parking spaces required by this Chapter may be located on another parcel of land, provided the parcel is within 500 feet of the use it serves and the DRB has approved the off-site parking through the Land Use Review. The distance from the parking area to the use shall be measured from the nearest parking space to the main building entrance, following a sidewalk or other pedestrian route. 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.*
- 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.*
- I. *Where the boundary of a parking lot adjoins or is within a residential district, such parking lot shall be screened by a sight-obscuring fence or planting. The screening shall be continuous along that boundary and shall be at least six (6) feet in height.*
- J. *Parking spaces along the boundaries of a parking lot shall be provided with a sturdy bumper guard or curb at least six (6) inches high and located far enough within the boundary to prevent any portion of a car within the lot from extending over the property line or interfering with required screening or sidewalks.*
- 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*

- 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.*
- 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.*
- N. Up to forty percent (40%) of the off-street spaces may be compact car spaces as identified in Section 4.001 - “Definitions,” and shall be appropriately identified.*
- O. Where off-street parking areas are designed for motor vehicles to overhang beyond curbs, planting areas adjacent to said curbs shall be increased to a minimum of seven (7) feet in depth. This standard shall apply to a double row of parking, the net effect of which shall be to create a planted area that is a minimum of seven (7) feet in depth.*
- 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. [Added by Ord. 835, 6/5/19]*

*(.03) Minimum and Maximum Off-Street Parking Requirements:*

- A. Parking and loading or delivery areas shall be designed with access and maneuvering area adequate to serve the functional needs of the site and shall:
 
  - 1. Separate loading and delivery areas and circulation from customer and/or employee parking and pedestrian areas. Circulation patterns shall be clearly marked.*
  - 2. To the greatest extent possible, separate vehicle and pedestrian traffic.**

**Response:** As shown on the Site Plan (Exhibit 3 Sheet A1.0), all parking, loading and delivery areas have been designed to ensure access, adequate turning and maneuvering to serve the proposed operations. The site design separates loading and delivery operations from visitor and employee parking in that the visitor parking is near the entry plaza west of the building. Additional parking areas are located at the eastern end of the site and are well connected to the main entrance via two direct pedestrian pathways, resulting in a site where vehicle movement and pedestrian movement is kept separated to the extent possible. These standards are met.

- B. Parking and loading or delivery areas shall be landscaped to minimize the visual dominance of the parking or loading area, as follows:
 
  - 1. Landscaping of at least ten percent (10%) of the parking area, designed to be screened from view from the public right-of-way and adjacent properties. This landscaping shall be considered to be part of the fifteen percent (15%) total landscaping required in Section 4.176.03 for the site development.**

**Response:** In an effort to minimize the visual dominance of parking and loading areas, the proposed development includes parking lot landscaping. The required landscape area of 10% of the parking areas will be designed to be screened from view from the public right-of-way is as follows:

<b>Parking Area</b>	<b>Square Feet</b>	<b>Parking Lot Landscape Area</b>
West (Front)	5,936	26.4% (1,569 SF)
East (Rear)	16,197	18.8% (3054 SF)



In addition, the site design provides a row of street trees along Java Road as a strategy to minimize the visual dominance of the northeast parking area. This standard is met.

2. *Landscape tree planting areas shall be a minimum of eight (8) feet in width and length and spaced every eight (8) parking spaces or an equivalent aggregated amount.*
  - a. *Trees shall be planted in a ratio of one (1) tree per eight (8) parking spaces or fraction thereof, except in parking areas of more than two hundred (200) spaces where a ratio of one (1) tree per six (six) spaces shall be applied as noted in subsection (.03)(B.)(3.). A landscape design that includes trees planted in areas based on an aggregated number of parking spaces must provide all area calculations.*
  - b. *Except for trees planted for screening, all deciduous interior parking lot trees must be suitably sized, located, and maintained to provide a branching minimum of seven (7) feet clearance at maturity.*

**Response:** As shown on the Site and Landscape Plans (Exhibit 3 Sheets A1.0 and L1.0), landscaped tree planting areas at least 8'-0" x 8'-0" have been placed between every 8 parking spaces. At least one tree for each eight parking spaces will be planted.

West Parking Lot: 15 parking spaces/1 tree per 8 spaces = minimum of 2 trees

East Parking Lot: 56 parking spaces/1 tree per 8 spaces = minimum of 7 trees

All deciduous interior parking lot trees will be suitably sized, located, and maintained to provide a branching minimum of seven (7) feet clearance at maturity. These standards are met.

3. *Due to their large amount of impervious surface, new development with parking areas of more than two hundred (200) spaces that are located in any zone, and that may be viewed from the public right of way, shall be landscaped to the following additional standards:*

**Response:** The project includes 71 proposed surface parking spaces. This section does not apply.

- C. *Off Street Parking shall be designed for safe and convenient access that meets ADA and ODOT standards. All parking areas which contain ten (10) or more parking spaces, shall for every fifty (50) standard spaces, provide one ADA-accessible parking space that is constructed to building code standards.*

**Response:** The proposed development includes a total of 71 parking spaces, requiring two ADA-accessible parking spaces constructed to building code standards. Four ADA-accessible spaces have been provided, located in the West parking area, closest to the main entrance plaza to maximize accessibility. See the Site Plan for more details (Exhibit 3 Sheet A1.0). This standard is met.

- D. *Where possible, parking areas shall be designed to connect with parking areas on adjacent sites so as to eliminate the necessity for any mode of travel of utilizing the public street for multiple accesses or cross movements. In addition, on-site parking shall be designed for efficient on-site circulation and parking.*

**Response:** All parking areas have been designed for efficient circulation and located based on operations of the building, solar access design, and provisions under the Coffee Creek DOD. There are



no parking areas on nearby adjacent sites. See the Site Plan for more details (Exhibit 3 Sheet A1.0). This standard is met.

- E. In all multi-family dwelling developments, there shall be sufficient areas established to provide for parking and storage of motorcycles, mopeds and bicycles. Such areas shall be clearly defined and reserved for the exclusive use of these vehicles.
- F. On-street parking spaces, directly adjoining the frontage of and on the same side of the street as the subject property, may be counted towards meeting the minimum off-street parking standards.

**Response:** While the future Java Road will include on-street parking spaces, the proposed development meets the minimum number of required parking spaces with off-street parking and does not need to utilize on-street parking.

- G. Table 5 shall be used to determine the minimum and maximum parking standards for various land uses. The minimum number of required parking spaces shown on Tables 5 shall be determined by rounding to the nearest whole parking space. For example, a use containing 500 square feet, in an area where the standard is one space for each 400 square feet of floor area, is required to provide one off-street parking space. If the same use contained more than 600 square feet, a second parking space would be required. Structured parking and on-street parking are exempted from the parking maximums in Table 5.

**Response:** The proposed development is considered an Industrial/Manufacturing use made up of various components with required parking as follows:

Proposed Parking Spaces			
Use	Area	Requirement (per 1,000 sf)	Required Parking
Fabrication	15,600 sf	1.6 spaces	24.96
Warehouse	39,800 sf	0.3	11.94
Retail	3,000 sf	1.67	5.01
Office	7,400 sf	2.7	19.98
Total Required			61.89 spaces
Total Provided			71 spaces

As illustrated in the table above, the proposed development will provide 71 parking spaces. This standard is met.

TABLE 5: PARKING STANDARDS			
USE	PARKING MINIMUMS	PARKING MAXIMUMS	BICYCLE MINIMUMS
Fast food (with drive-thru) Other		14.9 per 1000 sq. ft.	
8. Mortuaries	1 space/4 seats, or 8ft. of bench length in chapels	No Limit	Min. of 2
<b>f. Industrial</b>			
1. Manufacturing establishment	1.6 per 1000 sq. ft.	No Limit	1 per 10,000 sq. ft. Min. of 6
2. Storage warehouse, wholesale establishment, rail or trucking freight terminal	.3 per 1000 sq. ft.	.5 per 1000 sq. ft.	1 per 20,000 sq. ft. Min. of 2
<b>g. Park &amp; Ride or Transit Parking</b>			
	As needed	No Limit	10 per acre, with 50% in lockable enclosures

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:** The proposed development will not include electrical vehicle parking. These standards do not apply.

I. *Motorcycle parking:*

1. *Motorcycle parking may substitute for up to 5 spaces or 5 percent of required automobile parking, whichever is less. For every 4 motorcycle parking spaces provided, the automobile parking requirement is reduced by one space.*
2. *Each motorcycle space must be at least 4 feet wide and 8 feet deep. Existing parking may be converted to take advantage of this provision.*

**Response:** The proposed development will not include motorcycle parking. These standards do not apply.

(.04) *Bicycle Parking:*

A. *Required Bicycle Parking - General Provisions.*

1. *The required minimum number of bicycle parking spaces for each use category is shown in Table 5, Parking Standards.*
2. *Bicycle parking spaces are not required for accessory buildings. If a primary use is listed in Table 5, bicycle parking is not required for the accessory use.*
3. *When there are two or more primary uses on a site, the required bicycle parking for the site is the sum of the required bicycle parking for the individual primary uses.*
4. *Bicycle parking space requirements may be waived by the Development Review Board per Section 4.118(.03)(A.)(9.) and (10.).*

B. *Standards for Required Bicycle Parking*

1. *Each space must be at least 2 feet by 6 feet in area and be accessible without moving another bicycle.*
2. *An aisle at least 5 feet wide shall be maintained behind all required bicycle parking to allow room for bicycle maneuvering. Where the bicycle parking is adjacent to a sidewalk, the maneuvering area may extend into the right-of-way.*
3. *When bicycle parking is provided in racks, there must be enough space between the rack and any obstructions to use the space properly.*
4. *Bicycle lockers or racks, when provided, shall be securely anchored.*
5. *Bicycle parking shall be located within 30 feet of the main entrance to the building or inside a building, in a location that is easily accessible for bicycles. For multi-tenant developments, with multiple business entrances, bicycle parking may be distributed on-site among more than one main entrance.*
6. *With Planning Director approval, on street vehicle parking can also be used for bicycle parking.*

**Response:** The following bicycle parking has been proposed for this project based on the primary uses of Manufacturing and Warehouse.

Proposed Bicycle Parking			
Use	Area	Requirement (per 10,000 sf)	Required Parking
Fabrication	15,600 sf	1/10,000 SF	1.56
Warehouse	39,800 sf	1/20,000 (min of 2)	1.99
Total Required			3.55 spaces
Total Provided			6 spaces

As shown on the Site Plan (Exhibit 3 Sheet A1.0), the proposed development will include 6 short-term bicycle parking spaces located outside within 30' of the entry.

C. Long-term Bicycle Parking

1. Long-term bicycle parking provides employees, students, residents, commuters, and others who generally stay at a site for several hours a weather-protected place to park bicycles.
2. For a proposed multi-family residential, retail, office, or institutional development, or for a park and ride or transit center, where six (6) or more bicycle parking spaces are required pursuant to Table 5, 50% of the bicycle parking shall be developed as long-term, secure spaces. Required long-term bicycle parking shall meet the following standards:
  - a. All required spaces shall meet the standards in subsection (B.) above, and must be covered in one of the following ways: inside buildings, under roof overhangs or permanent awnings, in bicycle lockers, or within or under other structures.
  - b. All spaces must be located in areas that are secure or monitored (e.g., visible to employees, monitored by security guards, or in public view).
  - c. Spaces are not subject to the locational criterion of (B.)(5.).

**Response:** The proposed development will include 6 secure long-term bicycle parking spaces located inside the facility. This standard has been met.

(.05) Minimum Off-Street Loading Requirements:

- A. Every building that is erected or structurally altered to increase the floor area, and which will require the receipt or distribution of materials or merchandise by truck or similar vehicle, shall provide off-street loading berths on the basis of minimum requirements as follows:
  1. Commercial, industrial, and public utility uses which have a gross floor area of 5,000 square feet or more, shall provide truck loading or unloading berths in accordance with the following tables:

Square feet of Floor Area	Number of Berths Required
Less than 5,000	0
5,000 - 30,000	1
30,000 - 100,000	2
100,000 and over	3

**Response:** The proposed development is 65,800 GSF, thus requires two (2) loading and unloading berths. The development proposes 3 truck loading and unloading berths as shown on the Site Plan (Exhibit 3 Sheet A1.0).

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:*

<i>Square feet of Floor Area</i>	<i>Number of Berths Required</i>
<i>Less than 30,000</i>	<i>0</i>
<i>30,000 - 100,000</i>	<i>1</i>
<i>100,000 and over</i>	<i>2</i>

3. *A loading berth shall contain space twelve (12) feet wide, thirty-five (35) feet long, and have a height clearance of fourteen (14) feet. Where the vehicles generally used for loading and unloading exceed these dimensions, the required length of these berths shall be increased to accommodate the larger vehicles.*
4. *If loading space has been provided in connection with an existing use or is added to an existing use, the loading space shall not be eliminated if elimination would result in less space than is required to adequately handle the needs of the particular use.*
5. *Off-street parking areas used to fulfill the requirements of this Ordinance shall not be used for loading and unloading operations except during periods of the day when not required to meet parking needs.*

**Response:** Two loading berths are required that meet the standard of 12’x35’x14’. As shown on the Site Plan (Exhibit X), the development contains three loading and unloading areas measured as follows:

<b>Proposed Loading Berths</b>		
<b>Loading area</b>	<b>Size (Length, width, height)</b>	<b>Meets Standards</b>
2	16x40x16’	Yes
3	12x53x14’	Yes
1	9x40x10’	No

Two loading berths are required and two meet the dimensional requirements. This standard is met. Designated off-street parking areas will not be used for loading.

*(.06) Carpool and Vanpool Parking Requirements:*

- A. *Carpool and vanpool parking spaces shall be identified for the following uses:*
  1. *New commercial and industrial developments with seventy-five (75) or more parking spaces,*
  2. *New institutional or public assembly uses, and*
  3. *Transit park-and-ride facilities with fifty (50) or more parking spaces.*
- B. *Of the total spaces available for employee, student, and commuter parking, at least five percent, but not fewer than two, shall be designated for exclusive carpool and vanpool parking.*
- C. *Carpool and vanpool parking spaces shall be located closer to the main employee, student or commuter entrance than all other parking spaces with the exception of ADA parking spaces.*

- D. *Required carpool/vanpool spaces shall be clearly marked "Reserved - Carpool/Vanpool Only."*

**Response:** The development is not a new industrial use with 75 or more parking spaces, Therefore, carpool/vanpool spaces are not required. This standard is met.

- (.07) *Parking Area Redevelopment.* *The number of parking spaces may be reduced by up to 10% of the minimum required parking spaces for that use when a portion of the existing parking area is modified to accommodate or provide transit-related amenities such as transit stops, pull-outs, shelters, and park and ride stations.*

#### Section 4.171. General Regulations - Protection of Natural Features and Other Resources.

- (.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.*

- (.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:** While the site is relatively flat, the proposed Grading Plan (Exhibit 3 Sheets C2-C2.1), illustrates that this project has thoughtfully considered the topography and natural terrain of the site. This requirement is met.

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

**Response:** As shown on the Grading Plan (Exhibit 3 Sheets C2-C2.1), all grading, filling and excavating done in connection with this development shall be in accordance with the UBC. This requirement is met.

- C. *In addition to any permits required under the Uniform Building Code, all developments shall be planned, designed, constructed and maintained so as to:*
  - l. *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.*

(.03) Hillsides: All developments proposed on slopes greater than 25% shall be limited to the extent that:

- A. An engineering geologic study approved by the City, establishes that the site is stable for the proposed development, and any conditions and recommendations based on the study are incorporated into the plans and construction of the development. The study shall include items specified under subsection 4.171(.07)(A)(2.)(a-j):
- B. Slope stabilization and re-vegetation plans shall be included as part of the applicant's landscape plans.
- C. Buildings shall be clustered to reduce alteration of terrain and provide for preservation of natural features.
- D. Creation of building sites through mass pad grading and successive padding or terracing of building sites shall be avoided where feasible.
- E. Roads shall be of minimum width, with grades consistent with the City's Public Works Standards.
- F. Maintenance, including re-vegetation, of all grading areas is the responsibility of the developer, and shall occur through October 1 of the second growing season following receipt of Certificates of Occupancy unless a longer period is approved by the Development Review Board.
- G. The applicant shall obtain an erosion and sediment control permit from the City's Building and Environmental Services Division's.

**Response:** The land area within the proposed development does not slope greater than 25%. The above standards do not apply.

(.04) Trees and Wooded Areas.

- A. All developments shall be planned, designed, constructed and maintained so that:
  - 1. Existing vegetation is not disturbed, injured, or removed prior to site development and prior to an approved plan for circulation, parking and structure location.
  - 2. Existing wooded areas, significant clumps/groves of trees and vegetation, and all trees with a diameter at breast height of six inches or greater shall be incorporated into the development plan and protected wherever feasible.
  - 3. Existing trees are preserved within any right-of-way when such trees are suitably located, healthy, and when approved grading allows.

**Response:** While there are no wooded areas on the subject site, proposed construction activities will impact existing trees. As illustrated on the Tree Maintenance and Protection Plan (Exhibits 7 and 8), there are 21 trees on the site. Of these, eight would be retained and 13 would be removed in order to provide the streetscape and site design desired by the Coffee Creek DOD. The disturbance of existing trees and wooded areas has been avoided as much as possible. These requirements are met.

- B. Trees and woodland areas to be retained shall be protected during site preparation and construction according to City Public Works design specifications, by:
  - 1. Avoiding disturbance of the roots by grading and/or compacting activity.
  - 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:** Proposed construction activities will impact existing trees. Trees to be retained will be protected according to the City Public Works design specifications, as outlined in the requirements above. These requirements are met.

*(.05) High Voltage Powerline Easements and Rights of Way and Petroleum Pipeline Easements:*

- A. *Due to the restrictions placed on these lands, no residential structures shall be allowed within high voltage powerline easements and rights of way and petroleum pipeline easements, and any development, particularly residential, adjacent to high voltage powerline easements and rights of way and petroleum pipeline easements shall be carefully reviewed.*
- B. *Any proposed non-residential development within high voltage powerline easements and rights of way and petroleum pipeline easements shall be coordinated with and approved by the Bonneville Power Administration, Portland General Electric Company or other appropriate utility, depending on the easement or right of way ownership.*

**Response:** As shown on the Utility Plan (Exhibit 3 Sheet C3-C3.1), the proposed development is not within high-voltage powerline easements or petroleum pipeline easements. The requirements above do not apply to this project.

*(.06) Hazards to Safety: Purpose:*

- A. *To protect lives and property from natural or human-induced geologic or hydrologic hazards and disasters.*
- B. *To protect lives and property from damage due to soil hazards.*
- C. *To protect lives and property from forest and brush fires.*
- D. *To avoid financial loss resulting from development in hazard areas.*

*(.07) Standards for Earth Movement Hazard Areas:*

- A. *No development or grading shall be allowed in areas of land movement, slump or earth flow, and mud or debris flow, except under one of the following conditions:*
1. *Stabilization of the identified hazardous condition based on established and proven engineering techniques which ensure protection of public and private property. Appropriate conditions of approval may be attached by the City.*
  2. *An engineering geologic study approved by the City establishing that the site is stable for the proposed use and development. The study shall include the following:*
    - a. *Index map.*
    - b. *Project description, to include: location; topography, drainage, vegetation; discussion of previous work; and discussion of field exploration methods.*
    - c. *Site geology, to include: site geologic map; description of bedrock and superficial materials including artificial fill; location of any faults, folds, etc.; and structural data including bedding, jointing, and shear zones.*
    - d. *Discussion and analysis of any slope stability problems.*



- e. Discussion of any off-site geologic conditions that may pose a potential hazard to the site or that may be affected by on-site development.
  - f. Suitability of site for proposed development from geologic standpoint.
  - g. Specific recommendations for cut slope stability, seepage and drainage control, or other design criteria to mitigate geologic hazards.
  - h. Supportive data, to include: cross sections showing subsurface structure; graphic logs of subsurface explorations; results of laboratory tests; and references.
  - i. Signature and certification number of engineering geologist registered in the State of Oregon.
  - j. Additional information or analyses as necessary to evaluate the site.
- B. Vegetative cover shall be maintained or established for stability and erosion control purposes.
- C. Diversion of storm water into these areas shall be prohibited.
- D. The principal source of information for determining earth movement hazards is the State Department of Geology and Mineral Industries (DOGAMI) Bulletin 99 and any subsequent bulletins and accompanying maps. Approved site specific engineering geologic studies shall be used to identify the extent and severity of the hazardous conditions on the site, and to update the earth movement hazards database.

**Response:** According to site analysis and geotechnical analysis (Exhibit 6), the subject site is not an area of land movement, slump or earth flow, and mud or debris flow. Therefore, this section does 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:** Site analysis and geotechnical analysis (Exhibit 6) show no soil hazards and shows evidence of proper structural stability and opportunities for proper drainage. These standards are met.

*(.09) Historic Protection: Purpose:*

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

*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 fifty (50) 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:** The site does not contain historic, cultural, or archaeological significance. Therefore, the standards of this section do not apply.

#### Section 4.175. Public Safety and Crime Prevention.

- (.01) All developments shall be designed to deter crime and insure public safety.*
- (.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.*
- (.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.*
- (.04) Exterior lighting shall be designed and oriented to discourage crime.*

**Response:** The proposed development aims to deter crime and mischievous activity through site lighting, providing clear visibility opportunities, design with 'eyes on the street' surveillance approach, identifiable wayfinding for visitors, employees, and emergency response. A Lighting Plan has been included (see Exhibit 3 Sheet 1 of 2 and 2 of 2).

#### 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 solidwaste and recyclables.*

*(.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:** As shown on the Landscape Plan (Exhibit 3 Sheet L1.0-L1.1), the proposed development meets the purpose of this section, by promoting the growth of vegetation, plant communities, enhancement of visual character, unify development, and create a safe, comfortable experience throughout the development.

*(.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 1600 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:** The development plan proposes landscape treatment to enhance open spaces on the site. As shown on Exhibit 3 Sheet L1.0-L1.1, the Landscape Plan intent is to provide a row or cluster of street trees around the perimeter of the building. The plan shows at least one or more tree for every 800 SF and a mix of high and low shrubs for every 400 SF throughout the site plan. Ground cover plants will fully cover the remainder of the landscaped area not featuring trees and shrubs. This standard is met.

*D. Low Screen Landscaping Standard.*

1. *Intent. The Low Screen Landscaping Standard is a landscape treatment that uses a combination of distance and low screening to separate uses or developments. It is intended to be applied in situations where low screening is adequate to soften the impact of one use or development on another, or where visibility between areas is more important than a total visual screen. The Low Screen Landscaping Standard is usually applied along street lot lines or in the area separating parking lots from street rights-of-way.*
2. *Required materials. The Low Screen Landscaping Standard requires sufficient low shrubs to form a continuous screen three (3) feet high and 95% opaque, year-round. In addition, one tree is required for every 30 linear feet of landscaped area, or as otherwise required to provide a tree canopy over the landscaped area. Ground cover plants must fully cover the remainder of the landscaped area. A three (3) foot high masonry wall or a berm may be substituted for the shrubs, but the trees and ground cover plants are still required. When applied along street lot lines, the screen or wall is to be placed along the interior side of the landscaped area. (See Figure 22: Low Screen Landscaping).*

**Response:** As shown on the Landscape Plan (Exhibit 3 Sheet L1.0-L1.1), the proposed development incorporates landscaping meeting the 'low screen' standard along street lot lines for Garden Acres Road and Java Road, to soften the impact of the development upon entry and from neighboring developments. In addition, low screen is implemented between each of the two parking areas and Java Road. The landscape plan also uses low shrubs to help screen portion of the building operations.

*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 abutting uses or developments from one-another, and where it is desirable and practical to provide separation by both distance and sight-obscuring materials. This screening is most important where either, or both, of the abutting uses or developments can be expected to be particularly sensitive to noise or visual impacts.*
2. *Required materials. The Low Berm Standard requires a berm at least two feet six inches (2' 6") high along the interior side of the landscaped area (see Figure 23: Low Berm Landscaping). If the berm is less than three (3) feet high, low shrubs meeting the Low Screen Landscaping Standard, above, are to be planted along the top of the berm, assuring that the screen is at least three (3) feet in height. In addition, one tree is required for every 30 linear feet of berm, or as otherwise required to provide a tree canopy over the landscaped area. Ground cover plants must fully cover the remainder of the landscaped area.*

**Response:** As shown on the Landscape Plan (Exhibit 3 Sheet L1.0-L1.1), the proposed development does not incorporate Low Berm type landscaping, because it is not necessary to reduce visual and noise impacts to abutting uses or developments. This standard does not apply.

F. *High Screen Landscaping Standard.*

1. *Intent. The High Screen Landscaping Standard is a landscape treatment that relies primarily on screening to separate uses or developments. It is intended to be applied in situations where visual separation is required.*
2. *Required materials. The High Screen Landscaping Standard requires sufficient high shrubs to form a continuous screen at least six (6) feet high and 95% opaque, year-round. In addition, one tree is required for every 30 linear feet of landscaped area, or as otherwise required to provide a tree canopy over the landscaped area. Ground cover plants must fully cover the remainder of the landscaped area. A six (6) foot high masonry wall or a berm may be substituted for the shrubs, but the trees and ground cover plants are still required. When applied along street lot lines, the screen or wall is to be placed along the interior side of the landscaped area. (See Figure 24: High Screen Landscaping).*

**Response:** As shown on the Landscape Plan (Exhibit 3 Sheets L1.0-L1.1), the proposed development does not incorporate High Screen landscaping, because visual separation is not required between uses and developments. This is accomplished through distance and the other landscaping provided that meets the standards of this code. This standard does not apply.

G. *High Wall Standard.*

1. *Intent. The High Wall Standard is intended to be applied in situations where extensive screening to reduce both visual and noise impacts is needed to protect abutting uses or developments from one-another. This screening is most important where either, or both, of the abutting uses or developments can be expected to be particularly sensitive to noise or visual impacts, or where there is little space for physical separation.*
2. *Required materials. The High Wall Standard requires a masonry wall at least six (6) feet high along the interior side of the landscaped area (see Figure 25: High Wall Landscaping). In addition, one tree is required for every 30 linear feet of wall, or as otherwise required to provide a tree canopy over the landscaped area. Ground cover plants must fully cover the remainder of the landscaped area.*

**Response:** As shown on the Landscape Plan (Exhibit 3 Sheets L1.0-L1.1), High Wall type landscaping is not required, because no abutting uses exist that need extensive screening to reduce both visual and noise impacts. All future uses are either separated from the subject site by a street or by a great deal of distance. This standard does not apply.

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 (4) feet high along the interior side of the landscaped area (see Figure 26: High Berm*



*Landscaping). If the berm is less than six (6) feet high, low shrubs meeting the Low Screen Landscaping Standard, above, are to be planted along the top of the berm, assuring that the screen is at least six (6) feet in height. In addition, one tree is required for every 30 linear feet of berm, or as otherwise required to provide a tree canopy over the landscaped area. Ground cover plants must fully cover the remainder of the landscaped area.*

**Response:** As shown on the Landscape Plan (Exhibit 3 Sheet L1.0-L1.1), High Wall type landscaping is not required, because no abutting uses exist that need extensive screening to reduce both visual and noise impacts. All future uses are either separated from the subject site by a street or by a great deal of distance. This standard does not apply.

*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 (6) feet high and at least 50% sight-obscuring. Fences may be made of wood (other than plywood or particle-board), metal, bricks, masonry or other permanent materials*

**Response:** Partially sight-obscuring fences are not proposed to be used for screening as part of this project. A partially sight-obscuring fence will be located at the operations access point along Java Road to secure the back of the building and loading areas. This standard does not apply.

*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 (6) feet high and 100% sight-obscuring. Fences may be made of wood (other than plywood or particle-board), metal, bricks, masonry or other permanent materials (see Figure 28: Totally Sight-Obscuring Fence).*

**Response:** Fully Sight-Obscuring Fences are not proposed as part of this project. This standard does not apply.



(.03) *Landscape Area. Not less than fifteen percent (15%) of the total lot area, shall be landscaped with vegetative plant materials. The ten percent (10%) parking area landscaping required by section 4.155.03(B)(1) is included in the fifteen percent (15%) total lot landscaping requirement. Landscaping shall be located in at least three separate and distinct areas of the lot, one of which must be in the contiguous frontage area. Planting areas shall be encouraged adjacent to structures. Landscaping shall be used to define, soften or screen the appearance of buildings and off-street parking areas. Materials to be installed shall achieve a balance between various plant forms, textures, and heights. The installation of native plant materials shall be used whenever practicable. (For recommendations refer to the Native Plant List maintained by the City of Wilsonville).*

**Response:** The proposed development will include landscaped area that measures at least 15% of the total lot area. Fifteen percent of the total subject site development area is 206,217 SF x 0.15 = 60,935 SF. As shown on the Landscape Plan, 55,509 SF or 26.9% of the subject site development area is landscaped with vegetative plant materials. This standard is met.

- (.04) *Buffering and Screening. Additional to the standards of this subsection, the requirements of the Section 4.137.5 (Screening and Buffering Overlay Zone) shall also be applied, where applicable.*
  - A. *All intensive or higher density developments shall be screened and buffered from less intense or lower density developments.*
  - B. *Activity areas on commercial and industrial sites shall be buffered and screened from adjacent residential areas. Multi-family developments shall be screened and buffered from single-family areas.*
  - C. *All exterior, roof and ground mounted, mechanical and utility equipment shall be screened from ground level off-site view from adjacent streets or properties.*
  - D. *All outdoor storage areas shall be screened from public view, unless visible storage has been approved for the site by the Development Review Board or Planning Director acting on a development permit.*
  - E. *In all cases other than for industrial uses in industrial zones, landscaping shall be designed to screen loading areas and docks, and truck parking.*
  - F. *In any zone any fence over six (6) feet high measured from soil surface at the outside of fenceline shall require Development Review Board approval.*

**Response:** As illustrated on the Landscape Plan, the proposed development will employ landscaping to buffer and screen the industrial use from the less intense uses surrounding it, such as the undeveloped site to the south. There are no residential uses adjacent to the site that need to be screened. Any exterior mechanical equipment will be screened from view from the street and neighboring properties. See Exhibit 3 Sheets L1.0-L1.1 (Landscape Plan). The standards above are met.

**Section 4.177. Street Improvement Standards.**

*This section contains the City's requirements and standards for pedestrian, bicycle, and transit facility improvements to public streets, or within public easements. The purpose of this section is to ensure that*

*development, including redevelopment, provides transportation facilities that are safe, convenient, and adequate in rough proportion to their impacts.*

*(.01) Development and related public facility improvements shall comply with the standards in this section, the Wilsonville Public Works Standards, and the Transportation System Plan, in rough proportion to the potential impacts of the development. Such improvements shall be constructed at the time of development or as provided by Section 4.140, except as modified or waived by the City Engineer for reasons of safety or traffic operations.*

*(.02) Street Design Standards.*

*A. All street improvements and intersections shall provide for the continuation of streets through specific developments to adjoining properties or subdivisions.*

*1. Development shall be required to provide existing or future connections to adjacent sites through the use of access easements where applicable. Such easements shall be required in addition to required public street dedications as required in Section 4.236(.04).*

**Response:** Due to recent improvements to Garden Acres Road, no additional improvements are expected to be required along that street, which is classified in the Coffee Creek DOD as an Addressing Street.

As shown on the Site Plan (Exhibit 3 Sheets A1.0-A1.1), a new temporary access point will be constructed from Garden Acres Road until the parcel to the north is developed and the intersection at Garden Acres Road and Java Road is finalized. At that time, the temporary access point will be closed. Additional access points are proposed to the site from Java Road (a Supporting Street).

The new Supporting Street (Java Road) will be a private road, located in a public access easement and will run east-west along the northern property line of the site, creating the planned connection as shown in the Coffee Creek DOD. Half street improvements of Java Road will be constructed as part of the proposed project, with the second half to be built by others when the parcel to north is developed. The northern property line of the subject site will be the centerline of Java Road.

These requirements have been met.

*B. The City Engineer shall make the final determination regarding right-of-way and street element widths using the ranges provided in Chapter 3 of the Transportation System Plan and the additional street design standards in the Public Works Standards.*

**Response:** The applicant understands that the City Engineer shall make the final determination regarding right-of-way and street element widths using the TSP and Public Works Standards.

*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.*
- D. *Dead-end Streets. New dead-end streets or cul-de-sacs shall not exceed 200 feet in length, unless the adjoining land contains barriers such as existing buildings, railroads or freeways, or environmental constraints such as steep slopes, or major streams or rivers, that prevent future street extension and connection. A central landscaped island with rainwater management and infiltration are encouraged in cul-de-sac design. No more than 25 dwelling units shall take access to a new dead-end or cul-de-sac street unless it is determined that the traffic impacts on adjacent streets will not exceed those from a development of 25 or fewer units. All other dimensional standards of dead-end streets shall be governed by the Public Works Standards. Notification that the street is planned for future extension shall be posted on the dead-end street.*

**Response:** As shown on the Coffee Creek DOD Regulating Plan (Figure CC-1), Java Road runs east-west between Garden Acres Road and another planned Supporting Street to the east of the subject site. That planned Supporting Street is not yet built. Until the time that it is built and the complete connection can be made, Java Road will be a dead-end street. The standard is met because the adjoining land contains barriers such as environmental constraints that preclude the through connection at this time.

E. *Corner or clear vision area.*

1. *A clear vision area which meets the Public Works Standards shall be maintained on each corner of property at the intersection of any two streets, a street and a railroad or a street and a driveway. However, the following items shall be exempt from meeting this requirement:*
  - a. *Light and utility poles with a diameter less than 12 inches.*
  - b. *Trees less than 6" d.b.h., approved as a part of the Stage II Site Design, or administrative review.*
  - c. *Except as allowed by b., above, an existing tree, trimmed to the trunk, 10 feet above the curb.*
  - d. *Official warning or street sign.*
  - e. *Natural contours where the natural elevations are such that there can be no cross-visibility at the intersection and necessary excavation would result in an unreasonable hardship on the property owner or deteriorate the quality of the site.*

**Response:** As illustrated on the Site Plan (Exhibit 3 Sheet A1.0), corner and clear vision areas have been maintained on each corner of the property at Garden Acres Road and the future Java Road. The development provides clear vision distances upon approach of intersection and upon entry to the site. These standards are met.

- F. *Vertical clearance - a minimum clearance of 12 feet above the pavement surface shall be maintained over all streets and access drives.*

**Response:** The project will not impact vertical clearances. This standard is met.

- G. *Interim improvement standard. It is anticipated that all existing streets, except those in new subdivisions, will require complete reconstruction to support urban level traffic volumes. However, in most cases, existing and short-term projected traffic volumes do not warrant*

improvements to full Master Plan standards. Therefore, unless otherwise specified by the Development Review Board, the following interim standards shall apply.

1. *Arterials - 24 foot paved, with standard sub-base. Asphalt overlays are generally considered unacceptable, but may be considered as an interim improvement based on the recommendations of the City Engineer, regarding adequate structural quality to support an overlay.*
2. *Half-streets are generally considered unacceptable. However, where the Development Review Board finds it essential to allow for reasonable development, a half-street may be approved. Whenever a half-street improvement is approved, it shall conform to the requirements in the Public Works Standards:*
3. *When considered appropriate in conjunction with other anticipated or scheduled street improvements, the City Engineer may approve street improvements with a single asphalt lift. However, adequate provision must be made for interim storm drainage, pavement transitions at seams and the scheduling of the second lift through the Capital Improvements Plan.*

**Response:** As directed by the City Engineer (see Preapplication Conference notes) and as illustrated on the Site Plan (Exhibit 3 Sheet A1.0), half street improvements of Java Road, a Supporting Street, are proposed to be constructed as part of this project, with the second half to be built by others when the parcel to north is developed. The half street design and construction will conform with the Supporting Street section and Public Works Standards. The half street improvements will be located in a public access easement with the centerline being the northern property line of the subject site. These standards are met.

*(.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:** Due to recent improvements to Garden Acres Road, sidewalks do not need to be built along that frontage. The proposed development will build sidewalks along Java Road as part of the half street improvements. All sidewalks will be at least 5'-0" wide and will also include accessible routes to building entrances, parking spaces, and adjacent public rights-of-way. See the Site Plan for details (Exhibit 3 Sheet A1.0).

*(.04) Bicycle Facilities. Bicycle facilities shall be provided to implement the Transportation System Plan, and may include on-street and off-street bike lanes, shared lanes, bike boulevards, and cycle tracks. The design of on-street bicycle facilities will vary according to the functional classification and the average daily traffic of the facility.*

**Response:** The proposed development will include 6 short-term bicycle parking spaces located outside within 30' of the entry as shown on the Site Plan (Exhibit 3 Sheet A1.0).

(.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:** As shown on the Site Plan (Exhibit 3 Sheet A1.0), the development provides pathways around the majority of the building with direct access and connections between entrances, access doors, outdoor areas, and destinations. Multiuse paths in the right of way are not proposed as part of this project. Half street improvements of Java Road will include bicycle and pedestrian facilities and will be located in a public access easement. These standards are met.

(.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:** The proposed development is not located on or adjacent to a major transit street. Therefore, the standards of this section do not apply.

(.07) Residential Private Access Drives. Residential Private Access Drives shall meet the following standards:



**Response:** The proposed development does not include Residential Access Drives. Therefore the standards of this section do not apply.

(.08). Access Drive and Driveway Approach Development Standards.

- A. *An access drive to any proposed development shall be designed to provide a clear travel lane free from any obstructions.*
- B. *Access drive travel lanes shall be constructed with a hard surface capable of carrying a 23-ton load.*
- C. *Where emergency vehicle access is required, approaches and driveways shall be designed and constructed to accommodate emergency vehicle apparatus and shall conform to applicable fire protection requirements. The City may restrict parking, require signage, or require other public safety improvements pursuant to the recommendations of an emergency service provider.*
- D. *Secondary or emergency access lanes may be improved to a minimum 12 feet with an all-weather surface as approved by the Fire District. All fire lanes shall be dedicated easements.*
- E. *Minimum access requirements shall be adjusted commensurate with the intended function of the site based on vehicle types and traffic generation.*
- 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.*
- 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.*
- H. *The City may require a driveway to extend to one or more edges of a parcel and be designed to allow for future extension and inter-parcel circulation as adjacent properties develop. The City may also require the owner(s) of the subject site to record an access easement for future joint use of the approach and driveway as the adjacent property(ies) develop(s).*
- I. *Driveways shall accommodate all projected vehicular traffic on-site without vehicles stacking or backing up onto a street.*
- J. *Driveways shall be designed so that vehicle areas, including but not limited to drive-up and drive-through facilities and vehicle storage and service areas, do not obstruct any public right-of-way.*
- 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.*
- 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.*
- 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.*
- 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.*

- 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.*
- 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 Site Plan (Exhibit 3 A1.0) shows all access drives and driveways proposed on site. The project's temporary access point from Garden Acres Road has been designed to provide a clear travel lane free from any obstructions. All access drives and roadways have been constructed with a roadway asphalt capable of carrying a 23-ton load or more.

The Fire Service Plan (Exhibit 10) illustrates that proposed emergency vehicle access and approaches and driveways have been designed and constructed to accommodate emergency vehicle apparatus and conforms to applicable fire protection requirements. Secondary or emergency access lanes are greater than 12 feet all-weather asphalt surface.

Java Road will extend more than halfway into the parcel during Phase 1 and extend to the edge of the property parcel during Phase 2.

Approaches and driveways have been located and designed to allow for safe maneuvering in and around loading areas while avoiding conflicts with pedestrians, parking, landscaping, and buildings. Pedestrians are prohibited from entering the south/southeast portion of the facility to ensure safety.

These standards have been met.

*(.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:** As shown on the Site Plan (Exhibit 3 Sheet A1.0), the development provides street intersection spacing and alignment per the Coffee Creek DOD Connectivity Plan. These standards have been met.

*(.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 applicant is not requesting exceptions or adjustments to the spacing standards of this subsection. This section does not apply.



## Section 4.179. Mixed Solid Waste and Recyclables Storage in New Multi-Unit Residential and Non-Residential Buildings.

- (.01) *All site plans for multi-unit residential and non-residential buildings submitted to the Wilsonville Development Review Board for approval shall include adequate storage space for mixed solid waste and source separated recyclables.*
- (.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.*
- (.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.*
- (.04) *Storage areas for multiple uses on a single site may be combined and shared.*
- (.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.*
- (.06) *The specific requirements for storage area are as follows:*
- A. *Multi-unit residential buildings containing five-ten units shall provide a minimum storage area of 50 square feet. Buildings containing more than ten residential units shall provide an additional five square feet per unit for each unit above ten.*
  - B. *Non-residential buildings shall provide a minimum storage area of ten square feet, plus:*
    1. *Office: Four square feet per 1,000 square feet gross floor area (GFA);*
    2. *Retail: Ten square feet per 1,000 square feet GFA;*
    3. *Wholesale / Warehouse / Manufacturing: Six square feet per 1,000 square feet GFA; and*
    4. *Other: Four square feet per 1,000 square feet GFA.*

**Response:** The proposed development has 65,800 GFA, of which Warehouse/Manufacturing is the primary use. Other uses include Office and Retail, but they do not make up 20% of the overall GFA. Therefore, the project requires at least 395 SF of solid waste/recyclables storage area ( $65,800/1000 \times 6 \text{ SF} = 394.8 \text{ SF}$ ). The proposed storage as shown on the Site Plan (Exhibit 3 Sheet A1.0-A1.1) meets the required the amount required by this section. All solid waste and refuse and recycling will be contained within a covered area located on the east side of the building. These standards are met.

(.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.*

(.08) *Existing multi-unit residential and non-residential developments wishing to retrofit their structures to include storage areas for mixed solid waste and recycling may have their site plans reviewed and approved through the Class I Administrative Review process, according to the provisions of Section 4.035. Site plans for retrofitting existing developments must conform to all requirements of this Section, "Mixed Solid Waste and Recyclables Storage In New Multi-Unit Residential and Non-Residential Buildings," and 4.430, "Location, Design and Access Standards for Mixed Solid Waste and Recycling Areas," of the Wilsonville City Code*

**Response:** The applicant will 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 anticipate volumes, LOS and any other special circumstances. See Exhibit 9 for a Service Provider Letter from the waste removal company.

## Section 4.199. Outdoor Lighting

### Section 4.199.10. Outdoor Lighting in General

(.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.*

(.02) Purpose Statement as Guidelines: *Declaration of purpose statements are guidelines and not approval criteria in the application of WC Section 4.199.*

### Section 4.199.20. Applicability.

(.01) *This Ordinance is applicable to:*

- A. *Installation of new exterior lighting systems in public facility, commercial, industrial and multi-family housing projects with common areas.*
- B. *Major additions or modifications (as defined in this Section) to existing exterior lighting systems in public facility, commercial, industrial and multi-family housing projects with common areas.*

*(.02) Exemption. The following luminaires and lighting systems are EXEMPT from these requirements:*

*Section 4.199.30. Lighting Overlay Zones.*

*(.01) The designated Lighting Zone as indicated on the Lighting Overlay Zone Map for a commercial, industrial, multi-family or public facility parcel or project shall determine the limitations for lighting systems and fixtures as specified in this Ordinance.*

- A. *Property may contain more than one lighting zone depending on site conditions and natural resource characteristics.*

*(.02) The Lighting Zones shall be:*

- B. *LZ 2. Low-density suburban neighborhoods and suburban commercial districts, industrial parks and districts. This zone is intended to be the default condition for the majority of the City.*

**Response:** According to the Lighting Overlay Zone Map, the subject site is located in LZ2.

*(.03) Modification of Lighting Zones.*

**Response:** The applicant is not seeking to modify lighting zones. This section does not apply.

*Section 4.199.40. - Lighting Systems Standards for Approval.*

*(.01) Non-Residential Uses and Common Residential Areas.*

- A. *All outdoor lighting shall comply with either the Prescriptive Option or the Performance Option below.*
- 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.*
- C. *Performance Option. If the lighting is to comply with the Performance Option, the proposed lighting design shall be submitted by the applicant for approval by the City meeting all of the following:*
- 1. *The weighted average percentage of direct uplight lumens shall be less than the allowed amount per Table 9*
  - 2. *The maximum light level at any property line shall be less than the values in Table 9, as evidenced by a complete photometric analysis including horizontal illuminance of the site and vertical illuminance on the plane facing the site up to the mounting height of the luminaire mounted highest above grade. The Building Official or designee may accept a photometric test report, demonstration or sample, or other satisfactory confirmation that the luminaire meets the shielding requirements of Table 7. Luminaires shall not be mounted so as to permit aiming or use in any way other than the manner maintaining the shielding classification required herein:*
    - a. *Exception 1. If the property line abuts a public right-of-way, including a sidewalk or street, the analysis may be performed across the street at the adjacent property line to the right-of-way.*
    - b. *Exception 2. If, in the opinion of the Building Official or designee, compliance is impractical due to unique site circumstances such as lot size or shape, topography, or size or shape of building, which are circumstances not typical of the general conditions of the surrounding area. The Building Official may impose conditions of approval to avoid light trespass to the maximum extent possible and minimize any additional*

*negative impacts resulting to abutting and adjacent parcels, as well as public rights-of-way, based on best lighting practices and available lighting technology.*

*3. The maximum pole or mounting height shall comply with Table 8.*

*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:** A Lighting Plan meeting the standards of this section is included as part of Exhibit 3, Sheet 1 of 2 and 2 of 2. The Lighting Plan shows the type, location and levels of proposed lighting. The proposed development will comply with the curfew requirements to either Initiate operation at dusk and either extinguish lighting one hour after close or at the curfew times according to Table 10; or to reduce lighting intensity one hour after close or at the curfew time not more than 50% of the requirements set forth in the OEEESC unless waived by the DRB Due to special circumstances and to extinguish lighting consistent with 1. And 2. Above on Holidays. These standards have been met.

*(.02) Special Permit for Specific Lighting Fixtures and Systems and When Exceeding Lighting Requirements.*

- A. This section is intended to apply to situations where more than normal foot candles are required due to a unique circumstance or use or where it is absolutely essential to perform the proposed activities after dark. All special permits shall be reviewed by the DRB.*
- B. Upon issuance of a special permit by the Development Review Board (DRB), lighting systems not complying with the technical requirements of this Ordinance may be installed, maintained, and replaced for lighting that exceeds the maximums permitted by this Ordinance. This section is intended to be applied to uses such as sports lighting systems including but not limited to, sport fields and stadiums, such as baseball and football field lighting, tennis court lighting, swimming pool area lighting and prisons; other very intense lighting defined as having a light source exceeding 200,000 lumens or an intensity in any direction of more than 2,000,000 candelas; building façade lighting of portions of buildings over two stories high; and public monuments.*
- C. To obtain such a permit, applicants shall demonstrate that the proposed lighting installation:*
  - 1. Is within Lighting Zone 3 or above.*
  - 2. Has been designed to minimize obtrusive light and artificial sky glow, supported by a signed statement from a registered civil or electrical engineer describing the mitigation*

*measures. Such statement shall be accompanied by calculations indicating the light trespass levels (horizontal and vertical at ground level) at the property line.*

- 3. Will not create excessive glare, sky glow, or light trespass beyond that which can be reasonably expected by application of best lighting practices, and available technology.*
- 4. Provides appropriate lighting curfew hours based on the use and the surrounding areas.*
- D. The DRB may impose conditions of approval to mitigate any negative impacts resulting to the abutting parcel, based on best lighting practices and available lighting technology.*
- E. The City may charge a review fee and may, at the Building Official's option, employ the services of a qualified professional civil or electrical engineer to review such submittals and the cost thereof shall be an additional fee charged to the applicant.*

**Response:** The Lighting Plan (Exhibit 3 Sheets 1 of 2 and 2 of 2) for the proposed development intends to meet the standards of this section and does not anticipate a special permit for specific fixtures or systems or exceed lighting requirements. These standards do not apply.

*Section 4.199.50. - Submittal Requirements.*

- (.01) Applicants shall submit the following information as part of DRB review or administrative review of new commercial, industrial, multi-family or public facility projects:*
  - A. A statement regarding which of the lighting methods will be utilized, prescriptive or performance, and a map depicting the lighting zone(s) for the property.*
  - B. A site lighting plan that clearly indicates intended lighting by type and location. For adjustable luminaires, the aiming angles or coordinates shall be shown.*
  - C. For each luminaire type, drawings, cut sheets or other documents containing specifications for the intended lighting including but not limited to, luminaire description, mounting, mounting height, lamp type and manufacturer, lamp watts, ballast, optical system/distribution, and accessories such as shields.*
  - D. Calculations demonstrating compliance with Oregon Energy Efficiency Specialty Code, Exterior Lighting, as modified by Section 4.199.40(.01)(B.)(2.)*
  - 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.*
- (.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.*

- (.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.*
- (.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.*
- (.05) *For all calculations, the following light loss factors shall be used unless an alternative is specifically approved by the City:*

**Response:** The applicant has included a Lighting Plan (Exhibit 3 Sheets 1 of 2 and 2 of 2) as part of the submittal package which meets the requirements of this section. These standards have been met.

## 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.*

**Response:** As shown on the Utility Plan (Exhibit 3 Sheet C3.1), the proposed development will place new utility lines underground including but not limited to those required for power, communication, street lighting, gas, cable television services and related facilities, constructed per the City's Public Works standards. These standards are met.

### Section 4.320. Requirements.



- (.01) *The developer or subdivider shall be responsible for and make all necessary arrangements with the serving utility to provide the underground services (including cost of rearranging any existing overhead facilities). All such underground facilities as described shall be constructed in compliance with the rules and regulations of the Public Utility Commission of the State of Oregon relating to the installation and safety of underground lines, plant, system, equipment and apparatus.*
- (.02) *The location of the buried facilities shall conform to standards supplied to the subdivider by the City. The City also reserves the right to approve location of all surface-mounted transformers.*
- (.03) *Interior easements (back lot lines) will only be used for storm or sanitary sewers, and front easements will be used for other utilities unless different locations are approved by the City Engineer. Easements satisfactory to the serving utilities shall be provided by the developer and shall be set forth on the plat.*

**Response:** The applicant's development team will make all necessary arrangements to coordinate site utilities and infrastructure systems. All such facilities will 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. The applicant understands that the city reserves the right to approve the location of surface mounted transformers and interior easements will only be used for storm or sanitary sewers and front easements will be used for other utilities (unless approved by the City Engineer). Easements will be provided by the developer. These requirements are met.

## Site Design Review (Detailed Review of Architecture, Landscaping, Signs and other Design Elements)

### Section 4.400. Purpose.

- (.01) *Excessive uniformity, inappropriateness or poor design of the exterior appearance of structures and signs and the lack of proper attention to site development and landscaping in the business, commercial, industrial and certain residential areas of the City hinders the harmonious development of the City, impairs the desirability of residence, investment or occupation in the City, limits the opportunity to attain the optimum use in value and improvements, adversely affects the stability and value of property, produces degeneration of property in such areas and with attendant deterioration of conditions affecting the peace, health and welfare, and destroys a proper relationship between the taxable value of property and the cost of municipal services therefor.*
- (.02) *The City Council declares that the purposes and objectives of site development requirements and the site design review procedure are to:*
- A. *Assure that Site Development Plans are designed in a manner that insures proper functioning of the site and maintains a high quality visual environment.*
  - B. *Encourage originality, flexibility and innovation in site planning and development, including the architecture, landscaping and graphic design of said development;*
  - C. *Discourage monotonous, drab, unsightly, dreary and inharmonious developments;*

- D. *Conserve the City's natural beauty and visual character and charm by assuring that structures, signs and other improvements are properly related to their sites, and to surrounding sites and structures, with due regard to the aesthetic qualities of the natural terrain and landscaping, and that proper attention is given to exterior appearances of structures, signs and other improvements;*
- E. *Protect and enhance the City's appeal and thus support and stimulate business and industry and promote the desirability of investment and occupancy in business, commercial and industrial purposes;*
- F. *Stabilize and improve property values and prevent blighted areas and, thus, increase tax revenues;*
- G. *Insure that adequate public facilities are available to serve development as it occurs and that proper attention is given to site planning and development so as to not adversely impact the orderly, efficient and economic provision of public facilities and services.*
- H. *Achieve the beneficial influence of pleasant environments for living and working on behavioral patterns and, thus, decrease the cost of governmental services and reduce opportunities for crime through careful consideration of physical design and site layout under defensible space guidelines that clearly define all areas as either public, semi-private, or private, provide clear identity of structures and opportunities for easy surveillance of the site that maximize resident control of behavior -- particularly crime;*
- I. *Foster civic pride and community spirit so as to improve the quality and quantity of citizen participation in local government and in community growth, change and improvements;*
- J. *Sustain the comfort, health, tranquility and contentment of residents and attract new residents by reason of the City's favorable environment and, thus, to promote and protect the peace, health and welfare of the City.*

**Response:** Please refer to the Coffee Creek Design Overlay District requirements and design responses in this project narrative.

*Section 4.420. Jurisdiction and Powers of the Board.*

- (.01) *Application of Section. Except for single-family or two-family dwellings in any residential zoning district, and in the Village zone, row houses or apartments, and Class II applications in the Coffee Creek Industrial Design Overlay District, no Building Permit shall be issued for a new building or major exterior remodeling of an existing building, and no Sign Permit, except as permitted in Sections 4.156.02 and 4.156.05, shall be issued for the erection or construction of a sign relating to such new building or major remodeling, until the plans, drawings, sketches and other documents required for a Sign Permit application have been reviewed and approved by the Board. [Amended by Ord. No. 538, 2/21/02.] [Amended by Ord. No. 557, 9/5/03.] [Amended by Ord. No. 704, 6/18/12]*
- (.02) *Development in Accord with Plans. Construction, site development and landscaping shall be carried out in substantial accord with the plans, drawings, sketches and other documents approved by the Board, unless altered with Board approval. Nothing in this subsection shall be construed to prevent ordinary repair, maintenance and replacement of any part of the building or landscaping which does not involve a substantial change from the purpose of Section 4.400. If the Board objects to such proposed changes, they shall be subject to the procedures and requirements of the site design review process applicable to new proposals.*

(.03) ***Variiances.** The Board may authorize variances from the site development requirements, based upon the procedures, standards and criteria listed in Section 4.196. Variances shall be considered in conjunction with the site design review process.*

Section 4.421. Criteria and Application of Design Standards.

(.01) *The following standards shall be utilized by the Board in reviewing the plans, drawings, sketches and other documents required for Site Design Review. These standards are intended to provide a frame of reference for the applicant in the development of site and building plans as well as a method of review for the Board. These standards shall not be regarded as inflexible requirements. They are not intended to discourage creativity, invention and innovation. The specifications of one or more particular architectural styles is not included in these standards. (Even in the Boones Ferry Overlay Zone, a range of architectural styles will be encouraged.)*

A. *Preservation of Landscape. The landscape shall be preserved in its natural state, insofar as practicable, by minimizing tree and soils removal, and any grade changes shall be in keeping with the general appearance of neighboring developed areas.*

**Response:** The proposed development has provided a thoughtful landscaping concept that includes preservation of the landscape in its natural state and retention of existing trees and soils (see Exhibit 3 Sheets L1.0-L2.0, Landscape Plan). The landscape on the entire eastern half of the site (greater than four acres) will be left in its natural grassy state. Further, the site's stormwater will be managed and treated through Low Impact Development via streetscape planters located along nearly the entire western frontage of the site along Garden Acres Road. This will create a pleasant naturalistic aesthetic for passersby to enjoy. While existing trees will be impacted by the development as shown on the Tree Preservation Plan (Exhibits 7 and 8), trees will be preserved wherever possible as well. This criterion is satisfied.

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 proposed building and site have been designed with thoughtful consideration of their relationship with the environment. As shown on the Site Plan (Exhibit 3 Sheets A1.0-A1.1), the building is located at the northwest corner of the site, close to the intersection of Garden Acres Road and future Java Road. This is the most urbanized area of the site, where, according to the Coffee Creek DOD Connectivity Plan, an Addressing Street intersects with a Supporting Street. The rest of the site, including the entire eastern half, is allowed to remain in its undeveloped state. The building is set back approximately 78' from Garden Acres Road, in order to provide space for the large Low Impact Development streetscape planters that will treat the site's stormwater. The site does not contain any steep slopes or other significant wildlife habitat areas. The lot to the south is wholly undeveloped at this time. To buffer that lot from the proposed development, the majority of the site activity, including access, the building main entrance, loading and most of the parking, are oriented as far north as possible on the subject site. This criterion has been satisfied.

- 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:** As illustrated on the Site Plan (Exhibit 3 Sheets A1.0-A1.1), the proposed development has been carefully designed in conformance with the Coffee Creek DOD, which has specific requirements for where access to the site can happen. A temporary access point will be constructed to access new Java Road and the site from Garden Acres Road. Java Road is a new Supporting Street built per the Coffee Creek DOD Regulating Plan, and half of it will be constructed as part of this project (see cross section on Exhibit 3 Sheet A1.1). The temporary access point will be closed once the parcel to the north is developed and the permanent intersection can be built. All other site access will be taken from Java Road consistent with the city's access standards. Pedestrian circulation walkways have been provided throughout the site connecting parking, the industrial wayside, and the building main entrance with the public right of way along Garden Acres Road and Java Road. Parking areas are distributed throughout the site, with the larger of the two being located behind the building and not visible from Garden Acres Road. The smaller parking area at the northwest corner of the site is located close to the building and includes the ADA-accessible parking spaces, as well as a limited number of visitor spaces and abundant landscaping. This criterion has been satisfied.

- 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:** On-site stormwater facilities have been designed so that surface water will not adversely affect neighboring properties. The site's stormwater will be managed via a large Low Impact Development planter located along most of the site's west frontage. More details can be found in the Stormwater Plan, included as Exhibit 5 of this submittal package. This criterion has been satisfied.

- 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:** As illustrated on the Utility Plan (Exhibit 3 Sheets C3-C3.1), all proposed utilities will be located underground in accordance with the requirements of this code. This criterion has been satisfied.

- 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:** The proposed Sign Plan (Exhibit 3 Sheet A3.2) ensures that the size, location, design, color, texture, lighting and materials of all exterior signs and outdoor advertising structures or features do not detract from the design of the proposed building and surrounding properties. This criterion has been satisfied.

- 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 proposed development is consistent with the requirement above through its aforementioned conformance with the Coffee Creek DOD site design requirements for special setbacks, screening, planting related to parking and loading areas. This criterion has been satisfied.

- (.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.*

#### **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.*
  - B. *Indoor and outdoor storage areas shall comply with Uniform Building and Fire Code requirements.*



- C. *Storage area space requirements can be satisfied with a single location or multiple locations and can combine with both interior and exterior locations.*
- D. *Exterior storage areas can be located within interior side yard or rear yard areas. Minimum setback shall be three (3) feet. Exterior storage areas shall not be located within a required front yard setback, including double frontage lots.*
- E. *Exterior storage areas shall be located in central and visible locations on a site to enhance security for users.*
- F. *Exterior storage areas can be located in a parking area if the proposed use provides at least the minimum number of parking spaces required for the use after deducting the area used for storage. Storage areas shall be appropriately screened according to the provisions of Section 4.430 (.03), below.*
- G. *The storage area shall be accessible for collection vehicles and located so that the storage area will not obstruct pedestrian or vehicle traffic movement on the site or on public streets adjacent to the site.*

**Response:** The proposed solid waste and recycling area is located at the rear (to the east) of the building, as shown on the Site Plan (Exhibit 3 Sheets A1.0-A1.1). The location is secure, accessible, and visible to on-site users, and is not located in a required front yard area. Its location will not obstruct pedestrian or vehicle traffic movement on the site or on public streets adjacent to the site. A Service Provider Letter from the contracted waste removal and recycling service states that the location of the storage area is accessible (Exhibit 9). Please refer to the additional responses to the Coffee Creek Design Overlay District requirements and design responses in this project narrative. These standards have been met.

*(.03) Design Standards.*

- A. *The dimensions of the storage area shall accommodate containers consistent with current methods of local collection.*
- B. *Storage containers shall meet Uniform Fire Code standards and be made of or covered with waterproof materials or situated in a covered area.*
- C. *Exterior storage areas shall be enclosed by a sight obscuring fence, wall or hedge at least six (6) feet in height. Gate openings for haulers shall be a minimum of ten (10) feet wide and shall be capable of being secured in a closed or open position. In no case shall exterior storage areas be located in conflict with the vision clearance requirements of Section 4.177.*
- D. *Storage area(s) and containers shall be clearly labeled to indicate the type of materials accepted.*

**Response:** The proposed solid waste and recycling area is located at the rear (to the east) of the building, as shown on the Site Plan (Exhibit 3 Sheets A1.0-A1.1). The size of the storage area will accommodate containers with current methods of local collection. A Service Provider Letter from the local hauler has indicated that the location is adequate for their services (Exhibit 9). The area will be screened from the street view by a sight obscuring wall and landscaping at least six feet high. Containers will be labelled to indicate the contents accepted. These standards have been met.

*(.04) Access Standards.*

- A. *Access to storage areas can be limited for security reasons. However, the storage area shall be accessible to users at convenient times of the day and to collect service personnel on the day and approximate time they are scheduled to provide collection service.*

- B. *Storage areas shall be designed to be easily accessible to collection trucks and equipment, considering paving, grade and vehicle access. A minimum of ten (10) feet horizontal clearance and eight feet of vertical clearance is required if the storage area is covered.*
- C. *Storage areas shall be accessible to collection vehicles without requiring backing out of a driveway onto a public street. If only a single access point is available to the storage area, adequate turning radius shall be provided to allow collection vehicles to safely exit the site in a forward motion.*

**Response:** Access to the proposed solid waste and recycling storage area will be accessible to users and collection service personnel at convenient and required times of the day. A Service Provider Letter from the contracted hauler states that the location is adequate for services to be successfully implemented (Exhibit 9). In addition, please refer to the previous Coffee Creek Design Overlay District requirements and design responses in this project narrative. These standards have been met.

## Signs

### Section 4.156.01. Sign Regulations Purpose and Objectives.

- (.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.

- (.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.*
- (.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.*

- (.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:** According to the Pre-Application Conference Notes (Exhibit 11), a Class III Sign Permit is required for the proposed development.

- (.06) Class III Sign Permit. Sign permit requests shall be processed as a Class III Sign Permit when associated with new development, except as noted in Subsection 4.156.02 (.05) C., or redevelopment requiring DRB review, and not requiring a Master Sign Plan; when a sign permit request is associated with a waiver or non-administrative variance; or when the sign permit request involves one or more freestanding or ground mounted signs greater than eight (8) feet in height in a new location.*
- A. Class III Sign Permit Submission Requirements: Ten (10) paper and electronic copies of the submission requirements for Class II Sign Permits plus information on any requested waivers or variances in addition to all required fees.*
- B. Class III Sign Permit Review Criteria: The review criteria for Class II Sign Permits plus waiver or variance criteria when applicable.*

**Response:** According to the Pre-Application Conference Notes (Exhibit 11), a Class III Sign Permit is required for the proposed development. The standards and review criteria are addressed later in this narrative.

## Section 4.156.08. - Sign Regulations in the PDC, TC, PDI, and PF Zones

### *(.02) Signs On Buildings*

- A. Sign Eligible Facades. Building signs are allowed on a facade of a tenant space or single tenant building when one or more of the following criteria are met:*
- 1. The facade has one or more entrances open to the general public*
  - 2. The facade faces a lot line with frontage on a street or private drive with a cross section similar to a public street, and no other buildings on the same lot obstruct the view of the building facade from the street or private drive; or*
  - 3. The facade is adjacent to the primary parking area for the building or tenant.*

**Response:** The Sign Plan for the proposed development is shown on Exhibit 3 Sheet A3.2. The type of sign proposed is an 84 SF sign on the west facing façade of the building where the main entrance is located. The façade is eligible for a building sign because it has an entrance open to the general public, and it faces a lot line with frontage on Garden Acres Road, a public street, and no other buildings on the lot obstruct the view of the façade from that street. Two of the above criteria are met.

*B. Sign Area Allowed:*

1. *The sign area allowed for all building signs on a sign eligible façade is shown in the table below:*

<b>Linear Length of Façade (feet)</b>	<b>Sign Area Allowed*</b>
Greater than 72	36 sq. ft. plus 12 sq. ft. for each 24 linear feet or portion thereof greater than 72 up to a maximum of 200 sq. ft.

**Response:** As shown on the Signage Plan (Exhibit 3 Sheet A3.2), The proposed sign area is 70 SF, with dimensions of 40' X 1'-9". The allowed amount of signage on this façade is 85 SF based on a 170' façade length.

- C. *The length of individual tenant signs shall not exceed 75 percent of the length of the facade of the tenant space.*

**Response:** As shown on The Signage Plan (Exhibit 3 Sheet A3.2), the length of the proposed sign is 40' and the building façade length is 170'. Therefore, the proposed sign is 23.5% of the length of the façade. This standard is met.

- D. *The height of building signs shall be within a definable sign band, fascia, or architectural feature and allow a definable space between the sign and the top and bottom of the sign band, fascia, or architectural feature.*

**Response:** As shown on The Signage Plan (Exhibit 3 Sheet A3.2), the height of the proposed building sign is located within a definable fascia running along the façade where the sign is located, providing visible space between the sign itself and the top and bottom of the fascia. This standard is met.

- E. *Types of signs permitted on buildings include wall flat, fascia, projecting, blade, marquee and awning signs. Roof-top signs are prohibited.*

**Response:** As shown on The Signage Plan (Exhibit 3 Sheet A3.2), the proposed building sign is a fascia sign, and thus is permitted on the building. A roof-top sign is not proposed. This standard is met.

## Tree Removal

### 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.*

**Response:** Please refer to Landscape Plan (Exhibit 3 Sheets L1.0-L1.1) for location of new trees and tree species.

*(.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.*

*(.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.*

**Section 4.610.10. Standards For Tree Removal, Relocation Or Replacement**

(.01) *Except where an application is exempt, or where otherwise noted, the following standards shall govern the review of an application for a Type A, B, C or D Tree Removal Permit:*

A. *Standard for the Significant Resource Overlay Zone. The standard for tree removal in the Significant Resource Overlay Zone shall be that removal or transplanting of any tree is not inconsistent with the purposes of this Chapter.*

**Response:** The proposed development is not located within the Significant Resource Overlay Zone. This standard does not apply.

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 proposed development has taken tree preservation and conservation seriously as a design principle, as illustrated in the building location and site design.

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:** According to the Tree Maintenance and Protection Plan (Exhibit 7), a total of 21 existing trees have been identified on the site. The applicant has considered preservation and conservation of wooded areas and preserved trees where feasible and reasonable. This standard has been met.

D. *Land Clearing. Where the proposed activity requires land clearing, the clearing shall be limited to designated street rights-of-way and areas necessary for the construction of buildings, structures or other site improvements.*

**Response:** The applicant has limited clearing of land to areas necessary for the construction of buildings, structures and other site improvements such as the construction of Java Road. This standard has been met.

E. *Residential Development. Where the proposed activity involves residential development, residential units shall, to the extent reasonably feasible, be designed and constructed to blend into the natural setting of the landscape.*

**Response:** The proposed development is not residential. Therefore, this standard does not apply.

F. *Compliance With Statutes and Ordinances. The proposed activity shall comply with all applicable statutes and ordinances.*

**Response:** The proposed activity will comply with all applicable statutes and ordinances. This standard has been met.

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 is not residential. Therefore, this standard does not apply.

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 Tree Maintenance and Protection Plan (Exhibits 7 and 8) shows that trees are being removed due to disease or damage and because it is necessary for construction. This standard has been met. The site development plans and tree survey does indicate number of trees to remain.

*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.*

**Response:** A Tree Maintenance and Protection Plan prepared by a qualified professional has been included with this submittal package as Exhibit 7. This standard has been met.

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.*

**Response:** This standard does not apply because the proposed development is not part of a platted subdivision.

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:** The applicant understands that mitigation and/or replacement of any removed trees for the purpose of compliance with City Engineer requirements shall be in accordance with the standards of this subchapter.

- J. *Exemption. Type D permit applications shall be exempt from review under standards D, E, H and I of this subsection.*

**Response:** This standard does not apply.

**Section 4.610.40. Type C Permit**

- (.01) *Approval to remove any trees on property as part of a site development application may be granted in a Type C permit. A Type C permit application shall be reviewed by the standards of this subchapter and all applicable review criteria of Chapter 4. Application of the standards of this section shall not result in a reduction of square footage or loss of density, but may require an applicant to modify plans to allow for buildings of greater height. If an applicant proposes to remove trees and submits a landscaping plan as part of a site development application, an application for a Tree Removal Permit shall be included. The Tree Removal Permit application will be reviewed in the Stage II development review process. The DRB shall review all Type C permits, with the exception of Class II development review applications located within the Coffee Creek Industrial Design Overlay District, where the Planning Director shall have review authority. Any plan changes made that affect trees after Stage II review of a development application shall be subject to review by the original approval authority. Where mitigation is required for tree removal, such mitigation may be considered as part of the landscaping requirements as set forth in this Chapter. Tree removal shall not commence until approval of the required Stage II application and the expiration of the appeal period following that decision. If a decision approving a Type C permit is appealed, no trees shall be removed until the appeal has been settled.*
- (.02) *The applicant must provide ten copies of a Tree Maintenance and Protection Plan completed by an arborist that contains the following information:*
- A. *A plan, including a topographical survey bearing the stamp and signature of a qualified, registered professional containing all the following information:*
1. *Property Dimensions. The shape and dimensions of the property, and the location of any existing and proposed structure or improvement.*
  2. *Tree survey. The survey must include:*
    - a. *An accurate drawing of the site based on accurate survey techniques at a minimum scale of one inch (1") equals one hundred feet (100') and which provides a) the location of all trees having six inches (6") or greater d.b.h. likely to be impacted, b) the spread of canopy of those trees, (c) the common and botanical name of those trees, and d) the approximate location and name of any other trees on the property.*
    - b. *A description of the health and condition of all trees likely to be impacted on the site property. In addition, for trees in a present or proposed public street or road right-of-way that are described as unhealthy, the description shall include recommended actions to restore such trees to full health. Trees proposed to remain, to be transplanted or to be removed shall be so designated. All trees to remain on the site are to be designated with metal tags that are to remain in place throughout the development. Those tags shall be numbered, with the numbers keyed to the tree survey map that is provided with the application.*

- c. *Where a stand of twenty (20) or more contiguous trees exist on a site and the applicant does not propose to remove any of those trees, the required tree survey may be simplified to accurately show only the perimeter area of that stand of trees, including its drip line. Only those trees on the perimeter of the stand shall be tagged, as provided in "b," above.*
  - d. *All Oregon white oaks, native yews, and any species listed by either the state or federal government as rare or endangered shall be shown in the tree survey.*
3. *Tree Protection. A statement describing how trees intended to remain will be protected during development, and where protective barriers are necessary, that they will be erected before work starts. Barriers shall be sufficiently substantial to withstand nearby construction activities. Plastic tape or similar forms of markers do not constitute "barriers."*
  4. *Easements and Setbacks. Location and dimension of existing and proposed easements, as well as all setbacks required by existing zoning requirements.*
  5. *Grade Changes. Designation of grade changes proposed for the property that may impact trees.*
  6. *Cost of Replacement. A cost estimate for the proposed tree replacement program with a detailed explanation including the number, size and species.*
  7. *Tree Identification. A statement that all trees being retained will be identified by numbered metal tags, as specified in subsection "A," above in addition to clear identification on construction documents.*

**Response:** The Tree Maintenance and Protection Plan is included as Exhibits 7 and 8 of this submittal package. The plan was prepared by a qualified arboricultural professional and shows the property dimensions and topographical information, as well as a Tree Survey, shows easements and setbacks, grade changes and other necessary information.

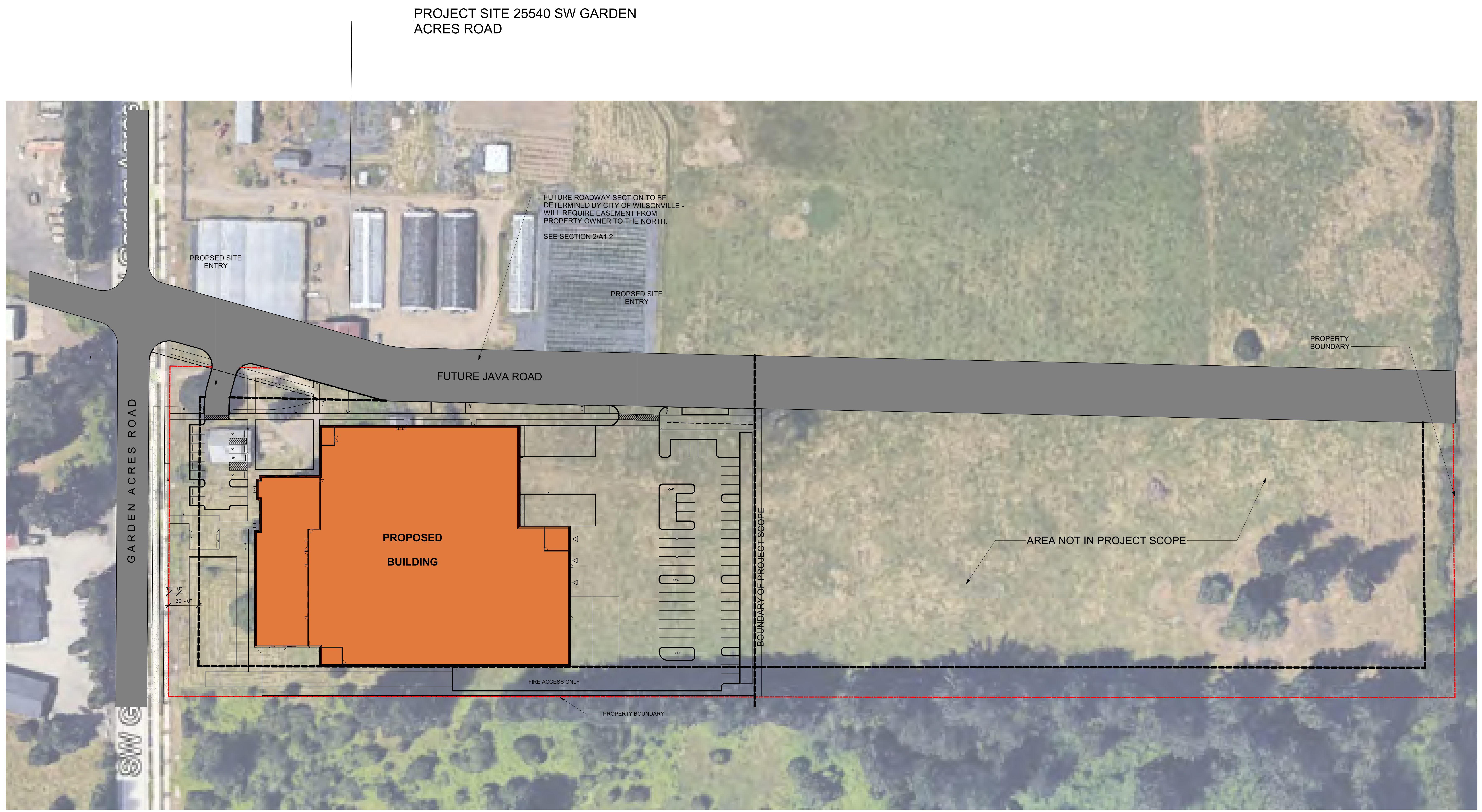












Client/ Owner:  
**PRECISION COUNTERTOPS**

26200 SW 95th Ave,  
 Wilsonville OR 97070

Project:  
**PRECISION COUNTERTOPS**

SW Garden Acres Road  
 Wilsonville OR 97070

Sheet Title:  
**STAGE 1 (SITE PLAN)**

Revisions:

#	Description	Date

REFER TO SITE PLAN FOR MORE INFORMATION

**1** SITE PLAN ( FUTURE )  
 1" = 40'-0"



**(WP2) WALL at Lobby & Showroom**

**MATERIAL:** Insulated Wall Panel

**STYLE:** Morin MX-1, MX-2, MX-3, MX-4, MX-6  
 (Mfr. Kingspan or Sim.)

**COLOR:** Dark Bronze or Sim.



**Dark Bronze**

SR:0.27 E:0.85 SRI:26  
 RGB: 55 51 50



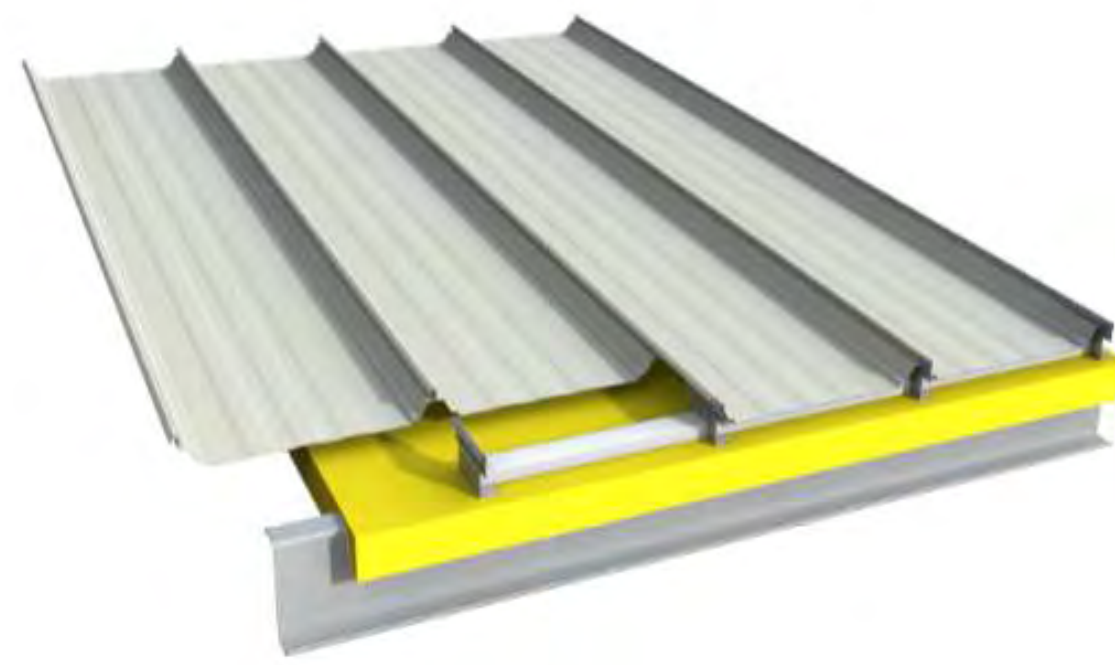
**ROOF - (R1)**

**MATERIAL:** Insulated Roof Panel

**STYLE:** 24 ga SSR Roof Panel  
 (Mfr. Varco Pruden, SIM.)

**COLOR:** COOL ZINC GRAY

**Cool Zinc Gray**

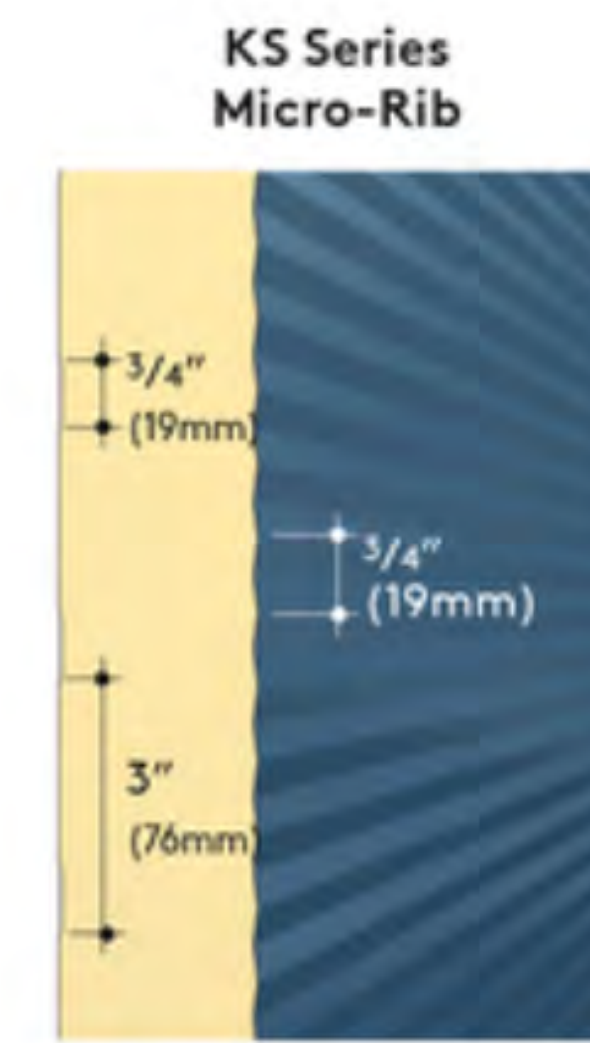


**(WP1) Wall at Office**

**MATERIAL:** Insulated Wall Panel

**STYLE:** KS Series: Micro Rib  
 (Mfr. Kingspan or Sim.)

**COLOR:** Zinc Gray



**Zinc Gray**

SR:0.35 E:0.86 SRI:37  
 RGB: 100 97 93



**(WP4) Wall at Manufacturing and Storage Area**

**MATERIAL:** PANEL Wall System

**STYLE:** 26 ga "R" panel  
 (Mfr. Varco Pruden, SIM.)

**COLOR:** Cool Zinc Gray

**Cool Zinc Gray**



**CANOPIES, DOOR, WINDOW FRAME, CAP & FLASHING (M1)**

**MATERIAL:** Metal

**FINISHES:** Anodized Finish

**COLOR:** Dark Bronze



**WALL ACCENT (WP3)**

**MATERIAL:** Metal

**MFR:** Kingspan or Sim.

**COLOR:** Dark Bronze



**WALL BASE (WB1)**

**MATERIAL:** Insulated Wall Panel

**STYLE:** KS Series: Granitstone Quartz  
 (Mfr. Kingspan or Sim.)

**COLOR:** Teton Gray or Sim.

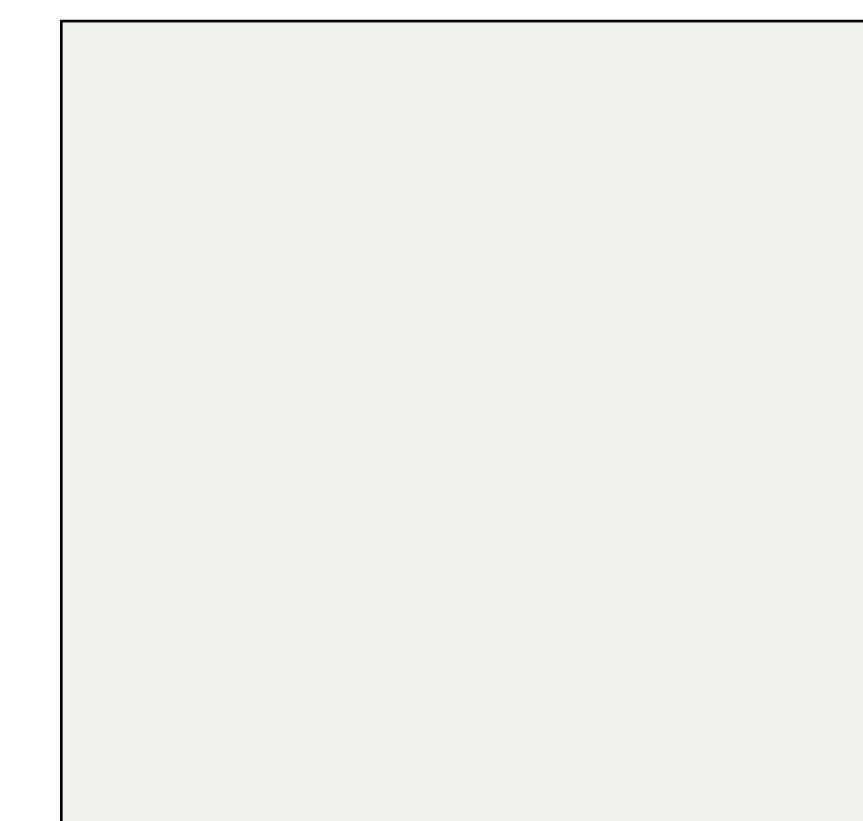


**SIGN (P1)**

**MATERIAL:** Metal

**FINISHES:** Semi Gloss  
 (Mfr. Behr or Sim.)

**COLOR:** Delicate White



Client/ Owner:

Project:  
**PRECISION COUNTERTOP**

25540 SW Garden Acres Road  
 Wilsonville OR 97140

Sheet Title:

**MATERIAL BOARD**

Revisions:

#	Description	Date
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Date: 2022-06-21

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Author: Checker

Job Number: 121036

Sheet



# Precision Countertop Site Storm Drainage Calculations

SW Garden Acres Road  
Wilsonville, Oregon

March 2023  
Project Number: 21279



EXPIRES: 6/30/23



**TM RIPPEY**  
CONSULTING ENGINEERS

7650 SW Beveland Street,  
Suite 100  
Tigard, Oregon 97223

Phone: 503 443 3900  
Fax: 503 443 3700  
email:kkoroch@tmrippy.com

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## Introduction

The site currently has several small buildings but is generally undeveloped, with the majority of the surface grassed. Existing site access is from SW Garden Acres Road, which was recently improved with curbs and sidewalk. Development consists of construction of a new commercial building with paved parking and maneuvering areas.

The development site is approximately 9.34 acres. The proposed building and site improvements will create approximately 143,910 square feet of impervious area. The eastern portion of the site is approximately 4 acres and may be developed in the future. Applying the City's 15% landscape requirement, approximately 194,000 of impervious surface could be created on this eastern portion of the property. It is assumed that with future development storm treatment and flow control will be provided on that portion of the property for this future development. A pipe to convey this future runoff has been provided along the southern portion of the development area.

City staff has provided areal topographic information indicating a portion of the adjacent separately owned parcel to the north currently drains southeast toward the eastern portion of the development site. At staff's request, a field inlet has been provided to collect this potential surface flow at the development site's north boundary. A conveyance pipe routes this potential runoff to the pipe from the future east site development area. The potential basin area tributary to this field inlet is 354,000 square feet. Of this, applying the City's mandated 15% landscape requirement results in a potential impervious area of 300,900 square feet. Treatment and flow control will occur on this separate parcel upon development and runoff will likely be routed directly to the previously provided storm connection lateral along this parcel's frontage at Garden Acres Road.

With site development, runoff from north building roof areas and the west portion of the supporting street surface will be directed to a LID rain garden located NW of the building for treatment and flow control. Three LID planters have been located along the supporting street to provide treatment and flow control for the remainder of the runoff from the supporting street surface. A LID planter has been provided at the east end of the development area to provide treatment and flow control for the paving east of the building. Runoff from the various truck docks and southern building roof is directed to an LID planter located west of the building. Each of these have been sized for flow control and filtration using the Clackamas County modeling software. As the modeling software provides sizing for both treatment and flow control, no separate flow control elements are proposed.

Outflow from the rain garden and planters is directed to the pipe system provided for the east future development parcel and the separate north parcel and is directed to the existing public storm lateral located on the site's Garden Acres Road frontage.

The geotechnical analysis indicates near zero (0.01 in/hr) in their testing. Based on this, the LID treatment has been modeled presuming zero infiltration, though the bottom of the rain garden and planters will be unlined.

### Pipe Sizing Design Methodology

Runoff for pipe sizing has been calculated based on Santa Barbara Unit Hydrograph methodology using HydroCAD™ software. Rainfall based on a 25-year, 24-hour Type 1A event of 3.90-inch rainfall. Piping has been sized to convey the 25-year event based on runoff rates calculated with HydroCAD software and pipe capacity based on Manning's equation with pipe runoff coefficient,  $n=0.013$ .



## **Appendix**

WES Sizing Tool Output  
HydroCAD Output  
Conveyance Calculations  
Basin Maps  
Geotechnical Analysis

WES BMP Sizing Software Version 1.6.0.2, May 2018

## WES BMP Sizing Report

## Project Information

Project Name	Precision Countertop Site
Project Type	Commercial
Location	Garden Acres Road Wilsonville
Stormwater Management Area	0
Project Applicant	PHI Construction
Jurisdiction	OutofDistrict

## Drainage Management Area

Name	Area (sq-ft)	Pre-Project Cover	Post-Project Cover	DMA Soil Type	BMP
DMA A NW Site Paving	6,500	Grass	ConventionalConcrete	C	BMP A NW Rain Garden
DMA A NW Building Roof	22,800	Grass	Roofs	C	BMP A NW Rain Garden
DMA E East Parking	42,650	Grass	ConventionalConcrete	C	BMP E East Paving Planter
DMA F South Roof	42,210	Grass	Roofs	C	BMP F SW of Buildin
DMA F Truck Dock and West Parking	14,150	Grass	ConventionalConcrete	C	BMP F SW of Buildin
DMA B West Center Java Road	4,900	Grass	ConventionalConcrete	C	BMP B West Center Java Road Planter
DMA C Center Java Road	2,475	Grass	ConventionalConcrete	C	BMP C Center Java Road Planter
DMA D East Java Road	4,225	Grass	ConventionalConcrete	C	BMP D East Java Road Planter

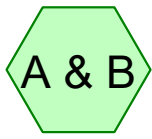
## LID Facility Sizing Details

LID ID	Design Criteria	BMP Type	Facility Soil Type	Minimum Area (sq-ft)	Planned Areas (sq-ft)	Orifice Diameter (in)
BMP A NW Rain Garden	FlowControlAndTreatment	Rain Garden - Filtration	Lined	1,465.0	1,573.0	1.5

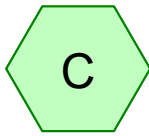
BMP B West Center Java Road Planter	FlowControlAndTreatment	Stormwater Planter - Filtration	Lined	343.0	348.0	0.7
BMP E East Paving Planter	FlowControlAndTreatment	Stormwater Planter - Filtration	Lined	2,985.5	3,001.0	2.0
BMP F SW of Buildin	FlowControlAndTreatment	Stormwater Planter - Filtration	Lined	3,945.2	3,956.0	2.3
BMP C Center Java Road Planter	FlowControlAndTreatment	Stormwater Planter - Filtration	Lined	173.3	177.0	0.5
BMP D East Java Road Planter	FlowControlAndTreatment	Stormwater Planter - Filtration	Lined	295.8	301.0	0.6

### Pond Sizing Details

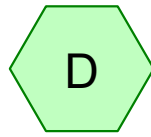
1. FCWQT = Flow control and water quality treatment, WQT = Water quality treatment only
2. Depth is measured from the bottom of the facility and includes the three feet of media (drain rock, separation layer and growing media).
3. Maximum volume of the facility. Includes the volume occupied by the media 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.



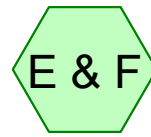
Area A & B



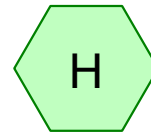
Area C



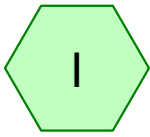
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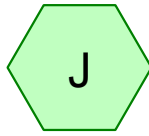
Area E & F



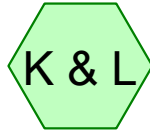
Area H



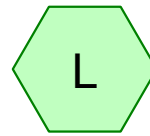
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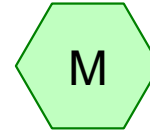
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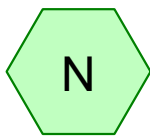
Area K & L



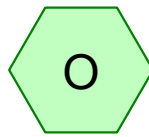
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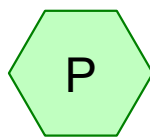
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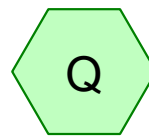
Area N



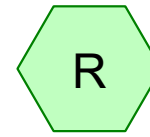
Area O



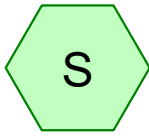
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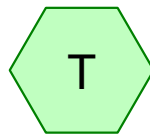
Area Q



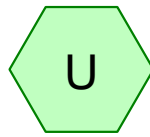
Area R



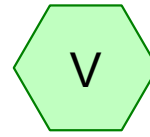
Area S



Area T



Area U



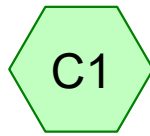
Area V



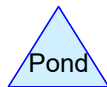
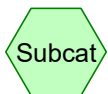
Area A1



Area B1



Area C1



**Routing Diagram for 2023-1-27 Pipe Sizing**  
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### 2023-1-27 Pipe Sizing

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#### Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	25yr24hr	Type IA 24-hr		Default	24.00	1	3.90	2

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**Area Listing (all nodes)**

Area (acres)	CN	Description (subcatchment-numbers)
13.083	98	Paved parking, HSG C (A & B, A1, B1, C1, E & F, L, M, N, O, P, U, V)
1.063	98	Roofs, HSG C (D, H, I, J, K & L, Q)
0.434	98	Unconnected roofs, HSG C (C, R, S, T)
<b>14.580</b>	<b>98</b>	<b>TOTAL AREA</b>



**2023-1-27 Pipe Sizing**

Type IA 24-hr 25yr24hr Rainfall=3.90"

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Time span=0.00-150.00 hrs, dt=0.01 hrs, 15001 points

Runoff by SBUH method, Weighted-CN

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

<b>SubcatchmentA &amp; B: Area A &amp; B</b>	Runoff Area=2,475 sf 100.00% Impervious Runoff Depth=3.67" Tc=5.0 min CN=98 Runoff=0.05 cfs 0.017 af
<b>SubcatchmentA1: Area A1</b>	Runoff Area=4,000 sf 100.00% Impervious Runoff Depth=3.67" Tc=5.0 min CN=98 Runoff=0.08 cfs 0.028 af
<b>SubcatchmentB1: Area B1</b>	Runoff Area=1,800 sf 100.00% Impervious Runoff Depth=3.67" Tc=5.0 min CN=98 Runoff=0.04 cfs 0.013 af
<b>SubcatchmentC: Area C</b>	Runoff Area=1,090 sf 100.00% Impervious Runoff Depth=3.67" Tc=5.0 min CN=98 Runoff=0.02 cfs 0.008 af
<b>SubcatchmentC1: Area C1</b>	Runoff Area=42,650 sf 100.00% Impervious Runoff Depth=3.67" Tc=5.0 min CN=98 Runoff=0.90 cfs 0.299 af
<b>SubcatchmentD: Area D</b>	Runoff Area=1,400 sf 100.00% Impervious Runoff Depth=3.67" Tc=5.0 min CN=98 Runoff=0.03 cfs 0.010 af
<b>SubcatchmentE &amp; F: Area E &amp; F</b>	Runoff Area=1,700 sf 100.00% Impervious Runoff Depth=3.67" Tc=5.0 min CN=98 Runoff=0.04 cfs 0.012 af
<b>SubcatchmentH: Area H</b>	Runoff Area=10,080 sf 100.00% Impervious Runoff Depth=3.67" Tc=5.0 min CN=98 Runoff=0.21 cfs 0.071 af
<b>SubcatchmentI: Area I</b>	Runoff Area=14,140 sf 100.00% Impervious Runoff Depth=3.67" Tc=5.0 min CN=98 Runoff=0.30 cfs 0.099 af
<b>SubcatchmentJ: Area J</b>	Runoff Area=11,900 sf 100.00% Impervious Runoff Depth=3.67" Tc=5.0 min CN=98 Runoff=0.25 cfs 0.083 af
<b>SubcatchmentK &amp; L: Area K &amp; L</b>	Runoff Area=3,800 sf 100.00% Impervious Runoff Depth=3.67" Tc=5.0 min CN=98 Runoff=0.08 cfs 0.027 af
<b>SubcatchmentL: Area L</b>	Runoff Area=4,290 sf 100.00% Impervious Runoff Depth=3.67" Tc=5.0 min CN=98 Runoff=0.09 cfs 0.030 af
<b>SubcatchmentM: Area M</b>	Runoff Area=2,475 sf 100.00% Impervious Runoff Depth=3.67" Tc=5.0 min CN=98 Runoff=0.05 cfs 0.017 af
<b>SubcatchmentN: Area N</b>	Runoff Area=4,225 sf 100.00% Impervious Runoff Depth=3.67" Tc=5.0 min CN=98 Runoff=0.09 cfs 0.030 af
<b>SubcatchmentO: Area O</b>	Runoff Area=300,900 sf 100.00% Impervious Runoff Depth=3.67" Flow Length=700' Slope=0.0070 '/' Tc=34.0 min CN=98 Runoff=4.44 cfs 2.110 af
<b>SubcatchmentP: Area P</b>	Runoff Area=194,000 sf 100.00% Impervious Runoff Depth=3.67" Flow Length=700' Slope=0.0070 '/' Tc=34.0 min CN=98 Runoff=2.86 cfs 1.360 af

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Type IA 24-hr 25yr24hr Rainfall=3.90"

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<b>SubcatchmentQ: Area Q</b>	Runoff Area=5,000 sf 100.00% Impervious Runoff Depth=3.67" Tc=5.0 min CN=98 Runoff=0.11 cfs 0.035 af
<b>SubcatchmentR: Area R</b>	Runoff Area=8,500 sf 100.00% Impervious Runoff Depth=3.67" Tc=5.0 min CN=98 Runoff=0.18 cfs 0.060 af
<b>SubcatchmentS: Area S</b>	Runoff Area=6,300 sf 100.00% Impervious Runoff Depth=3.67" Tc=5.0 min CN=98 Runoff=0.13 cfs 0.044 af
<b>SubcatchmentT: Area T</b>	Runoff Area=3,000 sf 100.00% Impervious Runoff Depth=3.67" Tc=5.0 min CN=98 Runoff=0.06 cfs 0.021 af
<b>SubcatchmentU: Area U</b>	Runoff Area=6,500 sf 100.00% Impervious Runoff Depth=3.67" Tc=5.0 min CN=98 Runoff=0.14 cfs 0.046 af
<b>SubcatchmentV: Area V</b>	Runoff Area=4,900 sf 100.00% Impervious Runoff Depth=3.67" Tc=5.0 min CN=98 Runoff=0.10 cfs 0.034 af

**Total Runoff Area = 14.580 ac Runoff Volume = 4.454 af Average Runoff Depth = 3.67"**  
**0.00% Pervious = 0.000 ac 100.00% Impervious = 14.580 ac**

**2023-1-27 Pipe Sizing**

Type IA 24-hr 25yr24hr Rainfall=3.90"

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**Summary for Subcatchment A & B: Area A & B**

Runoff = 0.05 cfs @ 7.88 hrs, Volume= 0.017 af, Depth= 3.67"

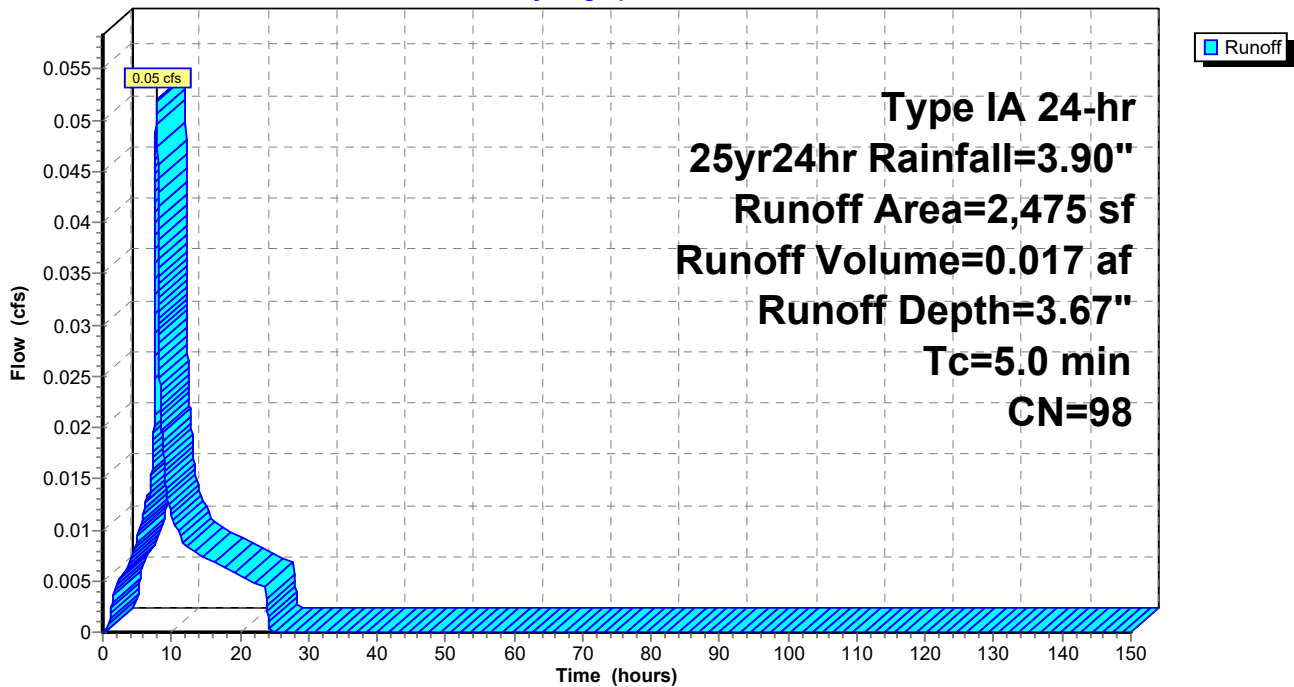
Runoff by SBUH method, Weighted-CN, Time Span= 0.00-150.00 hrs, dt= 0.01 hrs  
 Type IA 24-hr 25yr24hr Rainfall=3.90"

Area (sf)	CN	Description
2,475	98	Paved parking, HSG C
2,475		100.00% Impervious Area

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

**Subcatchment A & B: Area A & B**

Hydrograph



**2023-1-27 Pipe Sizing**

Type IA 24-hr 25yr24hr Rainfall=3.90"

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**Summary for Subcatchment A1: Area A1**

Runoff = 0.08 cfs @ 7.88 hrs, Volume= 0.028 af, Depth= 3.67"

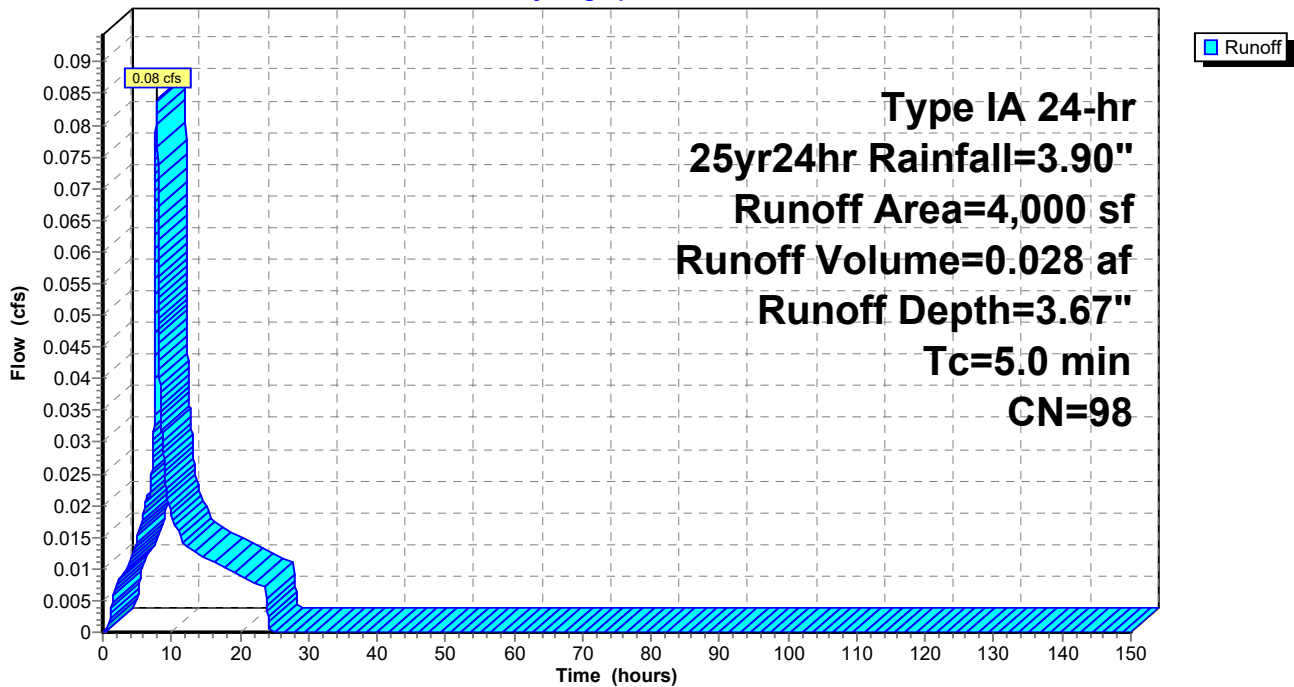
Runoff by SBUH method, Weighted-CN, Time Span= 0.00-150.00 hrs, dt= 0.01 hrs  
 Type IA 24-hr 25yr24hr Rainfall=3.90"

Area (sf)	CN	Description
4,000	98	Paved parking, HSG C
4,000		100.00% Impervious Area

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

**Subcatchment A1: Area A1**

Hydrograph



**2023-1-27 Pipe Sizing**

Type IA 24-hr 25yr24hr Rainfall=3.90"

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**Summary for Subcatchment B1: Area B1**

Runoff = 0.04 cfs @ 7.88 hrs, Volume= 0.013 af, Depth= 3.67"

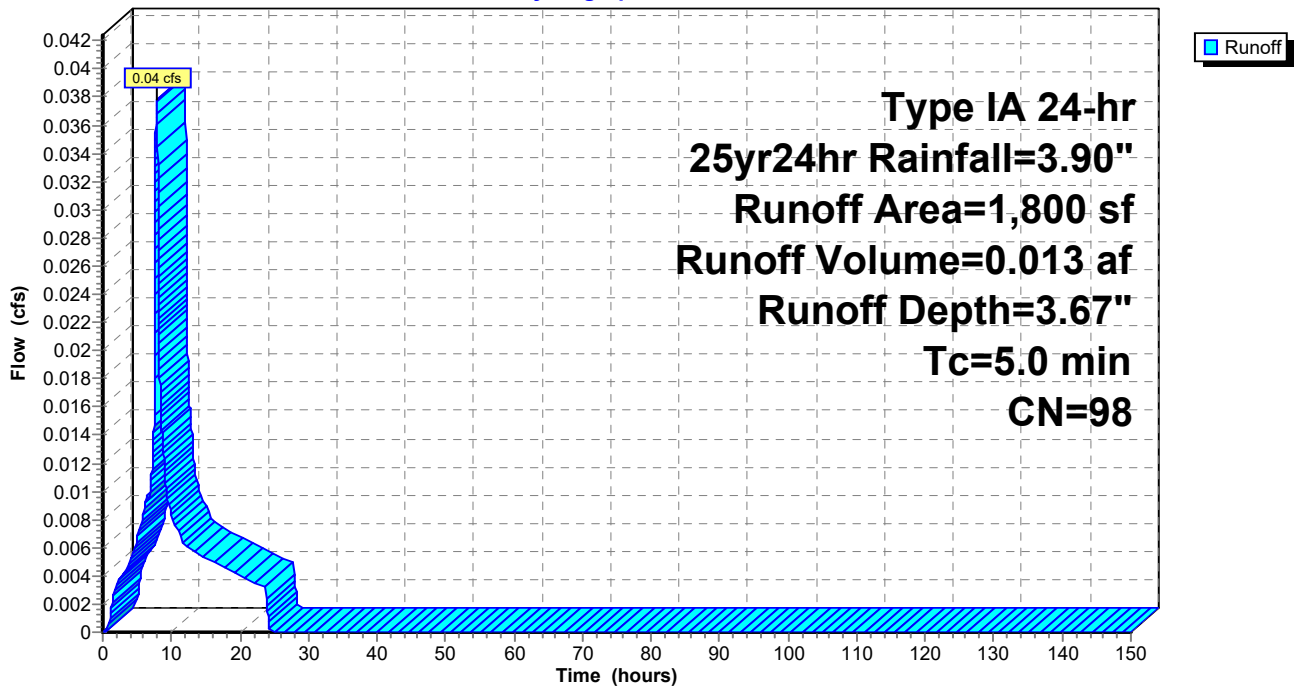
Runoff by SBUH method, Weighted-CN, Time Span= 0.00-150.00 hrs, dt= 0.01 hrs  
 Type IA 24-hr 25yr24hr Rainfall=3.90"

Area (sf)	CN	Description
1,800	98	Paved parking, HSG C
1,800		100.00% Impervious Area

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

**Subcatchment B1: Area B1**

Hydrograph



**2023-1-27 Pipe Sizing**

Type IA 24-hr 25yr24hr Rainfall=3.90"

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**Summary for Subcatchment C: Area C**

Runoff = 0.02 cfs @ 7.88 hrs, Volume= 0.008 af, Depth= 3.67"

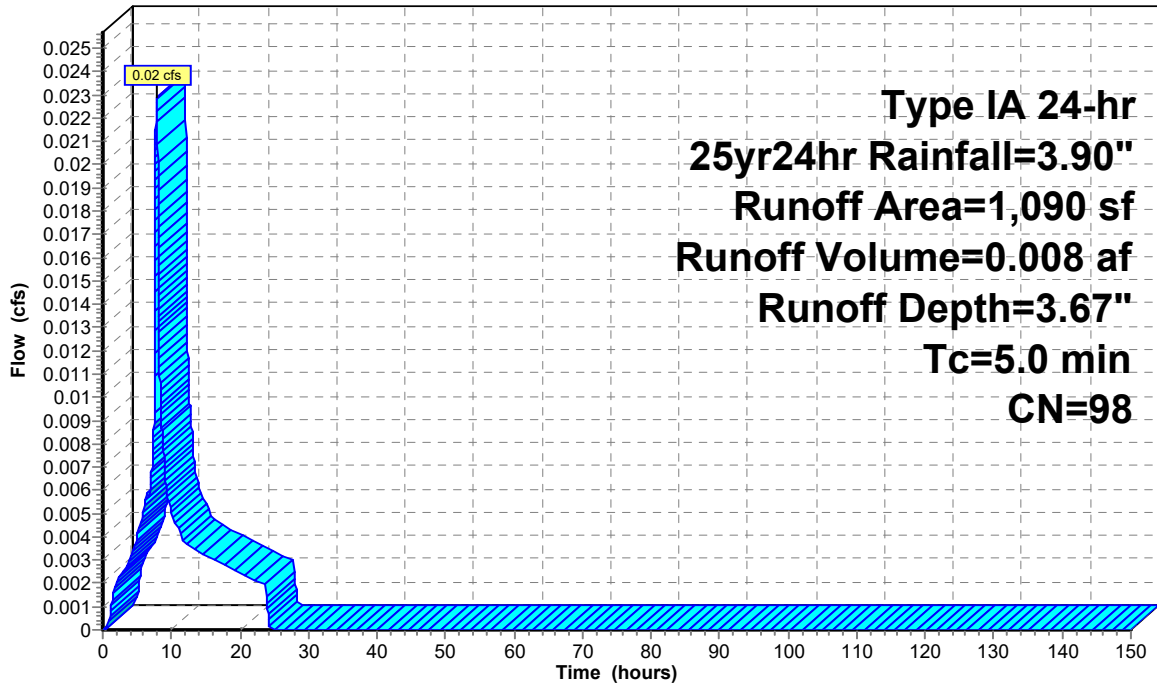
Runoff by SBUH method, Weighted-CN, Time Span= 0.00-150.00 hrs, dt= 0.01 hrs  
 Type IA 24-hr 25yr24hr Rainfall=3.90"

Area (sf)	CN	Description
1,090	98	Unconnected roofs, HSG C
1,090		100.00% Impervious Area
1,090		100.00% Unconnected

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

**Subcatchment C: Area C**

Hydrograph





### 2023-1-27 Pipe Sizing

Type IA 24-hr 25yr24hr Rainfall=3.90"

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### Summary for Subcatchment C1: Area C1

Runoff = 0.90 cfs @ 7.88 hrs, Volume= 0.299 af, Depth= 3.67"

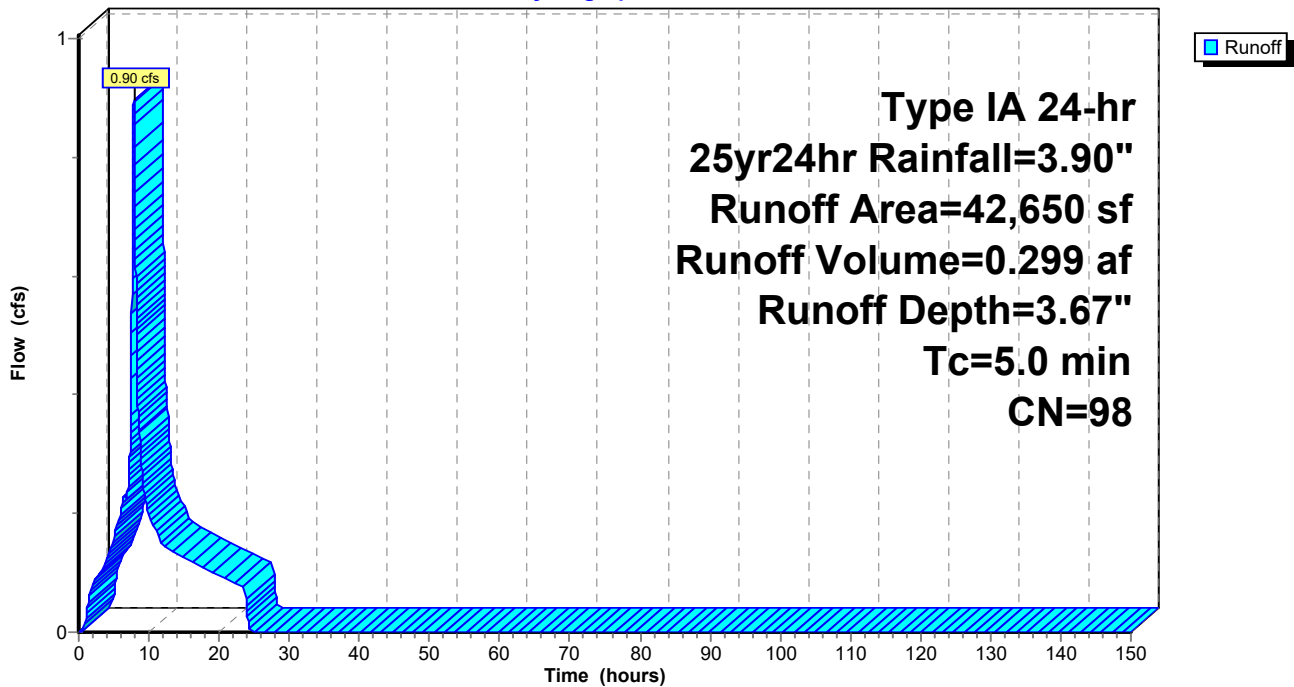
Runoff by SBUH method, Weighted-CN, Time Span= 0.00-150.00 hrs, dt= 0.01 hrs  
Type IA 24-hr 25yr24hr Rainfall=3.90"

Area (sf)	CN	Description
42,650	98	Paved parking, HSG C
42,650		100.00% Impervious Area

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

### Subcatchment C1: Area C1

Hydrograph



**2023-1-27 Pipe Sizing**

Type IA 24-hr 25yr24hr Rainfall=3.90"

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**Summary for Subcatchment D: Area D**

Runoff = 0.03 cfs @ 7.88 hrs, Volume= 0.010 af, Depth= 3.67"

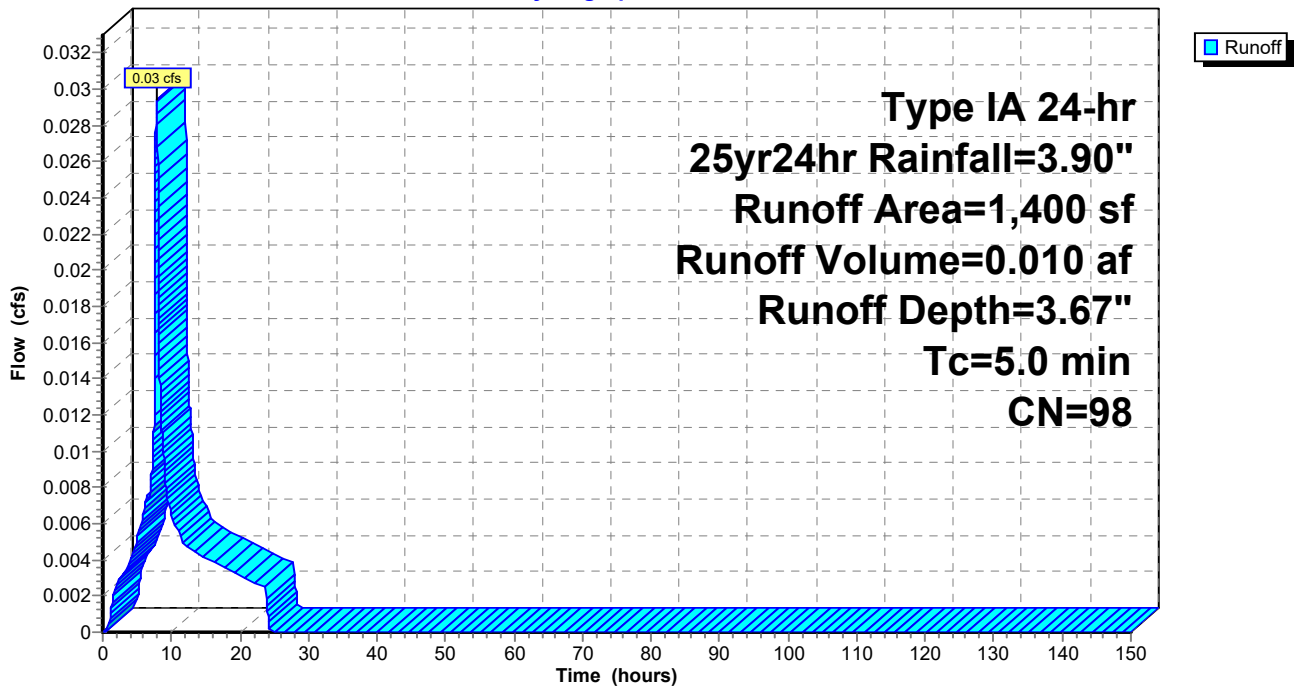
Runoff by SBUH method, Weighted-CN, Time Span= 0.00-150.00 hrs, dt= 0.01 hrs  
 Type IA 24-hr 25yr24hr Rainfall=3.90"

Area (sf)	CN	Description
1,400	98	Roofs, HSG C
1,400		100.00% Impervious Area

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

**Subcatchment D: Area D**

Hydrograph



**2023-1-27 Pipe Sizing**

Type IA 24-hr 25yr24hr Rainfall=3.90"

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**Summary for Subcatchment E & F: Area E & F**

Runoff = 0.04 cfs @ 7.88 hrs, Volume= 0.012 af, Depth= 3.67"

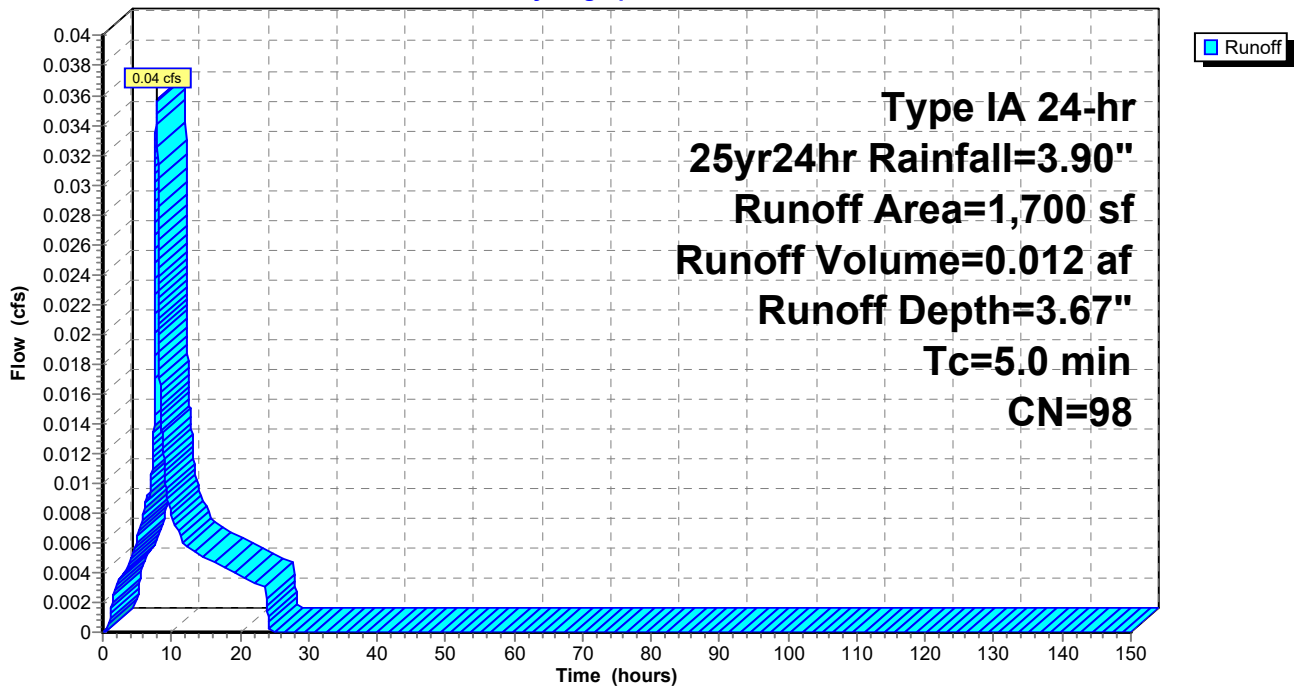
Runoff by SBUH method, Weighted-CN, Time Span= 0.00-150.00 hrs, dt= 0.01 hrs  
 Type IA 24-hr 25yr24hr Rainfall=3.90"

Area (sf)	CN	Description
1,700	98	Paved parking, HSG C
1,700		100.00% Impervious Area

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

**Subcatchment E & F: Area E & F**

Hydrograph



**2023-1-27 Pipe Sizing**

Type IA 24-hr 25yr24hr Rainfall=3.90"

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**Summary for Subcatchment H: Area H**

Runoff = 0.21 cfs @ 7.88 hrs, Volume= 0.071 af, Depth= 3.67"

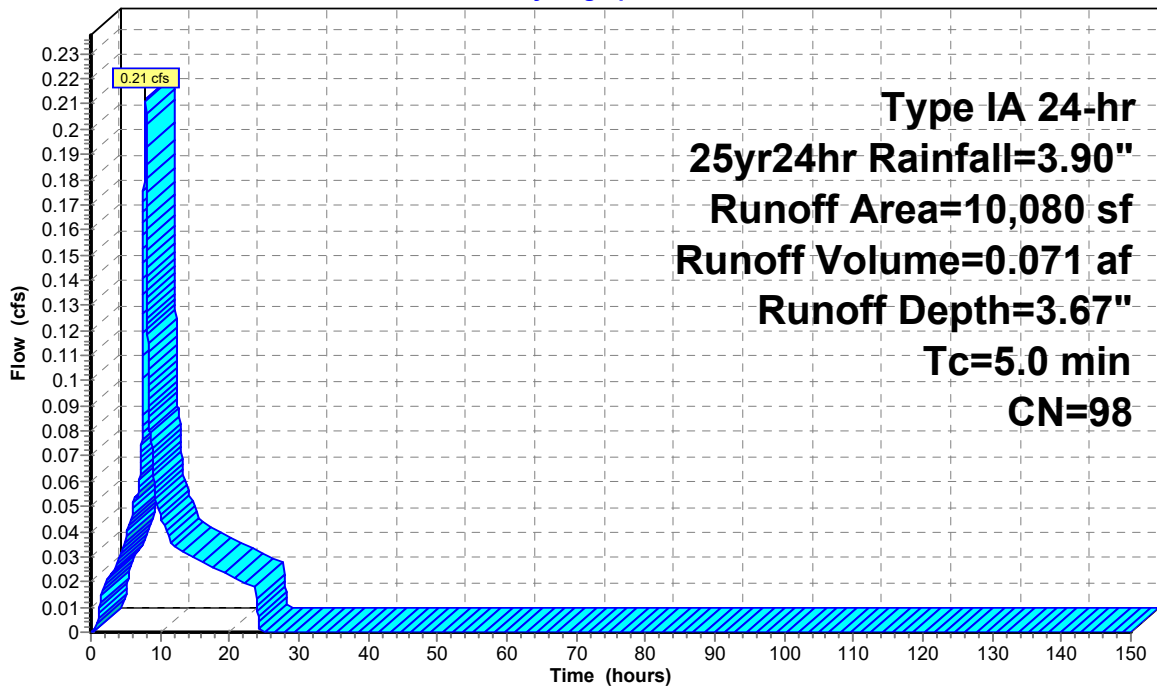
Runoff by SBUH method, Weighted-CN, Time Span= 0.00-150.00 hrs, dt= 0.01 hrs  
 Type IA 24-hr 25yr24hr Rainfall=3.90"

Area (sf)	CN	Description
10,080	98	Roofs, HSG C
10,080		100.00% Impervious Area

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

**Subcatchment H: Area H**

Hydrograph



Runoff

**2023-1-27 Pipe Sizing**

Type IA 24-hr 25yr24hr Rainfall=3.90"

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**Summary for Subcatchment I: Area I**

Runoff = 0.30 cfs @ 7.88 hrs, Volume= 0.099 af, Depth= 3.67"

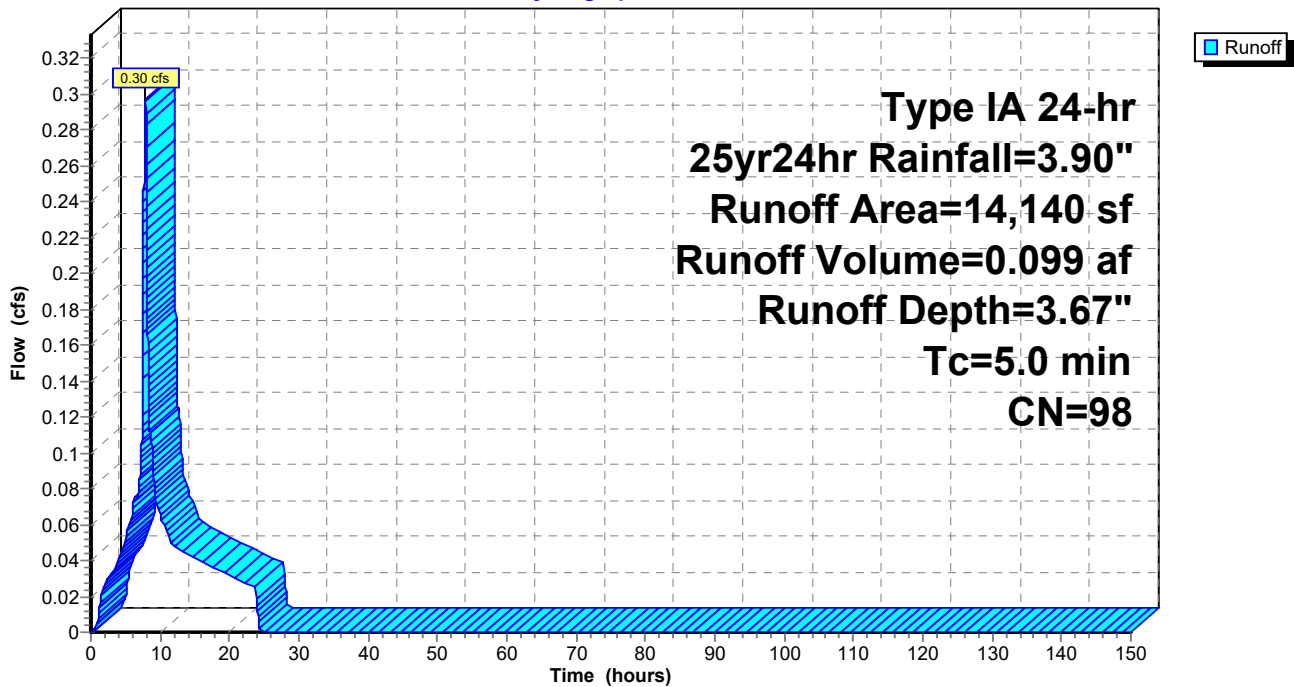
Runoff by SBUH method, Weighted-CN, Time Span= 0.00-150.00 hrs, dt= 0.01 hrs  
 Type IA 24-hr 25yr24hr Rainfall=3.90"

Area (sf)	CN	Description
14,140	98	Roofs, HSG C
14,140		100.00% Impervious Area

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

**Subcatchment I: Area I**

Hydrograph



**2023-1-27 Pipe Sizing**

Type IA 24-hr 25yr24hr Rainfall=3.90"

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**Summary for Subcatchment J: Area J**

Runoff = 0.25 cfs @ 7.88 hrs, Volume= 0.083 af, Depth= 3.67"

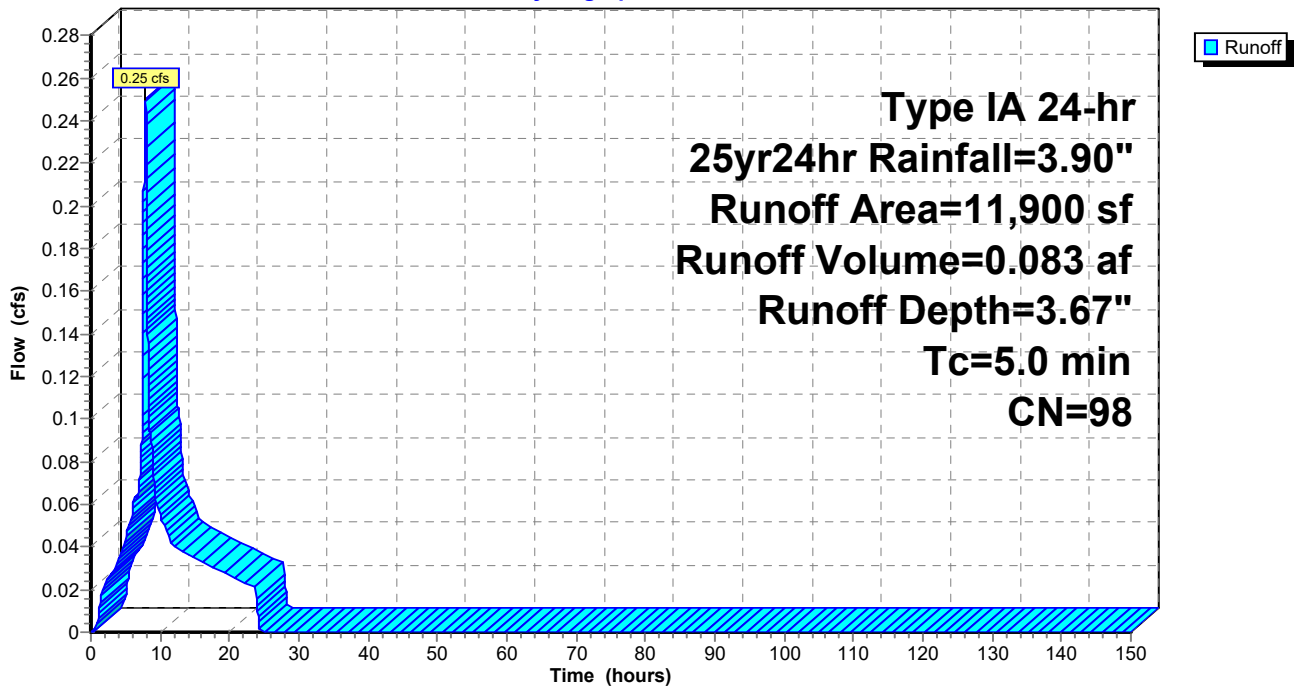
Runoff by SBUH method, Weighted-CN, Time Span= 0.00-150.00 hrs, dt= 0.01 hrs  
 Type IA 24-hr 25yr24hr Rainfall=3.90"

Area (sf)	CN	Description
11,900	98	Roofs, HSG C
11,900		100.00% Impervious Area

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

**Subcatchment J: Area J**

Hydrograph





**2023-1-27 Pipe Sizing**

Type IA 24-hr 25yr24hr Rainfall=3.90"

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**Summary for Subcatchment K & L: Area K & L**

Runoff = 0.08 cfs @ 7.88 hrs, Volume= 0.027 af, Depth= 3.67"

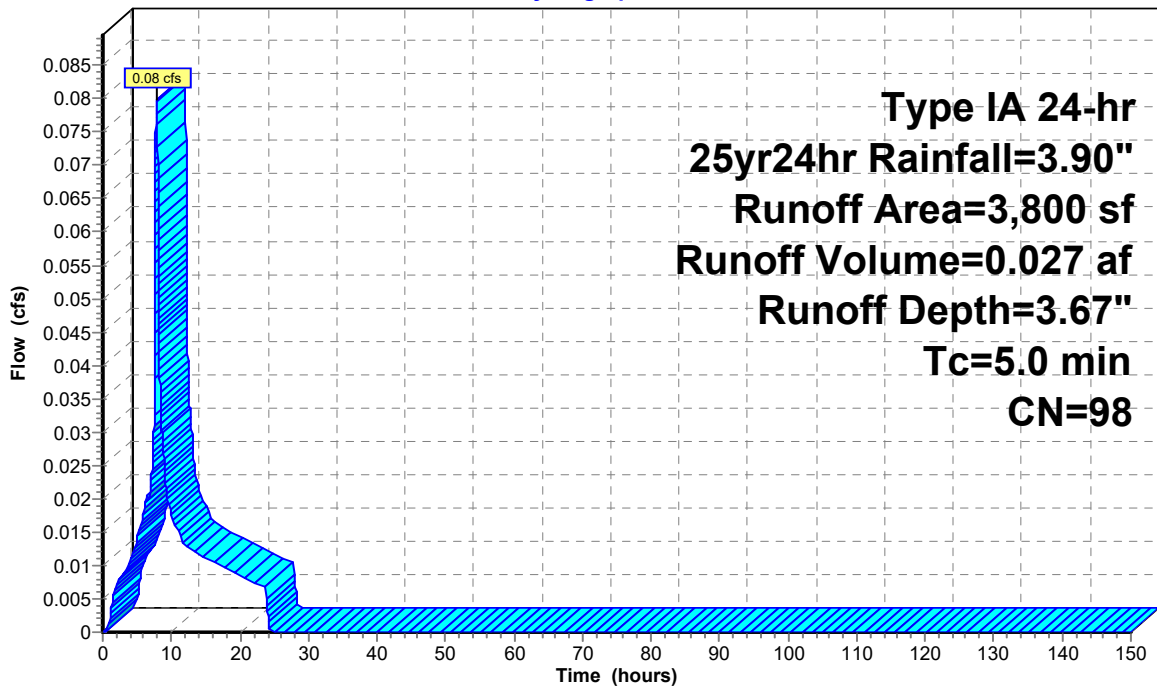
Runoff by SBUH method, Weighted-CN, Time Span= 0.00-150.00 hrs, dt= 0.01 hrs  
 Type IA 24-hr 25yr24hr Rainfall=3.90"

Area (sf)	CN	Description
3,800	98	Roofs, HSG C
3,800		100.00% Impervious Area

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

**Subcatchment K & L: Area K & L**

Hydrograph



**2023-1-27 Pipe Sizing**

Type IA 24-hr 25yr24hr Rainfall=3.90"

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Printed 1/27/2023

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**Summary for Subcatchment L: Area L**

Runoff = 0.09 cfs @ 7.88 hrs, Volume= 0.030 af, Depth= 3.67"

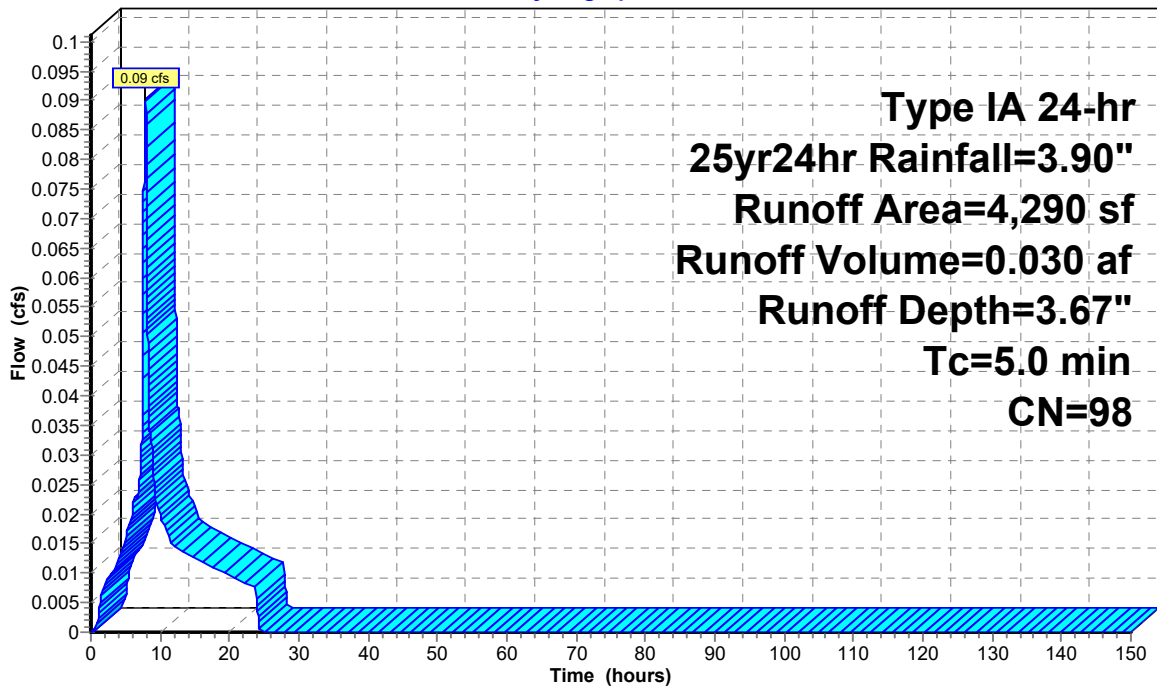
Runoff by SBUH method, Weighted-CN, Time Span= 0.00-150.00 hrs, dt= 0.01 hrs  
 Type IA 24-hr 25yr24hr Rainfall=3.90"

Area (sf)	CN	Description
4,290	98	Paved parking, HSG C
4,290		100.00% Impervious Area

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

**Subcatchment L: Area L**

Hydrograph



Runoff

**2023-1-27 Pipe Sizing**

Type IA 24-hr 25yr24hr Rainfall=3.90"

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**Summary for Subcatchment M: Area M**

Runoff = 0.05 cfs @ 7.88 hrs, Volume= 0.017 af, Depth= 3.67"

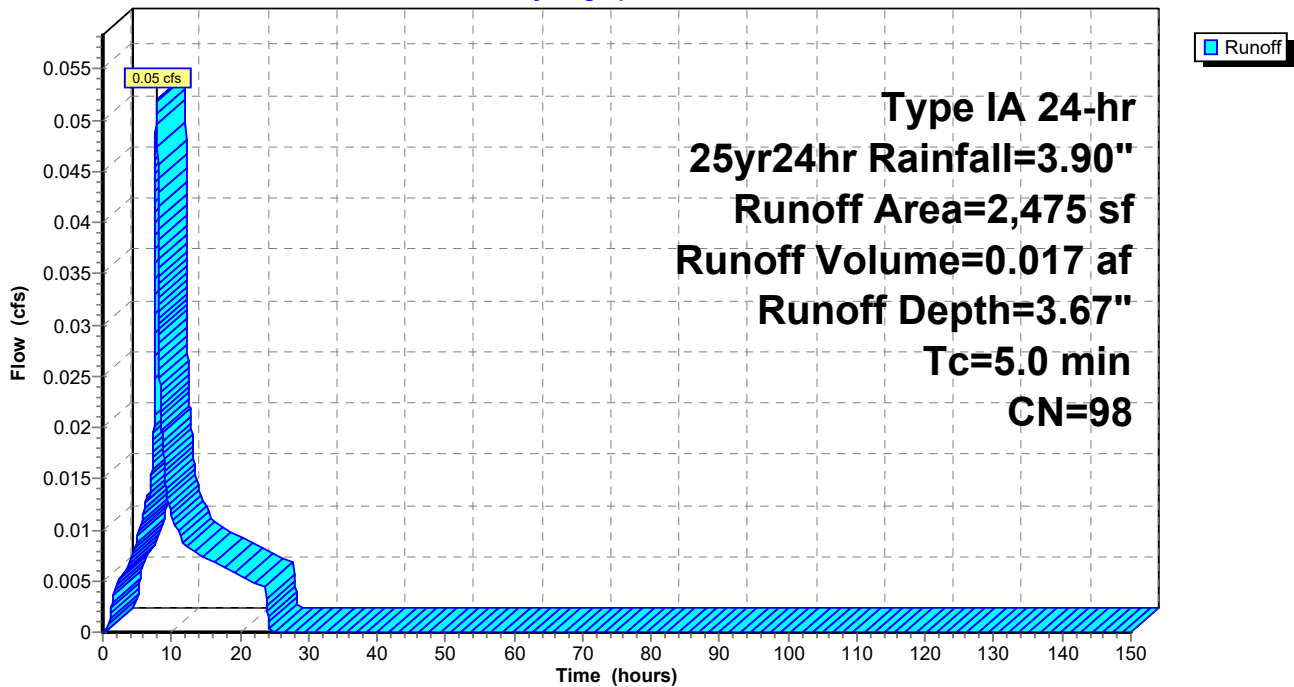
Runoff by SBUH method, Weighted-CN, Time Span= 0.00-150.00 hrs, dt= 0.01 hrs  
 Type IA 24-hr 25yr24hr Rainfall=3.90"

Area (sf)	CN	Description
2,475	98	Paved parking, HSG C
2,475		100.00% Impervious Area

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

**Subcatchment M: Area M**

Hydrograph



**2023-1-27 Pipe Sizing**

Type IA 24-hr 25yr24hr Rainfall=3.90"

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Printed 1/27/2023

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**Summary for Subcatchment N: Area N**

Runoff = 0.09 cfs @ 7.88 hrs, Volume= 0.030 af, Depth= 3.67"

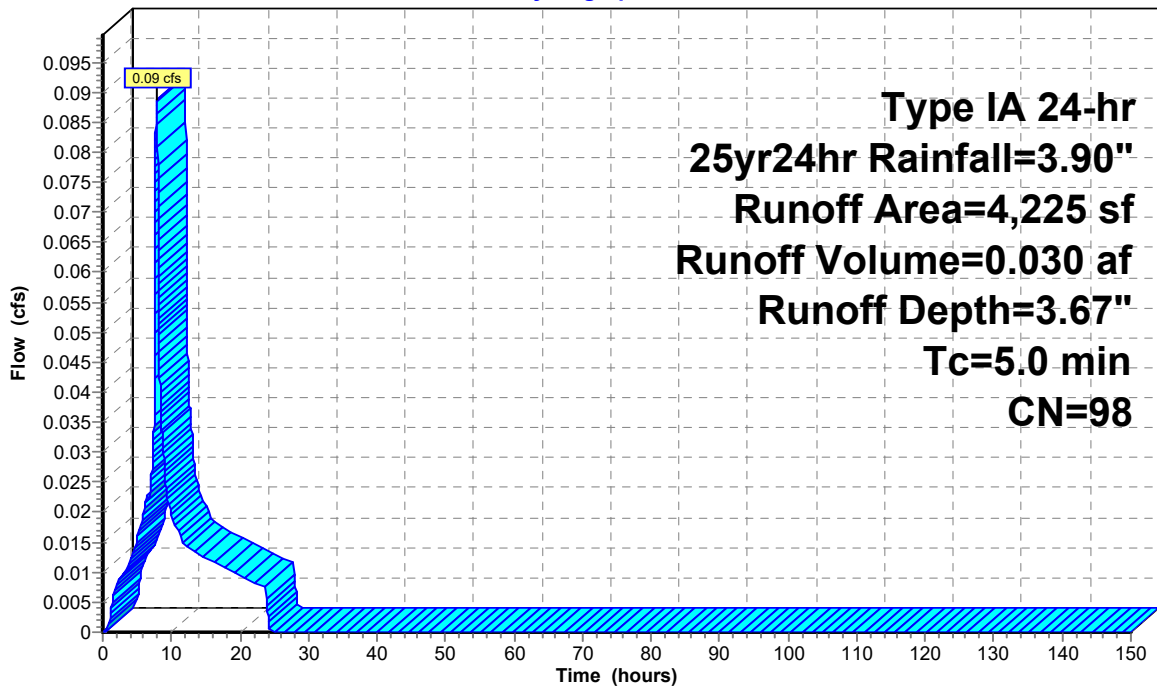
Runoff by SBUH method, Weighted-CN, Time Span= 0.00-150.00 hrs, dt= 0.01 hrs  
 Type IA 24-hr 25yr24hr Rainfall=3.90"

Area (sf)	CN	Description
4,225	98	Paved parking, HSG C
4,225		100.00% Impervious Area

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

**Subcatchment N: Area N**

Hydrograph



**2023-1-27 Pipe Sizing**

Type IA 24-hr 25yr24hr Rainfall=3.90"

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**Summary for Subcatchment O: Area O**

Runoff = 4.44 cfs @ 8.01 hrs, Volume= 2.110 af, Depth= 3.67"

Runoff by SBUH method, Weighted-CN, Time Span= 0.00-150.00 hrs, dt= 0.01 hrs  
 Type IA 24-hr 25yr24hr Rainfall=3.90"

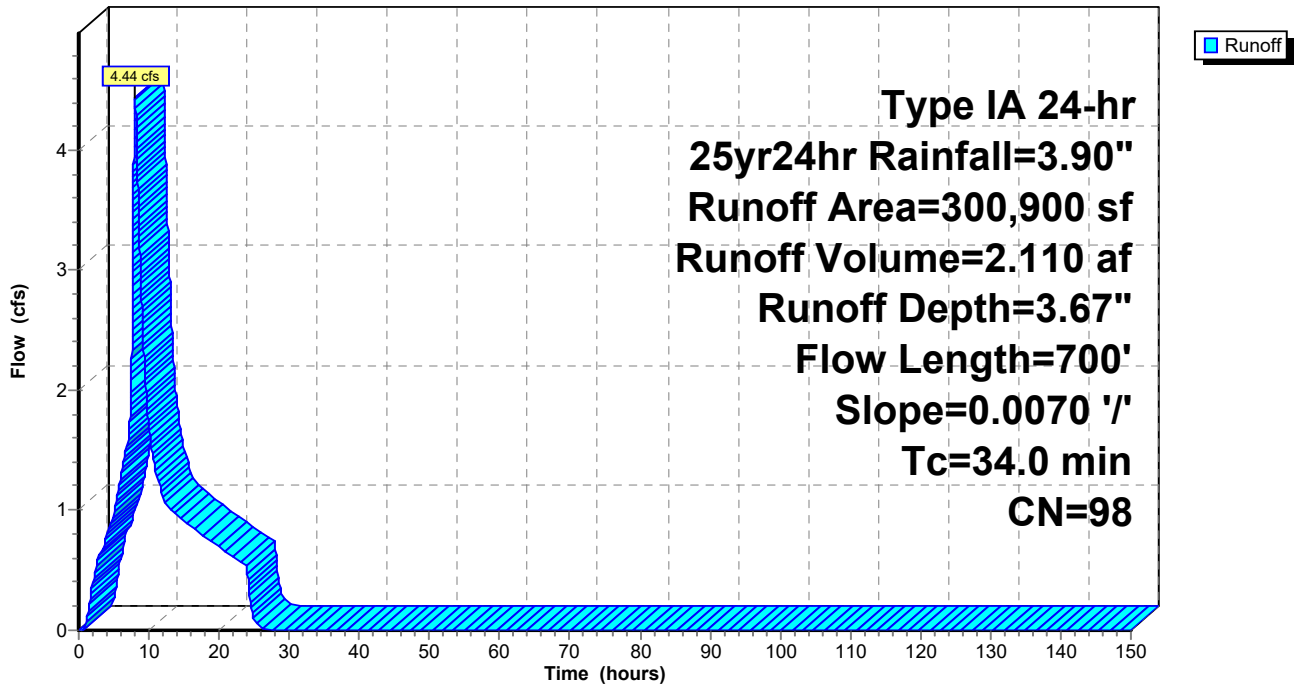
Area (sf)	CN	Description
300,900	98	Paved parking, HSG C
300,900		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.9	100	0.0070	0.10		<b>Sheet Flow,</b> Grass: Short n= 0.150 P2= 2.50"
17.1	600	0.0070	0.59		<b>Shallow Concentrated Flow,</b> Short Grass Pasture Kv= 7.0 fps
34.0	700	Total			

**Subcatchment O: Area O**

Hydrograph



**2023-1-27 Pipe Sizing**

Type IA 24-hr 25yr24hr Rainfall=3.90"

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**Summary for Subcatchment P: Area P**

Runoff = 2.86 cfs @ 8.01 hrs, Volume= 1.360 af, Depth= 3.67"

Runoff by SBUH method, Weighted-CN, Time Span= 0.00-150.00 hrs, dt= 0.01 hrs  
 Type IA 24-hr 25yr24hr Rainfall=3.90"

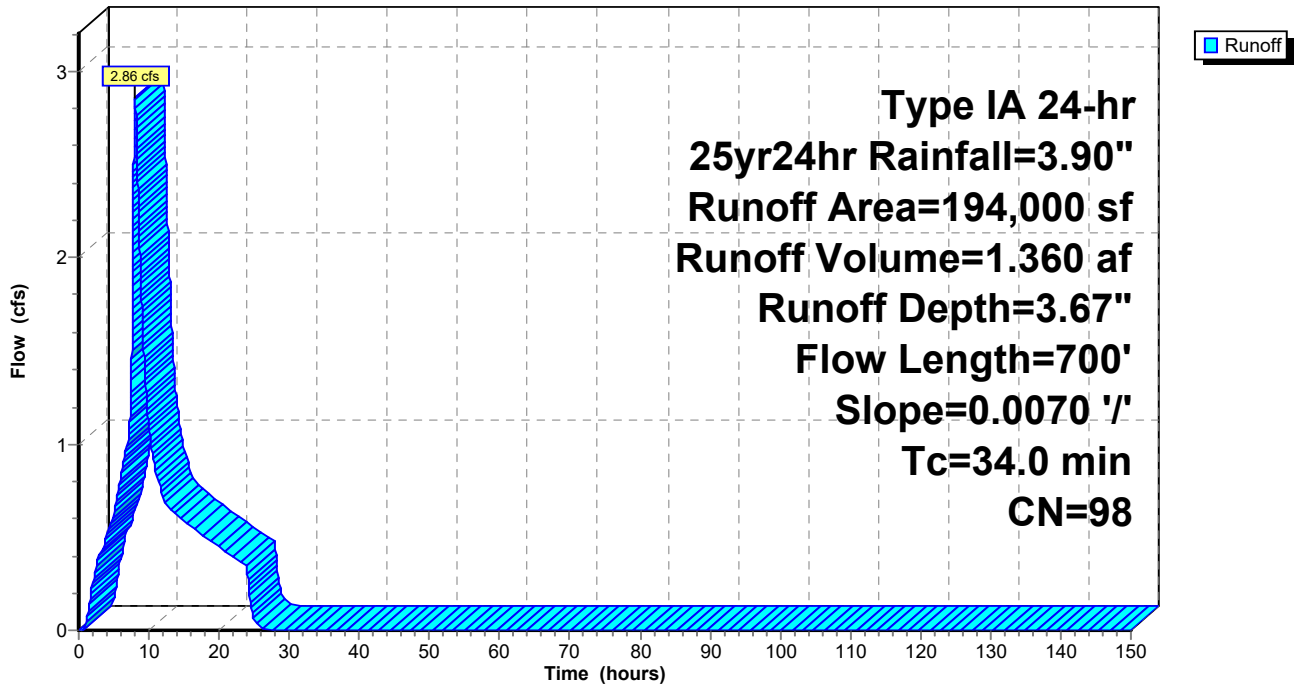
Area (sf)	CN	Description
194,000	98	Paved parking, HSG C
194,000		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.9	100	0.0070	0.10		<b>Sheet Flow,</b> Grass: Short n= 0.150 P2= 2.50"
17.1	600	0.0070	0.59		<b>Shallow Concentrated Flow,</b> Short Grass Pasture Kv= 7.0 fps
34.0	700	Total			

**Subcatchment P: Area P**

Hydrograph





**2023-1-27 Pipe Sizing**

Type IA 24-hr 25yr24hr Rainfall=3.90"

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**Summary for Subcatchment Q: Area Q**

Runoff = 0.11 cfs @ 7.88 hrs, Volume= 0.035 af, Depth= 3.67"

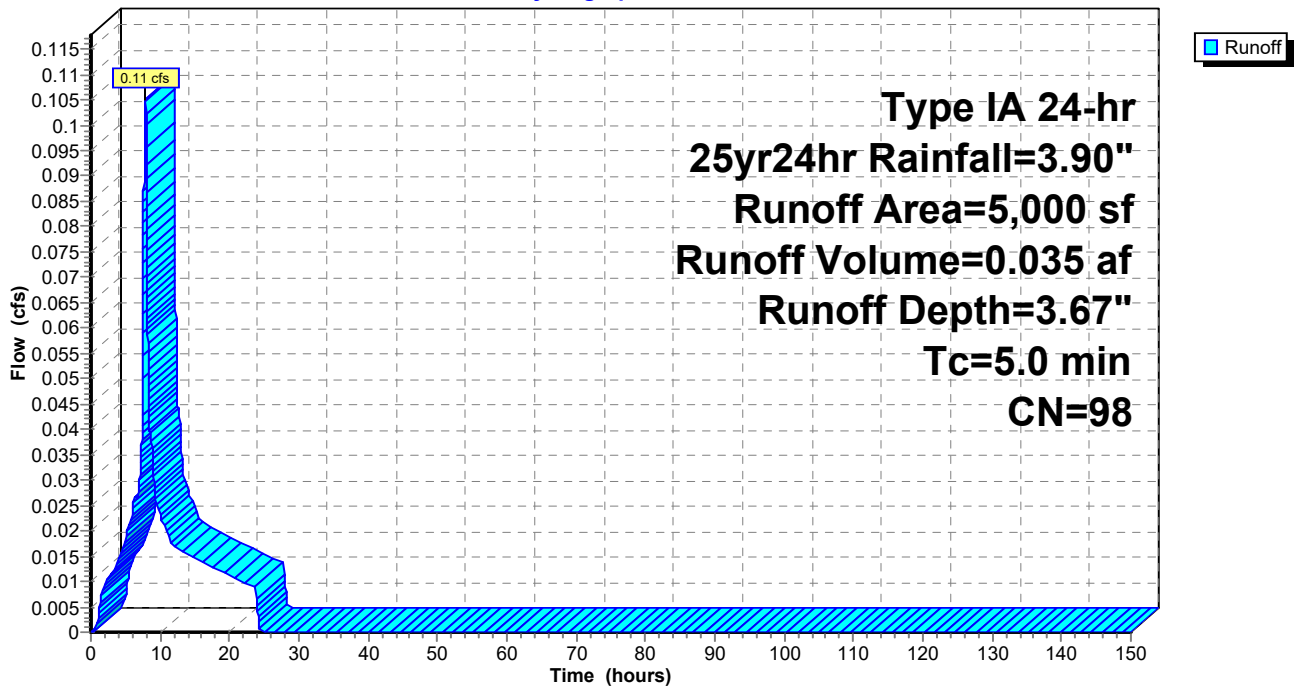
Runoff by SBUH method, Weighted-CN, Time Span= 0.00-150.00 hrs, dt= 0.01 hrs  
 Type IA 24-hr 25yr24hr Rainfall=3.90"

Area (sf)	CN	Description
5,000	98	Roofs, HSG C
5,000		100.00% Impervious Area

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

**Subcatchment Q: Area Q**

Hydrograph



**2023-1-27 Pipe Sizing**

Type IA 24-hr 25yr24hr Rainfall=3.90"

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**Summary for Subcatchment R: Area R**

Runoff = 0.18 cfs @ 7.88 hrs, Volume= 0.060 af, Depth= 3.67"

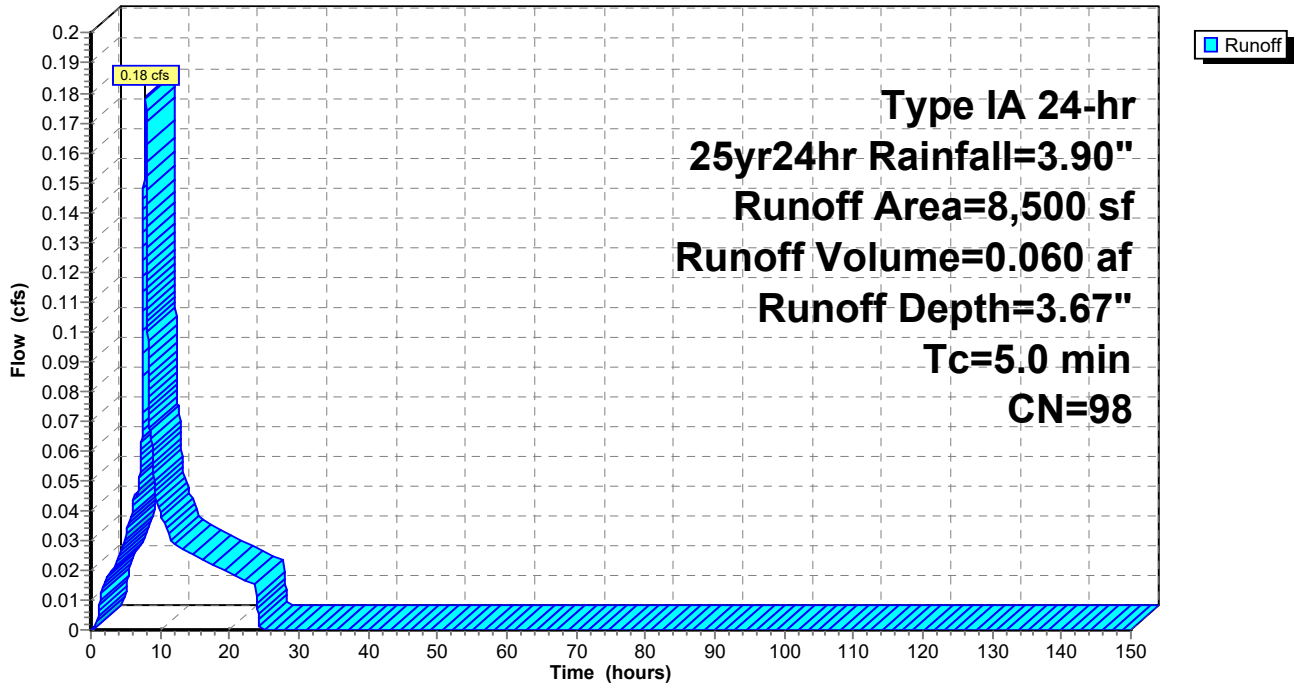
Runoff by SBUH method, Weighted-CN, Time Span= 0.00-150.00 hrs, dt= 0.01 hrs  
 Type IA 24-hr 25yr24hr Rainfall=3.90"

Area (sf)	CN	Description
8,500	98	Unconnected roofs, HSG C
8,500		100.00% Impervious Area
8,500		100.00% Unconnected

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

**Subcatchment R: Area R**

Hydrograph



**2023-1-27 Pipe Sizing**

Type IA 24-hr 25yr24hr Rainfall=3.90"

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**Summary for Subcatchment S: Area S**

Runoff = 0.13 cfs @ 7.88 hrs, Volume= 0.044 af, Depth= 3.67"

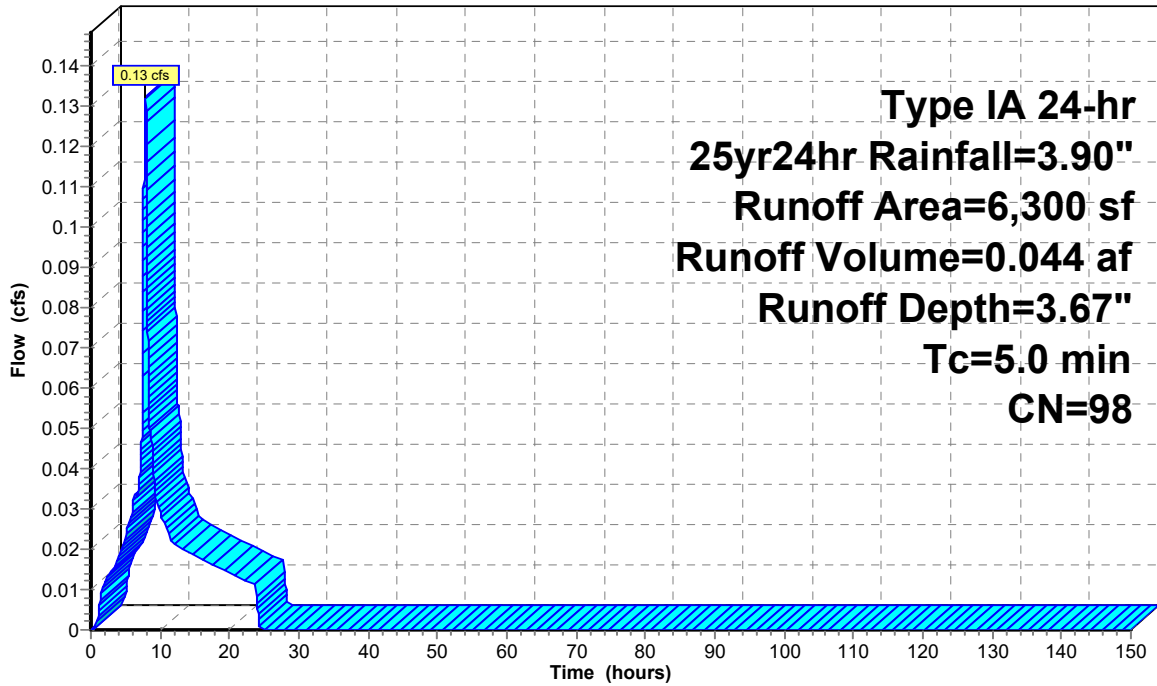
Runoff by SBUH method, Weighted-CN, Time Span= 0.00-150.00 hrs, dt= 0.01 hrs  
 Type IA 24-hr 25yr24hr Rainfall=3.90"

Area (sf)	CN	Description
6,300	98	Unconnected roofs, HSG C
6,300		100.00% Impervious Area
6,300		100.00% Unconnected

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

**Subcatchment S: Area S**

Hydrograph



**2023-1-27 Pipe Sizing**

Type IA 24-hr 25yr24hr Rainfall=3.90"

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**Summary for Subcatchment T: Area T**

Runoff = 0.06 cfs @ 7.88 hrs, Volume= 0.021 af, Depth= 3.67"

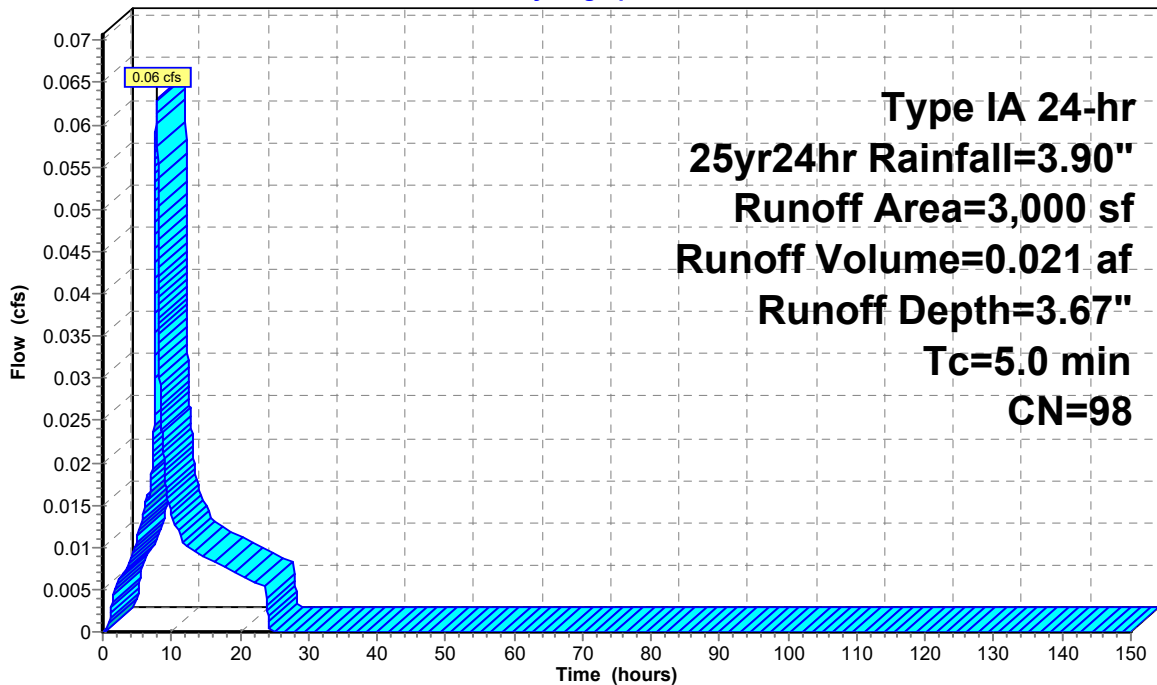
Runoff by SBUH method, Weighted-CN, Time Span= 0.00-150.00 hrs, dt= 0.01 hrs  
 Type IA 24-hr 25yr24hr Rainfall=3.90"

Area (sf)	CN	Description
3,000	98	Unconnected roofs, HSG C
3,000		100.00% Impervious Area
3,000		100.00% Unconnected

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

**Subcatchment T: Area T**

Hydrograph



Runoff

Type IA 24-hr  
 25yr24hr Rainfall=3.90"  
 Runoff Area=3,000 sf  
 Runoff Volume=0.021 af  
 Runoff Depth=3.67"  
 Tc=5.0 min  
 CN=98

### 2023-1-27 Pipe Sizing

Type IA 24-hr 25yr24hr Rainfall=3.90"

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### Summary for Subcatchment U: Area U

Runoff = 0.14 cfs @ 7.88 hrs, Volume= 0.046 af, Depth= 3.67"

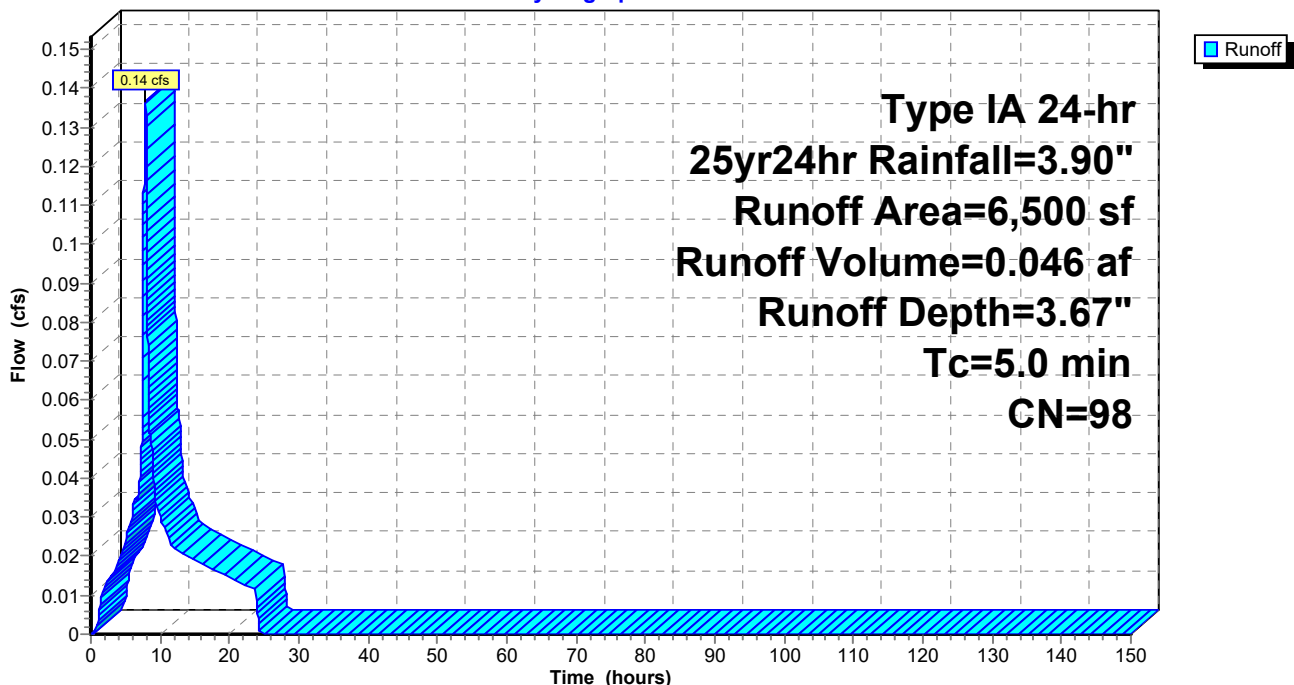
Runoff by SBUH method, Weighted-CN, Time Span= 0.00-150.00 hrs, dt= 0.01 hrs  
Type IA 24-hr 25yr24hr Rainfall=3.90"

Area (sf)	CN	Description
6,500	98	Paved parking, HSG C
6,500		100.00% Impervious Area

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

### Subcatchment U: Area U

Hydrograph



**2023-1-27 Pipe Sizing**

Type IA 24-hr 25yr24hr Rainfall=3.90"

Prepared by {enter your company name here}

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**Summary for Subcatchment V: Area V**

Runoff = 0.10 cfs @ 7.88 hrs, Volume= 0.034 af, Depth= 3.67"

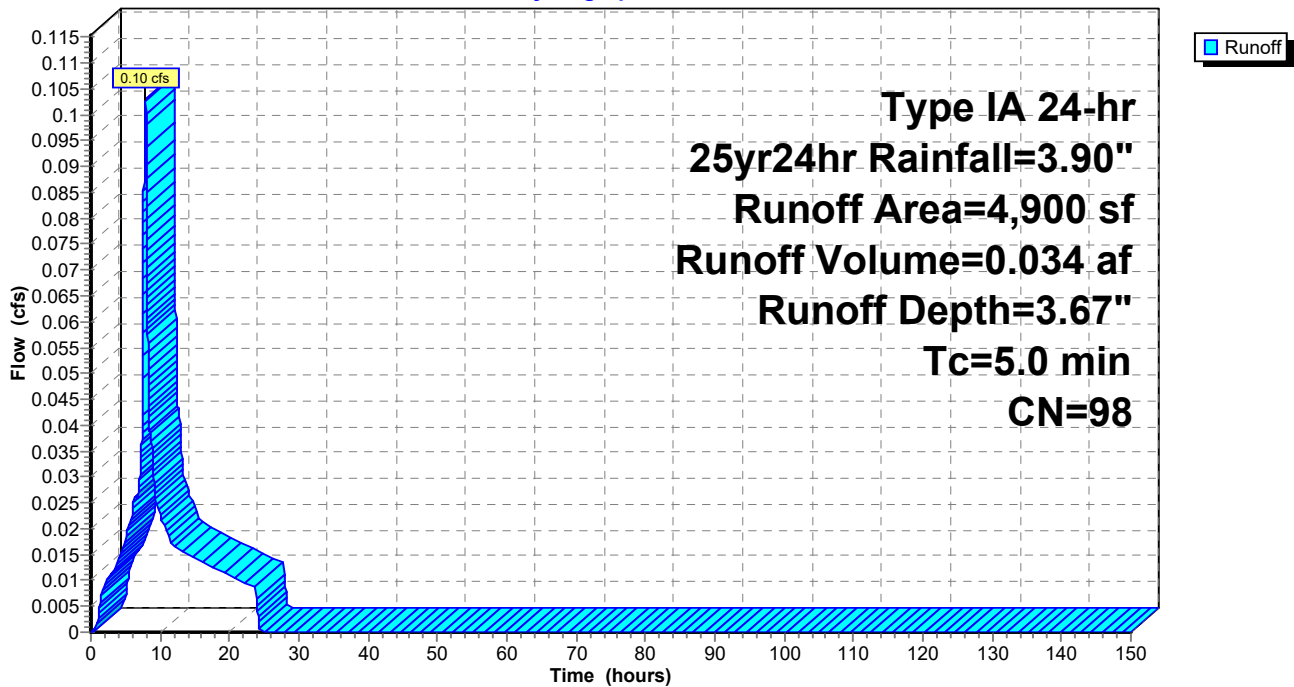
Runoff by SBUH method, Weighted-CN, Time Span= 0.00-150.00 hrs, dt= 0.01 hrs  
 Type IA 24-hr 25yr24hr Rainfall=3.90"

Area (sf)	CN	Description
4,900	98	Paved parking, HSG C
4,900		100.00% Impervious Area

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

**Subcatchment V: Area V**

Hydrograph





**2023-1-27 Pipe Sizing**

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**TM Rippey Consulting Engineers**

7650 SW Beveland St  
Suite 100  
Tigard, Oregon 97223  
Phone: 503 443 3900

**STORM SEWER DESIGN FORM**  
Project Number: 21279  
Precision Countertop Site  
January 27, 2023

Unit Conversion (acre/ft<sup>2</sup>) 2.30E-05  
Runoff Coefficient: 0.9  
Rainfall Intensity (in/hr): 3.9 (25 Year from HydroCAD)  
Manning's Coefficient (n)= 0.013

DESIGN AREA	DRAINAGE BASIN		Equiv. Area for 100% Runoff (C)/(A)	CUMULATIVE DRAINAGE AREA acres	PIPE LENGTH L	PIPE SIZE in	INVERT SLOPE ft/ft	DESIGN DISCHARGE cfs	FULL FLOW CAPACITY cfs	VELOC. @ Q/QF V	T <sub>t</sub>	COMMENTS
	PIPE #	AREA ft <sup>2</sup>										
A	1	2475	0.0568	0.0568	70	6	0.0050	0.050	0.400	8.01	9.34	Catch Basin
B	2	2475	0.0568	0.0568	5	6	0.0100	0.050	0.566	11.32	0.94	Catch Basin
	3	4950	0.1136	0.1136	20	6	0.0050	0.100	0.400	4.00	1.33	
C	4	1090	0.0250	0.0250	20	4	0.0100	0.020	0.192	9.60	3.20	Roof
	5	6040	0.1387	0.1387	135	6	0.0050	0.120	0.400	3.34	7.51	
D	6	1400	0.0321	0.0321	30	6	0.0100	0.030	0.566	18.87	9.44	Roof
	7	7440	0.1708	0.1708	25	6	0.0050	0.150	0.400	2.67	1.11	
E	8	1700	0.0390	0.0390	5	6	0.0100	0.040	0.566	14.15	1.18	Catch Basin
	9	9140	0.2098	0.2098	35	6	0.0050	0.190	0.400	2.11	1.23	
F	10	1700	0.0390	0.0390	5	6	0.0100	0.040	0.566	14.15	1.18	Catch Basin
	11	10840	0.2489	0.2489	65	6	0.0050	0.230	0.400	1.74	1.89	
H	12	10080	0.2314	0.2314	20	6	0.0100	0.210	0.566	2.70	0.90	Roof
	15	20920	0.4803	0.4803	125	8	0.0050	0.440	0.862	1.96	4.08	
I	16	14140	0.3246	0.3246	20	6	0.0100	0.300	0.566	1.89	0.63	Roof

**TM Rippey Consulting Engineers**

7650 SW Beveland St  
Suite 100  
Tigard, Oregon 97223  
Phone: 503 443 3900

**STORM SEWER DESIGN FORM**  
Project Number: 21279  
Precision Countertop Site  
January 27, 2023

Unit Conversion (acre/ft<sup>2</sup>) 2.30E-05  
Runoff Coefficient: 0.9  
Rainfall Intensity (in/hr): 3.9 (25 Year from HydroCAD)  
Manning's Coefficient (n)= 0.013

DESIGN AREA	DRAINAGE BASIN AREA		Equiv. Area for 100% Runoff (C)(A)	CUMULATIVE DRAINAGE AREA acres	PIPE LENGTH L	PIPE SIZE in	INVERT SLOPE ft/ft	DESIGN DISCHARGE cfs	FULL FLOW CAPACITY cfs	VELOC. @ Q/QF V	T <sub>t</sub>	COMMENTS
	ft <sup>2</sup>	acres										
	17	35060	0.8049	0.8049	105	8	0.0050	0.740	0.862	1.16	2.04	
J	18	11900	0.2732	0.2732	10	6	0.0100	0.250	0.566	2.26	0.38	Roof
	19	46960	1.0781	1.0781	50	10	0.0050	0.990	1.563	1.58	1.32	
K	20	3800	0.0872	0.0872	5	6	0.0100	0.080	0.566	7.08	0.59	Roof
	21	50760	1.1653	1.1653	35	10	0.0050	1.070	1.563	1.46	0.85	
L	22	3800	0.0872	0.0872	5	6	0.0100	0.080	0.566	7.08	0.59	Roof
	23	54560	1.2525	1.2525	50	10	0.0050	1.150	1.563	1.36	1.13	To Planter F
	73	60360	1.3857	1.3857	40	10	0.0050	1.270	1.563	1.23	0.82	From Planter F

**TM Rippey Consulting Engineers**

7650 SW Beveland St  
Suite 100  
Tigard, Oregon 97223  
Phone: 503 443 3900

**STORM SEWER DESIGN FORM**  
Project Number: 21279  
Precision Countertop Site  
January 27, 2023

Unit Conversion (acre/ft<sup>2</sup>) 2.30E-05  
Runoff Coefficient: 0.9  
Rainfall Intensity (in/hr): 3.9 (25 Year from HydroCAD)  
Manning's Coefficient (n)= 0.013

DESIGN AREA	PIPE #	DRAINAGE BASIN AREA		Equiv. Area for 100% Runoff (C)/(A)	CUMULATIVE DRAINAGE AREA acres	PIPE LENGTH L	PIPE SIZE in	INVERT SLOPE ft/ft	DESIGN DISCHARGE cfs	FULL FLOW CAPACITY cfs	VELOC. @ Q/Qf V	T <sub>t</sub>	COMMENTS
		ft <sup>2</sup>	acres										
M	100	2475	0.0568	0.051	0.0568	130	6	0.0100	0.050	0.566	11.32	24.53	From Planter C
N	101	4225	0.0970	0.087	0.0970	10	6	0.0100	0.090	0.566	6.29	1.05	From Planter D
O	103	300900	6.9077	6.217	6.9077	35	10	0.0800	4.440	6.252	1.41	0.82	North Parcel
	102	305125	7.0047	6.304	7.0047	15	15	0.0050	4.530	4.608	1.02	0.25	
	104	307600	7.0615	6.355	7.0615	265	15	0.0050	4.580	4.608	1.01	4.44	
P	105	194000	4.4536	4.008	4.4536	15	15	0.0050	2.860	4.608	1.61	0.40	Future East Development
C1	106	42650	0.9791	0.881	0.9791	80	6	0.0300	0.900	0.981	1.09	1.45	From Planter E
	107	236650	5.4327	4.889	5.4327	10	15	0.0050	3.760	4.608	1.23	0.20	
	108	544250	12.4943	11.245	12.4943	490	18	0.0065	8.340	8.544	1.02	8.37	
	109	578450	13.2794	11.951	13.2794	60	18	0.0110	9.060	11.115	1.23	1.23	
	110	638810	14.6651	13.199	14.6651	30	18	0.0830	10.330	30.532	2.96	1.48	To Existing Public Lateral

**TM Rippey Consulting Engineers**

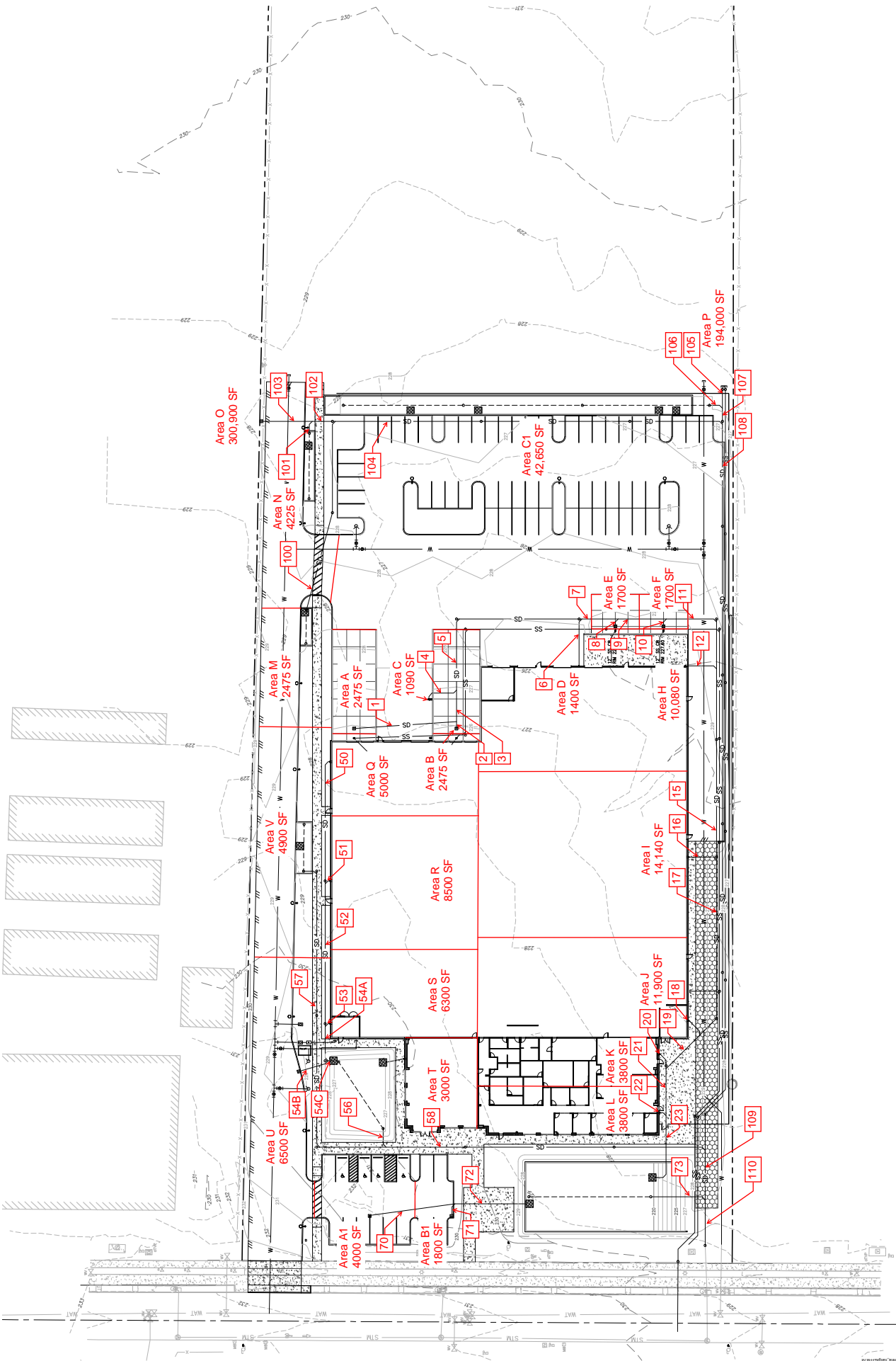
7650 SW Beveland St  
Suite 100  
Tigard, Oregon 97223  
Phone: 503 443 3900

**STORM SEWER DESIGN FORM**  
Project Number: 21279  
Precision Countertop Site  
January 27, 2023

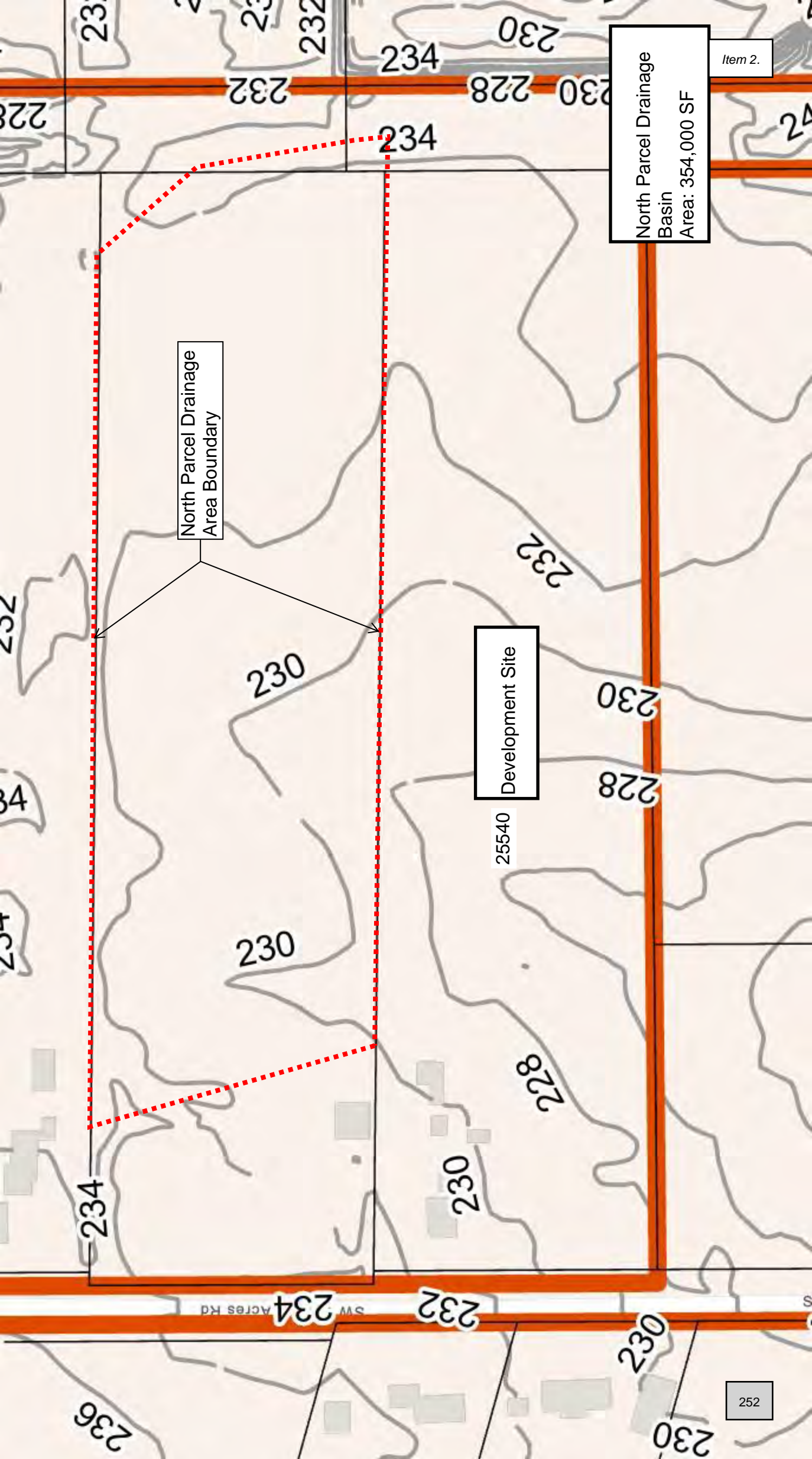
Unit Conversion (acre/ft<sup>2</sup>) 2.30E-05  
Runoff Coefficient: 0.9  
Rainfall Intensity (in/hr): 3.9 (25 Year from HydroCAD)  
Manning's Coefficient (n)= 0.013

DESIGN AREA	DRAINAGE BASIN AREA		Equiv. Area for 100% Runoff (C)/(A)	CUMULATIVE DRAINAGE AREA acres	PIPE LENGTH L	PIPE SIZE in	INVERT SLOPE ft/ft	DESIGN DISCHARGE cfs	FULL FLOW CAPACITY cfs	VELOC. @ Q/Qf V	COMMENTS	
	PIPE #	ft <sup>2</sup>										acres
Q	50	5000	0.1148	0.1148	85	6	0.0050	0.110	0.400	3.64	5.16	Roof
R	51	8500	0.176	0.1951	5	6	0.0100	0.180	0.566	3.15	0.26	Roof
	52	13500	0.279	0.3099	100	6	0.0050	0.290	0.400	1.38	2.30	
S	53	6300	0.130	0.1446	5	6	0.0100	0.130	0.566	4.35	0.36	Roof
	54A	19800	0.409	0.4545	30	6	0.0050	0.420	0.400	0.95	0.48	
T	55	3000	0.062	0.0689	15	6	0.0330	0.060	1.028	17.14	4.28	Roof
	54B	6500	0.134	0.1492	20	6	0.0100	0.140	0.566	4.04	1.35	Catch Basin
	54C	26300	0.543	0.6038	30	6	0.0050	0.560	0.400	0.71	0.36	To Rain Garden A
	56	29300	0.605	0.6726	20	6	0.0280	0.620	0.947	1.53	0.51	From Rain Garden A
V	57	4900	0.101	0.1125	175	6	0.0050	0.100	0.400	4.00	11.68	Paving to Planter B
	58	34200	0.707	0.7851	225	8	0.0050	0.720	0.862	1.20	4.49	
A1	70	4000	0.083	0.0918	60	6	0.0050	0.080	0.400	5.00	5.00	Catch Basin
B1	71	1800	0.037	0.0413	10	6	0.0100	0.040	0.566	14.15	2.36	Catch Basin
	72	5800	0.120	0.1331	50	6	0.0680	0.120	1.476	12.30	10.25	To Planter F

⊕ NOT TO SCALE







North Parcel Drainage  
Area Boundary

Development Site

North Parcel Drainage  
Basin  
Area: 354,000 SF

Item 2.

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## **REPORT OF GEOTECHNICAL ENGINEERING SERVICES**

**Precision Facility, 25540 SW Garden Acres Road  
Wilsonville, Oregon**

**Geotech  
Solutions Inc.**

August 22, 2021

GSI Project: precision-21-1-gi

August 22, 2021

precision-21-1-gi

PHI Construction  
[kelly@phiconst.com](mailto:kelly@phiconst.com)

## **REPORT OF GEOTECHNICAL ENGINEERING SERVICES Precision Facility, 25540 SW Garden Acres Road Wilsonville, Oregon**

As authorized, herein we present our report of geotechnical engineering services for the proposed project. Based on information you provided we understand that the roughly 10-acre site is to be developed with one roughly 88,000 square foot manufacturing facility with associated truck docks, pavements, and utilities, with future expansion to the east. Building loads are expected to be up to 200 kips for columns, 6 kips per foot for walls, and 500 psf for floors. The purpose of our work was to investigate the soil conditions and provide geotechnical engineering for project design. For site investigation we used previous recent extensive explorations on this site and a new site reconnaissance. Our specific scope of work included the following:

- Provide principal-level geotechnical project management including client communications, management of field and subcontracted services, report writing, analyses, and invoicing.
- Review geologic maps and vicinity geotechnical information as indicators of subsurface conditions.
- Complete a site reconnaissance to observe surface features relevant to geotechnical issues, such as topography, vegetation, presence and condition of springs, exposed soils and rock, and evidence of previous grading.
- Review explored subsurface conditions of 12 test pits to depths of up to 15 feet or refusal, and two borings to depths of up to 36.5 feet or refusal.
- Review classifications and sampling of materials encountered and a detailed log of the explorations.
- From same day falling head infiltration testing in two of the test pits, provide an infiltration rate and corresponding strata.
- Provide moisture content of selected samples obtained from the explorations.
- Provide recommendations for earthwork including site preparation, reuse of existing fill in place or stabilized or reinstalled, seasonal material usage, compaction criteria, utility trench backfill, and the need for subsurface drainage.
- Evaluate site liquefaction potential and estimate site deformations and provide qualitative means to address unsuitable deformations if needed.
- Provide recommendations for shallow foundations including suitable soils, stabilization, bearing pressures, sliding coefficient, and a seismic site class.
- Provide recommendations for truck dock retaining walls, including lateral earth pressures, backfill, and drainage.
- Provide recommendations for slab support, including a subgrade modulus if needed, underslab rock thickness and materials, and the need for stabilization.
- Provide recommendations for pavements including subgrade preparation and stabilization, and base rock and asphalt concrete and portland cement concrete thicknesses.
- Provide a written report summarizing the results of our geotechnical evaluation.

## SITE CONDITIONS

### Surface Conditions

The site vicinity is primarily in residential and light farm and grazing use, with industrial uses to the west, and commercial buildings to the south. Basalt rock quarries are present within 3/4 mile to the northwest. The parcel is relatively flat and includes residential and farm outbuildings in the west and trees and brush to the northwest and southern boundary. Much of the land is in grass and grazed by cattle. The site use and features have not changed appreciably since 2019.

### Subsurface Conditions

We explored subsurface conditions at the site by completing eleven test pits (TP-1 through TP-12, TP-11 was inaccessible) to depths of up to 12 feet or refusal on August 12, 2019, and two borings with a truck mounted CME 75 drill rig to depths of 36.5 feet on August 9, 2019. The locations of our explorations are shown in the attached **Site Plan**, and detailed logs and moisture contents are attached.

In general, we encountered silt underlain by silt with gravel, clay, and sand as residual soils from severely weathered basalt, underlain at depth by weathered basalt. Refusal with the rubber-tired backhoe was met at depths of 6 to 8 feet in the central portion of the property in test pits TP-6, TP-8, and TP-9.

Rooty topsoil was generally 5 to 8 inches thick. The silt was generally stiff with blow counts ( $N_{85}$ ) of 9 to 16 and extended to depths of generally 3 to 7 feet, deeper in TP-7. Under the upper silt we encountered residual soils of severely weathered basalt that was primarily silt with variable clay, sand, and gravel content. Blow counts in the borings ranged from 10 to 14 in this unit. The basalt generally became moderately weathered with blow counts of 24 to 63 below depths of 18 feet in the borings, and at depths of 6 to 8 feet in the central test pits. In B-2 we encountered a soil layer within the basalt from 24-28 feet that had a blow count of 6. This may represent an older weathered flow top. The rock is generally fractured with filled weathered joints in the explored depths.

No seepage was observed in the test pits. Wet soils were noted in the B-2 soil layer at 24 feet. High seasonal perched ground water is expected within a few feet of the ground surface.

### Infiltration testing

Double ring configuration falling head infiltration testing was completed in test pits TP-2 feet and TP-10 at 2 feet. After initial saturation the system was filled more, and water level readings were taken. Infiltration rates were very low at less than 0.1 in<sup>3</sup>/hr/in<sup>2</sup>. This is typical in these fine-grained soils. Deeper tests were not done as rates are expected to be even lower in the severely weathered basalt with clay content.

## CONCLUSIONS AND RECOMMENDATIONS

### General

This site is near original grades except for thin fills of organics near the barns, gravel fill at drives, and landscape fills near the residences. Site soils include topsoil in vegetated areas with a 5-8 inch root zone away from trees and brush. Near surface soils will require moisture conditioning and stabilization in wet conditions and contain appreciable clay in severely weathered basalt at depth. Boulders and shallow refusal on hard basalt is possible in deeper excavations and utilities, with refusal met at depths of 6 to 8 feet with a rubber-tired backhoe in several test pits.

## Site Preparation

**General** - Prior to earthwork construction, the site must be prepared by removing any existing structures, utilities, and any organic fill, mulch, and topsoil. Exposed boulders should also be removed. Any excavation resulting from the aforementioned preparation must be brought back to grade with structural fill. Site preparation for earthwork will also require the removal of the root zone and topsoil/till zone soils and organic fills from all pavement, building, and fill areas. The root zone thickness observed in our explorations was 5 to 8 inches away from trees and brush.

Root balls from trees and shrubs may extend several feet and grubbing operations can cause considerable subgrade disturbance. All disturbed material must be removed to undisturbed subgrade and backfilled with structural fill. In general, roots greater than one-inch in diameter must be removed as well as areas of concentrated smaller roots.

The test pit excavations were backfilled using relatively minimal compactive effort. Therefore, soft spots can be expected at these locations. We recommend that these relatively uncompacted soils be completely removed from the test pits located within the proposed building(s), and in paved areas to a depth of 3 feet below finished subgrade. The resulting excavations must be brought back to grade with structural fill.

## Earthwork

**Working Blankets and Haul Roads** - Construction equipment must not operate directly on the subgrade, as it is susceptible to disturbance and softening in all but the driest of late summer conditions. Rock working blankets and haul roads placed over a geosynthetic in a thickened advancing pad can be used to protect subgrades. We recommend that sound, angular, pit run or crushed basalt with no more than 6 percent passing a #200 sieve be used to construct haul roads and working blankets, overlying the preceding separation geosynthetics and stabilizations for building pads. Haul roads should be at least 18 inches thick overlying the geogrid with separation fabric at the bottom. Alternatively, the soils could be amended to a minimum depth of 12 inches and covered with a minimum of 4 inches of crushed rock. Some repair of working blankets and haul roads should be expected.

The preceding rock and amendment thicknesses are the minimum recommended. Subgrade protection is the responsibility of the contractor and thicker sections may be required based on subgrade conditions and type and frequency of construction equipment.

**Fill** – In dry summer conditions re-use of site soils as fill is possible with moisture conditioning. Boulders must not be included in fills. Soils must be moisture conditioned to within 3% of optimum and compacted to 92% of ASTM D-1557 or until deemed suitably stiff or dense by the geotechnical engineer and passing a proof roll with a loaded dump truck. Some of the residual soils where more clay is present have high moisture contents and would likely require discing. Soils observed have a moderate plasticity, but zones of high plasticity can occur in the residual soils which may require additional discing and drying time. Lifts should be no more than 10 inches in loose thickness.

As an alternative to the methods described above, stabilization may be possible by soil amendment using portland cement. This will first require removal of any boulders from the depth to be mixed, which can be observed by pre-ripping where needed. Amendment requires an experienced contractor using specialty spreading and mixing equipment. Typically, 5 to 6 percent cement is used for an amendment (i.e., mix) depth of 12 inches. However, the materials used and quantities can vary based on moisture

and organic contents, plasticity, and required amendment depth. Compaction and grading of amended soils must be completed within 4 hours of mixing, and the amended soil must be allowed to cure for 4 days prior to trafficking. Generally, in fine grained soils 50 percent of mixed particles should pass a No. 4 sieve.

The permeability of amended soil is very low. The surface of amended soils in building and pavement areas should therefore be sloped at a minimum of 0.3 percent in wet season construction to reduce collection of surface water. Amended soils must be removed from all landscape areas prior to planting. A second treatment phase is often needed in a small percentage of the area to stiffen soils not sufficiently cured during the first phase.

**Trenches** – Our explorations encountered refusal on boulders and basalt at the depths noted on the attached explorations. Difficult excavations and/or special excavation techniques will be required if such conditions are present at design inverts or grades. Project budgets and schedules must include a contingency for rock/boulder/rubble excavation.

Ground water seepage is expected, even in the dry season after rainfall events, and is expected to be near the ground surface in the wet season. Seepage was not observed in our test pits done during a long dry period. Seepage rates are expected to be slow but could be faster in fractured basalt gravels and cobbles with less silt and clay. Shoring of utility trenches will be required for depths greater than 4 feet and where groundwater seepage is present. We recommend that the type and design of the shoring system be the responsibility of the contractor, who is in the best position to choose a system that fits the overall plan of operation.

Depending on the excavation depth and amount of groundwater seepage, dewatering may be necessary for construction of underground utilities. Flow rates for dewatering are likely to vary depending on location, soil type, and the season during which the excavation occurs. The dewatering systems, if necessary, must be capable of adapting to variable flows.

Pipe bedding must be installed in accordance with the pipe manufacturers' recommendations. If groundwater is present in the base of utility trench excavations and softens conditions, over-excavating the trench and placing trench stabilization material may be needed. Trench stabilization material must consist of well-graded, crushed rock or crushed gravel with a maximum particle size of 4 inches and be free of deleterious materials. The percent passing the U.S. Standard No. 200 Sieve must be less than 5 percent by weight when tested in accordance with ASTM C 117. A minimum of one foot of stabilization rock is recommended if soft conditions are encountered.

Trench backfill above the pipe zone must consist of well graded, angular crushed rock or sand fill with no more than 7 percent passing a #200 sieve. Trench backfill must be compacted to 92 percent relative to ASTM D-1557, and construction of hard surfaces, such as sidewalks or pavement, must not occur within one week of backfilling.

### **Infiltration**

We recommend against infiltration of storm water due to the very low infiltration rates and the presence of high seasonal perched ground water in this area.

## Foundations

Buildings with loads less than 500 psf for floors, 200 kips for columns, and 6 kips per foot for walls, can be supported on shallow spread and continuous footings bearing on medium stiff or better native soils and structural fills, which we will need to observe. These footings can be designed for a bearing pressure of 3,000 psf. Resistance to lateral loads can be obtained by a footing base friction factor of 0.38, and passive soil resistance of 400 pcf below the top one foot (the top foot can be used if it is directly abutting permanent hardscaping such as pavement or sidewalks) which includes a factor of safety of 1.5.

## Slabs

Floor slab loads up to 500 psf are expected to induce less than one inch of settlement, and 120 pci can be used as a subgrade modulus. Working blankets are required for slabs in all but the driest late summer conditions. In dry late summer conditions, with no expected truck traffic on the pads, a minimum of six inches of clean, angular crushed rock with no more than 5 % passing a #200 sieve is recommended for underslab rock. Again, this will need to be thickened as a working blanket if trafficked and in all but dry late summer conditions. Prior to slab rock placement the subgrade will need to be evaluated by us by probing or observing a wheel roll using a fully loaded truck. Underslab rock must be compacted to 92 % compaction relative to ASTM D1557 and must be proof rolled as well. In addition, any areas contaminated with fines must be removed and replaced with clean rock. If the base rock is saturated or trapping water, this water must be removed prior to slab placement.

Some flooring manufacturers require specific slab moisture levels and/or vapor barriers to validate the warranties on their products. A properly installed and protected vapor flow retardant can reduce slab moistures. If moisture sensitive floor coverings or operations are planned, we recommend a vapor barrier be used. Typically, a reinforced product or thicker product (such as a 15 mil STEGO wrap) can be used. Experienced contractors using special concrete mix design and placement have been successful placing concrete directly over the vapor barrier which overlies the rock. This avoids the issue of water trapped in the rock between the slab and vapor barrier, which otherwise requires removal. In either case, slab moisture should be tested/monitored until it meets floor covering manufacturer's recommendations.

## Seismic Design

**General** - In accordance with the International Building Code (IBC) as adapted by State of Oregon Structural Specialty Code (SOSSC) and based on our explorations and experience in the site vicinity, the subject project must be evaluated using the parameters associated with Site Class C.

**Liquefaction** - Liquefaction occurs in loose, saturated, granular, or non-plastic soils. Strong shaking, such as that experienced during earthquakes, causes the densification and the subsequent settlement of these soils. The site fine grained soils have significant plasticity and are not susceptible to liquefaction, nor is the weathered rock. The risk of damaging deformations from such phenomena is low.

## Retaining Walls

**General** - The following recommendations are based on the assumptions that: (1) Walls are fully drained, (2) Wall backfill consists of level, drained, angular, granular material, (3) Walls are concrete cantilever-type walls and are less than 5 feet in height, and (4) No surcharges such as stockpiled soil, equipment, or footings are located within 10 feet of the wall.



Walls restrained against rotation must be designed using an equivalent fluid pressure of 48 pcf. Walls not restrained against rotation must be designed using an equivalent fluid pressure of 28 pcf. Seismic design for roughly one inch of deflection can be evaluated for an 1H rectangular wall pressure (to determine if this controls wall design over the preceding static condition). These forces can be resisted by passive pressure at the toe of the wall using an equivalent fluid pressure of 400 pcf (this must exclude the top 12 inches of embedment) and friction along the base using a friction coefficient of 0.38. These include a factor of safety of 1.5

Footings for retaining walls must be designed as recommended in the **Shallow Foundations** section of the report. Footings and floor slabs located above retaining walls and within a zone defined by a plane extending upward at 1H:1V from the bottom of the wall will increase lateral pressures on the wall. We must be consulted for lateral pressure and footing support issues if footings or other surcharge loads are located within this zone.

**Backfill** - Retaining walls must be backfilled with clean, imported, granular soil with less than 6 % fines, such as clean sand or rock. This material must also be compacted to a minimum of 92 % relative to ASTM D1557 (modified proctor). Within 3 feet of the wall, backfill must be compacted to not more than 90 % relative to ASTM D1557 using hand-operated equipment.

Retaining structures typically rotate and displace roughly 1% of the wall height during development of active pressures behind the wall. We therefore recommend that construction of improvements adjacent to the top of the walls greater than 5 feet high be delayed until approximately two weeks after wall construction.

### **Drainage**

**General** - All retaining walls must be fully drained. We also recommend installing perimeter foundation drains around all exterior foundations. The surface around building perimeters must be sloped to drain away from the buildings. Foundation and wall drains must consist of a two-foot-wide zone of drain rock encompassing a 4-inch diameter perforated pipe, all enclosed with a non-woven filter fabric. The drain rock must have no more than 2 percent passing a #200 sieve and must extend to within one foot of the ground surface. The geosynthetic should be Propex Geotex 601 or equivalent. An alternative to the rock drain would be geo-composite drain board, such as an Amerdrain 500/520 or equivalent. In either case one foot of low permeability soil (such as the on-site silt) must be placed over the fabric at the top of the drain to isolate the drain from surface runoff, and the drain must be routed to suitable down gradient discharge determined by the civil engineer.

If a continuous vapor barrier is used, with floor slabs above surrounding grades and perimeter grades sloped away from the building and building finished floor elevations in no more than 2 feet of cut, perimeter foundation drains would not be needed. In this case, footing/wall joints must still be water-proofed.

### **Pavement**

**Asphalt Concrete** – At the time of this report we did not have specific information regarding the type and frequency of expected traffic. We therefore developed asphalt concrete pavement thicknesses for

areas exposed to passenger vehicles only and areas exposed to up to 10 and 25 mixed 3 and 5-axle trucks per day based on a 20-year design life. Traffic volumes can be revised if specific data is available.

Our pavement analyses are based on AASHTO methods and subgrade of stiff silt or structural fill as discussed in this report and having a resilient modulus of at least 6,000 psi. We have also assumed that roadway construction will be completed during an extended period of dry weather. The results of our analyses based on these parameters are provided in the following table.

<u>Traffic</u>	<u>ESAL's</u>	<u>AC (inches)</u>	<u>CR (inches)</u>
Passenger Vehicle Only	-	2.5	6
Up to 10 Trucks Per Day	75,000	3.5	9
Up to 25 Trucks Per Day	189,000	4	11

The thicknesses listed in the preceding table are the minimum acceptable for construction during an extended period of dry summer weather. Increased rock thicknesses will be required for construction during wet conditions. Crushed rock must conform to ODOT base rock standards and have less than 6 percent passing the #200 sieve. Asphalt concrete must be compacted to a minimum of 91 percent of a Rice Density.

**Portland Cement Concrete** - We developed PCC pavement thicknesses at the site for the assumed one-way traffic levels as shown in the table below. Each of these sections is based on AASHTO methods with no reduction for wander and a composite modulus of subgrade reaction of 350 pci (AASHTO Figure 3.3 with  $M_r = 6,000$  psi and 6 inches crushed rock base). Other parameters include 4,000 psi compressive strength portland cement concrete (PCC), and plain jointed concrete **without** load transfer devices or tied concrete shoulders. PCC pavements over trench backfill should not be placed within one week of fill installation unless survey data indicates that settlement of the backfill is complete.

<u>Traffic</u>	<u>ESALS</u>	<u>PCC (inches)</u>	<u>CRB (inches)</u>
Up to 10 Trucks Per Day	75,000	6	6
Up to 25 Trucks Per Day	189,000	7	6

Crushed rock from stabilized working blankets and haul roads that are sufficiently low in fines and pass our observation of a wheel roll may be used in the preceding base rock thickness.

**Subgrade Preparation** - The pavement subgrade must be prepared in accordance with the **Earthwork and Site Preparation** recommendations presented in this report. All pavement subgrades must pass a proof roll prior to paving. Soft areas must be repaired per the preceding **Stabilization** section.

**LIMITATIONS AND OBSERVATION DURING CONSTRUCTION**

We have prepared this report for use by Phelan Development and members of their design and construction teams for this project only. The information herein can be used for bidding or estimating purposes but must not be construed as a warranty of subsurface conditions. We have made observations only at the identified exploration locations and depths and noted exposed surface soil locations. These observations do not reflect soil types, strata thicknesses, water levels or seepage that

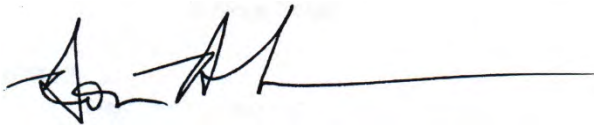
may exist between observations. We must be consulted to review final design and specifications in order to see that our recommendations are suitably followed. If any changes are made to the anticipated locations, loads, configurations, or construction timing, our recommendations may not be applicable, and we must be consulted. The preceding recommendations must be considered preliminary, as actual soil conditions may vary. In order for our recommendations to be final, we must be retained to review final building plans, to observe actual subsurface conditions encountered, and to observe foundation subgrades and pile driving. Our observations will allow us to adapt to actual conditions and to update our recommendations if needed.

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, expressed or implied, is given.

< >

We appreciate the opportunity to work with you on this project and look forward to our continued involvement. Please call if you have questions.

Sincerely,



Don Rondema, MS, PE, GE  
Principal Engineer



Attachments: site plan, guidelines for classification of soil, boring logs, test pit logs, moisture contents



NOT TO SCALE

BASE PHOTO FROM GOOGLE EARTH July 2018

## GUIDELINES FOR CLASSIFICATION OF SOIL

<b>Description of Relative Density for Granular Soil</b>	
<b>Relative Density</b>	<b>Standard Penetration Resistance (N-values) blows per foot</b>
very loose	0 - 4
loose	4 - 10
medium dense	10 - 30
dense	30 - 50
very dense	over 50

<b>Description of Consistency for Fine-Grained (Cohesive) Soils</b>		
<b>Consistency</b>	<b>Standard Penetration Resistance (N-values) blows per foot</b>	<b>Torvane Undrained Shear Strength, tsf</b>
very soft	0 - 2	less than 0.125
soft	2 - 4	0.125 - 0.25
medium stiff	4 - 8	0.25 - 0.50
stiff	8 - 15	0.50 - 1.0
very stiff	15 - 30	1.0 - 2.0
hard	over 30	over 2.0

<b>Grain-Size Classification</b>	
<b>Description</b>	<b>Size</b>
Boulders	12 - 36 in.
Cobbles	3 - 12 in.
Gravel	$\frac{1}{4}$ - $\frac{3}{4}$ in. (fine) $\frac{3}{4}$ - 3 in. (coarse)
Sand	No. 200 - No. 40 Sieve (fine) No. 40 - No. 10 sieve (medium) No. 10 - No. 4 sieve (coarse)
Silt/Clay	Pass No. 200 sieve

<b>Modifier for Subclassification</b>	
<b>Adjective</b>	<b>Percentage of Other Material In Total Sample</b>
Clean/Occasional	0 - 2
Trace	2 - 10
Some	10 - 30
Sandy, Silty, Clayey, etc.	30 - 50

<b>Test Pit #</b>	<b>Depth (ft)</b>	<b>Soil Description</b>
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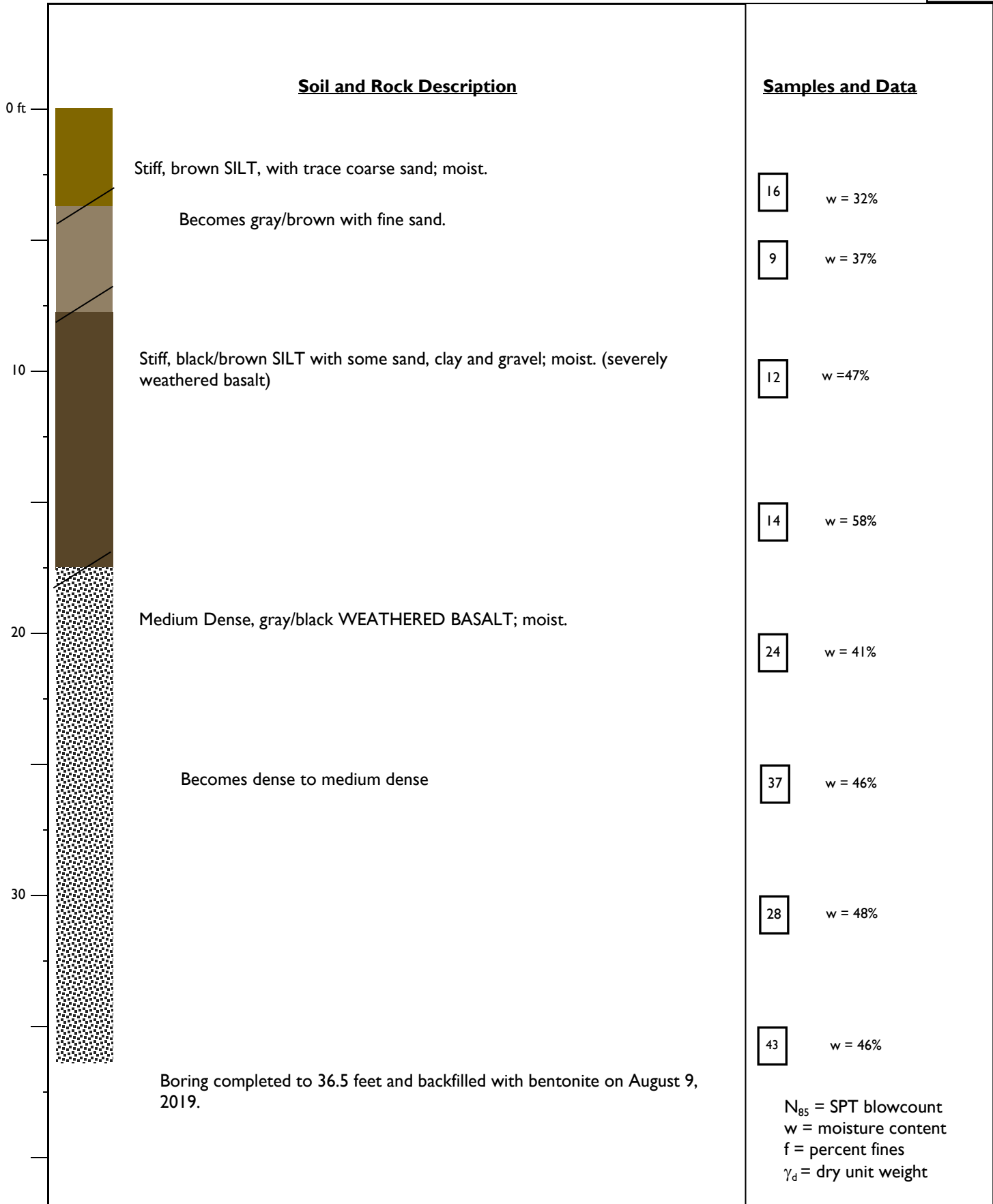
Explorations completed on August 12, 2019 with a Case backhoe (Approx. 15,000 pounds).

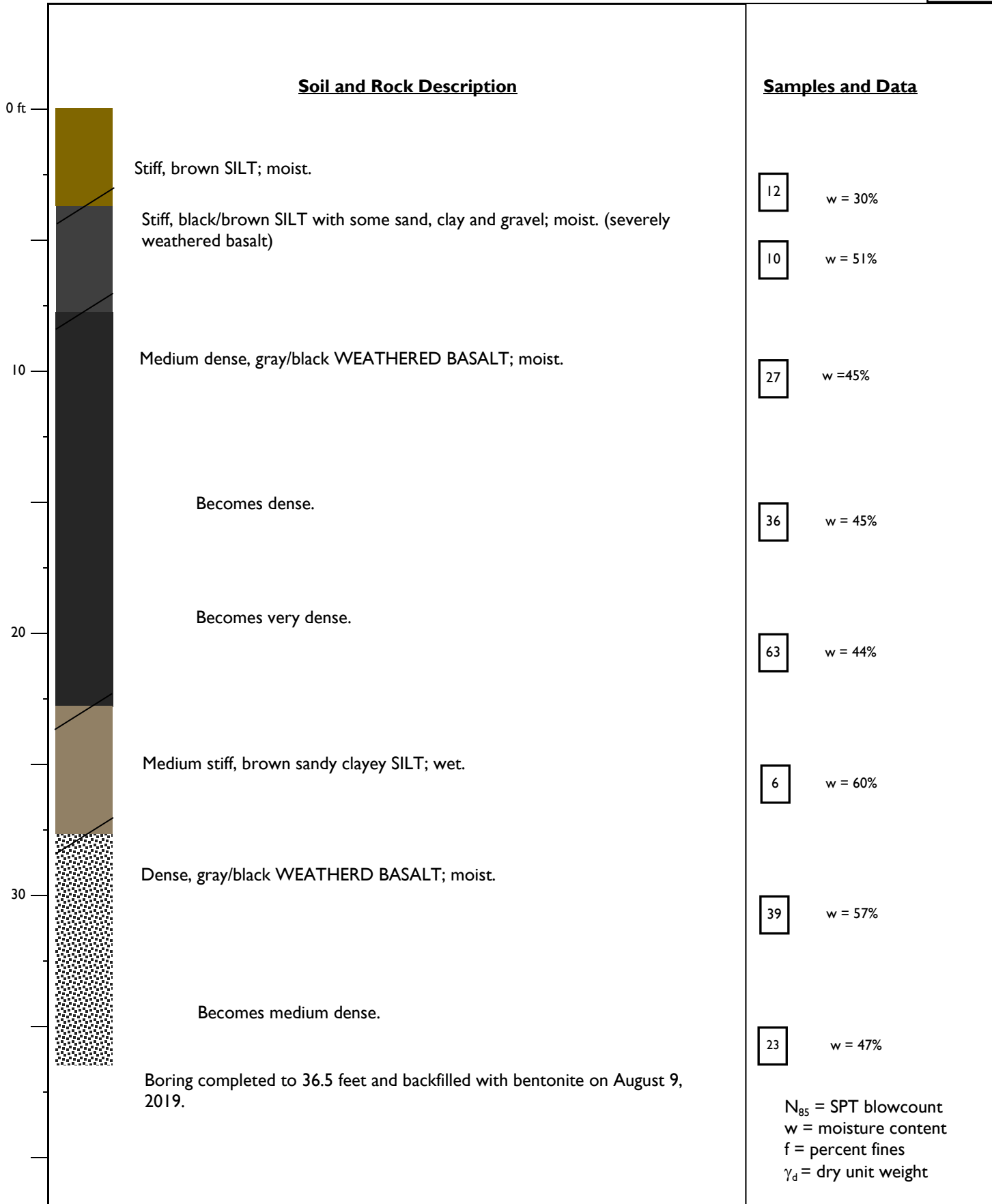
<b>TP-1</b>		<b>Location:</b> NE portion of site.
		<b>Surface conditions:</b> Long grass.
	0 – 3	Stiff, brown SILT; dry. (primary root zone to 5 in.)
	3 – 5	Stiff, brown SILT; moist.
	5 – 10	Very stiff/hard black/brown WEATHERED BASALT; moist.
		No caving. No seepage.
<b>TP-2</b>		<b>Location:</b> NE portion of site.
		<b>Surface conditions:</b> Long grass.
	0 – 2	Stiff, brown SILT; dry. (primary root zone to 6 in.)
		Double ring configuration falling head infiltration test at 2'.
		No caving. No seepage.
<b>TP-3</b>		<b>Location:</b> NE portion of site.
		<b>Surface conditions:</b> Long grass.
	0 – 2	Stiff, brown SILT; dry. (primary root zone to 5 in.)
	2 – 5	Stiff, brown SILT; moist.
	5 – 10	Very stiff/hard black/brown WEATHERED BASALT; moist.
		No caving. No seepage.
<b>TP-4</b>		<b>Location:</b> N portion of site.
		<b>Surface conditions:</b> Long grass.
	0 – 2	Stiff, brown SILT; dry. (primary root zone to 6 in.)
	2 – 6	Stiff, brown SILT; moist.
	6 – 11	Very stiff/hard black/brown WEATHERED BASALT; moist.
		No caving. No seepage.
<b>TP-5</b>		<b>Location:</b> SE portion of site.
		<b>Surface conditions:</b> Long grass.
	0 – 2	Stiff, brown SILT; dry. (primary root zone to 6 in.)
	2 – 3	Stiff, brown SILT; moist.
	3 – 4	Very stiff/hard black/brown WEATHERED BASALT; moist.
	4	Refusal on hard BASALT.
		No caving. No seepage.

<b>Test Pit #</b>	<b>Depth (ft)</b>	<b>Soil Description</b>
<b>TP-6</b>		<b>Location:</b> S central portion of site.
		<b>Surface conditions:</b> Long grass.
	0 – 3	Stiff, brown SILT; dry. (primary root zone to 7 in.)
	3 – 4	Stiff, brown SILT with some basalt cobbles/boulders; moist.
	4 – 6	Very stiff/hard black/brown WEATHERED BASALT; moist.
	6	Refusal on hard BASALT.
		No caving. No seepage.
<b>TP-7</b>		<b>Location:</b> N central portion of site.
		<b>Surface conditions:</b> Long grass.
	0 – 2	Stiff, brown SILT; dry. (primary root zone to 6 in.)
	2 – 11	Stiff, brown SILT; moist.
	11 – 15	Stiff, brown SILT, with some clay; moist.
		No caving. No seepage.
<b>TP-8</b>		<b>Location:</b> Central portion of site.
		<b>Surface conditions:</b> Long grass.
	0 – 1	Stiff, brown SILT, with some gravels/cobbles; dry. (primary root zone to 7 in.)
	1 – 7	Stiff, brown SILT; moist.
	7 – 8	Very stiff/hard black/brown WEATHERED BASALT; moist.
	8	Refusal on hard BASALT.
		No caving. No seepage.
<b>TP-9</b>		<b>Location:</b> NW portion of site.
		<b>Surface conditions:</b> Long grass.
	0 – 2	Stiff, brown SILT; dry. (primary root zone to 6 in.)
	2 – 5	Stiff, brown SILT; moist.
	5 – 6	Very stiff/hard black/brown WEATHERED BASALT; moist.
	6	Refusal on hard BASALT.
		No caving. No seepage.
<b>TP-10</b>		<b>Location:</b> SW portion of site.
		<b>Surface conditions:</b> Long grass.
	0 – 3	Stiff, brown SILT, with trace roots; dry. (primary root zone to 6 in.)
	3 – 4	Stiff, brown SILT; moist.
	4 – 6	Medium stiff brown SILT, with trace clay; moist.
		Double ring configuration falling head infiltration test at 2'.
		No caving. No seepage.









Exploration	Depth, ft	Moisture Content
TP-1	4.0	24%
TP-1	9.0	53%
TP-3	5.0	16%
TP-4	4.0	24%
TP-5	3.0	14%
TP-6	5.0	32%
TP-7	4.0	29%
TP-7	12.0	33%
TP-8	4.0	28%
TP-9	5.0	33%
TP-10	4.0	33%
TP-12	5.0	41%
TP-12	8.0	48%

<b>Exploration</b>	<b>Depth, ft</b>	<b>Moisture Content</b>
B-1	2.5	32%
B-1	5.0	37%
B-1	10.0	47%
B-1	15.0	58%
B-1	20.0	41%
B-1	25.0	46%
B-1	30.0	48%
B-1	35.0	46%
B-2	2.5	30%
B-2	5.0	51%
B-2	10.0	45%
B-2	15.0	45%
B-2	20.0	44%
B-2	25.0	60%
B-2	30.0	57%
B-2	35.0	47%

January 3, 2023

TM Rippey Consulting Engineers  
Karl Koroch, PE  
7650 SW Beveland Street  
Tigard, Oregon 97223

Re: Precision Countertop Site  
Wilsonville

Mr. Koroch,

We have reviewed the site drawing you provided showing the various private storm runoff treatment and flow control facilities proposed for the property on SW Garden Acres Road in Wilsonville.

All of the facilities shown on the plans will be accessible to our vactor truck and other maintenance equipment. You asked specifically about the large storm planter treatment/flow control facility situated west of the building and showed a possible parking location for our vactor truck north of the facility and a route for our maintenance staff along the east side to access the facility on foot from the south. This route works well for access and maintenance. We have the ability to dispatch a support vehicle with the vactor truck that has several rolls of extension hose for the vactor equipment. Our equipment and extension hoses can accommodate the lengths shown on the attached plan.

River City Environmental offers plumbing and drain cleaning; lift station services; parking lot sweeping; parking lot maintenance—including seal coating, striping & signage; service agreements for routine maintenance; septic and sewage removal; water truck services and drop box services.

River City Environmental also offers a complete range of stormwater B.M.P. installations, operation and maintenance services.

Please feel free to call me @ 503-252-6144 or Cell 503-969-2924. Thank you once again for this opportunity to offer these services to you.

Sincerely,

*Daniel Zundel*

Daniel Zundel  
River City Environmental, Inc.  
CCB#147355

Proposal must be accepted within ten (10) days

Accepted by: \_\_\_\_\_ Date: \_\_\_\_\_  
Name & Title



**WORKING TOGETHER FOR A CLEAN ENVIRONMENT**

**Phone: 503-252-6144 / Fax: 503-288-3658**



Client/ Owner:

Project:  
**Precision  
 Countertops**

25540 SW Garden Acres Rd.  
 Wilsonville OR

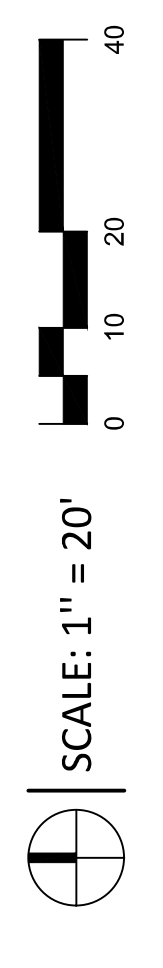
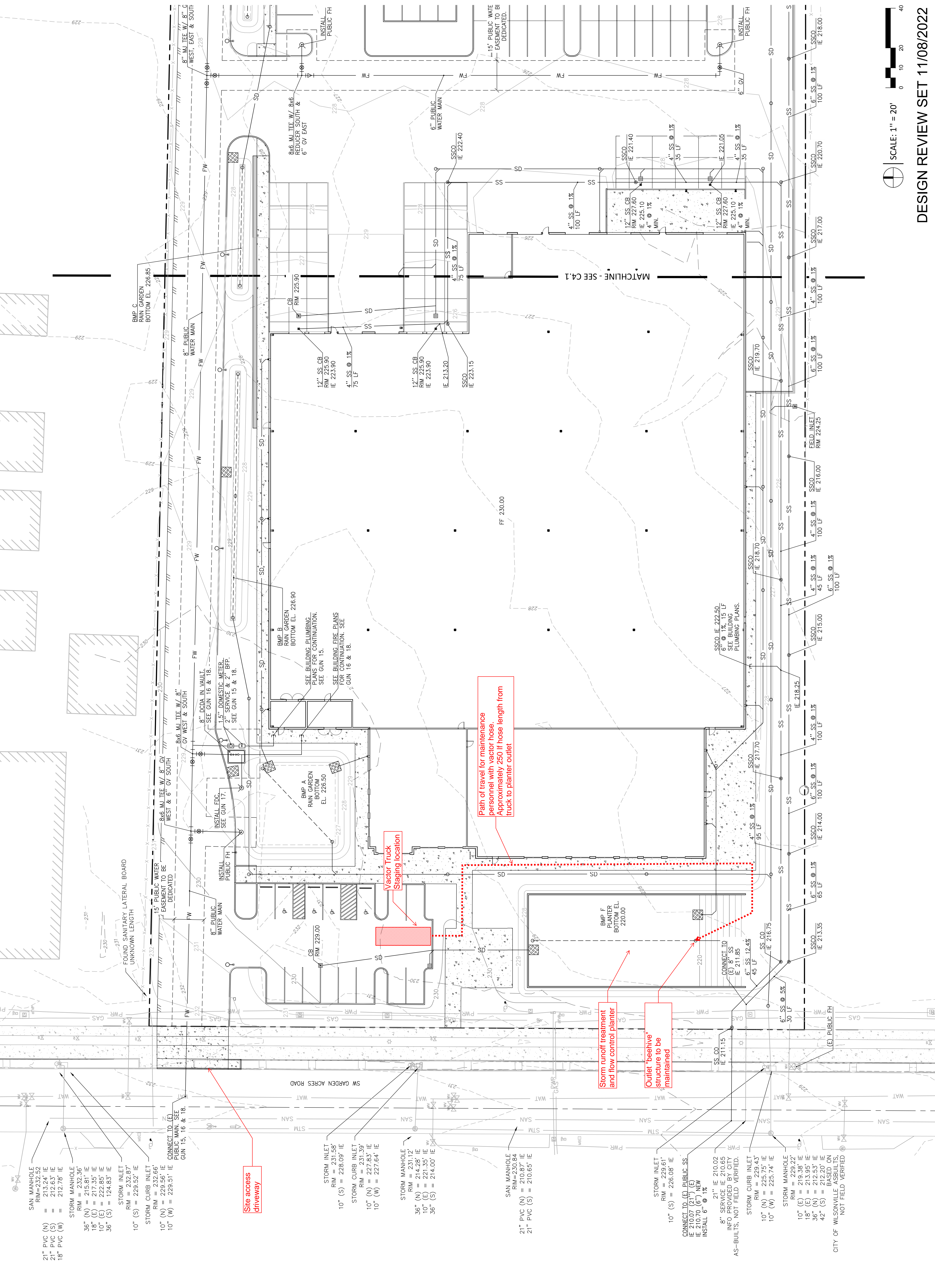
Sheet Title:

**Water &  
 Sanitary  
 Sewer Plan**

Revisions:  
 # Description Date

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Date: 2022-11-08  
 Drawn by: AS  
 Checked by: KJK  
 TMR Job Number: 21279  
 Sheet



- SAN MANHOLE  
 RIM=232.52  
 21" PVC (N) = 213.24' IE  
 21" PVC (S) = 212.63' IE  
 18" PVC (W) = 212.78' IE
- STORM MANHOLE  
 RIM = 232.36'  
 36" (N) = 215.81' IE  
 18" (E) = 217.35' IE  
 10" (E) = 222.85' IE  
 36" (S) = 124.83' IE
- STORM INLET  
 RIM = 232.87'  
 10" (S) = 229.52' IE
- STORM CURB INLET  
 RIM = 232.06'  
 10" (N) = 229.96' IE  
 10" (W) = 229.51' IE
- CONNECT TO (E) PUBLIC MAIN SEE GUN 15, 16 & 18.
- STORM INLET  
 RIM = 231.58'  
 10" (S) = 228.09' IE
- STORM CURB INLET  
 RIM = 231.39'  
 10" (N) = 227.83' IE  
 10" (W) = 227.64' IE
- STORM MANHOLE  
 RIM = 231.12'  
 36" (N) = 214.28' IE  
 10" (E) = 221.35' IE  
 36" (S) = 214.00' IE
- SAN MANHOLE  
 RIM=230.84  
 21" PVC (N) = 210.87' IE  
 21" PVC (S) = 210.65' IE
- STORM INLET  
 RIM = 229.61'  
 10" (S) = 226.08' IE
- CONNECT TO (E) PUBLIC SS (E) 8" SS IE 211.85  
 CONNECT TO (N) NEW IE 210.70 (6") NEW INSTALL 6" @ 1%
- 21" IE 210.02  
 8" SERVICE IE 210.65  
 INFO PROVIDED BY CITY AS-BUILTS, NOT FIELD VERIFIED.
- STORM CURB INLET  
 RIM = 229.43'  
 10" (N) = 225.75' IE  
 10" (W) = 225.74' IE
- STORM MANHOLE  
 RIM = 229.22'  
 10" (E) = 219.38' IE  
 18" (E) = 213.95' IE  
 36" (N) = 212.53' IE  
 42" (S) = 212.20' IE  
 BASED ON CITY OF WILSONVILLE AS-BUILTS, NOT FIELD VERIFIED

CITY OF WILSONVILLE AS-BUILTS, NOT FIELD VERIFIED



January 20, 2023

precision-21-1-cms

PHI Construction ; [kelly@phiconst.com](mailto:kelly@phiconst.com)

cc: [kkoroch@tmrippey.com](mailto:kkoroch@tmrippey.com)

## GEOTECHNICAL ENGINEERING SERVICES – Aggregate Access Road Precision Facility, 25540 SW Garden Acres Road, Wilsonville, Oregon

As requested, this letter summarizes our analyses of all-weather road thickness needed for occasional maintenance access to facilities at the subject site. We previously provided a geotechnical engineering report for the project that included explorations, testing, and analyses (attached). We understand that a 30-ton GVW maintenance vehicle will need occasional access and have assumed over 100 trips. Based on our site observations of subgrade stiffness, a subgrade resilient modulus of 6,000 psi can be used for design. With the preceding traffic, our analyses indicate that 13 inches of crushed rock would be needed. However, an equivalent and more economical section would be 8 inches of crushed rock base overlying a Propex Gridpro BXP-12 geogrid (or equivalent punched and drawn grid with a bi-directional tensile strength of at least 400 pounds per foot at 2% strain) overlying a Propex 801 nonwoven fabric. An alternative would be 5 inches of crushed rock overlying 12 inches of cement amended soil.

We have assumed that construction will be completed during extended dry conditions. The cement amended soil alternative could be done in non-rainfall wet season conditions, as could protection and stabilization of subgrades and increased rock thickness. Crushed rock should conform to ODOT base rock standards and have less than 6 percent passing the #200 sieve. The preceding analyses used a maximum rut depth of 1.5 inches. The Limitations of our report apply. We appreciate the opportunity to work with you on this project and look forward to our continued involvement. Please contact us if you have questions.

Sincerely,



Don Rondema, MS, PE, GE  
Principal Engineer



Attachments: geotechnical report

## **REPORT OF GEOTECHNICAL ENGINEERING SERVICES**

**Precision Facility, 25540 SW Garden Acres Road  
Wilsonville, Oregon**

**Geotech  
Solutions Inc.**

August 22, 2021

GSI Project: precision-21-1-gi

August 22, 2021

precision-21-1-gi

PHI Construction  
[kelly@phiconst.com](mailto:kelly@phiconst.com)

## **REPORT OF GEOTECHNICAL ENGINEERING SERVICES Precision Facility, 25540 SW Garden Acres Road Wilsonville, Oregon**

As authorized, herein we present our report of geotechnical engineering services for the proposed project. Based on information you provided we understand that the roughly 10-acre site is to be developed with one roughly 88,000 square foot manufacturing facility with associated truck docks, pavements, and utilities, with future expansion to the east. Building loads are expected to be up to 200 kips for columns, 6 kips per foot for walls, and 500 psf for floors. The purpose of our work was to investigate the soil conditions and provide geotechnical engineering for project design. For site investigation we used previous recent extensive explorations on this site and a new site reconnaissance. Our specific scope of work included the following:

- Provide principal-level geotechnical project management including client communications, management of field and subcontracted services, report writing, analyses, and invoicing.
- Review geologic maps and vicinity geotechnical information as indicators of subsurface conditions.
- Complete a site reconnaissance to observe surface features relevant to geotechnical issues, such as topography, vegetation, presence and condition of springs, exposed soils and rock, and evidence of previous grading.
- Review explored subsurface conditions of 12 test pits to depths of up to 15 feet or refusal, and two borings to depths of up to 36.5 feet or refusal.
- Review classifications and sampling of materials encountered and a detailed log of the explorations.
- From same day falling head infiltration testing in two of the test pits, provide an infiltration rate and corresponding strata.
- Provide moisture content of selected samples obtained from the explorations.
- Provide recommendations for earthwork including site preparation, reuse of existing fill in place or stabilized or reinstalled, seasonal material usage, compaction criteria, utility trench backfill, and the need for subsurface drainage.
- Evaluate site liquefaction potential and estimate site deformations and provide qualitative means to address unsuitable deformations if needed.
- Provide recommendations for shallow foundations including suitable soils, stabilization, bearing pressures, sliding coefficient, and a seismic site class.
- Provide recommendations for truck dock retaining walls, including lateral earth pressures, backfill, and drainage.
- Provide recommendations for slab support, including a subgrade modulus if needed, underslab rock thickness and materials, and the need for stabilization.
- Provide recommendations for pavements including subgrade preparation and stabilization, and base rock and asphalt concrete and portland cement concrete thicknesses.
- Provide a written report summarizing the results of our geotechnical evaluation.

## SITE CONDITIONS

### Surface Conditions

The site vicinity is primarily in residential and light farm and grazing use, with industrial uses to the west, and commercial buildings to the south. Basalt rock quarries are present within 3/4 mile to the northwest. The parcel is relatively flat and includes residential and farm outbuildings in the west and trees and brush to the northwest and southern boundary. Much of the land is in grass and grazed by cattle. The site use and features have not changed appreciably since 2019.

### Subsurface Conditions

We explored subsurface conditions at the site by completing eleven test pits (TP-1 through TP-12, TP-11 was inaccessible) to depths of up to 12 feet or refusal on August 12, 2019, and two borings with a truck mounted CME 75 drill rig to depths of 36.5 feet on August 9, 2019. The locations of our explorations are shown in the attached **Site Plan**, and detailed logs and moisture contents are attached.

In general, we encountered silt underlain by silt with gravel, clay, and sand as residual soils from severely weathered basalt, underlain at depth by weathered basalt. Refusal with the rubber-tired backhoe was met at depths of 6 to 8 feet in the central portion of the property in test pits TP-6, TP-8, and TP-9.

Rooty topsoil was generally 5 to 8 inches thick. The silt was generally stiff with blow counts ( $N_{85}$ ) of 9 to 16 and extended to depths of generally 3 to 7 feet, deeper in TP-7. Under the upper silt we encountered residual soils of severely weathered basalt that was primarily silt with variable clay, sand, and gravel content. Blow counts in the borings ranged from 10 to 14 in this unit. The basalt generally became moderately weathered with blow counts of 24 to 63 below depths of 18 feet in the borings, and at depths of 6 to 8 feet in the central test pits. In B-2 we encountered a soil layer within the basalt from 24-28 feet that had a blow count of 6. This may represent an older weathered flow top. The rock is generally fractured with filled weathered joints in the explored depths.

No seepage was observed in the test pits. Wet soils were noted in the B-2 soil layer at 24 feet. High seasonal perched ground water is expected within a few feet of the ground surface.

### Infiltration testing

Double ring configuration falling head infiltration testing was completed in test pits TP-2 feet and TP-10 at 2 feet. After initial saturation the system was filled more, and water level readings were taken. Infiltration rates were very low at less than 0.1 in<sup>3</sup>/hr/in<sup>2</sup>. This is typical in these fine-grained soils. Deeper tests were not done as rates are expected to be even lower in the severely weathered basalt with clay content.

## CONCLUSIONS AND RECOMMENDATIONS

### General

This site is near original grades except for thin fills of organics near the barns, gravel fill at drives, and landscape fills near the residences. Site soils include topsoil in vegetated areas with a 5-8 inch root zone away from trees and brush. Near surface soils will require moisture conditioning and stabilization in wet conditions and contain appreciable clay in severely weathered basalt at depth. Boulders and shallow refusal on hard basalt is possible in deeper excavations and utilities, with refusal met at depths of 6 to 8 feet with a rubber-tired backhoe in several test pits.

## Site Preparation

**General** - Prior to earthwork construction, the site must be prepared by removing any existing structures, utilities, and any organic fill, mulch, and topsoil. Exposed boulders should also be removed. Any excavation resulting from the aforementioned preparation must be brought back to grade with structural fill. Site preparation for earthwork will also require the removal of the root zone and topsoil/till zone soils and organic fills from all pavement, building, and fill areas. The root zone thickness observed in our explorations was 5 to 8 inches away from trees and brush.

Root balls from trees and shrubs may extend several feet and grubbing operations can cause considerable subgrade disturbance. All disturbed material must be removed to undisturbed subgrade and backfilled with structural fill. In general, roots greater than one-inch in diameter must be removed as well as areas of concentrated smaller roots.

The test pit excavations were backfilled using relatively minimal compactive effort. Therefore, soft spots can be expected at these locations. We recommend that these relatively uncompacted soils be completely removed from the test pits located within the proposed building(s), and in paved areas to a depth of 3 feet below finished subgrade. The resulting excavations must be brought back to grade with structural fill.

## Earthwork

**Working Blankets and Haul Roads** - Construction equipment must not operate directly on the subgrade, as it is susceptible to disturbance and softening in all but the driest of late summer conditions. Rock working blankets and haul roads placed over a geosynthetic in a thickened advancing pad can be used to protect subgrades. We recommend that sound, angular, pit run or crushed basalt with no more than 6 percent passing a #200 sieve be used to construct haul roads and working blankets, overlying the preceding separation geosynthetics and stabilizations for building pads. Haul roads should be at least 18 inches thick overlying the geogrid with separation fabric at the bottom. Alternatively, the soils could be amended to a minimum depth of 12 inches and covered with a minimum of 4 inches of crushed rock. Some repair of working blankets and haul roads should be expected.

The preceding rock and amendment thicknesses are the minimum recommended. Subgrade protection is the responsibility of the contractor and thicker sections may be required based on subgrade conditions and type and frequency of construction equipment.

**Fill** – In dry summer conditions re-use of site soils as fill is possible with moisture conditioning. Boulders must not be included in fills. Soils must be moisture conditioned to within 3% of optimum and compacted to 92% of ASTM D-1557 or until deemed suitably stiff or dense by the geotechnical engineer and passing a proof roll with a loaded dump truck. Some of the residual soils where more clay is present have high moisture contents and would likely require discing. Soils observed have a moderate plasticity, but zones of high plasticity can occur in the residual soils which may require additional discing and drying time. Lifts should be no more than 10 inches in loose thickness.

As an alternative to the methods described above, stabilization may be possible by soil amendment using portland cement. This will first require removal of any boulders from the depth to be mixed, which can be observed by pre-ripping where needed. Amendment requires an experienced contractor using specialty spreading and mixing equipment. Typically, 5 to 6 percent cement is used for an amendment (i.e., mix) depth of 12 inches. However, the materials used and quantities can vary based on moisture

and organic contents, plasticity, and required amendment depth. Compaction and grading of amended soils must be completed within 4 hours of mixing, and the amended soil must be allowed to cure for 4 days prior to trafficking. Generally, in fine grained soils 50 percent of mixed particles should pass a No. 4 sieve.

The permeability of amended soil is very low. The surface of amended soils in building and pavement areas should therefore be sloped at a minimum of 0.3 percent in wet season construction to reduce collection of surface water. Amended soils must be removed from all landscape areas prior to planting. A second treatment phase is often needed in a small percentage of the area to stiffen soils not sufficiently cured during the first phase.

**Trenches** – Our explorations encountered refusal on boulders and basalt at the depths noted on the attached explorations. Difficult excavations and/or special excavation techniques will be required if such conditions are present at design inverts or grades. Project budgets and schedules must include a contingency for rock/boulder/rubble excavation.

Ground water seepage is expected, even in the dry season after rainfall events, and is expected to be near the ground surface in the wet season. Seepage was not observed in our test pits done during a long dry period. Seepage rates are expected to be slow but could be faster in fractured basalt gravels and cobbles with less silt and clay. Shoring of utility trenches will be required for depths greater than 4 feet and where groundwater seepage is present. We recommend that the type and design of the shoring system be the responsibility of the contractor, who is in the best position to choose a system that fits the overall plan of operation.

Depending on the excavation depth and amount of groundwater seepage, dewatering may be necessary for construction of underground utilities. Flow rates for dewatering are likely to vary depending on location, soil type, and the season during which the excavation occurs. The dewatering systems, if necessary, must be capable of adapting to variable flows.

Pipe bedding must be installed in accordance with the pipe manufacturers' recommendations. If groundwater is present in the base of utility trench excavations and softens conditions, over-excavating the trench and placing trench stabilization material may be needed. Trench stabilization material must consist of well-graded, crushed rock or crushed gravel with a maximum particle size of 4 inches and be free of deleterious materials. The percent passing the U.S. Standard No. 200 Sieve must be less than 5 percent by weight when tested in accordance with ASTM C 117. A minimum of one foot of stabilization rock is recommended if soft conditions are encountered.

Trench backfill above the pipe zone must consist of well graded, angular crushed rock or sand fill with no more than 7 percent passing a #200 sieve. Trench backfill must be compacted to 92 percent relative to ASTM D-1557, and construction of hard surfaces, such as sidewalks or pavement, must not occur within one week of backfilling.

### **Infiltration**

We recommend against infiltration of storm water due to the very low infiltration rates and the presence of high seasonal perched ground water in this area.

## Foundations

Buildings with loads less than 500 psf for floors, 200 kips for columns, and 6 kips per foot for walls, can be supported on shallow spread and continuous footings bearing on medium stiff or better native soils and structural fills, which we will need to observe. These footings can be designed for a bearing pressure of 3,000 psf. Resistance to lateral loads can be obtained by a footing base friction factor of 0.38, and passive soil resistance of 400 pcf below the top one foot (the top foot can be used if it is directly abutting permanent hardscaping such as pavement or sidewalks) which includes a factor of safety of 1.5.

## Slabs

Floor slab loads up to 500 psf are expected to induce less than one inch of settlement, and 120 pci can be used as a subgrade modulus. Working blankets are required for slabs in all but the driest late summer conditions. In dry late summer conditions, with no expected truck traffic on the pads, a minimum of six inches of clean, angular crushed rock with no more than 5 % passing a #200 sieve is recommended for underslab rock. Again, this will need to be thickened as a working blanket if trafficked and in all but dry late summer conditions. Prior to slab rock placement the subgrade will need to be evaluated by us by probing or observing a wheel roll using a fully loaded truck. Underslab rock must be compacted to 92 % compaction relative to ASTM D1557 and must be proof rolled as well. In addition, any areas contaminated with fines must be removed and replaced with clean rock. If the base rock is saturated or trapping water, this water must be removed prior to slab placement.

Some flooring manufacturers require specific slab moisture levels and/or vapor barriers to validate the warranties on their products. A properly installed and protected vapor flow retardant can reduce slab moistures. If moisture sensitive floor coverings or operations are planned, we recommend a vapor barrier be used. Typically, a reinforced product or thicker product (such as a 15 mil STEGO wrap) can be used. Experienced contractors using special concrete mix design and placement have been successful placing concrete directly over the vapor barrier which overlies the rock. This avoids the issue of water trapped in the rock between the slab and vapor barrier, which otherwise requires removal. In either case, slab moisture should be tested/monitored until it meets floor covering manufacturer's recommendations.

## Seismic Design

**General** - In accordance with the International Building Code (IBC) as adapted by State of Oregon Structural Specialty Code (SOSSC) and based on our explorations and experience in the site vicinity, the subject project must be evaluated using the parameters associated with Site Class C.

**Liquefaction** - Liquefaction occurs in loose, saturated, granular, or non-plastic soils. Strong shaking, such as that experienced during earthquakes, causes the densification and the subsequent settlement of these soils. The site fine grained soils have significant plasticity and are not susceptible to liquefaction, nor is the weathered rock. The risk of damaging deformations from such phenomena is low.

## Retaining Walls

**General** - The following recommendations are based on the assumptions that: (1) Walls are fully drained, (2) Wall backfill consists of level, drained, angular, granular material, (3) Walls are concrete cantilever-type walls and are less than 5 feet in height, and (4) No surcharges such as stockpiled soil, equipment, or footings are located within 10 feet of the wall.



Walls restrained against rotation must be designed using an equivalent fluid pressure of 48 pcf. Walls not restrained against rotation must be designed using an equivalent fluid pressure of 28 pcf. Seismic design for roughly one inch of deflection can be evaluated for an 1H rectangular wall pressure (to determine if this controls wall design over the preceding static condition). These forces can be resisted by passive pressure at the toe of the wall using an equivalent fluid pressure of 400 pcf (this must exclude the top 12 inches of embedment) and friction along the base using a friction coefficient of 0.38. These include a factor of safety of 1.5

Footings for retaining walls must be designed as recommended in the **Shallow Foundations** section of the report. Footings and floor slabs located above retaining walls and within a zone defined by a plane extending upward at 1H:1V from the bottom of the wall will increase lateral pressures on the wall. We must be consulted for lateral pressure and footing support issues if footings or other surcharge loads are located within this zone.

**Backfill** - Retaining walls must be backfilled with clean, imported, granular soil with less than 6 % fines, such as clean sand or rock. This material must also be compacted to a minimum of 92 % relative to ASTM D1557 (modified proctor). Within 3 feet of the wall, backfill must be compacted to not more than 90 % relative to ASTM D1557 using hand-operated equipment.

Retaining structures typically rotate and displace roughly 1% of the wall height during development of active pressures behind the wall. We therefore recommend that construction of improvements adjacent to the top of the walls greater than 5 feet high be delayed until approximately two weeks after wall construction.

### **Drainage**

**General** - All retaining walls must be fully drained. We also recommend installing perimeter foundation drains around all exterior foundations. The surface around building perimeters must be sloped to drain away from the buildings. Foundation and wall drains must consist of a two-foot-wide zone of drain rock encompassing a 4-inch diameter perforated pipe, all enclosed with a non-woven filter fabric. The drain rock must have no more than 2 percent passing a #200 sieve and must extend to within one foot of the ground surface. The geosynthetic should be Propex Geotex 601 or equivalent. An alternative to the rock drain would be geo-composite drain board, such as an Amerdrain 500/520 or equivalent. In either case one foot of low permeability soil (such as the on-site silt) must be placed over the fabric at the top of the drain to isolate the drain from surface runoff, and the drain must be routed to suitable down gradient discharge determined by the civil engineer.

If a continuous vapor barrier is used, with floor slabs above surrounding grades and perimeter grades sloped away from the building and building finished floor elevations in no more than 2 feet of cut, perimeter foundation drains would not be needed. In this case, footing/wall joints must still be water-proofed.

### **Pavement**

**Asphalt Concrete** – At the time of this report we did not have specific information regarding the type and frequency of expected traffic. We therefore developed asphalt concrete pavement thicknesses for

areas exposed to passenger vehicles only and areas exposed to up to 10 and 25 mixed 3 and 5-axle trucks per day based on a 20-year design life. Traffic volumes can be revised if specific data is available.

Our pavement analyses are based on AASHTO methods and subgrade of stiff silt or structural fill as discussed in this report and having a resilient modulus of at least 6,000 psi. We have also assumed that roadway construction will be completed during an extended period of dry weather. The results of our analyses based on these parameters are provided in the following table.

<u>Traffic</u>	<u>ESAL's</u>	<u>AC (inches)</u>	<u>CR (inches)</u>
Passenger Vehicle Only	-	2.5	6
Up to 10 Trucks Per Day	75,000	3.5	9
Up to 25 Trucks Per Day	189,000	4	11

The thicknesses listed in the preceding table are the minimum acceptable for construction during an extended period of dry summer weather. Increased rock thicknesses will be required for construction during wet conditions. Crushed rock must conform to ODOT base rock standards and have less than 6 percent passing the #200 sieve. Asphalt concrete must be compacted to a minimum of 91 percent of a Rice Density.

**Portland Cement Concrete** - We developed PCC pavement thicknesses at the site for the assumed one-way traffic levels as shown in the table below. Each of these sections is based on AASHTO methods with no reduction for wander and a composite modulus of subgrade reaction of 350 pci (AASHTO Figure 3.3 with  $M_r = 6,000$  psi and 6 inches crushed rock base). Other parameters include 4,000 psi compressive strength portland cement concrete (PCC), and plain jointed concrete **without** load transfer devices or tied concrete shoulders. PCC pavements over trench backfill should not be placed within one week of fill installation unless survey data indicates that settlement of the backfill is complete.

<u>Traffic</u>	<u>ESALS</u>	<u>PCC (inches)</u>	<u>CRB (inches)</u>
Up to 10 Trucks Per Day	75,000	6	6
Up to 25 Trucks Per Day	189,000	7	6

Crushed rock from stabilized working blankets and haul roads that are sufficiently low in fines and pass our observation of a wheel roll may be used in the preceding base rock thickness.

**Subgrade Preparation** - The pavement subgrade must be prepared in accordance with the **Earthwork and Site Preparation** recommendations presented in this report. All pavement subgrades must pass a proof roll prior to paving. Soft areas must be repaired per the preceding **Stabilization** section.

**LIMITATIONS AND OBSERVATION DURING CONSTRUCTION**

We have prepared this report for use by Phelan Development and members of their design and construction teams for this project only. The information herein can be used for bidding or estimating purposes but must not be construed as a warranty of subsurface conditions. We have made observations only at the identified exploration locations and depths and noted exposed surface soil locations. These observations do not reflect soil types, strata thicknesses, water levels or seepage that

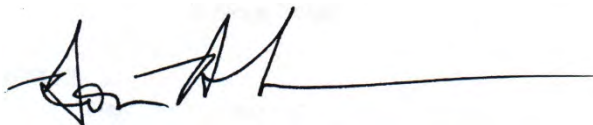
may exist between observations. We must be consulted to review final design and specifications in order to see that our recommendations are suitably followed. If any changes are made to the anticipated locations, loads, configurations, or construction timing, our recommendations may not be applicable, and we must be consulted. The preceding recommendations must be considered preliminary, as actual soil conditions may vary. In order for our recommendations to be final, we must be retained to review final building plans, to observe actual subsurface conditions encountered, and to observe foundation subgrades and pile driving. Our observations will allow us to adapt to actual conditions and to update our recommendations if needed.

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, expressed or implied, is given.

< >

We appreciate the opportunity to work with you on this project and look forward to our continued involvement. Please call if you have questions.

Sincerely,



Don Rondema, MS, PE, GE  
Principal Engineer



Attachments: site plan, guidelines for classification of soil, boring logs, test pit logs, moisture contents



NOT TO SCALE

BASE PHOTO FROM GOOGLE EARTH July 2018

## GUIDELINES FOR CLASSIFICATION OF SOIL

<b>Description of Relative Density for Granular Soil</b>	
<b>Relative Density</b>	<b>Standard Penetration Resistance (N-values) blows per foot</b>
very loose	0 - 4
loose	4 - 10
medium dense	10 - 30
dense	30 - 50
very dense	over 50

<b>Description of Consistency for Fine-Grained (Cohesive) Soils</b>		
<b>Consistency</b>	<b>Standard Penetration Resistance (N-values) blows per foot</b>	<b>Torvane Undrained Shear Strength, tsf</b>
very soft	0 - 2	less than 0.125
soft	2 - 4	0.125 - 0.25
medium stiff	4 - 8	0.25 - 0.50
stiff	8 - 15	0.50 - 1.0
very stiff	15 - 30	1.0 - 2.0
hard	over 30	over 2.0

<b>Grain-Size Classification</b>	
<b>Description</b>	<b>Size</b>
Boulders	12 - 36 in.
Cobbles	3 - 12 in.
Gravel	$\frac{1}{4}$ - $\frac{3}{4}$ in. (fine) $\frac{3}{4}$ - 3 in. (coarse)
Sand	No. 200 - No. 40 Sieve (fine) No. 40 - No. 10 sieve (medium) No. 10 - No. 4 sieve (coarse)
Silt/Clay	Pass No. 200 sieve

<b>Modifier for Subclassification</b>	
<b>Adjective</b>	<b>Percentage of Other Material In Total Sample</b>
Clean/Occasional	0 - 2
Trace	2 - 10
Some	10 - 30
Sandy, Silty, Clayey, etc.	30 - 50

**Test Pit #    Depth (ft)    Soil Description**

Explorations completed on August 12, 2019 with a Case backhoe (Approx. 15,000 pounds).

<b>TP-1</b>	<p><b>Location:</b> NE portion of site.  <b>Surface conditions:</b> Long grass.</p> <p>0 – 3    Stiff, brown SILT; dry. (primary root zone to 5 in.)            3 – 5    Stiff, brown SILT; moist.            5 – 10    Very stiff/hard black/brown WEATHERED BASALT; moist.</p> <p>No caving. No seepage.</p>
<b>TP-2</b>	<p><b>Location:</b> NE portion of site.  <b>Surface conditions:</b> Long grass.</p> <p>0 – 2    Stiff, brown SILT; dry. (primary root zone to 6 in.)</p> <p>Double ring configuration falling head infiltration test at 2'.</p> <p>No caving. No seepage.</p>
<b>TP-3</b>	<p><b>Location:</b> NE portion of site.  <b>Surface conditions:</b> Long grass.</p> <p>0 – 2    Stiff, brown SILT; dry. (primary root zone to 5 in.)            2 – 5    Stiff, brown SILT; moist.            5 – 10    Very stiff/hard black/brown WEATHERED BASALT; moist.</p> <p>No caving. No seepage.</p>
<b>TP-4</b>	<p><b>Location:</b> N portion of site.  <b>Surface conditions:</b> Long grass.</p> <p>0 – 2    Stiff, brown SILT; dry. (primary root zone to 6 in.)            2 – 6    Stiff, brown SILT; moist.            6 – 11    Very stiff/hard black/brown WEATHERED BASALT; moist.</p> <p>No caving. No seepage.</p>
<b>TP-5</b>	<p><b>Location:</b> SE portion of site.  <b>Surface conditions:</b> Long grass.</p> <p>0 – 2    Stiff, brown SILT; dry. (primary root zone to 6 in.)            2 – 3    Stiff, brown SILT; moist.            3 – 4    Very stiff/hard black/brown WEATHERED BASALT; moist.            4        Refusal on hard BASALT.</p> <p>No caving. No seepage.</p>

<b>Test Pit #</b>	<b>Depth (ft)</b>	<b>Soil Description</b>
<b>TP-6</b>		<b>Location:</b> S central portion of site.
		<b>Surface conditions:</b> Long grass.
	0 – 3	Stiff, brown SILT; dry. (primary root zone to 7 in.)
	3 – 4	Stiff, brown SILT with some basalt cobbles/boulders; moist.
	4 – 6	Very stiff/hard black/brown WEATHERED BASALT; moist.
	6	Refusal on hard BASALT.
		No caving. No seepage.
<b>TP-7</b>		<b>Location:</b> N central portion of site.
		<b>Surface conditions:</b> Long grass.
	0 – 2	Stiff, brown SILT; dry. (primary root zone to 6 in.)
	2 – 11	Stiff, brown SILT; moist.
	11 – 15	Stiff, brown SILT, with some clay; moist.
		No caving. No seepage.
<b>TP-8</b>		<b>Location:</b> Central portion of site.
		<b>Surface conditions:</b> Long grass.
	0 – 1	Stiff, brown SILT, with some gravels/cobbles; dry. (primary root zone to 7 in.)
	1 – 7	Stiff, brown SILT; moist.
	7 – 8	Very stiff/hard black/brown WEATHERED BASALT; moist.
	8	Refusal on hard BASALT.
		No caving. No seepage.
<b>TP-9</b>		<b>Location:</b> NW portion of site.
		<b>Surface conditions:</b> Long grass.
	0 – 2	Stiff, brown SILT; dry. (primary root zone to 6 in.)
	2 – 5	Stiff, brown SILT; moist.
	5 – 6	Very stiff/hard black/brown WEATHERED BASALT; moist.
	6	Refusal on hard BASALT.
		No caving. No seepage.
<b>TP-10</b>		<b>Location:</b> SW portion of site.
		<b>Surface conditions:</b> Long grass.
	0 – 3	Stiff, brown SILT, with trace roots; dry. (primary root zone to 6 in.)
	3 – 4	Stiff, brown SILT; moist.
	4 – 6	Medium stiff brown SILT, with trace clay; moist.
		Double ring configuration falling head infiltration test at 2'.
		No caving. No seepage.



**Test Pit #    Depth (ft)    Soil Description**

**TP-11**                      Inaccessible.

**TP-12**                      **Location:** NW portion of site.

**Surface conditions:** Short grass.

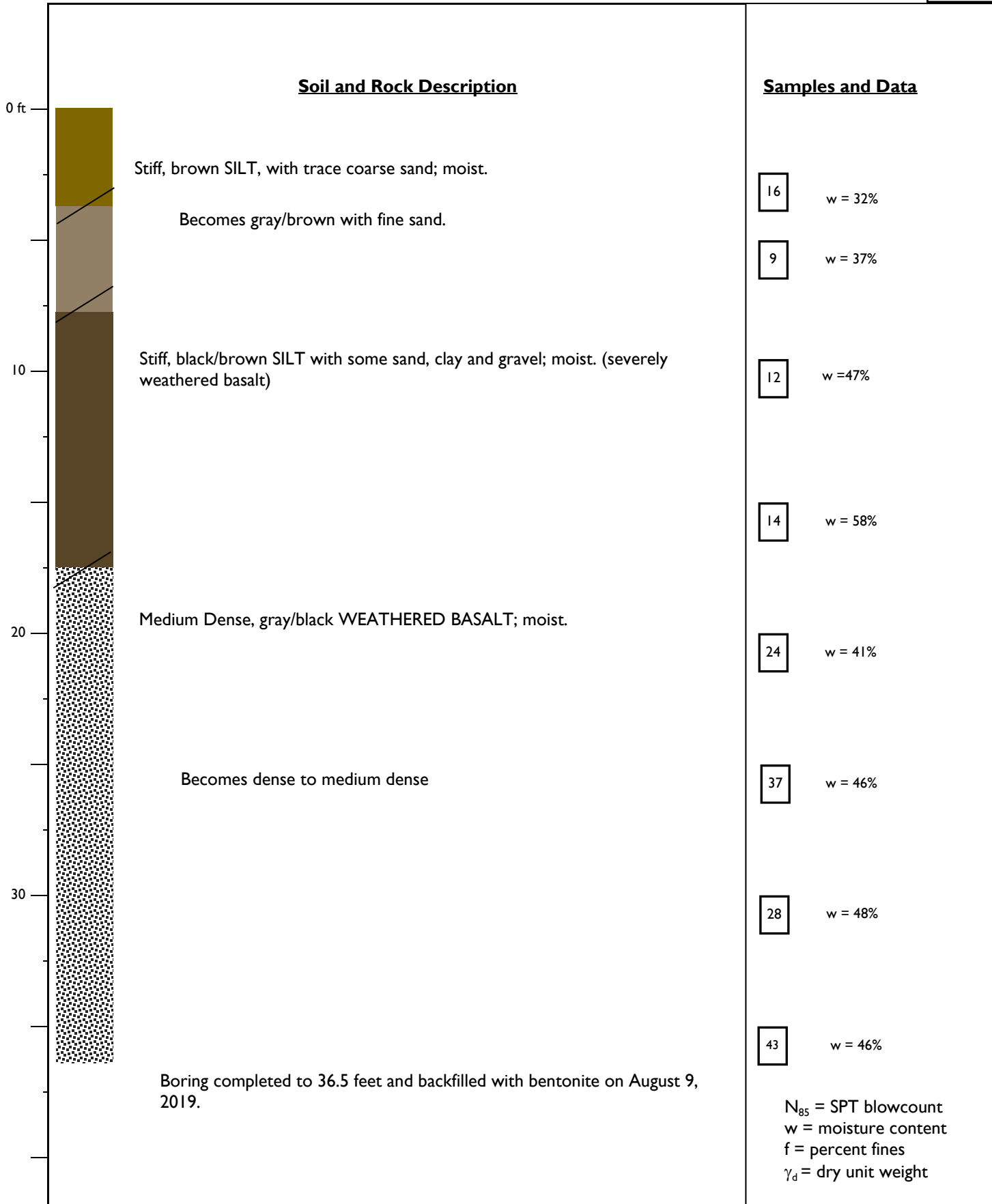
0 – 2                      Stiff, brown SILT;dry. (primary root zone to 8 in.)

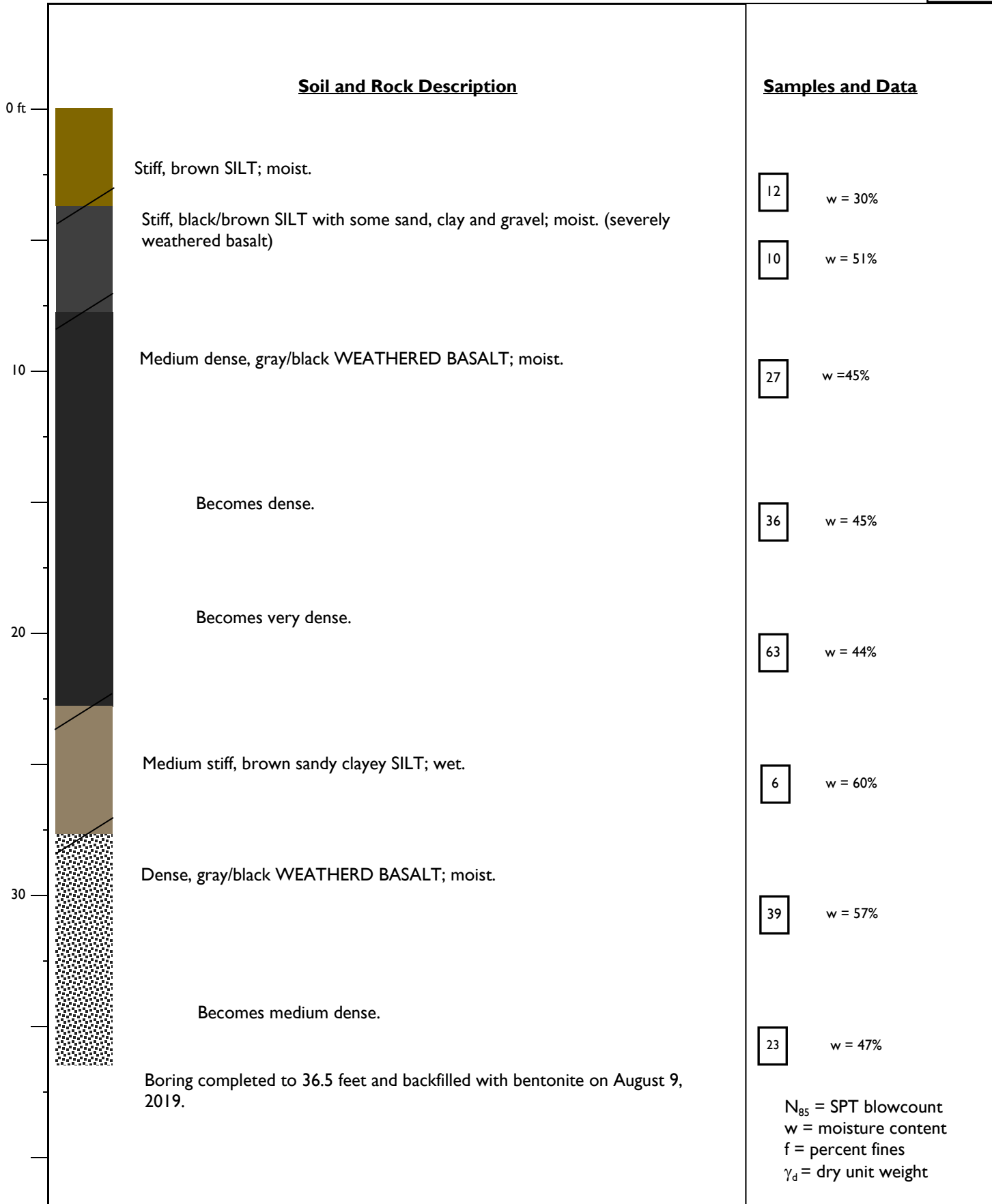
2 – 4                      Stiff, brown SILT; moist.

4 – 5                      Stiff, brown SILT, with some weathered basalt; moist.

5 – 10                     Very stiff/hard WEATHERED BASALT; moist.

No caving. No seepage.





<b>Exploration</b>	<b>Depth, ft</b>	<b>Moisture Content</b>
TP-1	4.0	24%
TP-1	9.0	53%
TP-3	5.0	16%
TP-4	4.0	24%
TP-5	3.0	14%
TP-6	5.0	32%
TP-7	4.0	29%
TP-7	12.0	33%
TP-8	4.0	28%
TP-9	5.0	33%
TP-10	4.0	33%
TP-12	5.0	41%
TP-12	8.0	48%

Exploration	Depth, ft	Moisture Content
B-1	2.5	32%
B-1	5.0	37%
B-1	10.0	47%
B-1	15.0	58%
B-1	20.0	41%
B-1	25.0	46%
B-1	30.0	48%
B-1	35.0	46%
B-2	2.5	30%
B-2	5.0	51%
B-2	10.0	45%
B-2	15.0	45%
B-2	20.0	44%
B-2	25.0	60%
B-2	30.0	57%
B-2	35.0	47%

# PRECISION COUNTERTOPS TRANSPORTATION IMPACT STUDY

MARCH 2022

PREPARED FOR CITY OF WILSONVILLE



PREPARED BY DKS ASSOCIATES

Scott Mansur, P.E., PTOE

Jenna Bogert, P.E.



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## INTRODUCTION

This study evaluates the transportation impacts associated with the proposed Precision Countertops building to be located on SW Garden Acres Road in Wilsonville, Oregon. The project will consist of approximately 65,800 square-feet of industrial manufacturing space used for countertop fabrication, countertop storage, a showroom, and office space. The building will be occupied by a single user, Precision Countertops.

The purpose of this transportation impact analysis is to identify potential mitigation measures needed to offset transportation impacts that the proposed development may have on the nearby transportation network. The impact analysis is focused on the study intersections, which were selected for evaluation in coordination with City staff. The intersections are listed below and shown in Figure 1.

1. SW Garden Acres Road/SW Ridder Road/SW Clutter Street
2. SW Ridder Road/SW 95th Avenue

This chapter introduces the proposed development. Table 1 lists important characteristics of the study area and proposed project.



FIGURE 1: STUDY AREA

TABLE 1: STUDY AREA AND PROPOSED PROJECT CHARACTERISTICS

STUDY AREA	
NUMBER OF STUDY INTERSECTIONS	Two
ANALYSIS PERIODS	Weekday PM peak hour (one hour between 4pm – 6pm)
PROPOSED DEVELOPMENT	
SIZE AND LAND USE	65,800 square-foot industrial manufacturing building
PROJECT TRIPS	43 total PM peak hour trips (13 in, 30 out)
VEHICLE ACCESS POINTS	Two full accesses to the site are proposed, both via SW Garden Acres Road.
OTHER TRANSPORTATION FACILITIES	
PEDESTRIAN AND BICYCLE FACILITIES	Sidewalks exist on SW Ridder Road. Sidewalks and bike lanes exist on SW 95th Avenue. Two-way cycle track and sidewalks are provided on the east side of Garden Acres Road.
TRANSIT FACILITIES	Bus stop for SMART Transit Route 5 is located on SW Ridder Road, about half a mile from the site.

## EXISTING CONDITIONS

This chapter provides documentation of existing study area conditions, including the study area roadway network, pedestrian and bicycle facilities, and existing traffic volumes and operations.

### STUDY AREA ROADWAY NETWORK

Key roadways in the study area are summarized in Table 2 along with their existing roadway characteristics. The functional classifications for City of Wilsonville streets are provided in the City of Wilsonville Transportation System Plan (TSP).<sup>1</sup>

<sup>1</sup> Wilsonville Transportation System Plan, Amended November 16, 2020.

TABLE 2: STUDY AREA ROADWAY CHARACTERISTICS

ROADWAY	FUNCTIONAL CLASSIFICATION	LANES	POSTED SPEED	SIDEWALKS	BIKE FACILITIES	ON-STREET PARKING
SW GARDEN ACRES ROAD	Minor Arterial	2	25 mph (unposted)	Yes	Yes	No
SW CLUTTER STREET	Collector	2	40 mph	No	No	No
SW RIDDER ROAD	Minor Arterial	3	40 mph <sup>a</sup> 30 mph <sup>b</sup>	Partial <sup>c</sup>	No	No
SW 95TH AVENUE	Minor Arterial	3	35 mph	Yes	Yes	No

<sup>a</sup> Posted speed limit on SW Ridder Road is 40 mph west of SW 95th Avenue.

<sup>b</sup> Posted speed limit on SW Ridder Road is 30 mph east of SW 95th Avenue.

<sup>c</sup> Sidewalks are missing on the south side of SW Ridder Road for approximately 1,600 feet between SW Garden Acres Road and SW 95th Avenue.

**BICYCLE AND PEDESTRIAN FACILITIES**

There are existing marked bicycle lanes on SW 95th Avenue. Sidewalks currently exist on SW Ridder Road and SW 95th Avenue. No sidewalks currently exist on SW Clutter Street. Sidewalk and two-way cycle track facilities were recently built on Garden Acres Road along the east side.

**PUBLIC TRANSIT SERVICE**

South Metro Area Regional Transit (SMART) provides public transportation services within Wilsonville and outlying areas, including Canby, Salem, and the south end of Portland. There are two bus stops along SW Ridder Road for Route 5. Route 5 provides service between SW Day Road and the Wilsonville Transit Center via SW 95th Avenue (see Figure 2 to the right). Service is provided Monday through Friday with headways of 30 mins between the hours of 6 am – 10 am and 3 pm – 7 pm.

**PLANNED PROJECTS**

The City of Wilsonville Transportation System Plan (TSP) has a list of Higher Priority projects which includes the recommended projects reasonably expected to be funded through 2035. These are the highest priority solutions to



FIGURE 2: SMART BUS ROUTE 5 MAP

meet the City’s most important needs. The list includes the following projects that impact the key roadways near the proposed project site.<sup>2</sup>

- RE-13 - Construct Java Road from Garden Acres Road to Grahams Ferry Road and install a signal at the Java Road/Grahams Ferry Road intersection and disconnect Clutter Street from Grahams Ferry Road.
- UU-08 – Upgrade Garden Acres Road to a three-lane collector with bicycle lanes and upgrade the Garden Acres Road/Day Road intersection to either a signal or a roundabout. ~~Realign Ridder Road to Garden Acres Road.~~ Close the existing Coffee Creek Correctional Facility driveway to Grahams Ferry Road and relocate the driveway to Cahalin Road.

The Long-term plan for Garden Acres Road will be to update it to a minor arterial through street. The traffic volumes will increase and the function of the road will significantly change once the extension and intersection improvements are completed as described in UU-08.

## EXISTING TRAFFIC VOLUMES

---

New intersection turn movement count data was collected during a weekday p.m. peak period (4:00-6:00 p.m.) at the SW Garden Acres Road/SW Ridder Road/SW Clutter Road and the SW Ridder Road/SW 95th Avenue intersections.<sup>3</sup>

Figure 1 shows the 2021 p.m. peak hour traffic volumes for the study intersections, along with the lane configurations and traffic control. The traffic counts are included in Appendix A.

---

<sup>2</sup> Table 5-2/Figure 5-2 and Figure 5-3, Wilsonville Transportation System Plan, Amended November 16, 2020.

<sup>3</sup> For the two study intersections, historical tube counts<sup>3</sup> were used with a 1% annual growth rate to estimate 2021 volume without COVID impacts. These were compared to the newly collected turning movement counts and it was determined that the current traffic levels at the study intersections should be increased by 6% to account for impacts from COVID-19.

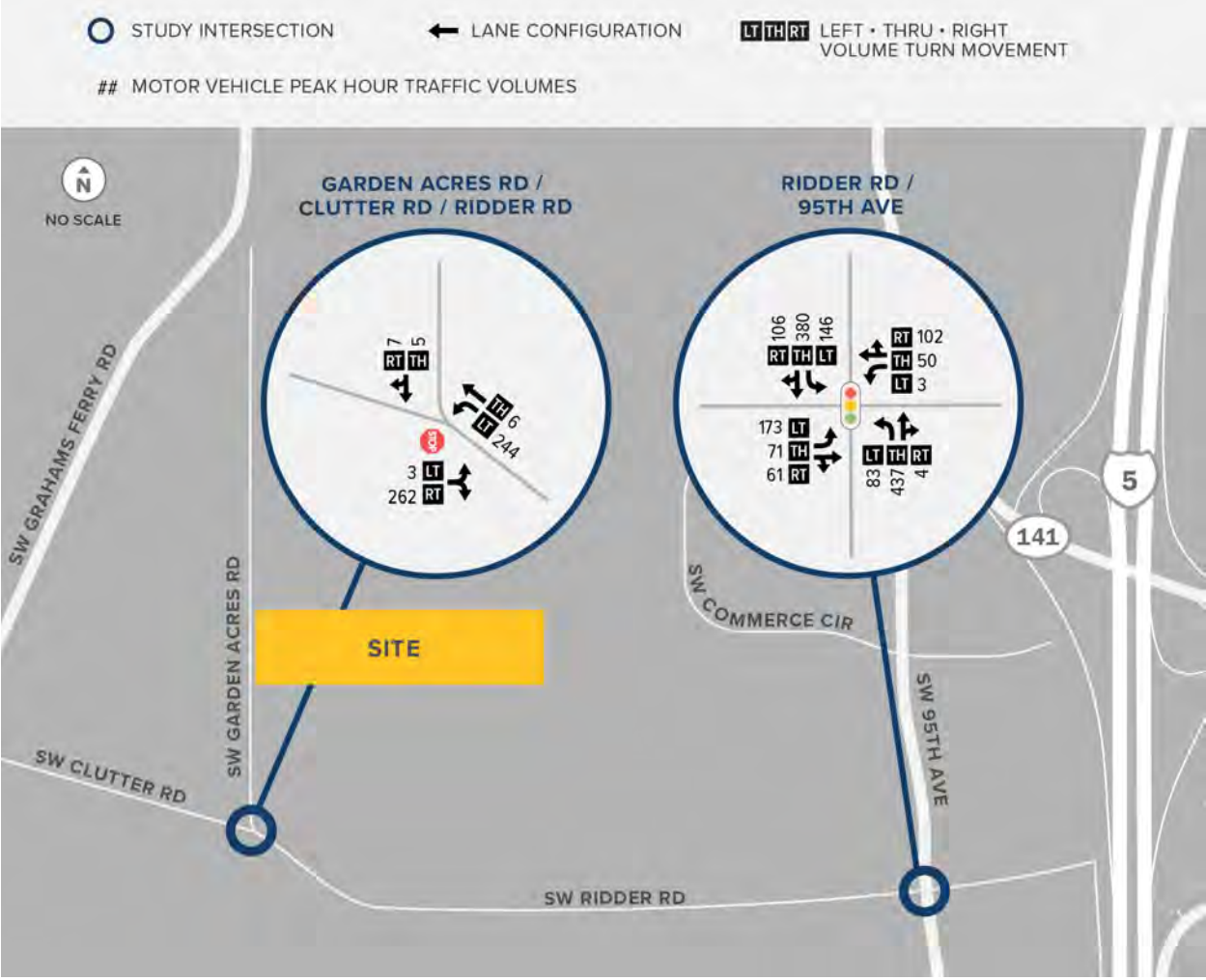


FIGURE 3: 2021 EXISTING TRAFFIC VOLUMES, LANE GEOMETRIES, AND TRAFFIC CONTROL

**INTERSECTION PERFORMANCE MEASURES**

Agency mobility standards often require intersections to meet level of service (LOS) or volume-to-capacity (V/C) intersection operation thresholds. Additional details about LOS and delay are provided in Appendix B.

- The intersection LOS is similar to a “report card” rating based upon average vehicle delay. Level of service A, B, and C indicate conditions where traffic moves without significant delays over periods of peak hour travel demand. Level of service D and E are progressively worse operating conditions. Level of service F represents conditions where average vehicle delay has become excessive, and demand has exceeded capacity. This condition is typically evident in long queues and delays.
- The volume-to-capacity (v/c) ratio represents the level of saturation of the intersection or individual movement. It is determined by dividing the peak hour traffic volume by the maximum hourly capacity of an intersection or turn movement. When the V/C ratio

approaches 0.95, operations become unstable and small disruptions can cause the traffic flow to break down, resulting in the formation of excessive queues.

The City of Wilsonville requires study intersections on public streets to meet its minimum acceptable level of service (LOS) standard, which is LOS D for the overall intersection for the PM peak period.

### EXISTING INTERSECTION OPERATIONS

An analysis of the 2021 existing intersection operations was performed at the two study intersections to determine the current operating conditions of the study area. Intersection operations were analyzed for the PM peak hour using Highway Capacity Manual (HCM) 6th Edition methodology.<sup>4</sup> The volume to capacity (v/c) ratio, delay, and level of service (LOS) of each study intersection are listed in Table 3.

TABLE 3: EXISTING 2021 STUDY INTERSECTION OPERATIONS

INTERSECTION	OPERATING STANDARD	PM PEAK HOUR		
		V/C	DELAY	LOS
<b>UNSIGNALIZED</b>				
SW GARDEN ACRES ROAD/SW RIDDER ROAD/SW CLUTTER STREET*	LOS D	0.29	9.8	A/A
<b>SIGNALIZED</b>				
SW RIDDER ROAD/SW 95TH AVENUE	LOS D	0.69	21.0	C

**\*TWO-WAY STOP INTERSECTIONS:**  
 Delay = Average Stopped Delay per Vehicle (sec) at Worst Movement  
 LOS = Level of Service of Major Street/Minor Street  
 v/c = Volume-to-Capacity Ratio of Worst Movement

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

As shown, all study intersections meet the operating standard (LOS D) for the existing conditions. The HCM reports are provided in Appendix C.

## PROJECT IMPACTS

This chapter reviews the impacts that the proposed development may have on the study area transportation system. This analysis includes site plan evaluation, trip generation, trip distribution, and future year traffic volumes and operating conditions for the four study intersections.

<sup>4</sup> Highway Capacity Manual, 6th Edition, Transportation Research Board, 2017.

## PROPOSED DEVELOPMENT

The project will consist of approximately 65,800 square-feet of industrial manufacturing space used for countertop fabrication, countertop storage, a showroom, and office space.

## FUTURE ANALYSIS SCENARIOS

Operating conditions were analyzed at the study intersections for the following traffic scenarios. The comparison of the following scenarios enables the assessment of project impacts:

- Existing + Stage II
- Existing + Project
- Existing + Stage II + Project

All future analysis scenarios assume the same traffic control as existing conditions. Stage II represents traffic from other developments that have Stage II approval or are under construction in Wilsonville.

## TRIP GENERATION

Trip generation is the method used to estimate the number of vehicles added to site driveways and the adjacent roadway network by a development during a specified period (i.e., such as the PM peak hour). For this study, the Institute of Transportation Engineers (ITE) trip generation rates for the various building uses were applied and combined to estimate the entire site's vehicle trip generation.<sup>5</sup> The total trip generation for the proposed development is shown in Table 4.

TABLE 4: VEHICLE TRIP GENERATION

LAND USE	LAND USE CODE	SIZE (KSF <sup>A</sup> )	PM PEAK HOUR			DAILY TRIPS
			ENTER TRIPS	EXIT TRIPS	TOTAL TRIPS	
MANUFACTURING <sup>B</sup>	140	18.0	5	9	14	86
OFFICE	710	7.8	4	16	20	126
FURNITURE STORE <sup>B</sup>	890	3.0	1	1	2	19
WAREHOUSE/STORAGE <sup>B</sup>	150	37.0	3	4	7	63
<b>TOTAL</b>		<b>65.8</b>	<b>13</b>	<b>30</b>	<b>43</b>	<b>294</b>

<sup>A</sup> KSF = 1,000 square feet

<sup>B</sup> Number of trips is based on the average rate.

As shown, the proposed development is expected to generate a total 43 PM peak hour trips (13 in, 30 out). The project trips at the study intersections are shown in Figure 2 in the following section.

<sup>5</sup> Trip Generation Manual, 11th Edition, Institute of Transportation Engineers, 2021.



### 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 2 shows the trip distribution for the proposed site. The trip distribution was based on the Wilsonville Travel Demand Model.<sup>6</sup>

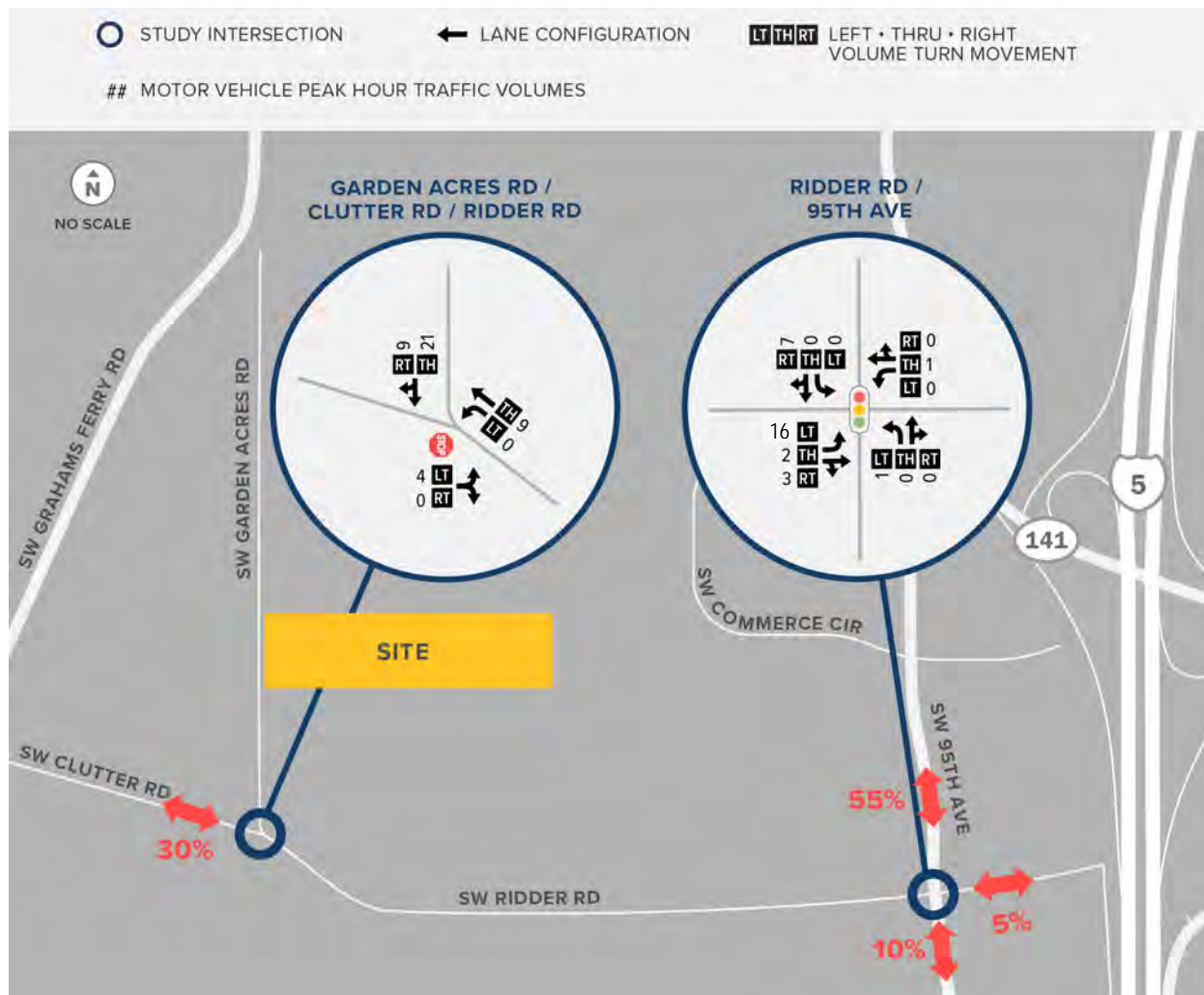


FIGURE 4: TRIP DISTRIBUTION AND PROJECT TRIPS

### PROJECT TRIPS THROUGH CITY OF WILSONVILLE INTERCHANGE AREAS

The project trips through the two City of Wilsonville I-5 interchange areas were estimated based on the trip generation and distribution assumptions as discussed prior.

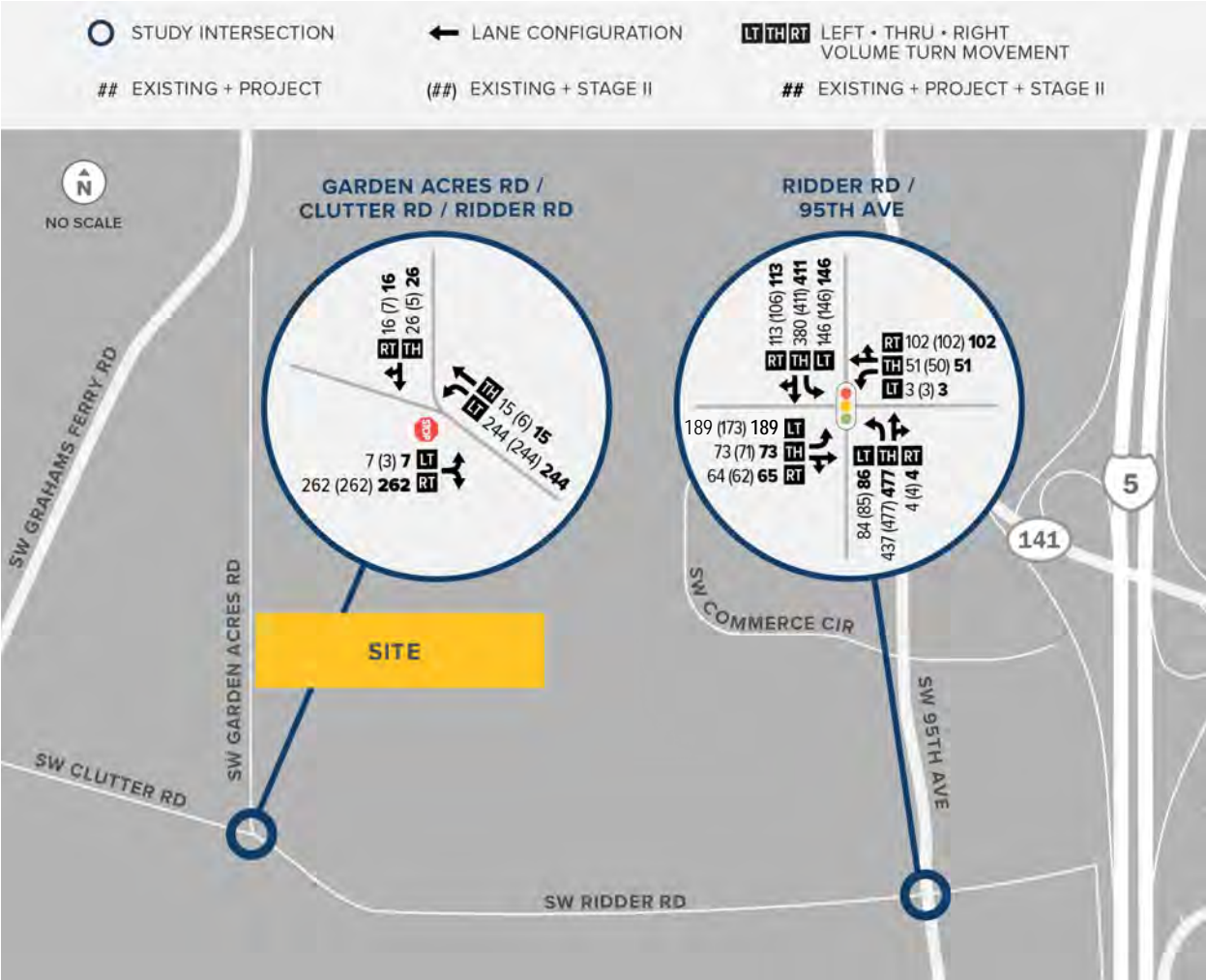
Approximately 5% of the project trips are expected to travel through the I-5/Wilsonville Road interchange area and 45% are expected to travel through the I-5/Elligsen Road interchange area;

<sup>6</sup> Select zone analysis for zone 4146 in 2035 Wilsonville Travel Demand Model.

that is, the proposed development is expected to generate 2 new PM peak hour trips through the I-5/Wilsonville Road interchange area and 19 new PM peak hour trips through the I-5/Elligsen Road interchange area.

**FUTURE TRAFFIC VOLUMES**

Traffic volumes were estimated at the study intersections for the two future analysis scenarios. The future scenarios include various combinations of three types of traffic: Existing, Project, and Stage II. Stage II development trips are estimated based on the list of currently approved Stage II developments provided by City staff.<sup>7</sup> The Stage II list is included in Appendix D. Figure 3 shows the PM peak hour traffic volumes used to analyze the two future scenarios.



**FIGURE 5: FUTURE PM PEAK HOUR TRAFFIC VOLUMES**

<sup>7</sup> Email from Daniel Pauly, City of Wilsonville, September 21, 2021.

**FUTURE INTERSECTION OPERATIONS**

Future operating conditions were analyzed based on the traffic volumes shown in Figure 3. The intersection operations for both future scenarios are shown in Table 5. The HCM reports are provided in Appendices E – G.

**TABLE 5: FUTURE INTERSECTION OPERATIONS**

INTERSECTION	OPERATING STANDARD	EXISTING + PROJECT PM			EXISTING + STAGE II PM			EXISTING + STAGE II + PROJECT PM		
		V/C	DELAY	LOS	V/C	DELAY	LOS	V/C	DELAY	LOS
<b>UNSIGNALIZED</b>										
SW GARDEN ACRES RD/SW RIDDER RD/SW CLUTTER ST*	LOS D	0.31	10.3	A/B	0.29	9.8	A/A	0.31	10.3	A/B
<b>SIGNALIZED</b>										
SW RIDDER ROAD/SW 95TH AVENUE	LOS D	0.72	21.2	C	0.72	22.0	C	0.74	22.2	C

**\*TWO-WAY STOP INTERSECTIONS:**

Delay = Average Stopped Delay per Vehicle (sec) at Worst Movement  
 LOS = Level of Service of Major Street/Minor Street  
 v/c = Volume-to-Capacity Ratio of Worst Movement

**SIGNALIZED INTERSECTION:**

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

As shown, the study intersections are expected to meet the City’s operating standard under all future analysis scenarios.

**SITE REVIEW**

The following sections discuss the site access and sight distance, pedestrian and bicycle facilities, and the parking for the proposed development. The site plan is provided in Appendix H.

**SITE ACCESSES**

The site plan shows two new proposed site access points on SW Garden Acres Road, which will be full-movement access points (no turn restrictions). The driveways are located at the northern and southern ends of the site and are spaced approximately 250 feet apart measured center-to-center. Based on the site plan, the northern access will eventually be removed and shared with the adjacent property owner via with the future Java Road street extension to Grahams Ferry Road (Wilsonville TSP Project #RE-13).

The proposed access points on SW Garden Acres Road are required to meet the City’s public works construction standards.<sup>8</sup> The minimum access spacing standard for an access on a minor arterial is 600 feet, but the desired spacing is 1,000 feet. Based on the City’s access spacing standards, one of the two accesses will need to be removed or a variance to the City access spacing standards will

<sup>8</sup> Table 2.12 Public Works Construction Standards, City of Wilsonville, Revised September 2017.

be required. The secondary access may be feasible in the future via a cross access agreement and shared access with the adjacent property owner.

**SIGHT DISTANCE**

With a worst case assumed design speed of 40 miles per hour (for future minor arterial function), the sight distance requirement along SW Garden Acres Road is 280 feet for vehicles turning left from the minor roadway and 240 feet for vehicles turning right from the minor roadway.<sup>9</sup> Preliminary sight distance was evaluated at the southern staff driveway location on SW Garden Acres Road. The driveway location was found to be sufficient to meet the stated requirements.

Prior to occupancy, sight distance at any new or modified access points will need to be verified, documented, and stamped by a registered professional Civil or Traffic Engineer licensed in the State of Oregon.

**PEDESTRIAN AND BICYCLE FACILITIES**

As stated earlier, there are existing marked bicycle lanes on SW 95th Avenue. Sidewalks currently exist on SW Ridder Road and SW 95th Avenue. No sidewalks currently exist on Clutter Street. Sidewalks and a two-way cycle track were recently built on the east side of SW Garden Acres Road. No additional frontage improvements will be required on Garden Acres Road other than the modifications to the site driveways.



**FIGURE 6: RECENTLY BUILT SIDEWALK AND CYCLE TRACK (EAST SIDE)**

On-site, the preliminary plan shows sidewalks between parking areas and the nearest entrance, and the western entrance includes an entry plaza.

**PARKING**

The proposed project is required to comply with the City code for the number of vehicular parking stalls and bicycle parking spaces that are provided on site.<sup>10</sup> Table 6 lists the vehicular and bicycle parking requirements for the project site. The parking requirements are based on the building use and size.

<sup>9</sup> American Association of State Highway and Transportation Officials (AASHTO), 2018, Table 9-7 and 9-9.

<sup>10</sup> Wilsonville Development Code, Section 4.155, Table 5, updated October 2019.

TABLE 6: VEHICLE AND BICYCLE PARKING REQUIREMENTS

LAND USE	SIZE (KSF)	MINIMUM RATE	MAXIMUM RATE	SPACES REQUIRED BY CODE		
				VEHICLE MINIMUM	VEHICLE MAXIMUM	BICYCLE MINIMUM
MANUFACTURING	18.0	1.6 stalls/KSF	No Limit	29	No Limit	2
OFFICE	7.8	2.7 stalls/KSF	4.1 stalls/KSF	21	32	3
RETAIL (SHOWROOM)	3.0	1.67 stalls/KSF	6.2 stalls/KSF	5	19	1
WAREHOUSE/STORAGE	37.0	0.3 stalls/KSF	0.5 stalls/KSF	11	19	2
<b>TOTAL BUILDING</b>	<b>65.8</b>	-	-	<b>66</b>	<b>No Limit</b>	<b>8</b>
<b>PROPOSED NUMBER OF STALLS</b>				<b>67</b>		<b>12</b>

As shown above, 66 vehicular parking stalls are needed to meet the minimum Code requirements for the project. The site plan proposes 67 vehicular parking stalls, meeting the requirements.

The City code requires a minimum of 8 bicycle parking spaces for the site. The site plans propose 12 bicycle parking spaces, meeting the minimum.

## SUMMARY OF PROJECT IMPACTS

The key findings of the transportation impact study for the Precision Countertops development are discussed below.

- The project will consist of approximately 65,800 square-feet of space used for countertop fabrication, countertop storage, a showroom, and office space. The building will be occupied by a single user, Precision Countertops.
- The proposed development is expected to generate 43 new PM peak hour trips (13 in, 30 out).
- Of those project trips, 2 new trips are expected to travel through the I-5/Wilsonville Road interchange area and 19 new trips are expected to travel through the I-5/Elligsen Road interchange area.
- The traffic operations at the three study intersections are expected to operate within the City's LOS D standard under project build conditions.
- Based on the City's access spacing standards, one of the two accesses on Garden Acres Road will need to be removed or a variance to the City access spacing standards will be required. The secondary access may be feasible in the future via cross access agreement and shared access with the adjacent property owner.

- Prior to occupancy, sight distance at the proposed project access points will need to be verified, documented, and stamped by a registered professional Civil or Traffic Engineer licensed in the State of Oregon.
- The proposed vehicle and bicycle parking stalls shown on the site plan are sufficient to meet the City's parking requirements.

# APPENDIX

## CONTENTS

- A. TRAFFIC COUNT DATA
- B. LOS DESCRIPTION
- C. HCM REPORT – EXISTING CONDITIONS
- D. STAGE II LIST
- E. HCM REPORT – EXISTING + PROJECT
- F. HCM REPORT – EXISTING + STAGE II
- G. HCM REPORT – EXISTING + STAGE II + PROJECT
- H. SITE PLAN



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**APPENDIX A.**

**TRAFFIC COUNT DATA**



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Location: 1 SW 95th Ave & SW Ridder Rd PM

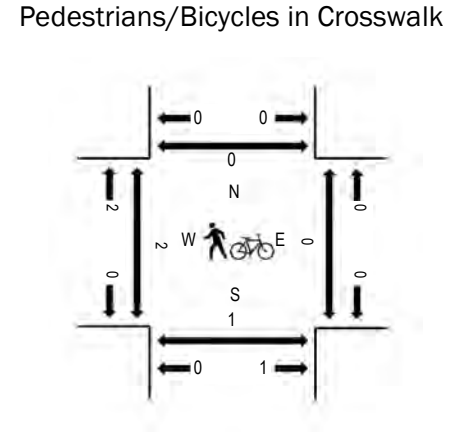
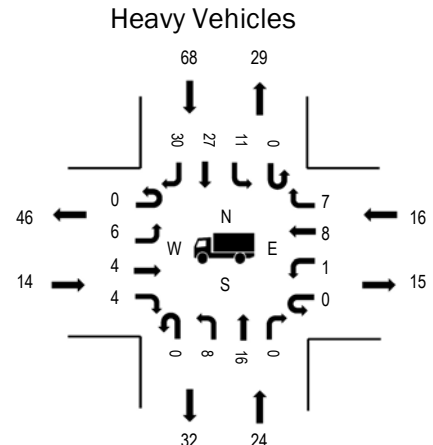
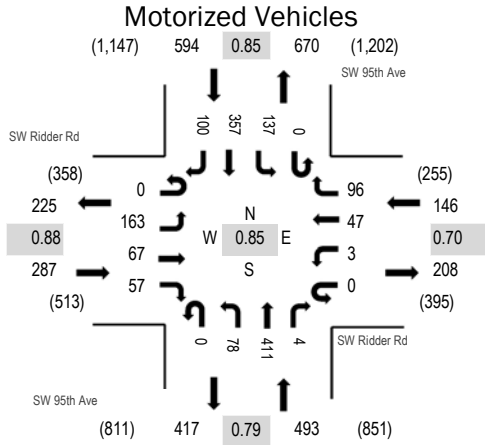
Date: Tuesday, September 28, 2021

Study Peak Hour: 04:25 PM - 05:25 PM

Peak 15-Minutes in Study Peak Hour: 05:05 PM - 05:20 PM

Item 2.

Study Peak Hour (for all study intersections)



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	4.9%	0.88
WB	11.0%	0.70
NB	4.9%	0.79
SB	11.4%	0.85
All	8.0%	0.85

Traffic Counts - Motorized Vehicles

Interval Start Time	SW Ridder Rd Eastbound				SW Ridder Rd Westbound				SW 95th Ave Northbound				SW 95th Ave 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	16	2	4	0	0	3	11	0	4	30	1	0	16	33	10	130	1,396
4:05 PM	0	8	7	1	0	0	2	6	0	10	41	0	0	12	27	4	118	1,383
4:10 PM	0	22	4	4	0	0	4	7	0	6	26	1	0	6	22	4	106	1,444
4:15 PM	0	8	6	3	0	0	5	4	0	5	26	1	0	16	34	4	112	1,489
4:20 PM	0	16	5	3	0	0	3	5	0	2	25	0	0	10	23	6	98	1,493
4:25 PM	0	9	4	8	0	0	5	4	0	4	29	0	0	17	26	6	112	1,520
4:30 PM	0	22	2	7	0	0	3	5	0	2	26	1	0	7	33	8	116	1,509
4:35 PM	0	21	5	4	0	0	6	7	0	9	45	0	0	14	16	15	142	1,493
4:40 PM	0	6	10	5	0	0	5	8	0	6	38	0	0	15	27	9	129	1,466
4:45 PM	0	13	7	5	0	1	3	4	0	7	26	0	0	8	27	3	104	1,436
4:50 PM	0	18	3	5	0	0	0	6	0	8	29	1	0	12	33	5	120	1,426
4:55 PM	0	14	5	5	0	0	5	8	0	6	26	0	0	8	24	8	109	1,385
5:00 PM	0	10	8	2	0	0	2	8	0	5	26	0	0	12	37	7	117	1,370
5:05 PM	0	14	11	3	0	0	5	15	0	14	62	1	0	9	35	10	179	
5:10 PM	0	10	6	2	0	2	5	12	0	9	39	1	0	17	35	13	151	
5:15 PM	0	15	3	3	0	0	3	10	0	6	25	0	0	11	31	9	116	
5:20 PM	0	11	3	8	0	0	5	9	0	2	40	0	0	7	33	7	125	
5:25 PM	0	10	5	3	0	0	3	8	0	1	24	0	0	14	29	4	101	
5:30 PM	0	18	2	3	0	1	3	7	0	2	16	1	0	14	28	5	100	
5:35 PM	0	13	4	8	0	0	1	5	0	1	26	0	0	14	38	5	115	
5:40 PM	0	11	3	2	0	0	2	0	0	2	29	0	0	10	37	3	99	
5:45 PM	0	6	2	3	0	0	1	8	0	4	19	0	0	10	33	8	94	
5:50 PM	0	4	3	2	0	0	3	7	0	1	29	0	0	8	17	5	79	
5:55 PM	0	11	3	1	0	1	2	7	0	2	23	0	0	7	34	3	94	
Count Total	0	306	113	94	0	5	79	171	0	118	725	8	0	274	712	161	2,766	
Peak Hour	0	163	67	57	0	3	47	96	0	78	411	4	0	137	357	100	1,520	

**Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles on Crosswalk**

*Item 2.*

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	4	0	5	9	4:00 PM	0	0	0	0	0	4:00 PM	0	0	0	0	0
4:05 PM	1	5	2	3	11	4:05 PM	0	0	0	0	0	4:05 PM	0	0	0	0	0
4:10 PM	3	7	0	3	13	4:10 PM	0	0	0	0	0	4:10 PM	0	0	0	0	0
4:15 PM	1	5	0	8	14	4:15 PM	0	0	0	0	0	4:15 PM	0	0	1	0	1
4:20 PM	1	1	0	4	6	4:20 PM	0	0	0	0	0	4:20 PM	0	0	0	0	0
4:25 PM	0	3	2	8	13	4:25 PM	0	0	0	0	0	4:25 PM	0	0	0	0	0
4:30 PM	1	3	0	3	7	4:30 PM	0	0	0	0	0	4:30 PM	0	1	0	0	1
4:35 PM	0	1	2	8	11	4:35 PM	0	1	0	0	1	4:35 PM	0	0	0	0	0
4:40 PM	1	2	2	8	13	4:40 PM	0	0	0	1	1	4:40 PM	0	0	0	0	0
4:45 PM	3	1	0	3	7	4:45 PM	0	0	0	1	1	4:45 PM	2	0	0	0	2
4:50 PM	4	5	1	9	19	4:50 PM	0	0	0	0	0	4:50 PM	0	0	0	0	0
4:55 PM	1	1	1	3	6	4:55 PM	0	0	0	0	0	4:55 PM	0	0	0	0	0
5:00 PM	0	3	0	4	7	5:00 PM	0	0	0	0	0	5:00 PM	0	0	0	0	0
5:05 PM	3	2	1	6	12	5:05 PM	0	0	0	0	0	5:05 PM	0	0	0	0	0
5:10 PM	0	1	1	6	8	5:10 PM	0	0	0	0	0	5:10 PM	0	0	0	0	0
5:15 PM	0	1	3	2	6	5:15 PM	0	0	0	1	1	5:15 PM	0	0	0	0	0
5:20 PM	1	1	3	8	13	5:20 PM	0	0	0	0	0	5:20 PM	0	0	0	0	0
5:25 PM	0	1	1	1	3	5:25 PM	0	0	0	0	0	5:25 PM	0	0	0	0	0
5:30 PM	1	3	1	3	8	5:30 PM	0	0	0	0	0	5:30 PM	0	0	0	0	0
5:35 PM	1	0	1	3	5	5:35 PM	0	0	0	0	0	5:35 PM	0	0	0	0	0
5:40 PM	1	2	0	3	6	5:40 PM	0	1	0	0	1	5:40 PM	0	0	2	0	2
5:45 PM	0	0	1	1	2	5:45 PM	0	1	0	0	1	5:45 PM	0	0	2	0	2
5:50 PM	1	0	1	2	4	5:50 PM	0	0	0	0	0	5:50 PM	0	0	0	0	0
5:55 PM	0	1	0	5	6	5:55 PM	0	0	0	0	0	5:55 PM	0	0	0	0	0
Count Total	24	53	23	109	209	Count Total	0	3	0	3	6	Count Total	2	1	5	0	8
Peak Hour	14	24	16	68	122	Peak Hour	0	1	0	3	4	Peak Hour	2	1	0	0	3



(303) 216-2439  
www.alltrafficdata.net

Location: 2 SW Garden Acres Rd & SW Ridder Rd PM

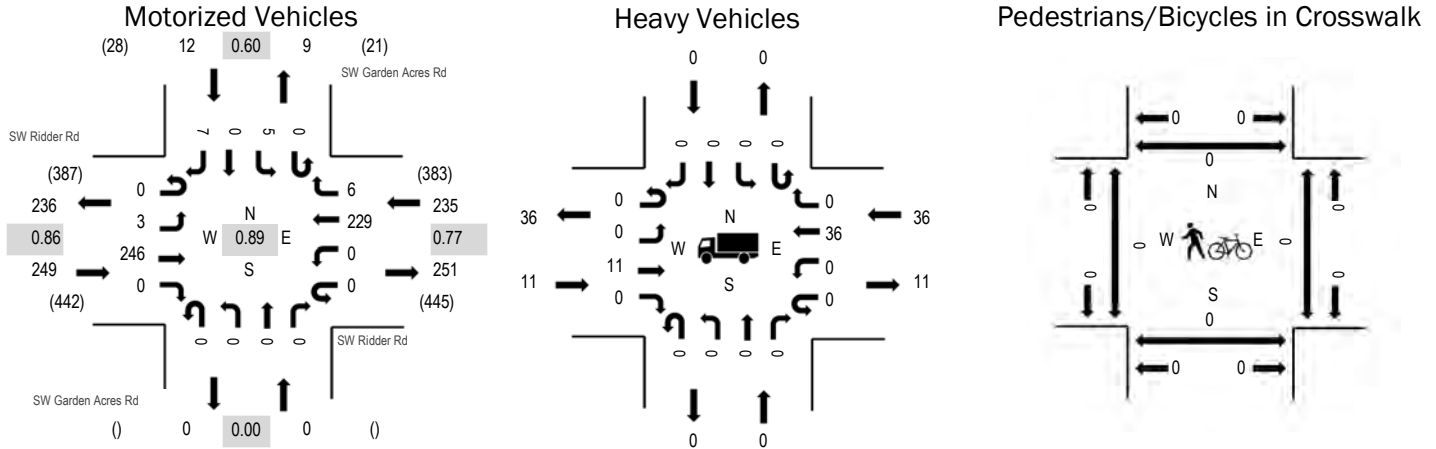
Date: Tuesday, September 28, 2021

Study Peak Hour: 04:25 PM - 05:25 PM

Peak 15-Minutes in Study Peak Hour: 05:05 PM - 05:20 PM

Item 2.

Study Peak Hour (for all study intersections)



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	4.4%	0.86
WB	15.3%	0.77
NB	0.0%	0.00
SB	0.0%	0.60
All	9.5%	0.89

Traffic Counts - Motorized Vehicles

Interval Start Time	SW Ridder Rd Eastbound				SW Ridder Rd Westbound				SW Garden Acres Rd Northbound				SW Garden Acres Rd 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	19	0	0	0	13	2	0	0	0	0	0	1	0	1	38	475
4:05 PM	0	0	20	0	0	0	18	0	0	0	0	0	0	0	0	0	38	469
4:10 PM	0	0	21	0	0	0	13	0	0	0	0	0	0	0	0	0	34	489
4:15 PM	0	0	16	0	0	0	13	3	0	0	0	0	0	0	0	2	34	495
4:20 PM	0	0	18	0	0	0	13	0	0	0	0	0	0	0	0	1	32	498
4:25 PM	0	0	19	0	0	0	18	0	0	0	0	0	0	2	0	1	40	496
4:30 PM	0	1	21	0	0	0	17	1	0	0	0	0	0	0	0	1	41	489
4:35 PM	0	0	25	0	0	0	25	1	0	0	0	0	0	0	0	1	52	483
4:40 PM	0	1	24	0	0	0	20	0	0	0	0	0	0	2	0	0	47	457
4:45 PM	0	0	14	0	0	0	13	0	0	0	0	0	0	0	0	1	28	436
4:50 PM	0	0	23	0	0	0	18	2	0	0	0	0	0	0	0	0	43	426
4:55 PM	0	1	26	0	0	0	19	0	0	0	0	0	0	0	0	2	48	408
5:00 PM	0	0	18	0	0	0	13	0	0	0	0	0	0	1	0	0	32	378
5:05 PM	0	0	27	0	0	0	31	0	0	0	0	0	0	0	0	0	58	
5:10 PM	0	0	15	0	0	0	25	0	0	0	0	0	0	0	0	0	40	
5:15 PM	0	0	17	0	0	0	19	1	0	0	0	0	0	0	0	0	37	
5:20 PM	0	0	17	0	0	0	11	1	0	0	0	0	0	0	0	1	30	
5:25 PM	0	0	19	0	0	0	12	0	0	0	0	0	0	0	0	2	33	
5:30 PM	0	0	20	0	0	0	10	2	0	0	0	0	0	1	0	2	35	
5:35 PM	0	0	17	0	0	0	8	0	0	0	0	0	0	0	0	1	26	
5:40 PM	0	0	15	0	0	0	9	1	0	0	0	0	0	1	0	0	26	
5:45 PM	0	0	4	0	0	0	10	2	0	0	0	0	0	0	0	2	18	
5:50 PM	0	0	14	0	0	0	9	0	0	0	0	0	0	0	0	2	25	
5:55 PM	0	0	8	0	0	0	10	0	0	0	0	0	0	0	0	0	18	
Count Total	0	5	437	0	0	0	367	16	0	0	0	0	0	8	0	20	853	
Peak Hour	0	3	246	0	0	0	229	6	0	0	0	0	0	5	0	7	496	

**Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles on Crosswalk**

*Item 2.*

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	0	2	0	2	4:00 PM	0	0	0	0	0	4:00 PM	0	0	0	0	0
4:05 PM	2	0	0	0	2	4:05 PM	0	0	0	0	0	4:05 PM	0	0	0	0	0
4:10 PM	2	0	2	0	4	4:10 PM	0	0	0	0	0	4:10 PM	2	0	0	0	2
4:15 PM	0	0	3	0	3	4:15 PM	0	0	0	0	0	4:15 PM	0	0	0	0	0
4:20 PM	0	0	3	0	3	4:20 PM	0	0	0	0	0	4:20 PM	0	0	0	0	0
4:25 PM	0	0	3	0	3	4:25 PM	0	0	0	0	0	4:25 PM	0	0	0	0	0
4:30 PM	2	0	4	0	6	4:30 PM	0	0	0	0	0	4:30 PM	0	0	0	0	0
4:35 PM	1	0	4	0	5	4:35 PM	0	0	0	0	0	4:35 PM	0	0	0	0	0
4:40 PM	1	0	4	0	5	4:40 PM	0	0	0	0	0	4:40 PM	0	0	0	0	0
4:45 PM	2	0	1	0	3	4:45 PM	0	0	0	0	0	4:45 PM	0	0	0	0	0
4:50 PM	1	0	5	0	6	4:50 PM	0	0	0	0	0	4:50 PM	0	0	0	0	0
4:55 PM	2	0	3	0	5	4:55 PM	0	0	0	0	0	4:55 PM	0	0	0	0	0
5:00 PM	1	0	3	0	4	5:00 PM	0	0	0	0	0	5:00 PM	0	0	0	0	0
5:05 PM	0	0	5	0	5	5:05 PM	0	0	0	0	0	5:05 PM	0	0	0	0	0
5:10 PM	0	0	2	0	2	5:10 PM	0	0	0	0	0	5:10 PM	0	0	0	0	0
5:15 PM	0	0	2	0	2	5:15 PM	0	0	0	0	0	5:15 PM	0	0	0	0	0
5:20 PM	1	0	0	0	1	5:20 PM	0	0	0	0	0	5:20 PM	0	0	0	0	0
5:25 PM	1	0	2	0	3	5:25 PM	0	0	0	0	0	5:25 PM	0	0	0	0	0
5:30 PM	0	0	1	0	1	5:30 PM	0	0	0	0	0	5:30 PM	0	0	0	0	0
5:35 PM	1	0	1	0	2	5:35 PM	0	0	0	0	0	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	2	0	2
5:45 PM	0	0	1	0	1	5:45 PM	0	0	0	0	0	5:45 PM	0	0	2	0	2
5:50 PM	1	0	1	0	2	5:50 PM	0	0	0	0	0	5:50 PM	0	0	0	0	0
5:55 PM	0	0	2	0	2	5:55 PM	0	0	0	0	0	5:55 PM	0	0	0	0	0
Count Total	18	0	54	0	72	Count Total	0	0	0	0	0	Count Total	2	0	4	0	6
Peak Hour	11	0	36	0	47	Peak Hour	0	0	0	0	0	Peak Hour	0	0	0	0	0

# APPENDIX B

## LOS DESCRIPTION

## TRAFFIC LEVELS OF SERVICE

Analysis of traffic volumes is useful in understanding the general nature of traffic in an area, but by itself indicates neither the ability of the street network to carry additional traffic nor the quality of service afforded by the street facilities. For this, the concept of level of service has been developed to subjectively describe traffic performance. Level of service can be measured at intersections and along key roadway segments.

Levels of service categories are similar to report card ratings for traffic performance. Intersections are typically the controlling bottlenecks of traffic flow and the ability of a roadway system to carry traffic efficiently is generally diminished in their vicinities. Levels of Service A, B and C indicate conditions where traffic moves without significant delays over periods of peak travel demand. Level of service D and E are progressively worse peak hour operating conditions and F conditions represent where demand exceeds the capacity of an intersection. Most urban communities set level of service D as the minimum acceptable level of service for peak hour operation and plan for level of service C or better for all other times of the day. The Highway Capacity Manual provides level of service calculation methodology for both intersections and arterials<sup>1</sup>. The following two sections provide interpretations of the analysis approaches.

---

<sup>1</sup> 2000 *Highway Capacity Manual*, Transportation Research Board, Washington D.C., 2000, Chapter 16 and 17.



## UNSIGNALIZED INTERSECTIONS (Two-Way Stop Controlled)

Unsignalized intersection level of service is reported for the major street and minor street (generally, left turn movements). The method assesses available and critical gaps in the traffic stream which make it possible for side street traffic to enter the main street flow. The 2010 Highway Capacity Manual describes the detailed methodology. It is not unusual for an intersection to experience level of service E or F conditions for the minor street left turn movement. It should be understood that, often, a poor level of service is experienced by only a few vehicles and the intersection as a whole operates acceptably.

Unsignalized intersection levels of service are described in the following table.

### *Level-of-Service Criteria: Automobile Mode*

Control Delay (s/vehicle)	LOS by Volume-to-Capacity Ratio	
	$v/c \leq 1.0$	$v/c > 1.0$
0-10	A	F
>10-15	B	F
>15-25	C	F
>25-35	D	F
>35-50	E	F
>50	F	F

Note: The LOS criteria apply to each lane on a given approach and to each approach on the minor street.  
LOS is not calculated for major-street approaches or for the intersection as a whole

## SIGNALIZED INTERSECTIONS

For signalized intersections, level of service is evaluated based upon average vehicle delay experienced by vehicles entering an intersection. Control delay (or signal delay) includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. In previous versions of this chapter of the HCM (1994 and earlier), delay included only stopped delay. As delay increases, the level of service decreases. Calculations for signalized and unsignalized intersections are different due to the variation in traffic control. The 2000 Highway Capacity Manual provides the basis for these calculations.

Level of Service	Delay (secs.)	Description
A	<10.00	<b>Free Flow/Insignificant Delays:</b> No approach phase is fully utilized by traffic and no vehicle waits longer than one red indication. Most vehicles do not stop at all. Progression is extremely favorable and most vehicles arrive during the green phase.
B	10.1-20.0	<b>Stable Operation/Minimal Delays:</b> An occasional approach phase is fully utilized. Many drivers begin to feel somewhat restricted within platoons of vehicles. This level generally occurs with good progression, short cycle lengths, or both.
C	20.1-35.0	<b>Stable Operation/Acceptable Delays:</b> Major approach phases fully utilized. Most drivers feel somewhat restricted. Higher delays may result from fair progression, longer cycle lengths, or both. Individual cycle failures may begin to appear at this level, and the number of vehicles stopping is significant.
D	35.1-55.0	<b>Approaching Unstable/Tolerable Delays:</b> The influence of congestion becomes more noticeable. Drivers may have to wait through more than one red signal indication. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high v/c ratios. The proportion of vehicles not stopping declines, and individual cycle failures are noticeable.
E	55.1-80.0	<b>Unstable Operation/Significant Delays:</b> Volumes at or near capacity. Vehicles may wait through several signal cycles. Long queues form upstream from intersection. These high delay values generally indicate poor progression, long cycle lengths, and high v/c ratios. Individual cycle failures are a frequent occurrence.
F	>80.0	<b>Forced Flow/Excessive Delays:</b> Represents jammed conditions. Queues may block upstream intersections. This level occurs when arrival flow rates exceed intersection capacity, and is considered to be unacceptable to most drivers. Poor progression, long cycle lengths, and v/c ratios approaching 1.0 may contribute to these high delay levels.

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Source: 2000 Highway Capacity Manual, Transportation Research Board, Washington D.C.

**APPENDIX C**

**HCM REPORT – EXISTING CONDITIONS**

HCM 6th TWSC  
 1: SW Ridder Rd/SW Garden Acres Rd & SW Clutter St

Precision Countertops T  
 Existing (PM Peak) COVID-Adjusted

Item 2.

**Intersection**

Int Delay, s/veh	8.6					
<b>Movement</b>	<b>EBL</b>	<b>EBR</b>	<b>NBL</b>	<b>NBT</b>	<b>SBT</b>	<b>SBR</b>
Lane Configurations	↘		↙	↑	↗	
Traffic Vol, veh/h	3	262	244	6	5	7
Future Vol, veh/h	3	262	244	6	5	7
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	-	0	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	0	4	17	0	0	0
Mvmt Flow	3	294	274	7	6	8

<b>Major/Minor</b>	<b>Minor2</b>	<b>Major1</b>		<b>Major2</b>	
Conflicting Flow All	565	10	14	0	0
Stage 1	10	-	-	-	-
Stage 2	555	-	-	-	-
Critical Hdwy	6.4	6.24	4.27	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.336	2.353	-	-
Pot Cap-1 Maneuver	490	1066	1512	-	-
Stage 1	1018	-	-	-	-
Stage 2	579	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	401	1066	1512	-	-
Mov Cap-2 Maneuver	401	-	-	-	-
Stage 1	834	-	-	-	-
Stage 2	579	-	-	-	-

<b>Approach</b>	<b>EB</b>	<b>NB</b>	<b>SB</b>
HCM Control Delay, s	9.8	7.7	0
HCM LOS	A		

<b>Minor Lane/Major Mvmt</b>	<b>NBL</b>	<b>NBT</b>	<b>EBLn1</b>	<b>SBT</b>	<b>SBR</b>
Capacity (veh/h)	1512	-	1046	-	-
HCM Lane V/C Ratio	0.181	-	0.285	-	-
HCM Control Delay (s)	7.9	-	9.8	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0.7	-	1.2	-	-

HCM 6th Signalized Intersection Summary  
2: SW 95th Ave & SW Ridder Rd

Precision Countertops T Item 2.  
Existing (PM Peak) COVID-Adjusted

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	173	71	61	3	50	102	83	437	4	146	380	106
Future Volume (veh/h)	173	71	61	3	50	102	83	437	4	146	380	106
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1811	1796	1411	1648	1796	1752	1841	1900	1781	1781	1455
Adj Flow Rate, veh/h	204	84	72	4	59	120	98	514	5	172	447	125
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	4	6	7	33	17	7	10	4	0	8	8	30
Cap, veh/h	346	237	203	283	76	154	263	654	6	342	527	147
Arrive On Green	0.11	0.27	0.27	0.00	0.16	0.16	0.05	0.36	0.36	0.09	0.39	0.39
Sat Flow, veh/h	1753	894	766	1344	484	984	1668	1819	18	1697	1339	375
Grp Volume(v), veh/h	204	0	156	4	0	179	98	0	519	172	0	572
Grp Sat Flow(s),veh/h/ln	1753	0	1660	1344	0	1467	1668	0	1837	1697	0	1714
Q Serve(g_s), s	6.8	0.0	5.4	0.2	0.0	8.3	2.4	0.0	17.8	4.4	0.0	21.5
Cycle Q Clear(g_c), s	6.8	0.0	5.4	0.2	0.0	8.3	2.4	0.0	17.8	4.4	0.0	21.5
Prop In Lane	1.00		0.46	1.00		0.67	1.00		0.01	1.00		0.22
Lane Grp Cap(c), veh/h	346	0	440	283	0	229	263	0	660	342	0	675
V/C Ratio(X)	0.59	0.00	0.35	0.01	0.00	0.78	0.37	0.00	0.79	0.50	0.00	0.85
Avail Cap(c_a), veh/h	346	0	634	429	0	560	361	0	961	384	0	896
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	22.0	0.0	21.1	19.1	0.0	28.7	15.2	0.0	20.2	14.8	0.0	19.5
Incr Delay (d2), s/veh	2.3	0.0	0.4	0.0	0.0	4.3	0.6	0.0	4.8	0.9	0.0	8.1
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	2.8	0.0	2.0	0.0	0.0	3.0	0.9	0.0	7.7	1.6	0.0	9.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.2	0.0	21.4	19.2	0.0	33.0	15.8	0.0	25.0	15.7	0.0	27.6
LnGrp LOS	C	A	C	B	A	C	B	A	C	B	A	C
Approach Vol, veh/h		360			183			617			744	
Approach Delay, s/veh		23.0			32.7			23.6			24.9	
Approach LOS		C			C			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.8	32.8	13.0	16.1	11.3	30.4	5.3	23.8				
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	8.0	37.0	8.0	27.0	8.0	37.0	8.0	27.0				
Max Q Clear Time (g_c+I1), s	4.4	23.5	8.8	10.3	6.4	19.8	2.2	7.4				
Green Ext Time (p_c), s	0.1	4.4	0.0	0.5	0.1	4.3	0.0	0.4				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				24.9								
HCM 6th LOS				C								

**APPENDIX D**

**STAGE II LIST**

Updated by D. Pauly 09.21.2021

Project	Land Use	Status	Size	Total PM Peak Trips	Trip Allocation Percentage		Net New (Primary + Diverted) PM Peak Hour Trips not yet active		
					Internal	Pass-By	In	Out	Total
Hydro-Temp: Recent agreement with the City, the project is vested and so are the traffic trips	Office/Flex-Space	Not built	60.8 KSF				44	46	90
Mercedes Benz (Phase 2)	Auto Dealership	Not built					20	26	46
Shredding Systems (SQFT does not including paint canopy and another canopy)	Industrial/Commercial	Under construction	66.8 KSF				20	46	66
Town Center Ph III and trip dedication to Miller Paint store Uses marked with "*" have not been built and PM peak hr trip sum exceeds remaining vested trip level by 2 trips. It has yet to be determined how to allocate trips between remaining buildings.	*High Turnover Restaurant (Pad 1)	Not built	7.5 KSF				24	17	47*
	Remaining Approved Total								47
Wilsonville Road Business Park Phase II	Phase 2 - office (2-story building on west parcel)	Partially Built	21.7 KSF				15	71	86
Frog Pond-Stafford Meadows (Phase 2 and 3a of 10/18 study)	Residential	Partially Built, 24 homes built and occupied	46 units				12	10	22
Frog Pond-Frog Pond Meadows (Phase 3B, 4A, 4B of 10/18 Study)	Residential	Partially Built, 3 homes built and occupied	74 units				44	27	71
Frog Pond Ridge	Residential	Under construction, no homes built	71 units				43	28	71
Frog Pond-Morgan Farm	Residential	Partially Built, 38 homes built and occupied	80 units				28	14	42
Fir Avenue Commons	Residential	Partially Built, 2 homes built and occupied	10 units				6	2	8
Magnolia Townhomes	Residential	Under construction	6 units				3	2	5
Aspen Meadows II	Residential	Under construction, no homes sold and occupied	5 units				2	3	5
Canyon Creek III	Residential	Approved	5 units (traffic study was for 11)				2	3	5
Coffee Creek Logistics	Industrial/Commercial	Under construction	115K				16	41	57

Project	Phase	Status	Land Use					Total PM Peak Trips	Trip Allocation Percentage		Net New (Primary + Diverted) PM Peak Hour Trips not yet active		
			SF	Town.	Apt.	Retail	School		Internal	Pass-By	In	Out	Total
North (Entirety)	Residential	Partially built, 364 homes sold and occupied	466								65	37	102
Central	Residential	Partially Built, 735 homes (102 single family, 319 condo/row homes, 365 apartments) occupied	102	391	365	8.5 KSF					30	13	43

Pending Projects for Which Traffic Analysis has been completed (except Villebois)										
Project	Land Use	Status	Size	Total PM Peak Trips	Trip Allocation Percentage			Net New (Primary) PM Peak Hour Trips		
					Internal	Pass-By	Diverted	In	Out	Total
PW Complex on Boberg	Public	under review	15,800 office, 17,900 warehouse					11	39	50
DAS North Valley Complex	Public/Industrial	under review	174,700 sf					5	15	20
Frog Pond Crossing								19	9	28
Boones Ferry Gas Station/Convenience Store	Commercial	under review	3,460 sf store, 12 gas pumps	240		134		53	53	106



## APPENDIX E

### HCM REPORT – EXISTNG + PROJECT

HCM 6th TWSC  
 1: SW Ridder Rd/SW Garden Acres Rd & SW Clutter St

Intersection						
Int Delay, s/veh	8.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	7	262	244	15	26	16
Future Vol, veh/h	7	262	244	15	26	16
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	-	0	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	0	4	17	0	0	0
Mvmt Flow	8	294	274	17	29	18

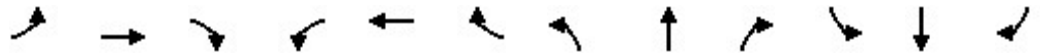
Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	603	38	47	0	0
Stage 1	38	-	-	-	-
Stage 2	565	-	-	-	-
Critical Hdwy	6.4	6.24	4.27	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.336	2.353	-	-
Pot Cap-1 Maneuver	465	1028	1469	-	-
Stage 1	990	-	-	-	-
Stage 2	573	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	378	1028	1469	-	-
Mov Cap-2 Maneuver	378	-	-	-	-
Stage 1	805	-	-	-	-
Stage 2	573	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.3	7.5	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1469	-	984	-	-
HCM Lane V/C Ratio	0.187	-	0.307	-	-
HCM Control Delay (s)	8	-	10.3	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.7	-	1.3	-	-

HCM 6th Signalized Intersection Summary  
2: SW 95th Ave & SW Ridder Rd

Precision Countertops T Item 2.  
Existing + Project (PM Peak)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	190	73	64	3	51	102	84	437	4	146	380	113
Future Volume (veh/h)	190	73	64	3	51	102	84	437	4	146	380	113
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1811	1796	1411	1648	1796	1752	1841	1900	1781	1781	1455
Adj Flow Rate, veh/h	224	86	37	4	60	24	99	514	4	172	447	121
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	4	6	7	33	17	7	10	4	0	8	8	30
Cap, veh/h	397	264	114	273	110	44	291	672	5	368	544	147
Arrive On Green	0.13	0.22	0.22	0.00	0.10	0.10	0.06	0.37	0.37	0.09	0.40	0.40
Sat Flow, veh/h	1753	1195	514	1344	1118	447	1668	1824	14	1697	1350	365
Grp Volume(v), veh/h	224	0	123	4	0	84	99	0	518	172	0	568
Grp Sat Flow(s),veh/h/ln	1753	0	1710	1344	0	1565	1668	0	1838	1697	0	1716
Q Serve(g_s), s	7.2	0.0	3.8	0.1	0.0	3.2	2.2	0.0	15.7	3.9	0.0	18.7
Cycle Q Clear(g_c), s	7.2	0.0	3.8	0.1	0.0	3.2	2.2	0.0	15.7	3.9	0.0	18.7
Prop In Lane	1.00		0.30	1.00		0.29	1.00		0.01	1.00		0.21
Lane Grp Cap(c), veh/h	397	0	378	273	0	154	291	0	677	368	0	692
V/C Ratio(X)	0.56	0.00	0.33	0.01	0.00	0.54	0.34	0.00	0.76	0.47	0.00	0.82
Avail Cap(c_a), veh/h	397	0	731	438	0	669	410	0	1076	430	0	1005
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	21.8	0.0	20.7	19.1	0.0	27.1	13.0	0.0	17.5	12.8	0.0	16.8
Incr Delay (d2), s/veh	1.6	0.0	0.4	0.0	0.0	2.2	0.5	0.0	3.9	0.7	0.0	5.9
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	2.8	0.0	1.4	0.0	0.0	1.2	0.7	0.0	6.5	1.3	0.0	7.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.4	0.0	21.0	19.2	0.0	29.3	13.5	0.0	21.4	13.4	0.0	22.8
LnGrp LOS	C	A	C	B	A	C	B	A	C	B	A	C
Approach Vol, veh/h		347			88			617			740	
Approach Delay, s/veh		22.6			28.9			20.1			20.6	
Approach LOS		C			C			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.5	30.5	13.0	11.2	10.7	28.3	5.3	19.0				
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	8.0	37.0	8.0	27.0	8.0	37.0	8.0	27.0				
Max Q Clear Time (g_c+I1), s	4.2	20.7	9.2	5.2	5.9	17.7	2.1	5.8				
Green Ext Time (p_c), s	0.1	4.8	0.0	0.2	0.1	4.5	0.0	0.3				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				21.2								
HCM 6th LOS				C								

**APPENDIX F**

**HCM REPORT – EXISTNG + STAGE II**

HCM 6th TWSC  
 1: SW Ridder Rd/SW Garden Acres Rd & SW Clutter St

Precision Countertops T  
 Existing + Stage II (PM Peak)

Item 2.

Intersection						
Int Delay, s/veh	8.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔		↔	↑	↑	
Traffic Vol, veh/h	3	262	244	6	5	7
Future Vol, veh/h	3	262	244	6	5	7
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	-	0	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	0	4	17	0	0	0
Mvmt Flow	3	294	274	7	6	8

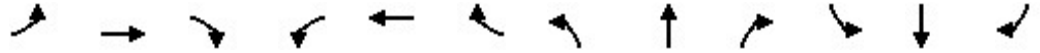
Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	565	10	14	0	0
Stage 1	10	-	-	-	-
Stage 2	555	-	-	-	-
Critical Hdwy	6.4	6.24	4.27	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.336	2.353	-	-
Pot Cap-1 Maneuver	490	1066	1512	-	-
Stage 1	1018	-	-	-	-
Stage 2	579	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	401	1066	1512	-	-
Mov Cap-2 Maneuver	401	-	-	-	-
Stage 1	834	-	-	-	-
Stage 2	579	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.8	7.7	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1512	-	1046	-	-
HCM Lane V/C Ratio	0.181	-	0.285	-	-
HCM Control Delay (s)	7.9	-	9.8	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0.7	-	1.2	-	-

HCM 6th Signalized Intersection Summary  
2: SW 95th Ave & SW Ridder Rd

Precision Countertops T Item 2.  
Existing + Stage II (PM Peak)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	173	71	62	3	50	102	85	477	4	146	411	106
Future Volume (veh/h)	173	71	62	3	50	102	85	477	4	146	411	106
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1811	1796	1411	1648	1796	1752	1841	1900	1781	1781	1455
Adj Flow Rate, veh/h	204	84	35	4	59	22	100	561	4	172	484	116
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	4	6	7	33	17	7	10	4	0	8	8	30
Cap, veh/h	388	260	108	267	110	41	283	702	5	349	580	139
Arrive On Green	0.12	0.22	0.22	0.00	0.10	0.10	0.05	0.38	0.38	0.09	0.42	0.42
Sat Flow, veh/h	1753	1208	503	1344	1143	426	1668	1825	13	1697	1389	333
Grp Volume(v), veh/h	204	0	119	4	0	81	100	0	565	172	0	600
Grp Sat Flow(s),veh/h/ln	1753	0	1712	1344	0	1569	1668	0	1838	1697	0	1722
Q Serve(g_s), s	6.7	0.0	3.8	0.2	0.0	3.2	2.2	0.0	17.7	3.9	0.0	20.2
Cycle Q Clear(g_c), s	6.7	0.0	3.8	0.2	0.0	3.2	2.2	0.0	17.7	3.9	0.0	20.2
Prop In Lane	1.00		0.29	1.00		0.27	1.00		0.01	1.00		0.19
Lane Grp Cap(c), veh/h	388	0	368	267	0	151	283	0	707	349	0	719
V/C Ratio(X)	0.53	0.00	0.32	0.01	0.00	0.54	0.35	0.00	0.80	0.49	0.00	0.83
Avail Cap(c_a), veh/h	388	0	713	427	0	653	398	0	1049	410	0	982
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	22.5	0.0	21.5	19.9	0.0	27.9	13.2	0.0	17.7	13.1	0.0	16.9
Incr Delay (d2), s/veh	1.0	0.0	0.4	0.0	0.0	2.2	0.6	0.0	4.9	0.8	0.0	6.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	0.0	1.4	0.0	0.0	1.2	0.7	0.0	7.5	1.3	0.0	8.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.5	0.0	21.8	19.9	0.0	30.1	13.8	0.0	22.6	13.9	0.0	23.6
LnGrp LOS	C	A	C	B	A	C	B	A	C	B	A	C
Approach Vol, veh/h		323			85			665			772	
Approach Delay, s/veh		22.9			29.7			21.3			21.5	
Approach LOS		C			C			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.5	32.1	13.0	11.2	10.7	29.9	5.3	19.0				
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	8.0	37.0	8.0	27.0	8.0	37.0	8.0	27.0				
Max Q Clear Time (g_c+I1), s	4.2	22.2	8.7	5.2	5.9	19.7	2.2	5.8				
Green Ext Time (p_c), s	0.1	4.9	0.0	0.2	0.1	4.8	0.0	0.3				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				22.0								
HCM 6th LOS				C								

## APPENDIX G

### HCM REPORT – EXISTNG + PROJECT + STAGE II



HCM 6th TWSC  
 1: SW Ridder Rd/SW Garden Acres Rd & SW Clutter St

Precision Countertops T  
 Existing + Stage II + Project (PM Peak)

Item 2.

Intersection						
Int Delay, s/veh	8.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	WT		WT	↑	↑	
Traffic Vol, veh/h	7	262	244	15	26	16
Future Vol, veh/h	7	262	244	15	26	16
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	-	0	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	0	4	17	0	0	0
Mvmt Flow	8	294	274	17	29	18

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	603	38	47	0	0
Stage 1	38	-	-	-	-
Stage 2	565	-	-	-	-
Critical Hdwy	6.4	6.24	4.27	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.336	2.353	-	-
Pot Cap-1 Maneuver	465	1028	1469	-	-
Stage 1	990	-	-	-	-
Stage 2	573	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	378	1028	1469	-	-
Mov Cap-2 Maneuver	378	-	-	-	-
Stage 1	805	-	-	-	-
Stage 2	573	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.3	7.5	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1469	-	984	-	-
HCM Lane V/C Ratio	0.187	-	0.307	-	-
HCM Control Delay (s)	8	-	10.3	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.7	-	1.3	-	-

HCM 6th Signalized Intersection Summary  
2: SW 95th Ave & SW Ridder Rd

Precision Countertops T  
Existing + Stage II + Project (PM Peak)

Item 2.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	190	73	65	3	51	102	86	477	4	146	411	113
Future Volume (veh/h)	190	73	65	3	51	102	86	477	4	146	411	113
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1811	1796	1411	1648	1796	1752	1841	1900	1781	1781	1455
Adj Flow Rate, veh/h	224	86	37	4	60	22	101	561	4	172	484	122
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	4	6	7	33	17	7	10	4	0	8	8	30
Cap, veh/h	384	256	110	262	110	40	282	708	5	352	577	146
Arrive On Green	0.12	0.21	0.21	0.00	0.10	0.10	0.06	0.39	0.39	0.09	0.42	0.42
Sat Flow, veh/h	1753	1195	514	1344	1149	421	1668	1825	13	1697	1373	346
Grp Volume(v), veh/h	224	0	123	4	0	82	101	0	565	172	0	606
Grp Sat Flow(s),veh/h/ln	1753	0	1710	1344	0	1570	1668	0	1838	1697	0	1719
Q Serve(g_s), s	7.5	0.0	4.0	0.2	0.0	3.3	2.2	0.0	17.7	3.9	0.0	20.6
Cycle Q Clear(g_c), s	7.5	0.0	4.0	0.2	0.0	3.3	2.2	0.0	17.7	3.9	0.0	20.6
Prop In Lane	1.00		0.30	1.00		0.27	1.00		0.01	1.00		0.20
Lane Grp Cap(c), veh/h	384	0	366	262	0	150	282	0	714	352	0	723
V/C Ratio(X)	0.58	0.00	0.34	0.02	0.00	0.55	0.36	0.00	0.79	0.49	0.00	0.84
Avail Cap(c_a), veh/h	384	0	707	421	0	649	395	0	1042	412	0	974
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	23.0	0.0	21.7	20.1	0.0	28.2	13.3	0.0	17.6	13.1	0.0	16.9
Incr Delay (d2), s/veh	1.9	0.0	0.4	0.0	0.0	2.3	0.6	0.0	4.6	0.8	0.0	7.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	0.0	1.5	0.0	0.0	1.2	0.7	0.0	7.4	1.3	0.0	8.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.9	0.0	22.1	20.1	0.0	30.4	13.9	0.0	22.3	13.8	0.0	23.9
LnGrp LOS	C	A	C	C	A	C	B	A	C	B	A	C
Approach Vol, veh/h		347			86			666			778	
Approach Delay, s/veh		23.9			30.0			21.0			21.7	
Approach LOS		C			C			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.6	32.4	13.0	11.3	10.7	30.3	5.3	19.0				
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	8.0	37.0	8.0	27.0	8.0	37.0	8.0	27.0				
Max Q Clear Time (g_c+I1), s	4.2	22.6	9.5	5.3	5.9	19.7	2.2	6.0				
Green Ext Time (p_c), s	0.1	4.8	0.0	0.2	0.1	4.8	0.0	0.3				

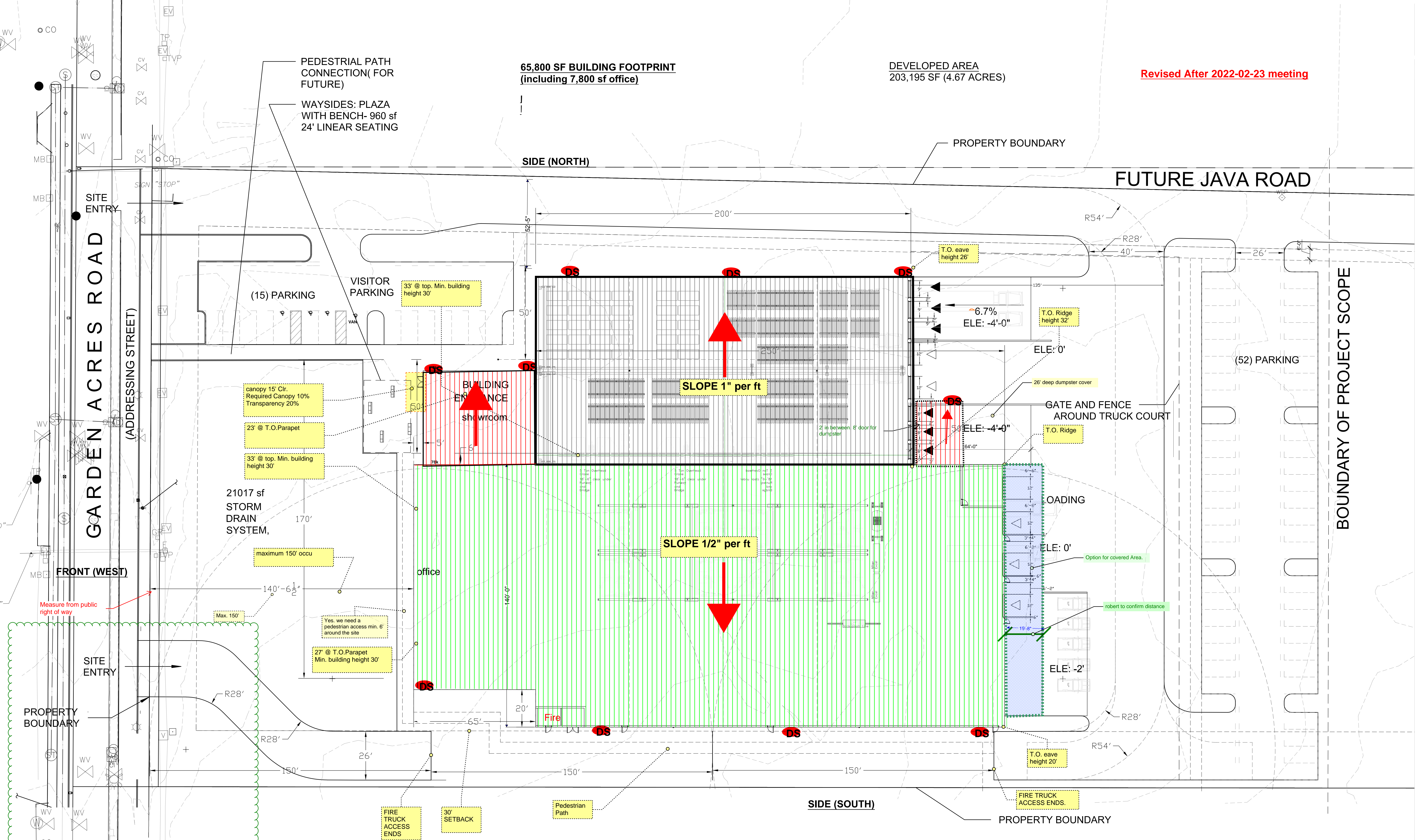
Intersection Summary												
HCM 6th Ctrl Delay				22.2								
HCM 6th LOS				C								

**APPENDIX H**

**SITE PLAN**



Revised After 2022-02-23 meeting



**1 SITE PLAN**  
1" = 20'-0"

Auto parking	SQFT	Per Table 5 Parking standard		
		Parking per 1000 NET	Parking (Required)	
Manufacturing	18000	1.6/ 1000sf	18.0	28.80
Warehouse/ Storage	37000	.3/ 1000sf	37.0	11.10
Retail/ showroom	3000	1.67/ 1000sf	3.0	5.01
Office	7800	2.7/ 1000sf	7.8	21.06
<b>Total</b>	<b>65800</b>			<b>65.97</b>

<b>Total Required per Proposed Plan</b>	<b>65.97</b>
<b>Total Provided</b>	<b>67</b>

Client/ Owner:

Project:  
**Precision Countertops**

25540 SW Garden Acres Road  
Wilsonville OR

Sheet Title:  
**FIRST FLOOR PLAN**

Revisions:  
# Description Date

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Date: 2021-09-22  
Drawn by: Checked by:  
Author Checker  
Job Number: 121036  
Sheet





30" base, 2" offset

1" PER FT ROOF  
27' eave height.  
Verify

Min. 20% glazing

15' HIGH ENTRY  
CANOPY

Suggestion: extend 10'

30' T.O.Parapet

9' storefront  
Adjust accordingly  
per interior layout

Drainage system









January 31, 2023

Simone O'Halloran / MDG

Re: Precision Countertop  
25540 SW Garden Acres Rd.  
Wilsonville, OR 97140

Dear Simone,

Thank you, for sending us the revised site design plans for this proposed development in Wilsonville.

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 industrial and commercial waste removal and recycling services as needed on a weekly basis for this location

We have reviewed the revised site design that you sent us on January 26, 2023 and have determined that the design modifications will allow Republic Services to provide trash and recycle service at this location as previously approved on May 30, 2022.

Thanks Simone, for your help and concerns for our services prior to this project being developed.

Sincerely,

A handwritten signature in blue ink, appearing to read "Kelly Herrod", with a stylized flourish extending from the end.

Kelly Herrod  
Operations Supervisor  
Republic Services Inc.



**FIRE CODE / LAND USE / BUILDING REVIEW  
APPLICATION**

Item 2.



North Operating Center  
11945 SW 70<sup>th</sup> 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: Nang Ma  
Address: 4875 SW Griffith Drive, Suite 300, Beaverton OR 97005  
Phone: 503.244.0552  
Email: nang@mdgpc.com  
Site Address: 25540 SW Garden Acres Rd.  
City: Wilsonville, OR 97140  
Map & Tax Lot #: 500, section 2c, township 3, south, Range 1 West, Willamette Meridian, Washington County, Oregon  
Business Name: Precision Countertop  
Land Use/Building Jurisdiction: Wilsonville  
Land Use/ Building Permit # Not Assigned  
Choose from: Beaverton, Tigard, Newberg, Tualatin, North Plains, West Linn, **Wilsonville**, Sherwood, Rivergrove, Durham, King City, Washington County, Clackamas County, Multnomah County, Yamhill County

**Project Description**

The proposed development scope is constructing a new headquarters and countertop fabrication facility for precision countertops. The proposed building is approximately 65,800 sf consists of a 3000sf showroom, office, storage, and fabrication spaces. The building will be constructed with metal construction. The structure will have a varying height of 25'-40'. The development will be occupying approximately 5 acres of the 10 acres property. The eastern portion of the site would be held for future development or expansion. No work shall be done beyond the limit of the construction boundary.

**Permit/Review Type (check one):**

- Land Use / Building Review - Service Provider Permit
- Emergency Radio Responder Coverage Install/Test
- LPG Tank (Greater than 2,000 gallons)
- Flammable or Combustible Liquid Tank Installation (Greater than 1,000 gallons)
  - \* Exception: Underground Storage Tanks (UST) are deferred to DEQ for regulation.
- Explosives Blasting (Blasting plan is required)
- Exterior Toxic, Pyrophoric or Corrosive Gas Installation (in excess of 810 cu.ft.)
- Tents or Temporary Membrane Structures (in excess of 10,000 square feet)
- Temporary Haunted House or similar
- OLCC Cannabis Extraction License Review
- Ceremonial Fire or Bonfire (For gathering, ceremony or other assembly)

**For Fire Marshal's Office Use Only**

TVFR Permit # 2022-0031  
Permit Type: SPP-COW  
Submittal Date: 3-15-22  
Assigned To: DFM Arn  
Due Date: NA  
Fees Due: \_\_\_\_\_  
Fees Paid: Ø

**Approval/Inspection Conditions**  
(For Fire Marshal's Office Use Only)

**This section is for application approval only**

[Signature] 0430 3/17/22  
Fire Marshal or Designee Date

Conditions: See attached Fire Service Plans.

See Attached Conditions:  Yes  No

Site Inspection Required:  Yes  No

**This section used when site inspection is required**

Inspection Comments:

Final TVFR Approval Signature & Emp ID \_\_\_\_\_ Date \_\_\_\_\_



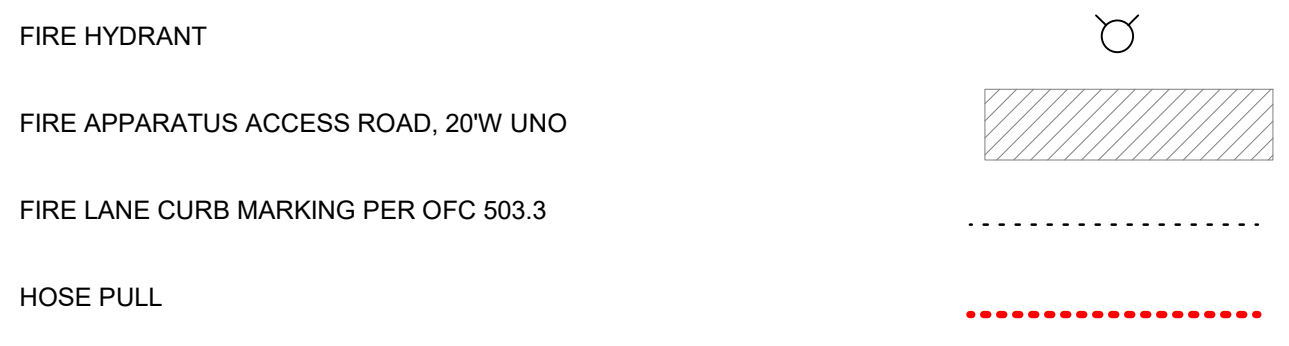
**GENERAL NOTES - FIRE RESPONSE**

- APPROVED FIRE DEPARTMENT ACCESS ROADS, REQUIRED WATER SUPPLY, FIRE HYDRANTS AND SAFETY PRECAUTIONS SHALL BE MADE AVAILABLE PRIOR TO COMBUSTIBLE MATERIALS ARRIVING ON SITE.
- FIRE LANES SHALL BE DESIGNED WITH A UNIFORM ALL-WEATHER DRIVING SURFACE TO SUPPORT THE IMPOSED GVW OF 75,000 LBS WITH A WHEEL LOAD OF 12,500 LBS AND A VERTICAL CLEARANCE OF NOT LESS THAN 13'-0". GRADING SHALL NOT EXCEED 10%.
- WHERE REQUIRED BY FIRE MARSHAL, FIRE APPARATUS ACCESS ROADS SHALL BE MARKED WITH PERMANENT "NO PARKING - FIRE LANE" SIGNS COMPLYING WITH OFC APPENDIX D103.6. FIRE APPARATUS ACCESS ROADS 20'-26" FT WIDE SHALL BE POSTED ON BOTH SIDES, AND ON ONE SIDE WHERE 26'-32" FT WIDE.
- DUMPSTERS AND CONTAINERS WITH AN INDIVIDUAL CAPACITY OF 1.5 CU YD OR MORE SHALL NOT BE STORED IN BUILDINGS OR PLACED WITHIN 5 FT OF COMBUSTIBLE WALLS, OPENINGS, OR COMBUSTIBLE ROOF EAVES UNLESS AREA IS PROTECTED BY AN APPROVED AUTOMATIC FIRE SPRINKLER SYSTEM.
- ABOVE-GROUND GAS METERS, REGULATORS AND PIPING EXPOSED TO VEHICULAR DAMAGE DUE TO PROXIMITY TO ALLEYS, DRIVEWAYS OR PARKING AREAS SHALL BE PROTECTED IN AN APPROVED MANNER.
- 3 FOOT CLEAR SPACE SHALL BE MAINTAINED AROUND THE CIRCUMFERENCE OF FIRE HYDRANTS. WHEN EXPOSED TO VEHICULAR DAMAGE, CONCRETE CURBING, SIDEWALKS OR 4-INCH CONCRETE FILLED BOLLARDS PLACED 3 FT FROM HYDRANTS SHALL SUITABLY PROTECT FIRE HYDRANTS. HYDRANTS SHALL BE COATED WITH APPROVED RED PAINT COLOR AND MARKINGS.
- FIRE EXTINGUISHERS SHALL BE INSTALLED THROUGHOUT THE FACILITY PER SECTION 906 OF THE FIRE CODE AND NFPA 10. THE SIZE AND DISTRIBUTION OF FIRE EXTINGUISHERS SHALL BE IN ACCORDANCE WITH SECTIONS 906.3.1 THROUGH 906.3.4. FIRE EXTINGUISHER RATING SHALL NOT BE LESS THAN A 2A:10BC. MAX UNOBSTRUCTED TRAVEL DISTANCE TO ANY APPROVED EXTINGUISHER SHALL NOT BE MORE THAN 75 FT.
- DELEGATED DESIGN NFPA 13 FIRE SPRINKLER SYSTEM DESIGNED IN ACCORDANCE WITH OSSC 903.3.1.1 WILL BE A DEFERRED SUBMITTAL.
- PLANS FOR FIRE DEPARTMENT CONNECTION (FDC) INDICATING SHUT-OFF VALVES (W/V OR P/V) AND WATER VALVES FOR FIRE SUPPRESSION SYSTEMS SHALL BE SUBMITTED TO THE FIRE OFFICIAL FOR APPROVAL PRIOR TO CONSTRUCTION.

- FIRE SUPPRESSION CONNECTIONS, VALVES AND VAULTS SHALL BE INSTALLED IN REMOTE LOCATIONS AWAY FROM THE BUILDINGS PROTECTED.
- FIRE FLOW DEMAND PER OFC APPENDIX B:
  - PER TABLE B105.2, SECTION 903.3.1.1 DESIGN STANDARD:  
TABLE B105.1(2) - TYPE IIB, 65,071 SF:  
FIRE FLOW RATE: 2,750 GPM  
FIRE FLOW DURATION: 2 HRS  
TABLE B105.2 REQUIRED FIRE FLOW - SPRINKLERED PER IFC 903.3.1.1:  
FIRE FLOW REDUCTION: 2,750 GPM x 0.25 = 687.5 GPM  
**THE REDUCED FIRE FLOW RATE SHALL NOT BE LESS THAN 1,000 GPM**  
**MIN. REQUIRED FIRE FLOW RATE = 1,000 GPM**  
**MIN. REQUIRED FIRE FLOW DURATION = 2 HRS**
- SIGNAGE NOTES:
  - PER OFC 509.1, ROOMS CONTAINING FIRE PROTECTION EQUIPMENT (AIR CONDITIONING SYSTEMS, FIRE SPRINKLER RISERS AND VALVES OR OTHER FIRE DETECTION, SUPPRESSION OR CONTROL ELEMENTS) SHALL BE IDENTIFIED IN AN APPROVED MANNER. REQUIRED SIGNS SHALL BE CONSTRUCTED OF DURABLE MATERIALS, PERMANENTLY INSTALLED AND READILY VISIBLE. SIGNAGE TO BE APPROVED PRIOR TO OCCUPANCY.
  - PER OFC 605.3.1 AND NFPA 20: DOORS INTO ELECTRICAL CONTROL PANEL ROOMS SHALL BE MARKED WITH A PLAINLY VISIBLE AND LEGIBLE SIGN STATING "ELECTRICAL ROOM". SIGNAGE TO BE APPROVED PRIOR TO OCCUPANCY.
  - PER OSC1011.4 A SIGN STATING "EXIT" IN RAISED LETTERS AND BRAILLE AND COMPLYING WITH ICC A117.1 SHALL BE PROVIDED ADJACENT TO EACH DOOR IN AN AREA OF REFUGE, EXTERIOR AREA FOR ASSISTED RESCUE, EXIT STAIRWAY, EXIT RAMP, EXIT PASSAGEWAY AND EXIT DISCHARGE.
  - FIRE DEPARTMENT ACCESS DOORS SHALL BE LABELED ON THE EXTERIOR SIDE WITH THE FOLLOWING SIGN OR OTHER APPROVED SIGN:  
  
FIRE DEPARTMENT ACCESS DOOR  
DO NOT BLOCK

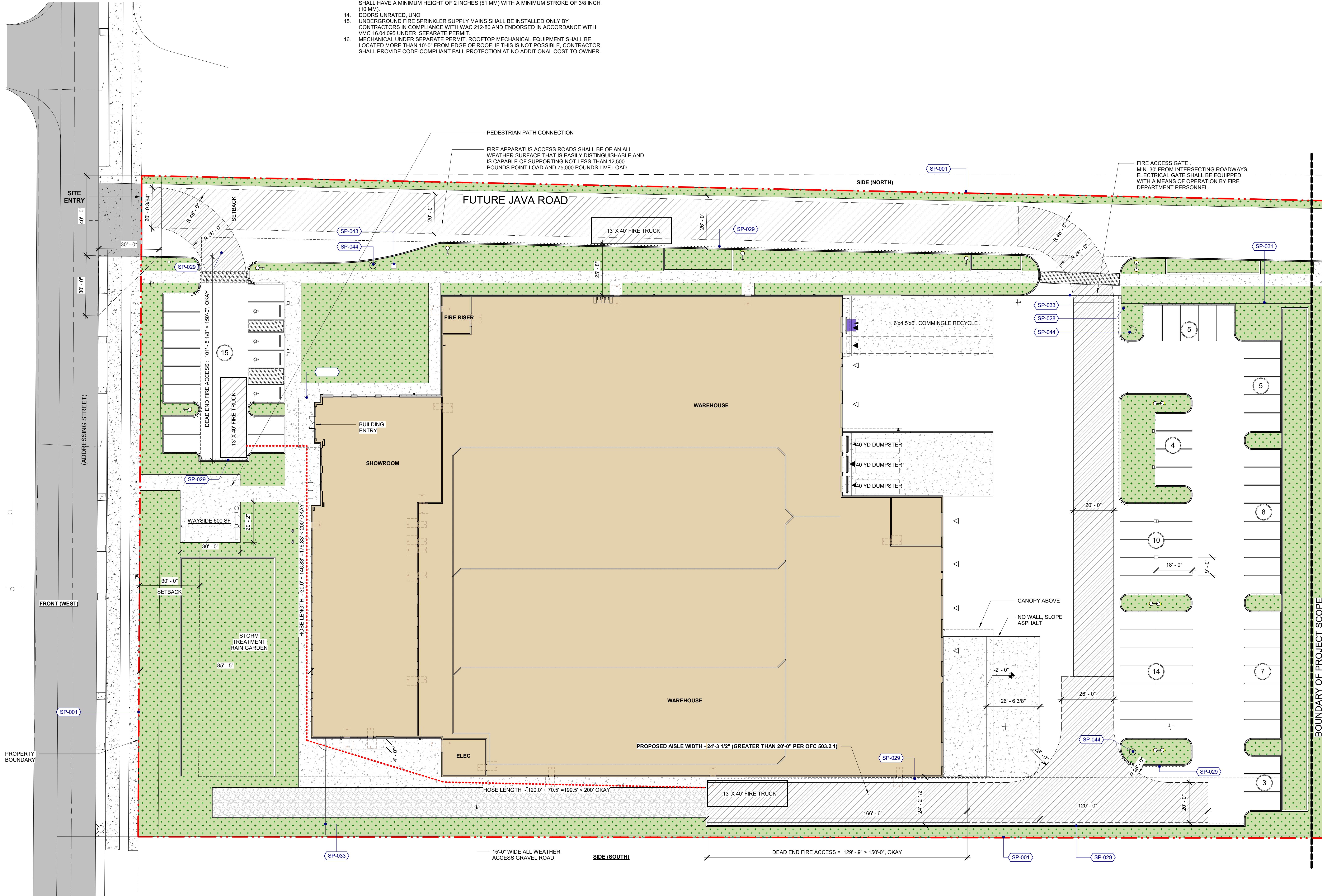
- THE LETTERING SHALL BE IN A CONTRASTING COLOR TO THE BACKGROUND. LETTERS SHALL HAVE A MINIMUM HEIGHT OF 2 INCHES (51 MM) WITH A MINIMUM STROKE OF 3/8 INCH (10 MM).
- DOORS UNRATED, UNO
- UNDERGROUND FIRE SPRINKLER SUPPLY MAINS SHALL BE INSTALLED ONLY BY CONTRACTORS IN COMPLIANCE WITH WAC 212-80 AND ENDORSED IN ACCORDANCE WITH WAC 16.04.085 UNDER SEPARATE PERMIT.
- MECHANICAL UNDER SEPARATE PERMIT. ROOFTOP MECHANICAL EQUIPMENT SHALL BE LOCATED MORE THAN 10'-0" FROM EDGE OF ROOF. IF THIS IS NOT POSSIBLE, CONTRACTOR SHALL PROVIDE CODE-COMPLIANT FALL PROTECTION AT NO ADDITIONAL COST TO OWNER.

**FIRE RESPONSE PLAN LEGEND**



**KEYNOTES**

- SP-001 PROPERTY LINE
- SP-028 KNOX BOX COORDINATE FINAL LOCATION(S) WITH FIRE MARSHAL
- SP-029 FIRE LANE CURB PAINTED RED, MARKED "NO PARKING FIRE LANE" AT 20 FT INTERVALS AND CHANGES IN DIRECTION, WHITE LETTERING: 1" STROKE, 6" HIGH
- SP-031 FENCE, ORNAMENTAL BLACK BAR, 6'-0"
- SP-033 GATE, ORNAMENTAL BLACK BAR, 20'W MIN CLR. ELECTRICAL GATES SHALL BE EQUIPPED WITH A MEANS FOR OPERATION BY FIRE DEPT PERSONNEL
- SP-043 FDC - COORDINATE LOCATION WITH FIRE MARSHAL
- SP-044 FIRE HYDRANT (N)



**2 FIRE SERVICE SITE PLAN**  
1" = 20'-0"



TVFR Permit# 2022-0031

**FD Notes:**  
Building will be required to test for Emergency Responder Radio Coverage or opt into our Mobile Emergency Radio program (MERRC). If the MERRC option is chosen, fees will need to be paid to TVFR prior to the issuance of a Building permit OFC 510.  
Fire Lane markings to be determined OFC 503.3.  
Fire department final inspection required OFC 107.2.

Client/ Owner:  
**PRECISION COUNTERTOPS**

26200 SW 95th AVE  
WILSONVILLE OR  
97070

Project:  
**PRECISION COUNTERTOPS**

SW GARDEN ACRES ROAD  
WILSONVILLE,  
OREGON 97070

Sheet Title:  
**FIRE SERVICE SITE PLAN**

Revisions:

#	Description	Date
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Date: 12/23/2022  
Job Number: 121036  
Sheet



Survey Number	Common and Scientific Name	DBH	Condition Health	Condition Structure	Field Notes/ Comments
t 1	Pinus palustris	42	Good	Good	
t 2	Pinus palustris	36	Good	Good	
t 3	Pinus palustris	38	Good	Good	low canopy
t 4	Pinus palustris	32	Good	Good	
t 5	Pinus palustris	20	Good	Good	
t 6	Pinus palustris	13	Good	Good	
t 7	Pinus palustris	13	Good	Good	
t 8	Pinus palustris	22	Good	Good	
t 9	Douglas-fir (Pseudotsuga menziesii)	10	Good	Good	
t 10	Douglas-fir (Pseudotsuga menziesii)	25	Good	Good	
t 11	Douglas-fir (Pseudotsuga menziesii)	29	Fair	Fair	
t 12	Douglas-fir (Pseudotsuga menziesii)	24	Fair	Poor	
t 13	Douglas-fir (Pseudotsuga menziesii)	21	Fair	Poor	
t 14	madrone (Arbutus menziesii)	8	Fair	Poor	
t 15	Douglas-fir (Pseudotsuga menziesii)	21	Fair	Poor	
t 16	Douglas-fir (Pseudotsuga menziesii)	27	Fair	Poor	
t 17	Douglas-fir (Pseudotsuga menziesii)	12	Fair	Poor	heavy lean
t 18	Douglas-fir (Pseudotsuga menziesii)	27	Fair	Poor	
t 19	Douglas-fir (Pseudotsuga menziesii)	16	Fair	Fair	
t 20	grand-fir (Abies grandis)	19	Fair	Fair	
t 21	grand-fir (Abies grandis)	27	Fair	Fair	
t 22	Douglas-fir (Pseudotsuga menziesii)	11	Fair	Fair	
t 23	Douglas-fir (Pseudotsuga menziesii)	24	Fair	Fair	
t 24	grand-fir (Abies grandis)	22	Fair	Fair	poison oak
t 25	grand-fir (Abies grandis)	20	Fair	Fair	
t 26	grand-fir (Abies grandis)	23	Fair	Fair	
t 27	madrone (Arbutus menziesii)	14	Fair	Poor	
t 28	grand-fir (Abies grandis)	26	Fair	Fair	

t	29	grand-fir (Abies grandis)	17	Fair	Fair	
t	30	grand-fir (Abies grandis)	23	Fair	Fair	
t	31	grand-fir (Abies grandis)	16	Fair	Fair	
t	32	Douglas-fir (Pseudotsuga menziesii)	16	Fair	Fair	
t	33	Douglas-fir (Pseudotsuga menziesii)	31	Fair	Fair	
t	34	grand-fir (Abies grandis)	16	Fair	Fair	
t	35	grand-fir (Abies grandis)	16	Dead/Dying	Failed/Failing	
t	36	grand-fir (Abies grandis)	18	Fair	Fair	
t	37	grand-fir (Abies grandis)	10	Fair	Failed/Failing	broken top
t	38	Douglas-fir (Pseudotsuga menziesii)	8	Fair	Failed/Failing	broken top
t	39	giant-sequoia (Sequoiadendron giganteum)	34	Good	Good	
t	40	grand-fir (Abies grandis)	18	Fair	Poor	heavy lean
t	41	grand-fir (Abies grandis)	16	Good	Good	
t	42	grand-fir (Abies grandis)	16	Good	Good	
t	43	grand-fir (Abies grandis)	24	Good	Good	
t	44	grand-fir (Abies grandis)	17	Fair	Fair	
t	45	red pine (Pinus resinosa)	20	Poor	Poor	
t	46	grand-fir (Abies grandis)	29	Fair	Fair	
t	47	Douglas-fir (Pseudotsuga menziesii)	40	Fair	Fair	
t	48	Douglas-fir (Pseudotsuga menziesii)	36	Fair	Fair	
t	49	Douglas-fir (Pseudotsuga menziesii)	36	Fair	Fair	
t	50	Douglas-fir (Pseudotsuga menziesii)	24	Fair	Fair	
t	51	Douglas-fir (Pseudotsuga menziesii)	36	Fair	Fair	
t	52	Douglas-fir (Pseudotsuga menziesii)	28	Fair	Fair	
t	53	Douglas-fir (Pseudotsuga menziesii)	18	Fair	Fair	
t	54	Douglas-fir (Pseudotsuga menziesii)	42	Fair	Fair	
t	55	Douglas-fir (Pseudotsuga menziesii)	24	Fair	Fair	
t	56	Douglas-fir (Pseudotsuga menziesii)	46	Fair	Fair	
t	57	Douglas-fir (Pseudotsuga menziesii)	34	Fair	Fair	
t	58	Douglas-fir (Pseudotsuga menziesii)	40	Fair	Fair	
t	59	Douglas-fir (Pseudotsuga menziesii)	40	Fair	Fair	




t	60	Douglas-fir ( <i>Pseudotsuga menziesii</i> )	38	Fair	Fair	
t	61	Douglas-fir ( <i>Pseudotsuga menziesii</i> )	38	Fair	Fair	
t	62	Douglas-fir ( <i>Pseudotsuga menziesii</i> )	38	Fair	Fair	
t	63	Douglas-fir ( <i>Pseudotsuga menziesii</i> )	38	Fair	Fair	



# PRECISION COUNTERTOPS

## 25540 SW GARDEN ACRES ROAD

## WILSONVILLE, OREGON

ZONING ANALYSIS	BUILDING CODE ANALYSIS	ENERGY CODE ANALYSIS	SHEET INDEX																																																																																																																																													
<p>ZONING: PDI - PLANNED DEVELOPMENT INDUSTRIAL COFFEE CREEK INDUSTRIAL DESIGN OVERLAY DISTRICT</p> <p><b>CHAPTER 4.155.03 - PLANNED DEVELOPMENT INDUSTRIAL ZONE</b> USES THAT ARE TYPICALLY PERMITTED: WAREHOUSES, FABRICATION, MANUFACTURING AND PROCESSING. LIMITED USES: OFFICE USES - LIMITED TO 20% OF MAXIMUM TOTAL FLOOR AREA RETAIL USES - LIMITED TO 3,000 SF</p> <p>LOT AREA: NONE BUILDING SETBACKS, MIN: FRONT: 30 FT SIDE: 30 FT REAR: 30 FT</p> <p>CHAPTER 4.155.03 MINIMUM AND MAXIMUM OFF-STREET PARKING REQUIREMENTS OFFICE: MIN: 2,711,000 SF MAX: 4,111,000 SF RETAIL/SHOWROOM: MIN: 1,671,000 SF MAX: 6,211,000 SF WAREHOUSE/STORAGE: MIN: 0,311,000 SF MAX: 0,511,000 SF MANUFACTURING: MIN: 1,611,000 SF MAX: NONE</p> <p>DIMENSIONS, 2-WAY, 90-DEG: 9.0'W x 20.0'L, 24.0' AISLE</p> <p>CHAPTER 4.155.04 - BICYCLE PARKING OFFICE: MIN: 2 OR 1 PER 5,000 SF = 2 RETAIL/SHOWROOM: MIN: 2 OR 1 PER 8,000 SF = 2 WAREHOUSE/STORAGE: MIN: 2 OR 1 PER 20,000 SF = 2 MANUFACTURING: MIN: 6 OR 1 PER 10,000 SF = 6</p> <p>4.155.04 C.2, WHERE 6 OR MORE BICYCLE PARKING SPACES ARE REQUIRED, 50% OF REQUIRED BICYCLE PARKING TO BE LONG-TERM.</p> <p>DIMENSIONS: 2.0'W x 6.0'L</p> <p>CHAPTER 4.155.04 MINIMUM OFF-STREET LOADING REQUIREMENTS 2 SPACES REQUIRED. (2) 30,000 SF - 100,000 SF MIN: 12.0'W x 35.0'L x 14.0'H</p>	<p><b>GOVERNING CODES</b> 2019 OREGON OREGON STRUCTURAL SPECIALTY CODE (OSSC) 2018 INTERNATIONAL FIRE CODE (IFC) 2019 OREGON MECHANICAL SPECIALTY CODE (OMSC) 2019 OREGON ELECTRICAL SPECIALTY CODE (OESC) 2019 OREGON PLUMBING SPECIALTY CODE (OPSC) 2021 OREGON ENERGY EFFICIENCY SPECIALTY CODE (OEECS) 2020 NFPA 13 STANDARD FOR INSTALLATION OF SPRINKLER SYSTEMS 2020 NFPA 72 NATIONAL FIRE ALARM AND SIGNALING CODE 2020 NFPA 110 STANDARD FOR EMERGENCY AND STANDBY POWER SYSTEMS 2010 ADA STANDARDS FOR ACCESSIBLE DESIGN</p> <p><b>OCCUPANCY AND CONSTRUCTION</b> ASSUMED OCCUPANCY: CONSTRUCTION TYPE: REQUIRED SEPARATION: BUILDING HEIGHT AND AREA ALLOWABLE HEIGHT: ALLOWABLE STORIES: PROPOSED HEIGHT: PROPOSED STORIES: ALLOWABLE AREA: I-B ONE STORY SPRINKLERED ACTUAL BUILDING AREA: FIRE-RESISTANCE RATING REQUIREMENTS STRUCTURAL FRAME: EXTERIOR BEARING WALLS: EXTERIOR NON-BEARING WALLS: INTERIOR NON-BEARING WALLS: FLOOR CONSTRUCTION: ROOF CONSTRUCTION: OPENING PROTECTION IN EXTERIOR WALLS: 5 FT TO &lt; 10 FT 30 FT OR GREATER FIRE PROTECTION INTERIOR FINISH F, B, M, S: EXIT TRAVEL DISTANCE B OCCUPANCY: F-1 OCCUPANCY: M OCCUPANCY: S-1 OCCUPANCY: FREEZE PROTECTION: NOT</p> <p>PER IBC 304, 306, 311 AND 602.2 F-1, S-1, B, M I-B F-1, S-1, B, M : NO SEPARATION REQUIREMENT PER OSSC SECTION 508.3 PER OSSC TABLES 504.3, 504.4, 506.2 F-1, S-1, B, M: 75' F-1, S-1, M: 3 B: 4 VARYING (35'-8" MAX) &lt; 75', OKAY B (S1): 92,000 SF F-1 (S1): 62,000 SF M (S1): 50,000 SF S-1 (S1): 70,000 SF B (S1): 6,820 SF &lt; 92,000 SF, OKAY F-1 (S1): 20,233 SF &lt; 62,000 SF, OKAY M (S1): 2,973 SF &lt; 50,000 SF, OKAY S-1 (S1): 35,976 SF &lt; 70,000 SF, OKAY PER OSSC TABLE 601 AND 602 0 HRS 0 HRS 0 HRS 0 HRS 0 HRS 25%, UNPROTECTED / SPRINKLERED NO LIMIT, UNPROTECTED / SPRINKLERED BUILDING IS EQUIPPED WITH AN AUTOMATIC FIRE PROTECTION SYSTEM THROUGHOUT IN IAW WITH OSSC 903.3.1.1 AND DESIGNED TO ACCOMMODATE HAZARD CLASSES 1,4, WITH AN INTERIOR CLEAR HEIGHT OF 22'-0" CLASS C - ROOMS AND ENCLOSED SPACES 1006 2.1: &lt;49 OCC, COMMON PATH OF EGRESS &lt; 100'-0" (SPRINKLERED) 1017.2: EXIT ACCESS TRAVEL DISTANCE &lt; 300'-0" (SPRINKLERED) 1006 2.1: &lt;49 OCC, COMMON PATH OF EGRESS &lt; 100'-0" (SPRINKLERED) 1017.2: EXIT ACCESS TRAVEL DISTANCE &lt; 250'-0" (SPRINKLERED) 1006 2.1: &lt;49 OCC, COMMON PATH OF EGRESS &lt; 75'-0" (SPRINKLERED) 1017.2: EXIT ACCESS TRAVEL DISTANCE &lt; 250'-0" (SPRINKLERED) 1006 2.1: &lt;29 OCC, COMMON PATH OF EGRESS &lt; 100'-0" (SPRINKLERED) 1017.2: EXIT ACCESS TRAVEL DISTANCE &lt; 250'-0" (SPRINKLERED) GAS FIRED UNIT HEATING SYSTEM LOCATED IN WAREHOUSE WITH A THERMOSTAT HAVING A MAXIMUM SET POINT CAPACITY OF 48°F MOUNTED LOWER THAN THE HEATING UNIT WITH AN OUTPUT CAPACITY NOT EXCEEDING 15 Btu/hr/12 OR 4 Watts/12 OF HEATED FLOOR AREA.</p>	<p><b>TABLE 5.5.4 BUILDING ENVELOPE REQUIREMENTS FOR CLIMATE ZONE 4 (A, B, C)</b></p> <p>ROOFS: METAL BUILDING: WALLS ABOVE GRADE: METAL BUILDING: WALLS BELOW GRADE: N/A SLAB-ON-GRADE FLOORS: UNHEATED HEATED OPAQUE DOORS: SWINGING NON-SWINGING VERTICAL FENESTRATION: FIXED: OPERABLE: ENTRANCE DOOR: SKYLIGHT: ALL TYPES: SKYLIGHT SIZE/ QUANTITY: DAYLIGHT AREA UNDER SKYLIGHT BUILDING AREA PER 5.5.4.2.3 CEILING HEIGHT ≥ 15.0' BUILDING AREA / DAYLIGHT AREA</p> <p>R-19 + R-11 LINEAR SYSTEM OR R-25 + R-8 LINEAR SYSTEM, NON-RESIDENTIAL R-19, SEMI-HEATED R-0 + R-15.8 C.I., NON RESIDENTIAL R-13, SEMI-HEATED R-7.5 C.I., NON-RESIDENTIAL NR, SEMI-HEATED R-15 FOR 24" NR, SEMI-HEATED R-20 FOR 24" R-10 FOR 24" U-0.370, NON-RESIDENTIAL U-0.370, SEMI-HEATED U-0.310, NON-RESIDENTIAL U-0.360, SEMI-HEATED 0.36, ASSY MAX U, NON-RESIDENTIAL 0.36, ASSY MAX SHGC, NON-RESIDENTIAL 1.10, ASSY MIN VT SHGC, NON-RESIDENTIAL 0.45, ASSY MAX U, NON-RESIDENTIAL 0.33, ASSY MAX SHGC, NON-RESIDENTIAL 1.10, ASSY MIN VT SHGC, NON-RESIDENTIAL 0.63, ASSY MAX U, NON-RESIDENTIAL 0.33, ASSY MAX SHGC, NON-RESIDENTIAL 1.10, ASSY MIN VT SHGC, NON-RESIDENTIAL 0.50, ASSY MAX U, NON-RESIDENTIAL 0.40, ASSY MAX SHGC, NON-RESIDENTIAL NR, SEMI-HEATED NR, SEMI-HEATED 7 x 27.00' FT CEILING HEIGHT = 18.90' x 2 = 37.80' EW ( 37.80' EW + 2.5'W ) x (37.80' EW + 10.0'L) = 40.30'W x 47.80'L DAYLIGHT AREA PER SKYLIGHT = 40.30'W x 47.80'L = 1,926.4 SF 53,166.47 SF 50% x 53,166.47 SF = 26,583.24 SF 26,583.24 SF / 1,926.4 SF = 13.80 SKYLIGHTS, MIN SKYLIGHTS TO BE 2.5'W x 10.0'L</p> <p><b>SECTION 5.4.3.1.2 CONTINUOUS AIR BARRIER DESIGN AND INSTALLATION</b> CONTINUOUS AIR BARRIER SHALL BE DESIGNED TO RESIST POSITIVE AND NEGATIVE PRESSURES FROM WIND, STACK EFFECT, AND MECHANICAL VENTILATION AND ALLOW FOR ANTICIPATED MOVEMENTS. THE FOLLOWING AREAS OF THE CONTINUOUS AIR BARRIER IN THE BUILDING ENVELOPE SHALL BE WRAPPED, SEALED, CAULKED, GASKETED OR TAPED IN AN APPROVED MANNER TO MINIMIZE AIR LEAKAGE: A. JOINTS AROUND FENESTRATION AND DOOR FRAMES. B. JUNCTIONS BETWEEN WALLS AND FLOORS, BETWEEN WALLS AT BUILDING CORNERS AND BETWEEN WALLS AND ROOFS. C. PENETRATIONS THROUGH THE CONTINUOUS AIR BARRIER IN BUILDING ENVELOPE ROOFS, WALLS AND FLOORS. D. BUILDING ASSEMBLIES USED AS DUCTS OR PLENUMS. E. JOINTS, SEAMS, CONNECTIONS BETWEEN PLANES AND OTHER CHANGES IN CONTINUOUS AIR BARRIER MATERIALS.</p>	<table border="1"> <thead> <tr> <th>SHEET #</th> <th>SHEET NAME</th> <th>6</th> </tr> </thead> <tbody> <tr><td colspan="3">01 GENERAL</td></tr> <tr><td>CS</td><td>COVER SHEET</td><td>*</td></tr> <tr><td>G0.1</td><td>PROJECT DATA</td><td>*</td></tr> <tr><td>G1.0</td><td>SITE SURVEY AND EXISTING CONDITIONS</td><td>*</td></tr> <tr><td>G1.2</td><td>CONSTRUCTION STAGING</td><td>*</td></tr> <tr><td>G2.0</td><td>RENDERINGS</td><td>*</td></tr> <tr><td>G2.1</td><td>RENDERINGS</td><td>*</td></tr> <tr><td>G2.2</td><td>RENDERINGS</td><td>*</td></tr> <tr><td>G3.0</td><td>RECYCLING FLOW &amp; DETAILS</td><td>*</td></tr> <tr><td colspan="3">02 CIVIL</td></tr> <tr><td>C0</td><td>GENERAL NOTES AND LEGENDS</td><td>*</td></tr> <tr><td>C1</td><td>EXISTING CONDITIONS PLAN</td><td>*</td></tr> <tr><td>C1.1</td><td>EXISTING CONDITIONS PLAN</td><td>*</td></tr> <tr><td>C2</td><td>GRADING PLAN</td><td>*</td></tr> <tr><td>C2.1</td><td>GRADING PLAN</td><td>*</td></tr> <tr><td>C3</td><td>STORMWATER PLAN</td><td>*</td></tr> <tr><td>C3.1</td><td>STORMWATER PLAN</td><td>*</td></tr> <tr><td>C4</td><td>WATER &amp; SANITARY SEWER PLAN</td><td>*</td></tr> <tr><td>C4.1</td><td>WATER &amp; SANITARY SEWER PLAN</td><td>*</td></tr> <tr><td>C5</td><td>DETAILS</td><td>*</td></tr> <tr><td>C5.1</td><td>DETAILS</td><td>*</td></tr> <tr><td>C5.2</td><td>DETAILS</td><td>*</td></tr> <tr><td colspan="3">03 LANDSCAPE</td></tr> <tr><td>L1.0</td><td>LANDSCAPE PLAN</td><td>*</td></tr> <tr><td>L1.1</td><td>TREE REMOVAL PLAN</td><td>*</td></tr> <tr><td>L2.0</td><td>LANDSCAPE SPECIFICATIONS &amp; DETAILS</td><td>*</td></tr> <tr><td colspan="3">05 ARCHITECTURAL</td></tr> <tr><td>A1.0</td><td>OVERALL SITE PLAN</td><td>*</td></tr> <tr><td>A1.1</td><td>ENLARGED SITE PLAN</td><td>*</td></tr> <tr><td>A1.2</td><td>SITE PLAN (FUTURE)</td><td>*</td></tr> <tr><td>A1.3</td><td>SITE DETAILS</td><td>*</td></tr> <tr><td>A1.4</td><td>SITE DETAILS</td><td>*</td></tr> <tr><td>A2.1</td><td>FLOOR PLAN</td><td>*</td></tr> <tr><td>A3.1</td><td>BUILDING ELEVATIONS</td><td>*</td></tr> <tr><td>A3.2</td><td>SIGNAGE, ENTRY, GLAZING CALCULATION</td><td>*</td></tr> <tr><td>A3.3</td><td>SIGNAGE</td><td>*</td></tr> <tr><td>A4.1</td><td>BUILDING SECTIONS</td><td>*</td></tr> <tr><td>A4.2</td><td>BUILDING SECTIONS</td><td>*</td></tr> <tr><td colspan="3">09 SITE LIGHTING</td></tr> <tr><td>LT1.0</td><td>LIGHTING PLAN, STATISTICS, SCHEDULES</td><td>*</td></tr> <tr><td>LT1.2</td><td>LIGHTING PLAN, STATISTICS, SCHEDULES</td><td>*</td></tr> <tr><td>LT2.0</td><td>LIGHTING CUT SHEETS</td><td>*</td></tr> <tr><td>LT2.1</td><td>LIGHTING CUT SHEETS</td><td>*</td></tr> <tr><td>LT3.0</td><td>WAYSIDE SUNLIGHT STUDY</td><td>*</td></tr> <tr><td colspan="3">10 FIRE SERVICE</td></tr> <tr><td>FS1.0</td><td>FIRE SERVICE SITE PLAN</td><td>*</td></tr> </tbody> </table>	SHEET #	SHEET NAME	6	01 GENERAL			CS	COVER SHEET	*	G0.1	PROJECT DATA	*	G1.0	SITE SURVEY AND EXISTING CONDITIONS	*	G1.2	CONSTRUCTION STAGING	*	G2.0	RENDERINGS	*	G2.1	RENDERINGS	*	G2.2	RENDERINGS	*	G3.0	RECYCLING FLOW & DETAILS	*	02 CIVIL			C0	GENERAL NOTES AND LEGENDS	*	C1	EXISTING CONDITIONS PLAN	*	C1.1	EXISTING CONDITIONS PLAN	*	C2	GRADING PLAN	*	C2.1	GRADING PLAN	*	C3	STORMWATER PLAN	*	C3.1	STORMWATER PLAN	*	C4	WATER & SANITARY SEWER PLAN	*	C4.1	WATER & SANITARY SEWER PLAN	*	C5	DETAILS	*	C5.1	DETAILS	*	C5.2	DETAILS	*	03 LANDSCAPE			L1.0	LANDSCAPE PLAN	*	L1.1	TREE REMOVAL PLAN	*	L2.0	LANDSCAPE SPECIFICATIONS & DETAILS	*	05 ARCHITECTURAL			A1.0	OVERALL SITE PLAN	*	A1.1	ENLARGED SITE PLAN	*	A1.2	SITE PLAN (FUTURE)	*	A1.3	SITE DETAILS	*	A1.4	SITE DETAILS	*	A2.1	FLOOR PLAN	*	A3.1	BUILDING ELEVATIONS	*	A3.2	SIGNAGE, ENTRY, GLAZING CALCULATION	*	A3.3	SIGNAGE	*	A4.1	BUILDING SECTIONS	*	A4.2	BUILDING SECTIONS	*	09 SITE LIGHTING			LT1.0	LIGHTING PLAN, STATISTICS, SCHEDULES	*	LT1.2	LIGHTING PLAN, STATISTICS, SCHEDULES	*	LT2.0	LIGHTING CUT SHEETS	*	LT2.1	LIGHTING CUT SHEETS	*	LT3.0	WAYSIDE SUNLIGHT STUDY	*	10 FIRE SERVICE			FS1.0	FIRE SERVICE SITE PLAN	*
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FS1.0	FIRE SERVICE SITE PLAN	*																																																																																																																																														
																																																																																																																																																

### PROJECT TEAM

<p><b>Owner:</b></p> <p><b>PRECISION COUNTERTOPS, INC.</b> 8490 SW WARM SPRINGS ST TUALATIN, OREGON 97062 CONTACT PERSON: Robert Hausserman EMAIL: robert.h@precisioncountertops.com</p>	<p><b>Civil Engineer:</b></p> <p><b>T.M. RIPPEY</b> 7650 SW BEVELAND ST SUITE 100 TIGARD, OREGON 97223 CONTACT PERSON: KARL KOROCZ KARL KOROCZ</p>	<p><b>Landscape Architect</b></p> <p><b>OTTEN + ASSOCIATES</b> 3933 S KELLEY AVE SUITE B PORTLAND, OREGON 97239 CONTACT PERSON: ERIN HOLSONBACK</p>	<p><b>Surveyor</b></p> <p><b>PLS SURVEYING</b> 604 W EVERGREEN BLVD VANCOUVER, WA 98660</p>
<p><b>Architect:</b></p> <p><b>MDG ARCHITECTURE   INTERIORS</b> 4875 SW GRIFFITH DRIVE, SUITE 300 BEAVERTON, OR 97005 VOICE: 503-244-0552 FAX: 503-244-0417 CONTACT PERSON: TUAN Q. LUU EMAIL: tuan@mdgpc.com</p>	<p><b>Structural Engineer:</b></p> <p><b>T.M. RIPPEY</b> 7650 SW BEVELAND ST SUITE 100 TIGARD, OREGON 97223 CONTACT PERSON: RALPH TURNBAUGH</p>	<p><b>Planner:</b></p> <p><b>FIRST FORTY FEET</b> 1716 SE 29TH AVE PORTLAND, OREGON 97214 CONTACT PERSON: WILLIAM GRIMM</p>	<p><b>General Contractor:</b></p> <p><b>PHI CONSTRUCTION</b> 4817 SE 61ST AVE PORTLAND, OREGON 97206 CONTACT PERSON: ROBERT ILOSVAY</p>

### VICINITY MAP



### PROJECT SUMMARY

<p><b>PROJECT DESCRIPTION</b></p> <p>THE PROPOSED DEVELOPMENT SCOPE IS CONSTRUCTING A NEW HEADQUARTERS AND COUNTERTOP FABRICATION FACILITY FOR PRECISION COUNTERTOPS. THE PROPOSED BUILDING IS APPROXIMATELY 65,800 SF CONSISTS OF A 3000SF SHOWROOM, OFFICE, STORAGE, AND FABRICATION SPACES. THE BUILDING WILL BE CONSTRUCTED WITH METAL CONSTRUCTION. THE STRUCTURE WILL HAVE A VARYING HEIGHT OF 29'-0". THE DEVELOPMENT WILL BE OCCUPYING APPROXIMATELY 4.34 ACRES OF THE 9.32 ACRES PROPERTY. THE EASTERN PORTION OF THE SITE WOULD BE HELD FOR FUTURE DEVELOPMENT OR EXPANSION. NO WORK SHALL BE DONE BEYOND THE LIMIT OF THE CONSTRUCTION BOUNDARY.</p>
<p><b>LOT DESCRIPTION</b></p> <p>MAP &amp; TAX LOT ID #2S128BC00700 A PORTION OF LOT 12, GARDEN ACRES, LOCATED IN THE WEST 1/2 OF THE WEST 1/2 OF SECTION 2, TOWNSHIP 3 SOUTH, RANGE 1 WEST, OF THE WILLAMETTE MERIDIAN, WASHINGTON COUNTY, OREGON</p>
<p><b>PLANNING APPROVALS</b></p> <p>DB22-0011, SEE CONDITIONS OF APPROVAL ON SHEET G.02</p>

Client/ Owner:  
**PRECISION COUNTERTOPS**

26200 SW 95th Ave,  
Wilsonville OR 97070

Project:  
**PRECISION COUNTERTOPS**

SW Garden Acres Road  
Wilsonville OR 97070

Sheet Title:  
**COVER SHEET**

Revisions:

#	Description	Date
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City of Wilsonville  
Exhibit B2 DB22-0011

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Date: 02/06/2023

Job Number: 121036

Sheet





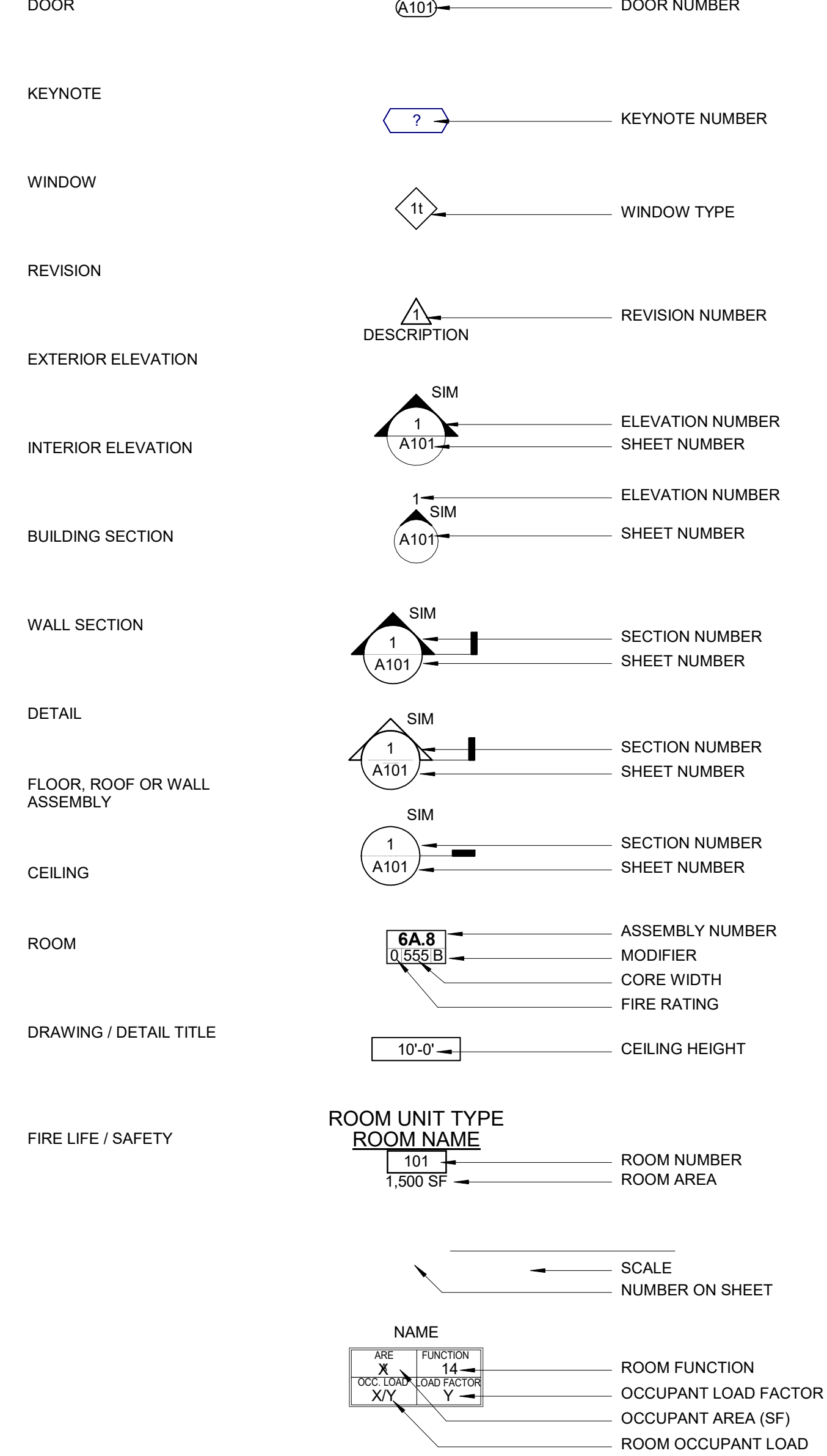
ABBREVIATIONS

Table of abbreviations including AV (AUDIO VISUAL), AB (ANCHOR BOLT), AC (AIR CONDITIONING), ACT (ACOUSTICAL), AD (AREA DRAIN), AFF (ABOVE FINISH FLOOR), AL (ALIGN), ALUM (ALUMINUM), APPROX (APPROXIMATELY), ARCH (ARCHITECTURAL), ASPH (ASPHALT), AUTO (AUTOMATIC), B# (BASE), BALC (BALCONY), BB (BOARD), BITUM (BITUMINOUS), BKR (BACKER), BLDG (BUILDING), BLKG (BLOCKING), BM (BEAM), BOC (BOTTOM OF CURB), BOT/BTM (BOTTOM), BOW (BOTTOM OF WALL), BSMT (BASEMENT), BTR (BETTER), BU (BUILT-UP), C# (CARPET), CW (CURTAIN WALL), CAB (CABINET), CATV (CABLE TV), CB (CATCH BASIN), CEM (CEMENT, CEMENTITIOUS), CG (CORNER GUARD), CHEM (CHEMICAL), CJ (CONTROL JOINT), CL (CENTER LINE), CLG (CEILING), CLR (CLEAR), COL (COLUMN), COMP (COMPOSITE), CONC (CONCRETE), COND (CONDITION), CONSTR (CONSTRUCTION), CONT (CONTINUOUS), CORR (CORRIDOR), CPT (CARPET), CTR (CENTER), CU (CUBIC), CUST (CUSTOM), DW (DISHWASHER), DBL (DOUBLE), DEF (DEFLECTION), DEMO (DEMOLITION), DEPT (DEPARTMENT), DIA (DIAMETER), DIM (DIMENSION), DNL (DEFLECTION), DWG (DRAWING), (E) (EXISTING), EA (EACH), ELEC (ELECTRICAL), ELEV (ELEVATOR), EMER (EMERGENCY), ENCL (ENCLOSURE), ENTR (ENTRANCE), EPS (EXPANDED POLYSTYRENE), EQ (EQUAL), EQPM (EQUIPMENT), EW (EACH WAY), EXIST (EXISTING), EXP (EXPANSION), EXPO (EXPOSED), EXT (EXTERIOR), EF (EXHAUST FAN), F (FABRIC, FIBER), FA (FIRE ALARM, FLUID APPLIED), FAB (FABRICATIONS), FB (FLAT BAR), FD (FLOOR DRAIN), FDN (FOUNDATION), FE (FIRE EXTINGUISHER), FEC (FIRE EXTINGUISHER CABINET), FF (FINISH FLOOR, FACTORY FINISH), FF SAM (FOIL FACED SELF-ADHERED MEMBRANE), FFE (FINISH FLOOR ELEVATION), FG (FULL GLASS), FGL (FIBERGLASS), FHC (FIRE HOSE CABINET), FIN (FINISH), FIXT (FIXTURE), FLR (FLOOR), FLG (FLOORING), FOC (FACE OF CONCRETE), FOF (FACE OF FINISH), FOM (FACE OF MASONRY), FOS (FACE OF STUD), FR (FIRE RATED, FIRE RESISTIVE), FRT (FIRE RETARDANT TREATED), FT (FOOT, FEET), FTG (FOOTING), FUT (FUTURE), GA (GAUGE), GAL (GALLON), GALV (GALVANIZED), GAR (GARAGE), GB (GRAB BAR), GFRG (GLASS FIBER REINFORCED GYPSUM), GL (GLASS, GLAZING), GLB (GLU-LAMINATED BEAM), GND (GROUND), GR (GRADE), GYP (GYPSUM), HB (HOSE BIBB), HC (HOLLOW CORE), HM (HOLLOW METAL), HORIZ (HORIZONTAL), HR (HOUR), HT (HEIGHT), HT SAM (HIGH TEMPERATURE SELF-ADHERED MEMBRANE), IAW (IN ACCORDANCE WITH), ICF (INSULATED CONCRETE FORMS), ID (INSIDE DIAMETER), IN (INCH, INCHES), INSUL (INSULATION), INT (INTERIOR), JAN (JANITOR), JST (JOIST), JT (JOINT, JOINTS), LAM (LAMINATE), LAV (LAVATORY), LF (LINEAL FEET), LG (LINEAR), LIN FT (LINEAL FEET), LT (LIGHT)

ABBREVIATIONS

Table of abbreviations including MACH (MACHINE), MAINT (MAINTENANCE), MAX (MAXIMUM), MDF (MEDIUM DENSITY FIBERBOARD), MDO (MEDIUM DENSITY OVERLAY), MECH (MECHANICAL), MED (MEDICATION, MEDICAL), MEMB (MEMBRANE), MFR (MANUFACTURER), MH (MANHOLE), MIN (MINIMUM), MISC (MISCELLANEOUS), MO (MASONRY OPENING), MR (MOISTURE RESISTANT), MTL (METAL), MUL (MULLION), N-C (NO CEILING), NC (NON-COMBUSTIBLE), NIC (NOT IN CONTRACT), NO (NUMBER), NOM (NOMINAL), NTS (NOT TO SCALE), OC (ON CENTER), OD (OUTSIDE DIAMETER), OFF (OFFICE), OH (OVERHEAD), OPNG (OPENING), OPP (OPPOSITE, OPPOSITE HAND), OZ (OUNCE), P (PAINT), P/L (PROPERTY LINE), PC (PRECAST), PED (PEDESTRIAN), PERFOR (PERFORATED), PH (PENTHOUSE), PKG (PARKING), PL (PLATE), PLJ (PLASTIC LAMINATE (PLAM)), PLAST (PLASTER, PLASTIC), PNL (PANEL), POLYISO (POLYISOCYANURATE), PP (POWER POLE), PR (PAIR), PREFIN (PREFINISHED), PRELIM (PRELIMINARY), PREM (PREMIUM), PROP (PROPERTY), PSQ (POUNDS PER SQUARE INCH), PT (PRESERVATIVE TREATED, POST-TENSIONED), PTD (PAPER TOWEL DISPENSER), PTDOR (PAPER TOWEL DISPENSER AND RECEPTACLE), PWD (PLYWOOD), R (RISER, RISERS), RAD (RADIUS), RB (RUBBER BASE), RCP (REFLECTED CEILING PLAN), RD (ROOF DRAIN), REF (REFERENCE), REHAB (REHABILITATION), REINF (REINFORCED, REINFORCING), REQ (REQUIREMENTS, REQUIRED), RF (RESILIENT FLOORING), RFG (ROOFING), RM (ROOM), RO (ROUGH OPENING), RR (REST ROOM), SAM (SELF-ADHERED MEMBRANE), SBS (STYRENE BUTADIENE STYRENE), SC (SEALED CONCRETE, SOLID CORE), SCD (SEAT COVER DISPENSER), SCHED (SCHEDULE), SECT (SECTION, SECTIONAL), SF (SQUARE FEET, STOREFRONT), SG (SAFETY GLASS), SGL (SINGLE), SH (SHEET), SHG (SHEATHING), SHFT (SIMILAR), SND (SANITARY NAPKIN DISPENSER), SNR (SANITARY NAPKIN RECEPTACLE), SOG (SLAB ON GRADE), SQ (SQUARE), SS (STAINLESS STEEL), SS# (SOLID SURFACE), STD (STANDARD), STL (STEEL), STOR (STORAGE), STR (STAIR, STAIRS), STRUCT (STRUCTURAL), SUSP (SUSPENDED), SV (SHEET VINYL), SYM (SYMMETRICAL, SYMBOL), T (TREAD, TREADS), TF (TOP AND BOTTOM), T&B (TONGUE AND GROOVE), T&M (TIME AND MATERIALS), TEL (TELEPHONE, TELECOMM), THK (THICK), TOC (TOP OF CURB), TOPL (TOP OF PLATE), TOPV (TOP OF PAVEMENT), TOW (TOP OF WALL), TPD (TOILET PAPER DISPENSER), TU (TILT-UP), TV (TELEVISION), TYP (TYPICAL), UNDL (UNDERLAYMENT), UNO (UNLESS NOTED OTHERWISE), UTIL (UTILITY), VCT (VINYL COMPOSITION TILE), VEG (VEGETATED), VERT (VERTICAL), VEST (VESTIBULE), VFY (VERIFY), VG (VERTICAL GRAIN), VNR (VENEER), VP (VENEER PLASTER), VR (VAPOR RETARDER), W (WITH), WH (WATER HEATER), W/O (WITHOUT), WC (WALLCOVERING, WATER CLOSET), WD (WOOD), WF (WOOD FLOORING), WH (WALL HUNG), WP (WATERPROOF), WPPFG (WATERPROOFING), WR (WATER RESISTANT, WATER RESISTIVE), WRB (WEATHER RESISTIVE BARRIER), WT (WEIGHT), WWF (WOVEN WIRE FABRIC), XPS (EXTRUDED POLYSTYRENE), YD (YARD)

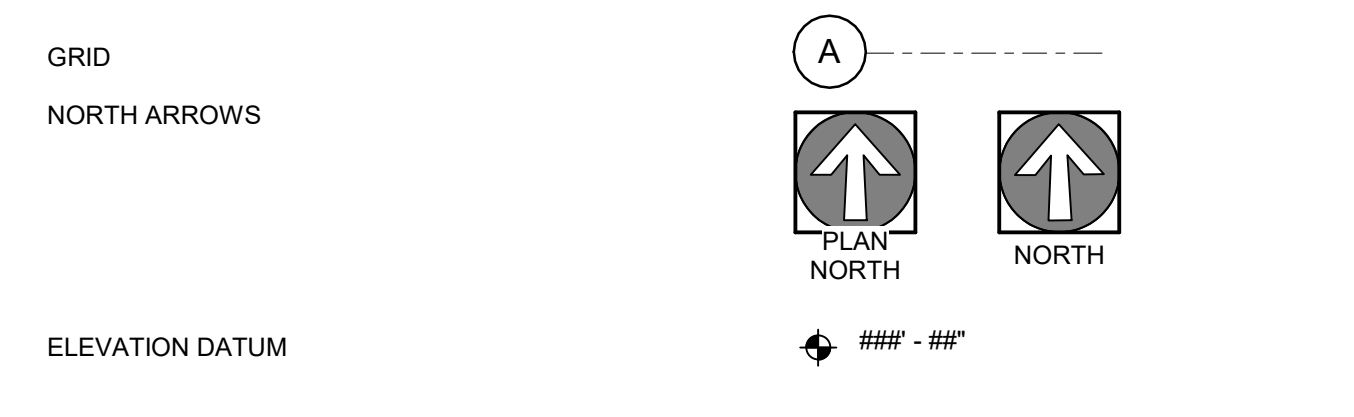
TAGS



MATERIALS

Table of materials including CONCRETE, BRICK VENEER, CMU, ALUMINUM, STEEL, PLYWOOD, MOISTURE RESISTANT SHEATHING, SAWN LUMBER: CONTINUOUS, SAWN LUMBER: BLOCKING, FINISH LUMBER, GLUE LAMINATED BEAM/ COLUMN, BATT INSULATION, RIGID BOARD INSULATION, MINERAL FIBER INSULATION, FOAMED-IN-PLACE INSULATION, BACKER ROD AND SEALANT, GYPSUM WALLBOARD.

SYMBOLS



PROJECT NOTES

- GENERAL: THESE DRAWINGS AND THE ACCOMPANYING SPECIFICATIONS ARE THE PROPERTY OF MDG AND SHALL NOT BE COPIED OR REUSED FOR ANY OTHER PROJECT. THE VARIOUS CONSTRUCTION DRAWINGS AND SPECIFICATIONS ARE COMPLEMENTARY. WHAT IS SHOWN FOR EITHER IS BINDING AND REQUIRED FOR ALL. PROVIDE WORK SHOWN OR REFERRED TO ON ONE SET OF DRAWINGS AS THOUGH SHOWN ON ALL RELATED DRAWINGS. CONTRACTOR TO COORDINATE ALL DRAWINGS AND SPECIFICATIONS TO COMPLETE THE WORK. NOTIFY THE ARCHITECT OF ANY DISCREPANCIES OR CONFLICTS. THE SPECIFICATIONS AND/OR BASIS OF DESIGN SCHEDULE CONTAIN PERTINENT DETAILED INFORMATION ABOUT EACH BUILDING COMPONENT; THEY ARE A PART OF THE CONTRACT DOCUMENTS AND MUST BE USED IN CONJUNCTION WITH THE DRAWINGS. NO BUILDING COMPONENT SHOWN ON THESE DRAWINGS SHALL BE INCORPORATED INTO THE WORK UNTIL SHOP DRAWINGS, SAMPLES, BROCHURES OR OTHER SUBMITTALS CALLED FOR IN THE SPECIFICATIONS HAVE BEEN REVIEWED AND APPROVED BY THE GENERAL CONTRACTOR AND SUBSEQUENTLY REVIEWED BY THE ARCHITECT. VERIFY SITE CONDITIONS AND REPORT ANY DISCREPANCIES TO THE ARCHITECT BEFORE PROCEEDING WITH CONSTRUCTION. COORDINATE THE WORK OF DELEGATED DESIGNERS WITH THE WORK OF OTHER TRADES. WOOD IN CONTACT WITH CONCRETE SHALL BE PRESERVATIVE-TREATED. CONCEALED WOOD USED IN TYPE I AND TYPE II CONSTRUCTION SHALL BE FIRE RETARDANT TREATED. FASTENERS IN CONTACT WITH TREATED WOOD SHALL BE CORROSION RESISTANT. PROVIDE BLOCKING OR OTHER CONCEALED SUPPORTS WITHIN WALLS AS REQUIRED FOR HANDRAILS, CASEWORK, GRAB BARS, ART WORK, SHELVING, AND OTHER APPLIED WALL MOUNTED FIXTURES, FINISHES OR EQUIPMENT. COORDINATE MECHANICAL, PLUMBING, AND ELECTRICAL ACCESS DOOR LOCATIONS WITH ARCHITECT. DIMENSIONS: DO NOT SCALE THE DRAWINGS. WRITTEN DIMENSIONS GOVERN. DO NOT ADJUST CLEAR DIMENSIONS WITHOUT APPROVAL OF THE ARCHITECT. DIMENSIONS ARE MEASURED FROM GRID LINES, PROPERTY LINES, FACE OF CONCRETE, FACE OF MASONRY, CENTERLINE OF STUD OR CENTERLINE OF THE AIR GAP (AT DOUBLE STUD ROW WALLS) UNLESS OTHERWISE NOTED. DIMENSIONS NOTED AS 'CLEAR' OR 'INSIDE CLEAR' ARE MEASURED FROM THE FACE OF FINISHED SURFACES. NOTES TO 'ALIGN' REFER TO FINISHED FACE OF INDICATED SURFACES. LOCATE FACE OF HINGE SIDE DOOR JAMBS 4" AWAY FROM ADJACENT WALL UNLESS NOTED OTHERWISE. 'FLOOR LINE', 'FLOOR', 'FINISH FLOOR' OR 'FLOOR LEVEL' REFER TO TOP OF CONCRETE SLAB OR TOP OF CEMENTITIOUS UNDERLAYMENT; SCHEDULED FLOORING MATERIAL IS INSTALLED ABOVE THE FLOOR LINE. ACCESSIBILITY: REFER TO SHEETS STARTING AT G0.2 FOR SPECIFIC ACCESSIBILITY REQUIREMENTS PERTAINING TO OUTLET LOCATIONS AND HEIGHTS, SWITCH LOCATIONS AND HEIGHTS, GRAB BARS, WALL BLOCKING, FLOOR CLEARANCES, COUNTERTOP HEIGHTS, LOCATION OF PLUMBING CONTROLS, ETC. CHANGES IN FINISH FLOOR ELEVATION IN EXCESS OF 1/4" MEASURED FROM LOWEST POINT ON EITHER SIDE OF THRESHOLD TO HIGHEST POINT ON THRESHOLD, SHALL BE BEVELED AT 1:2, 1/2" MAX. IN NO CASE SHALL FLOOR TRANSITIONS AND CHANGES IN LEVEL IN FLOOR SURFACE BE MORE THAN 1/4" MAX IN VERTICAL HEIGHT. SIGNAGE: PROVIDE EXIT SIGNAGE IN ACCORDANCE WITH OSSC 1013. PROVIDE ACCESSIBILITY SIGNAGE IN ACCORDANCE WITH OSSC 1111. PROVIDE CODE REQUIRED IN CASE OF FIRE. SIGNAGE AT ELEVATOR CALL STATIONS. IDENTIFY ALL FIRE-RATED ENCLOSURES CONCEALED ABOVE CEILINGS USING MIN. 3" HIGH RED LETTERING READING: 'FIRE AND/OR SMOKE BARRIER - PROTECT ALL OPENINGS'. AT EACH FLOOR LANDING IN BUILDING GREATER THAN 3 STORIES, A SIGN INDICATING IF THE STAIR PROVIDES ROOF ACCESS. AT LANDINGS OF STAIRS WITH MULTIPLE DOORS, INDICATE ANY DOOR WITH DIRECT ACCESS TO AN ENCLOSED ELEVATOR LOBBY.

- HORIZONTAL AND VERTICAL ASSEMBLIES: REFER TO STRUCTURAL DRAWINGS FOR LOCATIONS OF, AND ADDITIONAL REQUIREMENTS FOR LOAD-BEARING AND SHEAR WALLS. STUD SIZE AND CORE THICKNESSES ARE INDICATED ON THE ASSEMBLY TYPE TAGS ON THE DRAWINGS; REFER TO THE TAG LEGEND ON SHEET G0.1. GYPSUM WALLBOARD IS 5/8" TYPE 'X' UNLESS NOTED OTHERWISE. WEATHER-RESISTIVE BARRIERS AND/OR VAPOR RETARDERS DESIGNATED AS 'AB' ALSO FUNCTION AS AIR BARRIERS. SEAL ALL EDGES, INTERSECTIONS AND LAPS, TO CREATE AN AIR-TIGHT ENCLOSURE. FIRE RATED ASSEMBLIES: SEAL ALL EDGES AND INTERSECTIONS WITH FIRE CAULKING; COVER ALL RECESSED DEVICES WITH FIRE PROTECTIVE COVERINGS TO MEET THE REQUIREMENTS OF THE LISTING SOURCE AND AUTHORITY HAVING JURISDICTION (AHJ). INSTALL ALL MATERIALS IN STRICT ACCORDANCE WITH THE PUBLISHED REQUIREMENTS OF THE LISTING SOURCE, INCLUDING BUT NOT LIMITED TO: STUD GAGE AND SPACING; FASTENER SIZE AND SPACING; ORIENTATION OF GYPSUM WALLBOARD; OFFSETS OF JOINTS BETWEEN ADJACENT LAYERS OR OPPOSITE SIDES OF WALL, BRIDGING AND CROSS BRACING. FIRE RATING AGENCY REQUIREMENTS INDICATE THE MINIMUM NEEDED TO ACHIEVE FIRE RATING; ADDITIONAL LAYERS, OR THICKER LAYERS, OF GYPSUM WALLBOARD OR SHEATHING MAY BE SHOWN TO MEET OTHER PROJECT REQUIREMENTS. SEAL AND OTHERWISE PROTECT PENETRATIONS THROUGH FIRE-RATED CONSTRUCTION USING APPROVED FIRESTOPPING SYSTEMS TO MAINTAIN THE FIRE RATING OF THE ASSEMBLY BEING PENETRATED. USE ACOUSTICALLY RATED FIRE SEALANT WHEREVER FIRE RATED CONSTRUCTION IS ALSO ACOUSTICALLY RATED. SEAL PENETRATIONS THROUGH ACOUSTICALLY-RATED CONSTRUCTION TO MAINTAIN THE ACOUSTICAL RATING OF THE ASSEMBLY BEING PENETRATED. SEAL PENETRATIONS IN ACOUSTICALLY RATED WALLS. WRAP BACKS OF ALL RECESSED DEVICES WITH ACOUSTIC PADS RATED FOR THE ASSEMBLY. PROVIDE WATERSTOPS AT COLD JOINTS IN BELOW GRADE CONCRETE ASSEMBLIES AT THE EXTERIOR WALLS OF THE BUILDING. PROVIDE DEFLECTION COMPENSATION AT TOP OF WALLS SECURED TO THE UNDERSIDE OF CONCRETE SLABS OR METAL DECK. INSTALL FIREBLOCKING IN WALLS OF COMBUSTIBLE FRAMING AT THE CEILING AND FLOOR LEVELS AND AT MAX HORIZONTAL INTERVALS OF 10 FEET OR AS REQUIRED BY THE AHJ. INSTALL FIREBLOCKING AT THE INTERSECTION OF COMBUSTIBLE WALLS AND HORIZONTAL ASSEMBLIES WITH CONCEALED SPACES OF AS REQUIRED BY THE AHJ. INSTALL FIREBLOCKING IN STAIRS OF COMBUSTIBLE FRAMING IN CONCEALED SPACES BETWEEN STAIR STRINGERS AT THE TOP AND BOTTOM OF EACH RUN OR AS REQUIRED BY THE AHJ. INSTALL FIREBLOCKING IN CONCEALED SPACES BEHIND EXTERIOR WALL COVERINGS OF COMBUSTIBLE MATERIALS AT MAX. 20 FOOT INTERVALS WITH NO CONCEALED SPACE EXCEEDING 100 SQUARE FEET OR AS REQUIRED BY THE AHJ.

Client/ Owner:

PRECISION COUNTERTOPS

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Wilsonville OR 97070

Project:

PRECISION COUNTERTOPS

SW Garden Acres Road  
Wilsonville OR 97070

Sheet Title:

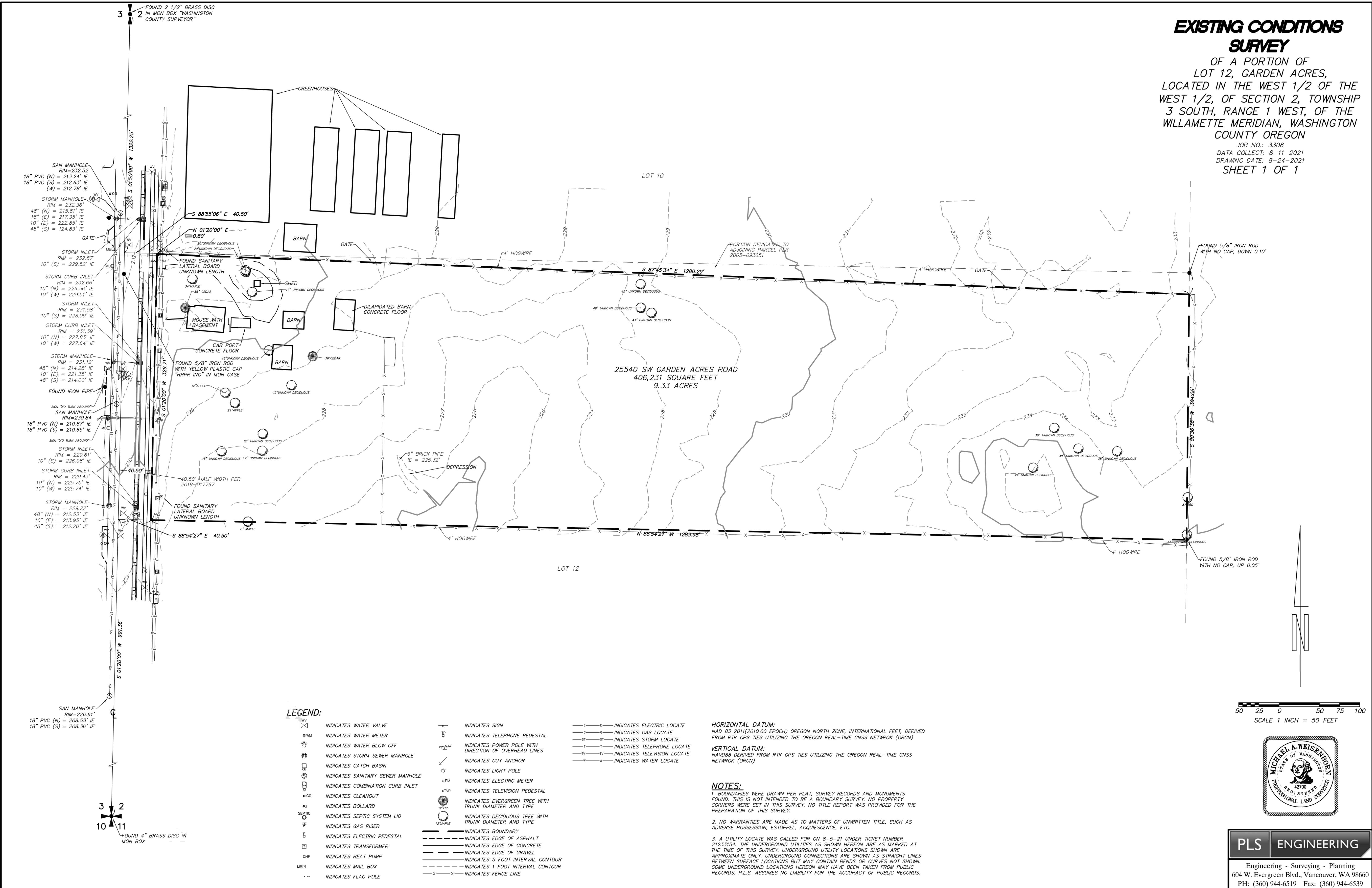
PROJECT DATA

Revisions:

Table with columns: #, Description, Date



**EXISTING CONDITIONS SURVEY**  
OF A PORTION OF  
LOT 12, GARDEN ACRES,  
LOCATED IN THE WEST 1/2 OF THE  
WEST 1/2, OF SECTION 2, TOWNSHIP  
3 SOUTH, RANGE 1 WEST, OF THE  
WILLAMETTE MERIDIAN, WASHINGTON  
COUNTY OREGON  
JOB NO.: 3308  
DATA COLLECT: 8-11-2021  
DRAWING DATE: 8-24-2021  
SHEET 1 OF 1



Client/ Owner:  
**PRECISION COUNTERTOPS**

26200 SW 95th Ave,  
Wilsonville OR 97070

Project:  
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SW Garden Acres Road  
Wilsonville OR 97070

Sheet Title:  
**SITE SURVEY AND EXISTING CONDITIONS**

Revisions:

# Description Date





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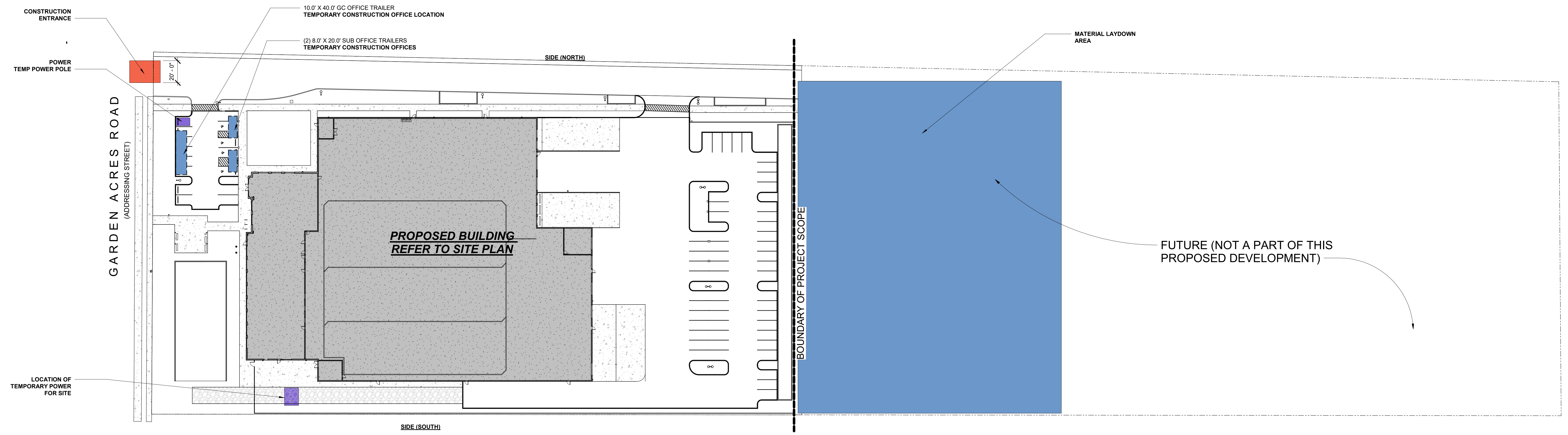
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Sheet Title:  
**CONSTRUCTION STAGING**

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#	Description	Date

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 Date: 02/06/2023  
 Job Number: 121036  
 Sheet



**1 CONSTRUCTION STAGING PLAN**  
 1" = 40'-0"

**DURATION OF THE TEMPORARY CONSTRUCTION OFFICE 18-24 MONTHS**





VIEW A - MAIN ENTRANCE VIEW FROM GARDEN ACRES ROAD



VIEW B - VIEW FROM WAYSIDE

Client/ Owner:  
**PRECISION  
 COUNTERTOPS**

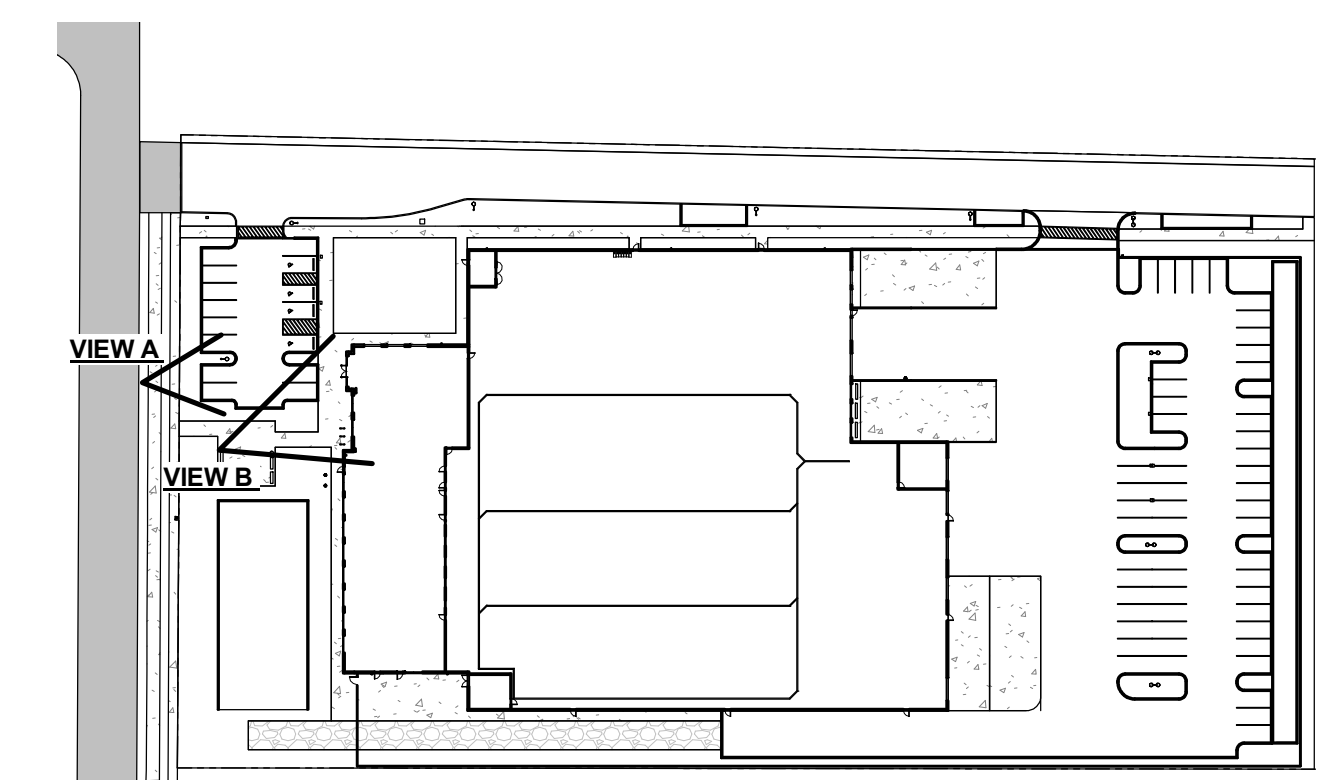
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**PRECISION  
 COUNTERTOPS**

SW Garden Acres Road  
 Wilsonville OR 97070

Sheet Title:  
**RENDERINGS**

Revisions:  
 # Description Date







VIEW C - LOADING DOCK VIEW - CURRENT CONDITION



VIEW C - LOADING DOCK VIEW - FUTURE JAVA ROAD CONDITION

Client/ Owner:  
**PRECISION  
 COUNTERTOPS**

26200 SW 95th Ave,  
 Wilsonville OR 97070

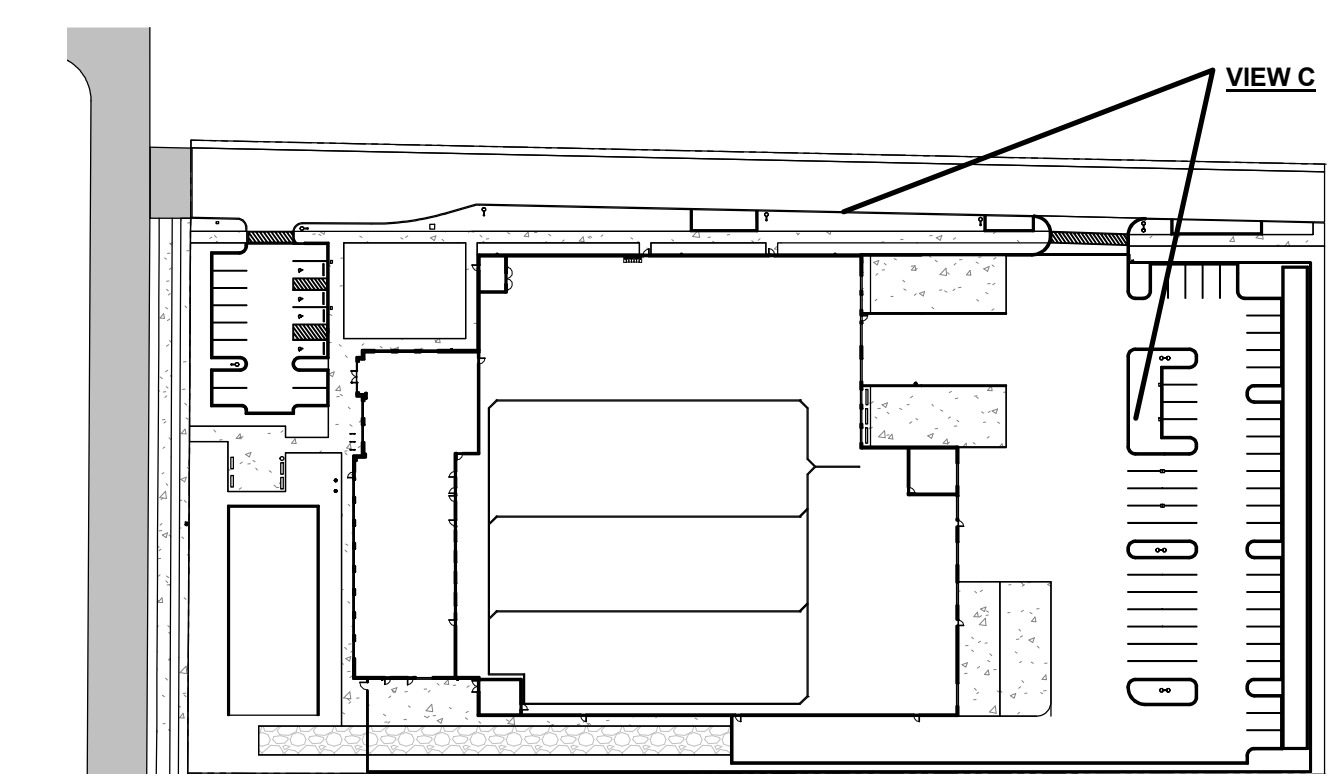
Project:  
**PRECISION  
 COUNTERTOPS**

SW Garden Acres Road  
 Wilsonville OR 97070

Sheet Title:  
**RENDERINGS**

Revisions:

#	Description	Date







VIEW D - FRONT DOCK VIEW - CURRENT CONDITION



VIEW D - FRONT VIEW - FUTURE JAVA ROAD CONDITION

Client/ Owner:  
**PRECISION  
 COUNTERTOPS**

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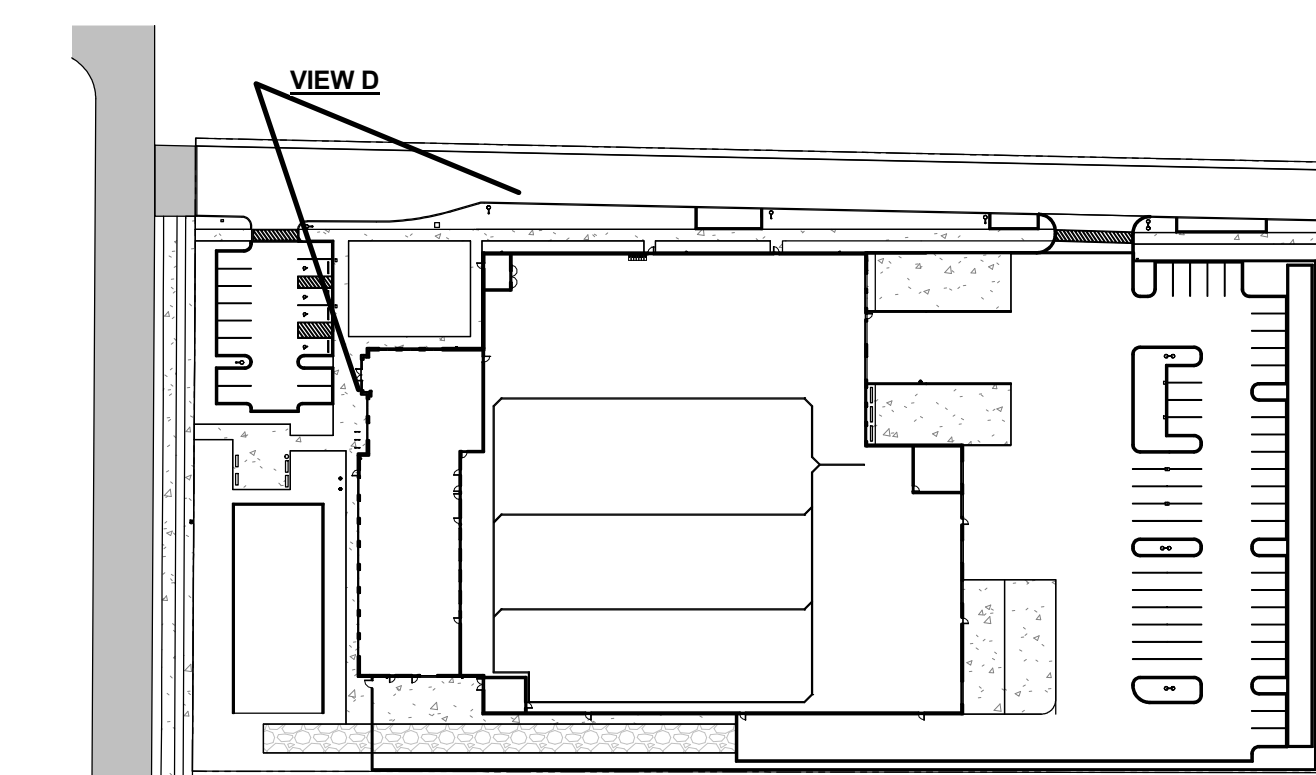
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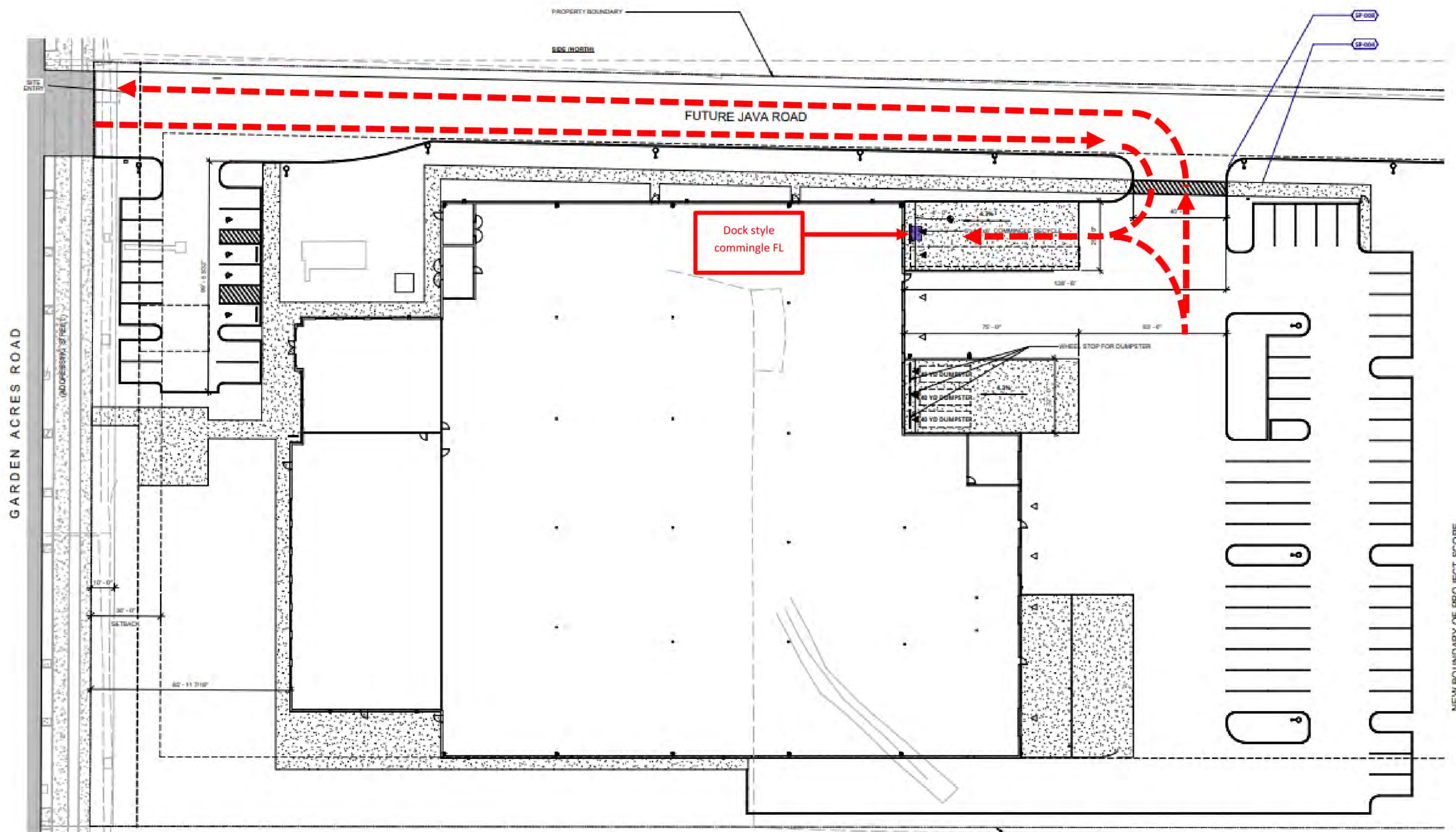
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**RENDERINGS**

Revisions:

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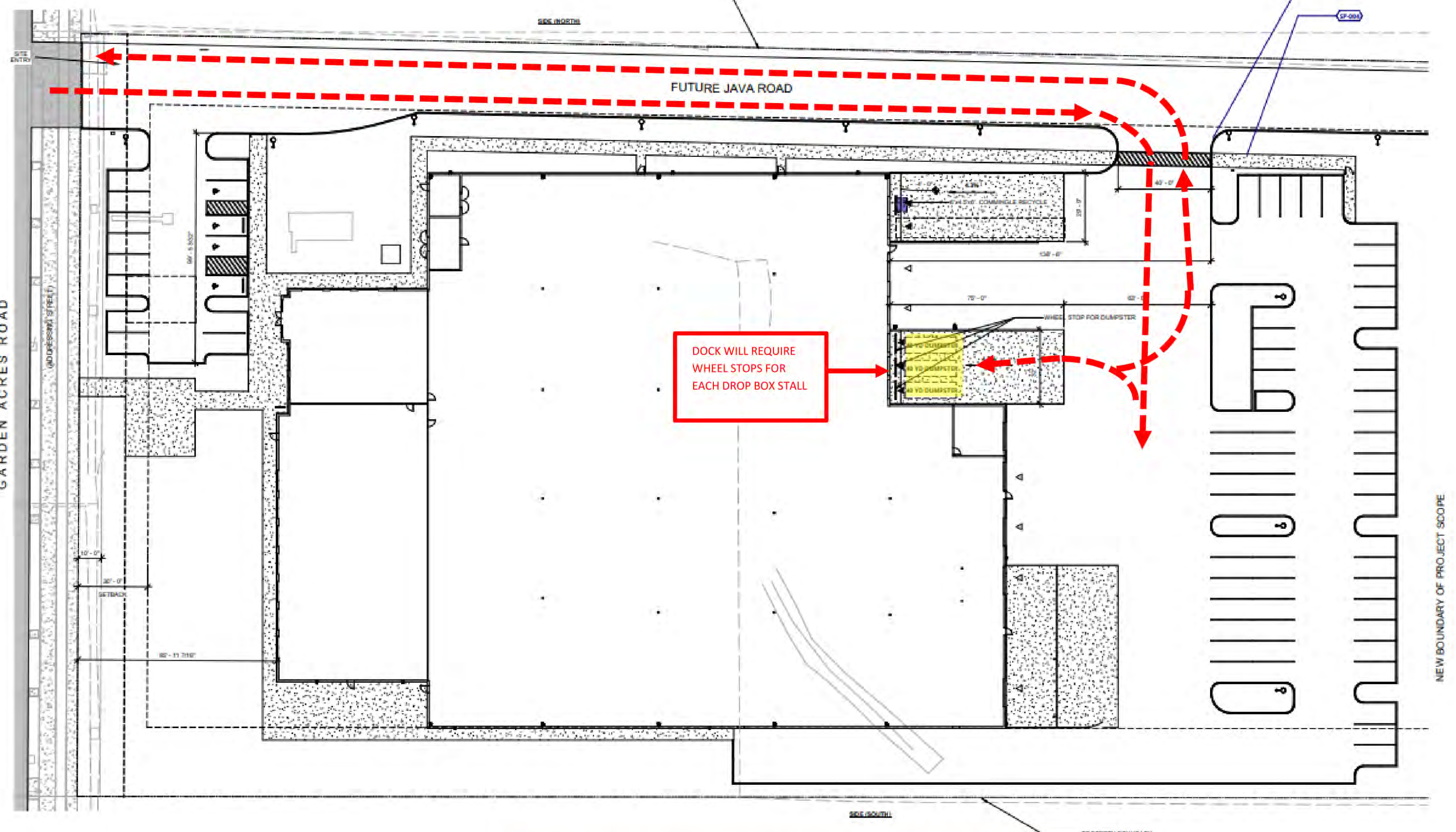






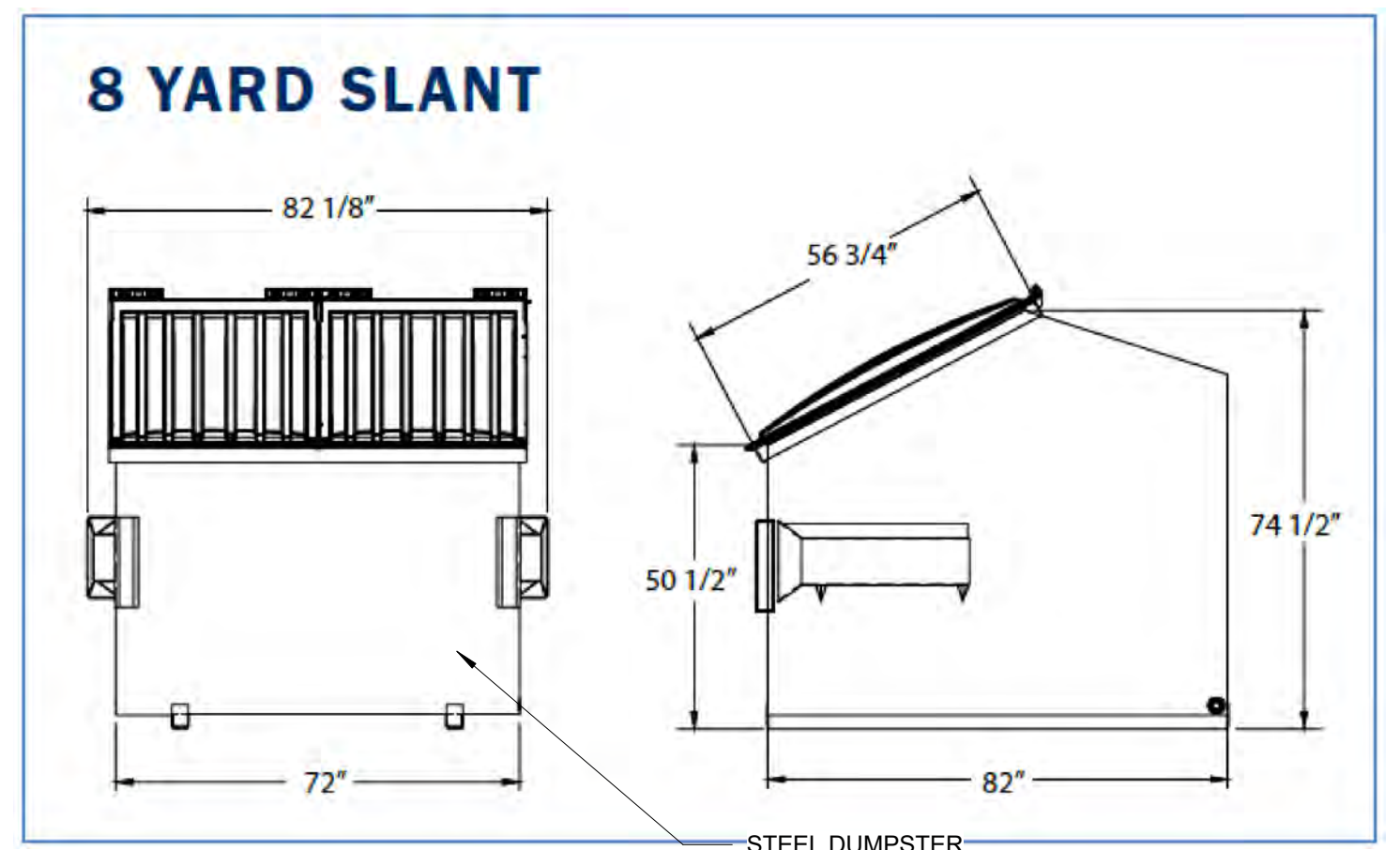
PRECISION COUNTERTOP – WILSONVILLE  
 FRONT LOAD RECYCLE  
 TRAFFIC FLOW PATTERN – 10/10/2022

NOTE : SITE PLANS ABOVE DO NOT REFLECT CURRENT SITE PLAN. SEE A1.0. PLEASE REFERENCE SERVICE PROVIDER LETTER FROM REPUBLIC SERVICE APPROVAL.



PRECISION COUNTERTOP – WILSONVILLE  
 DROP BOX TRASH/RECYCLE  
 TRAFFIC FLOW PATTERN – 10/10/2022

NOTE : SITE PLANS ABOVE DO NOT REFLECT CURRENT SITE PLAN. SEE A1.0. PLEASE REFERENCE SERVICE PROVIDER LETTER FROM REPUBLIC SERVICE APPROVAL.



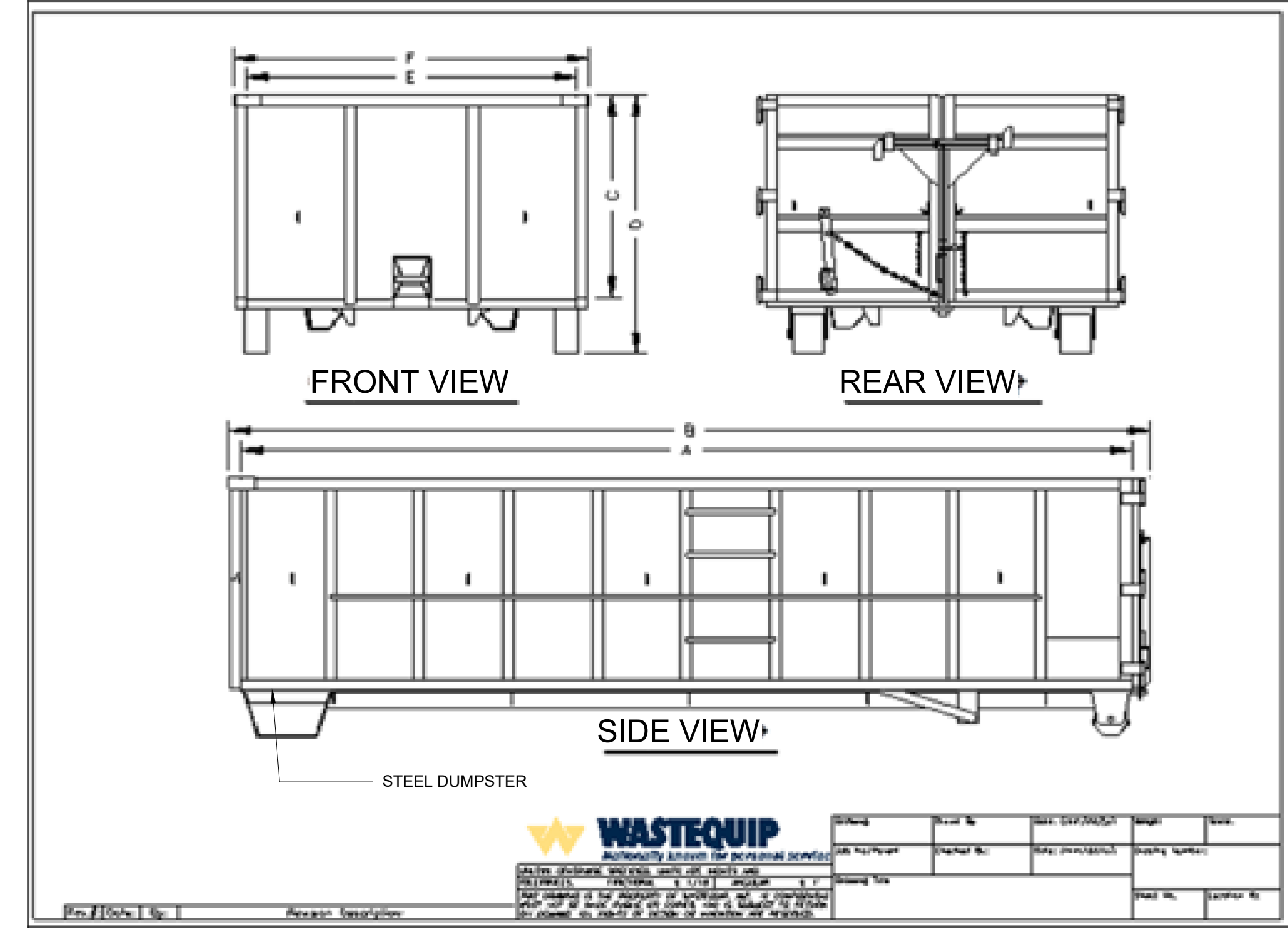
SPECIFICATION SHEET FOR COMINGLED RECYCLING CONTAINER OBTAINED FROM REPUBLIC SERVICES

FRONT LOAD RECYCLE

Wastequip Oregon  
 Wastequip Style Drop Box Dimensions

Cubic YDS	Box Length I.D. (A)	Box Length O.D. (B)	Wall Height I.D. (C.)	OVERALL Height O.D. (D)	WIDTH I.D. (E)	WIDTH O.D. (F)	Wall/ Floor all 12	Wall/ Floor 12g/1 0g	Wall/ Floor all 10 g
10 yd	12 ft.	12 ft. 8in.	37"	53"	89"	95"			
15 yd	12 ft.	12 ft. 8in.	54"	70"	89"	95"			
20 yd	16 ft.	16 ft. 8 in.	55"	71"	89"	95"			
20 yd	20 ft.	20 ft. 8 in.	44"	60"	89"	95"			
20 yd	22 ft.	22 ft. 8 in.	40"	56"	89"	95"			
25 yd	18 ft.	18 ft. 8 in.	61"	77"	89"	95"			
30 yd	20 ft.	20 ft. 8 in.	66"	82"	89"	95"			
30 yd	22 ft.	22 ft. 8 in.	61"	77"	89"	95"			
40 yd	20 ft.	20 ft. 8 in.	88"	104"	89"	95"			
40 yd	22 ft.	22 ft. 8 in.	80"	96"	89"	95"			
50 yd	22 ft.	22 ft. 8 in.	98"	114"	89"	95"			

Our standard box is a endless chain roll-off system-Superior Hook up



SPECIFICATION SHEET FOR 40 YARD DUMPSTER OBTAINED FROM REPUBLIC SERVICES

DROP BOX TRASH / RECYCLE



January 31, 2023  
 Simone O'Halloran / MDG

Re: Precision Countertop  
 25540 SW Garden Acres Rd.  
 Wilsonville, OR 97140

Dear Simone,

Thank you, for sending us the revised site design plans for this proposed development in Wilsonville.

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 industrial and commercial waste removal and recycling services as needed on a weekly basis for this location

We have reviewed the revised site design that you sent us on January 26, 2023 and have determined that the design modifications will allow Republic Services to provide trash and recycle service at this location as previously approved on May 30, 2022.

Thanks Simone, for your help and concerns for our services prior to this project being developed.

Sincerely,

Kelly Herrard  
 Operations Supervisor  
 Republic Services Inc.

SERVICE PROVIDER LETTER FROM REPUBLIC SERVICE OBTAINED FROM REPUBLIC SERVICES 1/31/2023

Client/ Owner:  
**PRECISION COUNTERTOPS**

26200 SW 95th Ave,  
 Wilsonville OR 97070

Project:  
**PRECISION COUNTERTOPS**

SW Garden Acres Road  
 Wilsonville OR 97070

Sheet Title:  
**RECYCLING FLOW & DETAILS**

Revisions:  
 # Description Date



## GENERAL UTILITY NOTES

- ALL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE JURISDICTION.
- ALL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE CURRENT EDITION OF THE PLUMBING CODE, BUILDING CODE, AND THE FIRE CODE.
- THE CONTRACTOR SHALL HAVE A FULL SET OF THE CURRENT APPROVED CONSTRUCTION DOCUMENTS INCLUDING ADDENDA ON THE PROJECT SITE AT ALL TIMES.
- THE CONTRACTOR SHALL NOTIFY THE OREGON UTILITY NOTIFICATION CENTER (800 332 2344) THREE BUSINESS DAYS PRIOR TO ANY EXCAVATION.
- EXISTING CONDITIONS BASED ON TOPOGRAPHIC, BOUNDARY, AND UTILITY SURVEY PREPARED BY PLS SURVEYING, PROVIDED AUGUST 2021 AND UPDATED MARCH 2022. EXISTING CONDITIONS ARE ALSO BASED ON GARDEN ACRES CONSTRUCTION PLANS PROVIDED BY PLS SURVEYING.
- THE CONTRACTOR IS RESPONSIBLE FOR COORDINATION OF PRIVATE UTILITIES SUCH AS GAS, TELEPHONE, POWER, CABLE TELEVISION, ETC. CONFIRM VAULT LOCATIONS WITH ARCHITECT.
- THE CONTRACTOR SHALL KEEP THE ARCHITECT AND JURISDICTION INFORMED OF CONSTRUCTION PROGRESS TO FACILITATE SITE OBSERVATIONS AT REQUIRED INTERVALS. 48-HOUR NOTICE IS REQUIRED.
- THE CONTRACTOR SHALL VERIFY AND CONFIRM EXISTING CONDITIONS. EXISTING UTILITIES AND POINTS OF CONNECTION TO EXISTING UTILITIES AND LOCATIONS WHERE NEW UTILITIES WILL CROSS EXISTING UTILITIES SHALL BE VERIFIED BY THE CONTRACTOR BY POTHOLING PRIOR TO CONSTRUCTION OR ORDERING MATERIALS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO SCHEDULE POTHOLES SUCH THAT IF CONFLICTS ARE ENCOUNTERED, SUFFICIENT TIME EXISTS TO PREPARE MODIFIED DESIGNS AND HAVE THE MODIFICATIONS APPROVED BY THE JURISDICTION WITHOUT IMPACTING THE PROJECT SCHEDULE.
- THIS PLAN IS GENERALLY DIAGRAMMATIC. IT DOES NOT SHOW EVERY JOINT, BEND, FITTING, OR ACCESSORY REQUIRED FOR CONSTRUCTION.
- INSTALL CLEANOUTS AT 100' MAX. AND AT ALL LATERALS PER CODE. PROVIDE CLEANOUTS AS REQUIRED BY THE CURRENT OREGON PLUMBING SPECIALTY CODE. NOT ALL REQUIRED CLEANOUTS ARE SHOWN.
- UTILITIES WITHIN TWO FEET OF A BUILDING SHALL BE CONSTRUCTED OF MATERIALS APPROVED FOR INTERIOR USE AS DESCRIBED IN THE CURRENT EDITION OF THE PLUMBING CODE.
- CHANGES IN DIRECTION OF DRAINAGE AND SEWER PIPING SHALL BE MADE BY THE APPROPRIATE USE OF APPROVED FITTINGS AND SHALL BE OF THE ANGLES PRESENTED BY ONE-SIXTEENTH BEND, ONE-EIGHTH BEND, ONE-SIXTH BEND OR OTHER APPROVED FITTINGS OF EQUIVALENT SWEEP.
- IF DEWATERING IS REQUIRED DURING CONSTRUCTION, THE CONTRACTOR SHALL PREPARE A DEWATERING PLAN CONSISTENT WITH CITY OF WILSONVILLE AND CLACKAMAS COUNTY REQUIREMENTS, AND OBTAIN APPROVAL OF THE PLAN FROM BOTH JURISDICTIONS PRIOR TO PROCEEDING WITH DEWATERING.
- THE CONTRACTOR SHALL CLEAN ALL CATCH BASINS AND STORM LINES IMPACTED BY SITE DEVELOPMENT FOLLOWING COMPLETION OF CONSTRUCTION OR AS DIRECTED BY THE CITY OF WILSONVILLE AND CLACKAMAS COUNTY. NO SEDIMENT SHALL BE ALLOWED TO ENTER THE STORM SYSTEM.
- COORDINATE WITH CITY OF WILSONVILLE FOR CONNECTION TO EXISTING PUBLIC WATER MAIN AT THE SW GARDEN ACRES ROAD SITE FRONTAGE. ALL CONNECTIONS TO EXISTING PUBLIC WATER MAIN TO BE BY CITY OF WILSONVILLE APPROVED CONTRACTORS, AS A SUBCONTRACTOR TO THE PROJECT GENERAL CONTRACTOR. CONTRACTOR TO INSTALL PUBLIC MAIN AND HYDRANTS ON SITE TO CITY OF WILSONVILLE PUBLIC WORKS STANDARDS, AVAILABLE FROM THE CITY. INSTALL DOMESTIC METER AND CITY OF WILSONVILLE APPROVED DOMESTIC BACKFLOW PREVENTER ADJACENT TO THE METER. EXTEND SERVICE PIPE TO BUILDING RISER ROOM. SIZE OF DOMESTIC SERVICE, CAPACITY OF METER, BUILDING DOMESTIC WATER DEMAND AND SIZE OF PIPING TO BUILDING IS ASSUMED AND TO BE DETERMINED BY BUILDING PLUMBING DESIGNER PRIOR TO CONSTRUCTION OR ORDERING MATERIAL. CONTRACTOR TO CONFIRM REQUIRED DOMESTIC BACKFLOW PREVENTER TYPE PRIOR TO CONSTRUCTION OR ORDERING MATERIALS; COORDINATE WITH BUILDING PLUMBING DESIGNER. IF REDUCED PRESSURE DOMESTIC BACKFLOW PREVENTER IS REQUIRED BY THE CITY, IT IS TO BE INSTALLED IN ABOVE GRADE HEATED AND INSULATED ENCLOSURE. PROVIDE POWER SOURCE FROM BUILDING FOR ENCLOSURE, COORDINATE WITH PROJECT ELECTRICAL DESIGNER FOR DEDICATED CIRCUIT FOR ENCLOSURE. CONTRACTOR TO DETERMINE IF REMOTE METER READER IS REQUIRED AND PROVIDE AS DIRECTED BY CITY OF WILSONVILLE. IRRIGATION METER SIZE IS BY THE GENERAL CONTRACTOR'S DESIGN-BUILD LANDSCAPE IRRIGATION SUBCONTRACTOR, BASED ON THEIR DEMAND CALCULATIONS. SEE LANDSCAPE PLANS FOR ADDITIONAL IRRIGATION SYSTEM INFORMATION. NO CONNECTIONS MAY OCCUR BETWEEN DOMESTIC METER AND BACKFLOW PREVENTER. PROVIDE MINIMUM 36" OF COVER OVER ALL DOMESTIC WATER PIPING.
- FIRE DCDA TO SERVE BUILDING TO BE INSTALLED IN PUBLIC UTILITY EASEMENT WITH SIZE TO BE DETERMINED BY CONTRACTOR IN CONSULTATION WITH BUILDING FIRE SYSTEM DESIGNER. FIRE LINE PIPE SIZE, HYDRANT PIPE SIZE, AND DCDA SIZE IS ASSUMED AND TO BE DETERMINED BY BUILDING FIRE SYSTEM DESIGNER BASED ON THEIR FLOW TESTING. ALL PUBLIC WATER SYSTEM COMPONENTS TO BE FULLY MECHANICALLY RESTRAINED AND INSTALLATION AND MATERIAL TO BE IN CONFORMANCE WITH THE CURRENT CITY OF WILSONVILLE PUBLIC WORKS STANDARDS, AVAILABLE FROM THE CITY. SITE FIRE PIPING AND FDC PIPING TO BE FULLY MECHANICALLY RESTRAINED WITH PRODUCTS APPROVED BY THE CITY OF WILSONVILLE. PROVIDE A MINIMUM OF 36" OF COVER OVER ALL PUBLIC WATER SYSTEM PIPE AND FITTINGS AND OVER ALL PRIVATE SITE FIRE AND FDC PIPING. NOTE, ADDITIONAL RISERS MAY BE REQUIRED FOR DCDA VAULT TO ALLOW PIPE COVER TO BE ACHIEVED. CONTRACTOR TO PROVIDE SEPARATE DEDICATED ELECTRICAL CIRCUIT FOR VAULT SUMP PUMP, IF PUMP IS REQUIRED BY CITY.
- INSTALL AUTOMATIC DRAIN VALVE IN VAULT AT LOW POINT OF FDC LINE. PROVIDE DRAINAGE FROM VAULT TO CITY OF WILSONVILLE APPROVED LOCATION. SIZE OF FDC PIPE IS ASSUMED AND TO BE DETERMINED BY BUILDING FIRE SYSTEM DESIGNER. FDC TO CONFORM TO REQUIREMENTS OF CITY OF WILSONVILLE FIRE DEPARTMENT. PROVIDE MINIMUM OF 36" OF COVER OVER FDC PIPING.
- PUBLIC WATER AND FIRE LINE, FITTINGS, VALVES, HYDRANTS, AND COMPONENTS TO CONFORM TO THE REQUIREMENTS OF CITY OF WILSONVILLE AND BE FULLY MECHANICALLY RESTRAINED. FIRE PIPING TO BE PVC ASTM C 900, FITTINGS AND ACCESSORIES TO BE COMPLIANT. HYDRANTS TO ALSO CONFORM TO REQUIREMENTS OF CITY OF WILSONVILLE FIRE DEPARTMENT.
- BUILDING SANITARY PIPE SIZE IS ASSUMED AND TO BE CONFIRMED BY BUILDING PLUMBING DESIGNER BASED ON THEIR CALCULATION OF DESIGN FIXTURE DISCHARGE. PIPE TO BE PVC ASTM 3034, SDR 35. SEE BUILDING PLUMBING PLANS FOR SANITARY CONTINUATION WITHIN BUILDING.
- CONTRACTOR TO CONNECT THE ON-SITE SANITARY SEWER PIPE SYSTEM TO EXISTING PUBLIC SANITARY SEWER SERVICE LATERAL IN CONFORMANCE WITH CITY OF WILSONVILLE REQUIREMENTS. CONTRACTOR TO CONNECT SEPARATE SANITARY PIPE FOR FUTURE EASTERN LOT DEVELOPMENT WITH A SEPARATE CONNECTION TO THE PUBLIC SANITARY MAIN IN GARDEN ACRES ROAD. CONNECTION TO CONFORM TO CITY OF WILSONVILLE PUBLIC WORKS STANDARDS AND MAY REQUIRE A SEPARATE PERMIT. CONTRACTOR TO COORDINATE PERMIT ACQUISITION WITH CITY OF WILSONVILLE. CONTRACTOR TO CONFIRM SITE SERVICE LATERAL EXISTS AND DETERMINE DEPTH BY POTHOLES PRIOR TO CONSTRUCTION OF ANY PORTION OF THE ON-SITE SANITARY SYSTEM AND PRIOR TO ORDERING MATERIALS.
- CONTRACTOR TO CONNECT ON-SITE STORM DISCHARGE FROM PLANTERS, RAIN GARDENS, AND STORM PIPE FROM FUTURE EASTERN LOT DEVELOPMENT TO EXISTING PUBLIC SITE SERVICE LATERAL IN CONFORMANCE WITH CITY OF WILSONVILLE REQUIREMENTS. DEPTH AND SIZE OF EXISTING PUBLIC LATERAL IS ASSUMED AND TO BE CONFIRMED BY THE CONTRACTOR BY POTHOLES PRIOR TO COMMENCING ANY STORM SYSTEM CONSTRUCTION OR ORDERING MATERIALS. COORDINATE WITH CITY OF WILSONVILLE STAFF PRIOR TO ANY WORK ON PUBLIC SYSTEM OR WITHIN PUBLIC RIGHT OF WAY.
- PRIVATE STORM SYSTEM OUTSIDE OF BUILDING TO BE EITHER PVC ASTM 3034, SDR 35, POLYETHYLENE, ASTM F 405, OR HDPE AASHTO M 294. PIPE TO BE DUCTILE IRON, CLASS 52 WHEN COVER IS LESS THAN 18".

## GENERAL GRADING NOTES

- ALL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE JURISDICTION AND THE PROJECT GEOTECHNICAL INVESTIGATION.
- THE CONTRACTOR SHALL HAVE A FULL SET OF THE CURRENT APPROVED CONSTRUCTION DOCUMENTS, INCLUDING ADDENDA ON THE PROJECT SITE AT ALL TIMES.
- THE CONTRACTOR SHALL NOTIFY THE OREGON UTILITY NOTIFICATION CENTER (800 332 2344) THREE BUSINESS DAYS PRIOR TO ANY EXCAVATION.
- THE CONTRACTOR IS RESPONSIBLE FOR COORDINATION OF PRIVATE UTILITIES SUCH AS GAS, TELEPHONE, POWER, DATA, ETC. CONFIRM VAULT LOCATIONS WITH THE ARCHITECT.
- THE CONTRACTOR SHALL KEEP THE ARCHITECT AND JURISDICTION INFORMED OF CONSTRUCTION PROGRESS TO FACILITATE SITE OBSERVATIONS AT REQUIRED INTERVALS. 48-HOUR NOTICE IS REQUIRED.
- EXISTING CONDITIONS BASED ON TOPOGRAPHIC, BOUNDARY, AND UTILITY SURVEY PREPARED BY PLS SURVEYING, PROVIDED AUGUST 2021 AND UPDATED MARCH 2022. EXISTING CONDITIONS ARE ALSO BASED ON GARDEN ACRES CONSTRUCTION PLANS PROVIDED BY PLS SURVEYING.
- FINISHED GRADES ARE TO BE BROUGHT TO WITHIN 0.08 FT. IN 10 FT. OF THE GRADES SHOWN AT SUBGRADE AND TO WITHIN 0.03 FT. IN 10 FT. AT FINISH GRADE. CONTRACTOR TO ALLOW FOR PLACEMENT OF REQUIRED TOPSOIL AND PLANTINGS IN ROUGH GRADING. DISTURBED AREAS NOT INDICATED FOR PLANTING ON THE LANDSCAPE DRAWINGS ARE TO BE SEEDED WITH FIELD GRASS, COORDINATE WITH ARCHITECT AND LANDSCAPE ARCHITECT FOR SPECIFIC INFORMATION.
- GRADING ELEVATIONS AS SHOWN ON PLANS ARE FINISHED GRADE, WHICH INCLUDES PAVING, BASE ROCK, AND SUBGRADE SOIL. GENERAL CONTRACTOR IS RESPONSIBLE TO COORDINATE GRADING WITH BOTH EXCAVATOR AND PAVING CONTRACTOR.
- SEE PROJECT GEOTECHNICAL ANALYSIS FOR ASPHALT AND CONCRETE PAVING AND BASE ROCK THICKNESS AND FOR EXCAVATION, FILL, AND COMPACTION REQUIREMENTS. STORM FACILITY ACCESS ROAD TO BE GRAVEL SURFACED. GRAVEL SECTION TO BE AS INDICATED IN SUPPLEMENT TO PROJECT GEOTECHNICAL ANALYSIS (8" OF 1.5"-0" COMPACTED CRUSHED AGGREGATE ON PROPEX GRIDPRO BXP 12 GEOGRID ON COMPACTED SUBGRADE) AND SATISFIES CRITERIA FOR AN ALL-WEATHER STORM TREATMENT/FLOW CONTROL FACILITY MAINTENANCE ACCESS CAPABLE OF SUPPORTING A 30 TON MAINTENANCE VEHICLE.
- MODULAR BLOCK RETAINING WALLS TO BE CONTRACTOR DESIGN-BUILD, INCLUDING ANY FENCING/FENCE ATTACHMENTS, OR GUARD RAILS. RETAINING WALLS AT TREATMENT/FLOW CONTROL PLANTERS MAY BE EITHER CONTRACTOR DESIGN-BUILD MODULAR BLOCK OR CAST IN PLACE; CONTRACTOR TO COORDINATE WITH STRUCTURAL ENGINEER FOR DESIGN IF CAST IN PLACE. COORDINATE DESIGN AND LOCATION OF ANY REQUIRED FENCING OR GUARD RAILS WITH ARCHITECT. PROVIDE GATES IN FENCING TO ACCESS TO FACILITIES FOR MAINTENANCE/INSPECTION. SEE ARCHITECTURAL PLANS FOR INFORMATION ON FENCING AND GATES.
- SEE LANDSCAPE PLANS FOR PLANTING IN RAIN GARDENS AND PLANTERS, PLANTING TO COMPLY WITH CITY OF WILSONVILLE STANDARDS FOR RAIN GARDENS AND PLANTERS.
- IF DEWATERING IS REQUIRED DURING CONSTRUCTION, THE CONTRACTOR SHALL PREPARE A DEWATERING PLAN CONSISTENT WITH CITY OF WILSONVILLE AND CLACKAMAS COUNTY REQUIREMENTS, AND OBTAIN APPROVAL OF THE PLAN FROM BOTH JURISDICTIONS PRIOR TO PROCEEDING WITH DEWATERING.
- THE CONTRACTOR SHALL CLEAN ALL CATCH BASINS AND STORM LINES IMPACTED BY SITE DEVELOPMENT FOLLOWING COMPLETION OF CONSTRUCTION OR AS DIRECTED BY THE CITY OF WILSONVILLE AND CLACKAMAS COUNTY. NO SEDIMENT SHALL BE ALLOWED TO ENTER NEW OR EXISTING INLETS OR OTHER STORM FACILITIES.

## CIVIL SHEET INDEX

C0	GENERAL NOTES & LEGEND
C1	EXISTING CONDITIONS PLAN
C1.1	EXISTING CONDITIONS PLAN
C2	GRADING PLAN
C2.1	GRADING PLAN
C3	STORMWATER PLAN
C3.1	STORMWATER PLAN
C4	WATER & SANITARY SEWER PLAN
C4.1	WATER & SANITARY SEWER PLAN
C5	DETAILS
C5.1	DETAILS
C5.2	DETAILS

## LEGEND

	PROPOSED	EXISTING
PROJECT BOUNDARY	---	---
PROPERTY LINE	---	---
EASEMENT LINE	---	---
FENCE	---	---
CURB	---	---
EDGE OF PAVEMENT	---	---
CONCRETE	---	---
1' CONTOUR	221	221
5' CONTOUR	220	220
STORM SEWER LINE	SD	STM
WATER LINE	W	WAT
SANITARY SEWER LINE	SS	SAN
GAS LINE		GAS
OVERHEAD UTILITY WIRE		OHW
UNDERGROUND POWER LINE		PWR
COMMUNICATION LINE		COM
EXISTING FEATURE OR CONDITION		(E)
CATCH BASIN		CB
TOP OF CURB		TC
GUTTER		G
ASPHALT CONCRETE		AC
CONCRETE		CONC
SIDEWALK		WALK
BACKFLOW PREVENTER		BFP
PERFORATED PIPE		PERF
TOP OF STEP		TS
BOTTOM OF STEP		BS
TOP OF WALL		TW
BOTTOM OF WALL AT FINISHED GRADE		BW
FINISHED GRADE		FG
FOOTING		FTG
BACKFLOW PREVENTER		BFP
WATER SURFACE ELEVATION		WSE
GROWING MEDIUM		GM
BOTTOM		BOT
GENERAL GRADING NOTES		GGN
GENERAL UTILITY NOTES		GUN

Item 2.

**MDG**

ARCHITECTURE | INTERIORS  
4875 SW Griffith Drive Suite 300  
Beaverton OR, 97005  
(503) 244-0552

**TMR**

T.M. RIPPEY  
CONSULTING ENGINEERS

7650 SW Beveland, Suite 100  
Tigard, Oregon 97223  
Phone: (503) 443-3900  
Fax: (503) 443-3700

Client/ Owner:

Project:

**Precision  
Countertops**

25540 SW Garden Acres Rd.  
Wilsonville OR

Sheet Title:

**General Notes  
& Legend**

Revisions:

#	Description	Date
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Drawn by: AS Checked by: KJK

AS KJK

TMR Job Number: 21279

Sheet

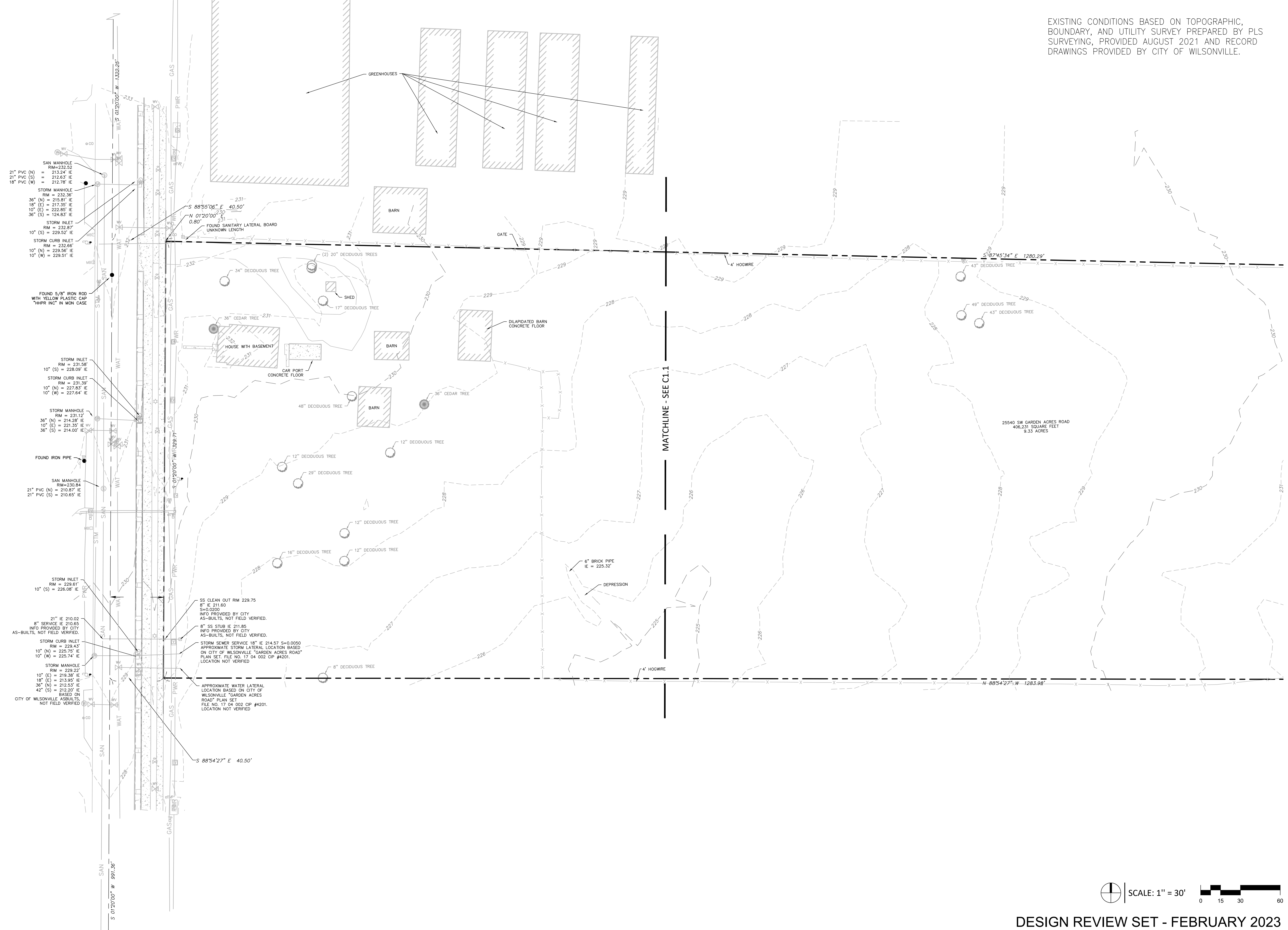
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C0

349



EXISTING CONDITIONS BASED ON TOPOGRAPHIC, BOUNDARY, AND UTILITY SURVEY PREPARED BY PLS SURVEYING, PROVIDED AUGUST 2021 AND RECORD DRAWINGS PROVIDED BY CITY OF WILSONVILLE.



Client/ Owner:

Project:  
**Precision Countertops**

25540 SW Garden Acres Rd.  
 Wilsonville OR

Sheet Title:

**Existing Conditions Plan**

Revisions:  
 # Description Date

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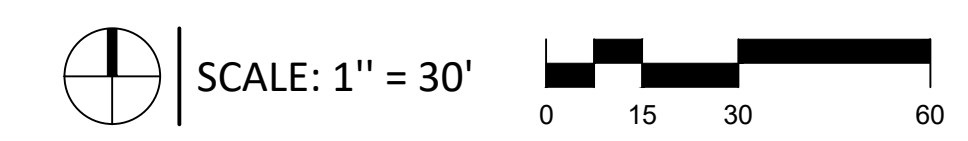
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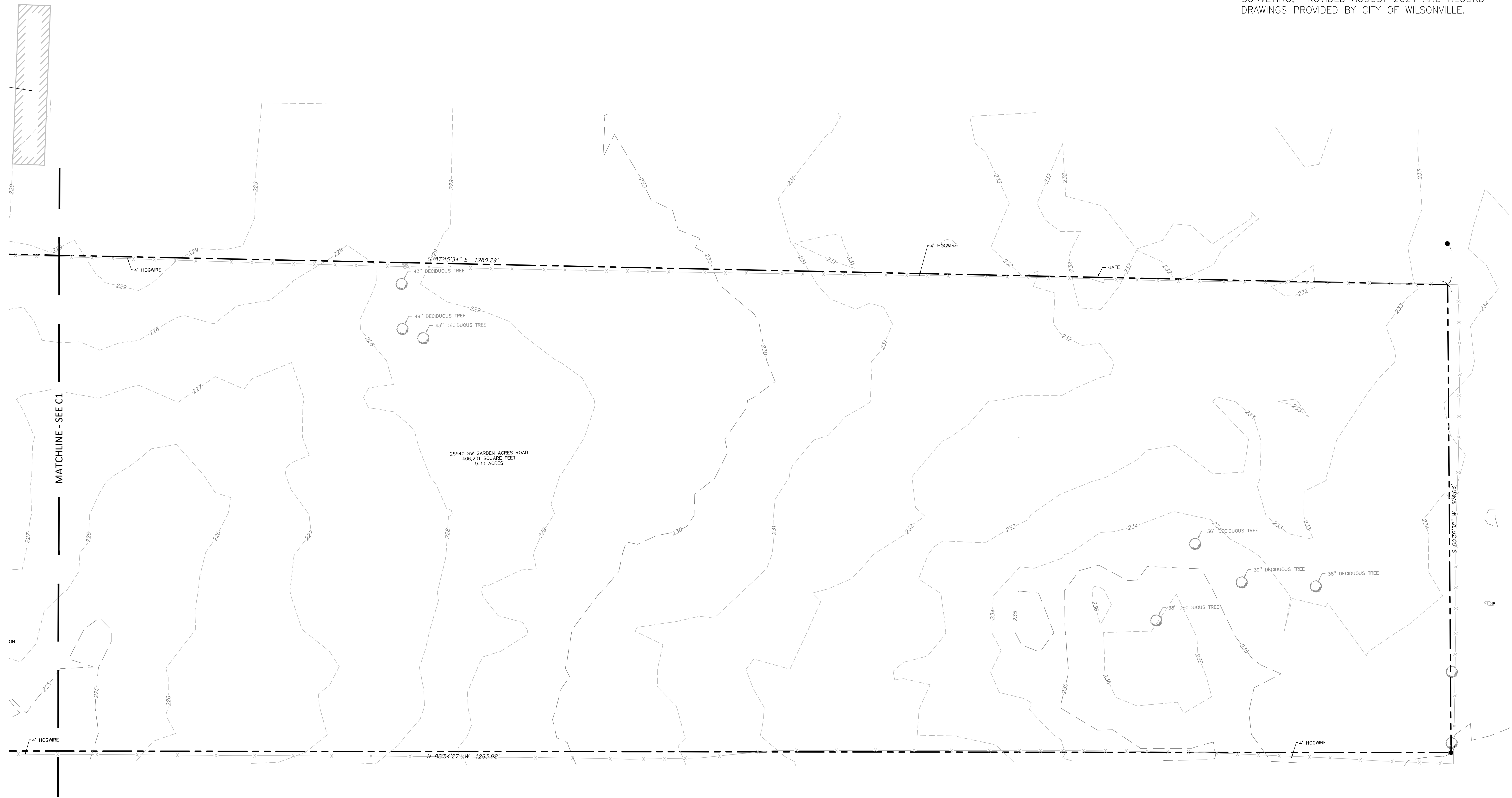
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EXISTING CONDITIONS BASED ON TOPOGRAPHIC, BOUNDARY, AND UTILITY SURVEY PREPARED BY PLS SURVEYING, PROVIDED AUGUST 2021 AND RECORD DRAWINGS PROVIDED BY CITY OF WILSONVILLE.



+

Client/ Owner:

Project:  
**Precision  
 Countertops**

25540 SW Garden Acres Rd.  
 Wilsonville OR

Sheet Title:  
**Existing  
 Conditions  
 Plan**

Revisions:  
 # Description Date

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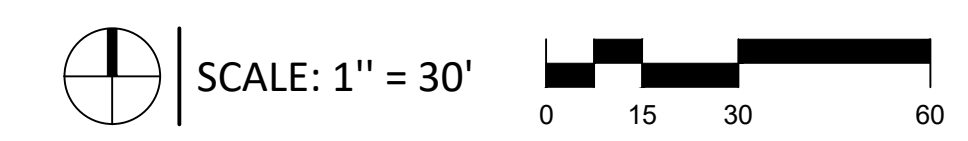
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Client/ Owner:

Project:  
**Precision Countertops**

25540 SW Garden Acres Rd.  
 Wilsonville OR

Sheet Title:  
**Grading Plan**

Revisions:  
 # Description Date

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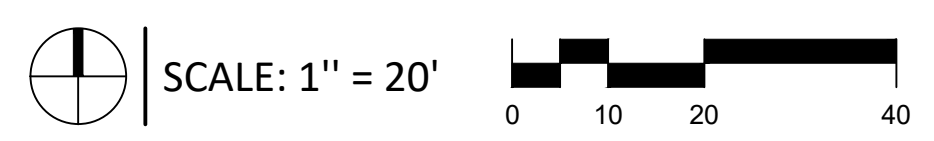
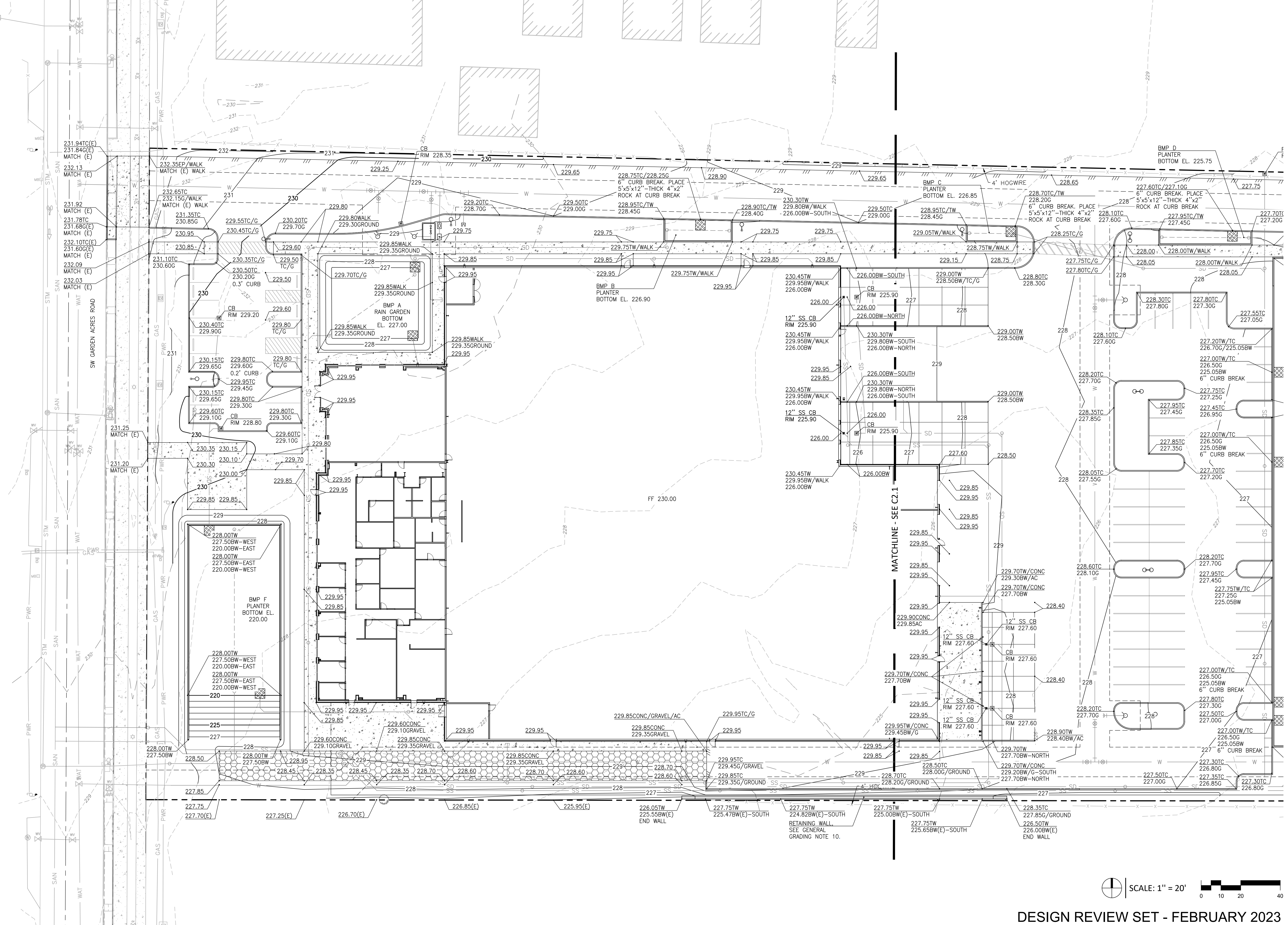
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Client/ Owner:

Project:  
**Precision Countertops**

25540 SW Garden Acres Rd.  
 Wilsonville OR

Sheet Title:

**Stormwater Plan**

Revisions:  
 # Description Date

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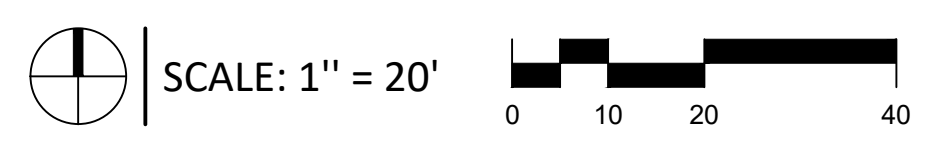
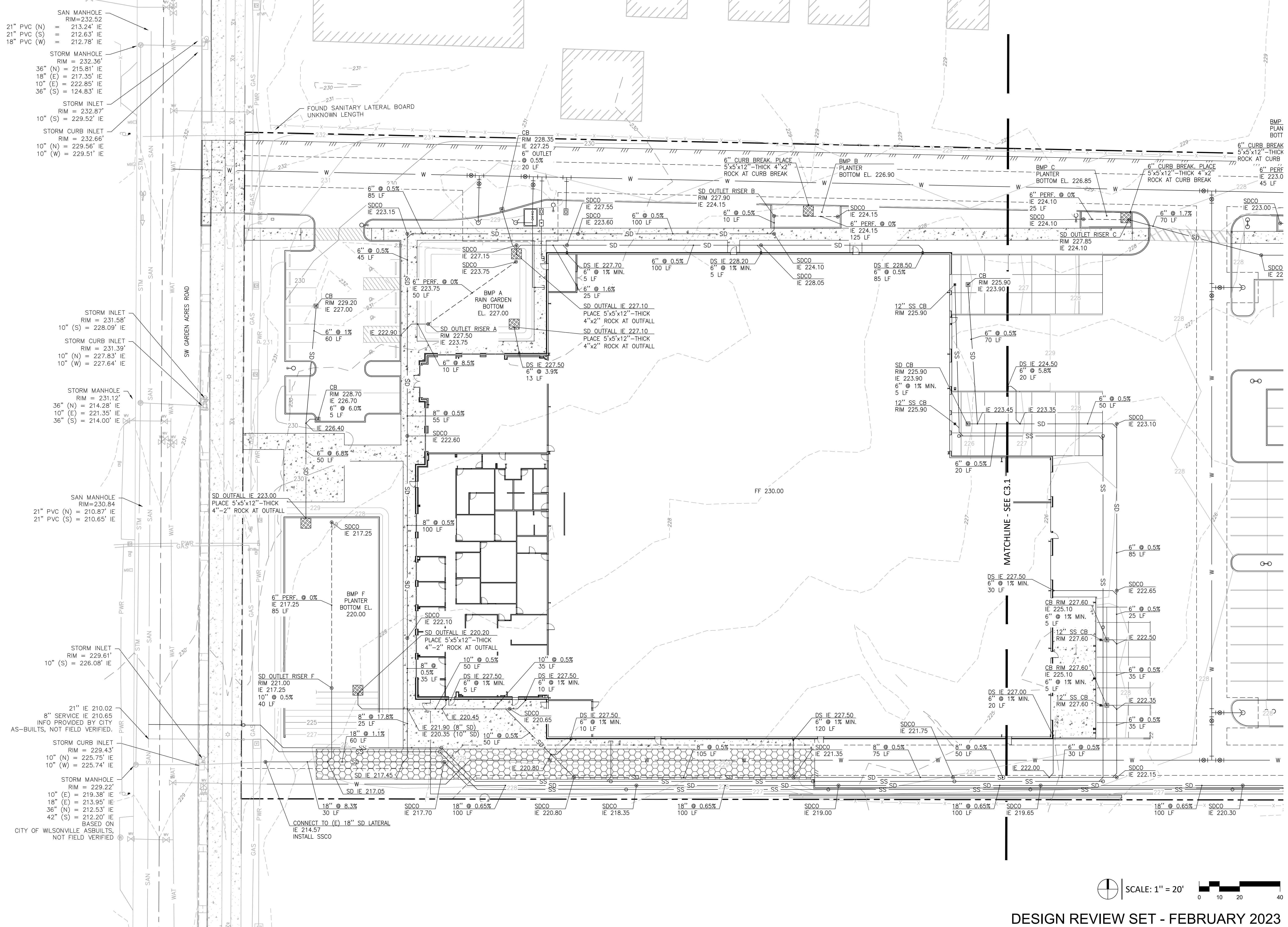
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Client/ Owner:

Project:  
**Precision Countertops**

25540 SW Garden Acres Rd.  
 Wilsonville OR

Sheet Title:

**Stormwater Plan**

Revisions:  
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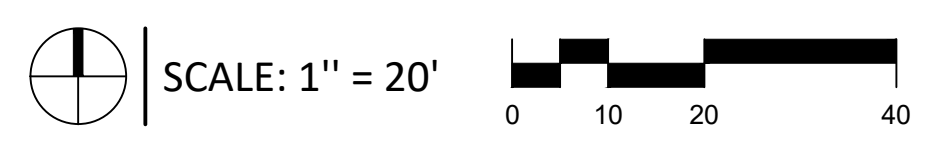
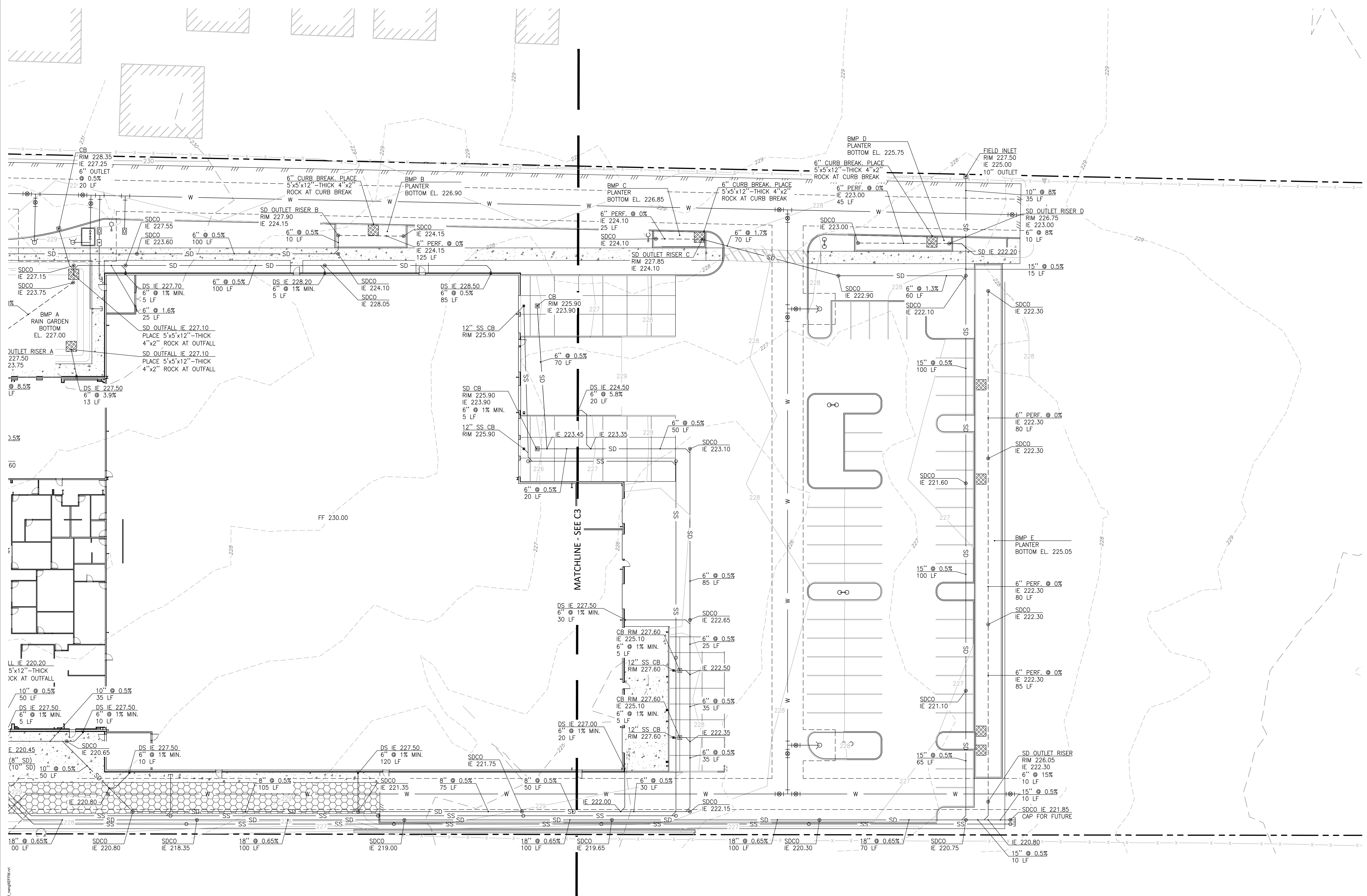
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C3.1

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Client/ Owner:

Project:  
**Precision  
 Countertops**

25540 SW Garden Acres Rd.  
 Wilsonville OR

Sheet Title:

**Water &  
 Sanitary  
 Sewer Plan**

Revisions:  
 # Description Date

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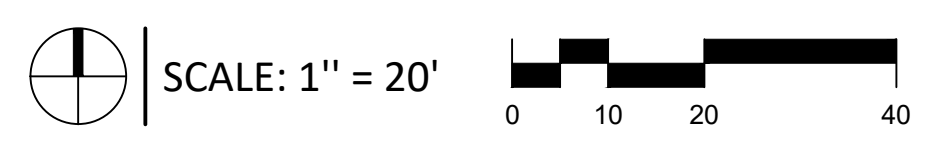
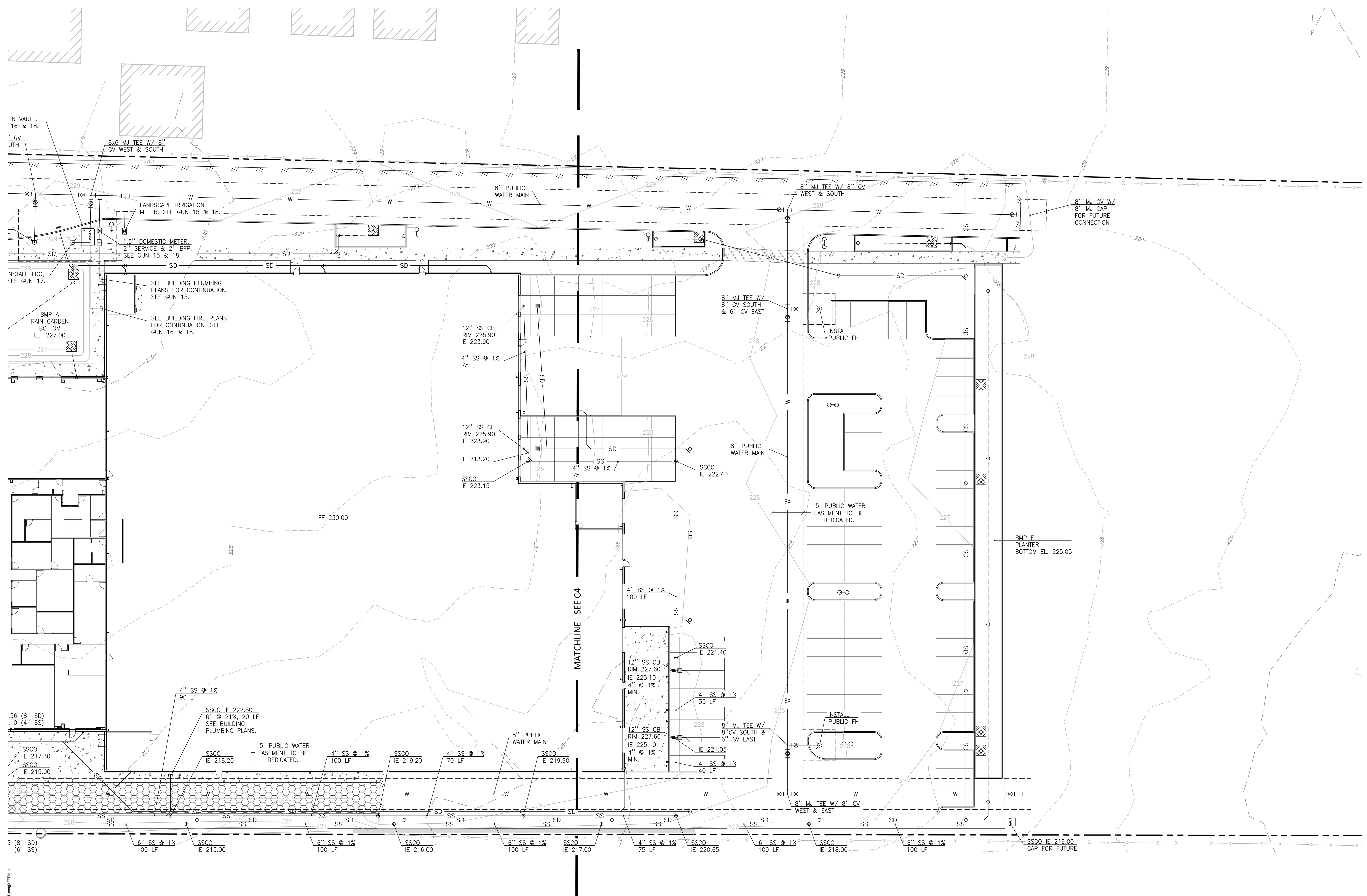
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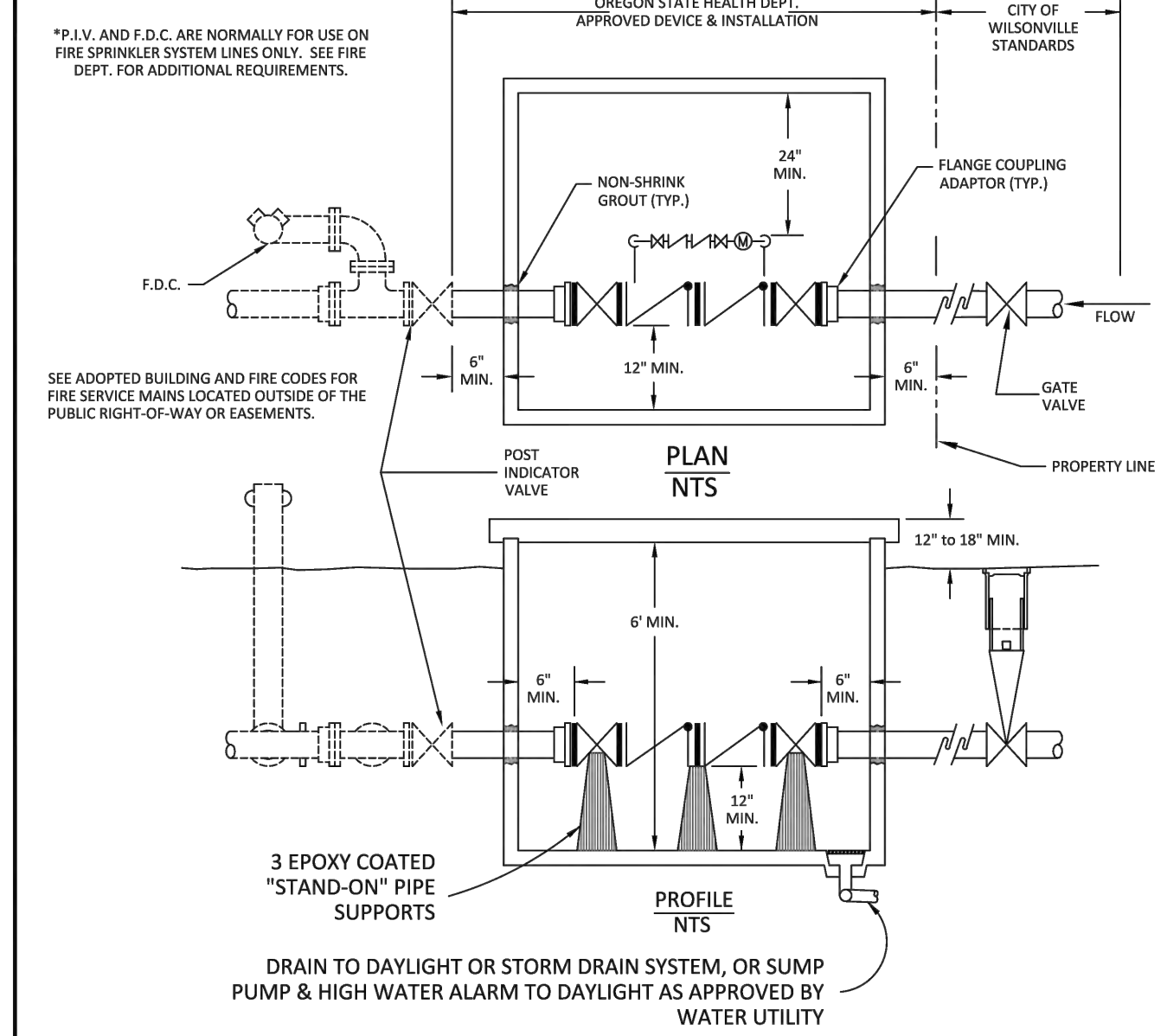
This Detail Drawing may not be altered or changed in any manner except by the City Engineer. It is the responsibility of the user to acquire the most current version.

To ensure proper operation and accessibility of all backflow prevention device assemblies, the following requirements shall apply to installation of these devices, unless specifically approved by the City Engineer.

1. No part of the backflow prevention device shall be submerged in water or installed in a location subject to flooding. If installed in a vault or chamber, adequate drainage shall be provided by either drainage to daylight or by sump pump with high water alarm system. Test cocks shall be plugged. The plugs shall not be of dissimilar metals.
2. The device assembly must be protected from freezing and other severe weather conditions.
3. Only devices approved for vertical installation may be installed vertically.
4. The device assembly shall be readily accessible with adequate room for maintenance and testing. Devices 2 inches and smaller shall have at least a 12-inch clearance below and on both sides of the device assembly; and if located in a vault, the top of the device assembly shall be between 12 and 24 inches below grade.
5. All device assemblies larger than 2 inches shall have a 12-inch clearance on the backside, a 24-inch clearance on the test-cock side, and 12 inches below the device assemblies. Adequate clearance (3 inches minimum) must be maintained above operating stem and yoke, gate-valve stem. Headroom of 6'0" is required in vaults. Access to the device and to any vault or chamber shall remain clear at all times. An OR/OSHA approved chamber ladder that extends 3 ft above surface of vault shall be installed.
5. No post indicating valves are allowed on Double Check Device assemblies.
6. Only approved Double Check Detector Check Valve Assemblies are to be used for system containment on fire line services in the City of Wilsonville. The meter on bypass assembly shall read in cubic feet.
7. If a Fire Line Flow, or Tamper Switch is installed, it must be connected to a monitored Fire Alarm System approved by the Fire Marshal. No installation will modify the backflow device assembly or interfere with its operation or maintenance.
8. All backflow devices shall be installed at the service connection to the premises per Oregon Administrative Rules 333-61-070, Cross Connection Control Requirements, unless specifically approved by the Water Division Engineer. (service connection - a location where the public water facilities end at or near the property line)
9. All pipe between main and device shall be restrained. Use Mega-Lug retainer glands on mj fittings and Field-Lok gaskets on bell joints. Uni-Flange adapters may be used in vaults.
10. All check valve assemblies are required to be UL Tested or Factory Mutual Approved as well as State of Oregon Approved per NFPA 13 & 24.

Double Detector Check Vault Page 2			CITY OF WILSONVILLE
DRAWING NUMBER:	DRAWN BY:	SCALE:	PUBLIC WORKS STANDARDS
B-4010	SR	N.T.S.	
FILE NAME:	APPROVED BY:	DATE:	
B-4010.DWG	NK	07/01/02	

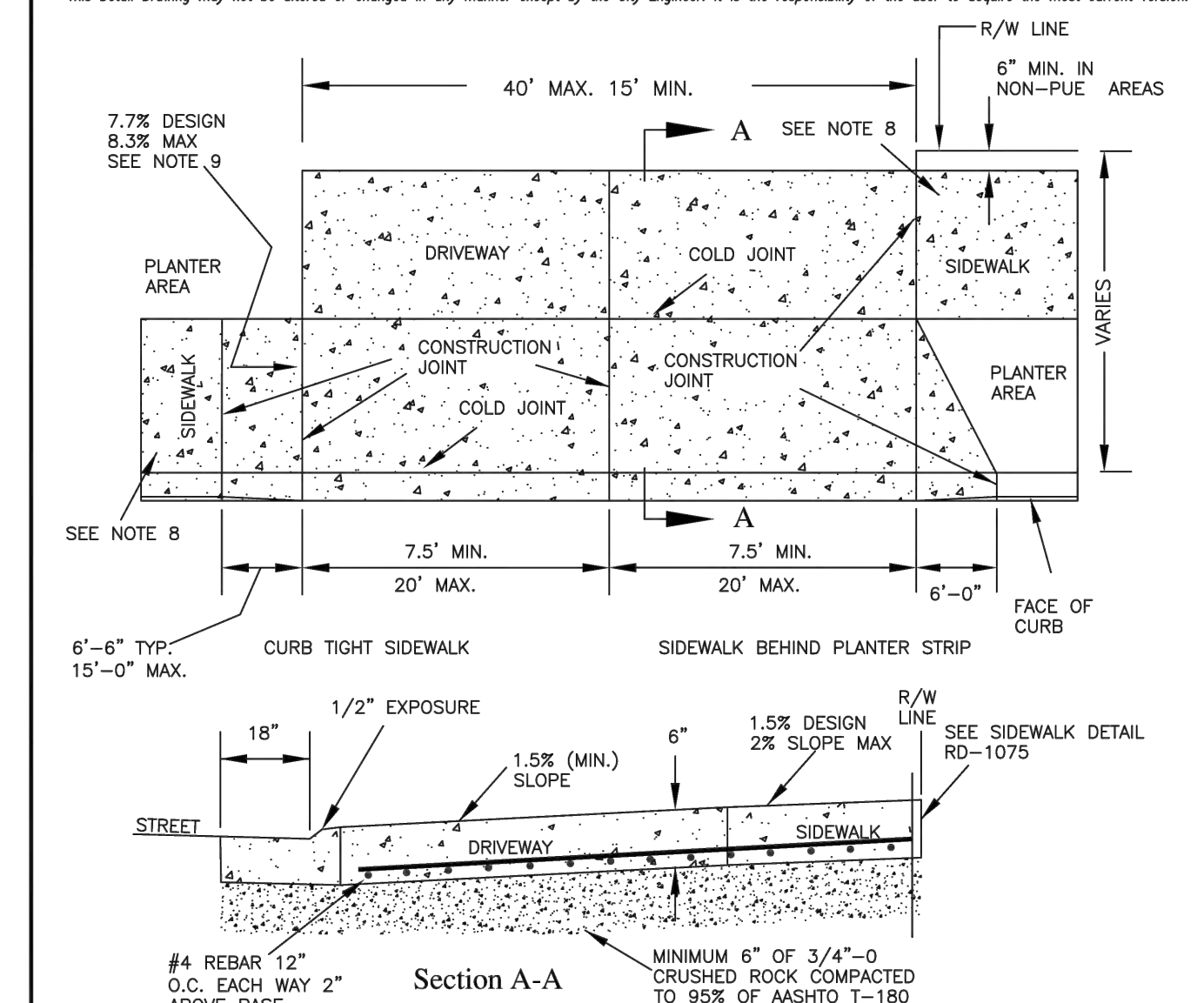
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Double Detector Check Vault Page 1			CITY OF WILSONVILLE
DRAWING NUMBER:	DRAWN BY:	SCALE:	PUBLIC WORKS STANDARDS
B-4005	SR	N.T.S.	
FILE NAME:	APPROVED BY:	DATE:	
B-4005.DWG	NK	03/29/06	

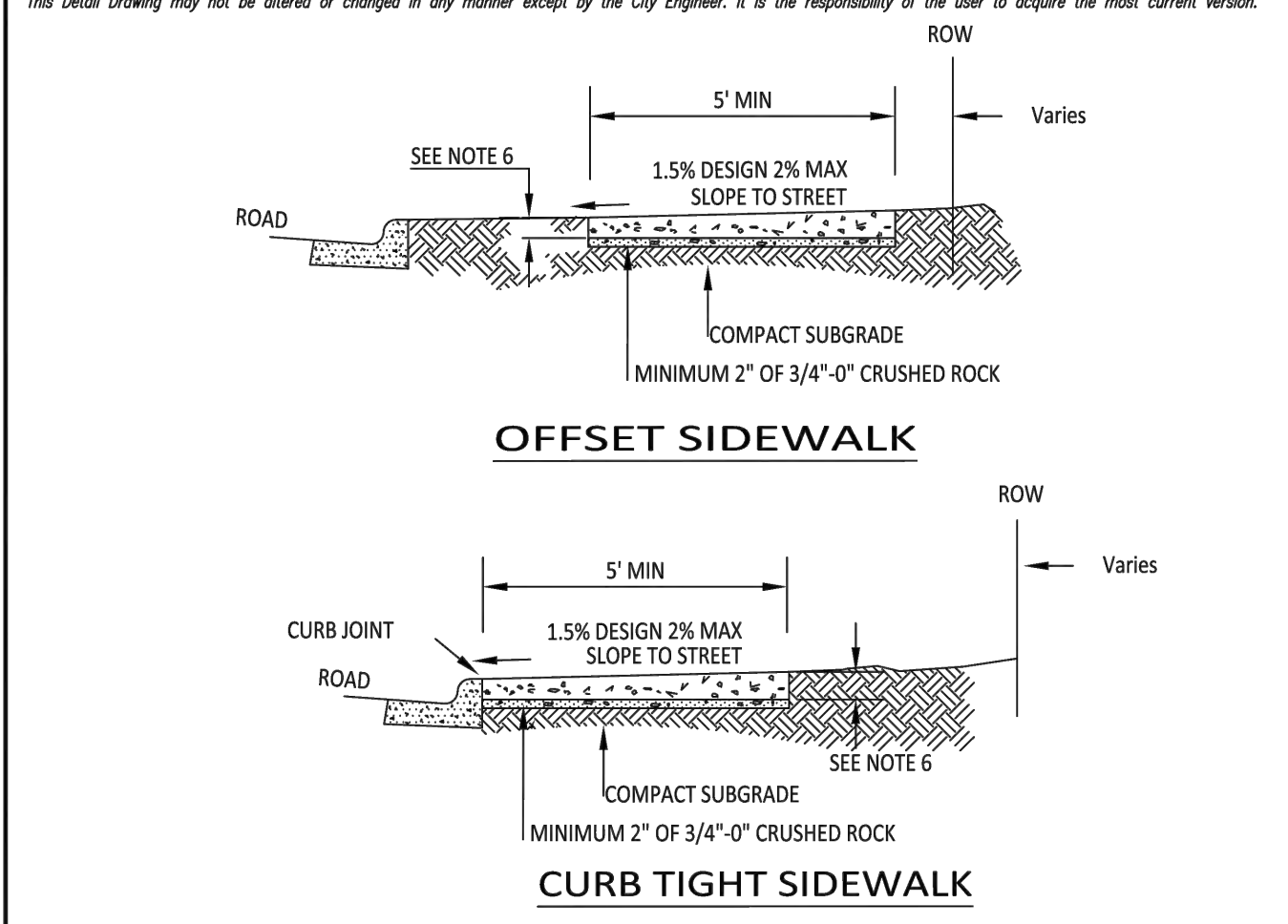
Double Detector Check Vault Page 2			CITY OF WILSONVILLE
DRAWING NUMBER:	DRAWN BY:	SCALE:	PUBLIC WORKS STANDARDS
B-4010	SR	N.T.S.	
FILE NAME:	APPROVED BY:	DATE:	
B-4010.DWG	NK	07/01/02	

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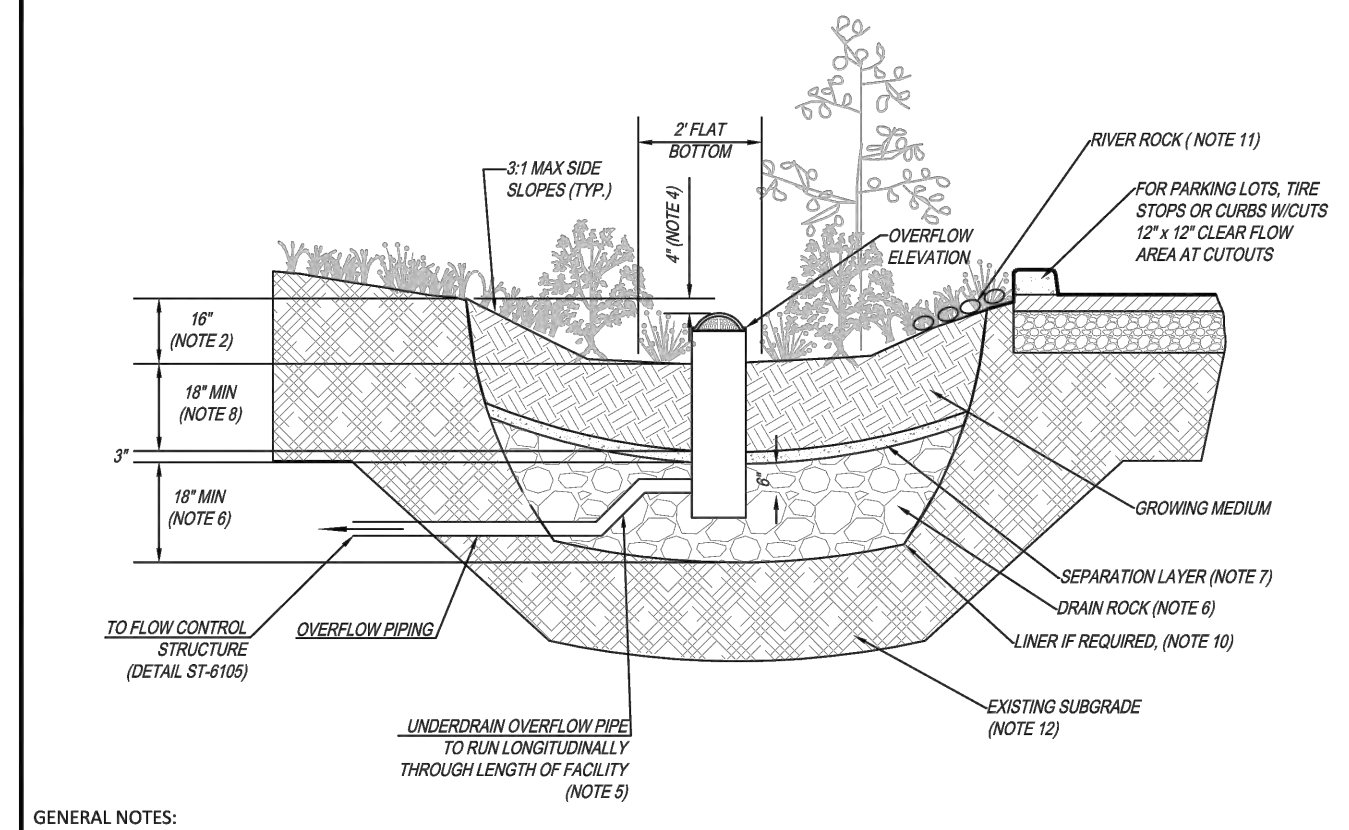
Commercial Driveway - Type I			CITY OF WILSONVILLE
DRAWING NUMBER:	DRAWN BY:	SCALE:	PUBLIC WORKS STANDARDS
RD-1095	SR	N.T.S.	
FILE NAME:	APPROVED BY:	DATE:	
RD-1095.DWG	PN	4/8/19	

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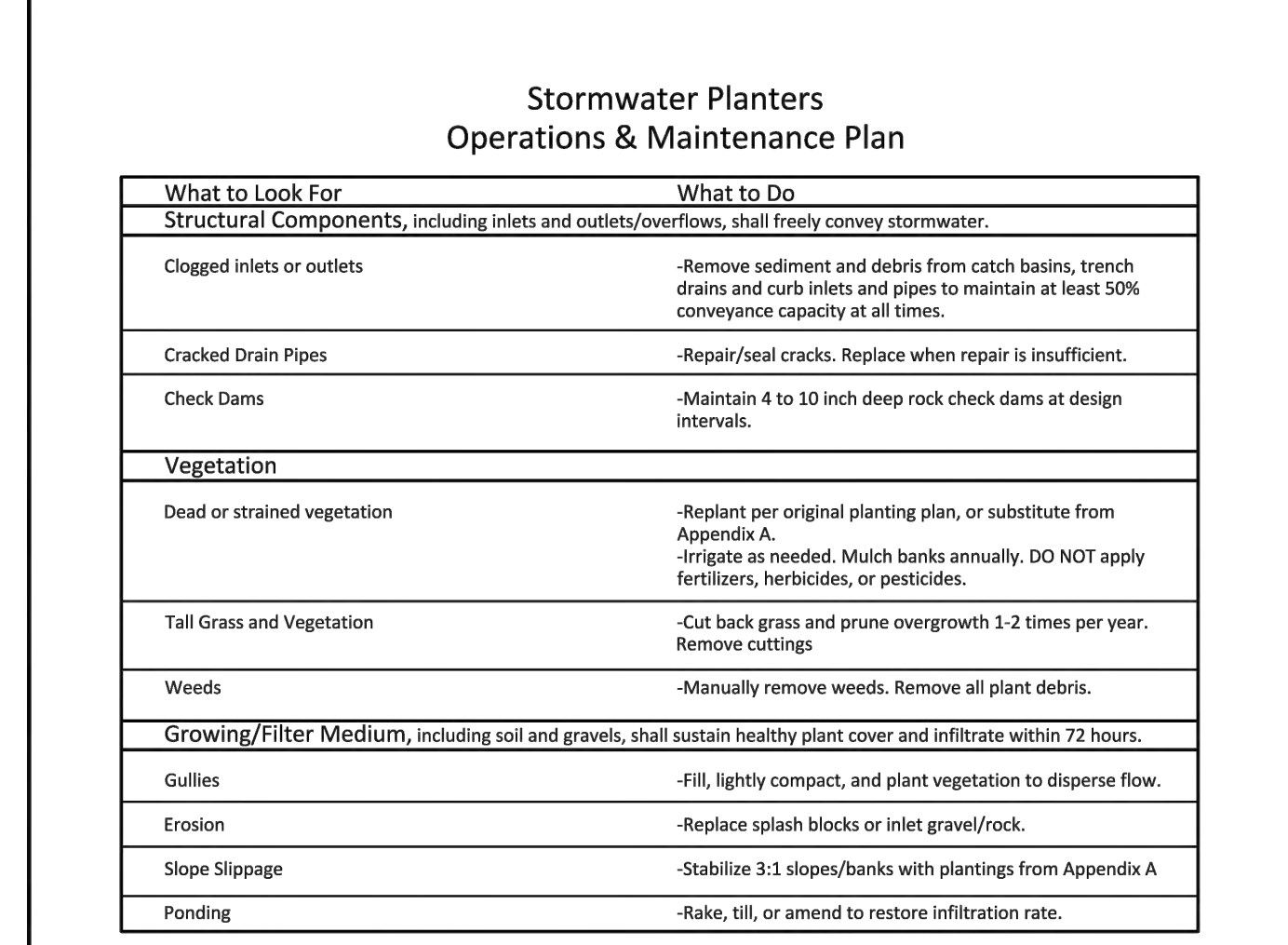
Concrete Sidewalk			CITY OF WILSONVILLE
DRAWING NUMBER:	DRAWN BY:	SCALE:	PUBLIC WORKS STANDARDS
RD-1075	SR	N.T.S.	
FILE NAME:	APPROVED BY:	DATE:	
RD-1075.DWG	NK	1/4/18	

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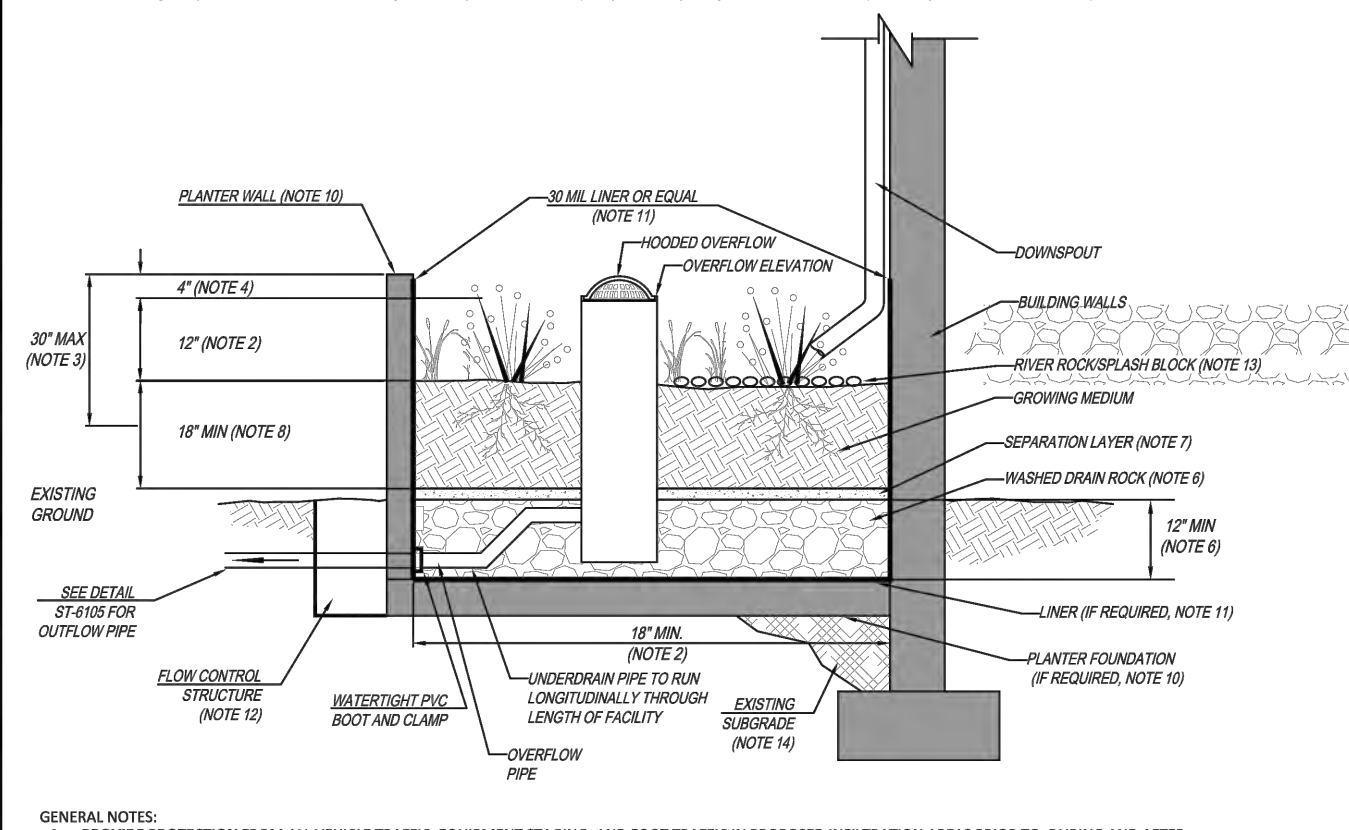
Rain Garden - Filtration			CITY OF WILSONVILLE
DRAWING NUMBER:	DRAWN BY:	SCALE:	PUBLIC WORKS STANDARDS
ST-6020	SR	N.T.S.	
FILE NAME:	APPROVED BY:	DATE:	
ST-6020.DWG	NK	4/16/18	

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Stormwater Planter O & M Plan			CITY OF WILSONVILLE
DRAWING NUMBER:	DRAWN BY:	SCALE:	PUBLIC WORKS STANDARDS
ST-6015	SR	N.T.S.	
FILE NAME:	APPROVED BY:	DATE:	
ST-6015.DWG	NK	10/8/14	

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Stormwater Planter - Filtration			CITY OF WILSONVILLE
DRAWING NUMBER:	DRAWN BY:	SCALE:	PUBLIC WORKS STANDARDS
ST-6005	SR	N.T.S.	
FILE NAME:	APPROVED BY:	DATE:	
ST-6005.DWG	NK	4/16/18	



Client/ Owner:

Project:  
**Precision**  
**Countertops**

25540 SW Garden Acres Rd.  
 Wilsonville OR

Sheet Title:

**Details**

Revisions:  
 # Description Date

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Date: 2023-02-07

Drawn by: Checked by:

AS KJK

TMR Job Number: 21279

Sheet

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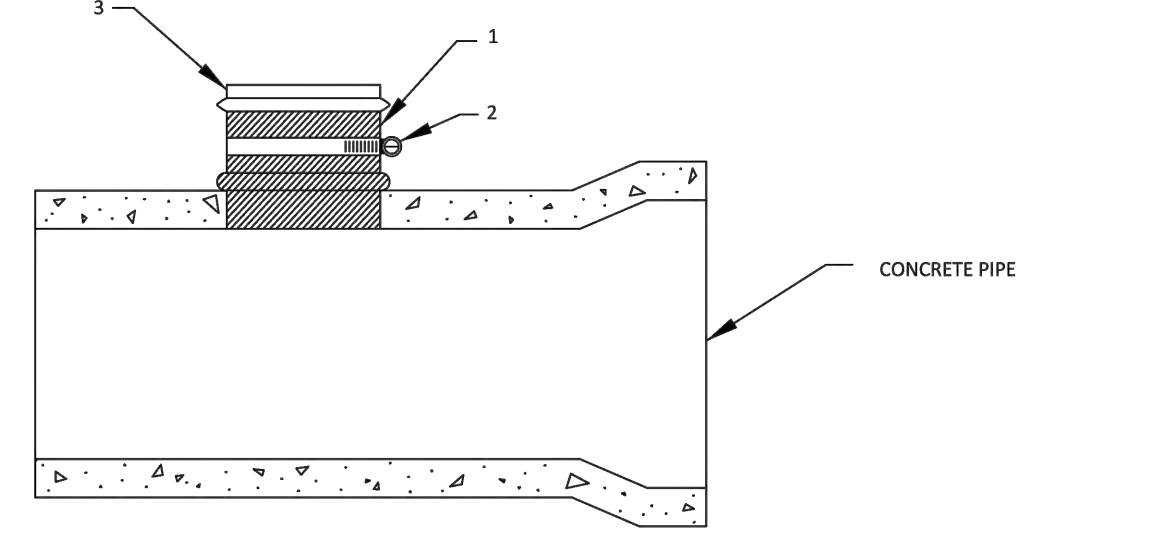
**Rain Gardens**  
**Operations & Maintenance Plan**

What to Look For	What to Do
<b>Structural Components, including inlets and outlets/overflows, shall freely convey stormwater.</b>	
Clogged inlets or outlets	-Remove sediment and debris from catch basins, trench drains and curb inlets and pipes to maintain at least 50% conveyance capacity at all times.
Cracked Drain Pipes	-Repair/seal cracks. Replace when repair is insufficient.
Check Dams	-Maintain 4 to 10 inch deep rock check dams at design intervals.
<b>Vegetation</b>	
Dead or strained vegetation	-Replant per original planting plan, or substitute from Appendix A. -Irrigate as needed. Mulch banks annually. DO NOT apply fertilizers, herbicides, or pesticides.
Tall Grass and Vegetation	-Cut back grass and prune overgrowth 1-2 times per year. Remove cuttings.
Weeds	-Manually remove weeds. Remove all plant debris.
<b>Growing/Filter Medium, including soil and gravels, shall sustain healthy plant cover and infiltrate within 72 hours.</b>	
Gullies	-Fill, lightly compact, and plant vegetation to disperse flow.
Erosion	-Replace splash blocks or inlet gravel/rock.
Slope Slippage	-Stabilize 3:1 slopes/banks with plantings from Appendix A
Ponding	-Rake, till, or amend to restore infiltration rate.

**Annual Maintenance Schedule:**  
**Summer:** Make any structural repairs. Improve filter medium as needed. Clear drain. Irrigate as needed.  
**Fall:** Replant exposed soil and replace dead plants. Remove sediment and plant debris.  
**Winter:** Monitor infiltration/flow-through rates. Clear inlets and outlets/overflows to maintain conveyance.  
**Spring:** Remove sediment and plant debris. Replant exposed soil and replace dead plants. Mulch.  
**All seasons:** Weed as necessary.  
**Maintenance Records:** Record date, description, and contractor (if applicable) for all structural repairs, landscape maintenance, and facility cleanup activities. Keep work orders and invoices on file and make available upon request of the inspector.  
**Access:** Maintain ingress/egress to design standards.  
**Infiltration/Flow Control:** All facilities shall drain within 72 hours. Record time/date, weather, and site conditions when ponding occurs.  
**Pollution Prevention:** All sites shall implement best management practices to prevent hazardous or solid wastes or excessive oil and sediment from contaminating stormwater. Contact \_\_\_\_\_ for immediate assistance responding to spills. Record time/date, weather, and site conditions if site activities contaminate stormwater.  
**Vectors (Mosquitoes & Rodents):** Stormwater facilities shall not harbor mosquito larvae or rats that pose a threat to public health or that undermine the facility structure. Monitor standing water for small wiggling sticks perpendicular to the water's surface. Note holes/burrows in and around facilities. Call Clackamas County Vector Control for immediate assistance to eradicate vectors. Record time/date, weather, and site conditions when vector activity observed.

Rain Garden O & M Plan			CITY OF WILSONVILLE PUBLIC WORKS STANDARDS
DRAWING NUMBER: ST-6030	DRAWN BY: SR	SCALE: N.T.S.	
FILE NAME: ST-6030.DWG	APPROVED BY: NK	DATE: 10/15/14	
CITY OF WILSONVILLE PUBLIC WORKS STANDARDS			

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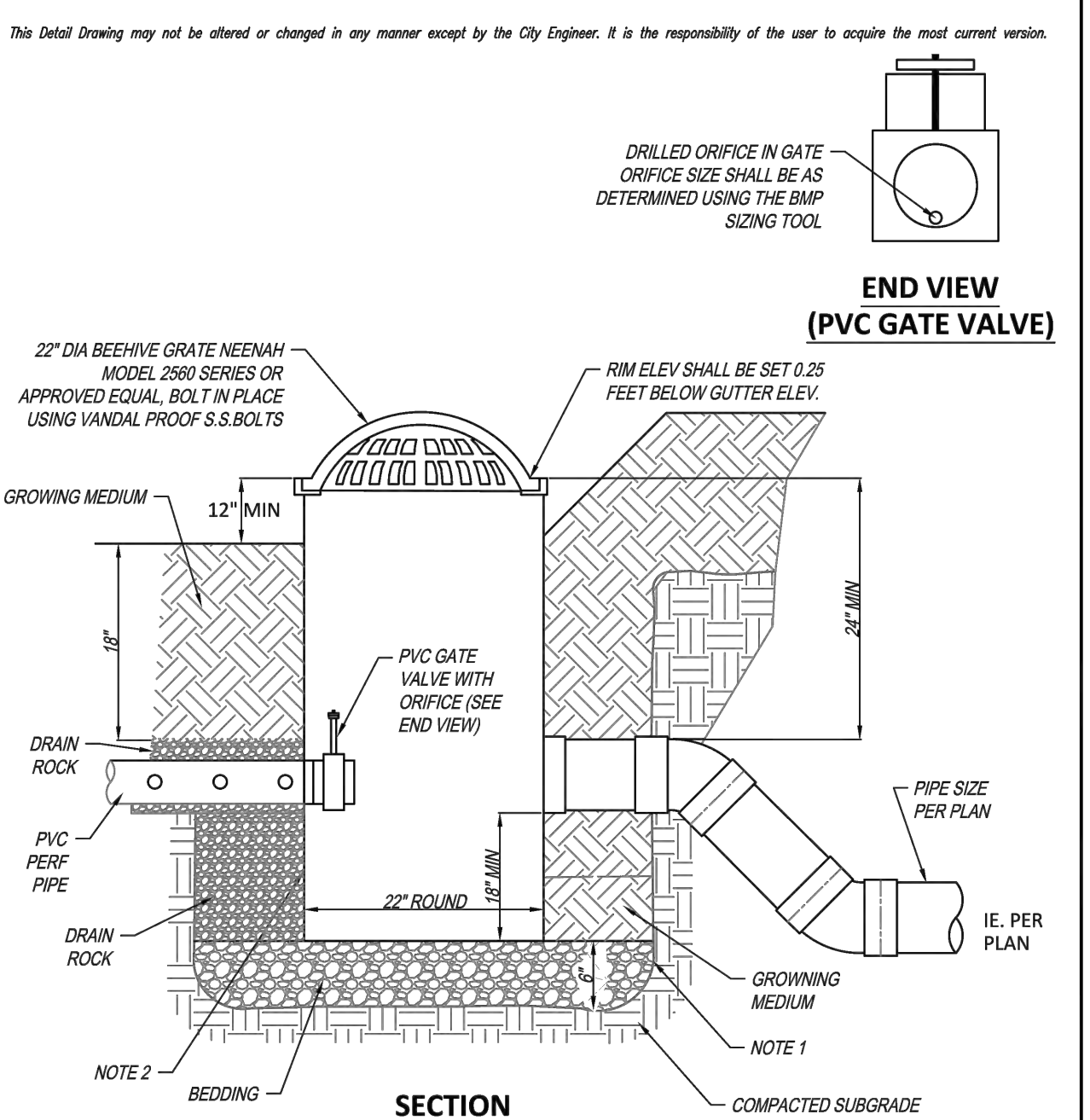


1. COMPLETE RUBBER SLEEVE (ASTM C-443) INCLUDES A MOLDED SEGMENT THAT HOLDS IT IN PLACE.
2. STAINLESS STEEL BAND (9/16" SERIES 316) SECURES UPPER HALF OF RUBBER SLEEVE TO THE PVC HUB.
3. PVC HUB (ASTM C-3034 SDR 35) DRIVE INTO CENTER OF RUBBER SLEEVE AFTER SLEEVE IS PLACED IN HOLE.

**NOTE:**  
 1. INSERTA TEES SHALL NOT BE USED ON NEW CONSTRUCTION AND ARE ONLY ALLOWED ON EXISTING THICK WALL PIPE MATERIAL, SUCH AS CONCRETE, DUCTILE IRON, AND RIB PLASTIC.  
 2. ALL INSERTA-TEE HOLES SHALL BE MACHINE DRILLED AND CORED AND LOCATED A MINIMUM 12" CLEAR DISTANCE FROM PIPE BELL.

Inserta-Tee			CITY OF WILSONVILLE PUBLIC WORKS STANDARDS
DRAWING NUMBER: S-2160	DRAWN BY: SR	SCALE: N.T.S.	
FILE NAME: S-2160.DWG	APPROVED BY: NK	DATE: 6/4/14	
CITY OF WILSONVILLE PUBLIC WORKS STANDARDS			

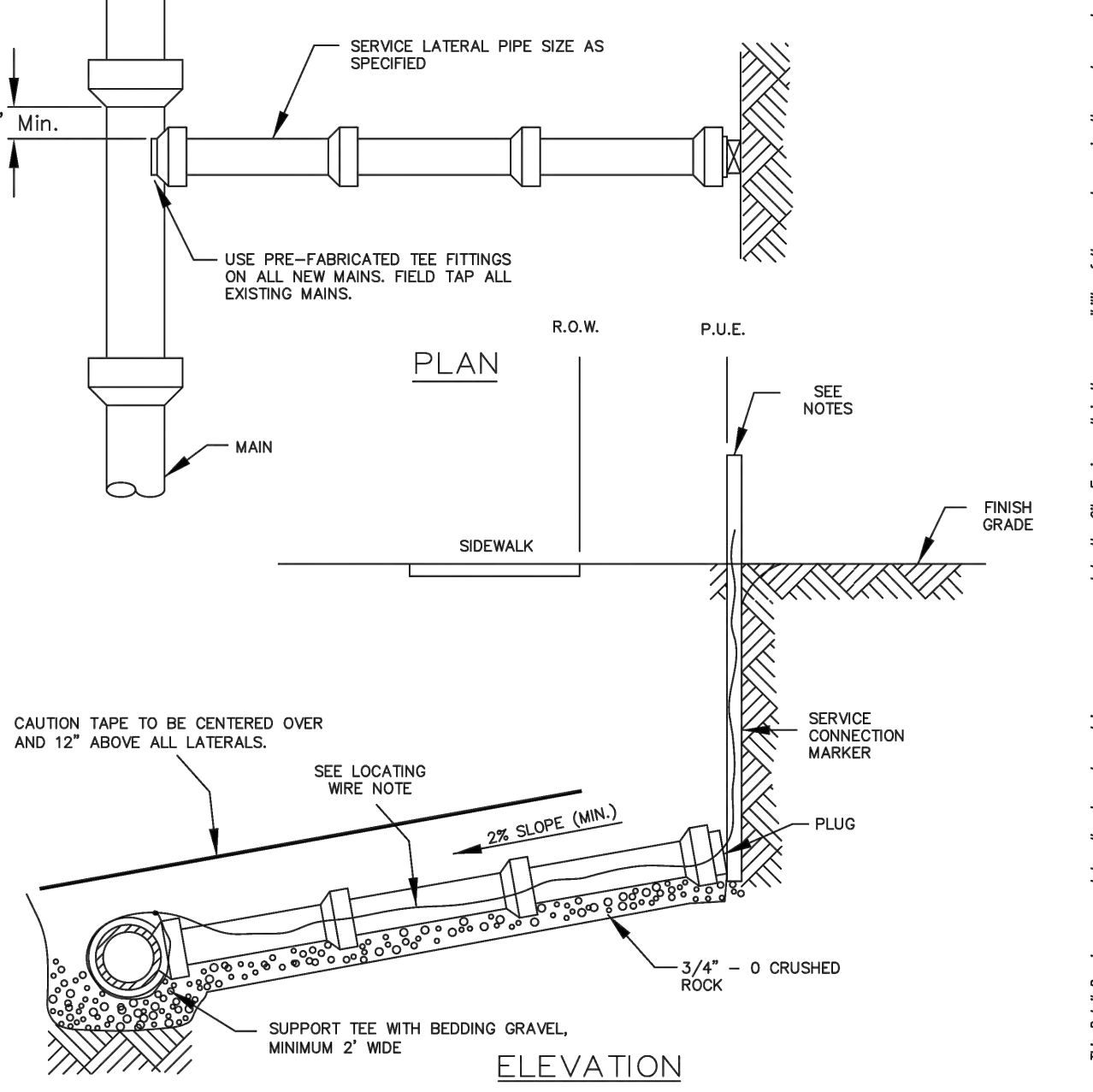
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- NOTES:**  
 1. CONTRACTOR TO WIDEN EXCAVATION AS REQUIRED TO OBTAIN COMPACTION WITH CONTRACTORS COMPACTION EQUIPMENT.  
 2. 10 GA. STEEL PLATE, BITUMINOUS COATED BASIN AS MANUFACTURED BY GIBSON STEEL, GRATEMASTER OR AS APPROVED BY CITY REPRESENTATIVE.  
 3. BEDDING SHALL BE 6" OF COMPACTED 3/4"-0 CRUSHED ROCK BASE MATERIAL.

Beehive Overflow Inlet			CITY OF WILSONVILLE PUBLIC WORKS STANDARDS
DRAWING NUMBER: ST-6120	DRAWN BY: SR	SCALE: N.T.S.	
FILE NAME: ST-6120.dwg	APPROVED BY: NK	DATE: 2/15/18	
CITY OF WILSONVILLE PUBLIC WORKS STANDARDS			

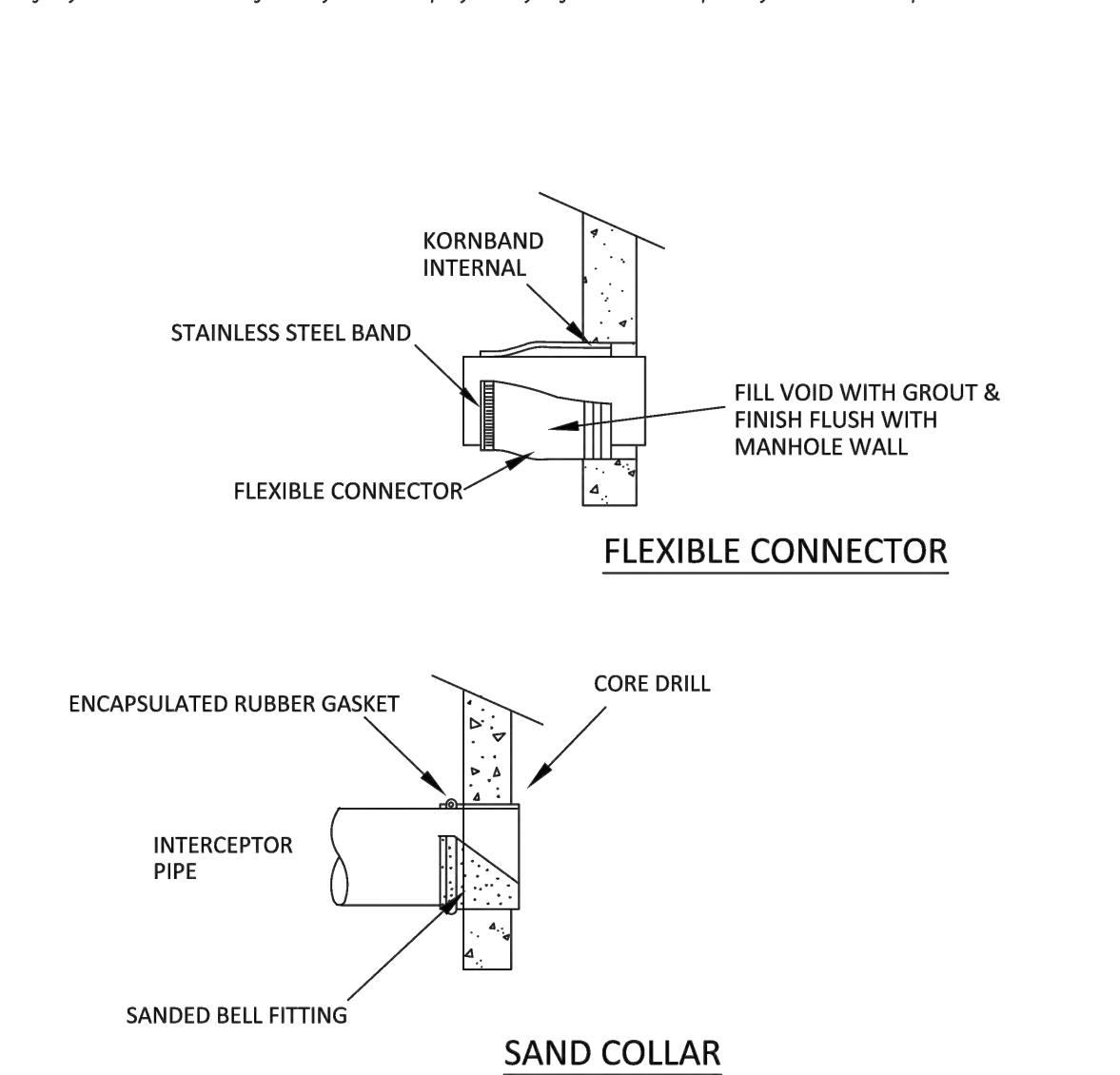
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- NOTE:**  
 1. SERVICE CONNECTION MARKER SHALL BE 2X4 PLACED AGAINST PLUG TO PREVENT BLOWOFF AND SECURED WITH TRENCH BACKFILL.  
 2. MARKER SHALL EXTEND AT LEAST 2 FEET ABOVE FINISHED GRADE AND PAINTED GREEN FOR SANITARY OR WHITE FOR STORM.  
 3. MINIMUM SIZE SHALL BE 6" FOR STORM LATERALS AND 4" FOR SANITARY LATERALS.  
 4. USE 4" PVC TO 4" D.I. FERRO-COR CAULDER COUPLINGS FOR 4" D.I. LATERALS.  
 5. LOCATING WIRE SHALL BE 12 GAUGE, HMW-PE CONTINUOUS, AND TIED TO MAIN AND TO CONNECTION MARKER. WIRE SHALL BE PLACED ALONG THE SPRING-LINE OF LATERAL WITH EXTRA 2' LENGTH PROVIDED AT THE MARKER. CONNECT TO MAIN LINE TRACER WIRE USING SOLDERLESS CONNECTION KIT SUITABLE FOR DIRECT BURIAL THAT JOINS WIRES MECHANICALLY AND ELECTRICALLY AND SEALS OUT MOISTURE, GELCAP OR APPROVED EQUAL. USE GREEN WIRE FOR SANITARY AND WHITE WIRE FOR STORM.

Service Lateral			CITY OF WILSONVILLE PUBLIC WORKS STANDARDS
DRAWING NUMBER: S-2175	DRAWN BY: SR	SCALE: N.T.S.	
FILE NAME: S-2175.DWG	APPROVED BY: NK	DATE: 6/4/14	
CITY OF WILSONVILLE PUBLIC WORKS STANDARDS			

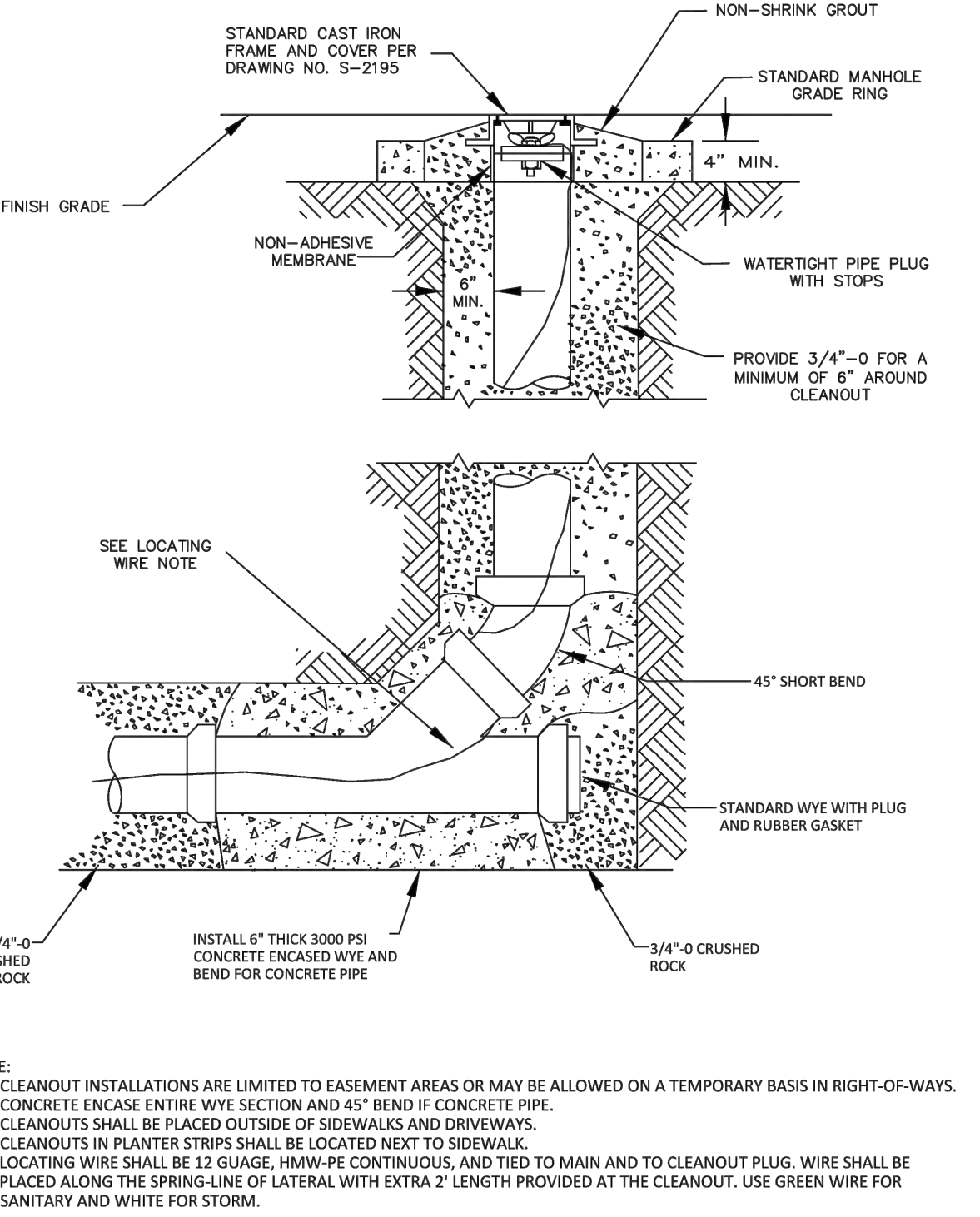
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1. FOR NEW SEWER AND STORM SYSTEMS, CONNECT PIPE SYSTEMS TO MANHOLES WITH A FLEXIBLE CONNECTOR, KOR-N-SEAL BOOT OR APPROVED EQUAL.
2. FLEXIBLE CONNECTORS SHALL BE SPECIFICALLY MANUFACTURED FOR THE INTENDED USE AND CONFORM TO ASTM C923.
3. CONNECT PIPE TO EXISTING MANHOLES WITH A FABRICATED SAND COLLAR BY AN APPROVED MANUFACTURER. SAND COLLAR SHALL BE FABRICATED OF THE SAME MATERIAL AS THE CONNECTING PIPE.
4. FIELD FABRICATED SAND COLLARS ARE NOT ALLOWED.
5. FOR PIPE CONNECTIONS LARGER THAN 24" IN DIAMETER, SEE DETAIL S-2035.

Manhole Pipe Connection			CITY OF WILSONVILLE PUBLIC WORKS STANDARDS
DRAWING NUMBER: S-2010	DRAWN BY: SR	SCALE: N.T.S.	
FILE NAME: S-2010.DWG	APPROVED BY: NK	DATE: 6/4/14	
CITY OF WILSONVILLE PUBLIC WORKS STANDARDS			

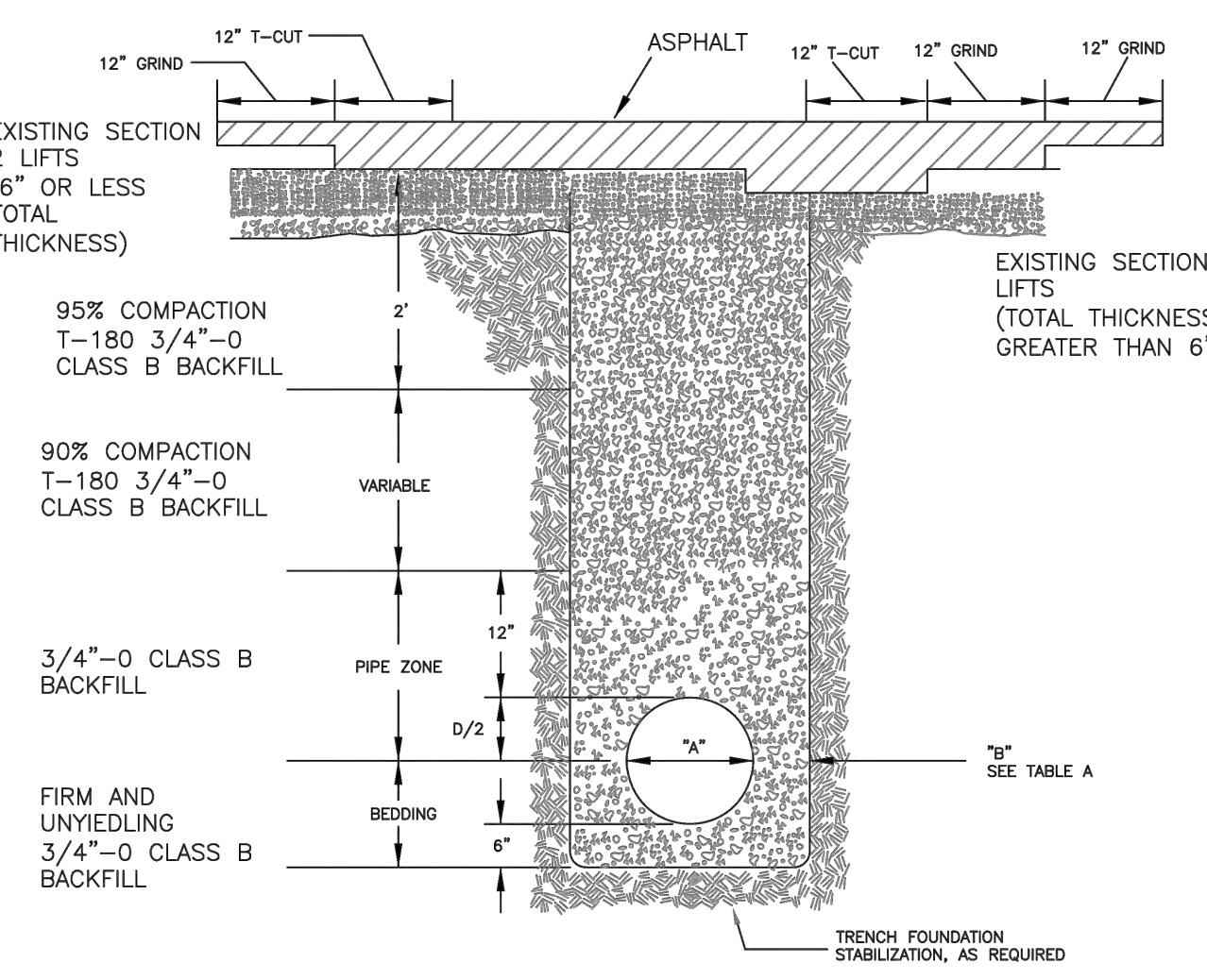
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- NOTE:**  
 1. CLEANOUT INSTALLATIONS ARE LIMITED TO EASEMENT AREAS OR MAY BE ALLOWED ON A TEMPORARY BASIS IN RIGHT-OF-WAYS.  
 2. CONCRETE ENCASE ENTIRE WYE SECTION AND 45° BEND IN CONCRETE PIPE.  
 3. CLEANOUTS SHALL BE PLACED OUTSIDE OF SIDEWALKS AND DRIVEWAYS.  
 4. CLEANOUTS IN PLANTER STRIPS SHALL BE LOCATED NEXT TO SIDEWALK.  
 5. LOCATING WIRE SHALL BE 12 GAUGE, HMW-PE CONTINUOUS, AND TIED TO MAIN AND TO CLEANOUT PLUG. WIRE SHALL BE PLACED ALONG THE SPRING-LINE OF LATERAL WITH EXTRA 2' LENGTH PROVIDED AT THE CLEANOUT. USE GREEN WIRE FOR SANITARY AND WHITE FOR STORM.

Standard Cleanout			CITY OF WILSONVILLE PUBLIC WORKS STANDARDS
DRAWING NUMBER: S-2180	DRAWN BY: SR	SCALE: N.T.S.	
FILE NAME: S-2180.DWG	APPROVED BY: NK	DATE: 6/4/14	
CITY OF WILSONVILLE PUBLIC WORKS STANDARDS			

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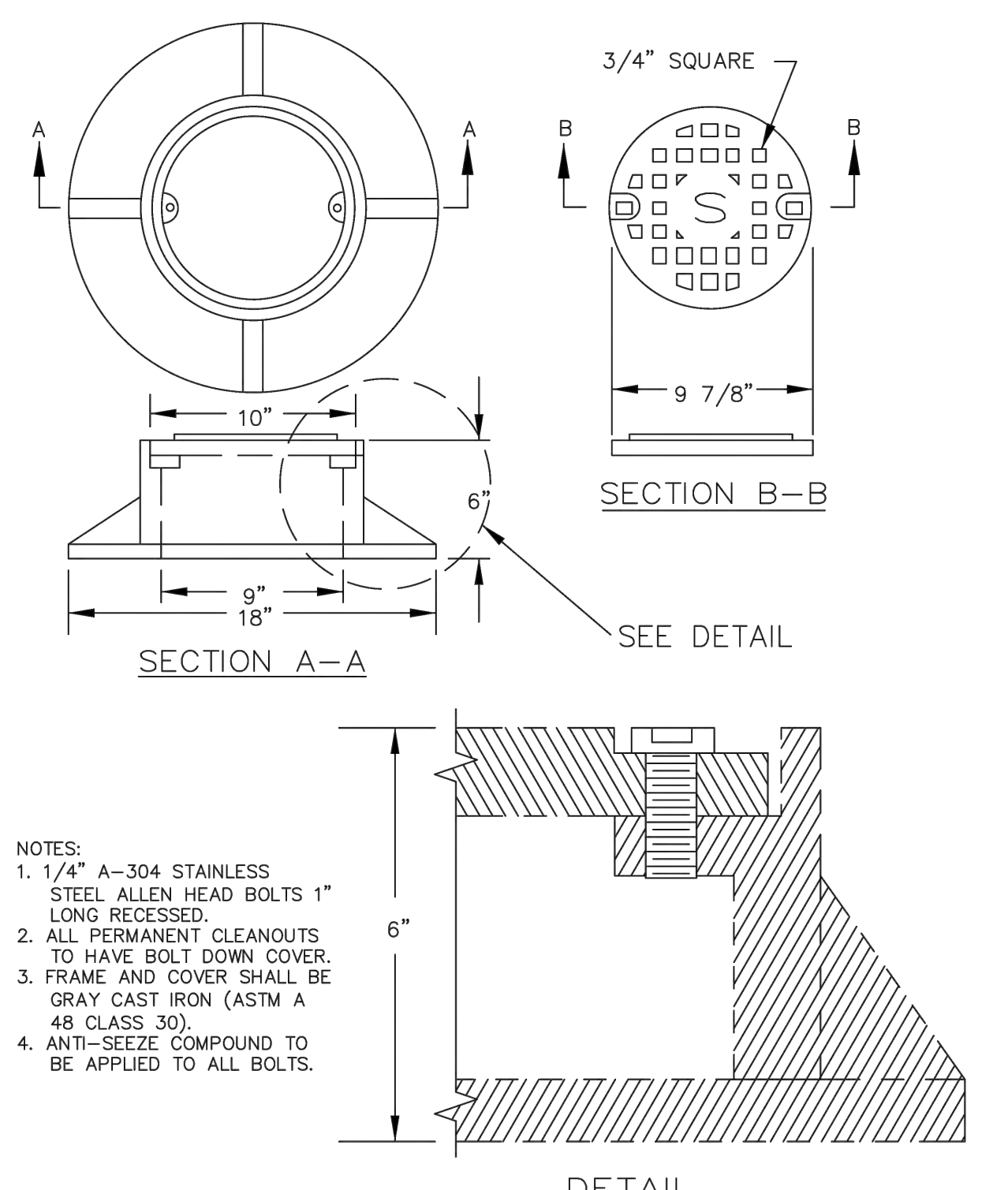


12"	18"	24"	30"	36"	42"	48"	54"	60"	66"	72"
12"	18"	24"	30"	36"	42"	48"	54"	60"	66"	72"

- NOTES:**  
 1. COMMERCIAL MIXED CLSM MAY BE SUBSTITUTED FOR 3/4"-0 CLASS B BACKFILL ABOVE THE PIPE ZONE.  
 2. CLSM SHALL BE PLACED TO TOP OF ROAD BASE ROCK.  
 3. ASPHALT SHALL BE PLACED IN LIFTS NOT EXCEEDING 3" AND COMPACTED TO 92% OF RICE DENSITY  
 4. PIPE ZONE BACKFILL MATERIAL SHALL BE COMPACTED TO ASSURE THAT THERE ARE NO UNFILLED OR UNCOMPACTED AREAS AROUND THE PIPE.  
 5. IF S/W IS AGAINST CURB, FILL ROCK TO BACK OF S/W.  
 6. IF S/W IS NOT AGAINST CURB, FILL ROCK 2" BACK FROM CURB.  
 7. 12" TEE CUT TO BE MADE AFTER INSTALLATION AND COMPACTION OF CRUSHED AGGREGATE.  
 8. ASPHALT GRINDING TO MATCH NEW TOP LIFT THICKNESS.  
 9. LIFT THICKNESS MINIMUM OF 2" MAXIMUM OF 3" TO BE COORDINATED WITH CITY INSPECTOR.

Standard Backfill and Street Repair			CITY OF WILSONVILLE PUBLIC WORKS STANDARDS
DRAWING NUMBER: S-2145	DRAWN BY: SR	SCALE: N.T.S.	
FILE NAME: S-2145.dwg	APPROVED BY: NK	DATE: 6/4/14	
CITY OF WILSONVILLE PUBLIC WORKS STANDARDS			

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- NOTES:**  
 1. 1/4" A-304 STAINLESS STEEL ALLEN HEAD BOLTS 1" LONG RECESSED.  
 2. ALL PERMANENT CLEANOUTS TO HAVE BOLT DOWN COVER.  
 3. FRAME AND COVER SHALL BE GRAY CAST IRON (ASTM A 48 CLASS 30).  
 4. ANTI-SLEEZE COMPOUND TO BE APPLIED TO ALL BOLTS.

Cleanout Frame & Cover			CITY OF WILSONVILLE PUBLIC WORKS STANDARDS
DRAWING NUMBER: S-2185	DRAWN BY: SR	SCALE: N.T.S.	
FILE NAME: S-2185.DWG	APPROVED BY: NK	DATE: 6/4/14	
CITY OF WILSONVILLE PUBLIC WORKS STANDARDS			



Client/ Owner:

Project:  
**Precision Countertops**

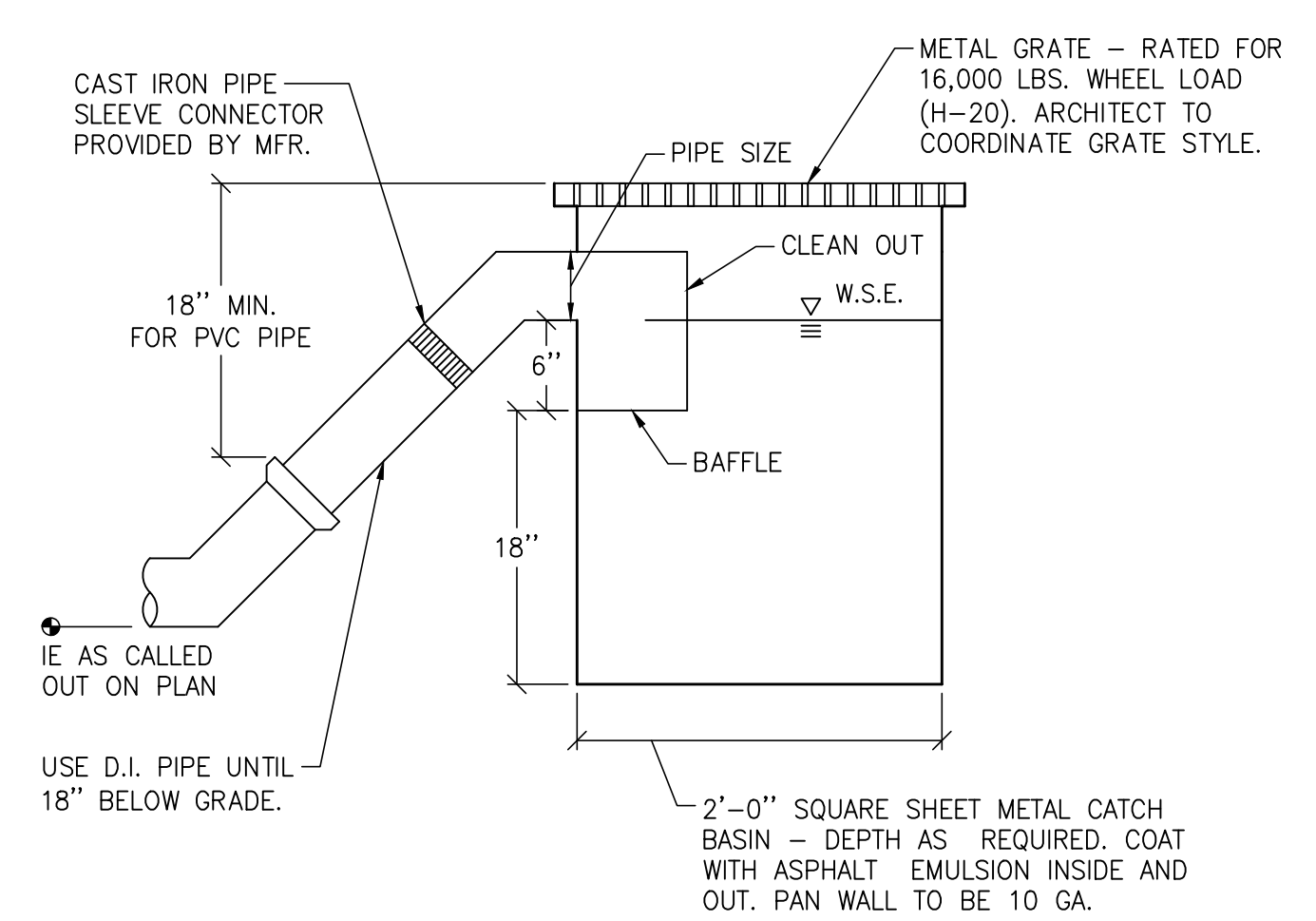
25540 SW Garden Acres Rd.  
Wilsonville OR

Sheet Title:

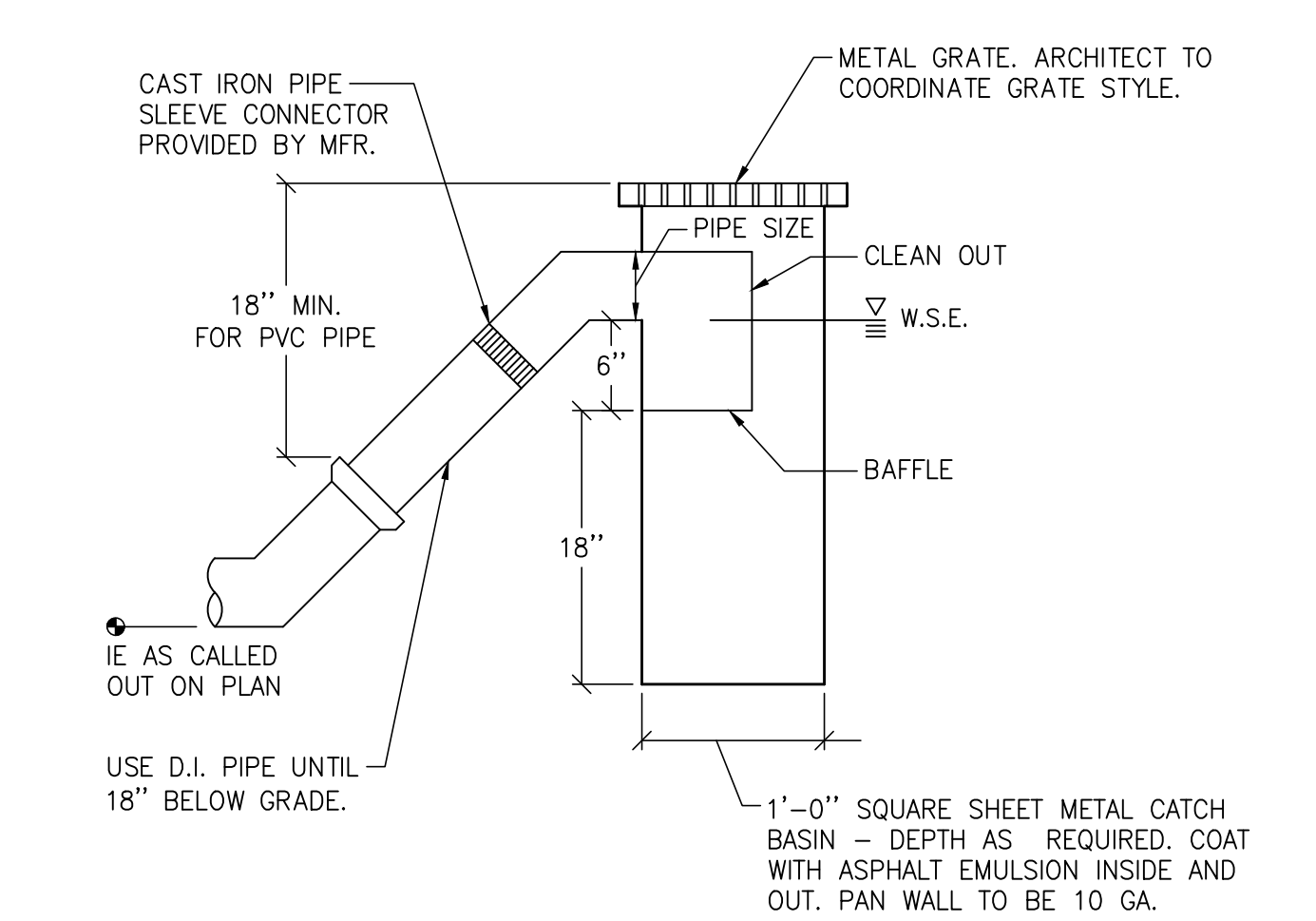
**Details**

Revisions:  
# Description Date

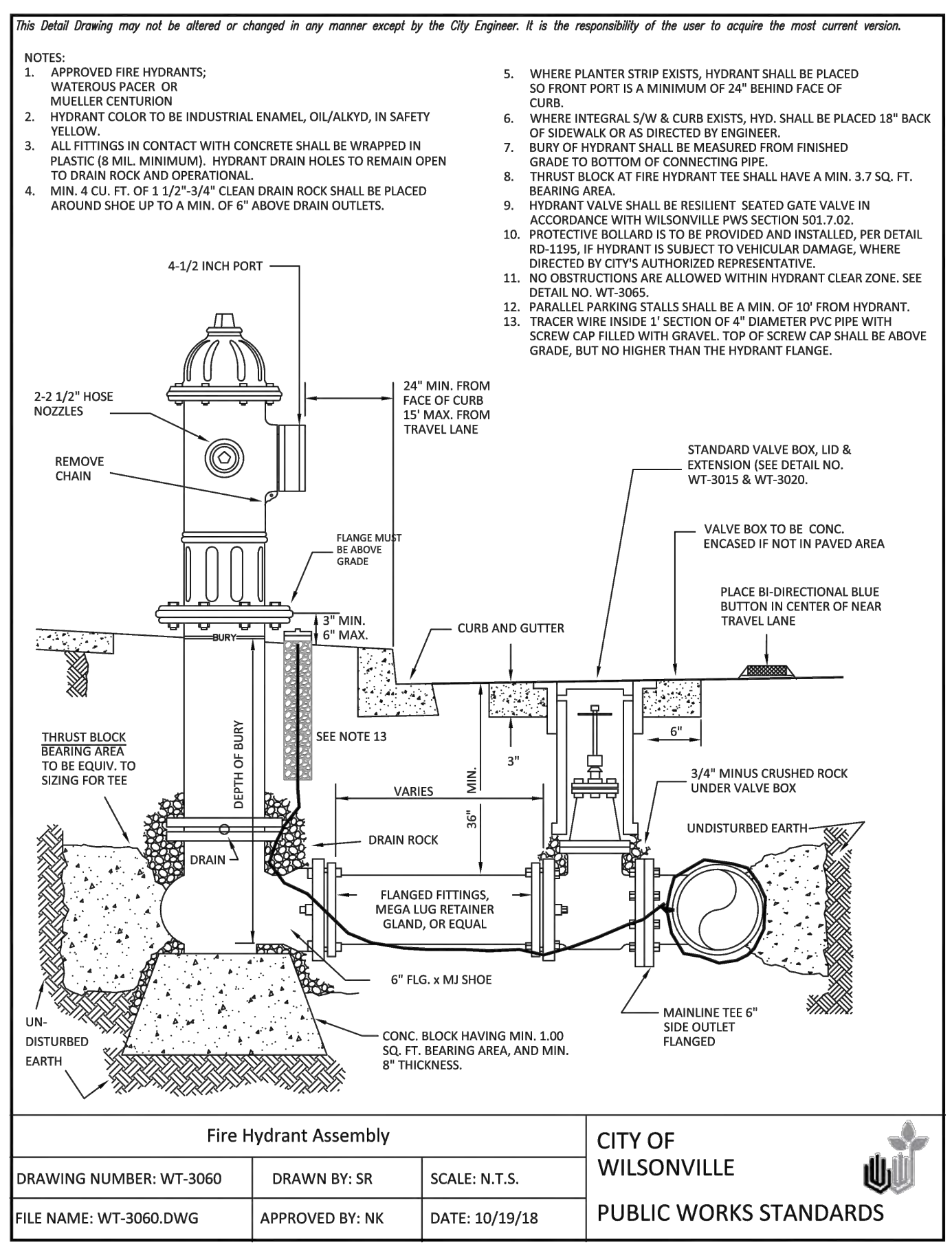
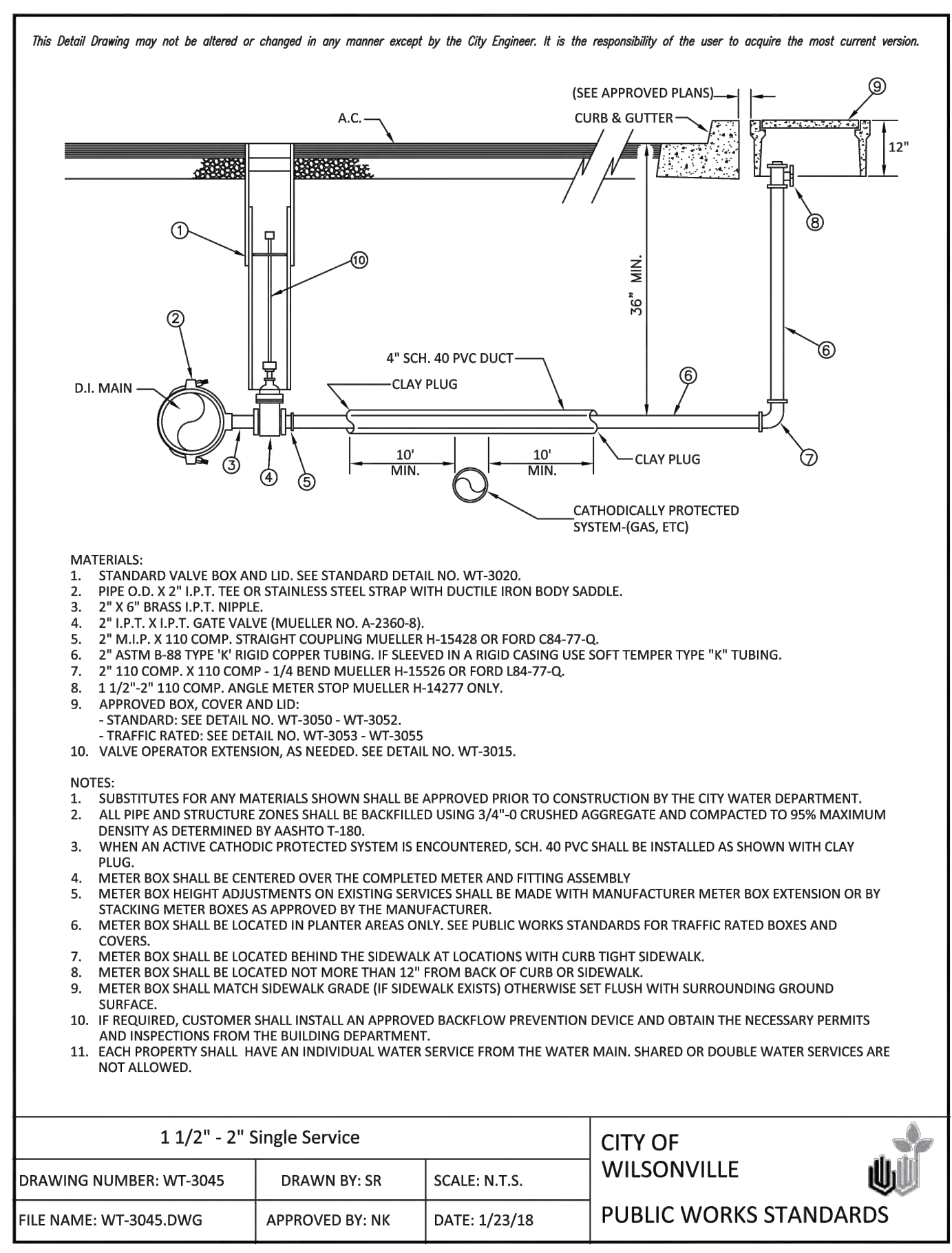
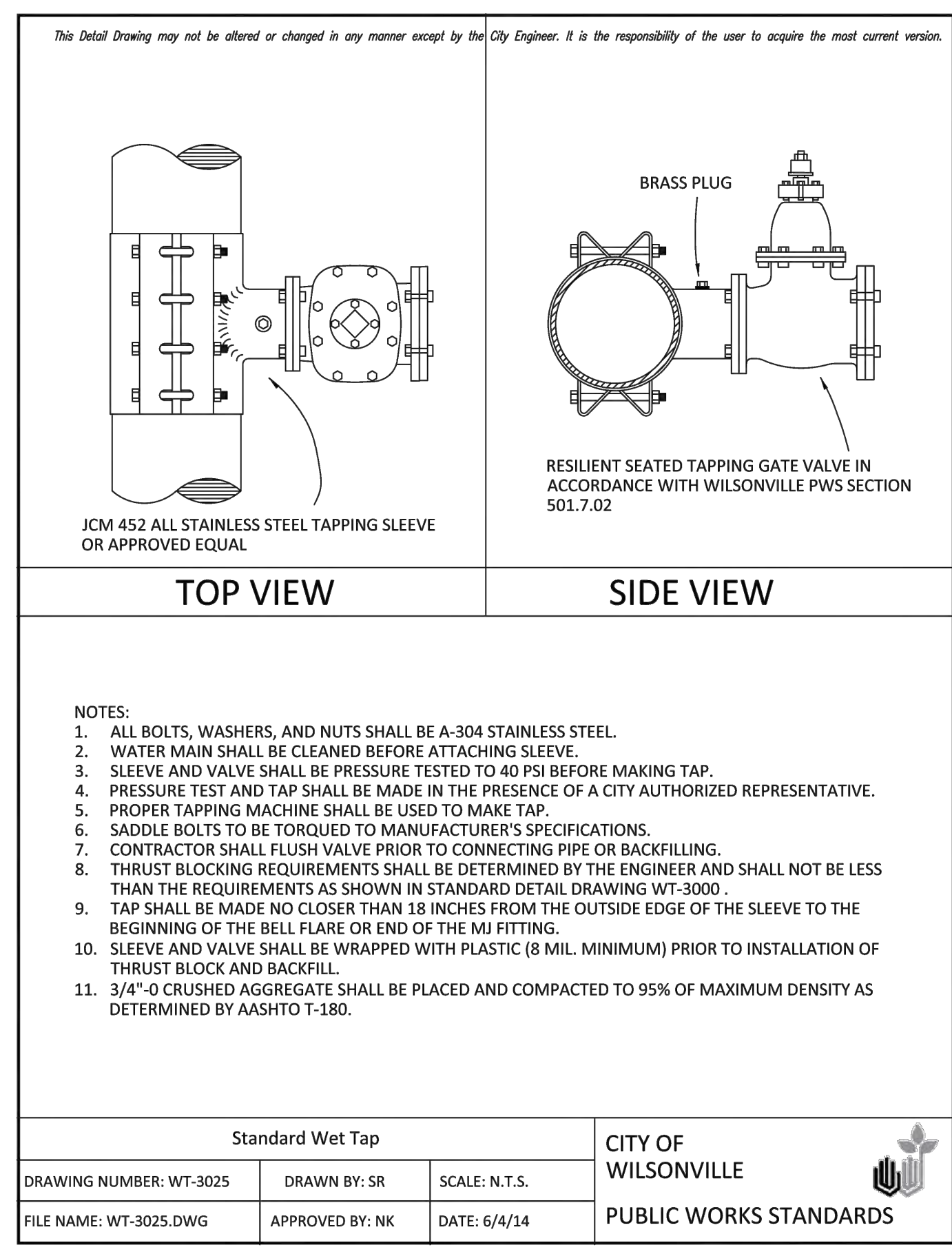
Date: 2023-02-07  
Drawn by: KJK  
Checked by: KJK  
TMR Job Number: 21279  
Sheet



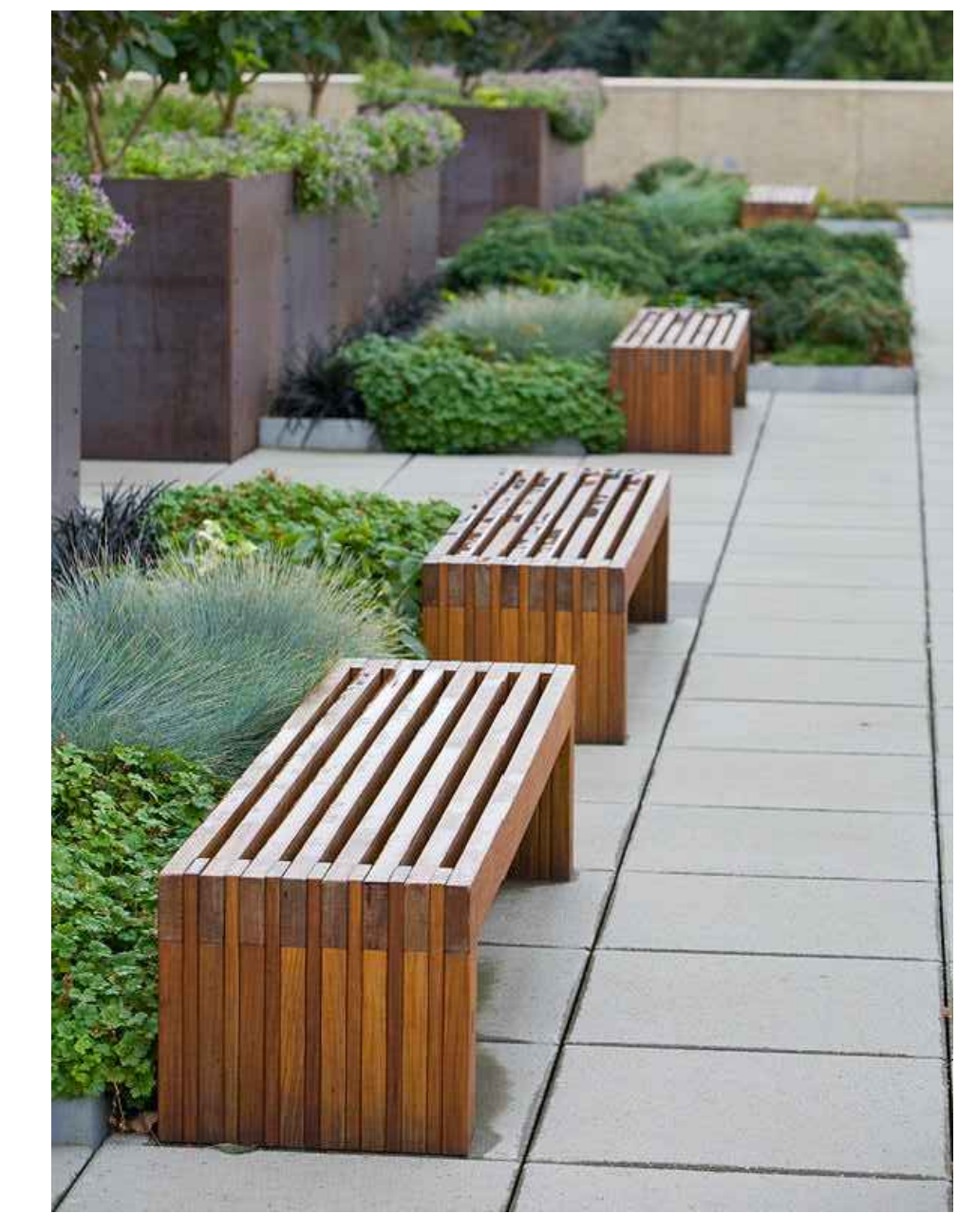
**1 CATCH BASIN DETAIL**  
NOT TO SCALE



**2 FIELD INLET DETAIL**  
NOT TO SCALE







**PROPOSED BENCHES**

MANUFACTURER: FORMS + SURFACES  
MODEL: 6' HUDSON BENCH, SURFACE MOUNT

PLANT LIST: GENERAL LANDSCAPING

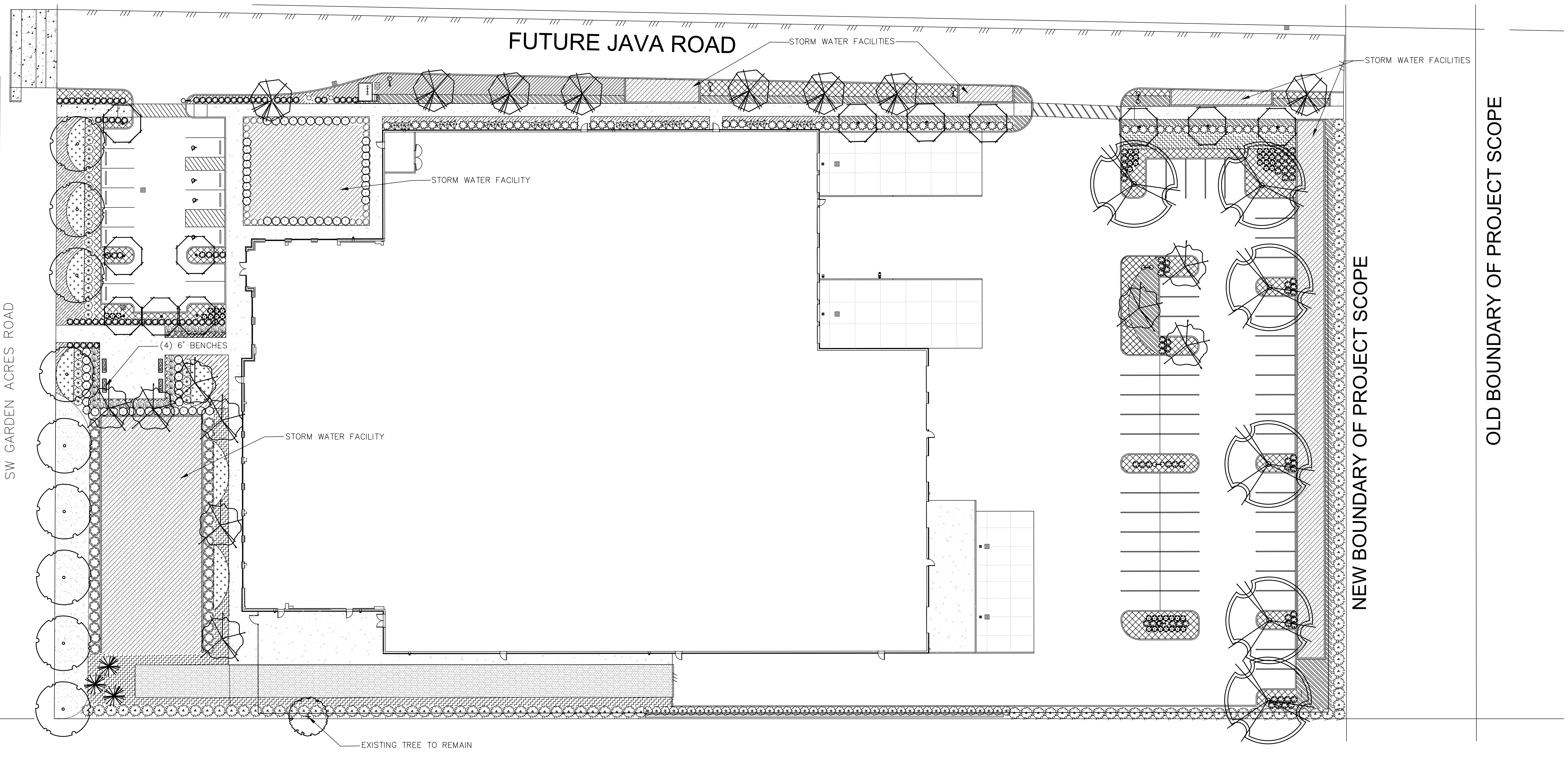
SYMBOL	#	LATIN/COMMON NAME TREES	SIZE	SPACING	WATER USE
TREES					
	9	ACER RUBRUM 'ARMSTRONG' Armstrong Red Maple	2" cal.	As shown	Moderate
	3	CHAMAECYPARIS NOOT. 'GLAUCA PENDULA' Blue Weeping Alaskan Cedar	8' ht.	As shown	Low
	8	CORNUS 'EDDIE'S WHITE WONDER' Eddies White Wonder Dogwood	1-1/2" cal.	As shown	Moderate
	12	NYSSA SYLVATICA Black Tupelo	1-1/2" cal.	As shown	Moderate
	9	PRUNUS SERRULATA 'MOUNT FUJI' Mount Fuji Flowering Cherry	1-1/2" cal.	As shown	Moderate
	6	ZELKOVA SERRATA 'GREEN VASE' Green Vase Zelkova	2" cal.	As shown	Low

PLANT LIST: GENERAL LANDSCAPING

SYMBOL	#	LATIN/COMMON NAME TREES	SIZE	SPACING	WATER USE
SHRUBS (WITH MIN. 10"-12" SPREAD)					
	28	ABELIA 'LUCKY LOTS' Twist of Lime Abelia	5 gal.	4' o.c.	Low
	44	CISTUS LADANIFER Crimson Spot Rockrose	5 gal.	5' o.c.	Low
	125	MYRICA CALIFORNICA Pacific Wax Myrtle	5 gal.	5' o.c.	Low
	74	NANDINA DOMESTICA 'GULF STREAM' Gulf Stream Nandina	2 gal.	3' o.c.	Low
	71	PIERIS JAPONICA 'CABERNET' Enchanted Forest Pieris	5 gal.	4' o.c.	Low
	42	SPIRAEA X BUM. "GOLDMOUND" Goldmound Spirea	2 gal.	3' o.c.	Low
	24	TAXUS BACCATA 'STRICTA' Irish Yew	5 gal.	4' o.c.	Low
	64	VIBURNUM DAVIDII David Viburnum	2 gal.	3' o.c.	Moderate
	75	VIBURNUM TINUS 'SPRING BOUQUET' Spring Bouquet Viburnum	5 gal.	4' o.c.	Moderate
GRASSES					
	37	CALAMAGROSTIS 'KARL FOERSTER' Feather Reed Grass	1 gal.	2' o.c.	Low
	20	MISCANTHUS SINENSIS 'YAKUSHIMA' Dwarf Maiden Grass	2 gal.	3' o.c.	Low

PLANT LIST: GENERAL LANDSCAPING

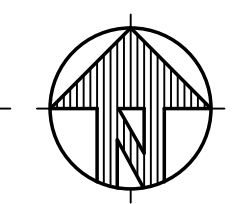
SYMBOL	#	LATIN/COMMON NAME TREES	SIZE	SPACING	WATER USE
GROUND COVER					
	561	ARCTOSTAPHYLOS UVA-URSI "MASS." Massachusetts Kinnikinnick	1 gal.	3' o.c.	Low
	320	LIRIOPE MUSCARI Big Blue Lily Turf	1 gal.	2' o.c.	Moderate
	160	LONICERA PILEATA Box Honeysuckle	1 gal.	4' o.c.	Low
	263	MAHONIA REPENS Creeping Oregon Grape	1 gal.	30" o.c.	Low
	119	ROSA 'FLOWER CARPET AMBER' Flower Carpet Amber Rose	2 gal.	3' o.c.	Moderate
OTHER					
		FINE LAWN SEED MIX See Specifications			Moderate
		STORMWATER FACILITY PLANTING Per City of Wilsonville Standards			Moderate



**GENERAL NOTES:**  
 1. Contractor is to verify all plant quantities.  
 2. Adjust plantings in the field as necessary.  
 3. Project is to be irrigated by an automatic, underground system, which will provide full coverage for all plant material. System is to be design/ build by Landscape Contractor. Guarantee system for a minimum one year. Show drip systems as alternate bid only.  
 4. All plants are to be fully foliated, well branched and true to form.  
 5. Contractor is to notify Landscape Architect or Owner's Representative of any site changes or unforeseen conditions that may be detrimental to plant health, or cause future problems to any structural elements of the project.

**LANDSCAPE PLAN**

SCALE 1" = 20'-0"



DESIGN REVIEW SET 03/20/2023

Client/ Owner:

Project:  
**PRECISION COUNTERTOP**

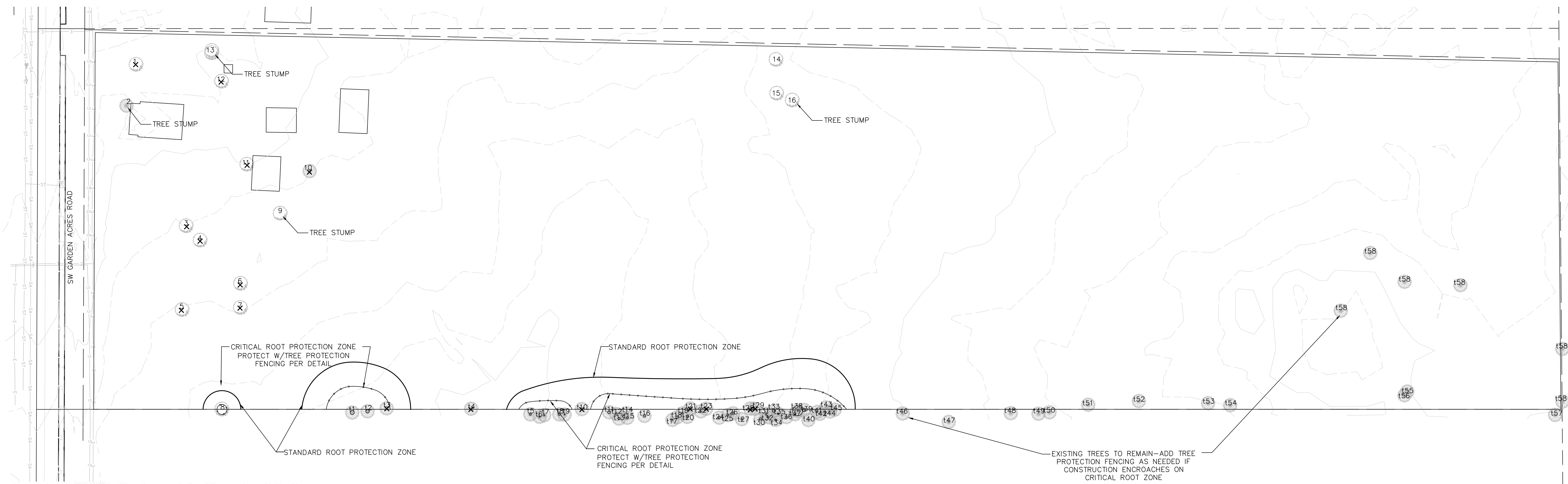
25540 SW Garden Acres Road  
Wilsonville OR 97140

Sheet Title:  
**LANDSCAPE PLAN**

Revisions:  
# Description Date

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 Date: 03/17/2023  
 Job Number: 121036  
 Sheet

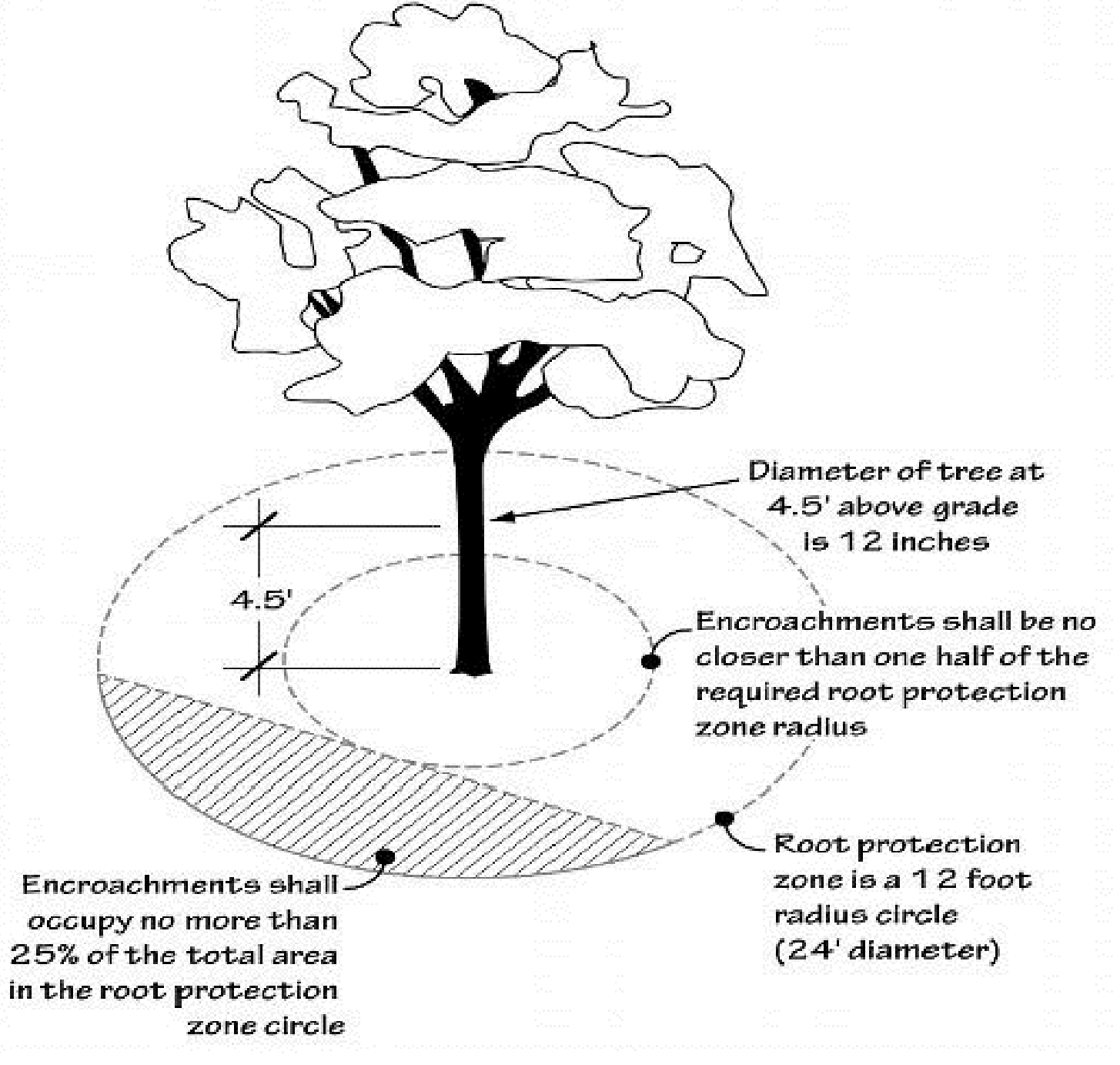




**TREE REMOVAL AND PROTECTION PLAN**

X TREES TO BE REMOVED

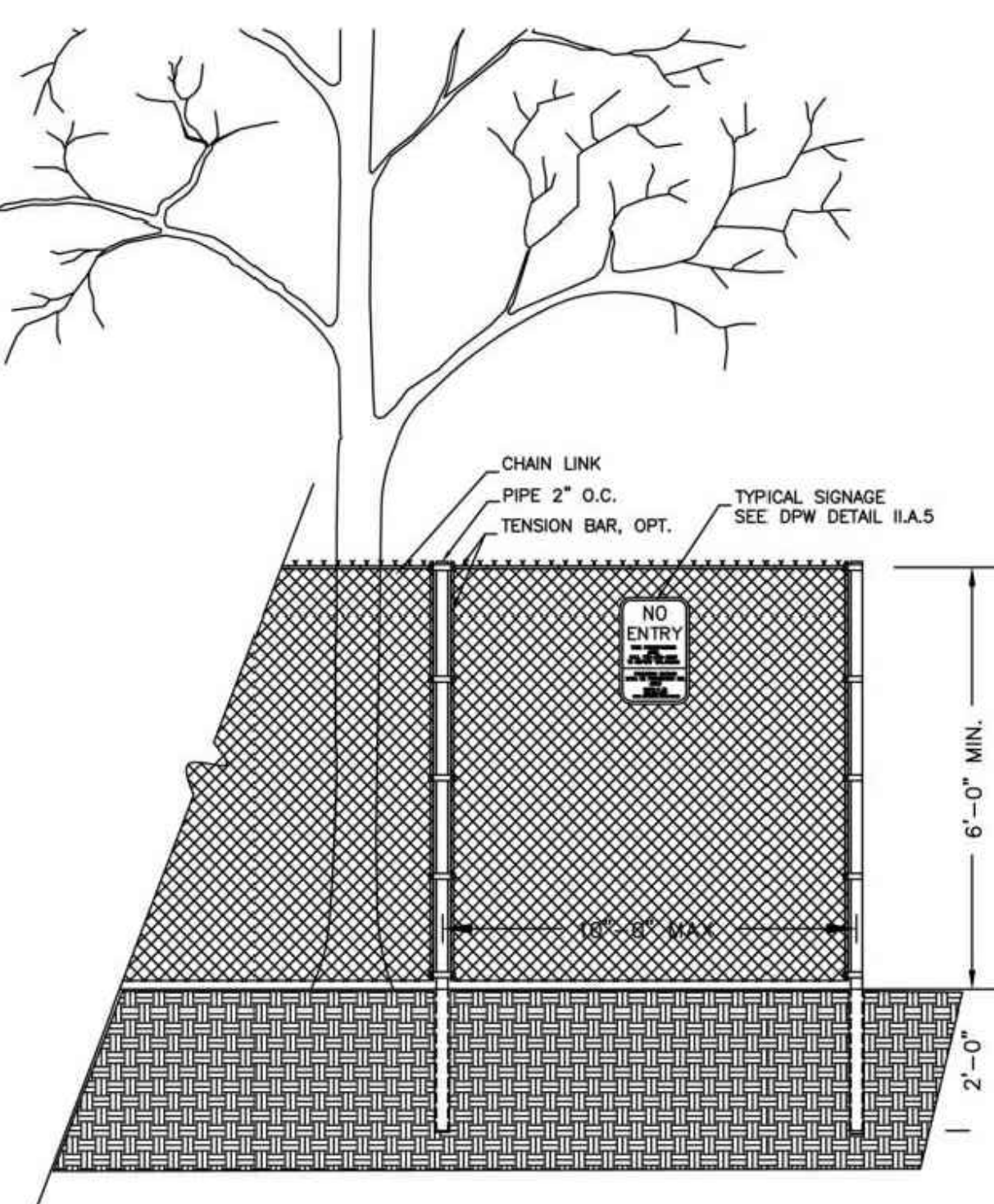
SCALE 1" = 40'-0"



**TREE ROOT ZONE DETAIL**

N.T.S.

- NOTES:**
1. ALL EXISTING TREES DESIGNATED TO BE PRESERVED SHALL BE PROTECTED BY FENCING, AS ILLUSTRATED.
  2. INSTALL TREE PROTECTION FENCE AT TREE DRIP LINE OR AT EDGE OF DISTURBED AREA, AS SHOWN ON PLANS, OR PER ARBORIST DIRECTION.
  3. AVOID DAMAGE TO CRITICAL ROOT ZONE. DO NOT DAMAGE OR SEVER LARGE ROOTS WHEN INSTALLING POSTS.
  4. THERE SHALL BE NO CONSTRUCTION ACTIVITY OR STORAGE OF MATERIAL WITHIN THE BOUNDARIES OF THE TREE PROTECTION FENCING.
  5. TREE PROTECTION FENCING SHALL BE INSTALLED PRIOR TO CONSTRUCTION AND MAINTAINED THROUGHOUT THE DURATION OF THE PROJECT.
  6. SIGNAGE DESIGNATING THE TREE PROTECTION ZONE SHALL BE SECURED IN A PROMINENT LOCATION ON EACH PROTECTION FENCE.
  7. PROJECT ARBORIST TO BE ON SITE WHEN DIGGING OCCURS WITHIN STANDARD ROOT ZONE SOUTH GRAVEL ROAD AND PARKING LOT.
  8. SEE ARBORIST REPORT FOR FURTHER TREE PROTECTION SPECIFICATIONS.



**TREE PROTECTION FENCING**

N.T.S.

**Tree Inventory - 25540 SW Garden Acres Rd, Sherwood, OR 97140**  
Conducted on 9/21/2021

Tree No.	Common Name	Botanical Name	DBH* (in)	Crown Radius (ft)	Health**	Structural Condition**	Comments
1	bigleaf maple	<i>Acer macrophyllum</i>	32	25	Good	Good	
2	incense cedar	<i>Calocedrus decurrens</i>	32	0	Dead	Dead	
3	apple	<i>Malus domestica</i>	12	12	Fair	Fair	Thin, deadwood.
4	apple	<i>Malus domestica</i>	26	20	Poor	Poor	Diameter measured at 2.5', codominant leaders at 4', deadwood, thin.
5	English walnut	<i>Juglans regia</i>	15	20	Good	Fair	Diameter measured at 2.75', multiple leaders at 4', grafted.
6	plum	<i>Prunus sp.</i>	13	12	Fair	Poor	Codominant leaders 8.8', split trunk, decay, broken branches.
7	plum	<i>Prunus sp.</i>	15	15	Good	Poor	Codominant leaders: 11.9, 6', stem decay, broken branches, wounds.
8	Norway maple	<i>Acer platanoides</i>	7	5	Fair	Fair	Blackened bark, heavy sap-sucker holes, deadwood.
9	oneseed hawthorn	<i>Crataegus monogyna</i>	15	10	Good	Poor	Diameter at ground level, multiple leaders 2.3" in diameter at 1' above ground level.
10	western redbud	<i>Thuja plicata</i>	36	20	Poor	Very poor	Codominant leaders at 15', dead top, broken top, thin.
11	Douglas fir	<i>Pseudotsuga menziesii</i>	49	28	Good	Fair	Large 3x1' mechanical damage on west side of trunk.
12	spruce	<i>Picea pungens</i>	17	12	Good	Good	
13	cherry	<i>Prunus sp.</i>	23	8	Poor	Poor	Codominant leaders: 18, 15', twist trunk, dead top.
14	Douglas fir	<i>Pseudotsuga menziesii</i>	46	0	Dead	Dead	
15	Douglas fir	<i>Pseudotsuga menziesii</i>	49	0	Dead	Dead	
16	Douglas fir	<i>Pseudotsuga menziesii</i>	44	0	Dead	Dead	
17	Douglas fir	<i>Pseudotsuga menziesii</i>	38	18	Good	Fair	Sweeping trunk, lost and regrow top.
18	Douglas fir	<i>Pseudotsuga menziesii</i>	36	18	Good	Good	
19	Douglas fir	<i>Pseudotsuga menziesii</i>	38	20	Good	Good	
20	Douglas fir	<i>Pseudotsuga menziesii</i>	39	20	Good	Good	
21	Douglas fir	<i>Pseudotsuga menziesii</i>	36	22	Good	Fair	Unbalanced to the west.
22	Douglas fir	<i>Pseudotsuga menziesii</i>	37	20	Good	Fair	Unbalanced to the west.

\*DBH (Diameter at Breast Height). The trunk diameter measured at industry standard, 4.5 feet above ground.  
\*\*Health and Structural Condition ratings range from Good, Fair, Poor, Very Poor, to Dead.

**ARBORIST TREE SURVEY**

Survey Number	Common and Scientific Name	DBH	Condition Health	Condition Structure	Field Notes/ Comments
t 1	Pinus palustris	42	Good	Good	
t 2	Pinus palustris	36	Good	Good	
t 3	Pinus palustris	38	Good	Good	low canopy
t 4	Pinus palustris	32	Good	Good	
t 5	Pinus palustris	20	Good	Good	
t 6	Pinus palustris	13	Good	Good	
t 7	Pinus palustris	13	Good	Good	
t 8	Pinus palustris	22	Good	Good	
t 9	Douglas-fir (Pseudotsuga menziesii)	10	Good	Good	
t 10	Douglas-fir (Pseudotsuga menziesii)	25	Good	Good	
t 11	Douglas-fir (Pseudotsuga menziesii)	29	Fair	Fair	
t 12	Douglas-fir (Pseudotsuga menziesii)	24	Fair	Poor	
t 13	Douglas-fir (Pseudotsuga menziesii)	21	Fair	Poor	
t 14	madrone (Arbutus menziesii)	8	Fair	Poor	
t 15	Douglas-fir (Pseudotsuga menziesii)	21	Fair	Poor	
t 16	Douglas-fir (Pseudotsuga menziesii)	27	Fair	Poor	
t 17	Douglas-fir (Pseudotsuga menziesii)	12	Fair	Poor	heavy lean
t 18	Douglas-fir (Pseudotsuga menziesii)	27	Fair	Poor	
t 19	Douglas-fir (Pseudotsuga menziesii)	16	Fair	Fair	
t 20	grand-fir (Abies grandis)	19	Fair	Fair	
t 21	grand-fir (Abies grandis)	27	Fair	Fair	
t 22	Douglas-fir (Pseudotsuga menziesii)	11	Fair	Fair	
t 23	Douglas-fir (Pseudotsuga menziesii)	24	Fair	Fair	
t 24	grand-fir (Abies grandis)	22	Fair	Fair	poison oak
t 25	grand-fir (Abies grandis)	20	Fair	Fair	
t 26	grand-fir (Abies grandis)	23	Fair	Fair	
t 27	madrone (Arbutus menziesii)	14	Fair	Poor	
t 28	grand-fir (Abies grandis)	26	Fair	Fair	
t 29	grand-fir (Abies grandis)	17	Fair	Fair	
t 30	grand-fir (Abies grandis)	23	Fair	Fair	
t 31	grand-fir (Abies grandis)	16	Fair	Fair	
t 32	Douglas-fir (Pseudotsuga menziesii)	16	Fair	Fair	
t 33	Douglas-fir (Pseudotsuga menziesii)	31	Fair	Fair	
t 34	grand-fir (Abies grandis)	16	Fair	Fair	
t 35	grand-fir (Abies grandis)	16	Dead/Dying	Failed/Failing	
t 36	grand-fir (Abies grandis)	18	Fair	Failed/Failing	
t 37	grand-fir (Abies grandis)	10	Fair	Failed/Failing	broken top
t 38	Douglas-fir (Pseudotsuga menziesii)	8	Fair	Failed/Failing	broken top
t 39	giant-sequoia (Sequoiadendron giganteum)	34	Good	Good	
t 40	grand-fir (Abies grandis)	18	Fair	Poor	heavy lean
t 41	grand-fir (Abies grandis)	16	Good	Good	
t 42	grand-fir (Abies grandis)	16	Good	Good	
t 43	grand-fir (Abies grandis)	24	Good	Good	
t 44	grand-fir (Abies grandis)	17	Fair	Fair	
t 45	red pine (Pinus resinosa)	20	Poor	Poor	
t 46	grand-fir (Abies grandis)	29	Fair	Fair	
t 47	Douglas-fir (Pseudotsuga menziesii)	40	Fair	Fair	
t 48	Douglas-fir (Pseudotsuga menziesii)	36	Fair	Fair	
t 49	Douglas-fir (Pseudotsuga menziesii)	36	Fair	Fair	
t 50	Douglas-fir (Pseudotsuga menziesii)	24	Fair	Fair	
t 51	Douglas-fir (Pseudotsuga menziesii)	36	Fair	Fair	
t 52	Douglas-fir (Pseudotsuga menziesii)	28	Fair	Fair	
t 53	Douglas-fir (Pseudotsuga menziesii)	18	Fair	Fair	
t 54	Douglas-fir (Pseudotsuga menziesii)	42	Fair	Fair	
t 55	Douglas-fir (Pseudotsuga menziesii)	24	Fair	Fair	
t 56	Douglas-fir (Pseudotsuga menziesii)	46	Fair	Fair	
t 57	Douglas-fir (Pseudotsuga menziesii)	34	Fair	Fair	
t 58	Douglas-fir (Pseudotsuga menziesii)	40	Fair	Fair	
t 59	Douglas-fir (Pseudotsuga menziesii)	40	Fair	Fair	
t 60	Douglas-fir (Pseudotsuga menziesii)	38	Fair	Fair	
t 61	Douglas-fir (Pseudotsuga menziesii)	38	Fair	Fair	
t 62	Douglas-fir (Pseudotsuga menziesii)	38	Fair	Fair	
t 63	Douglas-fir (Pseudotsuga menziesii)	38	Fair	Fair	

Client/ Owner:

**PRECISION COUNTERTOP**

25540 SW Garden Acres Road  
Wilsonville OR 97140

Sheet Title:

**TREE REMOVAL AND PROTECTION PLAN**

Revisions:

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### OUTLINE SPECIFICATIONS PLANTING AND SEEDING:

**GENERAL:** All plants shall conform to all applicable standards of the latest edition of the "American Association of Nurserymen Standards", A.N.S.I. Z60.1 - 1973. Meet or exceed the regulations and laws of Federal, State, and County regulations, regarding the inspection of plant materials, certified as free from hazardous insects, disease, and noxious weeds, and certified fit for sale in Oregon.

The apparent silence of the Specifications and Plans as to any detail, or the apparent omission from them of a detailed description concerning any point, shall be regarded as meaning that only the best general practice is to prevail and that only material and workmanship of first quality are to be used. All interpretations of these Specifications shall be made upon the basis above stated.

Landscape contractor shall perform a site visit prior to bidding to view existing conditions.

**PERFORMANCE QUALITY ASSURANCE:** Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary horticultural practices and who are completely familiar with the specified requirements and methods needed for the proper performance of the work of this section.

**NOTIFICATION:** Give Landscape Architect minimum of 2 days advance notice of times for inspections. Inspections at growing site does not preclude Landscape Architect's right of rejection of deficient materials at project site. Each plant failing to meet the above mentioned "Standards" or otherwise failing to meet the specified requirements as set forth shall be rejected and removed immediately from the premises by the Contractor and at his expense, and replaced with satisfactory plants or trees conforming to the specified requirements.

**SUBSTITUTIONS:** Only as approved by the Landscape Architect or the Owner's Representative.

**GUARANTEE AND REPLACEMENT:** All plant material shall be guaranteed from final acceptance for one full growing season or one year, whichever is longer. During this period the Contractor shall replace any plant material that is not in good condition and producing new growth (except that material damaged by severe weather conditions, due to Owner's negligence, normally unforeseen peculiarities of the planting site, or lost due to vandalism). Guarantee to replace, at no cost to Owner, unacceptable plant materials with plants of some variety, age, size and quality as plant originally specified. Conditions of guarantee on replacement plant shall be same as for original plant.

Landscape Contractor shall keep on site for Owner's Representative's inspection, all receipts for soil amendment and topsoil deliveries.

**PROTECTION** Protect existing roads, sidewalks, and curbs, landscaping, and other features remaining as final work. Verify location of underground utilities prior to doing work. Repair and make good any damage to service lines, existing features, etc. caused by landscaping installation.

**PLANT QUALITY ASSURANCE:** Deliver direct from nursery. Maintain and protect roots of plant material from drying or other possible injury. Store plants in shade and protect them from weather immediately upon delivery, if not to be planted within four hours.

Nursery stock shall be healthy, well branched and rooted, formed true to variety and species, full foliated, free of disease, injury, defects, insects, weeds, and weed roots. Trees shall have straight trunks, symmetrical tips, and have an intact single leader. Any trees with double leaders will be rejected upon inspection. All Plants: True to name, with one of each bundle or lot tagged with the common and botanical name and size of the plants in accordance with standards of practice of the American Association of Nurserymen, and shall conform to the Standardized Plant Names, 1942 Edition.

Container grown stock: Small container-grown plants, furnished in removable containers, shall be well rooted to ensure healthy growth. **Grow container plants in containers a minimum of one year** prior to delivery, with roots filling container but not root bound. Bare root stock: Roots well-branched and fibrous. Balled and burlapped (B&B): Ball shall be of natural size to ensure healthy growth. Ball shall be firm and the burlap sound. No loose or made ball will be acceptable.

**TOPSOIL AND FINAL GRADES:** Landscape Contractor is to supply and place 12" of topsoil in planting beds and 6" in lawn areas. Landscape Contractor is to verify with the General Contractor if the on-site topsoil is or is not conducive to proper plant growth. The topsoil shall be a sandy loam, free of all weeds and debris inimical to lawn or plant growth. Furnish soil analysis by a qualified soil testing laboratory stating percentages of organic matter, gradation of sand, silt and clay content; cation exchange capacity; deleterious material; pH; and plant nutrient content of the topsoil. Report suitability of topsoil for plant growth and recommended quantities of nitrogen, phosphorus and potash nutrients and soil amendments (including compost) to be added to produce satisfactory topsoil. If stockpiled topsoil on site is not conducive to proper plant growth, the Landscape Contractor shall import the required amount.

Landscaping shall include finished grades and even distribution of topsoil to meet planting requirements. Grades and slopes shall be as indicated. Planting bed grades shall be approximately 3" below adjacent walks, paving, finished grade lines, etc., to allow for bark application. Finish grading shall remove all depressions or low areas to provide positive drainage throughout the area.

### PLANTING SPECIFICATIONS:

**HERBICIDES:** Prior to soil preparation, all areas showing any undesirable weed or grass growth shall be treated with Round-up in strict accordance with the manufacturer's instructions.

**SOIL PREPARATION:** Work all areas by rototilling to a minimum depth of 8". Remove all stones (over 1 1/2" size), sticks, mortar, large clumps of vegetation, roots, debris, or extraneous matter turned up in working. Soil shall be of a homogeneous fine texture. Level, smooth and lightly compact area to plus or minus .10 of required grades.

In groundcover areas add 2" of compost (or as approved) and till in to the top 6" of soil.

**PLANTING HOLE:** Lay out all plant locations and excavate all soils from planting holes to 2 1/2 times the root ball or root system width. Loosen soil inside bottom of plant hole. Dispose of any "subsoil" or debris from excavation. Check drainage of planting hole with water, and adjust any area showing drainage problems.

**SOIL MIX:** Prepare soil mix in each planting hole by mixing:  
2 part native topsoil (no subsoil)  
1 part compost (as approved)

Thoroughly mix in planting hole and add fertilizers at the following rates:

- Small shrubs - 1/8 lb./ plant
- Shrubs - 1/3 to 1/2 lb./ plant
- Trees - 1/3 to 1 lb./ plant

**FERTILIZER:** For trees and shrubs use Commercial Fertilizer "A" Inorganic (5-4-3) with micro-nutrients and 50% slow releasing nitrogen. For initial application in fine seed lawn areas use Commercial Fertilizer "B" (8-16-8) with micro-nutrients and 50% slow-releasing nitrogen. For lawn maintenance use Commercial Fertilizer "C" (22-16-8) with micro-nutrients and 50% slow-releasing nitrogen. **DO NOT** apply fertilizer to Water Quality Swale.

**PLANTING TREES AND SHRUBS:** Plant upright and face to give best appearance or relationship to adjacent plants and structures. Place 6" minimum, lightly compacted layer of prepared planting soil under root system. Loosen and remove twine binding and burlap from top 1/2 of root balls. Cut off cleanly all broken or frayed roots, and spread roots out. Stagger Plants in rows. Backfill planting hole with soil mix while working each layer to eliminate voids.

When approximately 2/3 full, water thoroughly, then allow water to soak away. Place remaining backfill and dish surface around plant to hold water. Final grade should keep root ball slightly above surrounding grade, not to exceed 1". Water again until no more water is absorbed. Initial watering by irrigation system is not allowed.

**STAKING OF TREES:** Stake or guy all trees. Stakes shall be 2" x 2" (nom.) quality tree stakes with point. They shall be of Douglas Fir, clear and sturdy. Stake to be minimum 2/3 the height of the tree, not to exceed 8'-0". Drive stake firmly 1'-6" below the planting hole. Tree ties for deciduous trees shall be "Chainlock" (or better). For Evergreen trees use "Gro-Strait" Tree Ties (or a reinforced rubber hose and guy wires) with guy wires of a minimum 2 strand twisted 12 ga. wire. Staking and guying shall be loose enough to allow movement of tree while holding tree upright. Tree stakes shall be removed after one year.

**MULCHING OF PLANTINGS:** Mulch planting areas with dark, aged, medium grind fir or hemlock bark (aged at least 6 months) to a depth of 2" in ground cover areas and 2 1/2" in shrub beds. Apply evenly, not higher than grade of plant as it came from the nursery, and rake to a smooth finish. Water thoroughly, then hose down planting area with fine spray to wash leaves of plants.

**FINE LAWN AREAS:** In fine lawn area apply Commercial Fertilizer Mix "B" at 4.5 lbs. Per 1,000 sq.ft. and rake into soil surface. Establish an even, fine textured seeded meeting grades, surfaces and texture. Sow seed with a mechanical spreader at the uniform rates as noted below. Rake seed lightly to provide cover.

**ROUGH SEED AREA:** In rough seeded area, establish an evenly graded seedbed. Sow seed with a mechanical spreader at the uniform rates as noted below. Rake seed lightly to provide cover.

**SEED:** Bluetag grass seed conforming to applicable State laws. No noxious weed seeds. Submit Guaranteed analysis.

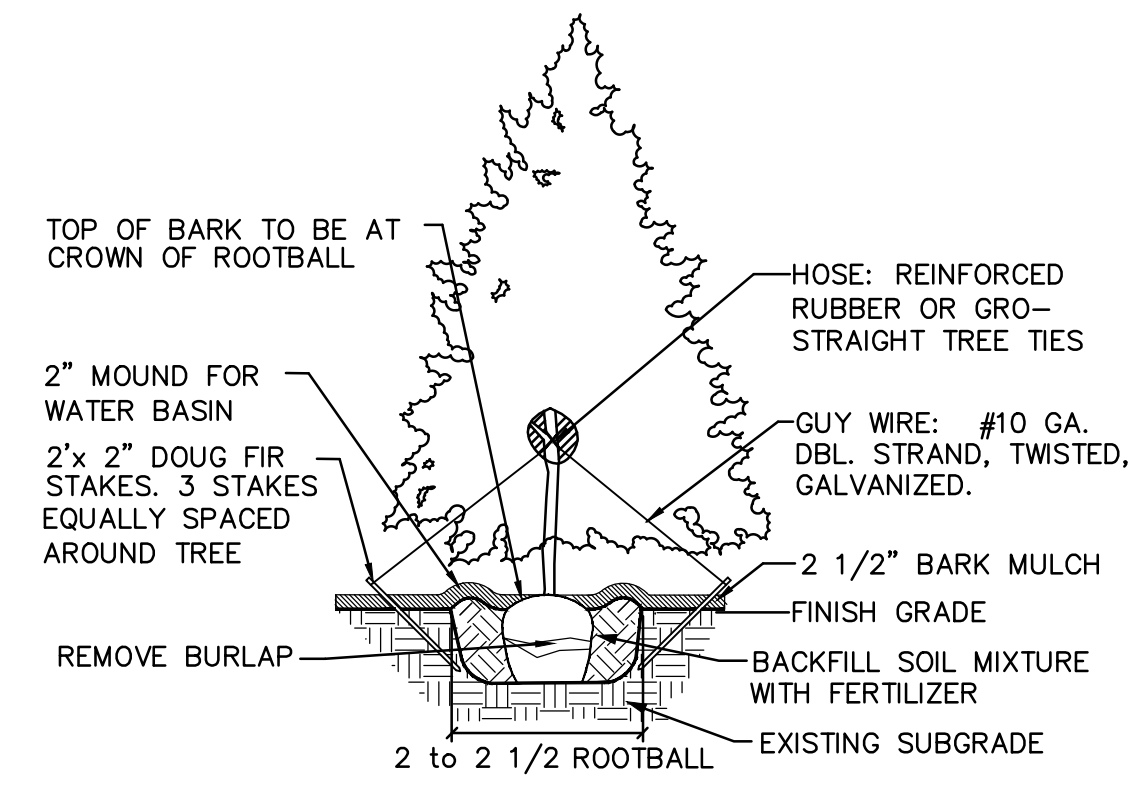
**Fine Lawn Seed Mix:** To contain 50% Top Hat Perennial Ryegrass, 30% Derby Supreme Ryegrass, 20% Longfellow Chewings Fescue (Hobbs and Hopkins Pro-Time 303 Lawn Mix or as approved) Sow Seed at 5 lbs. / 1000 sq. ft.

**Rough Seed Mix:** To Contain: 60% Perennial Ryegrass, 15% Eureka Hard Fescue, and 20% Herbaceous Plants and Clover (Hobbs and Hopkins Pro-Time 705 PDX, or approved equal). Sow at 2 lbs. Per 1,000 sq.ft.

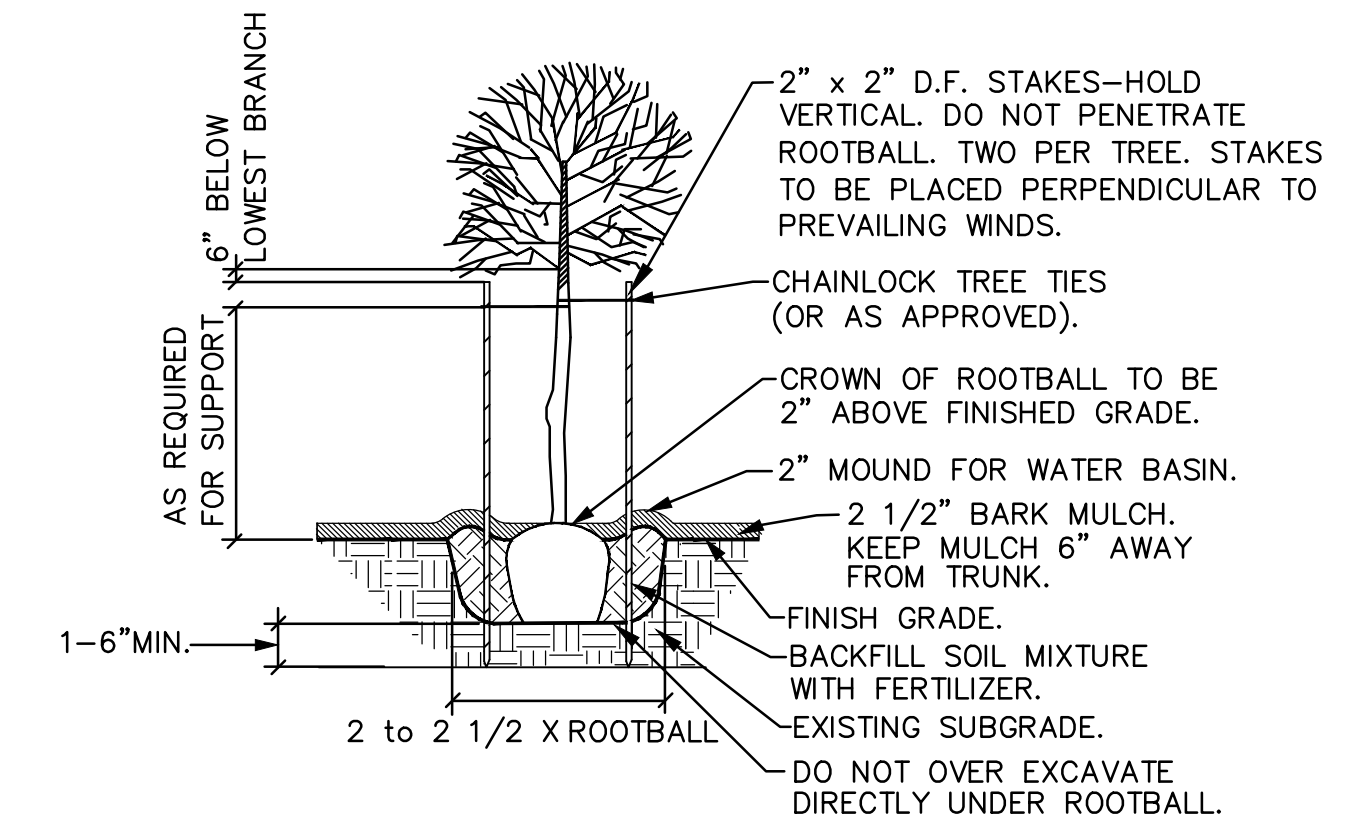
**MAINTENANCE OF SEEDED AREAS:**  
**Fine Lawn Areas:** The lawn areas shall be maintained by watering, mowing, reseeding, and weeding for a minimum of 60 days after seeding. After 30 days, or after the second mowing, apply Commercial Fertilizer Mix "C" at 5 lbs. per 1,000 sq. ft. Mow and keep at 1 1/2" to 2" in height. Remove clippings and dispose of off site.

**GENERAL MAINTENANCE:** Protect and maintain work described in these specifications against all defects of materials and workmanship, through final acceptance. Replace plants not in normal healthy condition at the end of this period. Water, weed, cultivate, mulch, reset plants to proper grade or upright position, remove dead wood and do necessary standard maintenance operations. Irrigate when necessary to avoid drying out of plant materials, and to promote healthy growth.

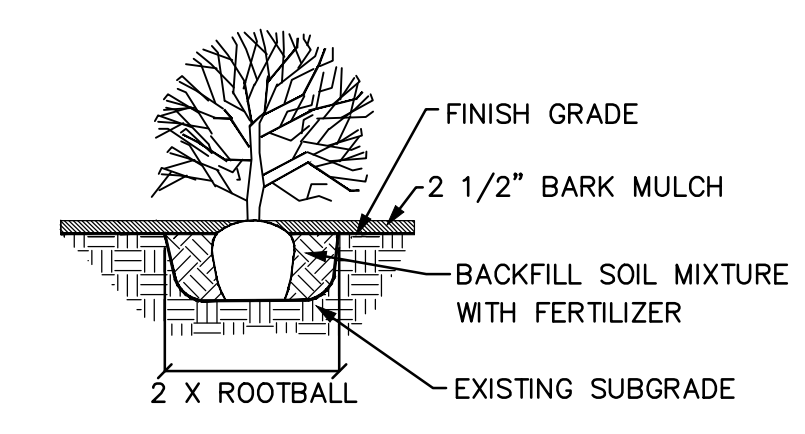
**CLEAN-UP:** At completion of each division of work all extra material, supplies, equipment, etc., shall be removed from the site. All walks, paving, or other surfaces shall be swept clean, mulch areas shall have debris removed and any soil cleared from surface. All areas of the project shall be kept clean, orderly and complete.



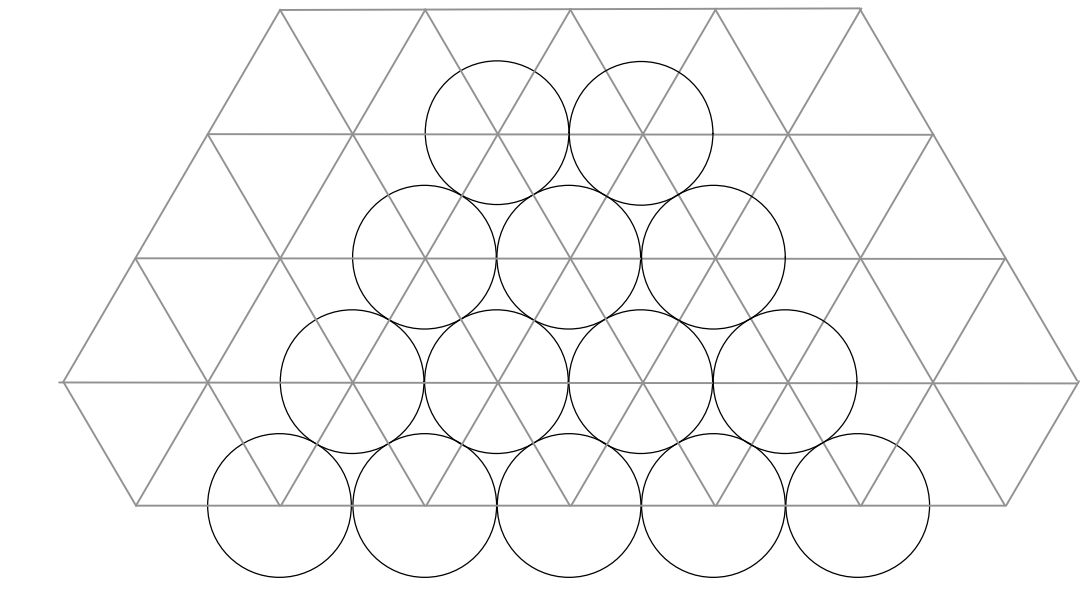
EVERGREEN TREE STAKING DETAIL  
NOT TO SCALE



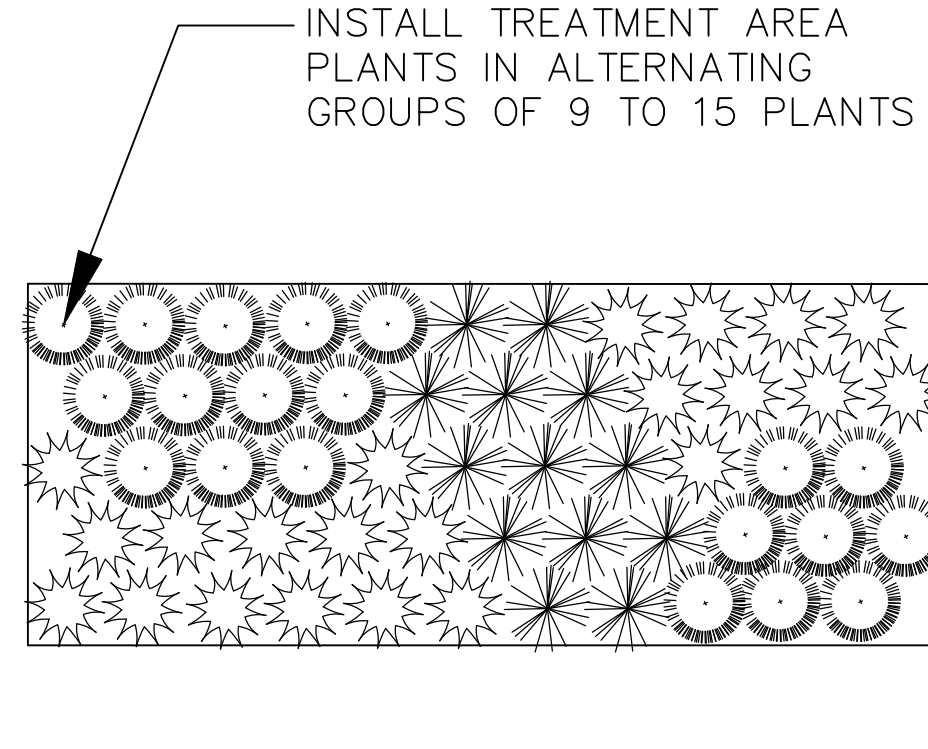
GENERAL DECIDUOUS TREE PLANTING DETAIL  
NOT TO SCALE



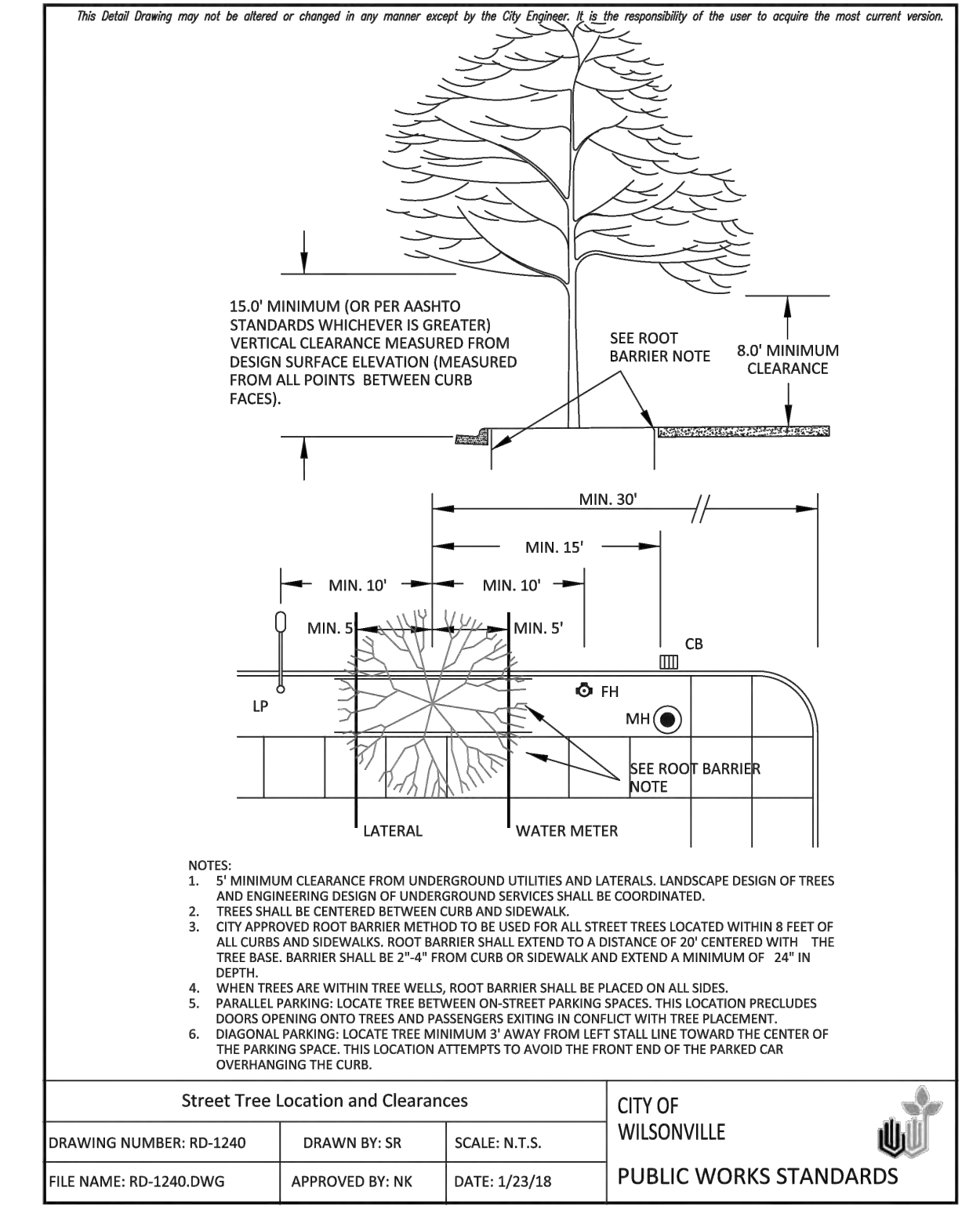
SHRUB PLANTING DETAIL  
NOT TO SCALE



GROUNDCOVER PLANTING DETAIL  
NOT TO SCALE



STORMWATER FACILITY PLANTING DETAIL  
NOT TO SCALE



Street Tree Location and Clearances		CITY OF WILSONVILLE	
DRAWING NUMBER: RD-1240	DRAWN BY: SR	SCALE: N.T.S.	
FILE NAME: RD-1240.DWG	APPROVED BY: NK	DATE: 1/23/18	

Client/ Owner:

Project:  
**PRECISION COUNTERTOP**

2540 SW Garden Acres Road  
Wilsonville OR 97140

Sheet Title:

**LANDSCAPE SPECIFICATIONS & DETAILS**

Revisions:

#	Description	Date
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GENERAL NOTES - SITE PLAN

- 1. GENERAL CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS PRIOR TO CONSTRUCTION...
2. CONTRACTORS SHALL VERIFY ALL LOCATIONS OF EXISTING UTILITIES...
3. REFER TO CIVIL DRAWINGS FOR GRADING AND UTILITY INFORMATION...
4. CONTRACTORS SHALL VERIFY ALL LOCATIONS OF EXISTING UTILITIES...
5. THE CONSTRUCTION SHALL NOT RESTRICT A FIVE-FOOT CLEAR UNOBSTRUCTED ACCESS TO ANY WATER OR POWER DISTRIBUTION FACILITIES...
6. THE CONSTRUCTION SHALL NOT BE WITHIN 10' OF ANY POWER LINES...
7. FIRE LANES SHALL BE DESIGNED TO SUPPORT A FIRE APPARATUS LOAD OF 75,000 LBS...
8. DELEGATED DESIGN NFPA 13 FIRE SPRINKLER SYSTEM...
9. FIRE FLOW DEMAND PER OFC APPENDIX B...
MIN. REQUIRED FIRE FLOW RATE = 1,000 GPM
MIN. REQUIRED FIRE FLOW DURATION = 2 HRS

ELECTRIC VEHICLE CHARGING STATION INFRASTRUCTURE SHALL BE PROVIDED IN ACCORDANCE WITH DIVISION 460 STRUCTURAL AND ENERGY EFFICIENCY SPECIALTY CODES SECTION 918-460-0200...
2A - NO LESS THAN 20%, ROUNDED UP TO THE NEAREST WHOLE NUMBER, OF THE SPACES IN THE GARAGE OR PARKING AREA FOR THE BUILDING...
3A - PROVISION OF BUILDING ELECTRICAL SERVICE, SIZED FOR THE ANTICIPATED LOAD OF ELECTRIC VEHICLE CHARGING STATIONS (EVCS)...

PROPOSED PARKING = 71 STALLS
TOTAL PARKING = 71 STALLS X 20% = 14.2 => 15 EVCS STALLS REQUIRED < 15 PROPOSED, OKAY

Table with 2 columns: Category and Value. Includes: TOTAL SITE AREA (406,233 SF = 9.32 ACRES), BUILDING AREA (66,002 SF), REQUIRED LANDSCAPING (15% OF TOTAL SITE), VEHICLE PARKING (OFFICE, RETAIL/SHOWROOM, WAREHOUSE/STORAGE, MANUFACTURING), BICYCLE PARKING, and LOADING.

KEYNOTES

- SP-001 PROPERTY LINE
SP-003 LIMITS OF WORK
SP-008 ASPHALT PAVING
SP-025 CROSSWALK, PAINTED
SP-026 CONCRETE SITE WALL, 6"W X 30"H
SP-031 FENCE, ORNAMENTAL BLACK BAR, 6'-0"H
SP-033 GATE, ORNAMENTAL BLACK BAR, 20"W MIN CLR. ELECTRIC GATES SHALL BE EQUIPPED WITH A MEANS FOR OPERATION BY FIRE DEPT PERSONNEL
SP-034 CONCRETE LOADING DOCK SLAB
SP-040 WHEEL STOP
SP-041 ELECTRIC VEHICLE CHARGING INFRASTRUCTURE PER OAR 918-460-0200
SP-051 WAYSIDE PLAZA WITH BENCH, WASTE AND RECYCLING RECEPTACLE, BOLLARD LIGHTING, 960 SF
SP-062 (2) FLAG POLES, 20' TALL

PARKING SCHEDULE

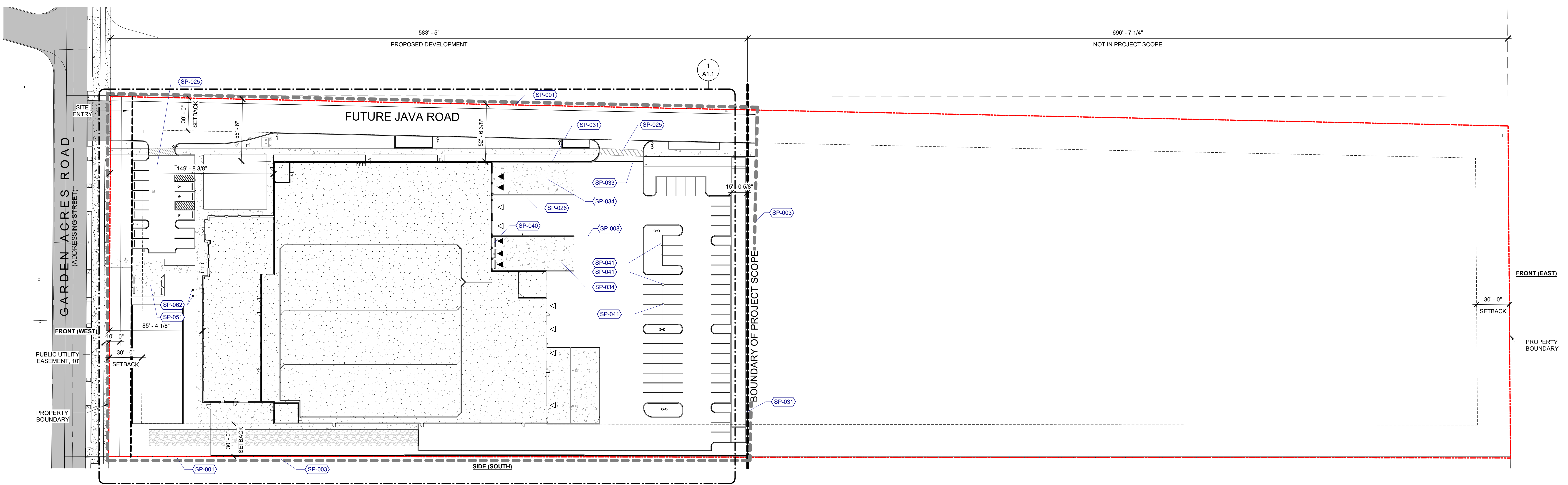
Table with 2 columns: Description and Count. Includes: 9'0" X 15'0" VEHICLE COMPACT SPACE (8), 9'0" X 18'0" ACCESSIBLE SPACE (3), 9'0" X 18'0" VAN ACCESSIBLE SPACE (1), 9'0" X 18'0" VEHICLE STANDARD SPACE (57), TOTAL (69).

AREA SCHEDULE - ZONING

Table with 2 columns: Name and Area. Includes: MANUFACTURING (19,545 SF), OFFICE (7,114 SF), SHOWROOM/RETAIL (2,963 SF), WAREHOUSE (36,474 SF), TOTAL AREA (66,096 SF).

LEGEND

- DRIVE-IN DOOR
DOCK-HEIGHT DOOR
AREA OF WORK
FIRE LANE
PARKING COUNT SUBTOTAL
SLOPE DOWN, UNO



1 SITE PLAN (CURRENT PROPOSED)
1" = 40'-0"

Client/ Owner:
PRECISION
COUNTERTOPS

26200 SW 95th Ave,
Wilsonville OR 97070

Project:
PRECISION
COUNTERTOPS

SW Garden Acres Road
Wilsonville OR 97070

Sheet Title:
OVERALL SITE
PLAN

Revisions:
# Description Date

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Date: 02/06/2023
Job Number: 121036
Sheet



**LEGEND**

△	DRIVE-IN DOOR
▲	DOCK-HEIGHT DOOR
---	AREA OF WORK
----	FIRE LANE
○	PARKING COUNT SUBTOTAL
→	SLOPE DOWN, UNO

- KEYNOTES**
- SP-005 CURB, 6" H
  - SP-009 ACCESSIBLE PARKING SPACE, AISLE, SIGNAGE AND RAMP - SEE DETAIL
  - SP-010 VAN ACCESSIBLE PARKING SPACE, AISLE, SIGNAGE AND RAMP - SEE DETAIL
  - SP-012 ACCESSIBLE ROUTE, PAINT STRIPING
  - SP-014 LANDSCAPING
  - SP-017 EXISTING FIRE HYDRANT
  - SP-021 ON-SITE STORM FACILITY
  - SP-025 CROSSWALK, PAINTED
  - SP-028 KNOX BOX, COORDINATE FINAL LOCATION(S) WITH FIRE MARSHAL
  - SP-031 FENCE, ORNAMENTAL BLACK BAR, 6'-0" H
  - SP-033 GATE, ORNAMENTAL BLACK BAR, 20" MIN CLR. ELECTRIC GATES SHALL BE EQUIPPED WITH A MEANS FOR OPERATION BY FIRE DEPT PERSONNEL
  - SP-041 ELECTRIC VEHICLE CHARGING INFRASTRUCTURE PER OAR 918-460-0200
  - SP-043 FDC - COORDINATE LOCATION WITH FIRE MARSHAL
  - SP-044 FIRE HYDRANT (N)
  - SP-049 POLE MOUNTED SITE LIGHTING
  - SP-054 DOWNSPOUT
  - SP-055 EXIT DOOR IN FENCE WITH EXIT DEVICE AND KNOX BOX FOR FIRE DEPARTMENT
  - SP-057 SHORT TERM BIKE PARKING, SEE ENLARGED PLAN FOR CLEARANCE REQUIREMENTS, 6A1.3
  - SP-058 PROVIDE (6) LONG TERM BIKE PARKING SPACES
  - SP-059 WASTE AND RECYCLING RECEPTACLE, SEE 8A1.3
  - SP-060 BENCH, SEE LANDSCAPE PLANS
  - SP-061 SITE LIGHTING, BOLLARD LIGHT
  - SP-062 (2) FLAG POLES, 20' TALL
  - SP-063 ALL-WEATHER ACCESS ROAD PER CIVIL

- GENERAL NOTES - SITE PLAN**
1. GENERAL CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS PRIOR TO CONSTRUCTION. CONFLICTS ARE TO BE BROUGHT TO THE ATTENTION OF THE ARCHITECT PRIOR TO THE START OF CONSTRUCTION RELATED TO SUCH.
  2. REFER TO CIVIL DRAWINGS FOR GRADING AND UTILITY INFORMATION.
  3. CONTRACTORS SHALL VERIFY ALL LOCATIONS OF EXISTING UTILITIES. CARE SHOULD BE TAKEN TO AVOID DAMAGE TO OR DISTURBANCE OF EXISTING UTILITIES.
  4. REFER TO CIVIL AND LANDSCAPE DRAWINGS FOR ALL PUBLIC RIGHT-OF-WAY IMPROVEMENTS.
  5. THE CONSTRUCTION SHALL NOT RESTRICT A FIVE-FOOT CLEAR UNOBSTRUCTED ACCESS TO ANY WATER OR POWER DISTRIBUTION FACILITIES (POWER POLES, PULL BOXES, TRANSFORMERS, VAULTS, PUMPS, VALVES, METERS, APPURTENANCES, ETC.) OR THE LOCATION OF THE HOOK-UP. THE CONSTRUCTION SHALL NOT BE WITHIN 10' OF ANY POWER LINES - WHETHER OR NOT THE POWER LINES ARE LOCATED ON THE PROPERTY. FAILURE TO COMPLY MAY CAUSE CONSTRUCTION DELAYS OR ADDITIONAL EXPENSES.
  6. FIRE LANES SHALL BE DESIGNED TO SUPPORT A FIRE APPARATUS LOAD OF 75,000 LBS WITH A WHEEL LOAD OF 12,500 LBS.
  7. DELEGATED DESIGN NFPA 13 FIRE SPRINKLER SYSTEM DESIGNED IN ACCORDANCE WITH OSSC 903.3.1.1 WILL BE A DEFERRED SUBMITTAL.
  8. FIRE FLOW DEMAND PER OAR APPENDIX B:
    - A. PER TABLE B105.2, SECTION 903.3.1.1 DESIGN STANDARD: TABLE B105.1(2) - TYPE IIB, 65,071 SF: FIRE FLOW RATE: 2,750 GPM; FIRE FLOW DURATION: 2 HRS
    - B. TABLE B105.2 REQUIRED FIRE FLOW - SPRINKLERED PER IFC 903.3.1.1: FIRE FLOW REDUCTION: 2,750 GPM X 0.25 = 687.5 GPM; \*THE REDUCED FIRE FLOW RATE SHALL NOT BE LESS THAN 1,000 GPM
  9. MIN. REQUIRED FIRE FLOW RATE = 1,000 GPM; MIN. REQUIRED FIRE FLOW DURATION = 2 HRS

TOTAL SITE AREA:	406,233 SF = 9.32 ACRES
SITE AREA IN PROJECT SCOPE:	189,289 SF = 4.34 ACRES
BUILDING AREA:	66,002 SF
PARKING/PAVING AREA:	78,118 SF
LOT COVERAGE/IMPERV AREA:	66,002 SF + 78,118 SF = 144,120 SF
	144,120 SF / 189,289 SF = 76.1 %
REQUIRED LANDSCAPING:	15 % OF TOTAL SITE
	189,289 SF x 0.15 = 28,393 SF MIN REQ'D
	38,861 SF PROPOSED > 28,393 SF, OKAY
VEHICLE PARKING:	
OFFICE:	2.7 x 6,820/1,000 = 18.5 SPACES REQ'D MIN.
	4.1 x 6,820/1,000 = 28 SPACES MAX
RETAIL/SHOWROOM:	1.67 x 2,973/1,000 = 5 SPACES REQ'D
	6.2 x 2,973/1,000 = 18.5 SPACES MAX
WAREHOUSE/STORAGE:	0.3 x 36,057/1,000 = 10.8 SPACES REQ'D
	0.5 x 36,057/1,000 = 18.0 SPACES MAX
MANUFACTURING:	1.6 x 20,150/1,000 SF = 32.3 SPACES REQ'D, NO MAX
	18.5 + 5.0 + 10.8 + 32.3 = 66.6 SPACED REQ'D
TOTAL:	69 SPACES PROPOSED > 66.6, OKAY
	PER OSSC TABLE 1106.1, (3) ACCESSIBLE SPACES INCLUDING (1) VAN SPACE REQ'D
BICYCLE PARKING:	
OFFICE:	1.0 x 6,820/5,000 = 1.4 SPACES, 2.0 REQ'D MIN
RETAIL/SHOWROOM:	1.0 x 2,973/8,000 = 0.4 SPACES, 2.0 REQ'D MIN
WAREHOUSE/STORAGE:	1.0 x 36,057/20,000 = 2.0 SPACES, 2.0 REQ'D MIN
MANUFACTURING:	1.0 x 20,150/10,000 SF = 2.0 SPACES, 6.0 REQ'D MIN
TOTAL:	12 SPACES PROPOSED > 12, OKAY
	PROVIDE 6 SHORT TERM, 6 LONG TERM SPACES
LOADING:	
(1) OUTRIGHT @ 250 SF	
(1) 30,000 SF - 100,000 SF @ 500 SF	
MIN: 10.0'W x 25.0'L x 14.0'H	

ELECTRIC VEHICLE CHARGING STATION INFRASTRUCTURE SHALL BE PROVIDED IN ACCORDANCE WITH DIVISION 460 STRUCTURAL AND ENERGY EFFICIENCY SPECIALTY CODES SECTION 918-460-0200 SUMMARIZED GENERALLY AS FOLLOWS. CONTRACTOR TO VERIFY REQUIREMENTS AND COMPLY WITH MOST CURRENT REQUIREMENTS.

2A - NO LESS THAN 20%, ROUNDED UP TO THE NEAREST WHOLE NUMBER, OF THE SPACES IN THE GARAGE OR PARKING AREA FOR THE BUILDING; OR

2B - IF LOCAL JURISDICTION REQUIRES MORE THAN THE QUANTITY NOTED IN ITEM 2A ABOVE, SHALL BE IN ACCORDANCE WITH THE LOCAL JURISDICTION'S REQUIREMENTS.

3A - PROVISION OF BUILDING ELECTRICAL SERVICE, SIZED FOR THE ANTICIPATED LOAD OF ELECTRIC VEHICLE CHARGING STATIONS (EVCS), THAT HAS OVERCURRENT DEVICES NECESSARY FOR EVCS' OR HAS ADEQUATE SPACE TO ADD OVERCURRENT DEVICES;

3B - A DESIGNATED SPACE WITHIN A BUILDING TO ADD ELECTRICAL SERVICE WITH CAPACITY FOR EVCS; OR

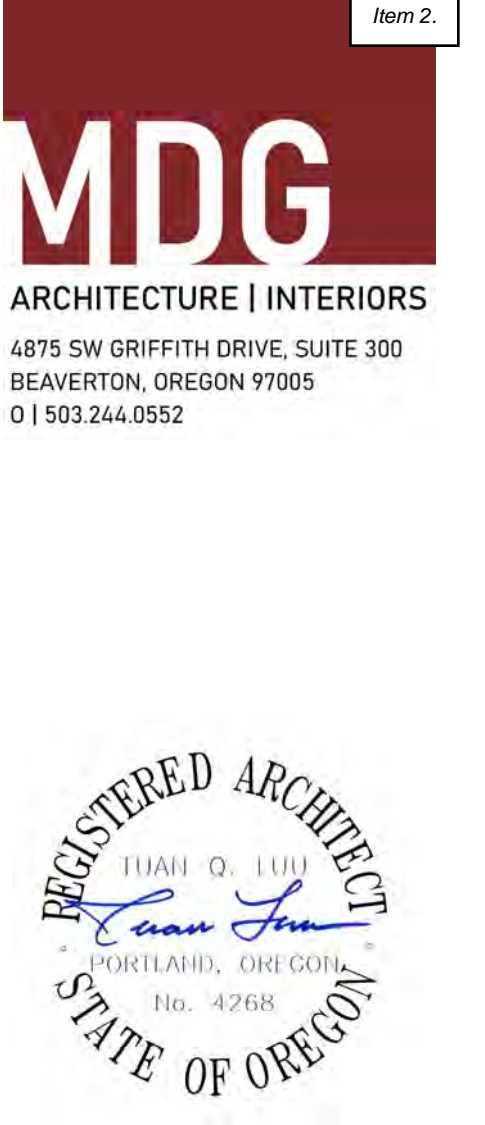
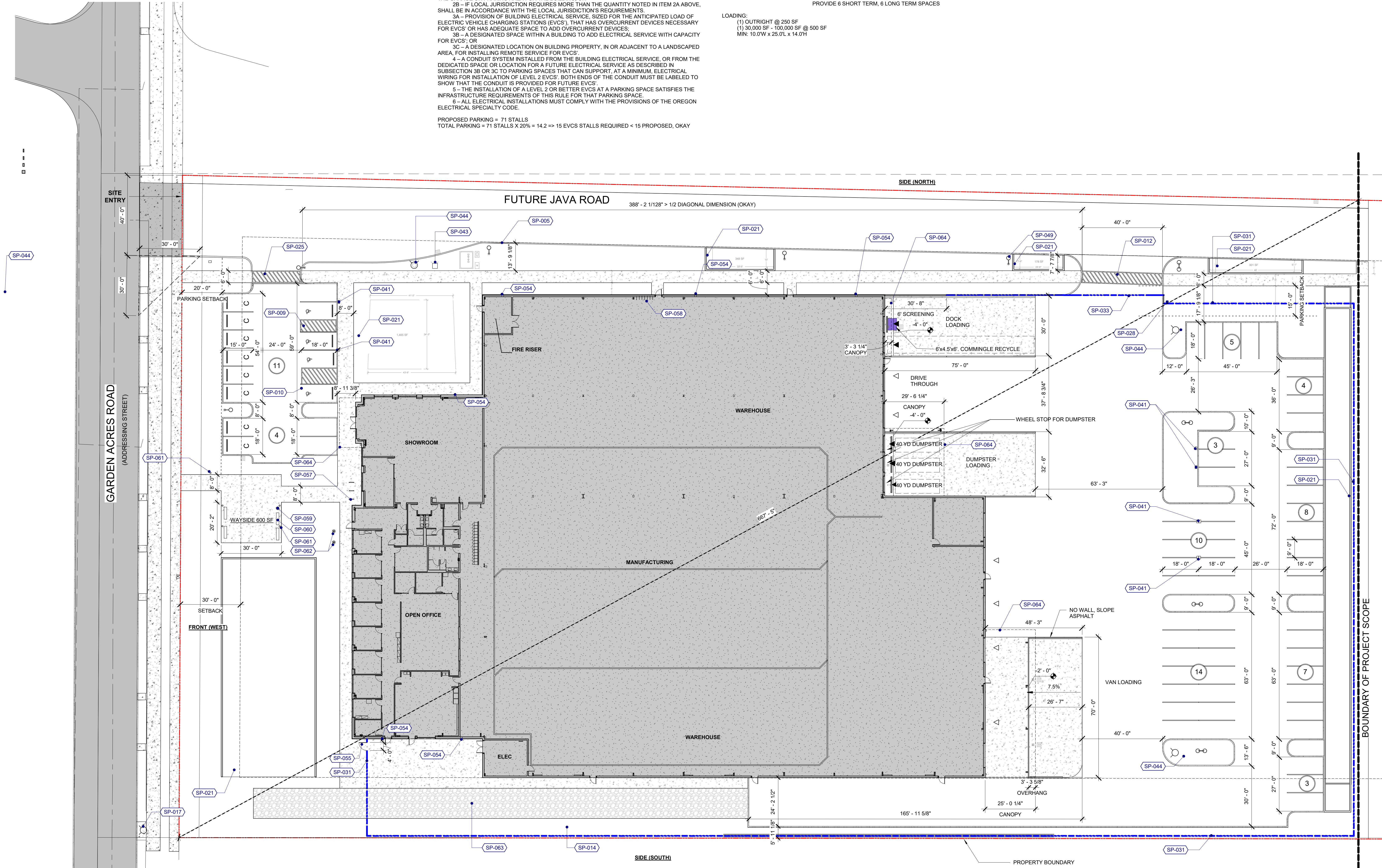
3C - A DESIGNATED LOCATION ON BUILDING PROPERTY, IN OR ADJACENT TO A LANDSCAPED AREA, FOR INSTALLING REMOTE SERVICE FOR EVCS;

4 - A CONDUIT SYSTEM INSTALLED FROM THE BUILDING ELECTRICAL SERVICE, OR FROM THE DEDICATED SPACE OR LOCATION FOR A FUTURE ELECTRICAL SERVICE AS DESCRIBED IN SUBSECTION 3B OR 3C TO PARKING SPACES THAT CAN SUPPORT, AT A MINIMUM, ELECTRICAL WIRING FOR INSTALLATION OF LEVEL 2 EVCS; BOTH ENDS OF THE CONDUIT MUST BE LABELED TO SHOW THAT THE CONDUIT IS PROVIDED FOR FUTURE EVCS;

5 - THE INSTALLATION OF A LEVEL 2 OR BETTER EVCS AT A PARKING SPACE SATISFIES THE INFRASTRUCTURE REQUIREMENTS OF THIS RULE FOR THAT PARKING SPACE

6 - ALL ELECTRICAL INSTALLATIONS MUST COMPLY WITH THE PROVISIONS OF THE OREGON ELECTRICAL SPECIALTY CODE.

PROPOSED PARKING = 71 STALLS  
TOTAL PARKING = 71 STALLS X 20% = 14.2 => 15 EVCS STALLS REQUIRED < 15 PROPOSED, OKAY



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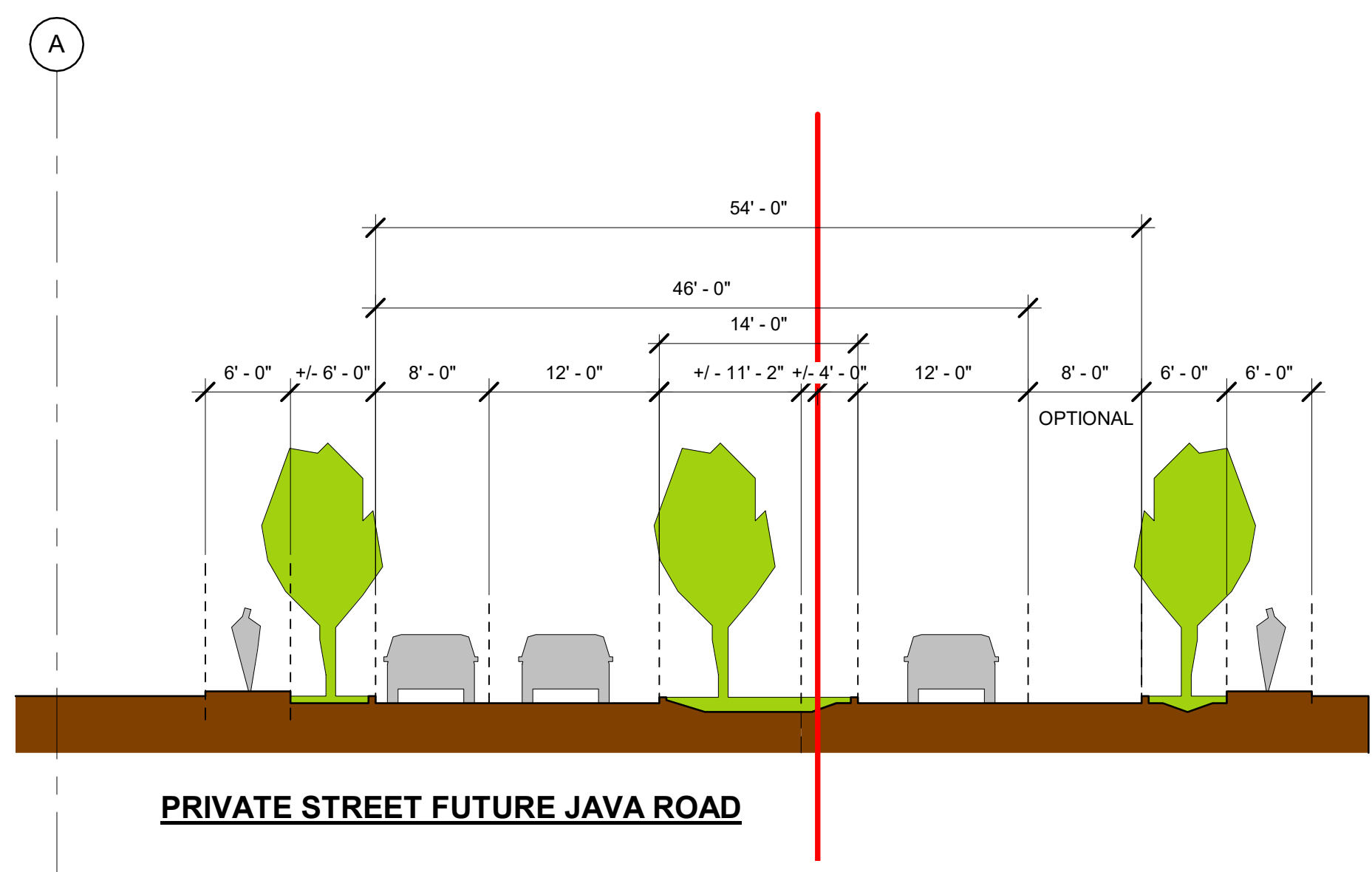
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**ENLARGED SITE PLAN**

Revisions:

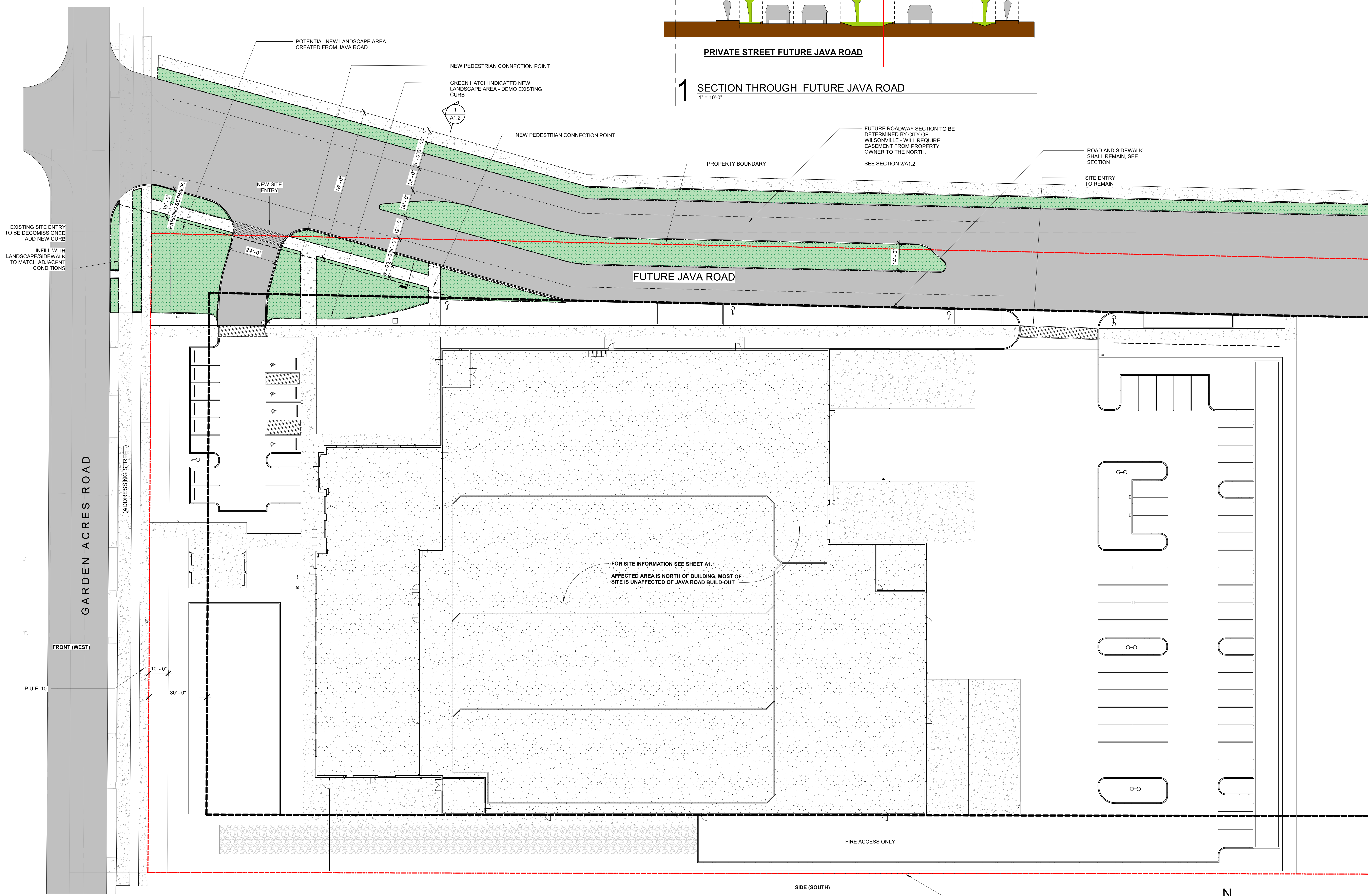
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**1 SECTION THROUGH FUTURE JAVA ROAD**  
 1" = 10'-0"



**2 SITE PLAN (FUTURE JAVA ROAD)**  
 1" = 20'-0"

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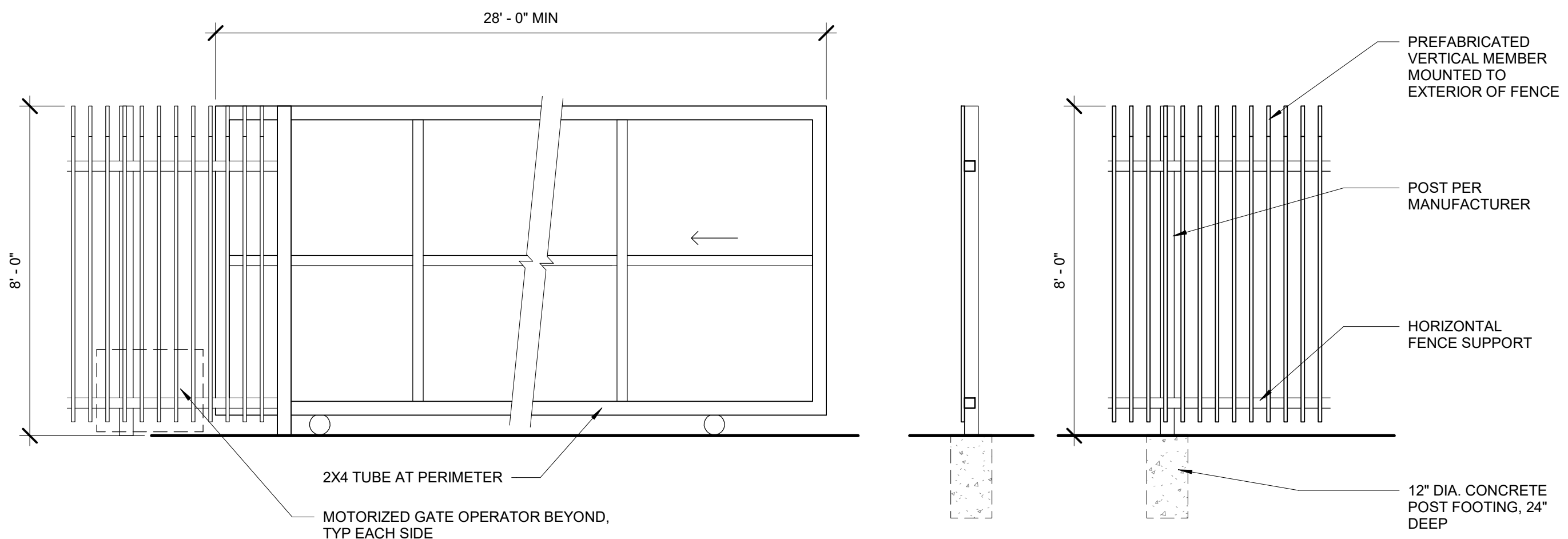
Sheet Title:  
**SITE PLAN (FUTURE)**

CURRENT PROPOSED PLAN  
 & (FUTURE) PLAN

Revisions:

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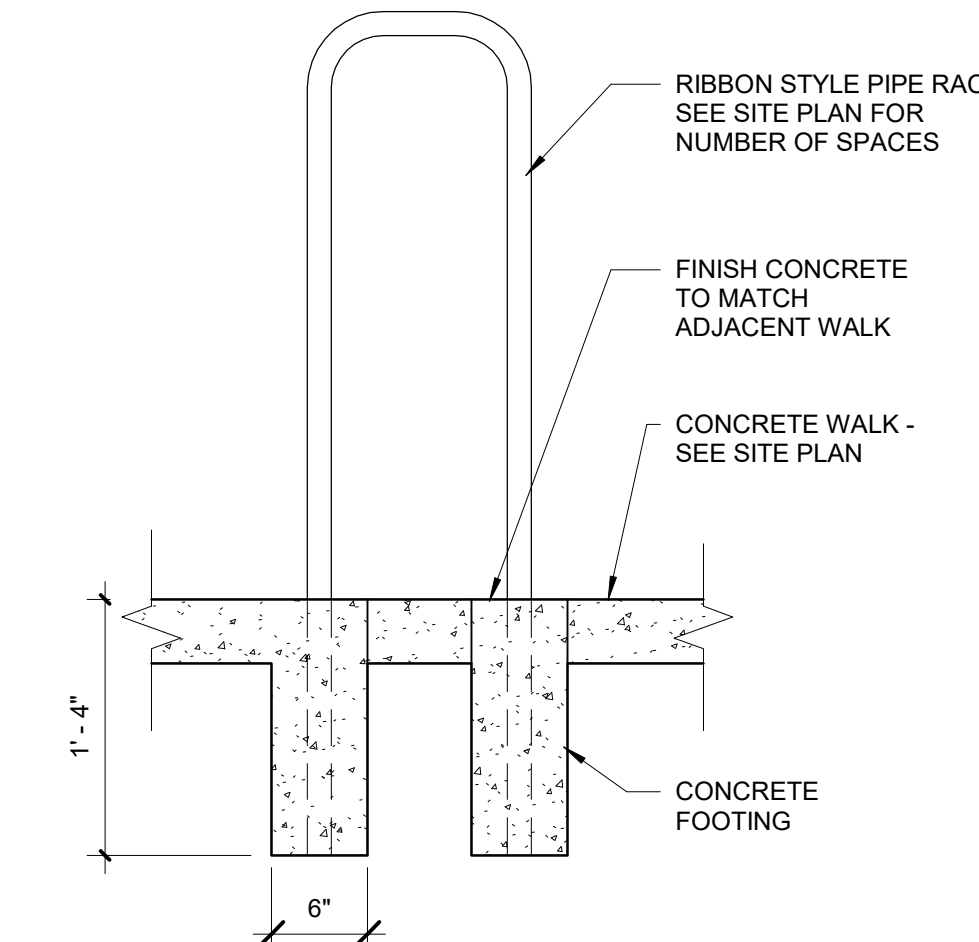




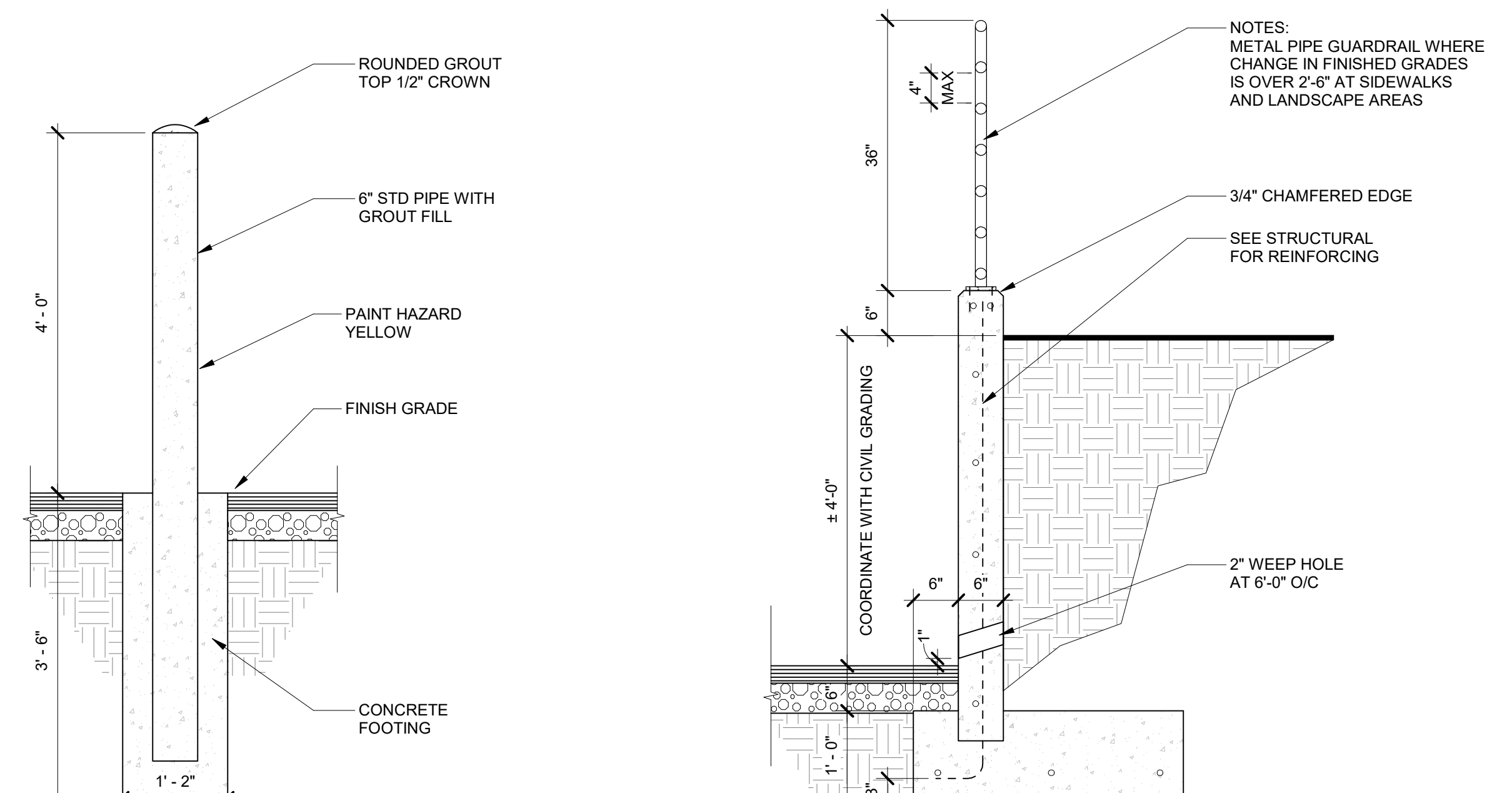
**1 ROLLING GATE AND PERIMETER FENCE DETAILS**  
3/8" = 1'-0"



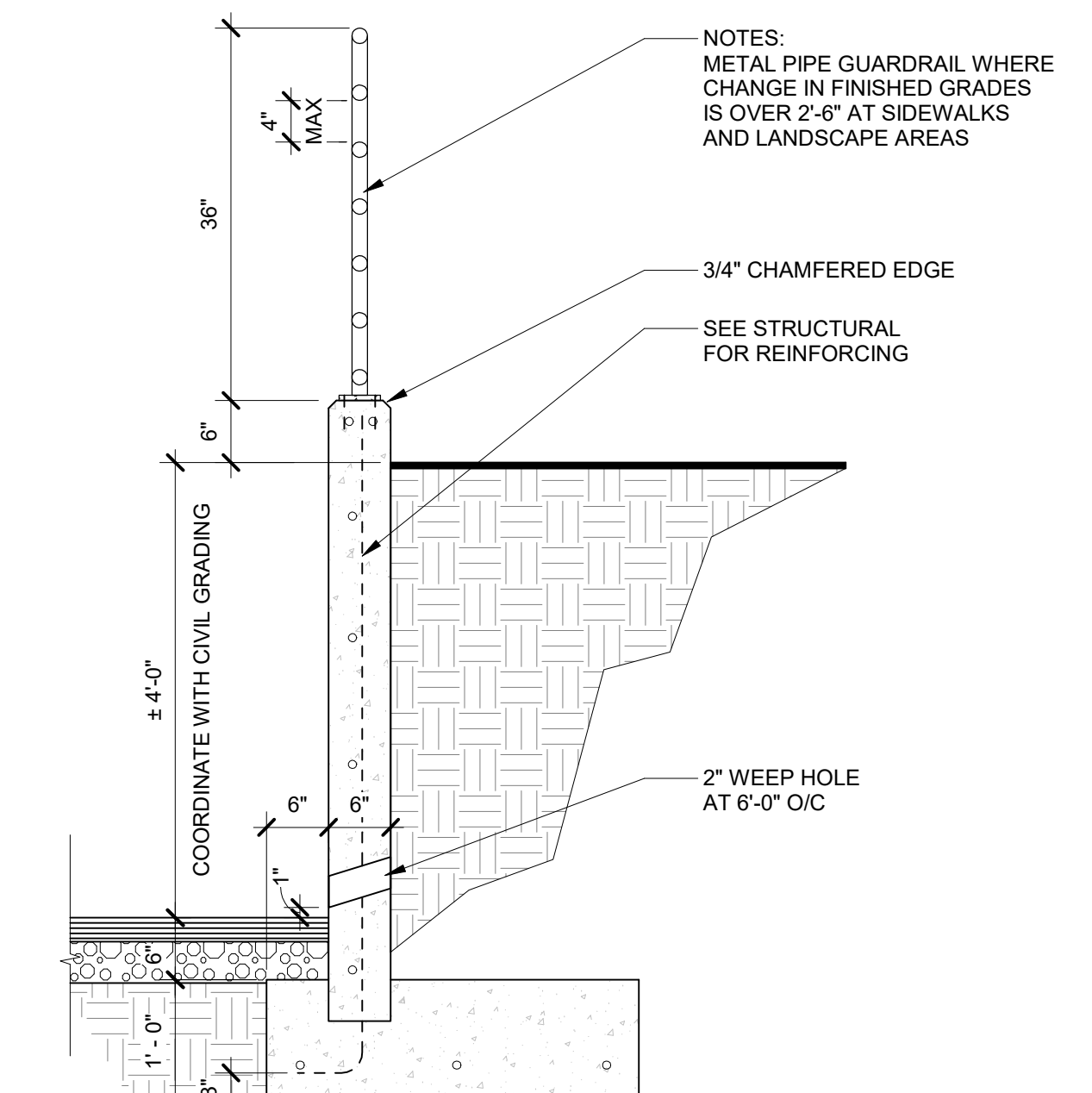
PROPOSED FENCE, SIM.



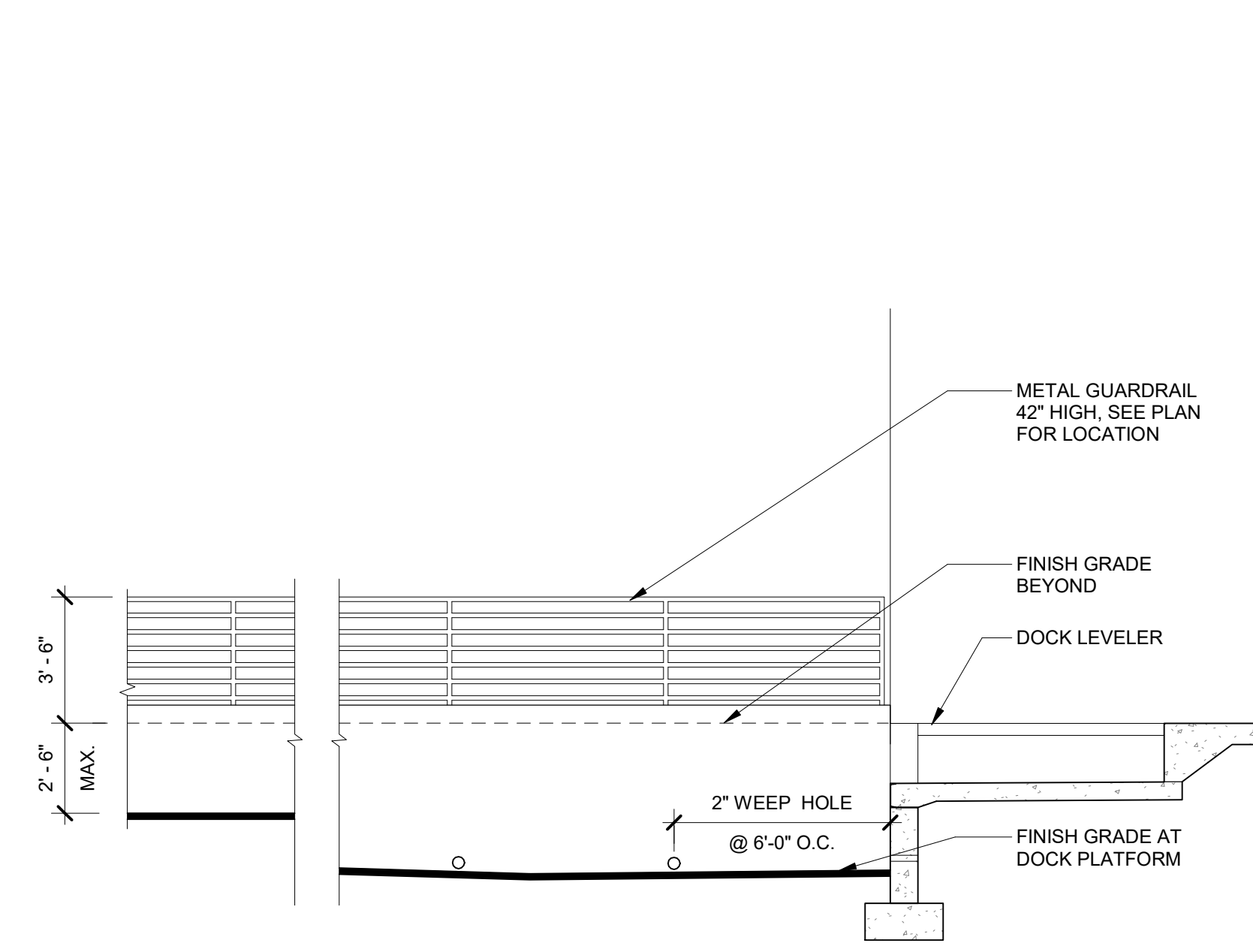
**2 BICYCLE RACK**  
1" = 1'-0"



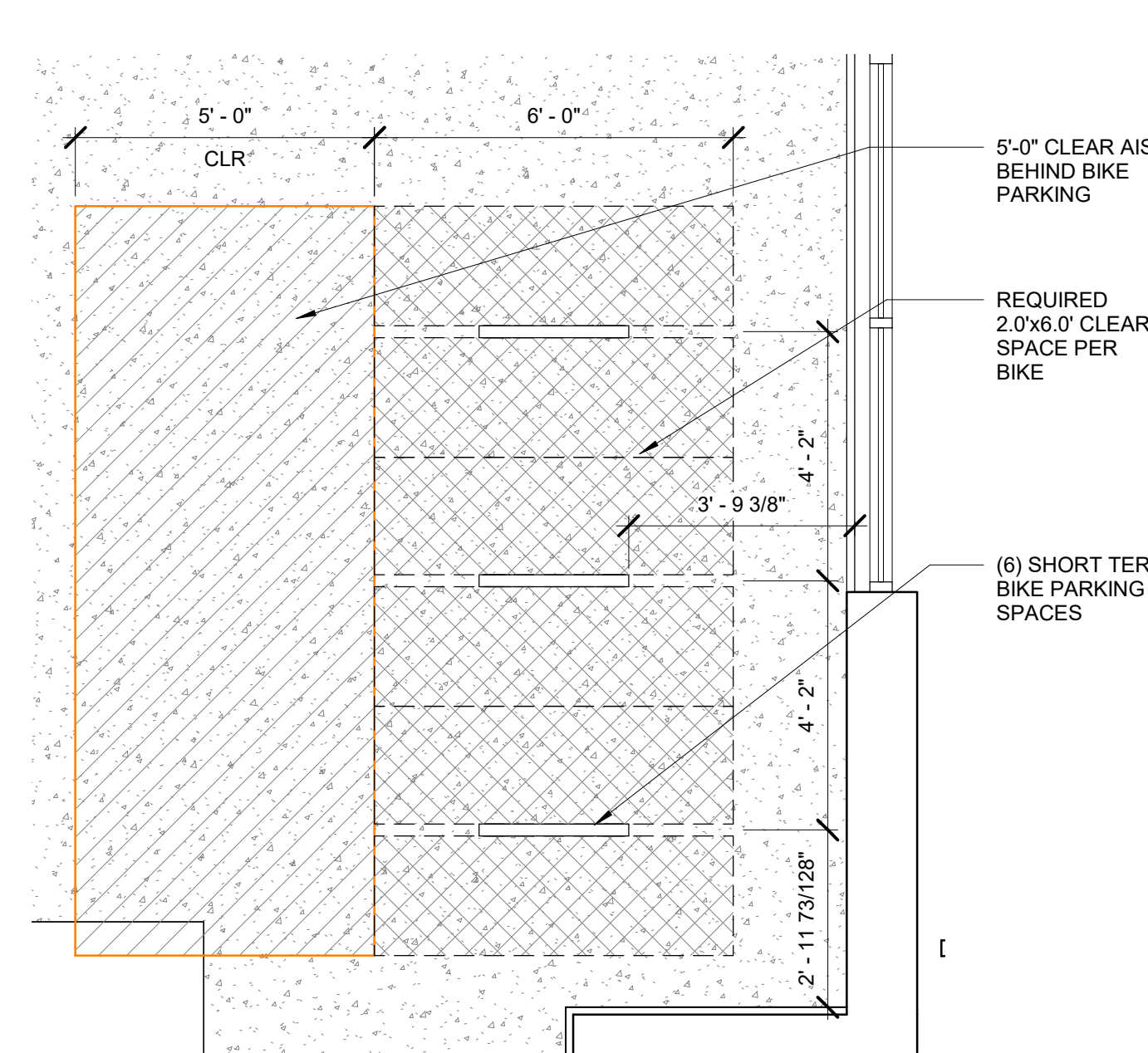
**3 CONCRETE FILLED BOLLARD**  
3/4" = 1'-0"



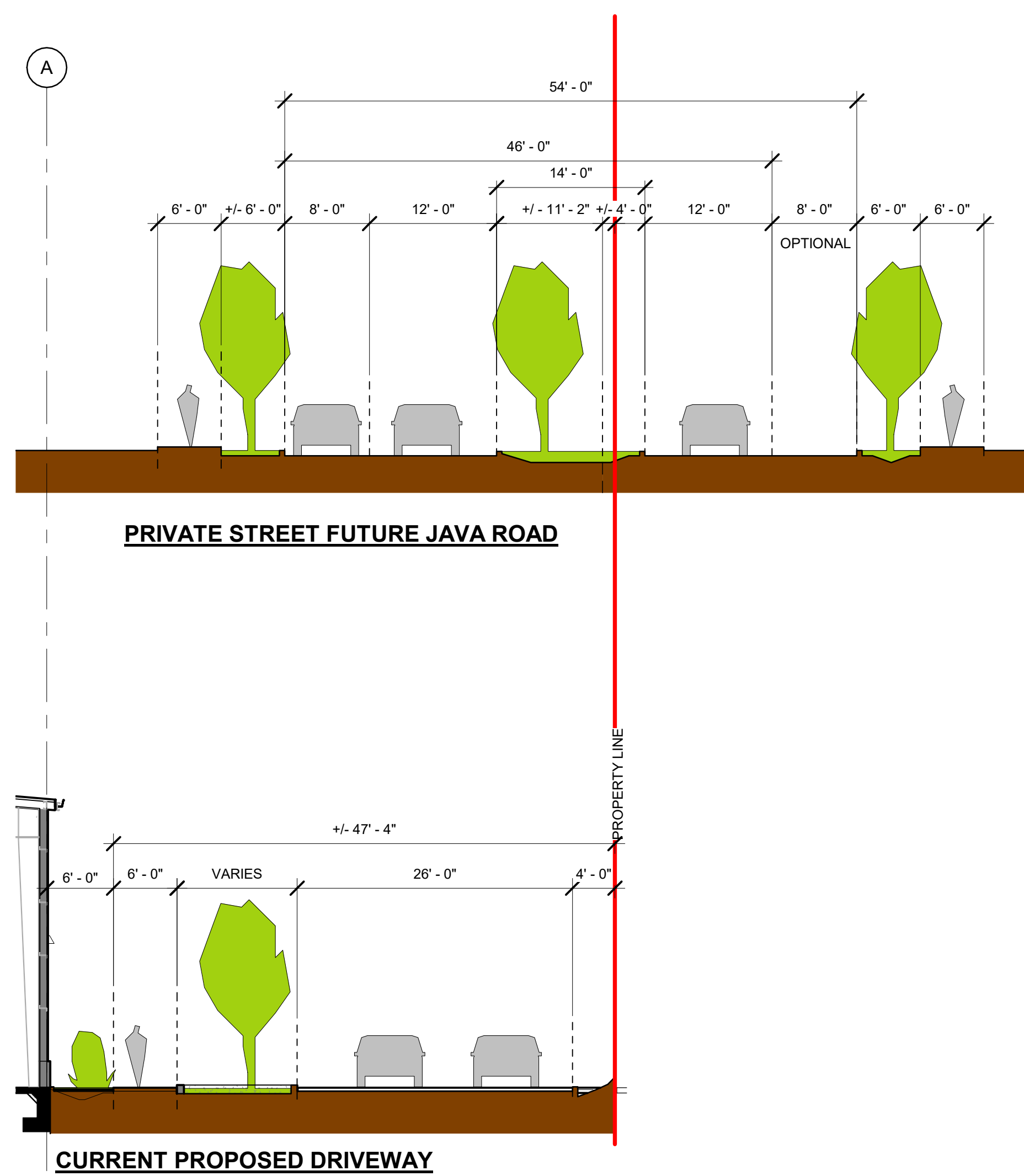
**4 GUARDRAIL DETAIL AT RECESSED DOCK**  
3/4" = 1'-0"



**5 GUARDRAIL ELEV. AT RECESSED DOCK**  
1/4" = 1'-0"



**6 BIKE PARKING ENLARGED**  
3/8" = 1'-0"



**7 SECTION THROUGH CURRENT DRIVEWAY AND FUTURE JAVA ROAD**  
1" = 10'-0"

**Infinity Series**  
ROUND RECEPTACLES

**Define your Scope**

When determining the scope of your program, several variables need to be considered. These fundamental choices need to be the first step: optimal location (inside or outdoors), property-sized capacities, and fine-tuned configurations is imperative for any successful sustainability program.

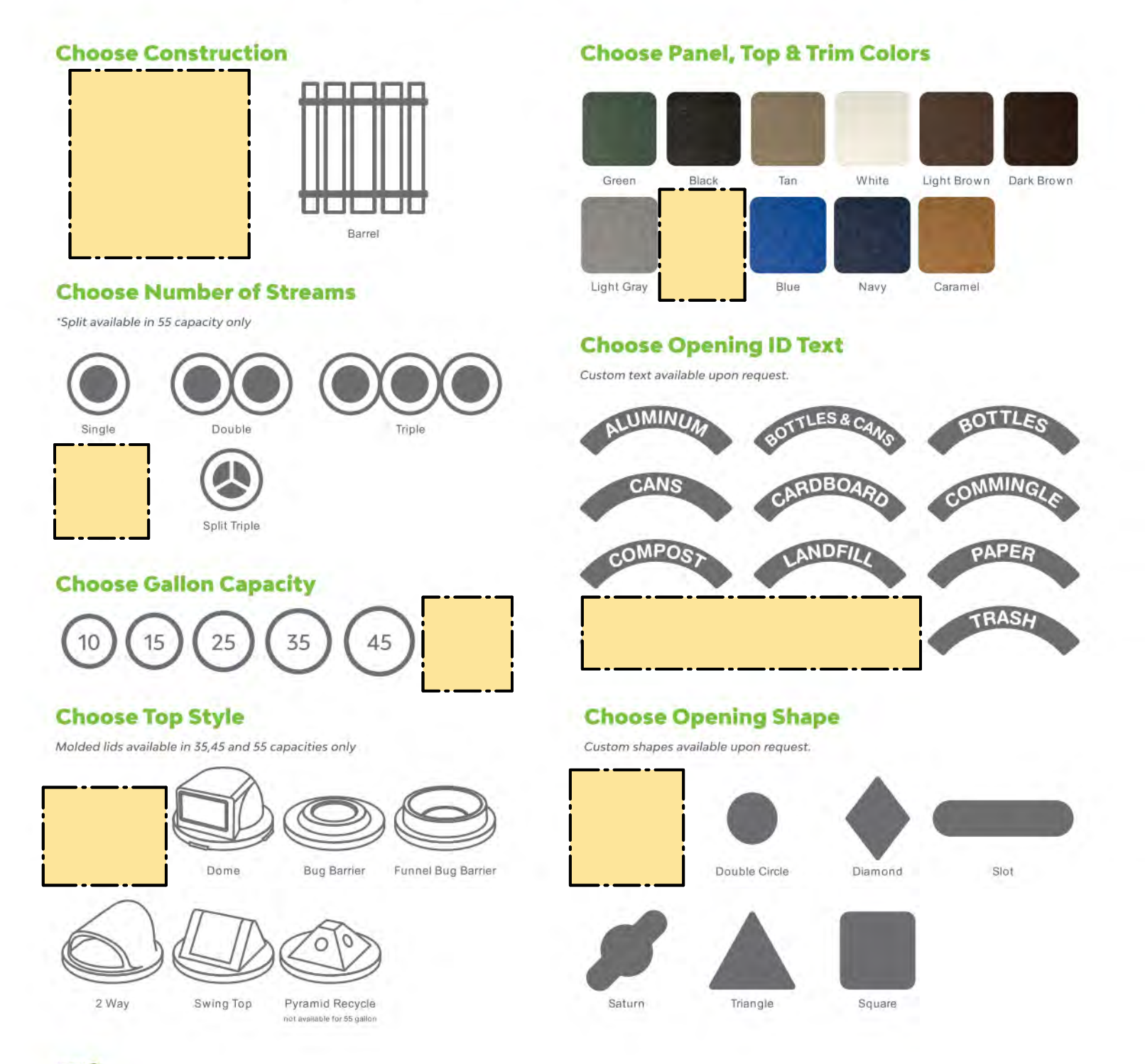


**8 TRASH RECEPTACLE**  
3" = 1'-0"

**Infinity Series**  
ROUND RECEPTACLES

**How to Order**

The Infinity is so much more than a blue bin. We believe that your waste and recycling program deserves a thoughtfully planned receptacle that will meet all of your functional and aesthetic needs, your brand standards, and will foster the growth of your sustainability program.



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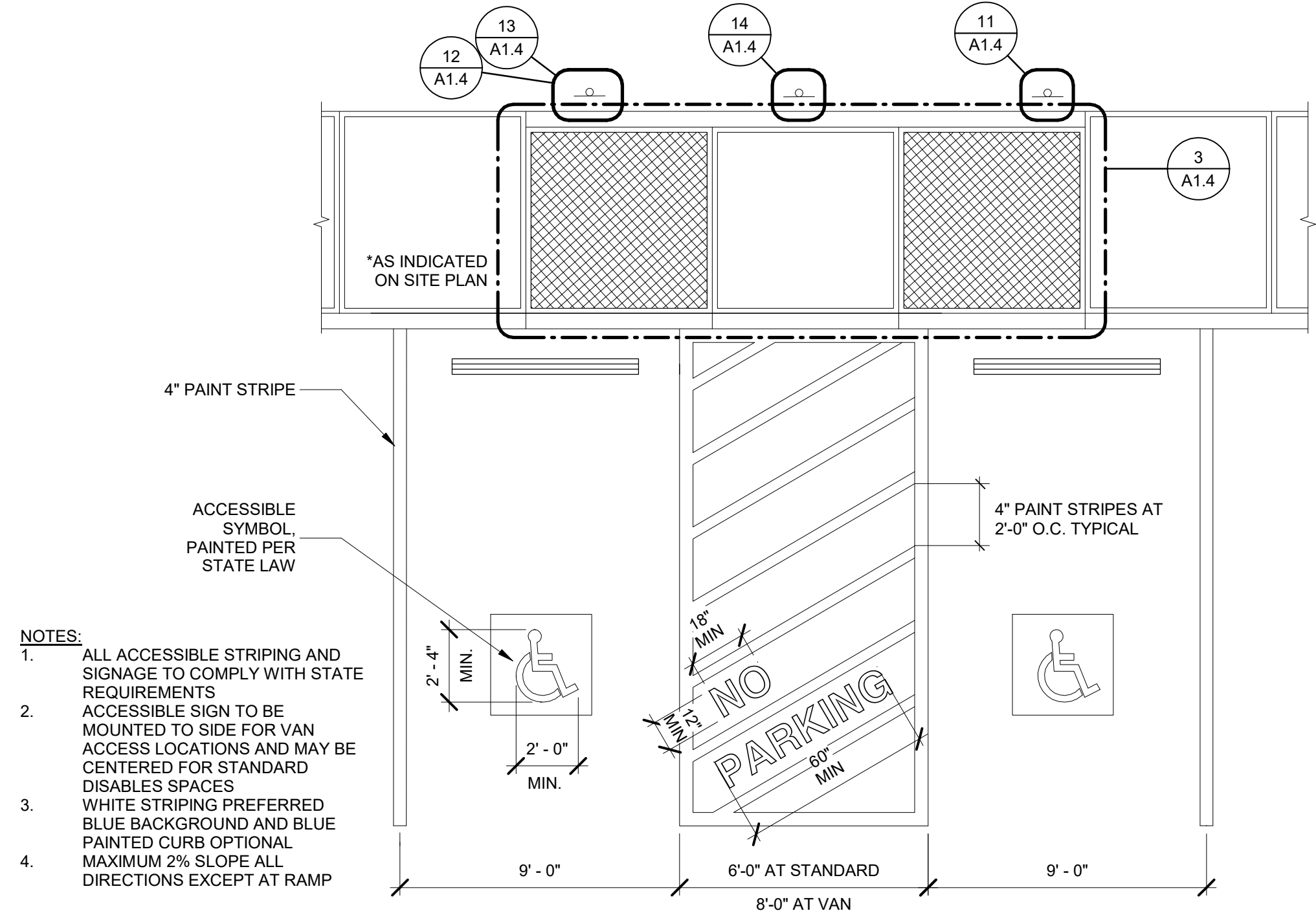
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**SITE DETAILS**

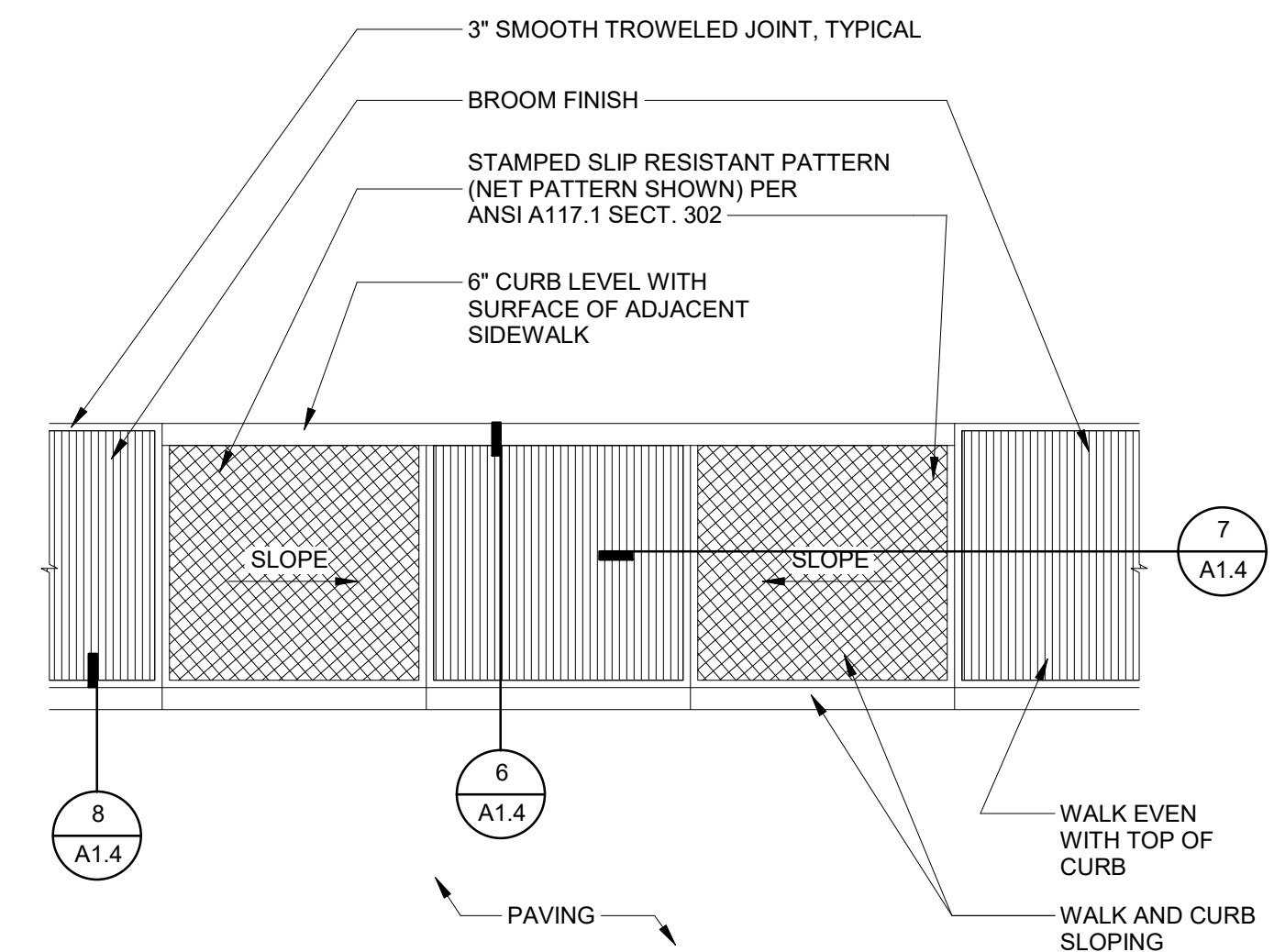
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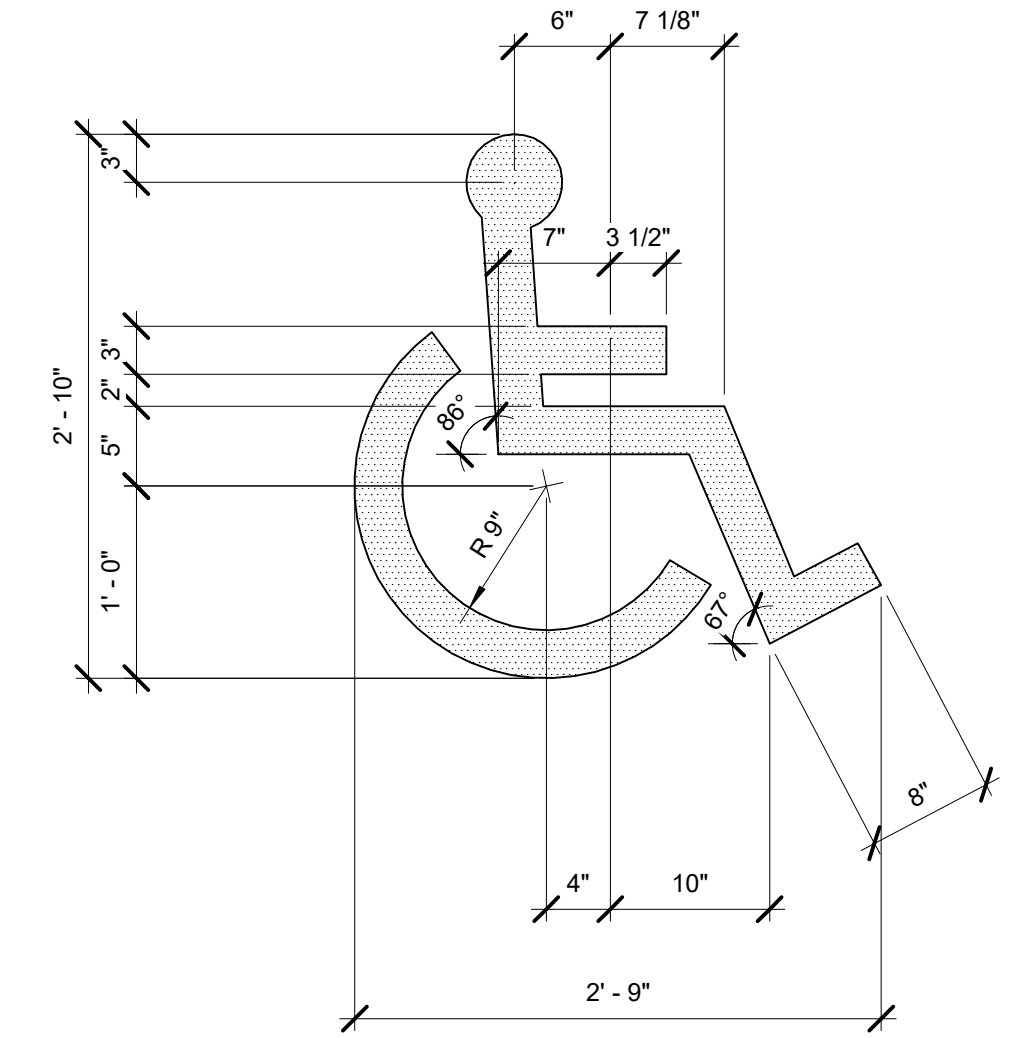




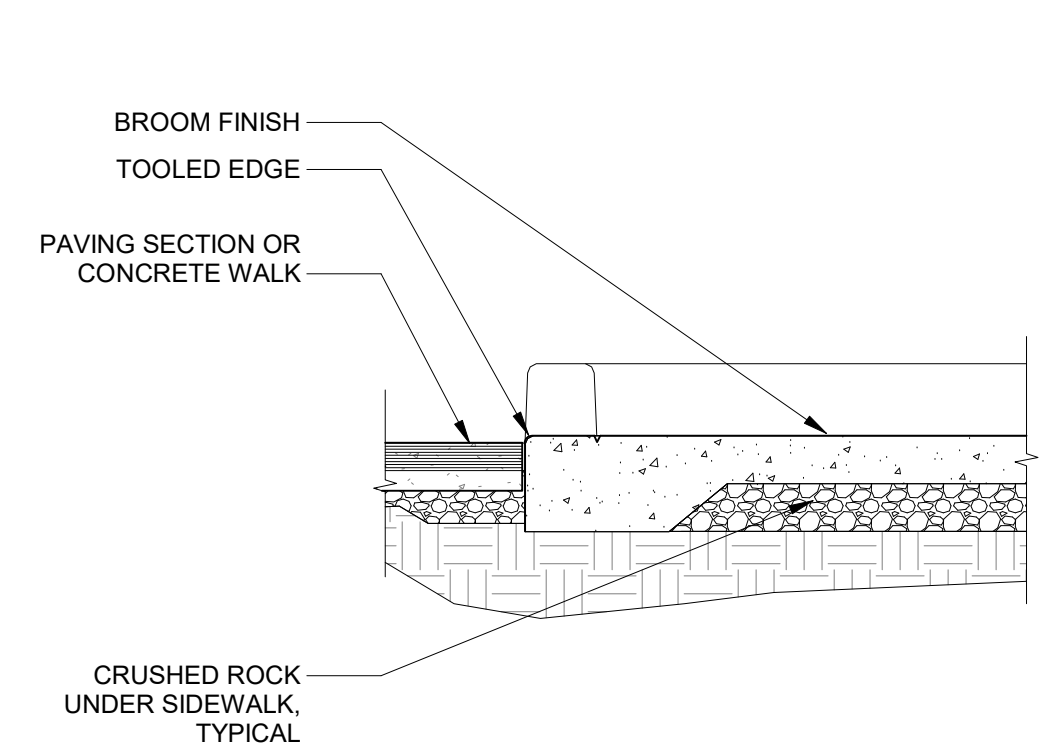
**1** ACCESSIBLE PARKING STALLS - DOUBLE ACCESS  
1/4" = 1'-0"



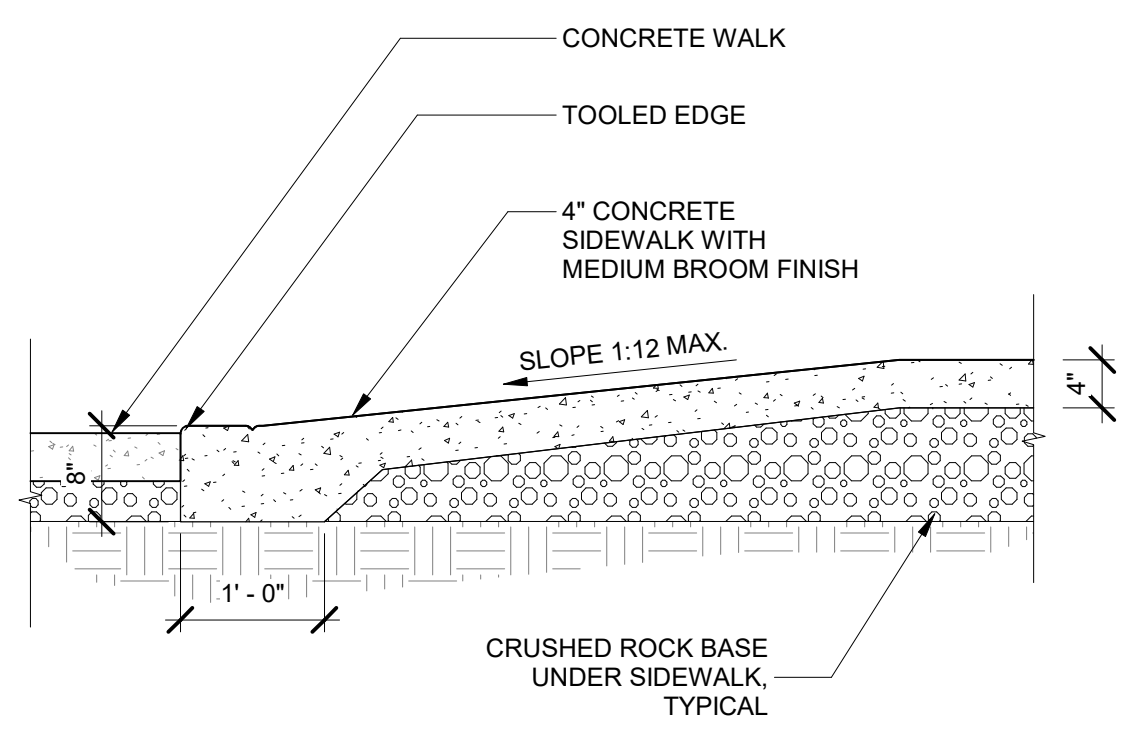
**3** ACCESSIBLE SIDEWALK RAMP  
1/4" = 1'-0"



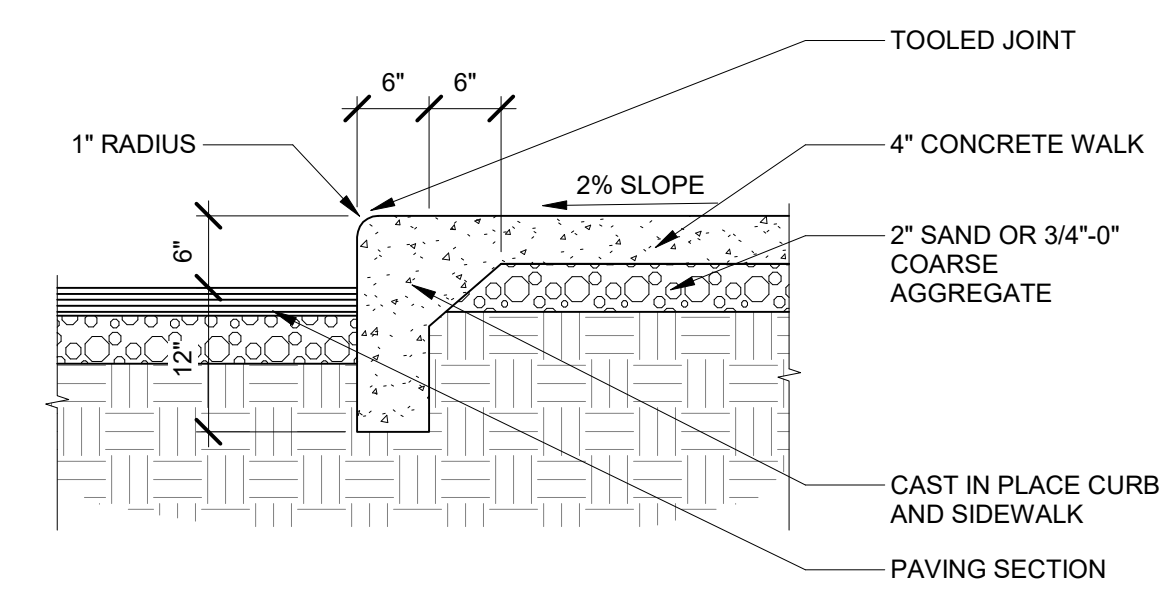
**4** INTERNATIONAL ACCESSIBLE SYMBOL  
1" = 1'-0"



**6** SIDEWALK FLUSH WITH PAVING  
3/4" = 1'-0"

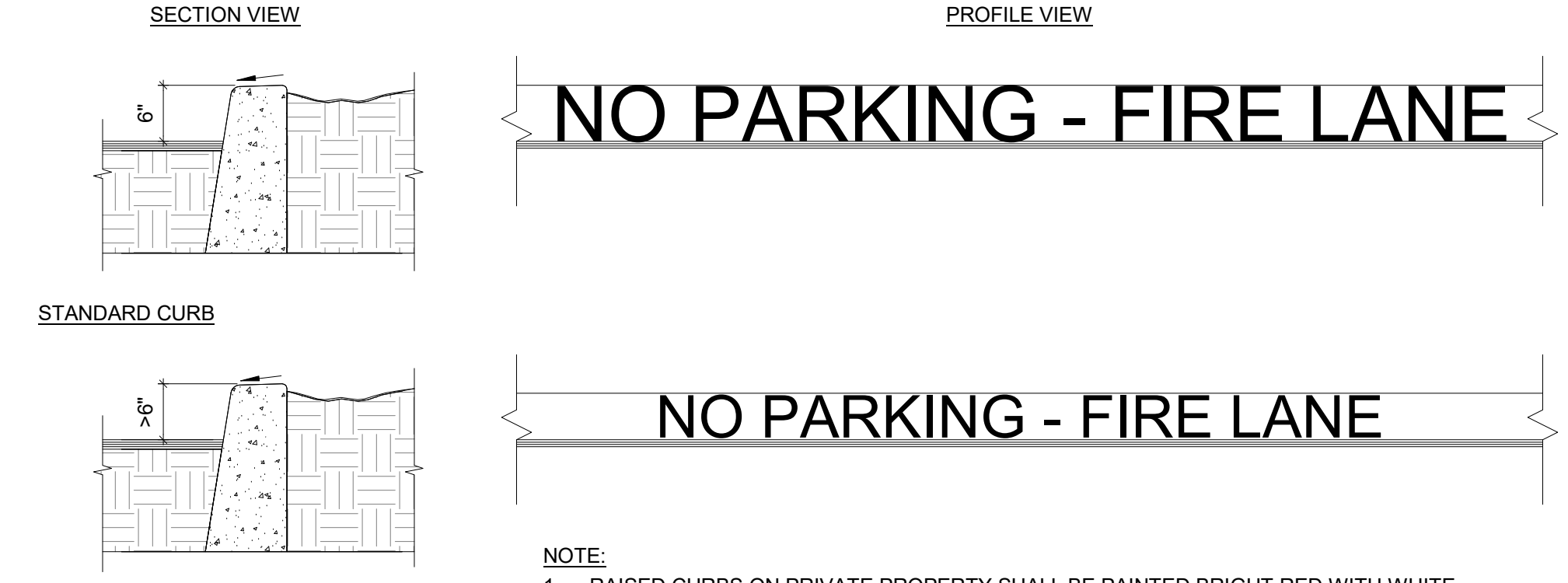


**7** SIDEWALK RAMP  
3/4" = 1'-0"

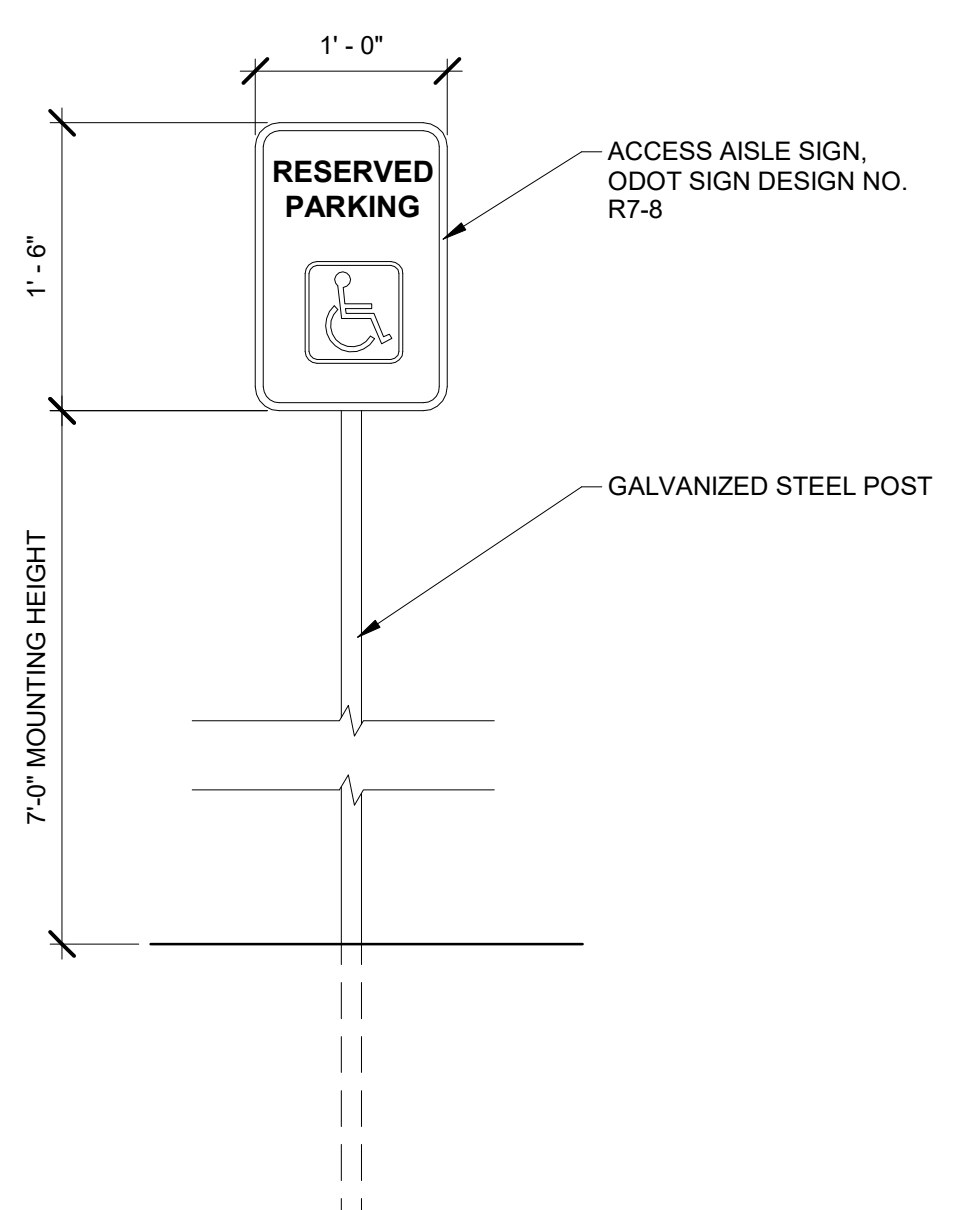


**NOTE:**  
- CONCRETE TO HAVE STRENGTH OF 3,000 PSI IN 28 DAYS, 2" TO 4" SLUMP  
- PROVIDE EXPANSION JOINTS AT 20'-0" O.C. ALIGN CURB AND WALK JOINTS  
- PROVIDE CONTROL JOINTS IN WALK AT 9'-0" O.C.

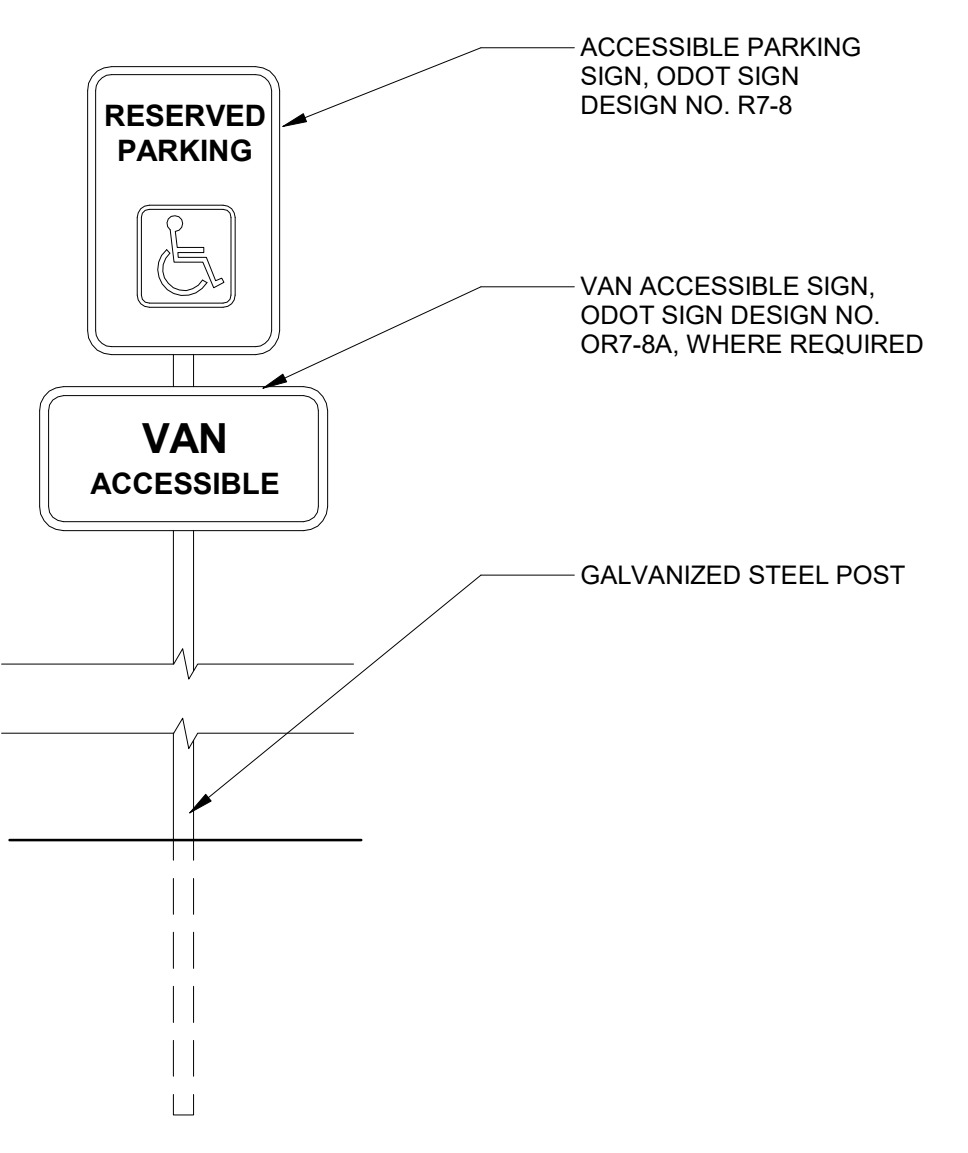
**8** MONOLITHIC CURB AND SIDEWALK  
3/4" = 1'-0"



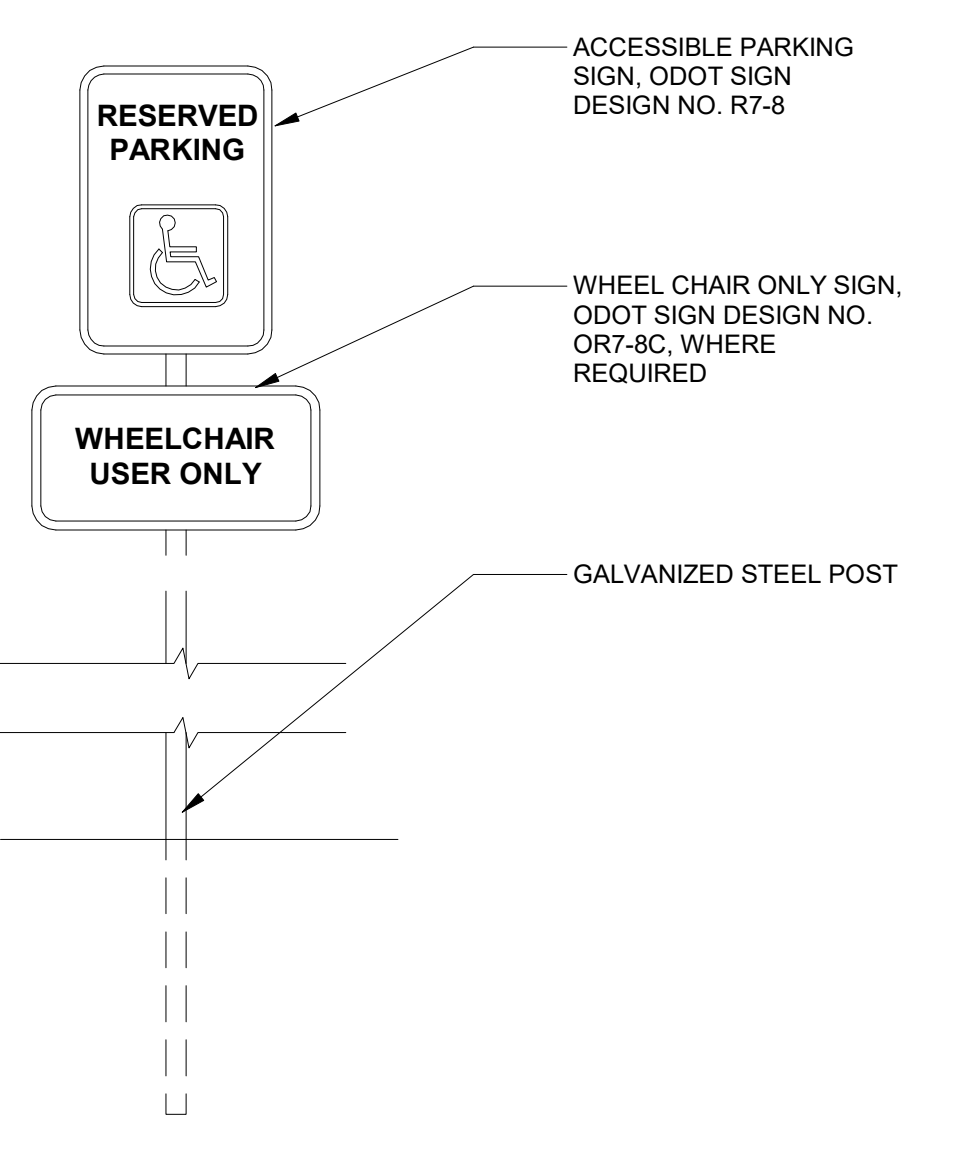
**9** FIRE LANE CURB  
3/4" = 1'-0"



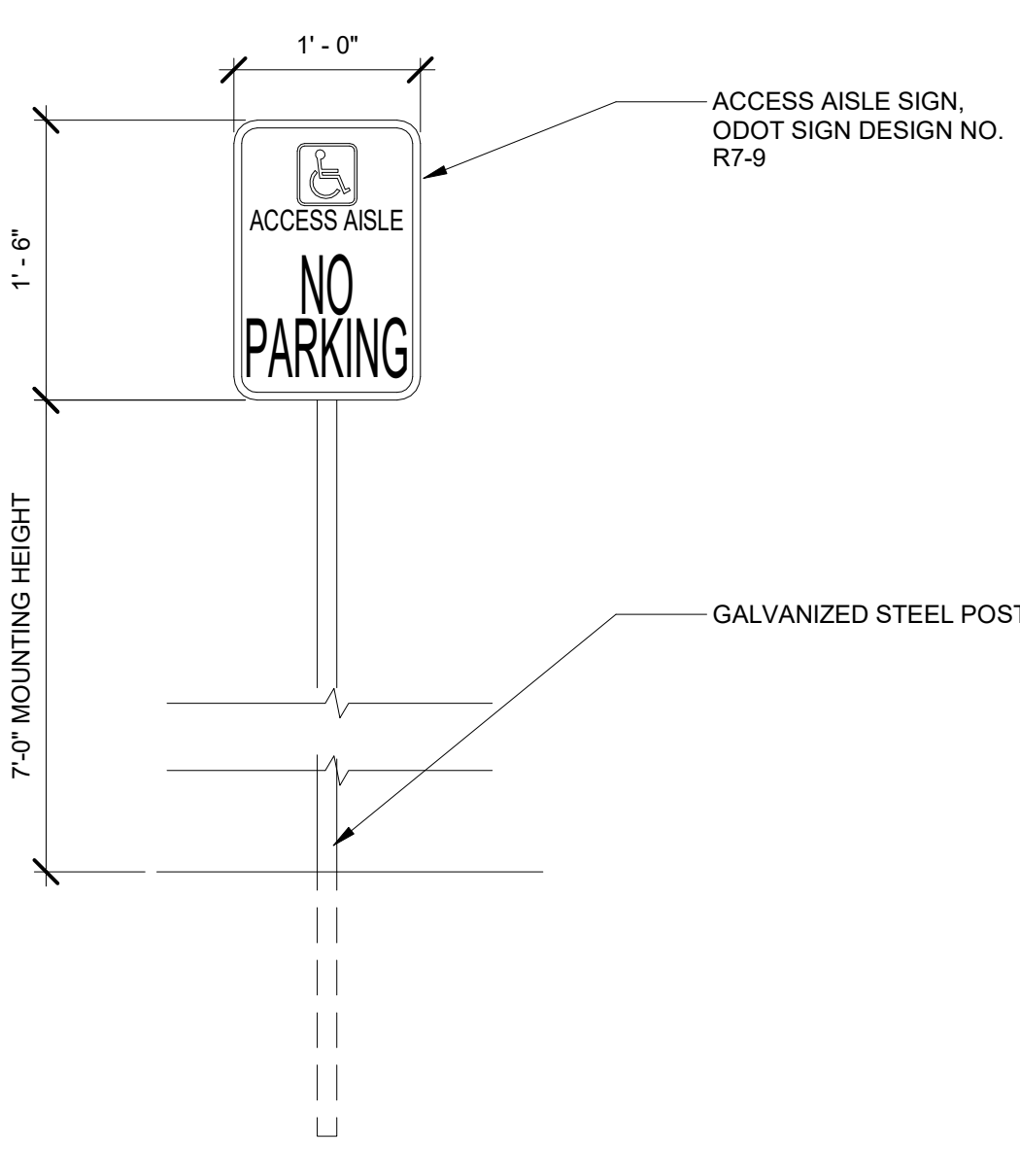
**11** ACCESSIBLE PARKING SIGNAGE  
1" = 1'-0"



**12** ACCESSIBLE PARKING SIGNAGE - VAN ACCESSIBLE  
1" = 1'-0"



**13** ACCESSIBLE PARKING SIGN - WHEELCHAIR  
1" = 1'-0"



**14** ACCESSIBLE PARKING SIGN - ACCESS AISLE  
1" = 1'-0"

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**SITE DETAILS**

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**GENERAL NOTES - FLOOR PLANS**

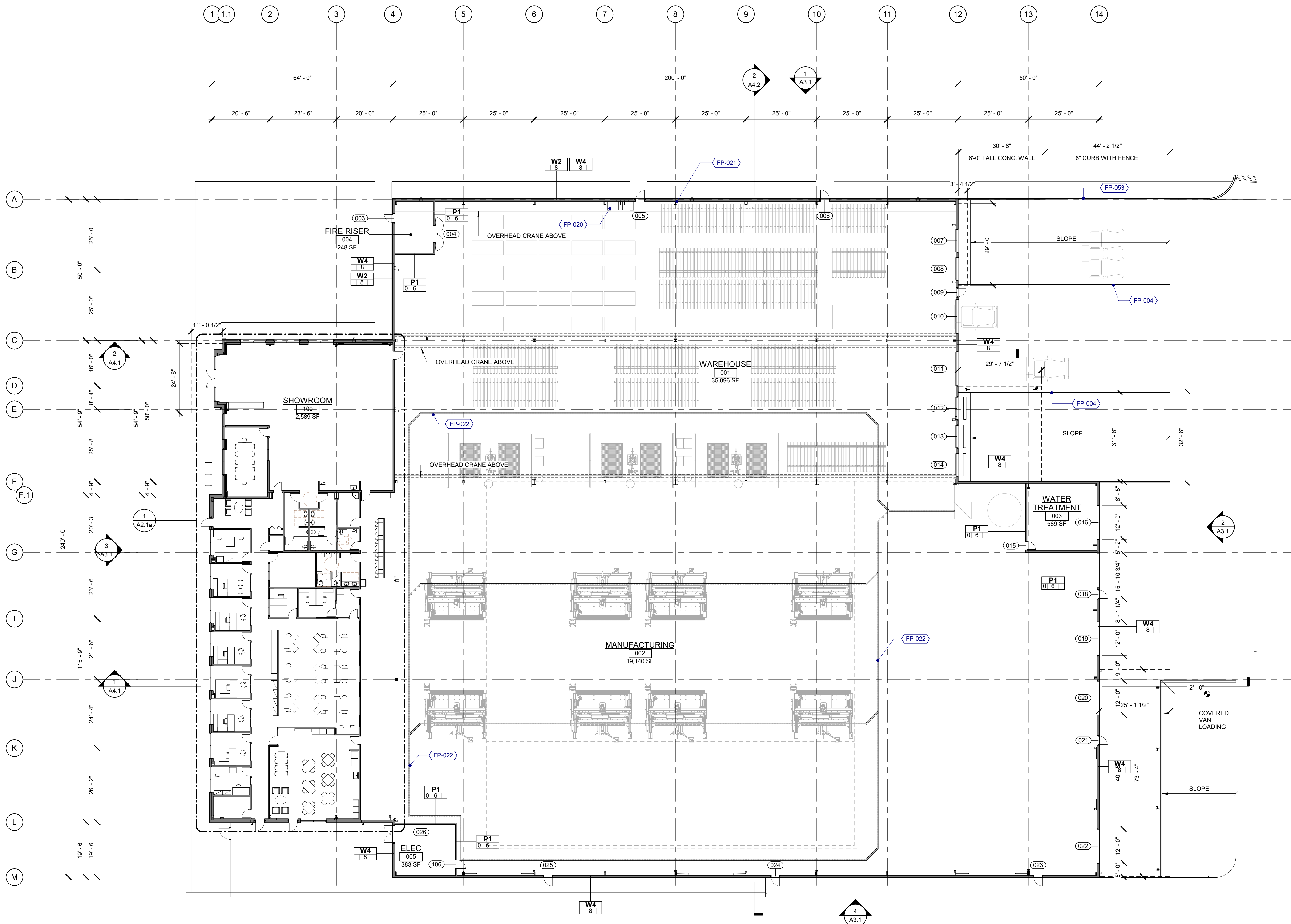
- REFER TO SHEET G0.1 FOR "PROJECT NOTES" APPLICABLE TO ALL PORTIONS OF THE WORK.
- PRIOR TO FRAMING GENERAL CONTRACTOR TO VERIFY PLUMBING, PIPES, CONDUIT, DUCTWORK, ELECTRICAL DEVICES, CASEWORK, FIXTURES, ETC. HAVE BEEN COORDINATED. UNCOORDINATED WALL SIZES SHALL BE REINSTALLED SOLELY AT CONTRACTOR'S EXPENSE.
- SEE SHEETS G0.4 FOR WALL, FLOOR AND ROOF ASSEMBLIES.
- SEE FIRE/LIFE SAFETY SHEETS BEGINNING ON A2.0 FOR LOCATIONS OF FIRE EXTINGUISHERS, EXIT SIGNS, ETC.
- REFER TO STRUCTURAL DRAWINGS FOR COLUMNS, SHEAR WALL, BEAM SIZES AND SO ON.
- VERIFY AND COORDINATE SLAB PENETRATIONS INCLUDING SLEEVES & BLOCKOUTS AS REQUIRED FOR PLUMBING, MECHANICAL, ELECTRICAL, ETC. NOTIFY ARCHITECT OF ANY CONFLICTS OR DISCREPANCIES.
- USE THE FOLLOWING DEFAULT ASSEMBLY TYPES UNLESS OTHERWISE NOTED ON THE DRAWINGS:
 

A. EXTERIOR WALLS	TYPE W1 / 8" CORE
B. INTERIOR PARTITIONS	TYPE P1 / 3.5" CORE
C. INTERIOR STAIR PARTITIONS	TYPE P2 / 6" CORE
- POWER & DATA OUTLETS INSTALLED 18" AFF. UNO.
- PARTITIONS WITH SOLID FILL PATTERN DENOTE ACOUSTICALLY RATED, UNO. PROVIDE ACOUSTICAL SEALANT, BATTIS, PUTTY PADS, ETC.
- FINISH NOTES:
 

A. OFFICE AREAS - GYPSUM BOARD WALL SURFACES TO RECEIVE A LEVEL 4 FINISH, SMOOTH TEXTURE PER AWCJ STANDARDS. APPLY A DRYWALL PRIMER (SHEETROCK BRAND "FIRST COAT" OR APPROVED) PRIOR TO FINAL FINISH COAT TO MINIMIZE SURFACE TEXTURE VARIATIONS.
B. WAREHOUSE AREAS - GYPSUM BOARD WALL SURFACES TO BE TAPED/ MUDDED ONLY, UNO.

**KEYNOTES**

- FP-004 CONCRETE SITE WALL WITH 42" CONCRETE GUARDRAIL WHERE CHANGE IN GRADE IS OVER 30"
- FP-020 WALL MOUNTED LONG TERM BIKE PARKING
- FP-021 PRE-ENGINEERED METAL BUILDING FRAME, SEE PEMB SUPPLIER
- FP-022 6" TRENCH DRAIN
- FP-053 FENCE, ORNAMENTAL BLACK BAR, 6'-0" H



**1** FIRST FLOOR PLAN  
1/16" = 1'-0"

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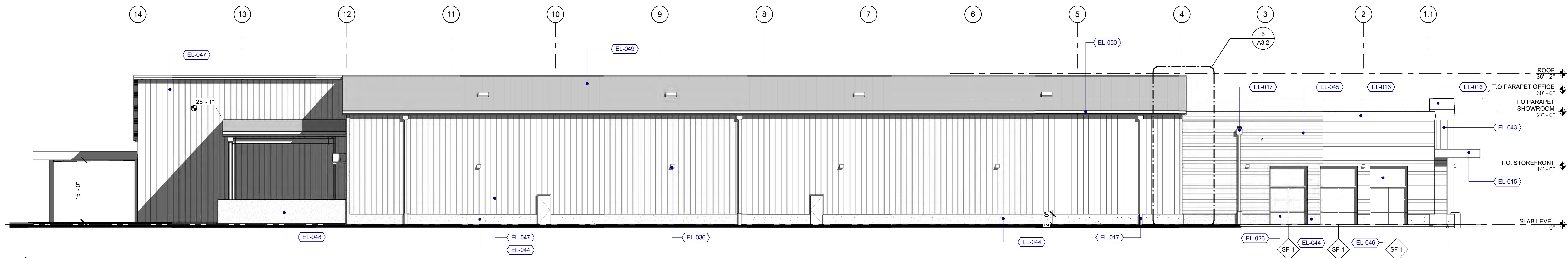
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**FLOOR PLAN**

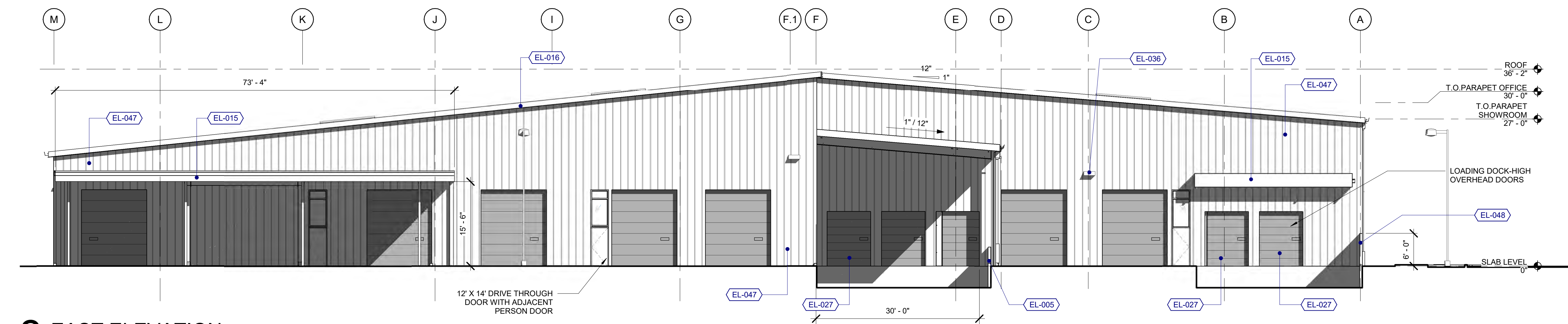
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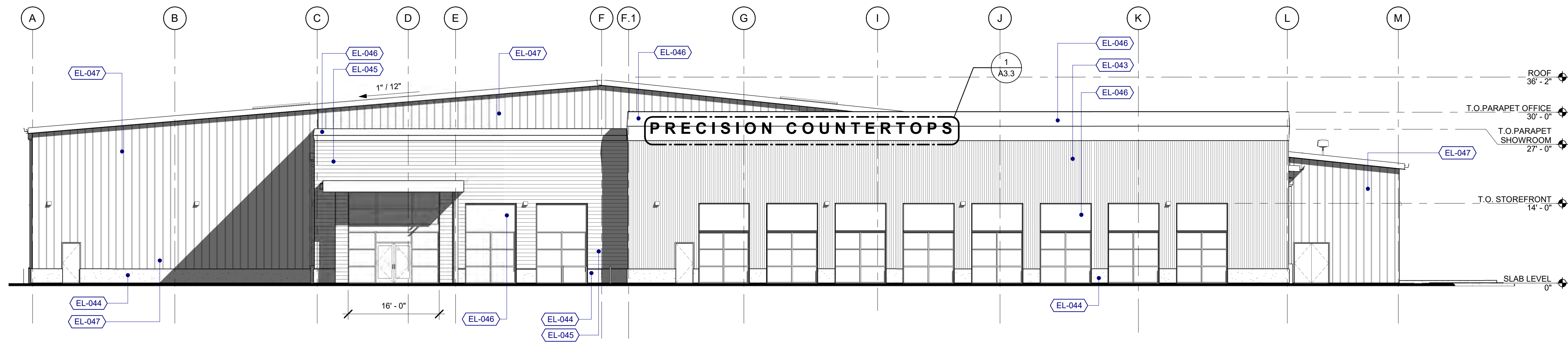




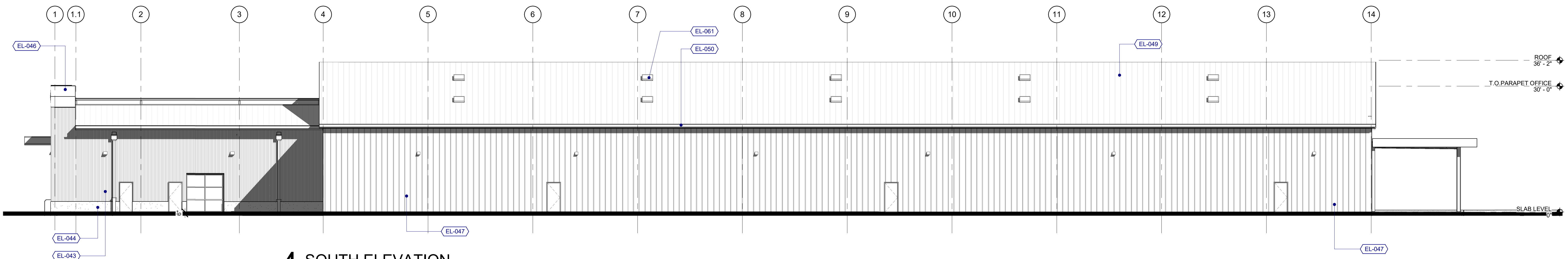
**1 NORTH ELEVATION**  
3/32" = 1'-0"



**2 EAST ELEVATION**  
3/32" = 1'-0"



**3 WEST ELEVATION**  
3/32" = 1'-0"



**4 SOUTH ELEVATION**  
3/32" = 1'-0"

**KEYNOTES**

- EL-005 CONCRETE SITE WALL - 6" W X 30" H
- EL-015 STEEL FRAMED CANOPY
- EL-016 METAL CAP FLASHING
- EL-017 SCUPPER AND DOWNSPOUT
- EL-026 STOREFRONT SYSTEM, THERMALLY INSULATED
- EL-027 SECTIONAL DOOR, VERTICAL LIFT
- EL-036 WALL PACK SITE LIGHTING
- EL-043 INSULATED METAL PANEL - KS SERIES - WP1
- EL-044 INSULATED METAL PANEL - KS SERIES GRANITSTONE - WB1
- EL-045 METAL PANEL - AEP FLEX - WP2
- EL-046 INSULATED METAL PANEL - KS SERIES - WP3
- EL-047 METAL PANEL - VP PANEL RIB WALL PANEL - WP4
- EL-048 6'-0" CONCRETE SCREENING WALL
- EL-049 ROOF METAL PANEL - VP SSR PANEL - R1
- EL-050 CONTINUOUS GUTTER
- EL-061 SKYLIGHT

**MATERIAL LEGEND**

- ROOF (R1)  
MATERIAL: INSULATED ROOF PANEL  
MFR: VARCO PRUDEN  
STYLE: 24 GA SSR ROOF PANEL  
COLOR: COOL DARK BRONZE
- WALL (OFFICE AREA) (WP1)  
MATERIAL: INSULATED WALL PANEL  
MFR: KINGSPAN OR SIM.  
STYLE: KS SERIES: MINI RIB  
COLOR: COOL ZINC GRAY
- WALL (LOBBY AREA) (WP2)  
MATERIAL: 30 GA GALVALUME  
MFR: AEP SPAN  
STYLE: FLEX SERIES 1.2FX10-12  
COLOR: COOL DARK BRONZE
- WALL (ACCENT PANEL) (WP3)  
MATERIAL: METAL  
MFR: KINGSPAN OR SIM  
STYLE: FLAT PANEL  
COLOR: COOL DARK BRONZE
- WALL AT MANUFACTURING AND STORAGE AREA (WP4)  
MATERIAL: PANEL RIB WALL SYSTEM  
MFR: VARCO PRUDEN  
STYLE: 26 GA "R" PANEL  
COLOR: COOL ZINC GRAY
- WALL BASE (WP2)  
MATERIAL: INSULATED WALL PANEL  
MFR: KINGSPAN OR SIM.  
STYLE: KS SERIES: GRANITSTONE QUARTZ  
COLOR: TETON GRAY  
(Min. 1.5" Extruded from the wall panel system)
- DOOR, WINDOW, FRAME, CANOPIES, PARAPET CAP AND FLASHING (M1)  
MATERIAL: METAL  
FINISHES: ANODIZED FINISH  
COLOR: DARK BRONZE
- SIGN COLOR (P1)  
MATERIAL: METAL  
MFR: BEHR OR SIM.  
FINISHES: SEMI GLOSS  
COLOR: DELICATE WHITE

Client/ Owner:  
**PRECISION COUNTERTOPS**

26200 SW 95th Ave,  
Wilsonville OR 97070

Project:  
**PRECISION COUNTERTOPS**

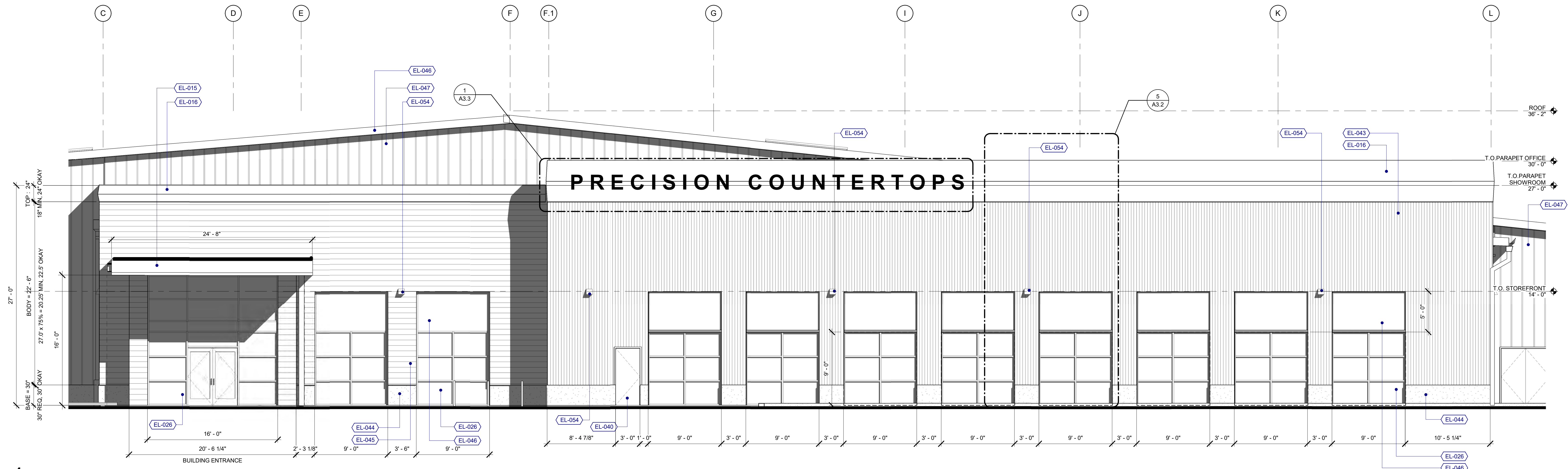
SW Garden Acres Road  
Wilsonville OR 97070

Sheet Title:  
**BUILDING ELEVATIONS**

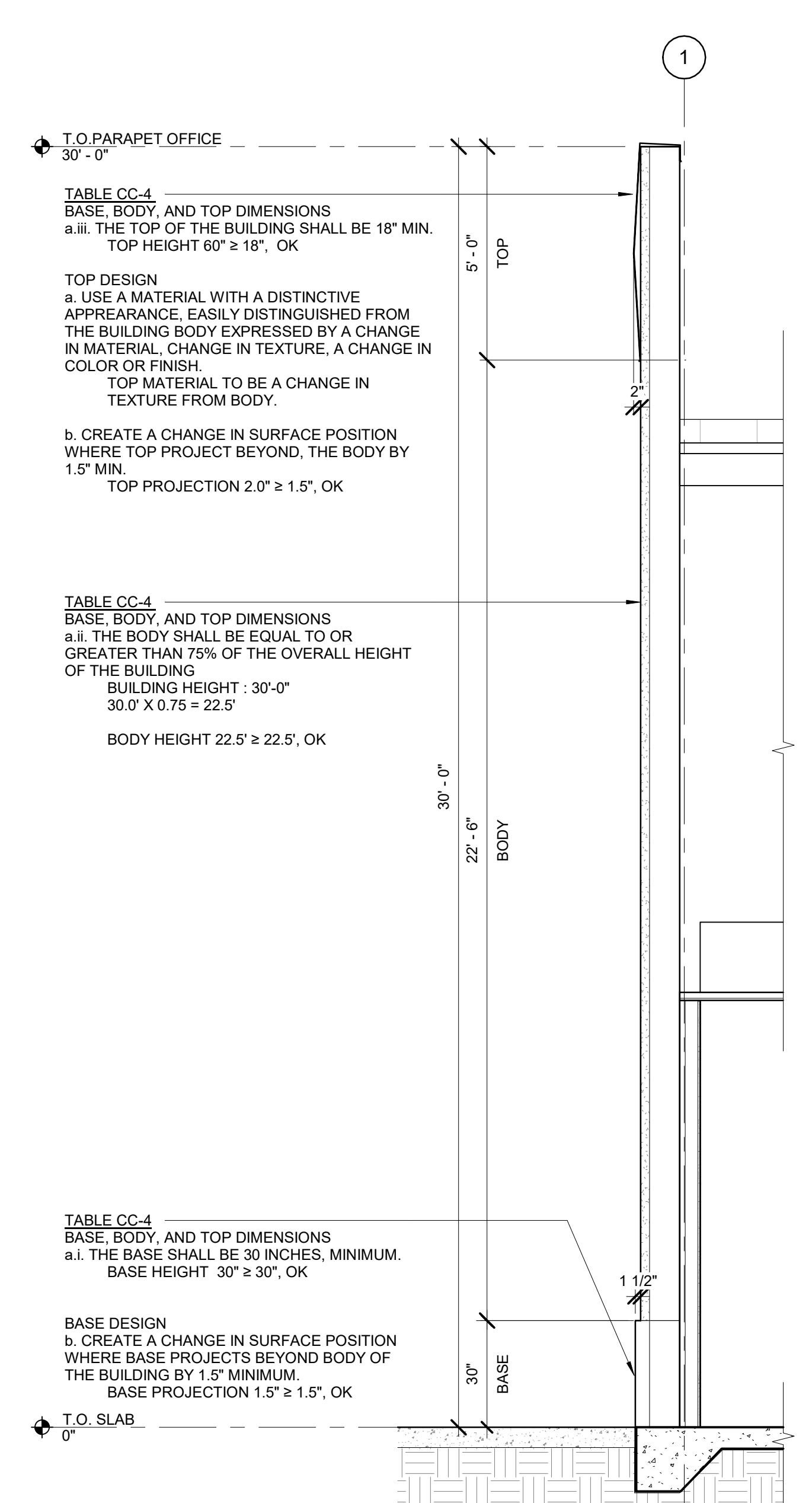
Revisions:

#	Description	Date

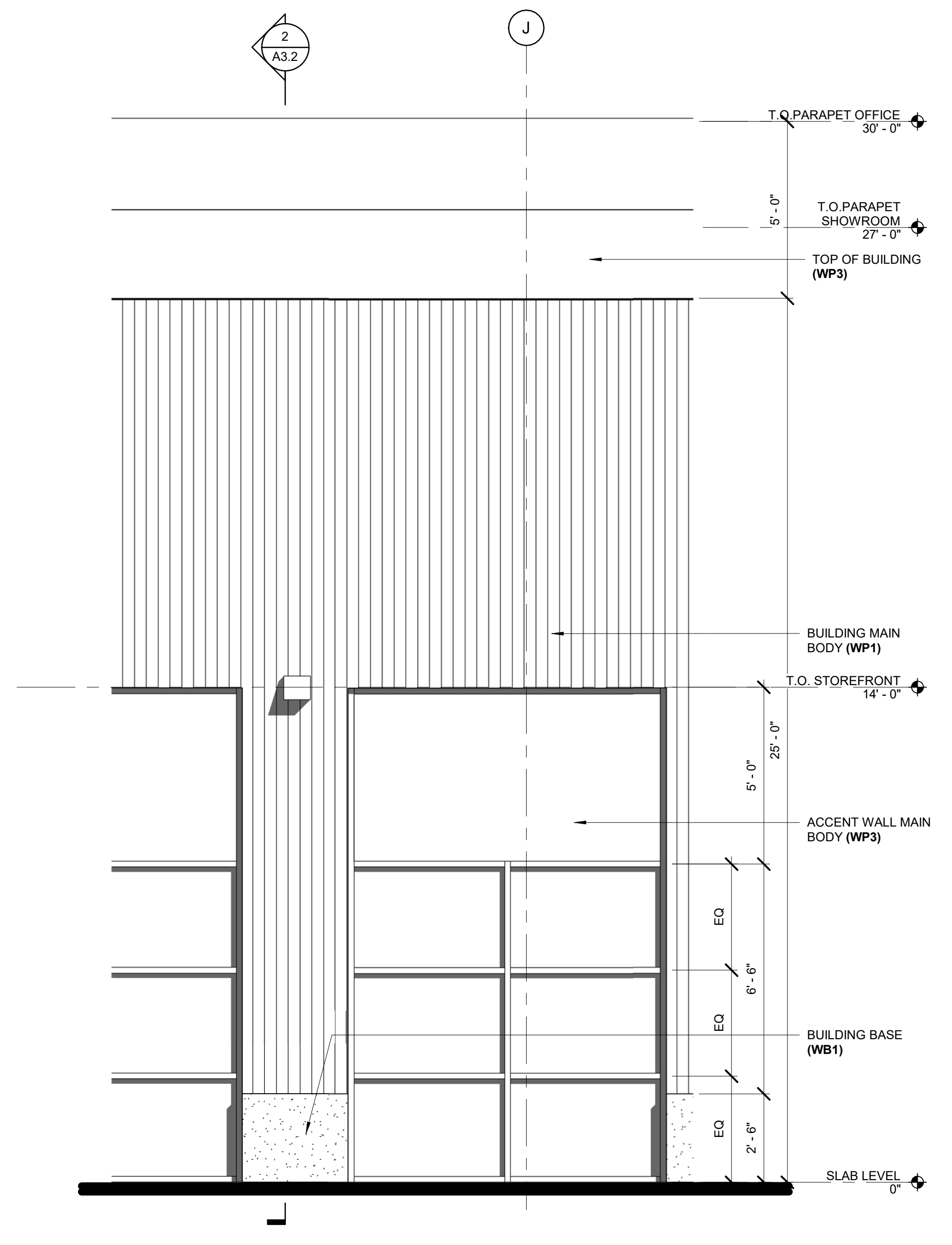




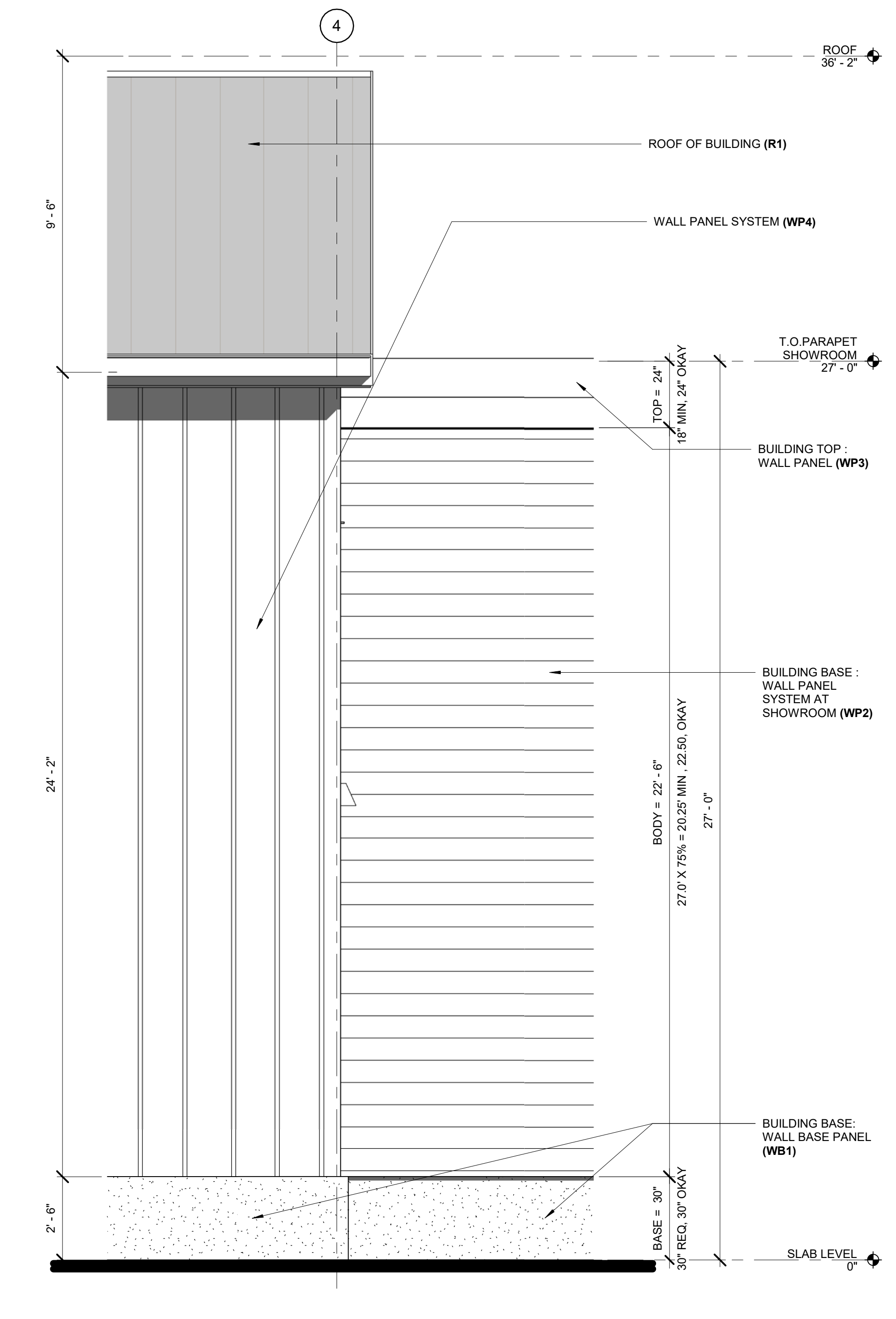
**1 ADDRESSING STREET FACADE**  
 3/16" = 1'-0"



**2 FRONT DIMENSION WALL SECTION**  
 3/8" = 1'-0"



**5 FRONT BUILDING DIMENSION**  
 3/8" = 1'-0"



**6 BUILDING (SIDE) DIMENSION**  
 3/8" = 1'-0"

- KEYNOTES**
- EL-015 STEEL FRAMED CANOPY
  - EL-016 METAL CAP FLASHING
  - EL-026 STOREFRONT SYSTEM, THERMALLY INSULATED
  - EL-040 PEDESTRIAN DOOR, HOLLOW METAL
  - EL-043 INSULATED METAL PANEL - KS SERIES - WP1
  - EL-044 INSULATED METAL PANEL - KS SERIES GRANISTONE - WB1
  - EL-045 METAL PANEL - AEP FLEX - WP2
  - EL-046 INSULATED METAL PANEL - KS SERIES - WP3
  - EL-047 METAL PANEL - VP PANEL RIB WALL PANEL - WP4
  - EL-054 SM4 EXTERIOR WALL SCIENCE
- TABLE CC-4 BUILDING DESIGN**
- CC4.2 PRIMARY BUILDING ENTRANCE**
- REQUIRED CANOPY**
- 15.0' VERTICAL CLEARANCE MIN. REQ
  - 16.0' CLEAR PROVIDED, OKAY
- ALL WEATHER PROTECTION ZONE 15.0' X 8.0' MIN REQ.**  
 24'-6" X 8'-0" PROVIDED, OKAY
- TRANSPARENCY**
- WALLS AND DOORS AT PRIMARY BUILDING ENTRANCE 65% TRANSPARENT MIN.**  
 WALL OF PRIMARY ENTRANCE = 320 SF  
 GLAZING PROVIDED AT PRIMARY ENTRANCE = 256 SF  
 256 / 320 = 80% PROVIDED > 65% REQ, OKAY
- BUILDING FRONTAGE**
- ADDRESSING STREET WALL FRONTAGE = 170'-0" (100' MIN. REQUIRED)**  
**CANOPY AT BUILDING FRONTAGE: 24'-6" (14% PROVIDED) (10% MIN. REQUIRED)**
- BUILDING FRONTAGE TRANSPARENCY**  
 BUILDING WALL SF AT THE ADDRESSING STREET = 4908 SF  
 GLAZING PROVIDED: 256+ 729= 985 SF, 20% PROVIDED (20% MIN REQUIRED)
- REFER TO MATERIAL LEGEND ON A3.1**

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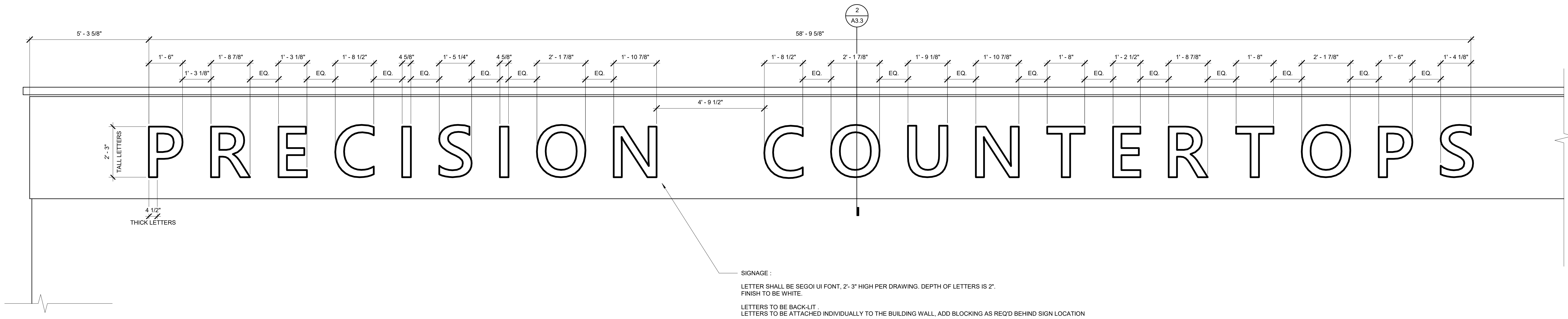
Project:  
**PRECISION COUNTERTOPS**

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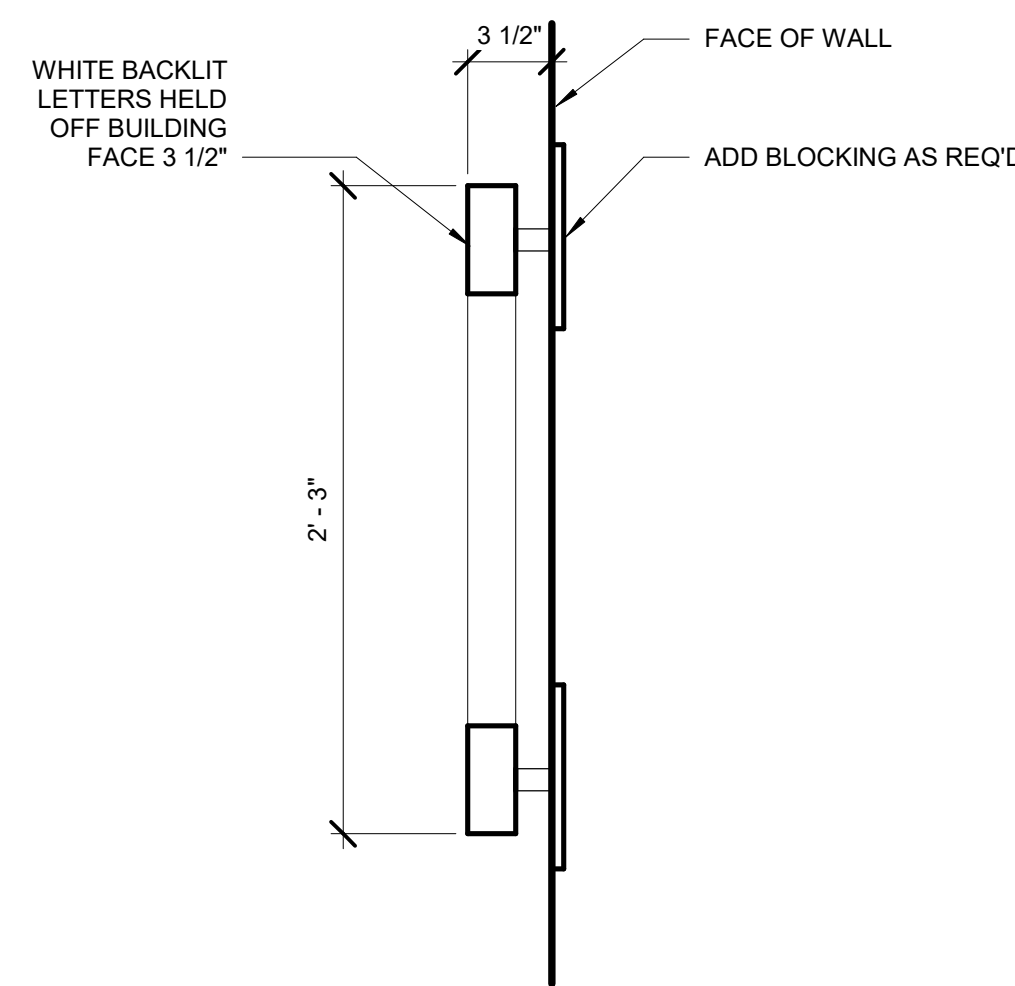
Sheet Title:  
**SIGNAGE, ENTRY, GLAZING CALCULATION**

Revisions:

#	Description	Date



**1 BUILDING SIGNAGE DETAIL**  
1/2" = 1'-0"



**2 SECTION THROUGH SIGNAGE**  
1 1/2" = 1'-0"

**BUILDING SIGNAGE CALCULATIONS**

LINEAR LENGTH OF FACADE 170'  
SIGN AREA ALLOWED= 36 SF + (((170'-72')/24)x12)= 85 SF

SIGN AREA: COMBINED AREA OF ALL BACKLIT LETTERS : 40 SF < 85 SF (OKAY)

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**PRECISION  
COUNTERTOPS**

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Project:

**PRECISION  
COUNTERTOPS**

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Sheet Title:

**SIGNAGE**

Revisions:

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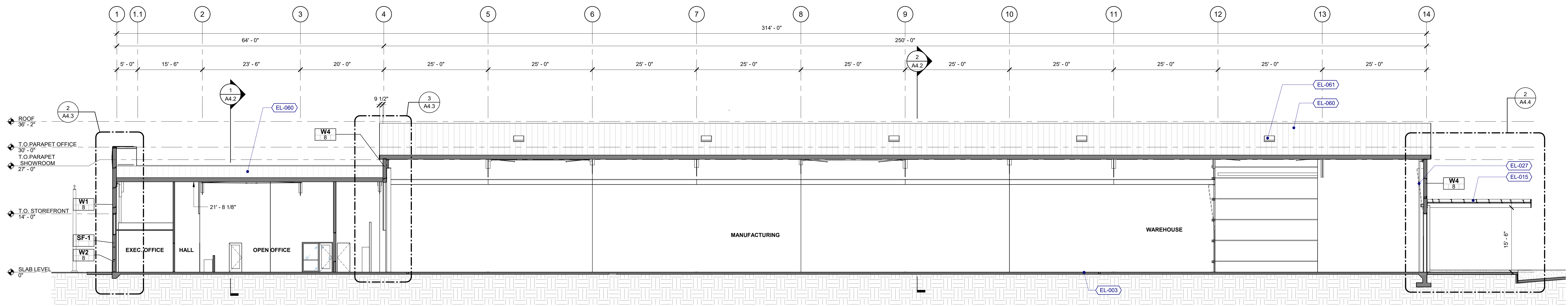
Job Number: 121036

Sheet

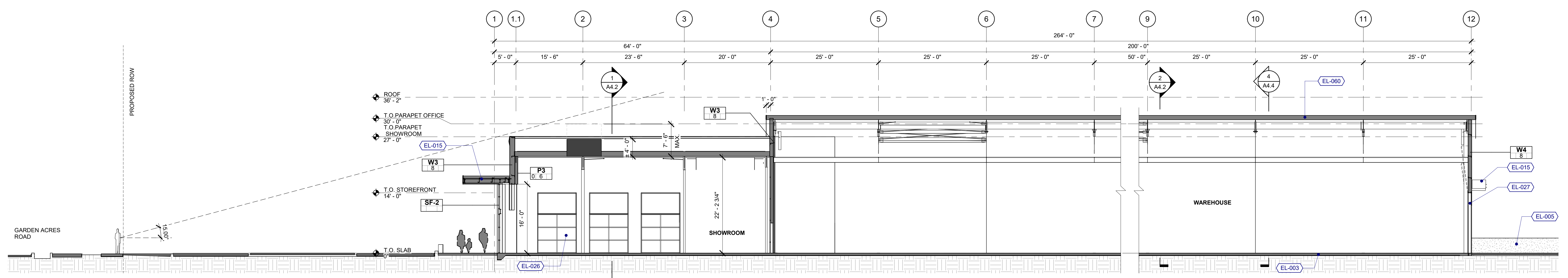


**KEYNOTES**

- EL-003 CONCRETE SLAB ON GRADE OVER GRAVEL BASE - SEE STRUCTURAL
- EL-005 CONCRETE SITE WALL, 6"W X 30"H
- EL-015 STEEL FRAMED CANOPY
- EL-026 STOREFRONT SYSTEM, THERMALLY INSULATED
- EL-027 SECTIONAL DOOR, VERTICAL LIFT
- EL-060 STANDING SEAM METAL PANEL ROOF, SEE ROOF PLAN FOR ASSEMBLY
- EL-061 SKYLIGHT
- EL-062 PRE ENGINEERED METAL BUILDING FRAME, SEE PEMB SUPPLIER



**1** CROSS SECTION THROUGH FABRICATION  
 1" = 10'-0"



**2** CROSS SECTION THROUGH ENTRY  
 1" = 10'-0"

Client/ Owner:  
**PRECISION COUNTERTOPS**  
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 Wilsonville OR 97070  
 Project:  
**PRECISION COUNTERTOPS**  
 SW Garden Acres Road  
 Wilsonville OR 97070

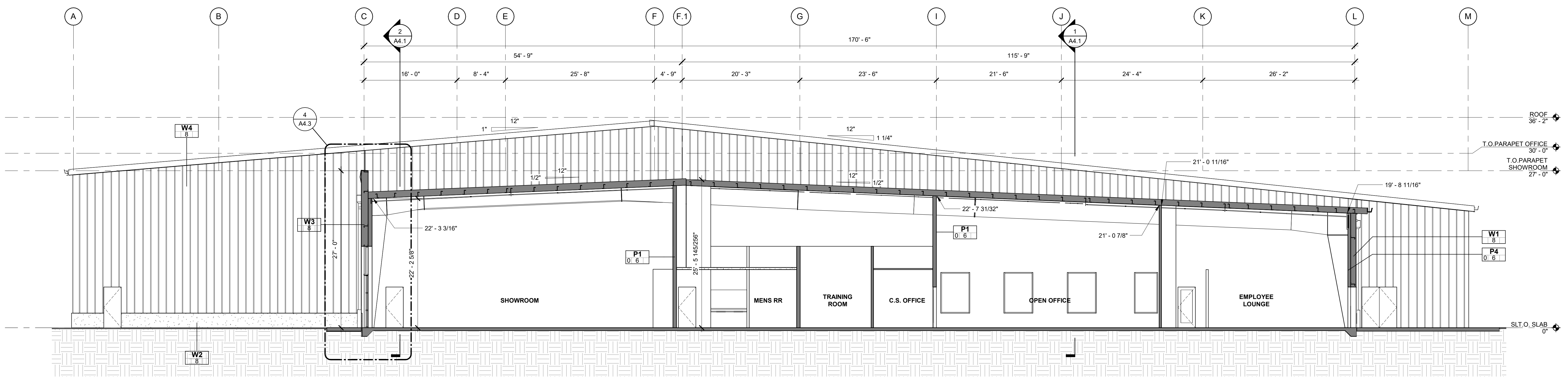
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**BUILDING SECTIONS**

Revisions:

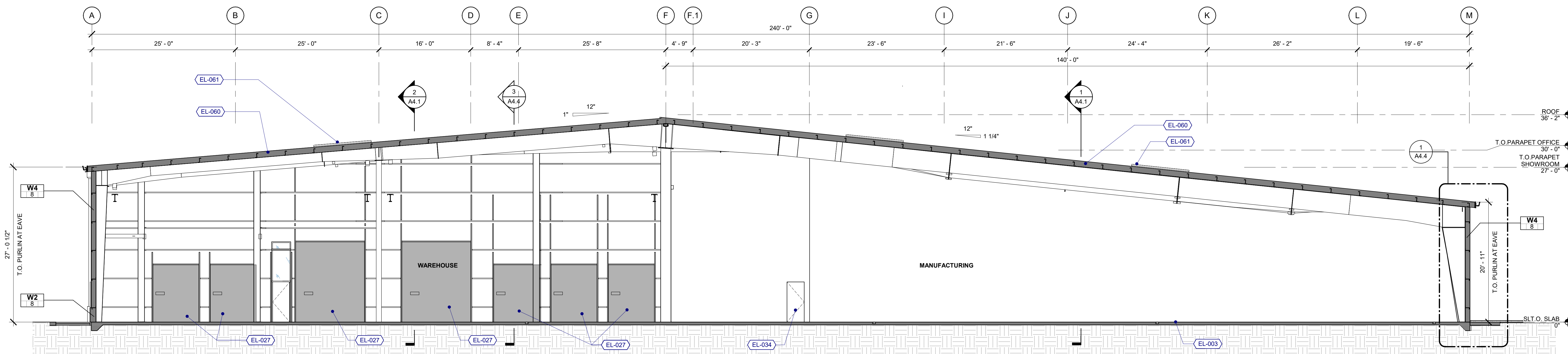
#	Description	Date

**KEYNOTES**

- EL-003 CONCRETE SLAB ON GRADE OVER GRAVEL BASE - SEE STRUCTURAL
- EL-027 SECTIONAL DOOR, VERTICAL LIFT
- EL-034 PEDESTRIAN DOOR, HOLLOW METAL
- EL-060 STANDING SEAM METAL PANEL ROOF, SEE ROOF PLAN FOR ASSEMBLY
- EL-061 SKYLIGHT
- EL-062 PRE ENGINEERED METAL BUILDING FRAME, SEE PEMB SUPPLIER



**1** CROSS SECTION THROUGH OFFICE  
1/8" = 1'-0"



**2** CROSS SECTION THROUGH STORAGE  
1/8" = 1'-0"

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**PRECISION COUNTERTOPS**

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Project:

**PRECISION COUNTERTOPS**

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Sheet Title:

**BUILDING SECTIONS**

Revisions:

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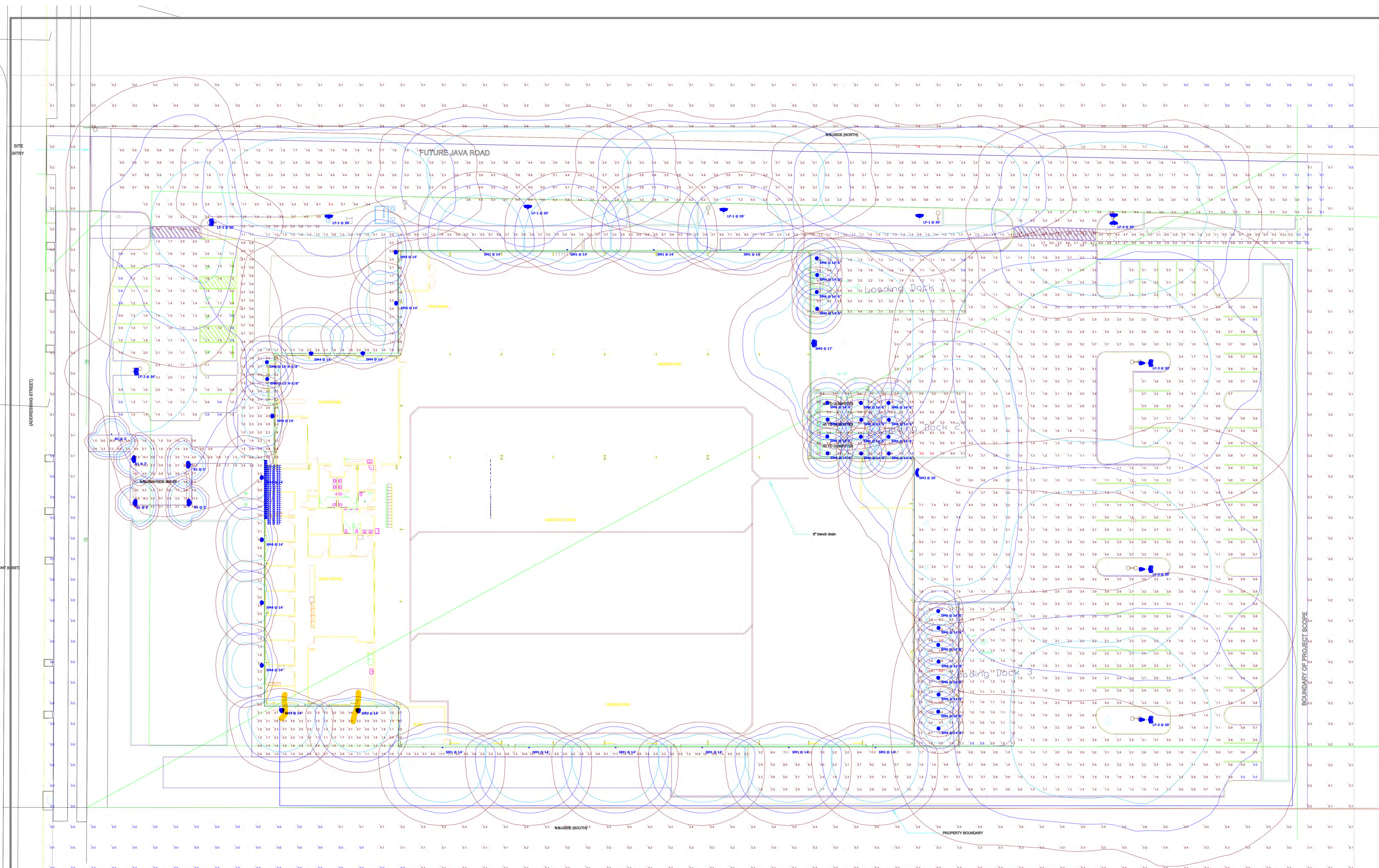
Job Number: 121036

Sheet









Precision Countertops

Statistics						
Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
Future Java Road	+	2.8 fc	7.4 fc	0.1 fc	74.0:1	28.0:1
Loading Dock 1	+	2.7 fc	10.9 fc	0.9 fc	12.1:1	3.0:1
Loading Dock 2	+	4.8 fc	8.6 fc	1.6 fc	5.4:1	3.0:1
Loading Dock 3	+	2.1 fc	4.9 fc	0.8 fc	6.1:1	2.6:1
Ped Path	+	3.1 fc	34.6 fc	0.2 fc	173.0:1	15.5:1
Prop Line	+	0.2 fc	1.8 fc	0.0 fc	N/A	N/A
West Lot Smaller	+	1.7 fc	6.3 fc	0.8 fc	7.9:1	2.1:1
East Lot-Large	+	2.1 fc	11.2 fc	0.5 fc	22.4:1	4.2:1

Symbol	Label	Manufacturer	Quantity	Color	Notes
BS	Lighting	BRUCE	4	AWA18-CLL4-T14	BRUCE
LF-1	Lighting	MSD	4	MSD LED P1 300-82	MSD Area Luminaire Size 2 P1 Luminaire Package 300W CCT Type 82 Distribution
LF-2	Lighting	MSD	2	MSD LED P1 300-84	MSD Area Luminaire Size 2 P1 Luminaire Package 300W CCT Type 84 Distribution
LF-3	Lighting	MSD	1	-	-
LF-4	Lighting	MSD	1	MSD LED P1 300-84	MSD Area Luminaire Size 2 P1 Luminaire Package 300W CCT Type 84 Distribution
S1	Lighting	MSD	28	MSD LED P1 300-82	MSD Area Luminaire Size 2 P1 Luminaire Package 300W CCT Type 82 Distribution
S2	Lighting	MSD	10	MSD LED P1 300-84	MSD Area Luminaire Size 2 P1 Luminaire Package 300W CCT Type 84 Distribution
S3	Lighting	MSD	1	MSD LED P1 300-84	MSD Area Luminaire Size 2 P1 Luminaire Package 300W CCT Type 84 Distribution
S4	Lighting	MSD	2	MSD LED P1 300-84	MSD Area Luminaire Size 2 P1 Luminaire Package 300W CCT Type 84 Distribution
S5	Lighting	MSD	1	MSD LED P1 300-84	MSD Area Luminaire Size 2 P1 Luminaire Package 300W CCT Type 84 Distribution
S6	Lighting	MSD	1	MSD LED P1 300-84	MSD Area Luminaire Size 2 P1 Luminaire Package 300W CCT Type 84 Distribution

Designer:  
Date: 09/15/2021  
Scale: Not to Scale  
Drawing No.:  
Summary:  
2 of 2

Client/ Owner:  
**PRECISION COUNTERTOPS**

26200 SW 95th Ave,  
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Project:  
**PRECISION COUNTERTOPS**

SW Garden Acres Road  
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Sheet Title:  
**LIGHTING PLAN, STATISTICS, SCHEDULES**

Revisions:  
# Description Date

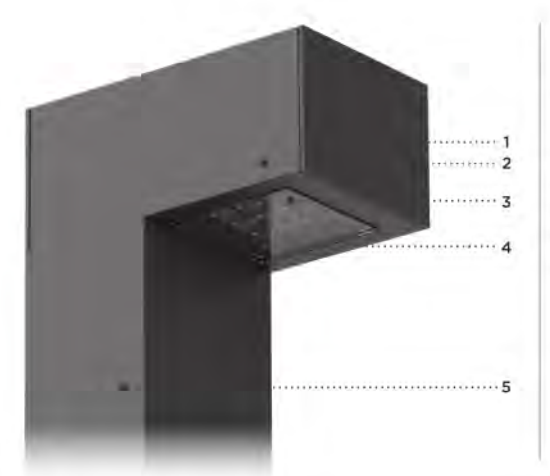
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Sheet



**LUMINIS**

**BVA11B/BVA12B SERIES**  
Bellevue  
BOLLARD

TYPE:	QUANTITY:	PROJECT:
CATALOG NUMBER:	MODEL:	LED LIGHT SELECTION:
	CCT:	VOLTAGE:
	FINISH:	OPTION:
	OPTION:	OPTION:



- 1 Front cover constructed of corrosion resistant aluminum.
- 2 4.5" (114mm) x 4" (102mm) Extruded aluminum optical chamber.
- 3 Available in configurations of 9 LEDs or 18 LEDs.
- 4 Clear tempered glass.
- 5 4.5" (114mm) x 4" (102mm) 6063-T6 aluminum pole, 0.125" wall thickness. All stainless steel hardware.



**MATERIALS**  
Bellevue bollard is made of 6063-T6 extruded aluminum alloy. LED board is assembled on a thick extruded aluminum profile and protected by a clear tempered glass. The acrylic optics provide a wide range of LED type distribution. The driver is mounted inside the fixture which is accessible from the back of the fixture for ease of maintenance.

**ELECTRICAL**  
Standard driver is 120-277V multi-volt compatibility (50-60Hz). Dimmable (0-10V) dimming ready down to 10%. Optional DALI dimming, operating temperatures of -40°C/-40°F to 55°C/131°F. Output over voltage protection, output over current protection, output short circuit protection with auto-recovery.

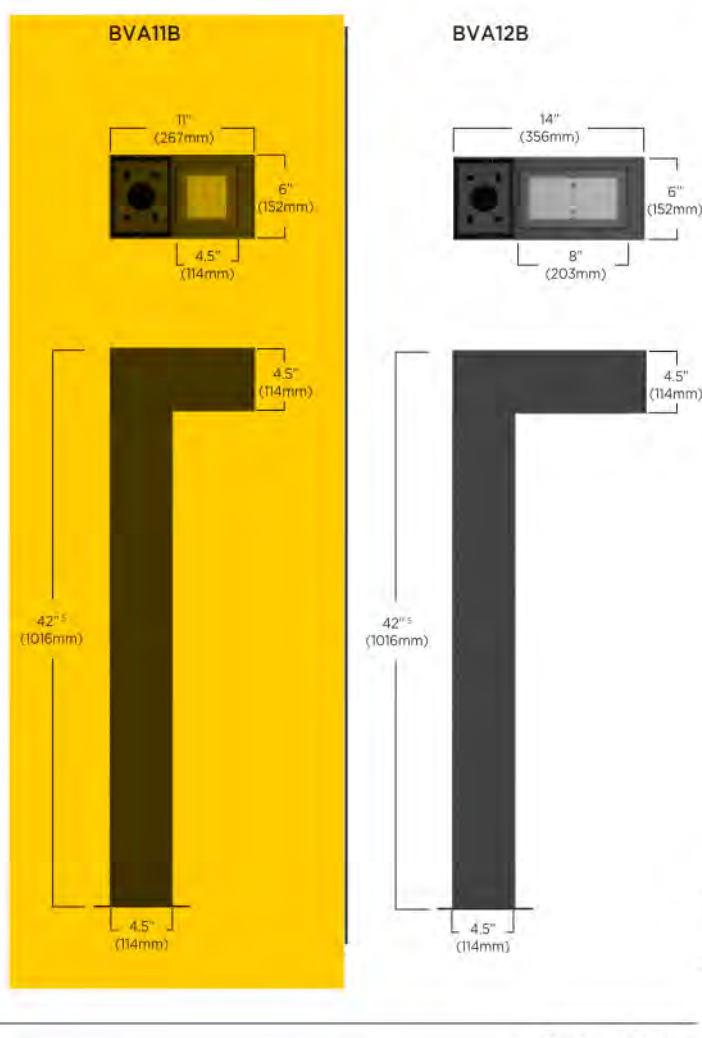
**LED**  
Type A, B, IV light distribution via high performance optical lenses. Offered in 2700K, 3000K, 3500K, 4000K & 5000K. Optional true amber LED for turtle sensitive areas. Wavelengths: 584.5nm to 597nm.

**LIFETIME**  
60,000hrs L70B50 (based on LM-80 report for lumen maintenance).

**FINISH**  
Polyester powder coating is applied through an electrocoat process, and oven cured for long term finish.

**CERTIFICATION**  
Certified and Approved as per CSA C22.2 No. 250 and standard and ANSI/UL 598 standard for wet location. Rated IP65. Rated IK10.  
Photometric testing performed by an independent laboratory in accordance with IES LM-79/80 standards at a Lumen depreciation in accordance with IESNA LM80 standards.

**MOUNTING**  
Maximum weight: 25 lbs (11.3 kg).  
Bellevue is designed for ease of access and installation. The head is secured on a mounting bracket that is accessible from the inside. The base plate is secured with a set of 4x 1/8" dia. 1/8" lg. galvanized hook anchor bolts.



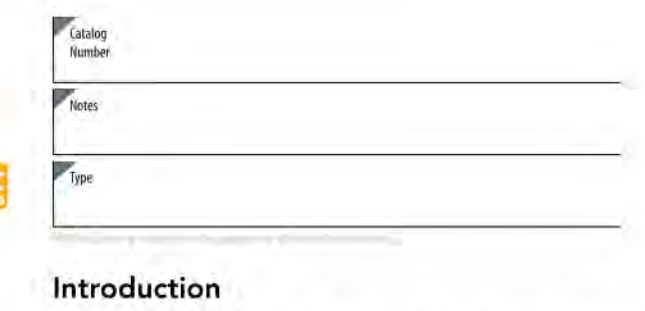
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**RSX2 LED Area Luminaire**



**Specifications**  
EPA (ft²@90°): 0.69 ft² (0.06 m²)  
Length: 29.3" (74.4 cm) (SPA mount)  
Width: 13.4" (34.0 cm)  
Height: 3.0" (7.6 cm) Main Body  
7.2" (18.3 cm) Arm  
Weight: 30.0 lbs (13.6 kg)



**Introduction**  
The new RSX LED Area family delivers maximum value by providing significant energy savings, long life and outstanding photometric performance at an affordable price. The RSX2 delivers 11,000 to 31,000 lumens allowing it to replace 250W to 1000W HID luminaires.  
The RSX features an integral universal mounting mechanism that allows the luminaire to be mounted on most existing drill hole patterns. This "no-drill" solution provides significant labor savings. An easy-access door on the bottom of mounting arm allows for wiring without opening the electrical compartment. A mast arm adaptor, adjustable integral splitters and other mounting configurations are available.

**Ordering Information** EXAMPLE: RSX2 LED P6 40K R3 MVOLT SPA DDBX

Series	Performance Package	Color Temperature	Distribution	Voltage	Mounting
RSX2 LED	P1	40K	R3	MVOLT (120V-277V)	SPA
	P2	40K	R3	MVOLT (120V-277V)	RPA
	P3	50K	R3	MVOLT (120V-277V)	SPA
	P4	40K	R3	MVOLT (120V-277V)	RPA
	P5	40K	R3	MVOLT (120V-277V)	SPA
	P6	40K	R3	MVOLT (120V-277V)	RPA

System	Shipped Installed	Shipped and Networked Sensors/Controls (Factory default settings, see table page 9)	Finish
HS	Interior side-vent	Standard and Networked Sensors/Controls (Factory default settings, see table page 9)	DBRD
PE	Phantom, bottom-vent	Standard and Networked Sensors/Controls (Factory default settings, see table page 9)	DBRD
PEB	Phantom, bottom-vent, black	Standard and Networked Sensors/Controls (Factory default settings, see table page 9)	DBRD
PEF	Phantom, bottom-vent, black, frosted	Standard and Networked Sensors/Controls (Factory default settings, see table page 9)	DBRD
SP	Single face (130, 271, 347)	Standard and Networked Sensors/Controls (Factory default settings, see table page 9)	DBRD
DF	Double face (130, 271, 347)	Standard and Networked Sensors/Controls (Factory default settings, see table page 9)	DBRD
SPDNV	200V Single pack (130V standard)	Standard and Networked Sensors/Controls (Factory default settings, see table page 9)	DBRD
FAO	Field adjustable support	Standard and Networked Sensors/Controls (Factory default settings, see table page 9)	DBRD
DS	Dual switching	Standard and Networked Sensors/Controls (Factory default settings, see table page 9)	DBRD

LITHONIA LIGHTING COMMERCIAL OUTDOOR | One Lithonia Way • Conyers, Georgia 30012 • Phone: 1-800-789-3810 (3786) | www.luminis.com | Lithonia RSX2 Area LED Rev. 01/2023 Page 1 of 8

**RSX2 LED Area Luminaire**



**Specifications**  
EPA (ft²@90°): 0.69 ft² (0.06 m²)  
Length: 29.3" (74.4 cm) (SPA mount)  
Width: 13.4" (34.0 cm)  
Height: 3.0" (7.6 cm) Main Body  
7.2" (18.3 cm) Arm  
Weight: 30.0 lbs (13.6 kg)

**Ordering Information** EXAMPLE: RSX2 LED P6 40K R3 MVOLT SPA DDBX

Series	Performance Package	Color Temperature	Distribution	Voltage	Mounting
RSX2 LED	P1	40K	R3	MVOLT (120V-277V)	SPA
	P2	40K	R3	MVOLT (120V-277V)	RPA
	P3	50K	R3	MVOLT (120V-277V)	SPA
	P4	40K	R3	MVOLT (120V-277V)	RPA
	P5	40K	R3	MVOLT (120V-277V)	SPA
	P6	40K	R3	MVOLT (120V-277V)	RPA

System	Shipped Installed	Shipped and Networked Sensors/Controls (Factory default settings, see table page 9)	Finish
HS	Interior side-vent	Standard and Networked Sensors/Controls (Factory default settings, see table page 9)	DBRD
PE	Phantom, bottom-vent	Standard and Networked Sensors/Controls (Factory default settings, see table page 9)	DBRD
PEB	Phantom, bottom-vent, black	Standard and Networked Sensors/Controls (Factory default settings, see table page 9)	DBRD
PEF	Phantom, bottom-vent, black, frosted	Standard and Networked Sensors/Controls (Factory default settings, see table page 9)	DBRD
SP	Single face (130, 271, 347)	Standard and Networked Sensors/Controls (Factory default settings, see table page 9)	DBRD
DF	Double face (130, 271, 347)	Standard and Networked Sensors/Controls (Factory default settings, see table page 9)	DBRD
SPDNV	200V Single pack (130V standard)	Standard and Networked Sensors/Controls (Factory default settings, see table page 9)	DBRD
FAO	Field adjustable support	Standard and Networked Sensors/Controls (Factory default settings, see table page 9)	DBRD
DS	Dual switching	Standard and Networked Sensors/Controls (Factory default settings, see table page 9)	DBRD

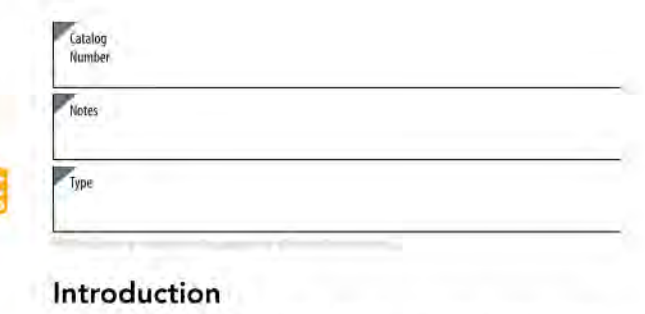
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**B-1 B-1 LIGHT FIXTURE**  
NTS

**RSX2 LED Area Luminaire**



**Specifications**  
EPA (ft²@90°): 0.69 ft² (0.06 m²)  
Length: 29.3" (74.4 cm) (SPA mount)  
Width: 13.4" (34.0 cm)  
Height: 3.0" (7.6 cm) Main Body  
7.2" (18.3 cm) Arm  
Weight: 30.0 lbs (13.6 kg)



**Introduction**  
The new RSX LED Area family delivers maximum value by providing significant energy savings, long life and outstanding photometric performance at an affordable price. The RSX2 delivers 11,000 to 31,000 lumens allowing it to replace 250W to 1000W HID luminaires.  
The RSX features an integral universal mounting mechanism that allows the luminaire to be mounted on most existing drill hole patterns. This "no-drill" solution provides significant labor savings. An easy-access door on the bottom of mounting arm allows for wiring without opening the electrical compartment. A mast arm adaptor, adjustable integral splitters and other mounting configurations are available.

**Ordering Information** EXAMPLE: RSX2 LED P6 40K R3 MVOLT SPA DDBX

Series	Performance Package	Color Temperature	Distribution	Voltage	Mounting
RSX2 LED	P1	40K	R3	MVOLT (120V-277V)	SPA
	P2	40K	R3	MVOLT (120V-277V)	RPA
	P3	50K	R3	MVOLT (120V-277V)	SPA
	P4	40K	R3	MVOLT (120V-277V)	RPA
	P5	40K	R3	MVOLT (120V-277V)	SPA
	P6	40K	R3	MVOLT (120V-277V)	RPA

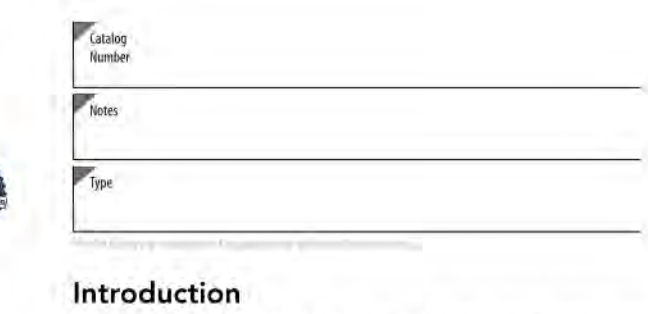
System	Shipped Installed	Shipped and Networked Sensors/Controls (Factory default settings, see table page 9)	Finish
HS	Interior side-vent	Standard and Networked Sensors/Controls (Factory default settings, see table page 9)	DBRD
PE	Phantom, bottom-vent	Standard and Networked Sensors/Controls (Factory default settings, see table page 9)	DBRD
PEB	Phantom, bottom-vent, black	Standard and Networked Sensors/Controls (Factory default settings, see table page 9)	DBRD
PEF	Phantom, bottom-vent, black, frosted	Standard and Networked Sensors/Controls (Factory default settings, see table page 9)	DBRD
SP	Single face (130, 271, 347)	Standard and Networked Sensors/Controls (Factory default settings, see table page 9)	DBRD
DF	Double face (130, 271, 347)	Standard and Networked Sensors/Controls (Factory default settings, see table page 9)	DBRD
SPDNV	200V Single pack (130V standard)	Standard and Networked Sensors/Controls (Factory default settings, see table page 9)	DBRD
FAO	Field adjustable support	Standard and Networked Sensors/Controls (Factory default settings, see table page 9)	DBRD
DS	Dual switching	Standard and Networked Sensors/Controls (Factory default settings, see table page 9)	DBRD

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**LF-1 LF-1 LIGHT FIXTURE**  
NTS



**Specifications**  
EPA (ft²@45°): 0.9 ft² (0.08 m²)  
Length: 28.3" (71.9 cm)  
Width: 13.4" (34.0 cm)  
Height: 3.0" (7.6 cm) Main Body  
7.2" (18.3 cm) Arm  
Weight: 33 lbs (15.0 kg)



**Introduction**  
The new RSXF LED Flood family delivers maximum value by providing significant energy savings, long life and outstanding photometric performance at an affordable price. The RSXF2 delivers 11,000 to 44,000 lumens allowing it to replace 250W to 1000W HID floodlights.  
The RSXF features an adjustable integral splitter that allows the luminaire to be mounted on a 2-3/8" OD tennel. Integral cover/wire box serves as an approved splice compartment allowing for fast, easy mounting and wiring without opening the electrical compartment. A yoke and other mounting configurations are available.

**Ordering Information** EXAMPLE: RSXF2 LED P4 40K WFL MVOLT IS DDBX

Series	Performance Package	Color Temperature	Distribution	Voltage	Mounting
RSXF2 LED	P1	40K	WFL	MVOLT (120V-277V)	IS
	P2	40K	WFL	MVOLT (120V-277V)	IS
	P3	50K	WFL	MVOLT (120V-277V)	IS
	P4	40K	WFL	MVOLT (120V-277V)	IS
	P5	40K	WFL	MVOLT (120V-277V)	IS
	P6	40K	WFL	MVOLT (120V-277V)	IS

System	Shipped Installed	Shipped and Networked Sensors/Controls (Factory default settings, see table page 9)	Finish
DBRD	Dark Bronze	Standard and Networked Sensors/Controls (Factory default settings, see table page 9)	DBRD
DBLD	Black	Standard and Networked Sensors/Controls (Factory default settings, see table page 9)	DBLD
DBRD	Dark Bronze	Standard and Networked Sensors/Controls (Factory default settings, see table page 9)	DBRD
DBLD	Black	Standard and Networked Sensors/Controls (Factory default settings, see table page 9)	DBLD
DBRD	Dark Bronze	Standard and Networked Sensors/Controls (Factory default settings, see table page 9)	DBRD
DBLD	Black	Standard and Networked Sensors/Controls (Factory default settings, see table page 9)	DBLD
DBRD	Dark Bronze	Standard and Networked Sensors/Controls (Factory default settings, see table page 9)	DBRD
DBLD	Black	Standard and Networked Sensors/Controls (Factory default settings, see table page 9)	DBLD
DBRD	Dark Bronze	Standard and Networked Sensors/Controls (Factory default settings, see table page 9)	DBRD
DBLD	Black	Standard and Networked Sensors/Controls (Factory default settings, see table page 9)	DBLD

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**LF-2 LF-2 LIGHT FIXTURE**  
NTS



**Specifications**  
EPA (ft²@90°): 0.69 ft² (0.06 m²)  
Length: 29.3" (74.4 cm) (SPA mount)  
Width: 13.4" (34.0 cm)  
Height: 3.0" (7.6 cm) Main Body  
7.2" (18.3 cm) Arm  
Weight: 30.0 lbs (13.6 kg)

**Ordering Information** EXAMPLE: RSX2 LED P6 40K R3 MVOLT SPA DDBX

Series	Performance Package	Color Temperature	Distribution	Voltage	Mounting
RSX2 LED	P1	40K	R3	MVOLT (120V-277V)	SPA
	P2	40K	R3	MVOLT (120V-277V)	RPA
	P3	50K	R3	MVOLT (120V-277V)	SPA
	P4	40K	R3	MVOLT (120V-277V)	RPA
	P5	40K	R3	MVOLT (120V-277V)	SPA
	P6	40K	R3	MVOLT (120V-277V)	RPA

System	Shipped Installed	Shipped and Networked Sensors/Controls (Factory default settings, see table page 9)	Finish
HS	Interior side-vent	Standard and Networked Sensors/Controls (Factory default settings, see table page 9)	DBRD
PE	Phantom, bottom-vent	Standard and Networked Sensors/Controls (Factory default settings, see table page 9)	DBRD
PEB	Phantom, bottom-vent, black	Standard and Networked Sensors/Controls (Factory default settings, see table page 9)	DBRD
PEF	Phantom, bottom-vent, black, frosted	Standard and Networked Sensors/Controls (Factory default settings, see table page 9)	DBRD
SP	Single face (130, 271, 347)	Standard and Networked Sensors/Controls (Factory default settings, see table page 9)	DBRD
DF	Double face (130, 271, 347)	Standard and Networked Sensors/Controls (Factory default settings, see table page 9)	DBRD
SPDNV	200V Single pack (130V standard)	Standard and Networked Sensors/Controls (Factory default settings, see table page 9)	DBRD
FAO	Field adjustable support	Standard and Networked Sensors/Controls (Factory default settings, see table page 9)	DBRD
DS	Dual switching	Standard and Networked Sensors/Controls (Factory default settings, see table page 9)	DBRD

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**LF-3 LF-3 LIGHT FIXTURE**  
NTS

**LF-4 LF-4 LIGHT FIXTURE**  
NTS

**S-1 S-1 LIGHT FIXTURE**  
NTS

Item 2

**MDG**

ARCHITECTURE | INTERIORS  
4875 SW Griffith Drive Suite 300  
Beaverton, OR 97005  
(503) 244-0552



Client / Owner:  
**PRECISION COUNTERTOPS**

26200 SW 95th Ave,  
Wilsonville OR 97070

Project:  
**PRECISION COUNTERTOPS**

SW Garden Acres Road  
Wilsonville OR 97070

Sheet Title:  
**LIGHTING CUT SHEETS**

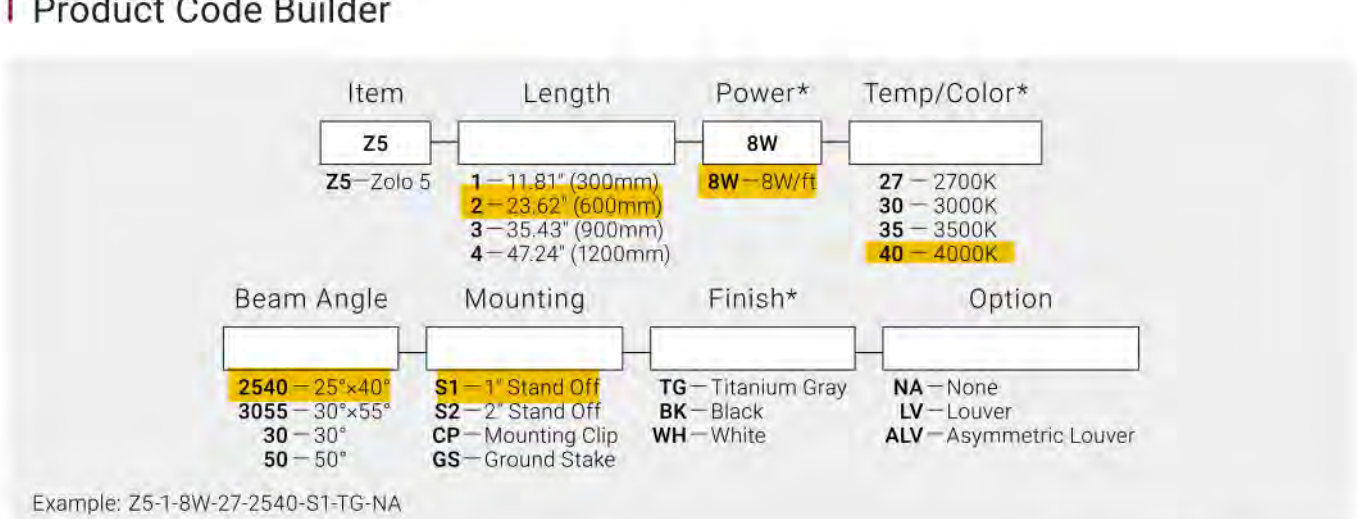
Revisions:  
# Description Date



**Description**  
Zolo 5 is our most popular indoor/outdoor washer/grazer. With it's small form factor, great light output, and high customizability, it's sure to fit your project perfectly.

**Features**  
• High Purity Tempered Glass  
• Extruded Aluminum Alloy Housing  
• Available in Titanium Gray, Black or White Finish  
• Multi-Volt 24VDC Remote Driver (Sold Separately)  
• Daisy Chain Multiple Fixtures  
• IP66 Outdoor Rated  
• Lower Options Available

**Specifications**  
Dimming Options: PWM, Triac, 0-10V, DMX 512, ELV  
Input Voltage: 24V DC/Constant Voltage  
Watts per Foot: 8W/ft  
Lumen per Watt: 100 lm/W  
Lumen per Foot: 800 lm/ft  
Beam Spread: 25°-40°, 30°-65°, 30°, 50°  
Max Run Length: 12 ft  
CRI: 85+  
Operating Temp: -40°F (-40°C) to 140°F (60°C)



1/4 | Z5 | 800-789-3810 | quotes@kelvix.com | \* Customizable - Consult Factory



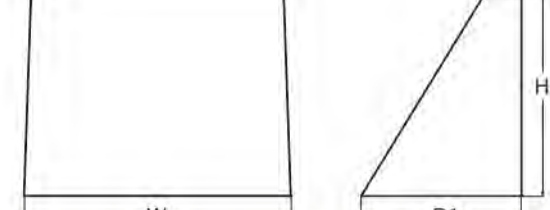


### WDGE2 LED Architectural Wall Sconce Precision Reflective Optic

Listing Number: \_\_\_\_\_  
Product Name: \_\_\_\_\_  
Type: SM-3

#### Specifications

Depth (D1): 7"  
Depth (D2): 1.5"  
Height: 9"  
Width: 11.5"  
Weight: 13.5 lbs (without options)



#### Introduction

The WDGE LED family is designed to meet specifier's every wall-mounted lighting need in a widely accepted shape that blends with any architecture. The clean, rectangular design comes in four sizes with lumen packages ranging from 1,200 to 25,000 lumens, providing a true site-wide solution. Embedded with rLight® AIR wireless controls, the WDGE family provides additional energy savings and code compliance. WDGE2 with industry leading precision reflective optics provides great uniform distribution and optical control. When combined with multiple integrated emergency battery backup options, including an 18W cold temperature option, the WDGE2 becomes the ideal wall-mounted lighting solution for pedestrian scale applications in any environment.

#### WDGE LED Family Overview

Luminaire	Optics	Standard EM, °C	Coldest EM, °C	Lumen	F1	F2	F3	F4	F5	F6
WDGE1 LED	Visual Comfort	4W	—	—	750	1,200	2,000	—	—	—
WDGE2 LED	Visual Comfort	4W	18W	Standard / Right	—	1,200	2,000	3,000	4,500	6,000
WDGE2 LED	Precision Reflective	10W	18W	Standard / Right	700	1,200	2,000	3,000	4,500	—
WDGE3 LED	Precision Reflective	15W	18W	Standard / Right	—	7,500	8,500	10,000	12,000	—
WDGE4 LED	Precision Reflective	—	—	Standard / Right	—	12,000	16,000	18,000	20,000	25,000

#### Ordering Information

EXAMPLE: WDGE2 LED P3 40K 80CRI VF MVOLT SRM DDBXD

Series	Package	Color Temperature (°K)	CR	Distribution	Height	Mounting	Shipped Included	Shipped Separately
WDGE2 LED	P1	27K	2700K	20CRI	T15	Type 1 (Short)	MVOLT	AWS
	P1	40K	4000K	80CRI	T2M	Type 1 (Medium)	SRM	SRM
	P2	40K	4000K	80CRI	T2M	Type 1 (Medium)	SRM	SRM
	P3	50K	5000K	90CRI	T4M	Type 4 (Medium)	SRM	SRM

System	Stand-alone Sensors/Controls	Finish
E190M	Emergency battery backup, Certified to AIA 10k-20 MAE200 (10kV, 20°C min)	DBDD Dark bronze
E220C	Emergency battery backup, Certified to AIA 10k-20 MAE200 (10kV, 20°C min)	DBDD Black
PE	Photo-cell, Button Type	DBDD Natural aluminum
DMC	0-10V dimming with photo-cell sensor (for use with external control, optional separately)	DBDD White
KCE	Buttons control every back box (BWB). Total of 4 empty ports.	DBDD Sandstone
BAA	Buy America/Act Compliant	DBDD Textured dark bronze

LITHONIA LIGHTING COMMERCIAL OUTDOOR One Lithonia Way • Cary, Georgia 30012 • Phone: 1-800-705-SERV (378) • www.lithonia.com WDGE2 LED Rev: 03/01/22 © 2019-2022 Acuity Brands Lighting, Inc. All rights reserved.

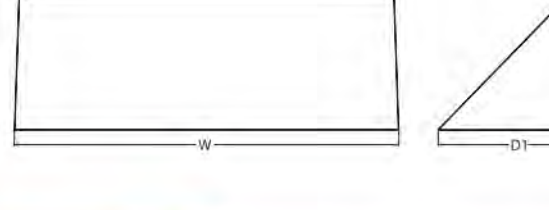


### WDGE4 LED Architectural Wall Sconce Precision Reflective Optic

Listing Number: \_\_\_\_\_  
Product Name: \_\_\_\_\_  
Type: SM-3

#### Specifications

Depth (D1): 10"  
Depth (D2): 2"  
Height: 9"  
Width: 25"  
Weight: 30.5 lbs (without options)



#### Introduction

The WDGE LED family is designed to meet specifier's every wall-mounted lighting need in a widely accepted shape that blends with any architecture. The clean, rectangular design comes in four sizes with lumen packages ranging from 1,200 to 25,000 lumens, providing a true site-wide solution. Embedded with rLight® AIR wireless controls, the WDGE family provides additional energy savings and code compliance. WDGE4 has been designed to deliver up to 25,000 lumens through a precision reflective lens with wide distribution, perfect for augmenting the lighting from pole mounted luminaires.

#### WDGE LED Family Overview

Luminaire	Optics	Standard EM, °C	Coldest EM, °C	Lumen	F1	F2	F3	F4	F5	F6
WDGE1 LED	Visual Comfort	4W	—	—	750	1,200	2,000	—	—	—
WDGE2 LED	Visual Comfort	4W	18W	Standard / Right	—	1,200	2,000	3,000	4,500	6,000
WDGE2 LED	Precision Reflective	10W	18W	Standard / Right	700	1,200	2,000	3,000	4,500	—
WDGE3 LED	Precision Reflective	15W	18W	Standard / Right	—	7,500	8,500	10,000	12,000	—
WDGE4 LED	Precision Reflective	—	—	Standard / Right	—	12,000	16,000	18,000	20,000	25,000

#### Ordering Information

EXAMPLE: WDGE4 LED P3 40K 70CRI R3 MVOLT SRM DDBXD

Series	Package	Color Temperature (°K)	CR	Distribution	Height	Mounting	Shipped Included	Shipped Separately
WDGE4 LED	P1	27K	2700K	20CRI	R2	Type 2	MVOLT	AWS
	P2	40K	4000K	80CRI	R3	Type 3	SRM	SRM
	P2	40K	4000K	80CRI	R3	Type 3	SRM	SRM
	P3	50K	5000K	90CRI	R4	Type 4	SRM	SRM

System	Stand-alone Sensors/Controls	Finish
DE	Photo-cell, Button Type	DBDD Dark bronze
DE	Dual switching (comes with 2 dimmers and 2 light engines)	DBDD Black
DMC	0-10V dimming with photo-cell sensor (for use with external control, optional separately)	DBDD Natural aluminum
DMC	0-10V dimming with photo-cell sensor (for use with external control, optional separately)	DBDD White
DMC	Buttons control every back box (BWB). Total of 4 empty ports.	DBDD Sandstone
DMC	Buttons control every back box (BWB). Total of 4 empty ports.	DBDD Textured dark bronze
DMC	Buttons control every back box (BWB). Total of 4 empty ports.	DBDD Textured aluminum
DMC	Buttons control every back box (BWB). Total of 4 empty ports.	DBDD Textured white
DMC	Buttons control every back box (BWB). Total of 4 empty ports.	DBDD Textured sandstone

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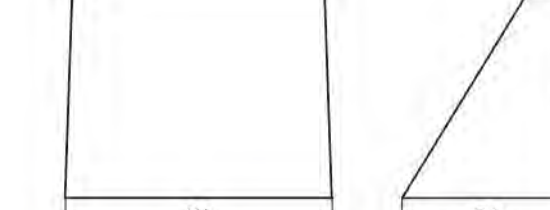


### WDGE2 LED Architectural Wall Sconce Precision Reflective Optic

Listing Number: \_\_\_\_\_  
Product Name: \_\_\_\_\_  
Type: SM-3

#### Specifications

Depth (D1): 7"  
Depth (D2): 1.5"  
Height: 9"  
Width: 11.5"  
Weight: 13.5 lbs (without options)



#### Introduction

The WDGE LED family is designed to meet specifier's every wall-mounted lighting need in a widely accepted shape that blends with any architecture. The clean, rectangular design comes in four sizes with lumen packages ranging from 1,200 to 25,000 lumens, providing a true site-wide solution. Embedded with rLight® AIR wireless controls, the WDGE family provides additional energy savings and code compliance. WDGE2 with industry leading precision reflective optics provides great uniform distribution and optical control. When combined with multiple integrated emergency battery backup options, including an 18W cold temperature option, the WDGE2 becomes the ideal wall-mounted lighting solution for pedestrian scale applications in any environment.

#### WDGE LED Family Overview

Luminaire	Optics	Standard EM, °C	Coldest EM, °C	Lumen	F1	F2	F3	F4	F5	F6
WDGE1 LED	Visual Comfort	4W	—	—	750	1,200	2,000	—	—	—
WDGE2 LED	Visual Comfort	4W	18W	Standard / Right	—	1,200	2,000	3,000	4,500	6,000
WDGE2 LED	Precision Reflective	10W	18W	Standard / Right	700	1,200	2,000	3,000	4,500	—
WDGE3 LED	Precision Reflective	15W	18W	Standard / Right	—	7,500	8,500	10,000	12,000	—
WDGE4 LED	Precision Reflective	—	—	Standard / Right	—	12,000	16,000	18,000	20,000	25,000

#### Ordering Information

EXAMPLE: WDGE2 LED P3 40K 80CRI VF MVOLT SRM DDBXD

Series	Package	Color Temperature (°K)	CR	Distribution	Height	Mounting	Shipped Included	Shipped Separately
WDGE2 LED	P1	27K	2700K	20CRI	T15	Type 1 (Short)	MVOLT	AWS
	P1	40K	4000K	80CRI	T2M	Type 1 (Medium)	SRM	SRM
	P2	40K	4000K	80CRI	T2M	Type 1 (Medium)	SRM	SRM
	P3	50K	5000K	90CRI	T4M	Type 4 (Medium)	SRM	SRM

System	Stand-alone Sensors/Controls	Finish
E190M	Emergency battery backup, Certified to AIA 10k-20 MAE200 (10kV, 20°C min)	DBDD Dark bronze
E220C	Emergency battery backup, Certified to AIA 10k-20 MAE200 (10kV, 20°C min)	DBDD Black
PE	Photo-cell, Button Type	DBDD Natural aluminum
DMC	0-10V dimming with photo-cell sensor (for use with external control, optional separately)	DBDD White
KCE	Buttons control every back box (BWB). Total of 4 empty ports.	DBDD Sandstone
BAA	Buy America/Act Compliant	DBDD Textured dark bronze

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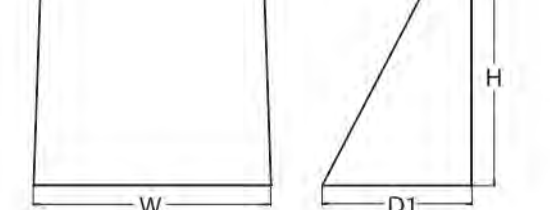


### WDGE1 LED Architectural Wall Sconce Precision Reflective Optic

Listing Number: \_\_\_\_\_  
Product Name: \_\_\_\_\_  
Type: SM-3

#### Specifications

Depth (D1): 5.5"  
Depth (D2): 1.5"  
Height: 8"  
Width: 9"  
Weight: 9 lbs (without options)



#### Introduction

The WDGE LED family is designed to meet specifier's every wall-mounted lighting need in a widely accepted shape that blends with any architecture. The clean, rectangular design comes in four sizes with lumen packages ranging from 1,200 to 25,000 lumens, providing a true site-wide solution. WDGE1 delivers up to 2,000 lumens with a soft, non-polluted light source, creating a visually comfortable environment. The compact size of WDGE1, with its integrated emergency battery backup option, makes it an ideal over-the-door wall-mounted lighting solution.

#### WDGE LED Family Overview

Luminaire	Optics	Standard EM, °C	Coldest EM, °C	Lumen	F1	F2	F3	F4	F5	F6
WDGE1 LED	Visual Comfort	4W	—	—	750	1,200	2,000	—	—	—
WDGE2 LED	Visual Comfort	4W	18W	Standard / Right	—	1,200	2,000	3,000	4,500	6,000
WDGE2 LED	Precision Reflective	10W	18W	Standard / Right	700	1,200	2,000	3,000	4,500	—
WDGE3 LED	Precision Reflective	15W	18W	Standard / Right	—	7,500	8,500	10,000	12,000	—
WDGE4 LED	Precision Reflective	—	—	Standard / Right	—	12,000	16,000	18,000	20,000	25,000

#### Ordering Information

EXAMPLE: WDGE1 LED P2 40K 80CRI VF MVOLT SRM PE DDBXD

Series	Package	Color Temperature (°K)	CR	Distribution	Height	Mounting	Shipped Included	Shipped Separately
WDGE1 LED	P1	27K	2700K	20CRI	VF	Visual Comfort (Short Pole)	MVOLT	AWS
	P2	40K	4000K	80CRI	VF	Visual Comfort (Short Pole)	SRM	SRM

System	Stand-alone Sensors/Controls	Finish
E190M	Emergency battery backup, Certified to AIA 10k-20 MAE200 (10kV, 20°C min)	DBDD Dark bronze
PE	Photo-cell, Button Type	DBDD Black
DMC	0-10V dimming with photo-cell sensor (for use with external control, optional separately)	DBDD Natural aluminum
KCE	Buttons control every back box (BWB). Total of 4 empty ports.	DBDD White
BAA	Buy America/Act Compliant	DBDD Textured aluminum

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## SM-1 SM1 LIGHT FIXTURE NTS

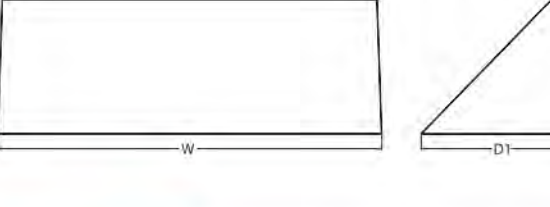


### WDGE4 LED Architectural Wall Sconce Precision Reflective Optic

Listing Number: \_\_\_\_\_  
Product Name: \_\_\_\_\_  
Type: SM-3

#### Specifications

Depth (D1): 10"  
Depth (D2): 2"  
Height: 9"  
Width: 25"  
Weight: 30.5 lbs (without options)



#### Introduction

The WDGE LED family is designed to meet specifier's every wall-mounted lighting need in a widely accepted shape that blends with any architecture. The clean, rectangular design comes in four sizes with lumen packages ranging from 1,200 to 25,000 lumens, providing a true site-wide solution. Embedded with rLight® AIR wireless controls, the WDGE family provides additional energy savings and code compliance. WDGE4 has been designed to deliver up to 25,000 lumens through a precision reflective lens with wide distribution, perfect for augmenting the lighting from pole mounted luminaires.

#### WDGE LED Family Overview

Luminaire	Optics	Standard EM, °C	Coldest EM, °C	Lumen	F1	F2	F3	F4	F5	F6
WDGE1 LED	Visual Comfort	4W	—	—	750	1,200	2,000	—	—	—
WDGE2 LED	Visual Comfort	4W	18W	Standard / Right	—	1,200	2,000	3,000	4,500	6,000
WDGE2 LED	Precision Reflective	10W	18W	Standard / Right	700	1,200	2,000	3,000	4,500	—
WDGE3 LED	Precision Reflective	15W	18W	Standard / Right	—	7,500	8,500	10,000	12,000	—
WDGE4 LED	Precision Reflective	—	—	Standard / Right	—	12,000	16,000	18,000	20,000	25,000

#### Ordering Information

EXAMPLE: WDGE4 LED P3 40K 70CRI R3 MVOLT SRM DDBXD

Series	Package	Color Temperature (°K)	CR	Distribution	Height	Mounting	Shipped Included	Shipped Separately
WDGE4 LED	P1	27K	2700K	20CRI	R2	Type 2	MVOLT	AWS
	P2	40K	4000K	80CRI	R3	Type 3	SRM	SRM
	P2	40K	4000K	80CRI	R3	Type 3	SRM	SRM
	P3	50K	5000K	90CRI	R4	Type 4	SRM	SRM

System	Stand-alone Sensors/Controls	Finish
DE	Photo-cell, Button Type	DBDD Dark bronze
DE	Dual switching (comes with 2 dimmers and 2 light engines)	DBDD Black
DMC	0-10V dimming with photo-cell sensor (for use with external control, optional separately)	DBDD Natural aluminum
DMC	0-10V dimming with photo-cell sensor (for use with external control, optional separately)	DBDD White
DMC	Buttons control every back box (BWB). Total of 4 empty ports.	DBDD Sandstone
DMC	Buttons control every back box (BWB). Total of 4 empty ports.	DBDD Textured dark bronze
DMC	Buttons control every back box (BWB). Total of 4 empty ports.	DBDD Textured aluminum
DMC	Buttons control every back box (BWB). Total of 4 empty ports.	DBDD Textured white
DMC	Buttons control every back box (BWB). Total of 4 empty ports.	DBDD Textured sandstone

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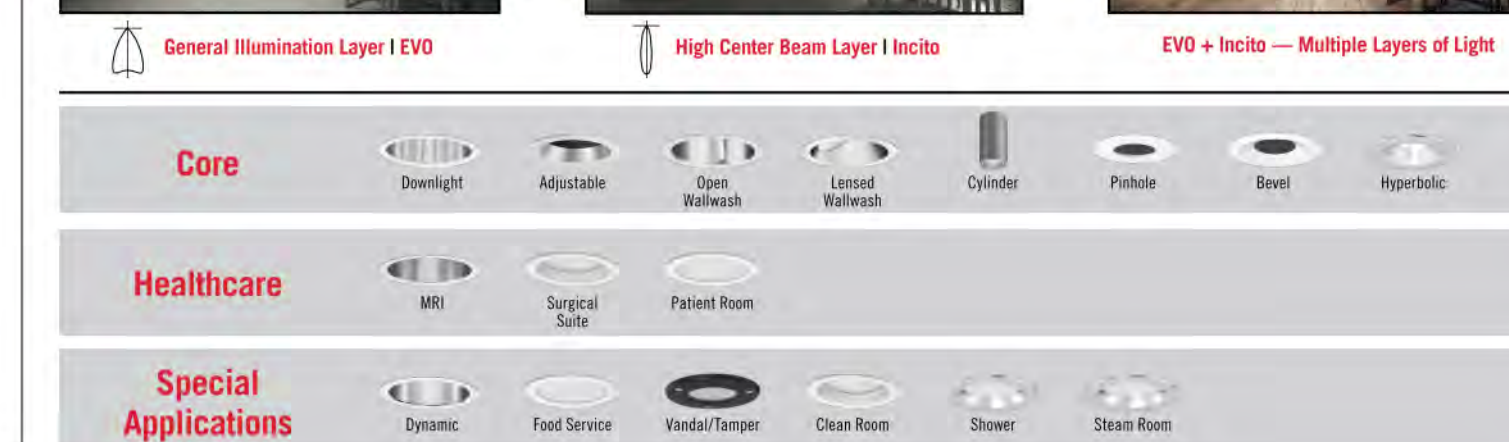
## SM-2 SM2 LIGHT FIXTURE NTS



Multiple Layers of Light  
General Illumination Surface Ceiling Cylinder 2"

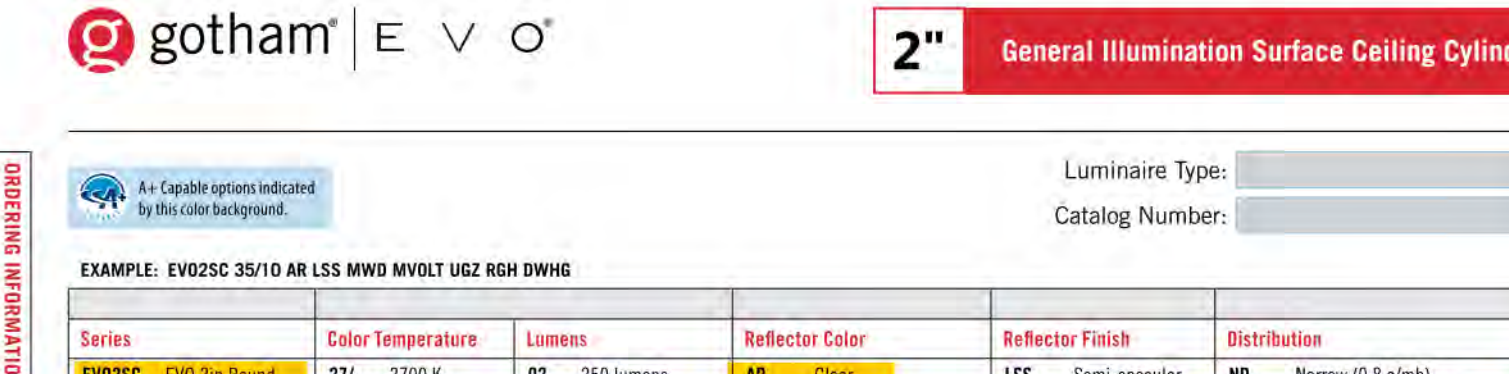
Series	Color Temperature	Lumens	Reflector Color	Reflector Finish	Distribution
EVO2C	27K 2700K	27 2700K	AA	Clear	ND Narrow (0.8 1/2 inch)
EVO2C	35K 3500K	35 3500K	WB	White	MD Medium (1.0 1/2 inch)
EVO2C	40K 4000K	40 4000K	WB	White	WD Wide (1.2 1/2 inch)
EVO2C	50K 5000K	50 5000K	WB	White	WD Wide (1.2 1/2 inch)

System	Architectural Colors - Powder Paint
80CRI	High CR (90+)
80P	Matte Black
80W	Gloss White
80L	Matte Medium Bronze
80S	Gloss Sandstone
80G	Gloss Charcoal Grey
80B	Gloss Navy Blue
80R	Gloss Steel Blue



EVO2C page 2 of 8 | GOTHAM ARCHITECTURAL DOWNLIGHTING | 1401 Lester Road Cary, GA 30012 | P 800-705-SERV (378) | gothamlighting.com © 2014-2022 Acuity Brands Lighting, Inc. All Rights Reserved. Rev. 03/01/22. Specifications subject to change without notice. The product images shown are for illustrative purposes only and may not be an exact representation of the product.

## SM-3 SM3 LIGHT FIXTURE NTS

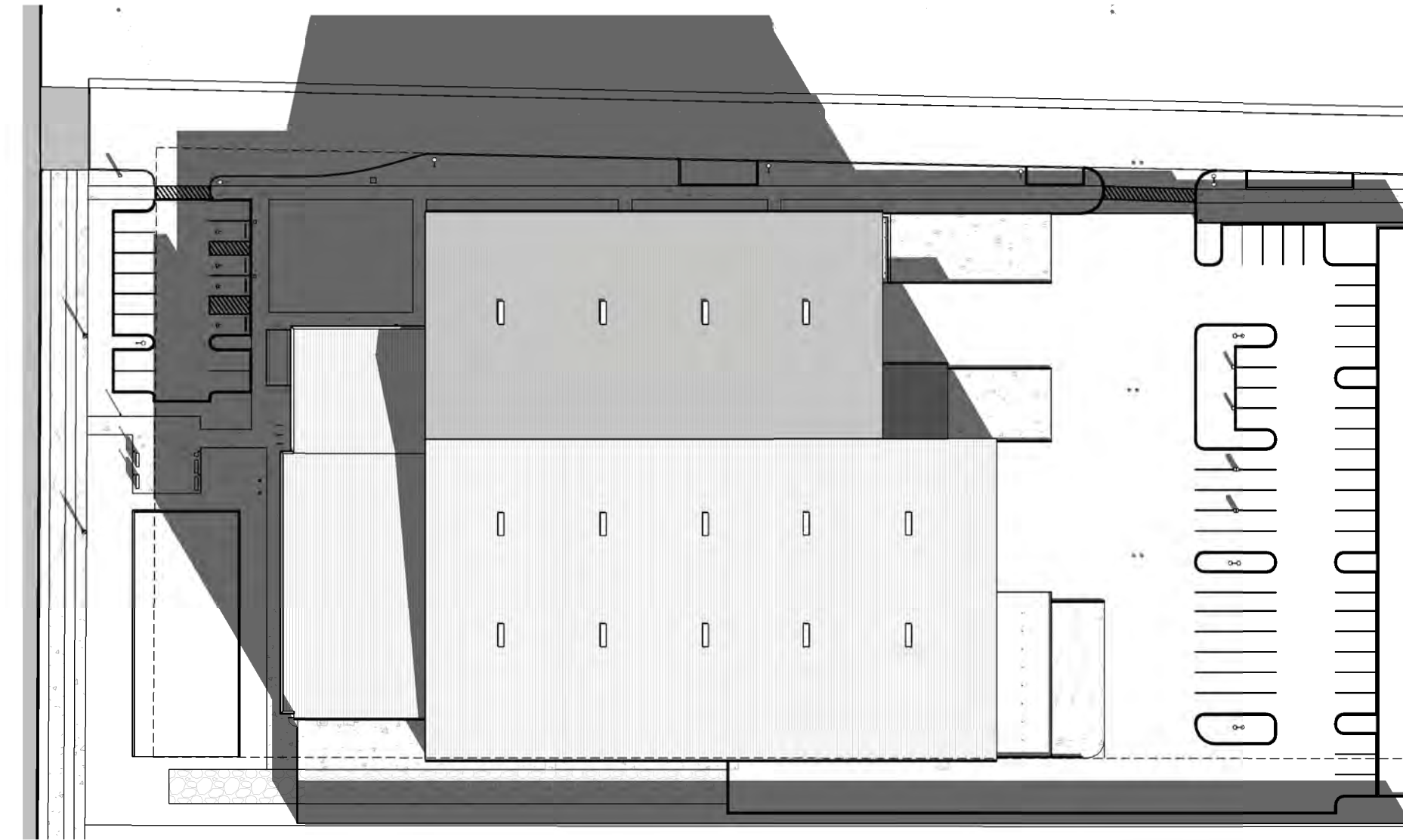


Multiple Layers of Light  
General Illumination Surface Ceiling Cylinder 2"

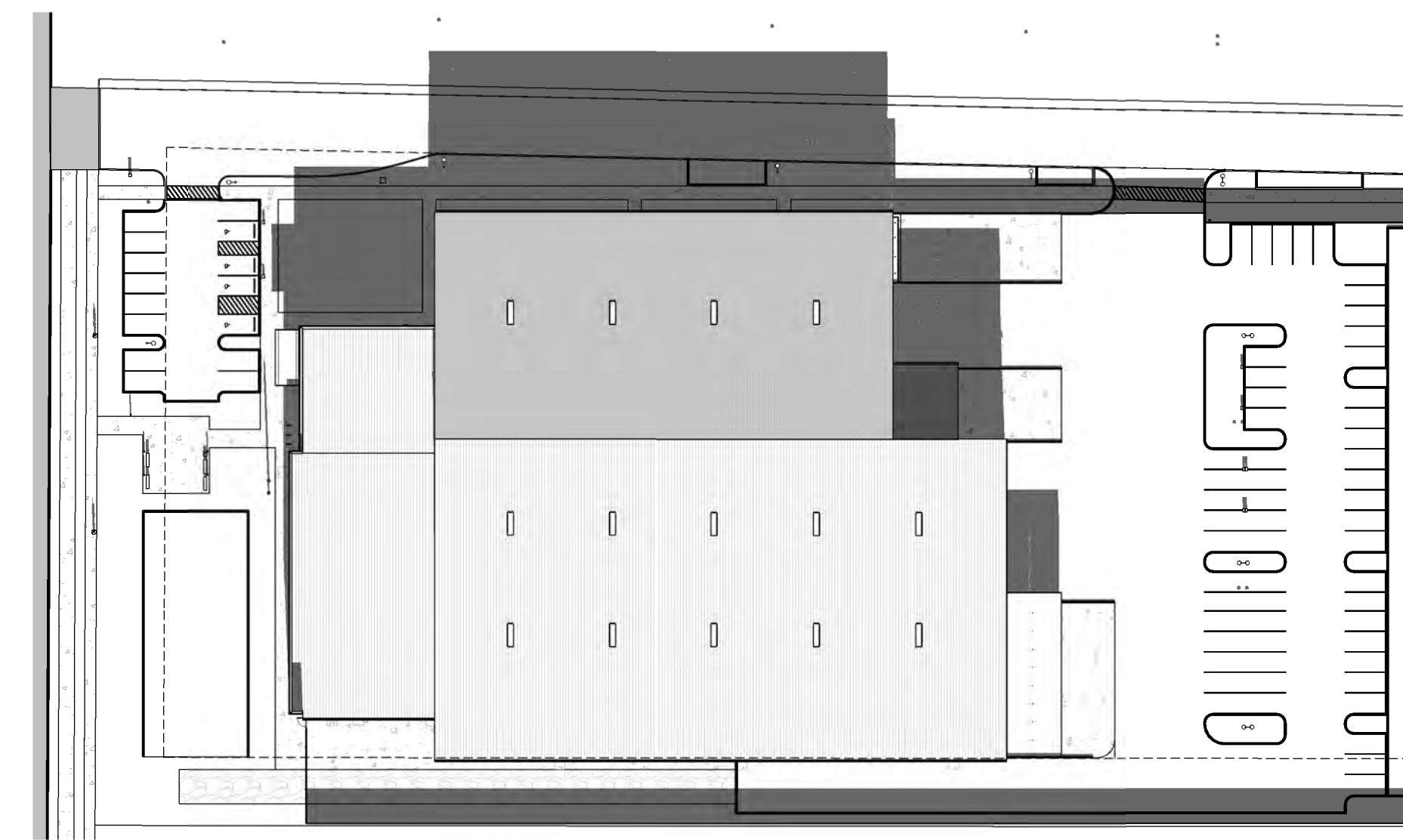
Series	Color Temperature	Lumens	Reflector Color	Reflector Finish	Distribution
EVO2C	27K 2700K	27 2700K	AA	Clear	ND Narrow (0.8 1/2 inch)
EVO2C	35K 3500K	35 3500K	WB	White	MD Medium (1.0 1/2 inch)
EVO2C	40K 4000K	40 4000K	WB	White	WD Wide (1.2 1/2 inch)
EVO2C	50K 5000K	50 5000K	WB	White	WD Wide (1.2 1/2 inch)

System	Architectural Colors - Powder Paint
80CRI</	

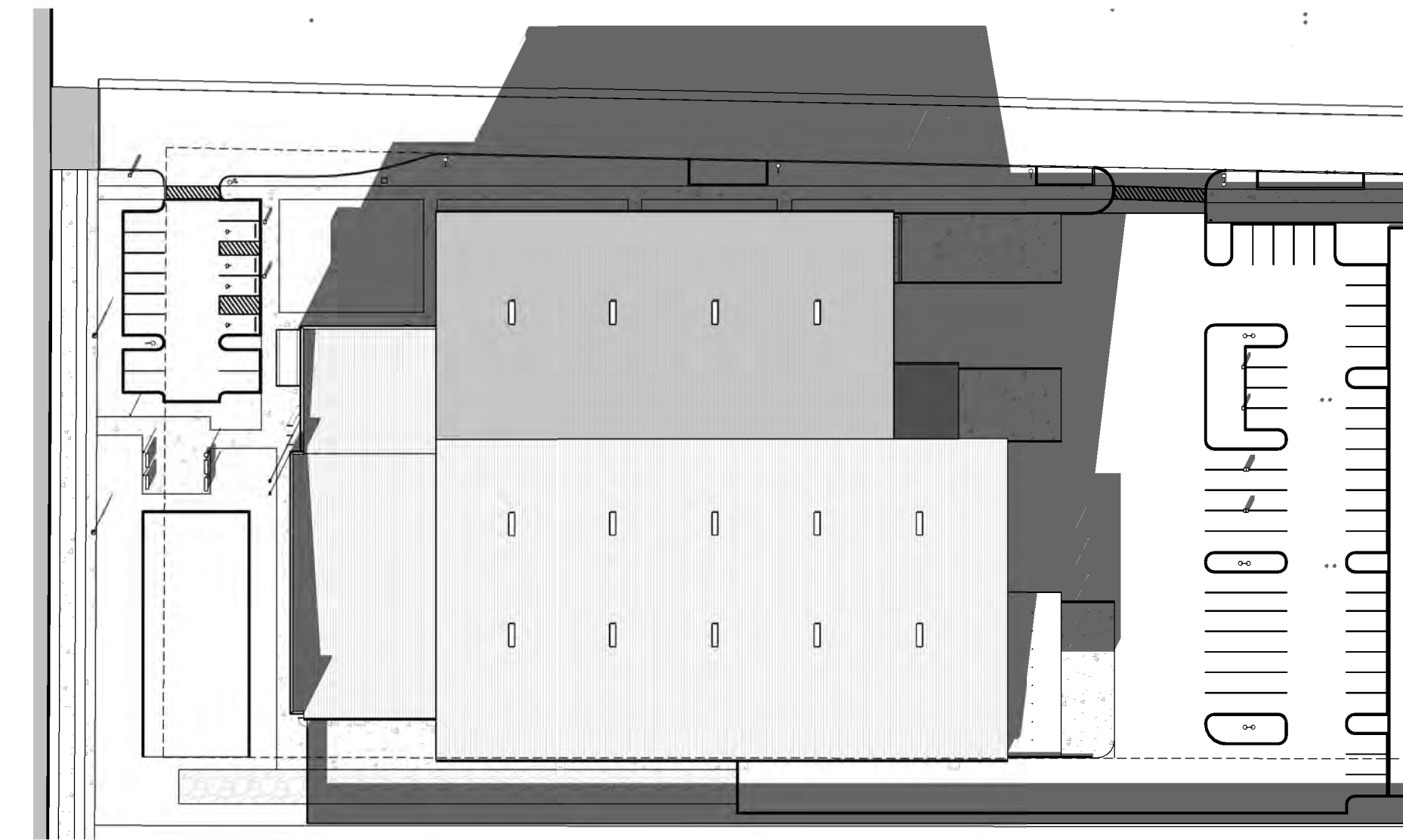




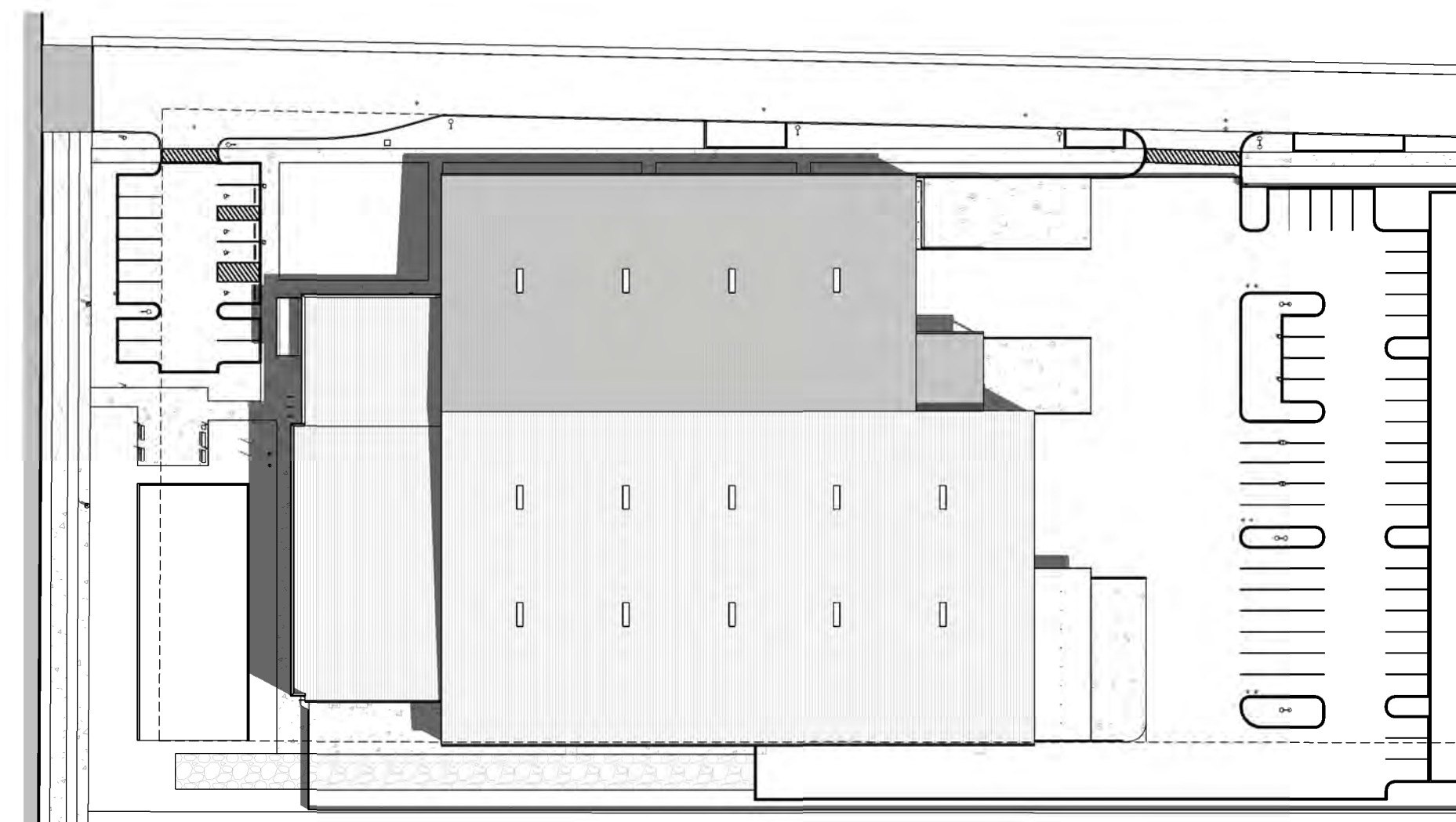
**1** WINTER SOLSTICE - 10 AM  
1/64" = 1'-0"



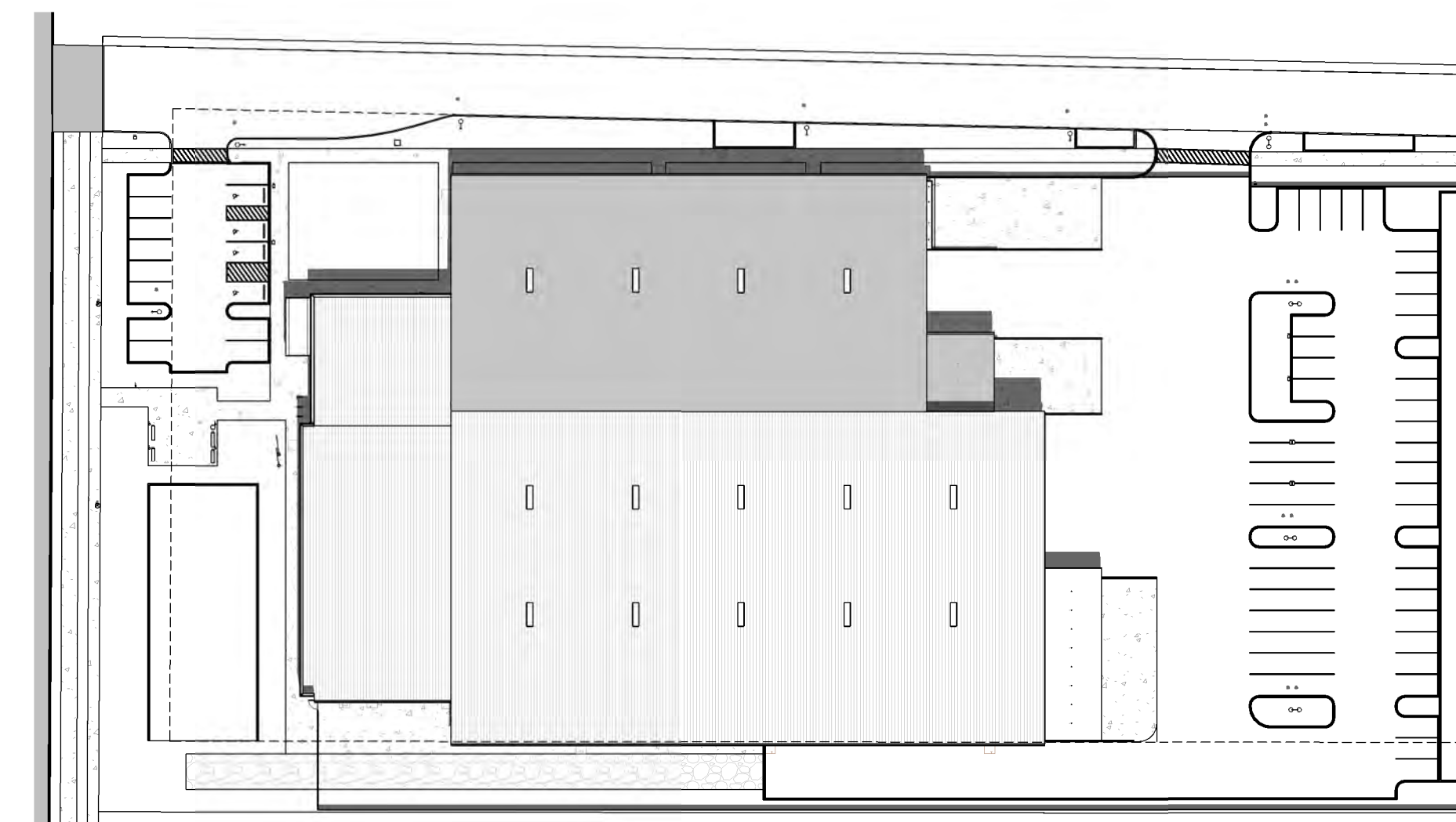
**2** WINTER SOLSTICE - 12 PM  
1/64" = 1'-0"



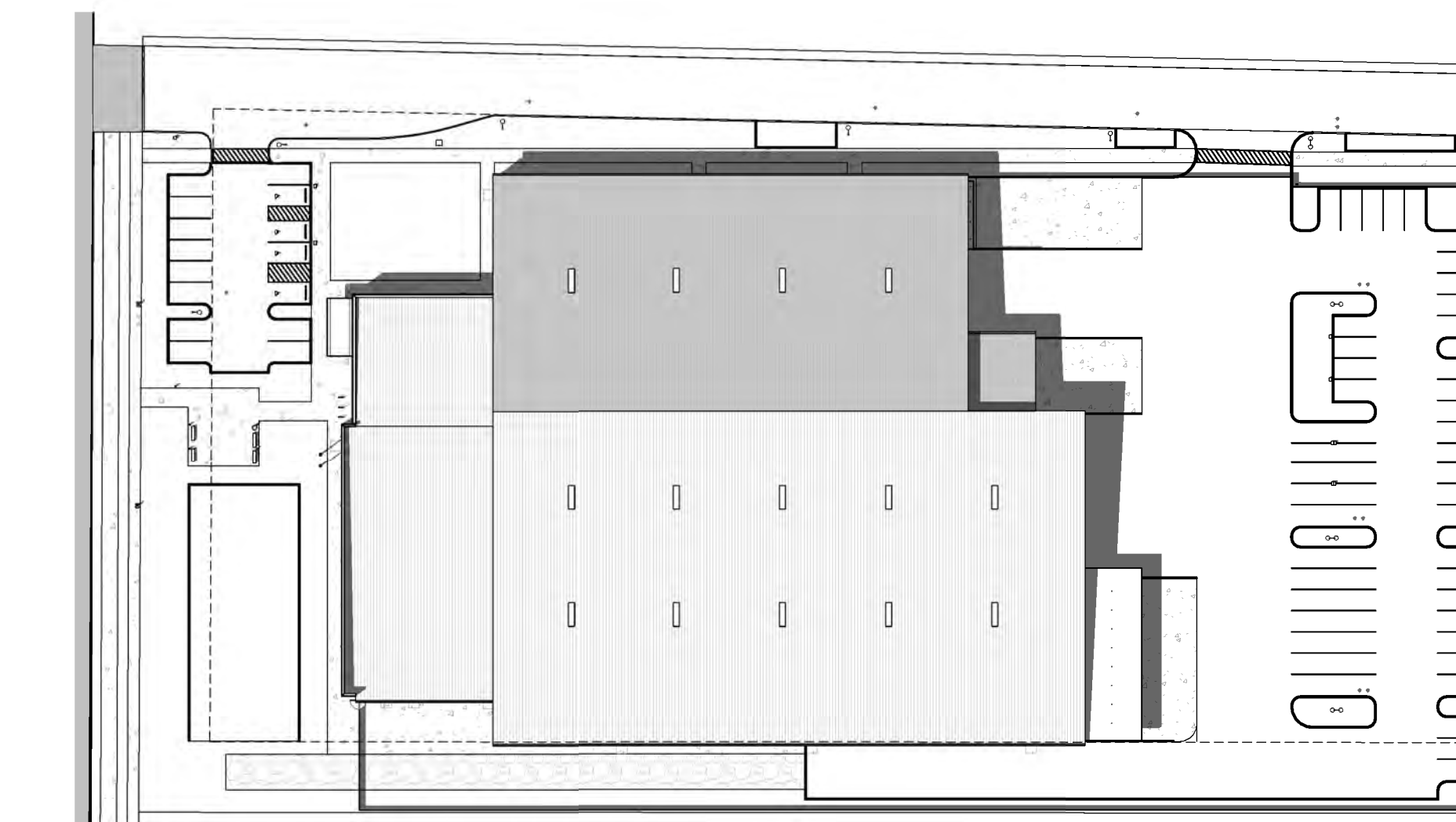
**3** WINTER SOLSTICE - 2 PM  
1/64" = 1'-0"



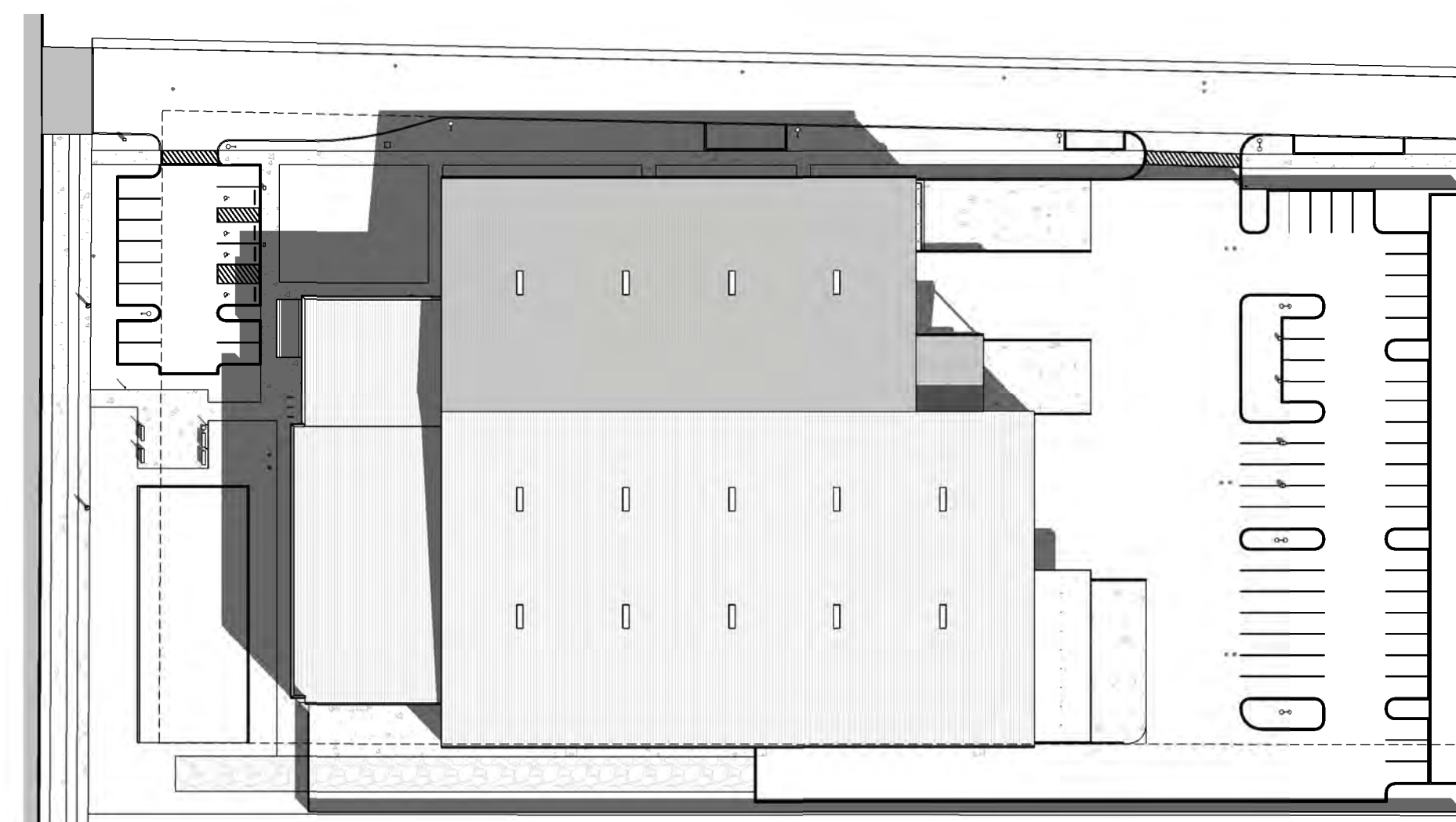
**4** SUMMER SOLSTICE - 10 AM  
1/64" = 1'-0"



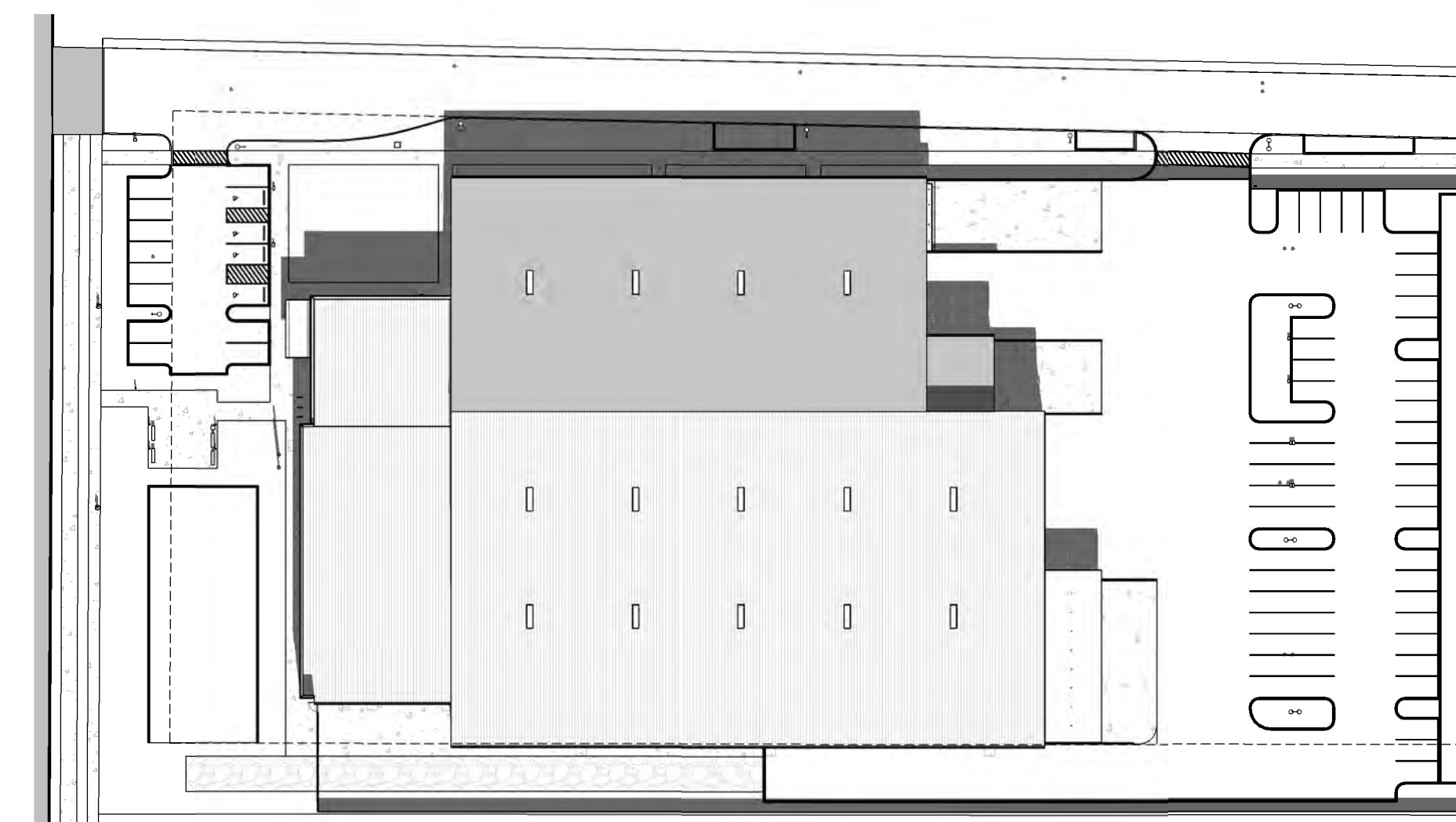
**5** SUMMER SOLSTICE - 12 PM  
1/64" = 1'-0"



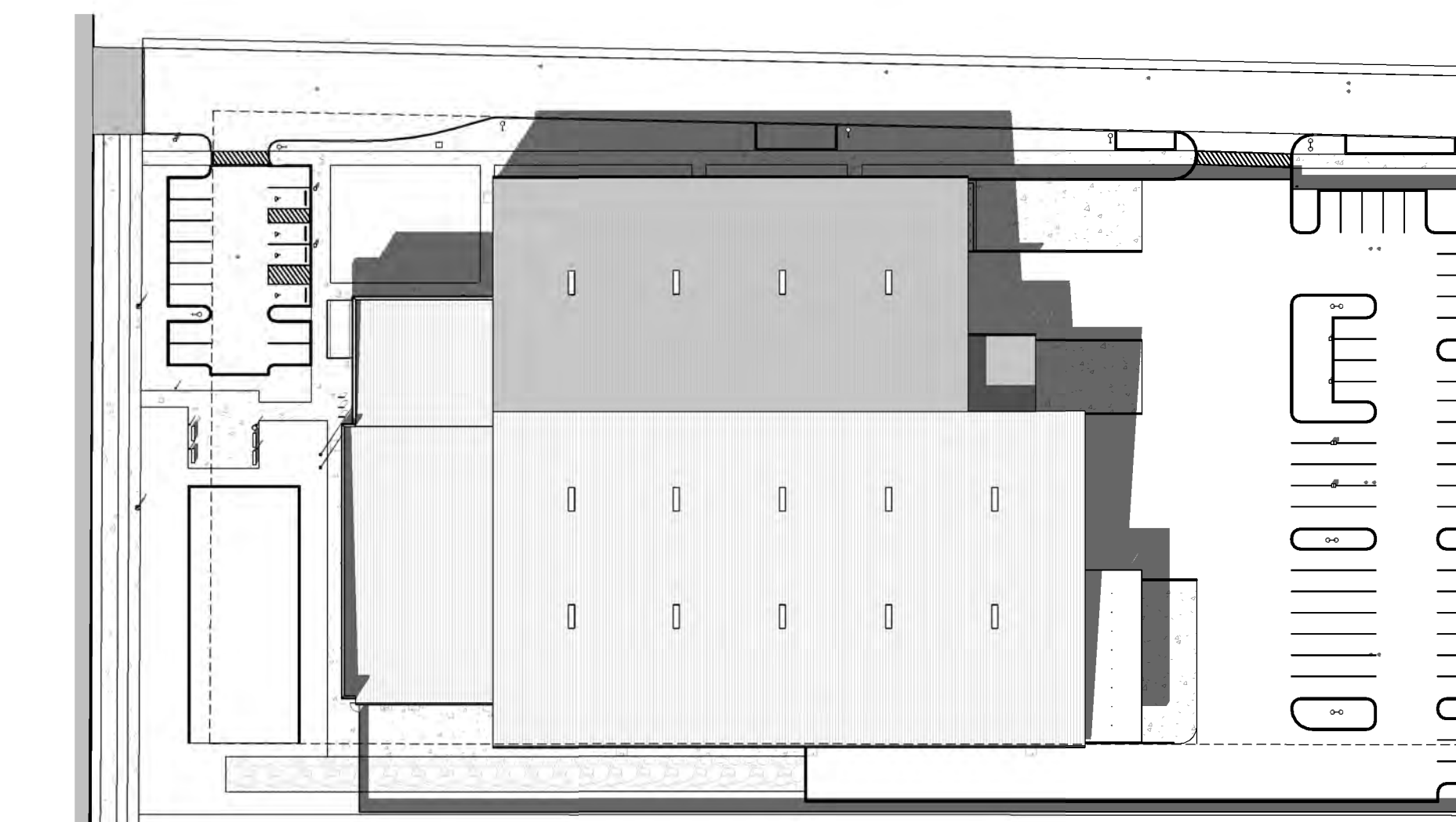
**6** SUMMER SOLSTICE - 2 PM  
1/64" = 1'-0"



**7** SPRING/FALL EQUINOX - 10 AM  
1/64" = 1'-0"



**8** SPRING/FALL EQUINOX - 12 PM  
1/64" = 1'-0"



**9** SPRING/FALL EQUINOX - 2 PM  
1/64" = 1'-0"

Client/ Owner:  
**PRECISION  
COUNTERTOPS**

26200 SW 95th Ave,  
Wilsonville OR 97070

Project:  
**PRECISION  
COUNTERTOPS**

SW Garden Acres Road  
Wilsonville OR 97070

Sheet Title:  
**WAYSIDE  
SUNLIGHT  
STUDY**

Revisions:  
# Description Date

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Job Number: 121036  
Sheet



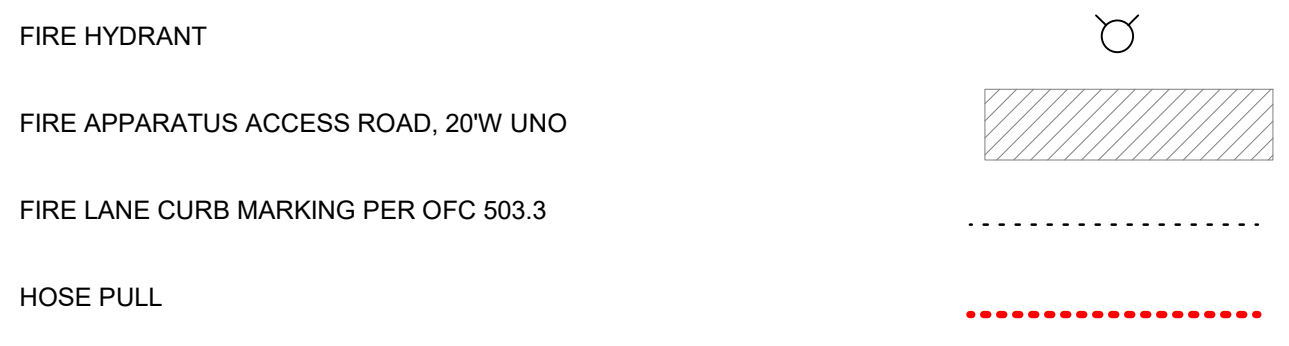
**GENERAL NOTES - FIRE RESPONSE**

- APPROVED FIRE DEPARTMENT ACCESS ROADS, REQUIRED WATER SUPPLY, FIRE HYDRANTS AND SAFETY PRECAUTIONS SHALL BE MADE AVAILABLE PRIOR TO COMBUSTIBLE MATERIALS ARRIVING ON SITE.
- FIRE LANES SHALL BE DESIGNED WITH A UNIFORM ALL-WEATHER DRIVING SURFACE TO SUPPORT THE IMPOSED GVW OF 75,000 LBS WITH A WHEEL LOAD OF 12,500 LBS AND A VERTICAL CLEARANCE OF NOT LESS THAN 13'-0". GRADING SHALL NOT EXCEED 10%.
- WHERE REQUIRED BY FIRE MARSHAL, FIRE APPARATUS ACCESS ROADS SHALL BE MARKED WITH PERMANENT "NO PARKING - FIRE LANE" SIGNS COMPLYING WITH OFC APPENDIX D103.6. FIRE APPARATUS ACCESS ROADS 20'-26' FT WIDE SHALL BE POSTED ON BOTH SIDES, AND ON ONE SIDE WHERE 26'-32' FT WIDE.
- DUMPSTERS AND CONTAINERS WITH AN INDIVIDUAL CAPACITY OF 1.5 CU YD OR MORE SHALL NOT BE STORED IN BUILDINGS OR PLACED WITHIN 5 FT OF COMBUSTIBLE WALLS, OPENINGS, OR COMBUSTIBLE ROOF EAVES UNLESS AREA IS PROTECTED BY AN APPROVED AUTOMATIC FIRE SPRINKLER SYSTEM.
- ABOVE-GROUND GAS METERS, REGULATORS AND PIPING EXPOSED TO VEHICULAR DAMAGE DUE TO PROXIMITY TO ALLEYS, DRIVEWAYS OR PARKING AREAS SHALL BE PROTECTED IN AN APPROVED MANNER.
- 3 FOOT CLEAR SPACE SHALL BE MAINTAINED AROUND THE CIRCUMFERENCE OF FIRE HYDRANTS. WHEN EXPOSED TO VEHICULAR DAMAGE, CONCRETE CURBING, SIDEWALKS OR 4-INCH CONCRETE FILLED BOLLARDS PLACED 3 FT FROM HYDRANTS SHALL SUITABLY PROTECT FIRE HYDRANTS. HYDRANTS SHALL BE COATED WITH APPROVED RED PAINT COLOR AND MARKINGS.
- FIRE EXTINGUISHERS SHALL BE INSTALLED THROUGHOUT THE FACILITY PER SECTION 906 OF THE FIRE CODE AND NFPA 10. THE SIZE AND DISTRIBUTION OF FIRE EXTINGUISHERS SHALL BE IN ACCORDANCE WITH SECTIONS 906.3.1 THROUGH 906.3.4. FIRE EXTINGUISHER RATING SHALL NOT BE LESS THAN A 2A:10BC. MAX UNOBSTRUCTED TRAVEL DISTANCE TO ANY APPROVED EXTINGUISHER SHALL NOT BE MORE THAN 75 FT.
- DELEGATED DESIGN NFPA 13 FIRE SPRINKLER SYSTEM DESIGNED IN ACCORDANCE WITH OSSC 903.3.1.1 WILL BE A DEFERRED SUBMITTAL.
- PLANS FOR FIRE DEPARTMENT CONNECTION (FDC) INDICATING SHUT-OFF VALVES (W/V OR P/V) AND WATER VALVES FOR FIRE SUPPRESSION SYSTEMS SHALL BE SUBMITTED TO THE FIRE OFFICIAL FOR APPROVAL PRIOR TO CONSTRUCTION.

- FIRE SUPPRESSION CONNECTIONS, VALVES AND VAULTS SHALL BE INSTALLED IN REMOTE LOCATIONS AWAY FROM THE BUILDINGS PROTECTED.
- FIRE FLOW DEMAND PER OFC APPENDIX B:
  - PER TABLE B105.2, SECTION 903.3.1.1 DESIGN STANDARD:  
 TABLE B105.1(2) - TYPE IIB, 65,071 SF:  
 FIRE FLOW RATE: 2,750 GPM  
 FIRE FLOW DURATION: 2 HRS  
 TABLE B105.2 REQUIRED FIRE FLOW - SPRINKLERED PER IFC 903.3.1.1:  
 FIRE FLOW REDUCTION: 2,750 GPM x 0.25 = 687.5 GPM  
**THE REDUCED FIRE FLOW RATE SHALL NOT BE LESS THAN 1,000 GPM**  
**MIN. REQUIRED FIRE FLOW RATE = 1,000 GPM**  
**MIN. REQUIRED FIRE FLOW DURATION = 2 HRS**
- SIGNAGE NOTES:
  - PER OFC 509.1, ROOMS CONTAINING FIRE PROTECTION EQUIPMENT (AIR CONDITIONING SYSTEMS, FIRE SPRINKLER RISERS AND VALVES OR OTHER FIRE DETECTION, SUPPRESSION OR CONTROL ELEMENTS) SHALL BE IDENTIFIED IN AN APPROVED MANNER. REQUIRED SIGNS SHALL BE CONSTRUCTED OF DURABLE MATERIALS, PERMANENTLY INSTALLED AND READILY VISIBLE. SIGNAGE TO BE APPROVED PRIOR TO OCCUPANCY.
  - PER OFC 605.3.1 AND NFPA 20, DOORS INTO ELECTRICAL CONTROL PANEL ROOMS SHALL BE MARKED WITH A PLAINLY VISIBLE AND LEGIBLE SIGN STATING "ELECTRICAL ROOM". SIGNAGE TO BE APPROVED PRIOR TO OCCUPANCY.
  - PER OSC1011.4 A SIGN STATING "EXIT" IN RAISED LETTERS AND BRAILLE AND COMPLYING WITH ICC A117.1 SHALL BE PROVIDED ADJACENT TO EACH DOOR IN AN AREA OF REFUGE, EXTERIOR AREA FOR ASSISTED RESCUE, EXIT STAIRWAY, EXIT RAMP, EXIT PASSAGEWAY AND EXIT DISCHARGE.
  - FIRE DEPARTMENT ACCESS DOORS SHALL BE LABELED ON THE EXTERIOR SIDE WITH THE FOLLOWING SIGN OR OTHER APPROVED SIGN:  
  
 FIRE DEPARTMENT ACCESS DOOR  
DO NOT BLOCK

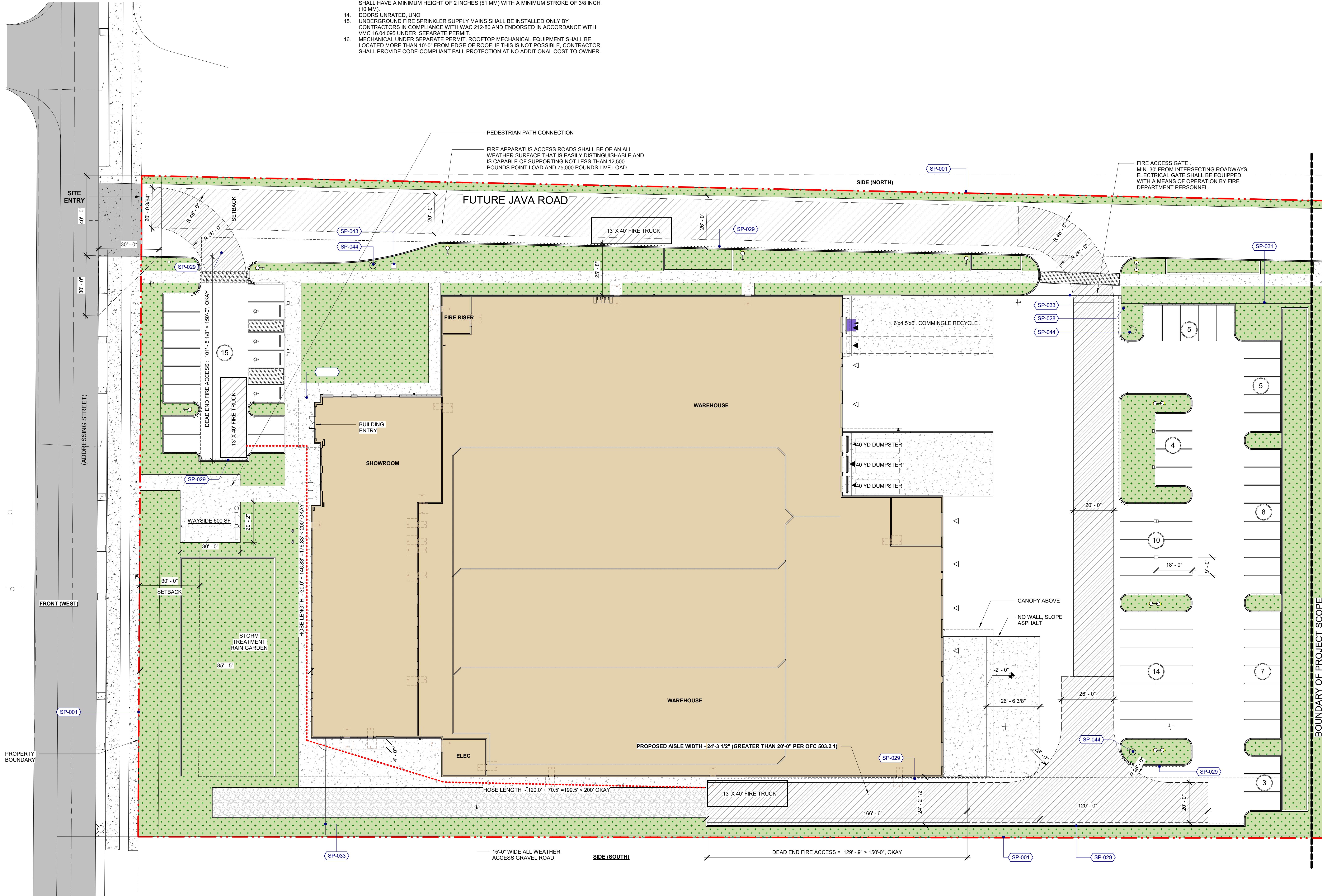
- THE LETTERING SHALL BE IN A CONTRASTING COLOR TO THE BACKGROUND. LETTERS SHALL HAVE A MINIMUM HEIGHT OF 2 INCHES (51 MM) WITH A MINIMUM STROKE OF 3/8 INCH (10 MM).
- DOORS UNRATED, UNO
- UNDERGROUND FIRE SPRINKLER SUPPLY MAINS SHALL BE INSTALLED ONLY BY CONTRACTORS IN COMPLIANCE WITH WAC 212-80 AND ENDORSED IN ACCORDANCE WITH WAC 16.04.095 UNDER SEPARATE PERMIT.
- MECHANICAL UNDER SEPARATE PERMIT, ROOFTOP MECHANICAL EQUIPMENT SHALL BE LOCATED MORE THAN 10'-0" FROM EDGE OF ROOF. IF THIS IS NOT POSSIBLE, CONTRACTOR SHALL PROVIDE CODE-COMPLIANT FALL PROTECTION AT NO ADDITIONAL COST TO OWNER.

**FIRE RESPONSE PLAN LEGEND**



**KEYNOTES**

- SP-001 PROPERTY LINE
- SP-028 KNOX BOX COORDINATE FINAL LOCATION(S) WITH FIRE MARSHAL
- SP-029 FIRE LANE CURB PAINTED RED, MARKED "NO PARKING FIRE LANE" AT 20 FT INTERVALS AND CHANGES IN DIRECTION, WHITE LETTERING: 1" STROKE, 6" HIGH
- SP-031 FENCE, ORNAMENTAL BLACK BAR, 6'-0" H
- SP-033 GATE, ORNAMENTAL BLACK BAR, 20' W MIN CLR. ELECTRICAL GATES SHALL BE EQUIPPED WITH A MEANS FOR OPERATION BY FIRE DEPT PERSONNEL
- SP-043 FDC - COORDINATE LOCATION WITH FIRE MARSHAL
- SP-044 FIRE HYDRANT (N)



**2 FIRE SERVICE SITE PLAN**  
1" = 20'-0"



TVFR Permit# 2022-0031

**FD Notes:**  
 Building will be required to test for Emergency Responder Radio Coverage or opt into our Mobile Emergency Radio program (MERRC). If the MERRC option is chosen, fees will need to be paid to TVFR prior to the issuance of a Building permit OFC 510.  
 Fire Lane markings to be determined OFC 503.3.  
 Fire department final inspection required OFC 107.2.

Client/ Owner:  
**PRECISION COUNTERTOPS**

26200 SW 95th AVE  
WILSONVILLE OR  
97070

Project:  
**PRECISION COUNTERTOPS**

SW GARDEN ACRES ROAD  
WILSONVILLE,  
OREGON 97070

Sheet Title:  
**FIRE SERVICE SITE PLAN**

Revisions:

#	Description	Date
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 Date: 12/23/2022  
 Job Number: 121036  
 Sheet



Public Hearing:

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

Case Files:

DB22-0012 Primary School in Frog Pond

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

**DEVELOPMENT REVIEW BOARD  
RESOLUTION NO. 415**

**A RESOLUTION ADOPTING FINDINGS AND CONDITIONS OF APPROVAL, APPROVING A STAGE 1 PRELIMINARY PLAN, STAGE 2 FINAL PLAN, SITE DESIGN REVIEW, CLASS 3 SIGN PERMIT AND WAIVERS, AND TYPE C TREE REMOVAL PLAN FOR CONSTRUCTION OF A NEW PRIMARY SCHOOL ON PROPERTY LOCATED AT 7151 SW BOECKMAN ROAD.**

WHEREAS, an application, together with planning exhibits for the above-captioned development, has been submitted by authorized representative Keith Liden, AICP, on behalf of the owner, West Linn-Wilsonville School District, in accordance with the procedures set forth in Section 4.008 of the Wilsonville Code, and

WHEREAS, the subject site is located at 7151 SW Boeckman Road on Tax Lot 4500, Section 12DC, and Tax Lot 400, Section 12DD 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 April 3, 2023, and

WHEREAS, said planning exhibits and staff report were duly considered by the Development Review Board Panel A at a scheduled meeting conducted on April 10, 2023, at which time exhibits, together with findings and public testimony were entered into the public record, and

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

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

NOW, THEREFORE, BE IT RESOLVED that the Development Review Board of the City of Wilsonville does hereby adopt the staff report dated April 3, 2023, attached hereto as Exhibit A1, with findings and recommendations contained therein, and authorizes the Planning Director to issue permits consistent with said recommendations for:

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

ADOPTED by the Development Review Board of the City of Wilsonville at a regular meeting thereof this 10<sup>th</sup> day of April, 2023, and filed with the Planning Administrative Assistant on \_\_\_\_\_. This resolution is final on the 15<sup>th</sup> calendar day after the postmarked date of the written notice of decision per *WC Sec 4.022(.09)* unless appealed per *WC Sec 4.022(.02)* or called up for review by the Council in accordance with *WC Sec 4.022(.03)*.

\_\_\_\_\_  
Jean Svadlenka, Chair - Panel A  
Wilsonville Development Review Board

Attest:

\_\_\_\_\_  
Shelley White, Planning Administrative Assistant





Exhibit A1  
Staff Report  
Wilsonville Planning Division  
Primary School in Frog Pond  
Development Review Board Panel 'A'  
Quasi-Judicial Public Hearing

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<b>Hearing Date:</b>	April 10, 2023
<b>Date of Report:</b>	April 3, 2023
<b>Application No.:</b>	DB22-0012 Primary School in Frog Pond
<b>Request/Summary:</b>	The requests before the Development Review Board include Stage 1 Preliminary Plan, Stage 2 Final Plan, Site Design Review, Class 3 Sign Permit and Waivers, and Type C Tree Removal Plan
<b>Location:</b>	7151 SW Boeckman Road. The property is specifically known as Tax Lot 4500, Section 12DC, and Tax Lot 400, Section 12DD, Township 3 South, Range 1 West, Willamette Meridian, City of Wilsonville, Clackamas County, Oregon.
<b>Owner/Applicant:</b>	West Linn-Wilsonville School District (Contact: Remo Douglas)
<b>Authorized Representative:</b>	Keith Liden, AICP
<b>Comprehensive Plan Designation:</b>	Public
<b>Zone Map Classification:</b>	Public Facility
<b>Staff Reviewers:</b>	Cindy Luxhoj AICP, Associate Planner Amy Pepper, PE, Development Engineering Manager Kerry Rappold, Natural Resources Manager
<b>Staff Recommendation:</b>	<b><u>Approve with conditions</u></b> the Stage 1 Preliminary Plan, Stage 2 Final Plan, Site Design Review, Class 3 Sign Permit and Waivers, and Type C Tree Removal Plan.

**Applicable Review Criteria:**

<b><u>Development Code:</u></b>	
Section 4.008	Application Procedures-In General
Section 4.009	Who May Initiate Application
Section 4.010	How to Apply
Section 4.011	How Applications are Processed
Section 4.014	Burden of Proof
Section 4.031	Authority of the Development Review Board
Subsection 4.035 (.04)	Site Development Permit Application
Subsection 4.035 (.05)	Complete Submittal Requirement
Section 4.110	Zones
Section 4.118	Standards Applying to Planned Development Zones
Section 4.136	PF – Public Facility Zone
Section 4.137.5	Screening and Buffering (SB) Overlay Zone
Section 4.139 through 4.139.11	Significant Resource Overlay Zone (SROZ)
Section 4.140	Planned Development Regulations
Section 4.154	On-site Pedestrian Access and Circulation
Section 4.155	Parking, Loading, and Bicycle Parking
Sections 4.156.01 through 4.156.11	Signs
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 Recyclables Storage
Section 4.199 through 4.199.60	
Sections 4.300 through 4.320	Underground Utilities
Sections 4.400 through 4.450 as applicable	Site Design Review
Sections 4.600 through 4.640.20	Tree Preservation and Protection
<b><u>Other Planning Documents:</u></b>	
Wilsonville Comprehensive Plan	
Frog Pond West Master Plan	

### Vicinity Map



### Background:

In July 2017 the City of Wilsonville adopted the Frog Pond West Master Plan for the subject property and surrounding area to guide development and implement the vision of previous planning efforts. The Frog Pond West Master Plan includes details on land use (including residential types and unit count ranges), location of other uses such as schools, residential and community design, transportation, parks and open space, and community elements such as lighting, street trees, gateways, and signs.

The new primary school site is 12.6 acres in size and consists of two parcels (Tax Lots 4500 and 400) identified as a “future school site” and “land banked” (future park site) in the Frog Pond West Master Plan. In 2019 as part of the Frog Pond Meadows subdivision annexation and Zone Map amendment (Ordinance Nos. 832 and 833), the future park property (Tax Lot 400) was annexed into the City and zoned PF (Public Facility) consistent with the Frog Pond West Master Plan. Subsequently in 2022 as part of the Frog Pond Estates subdivision annexation and Zone Map amendment (Ordinance No. 859 and 860), the primary school property (Tax Lot 4500) was annexed into the City and zoned PF consistent with the Master Plan.



Stemming from its historic rural use, a residence, pole barn, and two small accessory structures occupy the central portion of Tax Lot 4500. Tax Lot 400 is vacant. The trees on the site are generally clustered near the existing house and along the boundary between Tax Lots 4500 and 400.

The new primary school is proposed as envisioned in the Frog Pond Master Plan. The 12.6-acre property is owned by the West Linn-Wilsonville School District, and the northeastern portion is proposed to be sold to the City for use as a neighborhood park. The proposed primary school is planned to be constructed in two phases, with Phase 1 accommodating an enrollment of 350 students and 35 staff, and Phase 2 to include additional instruction space to raise the enrollment to 550 students, plus an additional 10 staff.

The Phase 1 development will include core facilities, such as the commons/gym, library, and food service designed to support the ultimate enrollment of 550 students. This phase will result in an approximately 58,130 square-foot, one-story building including:

- 16 classrooms
- Wellness/Commons/Gym
- Music classroom
- Library
- Makerspace
- Administrative offices
- Kitchen
- Main parking lot near Sherman Drive

The future Phase 2 addition of approximately 11,500 square feet (69,630 total) is proposed to include one additional wing of six classrooms and a two-classroom addition to a four-classroom wing from the first phase. In addition, a second parking lot is proposed in the northeastern portion of the school site to support the additional 200-student enrollment and staff.

This application requests the necessary City land use approvals, including a Stage 1 Preliminary Plan, Stage 2 Final Plan, Site Design Review, Class 3 Sign Permit and Waivers, and Type C Tree Removal Plan to construct the new primary school as described above. A Class 1 Administrative Review of a lot line adjustment has been applied for separately to create the desired property configuration for the proposed school and adjacent City park uses. Although the lot line adjustment will not be reviewed by the Development Review Board, the applicant has included a preliminary plat showing the proposed configuration of the school and park properties as tentatively agreed by the District and City in their application materials (Exhibit B1).

## Summary:

### Stage 1 Preliminary Plan

The Stage 1 Preliminary Plan proposes a new primary school and associated improvements on the west part of the site and sale of the east part of the site to the City for a new neighborhood park. The Stage 1 Preliminary Plan reviews the overall development and layout for consistency with the Frog Pond West Master Plan and requirements of the Public Facility (PF) zone. See Request A.

### Stage 2 Final Plan

The proposed Stage 2 Final Plan reviews the function and design of the proposed project, including consistency with the Stage 1 Preliminary Plan for a primary school and future park site. See Request B.

### Site Design Review

The scope of the Site Design Review includes review of the design, architecture, location, and context of the building and site improvements, such as landscaping, lighting, exterior colors and finishes, and signs, for consistency with the Stage 2 Final Plan and Code standards. See Request C.

### Class 3 Sign Permit and Waivers

The applicant proposes one (1) building mounted, one (1) freestanding sign with an electronic reader board, and three flag poles on the school site. The electronic reader board and third flag pole require waivers, which the applicant has requested at part of the current application. See Request D.

### Type C Tree Removal Plan

The Type C Tree Removal Plan reviews inventoried trees on the site, which are proposed for removal or retention, and replacement/mitigation. See Request E.

## Public Comments and Responses:

The City has received six (6) public comment letters about the proposed project (Exhibits D1 through D6). The comments express concerns about building orientation, site access, vehicular and bus traffic on surrounding streets, pedestrian and bicycle safety, noise and light pollution affecting existing residents, disruption to surrounding neighborhoods during construction and operation of the school, and landscaping. Public comments have been forwarded to the applicant so that they may respond to community concerns during their presentation at the Development Review Board public hearing.

## 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.

### Phasing of Improvements

The proposed primary school is planned to be constructed in two phases. Phase 1 will accommodate an enrollment of 350 students and 35 staff, and Phase 2 will include additional instruction space to raise the enrollment to 550 students, plus an additional 10 staff. The core facilities, such as the library, gymnasium, auditorium, and administrative offices are proposed to be built in the first phase to accommodate full enrollment.

### Traffic and Queuing

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

- Signalized Control:
  - SW Boeckman Road-SW Advance Road/SW Stafford Road-SW Wilsonville Road
- Two-way Stop-Controlled:
  - SW Boeckman Road/SW Willow Creek Drive
  - SW Boeckman Road/SW Laurel Glen Street
  - SW Boeckman Road/SW Sherman Drive
- All-way Stop-Controlled:
  - SW Boeckman Road/SW Canyon Creek Road

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

TABLE 3: EXISTING 2022 INTERSECTION OPERATIONS

INTERSECTION	OPERATING STANDARD	AM PEAK HOUR			AFTERNOON PEAK HOUR			PM PEAK HOUR		
		V/C	DELAY	LOS	V/C	DELAY	LOS	V/C	DELAY	LOS
<b>SIGNALIZED CONTROL</b>										
BOECKMAN RD-ADVANCE RD/ STAFFORD RD- WILSONVILLE RD	LOS D	0.46	12.4	B	0.67	14.6	B	0.68	19.0	B
<b>TWO-WAY STOP-CONTROLLED</b>										
BOECKMAN RD/ WILLOW CREEK DR	LOS D	0.18	15.7	A/C	0.29	22.2	A/C	0.10	17.4	A/C
BOECKMAN RD/ LAUREL GLEN ST	LOS D	0.13	14.1	A/B	0.08	15.9	A/C	0.11	15.8	A/C
BOECKMAN RD/ SHERMAN DR	LOS D	0.06	12.3	A/B	0.06	13.7	A/B	0.06	13.7	A/B
<b>ALL-WAY STOP-CONTROLLED</b>										
BOECKMAN RD/ CANYON CREEK RD	LOS D	0.52	13.3	B	0.64	16.8	C	0.72	21.1	C
<b>SIGNALIZED INTERSECTION:</b> Delay = Average Intersection Delay (secs) v/c = Total Volume-to-Capacity Ratio LOS = Total Level of Service		<b>TWO-WAY STOP CONTROLLED INTERSECTION:</b> Delay = Critical Movement Delay (secs) v/c = Critical Movement Volume-to-Capacity Ratio LOS = Critical Levels of Service (Major/Minor Road)			<b>ALL-WAY STOP CONTROLLED INTERSECTION:</b> Delay = Average Intersection Delay (secs) v/c = Critical Movement Volume-to-Capacity Ratio LOS = Total Level of Service					
<b>Bold/Highlighted = Does not meet the operating standard/mobility target</b>										

TABLE 7: INTERSECTION OPERATIONS – PM PEAK HOUR

INTERSECTION	OPERATING STANDARD	EXISTING + PROJECT			EXISTING + STAGE II			EXISTING + PROJECT + STAGE II		
		V/C	DELAY	LOS	V/C	DELAY	LOS	V/C	DELAY	LOS
<b>SIGNALIZED CONTROL</b>										
BOECKMAN RD-ADVANCE RD/ STAFFORD RD- WILSONVILLE RD	LOS D	0.69	21.4	C	0.73	22.8	C	0.74	23.1	C
<b>TWO-WAY STOP-CONTROLLED</b>										
BOECKMAN RD/ WILLOW CREEK DR	LOS D	0.11	18.3	A/C	0.14	23.9	A/C	0.17	25.6	A/D
BOECKMAN RD/ LAUREL GLEN ST	LOS D	0.14	18.6	A/C	0.16	21.4	A/C	0.18	22.9	A/C
BOECKMAN RD/ SHERMAN DR	LOS D	0.15	16.2	A/C	0.13	17.2	A/C	0.25	20.8	A/C
<b>ALL-WAY STOP-CONTROLLED</b>										
BOECKMAN RD/ CANYON CREEK RD	LOS D	0.73	21.7	C	0.94	36.5	<b>E</b>	0.95	38.0	<b>E</b>
<b>SIGNALIZED INTERSECTION:</b> Delay = Average Intersection Delay (secs) v/c = Total Volume-to-Capacity Ratio LOS = Total Level of Service		<b>TWO-WAY STOP CONTROLLED INTERSECTION:</b> Delay = Critical Movement Delay (secs) v/c = Critical Movement Volume-to-Capacity Ratio LOS = Critical Levels of Service (Major/Minor Road)			<b>ALL-WAY STOP CONTROLLED INTERSECTION:</b> Delay = Average Intersection Delay (secs) v/c = Critical Movement Volume-to-Capacity Ratio LOS = Total Level of Service					
<b>Bold/Highlighted = Does not meet the operating standard/mobility target</b>										

As discussed in the Transportation Impact Analysis, the SW Boeckman Road/SW Canyon Creek Road intersection operates at an overall LOS E in the Existing + Stage II and Existing + Stage II + Project scenarios. The Wilsonville Transportation System Plan (TSP) already specifies intersection improvements as a high priority project as part of project UU-01.14. As such, the developer’s Transportation System Development Charge (SDC) will contribute to the City’s fund to implement the improvements and no additional off-site mitigations or conditions of approval are



necessary. Construction of the intersection improvements will be coordinated with the other tasks in the project UU-01 Boeckman Road Dip Improvements, with design work currently in the process and construction estimated to begin in 2023.

**TABLE 8: MITIGATION INTERSECTION OPERATIONS – PM PEAK HOUR**

INTERSECTION	MITIGATION TRAFFIC CONTROL	OPERATING STANDARD	EXISTING + PROJECT + STAGE II		
			V/C	DELAY	LOS
<b>BOECKMAN RD/ CANYON CREEK RD</b>	Traffic Signal (with left turn lanes)	LOS D	0.59	14.8	B
<b>BOECKMAN RD/ CANYON CREEK RD</b>	Roundabout (Single-Lane)	LOS D	0.54	9.5	A

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

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

**Bold/Highlighted = Does not meet the operating standard/mobility target**

The project will add an additional 406 AM peak hour trips (220 in, 186 out), 247 Afternoon peak hour trips (114 in, 133 out), and 87 PM peak hour trips (39 in, 48 out). the proposed development is expected to generate one (1) new PM peak hour trip through the I-5/SW Wilsonville Road interchange area and one (1) new PM peak hour trip through the I-5/SW Elligsen Road interchange area.

**TABLE 4: VEHICLE TRIP GENERATION**

LAND USE	ITE DESCRIPTION (CODE)	UNITS	AM PEAK TRIPS			AFTERNOON PEAK TRIPS			PM PEAK TRIPS			WEEK DAY
			IN	OUT	TOTAL	IN	OUT	TOTAL	IN	OUT	TOTAL	
NEW PRIMARY SCHOOL	ELEMENTARY SCHOOL (520)	550 Students	220	187	407	114	134	248	40	48	88	1,249
EXISTING HOME REMOVED	SINGLE-FAMILY HOUSING (210)	1 Lot	0	1	1	0	1	1	1	0	1	15
<b>Total Net New Trips</b>			<b>220</b>	<b>186</b>	<b>406</b>	<b>114</b>	<b>133</b>	<b>247</b>	<b>39</b>	<b>48</b>	<b>87</b>	<b>1,234</b>

In addition to the vehicular trips generated, eight (8) school buses were included in the analysis of the transportation system and distributed based on conceptual school boundary estimates for the proposed primary school. The eight (8) buses will add 16 trips (8 in, 8 out) in the AM and Afternoon peak hours at the bus access on SW Boeckman Road.

**TABLE 5: SCHOOL BUS TRIP GENERATION**

LAND USE	TYPE OF ADDITIONAL TRIPS	UNITS	AM PEAK TRIPS			AFTERNOON PEAK TRIPS			PM PEAK TRIPS			WEEK DAY
			IN	OUT	TOTAL	IN	OUT	TOTAL	IN	OUT	TOTAL	
NEW PRIMARY SCHOOL	SCHOOL BUSES	Number of Buses	8	8	16	8	8	16	0	0	0	32
<b>Operations Analysis Volumes</b>			<b>16</b>	<b>16</b>	<b>31</b>	<b>16</b>	<b>16</b>	<b>32</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>64</b>

As discussed in the Transportation Impact Analysis, the main entrance and parking lot provide a drive aisle loop with a student drop-off and pick-up curb that is striped as approximately 300 feet long, which has the potential to accommodate up to 12 vehicles at a time for student loading when considering 25 feet of space per vehicle. Queuing of vehicles for student drop-off and pick-up can be very variable, depending on the site layout, efficiency of parking aide staff, and length of queuing area versus length of actual curbside loading area. With the long curbside loading area and availability of additional queuing space through the parking lot (totaling over 750 feet), this should prevent vehicle queues from spilling out of the site onto SW Sherman Drive.

The bus access provides queuing and loading areas for school buses and separates parent pick-up and drop-off from the school buses. There is approximately 275 feet of curb space for buses, which has the potential to accommodate up to five (5) buses at a time when considering 50 feet of space per bus. The school has estimated that a maximum of eight (8) school buses will be needed for the school. Therefore, the Transportation Impact Analysis recommends that bus arrival and departure times be coordinated so that all buses are not parked at one time in the loading area or that additional curb space be provided to accommodate all eight (8) buses at once.

### Bicycle Parking

The Transportation Impact Analysis assumed 22 classrooms in a 60,000-square-foot building at full buildout of Phases 1 and 2 of the new primary school, which resulted in a need for 97 bicycle parking spaces. However, the Phase 1 floor plan includes 58,103 square feet and 16 classrooms, with an additional 11,500 square feet of floor area and 8 more classrooms at full buildout of Phase 2, which is 9,630 square feet and 2 more classrooms than anticipated in the Transportation Impact Analysis. Thus, the applicant’s plans do not provide adequate bicycle parking to comply with Subsection 4.155 (.04) A. of the Code. To address this discrepancy, the applicant provides 52 bicycle parking spaces in Phase 1 and a condition of approval requires the applicant to demonstrate compliance with the standard prior to temporary occupancy of the school building.

### Street Demonstration Plan Compliance

The Street Demonstration Plan is an illustrative layout of the desired level of connectivity in the Frog Pond West neighborhood and is intended to be guiding, not binding, allowing for flexibility provided that overall connectivity goals are met. As discussed in Finding B21 of this staff report, the block size and shape, access, and connectivity of the proposed school site complies with Figure 18 of the Frog Pond West Master Plan for SW Sherman Drive and SW Brisband Street;

however, the applicant has proposed an alternative to the Pedestrian Connection shown in Figure 18 along the property's east boundary.

As described in the applicant's code response and explained in detail in Finding B21, they propose as an alternative a pathway from the SW Boeckman Road sidewalk that travels north along the bus lane to a path that meanders north along the eastern side of the school building to SW Brisband Street. For security purposes, this path will be gated during school hours but opened to the public at other times to facilitate access. During school hours the pedestrian route would continue along the bus lane to the front of the building and then onto the northwest corner of the site along SW Sherman Drive, which then connects to SW Brisband Street, thus completing the intent of the Master Plan while addressing school security.

### Tree Removal and Preservation

There are 63 trees inventoried for the proposed development on the applicant's tree protection and removal plan (Sheet LU 201 in Exhibit B2); these do not include trees on the future City park portion of the site that will not be impacted by development on the school site. The trees include a variety of fruit and ornamental trees, as well as cottonwood, birch and Douglas fir, planted around the existing house and outbuildings and are not significant native grown trees. Of the 63 trees, 47 trees are proposed for removal in Phase 1 construction and 16 preserved. Of the 16 preserved trees, 13 are proposed for removal in Phase 2 when construction occurs in the future. The applicant proposes planting in excess of 90 trees on the site and as street trees, exceeding the required 1:1 mitigation ratio.

### 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.

#### Sign Waivers

The Development Review Board may grant sign waivers as part of a comprehensive review of the design and function of an entire site to bring about an improved design.

The applicant has requested two (2) sign waivers, one (1) to allow a third flag pole and one (1) to allow an electronic reader board in the proposed monument sign on SW Sherman Drive. As discussed in detail in Findings D8 through D17 under Request D, the applicant's narrative provides responses to the four review criteria for sign waiver requests.

Two (2) flagpoles up to a maximum of 30 feet in height on a site are exempt from sign permit requirements. However, the applicant proposes three (3) flagpoles to fly the required School District flags and has requested a waiver to the sign permit requirements for the third pole. The proposed configuration will allow the three (3) flags to be displayed properly when half-mast protocol is in effect, each pole will be adequately lit from above, and the third flagpole is



complementary in design and placement to the two (2) allowed by the standard while meeting the State requirement.

Changeable copy signs, such as the proposed electronic reader board, are listed as prohibited signs in Subsection 4.156.06 (.01) D. However, a waiver may be granted to allow them as long as it is ensured specific criteria are met regarding automatic dimming technology, luminance of the sign, and copy hold time. While grouped under prohibited signs, the intention of the code is to make the signs conditionally permitted. As no conditionally permitted sign section exists currently, these signs were grouped in the prohibited sign section as that is where language regarding these signs previously existed in the code. The proposed electronic reader board design is complementary in design to the monument sign and school building and complies with waiver criteria with respect to display, illumination, copy hold time, and dimming technology.

**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 recommend approval to City Council or approve, as relevant, the proposed application (DB22-0012) with the following conditions:

**Planning Division Conditions:**

**Request A: Stage 1 Preliminary Plan (STG122-0008)**

**PDA 1. General:** Minor changes in an approved Stage 1 Preliminary Plan may be approved by the Planning Director through the Class 1 Administrative Review Process if such changes are consistent with the purposes and general character of the development plan and other changes as authorized by the Development Code to be reviewed through a Class 2 Administrative Review Process. All other modifications, including extension or revision of the staged development schedule, shall be processed in the same manner as the original application and shall be subject to the same procedural requirements.

**Request B: Stage 2 Final Plan (STG222-0010)**

**PDB 1. General:** The approved Stage 2 Final Plan shall control the issuance of all building permits and shall restrict the nature, location and design of all uses. The Planning Director through the Class 1 Administrative Review Process may approve minor changes to the Final Plan if such changes are consistent with the purposes and general character of the Final Plan and other changes as authorized by the Development Code to be reviewed through a Class 2 Administrative Review Process. All other modifications shall be processed in the same manner as the original application and shall be subject to the same procedural requirements.

**PDB 2. Prior to Temporary Occupancy:** The applicant shall install curb stops in parking spaces to ensure that landscaped areas and pedestrian walkways will not be encroached upon by parked vehicles. See Finding B29.

**PDB 3. Prior to Temporary Occupancy:** All crosswalks shall be clearly marked with contrasting paint or paving materials (e.g., pavers, light-colored concrete inlay between asphalt, or similar contrast). See Finding B26.

**PDB 4. Prior to Construction of the Phase 2 Parking Addition:** The applicant shall submit a landscape plan to for the parking area to the City for review and approval. See Finding B35.

**PDB 5.** The applicant’s plans do not provide adequate bicycle parking to comply with the standard. **Prior to Temporary Occupancy:** The applicant shall demonstrate compliance with the bicycle parking standard (Subsection 4.155 (.04) A.) and install the appropriate number of bicycle racks in Phase 1 and, subsequently Phase 2, of the school building. See Finding B37

**PDB 6. Prior to Final Occupancy:** A waiver of remonstrance against formation of a local improvement district (LID) shall be recorded in the County Recorder’s Office as well as the City’s Lien Docket. In light of the developer’s obligation to pay an Infrastructure Supplemental Fee and Boeckman Bridge Fee the LID Waiver may be released upon official recording of the release of the waiver only after payment of the Infrastructure Supplemental Fee and Boeckman Bridge Fee. Further, the developer shall pay all costs and fees associated with the City’s release of the LID Waiver. See Finding B53.

**Request C: Site Design Review (SDR22-0011)**

<b>PDC 1.</b>	<b><u>General:</u></b> 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 Section 4.030.
<b>PDC 2.</b>	<b><u>Prior to Final Occupancy:</u></b> All exterior, roof and ground mounted, mechanical and utility equipment shall be screened from ground level off-site view from adjacent streets or properties. See Finding C22.
<b>PDC 3.</b>	<b><u>Prior to Temporary Occupancy:</u></b> All landscaping required and approved by the DRB shall be installed prior to occupancy of the proposed development unless security equal to one hundred and ten percent (110%) of the cost of the landscaping as determined by the Planning Director is filed with the City assuring such installation within six (6) months of occupancy. "Security" is cash, certified check, time certificates of deposit, assignment of a savings account or such other assurance of completion as shall meet with the approval of the City Attorney. In such cases the developer shall also provide written authorization, to the satisfaction of the City Attorney, for the City or its designees to enter the property and complete the landscaping as approved. If the installation of the landscaping is not completed within the six-month period, or within an extension of time authorized by the DRB, the security may be used by the City to complete the installation. Upon completion of the installation, any portion of the remaining security deposited with the City will be returned to the applicant. See Finding C15.
<b>PDC 4.</b>	<b><u>Ongoing:</u></b> 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 C16.
<b>PDC 5.</b>	<b><u>Ongoing:</u></b> 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 C17 and C18.
<b>PDC 6.</b>	<b><u>General:</u></b> The following requirements for planting of shrubs and ground cover shall be met:



	<ul style="list-style-type: none"> <li>• Non-horticultural plastic sheeting or other impermeable surface shall not be placed under landscaping mulch.</li> <li>• Native topsoil shall be preserved and reused to the extent feasible.</li> <li>• 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.</li> <li>• 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.</li> <li>• Shrubs shall reach their designed size for screening within three (3) years of planting.</li> <li>• 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.</li> <li>• No bare root planting shall be permitted.</li> <li>• Ground cover shall be sufficient to cover at least 80% of the bare soil in required landscape areas within three (3) years of planting.</li> <li>• Appropriate plant materials shall be installed beneath the canopies of trees and large shrubs to avoid the appearance of bare ground in those locations.</li> <li>• Compost-amended topsoil shall be integrated in all areas to be landscaped, including lawns. See Finding C23.</li> </ul>
PDC 7.	<b>General:</b> All trees shall be balled and burlapped and conform in size and grade to “American Standards for Nursery Stock” current edition. See Finding C25.
PDC 8.	<b>Ongoing:</b> 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 C30.
PDC 9.	<b>Prior to issuance of any Public Works permits:</b> The applicant / owner shall submit information demonstrating compliance with the Public Works Standards and Frog Pond West Master Plan. The street lighting shall be Aurora style streetlights, as Westbrook is no longer approved by PGE. The applicant/owner 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. See Finding C42.
PDC 10.	<b>Prior to Non-Grading Building Permit Issuance:</b> Final review of the proposed building lighting’s conformance with the Outdoor Lighting Ordinance will be determined at the time of Building Permit issuance. See Findings C39.

Request D: Class 3 Sign Permit and Waivers (SIGN22-0012)

PDD 1.	<b>Ongoing:</b> Approved signs shall be installed in a manner substantially similar to the plans approved by the DRB and stamped approved by the Planning Division.
PDD 2.	<b>Prior to Sign Installation/Ongoing:</b> The Applicant/Owner of the property shall obtain all necessary building and electrical permits for the approved signs, prior to

	their installation, and shall ensure that the signs are maintained in a commonly-accepted, professional manner
PDD 3.	<b>Ongoing:</b> The Applicant/Owner shall ensure that the brightness of the approved reader board sign automatically adjusts in direct correlation with ambient light conditions, and appropriate functioning of the dimming technology for the life of the sign. See Finding D16.
PDD 4.	<b>Ongoing:</b> The Applicant/Owner shall ensure that the approved reader board sign does not exceed 5000 candelas per square meter between sunrise and sunset, or 500 candelas per square meter between sunset and sunrise. See Finding D17.
PDD 5.	<b>Ongoing:</b> The Applicant/Owner shall ensure the approved reader board sign maintains a copy hold time of at least fifteen (15) minutes. See Finding D18.
PDD 6.	<b>Prior to Final Occupancy:</b> All street signs shall be installed and utilize the City-approved sign cap on street name signs matching the design used in the previously approved subdivisions within Frog Pond West. The school district will buy the signs from the City. See Finding D41.

Request E: Type C Tree Removal Plan (TPLN22-0009)

PDE 1.	<b>General:</b> This approval for removal applies only to the 47 trees in Phase 1 and additional 13 trees in Phase 2 identified in the applicant’s submitted Tree Maintenance and Protection Plan, see Exhibit B2. All other trees on the property shall be maintained unless removal is approved through separate application.
PDE 2.	<b>Prior to Grading Permit Issuance:</b> The applicant/owner shall submit an application for a Type C Tree Removal Permit for the phase(s) of development impacted by the grading 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/owner 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/owner 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.
PDE 3.	<b>Prior to Temporary Occupancy:</b> The applicant/owner shall install the required mitigation trees, as shown in the applicant’s Sheets LU 206 through LU 208 per Section 4.620 WC. See Finding E9.
PDE 4.	<b>Prior to Commencing Site Grading:</b> 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. See Finding E12.

*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:**

<b>PFB 1.</b>	<b>Ongoing:</b> Public Works Plans and Public Improvements shall conform to the “Public Works Plan Submittal Requirements and Other Engineering Requirements” in Exhibit C1
<b>PFB 2.</b>	<b>Prior to Issuance of Any Permits:</b> The applicant shall enter into a Development Agreement or Intergovernmental Cooperative Agreement with the City.
<b>PFB 3.</b>	The Traffic Impact Study for the project (DKS, October 2022) found that the level of service (LOS) at the intersection of Boeckman Road and Canyon Creek Road will fall below LOS D. The City has identified intersection improvements as part of project UU-01 in the Transportation System Plan. The City is responsible for the actual reconstruction/improvement to SW Boeckman Road per the Frog Pond West Master Plan and Transportation System Plan. The City has identified funding for design and construction for design and construction as CIP 4206 in the proposed budget for FY 2023 and construction is anticipated to commence in 2023.
<b>PFB 4.</b>	Streets shall be primarily constructed per the street type and cross-section as shown in the Frog Pond West Master Plan. <b>Prior to Issuance of the Public Works Permit:</b> Submit construction drawings to Engineering showing street improvements along the development’s frontage on SW Sherman Drive, including street widening to accommodate two travel lane, parking lane, curb, planter strip, street trees, sidewalk, streetlights, fire access, and driveway approach along the site frontage. Additionally, the drawings shall show street improvements along the development’s frontage on SW Brisband Street, including a minimum pavement width of 20 feet, curb, sanitary sewer, water line, storm main, planter strip, street trees, sidewalk, street lights and a driveway approach along the site frontage. Street improvements shall be constructed in accordance with the Public Works Standards.
<b>PFB 5.</b>	The Frog Pond West Master Plan identifies a pedestrian connection at approximately the eastern property line of the project. However, SW Wehler Way was constructed further west than anticipated in the Street Demonstration Plan. The north-south pedestrian connection in the vicinity of this project will be partially constructed with the future park improvements. A pedestrian connection will be constructed through the project site that will be open to the public outside of school hours. <b>Prior to Issuance of the Public Works Permit:</b> Submit construction drawings to Engineering showing pedestrian connectivity improvements from the internal pedestrian routes to SW Wehler Way across Tax Lots 400 and 5100.



PFB 6.	<b><u>Prior to Issuance of the Public Works Permit:</u></b> A final stormwater report shall be submitted for review and approval. The stormwater report shall include information and calculations to demonstrate how the proposed development meets the treatment, flow control, and source control requirements.
PFB 7.	<b><u>Prior to Issuance of the Public Works Permit:</u></b> Applicant shall obtain an NPDES 1200C permit from the Oregon Department of Environmental Quality and a Local Erosion Control Permit from the City of Wilsonville. All erosion control measures shall be in place prior to starting any construction work, including any demolition work. Permits shall remain active until all construction work is complete and the site has been stabilized.
PFB 8.	<b><u>With the Building Permit:</u></b> The construction drawings shall show the location of any existing septic systems. <b><u>Prior to Final Building Permit Occupancy:</u></b> Submit documentation that the existing on-site septic systems were properly decommissioned per the requirements of OAR 340-071-0185.
PFB 9.	<b><u>With the Building Permit:</u></b> The construction drawings shall show the location of any existing well(s). <b><u>Prior to Final Building Permit Occupancy:</u></b> Submit documentation that any existing wells serving this property was properly abandoned in accordance with OAR 690-240 and the Water Resources Department requirements.
PFB 10.	Access to SW Boeckman Road, classified as a minor arterial, shall be limited to school buses only. <b><u>With the Public Works Permit:</u></b> The construction drawings shall show the location of signage to prohibit all non-bus traffic from using this access. <b><u>Prior to Final Building Certificate of Occupancy:</u></b> All necessary signage shall be installed, inspected and approved by the City.
PFB 11.	<b><u>Prior to Final Building Certificate of Occupancy:</u></b> The applicant shall dedicate all necessary 15-foot water line easements. All fire hydrants and water lines serving those fire hydrants shall be publicly owned. Any portion of that system that is located outside of the right-of-way shall be located in a 15-foot easement.
PFB 12.	<b><u>Prior to Final Building Certificate of Occupancy:</u></b> The applicant shall record a 40.8-foot right-of-way dedication along SW Brisband Street.
PFB 13.	<b><u>Prior to Final Building Certificate of Occupancy:</u></b> The applicant shall record a 10.5-foot right-of-way dedication along SW Boeckman Road.
PFB 14.	<b><u>Prior to Final Building Certificate of Occupancy:</u></b> The applicant shall dedicate a 6-foot public utility easement along SW Brisband Street and SW Sherman Drive rights-of-way.
PFB 15.	<b><u>Prior to Final Building Certificate of Occupancy:</u></b> The applicant shall dedicate a 10-foot public utility easement along the SW Boeckman Road right-of-way.
PFB 16.	Due to conflicts with stormwater planters located in the right-of-way, some street trees must be installed outside of the right-of-way. <b><u>Prior to Final Building Certificate of Occupancy:</u></b> The applicant shall dedicate a street tree easement along SW Brisband Street and SW Sherman Drive for all street trees located outside of the rights-of-way.
PFB 17.	<b><u>Prior to Issuance of Any Occupancy Permits:</u></b> All public infrastructure improvements including but not limited to street, stormwater drainage, water quality and flow

	control, sanitary sewer, and water facilities shall be substantially complete with approval from the Community Development Director pursuant to Section 4.220 of the Development Code.
<b>PFB 18.</b>	<b><u>Prior to Issuance of Any Occupancy Permits:</u></b> All necessary easements and right-of-way dedications shall be recorded with the County, including public water line, public utility, private storm pipeline, street tree, private stormwater and access easements, and conservation easements.
<b>PFB 19.</b>	<b><u>Prior to Issuance of Final Building Certificate of Occupancy:</u></b> The applicant shall provide a site distance certification by an Oregon Registered Professional Engineer for all driveway access per the Traffic Impact Study.
<b>PFB 20.</b>	<b><u>Prior to Any Paving:</u></b> Onsite stormwater facilities must be constructed and vegetated facilities planted. <b><u>Prior Issuance of Final Building Certificate of Occupancy:</u></b> The applicant must execute and record with the County a Stormwater Maintenance and Access Easement Agreement with the City.
<b>PFB 21.</b>	<b><u>Prior to Any Paving:</u></b> Offsite stormwater facilities must be constructed and vegetated facilities planted. <b><u>Prior Issuance of Final Building Certificate of Occupancy:</u></b> The applicant must execute and record with the County a Stormwater Maintenance Agreement with the City.

## 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 DB22-0012. 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. Applicant's Narrative and Materials – Available Under Separate Cover**

- Land Use Application Form
- Proof of Ownership/Title Insurance Policy
- Land Use Narrative
- Appendix A: Plan Set – see Exhibit B2
- Appendix B: Preliminary Partition Plat
- Appendix C: Screening and Exterior Finishes
- Appendix D: Transportation Impact Analysis
- Appendix E: Republic Services Provider Letter
- Appendix F: Tree Protection Specifications
- Appendix G: Tualatin Valley Fire and Rescue Permit
- Appendix H: Preliminary Drainage Report
- Appendix I: Landscape and Site Furnishing Details
- Appendix J: Lighting Details

#### **B2. Applicant's Drawings and Plans – Available Under Separate Cover**

- B3. Incompleteness Response Letter Dated January 24, 2023
- B4. Memorandum with Supplemental Information Dated April 3, 2023

### Development Review Team Correspondence

- C1. Public Works Submittal and Other Engineering Requirements

### Other Correspondence/Public Comments

- D1. John Ciepiela Comment Dated December 30, 2022
- D2. Brianna Gelow and Trent Powell Comment Dated March 28, 2023
- D3. Duane and Beck Fromhart Comment Dated March 29, 2023



- D4. Julie and John Egan Comment Dated March 29, 2023
- D5. Dave Clark Comment Dated March 31, 2023
- D6. John Boyle Comment Dated March 31, 2023

**Procedural Statements and Background Information:**

- 1. The statutory 120-day time limit applies to this application. The applicant first submitted the application on November 22, 2022. Staff conducted a completeness review within the statutorily allowed 30-day review period and found the application to be incomplete on December 22, 2022. The applicant submitted additional materials on January 25, 2023. Staff conducted a completeness review within the statutorily allowed 30-day review period and deemed the application complete on February 23, 2023. The City must render a final decision for the request, including any appeals, by June 22, 2023.
- 2. Surrounding land uses are as follows:

Compass Direction	Zone:	Existing Use:
North	RRFF-5 and RN	Rural Residential/Agriculture (Clackamas County) Residential (Frog Pond Estates, Frog Pond Ridge)
East	RN	Residential (Stafford Meadows, Frog Pond Meadows)
South	PDR4	Residential
West	RN	Residential (Morgan Farm)

- 3. Previous City Planning Approvals:  
DB18-0060 and DB18-0061 Frog Pond Meadows - Annexation and Zone Map Amendment  
DB21-0065 and DB21-0066 Frog Pond Estates - Annexation and Zone Map Amendment
- 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 City's processing of the application is in accordance with the applicable general procedures of this Section.

#### Initiating Application Section 4.009

The owners of all property included in the application signed the application forms. The West Linn-Wilsonville School District initiated the application, which was submitted by Keith Liden, Planning Consultant, with their approval.

#### Pre-Application Conference Subsection 4.010 (.02)

Following a request from the applicant, the City held a pre-application conference for the proposal on July 28, 2022 (PRE22-0017), in accordance with this subsection.

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

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

#### General Submission Requirements Subsection 4.035 (.04) A.

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

#### Zoning-Generally Section 4.110

This proposed development is in conformity with the applicable zoning district and general development regulations listed in Sections 4.150 through 4.199, applied in accordance with this Section.



## Request A: Stage 1 Preliminary Plan (STG122-0008)

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

### Comprehensive Plan

Support Development of Land within City Consistent with Land Use Designation  
Goal 2.1, Policy 2.1.1., Implementation Measure 2.1.1.a., Policy 2.2.1.

**A1.** The City's Comprehensive Plan, Frog Pond Area Plan, and Frog Pond West Master Plan designate the subject property for public facility use. The Frog Pond West Master Plan specifically identifies procedures for development of the subject and surrounding land, thus supporting its development for a school and neighborhood park so long as proposed development meets applicable policies and standards.

Encourage Master Planning of Large Areas  
Implementation Measure 2.1.1.f.2.

**A2.** The proposed development is part of a larger area covered by the Frog Pond West Master Plan consistent with the City's policies and encouragement related to master planning.

Urban Development Only Where Necessary Facilities can be Provided  
Goal 3.1, Policy 3.1.2, Implementation Measure 3.1.2.a.

**A3.** As can be found in the findings for the Stage 2 Final Plan, the proposed development provides all necessary facilities and services consistent with the Frog Pond West Master Plan.

Coordinate with School District to Provide for Additional School Sites Ahead of Need  
Implementation Measures 3.1.2.f.

**A4.** The Frog Pond West Master Plan anticipated development of a future school and public park on land owned by the West Linn-Wilsonville School District within the Plan area. As stated in the Plan, the 10-acre property fronting on SW Boeckman Road was planned for a future school to provide a key civic land use serving the neighborhood and surrounding area. The adjacent 5-acre parcel was labeled "land banked" with the intent for the School District to have options for its use including school facilities, a neighborhood park, and/or residential use. As stated elsewhere in this staff report, the District now intends to sell the eastern part of the site to the City for a future public park.

Coordinate with School District for Educational and Recreational Facilities  
Policy 3.1.10, Implementation Measure 3.1.10.c., 3.1.11.r

**A5.** As stated above and elsewhere in this staff report, the City is coordinating with the West Linn-Wilsonville School District to provide educational and recreational facilities in the Frog Pond West neighborhood consistent with these implementation measures.

### Provision of Usable Open Space

Implementation Measures 3.1.11.p., 4.1.5.kk.

- A6.** The proposal is located within a public facilities sub-district and does not require usable open space. However, the Frog Pond West Master Plan notes that a future school to be located in the Plan area will serve both Frog Pond West and adjoining neighborhoods and that a public park will provide a community gathering place for all residents of the neighborhood. The applicant proposes to construct the anticipated school and to sell the eastern part of the property to the City for a future park.

### Consistency with Street Demonstration Plans May Be Required

Implementation Measure 3.2.2.

- A7.** Section 4.127 requires the area subject to the Stage 1 Preliminary Plan be consistent with the street demonstration plan in Figure 18 of the Frog Pond West Master Plan. The proposed street layout is generally consistent with the street demonstration plan with variations as noted in Finding D15.

## Planned Development Regulations

### Planned Development Purpose and Lot Qualifications

Subsection 4.140 (.01) and (.02)

- A8.** The property is of sufficient size to be developed in a manner consistent the purposes and objectives of Section 4.140. The subject property is greater than 2 acres and is designated for public development in the Comprehensive Plan. The property is zoned PF (Public Facility) and will be developed as a planned development in accordance with this subsection.

### Ownership Requirements

Subsection 4.140 (.03)

- A9.** The owners of the subject property have signed an application form included with the application.

### Professional Design Team

Subsection 4.140 (.04)

- A10.** Keith Liden, AICP, is the coordinator of a professional design team with all the necessary disciplines including an engineer, landscape architect, and planner, among other professionals.

### Planned Development Permit Process

Subsection 4.140 (.05)

- A11.** The subject property is greater than 2 acres, is designated for public development in the Comprehensive Plan, and is zoned PF (Public Facility). The property will be developed as a planned development in accordance with this subsection.

## Consistency with Comprehensive Plan and Other Applicable Plans

Subsection 4.140 (.06) and 4.140 (.09) J. 1.

**A12.** The proposed project, as found elsewhere in this report, complies with the Public Facility zoning designation, which implements the Comprehensive Plan designation of Public for this property.

## Application Requirements

Subsection 4.140 (.07)

**A13.** Review of the proposed Stage 1 Preliminary Plan has been scheduled for a public hearing before the DRB in accordance with this subsection and the applicant has met all the applicable submission requirements as follows:

- The property affected by the Stage 1 Preliminary Plan is under an application by the property owners.
- The applicant submitted a Stage 1 Preliminary Plan request on a form prescribed by the City.
- The applicant identified a professional design team and coordinator. See Finding C12.
- The applicant has stated the uses involved in the Stage 1 Preliminary Plan and their locations.
- The applicant provided boundary information.
- The applicant has submitted sufficient topographic information.
- The applicant provided a tabulation of the land area to be devoted to various uses.
- Any necessary performance bonds will be required.

## Public Facility Zone

### Purpose of Public Facility Zone

Subsection 4.136 (.01)

**A14.** The PF zone is intended to be applied to existing public lands and facilities; including quasi-public lands and facilities which serve and benefit the community and its citizens. Typical uses permitted in the PF Zone are schools, churches, public buildings, hospitals, parks and public utilities.

### Uses Typically Permitted

Subsection 4.136 (.02)

**A15.** The applicant proposes a public school, an outright permitted use in the PF zone. The eastern part of the site will be sold to the City for a future park, a use that is also permitted outright.

### Block and Access Standards

Subsection 4.136 (.09) and Section 4.131 (.03)

**A16.** The PF zone is subject to the same block and access standards as the PDC zone, which require that the Development Review Board determine appropriate conditions of approval



to assure that adequate connectivity is provided within the development for pedestrians, bicyclists, and motor vehicle drivers, and that consideration is given to the use of public transit as a means of meeting access needs.

#### Minimum Lot Size

Subsection 4.136 (.04) A.

**A17.** The subject property is greater than one (1) acre in size and the applicant does not propose to reduce the lot area.

#### Setbacks, Street Frontage, and Building Height

Subsection 4.136 (.04) B. through D.

**A18.** The proposed setbacks for Phases 1 and 2 of the proposed project greatly exceed the minimum standards at follows:

- Front setback: SW Sherman Drive: 118 feet (Phase 1 building corner)
- Side setbacks: SW Brisband Street: 147 (Phase 2 building corner); SW Boeckman Road: 210 feet (Phase 1 building corner)
- Rear setback: Tax Lot 400 to the East: existing 40 feet; after lot line adjustment (under separate land use review) 80 feet (Phase 2 building corner)

Street frontage is over 780 feet along SW Sherman Drive; 480 feet along SW Brisband Street to the existing property line, 520 feet after lot line adjustment (under separate land use review); 480 feet along SW Boeckman Road existing and 504 feet after lot line adjustment, exceeding the 75-foot minimum. The maximum building height for the school gymnasium is 32.5 feet, which is within the 35-foot maximum allowed height.

### **Request B: Stage 2 Final Plan (STG222-0010)**

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

#### **Planned Development Regulations**

##### Planned Development Purpose and Lot Qualifications

Subsection 4.140 (.01) and (.02)

**B1.** The subject property is greater than 2 acres and is designated for public development in the Comprehensive Plan. The property is zoned PF (Public Facility) and, historically, schools in the Public Facility zone have elected to go through the Planned Development Process, although not required to do so. The school district is requesting a Planned Development be approved for the school site to facilitate appropriate site planning and phasing of development.

### Ownership Requirements Subsection 4.140 (.03)

- B2.** The owners of the subject property have signed an application form included with the application.

### Professional Design Team Subsection 4.140 (.04)

- B3.** Keith Liden, AICP, is the coordinator of a professional design team with all the necessary disciplines including an engineer, landscape architect, and planner, among other professionals.

### Planned Development Permit Process Subsection 4.140 (.05)

- B4.** The subject property is greater than 2 acres, is designated for public development in the Comprehensive Plan, and is zoned PF (Public Facility). The property will be developed as a planned development in accordance with this subsection.

## Stage 2 Final Plan Submission Requirements and Process

### Timing of Submission Subsection 4.140 (.09) A.

- B5.** The Stage 2 Final Plan request is being submitted concurrently with the Stage 1 Preliminary Plan, meeting submission timing requirements.

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

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

### Conformance with Stage 1 Preliminary Plan Subsection 4.140 (.09) C.

- B7.** The Stage 2 Final Plan substantially conforms with the Stage 1 Preliminary Plan. The applicant has provided the required drawings and other documents showing all information required by this subsection.

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

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

## Submission of Legal Documents

### Subsection 4.140 (.09) E.

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

## Expiration of Approval

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

- B10.** Stage 2 Final Plan approval, along with other associated applications, will expire two (2) years after approval, unless an extension is approved in accordance with these subsections. The applicant intends to construct the proposed Phase 1 site improvements, including all core facilities to support enrollment of 350 students and 35 staff, promptly after land use approval within the allotted time period. Phase 2, expected to occur in the future, would accommodate an additional 200 students and 10 staff, as well as a second parking area in the northeast part of the site.

## Consistency with Comprehensive Plan and Other Applicable Plans

### Subsection 4.140 (.09) J. 1.

- B11.** As demonstrated in Findings A1 through A12 under the Stage 1 Preliminary Plan, the project is consistent with the Comprehensive Plan. This review includes review for consistency with the Frog Pond West Master Plan.

## Traffic Concurrency

### Subsection 4.140 (.09) J. 2.

- B12.** As shown in Transportation Impact Study, included in Exhibit B1, the LOS D standard will continue to be met by existing street improvements at the studied intersections with existing, planned, and this proposed development, with the exception of the SW Boeckman Road/SW Canyon Creek Road intersection, as follows:

- Signalized Control:
  - SW Boeckman Road-SW Advance Road/SW Stafford Road-SW Wilsonville Road: LOS C, Volume-to-Capacity (VC) Ratio 0.74
- Two-way Stop-Controlled:
  - SW Boeckman Road/SW Willow Creek Drive: LOS A/D, VC Ratio 0.17
  - SW Boeckman Road/SW Laurel Glen Street: LOS A/C, VC Ratio 0.18
  - SW Boeckman Road/SW Sherman Drive: LOS A/C, VC Ratio 0.25
- All-way Stop-Controlled:
  - SW Boeckman Road/SW Canyon Creek Road: LOS E, VC Ratio 0.75

While the Boeckman Road/Canyon Creek Road intersection operates at an overall LOS E in the Existing + Stage II and Existing + Stage II + Project scenarios, as noted in Condition of Approval PFB 3, the Wilsonville Transportation System Plan already specifies transportation improvements as a high priority project at the intersection as part of project



UU-01.14. As such, the developer's Transportation System Development Charge (SDC) will contribute to the City's fund to implement the improvements and no additional off-site mitigations or conditions of approval are necessary.

#### Facilities and Services Concurrency

Subsection 4.140 (.09) J. 3.

**B13.** The applicant proposes sufficient facilities and services, including utilities, concurrent with development of the residential subdivision.

#### Adherence to Approved Plans

Subsection 4.140 (.10) A.

**B14.** A condition of approval ensures adherence to approved plans except for minor revisions approved by the Planning Director through the Class I Administrative Review Process if such changes are consistent with the purposes and general character of the development plan.

### Public Facility (PF) Zone Standards

#### Uses Typically Permitted

Subsection 4.136 (.02)

**B15.** The applicant proposes a public school, an outright permitted use in the PF Zone. The eastern part of the site will be sold to the City for a future park, a use that is also permitted outright.

#### Dimensional Standards

Subsection 4.136 (.04)

**B16.** As discussed under the Stage 1 Preliminary Plan (Request A, Finding A29), all dimensional standards are met by the proposed development.

#### Site Design Review Required

Subsection 4.136 (.08) A.

**B17.** The City is applying the Site Design Review standards of Sections 4.400 through 4.450 to the proposal. See Findings for Sections 4.400 through 4.450 in Request C.

#### Development in Public Facility Zone to Comply with Adopted Master Plans

Subsection 4.136 (.08) D.

**B18.** The proposed school site is designated public in the Comprehensive Plan, zoned PF (Public Facility), and identified for development as a future school site in the Frog Pond West Master Plan.

Block and Access Standards, Adequate Connectivity for Peds, Bikes, and Vehicles  
Subsection 4.136 (.09) and Section 4.131 (.03)

**B19.** The PF zone is subject to the same block and access standards as the PDC zone, which require that the Development Review Board determine appropriate conditions of approval to assure that adequate connectivity is provided within the development for pedestrians, bicyclists, and motor vehicle drivers, and that consideration is given to the use of public transit as a means of meeting access needs.

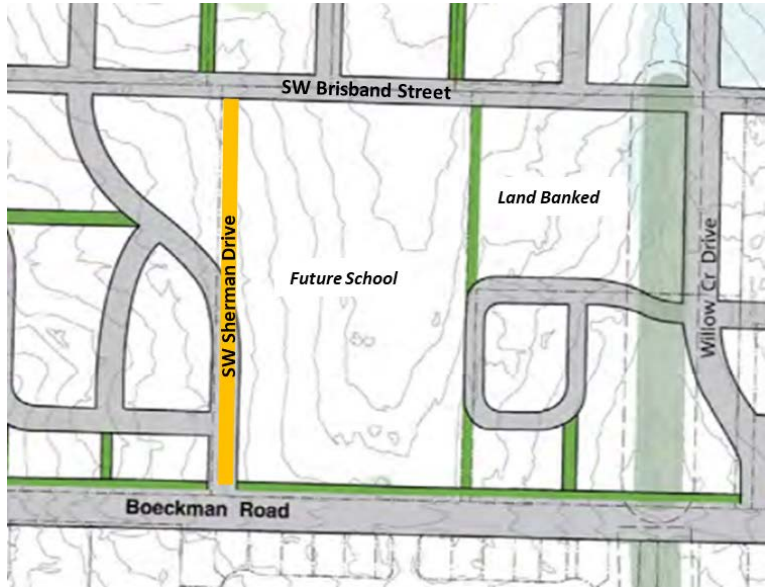
### Frog Pond West Specific Development Standards

Frog Pond West Specific Lot Development Standards  
Subsection 4.127 (.08) D. 1. a.

**B20.** The subject property is adjacent to SW Boeckman Road and, therefore, subject to the development standards specific to Frog Pond West requiring a wall and landscaping consistent with the standards in Figure 10 of the Frog Pond West Master Plan in rear or side yards adjacent to SW Boeckman Road. The applicant's plans show a brick wall with a black metal top railing along the SW Boeckman Road frontage as an extension of the wall and fence to the east, at the southeast corner of the site. The wall is proposed to stop at the east edge of the bus entry driveway to improve visibility to and from the school site, benefiting security and navigation to the school, and to emphasize the native plantings and stormwater features along the southern edge of the property.

Block, Access, and Connectivity Consistent with Frog Pond West Neighborhood Plan  
Subsection 4.127 (.10) and Figure 18. Frog Pond West Master Plan

**B21.** The Street Demonstration Plan is an illustrative layout of the desired level of connectivity in the Frog Pond West neighborhood and is intended to be guiding, not binding, allowing for flexibility provided that overall connectivity goals are met. As shown in the portion of Figure 18 below, SW Sherman Drive borders the subject property on the west, SW Brisband on the north, and SW Boeckman Road on the south, with a Pedestrian Connection connecting SW Brisband Street to SW Boeckman Road on the east side of the school site and west side of the future park site (land banked).

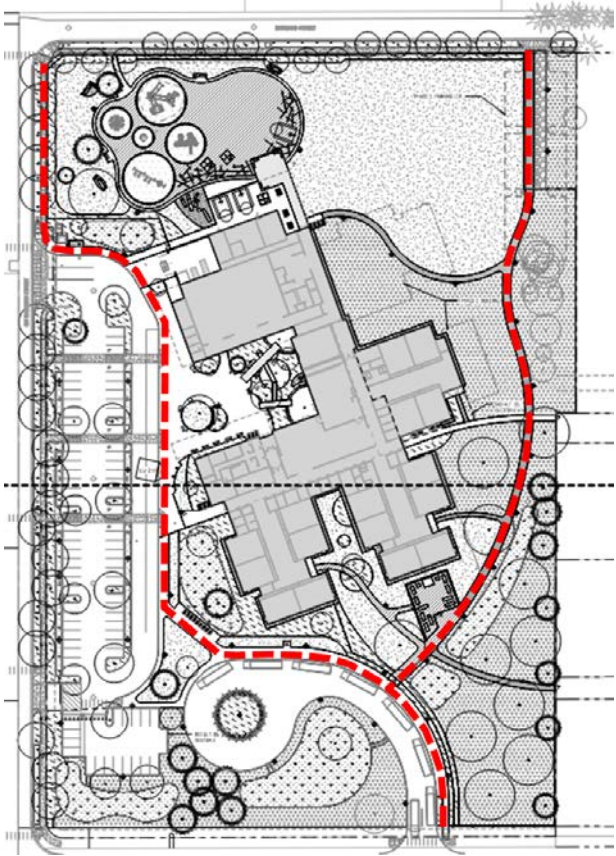


The block size and shape, access, and connectivity of the proposed school site complies with Figure 18 of the Frog Pond West Master Plan or is an allowed variation as shown in the table below.

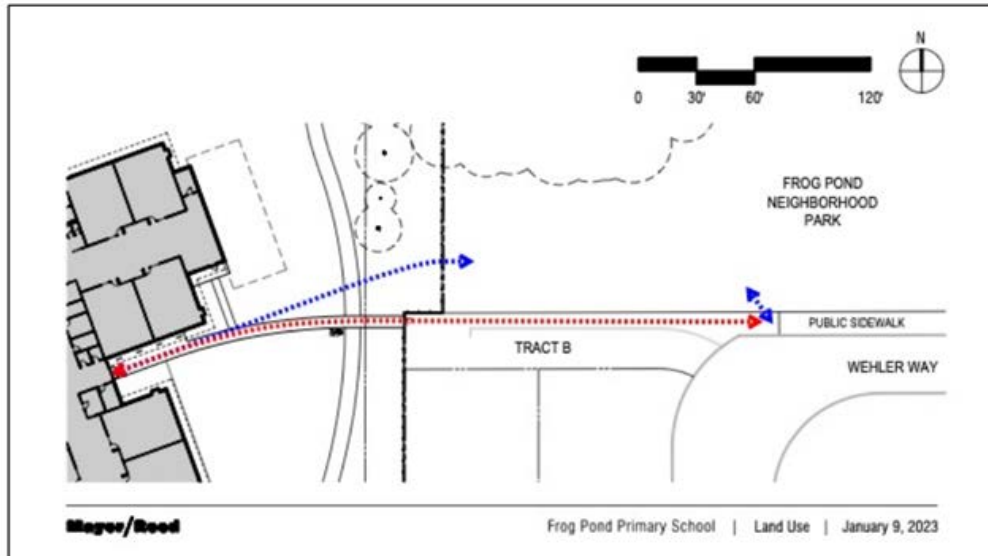
Street Segment	Generally Consistent with Figure 18	Allowed Variation	Explanation of Variation
SW Sherman Drive	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
SW Brisband Street	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Pedestrian Connection	<input type="checkbox"/>	<input checked="" type="checkbox"/>	See explanation below.

The applicant has proposed an alternative to the Pedestrian Connection shown in Figure 18 along the property’s east boundary. As described in their Code response and shown in the illustration below, a pathway from the SW Boeckman Road sidewalk travels north along the bus lane to a path that meanders north along the eastern side of the school building to SW Brisband Street. For security purposes, this path will be gated during school hours but opened to the public at other times to facilitate access. During school hours the pedestrian route would continue along the bus lane to the front of the building and then onto the northwest corner of the site along SW Sherman Drive, which then connects to SW Brisband Street, thus completing the intent of the Master Plan while addressing school security.



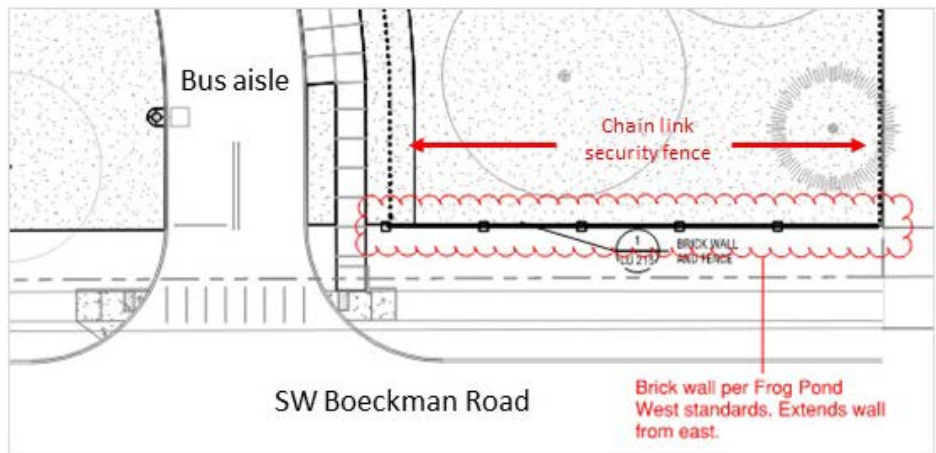


The pathway on the east side of the site that connects the sidewalk along the bus aisle with the sidewalk in SW Brisband Street at the north end of the site is proposed to be a combination of pedestrian asphalt paving, concrete, and/or compacted aggregate paving surface to provide ADA accessibility (see Sheets LU 202 and LU 203 in Exhibit B2). Two (2) pathways connecting the school property to SW Wehler Way also are proposed to be this combination of materials depending on location within the site. As illustrated below, there are two (2) options for the northern connection to SW Wehler Way: through the future City park property (the applicant's preferred option); or on the north side of private Tract B in the Stafford Meadows subdivision.



### Frog Pond West Specific Fence Standards Subsections 4.127 (.17)

**B22.** Within Frog Pond West, fences must comply with standards in 4.113 (.07) except that columns for the brick wall along SW Boeckman Road are to be placed at lot corners where possible; a solid fence taller than four (4) feet in height is not permitted within eight (8) feet of the brick wall along SW Boeckman Road except for fences placed on the side lot line that are perpendicular to the brick wall and end at a column of the brick wall; and height transitions for fences must occur at fence posts. As shown in the illustration below, the applicant proposes a brick wall along the SW Boeckman Road frontage at the southwest corner of the site as an extension of the existing brick wall to the east. The wall is proposed to stop at the east edge of the bus entry driveway; no brick wall is proposed on the west side of the bus aisle to the southwest corner of the site. As described by the applicant, this proposed gap in the wall will improve visibility to and from the school site, benefiting security as well as navigation to the school. The gap will also serve to emphasize the native plantings and stormwater features at the southwest corner and along the southern edge of the property. A detail of the brick wall that is consistent with the standards of Section 4.127 (.17) and the Frog Pond West Master Plan is included in Sheet LU 215 of the applicant's materials (Exhibit B2).



A perimeter 6-foot high chain link security fence is proposed to enclose areas occupied during the school day, such as the playground, field, and classroom wings in the north and east portions of the site to protect building entries and students and staff during school time exterior activities. The parking area and main building entry on the west side of the site, and the bus drop-off/pick-up area are outside the fenced area and open to the public throughout the day. The fence gates will be locked during school hours but opened at other times to facilitate community access to interior pathways, playground, and fields. As shown in the illustration above, the security fence is perpendicular to the brick wall along SW Boeckman Road as required. The applicant’s Sheet LU 217 (Exhibit B2) provides a detail of the chain link fence design.

**On-site Pedestrian Access and Circulation**

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

**B23.** As described in the applicant’s Code response narrative, the pedestrian pathway system provides direct connectivity between building entrances, other facilities on site, and surrounding neighborhoods. Connections are designed to be as safe and direct as possible, and vehicles and pedestrians are separated to enhance safety. Crosswalks with ADA compliant surfacing are be provided to allow safe and convenient locations for pedestrians to cross the internal driveway system. Direct pedestrian and bicycle access is provided from all directions to maximize connectivity to the surrounding neighborhoods before and after school. A street crossing on SW Boeckman Road with a Rectangular Rapid Flashing Beacon (RRFB) is proposed as recommended in the Transportation Impact Analysis (Exhibit D).

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

**B24.** The submitted plans show sidewalks and pathways providing safe, direct, and convenient connections consistent with Figure 18 of the Frog Pond West Master Plan.



### Vehicle/Pathway Separation

Section 4.154 (.01) B. 3.

**B25.** The proposed design vertically and or horizontally separates all sidewalks and pathways from vehicle travel lanes except for driveways and crosswalks.

### Crosswalks Delineation

Section 4.154 (.01) B. 4.

**B26.** All crosswalks are shown as visually delineated on the applicant's site plan and a condition of approval ensures all crosswalks shall be clearly marked with contrasting paint or paving materials (e.g., pavers, light-colored concrete inlay between asphalt, or similar contrast).

### Pathway Width and Surface

Section 4.154 (.01) B. 5.

**B27.** The applicant proposes all primary pathways to be concrete, asphalt, brick/masonry pavers, or other durable surface, and at least 5 feet wide, with secondary pathways and pedestrian trails using alternative surfacing, such as compacted aggregate, unless otherwise required to meet ADA standards.

## Parking Area Design Standards

### Minimum and Maximum Parking

Subsection 4.155 (.03) G.

**B28.** Pursuant to OAR 660-012-0430 and OAR 660-012-0440 the City cannot enforce vehicle parking minimums on this property. However, the applicant has demonstrated compliance with the vehicular parking requirements in this subsection. Vehicular parking requirements for schools are based on the number of students and staff, as specified by Table 5 in Section 4.155. The minimum vehicular parking ratio for elementary schools is 0.2 spaces per student and staff with a maximum of 0.3 spaces per student and staff. Bicycle parking is based on building square footage for K through 2<sup>nd</sup> grade and number of classrooms above 2<sup>nd</sup> grade. Calculation of required and proposed parking is shown in the table below:

Use and Parking Standard	Number of Students + Staff	Minimum Off-street Spaces Required	Maximum Off-street Spaces Allowed	Proposed Off-street Spaces	Minimum Bicycle Parking Spaces* <sup>1</sup>	Proposed Bicycle Parking Spaces
<b>Elementary School</b>		0.2 per student + staff	0.3 per student + staff	--	K-2 <sup>nd</sup> grade: 1 per 3,500 sf; Above 2 <sup>nd</sup> grade: 8 per class	--
<b>Phase 1</b>	350 students + 35 staff	77 spaces	116 spaces	77 spaces	Minimum 52 spaces* <sup>1</sup>	52 spaces
<b>Phase 2</b>	Additional 200 students + 10 staff	Additional 42 spaces	63 spaces	42 spaces	Minimum additional 48 spaces* <sup>1</sup>	Additional 48 spaces
<b>Total Phase 1 + Phase 2</b>	<b>550 students + 45 staff</b>	<b>119 spaces</b>	<b>179 spaces</b>	<b>119 spaces</b>	<b>Minimum 100 spaces*<sup>1</sup></b>	<b>100 spaces</b>

\*<sup>1</sup> Applicant to demonstrate compliance with standard prior to temporary occupancy of Phase 1. See Finding B37 and conditions of approval.

Based upon the approved capacities of the two schools plus staff, the minimum number of required vehicular parking spaces is 119 and the maximum number is 179. The applicant proposes 77 parking spaces along SW Sherman Drive, including six (6) ADA and 71 standard spaces. An additional 42 spaces is proposed in Phase 2, including four (4) spaces in the south parking area along SW Sherman Drive and 38 spaces in the lot proposed at the northeast corner of the site, for a total of 42 spaces. The 77 spaces provided in Phase 1 with the additional 42 spaces in Phase 2 meets the minimum requirement.

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

**B29.** The applicable standards are met as follows:

Standard	Met	Explanation
<b>Subsection 4.155 (.02) General Standards</b>		
B. All spaces accessible and usable for parking	<input checked="" type="checkbox"/>	As shown in the plan sheets, appropriate access shall be provided for the new parking spaces.
J. Sturdy bumper guards of at least 6 inches to prevent parked vehicles crossing property line or interfering with screening or sidewalks.	<input checked="" type="checkbox"/>	Curbs of at least 6 inches will be utilized to keep cars out of landscaping and walkways.
K. Surfaced with asphalt, concrete or other approved material.	<input checked="" type="checkbox"/>	The parking lot will be 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"/>	No compact parking spaces are proposed.
O. Where vehicles overhang curb, planting areas at least 7 feet in depth.	<input checked="" type="checkbox"/>	Parking spaces will have curb stops to ensure that landscaped areas and pedestrian walkways will not be encroached upon by parked vehicles.
<b>Subsection 4.155 (.03) General Standards</b>		
A. Access and maneuvering areas adequate.	<input checked="" type="checkbox"/>	Access to the area is available, with vehicles and pedestrians kept separate on distinct routes. Maneuvering area is plentiful.
A.1. Loading and delivery areas and circulation separate from customer/employee parking and pedestrian areas.	<input checked="" type="checkbox"/>	Loading and waste/recycling areas and circulation are separate from parking and pedestrian areas.
Circulation patterns clearly marked.	<input checked="" type="checkbox"/>	Circulation patterns are clearly evident, with direction pavement markings utilized throughout the driveways and parking areas.
A.2. To the greatest extent possible, vehicle and pedestrian traffic separated.	<input checked="" type="checkbox"/>	The existing and proposed parking areas clearly delineate vehicle and pedestrian traffic areas and separate them except for crosswalks.
C. Safe and Convenient Access, meet ADA and ODOT Standards. For parking areas with more than 10 spaces, 1 ADA space for every 50 spaces.	<input checked="" type="checkbox"/>	The proposed parking and access allow ADA and ODOT standards to be met. The applicant proposes a total of 77 parking spaces in Phase 1, with an additional 42 spaces in Phase 2 for a total of 119 spaces, 6 of which are ADA accessible spaces.
D. Where possible, parking areas connect to adjacent sites.	<input checked="" type="checkbox"/>	Parking for the school is not proposed to be shared with adjacent sites.
Efficient on-site parking and circulation	<input checked="" type="checkbox"/>	The careful and professional design of the parking provides for safety and efficiency and is a typical design with standard parking space and drive aisle size and orientation.



## Parking Area Landscaping

### Minimizing Visual Dominance of Parking

Subsection 4.155 (.03) B.

**B30.** The applicant proposes landscaping around 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.

**B31.** The proposed new parking area (Phase 1) is 25,165 square feet, requiring 2,517 square feet of interior parking lot landscaping to meet this standard. Approximately 11,298 square feet of parking lot landscaping is provided, exceeding overall site requirements while surrounding and screening the parking area. Phase 2 compliance with this standard will be determined in the future when detailed landscape design of the east parking area is completed (see Sheet LU 200 in Exhibit B4).

Because the improvements are well within the site with significant building setbacks on all sides, the General Landscape standard is required, with the exception of the parking area along SW Sherman Drive, which must meet the Low Screen standard to buffer and screen the parking from adjacent residential areas. To meet the requirement along the west and south edges of Phase 1 parking area, the applicant proposes 3-foot tall evergreen shrubs and groundcover along the entire western perimeter and various height and opacity shrubs along the entire southern perimeter. In addition, nine (9) trees will be planted around the perimeter (see Sheets LU 207 and LU 208 in Exhibit B2). The shrubs in combination with the layers of trees and other landscaping between the street right-of-way and the school building are designed to provide an appropriate and pleasing buffer between the site and the residences to the west, and with the addition of distance and stormwater plantings between the parking area and SW Boeckman Road.

### Landscape Screening of Parking

Subsection 4.155 (.03) B. 1.

**B32.** As discussed above, proposed landscaping will screen the proposed parking and circulation area from SW Sherman Drive and the residential area to the west, as well as from SW Boeckman Road to the south. Due to the size of the school site and placement of buildings, screening is not required to the north and east sides of the parking area, as they will not be visible from off site.

### Tree Planting Area Dimensions

Subsection 4.155 (.03) B. 2.

**B33.** The landscape plan includes tree planting areas for parking lot trees meeting the minimum eight (8)-foot by eight (8)-foot requirement.

### Parking Area Tree Requirement

Subsection 4.155 (.03) B. 2. and 2. a.

- B34.** With 77 vehicle parking spaces (in Phase 1), the stated ratio of one tree for every eight (8) spaces or fraction thereof requires 10 parking area trees. The landscape plan shows 12 trees in planting areas spread throughout and adjacent to the parking area.

### Parking Area Landscape Plan

Subsection 4.155 (.03) B. 2. a.

- B35.** The applicant's landscape plan includes the proposed parking area along SW Sherman Drive for Phases 1 and 2 combined; however, parking area landscaping is not shown for the 38 additional spaces in the Phase 2 parking area at the northeast corner of the site. A condition of approval ensures that the applicant submits a landscape plan to the City for review prior to construction of the Phase 2 parking addition.

### Parking Area Tree Clearance

Subsection 4.155 (.03) B. 2. b.

- B36.** The applicant could typically maintain all trees listed for planting in the parking area and is expected to maintain a 7-foot clearance in the parking areas.

## Bicycle Parking

### Required Bicycle Parking

Section 4.155 (.04) A. 1.

- B37.** Construction of the new primary school will require a minimum of 52 bicycle parking spaces in Phase 1 and an additional 48 spaces in Phase 2 (see Finding B28). The applicant proposes spaces at the southwest corner of the building, along the west façade of the commons area near the main entry to the building, and on the east side of the building as shown on Sheet LU 120 of the applicant's plan set (see Exhibits B2 and B4).

The Transportation Impact Analysis assumed 22 classrooms in a 60,000-square-foot building at full buildout of Phases 1 and 2 of the new primary school, which resulted in a need for 97 bicycle parking spaces. However, the Phase 1 floor plan includes 58,103 square feet and 16 classrooms, with an additional 11,500 square feet of floor area and 8 more classrooms at full buildout of Phase 2, which is 9,630 square feet and 2 more classrooms than anticipated in the Transportation Impact Analysis. Thus, the applicant's plans do not provide adequate bicycle parking to comply with Subsection 4.155 (.04) A. of the Code. To address this discrepancy, the applicant provides 52 bicycle parking spaces in Phase 1 and a condition of approval requires the applicant to demonstrate compliance with the standard prior to temporary occupancy of the school building.

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

**B38.** As only one use is proposed on the site, the required bicycle parking is based on an elementary school use.

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

**B39.** The applicant proposes no waivers to bicycle parking.

### **Bicycle Parking Standards**

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

**B40.** The bicycle parking details (see Sheet LU 216, Detail 3, in Exhibit B2) demonstrate that spaces comply with the two (2) foot by six (6) foot spacing dimension.

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

**B41.** All bicycle parking spaces provide adequate space to be accessible without moving another bicycle.

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

**B42.** An aisle at least five (5) feet wide is shown behind the required bicycle parking to allow room for maneuvering.

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

**B43.** Bicycle parking, as shown on the bicycle parking details (Sheet LU 216, Detail 3, and Sheet LU 120 in Exhibit B2), provide enough space between the racks and any obstructions to use the space property.

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

**B44.** The bicycle parking details (Sheet LU 216, Detail 3 in Exhibit B2) demonstrate that racks will be securely anchored.

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

**B45.** Per the applicant's narrative and as shown on the site plan (Sheet LU 120 in Exhibit B2), bicycle parking spaces are located within 30 feet of entrances on the west and east sides of the building.



## Other General Regulations

### Access, Ingress and Egress Subsection 4.167

**B46.** Planned access points are at defined locations as approved by the City Engineer.

### Outdoor Lighting Sections 4.199.20 through 4.199.60

**B47.** The proposal is required to meet the lighting standards. See Request C, Findings C28 through C36.

### Underground Installation of Utilities Sections 4.300 through 4.320

**B48.** All utilities on the property are required to be underground.

## Street Improvement Standards

### Conformance with Standards and Plan Subsection 4.177 (.01), Figures 19-27 Frog Pond West Master Plan

**B49.** The proposed streets appear to meet the City's Public Works Standards and Transportation System Plan. Further review of compliance with Public Works Standards and Transportation System Plan will occur with review and issuance of the Public Works construction permit.

### Street Design Standards-Future Connections and Adjoining Properties Subsection 4.177 (.02) A.

**B50.** The subject site is bordered by SW Boeckman Road on the south, SW Sherman Drive on the west, and the extension of SW Brisband Street on the north, and a modified Pedestrian Connection on the east, consistent with the Frog Pond West Master Plan Street Demonstration Plan with exceptions as noted elsewhere in this staff report. The proposed design provides for continuation of streets with residential and open space development in the Frog Pond West neighborhood, which surrounds the property on three (3) sides, and residential areas on the south side of SW Boeckman Road.

### City Engineer Determination of Street Design and Width Subsection 4.177 (.02) B.

**B51.** The City Engineering Division has preliminarily found the street designs and widths to be consistent with the cross sections shown in the Frog Pond West Master Plan. The Engineering Division will check final conformance with the cross sections shown in the Frog Pond West Master Plan during review of the Public Works permit.

### Right-of-Way Dedication

Subsection 4.177 (.02) C. 1.

**B52.** Right-of-way dedication is as required in the Engineering conditions of approval and as shown on the applicant's plan set.

### Waiver of Remonstrance Required

Subsection 4.177 (.02) C. 2.

**B53.** This subsection requires that a waiver of remonstrance against formation of a local improvement district (LID) be recorded in the County Recorder's Office as well as the City's Lien Docket as a part of recordation of a final plat. This requirement notes that in light of the developer's obligation to pay an Infrastructure Supplemental Fee and Boeckman Bridge Fee, the LID Waiver may be released upon official recording of the release of the waiver only after payment of the Infrastructure Supplemental Fee and Boeckman Bridge Fee. Further, the developer is required to pay all costs and fees associated with the City's release of the LID Waiver. A Condition of Approval outlines the process to be followed with respect to the required LID Waiver and its release for a specific parcel.

### Dead-end Streets Limitations

Subsection 4.177 (.02) D.

**B54.** No dead-end streets are proposed in the development.

### Corner Vision Clearance

Subsection 4.177 (.02) E.

**B55.** Street locations and site design allow the meeting of vision clearance standards.

### Vertical Clearance

Subsection 4.177 (.02) F.

**B56.** Nothing in the proposed subdivision design would prevent the meeting of vertical clearance standards.

### Interim Improvement Standards

Subsection 4.177 (.02) G.

**B57.** The City Engineer has or will review all interim improvements to meet applicable City standards.

### Sidewalks Requirements

Subsection 4.177 (.03)

**B58.** The applicant proposes sidewalks along all public street frontages abutting the school site.

### Bicycle Facility Requirements

Subsection 4.177 (.04)

**B59.** No on street bicycle facilities are required within the project area. A condition of approval requires all cross-sections to comply with the Frog Pond West Master Plan requirements prior to Final Plat approval.

### Pathways in Addition to, or in Lieu of, a Public Street

Subsection 4.177 (.05)

**B60.** No pedestrian and bicycle accessways are proposed in addition to, or in lieu of, public streets within the development.

### Transit Improvements Requirements

Subsection 4.177 (.06)

**B61.** The applicant does not propose any transit improvements with the proposed development. There is not currently transit service within the Frog Pond West Master Plan area; however, as the area continues to develop, additional transit service may be added. Any transit improvements would be addressed at the time the need for additional transit service is identified.

## Intersection Spacing

### Offset Intersections Not Allowed

Subsection 4.177 (.09) A.

**B62.** No new intersections are proposed within the development and no offset intersections are proposed.

### Minimum Street Intersection Spacing in Transportation System Plan Table 3-2

Subsection 4.177 (.09) B.

**B63.** There are no streets within the proposed development and street intersections adjacent to the site are existing, therefore, minimum spacing standards do not apply.

## Protection of Natural Features and Other Resources

### General Terrain Preparation

Section 4.171 (.02)

**B64.** As described in the applicant's Code response narrative, the subject site is relatively flat with very modest grades, sloping gently upward from the west to east side of the site by roughly five (5) feet. As a result, minimal site grading is proposed and all site work will comply with City and Uniform Building Code requirements.



## Trees and Wooded Areas

### Section 4.171 (.04)

**B65.** Existing vegetation on the site includes trees, grasses and underbrush. Existing trees are located around the house and outbuildings in the central part of the site and along the property boundary at the northeast corner. Trees in the central part of the site are proposed for removal as they are in the footprint of the school building; however, the line of trees along the northern half of the east property line are proposed to remain to the extent feasible except in the SW Brisband Street right-of-way where they will be removed for road construction. Trees identified to be retained will be protected during site preparation and construction according to the City Public Works design specifications as outlined in the Arborist Report and conditions of approval.

## Earth Movement Hazard Area

### Subsection 4.171 (.07)

**B66.** The applicant performed geotechnical investigations on all of the subject properties and found no earth movement hazards. A geotechnical report is provided in Exhibit B1.

## Historic Resources

### Subsection 4.171 (.09)

**B67.** Neither the applicant nor the City have identified any historic, cultural, or archaeological items on the sites, nor does any available information on the history of the site compel further investigation.

## Public Safety and Crime Prevention

### Design for Public Safety, Addressing, Lighting to Discourage Crime

#### Section 4.175

**B68.** As described in the applicant's narrative, the site layout of the primary school offers safe outdoor public spaces that are easily viewed from a variety of vantage points. All access routes on the site will be visible and easily viewed, which is accomplished by the following:

- Building design that does not create hidden corners
- Windows that provide views out and supervision
- Illumination of building entrances, walkways, and parking areas
- Plant species that are either low (three (3) feet maximum), limbed up to six (6) feet, or relatively transparent so as to maintain clear sight lines throughout the campus
- A 6-foot high chain link fence surrounding the north and east portions of the site to protect building entries and students and staff during school time exterior activities

## Landscaping Standards

### Intent and Required Materials

Subsections 4.176 (.02) C. through I.

**B69.** Planting areas along the street and within the school site are generally open and are not required to provide any specific screening, with the exception of screening of the parking area along SW Sherman Drive from the residential area to the west. Thus design of the landscaping follows the General Landscape standard, with the Low Screen standard along the west side of the west parking area. The plantings include a mixture of ground cover, shrubs, trees, and stormwater swale plantings. Proposed street trees are consistent with previously established trees on SW Sherman Drive (village green zelkona) in the Morgan Farm subdivision to the west and on SW Brisband Street (American basswood/aka linden) established in the Morgan Farm and Frog Pond Ridge subdivisions.

### Types of Plant Material, Variety and Balance, Use of Natives When Practicable

Subsection 4.176 (.03)

**B70.** The applicant proposes a professionally designed landscape using a variety of plant material. Parking area landscaping is required and as previously described. The landscape plans included in the applicant's materials (Sheets LU 200 through LU 215 in Exhibit B2) illustrate the location and type of landscaping within public rights-of-way and throughout the site. The design includes a variety of native plants where possible, particularly in open areas.

## Mixed Solid Waste and Recyclables Storage

### DRB Review of Adequate Storage Area, Minimum Storage Area

Subsections 4.179 (.01) through (.06)

**B71.** The proposed primary school falls under the use category of "Other," which requires a minimum storage area of 10 square feet plus four (4) square feet of mixed solid waste and recyclables storage per 1,000 square feet of gross floor area of a building. The proposed building totals 58,130 square feet in Phase 1 with an additional 11,500 square feet in Phase 2, for a total of 69,630 square feet. This amount of building area requires 289 square feet of solid waste/recyclables storage and approximately 717 square feet is proposed (see Sheet LU 320 in Exhibit B2), substantially exceeding the requirement.

### Review by Franchise Garbage Hauler

Subsection 4.179 (.07)

**B72.** The applicant has provided a letter from the franchised garbage hauler, Republic Services, demonstrating review and ensuring the proposed site plan provides adequate access for the hauler's equipment. The service provider letter is included in Exhibit B1.

## Request C: Site Design Review (SDR22-0011)

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 compliance with this subsection as follows:

- **Excessive Uniformity:** The proposed project is unique to the particular development context and does not create excessive uniformity.
- **Inappropriate or Poor Design of the Exterior Appearance of Structures:** The applicant used appropriate professional services to design structures on the site using quality materials and design. The applicant's description of the design notes that the exterior finish materials are residential in character, complementary to the surrounding neighborhood, and consistent with the requirements of the Frog Pond West Master Plan, including use of brick, wood-like siding, windows for natural daylight and view, and pitched roofs
- **Inappropriate or Poor Design of Signs:** The applicant used appropriate professionals to design permanent signage identifying the primary school. See also Request D.
- **Lack of Proper Attention to Site Development:** The applicant employed the skills of the appropriate professional services to design the project, demonstrating appropriate attention to site development.
- **Lack of Proper Attention to Landscaping:** The applicant proposes landscaping that is professionally designed by a landscape architect and incorporates a variety of plant materials, demonstrating appropriate attention to landscaping.

Purpose and Objectives

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

C2. The applicant has provided sufficient information demonstrating compliance with the objectives of this subsection as follows:

- **Pursuant to Objective A** (assure proper functioning of the site and high quality visual environment), as described by the applicant, the proposed improvements stress functionality related to school operations, safe and convenient accessibility to and from the site for all modes, low-maintenance landscaping, and appealing and durable exterior finishes.
- **Pursuant to Objective B** (encourage originality, flexibility, and innovation), as described in the applicant's materials, "the design of the school and supporting facilities demonstrate the District's commitment to innovation, continuing to improve school



design, and value to its students by facilitating opportunities for high-quality education”.

- **Pursuant to Objective C** (discourage inharmonious development), per the applicant’s narrative, the District and its design team have devoted a great deal of effort in creating a building and site design that will be visually appealing and functional. The primary design philosophy is to be a good neighbor by designing a single-story structure to be a consistent scale to neighborhood; centering the building and activity areas on the site and maximizing setbacks; rotating the building from cardinal directions to create more interesting viewing angles (both from outside and inside), outdoor adjacencies and outdoor spaces; and providing walking paths and a playground with accessible surfacing/activities available outside school hours.
  - **Pursuant to Objective D** (conserve natural beauty and visual character), as described by the applicant, “the architectural integrity of this new facility will retain much of the open feeling of the site by the residential scale of the building, sufficient building setbacks in all directions, and a landscape that exceeds City standards”.
  - **Pursuant to Objective E** (protect and enhance City’s appeal), as described by the applicant, the proposed addition supports a quality education program, which helps to attract business and industry to a community, and “demonstrates the District’s continued commitment to a well-rounded education”, thus protecting and enhancing the City’s appeal.
  - **Pursuant to Objective F** (stabilize property values/prevent blight), the applicant’s materials state that the “proposed improvements should not have any negative impact on surrounding properties or their value; ...having a new primary school serving the neighborhood may enhance values”.
  - **Pursuant to Objective G** (insure adequate public facilities), as found in the Stage 2 Final Plan review (Request B), adequate public facilities are currently available or will be provided.
  - **Pursuant to Objective H** (achieve pleasing environments and behavior), as described in the applicant’s materials, “the school design and proposed landscaping will be visually and functionally harmonious with the surrounding neighborhood”.
  - **Pursuant to Objective I** (foster civic pride and community spirit), as stated in the applicant’s materials, in addition to education, the school serves as a community center, fostering civic pride and providing improved educational and cultural opportunities for the community.
- C. **Pursuant to Objective J** (sustain favorable environment for residents), as described by the applicant, “quality educational facilities are certainly a contributing factor to achieving this objective”.

Design Standards  
Subsection 4.421 (.01)

- C3. The applicant has provided sufficient information demonstrating compliance with the standards of this subsection as follows:

- **Pursuant to Standard A** (Preservation of Landscape), as described in the applicant's narrative, "Although the site will be significantly changed from a small acreage tract to a school, the general appearance of the landscape will be retained by providing significant open space around the new school building".
  - **Pursuant to Standard B** (Relation of Proposed Buildings to Environment), the applicant used appropriate professional services to design the exterior of the building, and, per the applicant's materials, "the amount of landscaping and open space is maximized with complementary facilities to mitigate potential stormwater impacts".
  - **Pursuant to Standard C** (Drives, Parking, and Circulation), the applicant has worked with a professional design team to accommodate access throughout the site, with pedestrian, bicycle, vehicle, bus, and emergency access accommodated by establishing separate and convenient routes for pedestrians and bicyclists on site.
  - **Pursuant to Standard D** (Surface Water Drainage), surface water drainage has been professionally designed showing the proper attention has been paid. The stormwater system is designed to accommodate the new impervious surface of the building addition, driveways, parking, and other improvements. New LID facilities, such as vegetated stormwater planters, have been integrated into the design to meet the stormwater management requirements for water quality treatment and flow control.
  - **Pursuant to Standard E** (Utility Service), all services are available to serve the site, and no above ground utility installations are proposed.
  - **Pursuant to Standard F** (Advertising Features), all signs fit within defined sign bands on the building and placement complements the architecture of the building consistent with the City sign standards. No advertising features are proposed that would be visible along the perimeter of the site. See also Request D.
- D. **Pursuant to Standard G** (Special Features), the applicant does not propose any new special features requiring additional screening or buffering.

#### Applicability of Design Standards

Subsection 4.421 (.02)

- C4. In addition to the major building and structures on the site, this review also applies the design standards to all accessory buildings, structures, exterior signs and other site features, such as landscaping.

#### Conditions of Approval Ensuring Proper and Efficient Functioning of Development

Subsection 4.421 (.05)

- C5. Staff recommends no additional conditions of approval to ensure the proper and efficient functioning of the development.

#### Color or Materials Requirements

Subsection 4.421 (.06)

- C6. The colors and materials proposed by the applicant are appropriate. These include a one-story structure clad in brick and wood-like siding, with windows allowing natural daylight

and views, and pitched roofs to blend with the residential character of the surrounding residential neighborhoods. The building elevations in the plan set (Sheets LU 330 and LU 331 in Exhibit B2), digital materials board (Sheet LU 340) and physical samples, and screening and exterior finishes detail sheets (Exhibit B1) demonstrate compliance with this standard. Staff does not recommend any additional requirements or conditions related to colors and materials.

### Standards for Mixed Solid Waste and Recycling Areas

#### Mixed Solid Waste and Recycling Areas Location Standards Subsection 4.430 (.02)

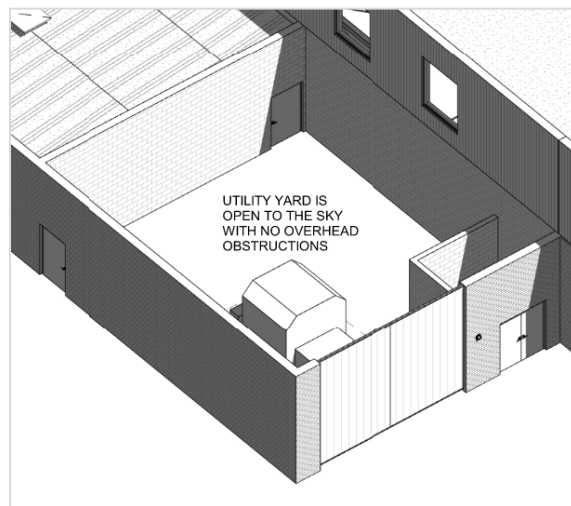
C7. The proposal provides a storage area for solid waste and recyclables at the northwest corner of the building. As noted in Findings B78 and B79, the proposed storage area is approximately 717 square feet in size within a 1,380-square-foot utility yard, which substantially exceeds the requirement of 289 square feet for the proposed primary school use.

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

C8. The proposal provides a storage area for solid waste and recyclables in a utility yard located at the northwest corner of the building, meeting the colocation requirement.

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

C9. As shown in the illustration below, the applicant proposes a single, visible location at the northwest corner of the building. The enclosure is integrated with the building design, screened by the walls on all sides, and open to the sky with no overhead obstructions for service vehicles. Review of the Building Permit will ensure that the building and fire code standards are met.







## Time Limit on Site Design Review Approvals

Void after 2 Years  
Section 4.442

- C14.** The applicant has indicated that they will pursue development within two (2) years. The approval will expire after two (2) years if not vested, or an extension is not requested and granted, consistent with City Code.

## Installation of Landscaping

Landscape Installation or Bonding  
Subsection 4.450 (.01)

- C15.** 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.

Approved Landscape Plan  
Subsection 4.450 (.02)

- C16.** A condition of approval ensures the approved landscape plan is binding upon the applicant/owner. It prevents substitution of plant materials, irrigation systems, or other aspects of an approved landscape plan without official action of the Planning Director or DRB, as specified in this Code.

Landscape Maintenance and Watering  
Subsection 4.450 (.03)

- C17.** A condition of approval ensures continual maintenance of the landscape, including necessary watering, weeding, pruning, and replacing, in a substantially similar manner as originally approved by the DRB, unless altered with appropriate City approval.

Modifications of Landscaping  
Subsection 4.450 (.04)

- C18.** A condition of approval provides ongoing assurance by preventing modification or removal without the appropriate City review.

## Landscaping Standards

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

- C19.** The applicant requests no waivers or variances to landscape standards. Thus, all landscaping and screening must comply with standards of this section.

### Intent and Required Materials

Subsections 4.176 (.02) C. through I.

**C20.** The minimum or higher standard has been applied throughout different landscape areas of the site and landscape materials are proposed to meet each standard in the different areas. Site Design Review is being reviewed concurrently with the Stage 2 Final Plan, which includes a thorough analysis of the functional application of the landscaping standards.

### Landscape Area and Locations

Subsection 4.176 (.03)

**C21.** As indicated in the applicant's narrative and Sheet LU 200 of the plan set in Exhibit B2 the site contains 51% landscaped area, substantially exceeding the 15% requirement. Additionally, the parking lot area exceeds the required 10% overall area dedicated to landscaping.

### Buffering and Screening

Subsection 4.176 (.04)

**C22.** Consistent with the proposed Stage 2 Final Plan, adequate landscape screening is proposed. Specifically, planting areas along the street and within the school site are generally open and are not required to provide any specific screening, with the exception of screening of the parking area along SW Sherman Drive from the residential area to the west. Thus design of the landscaping follows the General Landscape standard, with the Low Screen standard along the west side of the west parking area. See additional discussion under Finding B76 (Request B). All exterior, roof and ground mounted, mechanical and utility equipment is required to be screened from ground level off-site view from adjacent streets or properties; a condition of approval ensures compliance with the standard.

### Quality and Size of Plant Material

Subsection 4.176 (.06)

**C23.** The quality of the plant materials must meet American Association of Nurserymen (AAN) standards as required by this subsection. Trees as shown on the applicant's plans are specified at 2-inch caliper or greater than 6 feet for evergreen trees. Shrubs are specified on the Landscape Plans (Sheet LU 206) as two (2) gallon or greater in size. Ground cover is specified as 4 inches or greater. Turf or lawn is used for a minimal amount of the proposed public landscape area, primarily around the playground and in play fields on the north part of the site. Conditions of approval ensure the requirements of this subsection are met including use of native topsoil, mulch, and non-use of plastic sheeting.

### Shrubs and Groundcover Materials Requirements

Subsection 4.176 (.06) A.

**C24.** A condition of approval requires meeting the detailed requirements of this subsection, which includes shrubs two (2) gallon or greater in size, ground cover greater than 4 inches in size, and turf or lawn used for a minimal amount of the proposed public landscape area.



### Plant Materials Requirements-Trees

Subsection 4.176 (.06) B.

**C25.** As shown on the applicant's landscape plans (Sheet LU 206), trees are specified at (two) 2 inch caliper. A condition of approval requires all trees to be balled and burlapped (B&B), well-branched, and typical of their type as described in current American Association of Nurserymen (AAN) standards.

### Plant Materials-Buildings Larger than 24 Feet in Height or Greater than 50,000 Square Feet in Footprint Area

Subsection 4.176 (.06) C.

**C26.** The proposed building has a maximum height of 32.5 feet at the gym roof, as shown on Sheets LU 330 and LU 340 (Exhibit B2), with the majority of the building at a lower, single-story height of roughly 20 feet. The Phase 1 building area is 58,130 square feet, with Phase 2 adding 11,500 square feet, for a total future area of 69,630 square feet. These portions meet the threshold for requiring larger or more mature plant materials as defined by this subsection. However, the proposed building design provides architectural interest by using a variety of materials and articulation techniques and the site is proposed to be extensively landscaped. Therefore, it is staff's professional opinion that larger or more mature plant materials are not needed to achieve the intent of this subsection.

### Plant Species Requirements

Subsection 4.176 (.06) E.

**C27.** 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.

### Tree Credit

Subsection 4.176 (.06) F.

**C28.** The applicant is not proposing to preserve any trees to be counted as tree credits.

### Exceeding Plant Standards

Subsection 4.176 (.06) G.

**C29.** The selected landscape materials do not violate any height or vision clearance requirements.

### Landscape Installation and Maintenance

Subsection 4.176 (.07)

**C30.** Installation and maintenance standards are or will be met by conditions of approval as follows:

- Plant materials are required to be installed to current industry standards and be properly staked to ensure survival.

- Plants that die are required to be replaced in kind, within one growing season, unless appropriate substitute species are approved by the City.
- The applicant's plan set includes Irrigation Plans (see Sheets LU 204 and LU 205 in Exhibit B2) showing a fully automatic underground irrigation system as required by this standard.

### Landscape Plans

Subsection 4.176 (.09)

**C31.** The applicant's submitted landscape plans, Sheets LU 200 through LU 214, provide the required information.

### Completion of Landscaping

Subsection 4.176 (.10)

**C32.** The applicant has not requested to defer installation of plant materials.

## Natural Features and Other Resources

### Protection

Section 4.171

**C33.** The proposed design of the site provides for protection of natural features and other resources consistent with the proposed Stage 2 Final Plan for the site as well as the purpose and objectives of Site Design Review.

## Frog Pond West-Street Tree Plan

### Tree Lists for Primary Streets, Neighborhood Streets, and Pedestrian Connections

Pages 81-83 and Figure 43 of Frog Pond West Master Plan

**C34.** The Frog Pond West Master Plan Street Tree Plan provides guidance tied to the street typology for Frog Pond West, with an overall intent to beautify and unify the neighborhood while providing a variety of tree species. The Frog Pond West Master Plan intends to achieve continuity through consistent tree types and consistent spacing along both sides of a street.

The proposed street tree species comply with the Frog Pond West Master Plan or will with a condition of approval as shown in the table on the following page:

Street Name	Street Type	Proposed Species	Compliance Notes
SW Brisband Street	Neighborhood	American basswood (aka American linden)	On approved list; consistent with species established in Morgan Farm and Frog Pond Ridge
SW Sherman Drive	Neighborhood	Village green zelkova	On approved list; consistent with species established in Morgan Farm
SW Boeckman Road	Primary	Not applicable/To be planted by City as part of CIP project	Not applicable

**Outdoor Lighting**

**Applicability of Outdoor Lighting Standards**

Sections 4.199.20 and 4.199.60

**C35.** An exterior lighting system is being installed for the proposed new development. The Outdoor Lighting standards thus apply.

**Outdoor Lighting Zones**

Section 4.199.30

**C36.** The project site is within the LZ 2 lighting zone and the proposed outdoor lighting systems are reviewed under the standards of this zone. LZ 2 is intended to be the default condition for the majority of the City and is applied in low-density suburban neighborhoods and suburban commercial districts, and industrial parks and districts.

**Optional Lighting Compliance Methods**

Subsection 4.199.40 (.01) A.

**C37.** The applicant has the option of the Performance or Prescriptive method, and has elected to comply with the Performance Option.

**Weighted Average Percentage of Direct Uplight Lumens, Maximum Light Level at Property Line**

Subsection 4.199.40 (.01) C. 1. and C. 2., and Table 9

**C38.** The proposed lighting plan (Sheets LU 401 through LU 403 in Exhibit B2) has been designed to be compliant with City standards providing appropriate lighting for the site. The lighting plan includes a combination of building-mounted and pole-mounted fixtures, ranging from 406 to 5000 lumens. Per the applicant’s narrative, the exterior lighting plan complies with the performance standards by showing a weighted average percentage of direct uplight lumens less than 5%; showing that the maximum light level at the property line or adjacent public right-of-way is less than the values in Table 9; and including a photometric summary of horizontal illuminance of 0.2 foot candles maximum and vertical illuminance on the



plane facing the site up to the mounting height of the luminaire mounted highest above grade of 0.4 foot candles maximum (Table 9).

Table 9: Performance Method			
Lighting Zone	Maximum Percentage of Direct Uplight Lumens	Maximum Light Level at Property Line	
		Horizontal plane at grade (foot candles fc)	Vertical plan facing the site in question, from grade to mounting height of highest mounted luminaire (foot candles – fc)
LZ 2	5%	0.2 fc	0.4 fc

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

**C39.** The applicant submitted an exterior lighting compliance certificate for the proposed lighting (see Exhibit J of the applicant’s Exhibit B1) demonstrating compliance with the Oregon Energy Efficiency Code.

**Maximum Mounting Height**  
 Subsection 4.199.40 (.01) C. 3.

**C40.** The applicant proposes a mounting height of 20 feet for the new pole-mounted lights, less than the allowed maximum height of 40 feet. Pedestrian lighting is proposed at a maximum height of 12 feet, less than the allowed maximum height of 18 feet. Building-mounted fixtures are not proposed to exceed the maximum height of four feet greater than the portion of the building upon which they are located.

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

**Lighting Curfew**  
 Subsection 4.199.40 (.01) D.

**C41.** Per the applicant’s narrative Code response, the exterior lighting plan complies with the curfew requirements of the LZ 2 Lighting Zone by controlling the exterior lighting with an astronomical time clock that turns lighting on at dusk and turns lighting off at or before 10:00 pm.

## Frog Pond West-Public Lighting Plan

### Lighting of Local Streets

Local Street, page 78 and Figure 42 of Frog Pond West Master Plan

**C42.** The applicant's plan set does not show proposed street lights on local streets SW Sherman Drive and SW Brisband Street. The Frog Pond Master Plan requires PGE Option 'B' LED with Westbrook 35W LED and 18' decorative aluminum pole (20-foot mounting height with 4 foot mast arm). This light is no longer available from PGE and the Aurora is now used as the closest matching design. These are dark sky friendly and should be located to minimize negative effects on future homes, provide for safety, and use a consistent design established by the Frog Pond West Master Plan. A condition of approval requires the applicant to submit a street lighting plan and cut sheets demonstrating compliance with the street lighting standard as part of the Public Works permit application for the project.

### Lighting of Pathways

Pedestrian Connections, Trailheads and Paths, page 80 and Figure 42 of Frog Pond West Master Plan

**C43.** The Frog Pond West Master Plan requires a Public Lighting Plan and recommended light plan hierarchy to define various travel routes within Frog Pond. As the Pedestrian Connection shown in Street Demonstration Plan (Figure 18) will be provided by alternative means through and adjacent to the school site, lighting of this pathway will be accomplished using a variety of lighting, such as street lights, and building and pole mounted lights throughout the site (see Sheets LU 401 through LU 403 and details in Exhibit J of Exhibit B1).

## Request D: Class 3 Sign Permit and Waivers (SIGN22-0012)

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

### Sign Review and Submission

#### Class 2 Sign Permits Reviewed by DRB

Subsection 4.031 (.01) M. and Subsection 4.156.02 (.03)

**D1.** The application qualifies as a Class 3 Sign Permit and the Development Review Board is reviewing the application.

#### What Requires Class 3 Sign Permit Review

Subsection 4.156.02 (.06)

**D2.** The request involves a single user in a development subject to Site Design Review by the Development Review Board thus requiring a Class 3 Sign Permit.

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

**D3.** As indicated in the table below the applicant has satisfied the submission requirements for Class 3 sign permits, which includes the submission requirements for Class 2 sign permits:

Requirement	Submitted	Waiver Granted		Condition of Approval	Not Applicable	Additional findings/notes
		Info Already Available to City	Info Not Necessary for Review			
Completed Application Form	<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 type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

**Class 3 Sign Permit Review Criteria**

**Class 2 Review Criteria-Generally and Site Design Review**  
 Subsection 4.156.02 (.05) E.

**D4.** 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 Review Criteria-Compatibility with Zone**  
 Subsection 4.156.02 (.05) F. 1.

**D5.** The proposed signs are proportional to, and compatible with development in the PF zone. The application includes one (1) building sign with the school name mounted on the front canopy of the west side of the building near the main entrance. One (1) monument sign with an electronic reader board is proposed on the south side of the driveway on SW Sherman Drive. Three (3) flag poles, two of which are exempt and one (1) that requires a



waiver, are proposed to be located near the main building entrance. No evidence presented nor testimony received demonstrates the subject signs would detract from the visual appearance of the surrounding development.

#### Class 2 Review Criteria-Nuisance and Impact on Surrounding Properties

Subsection 4.156.02 (.05) F. 2.

- D6.** There is no evidence, and no testimony has been received suggesting the subject signs would create a nuisance or negatively impact the value of surrounding properties. The proposed electronic reader board sign improves functionality by facilitating remote regulation of the sign's operation and allowing easy message changes and real-time updates. The reader board will have brightness controls so as to avoid nuisances with the surrounding development and a condition of approval ensures the sign will maintain a hold-time of at least 15 minutes for messages.

#### Class 2 Review Criteria-Items for Special Attention

Subsection 4.156.02 (.05) F. 3.

- D7.** The signs do not conflict with the design or placement of other site elements, landscaping, or building architecture that has been reviewed as part of this application.

#### Sign Waivers-Qualifications

Subsection 4.156.02 (.08) A.

- D8.** The applicant requests two (2) waivers to allow an electronic reader board in the monument sign proposed on the south side of the driveway on SW Sherman Drive and to allow a third flag pole in front of the school building. The Development Review Board may grant waivers as part of a comprehensive review of the design and function of an entire site to bring about an improved design.

#### Signs Exempt from Sign Permit Requirements-Flags and Flagpoles

Subsection 4.156.05 (.01) C.

- D9.** Flags displayed from permanently-located freestanding or wall-mounted flagpoles that are designed to allow raising and lowering of flags are exempt from sign permit requirements, provided one site may have up to two (2) exempt flags and no exempt flag may be more than thirty (30) feet in height. The application proposes three (3) flagpoles to fly the required School District flags including the United States flag, State of Oregon flag, and National League of Families' POW/MIA flag. Therefore, the applicant has requested a waiver to the sign permit requirements of this subsection.

#### Prohibited Signs-Changeable Copy Signs

Subsection 4.156.06 (.01) D.

- D10.** Changeable copy signs that use lighting changed digitally, unless specifically approved through a waiver process connected with a Class 3 Sign Permit or Master Sign Plan, are prohibited. The applicant has applied for a waiver to allow an electronic reader board as

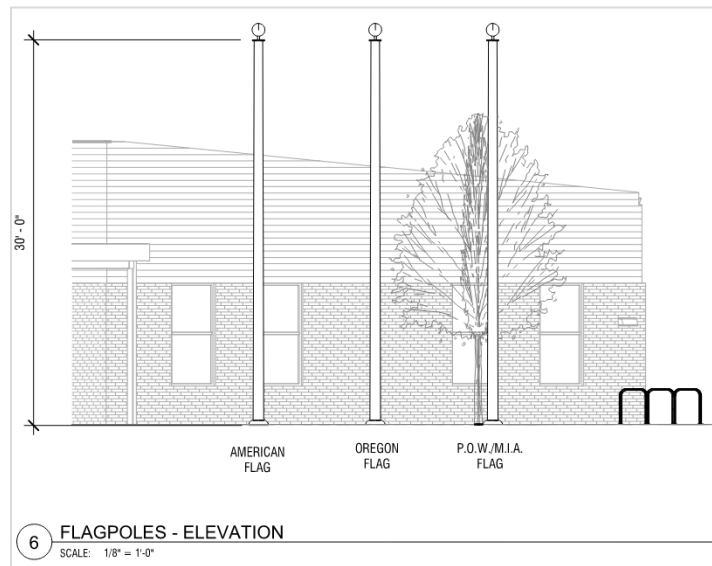
part of the monument sign proposed on the south side of the driveway on SW Sherman Drive.

**Definitions-Changeable Copy Sign**  
 Subsection 4.001 267. F.

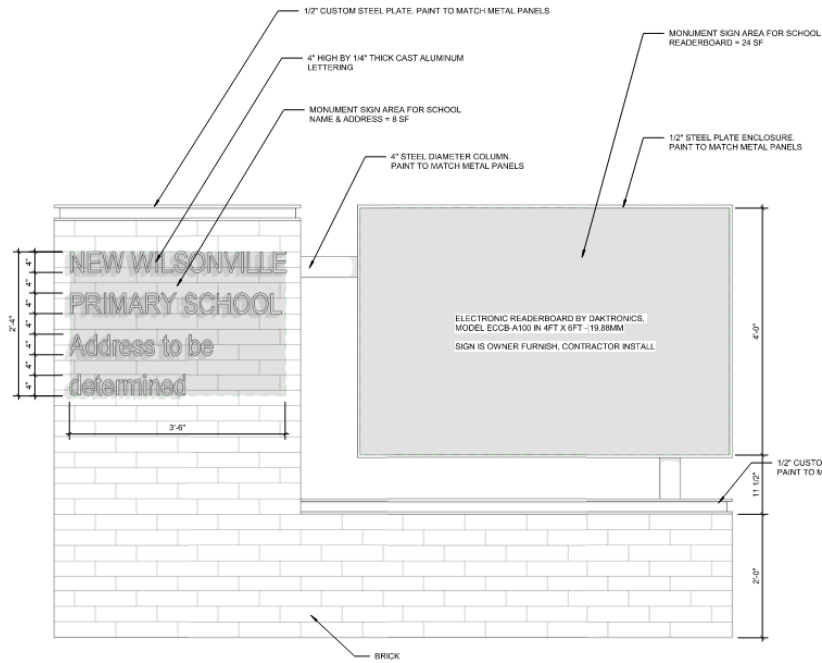
**D11.** The proposed electronic reader board sign as proposed by the applicant will not have moving structural elements, flashing or sequential lights, elements, prisms, or other methods that result in movement. A condition of approval ensures the frequency of text copy changes will not exceed once every 15 minutes except in emergency situations as requested by the City Manager or designee.

**Sign Waiver Criteria-Design**  
 Subsection 4.156.02 (.08) A. 1.

**D12.** With respect to the third flagpole, as stated by the applicant, three (3) flagpoles are required by the State of Oregon (Policy 107-011-160 established effective January 1, 2018) to fly the required United States flag, State of Oregon flag, and National League of Families’ POW/MIA flag. The proposed configuration, illustrated below, will allow the three (3) to be displayed properly when half-mast protocol is in effect. Each pole will be adequately lit from above. The third flagpole is complementary in design and placement to the two (2) allowed by the standard while meeting the State requirement.



Including an electronic reader board in the proposed monument sign, as described in the applicant’s narrative, improves sign functionality by facilitation remote regulation of the sign’s operation by the school, allowing easy message changes and real-time updates to the signage outside the school, and enabling the District to inform school visitors of upcoming events, or announce school closures or delays in the event of inclement weather. The proposed design is for text only, in one color of red, with no display of graphics or animations, oriented to be seen along SW Sherman Drive at the main entry to the school.



3 MONUMENT SIGN ELEVATION - FRONT & BACK  
SCALE: 1" = 1'-0"

Sign Waiver Criteria-Compatibility  
Subsection 4.156.02 (.08) A. 2.

D13. According to the applicant, the three (3) flag poles will be arranged in a cohesive grouping near the main building entrance as is customary for public buildings. The flag poles will comply with the maximum 30-foot standard and will not be overly large. Official Federal and State flags are commonly associated with public buildings and the District is obliged to properly display three (3) flags. At a 30-foot maximum flag pole height, it is not possible to properly display the flags at half-staff, therefore, a third flag pole is necessary to comply with State requirements.

As described by the application, the monument sign design and location were selected to allow the District to provide school announcements to the public traveling along SW Sherman Drive. The sign is proposed to be oriented so as to not direct messages toward the residences on the west side of the street. The brick and finish of the address lettering are consistent with the finish materials and canopy sign for the school building. The electronic reader board display will have a similar visual appearance to a manual reader board backlit display, which is allowed by the Code. It will not have graphics or flashing displays of any kind.



Sign Waiver Criteria-Public Safety, Especially Traffic Safety  
Subsection 4.156.02 (.08) A. 3.

**D14.** There is no evidence the proposed signs will negatively impact public safety, especially traffic safety. As noted in Finding D9, the proposed signs are sufficiently removed from streets to have any potential to adversely impact traffic or general public safety.

With regard to the electronic reader board sign, there is no evidence the proposed sign will negatively impact public safety, especially traffic safety. Per the applicant's narrative, the sign location will allow for proper visibility near the intersection of the parking area driveway and SW Sherman Drive. The electronic display will not be overly bright, animated, or distracting in any way that could compromise traffic safety.

Sign Waiver Criteria-Content  
Subsection 4.156.02 (.08) A. 4.

**D15.** The content of the subject signs is not being reviewed or considered as part of this application.

Changeable Copy Sign Waiver Criteria-Dimming Technology  
Subsection 4.156.06 (.01) D. 1.

**D16.** The applicant's narrative states that the electronic reader board display has a sensor and auto dimming capabilities to provide appropriate light levels during the daytime and early evening. In addition, the message will not change more frequently than every 15 minutes, as required by the standards.

Changeable Copy Sign Waiver Criteria-Luminance  
Subsection 4.156.06 (.01) D. 2.

**D17.** As described by the applicant, the proposed electronic reader board is designed for text only and will not display graphics or animations. Text will be displayed in one color, red, and will have a maximum brightness of 4,000 nits or 4,000 candela per square meter (for comparison, TV brightness is up to 1,500 nits or 1,500 candela per square meter), which is within the standard recommendation for brightness levels of outdoors displays.

## Sign Measurement

Measurement of Individual Element Signs  
Subsection 4.156.03 (.01) B.

**D18.** The sign measurement uses single rectangles, as allowed, and shown in Table 3 of the applicant's narrative, below.

**Table 3  
Proposed Signs**

SIGN LOCATION AND TYPE	NO.	DIMENSIONS AND AREA	MATERIAL AND INSTALLATION	ILLUMINATION
<b>North Courtyard Façade/Main Entrance</b>				
Building Signage "New Wilsonville Primary School" (Placeholder text for school name)	1	27'-1" X 1'-6" = 41 SF  8'-8" X 1'-6" = 13 SF	18" high by 1" thick cast aluminum letters	No illumination
<b>Site Entrance</b>				
Monument Sign "School Name & Address TBD" with an electronic reader board	1	Letters 3'-6" X 2'-4" = 8 SF  Reader board 6'-0" x 4'-0" = 24 SF	4" high by ¼" thick cast aluminum letters	Spotlights will illuminate the School Name & Address from the ground  Internal illumination

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

**General Allowance**

Subsection 4.156.08 (.01) A.

**D19.** The subject site has frontage on SW Sherman Drive of sufficient length to be sign eligible. As a corner lot, the site is eligible for one (1) additional freestanding or ground mounted sign on either SW Boeckman Road or SW Brisband Street. However, the applicant is proposing only one (1) sign, on the SW Sherman Drive frontage on the south side of the driveway at the main entrance to the school.

**Allowed Height**

Subsection 4.156.08 (.01) B.

**D20.** The allowed height for the sign is 20 feet in the PF zone. The proposed seven (7)-foot-tall freestanding sign (see Sheet LU 350 in Exhibit B2) thus meets the requirements of this subsection.

**Allowed Area**

Subsection 4.156.08 (.01) C.

**D21.** For PF zoned properties adjacent to residential zoned land, the maximum allowed area is 32 square feet. As shown on the applicant’s Sheet LU 350 (Exhibit B2) the name and address measures eight (8) square feet and the electronic reader board measures 24 square feet for a total sign area of 32 square feet, meeting the requirement.

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

**D22.** The applicant proposes constructing the freestanding sign and its foundation in a full vertical position.

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

**D23.** The subject freestanding sign will not extend into or above right-of-way, parking, and maneuvering areas.

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

**D24.** The proposed sign is coordinated with the building design.

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

**D25.** The proposed freestanding sign does not exceed eight (8) feet in height, therefore, the requirements of this subsection do not apply.

Sign Setback  
Subsection 4.156.08 (.01) J.

**D26.** The setback requirements intend for freestanding signs to be located no further than 15 feet from the property line and no closer than two feet from a sidewalk or other hard surface in the public right-of-way. The applicant's Sheet LU 300 (Exhibit B2) shows the freestanding sign located approximately five (5) feet from the west property line and roughly seven (7) feet from the public sidewalk in SW Sherman Drive, consistent with the requirement.

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

**D27.** The main entry to the site is from SW Sherman Drive. Sheet LU 350 (Exhibit B2) shows the address to be located on the monument sign, thus meeting the requirements.



### Building Signs in the PDC, PDI, and PF Zones

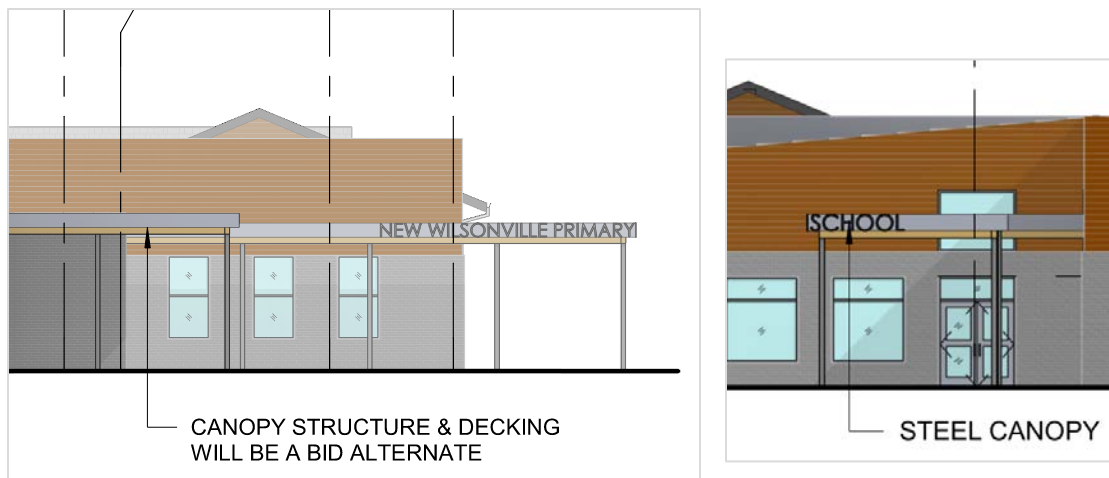
Establishing whether Building Facades are Eligible for Signs  
 Subsection 4.156.08 (.02) A.

**D28.** The west, north, and south facades are sign eligible while the east is not as follows:

Façade	Sign Eligible	Criteria making sign eligible
North	Yes	Faces a lot line with frontage on a street
East	No	
South	Yes	Faces a lot line with frontage on a street
West	Yes	Entrance open to general public; adjacent to primary parking area; faces a lot line with frontage on a street

Building Sign Area Allowed  
 Subsection 4.156.08 (.02) B.5.a

**D29.** As described by the applicant and shown on the plans and in the illustration below, the building-mounted sign is proposed to be located on the walkway canopy near the main front entrance, and will wrap around the west corner of the canopy. The northwest facing portion of the sign is 41 square feet (Sheet LU 350) on a building façade in excess of 140 feet, and the west facing portion of the sign is 13 square feet on a façade length over 370 feet. The code allows a sign area of 36 square feet for building facades lengths greater than 72 feet with an allowance to 12 additional square feet of sign area for every additional 24 feet of façade length. Each portion of the sign easily satisfies this standard. No signs are proposed on the north or south façades.



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

**D30.** The proposed building signs do not exceed 75 percent of the length of the façades.

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

**D31.** 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 features.

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

**D32.** The proposed building functionally similar to marquee and awning signs, which is allowed.

**Site Design Review**

**Excessive Uniformity, Inappropriate Design**  
Subsection 4.400 (.01)

**D33.** With quality materials and design, the proposed building and monument signs will not result in excessive uniformity, inappropriateness or poor design, and the proper attention has been paid to site development.

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

**D34.** The signs comply with the purposes and objectives of site design review, especially Objective D, which specifically mentions signs. The proposed signs are of a scale and design appropriately related to the subject site with the appropriate amount of attention given to visual appearance.

**Design Standards**  
Subsection 4.421 (.01)

**D35.** The applicant has provided sufficient information demonstrating compliance with the standards of this subsection, specifically Objective F. which pertains to advertising features. There is no indication that the size, location, design, color, texture, lighting or material of the proposed signs would detract from the design of the surrounding properties.

**Design Standards and Signs**  
Subsection 4.421 (.02)

**D36.** This review applies design standards to exterior signs, as required.

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

**D37.** Staff recommends no additional conditions of approval to ensure the proper and efficient functioning of the development in relation to the signs.

Color or Materials Requirements  
Subsection 4.421 (.06)

**D38.** The proposed coloring is appropriate for the signs and no additional requirements are necessary.

Site Design Review-Procedures and Submittal Requirements  
Section 4.440

**D39.** The applicant has submitted a sign plan as required by this section.

**Frog Pond West-Gateways, Monuments and Signage**

Unifying Frog Pond Name, Gateway Signs, Prohibition on Individual Subdivision Signs  
Page 92 of the Frog Pond West Master Plan

**D40.** There are no neighborhood gateways planned within the area of the subject site; therefore, no monument signs or other neighborhood gateway signs are permitted.

Unifying Frog Pond Name, Sign Caps on Street Signs  
Page 92 of the Frog Pond West Master Plan

**D41.** As required by a condition of approval, all street name signs on roads adjacent to the subject site installed by the applicant are required to utilize the City-approved sign cap, matching the design used in the previously approved projects within Frog Pond West. The developer will buy the signs from the City to ensure uniformity throughout the Frog Pond West neighborhood.

**Request E: Type C Tree Removal Plan (TPLN22-0009)**

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

**Type C Tree Removal**

Review Authority  
Subsection 4.610.00 (.03) B.

**E1.** The requested tree removal is connected to Site Design Review by the Development Review Board for new development and, thus, is under their authority.



Conditions of Approval  
Subsection 4.610.00 (.06) A.

**E2.** No additional conditions are recommended pursuant to this subsection.

Completion of Operation  
Subsection 4.610.00 (.06) B.

**E3.** It is understood that tree removal will be completed by the time the development of the proposed facility is completed, which is a reasonable time frame for tree removal.

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

**E4.** 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)

**E5.** The standards of this subsection are met as follows:

- Standard for the Significant Resource Overlay Zone: The proposed tree removal is not within the Significant Resource Overlay Zone.
- Preservation and Conservation: The applicant has taken tree preservation into consideration, and has limited tree removal to trees that are necessary to remove for development. Several trees along the northeast boundary of the site and an Austrian pine on the south side of the site near SW Boeckman Road will be preserved during Phase 1 construction; however, the applicant's tree protection and removal plan indicates that several of these trees will need to be removed when Phase 2 construction occurs in the future.
- Development Alternatives: No significant wooded areas or trees would be preserved by practical design alternatives.
- Land Clearing: As stated in the applicant's materials, because of the scale of the project, most of the site will need to be cleared; however, it will be restored with new landscaping that is integrated with the site design and the character of the emerging neighborhood, which surrounds the site.
- Residential Development: The proposed activity does not involve residential development, therefore this criteria does not apply.
- Compliance with Statutes and Ordinances: The necessary tree replacement and protection is planned according to the requirements of the tree preservation and protection ordinance.
- Relocation or Replacement. As shown on the applicant's planting schedule (Sheet LU 206 in Exhibit B2), in excess of 90 trees are proposed to be planted as replacement for the 41 proposed for removal in Phase 1 and additional 13 to be removed in Phase 2, substantially exceeding the 1:1 required replacement ratio.

- Limitation: Tree removal is limited to where it is necessary for construction or to address nuisances or where the health of the trees warrants removal.
- Tree Survey: A tree survey has been provided.

#### Review Process Subsection 4.610.40

- E6.** Review of the proposed Type C Tree Plan is concurrent with other site development applications.

#### Tree Maintenance and Protection Plan Section 4.610.40 (.02)

- E7.** The applicant submitted the necessary copies of a Tree Maintenance and Protection Plan.

### Replacement and Mitigation

#### Tree Replacement Required Subsection 4.620.00 (.01)

- E8.** Consistent with the tree replacement requirements for Type C Tree Removal Permits established by this subsection, the applicant proposes to plant mitigation trees consistent with Subsection 4.620.00 (.06).

#### Basis for Determining Replacement, and Replacement Tree Requirements Subsection 4.620.00 (.02) and (.03)

- E9.** As shown in the planting schedule on Sheet LU 206 in Exhibit B2, replacement trees will meet, or will meet with conditions of approval, the minimum caliper and other replacement requirements. The applicant proposes planting in excess of 90 trees consistent with the 1:1 ratio required by this subsection. Staff does not recommend any mitigation on an inch-per-inch basis.

#### Replacement Tree Stock Requirements Subsections 4.620.00 (.04)

- E10.** Review of the tree replacement and mitigation plan is prior to planting and in accordance with the tree ordinance, as established by other findings in this request. The applicant's landscape plans show tree stock meeting the tree stock requirements.

#### Replacement Trees, City Tree Fund Subsection 4.620.00 (.05)

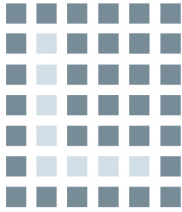
- E11.** As shown on the landscape plans (Sheets LU 206 through LU 209), some of the proposed replacement trees are street trees, the placement of which will be reviewed and approved as part of Public Works permit review for the project. The applicant does not propose to pay into the City Tree Fund as mitigation for removed trees.

**Protection of Preserved Trees**

Tree Protection During Construction  
Section 4.620.10

**E12.** A condition of approval ensures tree protection measures, including fencing, are in place consistent with Public Works Standards Detail Drawing RD-1230. All trees required to be protected must be clearly labeled as such, and suitable barriers to protect remaining trees must be erected, maintained, and remain in place until the City authorizes their removal or issues a final certificate of occupancy. A condition of approval will ensure the applicable requirements of this section are met.





**Keith Liden, AICP** PLANNING CONSULTANT

503.757.5501  
keith.liden@gmail.com

4021 SW 36th Place  
Portland, OR 97221

## MEMORANDUM

TO: Cindy Luxhoj, Associate Planner  
FROM: Keith Liden  
RE: Response to Incomplete Notice – Frog Pond Primary School  
DB22-0012  
DATE: January 24, 2023

On December 22, 2022 you issued a notice that the Design Review application submitted by the West Linn-Wilsonville School District was incomplete because it was missing information in nine areas along with eight additional compliance items. The missing items have now been included in the amended application package or addressed as described below. The lot line adjustment application has been withdrawn, and it will be submitted following a decision on this application.

### MISSING INFORMATION ITEMS 1 – 9

1. Landscape Planting Plans (LU 206-209) - Show utilities. Add quantities of proposed plantings to Plant Schedule. Add species codes of trees from Plant Schedule (LU 206) on Planting Plans-Trees (LU 207-208). Include street trees along the entire right-of-way length on the south side of SW Brisband Street (LU 207). Provide sufficient detail on the Planting Plan-Shrubs (LU 209) about location and species of proposed shrubs and groundcover to determine whether applicable landscape standards are met.

**Response:**

The landscaping plan sheets have been amended as requested.

2. Tree Protection and Removal Plan (LU 201) – Show topographical information, location and dimension of existing and proposed easements, setbacks, and proposed grade changes that may impact trees. Distinguish, on plan and in table, between trees proposed for removal in Phase 1 and anticipated for removal in Phase 2. Show tree protection fencing consistent with that shown on Grading Plan. Include cut sheet and notes for tree protection fencing consistent with Public Works Standards Drawing RD-1230.

**Response:**

The landscaping plan sheets have been amended as requested.

3. Provide physical materials/color board or samples consistent with Building Elevations (LU 330-331) and Exterior Materials sheet (LU 340) displaying specifications of type, color, and texture of exterior surfaces of proposed architectural features of the building.



**Response:**

Physical samples of the exterior materials consistent with Building Elevations (Exhibit A - LU 330-331) and Exterior Materials sheet (Exhibit A - LU 340) are provided.

4. Provide cut sheet/details of proposed rooftop mechanical screening specifications.

**Response:**

Mechanical details of the proposed rooftop mechanical screening are included as Exhibit C. The mechanical screens will be PAC-Clad 12-inch Flush Panels and a cut sheet is included.

5. Provide cut sheet/details of proposed outdoor site furnishings and features, such as benches and other seating (boulders, concrete seat walls), picnic tables, decorative pavers, bicycle, and other canopies, play equipment and furnishings, etc.

**Response:**

Canopy details of the proposed freestanding and building canopies are included as Exhibit H.

6. Provide sufficient findings in code response narrative to demonstrate compliance with Section 4.177 Street Improvement Standards.

**Response:**

Findings responding to Section 4.177 are now included in the application narrative.

7. Include approved site plan attachment with Republic Services provider letter. Provide area calculations for trash/recyclables area to demonstrate compliance with applicable standards. Provide cut sheets of dimensions, design and materials of gates to utility area.

**Response:**

The site plan that was approved with the Republic Services provider letter is included. Area calculations for trash/recyclables area to demonstrate compliance with applicable standards (Section 4.179. Mixed Solid Waste and Recyclables Storage) are included on Floor Plan Phase 1 Only (Exhibit A – LU 320). The gates will be Metalco Grigliato SC-100 panel, and a cut sheet is included (Exhibit C). The dimensions of the gates are included on the site plan that was approved with the Republic Services.

8. Include approved site plan attachment with TVF&R provider permit.

**Response:**

The site plan that was approved with the TVF&R provider permit is included (Exhibit E).

9. Request waiver for third flagpole shown on plans and provide sufficient additional code response narrative to demonstrate how the waiver criteria are met; if number of flag poles will be reduced to two, revise plans and narrative accordingly. Provide dimensions and sign drawing details in the sign plan for all proposed flag poles.

**Response:**

The application is amended to include a waiver request for the third flagpole.

**POTENTIAL COMPLIANCE ISSUES A - H**

- A. Architectural Site Plan (LU300) – Clarify whether features labelled “Bid Alternate” are included in Phase 1 or Phase 2 of project.

**Response:**

Architectural Site Plan (LU300), Floor Plan Phase 1 Only (LU320) and Floor Plan Phase 1 & Phase 2 (LU321) have been updated to clarify the bid alternates in Phase 1 and Phase 2 scope.

- B. Explain how the Pedestrian Connection between SW Brisband Street and SW Boeckman Road shown in the Frog Pond West Master Plan, Street Demonstration Plan (Figure 18), on the east side of the property is provided or a deviation/comparable substitute proposed.

**Response:**

A pedestrian connection from Boeckman Road to SW Brisband Street is shown in the Frog Pond Master Plan along the property’s east boundary. The district has provided the intent of this pedestrian connection by providing a pathway from Boeckman Road sidewalk north along the bus lane to a path that will meander north along the eastern side of the school building to SW Brisband Street. This path will be gated during school hours but opened to the public at other times to facilitate access. During school hours the pedestrian route would continue along the bus lane to the front of the building and then onto the northwest corner of the site along SW Sherman Drive which then connects to SW Brisband Street completing the intent of the master plan while addressing school security.

- C. Street trees are in conflict with LIDA facilities.

**Response:**

Street trees have been removed from the LIDA facilities and are now shown at the back of the walk per discussion with engineering staff, Amy Pepper. The street tree planting plan has been amended to comply (Exhibit a – LU 207 and LU 208).

- D. ADA crossings aren’t provided on the south side of intersections of SW Sherman Drive/SW Chestnut Lane and SW Sherman Drive/SW Bay Lane.

**Response:**

ADA crossings not shown are intentionally not provided to better control the crossings for students. Applicant’s engineer is working with city staff to discuss which crossings and types will be contemplated at each leg and will be addressed prior to the land use hearing or as a condition of approval.

- E. Water main must be installed in SW Brisband Street for looping purposes to serve future development.



**Response:**

Water main has been added to the plans in order to complete the loop and serve future development along SW Brisband Street and improve system performance. A reimbursement district will be entered into per city standards.

- F. Sewer main must be installed in SW Brisband Street for looping purposes to serve future development.

**Response:** Sewer main has been added to the plans in order to serve future development along SW Brisband Street. A reimbursement district will be entered into per city standards.

- G. Drainage Basins 3 and 28 are not shown to drain to a LIDA facility; it's unclear why these areas aren't being managed.

**Response:** Drainage Basin 28 has been revised to be managed onsite and Basin 3 will be coordinated with the City Engineer as the development of SW Brisband Street to the east is developed out by other development projects.

- H. Effective July 1, 2022, new commercial buildings are required to comply with electric vehicle charging infrastructure requirements for parking areas in accordance with OAR 918-460-0200: <https://www.oregon.gov/bcd/laws-rules/Documents/20220701-hb2180-evcharging-pr.pdf>

**Response:** Per Section (2) of OAR 918-460-0200, the building is not subject to EV requirements. Section (2) states that this rule only applies to newly constructed buildings and parking areas serving the following building types:

- (a) Commercial buildings under private ownership
- (b) Multifamily residential builds with five or more residential dwelling units; and
- (c) Mixed-use buildings consisting of privately owned commercial space and five or more residential dwelling units.

Frog Pond Primary School is a public building under school district ownership (government building).



## West Linn – Wilsonville Schools

April 3, 2023

Cindy Luxhoj, Associate Planner  
City of Wilsonville  
29799 SW Town Center Loop East  
Wilsonville, OR 97070

VIA Email

RE: New Primary School in Wilsonville  
DB22-0012

Dear Cindy,

In a March 31, 2023 email to the West Linn-Wilsonville School District and consulting team, you had three requests for clarification related to bicycle parking and landscaping. This prompted subsequent communication between you and Anne Samuel at Meyer Reed. Our responses follow:

1. **Bicycle parking location and design.** The application narrative indicates that 52 spaces are proposed for Phase 1 (350-student enrollment), with an additional 48 spaces to accompany Phase 2 (an additional 200- student enrollment and total enrollment of 550). You could only find 46 bike parking spaces and asked about where the remaining spaces would be located in Phases 1 and 2. You also asked for clarification regarding covered and uncovered spaces.

**Response:** Several plan sheets inadvertently were missing 6 spaces for Phase 1, and this has been corrected. Two additional racks (4 spaces) are proposed under the freestanding canopy in front of the building, and one rack is added at the west administration entry. This information and clarification regarding covered bicycle spaces are shown on revised application plan sheets LU 200, LU 203, LU 205, LU 208, LU 209, and LU 213, which are attached.

The application included basic information about Phase 2 to show the ultimate intent of the district to increase the size of the Phase 1 school from 350 to 550 students in the future when the need exists, and funding is available. The application provides basic site layout information for Phase 2 but does not include the same level of design detail of Phase 1 in several areas, including landscaping and bicycle parking. The district plans to submit a subsequent Phase 2 development review application in the future that is consistent with what is shown in this application. Phase 2 design details such as landscaping and bicycle parking will be provided at that time. It was with this understanding the application was deemed complete on February 22, 2023. The district will be available during the DRB hearing to answer any questions the public or DRB may have about Phase 1 or 2.

2. **Bicycle parking calculation.** You asked us to verify how the number of required bicycle spaces compares to what was assumed in the transportation impact analysis by DKS. DKS assumed 22 classrooms (Phases 1 and 2) in a 60,000 square-foot building. One-half of the floor area (30,000 sf)





## West Linn – Wilsonville Schools

was used to calculate bicycle parking for grades K through 2, and 11 classrooms to determine parking for grades 3 through 5. This yielded a total parking requirement of 97 bicycle spaces.

**Response:** The calculation method found in Table 5 of WDC 4.115(.04)A. states that bike parking for grades K-2 is 1 space per 3,500 square feet without specifying if this refers to classroom floor area, the entire school, or something in between, and 8 spaces per classroom for grades 3 through 5. Based upon the Phase 1 floor area of 58,130 square feet and 16 classrooms and the additional 11,500 square feet of floor area and 8 more classrooms for Phase 2, we realize now that the application does not provide the bicycle parking required by WDC 4.155(.04)A. At this point in the process the district simply requests the city condition the approval to require the additional required bicycle parking necessary for Phase 1.

3. **Parking area landscaping.** You asked for additional information related to parking area landscaping and the application's ability to satisfy the 10% parking area landscape requirement in WDC 4.155(.03)B.1 for the parking lots in Phases 1 and 2. Anne Samuel received guidance from you about how to measure compliance with this standard.

**Response:** The information requested is clarified on a separate, colored markup of Sheet LU 200 (attached). It demonstrates that the proposed landscaping for the main western parking lot along Sherman Drive easily satisfies the code requirement. The reason that the District chose to exceed this requirement to such a large degree was to be responsive to community feedback regarding the location of the parking lot relative to residential properties west of Sherman Drive. Community feedback after two community meetings, subsequent online surveys and in-person conversations standing along Sherman Drive indicated concern with the appearance of a parking lot and school across the street from residences. The District has responded to those concerns by providing additional landscape area to improve buffering. For the reasons stated above, comparable information is not available for Phase 2.

If you have any additional questions or concerns, please contact Keith Liden on our consulting team. We look forward to meeting with you and the DRB on April 10<sup>th</sup>. Thank you.

Sincerely,

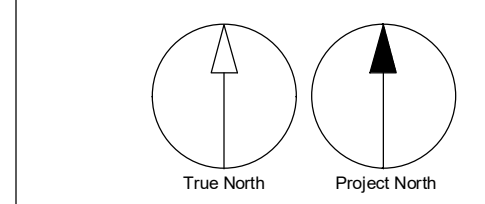
Remo Douglas

cc: Keith Liden  
Rebecca Grant, IBI Group  
Anne Samuel, Meyer Reed



No.	DESCRIPTION	DATE
	LAND USE APPLICATION	2022-11-04
	LAND USE INCOMPLETENESS RESPONSE	2023-01-17
	LAND USE RESPONSE TO PLANNER QUESTIONS	2023-03-31

**NOT FOR CONSTRUCTION**



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503.223.5953

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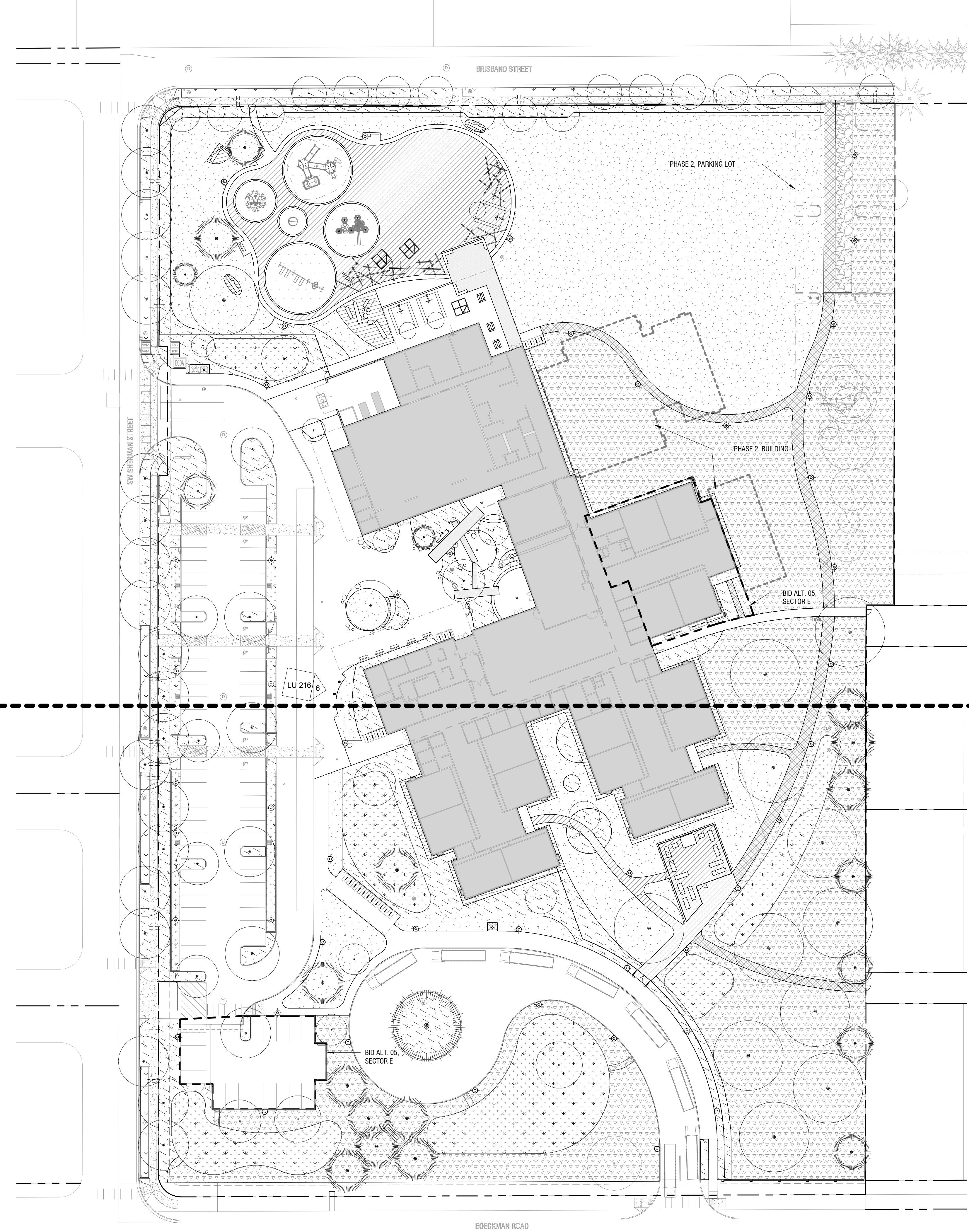
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Portland, OR 97205, USA  
tel 503 226 8950 fax 503 273 9192  
ibigroup.com

PROJECT  
**Frog Pond Primary School**  
7151 Boeckman Road  
Wilsonville, OR 97070

PROJECT NO:  
137469

SHEET TITLE  
**LANDSCAPE KEY PLAN**

SHEET NUMBER  
**LU 200**



**GENERAL ABBREVIATIONS**

- ARCH ARCHITECTURAL/ARCHITECT
- CAL CALIPER
- CONC CONCRETE
- DIA DIAMETER
- DBH DIAMETER AT BREAST HEIGHT
- DWG DRAWINGS
- EQ EQUAL
- HT HEIGHT
- L.A. LANDSCAPE ARCHITECT
- N/A NOT APPLICABLE
- NO. NUMBER
- O.C. ON CENTER
- PA PLANTING AREA
- R RADIUS
- SF SQUARE FEET
- SIM SIMILAR

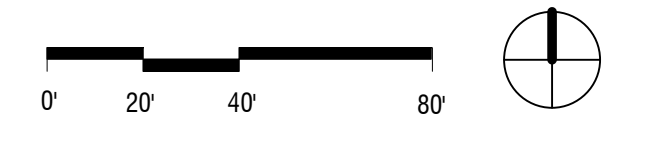
**GENERAL NOTES**

1. LANDSCAPE DOCUMENTS ARE BASED ON A SURVEY BY COMPASS LAND SURVEYORS DATED MARCH, 2022. NOTIFY OWNER'S REPRESENTATIVE OF ANY DISCREPANCIES IDENTIFIED ON SITE RELATED TO SURVEY INFORMATION PRIOR TO INSTALLATION.
2. REFERENCE CIVIL DRAWINGS FOR UNDERGROUND UTILITIES AND VEHICULAR AREAS INCLUDING PAVING, CURBS, STRIPING AND SIGNAGE.
3. REFERENCE ELECTRICAL DRAWINGS FOR SITE LIGHTING.
4. REFERENCE ARCHITECTURAL DRAWINGS FOR BUILDING, COVERED PLAY SHELTER, BIKE CANOPY AND SITE SIGNAGE, INCLUDING THE ENTRY MONUMENT.
5. REFERENCE DEMOLITION PLANS FOR SITE REMOVALS.
6. REFERENCE L-001 FOR EXISTING TREE REMOVALS AND PROTECTION.
7. IMPROVEMENTS WITHIN THE RIGHT OF WAY ARE FOR REFERENCE ONLY. REFERENCE SEPARATE CIVIL PUBLIC IMPROVEMENTS PACKAGE.

LU 202 - SITE - PARTIAL PLAN - NORTH  
 LU 204 - IRRIGATION - PARTIAL PLAN - NORTH  
 LU 207 - PLANTING - TREES - PARTIAL PLAN - NORTH

LU 203 - SITE - PARTIAL PLAN - SOUTH  
 LU 205 - IRRIGATION - PARTIAL PLAN - SOUTH  
 LU 208 - PLANTING - TREES - PARTIAL PLAN - SOUTH

1 SITE PLAN - KEY PLAN  
SCALE: 1" = 40'-0"



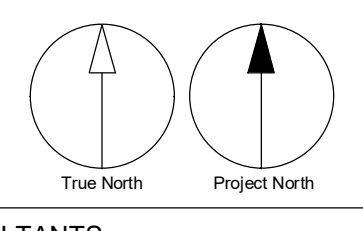




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ISSUES		
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PROJECT  
**Frog Pond Primary School**

7151 Boeckman Road  
Wilsonville, OR 97070

PROJECT NO:  
137469

SHEET TITLE  
**SITE - PARTIAL PLAN - SOUTH**

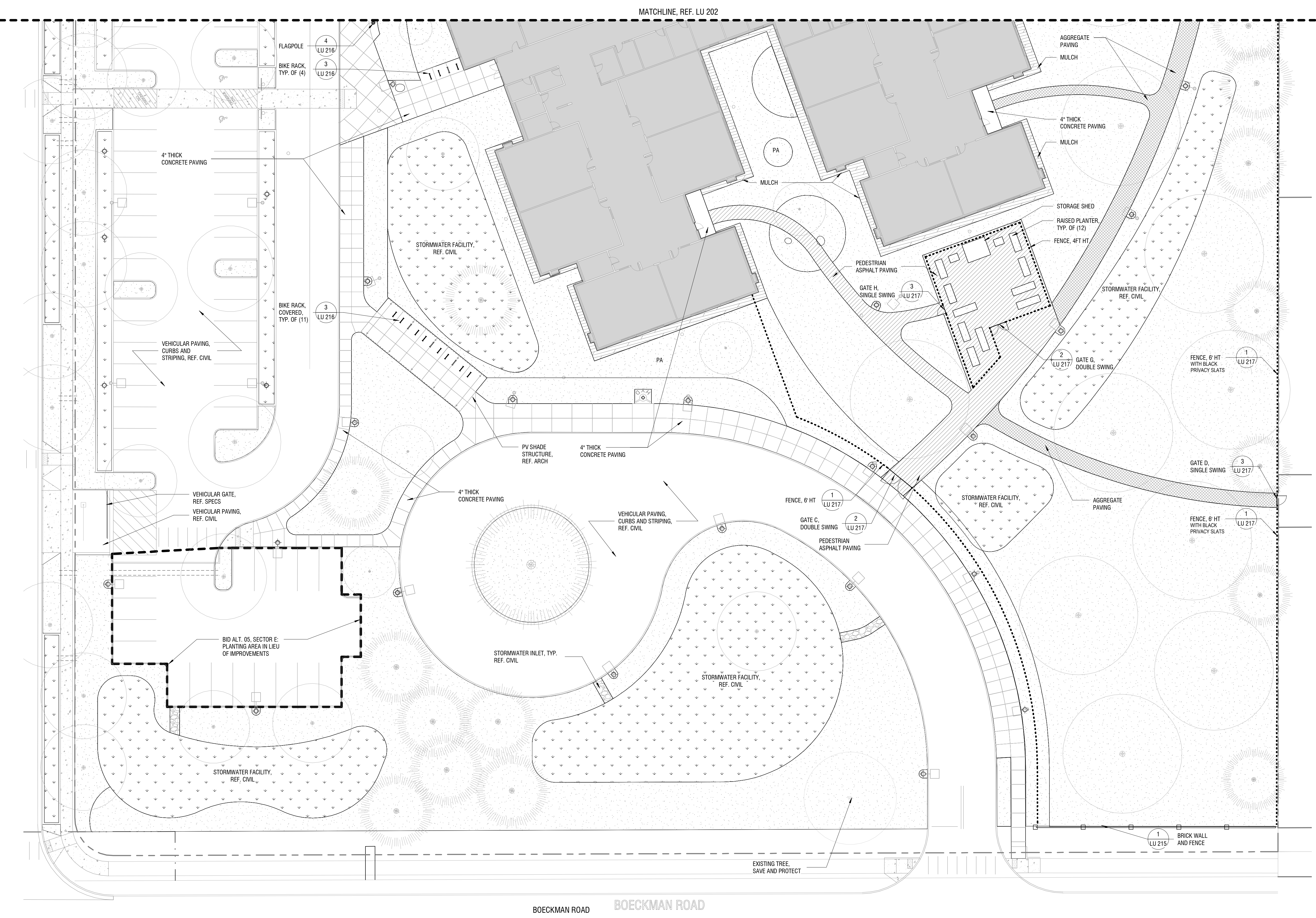
SHEET NUMBER  
**LU 203**

**GENERAL LEGEND**

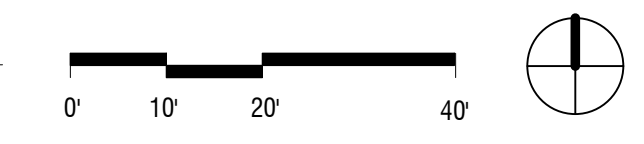
- PROPERTY LINE
- - - - - FENCE
- o AREA DRAIN, REF. CIVIL
- TRENCH DRAIN, REF. CIVIL
- LIGHT POLE, REF. ELECTRICAL
- BOLLARD, REF. CIVIL
- PROPOSED TREE, DECIDUOUS
- PROPOSED TREE, EVERGREEN
- PA PLANTING AREA, REF. L400 SERIES
- VEHICULAR ASPHALT PAVING - REF. CIVIL DWGS
- PEDESTRIAN ASPHALT PAVING
- COMPACTED AGGREGATE PAVING
- MULCH AT BUILDING

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- REFERENCE DEMOLITION PLANS FOR SITE REMOVALS.
- REFERENCE L-001 FOR EXISTING TREE REMOVALS AND PROTECTION.



1 LU - SITE - PARTIAL PLAN - SOUTH  
SCALE: 1" = 20'-0"















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	LAND USE RESPONSE TO PLANNER QUESTIONS	2023-03-31

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### GENERAL LEGEND

- PROPERTY LINE
- FENCING
- AREA DRAIN, REF. CIVIL
- TRENCH DRAIN
- LIGHT POLE, REF. ELEC
- SITE BOULDER
- BOLLARD
- EXISTING TREE
- APPROXIMATE CANOPY

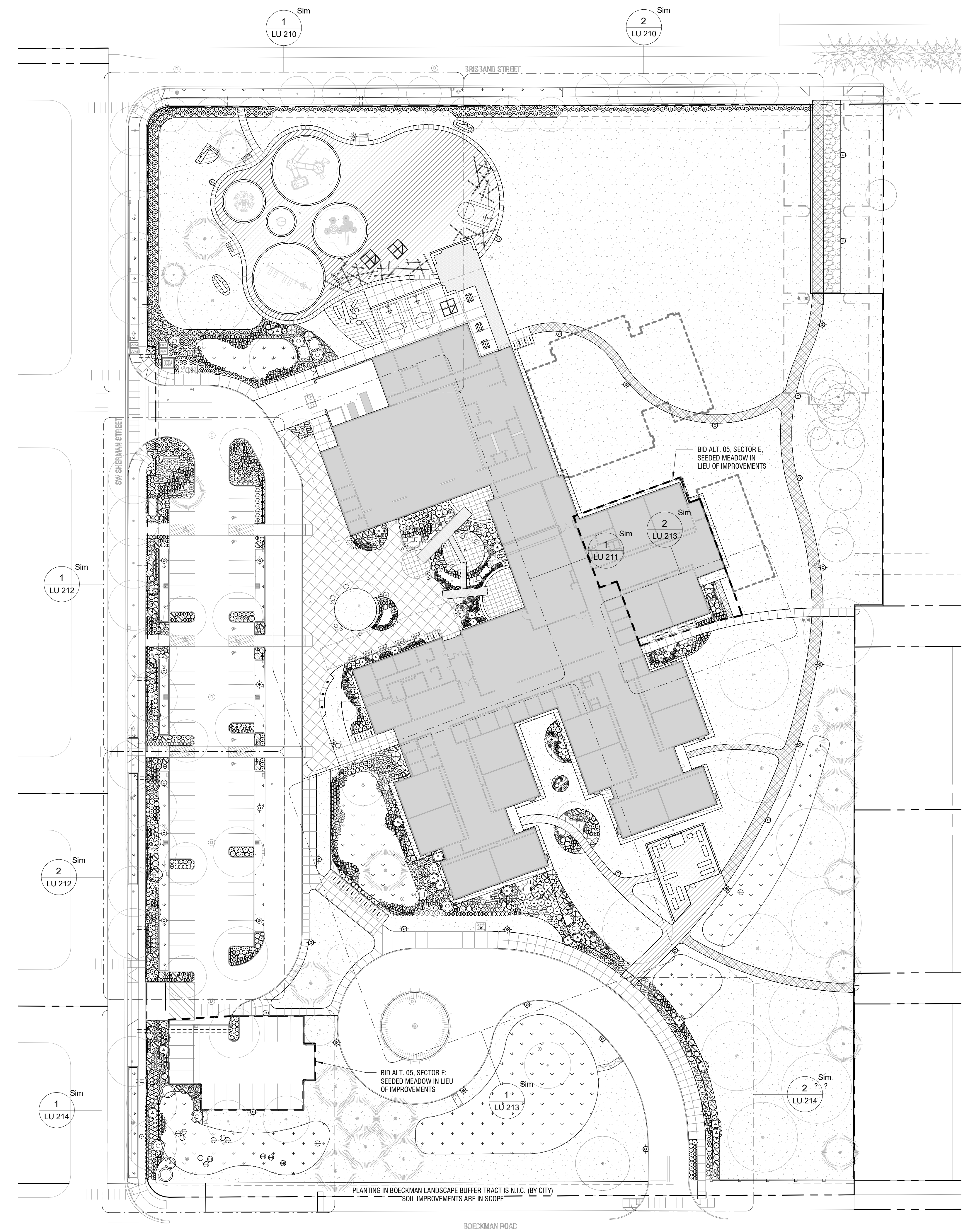
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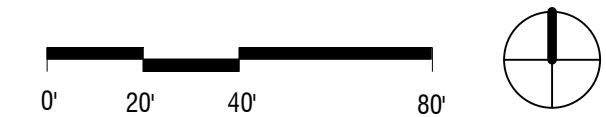
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- DO NOT BEGIN PLANTING UNTIL SOIL PREPARATION IS COMPLETE AND APPROVED. REF. SPECIFICATIONS FOR PLANTING SOIL PLACEMENT AND DEPTHS.
- LOCATE PLANTS AS DIMENSIONED ON THE PLANS AND AS SHOWN IN THE PLANT SCHEDULE. PLANT SPACING IS MEASURED CENTER TO CENTER. PLANT LOCATIONS MAY BE ADJUSTED BY THE LANDSCAPE ARCHITECT TO MEET FIELD CONDITIONS.
- VERIFY ALL QUANTITIES AND VARIETIES SHOWN ON THE DRAWINGS PRIOR TO ORDERING. OWNER MUST APPROVE ANY NECESSARY SUBSTITUTIONS DURING SUBMITTALS PROCESS. REVIEW PROCESS TO BE ESTABLISHED AT PRE-CONSTRUCTION MEETING.
- THOROUGHLY WATER IN ALL PLANTS WITHIN 6 HOURS OF PLANTING.
- APPLY SPECIFIED MULCH OVER PLANTING AREAS WITHIN TWO DAYS OF INSTALLING PLANTS, UNLESS OTHERWISE NOTED.
- ALL PLANTS ARE REQUIRED TO MEET AMERICAN STANDARD FOR NURSERY STOCK, ANSI Z60.1-2014.
- TO CALCULATE THE QUANTITY OF PLANTS PER AREA, USE THE FOLLOWING SPACING MULTIPLIERS:

TRIANGULAR SPACING	9"	12"	15"	18"	24"	30"	36"	48"
SQUARE FT MULTIPLIER	2.027	1.156	0.513	0.322	0.288	0.184	0.128	0.072



1 ARCHITECTURAL SITE PLAN  
SCALE: 1" = 40'



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 ibigroup.com

PROJECT  
**Frog Pond Primary School**  
 7151 Boeckman Road  
 Wilsonville, OR 97070

PROJECT NO:  
137469

SHEET TITLE  
**PLANTING KEY PLAN**

SHEET NUMBER  
**LU 209**

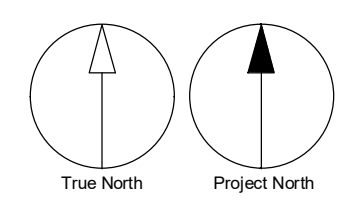




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PROJECT  
**Frog Pond Primary School**

7151 Boeckman Road  
Wilsonville, OR 97070

PROJECT NO:  
137469

SHEET TITLE  
**PLANTING- SHRUBS -  
PARTIAL PLAN - EAST  
ENTRIES**

SHEET NUMBER  
**LU 213**

**GENERAL LEGEND**

- PROPERTY LINE
- FENCING
- AREA DRAIN, REF. CIVIL
- TRENCH DRAIN
- LIGHT POLE, REF. ELEC
- SITE BOULDER
- BOLLARD
- EXISTING TREE
- APPROXIMATE CANOPY

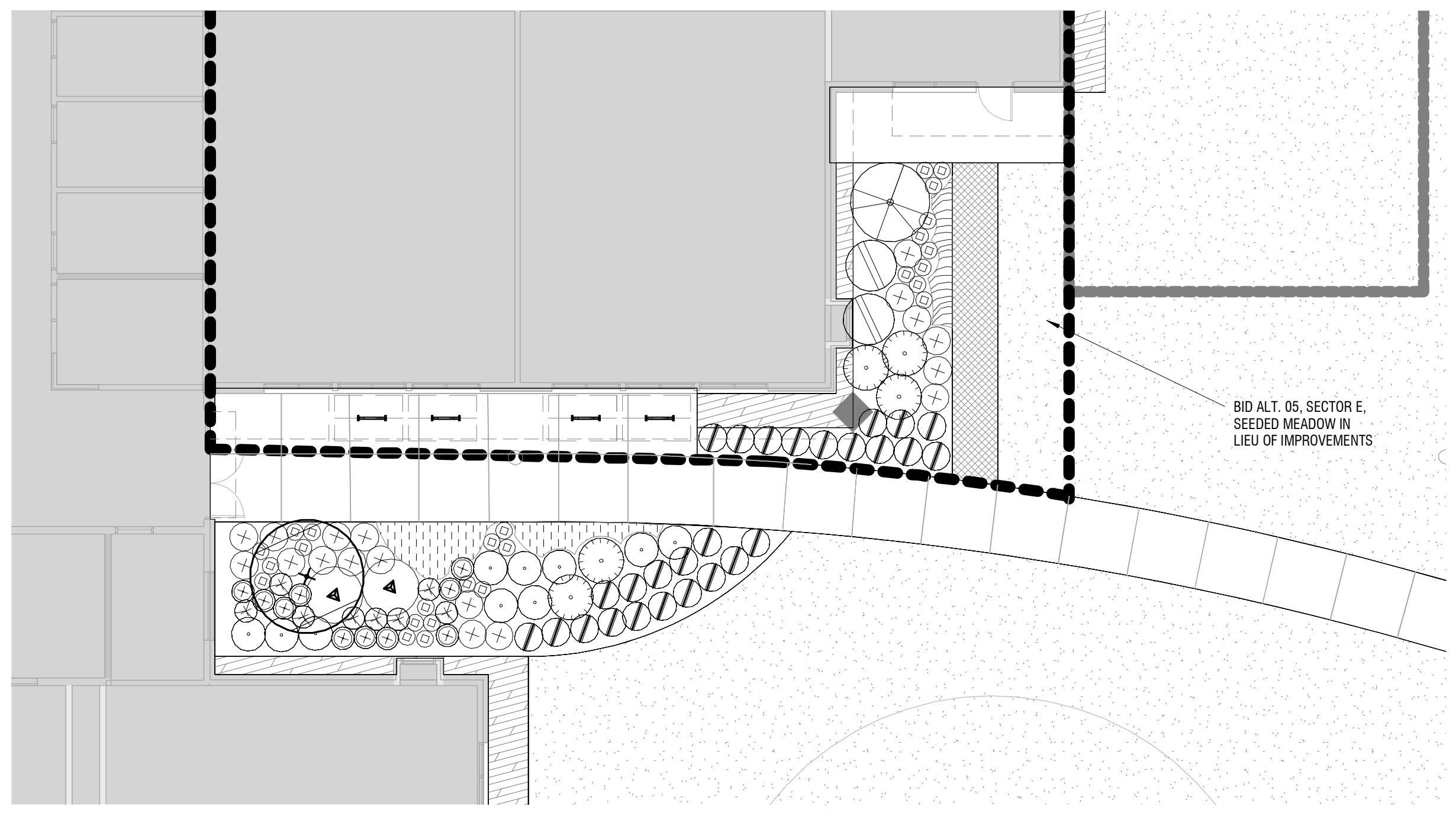
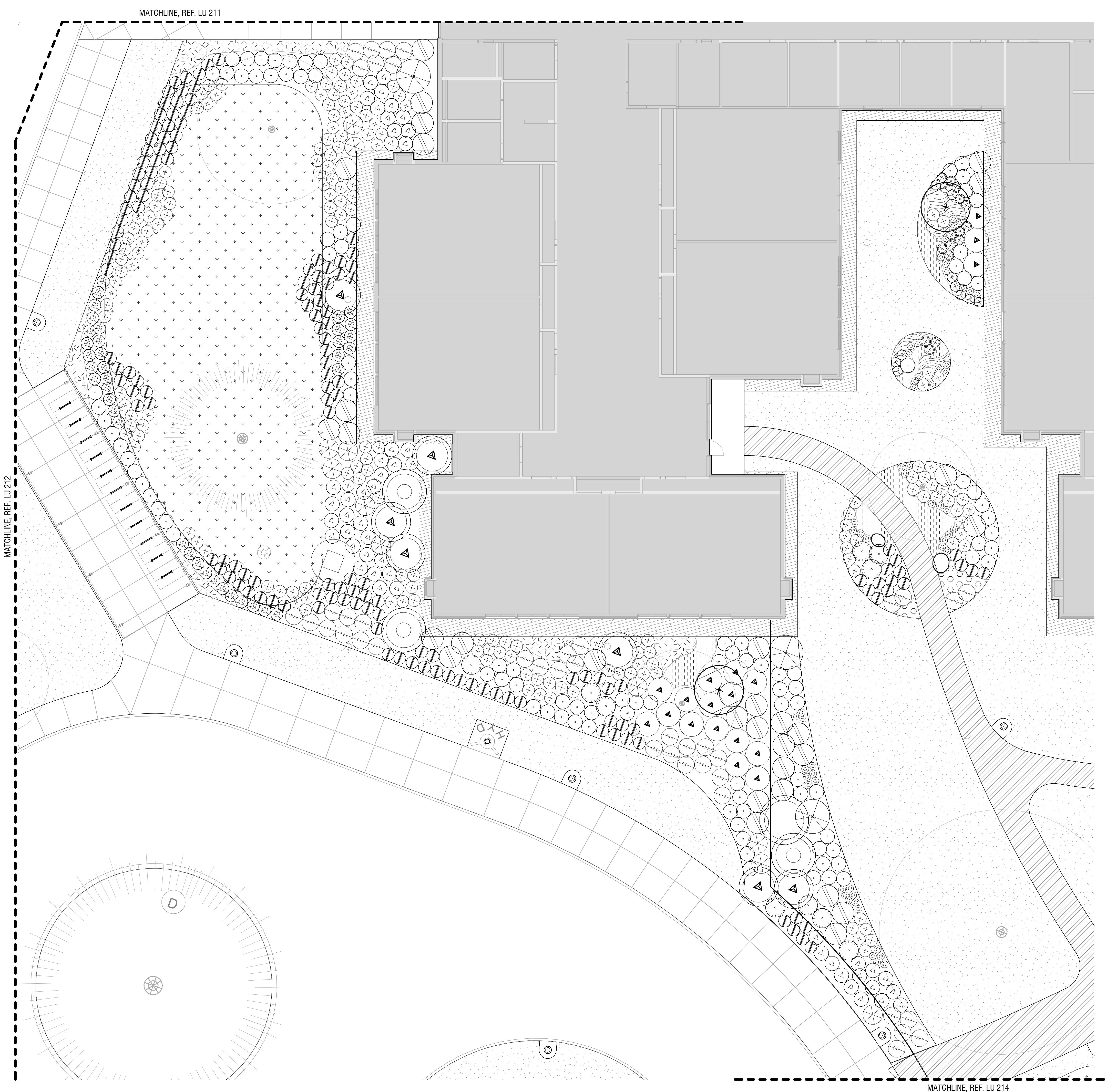
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SQUARE FT MULTIPLIER	2.027	1.156	0.513	0.322	0.288	0.184	0.128	0.072



1 LU - PARTIAL PLAN - PLANTING - SHRUBS - ENTRY SOUTH  
SCALE: 1" = 10'-0"

MATCHLINE, REF. LU 214

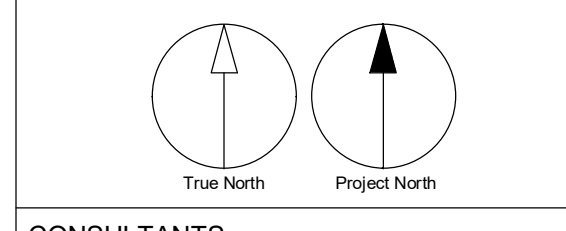
2 LU - PARTIAL PLAN - PLANTING - SHRUBS - ENTRY EAST  
SCALE: 1" = 10'-0"

MATCHLINE, REF. LU 214



No.	DESCRIPTION	DATE
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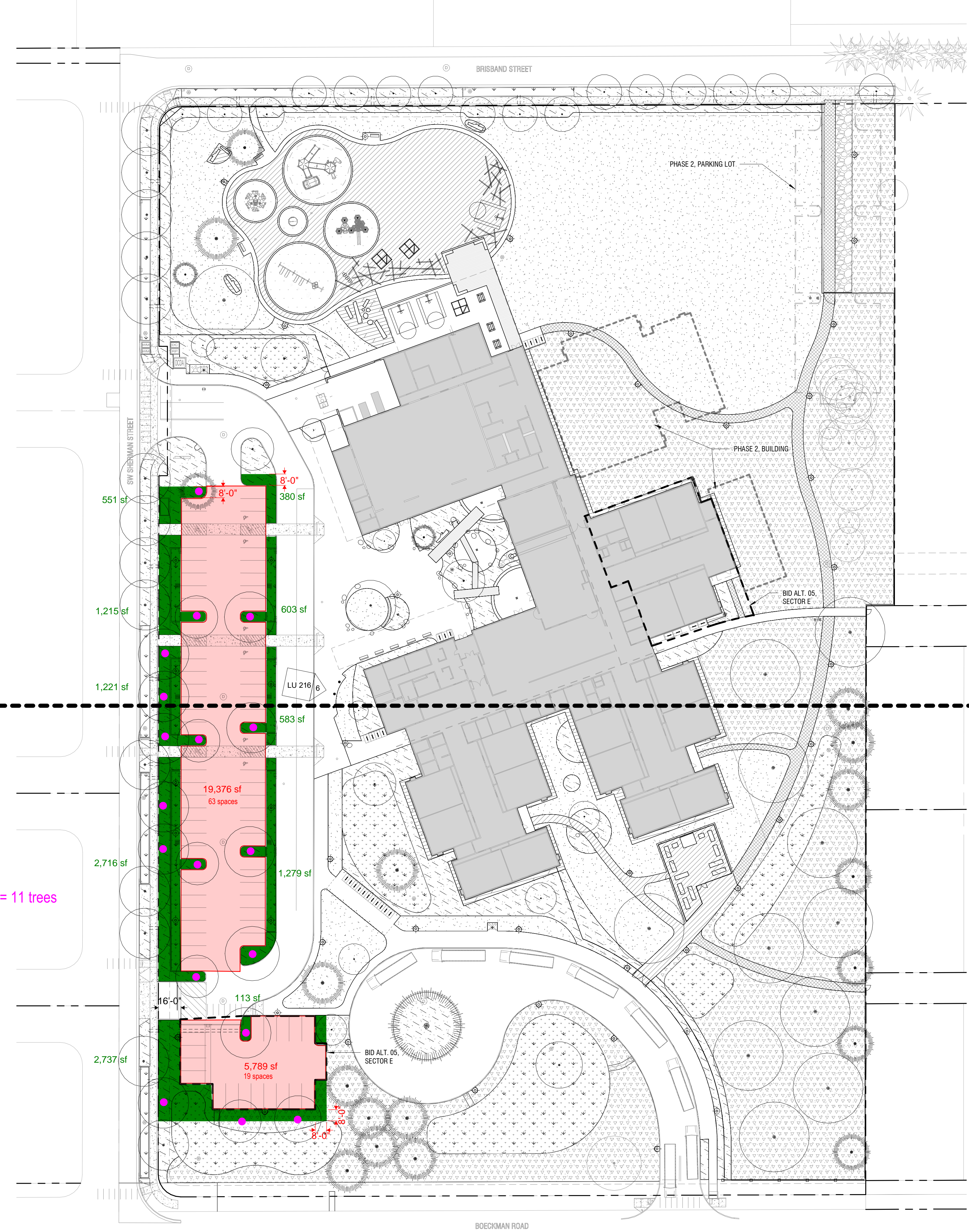
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PROJECT  
**Frog Pond Primary School**  
7151 Boeckman Road  
Wilsonville, OR 97070

PROJECT NO:  
137469  
SHEET TITLE  
**LANDSCAPE KEY PLAN**

SHEET NUMBER  
**LU 200**

Autodesk Docu1174169-FrogPond\_FS\_R01020PRPS\_MR\_LAND\_22.rvt  
1/17/2023 5:33:37 PM



West Parking Lot  
25,165 sf  
82 spaces  
  
Required: 10% = 2517 sf  
Provided: 11,298 sf  
  
Required: 1 tree / 8 spaces = 11 trees  
Provided: 18 trees

1 SITE PLAN - KEY PLAN  
SCALE: 1" = 40'-0"



### GENERAL ABBREVIATIONS

- ARCH ARCHITECTURAL/ARCHITECT
- CAL CALIPER
- CONC CONCRETE
- DIA DIAMETER
- DBH DIAMETER AT BREAST HEIGHT
- DWG DRAWINGS
- EQ EQUAL
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- L.A. LANDSCAPE ARCHITECT
- N/A NOT APPLICABLE
- NO. NUMBER
- O.C. ON CENTER
- PA PLANTING AREA
- R RADIUS
- SF SQUARE FEET
- SIM SIMILAR

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- LU 202 - SITE - PARTIAL PLAN - NORTH
- LU 204 - IRRIGATION - PARTIAL PLAN - NORTH
- LU 207 - PLANTING - TREES - PARTIAL PLAN - NORTH
- LU 203 - SITE - PARTIAL PLAN - SOUTH
- LU 205 - IRRIGATION - PARTIAL PLAN - SOUTH
- LU 208 - PLANTING - TREES - PARTIAL PLAN - SOUTH



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:

<b>Coverage</b> ( <i>Aggregate, accept where noted</i> )	<b>Limit</b>
<b>Commercial General Liability:</b>	
▪ 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
<b>Business Automobile Liability Insurance:</b>	
▪ Each Occurrence	\$1,000,000
▪ Aggregate	\$2,000,000
<b>Workers Compensation Insurance</b>	\$500,000

3. No construction of, or connection to, any existing or proposed public utility/improvements will be permitted until all plans are approved by Staff, all fees have been paid, all necessary permits, right-of-way and easements have been obtained and Staff is notified a minimum of 24 hours in advance.
4. All public utility/improvement plans submitted for review shall be based upon a 22" x 34" format and shall be prepared in accordance with the City of Wilsonville Public Work's Standards.
5. Plans submitted for review shall meet the following general criteria:
  - a. Utility improvements that shall be maintained by the public and are not contained within a public right-of-way shall be provided a maintenance access acceptable to the City. The public utility improvements shall be centered in a minimum 15-ft. wide public easement for single utilities and a minimum 20-ft wide public easement for two parallel utilities and shall be conveyed to the City on its dedication forms.
  - b. Design of any public utility improvements shall be approved at the time of the issuance of a Public Works Permit. Private utility improvements are subject to review and approval by the City Building Department.
  - c. In the plan set for the PW Permit, existing utilities and features, and proposed new private utilities shall be shown in a lighter, grey print. Proposed public improvements shall be shown in bolder, black print.

- d. All elevations on design plans and record drawings shall be based on NAVD 88 Datum.
  - e. All proposed on and off-site public/private utility improvements shall comply with the State of Oregon and the City of Wilsonville requirements and any other applicable codes.
  - f. Design plans shall identify locations for street lighting, gas service, power lines, telephone poles, cable television, mailboxes and any other public or private utility within the general construction area.
  - g. As per City of Wilsonville Ordinance No. 615, all new gas, telephone, cable, fiber-optic and electric improvements etc. shall be installed underground. Existing overhead utilities shall be undergrounded wherever reasonably possible.
  - h. Any final site landscaping and signing shall not impede any proposed or existing driveway or interior maneuvering sight distance.
  - i. Erosion Control Plan that conforms to City of Wilsonville Ordinance No. 482.
  - j. Existing/proposed right-of-way, easements and adjacent driveways shall be identified.
  - k. All engineering plans shall be printed to PDF, combined to a single file, stamped and digitally signed by a Professional Engineer registered in the State of Oregon.
  - l. All plans submitted for review shall be in sets of a digitally signed PDF and three printed sets.
6. Submit plans in the following general format and order for all public works construction to be maintained by the City:
- a. Cover sheet
  - b. City of Wilsonville construction note sheet
  - c. Land Use Conditions of Approval sheet
  - d. General construction note sheet
  - e. Existing conditions plan.
  - f. Erosion control and tree protection plan.
  - g. Site plan. Include property line boundaries, water quality pond boundaries, sidewalk improvements, right-of-way (existing/proposed), easements (existing/proposed), and sidewalk and road connections to adjoining properties.
  - h. Grading plan, with 1-foot contours.
  - i. Composite utility plan; identify storm, sanitary, and water lines; identify storm and sanitary manholes.
  - j. Detailed plans; show plan view and either profile view or provide i.e.'s at all utility crossings; include laterals in profile view or provide table with i.e.'s at crossings; vertical scale 1"= 5', horizontal scale 1"= 20' or 1"= 30'.
  - k. Street plans.
  - l. Storm sewer/drainage plans; number all lines, manholes, catch basins, and cleanouts for easier reference.
  - m. Stormwater LIDA facilities (Low Impact Development): provide plan and profile views of all LIDA facilities.
  - n. Water and sanitary sewer plans; plan; number all lines, manholes, and cleanouts for easier reference.



- o. Where depth of water mains are designed deeper than the 3-foot minimum (to clear other pipe lines or obstructions), the design engineer shall add the required depth information to the plan sheets.
  - p. Detailed plan for storm water detention facility (both plan and profile views), including water quality orifice diameter and manhole rim elevations. Provide detail of inlet structure and energy dissipation device. Provide details of drain inlets, structures, and piping for outfall structure. Note that although storm water detention facilities are typically privately maintained they will be inspected by engineering, and the plans must be part of the Public Works Permit set.
  - q. Detailed plan for water quality facility (both plan and profile views). Note that although storm water quality facilities are typically privately maintained they will be inspected by Natural Resources, and the plans must be part of the Public Works Permit set.
  - r. Composite franchise utility plan.
  - s. City of Wilsonville detail drawings.
  - t. Illumination plan.
  - u. Striping and signage plan.
  - v. Landscape plan.
7. Design engineer shall coordinate with the City in numbering the sanitary and stormwater sewer systems to reflect the City's numbering system. Video testing and sanitary manhole testing will refer to City's numbering system.
8. The applicant shall install, operate and maintain adequate erosion control measures in conformance with the standards adopted by the City of Wilsonville Ordinance No. 482 during the construction of any public/private utility and building improvements until such time as approved permanent vegetative materials have been installed.
9. Applicant shall work with City Engineering before disturbing any soil on the respective site. If 5 or more acres of the site will be disturbed applicant shall obtain a 1200-C permit from the Oregon Department of Environmental Quality. If 1 to less than 5 acres of the site will be disturbed a 1200-CN permit from the City of Wilsonville is required.
10. The applicant shall be in conformance with all stormwater and flow control requirements for the proposed development per the Public Works Standards.
11. A storm water analysis prepared by a Professional Engineer registered in the State of Oregon shall be submitted for review and approval by the City.
12. The applicant shall be in conformance with all water quality requirements for the proposed development per the Public Works Standards. If a mechanical water quality system is used, prior to City acceptance of the project the applicant shall provide a letter from the system manufacturer stating that the system was installed per specifications and is functioning as designed.

13. Storm water quality facilities shall have approved landscape planted and/or some other erosion control method installed and approved by the City of Wilsonville prior to paving.
14. The applicant shall contact the Oregon Water Resources Department and inform them of any existing wells located on the subject site. Any existing well shall be limited to irrigation purposes only. Proper separation, in conformance with applicable State standards, shall be maintained between irrigation systems, public water systems, and public sanitary systems. Should the project abandon any existing wells, they shall be properly abandoned in conformance with State standards.
15. All survey monuments on the subject site, or that may be subject to disturbance within the construction area, or the construction of any off-site improvements shall be adequately referenced and protected prior to commencement of any construction activity. If the survey monuments are disturbed, moved, relocated or destroyed as a result of any construction, the project shall, at its cost, retain the services of a registered professional land surveyor in the State of Oregon to restore the monument to its original condition and file the necessary surveys as required by Oregon State law. A copy of any recorded survey shall be submitted to Staff.
16. Streetlights shall be in compliance with City dark sky, LED, and PGE Option C requirements.
17. Sidewalks, crosswalks and pedestrian linkages in the public right-of-way shall be in compliance with the requirements of the U.S. Access Board.
18. No surcharging of sanitary or storm water manholes is allowed.
19. The project shall connect to an existing manhole or install a manhole at each connection point to the public storm system and sanitary sewer system.
20. A City approved energy dissipation device shall be installed at all proposed storm system outfalls. Storm outfall facilities shall be designed and constructed in conformance with the Public Works Standards.
21. The applicant shall provide a 'stamped' engineering plan and supporting information that shows the proposed street light locations meet the appropriate AASHTO lighting standards for all proposed streets and pedestrian alleyways.
22. All required pavement markings, in conformance with the Transportation Systems Plan and the Bike and Pedestrian Master Plan, shall be completed in conjunction with any conditioned street improvements.
23. Street and traffic signs shall have a hi-intensity prismatic finish meeting ASTM 4956 Spec Type 4 standards.

24. The applicant shall provide adequate sight distance at all project driveways by driveway placement or vegetation control. Specific designs to be submitted and approved by the City Engineer. Coordinate and align proposed driveways with driveways on the opposite side of the proposed project site.
25. The applicant shall provide adequate sight distance at all project street intersections, alley intersections and commercial driveways by properly designing intersection alignments, establishing set-backs, driveway placement and/or vegetation control. Coordinate and align proposed streets, alleys and commercial driveways with existing streets, alleys and commercial driveways located on the opposite side of the proposed project site existing roadways. Specific designs shall be approved by a Professional Engineer registered in the State of Oregon. As part of project acceptance by the City the Applicant shall have the sight distance at all project intersections, alley intersections and commercial driveways verified and approved by a Professional Engineer registered in the State of Oregon, with the approval(s) submitted to the City (on City approved forms).
26. Access requirements, including sight distance, shall conform to the City's Transportation Systems Plan (TSP) or as approved by the City Engineer. Landscaping plantings shall be low enough to provide adequate sight distance at all street intersections and alley/street intersections.
27. Applicant shall design interior streets and alleys to meet specifications of Tualatin Valley Fire & Rescue and Allied Waste Management (United Disposal) for access and use of their vehicles.
28. The applicant shall provide the City with a Stormwater Maintenance and Access Easement Agreement (on City approved forms) for City inspection of those portions of the storm system to be privately maintained. Applicant shall provide City with a map exhibit showing the location of all stormwater facilities which will be maintained by the Applicant or designee. Stormwater or rainwater LID facilities may be located within the public right-of-way upon approval of the City Engineer. Applicant shall maintain all LID storm water components and private conventional storm water facilities; maintenance shall transfer to the respective homeowners association when it is formed.
29. The applicant shall "loop" proposed waterlines by connecting to the existing City waterlines where applicable.
30. Applicant shall provide a minimum 6-foot Public Utility Easement on lot frontages to all public right-of-ways. An 8-foot PUE shall be provided along Collectors. A 10-ft PUE shall be provided along Minor and Major Arterials.
31. For any new public easements created with the project the Applicant shall be required to produce the specific survey exhibits establishing the easement and shall provide the City with the appropriate Easement document (on City approved forms).



### 32. Mylar Record Drawings:

At the completion of the installation of any required public improvements, and before a 'punch list' inspection is scheduled, the Engineer shall perform a record survey. Said survey shall be the basis for the preparation of 'record drawings' which will serve as the physical record of those changes made to the plans and/or specifications, originally approved by Staff, that occurred during construction. Using the record survey as a guide, the appropriate changes will be made to the construction plans and/or specifications and a complete revised 'set' shall be submitted. The 'set' shall consist of drawings on 3 mil. Mylar and an electronic copy in AutoCAD, current version, and a digitally signed PDF.

**From:** [Pauly, Daniel](#)  
**To:** [Luxhoj, Cindy](#); [Pepper, Amy](#)  
**Subject:** FW: Ask the City: You have been assigned a new Request #: 6658244  
**Date:** Friday, December 30, 2022 9:18:20 AM

Cindy. Please add this comment to the record for the project. Amy I have let the customer know I have forwarded the comment but have set no expectation of further response. If you want to share anything additional John's email is [jciepiela@swinerton.com](mailto:jciepiela@swinerton.com)

**Dan Pauly, AICP**  
 Planning Manager  
 City of Wilsonville  
 503.570.1536

*Disclosure Notice: Messages to and from this e-mail address may be subject to the Oregon Public Records Law.*

**From:** Ask the City of Wilsonville <noreply@user.govoutreach.com>  
**Sent:** Tuesday, December 27, 2022 8:02 AM  
**To:** Pauly, Daniel <pauly@ci.wilsonville.or.us>  
**Subject:** Ask the City: You have been assigned a new Request #: 6658244

**Request # 6658244 from Ask the City! has been assigned to you.**

**Request type:** Problem  
**Request area:** Planning - Other  
**Citizen name:** John Ciepiela  
**Description:** Good Morning,

I am curious on where we are at with the land use process for the Frog Pond Primary School?

I received a FAQ on the project and there is no stoplight going in? Considering the speed of travel on Boekman and how many neighborhoods entrances and exits there are, alot of residents are very concerned about our children's safety walking in and around this new school.

[Click here to access the request](#)

Note: This message is for notification purposes only. Please do not reply to this email. Email replies are not monitored and will be ignored.

**From:** [Brianna Gelow](#)  
**To:** [Luxhoj, Cindy](#)  
**Subject:** Frog Pond Primary School Project  
**Date:** Tuesday, March 28, 2023 3:03:28 PM

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[This email originated outside of the City of Wilsonville]

To whom it may concern,

I am emailing you in regards to the Frog Pond Primary School Project. My husband and I are homeowners in the neighboring community (Morgan Farms Neighborhood) and we are very pleased to hear of a new school joining the community. Despite our excitement for the project, we are quite concerned about where the busses, parents, and staff members will be entering the school parking lot. I worry that Sherman Drive (the entrance to our neighborhood) will be utilized for this.

Morgan Farms is a quiet neighborhood with many walkers, bikers, and children playing. Similarly, there is no traffic in the neighborhood which keeps the roads very safe for all pedestrians. If Sherman Drive (or any other neighborhood road) were to be used as an entrance for any school traffic it would be a huge safety hazard and disruption to our neighborhood.

I have had a lot of experience living next to elementary schools in the past, and in my experience, the parents typically use nearby neighborhoods to park and walk into the school to pick up their children. They also use the neighbor's driveways and nearby streets to turn around in. I can only imagine this will happen in our neighborhood more if you use our entrance as the school entrance. I wonder how you will combat this issue even if our entrance is not used for busses/parents/staff/etc.

Although this elementary school will be a benefit to our neighborhood, we will be suffering from more traffic on Boeckman Road, school bells, pollution from busses/cars, and the overall disruption of more people near our homes. Please treat our neighborhood as you would your own while making decisions regarding the construction/engineering of this school, its entrances, and the roads around it.

Sincerely,  
Brianna Gelow and Trent Powell of the Morgan Farms Neighborhood



**From:** [Becky Fromhart](#)  
**To:** [Luxhoj, Cindy](#)  
**Subject:** The New Frog Pond West Primary School  
**Date:** Wednesday, March 29, 2023 10:14:25 AM

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**[This email originated outside of the City of Wilsonville]**

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Development Review Panel A Members and Wilsonville City Council,

Thank you for serving our community and for listening to our voices.

The design of the school appears beautiful and well thought out. It appears to meet your design criteria . Also, the eastern portion that is to be purchased by the City for future park development seems to be a lovely idea.

The only concern I would like to raise is regarding the orientation of the building's entrance and main parking area.

It appears that the majority of the future students will be drawn from the current and future (higher density) developments on the east and north side of the campus. And, at first glance, it appears that the new city park would draw mostly from those areas as well.

Would it be possible to request that, at the April 10, 2023 public hearing, the Applicant (West Linn-Wilsonville School District) list and compare their pros and cons for siting the school with the parking and student drop-off access on the west side vs flipping the design so that access is instead from the east side? There appears to already be a gravel road on the east side of the property that could extend from Boeckman to Brisband, potentially even connecting via Ponderosa (currently Columbine) to Frog Pond Lane to meet sight criteria.

Thank you for your attention and advice.

Duane and Becky Fromhart  
7399 SW Woodbury Loop  
Wilsonville, OR 97070

March 29,2023

Wilsonville City Council  
Development Review Board Members

RE: New Frog Pond Elementary School Plans

Hello,

As residents of the Morgan Farm community we are deeply concerned about the plans for the new Frog Pond school to be built, particularly the traffic flow and parking plans. The current plan has all traffic except for buses routed into Morgan Farm via Sherman Drive. This will have a huge negative impact on our development and quality of life with increased traffic, noise and light pollution as well as an eyesore for any home along Sherman Drive. We feel this is short sighted by the developers and that there are better solutions. Since there are already plans to improve Boeckman Road, a better approach would be to have all traffic enter off of Boeckman with a stoplight and crosswalks at the entrance. The parking lot and drop off could be placed on the NE corner of the property, allowing access either from Boeckman or Brisband Street from Stafford Road. This would also allow for greater traffic flow in and out of the school, thus impacting local neighborhoods less. The building may need to be reoriented on the property to allow for this. Brisband Street should be developed to accommodate this, similar to Willow Creek Drive. The large barrier of trees on the east side of the property should be maintained to prevent noise and light pollution affecting existing homes in Frog Pond.

We feel it is imperative that the city and school district listen to residents and work with us to maintain and improve the quality of life for all in the Fog Pond area by developing the school with these concerns in mind.

Thank you for taking the time to review our comments. We look forward to seeing you all at the meeting on April 10th.

Sincerely,  
John and Julie Egan

**From:** [Clark, David C](#)  
**To:** [Luxhoj, Cindy](#)  
**Subject:** Frog Pond Primary School  
**Date:** Thursday, March 30, 2023 8:34:45 PM

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**[This email originated outside of the City of Wilsonville]**

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Wilsonville City Council  
 Development Review Board Members

My name is David Clark and I represent several homeowners in the Frog Pond housing community (along Larkspur Terr). When we purchased our homes from West Hills, Stonebridge and Richland America, respectively, we were informed of the city's long-range development plan to add the Frog Pond elementary school, which we support. This housing and school plan has attracted many families with very young children to Frog Pond. We were also informed that the traffic pattern for the school would traverse from Boeckman to Sherman and not from Brisband or Willow Creek. Many of us may home purchase decisions with these assurances. Also, at several of your recent community open houses, we received similar assurances from your planning team.

We request you continue with the current plans with a few modifications to address Morgan Farms residents' concerns:

- Widen Sherman Drive, add boulevard trees, and a brick fence around the school property. This would reduce traffic noise and allow Morgan Farm residents the ability to turn in, or exit, the neighborhood.
- Reorient the school building so that the parking faces the future city park site (SW Brisband and SW Willow Creek). This way the parking and associated traffic would not have to face any neighborhoods.....Frog Pond or Morgan Farm.
  - For residents only, consider opening Morgan Farm entry from Boeckman via SW Painter (currently blocked off)
- **We do not support:** 1) any plans to route any school traffic via SW Willow Creek Drive or 2) any plans to expand SW Brisband Road. This will bring more traffic into both Frog Pond and Morgan Farms from Stafford Road.

Thank you for allowing us to provide input to this planning process.

Sincerely,

Dave Clark  
 27625 SW Larkspur Terr



3/31/2023

Cindy Luxhoj, AICP  
 City of Wilsonville  
 Development Review Board  
 29799 SW Town Center Loop East  
 Wilsonville, OR 97070

Re: Proposed Frog Pond Primary School development

I am writing to provide feedback and comments about the development plans for the proposed primary school at 7151 SW Boeckman Road. There are several concerns regarding the orientation of the building, size of the parking lot, community impact, noise, landscaping, and safety that are extremely concerning to me and several of my neighbors.

Initially, I was a supporter of having a new primary school. Wilsonville, and surrounding areas, have had staggering growth and development over the past several years. I moved to Morgan Farm in early 2021. My family has enjoyed the Wilsonville community and we look forward to many more. But recently I have wondered if this is the right time, and the right location for a new school. I'm curious why the new school is being built so close to the existing Boeckman Creek Elementary School? It appears to be only 1.0 miles from the new school site, or three minutes by vehicle. I am not sure what the capacity is of Boeckman Creek Elementary is. To have an existing school property so close seems over built even with the increase in residences from the Frog Pond development. Is there no room to expand Boeckman Creek?

Should the school development move forward there are concerns I would like addressed by DRB.

First is traffic on Sherman Drive. Sherman Drive is the heart of our neighborhood. For the past three years, it has been the only way in and out of our development. Neighbors gather for conversations at the mailbox, take walks with family and pets, and we even have our annual Fourth of July kid's parade start on Sherman Drive.

Using this street to access the (extremely large) parking facility at the school will pose potential safety issues and put too much traffic into our neighborhood. Along with this comes noise, pollution, light pollution, and safety concerns. Widening the road makes the entrance to Morgan Farm a highway. While we understand the future Brisband Street will connect to the back of our neighborhood, there is no doubt the majority of school related traffic will use Sherman. In addition, with the high speeds on Boeckman, there is already a traffic safety concern with ingress and egress from Sherman. Without a signal we often have to wait several minutes to allow a safe turn into our out of the neighborhood. I can't imagine what this will look like during drop off and pick up hours.



I am also concerned that the traffic will include school employees, vendors, parents dropping/picking up students, and potential off-school hour activities. We moved to Wilsonville for the peace and quiet of a well-planned community and city. One with a strong Comprehensive Plan to restrict and manage out of control development like we see in Tualatin, Sherwood, and Tigard. We do not want acres of visible concrete and vehicles. We do not want a consistent flow of traffic creating safety and security issues for our homes, families, and common areas.

I believe the proposed site plan may not follow the City of Wilsonville Comprehensive Plan as it pertains to parking lots and parking structure. The document outlines the goals of the plan is to help the City preserve the natural qualities of the area, while also ensuring efficient land use as development occurred." The proposed parking space doesn't seem to line up with that goal.

During a meeting last summer, Remo Douglass from the school district, said the district does not have to comply with the Comprehensive Plan. I find that statement to be alarming. If we have a Comprehensive Plan, shouldn't every proposed development should go through the plan as a filter and impacts assessed based on the overall goals of our city? I think it is unfair to have a plan that only apply to certain types of development.

The current site plan calls for about 72 parking locations. By comparison Safeway has about 113 shared with other retail. This means the school will have 62% of the Safeway parking locations? Several studies have shown the significant impact of parking lots and the implications to climate change, pollutants (such as oil, heavy metals, grease, and sediment) , carbon from idling cars, and noise.

For reference, the Comprehensive Plan addresses parking as follows:

1. **Implementation Measure 3.3.1.h. "Consider reducing parking requirements where it can be shown that transit and/or bicycle pedestrian access will reduce vehicular trips. "** I believe the future Boeckman Road project will have sufficient bike lanes and safe sidewalks to provide efficient access to the school, which could reduce vehicle trips. Public transportation access could also be enhanced. I do not understand why the parking lot is so large? If the city sustainability goals are to reduce the impacts of climate change, why does the proposed parking exceed the number of other school locations (as outlined in the attached document).

It was difficult to find any other school locations where the primary access for vehicles cut through a neighborhood as you show in the new school site plan. It was also clear the size of the parking field at Frog Pond exceeded almost all of the other locations surveyed.

2. **Public facilities and services, page 63: "Parking areas and yards should be landscaped, and signing should be subtle and "in keeping" with a quality environment. Large-scale and technology-oriented office facilities should be encouraged to locate in the Town Center and in large, planned development commercial or planned development industrial zones."**

3. **Implementation Measure 4.1.4.4: "The siting of buildings to minimize the visual effects of parking areas and to increase the availability of privacy and natural surveillance for security".** This is the most glaring conflict between the Wilsonville Comprehensive Plan and the proposed Frog Pond Primary School Site Plan. It seems no consideration was made to comply with section 4.1.4.4 with the (over spaced) parking area taking up the majority of the Sherman Drive side of the property.

My second comment is about the orientation of the building, playground, bus drop off and parking. The current design places the parking facility directly adjacent to Sherman Drive. This will mean noise, light pollution from headlights, and other pollutants for the neighbors closest to the school.

As a consideration, the non-bus traffic could be routed onto SW Willow Creek Drive. Willow Creek has a median and the street could potentially connect into the back of the school property.

Another option is for the school district to evaluate changing the building orientation so the parking faces the future city park site (SW Brisband and SW Willow Creek

In closing, I am requesting the DRB seek to require a revision to the proposal with these considerations:

- Evaluate the possibility of sending traffic down Willow Creek. This will allow better management of school traffic versus using Sherman Drive
- Consider placing the parking field behind the school building on the SE side of the property. This will also comply with the Comprehensive Plan section 4.1.4.4 and seems like a good solution.
- Require the School District plan to include more wood and brick fencing, typical of the rest of the City aesthetic. This fence would help lower the visibility into the site, help control noise and light pollution, and can help with school safety as well.

Thank you for allowing me to submit my comments.

John Boyle

Morgan Farm resident



Boekman Creek  
Primary

Item 3.



Boeckman Creek Primary School



Stafford Primary School



# Trillium Creek Primary

Note bus circle  
combines with parking



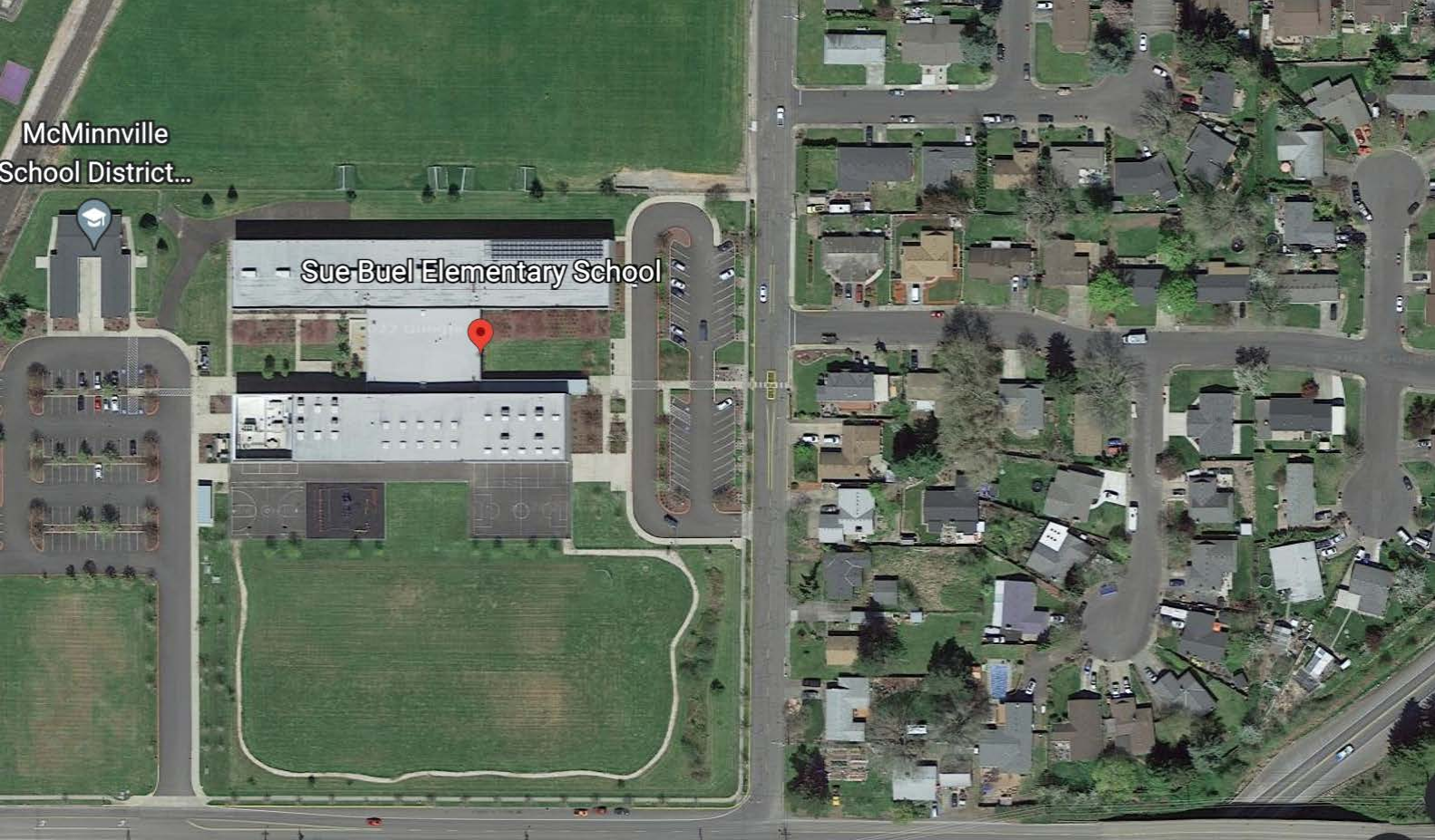


Sunset Primary ,  
West Linn





Sue Buel Primary,  
McMinville



Columbus Primary  
McMinville







**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.

29799 SW Town Center Loop E, Wilsonville, OR 97070  
Phone: 503.682.4960 Fax: 503.682.7025  
Web: [www.ci.wilsonville.or.us](http://www.ci.wilsonville.or.us)

**Applicant:**

Name: Remo Douglas  
Company: West Linn-Wilsonville School District  
Mailing Address: 22210 SW Stafford Road  
City, State, Zip: Tualatin, OR 97062  
Phone: 503.673.7988 Fax: \_\_\_\_\_  
E-mail: douglasr@wlwv.k12.or.us


**Authorized Representative:**

Name: Keith Liden  
Company: Keith Liden, Planning Consultant  
Mailing Address: 4021 SW 36th Place  
City, State, Zip: Portland, OR 97221  
Phone: 503.757.5501 Fax: \_\_\_\_\_  
E-mail: keith.liden@gmail.com

**Property Owner:**

Name: Same as applicant  
Company: \_\_\_\_\_  
Mailing Address: \_\_\_\_\_  
City, State, Zip: \_\_\_\_\_  
Phone: \_\_\_\_\_ Fax: \_\_\_\_\_  
E-mail: \_\_\_\_\_

**Property Owner's Signature:**

  
Printed Name: REMO DOUGLAS Date: 11-17-22

**Applicant's Signature:** (If different from Property Owner)

\_\_\_\_\_  
Printed Name: \_\_\_\_\_ Date: \_\_\_\_\_

**Site Location and Description:**

Project Address if Available: 7151 SW Boeckman Road Suite/Unit \_\_\_\_\_  
Project Location: \_\_\_\_\_  
Tax Map #(s): 12DC and 12DD Tax Lot #(s): TL 4500 and 400 County:  Washington  Clackamas

**Request:**

Master Plan, Lot Line Adjustment, Site Design Review, Tree Removal, and Sign Waiver to construct a new primary school (Phase 1: 350 enrollment and future Phase 2: 550 enrollment).

**Project Type:**  **Class I**  **Class II**  **Class III**

Residential  Commercial  Industrial  Other: Public Facility

**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 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                |   |





**POLICY OF TITLE INSURANCE**

**CHICAGO TITLE INSURANCE COMPANY OF OREGON**

SUBJECT TO THE EXCLUSIONS FROM COVERAGE, THE EXCEPTIONS FROM COVERAGE CONTAINED IN SCHEDULE B AND THE CONDITIONS AND STIPULATIONS, CHICAGO TITLE INSURANCE COMPANY OF OREGON, an Oregon corporation, herein called the Company, insures, as of Date of Policy shown in Schedule A, against loss or damage, not exceeding the Amount of Insurance stated in Schedule A, sustained or incurred by the insured by reason of:

1. Title to the estate or interest described in Schedule A being vested other than as stated therein;
2. Any defect in or lien or encumbrance on the title;
3. Unmarketability of the title;
4. Lack of a right of access to and from the land.

The Company will also pay the costs, attorneys' fees and expenses incurred in defense of the title, as insured, but only to the extent provided in the Conditions and Stipulations.

**CHICAGO TITLE INSURANCE COMPANY OF OREGON**

Issued by:  
CHICAGO TITLE INSURANCE COMPANY  
OF OREGON  
10001 S.E. SUNNYSIDE ROAD  
CLACKAMAS, OR 97015  
(503) 653-7300

By:

*Bradley J. London*  
President

By:

*Thomas J. Adams*  
Secretary



*Norman Lee*  
Authorized Signature

ALTA OWNER'S POLICY (10-17-92)

**SCHEDULE A**

Date of Policy: May 24, 1999 at 1:52 p.m. Policy No.: 201430

Amount of Insurance: \$1,225,000.00 Premium: \$2,437.50

1. Name of Insured:

CLACKAMAS COUNTY SCHOOL DISTRICT 3, WEST LINN-WILSONVILLE SCHOOL DISTRICT 3JT

2. The estate or interest in the land which is covered by this policy is:

FEE SIMPLE

3. Title to the estate or interest in the land is vested in:

CLACKAMAS COUNTY SCHOOL DISTRICT 3, WEST LINN-WILSONVILLE SCHOOL DISTRICT 3JT

4. The land referred to in this policy is described as follows:

(Continued)



## LEGAL DESCRIPTION

## PARCEL I:

A tract of land situated in the Southeast one-quarter of Section 12, Township 3 South, Range 1 West of the Willamette Meridian, in the County of Clackamas and State of Oregon, more particularly described as follows:

Commencing at a stone in a monument box at the Southeast corner of said Section 12; thence tracing the South line of said Section 12 and the centerline of Boeckman Road South 89°46'58" West 1,519.10 feet; thence North 0°02'40" East 30.00 feet to a 5/8" iron rod on the North right-of-way line of Boeckman Road and the true point of beginning of this description; thence continuing North 0°02'40" East 828.00 feet to a 5/8" iron rod; thence South 89°46'58" West 511.16 feet; thence South 0°02'40" West 828.00 feet to the North right-of-way line of said Boeckman Road; thence along said North right-of-way line North 89°46'58" East 511.16 feet to the true point of beginning.

Bearings in this description are based on 'LP 064' (Clackamas County Restoration Survey).

## PARCEL II:

A tract of land situated in the Southeast one-quarter of Section 12, Township 3 South, Range 1 West of the Willamette Meridian, in the County of Clackamas and State of Oregon, described as follows:

BEGINNING at stone in monument box at the Southeast corner of said Section 12; thence tracing the South line of said Section 12 and the center line of Boeckman Road South 89°46'58" West 925.63 feet to the Southwest corner of a tract of land conveyed by Theodore C. Hopper to Walter O. and Doris A. Wehler recorded as Recorder's Fee No. 73-35929, Clackamas County Records (found 5/8-inch iron rod bears North 00°02'40" East 30.21 feet); thence continuing South 89°46'58" West 33.00 feet; thence North 00°02'40" East (parallel to the East line of the Southeast one-quarter of said Section 12) 30.00 feet to a point on the North right-of-way line of Boeckman Road (5/8-inch iron rod set by L. S. 475 bears South 63° East 0.13 feet); thence continuing North 00°02'40" East along the West line of a tract of land described in Warranty Deed from James A. Hathaway to Dale I. Kreilkamp, recorded as Recorder's Fee No. 86-01354, Clackamas County Records, North 00°02'40" East 422.00 feet to the true point of beginning of this description; thence South 89°46'58" West 540.47 feet; thence South 00°20'40" West 422.00 feet to a point on the North right-of-way line of said Boeckman Road (30.00 feet North of center line); thence tracing said North line South 89°46'58" West 20.00 feet; thence North 00°02'40" East 828.00 feet to a point on the South line of a tract of land described in Warranty Deed from Hubert Hutchcroft and Gladys B. Hutchcroft to Robert Coats, recorded in Book 641, Page 199, June 9, 1964, Clackamas County Deed Records; thence along said South line and also the South line of a tract of land conveyed by Berry K. Fuller and Stanley Kruse, co-executors of the estate of Mary W. Kruse to Ernest R. and Pauline V. Russel, recorded as Recorder's Fee No. 74-5153, Clackamas County Records, North

(Continued)

Policy No. 201430

LEGAL DESCRIPTION

89°46'58" East 560.47 feet to the Northwest corner of the Kreilkamp Tract described in said Recorder's Fee No. 86-01354, Clackamas County Records; thence along the West line of said Kreilkamp Tract South 00°02'40" West 406.00 feet to the true point of beginning of this description. Bearings in this description are based on 'LP 064' (Clackamas County Restoration Survey).

EXCEPTING THEREFROM that portion thereof contained in Deed to Louie M. Pike, et ux, recorded February 9, 1989, Recorder's Fee No. 89 06039, Clackamas County Records.

Policy No. 201430

**SCHEDULE B**

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:

**GENERAL EXCEPTIONS**

1. a. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records.  
b. Proceedings by a public agency which may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the public records.
2. a. Easements, liens, encumbrances, interests or claims thereof which are not shown by the public records.  
b. Any facts, rights, interests or claims which are not shown by the public records but which could be ascertained by an inspection of the land or by making inquiry of persons in possession thereof.
3. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by the public records.
4. a. Unpatented mining claims;  
b. Reservations or exceptions in patents or in Acts authorizing the issuance thereof;  
c. Water rights, claims or title to water;  
whether or not the matters excepted under (a), (b), or (c) are shown by the public records.
5. Any lien or right to a lien, for services, labor or material heretofore or hereafter furnished, imposed by law and not shown by the public records.



Policy No. 201430

SCHEDULE B - continued

SPECIAL EXCEPTIONS:

6. Rights of the public and of governmental bodies in and to that portion of the premises herein described lying below the high water mark of an unnamed creek. (Affects Parcel II)
7. An easement created by instrument, including terms and provisions thereof;
  - Dated: July 6, 1907
  - Recorded: July 8, 1907
  - Book: 99
  - Page: 520
  - In Favor Of: Portland Railway, Light and Power Company
  - For: Transmission lines
  - Affects: The Southerly portion
8. An easement created by instrument, including terms and provisions thereof;
  - Dated: July 6, 1907
  - Recorded: July 8, 1907
  - Book: 99
  - Page: 520
  - In Favor Of: Portland Railway, Light and Power Company
  - For: Tree trimming and removal
  - Affects: The Southerly portion
9. An easement created by instrument, including terms and provisions thereof;
  - Dated: July 23, 1913
  - Recorded: October 1, 1913
  - Book: 5
  - Page: 455, Miscellaneous Records
  - In Favor Of: The Pacific Telephone and Telegraph Company
  - For: Poles and wires
  - Affects: Exact location not disclosed
10. Lease, including the terms and provisions thereof.
  - Dated: January 4, 1999
  - A memorandum of which was:
  - Recorded: January 26, 1999
  - Recorder's Fee No.: 99-007773
  - Lessor: Thomas C. Scott
  - Lessee: T. C. Scott Machining, Ltd.
  - (Affects Parcel I)

(Continued)

Policy No: 201430

The present ownership of said leasehold and other matters affecting the interest of the lessee are not shown herein.

End of Policy

4200-27182-SB

06/15/99

cjg

OWNER'S INFLATION PROTECTION ENDORSEMENT

Item 3.

Attached to Policy No. 201430  
Issued by

CHICAGO TITLE INSURANCE COMPANY OF OREGON

Dated: May 24, 1999 at 1:52 p.m. Premium: No Charge

The Company, recognizing the current effect of inflation on real property valuation and intending to provide additional monetary protection to the insured owner named in the policy, hereby modifies the policy, as follows:

1. notwithstanding anything contained in the policy to the contrary, the amount of insurance provided by the policy, as stated in Schedule A thereof, is subject to cumulative annual upward adjustments in the manner and to the extent hereinafter specified;
2. 'adjustment date' is defined, for the purpose of this endorsement, to be 12:01 a.m. on the first January 1 which occurs more than six months after the Date of Policy, as shown in Schedule A of the policy to which this endorsement is attached and on each succeeding January 1;
3. an upward adjustment will be made on each of the adjustment dates, as defined above, by increasing the maximum of insurance provided by the policy by 10% (ten percent) per year for 5 (five) years; provided, however, that the maximum amount of insurance in force shall never exceed 150% of the amount of insurance stated in Schedule A of the policy, less the amount of any claim paid under the policy which, under the terms of the conditions and stipulations, reduces the amount of insurance in force;
4. in the settlement of any claim against the Company under the policy, the amount of insurance in force shall be deemed to be the amount which is in force as of the date on which the insured claimant first learned of the assertion or possible assertion of such claim, or as the date of receipt by the Company of the first notice of the claim, whichever shall first occur.

This endorsement is made a part of the policy and is subject to all the terms and provisions thereof and of any prior endorsements thereto. Except to the extent expressly stated, it neither modifies any of the terms and provisions of the policy and any prior endorsements, nor does it extend the effective date of the policy and any prior endorsements, nor does it increase the face amount thereof.

CHICAGO TITLE INSURANCE COMPANY  
OF OREGON

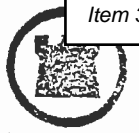


BY: \_\_\_\_\_  
Authorized Signature

Endorsement No. 78



# CHICAGO



This plat is for your aid in locating your land with reference to streets and other parcels. While this plat is believed to be correct, the company assumes no liability for any loss occurring by reason of reliance thereon.

No. **R31W12D**

CHICAGO TITLE INSURANCE COMPANY  
10001 S.E. SUNNYSIDE ROAD  
CLACKAMAS, OREGON 97015



SEE MAP 3 1W 12

6900

CENTER SEC

601  
13.13 Ac.  
7475

500  
13.33 Ac.  
6901  
6905

402  
5.17 Ac

BOECKMAN CREEK

700  
3.67 Ac.  
7515

800  
3.00 Ac.  
7115

100  
1.00 Ac.  
21271

STAFFORD (MERIDIAN) RD.  
WILLAMETTE

1100  
9.00 Ac.  
7480

1101  
1.00 Ac.  
1520

1200  
1.25 ac.  
7252

1400  
5.00 Ac.  
7128

1501  
4.06 Ac.  
7870

1500  
5.94 Ac.

1700  
10.00 Ac.  
6128

## 3-28

### RRFF-5

1800  
10.00 Ac.  
71651

MKT. RD NO 12  
SEE MAP 3 1E 7

2400  
8.74 Ac.  
7331

2300  
9.72 Ac.  
7151  
7375

2200  
5.33 Ac.  
7955

2201  
5.12 Ac.

1902  
0.94 Ac. 7188

1903  
1.88 Ac.

2000  
4.05 Ac  
7182

2001  
7.00 Ac.  
6631

2202  
5.33 Ac.  
7925

2100  
3.70 Ac.  
6955

BOECKMAN

(ROBERTS)

RD. NO. 80

ROAD

(MERIDIAN) STAFFORD (MERIDIAN) RD.  
WILLAMETTE

BRIDAL

TRAIL

ACRES

SEE MAP 3 1W 15A

JUL 2 1997.13

3 1W 12D  
WILSONVILLE  
R00W 2E

# NEW WILSONVILLE PRIMARY SCHOOL

## Master Plan, Site Design Review, Tree Removal and Sign Waiver

### TABLE OF CONTENTS

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<b>GENERAL INFORMATION</b>	1
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<b>COMPLIANCE WITH THE WILSONVILLE DEVELOPMENT CODE</b>	15
<b>CONCLUSION</b>	32

### SUPPLEMENTAL INFORMATION

- Exhibit A – Application Plan Sheets
- Exhibit B – Lot Line Adjustment (Preliminary Partition Plat)
- Exhibit C – Screening and Exterior Finishes
- Exhibit D – Wilsonville Frog Pond Primary School – Transportation Impact Analysis
- Exhibit E – Republic Services Provider Letter
- Exhibit F – TVFR Service Provider Approval
- Exhibit G – Arborist Tree Protection Memorandum
- Exhibit H – Landscape Details
- Exhibit I - Preliminary Stormwater Report – New Wilsonville Primary School
- Exhibit J – Exterior Lighting Information/Energy Compliance Form

### APPLICATION SUMMARY

For Stage I Master Plan, Stage II Final Plan, Site Design Review, Type C Tree Removal Permit, and Sign Waiver to construct a new primary school, parking, playground, and related improvements.

### GENERAL INFORMATION

#### Location

7151 Boeckman Road (3S 1W, Section 12DC, Tax Lot 4500 and 3S 1W, Section 12 DD, tax Lot 400.) Its location is shown in Figure 1.

#### Comprehensive Plan and Zoning Designation

The plan designation is Public, and the zoning is PF - Public Facilities.

## Applicant and Owner

Remo Douglas  
Capital Construction Program Manager  
West Linn-Wilsonville School District  
2755 SW Borland Road  
Tualatin, OR 97062  
Phone: 503.673.7988  
[douglasr@wlwv.k12.or.us](mailto:douglasr@wlwv.k12.or.us)

## Applicant's Representative

Keith Liden, AICP  
4021 SW 36<sup>th</sup> Place  
Portland, OR 97221  
503.757.5501  
[keith.liden@gmail.com](mailto:keith.liden@gmail.com)

## Design Team

Rebecca Grant  
IBI Group  
907 SW Harvey Milk Street  
Portland, OR 97205  
503.419.1606  
[Rebecca.grant@ibigroup.com](mailto:Rebecca.grant@ibigroup.com)

Joseph McAllister, PLS  
Compass Land Surveyors  
4107 SE International Way, Suite 705  
Milwaukie, OR 97222  
503.496.1489  
[joem@compass-landsurveyors.com](mailto:joem@compass-landsurveyors.com)

John Howorth, PE  
3J Consulting  
9600 SW Nimbus Avenue, Suite 100  
Beaverton, OR 97008  
503.946.9365, x201  
[john.howorth@3j-consulting.com](mailto:john.howorth@3j-consulting.com)

Jeramie Shane  
Mayer/Reed  
319 SW Washington Street, Suite 820  
Portland, OR 97204  
503.223.5953  
[jeramie.@mayerreed.com](mailto:jeramie.@mayerreed.com)

William Driscoll  
Glumac  
900 SW 5<sup>th</sup> Avenue, Suite 1600  
Portland, OR 97204  
503.227.5280  
[wdriscoll@glumac.com](mailto:wdriscoll@glumac.com)



Figure 1: Vicinity Map



Source: Metro

## BACKGROUND INFORMATION

### Site Description

The New Wilsonville Primary School site is located on a 12.6-acre property that consists of two parcels (TL 4500 and TL 400). The property was recently annexed into the city and zoned PF – Public Facilities. A residence, pole barn, and two small accessory structures occupy the central portion of Tax Lot 4500. Tax Lot 400 is vacant. The trees on the site are generally clustered near the existing house and along the boundary between Tax Lots 4500 and 400 (Exhibit A – LU 100 and LU 110).

The property has over 511 feet of frontage along Boeckman Road to the south, which is classified as a minor arterial with a three-lane cross section, bike lane, and curb but no sidewalk. The western side of the property has 827 feet of frontage along SW Sherman Drive, which is classified as a local street, lacks full improvements along the subject property frontage. Tract A “Frog Pond Meadows No. 2” separates the eastern property boundary from SW Willow Creek Drive, a collector street. A portion of the property to the southeast fronts on SW Wehler Way, a local street, and the remainder abuts residential properties (Exhibit B).

SW Brisband Street, another local street, is planned to traverse across the northern property boundary. A portion of SW Brisband Street right-of-way has been recently dedicated to the city, and the remainder is assumed to be dedicated in conjunction with the development of the new school.

### Surrounding Area Description

The plan and zoning designations and current land use of the surrounding area are summarized in Table 1.

**Table 1  
Land Use Summary**

PROPERTIES IN THE VICINITY	WITHIN CITY	PLAN DESIGNATION	ZONE DESIGNATION	LAND USE
<u>Subject Property</u> 3S 1W 12, TL 4500 and 400	Yes	Public	PF – Public Facility	Acreage residence and vacant
<u>Surrounding Properties</u>				
North 3S 1W 12D	Yes	Residential	Residential	Acreage residence
TL 1501 and 1300	Yes	Residential	Residential	Acreage residence
TL 1400	No	Residential		Acreage residence
East	Yes	Residential	RN – Residential Neighborhood	Single family residences
South	Yes	Residential	PDR – Planned Development Residential	Single family residences
West	Yes	Residential	RN – Residential Neighborhood	Single family residences

## PRIMARY SCHOOL BUILDING AND RELATED IMPROVEMENTS

### Improvement Summary

The new Wilsonville Primary School is proposed as envisioned in the Frog Pond Master Plan. The 12.6-acre property (12.78-acres less the right-of-way dedication deed 2022-047267) is owned by the school district, and the northeastern portion is proposed to be sold to the city for use as a neighborhood park.

The proposed primary school is planned to be constructed in two phases. The proposed first phase will accommodate an enrollment of 350 students and 35 staff. A second phase would include additional instruction space to raise the enrollment to 550 students, plus an additional 10 staff. The core facilities, such as the library, gymnasium, auditorium, and administrative offices will be built in the first phase to accommodate full enrollment (Exhibit A – LU 120 and LU 300).

The hours of operation for all primary schools in the district at the time of this application are 7:50am-2:10pm. On early release days (1 or 2 Wed. per month) school ends at 12:10 pm. Each primary school has an after school childcare program that occupies the multi-purpose room, cafeteria, or wellness center until 6 pm Monday-Friday. Gyms are used for either volleyball or basketball by the youth sports programs and community members from 4pm-10pm. Gym use depends upon seasons. Primary gyms are not utilized as often during spring or summer. School events take place in gyms/multi-purpose rooms on average 1-2 times per month.

## Lot Line Adjustment

A lot line adjustment will follow this application to create the desired property configuration for both the school and park uses. The plan sheets show the proposed configuration of the school and park properties as tentatively agreed by the district and city (Exhibit B). The proposed lot line adjustment would result in an approximately 9.68-acre (421,512 sf) western parcel for the school and a 2.93-acre (127,449 sf) site for a future city park. Following the anticipated dedications for SW Brisband Street (41.8-ft dedication), SW Sherman Drive (6.0-ft dedication), and Boeckman Road (10.5-ft dedication) the net site area will be 9.11 acres (396,812 sf).

## Primary School Building

### Program Elements

The Phase 1 development will include core facilities, such as the commons/gym, library, and food service designed to support the ultimate enrollment of 550 students. This phase will result in an approximately 58,130 square-foot, one-story building including:

- 16 classrooms
- Wellness/Commons/Gym
- Music classroom
- Library
- Makerspace
- Administrative offices
- Kitchen
- Main parking lot near Sherman Drive

A future Phase 2 addition of approximately 11,500 square feet (69,630 total) is proposed to include one additional wing of six classrooms and a two-classroom addition to a four-classroom wing from the first phase (Exhibit A – LU 120 and LU 321). In addition, a second parking lot is proposed in the northeastern portion of the school site to support the additional 200-student enrollment and staff.



The building setbacks for the first and second phases following anticipated street right-of-way dedications and the lot line adjustment will be:

- SW Sherman Drive: 114 feet (Phase 1 building corner).
- SW Brisband Street: 139 feet, 11 inches (Phase 2 building corner).
- Tax Lot 400 to the East: 82 feet, 7 inches (Phase 2 building corner).
- Boeckman Road: 206 feet, 7 inches (Phase 1 building corner).

### Site and Architectural Design

The school design was guided by three basic principles: 1) being a good neighbor; 2) providing safe and efficient access; and 3) enabling community use (Exhibit A – LU 300 - LU 331 and LU 200 - LU 212).

Being a good neighbor will primarily be accomplished by:

- A single-story structure, with a maximum height of 32.5 feet, which is an appropriate scale to neighborhood.
- Centering the building on the site to maximize its distance from surrounding residences.
- Building finish materials and landscaping to provide a high-quality aesthetic.
- Screening of rooftop mechanical equipment and the trash/recycling area (Exhibit C). The screening for the rooftop equipment is shown in Exhibit A – LU 310-313 and LU 330-340). The gates will be Metalco Grigliato SC-100 panels, and a cut sheet is included in Exhibit C. The dimensions of the gates are included on the site plan that was approved with the Republic Services.

Providing safe and efficient access by providing:

- A separated bus loop from parent drop-off and pick-up.
- Sufficient on-site queuing for drop-off and pick-up to minimize the impact to local streets.
- On-site parking that meets city requirements.
- Safe and convenient pedestrian and bicycle access to and within the school site.
- Vehicular access to the trash/recycling area approved by Republic Services.

Enabling community use including:

- Wellness commons (gym) with kitchenette, space for spectators and activities.
- Multipurpose room with raised platform.
- Walking paths that will be available for public use outside of school hours.
- Playground with accessible surfacing / activities available for public use outside of school hours.

### Architectural Form, Materials and Character

The building is designed to have a scale and appearance that is complementary to the residential character of the neighborhood. In addition to a low-profile building scale, this will be accomplished by exterior finish materials that will have a residential aesthetic including:

- Brick.
- Wood-like siding.
- Windows for natural daylight and views.

- Residential scale with single story structures and pitched roofs at the learning neighborhoods.

These materials are shown in Exhibit A – LU 310-313 and LU 330-331, and physical samples are also provided with the application. Photographic representations of the primary exterior finishes are shown in Exhibit A – LU 340 and Exhibit C.

## Parking, Circulation, and Loading

### Circulation

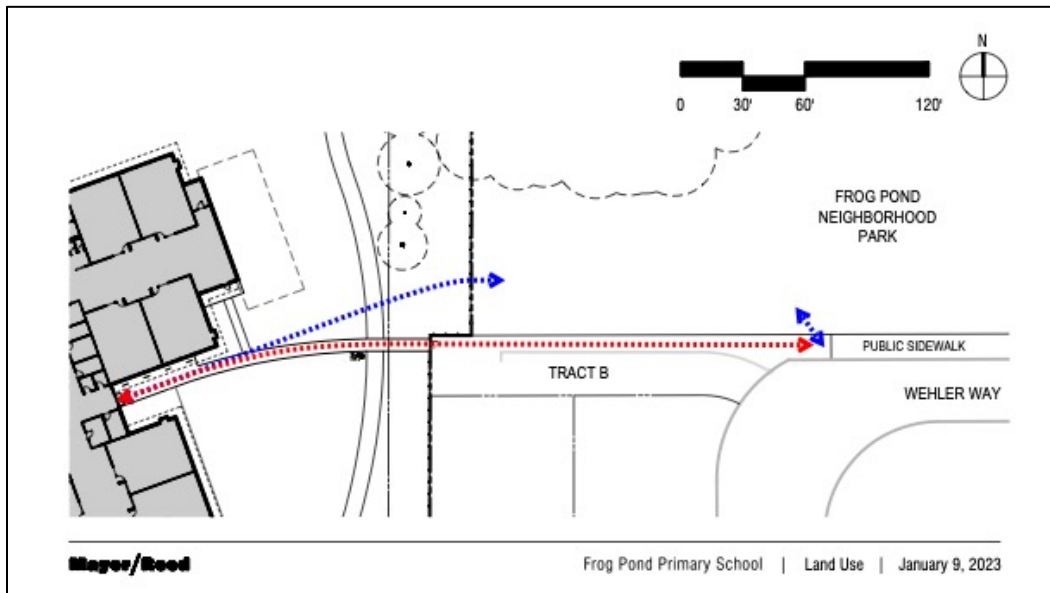
The driveway and overall circulation design is intended to enhance safety for everyone entering and leaving the site by keeping different modes separate. The primary driveway for visitors, parent drop-off/pick-up, and staff is proposed on SW Sherman Drive in alignment with SW Woodbury Loop. A secondary driveway is proposed on SW Brisband Street to another parking lot proposed in Phase 2. A driveway for school buses and authorized vehicles is proposed on Boeckman Road across from SW Laurel Glen Street. This will allow for separation of buses from other traffic along with reducing any potential congestion on SW Sherman Drive (Exhibit A – LU 120).

Once on-site, the parking lot will provide a one-way circulation for parent drop-off and pick-up at the front of the school and the main entrance. Students riding the bus will have similarly convenient access to the school building from the bus drop-off and pick-up loop. This restricted driveway will be clearly signed as Bus and Authorized School District Use Only. The Phase 2 parking lot will provide additional capacity when the school is enlarged to support an enrollment of 550 students. The design of this lot may change, and it could be influenced in a coordination with the city and the future park design.

Direct pedestrian and bicycle access will be provided from all directions to maximize connectivity to the surrounding neighborhoods before and after school, including:

- Sidewalk along the entire property street frontage for Boeckman Road, SW Sherman Drive, and SW Brisband Street.
- Crosswalks at the following intersections along SW Sherman Drive on the west side of the site as approved by the City Engineer.
  - SW Brisband Street: South leg only (No other receiving ADA ramp available).
  - SW Woodbury Loop: North and south legs at the driveway to the school.
  - SW Chestnut Lane: North leg only.
  - SW Bay Lane: North leg only.
  - Boeckman Road: North leg only.
- A street crossing on Boeckman featuring a Rectangular Rapid Flashing Beacon (RRFB) as recommended in the DKS transportation impact analysis (Exhibit D). The DKS study recommends that the district and city develop a map of the preferred Safe Routes to School and to install the RRFB on the east leg of the Sherman/Boeckman intersection.
- Pathway connections to SW Wehler Way and SW Brisband Street. Phase 1 will include a pathway alignment to SW Brisband Street with a modified pathway alignment in Phase 2 to accommodate the Phase 2 layout. The pathways are proposed to be ¼-inch minus to provide ADA accessibility. An option to connect through the future city park property has

been discussed with the city and is the preferred option. Either a direct connection to SW Wehler Way will be made through the private Tract B (as shown on the plans), or just north of Tract B through the public park to SW Wehler Way (shown below).



- A perimeter security fence will enclose the areas occupied during the school day including the playground, field and around the classroom wings. The gates will be locked during school hours but opened at other times to facilitate community access.
- In addition to the main building entrance facing SW Sherman Drive, other building entrances will be accessible for student arrival and dismissal.
- A pedestrian connection from Boeckman Road to SW Brisband Street is shown in the Frog Pond Master Plan along the property's east boundary. The district has accommodated the intent of this pedestrian connection by providing a pathway from Boeckman Road sidewalk north along the bus lane to a path that will meander north along the eastern side of the school building to SW Brisband Street. This path will be gated during school hours but opened to the public at other times to facilitate access. During school hours the pedestrian route would continue along the bus lane to the front of the building and then onto the northwest corner of the site along SW Sherman Drive which then connects to SW Brisband Street completing the intent of the master plan while addressing school security.

In addition to the RRFB recommendation noted above, the transportation impact analysis in Exhibit D contains the following important conclusions:

- Existing traffic operations for the intersections near the site meet the city's operating standards (Table 3).
- With full buildout of the school (550 enrollment) and anticipated Frog Pond development, the nearby intersections will continue to operate acceptably except for the Boeckman Road/Canyon Creek Road intersection (Table 7). However, the report acknowledges that with the planned signal at this intersection, it will also operate at an acceptable level.
- Although the proposed restricted bus driveway does not meet the minimum desired spacing of 600 feet along Boeckman Road, it does not pose a problem because it will align



with the existing SW Laurel Glen Street intersection, and the number of buses is quite low.

- The proposed 119 parking spaces will satisfy city requirements for a range between 119 and 179 spaces to support an enrollment of 550 students and 45 staff.
- A total of 97 bicycle parking spaces are required with the completion of Phase 2 (100 spaces are proposed with the completion of Phase 2).
- Once the school walking boundary is confirmed, the city and district will develop a Safe Routes to School map.

**Parking**

A 77-space lot is proposed along the SW Sherman Drive frontage as part of Phase 1. Six of the 77 spaces will be accessible. Phase 2 of the development will provide 4 additional spaces to the SW Sherman Drive lot, and a second 38-space lot is proposed in the northeastern corner of the site for a total of 119 spaces to support the increase enrollment from 350 to 550 students.

A total of 52 bicycle parking spaces are proposed with Phase 1. Twenty-six spaces will be long-term, covered spaces located in the front (west side) of the building. An additional 26 spaces are proposed within 30 feet of building entrances on the west and east sides of the building (see Table 2 and Exhibit A - LU 120).

**Table 2  
Parking Summary**

	Phase 1	Phase 2	Total
<b>Vehicle</b>			
Standard	71	42	113
ADA	6	0	6
<b>Total</b>	<b>77</b>	<b>42</b>	<b>119</b>
<b>Bike</b>			
Within 30' of entry	26	24	50
Covered (long-term)	26	24	50
<b>Total</b>	<b>52</b>	<b>48</b>	<b>100</b>

**Loading and Emergency Access**

Loading area for deliveries will be in front of the utility yard on the west side of the building. The solid waste and recycling areas will also be located in this area behind a wall and gate enclosure. Access for both functions will be provided by the SW Sherman Drive driveway (Exhibit A – LU 300, LU 311, and LU 320). Republic Services has reviewed and approved the design of the trash and recycling facilities (Exhibit E). A service provider approval has also been received from Tualatin Valley Fire and Rescue (Exhibit F).

## Landscape

### Tree Removal and Protection

Forty-seven trees are proposed to be removed in Phase 1, (Exhibit A – LU 201), 41 of which are 6-inch dbh and larger. Additional trees may be required to be removed for the Phase 2 parking lot, though that quantity is unknown at this time. A Type C Tree Removal Permit is requested to remove the 47 trees affected by Phase 1 construction. The Austrian pine near SW Boeckman Road and the remaining trees along the northeast side of the site will be protected as shown (Exhibit A – LU 201) and described by the consulting arborist in Exhibit J. Forty-one new trees will be planted in Phase 1 as mitigation for the removed trees 6-inch and larger. Additional trees will be planted with Phase 2 to cover mitigation requirements for additional tree removals.

### Landscaping and Plantings

The site design includes an entry courtyard, playgrounds, open play lawn area, gardening planters, and a connecting pedestrian circulation system. Included in the circulation system is the Community Connector path, as directed in the Frog Pond West Master Plan, situated along the east side of the property.

Various types of landscaping have been chosen to create a naturalized campus supportive of hands-on learning and ecological rehabilitation of the site. Hardy, drought-tolerant, low ornamental shrubs and groundcovers will be used adjacent to the building and around the parking lots. Irrigated mown lawn is proposed in programmed high use areas such as the open play area to the north and in the entry courtyard. Several stormwater facilities are distributed throughout the site. The remaining areas of the site are proposed to be planted in either native meadow or native woodland species to improve the ecological health of the site and enhance its resilience (Exhibit A – LU 206 - LU 214).

### Street Frontage Landscaping

Boeckman Road is currently being designed by the City of Wilsonville and may change depending on that project. Currently, the street frontage along the new primary school will consist of a 9-foot wide planter strip, a 7-foot wide separated bike lane connected directly to a 6-foot sidewalk with a 10-foot wide planted area that will also be a 10-foot PUE, and finally SW Brisband Street will have a standard planter strip that accommodates both LIDA facilities and street trees as required. Street trees that would otherwise conflict with the LIDA facilities will be planted at the back of the public sidewalk. The Frog Pond Master Plan calls for a brick wall with a black metal fence atop the wall along the Boeckman Road frontage (with the exception described herein). This wall and fence will be constructed as an extension of the existing wall and fence to the east.

This extension of the wall and fence along Boeckman Road at the southeast corner of the site will be buffered to the south with low ornamental planting. The wall is proposed to stop at the east edge of the bus entry driveway. The gap in the wall will improve visibility to and from the school site, benefiting security as well as navigation to the school. This will also serve to emphasize the native plantings and stormwater features along the southern edge of the property. The ornamental planting in the “landscape buffer” will continue west along the street frontage

between the bus access drive and the street corner to provide an attractive edge and continuous aesthetic in keeping with the Frog Pond West Master Plan.

SW Sherman Drive and SW Brisband Street will have a standard planter strip that accommodates both LIDA facilities and street trees as required. The planting along SW Sherman Drive and SW Brisband Street will be low shrubs, groundcovers and trees extending seamlessly from the on-site planting plan. Trees will be spaced per city standard spacing, considering required offsets from adjacent improvements such as utilities and vision clearances.

### **Hardscape and Plaza Spaces**

The main outdoor gathering and use space is the Entry Courtyard between the building and the main parking lot. This area will accommodate student pick-up and drop-off, bike parking, general circulation to several building entries, a gathering space for before and after school and community events, two areas showcasing stormwater, and several sub-areas for smaller gatherings. Boulders will be installed throughout the space as informal seating and serve as wayfinding elements to enhance the story of water. Low, wide concrete walls and backed benches increase the options for seating. Details for the concrete walls and boulders are provided in Exhibit A – LU 216, and cutsheets of the benches are in Exhibit H. A stamped concrete finish, to look like a boardwalk, will be used on a portion of the concrete paving to further enhance and delineate the space.

### **Playground and Field**

The main playground and play area are located to the north of the school building. The playground will consist of a large “pond” of asphalt paving with interspersed “lily pads” of synthetic turf surrounding play equipment pieces. The pieces have been chosen specifically to meet the goals of universal and inclusive play, with an emphasis on wheelchair accessibility. A natural lawn play area is located to the east of the playground and is delineated by sloped edges along the northern and eastern edges. Additional site furnishing of low concrete walls (see Exhibit A - LU 216) and picnic tables (Exhibit H) complete the space. Finally, the stamped concrete finish, used in the entry courtyard will be used in a portion of the paving to create a “boardwalk” and “dock” extending into the playground “pond”. Other play elements will be created using paving paint.

## **Utilities**

### **Stormwater**

Stormwater runoff coming from the new impervious areas including the building and paved areas will be conveyed and treated using multiple stormwater facilities within the original drainage basins and be metered and discharged according to the original basins.

Specifically, runoff from the proposed and future impervious areas will be conveyed to Low Impact Development (LID) facilities that have been designed using the BMP Sizing Tool. The areas currently draining to the east and west will be respected and continue to follow the same drainage



patterns as closely as possible. Due to the surrounding developments and topography, offsite runoff is not expected to reach the site.

As part of the Stafford Meadows Subdivision, OTAK performed a downstream analysis that included the future build-out of the school site draining east. The analysis showed that the downstream conveyance system has capacity for the development of the school site. Additionally, the subdivision installed a 36-inch box culvert in SW Wehler Way to convey Willow Creek draining north to south. The new culvert was sized to convey future flows from the school site.

The post-developed western portion of the site will discharge treated and detained runoff to the existing storm system installed in Phase 1 and 2 of the Morgan Farm Subdivision. The downstream analysis based on as-built plans and reports indicates the existing systems will not have capacity issues.

Stormwater management for the project area will be provided using the *2015 City of Wilsonville Stormwater & Surface Design & Construction Standards* as described in the Preliminary Drainage Report – New Wilsonville Primary School (Exhibit I).

### **Water**

A private domestic water line will be installed from an existing public water line located in SW Sherman Drive to the west of the site.

A public fire service line will be installed from an existing public water line located in SW Sherman Drive to the west of the site. The fire service line onsite will be within a public water line easement per the city requirements.

An irrigation water service line will be installed from an existing public water line located in SW Sherman Drive to the west of the site.

As part of the extension of SW Brisband Street a public water line will be constructed between the two existing water lines installed as part of previous developments. A reimbursement district will be entered into for this improvement per city standards.

### **Sanitary Sewer**

Sanitary sewer will be collected and discharged via gravity to the west into an existing sanitary sewer system within SW Sherman Drive.

As part of the extension of SW Brisband Street a public sanitary sewer line will be constructed to serve the adjacent properties. A reimbursement district will be entered into for this improvement per city standards.

### **Power**

Power will be extended to the site from SW Sherman Drive and extended to the north side of the building. The transformer will be located within the service area and screened from view.

## Site Lighting

Site lighting will be provided for the school grounds (Exhibit A – LU 401 - LU 403). Pole area lights are located throughout the parking lots and driveways while smaller pole area lights are located at pathways and play areas. For pole area lights that are adjacent to the property line, a house side shield will be included with each of these fixtures.

For some building exits with canopies, recessed linear fixtures will be utilized. Most other building exits will utilize architectural wall packs. The main plaza area will include surface mounted downlights at the canopy walkway in addition to light poles. These light poles will have a higher lumen output compared to the light poles at the pathways.

Three flagpoles displaying the US, Oregon, and POW/MIA flags will be illuminated with a luminaire mounted at the top of the flagpole that is directed downward only (Exhibit A – LU 202, LU 203, LU 216, and LU 402). Note that lighting illuminating the American flag is exempt from the general lighting requirements per 4.199.20(.02)L.

An ornamental downspout between the music room and the multi-purpose room will also be illuminated with a fixture specification yet to be determined. It is subject to the general lighting requirements and will comply with all standards set forth per 4.199.10 and 4.199.40.

Cut sheet information for exterior lighting fixtures is provided in Exhibit A – LU 401, and energy compliance forms are provided in Exhibit J.

## Signs

The district proposes to have a sign with the school name mounted on the front canopy of the building near the main entrance along with a monument sign with an electronic reader board. Descriptions of the proposed signs are summarized in Table 3 below and illustrated in Exhibit A – LU 350.

The monument sign is proposed to be located on SW Sherman Drive on the south side of the driveway. The material palette corresponds to the materials used on the school's building façade.

The electronic reader board sign is proposed to have the following operating characteristics:

- The sign will allow for real-time updates to the signage outside the school, an example of how this may be helpful would be notice to school visitors of upcoming events, or in the event of inclement weather or cancellation of scheduled events.
- Designed for text only and will not display graphics or animations. Text is displayed in one color of red and has a maximum brightness of 4,000 nits or 4,000 candela per square meter (for comparison, a TV brightness is up to 1,500 nits or 1,500 candela per square meter), which is within the standard recommendation for brightness levels of outdoor displays. The display has a sensor and auto dimming capabilities to provide appropriate light levels during the daytime and early evening, and the message will not change more frequently than every 15 minutes.
- The sign will be located along SW Sherman Drive on the south side of the driveway. The sign will be oriented to be seen along SW Sherman Drive. The recommended minimum

viewing distance by the manufacturer is 45 feet, and this should not present any visual disturbance for motorists or nearby properties. The sign will be a minimum approximate distance of 60 feet east of the nearest homes on the west side of the street and the reader board will be oriented to be viewed by persons traveling along SW Sherman Drive.

- The sign is essentially the same as the monument sign for Meridian Creek Middle School.

In addition to the monument sign, three flagpoles are proposed in the front of the building (Exhibit A – LU 216). Consistent with The [State of Oregon policy](#): 107-011-160 established that effective January 1, 2018, all new construction of new construction of all county, municipal, school district and special district buildings, upon which or near which it is customary and suitable to display the United States flag, must include sufficient infrastructure to properly display all three flags simultaneously: United States flag, Oregon State flag, and National League of Families’ POW/MIA flag. At a maximum 30-foot height, as required by the city, three flagpoles are necessary to properly display these flags when half-mast protocol is in effect.

The reader board and flagpoles are subject to a Class 3 Sign Permit and a sign waiver.

**Table 3  
Proposed Signs**

SIGN LOCATION AND TYPE	NO.	DIMENSIONS AND AREA	MATERIAL AND INSTALLATION	ILLUMINATION
<b>North Courtyard Façade/Main Entrance</b>				
Building Signage “New Wilsonville Primary School” (Placeholder text for school name)	1	27’-1” X 1’-6” = 41 SF  8’-8” X 1’-6” = 13 SF	18” high by 1” thick cast aluminum letters	No illumination
<b>Site Entrance</b>				
Monument Sign “School Name & Address TBD” with an electronic reader board	1	Letters 3’-6” X 2’-4” = 8 SF  Reader board 6’-0” x 4’-0” = 24 SF	4” high by ¼” thick cast aluminum letters	Spotlights will illuminate the School Name & Address from the ground  Internal illumination

### Community Engagement

Voters approved Measure 3-554, commonly referred to as the 2019 Capital Bond Program after a lengthy public engagement process. This project was prominently referenced in information made available prior to the election. Subsequent to the election, the district created an email distribution list of 242 addresses to provide updates regarding the project. Two community open house meetings were held, one on May 3<sup>rd</sup> during the schematic design phase, and one on August 22<sup>nd</sup> during the design development phase, and were accompanied by an online survey to provide feedback regarding the project. District staff have also responded to various email inquiries and met with neighbors at the site upon request. A question and answer page on the district website



has been used to publicly post answers to questions received and address concerns expressed by the community.

Further stakeholder outreach has included students, teachers, maintenance staff, district administrators, and city staff.

## COMPLIANCE WITH THE WILSONVILLE DEVELOPMENT CODE

The city planning staff determined that the proposal is subject to a Master Plan, Lot Line Adjustment and Site Design Review process before the Development Review Board (DRB). In addition, a waiver is requested to allow a reader board message sign, and a Type C Tree Removal Permit is necessary to remove 46 trees, of which 6 are less than 6 inches dbh. The relevant criteria of the Wilsonville Development Code (WDC) must be addressed as part of this review. These criteria are listed followed by findings, which demonstrate that the application is consistent with the code.

### 4.136 PF – Public Facility Zone

**(.02) K. Uses Permitted Outright.** Public schools are listed as a permitted use in the PF Zone.

**(.04) Dimensional Standards.** The proposed school meets the applicable standards in this section because:

- At 9.68 acres, the property exceeds the minimum 1-acre lot size.
- The proposed front, rear, and side yard setbacks for Phases 1 and 2 greatly exceed the city's minimum standards (front and rear of 30 feet / side of 10 feet). The following building setbacks are illustrated in Exhibit A – LU 120):
  - SW Sherman Drive: 114 feet (Phase 1 building corner).
  - SW Brisband Street: 139 feet, 11 inches (Phase 2 building corner).
  - Tax Lot 400 to the East: 82 feet, 7 inches (Phase 2 building corner).
  - Boeckman Road: 206 feet, 7 inches (Phase 1 building corner).
- The street frontage is over 820 feet along SW Sherman Drive and 500 feet along Boeckman Road and SW Brisband Street, exceeding the 75-foot minimum standard.
- The maximum building height for the school gymnasium will have a height of 32.5 feet, which is under the 35-foot maximum (Exhibit A – LU 330 and LU 331).

Requirements pertaining to off-street parking, signs, landscaping, corner vision, and special regulations for site design review are addressed later in this section of the application narrative.

### 4.118 Standards Applying to All Planned Development Zones

**(.03) A. Waiver of development standards.** This section allows the DRB to grant waivers to typical development standards such as building height. No waivers under this section are sought to any development standards.

## 4.140 Planned Development Regulations

**(.01) A. Overall purpose of planned development regulations.** The proposed primary school has long been planned to be a significant community asset in the Frog Pond West Master Plan. As demonstrated in this application, great care has been given to create a building design that is consistent with the master plan, complements the character of the surrounding neighborhood, and maximizes the functionality of the new school.

**(.01) B. A number of specific purpose statements are made in this section.** These are addressed below:

1. **Functional design.** The design of the site is highly functional including vehicular, bicycle and pedestrian accommodation. Another strength of the proposed design is efficient and effective layout of the building, internally and with respect to other improvements on the site. The proposed building is single story to maintain scale with adjacent homes, centered on the site, and uses simple sloped rooflines and quality materials. The proposed pedestrian pathways, playground, play field and building will be available for community use outside school hours, while the perimeter fence provides security for staff and students during the school day.
2. **Population density, distribution and circulation.** Circulation is addressed through the following proposed improvements and as described beginning on Page 7 of this narrative:
  - A separated bus loop from parent drop-off and pick-up.
  - Sufficient on-site queueing for drop-off and pick-up to not impact local streets.
  - On-site parking that meets city requirements.
  - Safe and convenient pedestrian and bicycle access to and within the school site.
3. **Development that is equal or better.** Given the scale of the proposed primary school and its significant distance from surrounding properties the proposed design is a quality addition to the Frog Pond community. The proposed development is significantly better than the existing development which includes an irregular combination of pole barns, aging residence, and outbuildings.
4. **Permit design flexibility for efficient site utilization.** The proposed design makes efficient and effective use of the site through thoughtful placement of improvements to meet all functional criteria for the school, while being a good neighbor, providing safe and efficient access, and enabling community use.
5. **Building height flexibility that enables appropriate open space and buffering.** As noted above, the proposed primary school is single story, and uses simple sloped rooflines to minimize the visual impact to neighboring properties. Large open areas surround the proposed building, with trees and shrubs in excess of code requirements as added buffering. The proposed building is centered on the site to attain setbacks that exceed code requirements.

6. **Adequate facilities and services are available.** The school was contemplated in the Frog Pond West Master Plan. Adequate facilities and services are currently available for the proposed school site, including utilities (Exhibit A – LU 150).
7. **Mix of uses.** As intended in the Frog Pond West Master Plan, the new Wilsonville Primary School will serve the surrounding community. The school will maintain the district's ability to provide a high-quality education to its students.
8. **Allow flexibility and innovation.** The proposed design provides the district with the flexibility to respond to future enrollment growth through the Phase II expansion and accommodates several school and community related activities as described in this narrative. The proposed design includes innovations in response to stakeholder feedback from students, community members, teachers, administrators, and maintenance staff. These innovations will serve to maximize the learning experience for students while honoring the community and stewardship responsibilities of the district.

**(.03) A. Ownership.** Proposed planned development must be under single ownership, and as the sole owner, the district satisfies this criterion.

**(.04) Professional Design.** As demonstrated in this application package, the district has engaged a professional design team as required by this section.

**(.09) J. 2 b. Essential government service.** As an essential government service (defined in Section 4.001(256)), schools are exempt from meeting the Level of Service D requirement. In addition, the transportation impact analysis (Exhibit C) concluded that the proposed improvements will have a modest and acceptable impact on traffic operations in the general vicinity.

#### 4.154 General Regulations – On-site Pedestrian Access and Circulation

**(.01) On-site Pedestrian Access and Circulation.** This section contains several standards in Subsection B, which are satisfied by the proposed school facility because:

1. The pedestrian pathway system will provide direct connectivity between the building entrances, other facilities on the site, and the surrounding neighborhoods.
2. The connections are designed to be as safe and direct as possible.
3. Vehicles and pedestrians will be separated.
4. The district proposes to provide vehicular separation to enhance safety.
5. In coordination with the city, crosswalks will be provided to allow safe and convenient locations for pedestrians to cross the internal driveway system.
6. The walkways will have ADA compliant surfacing.
7. Wayfinding will be clear and obvious primarily through the site design, which will make navigating on the site intuitive and obvious.

#### 4.155 General Regulations – Parking, Loading and Bicycle Parking

**(.02) General provisions.** This section contains several provisions, which are satisfied by the proposed school facility as noted:

- A. Parking will be maintained for the school use, and the proposal will provide the number of on-site parking spaces in a manner that will not compromise the provision of an attractive and safe pedestrian environment.
- B. The number of spaces and the basic parking layout will provide appropriate access and circulation entering, within, and exiting the site. All the parking spaces shown are accessible with appropriate maneuvering area as mandated in the parking lot dimensional standards.
- C. Each phase for the school's development is proposed to have the required parking per the code.
- D. Not applicable, only one use.
- E. Not applicable, only one owner.
- F. Existing parking spaces will be maintained, throughout the existing subdivision, specifically on SW Sherman Drive to the west. As this development is new, there are no existing parking spaces to preserve/maintain.
- G. Not applicable, no off-site parking is proposed.
- H. Parking spaces shall not be used for other activities.
- I. All parking areas will be buffered with landscaped areas in a manner that meets or exceeds WDC requirements.
- J. Curbs will be utilized to keep cars out of landscaping and walkways.
- K. Parking and driveway areas will all be paved.
- L. Lighting will be provided, and it will be directed in a manner that will not shine onto adjoining properties as demonstrated in Exhibit A – LU 401-LU 403.
- M. Not applicable because the code does have specific parking requirements for schools, and these standards will be satisfied.
- N. Not applicable, only standard parking spaces are proposed.
- O. The new parking spaces will have curb stops to ensure that the 8-foot wide landscaped areas and pedestrian walkway will not be encroached upon by parked vehicles.

**(.03) Minimum and Maximum Off-Street Parking Requirements.** This code section contains several standards, which apply to the application. These requirements are met as described below:



- A. A loading and waste/recycling area will be provided. As described above and illustrated in the plans, vehicles and pedestrians will be kept separate on distinct routes. In addition, republic Services has reviewed and approved the design of the waste/recycling facilities.
- B. All disturbed areas will be landscaped in accordance with city standards as shown. The entire parking lot along SW Sherman Drive will be screened as illustrated in Exhibit A – LU203-LU205. At the time Phase 2 is developed, the second lot on SW Brisband Street will be designed to the same standard. The trees will be spaced and within landscaped areas of sufficient size to satisfy code standards. Additional trees are proposed between Sherman Drive and the main parking lot in response to conversations with residents living in the neighborhood west of the site.
- C. The parking and circulation facilities were designed to satisfy ADA and other applicable standards. The proposed 6 ADA parking spaces exceeds the requirement for a minimum of 1 ADA space per 50 spaces.
- D. This criterion calls for connecting parking areas on adjacent sites, which is not applicable to the school.
- E. Not applicable, applies only to multi-family development.
- F. Not applicable, no on-street parking is proposed to be applied to meet the minimum parking requirements.
- G. As indicated above, the required number of 119 parking spaces has been determined in the traffic study and by the district.
- H. No electrical charging stations are on the site or proposed as part of this project.
- I. Motorcycle parking is not proposed on the site.

**(.04) Bicycle Parking.** This code section contains several standards for bicycle parking.

- A. The traffic analysis concluded that 97 bicycle parking spaces were necessary for the full Phase 1 and 2 buildout. A total of 100 bicycle parking spaces are proposed for Phases 1 and 2.
- B. Each bicycle parking space will be 2 x 6 feet in dimension and each bicycle rack will accommodate two bike spaces. Clear aisles, where needed, will be a minimum of 5 feet wide. All bike parking, not including covered spaces, will be located within 30 feet of one of the four main entrances.
- C. In Phase 1, 50% of the bike parking will be covered and located near the southwest corner of the building. It will be monitored due to its location in public view along the public drop-off and pick-up lane and the bus loop and within view of building classrooms. Phase 2 covered bike parking will be located along the west façade of the Commons part of the school and will be monitored due to its location in public view along the public drop-off and pick-up lane.

**(.05) Minimum Off-Street Loading.** This code section contains several standards for off-street loading. The applicable standards for the school are satisfied because:

- The required minimum of 1 loading space of at least 12 by 35 feet and minimum clearance 14 feet of is provided.
- Off-street parking will not be used for loading.

## 4.156 Sign Regulations

The proposed monument sign, canopy signs, and flagpoles are subject to a Class III sign permit including DRB review. As described in this application, two signs are proposed – a monument sign with electronic reader board and a school identification sign on the walkway canopy near the main entrance (see Table 3 and Exhibit A – LU 350). In addition, the flagpoles are illustrated in Exhibit A – LU 216). As explained below, the proposed signs satisfy the applicable code criteria except for the reader board and third flagpole, which require a waiver.

### 4.156.02(.06) Class III Sign Permits

Section 4.156.02(.06) Class III Sign Permit applies to this application. There are three criteria that must be satisfied in Section 4.156.02(.05) F:

1. **The proposed signage is compatible with developments or uses permitted in the zone in terms of design, materials used, color schemes, proportionality, and location, so that it does not interfere with or detract from the visual appearance of surrounding development.** The monument sign will enhance daytime identification of the school in a manner that is complementary to the building’s architecture and exterior finish materials. The materials and colors proposed will coincide with the school building façade, resulting in a cohesive design and pleasing appearance. The canopy sign, with its simple and clean cast aluminum lettering will fit well with the building architecture and not be oversized or obtrusive. Each sign is typical of other signs at schools throughout the city and facilitate community information as well as navigation to these public facilities.

Flagpoles are customarily found with public buildings. The proposed flagpoles will comply with the maximum 30-foot height and will only be used to display the US, state, and POW/MIA flags are required by state policy.

2. **The proposed signage will not create a nuisance or result in a significant reduction in the value or usefulness of surrounding development.** The monument sign will complement the materials and colors of the school building façade. Because the monument sign will be a significant distance from any nearby residences, it will have no detrimental impact on surrounding properties (the reader board is addressed under the waiver criteria below). The canopy sign is designed to blend in with the building architecture with the primary purpose of welcoming students and visitors to the school.

Flagpoles are customarily found with public buildings, and they will be illuminated with up lights. They will not produce any nuisance for the surrounding neighborhood.

- 3. Special attention is paid to the interface between signs and other site elements including building architecture and landscaping, including trees.** The new Wilsonville Primary School, site landscaping, and signs were carefully designed by the school district to be compatible with the neighborhood and satisfy city code requirements. The proposed monument and canopy signs have been designed to complement the site layout, building architecture, and the school's surroundings.

The flagpoles will be located together in the front of the school building near the main entry, in a location that is integrated with the building and landscape design at a significant distance from surrounding properties.

#### **4.156.02(.08) A. Waivers**

A waiver is requested to allow an electronic reader board with changeable copy along with a third flagpole. This section addresses four criteria that must be satisfied to receive a waiver:

- 1. The waiver will result in improved sign design, with regard to both aesthetics and functionality.** The sign design and location will be very similar to other approved monument signs currently used at other schools including Meridian Creek Middle School and Wood Middle School. The electronic display offers significant advantages by allowing easy message changes and regulation of the sign's operation. Except for the electronic reader board, the proposed monument sign complies with all other dimensional and design requirements.

The three flagpoles will be arranged in a cohesive grouping near the main building entry as is customary for public buildings. The flagpoles will comply with the city's 30-foot maximum standard, and the flags will not be overly large.

- 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.** The sign design and location were selected to allow for providing school announcements to the public traveling along SW Sherman Drive. The sign is oriented to not direct messages toward the homes on the west side of the street. The brick and finish of the address lettering are consistent with the finish materials and canopy sign for the school building. The electronic reader board display will have a similar visual appearance to a manual reader board backlit display, which is allowed by the code. It will not have graphics or flashing displays of any kind.

Official federal and state flags are commonly associated with public buildings, and as noted in this application, the district is obligated to properly display three flags. At a 30-foot maximum flagpole height, it is not possible to properly display them at half-staff.

- 3. The waiver will result in a sign or signs that improve, or at least do not negatively impact, public safety, especially traffic safety.** The sign location will allow for proper visibility near the intersection of the parking lot driveway and SW Sherman Drive. As noted above, the electronic display will not be overly bright, animated, or distracting in any way that could compromise traffic safety.

The flags will be located a significant distance from the property boundaries and nearby streets, and they will not be distracting or have any impact on traffic safety.

4. ***Sign content is not being considered when determining whether to grant a waiver.*** The sign content will obviously change with each school announcement. The primary consideration should be the proposed absence of any graphics or animation, which could become detrimental to surrounding properties or traffic safety.

The district shall only display federal and state flags, and no type of advertisement will occur.

#### **4.156.08 Sign Regulation in the PDC, TC, PDI, and PF Zones**

***Section 4.156.05(.01) C. allows for up to two flags/flagpoles with a maximum height of 30 feet as being exempt from the sign code.*** The proposed three flagpoles comply with the maximum 30-foot height maximum, and a sign waiver for the third flagpole is submitted as part of this application.

***Section 4.156.08(.01) C. allows for a freestanding sign with a maximum of 32 square feet with a maximum height of 20 feet.*** The proposed sign complies with these dimensional standards with a maximum sign area of 32 square feet, including school name/address and the reader board, and a height of less than 7 feet.

***Sections 4.156.08(.01) E, F, G, J, and K provide location standards that are applicable to the proposed monument sign.*** The proposed sign complies with these standards by:

- Not extending into or above public right-of-way, parking areas, or vehicle maneuvering areas.
- Satisfying applicable sight distance requirements near the driveway.
- Using brick and other materials that match and complement the exterior materials for the school building.
- Locating the sign within 15 feet of the street right-of-way and more than 2 feet from the sidewalk.
- Providing a street address.

***Sections 4.156.08(.02) A, B, D, and E include the applicable standards for the proposed building sign.*** The proposed sign complies with these standards as follows:

- The sign is proposed to be located on the walkway canopy near the main front entrance, and it will wrap around the west corner of the canopy. The northwest facing portion of the sign (41 SF, see Table 3 and LU 350) will be on a building façade in excess of 140 feet, and the west facing portion of the sign (13 SF) will have a façade length over 370 feet. The code allows a sign area of 36 square feet for building facades lengths greater than 72 feet with an allowance to 12 additional square feet of sign area for every additional 24 feet of façade length. Each portion of the sign easily satisfies this standard.
- The proposed uniform lettering will appear as a definable sign band with the taller portions of the building as a backdrop.
- The sign type is allowed as being functionally similar to marquee and awning signs, which are allowed.



#### 4.171 Protection of Natural Features

This section provides approval criteria for a variety of situations including steep slopes, soil hazard areas, earth movement, and flooding. Only the three following subsections are relevant to this application.

**(.02) General Terrain Preparation.** The site is relatively flat with very modest grades. As a result, only minimal site grading is proposed, and all site work will comply with city and Uniform Building Code requirements.

**(.04) Trees and Wooded Areas.** As described in this application, existing trees will need to be removed. The existing trees around the existing buildings and southwards will need to be removed as they are in the footprint of the proposed building and bus turnaround. The line of trees along the northern half of the east property line will remain to the extent feasible as shown on Sheet LU 201 (Exhibit A). The northern half of this tree line will need to be removed to accommodate the proposed fire lane off of Brisband.

**(.09) Historic Protection.** This subsection is intended to “preserve structures, sites, objects, and areas ... having historic, cultural, or archaeological significance.” There are no historic resources on the site.

#### 4.175 Public Safety and Crime Prevention

The provisions of this section call for appropriate design and lighting to deter crime. The primary school is designed in a manner consistent with these criteria. The proposed site layout offers safe outdoor public spaces that are easily viewed from a variety of vantage points. All access routes on the site will be visible and easily viewed. This will primarily be accomplished by:

- Building design that does not create hidden corners.
- Windows that provide views out and supervision.
- Illumination of building entrances, walkways, and parking areas.
- Plant species that are either low (3 ft maximum), limbed up to 6 feet, or relatively transparent so as to maintain clear sight lines throughout the campus.
- A 6-foot high chain link fence surrounding the north and east portions of the site to protect building entries and students and staff during school time exterior activities.

#### 4.176 Landscaping, Screening and Buffering

**(.02) Landscaping and Screening Standards.** Because the improvements are well within the site with significant building setbacks on all sides, the general landscaping standards are required except for the parking lot along SW Sherman that requires satisfaction of the low screen standard. The landscape plan meets the code standards, including the requirements in the Frog Pond West Master Plan because:

- **C. General Landscaping Standard.** Landscaped areas are 30 feet deep and greater so the planting standards of one tree is required for every 800 square feet and two high shrubs or three low shrubs are required for every 400 square feet. The planting design proposes to meet these requirements throughout the site.

- **D. Low Screen Landscaping Standard.** This standard applies along 10% of the west and south edges of the Phase 1 parking lot. The proposed landscaping will exceed this requirement. 3-foot tall evergreen shrubs and groundcover are proposed along the entire western perimeter of the lot and various height and opacity shrubs will be planted along the entire southern perimeter of the lot. In addition, 9 trees will be planted around the perimeter. As illustrated in Exhibit A – LU 207 and LU 208 this will provide a continuous visual buffer between the parking lot and SW Sherman Drive and with the addition of distance and stormwater plantings between the lot and Boeckman Road. The shrubs will screen the cars and headlights. In combination with the layers of trees and other landscaping between the street right-of-way and the building will provide an appropriate and pleasing buffer between the school use and the residences to the west.
- **Frog Pond West Master Plan.** Foundation landscaping will be installed along the Boeckman Road frontage between the sidewalk and the wall/fence per the Frog Pond West Master Plan.

**(.03) Landscaped Area.** 54% of the school site will be landscaped; well over the required minimum of 15%.

**(.04) Buffering and screening.** The school will be well screened from surrounding properties by virtue of distance, and:

- Phase 1 parking lot with a low screen along the west and south edges.
- Phase 2 parking lot with a low screen along the north edge and a buffering future park along the east edge.
- Significant naturalized buffer to the south of the school including stormwater plantings, ornamental plantings, meadow, and reforestation.

**(.05) Sight-Obscuring Fence or Planting.** This section requires the installation of required sight-obscuring fencing and planting prior to occupancy. The district fully intends to comply and have all required landscaping and buffering in place prior to opening the school.

**(.06) Plant Materials.** This section specifies the minimum sizes and coverage for new landscaping. These standards will be met or exceeded as shown on the landscaping plan sheets.

**(.07) Installation and Maintenance.** The installation requirements will be followed, and an irrigation system is proposed.

**(.08) Landscaping on Corner Lots.** The landscaping plan demonstrates that vision clearance will be maintained at street and driveway intersections.

**(.09) Landscape Plans.** This section requires landscape plans. The landscape plan sheets provided in this application comply with the requirements of this section.

**(.10) Completion of Landscaping.** The district shall install and maintain landscaping as required by this section.

**(.11) Street Trees Not Typically Part of Site Landscaping.** This section segregates street trees from other landscaping requirements. The landscaping plan is consistent with the Frog Pond West Master Plan by proposing street trees and landscaping as described in the plan.

**(.12) Mitigation and restoration plantings.** As shown in the tree planting plans (Exhibit A – LU 206), the 40 qualifying (6” dbh and larger) removed trees will be mitigated by more than 40 new trees. All new landscaping shall be properly maintained as described in this code section.

#### 4.177 Street Improvement Standards

This section provides the requirements for street, sidewalk, bicycle, and other public transportation facility improvements. The district’s engineering consultant has coordinated closely with the city’s engineering department, and the improvements shown are consistent with city requirements.

##### **(.02) Street Design Standards.**

- A. Improvements and intersections.** The proposed street improvements are consistent with the Frog Pond West Master Plan and requirements from the City Engineer, and the provide the necessary connections with existing and future development.
- B. City Engineer determination.** The right-of-way widths and street elements have been designed in coordination with the City Engineer.
- C. Rights-of-way.** As noted in the application, the appropriate street right-of-way dedications will be made in conjunction with the proposed primary school.
- D. Dead-end streets.** No dead-end streets are proposed.
- E. Corner or clear vision area.** Appropriate vision clearance will be provided along the entire street frontage by planting street trees and other landscaping that will comply with the standards in this section.
- F. Vertical clearance.** Nothing proposed in this application will include vegetation or structures over pavement surfaces. As street trees mature, they will extend over the pavement, but will be able to meet the minimum 15-foot clearance requirement.
- G. Interim improvement standard.** SW Brisband Street will be extended from the development to the east to the existing SW Sherman Drive intersection. The applicant will provide the minimum required half-street improvement which will require at least 22-ft of pavement to accommodate a minimum of two traffic lanes. The south side of SW Brisband Street will include a 5.0-ft sidewalk, 6.5-ft planter or LIDA facility, and the 22-ft of paving in the interim as coordinated with city engineering staff.

**(.03) Sidewalks.** Sidewalks, which comply with city standards, are proposed along all street frontage.

**(.04) Bicycle facilities.** Bicycle facilities are only required along the SW Boeckman Road frontage, and the existing bike lane will remain along this frontage as designed and constructed by the city.

**(.05) Multiuse pathways.** Such pathways are not proposed by the applicant. The site will include several pathway connections, to allow for safe and convenient pedestrian and bicycle access throughout the site and with the surrounding neighborhood.

**(.06) Transit improvements.** Such improvements are not required or proposed.

**(.07) Residential private access drives.** Not applicable.

**(.08) Access drive and driveway approach development standards.**

- A. Access drives and clear travel lane.** The proposed access drives on the site are designed to satisfy city standards for pavement widths and clearances.
- B. Access drive construction.** The access driveways are proposed to support the required 23-ton minimum.
- C. Emergency vehicle access.** Emergency vehicle access has been reviewed and approved by TVF&R.
- D. Secondary emergency access.** Emergency vehicle access has been reviewed and approved by TVF&R.
- E. Access commensurate with the use.** The proposed access to the school building, parking lots, and bus circulation have been reviewed with city staff and found to be appropriate for the school use.
- F. Minimize approaches on higher classification streets.** The primary access to the school will be provided by the driveways on SW Brisband Street and SW Sherman Drive, which are local streets. The bus access on Boeckman Road has received the endorsement of the City Engineer and consulting traffic engineer.
- G. Access limitations.** As noted, the access to the site have been held to a minimum while providing suitable accessibility to the site.
- H. Common access drives.** This is not applicable because there is no current potential to share driveways with adjoining properties.
- I. No obstruction in the public right-of-way.** The circulation system for the three proposed driveway entrances provides sufficient space to avoid traffic backing out onto adjoining public streets.
- J. Drive-through and storage facilities.** This is not applicable because no drive-through or storage facilities are proposed
- K. Driveway approaches no wider than necessary.** The driveway entrances are properly sized for the anticipate traffic loads and types of vehicles. This has been reviewed by the consulting traffic engineer with no recommended amendments.



- L. Traffic calming.** No specific traffic calming techniques are currently proposed by the city or the district.
- M. Safe maneuvering near loading areas.** The site plan provides sufficient space in the vicinity of the trash/recycling and loading area for the school. This arrangement has been approved by Republic Services.
- N. Driveway culvert crossing.** Not applicable.
- O. Temporary construction access.** The district will work with the City Engineer and building department to provide appropriate construction access that will prevent mud being tracked out onto the street.
- P. Residential and mixed use driveways.** Not applicable.

**(.09) Minimum intersection spacing standards.** Streets and driveways shall be aligned appropriately as demonstrated in the plans for the school.

**(.10) Exceptions and adjustments.** Not applicable because none are requested.

#### **4.179 Mixed Solid Waste and Recycling**

The design of the existing solid waste and recycling facilities on the site were designed to satisfy city and Republic Services requirements. An approval letter was submitted by Republic Services (Exhibit D).

#### **4.199 Outdoor Lighting**

The property is within Lighting Overlay Zone 2. The exterior lighting plan complies with the performance standards in 4.199.40(.01)C by:

- Showing a weighted average percentage of direct uplight lumens less than 5% per Table 9.
- Showing that the maximum light level at the property line or adjacent public right-of-way is less than the values in Table 9, by including a photometric summary of:
  - Horizontal illuminance of 0.2 footcandles maximum.
  - Vertical illuminance on the plane facing the site up to the mounting height of the luminaire mounted highest above grade of 0.4 footcandles maximum.

The exterior lighting plan complies with the curfew requirements in 4.199.40(.01)D by controlling the exterior lighting with an astronomical timeclock that turns lighting on at dusk and turns lighting off at or before 10:00 pm.

#### **4.300 – 4.320 Underground Utilities**

These code sections generally require underground utilities. The site will be developed with underground utilities, to the extent allowed by PGE, satisfying this requirement.

#### 4.400 Purpose – Site Design Review

**(.01) Discourage excessive uniformity and poor design.** School properties have proven to be significant community assets. The design of the building and site improvements are consistent with the Frog Pond West Master Plan. The one-story scale and residential character of the building design are complementary to the surrounding residential neighborhood. The exterior finish materials are residential in character, including:

- Brick.
- Wood-like siding.
- Windows for natural daylight and views.
- Pitched roofs for much of the school building.

**(.02) A number of objectives are noted in the purpose section.** These are addressed below:

- A. Proper function.** The proposed improvements stress functionality relating to school operations, safe and convenient accessibility to and from the site for all modes, low-maintenance landscaping, and appealing and durable exterior finishes.
- B. Encourage originality, flexibility, and innovation.** The design of the school and supporting facilities demonstrate the district’s commitment to innovation, continuing to improve school design, and value to its students by facilitating opportunities for high-quality education.
- C. Discourage drab, inharmonious developments.** The district and its design team have devoted a great deal of effort in creating a building and site design that will be visually appealing and functional. The primary design philosophy is to be a good neighbor by:
- Designing a single-story structure to be a consistent scale to neighborhood.
  - Centering the building and activity areas on the site and maximizing setbacks.
  - Building rotated from cardinal directions to create more interesting viewing angles (both from outside and inside), outdoor adjacencies and outdoor spaces.
  - Providing walking paths available outside of school hours.
  - Providing a playground with accessible surfacing / activities available outside school hours.
- D. Conserve the city’s beauty.** The architectural integrity of this new facility will retain much of the open feeling of site by the residential scale of the building, sufficient building setbacks in all directions, and a landscape that exceeds city standards.
- E. Promote businesses and industry.** A quality education program is the cornerstone for attracting business and industry to a community. This new school demonstrates the district’s continued commitment to a well-rounded education.
- F. Property values.** The proposed improvements will be well within the property and should not have any negative impact on surrounding properties or their value. In fact, having a new primary school serving the neighborhood may enhance values.

- G. Adequate public facilities.** Facilities are currently available or will be provided. Most important, the primary school, along with the public facilities to support it, were contemplated in the Frog Pond master planning process.
- H. Pleasant environments.** As noted above, the school design and proposed landscaping will be visually and functionally harmonious with the surrounding neighborhood.
- I. Foster civic pride.** In addition to education, the school serves as a community center, fostering civic pride. In particular, this new school will provide improved educational and cultural opportunities for the community.
- J. Sustain comfort, health, tranquility and contentment of residents.** Quality educational facilities are certainly a contributing factor to achieving this objective.

#### 4.421 Criteria and Application of Design Standards

**(.01) Evaluation Standards.** The standards of this section are addressed below:

- A. Preservation of landscape.** Although the site will be significantly changed from a small acreage tract to a school, the general appearance of the landscape will be retained by providing significant open space around the new school building.
- B. Relation of proposed building to the environment.** This site does not include any environmentally sensitive areas. In addition, the amount of landscaping and open space is maximized with complementary facilities to mitigate potential stormwater impacts.
- C. Drives, parking and circulation.** Pedestrian, bicycle, vehicle, bus, and emergency access will be successfully accommodated by establishing separate and convenient routes for pedestrians and bicyclists on site. In addition, circulation to and from the site have been designed to operate safely as confirmed in the DKS traffic analysis.
- D. Surface water drainage.** This criterion is satisfied as described above. The storm drainage system is designed to accommodate the new impervious surface of the building addition, driveways, parking, and other improvements. New LID facilities, such as vegetated storm water planters, have been integrated into the design meet the stormwater management requirements for water quality treatment and flow control.
- E. Utility service.** All on-site utilities will be placed underground.
- F. Advertising features.** No advertising features are proposed that would be visible along the perimeter of the site.
- G. Special features.** Storage, loading, and solid waste/recycling area will be set back and visually buffered from surrounding residences.

**(.03) Guidance by the purpose statement.** The purpose statement in Section 4.400 is also used to evaluate development proposals. The purpose statement and related objectives are addressed above.

#### 4.430 Mixed Solid Waste and Recycling Areas

**(.02) Location Standards:**

- A. Co-locate recyclables with mixed solid waste.** The recycling and solid water facilities will be in the same location.
- B. Compliance with Uniform Building and Fire Code requirements.** The trash/recycling enclosure has been designed to satisfy building and fire code requirements.
- C. Storage area space in single or multiple locations may use interior and exterior locations.** The trash/recycling area will be enclosed within a wall and sight-obscuring gate.
- D. Exterior storage areas can be located within interior side yard or rear yard areas.** The storage area will be enclosed, and it will not be within a required yard area.
- E. Exterior storage areas located to enhance security for users.** The proposed arrangement for trash/recycling is typical of the district's schools to provide suitable security for staff.
- F. Exterior storage areas can be located in a parking areas.** Not applicable.
- G. Access for collection vehicles.** Appropriate access will be provided for vehicles. Republic Services has reviewed and approved the proposed plan. In addition, adequate space is provided to allow vehicles to access this area without impeding pedestrian or vehicle circulation on the site.

**(.03) Design Standards:**

- A. Storage area dimensions.** The storage area dimensions are appropriate and have been reviewed and approved by Republic Services.
- B. Storage container design and materials.** Will meet applicable code requirements, and they have been reviewed and approved by Republic Services.
- C. Exterior storage areas shall be enclosed by a sight obscuring fence, wall or hedge at least six feet in height, with minimum 10-foot wide gate openings, and compliance with vision clearance requirements.** The storage area will be surrounded by a wall of approximately 13 feet, with a gate opening of greater than 10 feet, and a location outside of any vision clearance area.
- D. Storage area(s) and containers shall be clearly labeled.** The containers will be labeled to avoid any confusion about where to deposit trash and recyclable materials.



**(.04) Access Standards:**

- A. Access to storage areas accessibility to users.** The storage will only be accessible to district personnel and other authorized persons.
- B. Storage areas shall be designed to be easily accessible to collection trucks and equipment.** The trash/recycling area will be easily accessible, and the proposed access has been reviewed and approved by Republic Services.
- C. Storage areas shall be accessible to collection vehicles without requiring backing out of a driveway onto a public street.** Access is proposed from the front driveway.

**4.600 Tree Preservation and Protection (through 4.640.2)**

**Section 4.610.10(.01) contains the standards for tree removal.** The proposed removal of 40 trees satisfies the applicable criteria in this section because:

- A. SROZ.** Not applicable because the proposed improvements do not include any work or tree removal in an SROZ.
- B. Preservation and Conservation.** This section indicates that no application shall be denied due to tree removal. In this case, the proposed location of the building, driveways, parking lot and fire lane necessitated removal and replacement of 40 trees 6-inch dbh and greater.
- C. Developmental Alternatives.** The necessary location of the school building, and other improvements necessitate the removal of many of the existing trees located near the existing residence and accessory buildings. The location of the fire lane in the northeast corner of the site necessitates removal of trees along the east property line. Other trees along the boundary between the school parcel and future city park may be retained, although some more may need to be removed to make way for Phase 2 improvements. The Phase 1 tree removal will be mitigated by the planting of more than 40 new trees throughout the site.
- D. Land Clearing.** Because of the scale of the project, most of the site will need to be cleared. However, it will be restored with new landscaping that is integrated with the site design and the character of the emerging neighborhood, which surrounds the site.
- E. Residential Development.** Not applicable.
- F. Compliance with Statutes and Ordinances.** The proposed tree removal and replacement meets city requirements and is not in conflict with any other regulations.
- G. Relocation or Replacement.** Relocating the trees will not be feasible, but they will be replaced at a ratio greater than 1:1. The trees to remain will be protected as shown in the landscaping plans. Section 4.620.10 contains the city requirements for tree protection during construction. As indicated on the landscaping plans, appropriate protection will be provided for trees and other landscaping that is to be retained.

**H. Limitation.** The removal and replacement of existing trees is necessary to accommodate construction, as noted above.

## **CONCLUSION**

The proposed improvements satisfy all the relevant criteria for Master Plan, Site Design Review, Type C Tree Removal, and sign waiver approval as demonstrated above.



**SURVEYOR'S CERTIFICATE**

I, JOSEPH C. McALLISTER, A REGISTERED PROFESSIONAL LAND SURVEYOR IN THE STATE OF OREGON, HEREBY CERTIFY THAT I HAVE CORRECTLY SURVEYED AND MARKED WITH PROPER MONUMENTS THE LAND SHOWN AND REPRESENTED ON THE ATTACHED PARTITION PLAT, THE BOUNDARY OF WHICH BEING DESCRIBED AS FOLLOWS:

A TRACT OF LAND LOCATED IN THE SOUTHEAST ONE-QUARTER OF SECTION 12, TOWNSHIP 3 SOUTH, RANGE 1 WEST, WILLAMETTE MERIDIAN, CLACKAMAS COUNTY, OREGON, BEING PARCEL 1 OF PARTITION PLAT NO. 2019-047, CLACKAMAS COUNTY PLAT RECORDS AND THAT TRACT OF LAND DESCRIBED IN DOCUMENT NO. 99-052396, CLACKAMAS COUNTY DEED RECORDS, THE OUTBOUNDS THEREOF BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

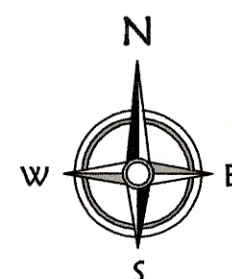
BEGINNING AT A FOUND 5/8 INCH DIAMETER IRON ROD WITH A YELLOW PLASTIC CAP STAMPED "OTAK INC" ON THE NORTH RIGHT OF WAY LINE OF BROECKMAN ROAD (COUNTY ROAD NO. 80, 30.00 FEET FROM CENTERLINE), BEING THE SOUTHWEST CORNER OF "STAFFORD MEADOWS", PLAT NO. 4558, CLACKAMAS COUNTY PLAT RECORDS; THENCE ALONG SAID NORTH RIGHT OF WAY LINE, S.89°48'27"W., 503.17 FEET TO A 5/8 INCH DIAMETER IRON ROD WITH A YELLOW PLASTIC CAP STAMPED "COMPASS LAND SURVEYORS" AT THE SOUTHEAST CORNER OF DEDICATION DOCUMENT 2019-010342, CLACKAMAS DEED RECORDS; THENCE ALONG THE EAST LINE OF SAID DOCUMENT NO. 2019-010342, BEING 28.00 FEET EAST OF AND PARALLEL WITH THE EAST LINE OF "MORGAN FARM", PLAT NO. 4566, CLACKAMAS COUNTY PLAT RECORDS, N.00°03'30"E., 827.88 FEET TO A 5/8 INCH DIAMETER IRON ROD WITH A YELLOW PLASTIC CAP STAMPED "COMPASS LAND SURVEYORS" ON THE NORTH LINE OF AFORESAID DOCUMENT NO. 99-052396; THENCE, ALONG SAID NORTH LINE OF SAID DOCUMENT, N.89°47'54"E., 449.02 FEET TO A 5/8 INCH DIAMETER IRON ROD WITH A YELLOW PLASTIC CAP STAMPED "COMPASS LAND SURVEYORS" AT THE NORTHWEST CORNER OF DEDICATION DOCUMENT NO. 2022-047267, CLACKAMAS COUNTY DEED RECORDS; THENCE, ALONG THE WEST LINE OF SAID DOCUMENT, S.00°21'07"E., 41.77 FEET TO A 5/8 INCH DIAMETER IRON ROD WITH A YELLOW PLASTIC CAP STAMPED "COMPASS LAND SURVEYORS" AT THE SOUTHWEST CORNER THEREOF; THENCE ALONG THE SOUTH LINE THEREOF AND ITS EASTERLY EXTENSION, BEING THE SOUTH LINE OF DEDICATION DOCUMENT NO. 2020-064209, CLACKAMAS COUNTY DEED RECORDS, N.89°38'53"E., 430.33 FEET TO A 5/8 INCH DIAMETER IRON ROD WITH A YELLOW PLASTIC CAP STAMPED "COMPASS LAND SURVEYORS" AT THE SOUTHEAST CORNER OF SAID DOCUMENT NO. 2020-064209, BEING ON THE EAST LINE OF PARCEL 1 OF SAID PARTITION PLAT NO. 2019-047; THENCE, ALONG THE EAST LINE OF SAID PARCEL 1, S.00°04'03"W., 358.13 FEET, TO THE SOUTHEAST CORNER THEREOF; THENCE, ALONG THE SOUTH LINE OF SAID PARCEL 1, S.89°48'47"W., 376.31 FEET TO THE SOUTHERLY REENTRANT CORNER OF SAID PARCEL 1; THENCE ALONG THE EAST LINE OF THE FLAG PORTION OF SAID PARCEL 1, S.00°04'23"W., 429.29 FEET TO THE POINT OF BEGINNING, CONTAINING 548,961 SQUARE FEET (12.60 ACRES), MORE OR LESS.

**NARRATIVE**

- CLIENT: WEST LINN WILSONVILLE SCHOOL DISTRICT
- PURPOSE: THE PURPOSE OF THIS SURVEY IS TO LOCATE AND MONUMENT A PROPERTY LINE ADJUSTMENT BY PARTITION PLAT, BETWEEN THAT TRACT OF LAND DESCRIBED IN DEED NO. 99-052396, CLACKAMAS COUNTY DEED RECORDS AND PARCEL 1, PARTITION PLAT NO. 2019-047, CLACKAMAS COUNTY PLAT RECORDS PER CLACKAMAS COUNTY PLANNING FILE XX-XXX-XX.
- BASIS OF BEARINGS: THE EAST LINE OF "MORGAN FARM", PLAT NO. 4566, CLACKAMAS COUNTY PLAT RECORDS, BETWEEN THE FOUND 5/8 INCH DIAMETER IRON ROD WITH A YELLOW PLASTIC CAP STAMPED "PIONEER DESIGN" AT THE NORTHEAST CORNER AND THE FOUND 5/8 INCH DIAMETER IRON ROD WITH A YELLOW PLASTIC CAP STAMPED "PIONEER DESIGN" AT THE SOUTHEAST CORNER THEREOF, WAS HELD TO BE S.00°03'30"W., AS DETERMINED BY GPS OBSERVATIONS TIED TO THE OREGON REAL-TIME GNSS NETWORK (ORGN) (OREGON COORDINATE REFERENCE SYSTEM NAD 83 (2011), PORTLAND ZONE EPOCH 2010). THE WEST LINE OF DOCUMENT NO. 99-052396 BEING ESTABLISHED 28.00 FEET EAST OF AND PARALLEL WITH SAID LINE PER DEDICATION DOCUMENT 2019-010342, CLACKAMAS COUNTY DEED RECORDS.
- THE EASTERLY SUBJECT TRACT, BEING PARCEL 1, OF AFORESAID PARTITION PLAT NO. 2019-047, WAS HELD TO THE MONUMENTS THEREOF, BEING FOUND AND HELD AS SHOWN. THE WEST LINE OF SAID PARCEL 1 BEING THE EAST LINE OF AFORESAID DOCUMENT NO. 99-052396.
- THE NORTH LINE OF THE DOCUMENT NO. 99-052396, WAS HELD TO THE LINE BETWEEN THE FOUND MONUMENT AT THE NORTHEAST CORNER OF "MORGAN FARMS" TO THE FOUND MONUMENT AT THE NORTHWEST CORNER OF PARCEL 1 OF SAID PARTITION PLAT 2019-047.
- THE SOUTH LINE OF DOUMENT NO. 99-052396, BEING THE NORTH RIGHT OF WAY LINE OF SW BROECKMAN ROAD (COUNTY ROAD NO. 80, 30.00 FEET FROM CENTERLINE), WAS HELD TO THE LINE BETWEEN THE FOUND MONUMENT AT THE SOUTHEAST CORNER OF "MORGAN FARMS" TO THE MONUMENT FOUND AT THE SOUTHWEST CORNER OF PARCEL 1, PARTITION PLAT NO. 2019-047.
- THE PROPERTY LINE WAS ADJUSTED AND THE PROPERTIES PARTITIONED AT THE CLIENTS DIRECTION IN ACCORDANCE WITH CLACKAMAS COUNTY PLANNING FILE NO. XX-XXX-XXX.

**PRELIMINARY PARTITION PLAT NO. 2022-\_\_\_\_\_**  
**LOCATED IN SOUTHEAST 1/4 SECTION 12, T.3S., R.1W., W.M.**  
**CLACKAMAS COUNTY, OREGON**

**CLACKAMAS COUNTY PLANNING AND ZONING CASE FILE NO.**  
**SEPTEMBER 2022 SHEET 1 OF 3**  
**SCALE: 1" = 100'**



**APPROVALS**

APPROVED THIS \_\_\_\_\_ DAY OF \_\_\_\_\_, 2022

CLACKAMAS COUNTY PLANNING DIRECTOR

APPROVED THIS \_\_\_\_\_ DAY OF \_\_\_\_\_, 2022

CLACKAMAS COUNTY SURVEYOR; AND  
CLACKAMAS COUNTY BOARD OF COMMISSIONERS DELEGATE  
PER COUNTY CODE CHAPTER 11.02

ALL TAXES, FEES, ASSESSMENTS AND OTHER CHARGES AS PROVIDED  
BY ORS 92.095 HAVE BEEN PAID THRU JUNE 30, \_\_\_\_\_

APPROVED THIS \_\_\_\_\_ DAY OF \_\_\_\_\_, 2022  
CLACKAMAS COUNTY ASSESSOR & TAX COLLECTOR

BY: \_\_\_\_\_  
DEPUTY

STATE OF OREGON } SS  
COUNTY OF CLACKAMAS }

I DO HEREBY CERTIFY THAT THE ATTACHED PARTITION PLAT WAS RECEIVED  
FOR RECORD ON THE \_\_\_\_\_ DAY OF \_\_\_\_\_, 2022

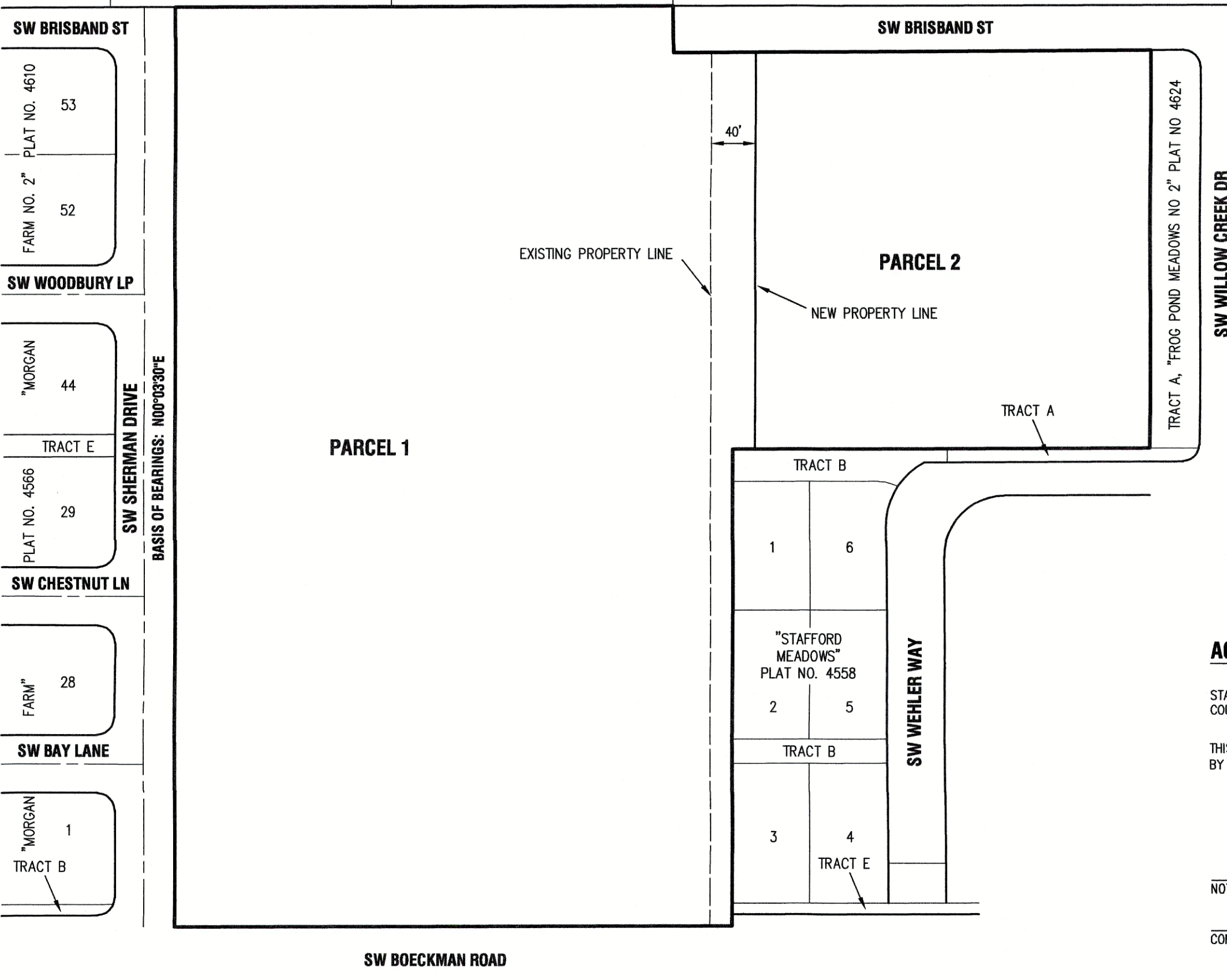
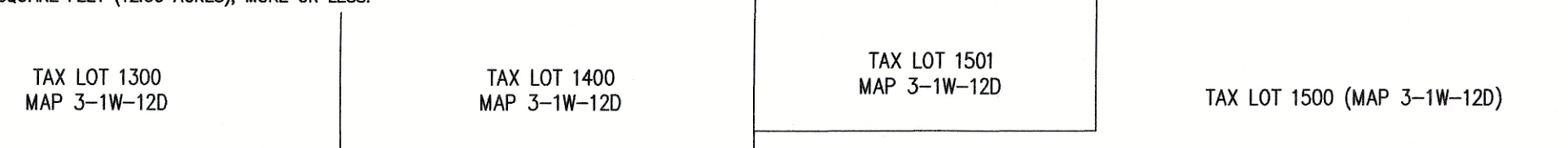
AT \_\_\_\_\_ O'CLOCK \_\_\_\_\_ M.

AS PARTITION PLAT NO. \_\_\_\_\_

DOCUMENT NO. \_\_\_\_\_

SHERRY HALL, CLACKAMAS COUNTY CLERK

BY: \_\_\_\_\_  
DEPUTY



**PLAT RESTRICTIONS**

1. THIS PARTITION IS SUBJECT TO CONDITIONS OF  
APPROVAL PER CLACKAMAS COUNTY PLANNING AND  
ZONING CASE FILE NO. \_\_\_\_\_.

**DECLARATION**

KNOW ALL PEOPLE BY THESE PRESENT THAT WEST LINN-WILSONVILLE SCHOOL DISTRICT NO. 3, OWNER OF THE LAND REPRESENTED ON THE ANNEXED MAP, AND MORE PARTICULARLY DESCRIBED IN THE ACCOMPANYING SURVEYOR'S CERTIFICATE, DOES HEREBY DECLARE THE ANNEXED MAP TO BE A CORRECT MAP OF THE PARTITION PLAT OF SAID PROPERTY AND THAT IT HAS CAUSED THIS PARTITION PLAT TO BE PREPARED AND THE PROPERTY PARTITIONED INTO PARCELS WITH EASEMENTS AS SHOWN, IN ACCORDANCE WITH THE PROVISIONS OF CHAPTER 92 OF OREGON REVISED STATUTES. THE PLATTED PROPERTY HEREON IS SUBJECT TO RESTRICTIONS AS NOTED HEREON. THE DECLARANT MAKES NO CLAIM TO LAND BEYOND THE BOUNDARY AS PLATTED AND DESCRIBED IN THE SURVEYOR'S CERTIFICATE.

KATHLEEN LUDWIG, SUPERINTENDENT  
WEST LINN-WILSONVILLE SCHOOL DISTRICT NO. 3

**ACKNOWLEDGMENT**

STATE OF OREGON } SS  
COUNTY OF CLACKAMAS }

THIS DECLARATION WAS ACKNOWLEDGED BEFORE ME ON \_\_\_\_\_, 2022  
BY KATHLEEN LUDWIG, SUPERINTENDENT, WEST LINN-WILSONVILLE SCHOOL DISTRICT NO. 3.

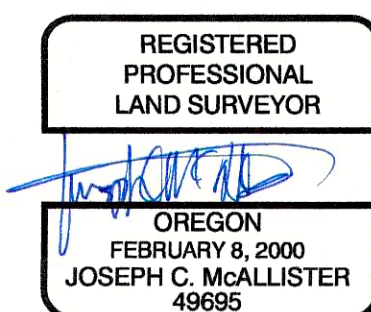
NOTARY SIGNATURE \_\_\_\_\_

NOTARY PUBLIC - OREGON \_\_\_\_\_

COMMISSION NO. \_\_\_\_\_

MY COMMISSION EXPIRES \_\_\_\_\_

**SURVEYED BY:**  
**COMPASS LAND SURVEYORS**  
**4107 INTERNATIONAL WAY, SUITE 705**  
**MILWAUKIE, OREGON 97222**  
**PHONE: (503) 653-9093**  
**8334 Part.dwg**



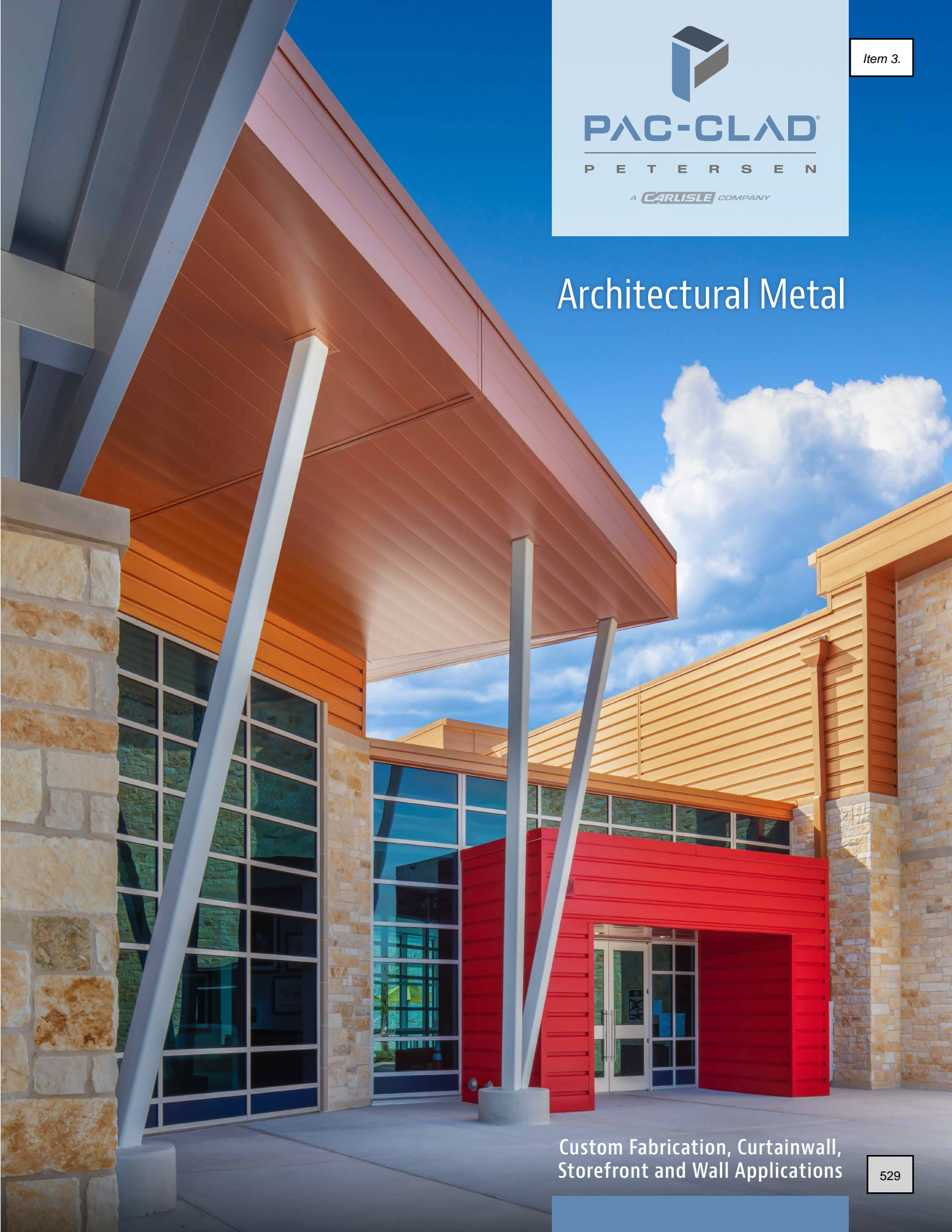
DATE OF SIGNATURE: *01/31/22*  
EXPIRES: 12/31/2022





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# Architectural Metal



Custom Fabrication, Curtainwall,  
Storefront and Wall Applications



# FLUSH AND REVEAL WALL PANELS

Flush and Reveal panels are designed for wall, fascia and soffit applications where a flat appearance is desired. A rounded interlock leg and concealed fastening system improves the flush appearance while providing additional strength. Panels are factory-formed to length to minimize field cutting. Maximum panel length is 25' and minimum panel length is 4'.

Flush panels are available in on-center dimensions designed to complement Petersen's roofing panel product line. Flush and Reveal joint configurations are available.

## PENCIL RIBS

The Flush and Reveal panels are available with optional pencil ribs. Pencil ribs are recommended for longer panel lengths. One or two ribs are available.

## INSTALLATION

Flush and Reveal panels shall be installed over a solid substrate with appropriate ice and water shield, or in limited applications over framing sections. When used in a windscreen application, panels must be fastened (stitched) through side joints. Consult a local architect/engineer for requirements of local codes and conditions.

## OPTIONAL CLIP

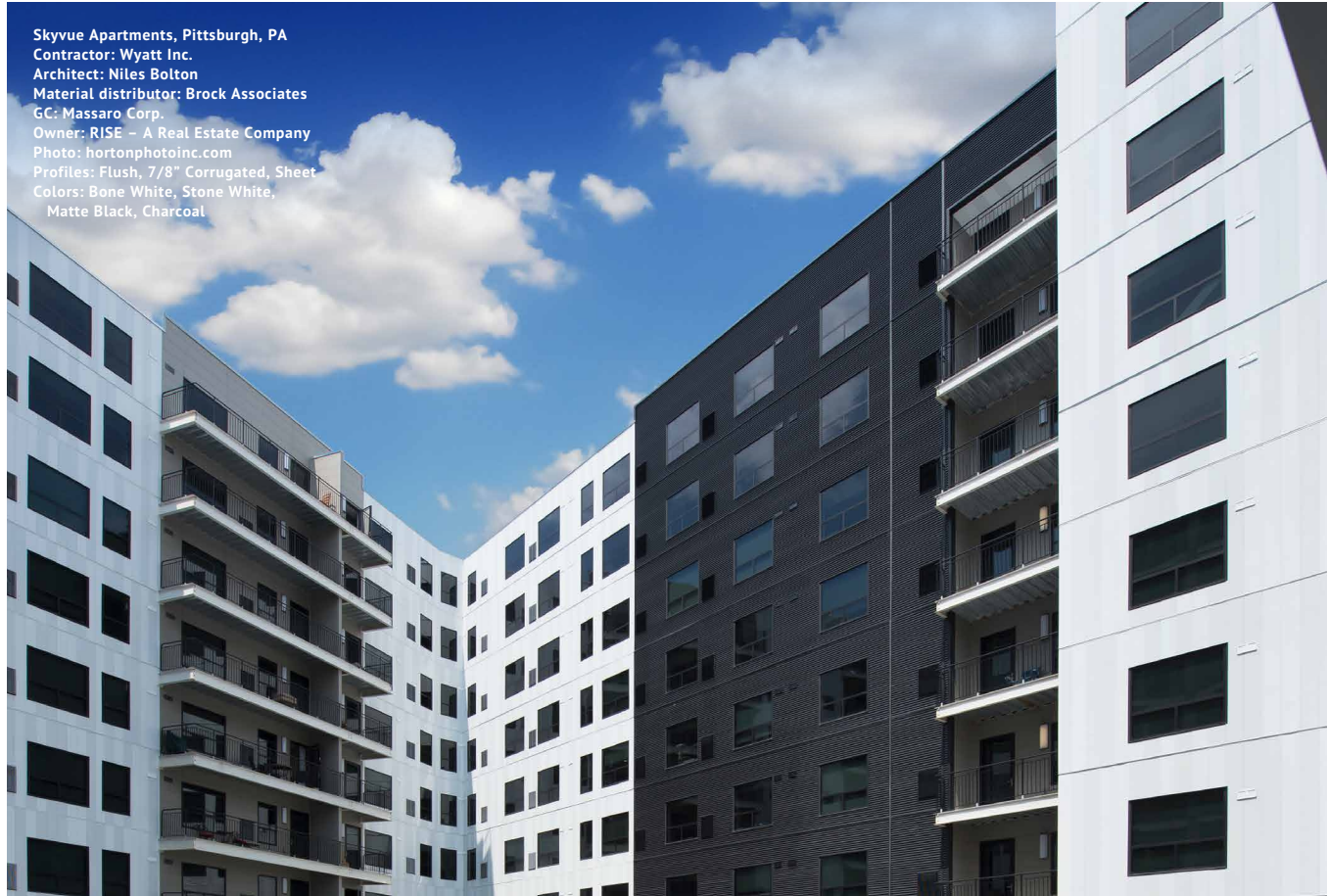
An optional patented concealed fastening clip is available to raise a panel assembly's wind resistance performance level. The optional clip has been designed and tested to resist disengagement during high-wind events.

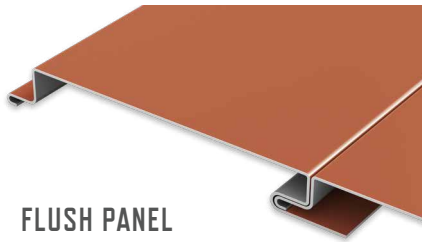
## TRIM

All flashing and trim shall be fabricated by Petersen or qualified fabricator. Flashing shall be PAC-CLAD aluminum (.032 - .063 gauge as specified) or PAC-CLAD steel (24 gauge or 22 gauge as specified). A 30-year non-prorated finish warranty can be supplied covering finish performance. Minimum bending radius is 2T; consult rep for details. Vinyl masking is recommended on all fabrication applications where extra handling is expected. NOTE: The strippable vinyl film must be removed immediately after installation.

## HORIZONTAL APPLICATIONS

When installing Flush and Reveal panels horizontally, install first panel at top of wall and proceed to bottom.





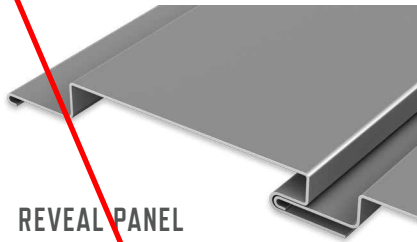
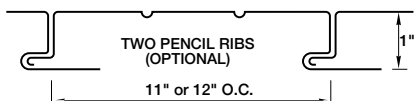
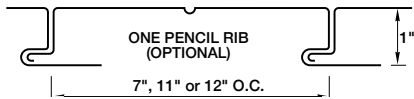
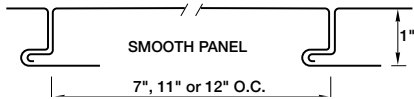
**FLUSH PANEL**

**MATERIALS**

.032 aluminum 24 gauge steel  
.040 aluminum\* 22 gauge steel\*

**SPECS**

7", 11", or 12" O.C. 1" High



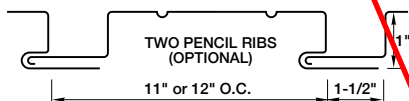
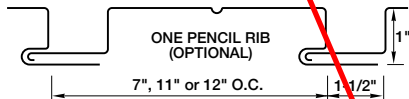
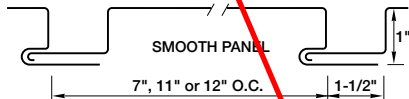
**REVEAL PANEL**

**MATERIALS**

.032 aluminum 24 gauge steel  
.040 aluminum\* 22 gauge steel\*

**SPECS**

7", 11", or 12" O.C. 1" High



**PRODUCT FEATURES**

- ▶ Available with up to two pencil ribs
- ▶ Rounded interlock leg provides improved flush fit
- ▶ Optional clips available for Miami-Dade wind resistance requirements
- ▶ 30-year non-prorated finish warranty
- ▶ Panel lengths from 4' to 25'

**MATERIAL**

- ▶ 43 stocked colors (24 gauge steel)
- ▶ 16 stocked colors (22 gauge steel)
- ▶ 36 stocked colors (.032 aluminum)
- ▶ 22 stocked colors (.040 aluminum)
- ▶ Galvalume Plus available

**ASTM TESTS - FLUSH**

- ▶ ASTM E330 tested - 12" only
- ▶ ASTM 1592
- ▶ ASTM E283
- ▶ ASTM E331
- ▶ AAMA 501.1-05

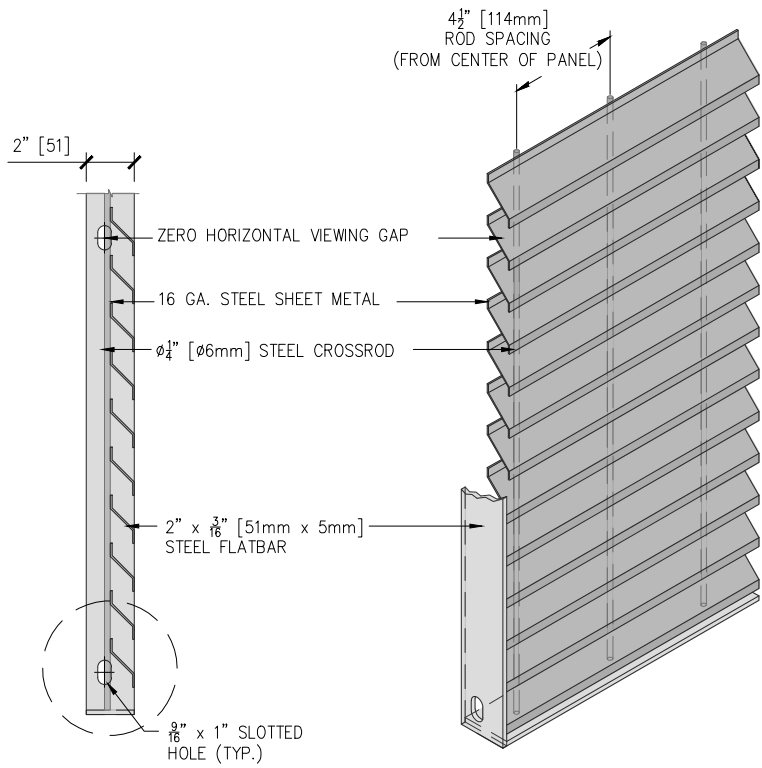
**FLORIDA BUILDING PRODUCT APPROVALS**

Please refer to [pac-clad.com](http://pac-clad.com) or your local factory for specific product approval numbers for Flush panels.

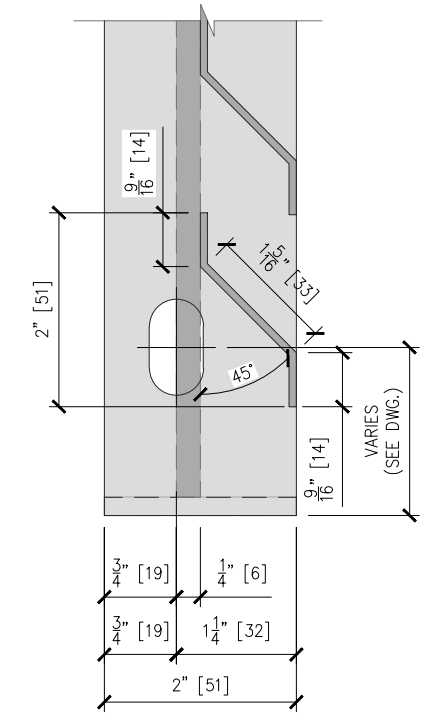
\*Limited color availability.

12" O.C. has reduced fastener flange. Clip not shown in drawings above.  
A complete specification is available online at [pac-clad.com](http://pac-clad.com).






1 GRIGLIATO SC-100 DETAIL  
 SC100 SCALE: 1-1/2"=1'-0"



2 ENLARGED VIEW  
 SC100 SCALE: 6"=1'-0"

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DATE: 3/17/21		





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NO.	DESCRIPTION	DATE
1	CD CHECK SHEET #1	2024-11-04
2	RFP CONSTRUCTION DOCUMENTS	2024-12-16

**NOT FOR CONSTRUCTION**

CONSULTANTS

SEAL

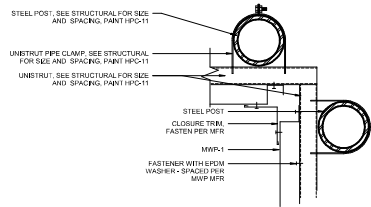
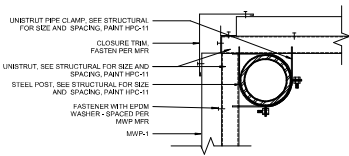
PRIME CONSULTANT  
**IBI** IBI Group  
 507 SW Honeywell Street  
 Tualatin, OR 97062, USA  
 (503) 291-8300 Fax: (503) 273-9190  
 www.ibigroup.com

PROJECT  
 New Wilsonville Primary School  
 7151 Beekman Road  
 Wilsonville, OR 97070

PROJECT NO.  
 137469

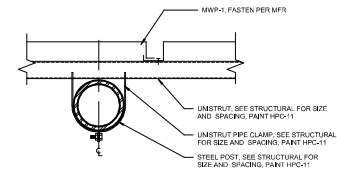
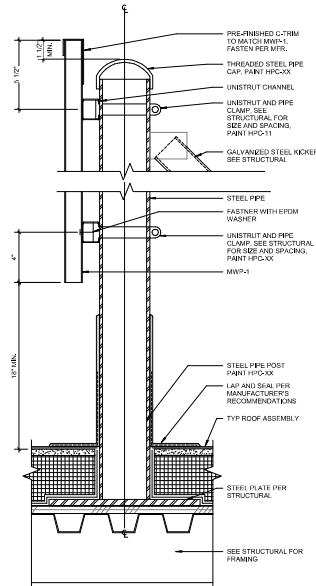
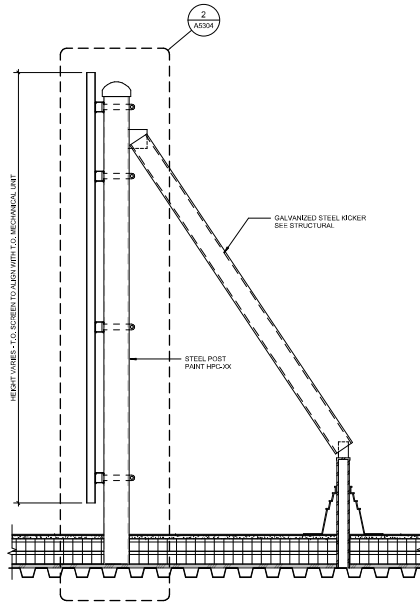
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 ROOF DETAILS -  
 MECHANICAL SCREEN

SHEET  
 534

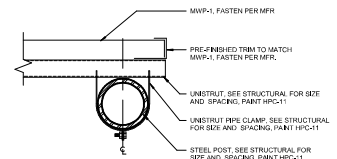


**5 MECHANICAL SCREEN OUTSIDE CORNER**  
 SCALE: 3/4"=1'-0"

**6 MECHANICAL SCREEN INSIDE CORNER**  
 SCALE: 3/4"=1'-0"



**4 MECHANICAL SCREEN PLAN**  
 SCALE: 3/4"=1'-0"



**3 MECHANICAL SCREEN END**  
 SCALE: 3/4"=1'-0"

**1 MECHANICAL SCREEN SECTION**  
 SCALE: 1/2"=1'-0"

**2 MECHANICAL SCREEN ROOF PENETRATION**  
 SCALE: 3/4"=1'-0"



# WILSONVILLE FROG POND PRIMARY SCHOOL TRANSPORTATION IMPACT ANALYSIS

OCTOBER 2022

PREPARED FOR CITY OF WILSONVILLE



PREPARED BY DKS ASSOCIATES

Scott Mansur, PE, PTOE  
Jenna Bogert, PE  
Travis Larson, EI



117 COMMERCIAL STREET NE, SUITE 310, SALEM, OR 97301 • 503.391.8773 • DKSASSOCIATES.COM

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## INTRODUCTION

This study evaluates the transportation impacts associated with the proposed Frog Pond Primary School to be located on Sherman Drive just off Boeckman Road in Wilsonville, Oregon. The West Linn-Wilsonville School District desires to construct a primary school with a future estimated capacity of 550 students that is consistent with the Frog Pond West Master Plan.<sup>1</sup> The school will be constructed in two phases, with Phase 1 accommodating 350 students (with 35 staff) and Phase 2 accommodating another 200 students (with another 10 staff) for the full buildout of 550 students (and 45 staff). For the purposes of evaluating worst case transportation impacts of the proposed primary school, the following transportation analysis assumes traffic associated with full buildout or 550 students.

The purpose of this transportation impact analysis is to identify potential mitigation measures needed to offset transportation impacts that the proposed development may have on the nearby transportation network. The impact analysis is focused on the study intersections, which were selected for evaluation in coordination with City staff. The intersections are listed below and shown on Figure 1. Table 1 lists important characteristics of the study area and proposed project.

- Boeckman Road/Stafford Road/Advance Road/Wilsonville Road
- Boeckman Road/Willow Creek Drive
- Boeckman Road/Laurel Glen Street
- Boeckman Road/Sherman Drive
- Boeckman Road/Canyon Creek Road

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<sup>1</sup> Frog Pond West Master Plan, City of Wilsonville, Adopted July 17, 2017.



**TABLE 1: STUDY AREA AND PROPOSED PROJECT CHARACTERISTICS**

STUDY AREA	
<b>NUMBER OF STUDY INTERSECTIONS</b>	Five
<b>ANALYSIS PERIODS</b>	Weekday AM Peak Hour (highest hour between 7am – 9am) Weekday Afternoon Peak Hour (highest hour between 2pm – 4pm) Weekday PM Peak Hour (highest hour between 4pm – 6pm)
PROPOSED DEVELOPMENT	
<b>SIZE AND LAND USE</b>	Primary school accommodating 550 students (12.8-acre site)
<b>NET PROJECT TRIPS</b>	406 total AM peak hour trips (220 in, 186 out) 247 total Afternoon peak hour trips (114 in, 133 out) 87 total PM peak hour trips (39 in, 48 out)
<b>VEHICLE ACCESS POINTS</b>	The Main Entrance to the site, for parents and employees, will be provided on Sherman Drive via a new eastern fourth leg of the Woodbury Loop intersection. Bus Access will be provided on Boeckman Road via a new fourth northern leg to the Laurel Glen Street intersection.



**FIGURE 1: STUDY AREA**

## 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 the streets are provided in the City of Wilsonville Transportation System Plan (TSP)<sup>2</sup> and the Frog Pond West Master Plan.<sup>3</sup>

**TABLE 2: STUDY AREA ROADWAY CHARACTERISTICS**

ROADWAY	FUNCTIONAL CLASSIFICATION	ROADWAY OWNERSHIP	POSTED SPEED	SIDEWALKS	BIKE FACILITIES	ON-STREET PARKING
<b>BOECKMAN ROAD</b>	Minor Arterial	City of Wilsonville	40 mph <sup>a</sup>	Partial <sup>b</sup>	Partial <sup>b</sup>	No
<b>ADVANCE ROAD</b>	Collector	City/County <sup>c</sup>	35 mph <sup>d</sup>	Partial <sup>e</sup>	Partial <sup>e</sup>	No
<b>STAFFORD ROAD</b>	Major Arterial	Split City/County <sup>f</sup>	45 mph <sup>g</sup>	No	No	No
<b>WILSONVILLE ROAD</b>	Minor Arterial	City of Wilsonville	35 mph	Yes	Yes	No
<b>WILLOW CREEK DRIVE</b>	Collector	City of Wilsonville	N/A	Yes	Partial <sup>h</sup>	Partial <sup>h</sup>
<b>LAUREL GLEN STREET</b>	Local	City of Wilsonville	25 mph	Yes	No	No
<b>SHERMAN DRIVE</b>	Local	City of Wilsonville	N/A	Partial <sup>i</sup>	No	Yes
<b>CANYON CREEK ROAD</b>	Minor Arterial	City of Wilsonville	35 mph <sup>j</sup>	Yes	Yes	No

<sup>a</sup> Speed limits drops to 35 mph between Willow Creek Drive and Wilsonville Road.

<sup>b</sup> Sidewalk primarily exists on south side of Boeckman Road. Bicycle lanes are intermittent.

<sup>c</sup> City of Wilsonville jurisdiction west of 60<sup>th</sup> Avenue; Clackamas County jurisdiction east of 60<sup>th</sup> Avenue.

<sup>d</sup> Speed limit increases from 35 mph to 45 mph west of 60<sup>th</sup> Avenue outside of the city.

<sup>e</sup> Sidewalk and bike lane present on the south side of Advance Road between Stafford Road and 63<sup>rd</sup> Avenue.

<sup>f</sup> City of Wilsonville jurisdiction south of Frog Pond Lane; Clackamas County jurisdiction north of Frog Pond Lane.

<sup>g</sup> Speed limit decreases to 35 mph just north of the Boeckman Road intersection.

<sup>h</sup> Bike lanes exist south of Brisband Street; on-street parking exists north of Brisband Street.

<sup>i</sup> Sidewalks currently exist on the west side of Sherman Drive. Sidewalks will exist on both sides at full subdivision buildout.

<sup>j</sup> Speed limit is 35 mph north of Boeckman Road and 30 mph south of Boeckman Road.

<sup>2</sup> Figure 3-2, Wilsonville Transportation System Plan, City of Wilsonville, Amended November 16, 2020.

<sup>3</sup> Figure 19, Frog Pond West Master Plan, City of Wilsonville, Adopted July 17, 2017.

## NEARBY BICYCLE AND PEDESTRIAN FACILITIES

The Frog Pond West neighborhood is continually developing and constructing new pedestrian and bicycle infrastructure and connectivity. Willow Creek Drive, a partially constructed collector road, will have sidewalks and bicycle lanes on both sides of the street. Sherman Drive and Brisband Street, partially constructed local streets, will have sidewalks on both sides of the street and bicycles will share the travel way with vehicles.

Within the greater transportation network, Boeckman Road has existing sidewalks on the south side and intermittent bicycle lanes on both sides of the road. There is a push-button activated Rectangular Rapid Flashing Beacon (RRFB) on the west leg of the Boeckman Road and Sherman Drive intersection. Advance Road has a bicycle lane and sidewalk on the south side of the street. Stafford Road has no bicycle or pedestrian facilities currently. Wilsonville Road has bicycle lanes and sidewalks on both sides of the street.

## NEARBY PUBLIC TRANSIT SERVICE

South Metro Area Regional Transit (SMART) provides public transportation services within Wilsonville and the outlying areas. There are no bus stops currently adjacent to the Frog Pond West neighborhood, but Route 4 covers Advance Road and Wilsonville Road with the closest stop to the project site approximately 0.15 mile south of the Wilsonville Road/ Advance Road intersection at Landover Road. After the completion of the Boeckman Dip Improvement project (UU-01), transit service is expected to be expanded to the Frog Pond West area.

## PLANNED PROJECTS

The City of Wilsonville Transportation System Plan (TSP) has a list of Higher Priority projects which includes the recommended projects reasonably expected to be funded through 2035. These are the highest priority solutions to meet the City's most important needs. The list includes the following projects that impact the key roadways near the proposed project site.<sup>4</sup>

- *RE-12A – Frog Pond West Neighborhood Collector Roads*: Construction of collector roadways within the Frog Pond West neighborhood per the West Master Plan.
- *UU-01 – Boeckman Road Dip Improvements*: Installation of bridge along Boeckman Road at the vertical curve and a new traffic signal or roundabout or at the Boeckman Road/Canyon Creek Road intersection.
- *UU-06 – Stafford Road Urban Upgrade*: Upgrade of Stafford Road from Kahle Road to Boeckman Road to applicable roadway cross-section standards.
- *UU-10 – Advance Road Urban Upgrade*: Upgrade Advance Road to collector standards starting at Stafford Road to the proposed 63<sup>rd</sup> Avenue (entrance to proposed Meridian Creek Middle School).
- *RT-01A – Boeckman Creek Trail (North)*: Construct north-south trail through east Wilsonville following Boeckman Creek, with connections to neighborhoods, parks, and intersecting roads.
- *RT-07 – Revised Frog Pond Regional Trail*: Construct the regional trail identified in the Frog Pond Area Plan.

<sup>4</sup> Table 5-3/Figure 5-4, Wilsonville Transportation System Plan, City of Wilsonville, Amended November 16, 2020.

## EXISTING TRAFFIC VOLUMES

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A combination of sources were used to determine the existing 2022 traffic volumes. New AM and Afternoon peak period turning movement count data was collected on Thursday, May 19<sup>th</sup>, 2022 at the five study intersections for the AM and Afternoon volumes. These traffic counts were collected when school was still in session capturing existing school and bus trips. No adjustment factors were applied to the new AM and Afternoon traffic counts.

Historical PM peak period turning movement count data was gathered for three of the study intersections from previous traffic studies that were collected on Thursday, September 30<sup>th</sup>, 2021. The PM volumes for the two remaining intersections, Boeckman Road/Sherman Drive and Boeckman Road/Laurel Glen Street, were estimated using the turning movement volumes from adjacent intersections and the Institute of Transportation Engineers (ITE) trip generation rates for Single-Family Detached Housing (210).<sup>5</sup> As both Sherman Drive and Laurel Glen Street are currently the only access points for their respective housing developments, turning movements were based on the number of currently constructed homes in each development. A conservative estimate of 60 completed homes was used for development off Sherman Drive and 104 homes was used for the development off Laurel Glen Street. The PM 2021 volumes were then factored up to 2022 conditions by assuming a yearly growth rate of 2%. This yearly growth rate is a typical growth rate used in Wilsonville traffic impact analyses and has been calculated using the Wilsonville Travel Demand model. Figure 2 shows the 2022 Existing AM, Afternoon, and 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 overall intersection for the PM peak period.<sup>6</sup>

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<sup>5</sup> Trip Generation Manual, 11th Edition, Institute of Transportation Engineers, 2021.

<sup>6</sup> Policy 5, Wilsonville Transportation System Plan, City of Wilsonville, Amended November 16, 2020.



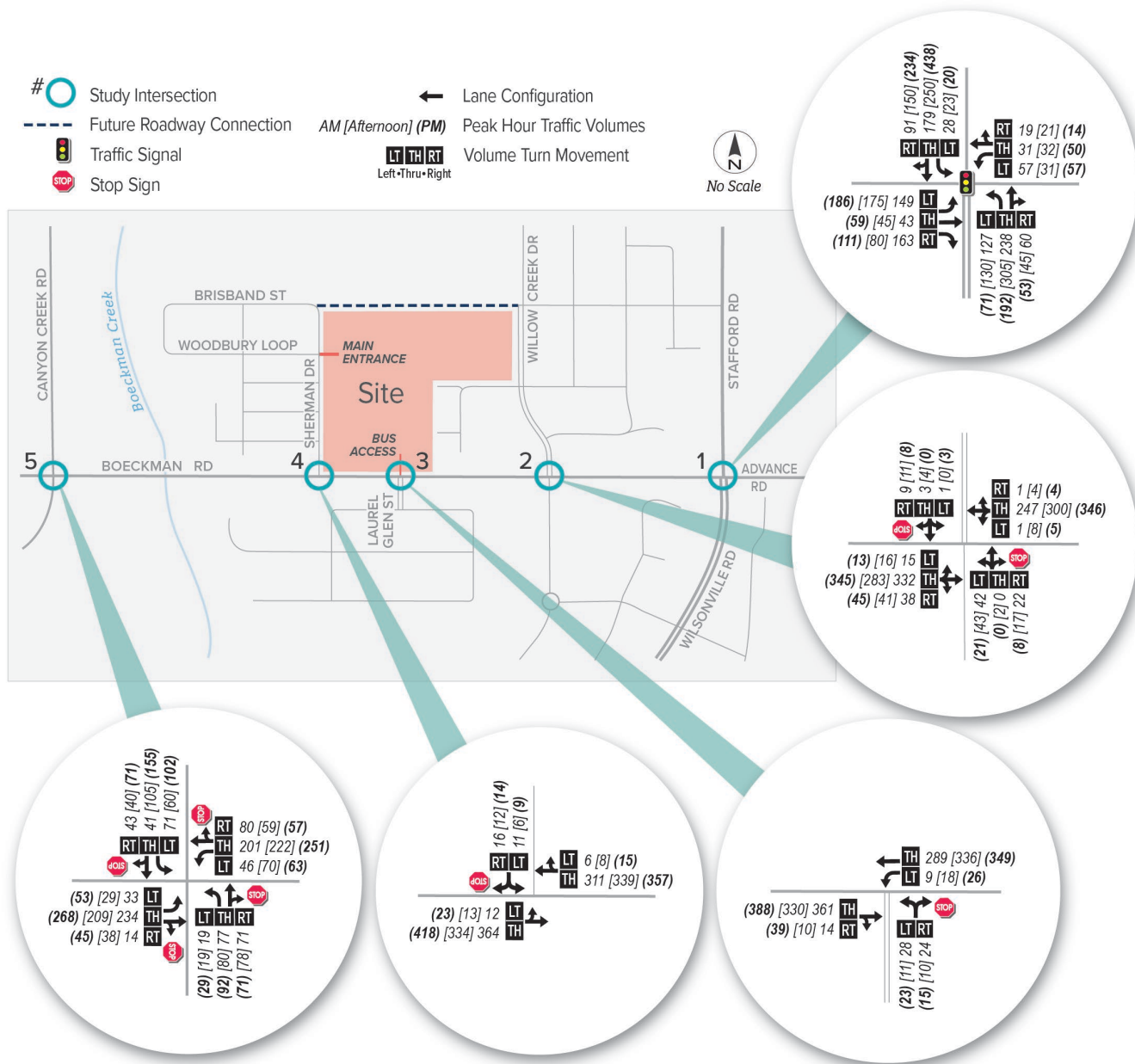


FIGURE 2: 2022 EXISTING TRAFFIC VOLUMES (AM, AFTERNOON, PM)

**EXISTING INTERSECTION OPERATIONS**

An analysis of the 2022 existing intersection operations was performed at the study intersections to determine the current operating conditions of the study area. Intersection operations were analyzed for the AM, Afternoon, and PM peak hours using Highway Capacity Manual (HCM) 6th Edition methodology.<sup>7</sup> The volume to capacity (v/c) ratio, delay, and level of service (LOS) of each study intersection are listed in Table 3.

**TABLE 3: EXISTING 2022 INTERSECTION OPERATIONS**

INTERSECTION	OPERATING STANDARD	AM PEAK HOUR			AFTERNOON PEAK HOUR			PM PEAK HOUR		
		V/C	DELAY	LOS	V/C	DELAY	LOS	V/C	DELAY	LOS
<b>SIGNALIZED CONTROL</b>										
<b>BOECKMAN RD- ADVANCE RD/ STAFFORD RD- WILSONVILLE RD</b>	LOS D	0.46	12.4	B	0.67	14.6	B	0.68	19.0	B
<b>TWO-WAY STOP-CONTROLLED</b>										
<b>BOECKMAN RD/ WILLOW CREEK DR</b>	LOS D	0.18	15.7	A/C	0.29	22.2	A/C	0.10	17.4	A/C
<b>BOECKMAN RD/ LAUREL GLEN ST</b>	LOS D	0.13	14.1	A/B	0.08	15.9	A/C	0.11	15.8	A/C
<b>BOECKMAN RD/ SHERMAN DR</b>	LOS D	0.06	12.3	A/B	0.06	13.7	A/B	0.06	13.7	A/B
<b>ALL-WAY STOP-CONTROLLED</b>										
<b>BOECKMAN RD/ CANYON CREEK RD</b>	LOS D	0.52	13.3	B	0.64	16.8	C	0.72	21.1	C

**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)

**ALL-WAY STOP CONTROLLED INTERSECTION:**  
 Delay = Average Intersection Delay (secs)  
 v/c = Critical Movement Volume-to-Capacity Ratio  
 LOS = Total Level of Service

**Bold/Highlighted = Does not meet the operating standard/mobility target**

As shown, all study intersections meet the City of Wilsonville’s operating standards for the existing conditions.

<sup>7</sup> Highway Capacity Manual, 6th Edition, Transportation Research Board, 2017.

## PROJECT IMPACTS

This chapter reviews the impacts that the proposed development may have on the study area transportation system. This analysis includes site plan evaluation, trip generation, trip distribution, and future year traffic volumes and operating conditions for the study intersections.

## PROPOSED DEVELOPMENT

The proposed development includes a primary school with a full buildout capacity of 550 students (350 students during Phase 1 and another 200 students during Phase 2). The location of the proposed development is shown on all analysis figures and is part of the Frog Pond West Master Plan.<sup>8</sup> The parcel is currently used primarily for agricultural purposes with one single-family home on it.

## 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 (AM, Afternoon, PM)
- Existing + Stage II (PM only)
- Existing + Project + Stage II (PM only)

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, for which there is only data available for the PM peak hour. The list of these developments was provided by City staff and is included in the appendix.<sup>9</sup> For this analysis, while the Frog Pond Overlook, Terrace, and Matteoni developments have not been fully approved, they were included in the Stage II list as they are part of the greater Frog Pond Master Plan.

An update of the Wilsonville Stage II Model was recently completed which sought to provide more accurate trip assignment data in a trusted platform to better serve the City. With the update, more accuracy was provided in the model which provided greater clarity to specific trip assignment for developments approved but not yet constructed. This led to some changes in intersection volumes compared to transportation studies using the previous Stage II model.

## 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., the PM peak hour). For this study, the Institute of Transportation Engineers (ITE) trip generation rates for Elementary School (520) and Single-Family Detached Housing (210) were used to estimate the

<sup>8</sup> Frog Pond West Master Plan, City of Wilsonville, Adopted July 17, 2017.

<sup>9</sup> Email from Daniel Pauly, City of Wilsonville, July 22, 2022.

site's trip generation, which is based on the maximum number of students at the school and the number of lots being removed due to the development.<sup>10</sup> As one home will be removed from the site during construction, the trips from that home have been subtracted from the total trips.

The trip generation for the proposed development is shown in Table 4. As shown, the proposed development is expected to generate a net total 406 AM peak hour trips (220 in, 186 out), 247 Afternoon peak hour trips (114 in, 133 out), and 87 PM peak hour trips (39 in, 48 out).

**TABLE 4: VEHICLE TRIP GENERATION**

LAND USE	ITE DESCRIPTION (CODE)	UNITS	AM PEAK TRIPS			AFTERNOON PEAK TRIPS			PM PEAK TRIPS			WEEK DAY
			IN	OUT	TOTAL	IN	OUT	TOTAL	IN	OUT	TOTAL	
NEW PRIMARY SCHOOL	ELEMENTARY SCHOOL (520)	550 Students	220	187	407	114	134	248	40	48	88	1,249
EXISTING HOME REMOVED	SINGLE-FAMILY HOUSING (210)	1 Lot	0	1	1	0	1	1	1	0	1	15
<b>Total Net New Trips</b>			<b>220</b>	<b>186</b>	<b>406</b>	<b>114</b>	<b>133</b>	<b>247</b>	<b>39</b>	<b>48</b>	<b>87</b>	<b>1,234</b>

In addition to the vehicular trips generated, eight school buses were included in the analysis of the transportation system and distributed based on conceptual school boundary estimates for the primary school.<sup>11</sup> The eight buses consisted of eight inbound and eight outbound trips for the AM and Afternoon peak hours which utilized the Bus Access. These school buses are denoted as one vehicle per the volume figures but were analyzed as two vehicles per HCM methodology for operations analysis. Table 5 shows the trip generation for these school buses.

**TABLE 5: SCHOOL BUS TRIP GENERATION**

LAND USE	TYPE OF ADDITIONAL TRIPS	UNITS	AM PEAK TRIPS			AFTERNOON PEAK TRIPS			PM PEAK TRIPS			WEEK DAY
			IN	OUT	TOTAL	IN	OUT	TOTAL	IN	OUT	TOTAL	
NEW PRIMARY SCHOOL	SCHOOL BUSES	Number of Buses	8	8	16	8	8	16	0	0	0	32
<b>Operations Analysis Volumes</b>			<b>16</b>	<b>16</b>	<b>31</b>	<b>16</b>	<b>16</b>	<b>32</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>64</b>

<sup>10</sup> Trip Generation Manual, 11th Edition, Institute of Transportation Engineers, 2021.

<sup>11</sup> Email from Brooke Besheone, CBRE (West Linn Wilsonville School District Representative), July 27, 2022.



## VEHICLE TRIP DISTRIBUTION

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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. The trip distribution was based on coordination with the West Linn-Wilsonville School District and conceptual future school boundary assumptions.<sup>12</sup> It is estimated that 10% of the trips are internal Frog Pond trips, 30% of trips utilize Stafford Road to/from the north, 20% of trips utilize Boeckman Road to/from the west, 5% of trips utilize Wilsonville Road to/from the south, 25% of trips utilize Advance Road to/from the east, and 10% of trips cross into the neighborhood directly south of Boeckman Road. Figure 3 shows the trip distribution for the proposed site.

## PROJECT TRIPS THROUGH CITY OF WILSONVILLE INTERCHANGE AREAS

The project trips through the two City of Wilsonville I-5 interchange areas were estimated based on the trip generation and distribution assumptions. It is estimated that 5% of the project trips are expected to travel through the I-5/Wilsonville Road interchange area and 5% are expected to travel through the I-5/Elligsen Road interchange area. Therefore, the proposed development is expected to generate one net new PM peak hour trip through the I-5/Wilsonville Road interchange area and one net new PM peak hour trip through the I-5/Elligsen Road interchange area.

## FUTURE TRAFFIC VOLUMES

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Traffic volumes were estimated at the study intersections for all the traffic analysis scenarios. Figure 4 provides the Existing + Project traffic volumes, Figure 5 provides the Existing + Stage II traffic volumes, Figure 6 and provides the Existing + Project + Stage II traffic volumes.

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<sup>12</sup> Email from Remo Douglas, West Linn Wilsonville School District, July 21, 2022.

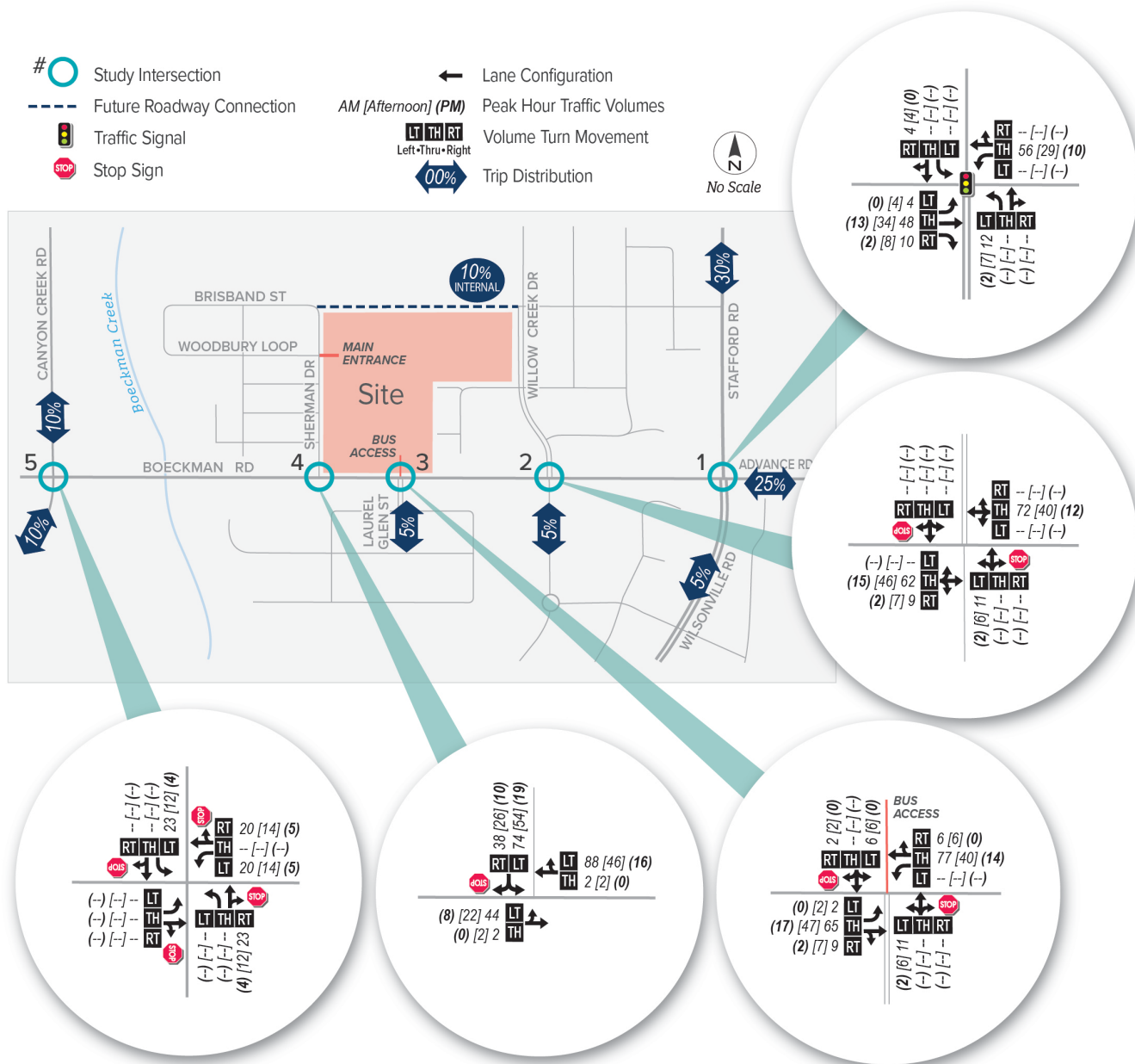


FIGURE 3: PROJECT TRIPS AND DISTRIBUTION (AM, AFTERNOON, PM)

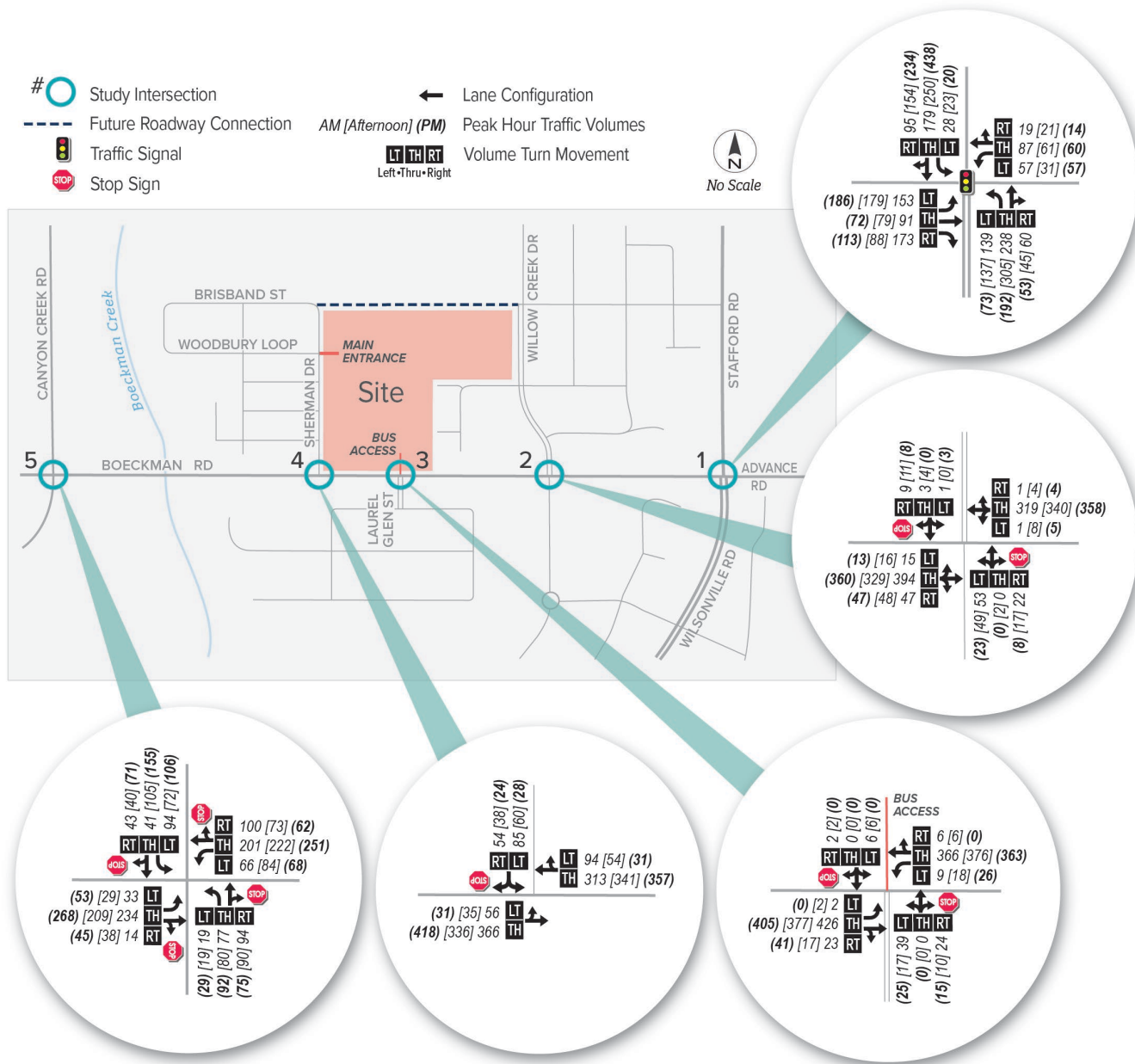


FIGURE 4: 2022 EXISTING + PROJECT TRAFFIC VOLUMES (AM, AFTERNOON, PM)

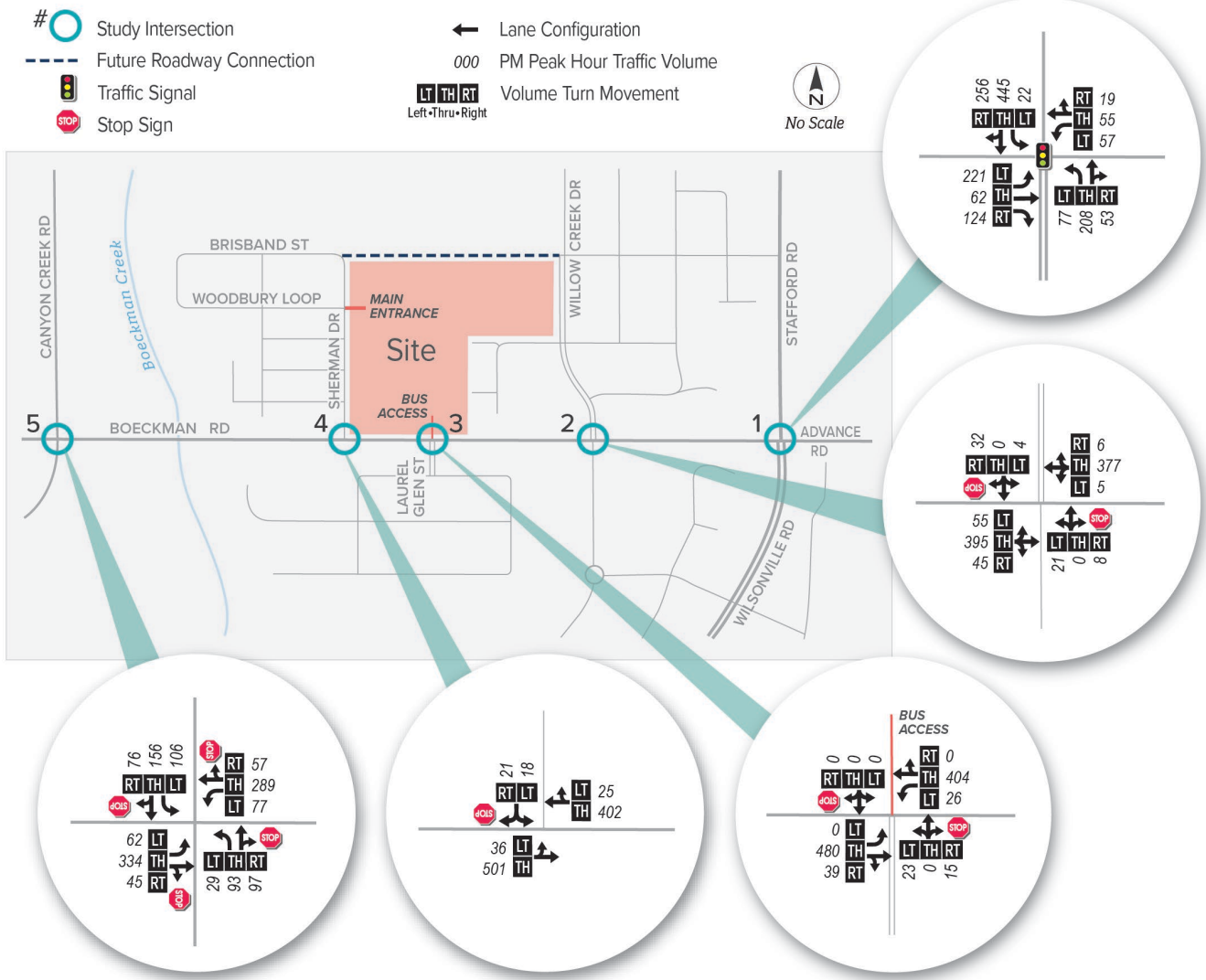
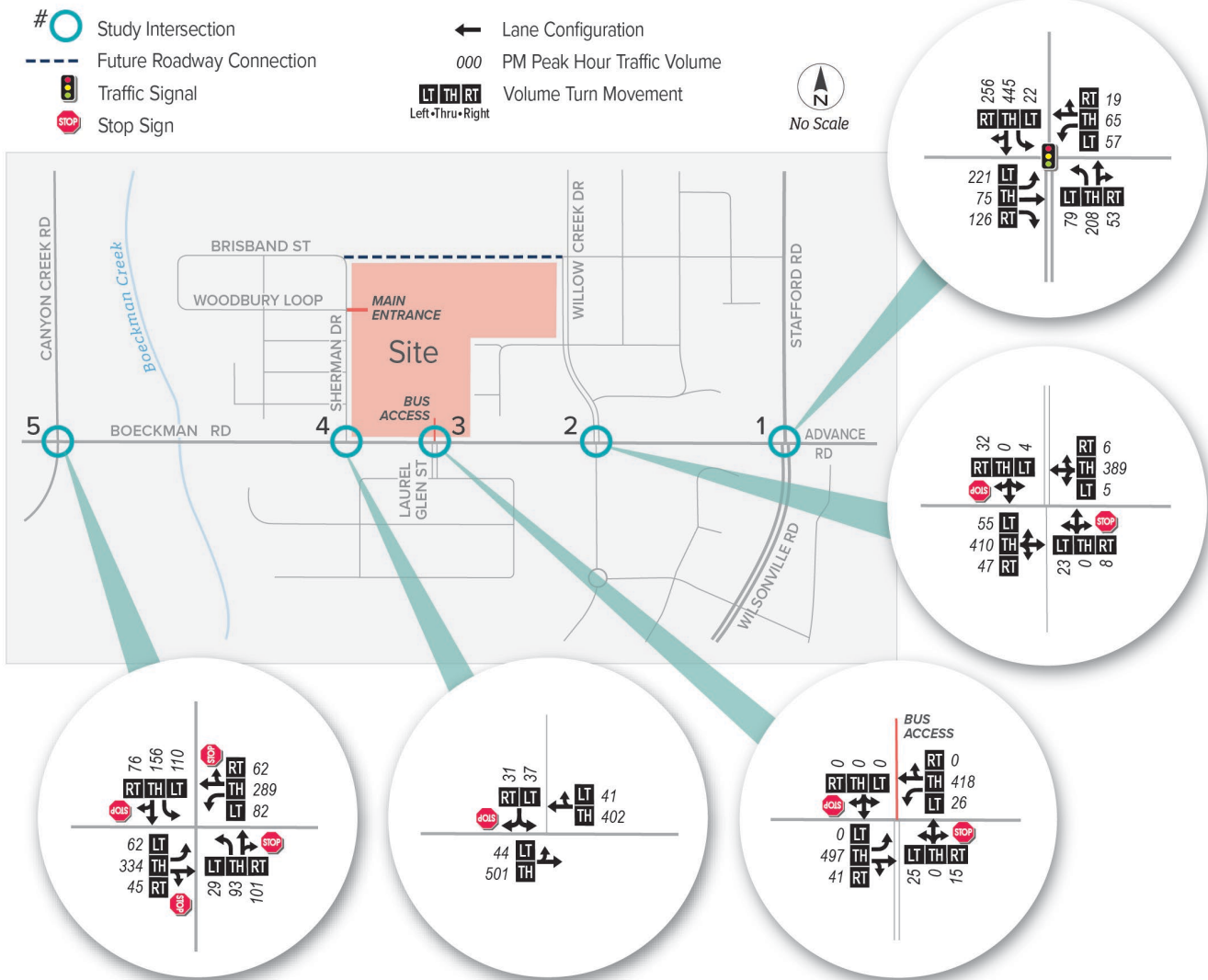


FIGURE 5: 2022 EXISTING + STAGE II TRAFFIC VOLUMES (PM ONLY)





**FIGURE 6: 2022 EXISTING + PROJECT + STAGE II TRAFFIC VOLUMES (PM ONLY)**

**FUTURE INTERSECTION OPERATIONS**

Intersection operations were analyzed for all traffic analysis scenarios at all study intersections using Highway Capacity Manual (HCM) 6th Edition methodology.<sup>13</sup> The volume to capacity (v/c) ratio, delay, and level of service (LOS) of each study intersection are listed in Table 6 and Table 7.

As shown, all study intersections except the intersection of Boeckman Road/Canyon Creek Road meet the City of Wilsonville’s operating standard.

**TABLE 6: INTERSECTION OPERATIONS – EXISTING + PROJECT (AM, AFTERNOON, PM)**

INTERSECTION	OPERATING STANDARD	AM PEAK HOUR			AFTERNOON PEAK HOUR			PM PEAK HOUR		
		V/C	DELAY	LOS	V/C	DELAY	LOS	V/C	DELAY	LOS
<b>SIGNALIZED CONTROL</b>										
<b>BOECKMAN RD- ADVANCE RD/ STAFFORD RD- WILSONVILLE RD</b>	LOS D	0.53	14.7	B	0.73	18.4	B	0.69	21.4	C
<b>TWO-WAY STOP-CONTROLLED</b>										
<b>BOECKMAN RD/ WILLOW CREEK DR</b>	LOS D	0.27	20.7	A/C	0.40	30.4	A/D	0.11	18.3	A/C
<b>BOECKMAN RD/ LAUREL GLEN ST</b>	LOS D	0.24	20.6	A/C	0.11	24.4	A/C	0.14	18.6	A/C
<b>BOECKMAN RD/ SHERMAN DR</b>	LOS D	0.41	21.4	A/C	0.43	25.2	A/D	0.15	16.2	A/C
<b>ALL-WAY STOP-CONTROLLED</b>										
<b>BOECKMAN RD/ CANYON CREEK RD</b>	LOS D	0.59	14.8	B	0.69	18.2	C	0.73	21.7	C

**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)

**ALL-WAY STOP CONTROLLED INTERSECTION:**  
 Delay = Average Intersection Delay (secs)  
 v/c = Critical Movement Volume-to-Capacity Ratio  
 LOS = Total Level of Service

**Bold/Highlighted = Does not meet the operating standard/mobility target**

<sup>13</sup> Highway Capacity Manual, 6th Edition, Transportation Research Board, 2017.

TABLE 7: INTERSECTION OPERATIONS – PM PEAK HOUR

INTERSECTION	OPERATING STANDARD	EXISTING + PROJECT			EXISTING + STAGE II			EXISTING + PROJECT + STAGE II		
		V/C	DELAY	LOS	V/C	DELAY	LOS	V/C	DELAY	LOS
<b>SIGNALIZED CONTROL</b>										
BOECKMAN RD- ADVANCE RD/ STAFFORD RD- WILSONVILLE RD	LOS D	0.69	21.4	C	0.73	22.8	C	0.74	23.1	C
<b>TWO-WAY STOP-CONTROLLED</b>										
BOECKMAN RD/ WILLOW CREEK DR	LOS D	0.11	18.3	A/C	0.14	23.9	A/C	0.17	25.6	A/D
BOECKMAN RD/ LAUREL GLEN ST	LOS D	0.14	18.6	A/C	0.16	21.4	A/C	0.18	22.9	A/C
BOECKMAN RD/ SHERMAN DR	LOS D	0.15	16.2	A/C	0.13	17.2	A/C	0.25	20.8	A/C
<b>ALL-WAY STOP-CONTROLLED</b>										
BOECKMAN RD/ CANYON CREEK RD	LOS D	0.73	21.7	C	0.94	36.5	<b>E</b>	0.95	38.0	<b>E</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)

**ALL-WAY STOP CONTROLLED INTERSECTION:**

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

**Bold/Highlighted = Does not meet the operating standard/mobility target**

**MITIGATION**

The Boeckman Road/Canyon Creek Road intersection operates at an overall LOS E in the *Existing + Stage II* and *Existing + Stage II + Project* scenarios. The Wilsonville Transportation System Plan already specifies a traffic signal as a high priority project at the intersection as part of project UU-01.<sup>14</sup> As such, the developer’s Transportation System Development Charge (SDC) will contribute to the City’s fund to implement the traffic signal and no additional off-site mitigations or conditions of approval are necessary. The construction of the new traffic signal will be coordinated with the other tasks in the project UU-01 Boeckman Road Dip Improvements, with design work currently in the process and construction estimated to begin in 2023. While a traffic signal was specified in the TSP, both a traffic signal and roundabout are being considered and evaluated by the City and project team. As such, mitigation results are shown for both a traffic signal and a roundabout in Table 8. The traffic signal includes dedicated left turn lanes for all approaches and protected-permitted phasing. The roundabout is a single-lane roundabout with single entry and exist points at all approaches.

**TABLE 8: MITIGATION INTERSECTION OPERATIONS – PM PEAK HOUR**

INTERSECTION	MITIGATION TRAFFIC CONTROL	OPERATING STANDARD	EXISTING + PROJECT + STAGE II		
			V/C	DELAY	LOS
<b>BOECKMAN RD/ CANYON CREEK RD</b>	Traffic Signal (with left turn lanes)	LOS D	0.59	14.8	B
<b>BOECKMAN RD/ CANYON CREEK RD</b>	Roundabout (Single-Lane)	LOS D	0.54	9.5	A

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

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

**Bold/Highlighted = Does not meet the operating standard/mobility target**

<sup>14</sup> Table 5-3/Figure 5-4, Wilsonville Transportation System Plan, City of Wilsonville, Amended November 16, 2020.



## SITE REVIEW

This chapter reviews the most recently provided site plan (dated 08/17/2022) to determine consistency with the Frog Pond West Master Plan and alignment with the Wilsonville Transportation system Plan (TSP), Development Code, and Construction Standards. The site plan is included in the appendix.

### FROG PONG WEST MASTER PLAN CONSISTENCY

The proposed street layout generally matches the framework plan as laid out in the Frog Pond West Master Plan<sup>15</sup> with the proposed site generally being bordered by Sherman Drive, Brisband Street, Willow Creek Drive, and Boeckman Road. The Public Facilities zoning and land use in the site plan also appear to be consistent with the Master Plan.<sup>16</sup>

### ACCESS SPACING

The proposed project is required to comply with access spacing requirements as laid out in the City Transportation System Plan.<sup>17</sup> The main entrance access point is located on a local street (Sherman Drive), for which the City has no spacing requirements. The Bus Access is located on the proposed northern fourth leg of the pre-existing Laurel Glen Street minor stop-controlled intersection which located on a Minor Arterial (Boeckman Road), for which the City has a Desired spacing of 1,000 ft and a Minimum spacing of 600 ft. While the Bus Access/Laurel Street intersection is less than 600 ft from Sherman Drive (approximately 400 ft), it is a pre-existing intersection with the existing subdivision to the south. Sherman Drive is also a tee-intersection with no southern approach so there will be no westbound left turn lane at this intersection that would conflict with the eastbound left turn movement at Laurel Glen Street. Additionally, left turn lanes are provided at this Laurel Glen Street intersection and with the access being limited use (school buses only), operations are not expected to impact adjacent intersections or through traffic. Therefore, the access points are consistent with the Frog Pond Master Plan and no new significant access points will be created. It should also be noted that allowing this bus access will improve on site safety by separating bus loading from parent loading and it will also keep buses from having to travel on neighborhood streets to enter and exit the school.

### PARKING

The proposed project is required to comply with the Wilsonville Code for the number of vehicular parking and bicycle parking spaces that are provided on site.<sup>18</sup> Table 9 lists the vehicular parking requirements for the project site, which are based primarily on the estimated number of students and staff.<sup>19</sup>

<sup>15</sup> Figure 19, Frog Pond West Master Plan, City of Wilsonville, July 17, 2017.

<sup>16</sup> Figure 6 & Table 1, Frog Pond West Master Plan, City of Wilsonville, July 17, 2017.

<sup>17</sup> Table 3-2, Wilsonville Transportation System Plan, Amended November 16, 2020.

<sup>18</sup> Section 4.155, Table 5, Wilsonville Development Code, Updated March 2022.

<sup>19</sup> Email from Brooke Besheone, CBRE (West Linn Wilsonville School District Representative), August 15, 2022.

As shown below, 119 to 179 vehicular parking spaces are needed to meet the Code requirements for the project when estimating 45 staff with the 550 students. 119 parking spaces are proposed on the current site plan reviewed for this study<sup>20</sup>, including the auxiliary lot located off of Brisband Street, which meets the code requirements. The Code also dictates that one ADA-accessible parking space is to be constructed for every 50 standard parking spaces, of which there are six currently shown.

**TABLE 9: VEHICLE PARKING REQUIREMENTS**

LAND USE	SIZE	MINIMUM RATE	MAXIMUM RATE	SPACES REQUIRED	
				VEHICLE MINIMUM	VEHICLE MAXIMUM
ELEMENTARY OR MIDDLE SCHOOL	595 Total Students/Staff	0.2 stalls/person	0.3 stalls/person	119	179
<b>PROPOSED NUMBER OF STALLS</b>				<b>119</b>	

Bicycle parking requirements for primary schools are associated with the size of the school building and the number of classrooms. For K-2<sup>nd</sup> grade classes, 1 space is required per 3,500 square feet of building area. For classes above 2<sup>nd</sup> grade, 8 spaces are required per class. There will be an estimated 22 classrooms in the new school with a total building square footage of approximately 60,000 square feet at full buildout. Allocating half of the building area to K-2<sup>nd</sup> grade (30,000 square feet) and allocating half of the classrooms to above 2<sup>nd</sup> grade (11 classrooms), a total of 97 bicycle parking stalls are needed to meet the minimum code requirements.

No bicycle parking stalls are currently shown on the site plan. As the site plan is further refined, the number should be recalculated accordingly and stalls added to the site plan. See Table 10 for a breakdown of the bicycle parking.

**TABLE 10: BICYCLE PARKING REQUIREMENTS**

LAND USE	SIZE	K-2 <sup>ND</sup> GRADE CLASSES	ABOVE 2 <sup>ND</sup> GRADE CLASSES	SPACES REQUIRED
ELEMENTARY OR MIDDLE SCHOOL	60,000 SF Building 22 Classrooms	9 Stalls	88 Stalls	97
<b>PROPOSED NUMBER OF STALLS</b>				<b>0</b>

## SITE CIRCULATION AND QUEUING

The proposed project provides adequate internal and external site circulation when considering the entirety of the Frog Pond West Master Plan. The proposed site will have access to Boeckman Road via Sherman Drive and Stafford Road via Brisband Street.

<sup>20</sup> Site Plan dated August 17, 2022.

The Main Entrance and parking lot provides a drive aisle loop with a student drop-off and pick-up curb that is striped as approximately 300 ft long, which has the potential to accommodate up to 12 vehicles at a time for student loading when considering 25 ft of space per vehicle. Queuing of vehicles for student drop-off and pick-up can be very variable, depending on the site layout, efficiency of parking aide staff, and length of queuing area vs. length of actual curbside loading area. With the long curbside loading area and availability of additional queuing space through the parking lot (totaling over 750 ft), this should prevent vehicle queues from spilling out of the site onto Sherman Drive.

The Bus Access provides queuing and loading areas for school buses and separates parent pick-up and drop-off from the school buses. There is approximately 275 ft of curb space for buses, which has the potential to accommodate up to five buses at a time when considering 50 ft of space per bus. The school has estimated that a maximum of eight school buses will be needed for the school. Therefore, it is recommended that bus arrival and departure times be coordinated so that all buses are not parked at one time or that additional curb space be provided to accommodate all eight buses at once.

## **PEDESTRIAN AND BICYCLE FACILITIES**

The proposed site plan shows many paths and pedestrian connectivity options throughout the site, with multiple path options from the bus and parent areas. Pedestrian connections are made between each bordering street, including from the back of the school (east side of building) to Wehler Way, allowing for a more direct pedestrian/bicycle route to that area of the Frog Pond neighborhood.

Once the school walking boundary is confirmed, it is recommended that the School District work with the City to provide a map of the preferred Safe Routes to School for the new primary school to residential uses within the school walking boundary. As part of the Safe Route to School plan, a pedestrian/student crossing on the east leg of the Sherman Drive/Boeckman Road intersection should be installed with a median island and Rectangular Rapid Flashing Beacon (RRFB) to serve the students that will need to cross Boeckman Road. The existing RRFB on the west leg should be removed so that a westbound left turn lane can be installed on Boeckman Road into Sherman Drive and not conflict with the RRFB and crosswalk.

Based on discussions with the City of Wilsonville, consistent with the Boeckman Road construction project, left turn lanes will be installed on Boeckman Road at the Laurel Glen/Bus Driveway intersection. The eastbound left turn lane should provide sufficient length to accommodate the estimated number of school buses for the site and will facilitate safe turning movements for the buses.

Additionally, a 20-mph school speed zone should be installed along Boeckman Road, with endpoints approximately 200 feet east and west of the school property.

## **STREETS**

The Frog Pond West Master Plan provides the street classifications and required cross sections for all streets in the Frog Pond West development, including Boeckman Road fronting the Frog Pond

Area.<sup>21</sup> Boeckman Road is a Minor Arterial that is to have two travel lanes, a turn lane/median, buffered bike lanes, planter strips, sidewalks, and an additional landscape buffer on the north side. Sherman Drive and Brisband Drive are Local streets that are to have two travel lanes with on-street parking (with bikes using the travel lanes), planter strips, and sidewalks. The developer will be responsible building half street improvements along the property frontages that meet the required cross section standards.

### **SIGHT DISTANCE**

Adequate sight distance should be provided at the proposed access points. Objects (e.g., fences, walls, or vegetation) located near the intersections may inhibit sight distance for drivers attempting to turn out of a minor street onto the major street. Prior to occupancy, sight distance at any proposed access point will need to be verified, documented, and stamped by a registered professional Civil or Traffic Engineer licensed in the State of Oregon to assure that buildings, signs, or landscaping does not restrict sight distance.

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<sup>21</sup> Figure 19 & 20 & 21, Frog Pond West Master Plan, City of Wilsonville, July 17, 2017.



## PROJECT IMPACT SUMMARY

The key findings of the transportation impact analysis for the Frog Pond Primary School development are discussed below.

- The project consists of the proposed Frog Pond Primary School development to be located on Sherman Drive which will be part of the West Linn-Wilsonville School District and will have a future capacity of 550 students with 45 total staff. Phase 1 will accommodate 350 students and full buildout at Phase 2 will accommodate another 200 students.
- The proposed full buildout of the 550-student school is expected to generate a net total of 406 AM peak hour trips (220 in, 186 out), 247 Afternoon peak hour trips (114 in, 133 out), 87 PM peak hour trips (39 in, 48 out), and 1,234 Weekday trips.
- Of the net project trips during the PM peak hour, one trip is expected to travel through the I-5/Wilsonville Road interchange area and one trip is expected to travel through the I-5/Elligsen Road interchange area.
- All study intersections, except the intersection of Boeckman Road/Canyon Creek Road, meet the City of Wilsonville’s operating standard. However, the Wilsonville Transportation System Plan shows a traffic signal as a high priority project at the intersection of Boeckman Road/Canyon Creek Road as part of project UU-01 and the developer’s Transportation System Development Charge (SDC) will contribute to the City’s fund to implement the traffic signal. Intersection improvements are currently in the design phase.
- The site plan is generally consistent with the Frog Pond West Master Plan and applicable City of Wilsonville planning documents and standards. See the following findings regarding the site plan.
  - It is recommended that bicycle parking be added to the site to meet City parking standards.
  - Once the school walking boundary is confirmed, it is recommended that the School District work with the City to provide a map of the preferred Safe Routes to School and install a pedestrian/student crossing on the east leg of the Sherman Drive/Boeckman Road intersections with a median island and RRFB.
  - Eastbound and westbound left turn lanes should be installed on Boeckman Road at the Laurel Glen/Bus Driveway intersection to facilitate safe turning movements, especially for the school buses.
  - A 20-mph school speed zone should be installed along Boeckman Road (including flashers), with endpoints approximately 200 feet east and west of the school property.
  - Prior to occupancy, sight distance at any proposed access point will need to be verified, documented, and stamped by a registered professional Civil or Traffic Engineer licensed in the State of Oregon to assure that buildings, signs, or landscaping does not restrict sight distance.

# APPENDIX

## CONTENTS

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**F. HCM REPORTS – EXISTING + STAGE II + PROJECT**

**G. HCM REPORTS – MITIGATIONS**

**H. SITE PLAN**

**A. TRAFFIC COUNT DATA**

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ALL TRAFFIC DATA SERVICES

(303) 216-2439

www.alltrafficdata.net

Location: 1 SW WILSONVILLE RD & SW BOECKMAN RD AM

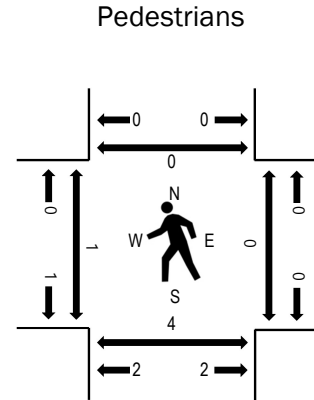
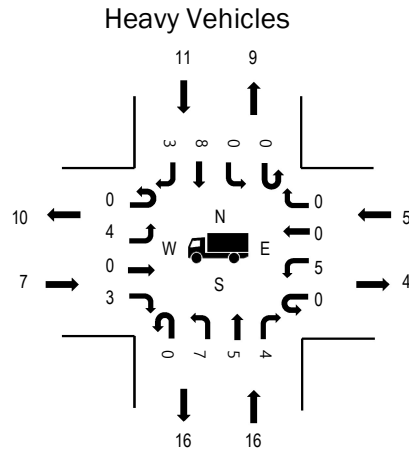
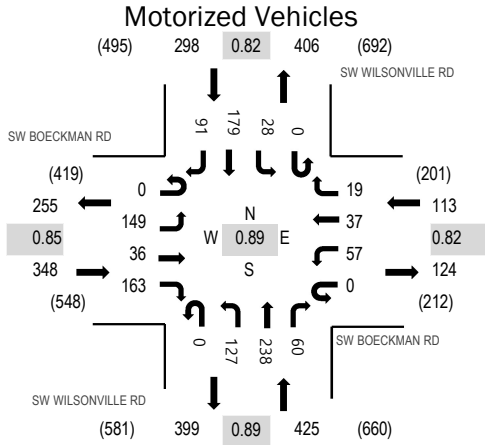
Date: Thursday, May 19, 2022

Peak Hour: 07:40 AM - 08:40 AM

Peak 15-Minutes: 07:50 AM - 08:05 AM

Item 3.

Peak Hour



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	2.0%	0.85
WB	4.4%	0.82
NB	3.8%	0.89
SB	3.7%	0.82
All	3.3%	0.89

Traffic Counts - Motorized Vehicles

Interval Start Time	SW BOECKMAN RD Eastbound				SW BOECKMAN RD Westbound				SW WILSONVILLE RD Northbound				SW WILSONVILLE RD Southbound				Total	Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
7:00 AM	0	4	3	1	0	0	1	0	0	2	4	1	0	1	3	2	22	858
7:05 AM	0	6	0	1	0	0	2	2	0	0	12	0	0	1	3	6	33	934
7:10 AM	0	8	0	1	0	2	2	0	0	2	7	0	0	2	6	10	40	1,002
7:15 AM	0	8	0	1	0	2	3	1	0	6	22	0	0	2	8	4	57	1,062
7:20 AM	0	6	3	7	0	3	2	3	0	2	9	1	0	0	7	9	52	1,108
7:25 AM	0	9	3	11	0	1	3	2	0	6	22	3	0	1	19	10	90	1,160
7:30 AM	0	13	2	15	0	2	1	2	0	3	18	2	0	2	7	6	73	1,166
7:35 AM	0	18	1	9	0	5	2	2	0	6	15	2	0	2	10	4	76	1,178
7:40 AM	0	20	1	18	0	4	2	0	0	7	27	2	0	0	16	14	111	1,184
7:45 AM	0	10	3	8	0	5	3	1	0	11	13	3	0	1	11	2	71	1,133
7:50 AM	0	20	6	12	0	6	0	2	0	13	28	9	0	1	18	10	125	1,136
7:55 AM	0	14	3	11	0	7	6	2	0	13	14	11	0	4	12	11	108	1,080
8:00 AM	0	15	0	9	0	4	7	4	0	10	17	4	0	4	15	9	98	1,046
8:05 AM	0	8	4	15	0	4	4	0	0	9	18	6	0	5	21	7	101	
8:10 AM	0	12	5	25	0	6	2	2	0	8	17	1	0	1	16	5	100	
8:15 AM	0	6	4	20	0	5	0	0	0	11	19	1	0	6	25	6	103	
8:20 AM	0	12	2	21	0	6	3	1	0	10	21	6	0	0	14	8	104	
8:25 AM	0	11	2	10	0	7	5	1	0	14	19	2	0	3	17	5	96	
8:30 AM	0	10	4	8	0	2	1	2	0	8	26	6	0	3	6	9	85	
8:35 AM	0	11	2	6	0	1	4	4	0	13	19	9	0	0	8	5	82	
8:40 AM	0	8	5	2	0	2	5	1	0	3	14	1	0	3	10	6	60	
8:45 AM	0	10	4	3	0	1	6	3	0	4	12	7	0	1	11	12	74	
8:50 AM	0	15	4	4	0	7	8	1	0	3	8	7	0	2	3	7	69	
8:55 AM	0	6	7	2	0	5	3	3	0	7	12	12	0	3	8	6	74	
Count Total	0	260	68	220	0	87	75	39	0	171	393	96	0	48	274	173	1,904	
Peak Hour	0	149	36	163	0	57	37	19	0	127	238	60	0	28	179	91	1,184	



**Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles on Crosswalk**

Item 3.

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
7:00 AM	2	0	0	0	2	7:00 AM	0	0	0	0	0	7:00 AM	0	0	0	0	0
7:05 AM	0	0	1	1	2	7:05 AM	0	0	0	0	0	7:05 AM	0	0	0	0	0
7:10 AM	0	1	0	0	1	7:10 AM	0	0	0	0	0	7:10 AM	0	0	0	0	0
7:15 AM	0	0	0	0	0	7:15 AM	0	0	0	0	0	7:15 AM	1	1	0	0	2
7:20 AM	0	0	2	2	4	7:20 AM	0	0	0	0	0	7:20 AM	0	1	0	0	1
7:25 AM	0	1	0	1	2	7:25 AM	0	0	0	0	0	7:25 AM	0	1	0	0	1
7:30 AM	1	1	0	1	3	7:30 AM	0	0	0	0	0	7:30 AM	0	0	0	0	0
7:35 AM	0	1	1	1	3	7:35 AM	0	0	0	0	0	7:35 AM	0	1	0	0	1
7:40 AM	0	0	0	2	2	7:40 AM	0	0	0	0	0	7:40 AM	0	0	0	0	0
7:45 AM	1	0	0	1	2	7:45 AM	0	0	0	0	0	7:45 AM	0	0	0	0	0
7:50 AM	1	2	0	1	4	7:50 AM	0	0	0	0	0	7:50 AM	0	3	0	0	3
7:55 AM	1	1	1	0	3	7:55 AM	0	0	0	0	0	7:55 AM	0	2	0	0	2
8:00 AM	0	0	1	1	2	8:00 AM	0	0	0	0	0	8:00 AM	0	0	0	0	0
8:05 AM	0	3	0	0	3	8:05 AM	0	0	0	0	0	8:05 AM	0	0	0	0	0
8:10 AM	2	0	1	1	4	8:10 AM	0	0	0	0	0	8:10 AM	0	0	0	0	0
8:15 AM	1	1	0	1	3	8:15 AM	0	0	0	0	0	8:15 AM	0	0	0	0	0
8:20 AM	1	1	1	1	4	8:20 AM	0	0	0	0	0	8:20 AM	1	0	0	0	1
8:25 AM	0	1	0	2	3	8:25 AM	0	0	0	0	0	8:25 AM	0	0	0	0	0
8:30 AM	0	3	1	0	4	8:30 AM	0	0	0	0	0	8:30 AM	0	0	0	0	0
8:35 AM	0	4	0	1	5	8:35 AM	0	0	0	0	0	8:35 AM	0	1	0	0	1
8:40 AM	1	3	0	2	6	8:40 AM	0	0	0	0	0	8:40 AM	0	1	0	0	1
8:45 AM	0	5	0	1	6	8:45 AM	0	0	0	0	0	8:45 AM	0	1	0	0	1
8:50 AM	0	2	3	0	5	8:50 AM	0	0	0	0	0	8:50 AM	0	1	0	0	1
8:55 AM	0	0	0	2	2	8:55 AM	0	0	0	0	0	8:55 AM	0	2	0	0	2
Count Total	11	30	12	22	75	Count Total	0	0	0	0	0	Count Total	2	15	0	0	17
Peak Hour	7	16	5	11	39	Peak Hour	0	0	0	0	0	Peak Hour	1	6	0	0	7



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Location: 2 SW WILLOW CREEK DR & SW BOECKMAN RD AM

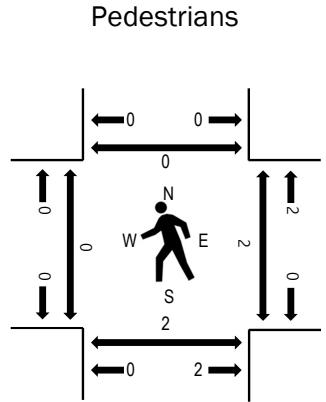
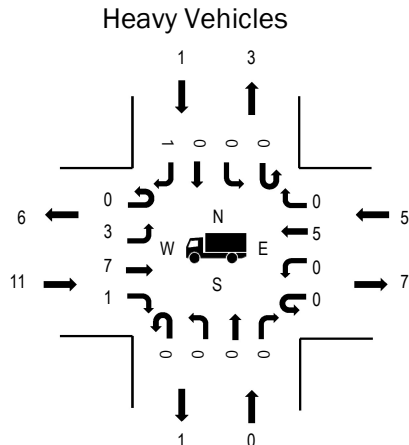
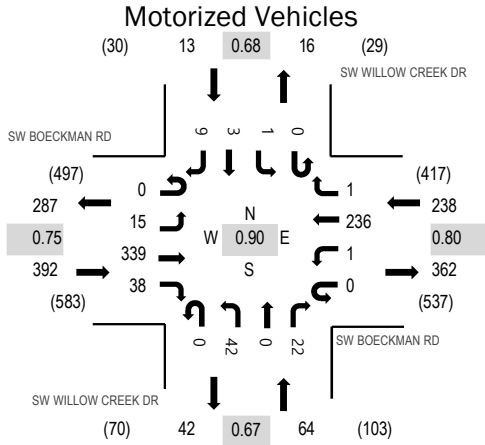
Date: Thursday, May 19, 2022

Peak Hour: 07:30 AM - 08:30 AM

Peak 15-Minutes: 08:10 AM - 08:25 AM

Item 3.

Peak Hour



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	2.8%	0.75
WB	2.1%	0.80
NB	0.0%	0.67
SB	7.7%	0.68
All	2.4%	0.90

Traffic Counts - Motorized Vehicles

Interval Start Time	SW BOECKMAN RD Eastbound				SW BOECKMAN RD Westbound				SW WILLOW CREEK DR Northbound				SW WILLOW CREEK DR Southbound				Total	Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
7:00 AM	0	1	7	0	0	0	5	0	0	2	0	1	0	0	0	0	16	507
7:05 AM	0	1	7	1	0	0	8	0	0	2	0	0	0	0	0	0	19	543
7:10 AM	0	0	7	1	0	0	14	0	0	1	0	1	0	0	0	0	24	584
7:15 AM	0	1	8	0	0	0	13	1	0	2	0	0	0	1	0	1	27	620
7:20 AM	0	0	17	0	0	0	12	0	0	3	0	1	0	0	0	1	34	660
7:25 AM	0	1	22	1	0	2	16	0	0	0	0	0	0	0	0	1	43	695
7:30 AM	0	2	28	0	0	0	10	0	0	5	0	1	0	0	1	1	48	707
7:35 AM	0	2	28	1	0	0	14	0	0	3	0	2	0	0	1	1	52	707
7:40 AM	0	1	38	1	0	0	22	0	0	3	0	2	0	0	0	0	67	701
7:45 AM	0	1	17	2	0	0	14	0	0	5	0	2	0	1	0	0	42	666
7:50 AM	0	1	33	1	0	0	23	0	0	2	0	3	0	0	0	0	63	671
7:55 AM	0	1	21	3	0	1	31	1	0	8	0	4	0	0	0	2	72	652
8:00 AM	0	1	24	0	0	0	24	0	0	1	0	0	0	0	0	2	52	626
8:05 AM	0	0	27	4	0	0	22	0	0	4	0	3	0	0	0	0	60	
8:10 AM	0	0	39	2	0	0	14	0	0	3	0	0	0	0	1	1	60	
8:15 AM	0	1	34	12	0	0	16	0	0	2	0	0	0	0	0	2	67	
8:20 AM	0	3	31	9	0	0	21	0	0	4	0	1	0	0	0	0	69	
8:25 AM	0	2	19	3	0	0	25	0	0	2	0	4	0	0	0	0	55	
8:30 AM	0	1	15	4	0	0	19	0	0	4	0	2	0	0	1	2	48	
8:35 AM	0	0	18	2	0	0	21	1	0	1	0	2	0	0	0	1	46	
8:40 AM	0	3	11	2	0	1	11	0	0	2	0	0	0	1	0	1	32	
8:45 AM	0	0	19	2	0	1	21	0	0	1	0	1	0	0	1	1	47	
8:50 AM	0	1	16	2	0	1	16	1	0	4	0	1	0	0	1	1	44	
8:55 AM	0	1	15	4	0	0	15	0	0	6	0	2	0	0	1	2	46	
Count Total	0	25	501	57	0	6	407	4	0	70	0	33	0	3	7	20	1,133	
Peak Hour	0	15	339	38	0	1	236	1	0	42	0	22	0	1	3	9	707	

**Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles on Crosswalk**

Item 3.

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
7:00 AM	2	0	0	0	2	7:00 AM	0	0	0	0	0	7:00 AM	0	0	0	0	0
7:05 AM	1	0	1	0	2	7:05 AM	0	0	0	0	0	7:05 AM	0	0	0	0	0
7:10 AM	0	0	1	0	1	7:10 AM	0	0	0	0	0	7:10 AM	0	1	0	0	1
7:15 AM	0	0	0	0	0	7:15 AM	0	0	0	0	0	7:15 AM	1	0	0	0	1
7:20 AM	0	0	2	0	2	7:20 AM	0	0	0	0	0	7:20 AM	0	0	0	0	0
7:25 AM	0	0	0	0	0	7:25 AM	0	0	0	0	0	7:25 AM	0	1	0	0	1
7:30 AM	1	0	0	0	1	7:30 AM	0	0	0	0	0	7:30 AM	0	0	1	0	1
7:35 AM	1	0	0	0	1	7:35 AM	0	0	0	0	0	7:35 AM	0	0	0	0	0
7:40 AM	0	0	0	0	0	7:40 AM	0	0	0	0	0	7:40 AM	0	0	0	0	0
7:45 AM	3	0	0	0	3	7:45 AM	0	0	0	0	0	7:45 AM	0	1	1	0	2
7:50 AM	0	0	0	0	0	7:50 AM	0	0	0	0	0	7:50 AM	0	0	0	0	0
7:55 AM	1	0	0	0	1	7:55 AM	0	0	0	0	0	7:55 AM	0	0	0	0	0
8:00 AM	0	0	1	1	2	8:00 AM	0	0	0	0	0	8:00 AM	0	0	0	0	0
8:05 AM	0	0	0	0	0	8:05 AM	0	0	0	0	0	8:05 AM	0	1	0	0	1
8:10 AM	2	0	0	0	2	8:10 AM	0	0	0	0	0	8:10 AM	0	0	0	0	0
8:15 AM	2	0	0	0	2	8:15 AM	0	0	0	0	0	8:15 AM	0	0	0	0	0
8:20 AM	1	0	2	0	3	8:20 AM	0	0	0	0	0	8:20 AM	0	0	0	0	0
8:25 AM	0	0	2	0	2	8:25 AM	0	0	0	0	0	8:25 AM	0	0	0	0	0
8:30 AM	0	0	3	0	3	8:30 AM	0	0	0	0	0	8:30 AM	0	1	0	0	1
8:35 AM	0	0	2	0	2	8:35 AM	0	0	0	0	0	8:35 AM	0	1	0	0	1
8:40 AM	2	0	1	0	3	8:40 AM	0	0	0	0	0	8:40 AM	0	0	0	0	0
8:45 AM	0	0	3	0	3	8:45 AM	0	0	0	0	0	8:45 AM	0	0	0	0	0
8:50 AM	0	0	2	0	2	8:50 AM	0	0	0	0	0	8:50 AM	0	0	0	0	0
8:55 AM	0	0	0	1	1	8:55 AM	0	0	0	0	0	8:55 AM	0	1	0	0	1
Count Total	16	0	20	2	38	Count Total	0	0	0	0	0	Count Total	1	7	2	0	10
Peak Hour	11	0	5	1	17	Peak Hour	0	0	0	0	0	Peak Hour	0	2	2	0	4





**Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles on Crosswalk**

*Item 3.*

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
7:00 AM	1	0	0	0	1	7:00 AM	0	0	0	0	0	7:00 AM	0	0	0	0	0
7:05 AM	1	0	1	0	2	7:05 AM	0	0	0	0	0	7:05 AM	0	0	0	0	0
7:10 AM	0	0	2	0	2	7:10 AM	0	0	0	0	0	7:10 AM	0	1	0	0	1
7:15 AM	0	0	0	0	0	7:15 AM	0	0	0	0	0	7:15 AM	0	0	0	0	0
7:20 AM	0	0	2	0	2	7:20 AM	0	0	0	0	0	7:20 AM	0	1	0	0	1
7:25 AM	0	0	0	0	0	7:25 AM	0	0	0	0	0	7:25 AM	0	1	0	0	1
7:30 AM	1	0	1	0	2	7:30 AM	0	0	0	0	0	7:30 AM	0	0	0	0	0
7:35 AM	1	0	1	0	2	7:35 AM	0	0	0	0	0	7:35 AM	0	0	0	0	0
7:40 AM	0	0	0	0	0	7:40 AM	0	0	0	0	0	7:40 AM	0	0	0	0	0
7:45 AM	3	0	0	0	3	7:45 AM	0	0	0	0	0	7:45 AM	0	1	0	0	1
7:50 AM	0	0	0	0	0	7:50 AM	0	0	0	0	0	7:50 AM	0	0	0	0	0
7:55 AM	1	0	0	0	1	7:55 AM	0	0	0	0	0	7:55 AM	0	0	0	0	0
8:00 AM	0	0	2	0	2	8:00 AM	0	0	0	0	0	8:00 AM	0	0	0	0	0
8:05 AM	0	0	0	0	0	8:05 AM	0	0	0	0	0	8:05 AM	0	0	0	0	0
8:10 AM	2	0	0	0	2	8:10 AM	0	0	0	0	0	8:10 AM	0	3	0	0	3
8:15 AM	2	0	0	0	2	8:15 AM	0	0	0	0	0	8:15 AM	0	1	0	0	1
8:20 AM	1	0	2	0	3	8:20 AM	0	0	0	0	0	8:20 AM	0	0	0	0	0
8:25 AM	0	0	2	0	2	8:25 AM	0	0	0	0	0	8:25 AM	0	0	0	0	0
8:30 AM	0	0	3	0	3	8:30 AM	0	0	0	0	0	8:30 AM	0	0	0	0	0
8:35 AM	1	0	2	0	3	8:35 AM	0	0	0	0	0	8:35 AM	0	1	0	0	1
8:40 AM	2	0	1	0	3	8:40 AM	0	0	0	0	0	8:40 AM	0	1	0	0	1
8:45 AM	0	0	3	0	3	8:45 AM	0	0	0	0	0	8:45 AM	0	0	0	0	0
8:50 AM	0	0	2	0	2	8:50 AM	0	0	0	0	0	8:50 AM	0	0	0	0	0
8:55 AM	0	0	1	0	1	8:55 AM	0	0	0	0	0	8:55 AM	0	0	0	0	0
Count Total	16	0	25	0	41	Count Total	0	0	0	0	0	Count Total	0	10	0	0	10
Peak Hour	11	0	8	0	19	Peak Hour	0	0	0	0	0	Peak Hour	0	5	0	0	5



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Location: 4 SW SHEWRMAN DR & SW BOECKMAN RD AM

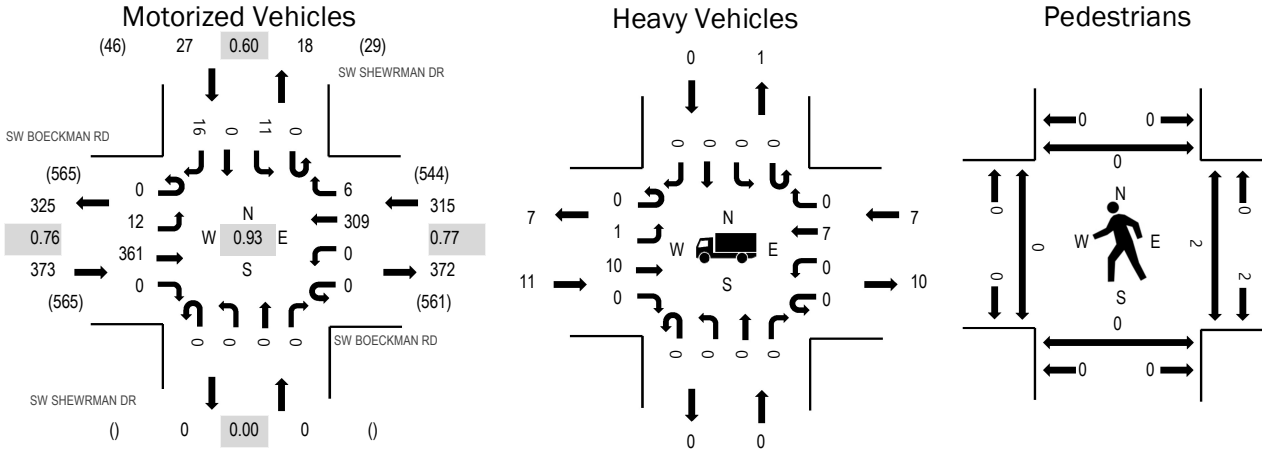
Date: Thursday, May 19, 2022

Peak Hour: 07:30 AM - 08:30 AM

Peak 15-Minutes: 07:50 AM - 08:05 AM

Item 3.

Peak Hour



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	2.9%	0.76
WB	2.2%	0.77
NB	0.0%	0.00
SB	0.0%	0.60
All	2.5%	0.93

Traffic Counts - Motorized Vehicles

Interval Start Time	SW BOECKMAN RD Eastbound				SW BOECKMAN RD Westbound				SW SHEWRMAN DR Northbound				SW SHEWRMAN DR Southbound				Total	Rolling Hour	
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			
7:00 AM	0	0	5	0	0	0	9	0	0	0	0	0	0	0	0	0	3	17	530
7:05 AM	0	0	8	0	0	0	12	0	0	0	0	0	0	0	0	0	1	21	575
7:10 AM	0	0	9	0	0	0	24	0	0	0	0	0	0	1	0	0	0	34	615
7:15 AM	0	1	10	0	0	0	14	0	0	0	0	0	0	0	0	0	2	27	642
7:20 AM	0	0	20	0	0	0	16	0	0	0	0	0	0	1	0	1	3	38	683
7:25 AM	0	0	27	0	0	0	20	0	0	0	0	0	0	1	0	1	4	49	706
7:30 AM	0	2	22	0	0	0	19	0	0	0	0	0	0	1	0	3	4	47	715
7:35 AM	0	0	31	0	0	0	22	1	0	0	0	0	0	2	0	2	5	58	714
7:40 AM	0	0	29	0	0	0	29	0	0	0	0	0	0	3	0	1	6	62	697
7:45 AM	0	1	24	0	0	0	17	2	0	0	0	0	0	0	0	2	4	46	666
7:50 AM	0	1	30	0	0	0	31	1	0	0	0	0	0	0	0	2	6	65	667
7:55 AM	0	0	22	0	0	0	43	0	0	0	0	0	0	1	0	0	6	66	649
8:00 AM	0	0	29	0	0	0	30	0	0	0	0	0	0	2	0	1	6	62	625
8:05 AM	0	4	28	0	0	0	27	0	0	0	0	0	0	0	0	2	6	61	
8:10 AM	0	0	44	0	0	0	17	0	0	0	0	0	0	0	0	0	0	61	
8:15 AM	0	0	46	0	0	0	20	1	0	0	0	0	0	0	0	1	6	68	
8:20 AM	0	2	30	0	0	0	26	0	0	0	0	0	0	1	0	2	6	61	
8:25 AM	0	2	26	0	0	0	28	1	0	0	0	0	0	1	0	0	5	58	
8:30 AM	0	1	14	0	0	0	28	0	0	0	0	0	0	2	0	1	4	46	
8:35 AM	0	2	18	0	0	0	21	0	0	0	0	0	0	0	0	0	4	41	
8:40 AM	0	1	16	0	0	0	12	0	0	0	0	0	0	1	0	1	3	31	
8:45 AM	0	2	20	0	0	0	25	0	0	0	0	0	0	0	0	0	4	47	
8:50 AM	0	1	20	0	0	0	24	0	0	0	0	0	0	1	0	1	4	47	
8:55 AM	0	3	14	0	0	0	24	0	0	0	0	0	0	1	0	0	4	42	
Count Total	0	23	542	0	0	0	538	6	0	0	0	0	0	19	0	27	1,155		
Peak Hour	0	12	361	0	0	0	309	6	0	0	0	0	0	11	0	16	715		

**Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles on Crosswalk**

Item 3.

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
7:00 AM	1	0	0	0	1	7:00 AM	0	0	0	0	0	7:00 AM	0	0	0	0	0
7:05 AM	1	0	1	0	2	7:05 AM	0	0	0	0	0	7:05 AM	0	0	0	0	0
7:10 AM	0	0	1	0	1	7:10 AM	0	0	0	0	0	7:10 AM	0	0	1	1	2
7:15 AM	0	0	1	0	1	7:15 AM	0	0	0	0	0	7:15 AM	0	0	0	0	0
7:20 AM	0	0	0	0	0	7:20 AM	0	0	0	0	0	7:20 AM	0	0	0	0	0
7:25 AM	0	0	0	0	0	7:25 AM	0	0	0	0	0	7:25 AM	0	0	0	0	0
7:30 AM	0	0	0	0	0	7:30 AM	0	0	0	0	0	7:30 AM	0	0	0	0	0
7:35 AM	1	0	0	0	1	7:35 AM	0	0	0	0	0	7:35 AM	0	0	0	0	0
7:40 AM	2	0	0	0	2	7:40 AM	0	0	0	0	0	7:40 AM	0	0	0	0	0
7:45 AM	2	0	0	0	2	7:45 AM	0	0	0	0	0	7:45 AM	0	0	0	0	0
7:50 AM	1	0	0	0	1	7:50 AM	0	0	0	0	0	7:50 AM	0	0	0	0	0
7:55 AM	0	0	0	0	0	7:55 AM	0	0	0	0	0	7:55 AM	0	0	2	0	2
8:00 AM	0	0	2	0	2	8:00 AM	0	0	0	0	0	8:00 AM	0	0	0	0	0
8:05 AM	1	0	0	0	1	8:05 AM	0	0	0	0	0	8:05 AM	0	0	0	0	0
8:10 AM	1	0	0	0	1	8:10 AM	0	0	0	0	0	8:10 AM	0	0	0	0	0
8:15 AM	3	0	0	0	3	8:15 AM	0	0	0	0	0	8:15 AM	0	0	0	0	0
8:20 AM	0	0	2	0	2	8:20 AM	0	0	0	0	0	8:20 AM	0	0	0	0	0
8:25 AM	0	0	3	0	3	8:25 AM	0	0	0	0	0	8:25 AM	0	0	0	0	0
8:30 AM	0	0	3	0	3	8:30 AM	0	0	0	0	0	8:30 AM	0	0	0	0	0
8:35 AM	2	0	1	0	3	8:35 AM	0	0	0	0	0	8:35 AM	0	0	0	0	0
8:40 AM	0	0	1	0	1	8:40 AM	0	0	0	0	0	8:40 AM	0	0	0	0	0
8:45 AM	0	0	5	0	5	8:45 AM	0	0	0	0	0	8:45 AM	0	0	0	0	0
8:50 AM	0	0	1	0	1	8:50 AM	0	0	0	0	0	8:50 AM	0	0	0	0	0
8:55 AM	0	0	0	0	0	8:55 AM	0	0	0	0	0	8:55 AM	0	0	0	0	0
Count Total	15	0	21	0	36	Count Total	0	0	0	0	0	Count Total	0	0	3	1	4
Peak Hour	11	0	7	0	18	Peak Hour	0	0	0	0	0	Peak Hour	0	0	2	0	2



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Location: 5 SW CANYON CREEK RD & SW BOECKMAN RD AM

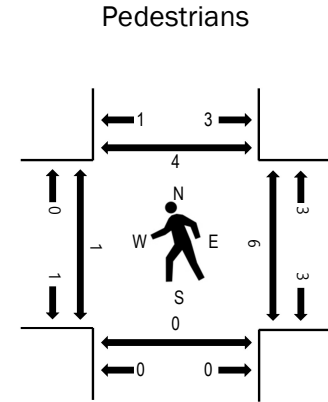
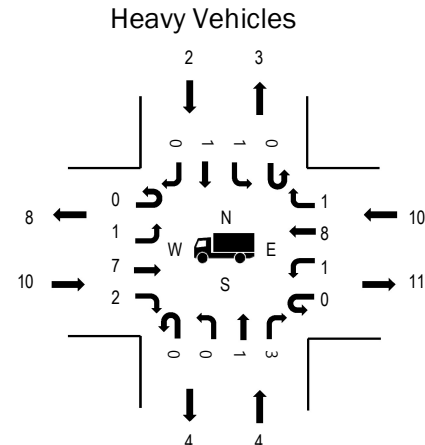
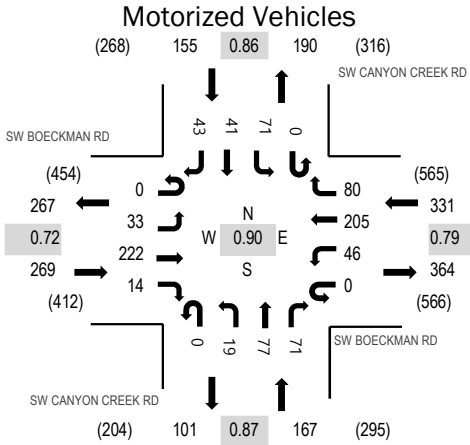
Date: Thursday, May 19, 2022

Peak Hour: 07:35 AM - 08:35 AM

Peak 15-Minutes: 08:00 AM - 08:15 AM

Item 3.

Peak Hour



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	3.7%	0.72
WB	3.0%	0.79
NB	2.4%	0.87
SB	1.3%	0.86
All	2.8%	0.90

Traffic Counts - Motorized Vehicles

Interval Start Time	SW BOECKMAN RD Eastbound				SW BOECKMAN RD Westbound				SW CANYON CREEK RD Northbound				SW CANYON CREEK RD Southbound				Total	Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
7:00 AM	0	2	6	0	0	4	3	5	0	4	6	0	0	0	1	0	31	708
7:05 AM	0	1	6	0	0	1	8	5	0	0	8	3	0	0	3	2	37	761
7:10 AM	0	0	5	2	0	4	10	6	0	2	2	1	0	2	3	6	43	807
7:15 AM	0	0	8	0	0	4	14	1	0	4	7	1	0	2	0	3	44	853
7:20 AM	0	4	10	1	0	4	11	4	0	3	6	6	0	2	3	1	55	884
7:25 AM	0	1	18	1	0	3	10	6	0	3	8	3	0	8	5	2	68	915
7:30 AM	0	1	5	2	0	2	10	5	0	1	3	7	0	9	2	4	51	921
7:35 AM	0	1	13	2	0	1	12	11	0	3	10	9	0	5	1	5	73	922
7:40 AM	0	1	24	0	0	6	14	10	0	3	5	8	0	4	2	3	80	903
7:45 AM	0	3	15	2	0	7	14	5	0	0	5	4	0	6	5	2	68	877
7:50 AM	0	5	16	2	0	3	16	6	0	1	8	10	0	4	3	4	78	867
7:55 AM	0	6	9	0	0	5	28	7	0	1	4	4	0	7	3	6	80	845
8:00 AM	0	0	23	1	0	7	18	9	0	2	9	5	0	2	4	4	84	832
8:05 AM	0	5	14	2	0	4	20	7	0	1	5	6	0	9	7	3	83	
8:10 AM	0	3	36	1	0	1	17	3	0	1	3	6	0	6	6	6	89	
8:15 AM	0	0	30	1	0	0	12	6	0	1	8	6	0	7	3	1	75	
8:20 AM	0	3	18	2	0	3	20	6	0	2	8	7	0	9	5	3	86	
8:25 AM	0	4	14	1	0	6	15	7	0	1	8	5	0	8	1	4	74	
8:30 AM	0	2	10	0	0	3	19	3	0	3	4	1	0	4	1	2	52	
8:35 AM	0	1	13	1	0	3	13	8	0	0	2	9	0	1	2	1	54	
8:40 AM	0	2	8	3	0	4	13	2	0	2	5	3	0	3	4	5	54	
8:45 AM	0	0	16	0	0	4	12	4	0	2	4	4	0	4	5	3	58	
8:50 AM	0	3	9	1	0	12	10	1	0	0	4	6	0	3	4	3	56	
8:55 AM	0	1	10	2	0	5	18	5	0	1	3	5	0	6	8	3	67	
Count Total	0	49	336	27	0	96	337	132	0	41	135	119	0	111	81	76	1,540	
Peak Hour	0	33	222	14	0	46	205	80	0	19	77	71	0	71	41	43	922	



**Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles on Crosswalk**

Item 3.

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
7:00 AM	1	1	0	0	2	7:00 AM	0	0	0	0	0	7:00 AM	0	0	1	0	1
7:05 AM	1	0	0	0	1	7:05 AM	0	0	0	0	0	7:05 AM	0	0	0	0	0
7:10 AM	1	0	2	0	3	7:10 AM	0	0	0	0	0	7:10 AM	0	0	0	0	0
7:15 AM	0	0	0	0	0	7:15 AM	0	0	0	0	0	7:15 AM	0	0	0	0	0
7:20 AM	1	0	1	0	2	7:20 AM	0	0	0	0	0	7:20 AM	0	0	0	0	0
7:25 AM	0	2	0	1	3	7:25 AM	0	0	0	0	0	7:25 AM	0	0	0	0	0
7:30 AM	1	0	0	0	1	7:30 AM	0	0	0	0	0	7:30 AM	1	0	0	0	1
7:35 AM	1	1	0	0	2	7:35 AM	0	0	0	0	0	7:35 AM	0	0	0	0	0
7:40 AM	1	1	0	0	2	7:40 AM	0	0	0	0	0	7:40 AM	0	0	1	1	2
7:45 AM	2	0	1	0	3	7:45 AM	0	0	0	0	0	7:45 AM	0	0	1	1	2
7:50 AM	1	0	0	0	1	7:50 AM	0	0	0	0	0	7:50 AM	0	0	0	0	0
7:55 AM	1	0	0	0	1	7:55 AM	0	0	0	0	0	7:55 AM	0	0	1	1	2
8:00 AM	0	0	2	0	2	8:00 AM	0	0	0	0	0	8:00 AM	0	0	0	0	0
8:05 AM	1	0	0	1	2	8:05 AM	0	0	0	0	0	8:05 AM	0	0	0	1	1
8:10 AM	0	0	0	0	0	8:10 AM	0	0	0	0	0	8:10 AM	1	0	0	0	1
8:15 AM	2	1	0	1	4	8:15 AM	0	0	0	0	0	8:15 AM	0	0	1	0	1
8:20 AM	0	0	2	0	2	8:20 AM	0	0	0	0	0	8:20 AM	0	0	2	0	2
8:25 AM	1	1	2	0	4	8:25 AM	0	0	0	0	0	8:25 AM	0	0	0	0	0
8:30 AM	0	0	3	0	3	8:30 AM	0	0	0	0	0	8:30 AM	0	0	0	0	0
8:35 AM	1	0	2	0	3	8:35 AM	0	0	0	0	0	8:35 AM	0	0	0	0	0
8:40 AM	0	0	1	0	1	8:40 AM	0	0	0	0	0	8:40 AM	0	0	0	0	0
8:45 AM	0	1	2	0	3	8:45 AM	0	0	0	0	0	8:45 AM	0	0	1	0	1
8:50 AM	0	0	2	1	3	8:50 AM	0	0	0	0	0	8:50 AM	0	0	0	0	0
8:55 AM	0	0	1	1	2	8:55 AM	0	0	0	0	0	8:55 AM	0	0	0	1	1
Count Total	16	8	21	5	50	Count Total	0	0	0	0	0	Count Total	2	0	8	5	15
Peak Hour	10	4	10	2	26	Peak Hour	0	0	0	0	0	Peak Hour	1	0	6	4	11



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Location: 1 SW WILSONVILLE RD & SW BOECKMAN RD Noon

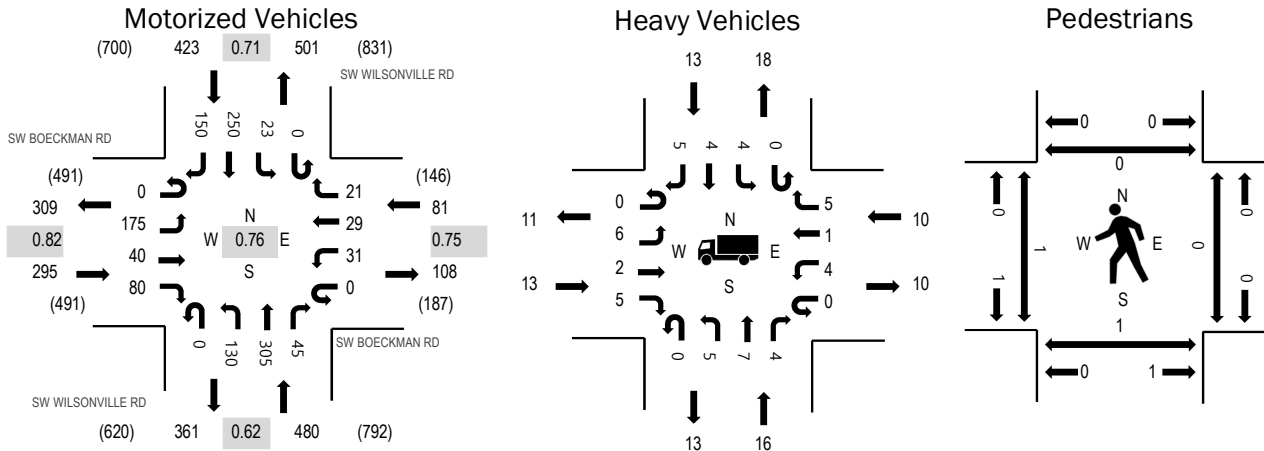
Date: Thursday, May 19, 2022

Peak Hour: 02:25 PM - 03:25 PM

Peak 15-Minutes: 03:05 PM - 03:20 PM

Item 3.

Peak Hour



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	4.4%	0.82
WB	12.3%	0.75
NB	3.3%	0.62
SB	3.1%	0.71
All	4.1%	0.76

Traffic Counts - Motorized Vehicles

Interval Start Time	SW BOECKMAN RD Eastbound				SW BOECKMAN RD Westbound				SW WILSONVILLE RD Northbound				SW WILSONVILLE RD Southbound				Total	Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
1:30 PM	0	7	2	5	0	3	1	2	0	6	20	3	0	0	6	4	59	825
1:35 PM	0	12	0	9	0	4	1	1	0	13	23	4	0	0	7	4	78	852
1:40 PM	0	8	3	6	0	2	0	1	0	4	19	0	0	1	12	6	62	855
1:45 PM	0	8	2	6	0	1	4	3	0	2	20	4	0	0	7	4	61	881
1:50 PM	0	8	1	8	0	3	0	2	0	0	14	2	0	2	14	5	59	907
1:55 PM	0	6	2	8	0	2	0	0	0	5	10	2	0	0	15	8	58	939
2:00 PM	0	7	1	2	0	4	5	0	0	1	20	2	0	1	17	5	65	969
2:05 PM	0	7	0	3	0	2	3	0	0	2	14	7	0	3	10	12	63	1,032
2:10 PM	0	6	2	3	0	3	2	2	0	7	19	1	0	0	13	14	72	1,100
2:15 PM	0	12	3	7	0	5	1	2	0	8	9	5	0	1	17	8	78	1,174
2:20 PM	0	7	2	5	0	0	0	1	0	13	27	1	0	2	13	12	83	1,238
2:25 PM	0	12	3	4	0	1	2	2	0	11	28	3	0	0	12	9	87	1,279
2:30 PM	0	23	4	3	0	0	2	2	0	6	21	4	0	2	10	9	86	
2:35 PM	0	12	0	4	0	3	4	2	0	6	26	2	0	1	16	5	81	
2:40 PM	0	19	1	4	0	2	2	3	0	1	18	4	0	2	16	16	88	
2:45 PM	0	16	1	7	0	2	3	2	0	4	24	0	0	3	17	8	87	
2:50 PM	0	12	2	11	0	4	2	0	0	6	21	2	0	0	24	7	91	
2:55 PM	0	18	5	8	0	3	3	1	0	3	17	4	0	1	16	9	88	
3:00 PM	0	17	3	10	0	5	2	1	0	5	33	3	0	4	31	14	128	
3:05 PM	0	13	7	12	0	3	6	3	0	25	26	5	0	3	15	13	131	
3:10 PM	0	9	2	5	0	1	1	1	0	29	37	6	0	3	34	18	146	
3:15 PM	0	12	5	7	0	5	2	4	0	30	34	4	0	2	20	17	142	
3:20 PM	0	12	7	5	0	2	0	0	0	4	20	8	0	2	39	25	124	
3:25 PM	0	20	6	2	0	1	4	0	0	2	13	10	0	4	34	16	112	
Count Total	0	283	64	144	0	61	50	35	0	193	513	86	0	37	415	248	2,129	
Peak Hour	0	175	40	80	0	31	29	21	0	130	305	45	0	23	250	150	1,279	

**Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles on Crosswalk**

Item 3.

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
1:30 PM	1	1	0	0	2	1:30 PM	0	0	0	0	0	1:30 PM	0	0	0	0	0
1:35 PM	3	0	2	0	5	1:35 PM	0	0	0	0	0	1:35 PM	0	0	0	0	0
1:40 PM	1	1	1	0	3	1:40 PM	0	0	0	0	0	1:40 PM	0	0	0	0	0
1:45 PM	1	1	0	0	2	1:45 PM	0	0	0	0	0	1:45 PM	0	0	0	0	0
1:50 PM	1	0	0	0	1	1:50 PM	0	0	0	0	0	1:50 PM	0	0	1	0	1
1:55 PM	0	2	0	0	2	1:55 PM	0	0	0	0	0	1:55 PM	0	0	4	0	4
2:00 PM	0	0	0	1	1	2:00 PM	0	0	0	0	0	2:00 PM	0	0	0	0	0
2:05 PM	2	0	0	2	4	2:05 PM	0	0	0	0	0	2:05 PM	0	0	0	0	0
2:10 PM	0	1	0	3	4	2:10 PM	0	0	0	0	0	2:10 PM	0	0	0	0	0
2:15 PM	1	2	3	0	6	2:15 PM	0	0	0	0	0	2:15 PM	0	0	0	0	0
2:20 PM	0	3	0	2	5	2:20 PM	0	0	0	0	0	2:20 PM	0	0	0	0	0
2:25 PM	1	1	1	0	3	2:25 PM	0	0	0	0	0	2:25 PM	1	0	0	0	1
2:30 PM	3	0	0	0	3	2:30 PM	0	0	0	0	0	2:30 PM	0	0	0	0	0
2:35 PM	2	1	0	0	3	2:35 PM	0	0	0	0	0	2:35 PM	0	0	0	0	0
2:40 PM	1	0	2	6	9	2:40 PM	0	0	0	0	0	2:40 PM	0	0	0	0	0
2:45 PM	0	1	0	1	2	2:45 PM	0	0	0	0	0	2:45 PM	0	0	0	0	0
2:50 PM	0	1	1	0	2	2:50 PM	0	0	0	0	0	2:50 PM	0	0	0	0	0
2:55 PM	2	3	0	1	6	2:55 PM	0	0	0	0	0	2:55 PM	0	1	0	0	1
3:00 PM	0	0	2	2	4	3:00 PM	0	0	0	0	0	3:00 PM	0	0	0	0	0
3:05 PM	1	1	2	0	4	3:05 PM	0	0	0	0	0	3:05 PM	0	0	0	0	0
3:10 PM	2	3	1	1	7	3:10 PM	0	0	0	0	0	3:10 PM	0	0	0	0	0
3:15 PM	0	4	1	1	6	3:15 PM	0	0	0	0	0	3:15 PM	0	0	0	0	0
3:20 PM	1	1	0	1	3	3:20 PM	0	0	0	0	0	3:20 PM	0	0	0	0	0
3:25 PM	1	1	0	0	2	3:25 PM	0	0	0	0	0	3:25 PM	0	0	0	0	0
Count Total	24	28	16	21	89	Count Total	0	0	0	0	0	Count Total	1	1	5	0	7
Peak Hour	13	16	10	13	52	Peak Hour	0	0	0	0	0	Peak Hour	1	1	0	0	2





**Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles on Crosswalk**

Item 3.

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
1:30 PM	0	0	1	0	1	1:30 PM	0	0	0	0	0	1:30 PM	0	0	0	0	0
1:35 PM	2	0	1	1	4	1:35 PM	0	0	0	0	0	1:35 PM	0	0	0	0	0
1:40 PM	1	0	0	0	1	1:40 PM	0	0	0	0	0	1:40 PM	0	0	0	0	0
1:45 PM	2	0	0	0	2	1:45 PM	0	0	0	0	0	1:45 PM	0	0	0	0	0
1:50 PM	0	0	0	0	0	1:50 PM	0	0	0	0	0	1:50 PM	0	0	0	0	0
1:55 PM	1	0	0	0	1	1:55 PM	0	0	0	0	0	1:55 PM	0	0	0	0	0
2:00 PM	1	0	0	0	1	2:00 PM	0	0	0	0	0	2:00 PM	0	3	0	0	3
2:05 PM	0	0	1	0	1	2:05 PM	0	0	0	0	0	2:05 PM	0	1	0	0	1
2:10 PM	1	0	1	0	2	2:10 PM	0	0	0	0	0	2:10 PM	0	0	0	0	0
2:15 PM	1	0	1	1	3	2:15 PM	0	0	0	0	0	2:15 PM	0	0	0	0	0
2:20 PM	0	0	3	0	3	2:20 PM	0	0	0	0	0	2:20 PM	0	0	0	0	0
2:25 PM	2	0	0	0	2	2:25 PM	0	0	0	0	0	2:25 PM	0	0	0	0	0
2:30 PM	1	0	0	0	1	2:30 PM	0	0	0	0	0	2:30 PM	0	0	0	0	0
2:35 PM	1	0	0	0	1	2:35 PM	0	0	0	0	0	2:35 PM	0	0	0	0	0
2:40 PM	1	0	2	0	3	2:40 PM	0	0	0	0	0	2:40 PM	0	0	0	0	0
2:45 PM	1	0	0	0	1	2:45 PM	0	0	0	0	0	2:45 PM	0	0	0	0	0
2:50 PM	0	0	2	0	2	2:50 PM	0	0	0	0	0	2:50 PM	0	0	0	0	0
2:55 PM	1	0	0	0	1	2:55 PM	0	0	0	0	0	2:55 PM	0	0	0	0	0
3:00 PM	1	0	0	0	1	3:00 PM	0	0	0	0	0	3:00 PM	0	0	0	0	0
3:05 PM	1	0	0	0	1	3:05 PM	0	0	0	0	0	3:05 PM	0	0	0	0	0
3:10 PM	1	0	4	0	5	3:10 PM	0	0	0	0	0	3:10 PM	0	0	0	0	0
3:15 PM	1	0	5	0	6	3:15 PM	0	0	0	0	0	3:15 PM	0	0	0	0	0
3:20 PM	1	0	0	0	1	3:20 PM	0	0	0	0	0	3:20 PM	0	0	1	0	1
3:25 PM	0	0	0	0	0	3:25 PM	0	0	0	0	0	3:25 PM	0	0	0	0	0
Count Total	21	0	21	2	44	Count Total	0	0	0	0	0	Count Total	0	4	1	0	5
Peak Hour	12	0	13	0	25	Peak Hour	0	0	0	0	0	Peak Hour	0	0	1	0	1



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Location: 3 SW LAUREL GLEN ST & SW BOECKMAN RD Noon

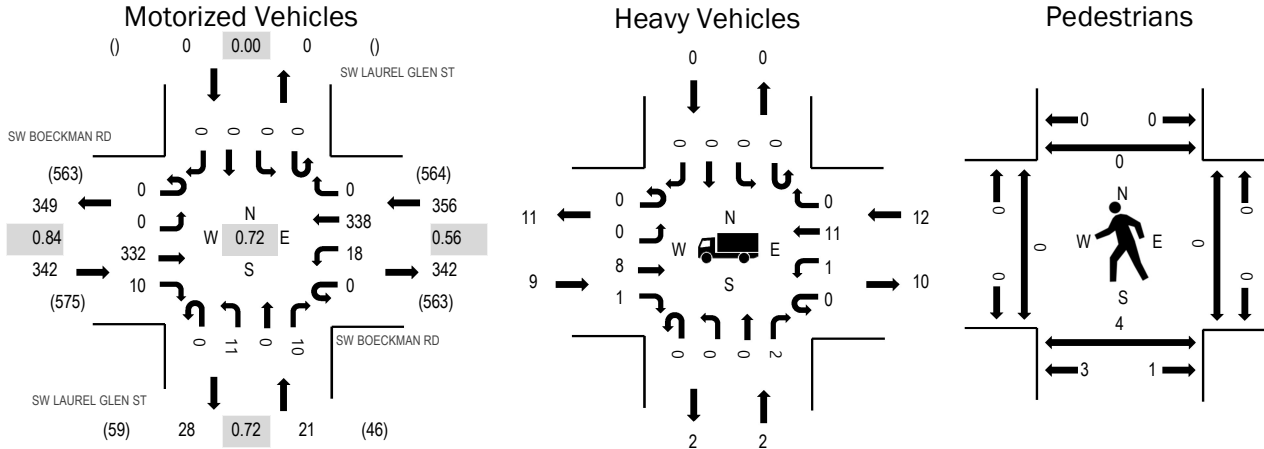
Date: Thursday, May 19, 2022

Peak Hour: 02:25 PM - 03:25 PM

Peak 15-Minutes: 03:05 PM - 03:20 PM

Item 3.

Peak Hour



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	2.6%	0.84
WB	3.4%	0.56
NB	9.5%	0.72
SB	0.0%	0.00
All	3.2%	0.72

Traffic Counts - Motorized Vehicles

Interval Start Time	SW BOECKMAN RD Eastbound				SW BOECKMAN RD Westbound				SW LAUREL GLEN ST Northbound				SW LAUREL GLEN ST Southbound				Total	Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
1:30 PM	0	0	16	1	0	0	13	0	0	3	0	0	0	0	0	0	33	455
1:35 PM	0	0	21	3	0	4	16	0	0	2	0	0	0	0	0	0	46	469
1:40 PM	0	0	15	3	0	0	10	0	0	0	0	0	0	0	0	0	28	465
1:45 PM	0	0	21	3	0	0	13	0	0	0	0	1	0	0	0	0	38	479
1:50 PM	0	0	12	0	0	0	12	0	0	2	0	0	0	0	0	0	26	498
1:55 PM	0	0	16	1	0	0	10	0	0	1	0	3	0	0	0	0	31	526
2:00 PM	0	0	12	3	0	2	10	0	0	2	0	0	0	0	0	0	29	546
2:05 PM	0	0	8	1	0	1	23	0	0	0	0	0	0	0	0	0	33	582
2:10 PM	0	0	20	1	0	1	22	0	0	1	0	2	0	0	0	0	47	626
2:15 PM	0	0	22	1	0	0	19	0	0	2	0	0	0	0	0	0	44	664
2:20 PM	0	0	20	0	0	2	25	0	0	4	0	0	0	0	0	0	51	707
2:25 PM	0	0	19	0	0	2	25	0	0	1	0	2	0	0	0	0	49	719
2:30 PM	0	0	27	1	0	0	19	0	0	0	0	0	0	0	0	0	47	
2:35 PM	0	0	25	0	0	0	16	0	0	0	0	1	0	0	0	0	42	
2:40 PM	0	0	21	0	0	1	18	0	0	0	0	2	0	0	0	0	42	
2:45 PM	0	0	34	2	0	2	18	0	0	1	0	0	0	0	0	0	57	
2:50 PM	0	0	29	1	0	0	21	0	0	2	0	1	0	0	0	0	54	
2:55 PM	0	0	33	1	0	0	16	0	0	1	0	0	0	0	0	0	51	
3:00 PM	0	0	37	2	0	0	25	0	0	0	0	1	0	0	0	0	65	
3:05 PM	0	0	33	0	0	3	40	0	0	1	0	0	0	0	0	0	77	
3:10 PM	0	0	21	1	0	2	59	0	0	2	0	0	0	0	0	0	85	
3:15 PM	0	0	26	2	0	5	50	0	0	2	0	2	0	0	0	0	87	
3:20 PM	0	0	27	0	0	3	31	0	0	1	0	1	0	0	0	0	63	
3:25 PM	0	0	31	2	0	2	23	0	0	1	0	1	0	0	0	0	60	
Count Total	0	0	546	29	0	30	534	0	0	29	0	17	0	0	0	0	1,185	
Peak Hour	0	0	332	10	0	18	338	0	0	11	0	10	0	0	0	0	719	

**Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles on Crosswalk**

Item 3.

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
1:30 PM	0	0	0	0	0	1:30 PM	0	0	0	0	0	1:30 PM	0	0	0	0	0
1:35 PM	2	0	1	0	3	1:35 PM	0	0	0	0	0	1:35 PM	0	0	0	0	0
1:40 PM	1	0	0	0	1	1:40 PM	0	0	0	0	0	1:40 PM	0	0	0	0	0
1:45 PM	2	0	0	0	2	1:45 PM	0	0	0	0	0	1:45 PM	0	0	0	0	0
1:50 PM	0	0	0	0	0	1:50 PM	0	0	0	0	0	1:50 PM	0	0	0	0	0
1:55 PM	1	0	0	0	1	1:55 PM	0	0	0	0	0	1:55 PM	0	1	0	0	1
2:00 PM	1	0	0	0	1	2:00 PM	0	0	0	0	0	2:00 PM	0	1	0	0	1
2:05 PM	0	0	1	0	1	2:05 PM	0	0	0	0	0	2:05 PM	0	1	0	0	1
2:10 PM	0	2	1	0	3	2:10 PM	0	0	0	0	0	2:10 PM	0	0	0	0	0
2:15 PM	0	0	1	0	1	2:15 PM	0	0	0	0	0	2:15 PM	0	0	0	0	0
2:20 PM	0	0	3	0	3	2:20 PM	0	0	0	0	0	2:20 PM	0	0	0	0	0
2:25 PM	1	1	0	0	2	2:25 PM	0	0	0	0	0	2:25 PM	0	0	0	0	0
2:30 PM	1	0	0	0	1	2:30 PM	0	0	0	0	0	2:30 PM	0	0	0	0	0
2:35 PM	1	0	0	0	1	2:35 PM	0	0	0	0	0	2:35 PM	0	0	0	0	0
2:40 PM	1	0	1	0	2	2:40 PM	0	0	0	0	0	2:40 PM	0	1	0	0	1
2:45 PM	1	0	0	0	1	2:45 PM	0	0	0	0	0	2:45 PM	0	0	0	0	0
2:50 PM	1	0	2	0	3	2:50 PM	0	0	0	0	0	2:50 PM	0	1	0	0	1
2:55 PM	1	0	0	0	1	2:55 PM	0	0	0	0	0	2:55 PM	0	0	0	0	0
3:00 PM	0	1	0	0	1	3:00 PM	0	0	0	0	0	3:00 PM	0	0	0	0	0
3:05 PM	1	0	0	0	1	3:05 PM	0	0	0	0	0	3:05 PM	0	0	0	0	0
3:10 PM	1	0	4	0	5	3:10 PM	0	0	0	0	0	3:10 PM	0	0	0	0	0
3:15 PM	0	0	5	0	5	3:15 PM	0	0	0	0	0	3:15 PM	0	2	0	0	2
3:20 PM	0	0	0	0	0	3:20 PM	0	0	0	0	0	3:20 PM	0	0	0	0	0
3:25 PM	1	0	0	0	1	3:25 PM	0	0	0	0	0	3:25 PM	0	2	0	0	2
Count Total	17	4	19	0	40	Count Total	0	0	0	0	0	Count Total	0	9	0	0	9
Peak Hour	9	2	12	0	23	Peak Hour	0	0	0	0	0	Peak Hour	0	4	0	0	4



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Location: 4 SW SHEWRMAN DR & SW BOECKMAN RD Noon

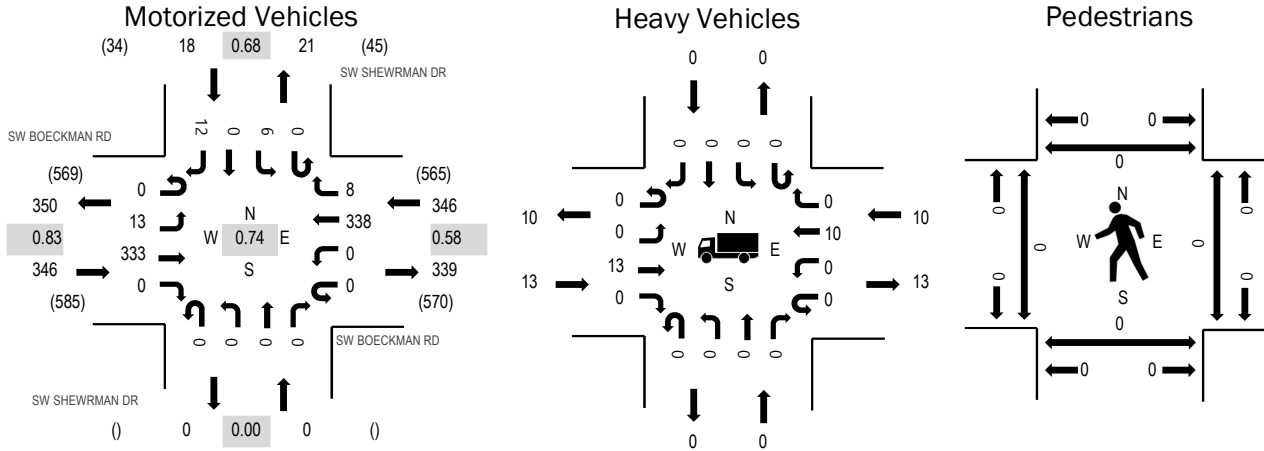
Date: Thursday, May 19, 2022

Peak Hour: 02:25 PM - 03:25 PM

Peak 15-Minutes: 03:05 PM - 03:20 PM

Item 3.

Peak Hour



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	3.8%	0.83
WB	2.9%	0.58
NB	0.0%	0.00
SB	0.0%	0.68
All	3.2%	0.74

Traffic Counts - Motorized Vehicles

Interval Start Time	SW BOECKMAN RD Eastbound				SW BOECKMAN RD Westbound				SW SHEWRMAN DR Northbound				SW SHEWRMAN DR Southbound				Total	Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
1:30 PM	0	1	12	0	0	0	19	1	0	0	0	0	0	1	0	0	34	460
1:35 PM	0	0	27	0	0	0	14	1	0	0	0	0	0	0	0	3	45	475
1:40 PM	0	1	18	0	0	0	9	1	0	0	0	0	0	0	0	2	31	472
1:45 PM	0	0	19	0	0	0	15	1	0	0	0	0	0	0	0	1	36	484
1:50 PM	0	0	18	0	0	0	12	0	0	0	0	0	0	0	0	3	33	498
1:55 PM	0	0	15	0	0	0	10	1	0	0	0	0	0	0	0	1	27	527
2:00 PM	0	4	17	0	0	0	12	0	0	0	0	0	0	0	0	0	33	561
2:05 PM	0	1	8	0	0	0	22	2	0	0	0	0	0	0	0	0	33	592
2:10 PM	0	3	24	0	0	0	22	3	0	0	0	0	0	1	0	0	53	625
2:15 PM	0	0	18	0	0	0	19	1	0	0	0	0	0	1	0	1	40	661
2:20 PM	0	0	21	0	0	0	31	2	0	0	0	0	0	0	0	1	55	705
2:25 PM	0	0	18	0	0	0	22	0	0	0	0	0	0	0	0	0	40	710
2:30 PM	0	1	26	0	0	0	18	0	0	0	0	0	0	1	0	3	49	
2:35 PM	0	0	24	0	0	0	17	0	0	0	0	0	0	0	0	1	42	
2:40 PM	0	4	20	0	0	0	17	0	0	0	0	0	0	1	0	1	43	
2:45 PM	0	0	31	0	0	0	19	0	0	0	0	0	0	0	0	0	50	
2:50 PM	0	0	33	0	0	0	25	1	0	0	0	0	0	0	0	3	62	
2:55 PM	0	0	42	0	0	0	13	3	0	0	0	0	0	2	0	1	61	
3:00 PM	0	1	33	0	0	0	30	0	0	0	0	0	0	0	0	0	64	
3:05 PM	0	1	24	0	0	0	39	0	0	0	0	0	0	1	0	1	66	
3:10 PM	0	2	27	0	0	0	57	2	0	0	0	0	0	0	0	1	89	
3:15 PM	0	2	29	0	0	0	50	1	0	0	0	0	0	1	0	1	84	
3:20 PM	0	2	26	0	0	0	31	1	0	0	0	0	0	0	0	0	60	
3:25 PM	0	1	31	0	0	0	21	0	0	0	0	0	0	0	0	1	54	
Count Total	0	24	561	0	0	0	544	21	0	0	0	0	0	9	0	25	1,184	
Peak Hour	0	13	333	0	0	0	338	8	0	0	0	0	0	6	0	12	710	



**Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles on Crosswalk**

Item 3.

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
1:30 PM	0	0	1	0	1	1:30 PM	0	0	0	0	0	1:30 PM	0	0	0	0	0
1:35 PM	3	0	0	0	3	1:35 PM	0	0	0	0	0	1:35 PM	0	0	0	0	0
1:40 PM	1	0	0	0	1	1:40 PM	0	0	0	0	0	1:40 PM	0	0	0	0	0
1:45 PM	1	0	0	0	1	1:45 PM	0	0	0	0	0	1:45 PM	0	0	0	0	0
1:50 PM	0	0	0	0	0	1:50 PM	0	0	0	0	0	1:50 PM	0	0	0	0	0
1:55 PM	1	0	0	0	1	1:55 PM	0	0	0	0	0	1:55 PM	0	0	0	0	0
2:00 PM	1	0	0	0	1	2:00 PM	0	0	0	0	0	2:00 PM	0	0	0	0	0
2:05 PM	0	0	0	0	0	2:05 PM	0	0	0	0	0	2:05 PM	0	0	0	0	0
2:10 PM	0	0	1	0	1	2:10 PM	0	0	0	0	0	2:10 PM	0	0	0	0	0
2:15 PM	0	0	1	0	1	2:15 PM	0	0	0	0	0	2:15 PM	0	0	0	0	0
2:20 PM	0	0	2	0	2	2:20 PM	0	0	0	0	0	2:20 PM	0	0	0	0	0
2:25 PM	1	0	0	0	1	2:25 PM	0	0	0	0	0	2:25 PM	0	0	0	0	0
2:30 PM	3	0	0	0	3	2:30 PM	0	0	0	0	0	2:30 PM	0	0	0	0	0
2:35 PM	0	0	0	0	0	2:35 PM	0	0	0	0	0	2:35 PM	0	0	0	0	0
2:40 PM	1	0	1	0	2	2:40 PM	0	0	0	0	0	2:40 PM	0	0	0	0	0
2:45 PM	1	0	0	0	1	2:45 PM	0	0	0	0	0	2:45 PM	0	0	0	0	0
2:50 PM	3	0	2	0	5	2:50 PM	0	0	0	0	0	2:50 PM	0	0	0	0	0
2:55 PM	1	0	0	0	1	2:55 PM	0	0	0	0	0	2:55 PM	0	0	0	0	0
3:00 PM	0	0	0	0	0	3:00 PM	0	0	0	0	0	3:00 PM	0	0	0	0	0
3:05 PM	1	0	0	0	1	3:05 PM	0	0	0	0	0	3:05 PM	0	0	0	0	0
3:10 PM	1	0	4	0	5	3:10 PM	0	0	0	0	0	3:10 PM	0	0	0	0	0
3:15 PM	0	0	3	0	3	3:15 PM	0	0	0	0	0	3:15 PM	0	0	0	0	0
3:20 PM	1	0	0	0	1	3:20 PM	0	0	0	0	0	3:20 PM	0	0	0	0	0
3:25 PM	0	0	0	0	0	3:25 PM	0	0	0	0	0	3:25 PM	0	0	0	0	0
Count Total	20	0	15	0	35	Count Total	0	0	0	0	0	Count Total	0	0	0	0	0
Peak Hour	13	0	10	0	23	Peak Hour	0	0	0	0	0	Peak Hour	0	0	0	0	0



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Location: 5 SW CANYON CREEK RD & SW BOECKMAN RD Noon

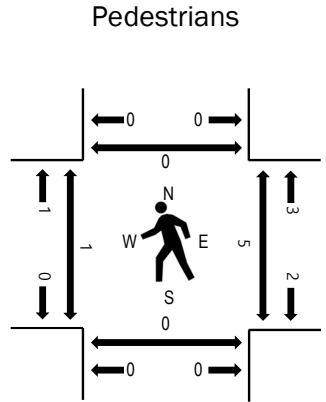
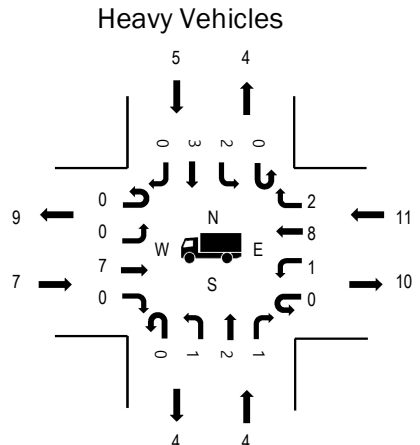
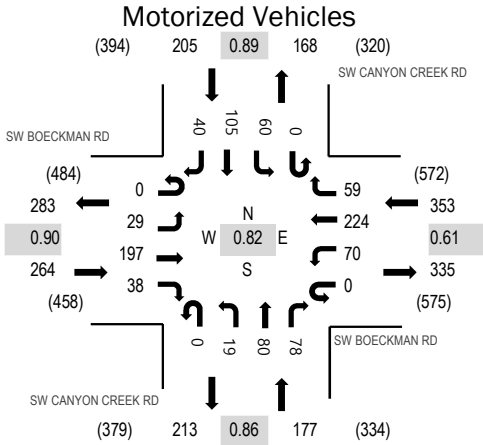
Date: Thursday, May 19, 2022

Peak Hour: 02:25 PM - 03:25 PM

Peak 15-Minutes: 03:05 PM - 03:20 PM

Item 3.

Peak Hour



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	2.7%	0.90
WB	3.1%	0.61
NB	2.3%	0.86
SB	2.4%	0.89
All	2.7%	0.82

Traffic Counts - Motorized Vehicles

Interval Start Time	SW BOECKMAN RD Eastbound				SW BOECKMAN RD Westbound				SW CANYON CREEK RD Northbound				SW CANYON CREEK RD Southbound				Total	Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
1:30 PM	0	1	13	2	0	3	8	5	0	2	3	1	0	2	7	4	51	739
1:35 PM	0	3	9	5	0	4	9	6	0	2	8	7	0	10	9	3	75	757
1:40 PM	0	3	11	1	0	2	8	2	0	2	5	6	0	3	6	1	50	762
1:45 PM	0	1	11	0	0	2	11	3	0	2	4	4	0	4	9	2	53	770
1:50 PM	0	6	11	2	0	4	5	2	0	2	3	0	0	6	7	4	52	788
1:55 PM	0	1	9	0	0	3	13	4	0	4	15	3	0	5	6	7	70	820
2:00 PM	0	2	9	4	0	2	4	2	0	2	5	3	0	5	2	2	42	828
2:05 PM	0	4	8	2	0	8	7	5	0	5	7	1	0	4	13	3	67	873
2:10 PM	0	1	5	2	0	6	15	1	0	3	4	7	0	3	6	6	59	901
2:15 PM	0	1	15	4	0	4	18	2	0	0	9	4	0	6	7	4	74	940
2:20 PM	0	3	11	3	0	3	15	6	0	1	9	5	0	3	11	3	73	977
2:25 PM	0	4	11	4	0	5	18	5	0	0	7	3	0	3	9	4	73	999
2:30 PM	0	2	14	2	0	4	13	5	0	0	8	7	0	3	6	5	69	
2:35 PM	0	1	18	7	0	4	12	4	0	2	5	7	0	2	14	4	80	
2:40 PM	0	2	18	3	0	2	9	1	0	2	5	5	0	4	4	3	58	
2:45 PM	0	1	13	5	0	5	12	2	0	2	5	4	0	4	13	5	71	
2:50 PM	0	2	23	3	0	8	13	5	0	3	5	3	0	8	10	1	84	
2:55 PM	0	3	20	1	0	1	16	2	0	1	4	12	0	5	8	5	78	
3:00 PM	0	4	18	3	0	6	13	3	0	1	10	10	0	7	8	4	87	
3:05 PM	0	4	17	2	0	11	25	5	0	2	7	3	0	9	8	2	95	
3:10 PM	0	1	11	3	0	5	32	10	0	1	9	9	0	5	10	2	98	
3:15 PM	0	3	17	2	0	6	38	8	0	3	8	9	0	5	10	2	111	
3:20 PM	0	2	17	3	0	13	23	9	0	2	7	6	0	5	5	3	95	
3:25 PM	0	4	22	5	0	5	18	4	0	2	8	9	0	5	7	4	93	
Count Total	0	59	331	68	0	116	355	101	0	46	160	128	0	116	195	83	1,758	
Peak Hour	0	29	197	38	0	70	224	59	0	19	80	78	0	60	105	40	999	

**Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles on Crosswalk**

Item 3.

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
1:30 PM	0	0	0	0	0	1:30 PM	0	0	0	0	0	1:30 PM	0	0	0	0	0
1:35 PM	3	0	1	0	4	1:35 PM	0	0	0	0	0	1:35 PM	0	0	0	0	0
1:40 PM	1	0	0	0	1	1:40 PM	0	0	0	0	0	1:40 PM	0	0	0	0	0
1:45 PM	2	0	0	0	2	1:45 PM	0	0	0	0	0	1:45 PM	0	0	0	0	0
1:50 PM	0	0	0	0	0	1:50 PM	0	0	0	0	0	1:50 PM	0	0	0	0	0
1:55 PM	1	0	0	0	1	1:55 PM	0	0	0	0	0	1:55 PM	0	0	0	0	0
2:00 PM	1	0	0	0	1	2:00 PM	0	0	0	0	0	2:00 PM	0	0	0	0	0
2:05 PM	1	0	0	1	2	2:05 PM	0	0	0	0	0	2:05 PM	0	0	0	0	0
2:10 PM	0	0	0	0	0	2:10 PM	0	0	0	0	0	2:10 PM	0	0	0	0	0
2:15 PM	0	2	2	0	4	2:15 PM	0	0	0	0	0	2:15 PM	1	0	0	0	1
2:20 PM	0	0	1	0	1	2:20 PM	0	0	0	0	0	2:20 PM	0	0	0	0	0
2:25 PM	0	0	1	0	1	2:25 PM	0	0	0	0	0	2:25 PM	0	0	0	0	0
2:30 PM	1	1	0	0	2	2:30 PM	0	0	0	0	0	2:30 PM	0	0	0	0	0
2:35 PM	2	2	0	0	4	2:35 PM	0	0	0	0	0	2:35 PM	0	0	2	0	2
2:40 PM	0	0	1	0	1	2:40 PM	0	0	0	0	0	2:40 PM	0	0	0	0	0
2:45 PM	1	0	0	0	1	2:45 PM	0	0	0	0	0	2:45 PM	1	0	0	0	1
2:50 PM	1	0	1	4	6	2:50 PM	0	0	0	0	0	2:50 PM	0	0	0	0	0
2:55 PM	0	0	1	0	1	2:55 PM	0	0	0	0	0	2:55 PM	0	0	2	0	2
3:00 PM	0	0	0	0	0	3:00 PM	0	0	0	0	0	3:00 PM	0	0	1	0	1
3:05 PM	0	0	0	0	0	3:05 PM	0	0	0	0	0	3:05 PM	1	0	0	0	1
3:10 PM	1	0	2	1	4	3:10 PM	0	0	0	0	0	3:10 PM	0	0	2	0	2
3:15 PM	0	1	2	0	3	3:15 PM	0	0	0	0	0	3:15 PM	0	0	0	0	0
3:20 PM	1	0	3	0	4	3:20 PM	0	0	0	0	0	3:20 PM	0	0	0	0	0
3:25 PM	0	1	0	0	1	3:25 PM	0	0	0	0	0	3:25 PM	0	0	0	0	0
Count Total	16	7	15	6	44	Count Total	0	0	0	0	0	Count Total	3	0	7	0	10
Peak Hour	7	4	11	5	27	Peak Hour	0	0	0	0	0	Peak Hour	2	0	7	0	9



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Location: 4 SW Wilsonville Rd & SW Advance Rd PM

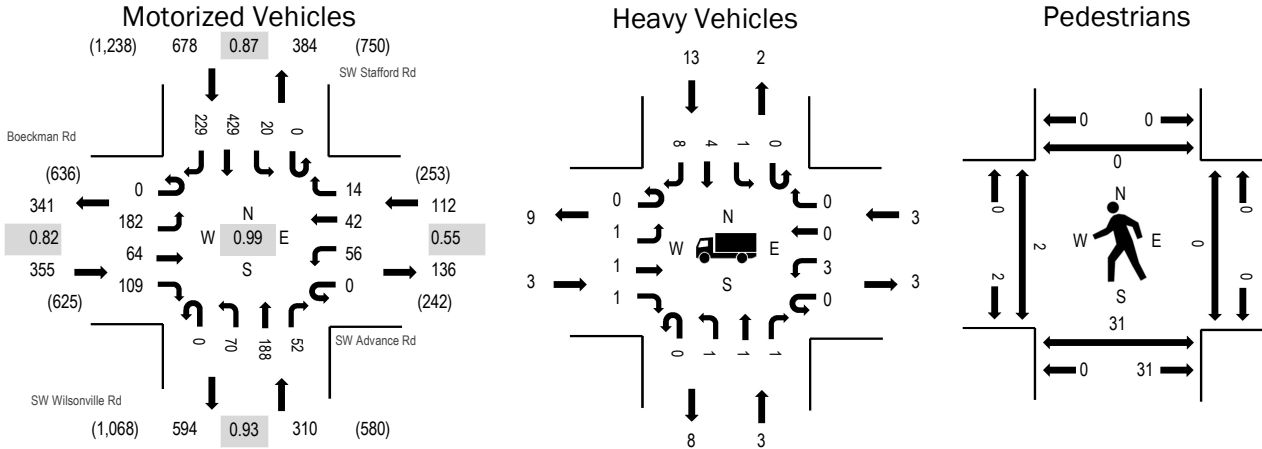
Date: Thursday, September 30, 2021

Peak Hour: 04:45 PM - 05:45 PM

Peak 15-Minutes: 05:00 PM - 05:15 PM

Item 3.

Peak Hour



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	0.8%	0.82
WB	2.7%	0.55
NB	1.0%	0.93
SB	1.9%	0.87
All	1.5%	0.99

Traffic Counts - Motorized Vehicles

Interval Start Time	Boeckman Rd Eastbound				SW Advance Rd Westbound				SW Wilsonville Rd Northbound				SW Stafford Rd 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	11	4	8	0	16	19	12	0	4	14	1	0	5	26	16	136	1,289
4:05 PM	0	16	1	0	0	3	2	3	0	4	20	1	0	2	22	19	93	1,263
4:10 PM	0	17	6	3	0	4	2	6	0	4	16	3	0	0	31	14	106	1,294
4:15 PM	0	10	2	0	0	4	1	3	0	7	14	4	0	0	23	15	83	1,323
4:20 PM	0	20	7	6	0	9	2	5	0	5	13	1	0	0	30	12	110	1,350
4:25 PM	0	12	3	7	0	5	5	3	0	1	18	7	0	3	25	27	116	1,363
4:30 PM	0	11	5	8	0	3	2	0	0	2	10	3	0	1	24	23	92	1,376
4:35 PM	0	18	2	6	0	2	3	2	0	2	14	3	0	3	29	14	98	1,399
4:40 PM	0	11	3	8	0	3	1	4	0	3	14	5	0	1	31	13	97	1,424
4:45 PM	0	15	4	12	0	8	2	0	0	5	17	7	0	0	25	23	118	1,455
4:50 PM	0	15	6	1	0	2	6	2	0	8	15	7	0	2	35	21	120	1,435
4:55 PM	0	16	13	9	0	0	1	2	0	3	9	4	0	1	41	21	120	1,424
5:00 PM	0	19	10	6	0	6	1	0	0	6	16	6	0	2	21	17	110	1,407
5:05 PM	0	12	6	15	0	8	8	5	0	6	15	5	0	1	28	15	124	
5:10 PM	0	23	3	14	0	11	12	2	0	8	15	4	0	2	28	13	135	
5:15 PM	0	14	2	9	0	4	3	1	0	6	14	2	0	3	30	22	110	
5:20 PM	0	7	2	15	0	2	1	0	0	6	22	3	0	1	42	22	123	
5:25 PM	0	13	3	8	0	4	2	0	0	5	19	4	0	2	54	15	129	
5:30 PM	0	15	5	5	0	6	0	0	0	8	16	1	0	2	41	16	115	
5:35 PM	0	16	4	7	0	2	3	2	0	3	16	3	0	2	45	20	123	
5:40 PM	0	17	6	8	0	3	3	0	0	6	14	6	0	2	39	24	128	
5:45 PM	0	7	4	4	0	5	2	2	0	2	13	6	0	0	35	18	98	
5:50 PM	0	13	2	11	0	3	3	0	0	14	11	2	0	3	31	16	109	
5:55 PM	0	8	4	12	0	1	1	0	0	6	15	8	0	1	36	11	103	
Count Total	0	336	107	182	0	114	85	54	0	124	360	96	0	39	772	427	2,696	
Peak Hour	0	182	64	109	0	56	42	14	0	70	188	52	0	20	429	229	1,455	



# Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles on Crosswalk

Item 3.

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	0	4	1	5	4:00 PM	0	0	0	0	0	4:00 PM	0	8	0	0	8
4:05 PM	0	0	1	0	1	4:05 PM	0	0	0	0	0	4:05 PM	0	0	0	0	0
4:10 PM	1	2	1	0	4	4:10 PM	0	0	0	0	0	4:10 PM	0	0	0	0	0
4:15 PM	1	1	0	0	2	4:15 PM	0	0	0	0	0	4:15 PM	0	1	0	0	1
4:20 PM	0	4	0	1	5	4:20 PM	0	0	0	0	0	4:20 PM	0	1	0	0	1
4:25 PM	0	1	0	1	2	4:25 PM	0	0	0	0	0	4:25 PM	0	44	0	0	44
4:30 PM	0	0	1	3	4	4:30 PM	0	0	0	0	0	4:30 PM	0	0	0	0	0
4:35 PM	0	0	0	0	0	4:35 PM	0	0	0	0	0	4:35 PM	0	0	0	0	0
4:40 PM	0	0	0	1	1	4:40 PM	0	0	0	0	0	4:40 PM	0	11	0	0	11
4:45 PM	0	0	0	1	1	4:45 PM	0	0	0	0	0	4:45 PM	0	9	0	0	9
4:50 PM	0	0	0	2	2	4:50 PM	0	0	0	0	0	4:50 PM	0	22	0	0	22
4:55 PM	0	1	0	1	2	4:55 PM	0	0	0	0	0	4:55 PM	0	0	0	0	0
5:00 PM	0	0	1	0	1	5:00 PM	0	0	0	0	0	5:00 PM	0	1	0	0	1
5:05 PM	0	0	0	1	1	5:05 PM	0	0	0	0	0	5:05 PM	0	0	0	0	0
5:10 PM	2	0	0	1	3	5:10 PM	0	0	0	0	0	5:10 PM	1	0	0	0	1
5:15 PM	0	0	1	2	3	5:15 PM	0	0	0	0	0	5:15 PM	0	3	0	0	3
5:20 PM	0	0	0	1	1	5:20 PM	0	0	0	0	0	5:20 PM	0	0	0	0	0
5:25 PM	1	0	0	0	1	5:25 PM	0	0	0	0	0	5:25 PM	0	0	0	0	0
5:30 PM	0	2	1	0	3	5:30 PM	0	0	0	0	0	5:30 PM	0	0	0	0	0
5:35 PM	0	0	0	3	3	5:35 PM	0	0	0	0	0	5:35 PM	0	0	0	0	0
5:40 PM	0	0	0	1	1	5:40 PM	0	0	0	0	0	5:40 PM	2	0	0	0	2
5:45 PM	0	0	1	0	1	5:45 PM	0	0	0	0	0	5:45 PM	2	0	0	0	2
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	0	0	0	5:55 PM	0	0	0	0	0	5:55 PM	0	0	0	0	0
Count Total	5	11	11	20	47	Count Total	0	0	0	0	0	Count Total	5	100	0	0	105
Peak Hour	3	3	3	13	22	Peak Hour	0	0	0	0	0	Peak Hour	3	35	0	0	38



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Location: 3 Willow Creek Dr & Boeckman Rd PM

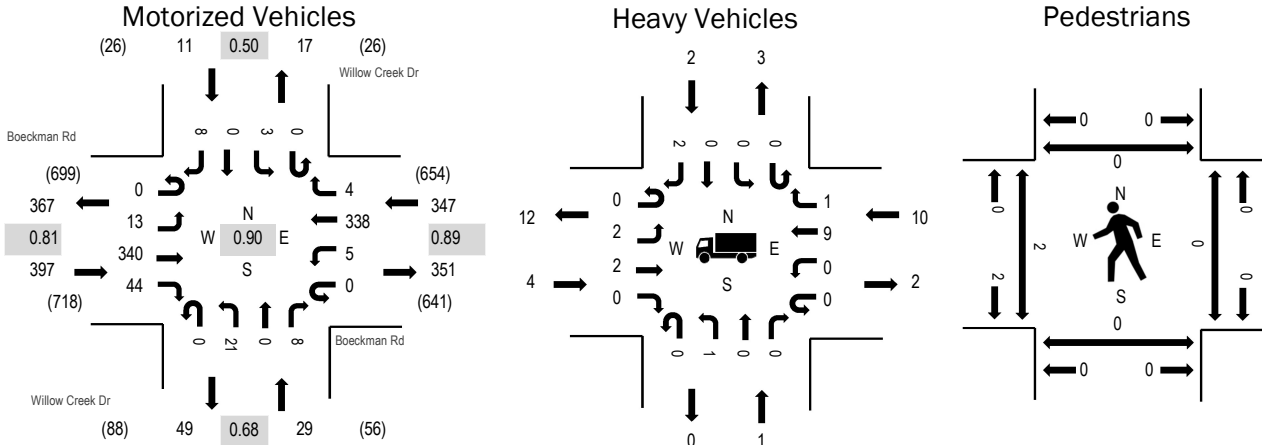
Date: Thursday, September 30, 2021

Peak Hour: 04:45 PM - 05:45 PM

Peak 15-Minutes: 05:00 PM - 05:15 PM

Item 3.

Peak Hour



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	1.0%	0.81
WB	2.9%	0.89
NB	3.4%	0.68
SB	18.2%	0.50
All	2.2%	0.90

Traffic Counts - Motorized Vehicles

Interval Start Time	Boeckman Rd Eastbound				Boeckman Rd Westbound				Willow Creek Dr Northbound				Willow Creek Dr 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	19	2	0	0	45	0	0	3	0	0	0	1	0	0	72	700
4:05 PM	0	0	16	2	0	1	23	0	0	3	0	1	0	0	0	0	46	697
4:10 PM	0	0	28	4	0	0	23	0	0	2	0	1	0	0	0	1	59	723
4:15 PM	0	1	24	2	0	0	18	3	0	1	0	0	0	0	0	2	51	741
4:20 PM	0	1	30	2	0	0	18	0	0	2	0	1	0	1	0	2	57	749
4:25 PM	0	1	22	5	0	1	33	0	0	0	0	0	0	1	0	1	64	754
4:30 PM	0	0	23	2	0	0	30	0	0	1	0	0	0	1	0	2	59	736
4:35 PM	0	0	27	1	0	1	18	0	0	1	0	0	0	0	0	1	49	744
4:40 PM	0	0	23	3	0	1	16	0	0	2	0	0	0	0	0	0	45	756
4:45 PM	0	0	29	1	0	1	27	1	0	1	0	1	0	0	0	1	62	784
4:50 PM	0	1	22	3	0	1	33	0	0	3	0	2	0	0	0	2	67	773
4:55 PM	0	1	35	6	0	0	25	0	0	0	0	2	0	0	0	0	69	773
5:00 PM	0	2	36	9	0	0	20	0	0	2	0	0	0	0	0	0	69	754
5:05 PM	0	1	30	2	0	0	36	0	0	2	0	0	0	1	0	0	72	
5:10 PM	0	1	33	7	0	0	34	0	0	2	0	0	0	0	0	0	77	
5:15 PM	0	1	24	3	0	0	27	1	0	2	0	1	0	0	0	0	59	
5:20 PM	0	2	25	0	0	1	31	0	0	1	0	0	0	0	0	2	62	
5:25 PM	0	0	22	0	0	0	20	1	0	1	0	0	0	1	0	1	46	
5:30 PM	0	0	28	8	0	0	28	0	0	1	0	1	0	0	0	1	67	
5:35 PM	0	3	25	2	0	2	25	1	0	3	0	0	0	0	0	0	61	
5:40 PM	0	1	31	3	0	0	32	0	0	3	0	1	0	1	0	1	73	
5:45 PM	0	1	23	2	0	1	20	0	0	3	0	0	0	1	0	0	51	
5:50 PM	0	0	22	4	0	1	35	0	0	4	0	0	0	0	0	1	67	
5:55 PM	0	0	25	4	0	0	19	0	0	2	0	0	0	0	0	0	50	
Count Total	0	19	622	77	0	11	636	7	0	45	0	11	0	8	0	18	1,454	
Peak Hour	0	13	340	44	0	5	338	4	0	21	0	8	0	3	0	8	784	

**Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles on Crosswalk**

*Item 3.*

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	0	1	0	1	4:00 PM	0	0	0	0	0	4:00 PM	0	9	0	0	9
4:05 PM	0	0	2	0	2	4:05 PM	0	0	0	0	0	4:05 PM	0	10	0	0	10
4:10 PM	0	0	1	0	1	4:10 PM	0	0	0	0	0	4:10 PM	0	1	0	0	1
4:15 PM	1	0	0	0	1	4:15 PM	0	0	0	0	0	4:15 PM	0	10	0	0	10
4:20 PM	0	0	2	0	2	4:20 PM	0	0	0	0	0	4:20 PM	0	1	0	0	1
4:25 PM	1	0	2	0	3	4:25 PM	0	0	0	0	0	4:25 PM	0	5	0	0	5
4:30 PM	0	0	1	0	1	4:30 PM	0	0	0	0	0	4:30 PM	0	0	0	0	0
4:35 PM	0	0	0	0	0	4:35 PM	0	0	0	0	0	4:35 PM	0	3	0	0	3
4:40 PM	0	0	0	0	0	4:40 PM	0	0	0	0	0	4:40 PM	0	0	0	0	0
4:45 PM	0	0	1	0	1	4:45 PM	0	0	0	0	0	4:45 PM	0	0	0	0	0
4:50 PM	0	0	1	1	2	4:50 PM	0	0	0	0	0	4:50 PM	0	0	0	0	0
4:55 PM	0	0	0	0	0	4:55 PM	0	0	0	0	0	4:55 PM	0	0	0	0	0
5:00 PM	1	0	0	0	1	5:00 PM	0	0	0	0	0	5:00 PM	0	0	0	0	0
5:05 PM	0	0	1	0	1	5:05 PM	0	0	0	0	0	5:05 PM	0	0	0	0	0
5:10 PM	2	1	1	0	4	5:10 PM	0	0	0	0	0	5:10 PM	0	0	0	0	0
5:15 PM	0	0	1	0	1	5:15 PM	0	0	0	0	0	5:15 PM	0	0	0	0	0
5:20 PM	1	0	1	0	2	5:20 PM	0	0	0	0	0	5:20 PM	0	0	0	0	0
5:25 PM	0	0	0	0	0	5:25 PM	0	0	0	0	0	5:25 PM	0	0	0	0	0
5:30 PM	0	0	1	1	2	5:30 PM	0	0	0	0	0	5:30 PM	0	0	0	0	0
5:35 PM	0	0	3	0	3	5:35 PM	0	0	0	0	0	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	2	0	0	0	2
5:45 PM	0	0	0	0	0	5:45 PM	0	0	0	0	0	5:45 PM	2	0	0	0	2
5:50 PM	0	0	0	1	1	5:50 PM	0	0	0	0	0	5:50 PM	0	1	0	0	1
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	6	1	19	3	29	Count Total	0	0	0	0	0	Count Total	4	40	0	0	44
Peak Hour	4	1	10	2	17	Peak Hour	0	0	0	0	0	Peak Hour	2	0	0	0	2



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Location: 2 SW Canyon Creek Rd & Boeckman Rd PM

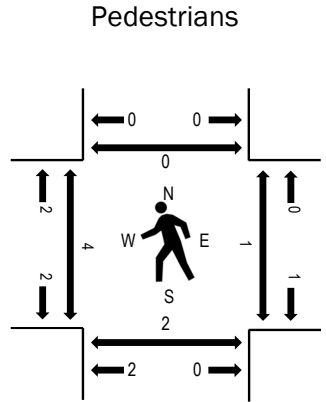
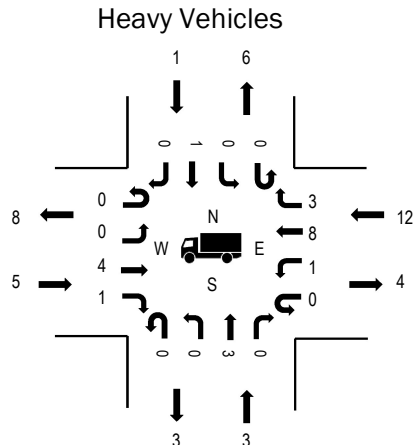
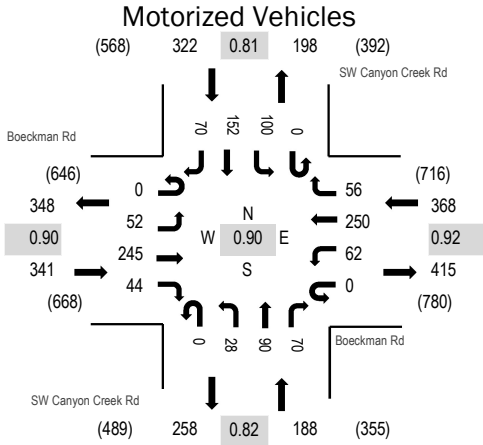
Date: Thursday, September 30, 2021

Peak Hour: 04:45 PM - 05:45 PM

Peak 15-Minutes: 04:50 PM - 05:05 PM

Item 3.

Peak Hour



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	1.5%	0.90
WB	3.3%	0.92
NB	1.6%	0.82
SB	0.3%	0.81
All	1.7%	0.90

Traffic Counts - Motorized Vehicles

Interval Start Time	Boeckman Rd Eastbound				Boeckman Rd Westbound				SW Canyon Creek Rd Northbound				SW Canyon Creek Rd 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	6	17	8	0	11	31	4	0	4	5	2	0	5	9	4	106	1,142
4:05 PM	0	4	22	2	0	4	18	7	0	0	8	6	0	2	9	1	83	1,148
4:10 PM	0	5	21	3	0	3	20	4	0	1	5	5	0	3	15	7	92	1,172
4:15 PM	0	5	14	3	0	2	15	5	0	2	15	6	0	8	7	3	85	1,184
4:20 PM	0	2	28	2	0	4	14	6	0	2	11	4	0	5	15	3	96	1,201
4:25 PM	0	3	19	7	0	7	22	4	0	3	7	4	0	7	9	2	94	1,201
4:30 PM	0	3	23	3	0	8	21	4	0	2	4	5	0	7	5	9	94	1,202
4:35 PM	0	4	22	5	0	2	19	5	0	3	10	1	0	3	13	3	90	1,214
4:40 PM	0	3	19	2	0	6	12	3	0	3	8	4	0	11	14	7	92	1,215
4:45 PM	0	3	18	4	0	1	20	3	0	3	5	3	0	9	9	7	85	1,219
4:50 PM	0	8	12	4	0	5	31	6	0	2	9	5	0	12	16	3	113	1,214
4:55 PM	0	7	25	2	0	6	19	3	0	3	7	8	0	9	13	10	112	1,190
5:00 PM	0	5	22	0	0	2	12	6	0	5	9	11	0	16	15	9	112	1,165
5:05 PM	0	2	27	7	0	8	24	6	0	1	7	3	0	9	10	3	107	
5:10 PM	0	3	21	6	0	8	20	5	0	1	11	4	0	6	12	7	104	
5:15 PM	0	7	19	3	0	4	20	6	0	3	10	7	0	6	14	3	102	
5:20 PM	0	5	14	5	0	7	23	7	0	3	4	5	0	6	11	6	96	
5:25 PM	0	4	19	6	0	7	18	5	0	2	3	3	0	7	16	5	95	
5:30 PM	0	2	25	5	0	3	20	3	0	1	10	7	0	10	11	9	106	
5:35 PM	0	3	21	1	0	6	17	5	0	3	8	5	0	4	17	1	91	
5:40 PM	0	3	22	1	0	5	26	1	0	1	7	9	0	6	8	7	96	
5:45 PM	0	1	21	3	0	7	20	2	0	2	8	6	0	6	2	2	80	
5:50 PM	0	2	16	4	0	5	20	6	0	0	11	2	0	10	10	3	89	
5:55 PM	0	4	19	2	0	6	16	5	0	0	5	3	0	9	14	4	87	
Count Total	0	94	486	88	0	127	478	111	0	50	187	118	0	176	274	118	2,307	
Peak Hour	0	52	245	44	0	62	250	56	0	28	90	70	0	100	152	70	1,219	



**Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles on Crosswalk**

*Item 3.*

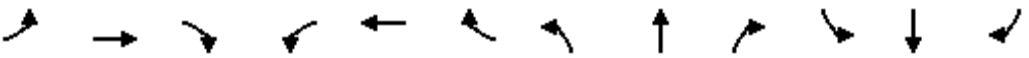
Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
4:00 PM	0	0	3	0	3	4:00 PM	0	0	0	0	0	4:00 PM	0	0	0	0	0
4:05 PM	0	2	2	0	4	4:05 PM	0	0	0	0	0	4:05 PM	0	0	0	0	0
4:10 PM	1	0	1	0	2	4:10 PM	0	0	0	0	0	4:10 PM	0	2	0	0	2
4:15 PM	1	1	0	1	3	4:15 PM	0	0	0	0	0	4:15 PM	1	2	2	0	5
4:20 PM	0	1	1	0	2	4:20 PM	0	0	0	0	0	4:20 PM	0	0	0	0	0
4:25 PM	1	0	2	0	3	4:25 PM	0	0	0	0	0	4:25 PM	0	0	0	0	0
4:30 PM	1	0	2	0	3	4:30 PM	0	0	0	0	0	4:30 PM	0	2	0	0	2
4:35 PM	0	0	0	0	0	4:35 PM	0	0	0	0	0	4:35 PM	0	0	2	0	2
4:40 PM	0	0	0	0	0	4:40 PM	0	0	0	1	1	4:40 PM	0	0	0	0	0
4:45 PM	0	0	1	0	1	4:45 PM	0	0	0	0	0	4:45 PM	0	0	0	0	0
4:50 PM	0	0	1	0	1	4:50 PM	0	0	0	1	1	4:50 PM	0	0	0	0	0
4:55 PM	0	0	0	0	0	4:55 PM	0	0	0	0	0	4:55 PM	0	0	0	0	0
5:00 PM	1	0	0	0	1	5:00 PM	0	0	0	0	0	5:00 PM	0	1	0	0	1
5:05 PM	1	0	0	0	1	5:05 PM	0	0	0	0	0	5:05 PM	1	0	0	0	1
5:10 PM	1	0	1	0	2	5:10 PM	0	0	0	0	0	5:10 PM	0	0	0	0	0
5:15 PM	0	0	1	1	2	5:15 PM	0	0	0	0	0	5:15 PM	1	0	0	0	1
5:20 PM	2	0	2	0	4	5:20 PM	0	0	0	0	0	5:20 PM	0	1	0	0	1
5:25 PM	0	0	1	0	1	5:25 PM	0	0	0	0	0	5:25 PM	0	0	0	0	0
5:30 PM	0	1	2	0	3	5:30 PM	0	0	0	0	0	5:30 PM	0	0	0	0	0
5:35 PM	0	2	3	0	5	5:35 PM	0	0	0	0	0	5:35 PM	0	0	1	0	1
5:40 PM	0	0	0	0	0	5:40 PM	0	0	0	0	0	5:40 PM	2	0	0	0	2
5:45 PM	0	0	0	0	0	5:45 PM	0	0	0	0	0	5:45 PM	2	0	0	0	2
5:50 PM	0	0	0	0	0	5:50 PM	0	0	0	0	0	5:50 PM	0	1	0	0	1
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	9	7	23	2	41	Count Total	0	0	0	2	2	Count Total	7	9	5	0	21
Peak Hour	5	3	12	1	21	Peak Hour	0	0	0	1	1	Peak Hour	4	2	1	0	7

**B. HCM REPORTS – EXISTING**

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HCM 6th Signalized Intersection Summary  
 1: Wilsonville Rd/Stafford Rd & Boeckman Rd/Advance Rd

WV Frog Pond Elementary School  
 Existing 2022 - AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↑	↗	↖	↗		↖	↗		↖	↗	
Traffic Volume (veh/h)	149	43	163	57	31	19	127	238	60	28	179	91
Future Volume (veh/h)	149	43	163	57	31	19	127	238	60	28	179	91
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.98		0.99	0.98		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1900	1870	1767	1900	1900	1811	1870	1796	1900	1841	1856
Adj Flow Rate, veh/h	167	48	5	64	35	0	143	267	55	31	201	76
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	3	0	2	9	0	0	6	2	7	0	4	3
Cap, veh/h	534	304	250	439	192	0	442	447	92	396	304	115
Arrive On Green	0.13	0.16	0.16	0.07	0.10	0.00	0.09	0.30	0.28	0.03	0.24	0.22
Sat Flow, veh/h	1767	1900	1565	1682	1900	0	1725	1497	308	1810	1272	481
Grp Volume(v), veh/h	167	48	5	64	35	0	143	0	322	31	0	277
Grp Sat Flow(s),veh/h/ln	1767	1900	1565	1682	1900	0	1725	0	1806	1810	0	1753
Q Serve(g_s), s	2.9	0.8	0.1	1.2	0.6	0.0	2.2	0.0	5.5	0.5	0.0	5.1
Cycle Q Clear(g_c), s	2.9	0.8	0.1	1.2	0.6	0.0	2.2	0.0	5.5	0.5	0.0	5.1
Prop In Lane	1.00		1.00	1.00		0.00	1.00		0.17	1.00		0.27
Lane Grp Cap(c), veh/h	534	304	250	439	192	0	442	0	540	396	0	419
V/C Ratio(X)	0.31	0.16	0.02	0.15	0.18	0.00	0.32	0.00	0.60	0.08	0.00	0.66
Avail Cap(c_a), veh/h	633	1243	1024	537	1137	0	528	0	1106	544	0	1025
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	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	11.8	13.0	12.7	12.9	14.8	0.0	9.5	0.0	10.8	10.3	0.0	12.4
Incr Delay (d2), s/veh	0.2	0.2	0.0	0.1	0.3	0.0	0.3	0.0	1.1	0.1	0.0	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.3	0.0	0.4	0.2	0.0	0.6	0.0	1.7	0.1	0.0	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.0	13.2	12.7	13.1	15.1	0.0	9.8	0.0	11.8	10.4	0.0	14.2
LnGrp LOS	B	B	B	B	B	A	A	A	B	B	A	B
Approach Vol, veh/h		220			99			465			308	
Approach Delay, s/veh		12.3			13.8			11.2			13.8	
Approach LOS		B			B			B			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.2	12.6	8.5	7.6	5.1	14.7	6.4	9.7				
Change Period (Y+Rc), s	4.0	4.5	4.5	4.5	4.0	4.5	4.5	4.5				
Max Green Setting (Gmax), s	5.0	20.5	6.0	21.0	4.0	21.5	4.0	23.0				
Max Q Clear Time (g_c+I1), s	4.2	7.1	4.9	2.6	2.5	7.5	3.2	2.8				
Green Ext Time (p_c), s	0.0	0.9	0.0	0.0	0.0	1.1	0.0	0.1				

Intersection Summary												
HCM 6th Ctrl Delay				12.4								
HCM 6th LOS				B								

Intersection												
Int Delay, s/veh	1.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	15	332	38	1	247	1	42	0	22	1	3	9
Future Vol, veh/h	15	332	38	1	247	1	42	0	22	1	3	9
Conflicting Peds, #/hr	0	0	2	2	0	0	0	0	2	2	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
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, %	20	2	3	0	2	0	0	0	0	0	0	11
Mvmt Flow	17	369	42	1	274	1	47	0	24	1	3	10

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	275	0	0	413	0	0	709	703	394	715	724	275
Stage 1	-	-	-	-	-	-	426	426	-	277	277	-
Stage 2	-	-	-	-	-	-	283	277	-	438	447	-
Critical Hdwy	4.3	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.31
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	2.38	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.399
Pot Cap-1 Maneuver	1191	-	-	1157	-	-	352	364	659	348	354	743
Stage 1	-	-	-	-	-	-	610	589	-	734	685	-
Stage 2	-	-	-	-	-	-	728	685	-	601	577	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1191	-	-	1155	-	-	339	356	657	330	346	743
Mov Cap-2 Maneuver	-	-	-	-	-	-	339	356	-	330	346	-
Stage 1	-	-	-	-	-	-	597	577	-	720	684	-
Stage 2	-	-	-	-	-	-	714	684	-	567	565	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0	15.7	11.8
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	407	1191	-	-	1155	-	-	546
HCM Lane V/C Ratio	0.175	0.014	-	-	0.001	-	-	0.026
HCM Control Delay (s)	15.7	8.1	0	-	8.1	0	-	11.8
HCM Lane LOS	C	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.6	0	-	-	0	-	-	0.1



Intersection						
Int Delay, s/veh	1.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↶		↷	↶	↷	
Traffic Vol, veh/h	361	14	9	289	28	24
Future Vol, veh/h	361	14	9	289	28	24
Conflicting Peds, #/hr	0	5	5	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	3	0	0	3	0	0
Mvmt Flow	410	16	10	328	32	27

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	431	0	771
Stage 1	-	-	-	-	423
Stage 2	-	-	-	-	348
Critical Hdwy	-	-	4.1	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.2	-	3.5
Pot Cap-1 Maneuver	-	-	1139	-	371
Stage 1	-	-	-	-	665
Stage 2	-	-	-	-	719
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1134	-	366
Mov Cap-2 Maneuver	-	-	-	-	366
Stage 1	-	-	-	-	662
Stage 2	-	-	-	-	713

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	14.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	454	-	-	1134	-
HCM Lane V/C Ratio	0.13	-	-	0.009	-
HCM Control Delay (s)	14.1	-	-	8.2	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.4	-	-	0	-

Intersection						
Int Delay, s/veh	0.6					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	12	364	311	6	11	16
Future Vol, veh/h	12	364	311	6	11	16
Conflicting Peds, #/hr	0	0	0	0	2	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	8	3	2	0	0	0
Mvmt Flow	13	391	334	6	12	17

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	340	0	-	0	756 337
Stage 1	-	-	-	-	337 -
Stage 2	-	-	-	-	419 -
Critical Hdwy	4.18	-	-	-	6.4 6.2
Critical Hdwy Stg 1	-	-	-	-	5.4 -
Critical Hdwy Stg 2	-	-	-	-	5.4 -
Follow-up Hdwy	2.272	-	-	-	3.5 3.3
Pot Cap-1 Maneuver	1186	-	-	-	379 710
Stage 1	-	-	-	-	728 -
Stage 2	-	-	-	-	668 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1186	-	-	-	374 710
Mov Cap-2 Maneuver	-	-	-	-	374 -
Stage 1	-	-	-	-	718 -
Stage 2	-	-	-	-	668 -

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	12.3
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1186	-	-	-	520
HCM Lane V/C Ratio	0.011	-	-	-	0.056
HCM Control Delay (s)	8.1	0	-	-	12.3
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.2

Intersection	
Intersection Delay, s/veh	13.3
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷		↶	↷		↶	↷		↶	↷	
Traffic Vol, veh/h	33	234	14	46	201	80	19	77	71	71	41	43
Future Vol, veh/h	33	234	14	46	201	80	19	77	71	71	41	43
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	3	3	14	2	4	1	0	1	4	1	2	0
Mvmt Flow	37	260	16	51	223	89	21	86	79	79	46	48
Number of Lanes	1	1	0	1	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	14.1	14.5	11.7	11
HCM LOS	B	B	B	B

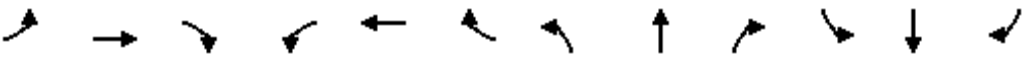
Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	100%	0%	100%	0%
Vol Thru, %	0%	52%	0%	94%	0%	72%	0%	49%
Vol Right, %	0%	48%	0%	6%	0%	28%	0%	51%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	19	148	33	248	46	281	71	84
LT Vol	19	0	33	0	46	0	71	0
Through Vol	0	77	0	234	0	201	0	41
RT Vol	0	71	0	14	0	80	0	43
Lane Flow Rate	21	164	37	276	51	312	79	93
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.043	0.295	0.069	0.476	0.095	0.521	0.161	0.168
Departure Headway (Hd)	7.29	6.455	6.763	6.215	6.682	6.007	7.332	6.474
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	489	553	527	576	534	596	487	551
Service Time	5.071	4.236	4.533	3.985	4.45	3.774	5.115	4.256
HCM Lane V/C Ratio	0.043	0.297	0.07	0.479	0.096	0.523	0.162	0.169
HCM Control Delay	10.4	11.9	10	14.6	10.2	15.2	11.5	10.6
HCM Lane LOS	B	B	A	B	B	C	B	B
HCM 95th-tile Q	0.1	1.2	0.2	2.6	0.3	3	0.6	0.6

ID	Software/Method	Intersection	Control Type	LOS	Delay	V/C Ratio
1	Synchro HCM 6th Signal	Wilsonville Rd/Stafford Rd & Boeckman Rd/Ac	Signal	B	12	0.46



HCM 6th Signalized Intersection Summary  
 1: Wilsonville Rd/Stafford Rd & Boeckman Rd/Advance Rd

WV Frog Pond Elementary School  
 Existing 2022 - Afternoon Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	175	45	80	31	32	21	130	305	45	23	250	150
Future Volume (veh/h)	175	45	80	31	32	21	130	305	45	23	250	150
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	0.99		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	1856	1826	1811	1707	1856	1544	1841	1870	1767	1648	1870	1856
Adj Flow Rate, veh/h	230	59	0	41	42	0	171	401	51	30	329	161
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Percent Heavy Veh, %	3	5	6	13	3	24	4	2	9	17	2	3
Cap, veh/h	508	351	295	325	151	0	369	649	83	353	406	199
Arrive On Green	0.16	0.19	0.00	0.05	0.08	0.00	0.08	0.40	0.39	0.03	0.34	0.33
Sat Flow, veh/h	1767	1826	1535	1626	1856	0	1753	1626	207	1570	1185	580
Grp Volume(v), veh/h	230	59	0	41	42	0	171	0	452	30	0	490
Grp Sat Flow(s),veh/h/ln	1767	1826	1535	1626	1856	0	1753	0	1833	1570	0	1765
Q Serve(g_s), s	5.1	1.3	0.0	1.1	1.0	0.0	2.9	0.0	9.4	0.6	0.0	12.1
Cycle Q Clear(g_c), s	5.1	1.3	0.0	1.1	1.0	0.0	2.9	0.0	9.4	0.6	0.0	12.1
Prop In Lane	1.00		1.00	1.00		0.00	1.00		0.11	1.00		0.33
Lane Grp Cap(c), veh/h	508	351	295	325	151	0	369	0	732	353	0	605
V/C Ratio(X)	0.45	0.17	0.00	0.13	0.28	0.00	0.46	0.00	0.62	0.09	0.00	0.81
Avail Cap(c_a), veh/h	596	900	757	404	709	0	369	0	1038	441	0	1000
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	1.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	14.3	16.1	0.0	18.6	20.6	0.0	10.7	0.0	11.4	10.4	0.0	14.3
Incr Delay (d2), s/veh	0.5	0.2	0.0	0.1	0.7	0.0	0.7	0.0	0.9	0.1	0.0	2.7
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	1.8	0.5	0.0	0.4	0.4	0.0	0.9	0.0	3.1	0.2	0.0	4.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.8	16.2	0.0	18.7	21.3	0.0	11.3	0.0	12.3	10.5	0.0	17.0
LnGrp LOS	B	B	A	B	C	A	B	A	B	B	A	B
Approach Vol, veh/h		289			83			623			520	
Approach Delay, s/veh		15.1			20.0			12.0			16.6	
Approach LOS		B			C			B			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.0	20.3	11.4	7.9	5.3	23.0	6.2	13.1				
Change Period (Y+Rc), s	4.0	4.5	4.5	4.5	4.0	4.5	4.5	4.5				
Max Green Setting (Gmax), s	4.0	26.5	9.3	17.7	4.0	26.5	4.0	23.0				
Max Q Clear Time (g_c+I1), s	4.9	14.1	7.1	3.0	2.6	11.4	3.1	3.3				
Green Ext Time (p_c), s	0.0	1.7	0.1	0.0	0.0	1.6	0.0	0.1				

Intersection Summary												
HCM 6th Ctrl Delay				14.6								
HCM 6th LOS				B								

**Intersection**

Int Delay, s/veh 2.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	16	283	41	8	300	4	43	2	17	0	4	11
Future Vol, veh/h	16	283	41	8	300	4	43	2	17	0	4	11
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	1	1	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	73	73	73	73	73	73	73	73	73	73	73	73
Heavy Vehicles, %	0	4	5	12	4	0	0	0	0	0	0	0
Mvmt Flow	22	388	56	11	411	5	59	3	23	0	5	15

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	416	0	0	444	0	0	906	898	417	910	924	414
Stage 1	-	-	-	-	-	-	460	460	-	436	436	-
Stage 2	-	-	-	-	-	-	446	438	-	474	488	-
Critical Hdwy	4.1	-	-	4.22	-	-	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	-	-	2.308	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1154	-	-	1065	-	-	259	281	640	258	271	643
Stage 1	-	-	-	-	-	-	585	569	-	603	583	-
Stage 2	-	-	-	-	-	-	595	582	-	575	553	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1154	-	-	1065	-	-	242	270	639	239	260	643
Mov Cap-2 Maneuver	-	-	-	-	-	-	242	270	-	239	260	-
Stage 1	-	-	-	-	-	-	570	554	-	587	575	-
Stage 2	-	-	-	-	-	-	568	574	-	537	539	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.4			0.2			22.2			13.2		
HCM LOS							C			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	293	1154	-	-	1065	-	-	462
HCM Lane V/C Ratio	0.29	0.019	-	-	0.01	-	-	0.044
HCM Control Delay (s)	22.2	8.2	0	-	8.4	0	-	13.2
HCM Lane LOS	C	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	1.2	0.1	-	-	0	-	-	0.1

Intersection						
Int Delay, s/veh	0.7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↶		↷	↶	↷	
Traffic Vol, veh/h	330	10	18	336	11	10
Future Vol, veh/h	330	10	18	336	11	10
Conflicting Peds, #/hr	0	4	4	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	72	72	72	72	72	72
Heavy Vehicles, %	2	10	6	3	0	20
Mvmt Flow	458	14	25	467	15	14

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	476	0	986
Stage 1	-	-	-	-	469
Stage 2	-	-	-	-	517
Critical Hdwy	-	-	4.16	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.254	-	3.5
Pot Cap-1 Maneuver	-	-	1066	-	277
Stage 1	-	-	-	-	634
Stage 2	-	-	-	-	603
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1062	-	270
Mov Cap-2 Maneuver	-	-	-	-	270
Stage 1	-	-	-	-	632
Stage 2	-	-	-	-	589

Approach	EB	WB	NB
HCM Control Delay, s	0	0.4	15.9
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	358	-	-	1062	-
HCM Lane V/C Ratio	0.081	-	-	0.024	-
HCM Control Delay (s)	15.9	-	-	8.5	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	0.3	-	-	0.1	-

Intersection						
Int Delay, s/veh	0.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↶	↷		↶	↷
Traffic Vol, veh/h	13	334	339	8	6	12
Future Vol, veh/h	13	334	339	8	6	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	74	74	74	74	74	74
Heavy Vehicles, %	0	4	3	0	0	0
Mvmt Flow	18	451	458	11	8	16

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	469	0	-	0	951
Stage 1	-	-	-	-	464
Stage 2	-	-	-	-	487
Critical Hdwy	4.1	-	-	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	2.2	-	-	-	3.5
Pot Cap-1 Maneuver	1103	-	-	-	291
Stage 1	-	-	-	-	637
Stage 2	-	-	-	-	622
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1103	-	-	-	285
Mov Cap-2 Maneuver	-	-	-	-	285
Stage 1	-	-	-	-	623
Stage 2	-	-	-	-	622

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	13.7
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1103	-	-	-	439
HCM Lane V/C Ratio	0.016	-	-	-	0.055
HCM Control Delay (s)	8.3	0	-	-	13.7
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.2



Intersection	
Intersection Delay, s/veh	16.8
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷		↶	↷		↶	↷		↶	↷	
Traffic Vol, veh/h	29	209	38	70	222	59	19	80	78	60	105	40
Future Vol, veh/h	29	209	38	70	222	59	19	80	78	60	105	40
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Heavy Vehicles, %	0	4	0	1	4	3	5	2	1	3	3	0
Mvmt Flow	35	255	46	85	271	72	23	98	95	73	128	49
Number of Lanes	1	1	0	1	1	0	1	1	0	1	1	0























Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	18	19.1	14.1	13.6
HCM LOS	C	C	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	100%	0%	100%	0%
Vol Thru, %	0%	51%	0%	85%	0%	79%	0%	72%
Vol Right, %	0%	49%	0%	15%	0%	21%	0%	28%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	19	158	29	247	70	281	60	145
LT Vol	19	0	29	0	70	0	60	0
Through Vol	0	80	0	209	0	222	0	105
RT Vol	0	78	0	38	0	59	0	40
Lane Flow Rate	23	193	35	301	85	343	73	177
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.052	0.385	0.073	0.58	0.174	0.642	0.163	0.358
Departure Headway (Hd)	8.113	7.192	7.481	6.929	7.351	6.742	7.995	7.284
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	441	499	479	521	487	535	449	493
Service Time	5.868	4.946	5.232	4.679	5.099	4.49	5.75	5.038
HCM Lane V/C Ratio	0.052	0.387	0.073	0.578	0.175	0.641	0.163	0.359
HCM Control Delay	11.3	14.4	10.8	18.9	11.7	20.9	12.3	14.1
HCM Lane LOS	B	B	B	C	B	C	B	B
HCM 95th-tile Q	0.2	1.8	0.2	3.7	0.6	4.5	0.6	1.6

ID	Software/Method	Intersection	Control Type	LOS	Delay	V/C Ratio
1	Synchro HCM 6th Signal	Wilsonville Rd/Stafford Rd & Boeckman Rd/Ac	Signal	B	15	0.67

HCM 6th Signalized Intersection Summary  
 1: Wilsonville Rd/Stafford Rd & Boeckman Rd/Advance Rd

WV Frog Pond Elementary School  
 Existing 2022 - PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	186	59	111	57	50	14	71	192	53	20	438	234
Future Volume (veh/h)	186	59	111	57	50	14	71	192	53	20	438	234
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.93		0.91	0.90		0.88	1.00		0.97	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	1885	1870	1885	1826	1900	1900	1885	1885	1870	1826	1885	1856
Adj Flow Rate, veh/h	188	60	17	58	51	1	72	194	44	20	442	217
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	1	2	1	5	0	0	1	1	2	5	1	3
Cap, veh/h	482	388	300	368	252	5	264	666	151	555	503	247
Arrive On Green	0.12	0.21	0.21	0.05	0.14	0.13	0.05	0.45	0.44	0.02	0.42	0.41
Sat Flow, veh/h	1795	1870	1446	1739	1851	36	1795	1479	335	1739	1193	586
Grp Volume(v), veh/h	188	60	17	58	0	52	72	0	238	20	0	659
Grp Sat Flow(s),veh/h/ln	1795	1870	1446	1739	0	1888	1795	0	1814	1739	0	1778
Q Serve(g_s), s	4.8	1.5	0.6	1.6	0.0	1.4	1.3	0.0	4.9	0.4	0.0	19.9
Cycle Q Clear(g_c), s	4.8	1.5	0.6	1.6	0.0	1.4	1.3	0.0	4.9	0.4	0.0	19.9
Prop In Lane	1.00		1.00	1.00		0.02	1.00		0.18	1.00		0.33
Lane Grp Cap(c), veh/h	482	388	300	368	0	257	264	0	817	555	0	750
V/C Ratio(X)	0.39	0.15	0.06	0.16	0.00	0.20	0.27	0.00	0.29	0.04	0.00	0.88
Avail Cap(c_a), veh/h	535	751	581	418	0	623	303	0	990	641	0	970
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	1.00	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	16.5	19.0	18.6	20.0	0.0	22.4	12.6	0.0	10.2	9.6	0.0	15.6
Incr Delay (d2), s/veh	0.4	0.1	0.1	0.1	0.0	0.3	0.4	0.0	0.2	0.0	0.0	7.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	0.6	0.2	0.6	0.0	0.6	0.5	0.0	1.6	0.1	0.0	8.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.9	19.1	18.7	20.2	0.0	22.7	13.0	0.0	10.4	9.6	0.0	23.2
LnGrp LOS	B	B	B	C	A	C	B	A	B	A	A	C
Approach Vol, veh/h		265			110			310			679	
Approach Delay, s/veh		17.5			21.4			11.0			22.8	
Approach LOS		B			C			B			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.8	28.7	11.1	12.0	5.1	30.3	6.9	16.1				
Change Period (Y+Rc), s	4.0	4.5	4.5	4.5	4.0	4.5	4.5	4.5				
Max Green Setting (Gmax), s	4.0	31.4	8.3	18.8	4.0	31.4	4.1	23.0				
Max Q Clear Time (g_c+I1), s	3.3	21.9	6.8	3.4	2.4	6.9	3.6	3.5				
Green Ext Time (p_c), s	0.0	2.2	0.1	0.1	0.0	0.9	0.0	0.2				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				19.0								
HCM 6th LOS				B								

Intersection												
Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	13	345	45	5	346	4	21	0	8	3	0	8
Future Vol, veh/h	13	345	45	5	346	4	21	0	8	3	0	8
Conflicting Peds, #/hr	0	0	0	0	0	0	2	0	0	0	0	2
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
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, %	15	1	0	0	3	25	5	0	0	0	0	25
Mvmt Flow	14	383	50	6	384	4	23	0	9	3	0	9

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	388	0	0	433	0	0	841	836	408	839	859	388
Stage 1	-	-	-	-	-	-	436	436	-	398	398	-
Stage 2	-	-	-	-	-	-	405	400	-	441	461	-
Critical Hdwy	4.25	-	-	4.1	-	-	7.15	6.5	6.2	7.1	6.5	6.45
Critical Hdwy Stg 1	-	-	-	-	-	-	6.15	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.15	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.335	-	-	2.2	-	-	3.545	4	3.3	3.5	4	3.525
Pot Cap-1 Maneuver	1103	-	-	1137	-	-	281	305	648	288	296	613
Stage 1	-	-	-	-	-	-	593	583	-	632	606	-
Stage 2	-	-	-	-	-	-	617	605	-	599	569	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1103	-	-	1137	-	-	271	298	648	279	289	612
Mov Cap-2 Maneuver	-	-	-	-	-	-	271	298	-	279	289	-
Stage 1	-	-	-	-	-	-	583	573	-	621	602	-
Stage 2	-	-	-	-	-	-	603	601	-	581	559	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.3			0.1			17.4			13		
HCM LOS							C			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	323	1103	-	-	1137	-	-	462
HCM Lane V/C Ratio	0.1	0.013	-	-	0.005	-	-	0.026
HCM Control Delay (s)	17.4	8.3	0	-	8.2	0	-	13
HCM Lane LOS	C	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.3	0	-	-	0	-	-	0.1



Intersection						
Int Delay, s/veh	1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	388	39	26	349	23	15
Future Vol, veh/h	388	39	26	349	23	15
Conflicting Peds, #/hr	0	5	5	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	3	0	0	3	0	0
Mvmt Flow	431	43	29	388	26	17

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	479	0	904
Stage 1	-	-	-	-	458
Stage 2	-	-	-	-	446
Critical Hdwy	-	-	4.1	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.2	-	3.5
Pot Cap-1 Maneuver	-	-	1094	-	310
Stage 1	-	-	-	-	641
Stage 2	-	-	-	-	649
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1089	-	300
Mov Cap-2 Maneuver	-	-	-	-	300
Stage 1	-	-	-	-	638
Stage 2	-	-	-	-	631

Approach	EB	WB	NB
HCM Control Delay, s	0	0.6	15.8
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	374	-	-	1089	-
HCM Lane V/C Ratio	0.113	-	-	0.027	-
HCM Control Delay (s)	15.8	-	-	8.4	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	0.4	-	-	0.1	-

Intersection						
Int Delay, s/veh	0.6					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↶	↷		↶	↷
Traffic Vol, veh/h	23	418	357	15	9	14
Future Vol, veh/h	23	418	357	15	9	14
Conflicting Peds, #/hr	0	0	0	0	1	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	3	3	0	0	0
Mvmt Flow	26	464	397	17	10	16

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	414	0	-	0	923
Stage 1	-	-	-	-	406
Stage 2	-	-	-	-	517
Critical Hdwy	4.1	-	-	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	2.2	-	-	-	3.5
Pot Cap-1 Maneuver	1156	-	-	-	302
Stage 1	-	-	-	-	677
Stage 2	-	-	-	-	603
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1156	-	-	-	293
Mov Cap-2 Maneuver	-	-	-	-	293
Stage 1	-	-	-	-	657
Stage 2	-	-	-	-	603

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	13.7
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1156	-	-	-	440
HCM Lane V/C Ratio	0.022	-	-	-	0.058
HCM Control Delay (s)	8.2	0	-	-	13.7
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.2

Intersection	
Intersection Delay, s/veh	21.1
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷		↶	↷		↶	↷		↶	↷	
Traffic Vol, veh/h	53	268	45	63	251	57	29	92	71	102	155	71
Future Vol, veh/h	53	268	45	63	251	57	29	92	71	102	155	71
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	0	2	2	2	3	5	0	3	0	0	1	0
Mvmt Flow	59	298	50	70	279	63	32	102	79	113	172	79
Number of Lanes	1	1	0	1	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	24.9	23.8	15.3	17.3
HCM LOS	C	C	C	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	100%	0%	100%	0%
Vol Thru, %	0%	56%	0%	86%	0%	81%	0%	69%
Vol Right, %	0%	44%	0%	14%	0%	19%	0%	31%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	29	163	53	313	63	308	102	226
LT Vol	29	0	53	0	63	0	102	0
Through Vol	0	92	0	268	0	251	0	155
RT Vol	0	71	0	45	0	57	0	71
Lane Flow Rate	32	181	59	348	70	342	113	251
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.078	0.398	0.131	0.718	0.157	0.705	0.262	0.53
Departure Headway (Hd)	8.699	7.918	8.017	7.434	8.049	7.419	8.324	7.599
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	410	453	445	483	444	486	430	472
Service Time	6.493	5.712	5.798	5.215	5.83	5.2	6.109	5.384
HCM Lane V/C Ratio	0.078	0.4	0.133	0.72	0.158	0.704	0.263	0.532
HCM Control Delay	12.2	15.9	12	27.1	12.3	26.2	14.1	18.7
HCM Lane LOS	B	C	B	D	B	D	B	C
HCM 95th-tile Q	0.3	1.9	0.4	5.7	0.6	5.5	1	3

ID	Software/Method	Intersection	Control Type	LOS	Delay	V/C Ratio
1	Synchro HCM 6th Signal	Wilsonville Rd/Stafford Rd & Boeckman Rd/Ac	Signal	B	19	0.68



**C. STAGE II LIST**

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Updated by D. Pauly 07.22.2022

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	Diverted	In	Out	Total
Hydro-Temp: Recent agreement with the City, the project is vested and so are the traffic trips	Office/Flex-Space	Not built	60.8 KSF					44	46	90
Mercedes Benz (Phase 2)	Auto Dealership	Not built						20	26	46
Shredding Systems (SQFT does not including paint canopy and another canopy)	Industrial/Commercial	Under construction	66.8 KSF					20	46	66
Town Center Ph III and trip dedication to Miller Paint store Uses marked with "*" have not been built and PM peak hr trip sum exceeds remaining vested trip level by 2 trips. It has yet to be determined how to allocate trips between remaining buildings.	*High Turnover Restaurant (Pad 1)	Not built	7.5 KSF					24	17	47*
	Remaining Approved Total									47
Wilsonville Road Business Park Phase II	Phase 2 - office (2-story building on west parcel)	Partially Built	21.7 KSF					15	71	86
Frog Pond-Stafford Meadows (Phase 2 and 3a of 10/18 study)	Residential	Partially Built, 34 homes built and occupied	44 units					6	4	10
Frog Pond-Frog Pond Meadows (Phase 3B, 4A, 4B of 10/18 Study)	Residential	Partially Built, 52 homes built and occupied	74 units					13	9	22
Frog Pond Ridge	Residential	Under construction, n	71 units					43	28	71
Frog Pond-Morgan Farm	Residential	Partially Built, 69 homes built and occupied	78 units					5	4	9
Frog Pond Crossing	Residential	Approved	29 units					19	9	28
Frog Pond Estates	Residential	Approved	17 units					11	7	18
Frog Pond Oaks	Residential	Approved	41 units					27	14	41
Frog Pond Vista	Residential	Approved	38 units					27	17	44
Magnolia Townhomes	Residential	Under construction	6 units					3	2	5
Canyon Creek III	Residential	Approved	5 units (traffic study was for 11)					2	3	5
Coffee Creek Logistics	Industrial/Commercial	Complete	115K					16	41	57
PW Complex on Boberg	Public	Approved	15,800 office, 17,900 warehouse					11	39	50
DAS North Valley Complex	Public/Industria	Under Construction	174,700 sf					5	15	20
Black Creek Group-Garden Acres	Industrial	Approved	148,500 sf warehouse	178				69	109	178

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

Pending Projects for Which Traffic Analysis has been completed										
Project	Land Use	Status	Size	Total PM Peak Trips	Trip Allocation Percentage			Net New (Primary) PM Peak Hour Trips		
					Internal	Pass-By	Diverted	In	Out	Total
Boones Ferry Gas Station/Conve	Commercial	under review	3,460 sf store, 12 g	240		134		53	53	106
Delta Logistics	Industrial	under review	56,100 sf wareho	33				9	24	33
Building W5 Boeckman and Kins	Industrial	under review	80,000 sf manufact	54				17	37	54
Frog Pond Overlook	Residential	under review	12 lots	13				8	5	13
Frog Pond Terrace	Residential	under review	19 lots	20				12	8	20
Boones Ferry Construction Stora	Industrial	under review	1.25 acres	5				1	4	5

**D. HCM REPORTS – EXISTING + PROJECT**

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HCM 6th Signalized Intersection Summary  
 1: Wilsonville Rd/Stafford Rd & Boeckman Rd/Advance Rd

WV Frog Pond Elementary School  
 Existing + Project - AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	157	92	174	57	88	19	140	238	60	28	179	99
Future Volume (veh/h)	157	92	174	57	88	19	140	238	60	28	179	99
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.99	0.98		0.98	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1900	1870	1767	1900	1900	1811	1870	1796	1900	1841	1856
Adj Flow Rate, veh/h	176	103	17	64	99	6	157	267	55	31	201	82
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	3	0	2	9	0	0	6	2	7	0	4	3
Cap, veh/h	425	308	254	359	164	10	432	422	87	387	267	109
Arrive On Green	0.11	0.16	0.16	0.04	0.09	0.11	0.10	0.28	0.29	0.03	0.21	0.23
Sat Flow, veh/h	1767	1900	1565	1682	1771	107	1725	1497	308	1810	1242	507
Grp Volume(v), veh/h	176	103	17	64	0	105	157	0	322	31	0	283
Grp Sat Flow(s),veh/h/ln	1767	1900	1565	1682	0	1878	1725	0	1806	1810	0	1748
Q Serve(g_s), s	3.4	1.9	0.4	1.3	0.0	2.1	2.6	0.0	6.1	0.5	0.0	5.9
Cycle Q Clear(g_c), s	3.4	1.9	0.4	1.3	0.0	2.1	2.6	0.0	6.1	0.5	0.0	5.9
Prop In Lane	1.00		1.00	1.00		0.06	1.00		0.17	1.00		0.29
Lane Grp Cap(c), veh/h	425	308	254	359	0	174	432	0	509	387	0	376
V/C Ratio(X)	0.41	0.33	0.07	0.18	0.00	0.60	0.36	0.00	0.63	0.08	0.00	0.75
Avail Cap(c_a), veh/h	552	1099	906	446	0	917	443	0	975	520	0	944
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	1.00	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	13.9	14.4	13.8	15.3	0.0	17.0	10.0	0.0	12.2	11.1	0.0	14.2
Incr Delay (d2), s/veh	0.5	0.5	0.1	0.2	0.0	2.5	0.4	0.0	1.3	0.1	0.0	3.1
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	1.1	0.7	0.1	0.4	0.0	0.9	0.7	0.0	2.0	0.2	0.0	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.3	14.9	13.9	15.4	0.0	19.5	10.4	0.0	13.5	11.1	0.0	17.3
LnGrp LOS	B	B	B	B	A	B	B	A	B	B	A	B
Approach Vol, veh/h		296			169			479			314	
Approach Delay, s/veh		14.5			17.9			12.5			16.7	
Approach LOS		B			B			B			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.7	13.4	9.2	8.6	5.1	16.0	6.5	11.3				
Change Period (Y+Rc), s	4.0	4.5	4.5	4.5	4.0	4.5	4.5	4.5				
Max Green Setting (Gmax), s	4.0	21.5	7.5	19.5	4.0	21.5	4.0	23.0				
Max Q Clear Time (g_c+I1), s	4.6	7.9	5.4	4.1	2.5	8.1	3.3	3.9				
Green Ext Time (p_c), s	0.0	0.9	0.1	0.2	0.0	1.0	0.0	0.3				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				14.7								
HCM 6th LOS				B								



Intersection												
Int Delay, s/veh	2.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	15	400	47	1	325	1	53	0	22	1	3	9
Future Vol, veh/h	15	400	47	1	325	1	53	0	22	1	3	9
Conflicting Peds, #/hr	0	0	2	2	0	0	0	0	2	2	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
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, %	20	2	3	0	2	0	0	0	0	0	0	11
Mvmt Flow	17	444	52	1	361	1	59	0	24	1	3	10

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	362	0	0	498	0	0	876	870	474	882	896	362
Stage 1	-	-	-	-	-	-	506	506	-	364	364	-
Stage 2	-	-	-	-	-	-	370	364	-	518	532	-
Critical Hdwy	4.3	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.31
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	2.38	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.399
Pot Cap-1 Maneuver	1104	-	-	1076	-	-	272	292	595	269	282	663
Stage 1	-	-	-	-	-	-	552	543	-	659	627	-
Stage 2	-	-	-	-	-	-	654	627	-	544	529	-
Platoon blocked, %		-	-	-	-	-						
Mov Cap-1 Maneuver	1104	-	-	1074	-	-	261	285	593	253	275	663
Mov Cap-2 Maneuver	-	-	-	-	-	-	261	285	-	253	275	-
Stage 1	-	-	-	-	-	-	539	531	-	645	626	-
Stage 2	-	-	-	-	-	-	640	626	-	510	517	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0	20.7	13.1
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	312	1104	-	-	1074	-	-	457
HCM Lane V/C Ratio	0.267	0.015	-	-	0.001	-	-	0.032
HCM Control Delay (s)	20.7	8.3	0	-	8.4	0	-	13.1
HCM Lane LOS	C	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	1.1	0	-	-	0	-	-	0.1

Intersection												
Int Delay, s/veh	1.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗			↕			↕	
Traffic Vol, veh/h	4	426	23	9	366	12	39	0	24	12	0	4
Future Vol, veh/h	4	426	23	9	366	12	39	0	24	12	0	4
Conflicting Peds, #/hr	0	0	5	5	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	100	-	-	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	0	3	0	0	3	0	0	0	0	0	0	0
Mvmt Flow	5	484	26	10	416	14	44	0	27	14	0	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	430	0	0	515	0	0	958	962	502	964	968	423
Stage 1	-	-	-	-	-	-	512	512	-	443	443	-
Stage 2	-	-	-	-	-	-	446	450	-	521	525	-
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	1140	-	-	1061	-	-	239	258	573	237	256	635
Stage 1	-	-	-	-	-	-	548	540	-	598	579	-
Stage 2	-	-	-	-	-	-	595	575	-	542	533	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1140	-	-	1057	-	-	234	254	571	223	252	635
Mov Cap-2 Maneuver	-	-	-	-	-	-	234	254	-	223	252	-
Stage 1	-	-	-	-	-	-	543	536	-	596	574	-
Stage 2	-	-	-	-	-	-	585	570	-	514	529	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.1			0.2			20.6			19.5		
HCM LOS							C			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	302	1140	-	-	1057	-	-	266
HCM Lane V/C Ratio	0.237	0.004	-	-	0.01	-	-	0.068
HCM Control Delay (s)	20.6	8.2	-	-	8.4	-	-	19.5
HCM Lane LOS	C	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.9	0	-	-	0	-	-	0.2

Intersection						
Int Delay, s/veh	3.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	56	368	315	94	85	54
Future Vol, veh/h	56	368	315	94	85	54
Conflicting Peds, #/hr	0	0	0	0	2	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	8	3	2	0	0	0
Mvmt Flow	60	396	339	101	91	58

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	440	0	-	0	908
Stage 1	-	-	-	-	390
Stage 2	-	-	-	-	518
Critical Hdwy	4.18	-	-	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	2.272	-	-	-	3.5
Pot Cap-1 Maneuver	1089	-	-	-	308
Stage 1	-	-	-	-	689
Stage 2	-	-	-	-	602
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1089	-	-	-	286
Mov Cap-2 Maneuver	-	-	-	-	286
Stage 1	-	-	-	-	640
Stage 2	-	-	-	-	602

Approach	EB	WB	SB
HCM Control Delay, s	1.1	0	21.4
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1089	-	-	-	367
HCM Lane V/C Ratio	0.055	-	-	-	0.407
HCM Control Delay (s)	8.5	0	-	-	21.4
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0.2	-	-	-	1.9

Intersection	
Intersection Delay, s/veh	14.8
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷		↶	↷		↶	↷		↶	↷	
Traffic Vol, veh/h	33	234	14	67	201	101	19	77	95	95	41	43
Future Vol, veh/h	33	234	14	67	201	101	19	77	95	95	41	43
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	3	3	14	2	4	1	0	1	4	1	2	0
Mvmt Flow	37	260	16	74	223	112	21	86	106	106	46	48
Number of Lanes	1	1	0	1	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	15.4	16.6	13.1	11.9
HCM LOS	C	C	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	100%	0%	100%	0%
Vol Thru, %	0%	45%	0%	94%	0%	67%	0%	49%
Vol Right, %	0%	55%	0%	6%	0%	33%	0%	51%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	19	172	33	248	67	302	95	84
LT Vol	19	0	33	0	67	0	95	0
Through Vol	0	77	0	234	0	201	0	41
RT Vol	0	95	0	14	0	101	0	43
Lane Flow Rate	21	191	37	276	74	336	106	93
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.045	0.359	0.073	0.509	0.146	0.59	0.225	0.177
Departure Headway (Hd)	7.646	6.756	7.203	6.653	7.043	6.331	7.689	6.828
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	468	533	499	543	511	574	467	525
Service Time	5.391	4.5	4.917	4.367	4.754	4.041	5.437	4.575
HCM Lane V/C Ratio	0.045	0.358	0.074	0.508	0.145	0.585	0.227	0.177
HCM Control Delay	10.8	13.3	10.5	16.1	11	17.8	12.7	11
HCM Lane LOS	B	B	B	C	B	C	B	B
HCM 95th-tile Q	0.1	1.6	0.2	2.9	0.5	3.8	0.9	0.6



ID	Software/Method	Intersection	Control Type	LOS	Delay	V/C Ratio
1	Synchro HCM 6th Signal	Wilsonville Rd/Stafford Rd & Boeckman Rd/A	Signal	B	14.7	0.53

HCM 6th Signalized Intersection Summary  
 1: Wilsonville Rd/Stafford Rd & Boeckman Rd/Advance Rd

WV Frog Pond Elementary School  
 Existing + Project - Afternoon Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	183	80	89	31	62	21	138	305	45	23	250	158
Future Volume (veh/h)	183	80	89	31	62	21	138	305	45	23	250	158
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	0.99		0.99	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	1856	1826	1811	1707	1856	1544	1841	1870	1767	1648	1870	1856
Adj Flow Rate, veh/h	241	105	1	41	82	4	182	401	51	30	329	171
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Percent Heavy Veh, %	3	5	6	13	3	24	4	2	9	17	2	3
Cap, veh/h	432	356	298	263	128	6	361	638	81	347	377	196
Arrive On Green	0.15	0.19	0.19	0.02	0.07	0.08	0.09	0.39	0.40	0.03	0.33	0.34
Sat Flow, veh/h	1767	1826	1531	1626	1754	86	1753	1626	207	1570	1159	602
Grp Volume(v), veh/h	241	105	1	41	0	86	182	0	452	30	0	500
Grp Sat Flow(s),veh/h/ln	1767	1826	1531	1626	0	1840	1753	0	1833	1570	0	1761
Q Serve(g_s), s	6.2	2.6	0.0	1.2	0.0	2.4	3.3	0.0	10.5	0.7	0.0	14.1
Cycle Q Clear(g_c), s	6.2	2.6	0.0	1.2	0.0	2.4	3.3	0.0	10.5	0.7	0.0	14.1
Prop In Lane	1.00		1.00	1.00		0.05	1.00		0.11	1.00		0.34
Lane Grp Cap(c), veh/h	432	356	298	263	0	135	361	0	719	347	0	573
V/C Ratio(X)	0.56	0.30	0.00	0.16	0.00	0.64	0.50	0.00	0.63	0.09	0.00	0.87
Avail Cap(c_a), veh/h	582	780	654	334	0	486	363	0	902	424	0	833
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	1.00	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	17.0	18.1	17.1	22.0	0.0	23.7	11.5	0.0	12.9	11.4	0.0	16.6
Incr Delay (d2), s/veh	0.8	0.3	0.0	0.2	0.0	3.7	0.8	0.0	0.9	0.1	0.0	7.1
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	2.2	1.0	0.0	0.4	0.0	1.1	1.1	0.0	3.6	0.2	0.0	5.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.9	18.4	17.1	22.2	0.0	27.4	12.3	0.0	13.8	11.5	0.0	23.7
LnGrp LOS	B	B	B	C	A	C	B	A	B	B	A	C
Approach Vol, veh/h		347			127			634				530
Approach Delay, s/veh		18.0			25.7			13.4				23.0
Approach LOS		B			C			B				C
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.9	22.1	12.7	8.9	5.4	25.7	6.3	15.3				
Change Period (Y+Rc), s	4.0	4.5	4.5	4.5	4.0	4.5	4.5	4.5				
Max Green Setting (Gmax), s	5.0	25.4	12.7	14.4	4.0	26.4	4.1	23.0				
Max Q Clear Time (g_c+I1), s	5.3	16.1	8.2	4.4	2.7	12.5	3.2	4.6				
Green Ext Time (p_c), s	0.0	1.6	0.3	0.1	0.0	1.6	0.0	0.2				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				18.4								
HCM 6th LOS				B								

Intersection												
Int Delay, s/veh	2.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	16	335	48	8	346	4	49	2	17	0	4	11
Future Vol, veh/h	16	335	48	8	346	4	49	2	17	0	4	11
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	1	1	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	73	73	73	73	73	73	73	73	73	73	73	73
Heavy Vehicles, %	0	4	5	12	4	0	0	0	0	0	0	0
Mvmt Flow	22	459	66	11	474	5	67	3	23	0	5	15

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	479	0	0	525	0	0	1045	1037	493	1049	1068	477
Stage 1	-	-	-	-	-	-	536	536	-	499	499	-
Stage 2	-	-	-	-	-	-	509	501	-	550	569	-
Critical Hdwy	4.1	-	-	4.22	-	-	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	-	-	2.308	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1094	-	-	993	-	-	209	233	580	207	223	592
Stage 1	-	-	-	-	-	-	532	527	-	557	547	-
Stage 2	-	-	-	-	-	-	550	546	-	523	509	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1094	-	-	993	-	-	193	223	580	190	213	592
Mov Cap-2 Maneuver	-	-	-	-	-	-	193	223	-	190	213	-
Stage 1	-	-	-	-	-	-	517	512	-	541	539	-
Stage 2	-	-	-	-	-	-	523	538	-	484	494	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.3			0.2			30.4			14.5		
HCM LOS							D			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	233	1094	-	-	993	-	-	401
HCM Lane V/C Ratio	0.4	0.02	-	-	0.011	-	-	0.051
HCM Control Delay (s)	30.4	8.4	0	-	8.7	0	-	14.5
HCM Lane LOS	D	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	1.8	0.1	-	-	0	-	-	0.2

HCM 6th TWSC  
 3: Laurel Glen St/Bus Access & Boeckman Rd

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	4	377	17	18	376	12	17	0	10	12	0	4
Future Vol, veh/h	4	377	17	18	376	12	17	0	10	12	0	4
Conflicting Peds, #/hr	0	0	4	4	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	100	-	-	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	72	72	72	72	72	72	72	72	72	72	72	72
Heavy Vehicles, %	0	2	10	6	3	0	0	0	20	0	0	0
Mvmt Flow	6	524	24	25	522	17	24	0	14	17	0	6

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	539	0	0	552	0	0	1136	1141	540	1136	1145	531
Stage 1	-	-	-	-	-	-	552	552	-	581	581	-
Stage 2	-	-	-	-	-	-	584	589	-	555	564	-
Critical Hdwy	4.1	-	-	4.16	-	-	7.1	6.5	6.4	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	-	-	2.254	-	-	3.5	4	3.48	3.5	4	3.3
Pot Cap-1 Maneuver	1040	-	-	998	-	-	181	202	508	181	201	552
Stage 1	-	-	-	-	-	-	522	518	-	503	503	-
Stage 2	-	-	-	-	-	-	501	499	-	520	512	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1040	-	-	995	-	-	174	195	506	172	194	552
Mov Cap-2 Maneuver	-	-	-	-	-	-	174	195	-	172	194	-
Stage 1	-	-	-	-	-	-	517	513	-	500	490	-
Stage 2	-	-	-	-	-	-	483	487	-	503	507	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.1			0.4			23.7			24.4		
HCM LOS							C			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	230	1040	-	-	995	-	-	208
HCM Lane V/C Ratio	0.163	0.005	-	-	0.025	-	-	0.107
HCM Control Delay (s)	23.7	8.5	-	-	8.7	-	-	24.4
HCM Lane LOS	C	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.6	0	-	-	0.1	-	-	0.4



Intersection						
Int Delay, s/veh	3.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	35	338	343	54	60	38
Future Vol, veh/h	35	338	343	54	60	38
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	74	74	74	74	74	74
Heavy Vehicles, %	0	4	3	0	0	0
Mvmt Flow	47	457	464	73	81	51

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	537	0	-	0	1052 501
Stage 1	-	-	-	-	501 -
Stage 2	-	-	-	-	551 -
Critical Hdwy	4.1	-	-	-	6.4 6.2
Critical Hdwy Stg 1	-	-	-	-	5.4 -
Critical Hdwy Stg 2	-	-	-	-	5.4 -
Follow-up Hdwy	2.2	-	-	-	3.5 3.3
Pot Cap-1 Maneuver	1041	-	-	-	253 574
Stage 1	-	-	-	-	613 -
Stage 2	-	-	-	-	581 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1041	-	-	-	238 574
Mov Cap-2 Maneuver	-	-	-	-	238 -
Stage 1	-	-	-	-	576 -
Stage 2	-	-	-	-	581 -

Approach	EB	WB	SB
HCM Control Delay, s	0.8	0	25.2
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1041	-	-	-	308
HCM Lane V/C Ratio	0.045	-	-	-	0.43
HCM Control Delay (s)	8.6	0	-	-	25.2
HCM Lane LOS	A	A	-	-	D
HCM 95th %tile Q(veh)	0.1	-	-	-	2.1

Intersection	
Intersection Delay, s/veh	18.2
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷		↶	↷		↶	↷		↶	↷	
Traffic Vol, veh/h	29	209	38	85	222	74	19	80	91	73	105	40
Future Vol, veh/h	29	209	38	85	222	74	19	80	91	73	105	40
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Heavy Vehicles, %	0	4	0	1	4	3	5	2	1	3	3	0
Mvmt Flow	35	255	46	104	271	90	23	98	111	89	128	49
Number of Lanes	1	1	0	1	1	0	1	1	0	1	1	0

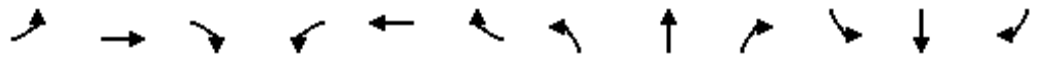
Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	19.2	21.3	15.1	14.1
HCM LOS	C	C	C	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	100%	0%	100%	0%
Vol Thru, %	0%	47%	0%	85%	0%	75%	0%	72%
Vol Right, %	0%	53%	0%	15%	0%	25%	0%	28%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	19	171	29	247	85	296	73	145
LT Vol	19	0	29	0	85	0	73	0
Through Vol	0	80	0	209	0	222	0	105
RT Vol	0	91	0	38	0	74	0	40
Lane Flow Rate	23	209	35	301	104	361	89	177
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.053	0.426	0.076	0.6	0.217	0.691	0.203	0.368
Departure Headway (Hd)	8.311	7.361	7.72	7.167	7.528	6.89	8.198	7.485
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	430	488	463	503	476	523	437	479
Service Time	6.079	5.127	5.482	4.928	5.287	4.648	5.964	5.25
HCM Lane V/C Ratio	0.053	0.428	0.076	0.598	0.218	0.69	0.204	0.37
HCM Control Delay	11.5	15.5	11.1	20.2	12.4	23.8	13.1	14.6
HCM Lane LOS	B	C	B	C	B	C	B	B
HCM 95th-tile Q	0.2	2.1	0.2	3.9	0.8	5.3	0.8	1.7

ID	Software/Method	Intersection	Control Type	LOS	Delay	V/C Ratio
1	Synchro HCM 6th Signal	Wilsonville Rd/Stafford Rd & Boeckman Rd/A	Signal	B	18.4	0.73

HCM 6th Signalized Intersection Summary  
 1: Wilsonville Rd/Stafford Rd & Boeckman Rd/Advance Rd

WV Frog Pond Elementary School  
 Existing + Project - PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷	↷	↶	↷		↶	↷		↶	↷	
Traffic Volume (veh/h)	186	72	113	57	60	14	73	192	53	20	438	234
Future Volume (veh/h)	186	72	113	57	60	14	73	192	53	20	438	234
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.92		0.90	0.88		0.87	1.00		0.97	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	1885	1870	1885	1826	1900	1900	1885	1885	1870	1826	1885	1856
Adj Flow Rate, veh/h	188	73	20	58	61	2	74	194	44	20	442	216
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	1	2	1	5	0	0	1	1	2	5	1	3
Cap, veh/h	422	356	273	307	208	7	261	647	147	556	488	239
Arrive On Green	0.11	0.19	0.19	0.03	0.11	0.12	0.05	0.44	0.45	0.02	0.41	0.42
Sat Flow, veh/h	1795	1870	1435	1739	1819	60	1795	1479	335	1739	1195	584
Grp Volume(v), veh/h	188	73	20	58	0	63	74	0	238	20	0	658
Grp Sat Flow(s),veh/h/ln	1795	1870	1435	1739	0	1879	1795	0	1814	1739	0	1778
Q Serve(g_s), s	5.2	1.9	0.7	1.7	0.0	1.8	1.4	0.0	5.0	0.4	0.0	20.6
Cycle Q Clear(g_c), s	5.2	1.9	0.7	1.7	0.0	1.8	1.4	0.0	5.0	0.4	0.0	20.6
Prop In Lane	1.00		1.00	1.00		0.03	1.00		0.18	1.00		0.33
Lane Grp Cap(c), veh/h	422	356	273	307	0	215	261	0	793	556	0	727
V/C Ratio(X)	0.45	0.20	0.07	0.19	0.00	0.29	0.28	0.00	0.30	0.04	0.00	0.91
Avail Cap(c_a), veh/h	501	710	545	355	0	539	297	0	945	640	0	927
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	1.00	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	18.8	20.2	19.7	22.3	0.0	24.0	12.8	0.0	10.8	9.6	0.0	16.4
Incr Delay (d2), s/veh	0.5	0.2	0.1	0.2	0.0	0.6	0.4	0.0	0.2	0.0	0.0	10.4
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	2.0	0.8	0.2	0.7	0.0	0.8	0.5	0.0	1.7	0.1	0.0	9.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.4	20.4	19.8	22.5	0.0	24.6	13.2	0.0	11.0	9.7	0.0	26.8
LnGrp LOS	B	C	B	C	A	C	B	A	B	A	A	C
Approach Vol, veh/h		281			121			312			678	
Approach Delay, s/veh		19.7			23.6			11.5			26.3	
Approach LOS		B			C			B			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.8	29.2	11.5	11.8	5.1	30.9	7.0	16.3				
Change Period (Y+Rc), s	4.0	4.5	4.5	4.5	4.0	4.5	4.5	4.5				
Max Green Setting (Gmax), s	4.0	31.4	9.6	17.5	4.0	31.4	4.1	23.0				
Max Q Clear Time (g_c+I1), s	3.4	22.6	7.2	3.8	2.4	7.0	3.7	3.9				
Green Ext Time (p_c), s	0.0	2.1	0.1	0.1	0.0	0.9	0.0	0.2				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				21.4								
HCM 6th LOS				C								



Intersection												
Int Delay, s/veh	1.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	13	360	47	5	358	4	23	0	8	3	0	8
Future Vol, veh/h	13	360	47	5	358	4	23	0	8	3	0	8
Conflicting Peds, #/hr	0	0	0	0	0	0	2	0	0	0	0	2
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
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, %	15	1	0	0	3	25	5	0	0	0	0	25
Mvmt Flow	14	400	52	6	398	4	26	0	9	3	0	9

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	402	0	0	452	0	0	873	868	426	871	892	402
Stage 1	-	-	-	-	-	-	454	454	-	412	412	-
Stage 2	-	-	-	-	-	-	419	414	-	459	480	-
Critical Hdwy	4.25	-	-	4.1	-	-	7.15	6.5	6.2	7.1	6.5	6.45
Critical Hdwy Stg 1	-	-	-	-	-	-	6.15	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.15	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.335	-	-	2.2	-	-	3.545	4	3.3	3.5	4	3.525
Pot Cap-1 Maneuver	1090	-	-	1119	-	-	267	293	633	274	283	601
Stage 1	-	-	-	-	-	-	580	573	-	621	598	-
Stage 2	-	-	-	-	-	-	606	597	-	586	558	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1090	-	-	1119	-	-	258	286	633	265	276	600
Mov Cap-2 Maneuver	-	-	-	-	-	-	258	286	-	265	276	-
Stage 1	-	-	-	-	-	-	570	563	-	610	594	-
Stage 2	-	-	-	-	-	-	592	593	-	568	549	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.3			0.1			18.3			13.3		
HCM LOS							C			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	305	1090	-	-	1119	-	-	446
HCM Lane V/C Ratio	0.113	0.013	-	-	0.005	-	-	0.027
HCM Control Delay (s)	18.3	8.3	0	-	8.2	0	-	13.3
HCM Lane LOS	C	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.4	0	-	-	0	-	-	0.1

Intersection												
Int Delay, s/veh	1.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↵	↵		↵	↵			↕			↕	
Traffic Vol, veh/h	0	405	41	26	363	0	25	0	15	0	0	0
Future Vol, veh/h	0	405	41	26	363	0	25	0	15	0	0	0
Conflicting Peds, #/hr	0	0	5	5	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	100	-	-	100	-	-	-	-	-	-	-	-
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	3	0	0	3	0	0	0	0	0	0	0
Mvmt Flow	0	450	46	29	403	0	28	0	17	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	403	0	0	501	0	0	939	939	478	943	962	403
Stage 1	-	-	-	-	-	-	478	478	-	461	461	-
Stage 2	-	-	-	-	-	-	461	461	-	482	501	-
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	1167	-	-	1074	-	-	246	266	591	245	258	652
Stage 1	-	-	-	-	-	-	572	559	-	584	569	-
Stage 2	-	-	-	-	-	-	584	569	-	569	546	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1167	-	-	1070	-	-	240	258	589	233	250	652
Mov Cap-2 Maneuver	-	-	-	-	-	-	240	258	-	233	250	-
Stage 1	-	-	-	-	-	-	570	557	-	584	554	-
Stage 2	-	-	-	-	-	-	568	554	-	553	544	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0.6			18.6			0		
HCM LOS							C			A		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	309	1167	-	-	1070	-	-	-
HCM Lane V/C Ratio	0.144	-	-	-	0.027	-	-	-
HCM Control Delay (s)	18.6	0	-	-	8.5	-	-	0
HCM Lane LOS	C	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0.5	0	-	-	0.1	-	-	-

Intersection						
Int Delay, s/veh	1.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	31	418	357	31	28	24
Future Vol, veh/h	31	418	357	31	28	24
Conflicting Peds, #/hr	0	0	0	0	1	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	3	3	0	0	0
Mvmt Flow	34	464	397	34	31	27

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	431	0	-	0	947
Stage 1	-	-	-	-	414
Stage 2	-	-	-	-	533
Critical Hdwy	4.1	-	-	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	2.2	-	-	-	3.5
Pot Cap-1 Maneuver	1139	-	-	-	292
Stage 1	-	-	-	-	671
Stage 2	-	-	-	-	593
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1139	-	-	-	280
Mov Cap-2 Maneuver	-	-	-	-	280
Stage 1	-	-	-	-	644
Stage 2	-	-	-	-	593

Approach	EB	WB	SB
HCM Control Delay, s	0.6	0	16.2
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1139	-	-	-	379
HCM Lane V/C Ratio	0.03	-	-	-	0.152
HCM Control Delay (s)	8.3	0	-	-	16.2
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.5

Intersection	
Intersection Delay, s/veh	21.7
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷		↶	↷		↶	↷		↶	↷	
Traffic Vol, veh/h	53	268	45	68	251	62	29	92	75	106	155	71
Future Vol, veh/h	53	268	45	68	251	62	29	92	75	106	155	71
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	0	2	2	2	3	5	0	3	0	0	1	0
Mvmt Flow	59	298	50	76	279	69	32	102	83	118	172	79
Number of Lanes	1	1	0	1	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	25.5	24.8	15.7	17.5
HCM LOS	D	C	C	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	100%	0%	100%	0%
Vol Thru, %	0%	55%	0%	86%	0%	80%	0%	69%
Vol Right, %	0%	45%	0%	14%	0%	20%	0%	31%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	29	167	53	313	68	313	106	226
LT Vol	29	0	53	0	68	0	106	0
Through Vol	0	92	0	268	0	251	0	155
RT Vol	0	75	0	45	0	62	0	71
Lane Flow Rate	32	186	59	348	76	348	118	251
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.078	0.411	0.132	0.725	0.17	0.721	0.274	0.535
Departure Headway (Hd)	8.763	7.972	8.088	7.505	8.102	7.462	8.388	7.663
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	407	449	441	480	440	483	426	467
Service Time	6.561	5.769	5.874	5.291	5.888	5.248	6.176	5.45
HCM Lane V/C Ratio	0.079	0.414	0.134	0.725	0.173	0.72	0.277	0.537
HCM Control Delay	12.3	16.3	12.1	27.8	12.6	27.4	14.3	19
HCM Lane LOS	B	C	B	D	B	D	B	C
HCM 95th-tile Q	0.3	2	0.5	5.8	0.6	5.8	1.1	3.1



ID	Software/Method	Intersection	Control Type	LOS	Delay	V/C Ratio
1	Synchro HCM 6th Signal	Wilsonville Rd/Stafford Rd & Boeckman Rd/A	Signal	C	21.4	0.69

**E. HCM REPORTS – EXISTING + STAGE II**

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HCM 6th Signalized Intersection Summary  
 1: Wilsonville Rd/Stafford Rd & Boeckman Rd/Advance Rd

WV Frog Pond Elementary School  
 Existing + Stage II - PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	221	62	124	57	55	19	77	208	53	22	445	256
Future Volume (veh/h)	221	62	124	57	55	19	77	208	53	22	445	256
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.91		0.90	0.85		0.84	1.00		0.97	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	1885	1870	1885	1826	1900	1900	1885	1885	1870	1826	1885	1856
Adj Flow Rate, veh/h	223	63	23	58	56	2	78	210	44	22	449	237
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	1	2	1	5	0	0	1	1	2	5	1	3
Cap, veh/h	425	349	267	272	162	6	254	676	142	558	490	258
Arrive On Green	0.13	0.19	0.19	0.03	0.09	0.10	0.05	0.45	0.46	0.02	0.42	0.43
Sat Flow, veh/h	1795	1870	1433	1739	1809	65	1795	1504	315	1739	1161	613
Grp Volume(v), veh/h	223	63	23	58	0	58	78	0	254	22	0	686
Grp Sat Flow(s),veh/h/ln	1795	1870	1433	1739	0	1874	1795	0	1819	1739	0	1773
Q Serve(g_s), s	6.5	1.7	0.8	1.8	0.0	1.8	1.4	0.0	5.4	0.4	0.0	22.3
Cycle Q Clear(g_c), s	6.5	1.7	0.8	1.8	0.0	1.8	1.4	0.0	5.4	0.4	0.0	22.3
Prop In Lane	1.00		1.00	1.00		0.03	1.00		0.17	1.00		0.35
Lane Grp Cap(c), veh/h	425	349	267	272	0	168	254	0	817	558	0	748
V/C Ratio(X)	0.52	0.18	0.09	0.21	0.00	0.35	0.31	0.00	0.31	0.04	0.00	0.92
Avail Cap(c_a), veh/h	487	689	528	317	0	494	285	0	920	636	0	897
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	1.00	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	19.7	20.9	20.6	24.3	0.0	26.1	13.2	0.0	10.7	9.5	0.0	16.6
Incr Delay (d2), s/veh	0.7	0.2	0.1	0.3	0.0	0.9	0.5	0.0	0.2	0.0	0.0	12.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	0.7	0.3	0.7	0.0	0.8	0.5	0.0	1.9	0.1	0.0	10.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.4	21.1	20.7	24.6	0.0	27.0	13.7	0.0	10.9	9.5	0.0	29.2
LnGrp LOS	C	C	C	C	A	C	B	A	B	A	A	C
Approach Vol, veh/h		309			116			332			708	
Approach Delay, s/veh		20.6			25.8			11.6			28.5	
Approach LOS		C			C			B			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.9	30.8	12.9	10.5	5.2	32.5	7.0	16.4				
Change Period (Y+Rc), s	4.0	4.5	4.5	4.5	4.0	4.5	4.5	4.5				
Max Green Setting (Gmax), s	4.0	31.4	10.5	16.6	4.0	31.4	4.1	23.0				
Max Q Clear Time (g_c+I1), s	3.4	24.3	8.5	3.8	2.4	7.4	3.8	3.7				
Green Ext Time (p_c), s	0.0	2.0	0.1	0.1	0.0	0.9	0.0	0.2				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				22.8								
HCM 6th LOS				C								

Intersection												
Int Delay, s/veh	1.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	55	395	45	5	377	6	21	0	8	4	0	32
Future Vol, veh/h	55	395	45	5	377	6	21	0	8	4	0	32
Conflicting Peds, #/hr	0	0	0	0	0	0	2	0	0	0	0	2
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
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, %	15	1	0	0	3	25	5	0	0	0	0	25
Mvmt Flow	61	439	50	6	419	7	23	0	9	4	0	36

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	426	0	0	489	0	0	1041	1024	464	1026	1046	425
Stage 1	-	-	-	-	-	-	586	586	-	435	435	-
Stage 2	-	-	-	-	-	-	455	438	-	591	611	-
Critical Hdwy	4.25	-	-	4.1	-	-	7.15	6.5	6.2	7.1	6.5	6.45
Critical Hdwy Stg 1	-	-	-	-	-	-	6.15	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.15	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.335	-	-	2.2	-	-	3.545	4	3.3	3.5	4	3.525
Pot Cap-1 Maneuver	1067	-	-	1085	-	-	205	237	602	215	230	583
Stage 1	-	-	-	-	-	-	491	500	-	604	584	-
Stage 2	-	-	-	-	-	-	579	582	-	497	487	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1067	-	-	1085	-	-	180	217	602	198	210	582
Mov Cap-2 Maneuver	-	-	-	-	-	-	180	217	-	198	210	-
Stage 1	-	-	-	-	-	-	452	461	-	556	580	-
Stage 2	-	-	-	-	-	-	539	578	-	451	449	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	1			0.1			23.9			13.2		
HCM LOS							C			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	223	1067	-	-	1085	-	-	479
HCM Lane V/C Ratio	0.144	0.057	-	-	0.005	-	-	0.084
HCM Control Delay (s)	23.9	8.6	0	-	8.3	0	-	13.2
HCM Lane LOS	C	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.5	0.2	-	-	0	-	-	0.3



Intersection												
Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷		↶	↷			↕			↕	
Traffic Vol, veh/h	0	480	39	26	404	0	23	0	15	0	0	0
Future Vol, veh/h	0	480	39	26	404	0	23	0	15	0	0	0
Conflicting Peds, #/hr	0	0	5	5	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	100	-	-	100	-	-	-	-	-	-	-	-
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	3	0	0	3	0	0	0	0	0	0	0
Mvmt Flow	0	533	43	29	449	0	26	0	17	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	449	0	0	581	0	0	1067	1067	560	1070	1088	449
Stage 1	-	-	-	-	-	-	560	560	-	507	507	-
Stage 2	-	-	-	-	-	-	507	507	-	563	581	-
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	1122	-	-	1003	-	-	202	224	532	201	218	614
Stage 1	-	-	-	-	-	-	516	514	-	552	543	-
Stage 2	-	-	-	-	-	-	552	543	-	514	503	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1122	-	-	999	-	-	197	217	530	190	211	614
Mov Cap-2 Maneuver	-	-	-	-	-	-	197	217	-	190	211	-
Stage 1	-	-	-	-	-	-	514	512	-	552	527	-
Stage 2	-	-	-	-	-	-	536	527	-	498	501	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	0		0.5		21.4		0	
HCM LOS					C		A	

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	262	1122	-	-	999	-	-	-
HCM Lane V/C Ratio	0.161	-	-	-	0.029	-	-	-
HCM Control Delay (s)	21.4	0	-	-	8.7	-	-	0
HCM Lane LOS	C	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0.6	0	-	-	0.1	-	-	-

Intersection						
Int Delay, s/veh	1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↶	↷		↶	↷
Traffic Vol, veh/h	36	501	402	25	18	21
Future Vol, veh/h	36	501	402	25	18	21
Conflicting Peds, #/hr	0	0	0	0	1	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	3	3	0	0	0
Mvmt Flow	40	557	447	28	20	23

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	475	0	-	0	1099 461
Stage 1	-	-	-	-	461 -
Stage 2	-	-	-	-	638 -
Critical Hdwy	4.1	-	-	-	6.4 6.2
Critical Hdwy Stg 1	-	-	-	-	5.4 -
Critical Hdwy Stg 2	-	-	-	-	5.4 -
Follow-up Hdwy	2.2	-	-	-	3.5 3.3
Pot Cap-1 Maneuver	1098	-	-	-	237 605
Stage 1	-	-	-	-	639 -
Stage 2	-	-	-	-	530 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1098	-	-	-	224 605
Mov Cap-2 Maneuver	-	-	-	-	224 -
Stage 1	-	-	-	-	605 -
Stage 2	-	-	-	-	530 -

Approach	EB	WB	SB
HCM Control Delay, s	0.6	0	17.2
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1098	-	-	-	339
HCM Lane V/C Ratio	0.036	-	-	-	0.128
HCM Control Delay (s)	8.4	0	-	-	17.2
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.4

Intersection	
Intersection Delay, s/veh	36.5
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷		↶	↷		↶	↷		↶	↷	
Traffic Vol, veh/h	62	334	45	77	289	57	29	93	97	106	156	76
Future Vol, veh/h	62	334	45	77	289	57	29	93	97	106	156	76
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	0	2	2	2	3	5	0	3	0	0	1	0
Mvmt Flow	69	371	50	86	321	63	32	103	108	118	173	84
Number of Lanes	1	1	0	1	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	53.2	40.2	19.5	21.2
HCM LOS	F	E	C	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	100%	0%	100%	0%
Vol Thru, %	0%	49%	0%	88%	0%	84%	0%	67%
Vol Right, %	0%	51%	0%	12%	0%	16%	0%	33%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	29	190	62	379	77	346	106	232
LT Vol	29	0	62	0	77	0	106	0
Through Vol	0	93	0	334	0	289	0	156
RT Vol	0	97	0	45	0	57	0	76
Lane Flow Rate	32	211	69	421	86	384	118	258
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.086	0.512	0.166	0.95	0.209	0.873	0.302	0.607
Departure Headway (Hd)	9.581	8.738	8.686	8.118	8.798	8.178	9.217	8.476
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	374	412	413	446	407	442	390	425
Service Time	7.348	6.505	6.445	5.876	6.559	5.938	6.979	6.237
HCM Lane V/C Ratio	0.086	0.512	0.167	0.944	0.211	0.869	0.303	0.607
HCM Control Delay	13.3	20.4	13.2	59.8	13.9	46	15.9	23.6
HCM Lane LOS	B	C	B	F	B	E	C	C
HCM 95th-tile Q	0.3	2.8	0.6	11.2	0.8	9	1.3	3.9

ID	Software/Method	Intersection	Control Type	LOS	Delay	V/C Ratio
1	Synchro HCM 6th Signal	Wilsonville Rd/Stafford Rd & Boeckman Rd/A	Signal	C	22.8	0.73

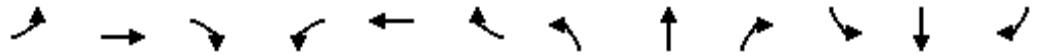


**F. HCM REPORTS – EXISTING + PROJECT + STAGE II**

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HCM 6th Signalized Intersection Summary  
 1: Wilsonville Rd/Stafford Rd & Boeckman Rd/Advance Rd

WV Frog Pond Elementary School  
 Existing + Project + Stage II - PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	221	75	126	57	65	19	79	208	53	22	445	256
Future Volume (veh/h)	221	75	126	57	65	19	79	208	53	22	445	256
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.92		0.90	0.85		0.85	1.00		0.97	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	1885	1870	1885	1826	1900	1900	1885	1885	1870	1826	1885	1856
Adj Flow Rate, veh/h	223	76	24	58	66	4	80	210	44	22	449	237
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	1	2	1	5	0	0	1	1	2	5	1	3
Cap, veh/h	419	353	271	274	162	10	253	676	142	556	489	258
Arrive On Green	0.13	0.19	0.19	0.03	0.09	0.10	0.05	0.45	0.46	0.02	0.42	0.43
Sat Flow, veh/h	1795	1870	1434	1739	1752	106	1795	1504	315	1739	1161	613
Grp Volume(v), veh/h	223	76	24	58	0	70	80	0	254	22	0	686
Grp Sat Flow(s),veh/h/ln	1795	1870	1434	1739	0	1858	1795	0	1819	1739	0	1773
Q Serve(g_s), s	6.5	2.1	0.8	1.9	0.0	2.2	1.5	0.0	5.5	0.4	0.0	22.5
Cycle Q Clear(g_c), s	6.5	2.1	0.8	1.9	0.0	2.2	1.5	0.0	5.5	0.4	0.0	22.5
Prop In Lane	1.00		1.00	1.00		0.06	1.00		0.17	1.00		0.35
Lane Grp Cap(c), veh/h	419	353	271	274	0	172	253	0	817	556	0	747
V/C Ratio(X)	0.53	0.22	0.09	0.21	0.00	0.41	0.32	0.00	0.31	0.04	0.00	0.92
Avail Cap(c_a), veh/h	479	684	524	319	0	486	283	0	913	634	0	890
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	1.00	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	19.7	21.1	20.6	24.4	0.0	26.3	13.4	0.0	10.8	9.6	0.0	16.7
Incr Delay (d2), s/veh	0.8	0.2	0.1	0.3	0.0	1.1	0.5	0.0	0.2	0.0	0.0	12.9
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	2.5	0.9	0.3	0.7	0.0	1.0	0.5	0.0	1.9	0.1	0.0	10.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.5	21.3	20.7	24.6	0.0	27.5	13.9	0.0	11.0	9.6	0.0	29.6
LnGrp LOS	C	C	C	C	A	C	B	A	B	A	A	C
Approach Vol, veh/h		323			128			334			708	
Approach Delay, s/veh		20.7			26.2			11.7			29.0	
Approach LOS		C			C			B			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.0	30.9	12.9	10.7	5.3	32.6	7.0	16.6				
Change Period (Y+Rc), s	4.0	4.5	4.5	4.5	4.0	4.5	4.5	4.5				
Max Green Setting (Gmax), s	4.0	31.4	10.5	16.6	4.0	31.4	4.1	23.0				
Max Q Clear Time (g_c+I1), s	3.5	24.5	8.5	4.2	2.4	7.5	3.9	4.1				
Green Ext Time (p_c), s	0.0	2.0	0.1	0.1	0.0	0.9	0.0	0.2				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				23.1								
HCM 6th LOS				C								

Intersection												
Int Delay, s/veh	1.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	55	410	47	5	389	6	23	0	8	4	0	32
Future Vol, veh/h	55	410	47	5	389	6	23	0	8	4	0	32
Conflicting Peds, #/hr	0	0	0	0	0	0	2	0	0	0	0	2
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
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, %	15	1	0	0	3	25	5	0	0	0	0	25
Mvmt Flow	61	456	52	6	432	7	26	0	9	4	0	36

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	439	0	0	508	0	0	1072	1055	482	1057	1078	438
Stage 1	-	-	-	-	-	-	604	604	-	448	448	-
Stage 2	-	-	-	-	-	-	468	451	-	609	630	-
Critical Hdwy	4.25	-	-	4.1	-	-	7.15	6.5	6.2	7.1	6.5	6.45
Critical Hdwy Stg 1	-	-	-	-	-	-	6.15	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.15	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.335	-	-	2.2	-	-	3.545	4	3.3	3.5	4	3.525
Pot Cap-1 Maneuver	1055	-	-	1067	-	-	196	227	588	205	220	573
Stage 1	-	-	-	-	-	-	480	491	-	594	576	-
Stage 2	-	-	-	-	-	-	570	574	-	486	478	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1055	-	-	1067	-	-	171	207	588	188	201	572
Mov Cap-2 Maneuver	-	-	-	-	-	-	171	207	-	188	201	-
Stage 1	-	-	-	-	-	-	441	451	-	546	572	-
Stage 2	-	-	-	-	-	-	530	570	-	440	439	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.9			0.1			25.6			13.4		
HCM LOS							D			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	209	1055	-	-	1067	-	-	466
HCM Lane V/C Ratio	0.165	0.058	-	-	0.005	-	-	0.086
HCM Control Delay (s)	25.6	8.6	0	-	8.4	0	-	13.4
HCM Lane LOS	D	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.6	0.2	-	-	0	-	-	0.3

Intersection												
Int Delay, s/veh	1.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗			↕			↕	
Traffic Vol, veh/h	0	497	41	26	418	0	25	0	15	0	0	0
Future Vol, veh/h	0	497	41	26	418	0	25	0	15	0	0	0
Conflicting Peds, #/hr	0	0	5	5	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	100	-	-	100	-	-	-	-	-	-	-	-
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	3	0	0	3	0	0	0	0	0	0	0
Mvmt Flow	0	552	46	29	464	0	28	0	17	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	464	0	0	603	0	0	1102	1102	580	1106	1125	464
Stage 1	-	-	-	-	-	-	580	580	-	522	522	-
Stage 2	-	-	-	-	-	-	522	522	-	584	603	-
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	1108	-	-	984	-	-	191	213	518	190	207	602
Stage 1	-	-	-	-	-	-	504	503	-	542	534	-
Stage 2	-	-	-	-	-	-	542	534	-	501	492	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1108	-	-	980	-	-	186	206	516	180	200	602
Mov Cap-2 Maneuver	-	-	-	-	-	-	186	206	-	180	200	-
Stage 1	-	-	-	-	-	-	502	501	-	542	518	-
Stage 2	-	-	-	-	-	-	526	518	-	485	490	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0.5			22.9			0		
HCM LOS							C			A		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	245	1108	-	-	980	-	-	-
HCM Lane V/C Ratio	0.181	-	-	-	0.029	-	-	-
HCM Control Delay (s)	22.9	0	-	-	8.8	-	-	0
HCM Lane LOS	C	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0.6	0	-	-	0.1	-	-	-



Intersection						
Int Delay, s/veh	1.7					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↶	↷		↶	↷
Traffic Vol, veh/h	44	501	402	41	37	31
Future Vol, veh/h	44	501	402	41	37	31
Conflicting Peds, #/hr	0	0	0	0	1	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	3	3	0	0	0
Mvmt Flow	49	557	447	46	41	34

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	493	0	-	0	1126 470
Stage 1	-	-	-	-	470 -
Stage 2	-	-	-	-	656 -
Critical Hdwy	4.1	-	-	-	6.4 6.2
Critical Hdwy Stg 1	-	-	-	-	5.4 -
Critical Hdwy Stg 2	-	-	-	-	5.4 -
Follow-up Hdwy	2.2	-	-	-	3.5 3.3
Pot Cap-1 Maneuver	1081	-	-	-	229 598
Stage 1	-	-	-	-	633 -
Stage 2	-	-	-	-	520 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1081	-	-	-	214 598
Mov Cap-2 Maneuver	-	-	-	-	214 -
Stage 1	-	-	-	-	591 -
Stage 2	-	-	-	-	520 -

Approach	EB	WB	SB
HCM Control Delay, s	0.7	0	20.8
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1081	-	-	-	303
HCM Lane V/C Ratio	0.045	-	-	-	0.249
HCM Control Delay (s)	8.5	0	-	-	20.8
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	1

Intersection	
Intersection Delay, s/veh	38
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷		↶	↷		↶	↷		↶	↷	
Traffic Vol, veh/h	62	334	45	82	289	62	29	93	101	110	156	76
Future Vol, veh/h	62	334	45	82	289	62	29	93	101	110	156	76
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	0	2	2	2	3	5	0	3	0	0	1	0
Mvmt Flow	69	371	50	91	321	69	32	103	112	122	173	84
Number of Lanes	1	1	0	1	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	55.2	42.7	20	21.5
HCM LOS	F	E	C	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	100%	0%	100%	0%
Vol Thru, %	0%	48%	0%	88%	0%	82%	0%	67%
Vol Right, %	0%	52%	0%	12%	0%	18%	0%	33%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	29	194	62	379	82	351	110	232
LT Vol	29	0	62	0	82	0	110	0
Through Vol	0	93	0	334	0	289	0	156
RT Vol	0	101	0	45	0	62	0	76
Lane Flow Rate	32	216	69	421	91	390	122	258
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.086	0.527	0.168	0.959	0.224	0.892	0.315	0.612
Departure Headway (Hd)	9.648	8.797	8.768	8.199	8.86	8.231	9.289	8.547
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	371	410	409	442	405	441	386	423
Service Time	7.418	6.566	6.528	5.959	6.624	5.994	7.055	6.312
HCM Lane V/C Ratio	0.086	0.527	0.169	0.952	0.225	0.884	0.316	0.61
HCM Control Delay	13.3	21	13.3	62.1	14.2	49.3	16.3	24
HCM Lane LOS	B	C	B	F	B	E	C	C
HCM 95th-tile Q	0.3	3	0.6	11.5	0.8	9.5	1.3	4

ID	Software/Method	Intersection	Control Type	LOS	Delay	V/C Ratio
1	Synchro HCM 6th Signal	Wilsonville Rd/Stafford Rd & Boeckman Rd/A	Signal	C	23.1	0.74

**G. HCM REPORTS – MITIGATIONS**

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HCM 6th Signalized Intersection Summary  
5: Canyon Creek Rd & Boeckman Rd

Mitigations

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	62	334	45	82	289	62	29	93	101	110	156	76
Future Volume (veh/h)	62	334	45	82	289	62	29	93	101	110	156	76
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	0.99		0.99	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	1900	1870	1870	1870	1856	1826	1900	1856	1900	1900	1885	1900
Adj Flow Rate, veh/h	69	371	41	91	321	55	32	103	38	122	173	52
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	2	2	2	3	5	0	3	0	0	1	0
Cap, veh/h	393	469	52	373	454	78	321	177	65	407	258	78
Arrive On Green	0.05	0.28	0.28	0.06	0.29	0.29	0.03	0.14	0.14	0.08	0.19	0.19
Sat Flow, veh/h	1810	1654	183	1781	1543	264	1810	1287	475	1810	1379	415
Grp Volume(v), veh/h	69	0	412	91	0	376	32	0	141	122	0	225
Grp Sat Flow(s),veh/h/ln	1810	0	1837	1781	0	1807	1810	0	1762	1810	0	1794
Q Serve(g_s), s	1.0	0.0	8.1	1.4	0.0	7.3	0.6	0.0	2.9	2.2	0.0	4.6
Cycle Q Clear(g_c), s	1.0	0.0	8.1	1.4	0.0	7.3	0.6	0.0	2.9	2.2	0.0	4.6
Prop In Lane	1.00		0.10	1.00		0.15	1.00		0.27	1.00		0.23
Lane Grp Cap(c), veh/h	393	0	521	373	0	531	321	0	243	407	0	336
V/C Ratio(X)	0.18	0.00	0.79	0.24	0.00	0.71	0.10	0.00	0.58	0.30	0.00	0.67
Avail Cap(c_a), veh/h	480	0	822	477	0	846	475	0	726	476	0	744
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	9.6	0.0	12.9	9.7	0.0	12.3	13.9	0.0	15.8	13.0	0.0	14.8
Incr Delay (d2), s/veh	0.2	0.0	2.8	0.3	0.0	1.8	0.1	0.0	2.2	0.4	0.0	2.3
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	0.3	0.0	2.8	0.4	0.0	2.3	0.2	0.0	1.1	0.7	0.0	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.8	0.0	15.7	10.0	0.0	14.1	14.0	0.0	18.0	13.4	0.0	17.1
LnGrp LOS	A	A	B	B	A	B	B	A	B	B	A	B
Approach Vol, veh/h		481			467			173			347	
Approach Delay, s/veh		14.8			13.3			17.2			15.8	
Approach LOS		B			B			B			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.1	9.9	6.5	15.6	5.2	11.8	6.1	16.0				
Change Period (Y+Rc), s	4.0	4.5	4.0	4.5	4.0	4.5	4.0	4.5				
Max Green Setting (Gmax), s	4.6	16.1	4.8	17.5	4.5	16.2	4.0	18.3				
Max Q Clear Time (g_c+I1), s	4.2	4.9	3.4	10.1	2.6	6.6	3.0	9.3				
Green Ext Time (p_c), s	0.0	0.3	0.0	1.0	0.0	0.6	0.0	1.0				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			14.8									
HCM 6th LOS			B									

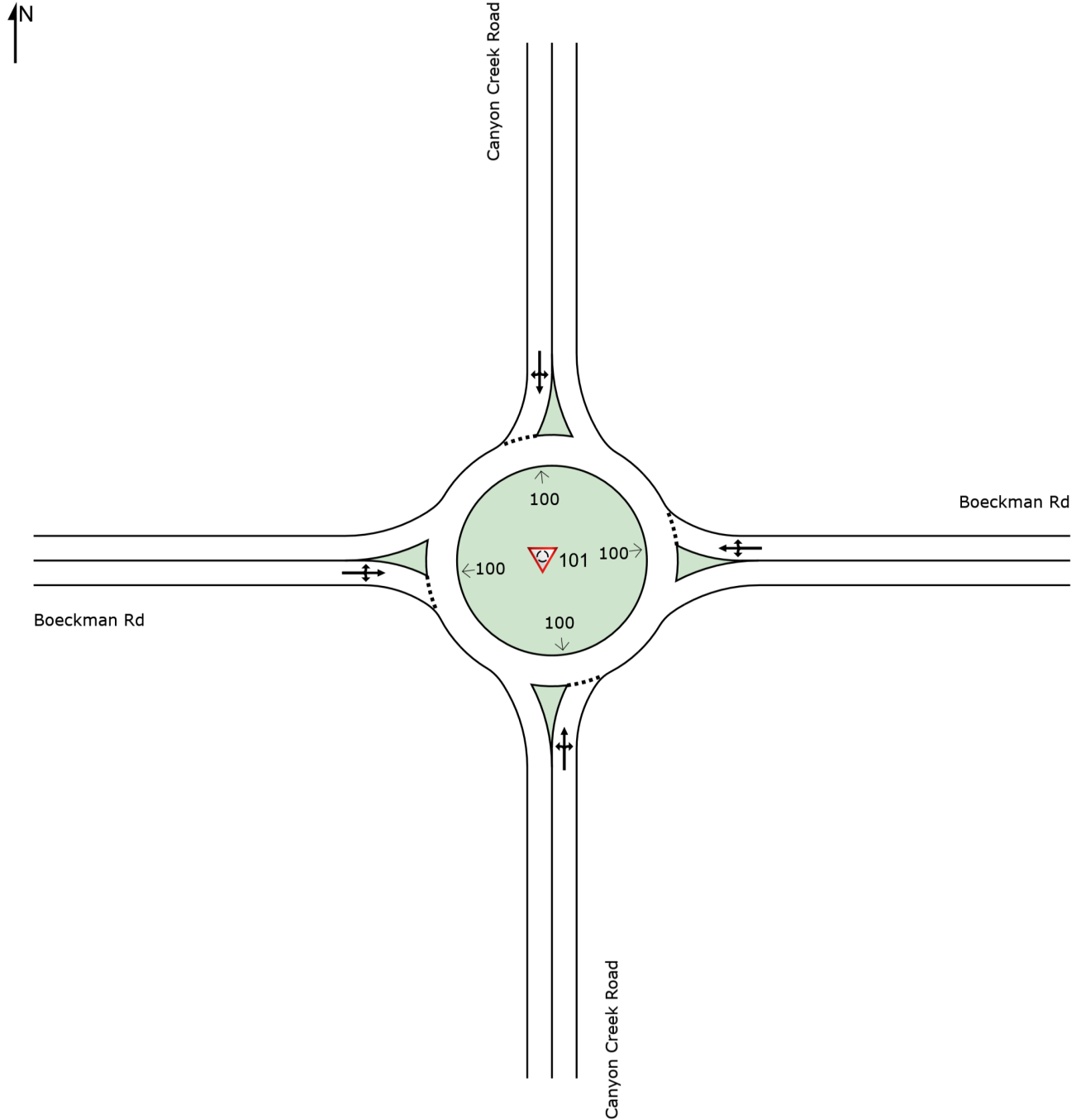
ID	Software/Method	Intersection	Control Type	LOS	Delay	V/C Ratio
5	Synchro HCM 6th Signal	Canyon Creek Rd & Boeckman Rd	Signal	B	14.8	0.59

# SITE LAYOUT

Site: 101 [Boeckman Rd/Canyon Creek Rd (Site Folder: Frog Pond Elementary Mitigations)]

New Site  
Site Category: (None)  
Roundabout

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



## MOVEMENT SUMMARY

### Site: 101 [Boeckman Rd/Canyon Creek Rd (Site Folder: Frog Pond Elementary Mitigations)]

New Site  
 Site Category: (None)  
 Roundabout

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[ Total veh/h	HV %	[ Total veh/h	HV %				[ Veh. veh	Dist ] ft				
South: Canyon Creek Road														
3	L2	29	0.0	32	0.0	0.325	8.6	LOS A	1.5	37.9	0.64	0.64	0.64	29.8
8	T1	93	3.0	103	3.0	0.325	8.7	LOS A	1.5	37.9	0.64	0.64	0.64	28.5
18	R2	101	0.0	112	0.0	0.325	8.6	LOS A	1.5	37.9	0.64	0.64	0.64	29.0
Approach		223	1.3	248	1.3	0.325	8.6	LOS A	1.5	37.9	0.64	0.64	0.64	28.9
East: Boeckman Rd														
1	L2	82	2.0	91	2.0	0.445	8.1	LOS A	2.7	68.9	0.50	0.36	0.50	30.3
6	T1	289	3.0	321	3.0	0.445	8.2	LOS A	2.7	68.9	0.50	0.36	0.50	33.1
16	R2	62	5.0	69	5.0	0.445	8.2	LOS A	2.7	68.9	0.50	0.36	0.50	30.8
Approach		433	3.1	481	3.1	0.445	8.2	LOS A	2.7	68.9	0.50	0.36	0.50	32.2
North: Canyon Creek Road														
7	L2	110	0.0	122	0.0	0.441	9.6	LOS A	2.7	68.3	0.66	0.68	0.78	30.8
4	T1	156	1.0	173	1.0	0.441	9.6	LOS A	2.7	68.3	0.66	0.68	0.78	27.9
14	R2	76	0.0	84	0.0	0.441	9.6	LOS A	2.7	68.3	0.66	0.68	0.78	29.9
Approach		342	0.5	380	0.5	0.441	9.6	LOS A	2.7	68.3	0.66	0.68	0.78	29.2
West: Boeckman Rd														
5	L2	62	0.0	69	0.0	0.538	11.1	LOS B	4.5	113.0	0.69	0.74	0.94	30.8
2	T1	334	2.0	371	2.0	0.538	11.2	LOS B	4.5	113.0	0.69	0.74	0.94	31.8
12	R2	45	2.0	50	2.0	0.538	11.2	LOS B	4.5	113.0	0.69	0.74	0.94	28.1
Approach		441	1.7	490	1.7	0.538	11.2	LOS B	4.5	113.0	0.69	0.74	0.94	31.2
All Vehicles		1439	1.8	1599	1.8	0.538	9.5	LOS A	4.5	113.0	0.62	0.60	0.72	30.6

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

Delay Model: HCM Delay Formula (Geometric Delay is not included).

Queue Model: HCM Queue Formula.

Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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Organisation: DKS ASSOCIATES | Licence: PLUS / Enterprise | Processed: Wednesday, August 24, 2022 11:19:46 AM

Project: S:\Projects\2021\21123-005 (Wilsonville Frog Pond Elementary School TIA)\03\_Analysis\Synchro\Mitigation\WV FP Elementary School - E+P +S - PM Peak - Canyon Creek Mitigation.sip9



**H. SITE PLAN**

---

SW BRISBAND STREET

231.5

1.5%

230.0

1%

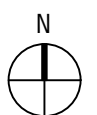
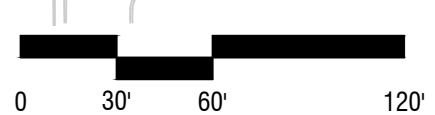
226.5

228.0

SW SHERMAN DRIVE

BOECKMAN ROAD

6" HIGH, 4" TALL  
BLACK WALL





10295 Southwest Riddle Road, Wilsonville, OR 97070  
© 2023 Republic Services, Inc. 1-800-582-9307 republicservices.com

September 29, 2022

Brooke Besheone

Re: Frog Pond Primary School  
7151 SW Boeckman Rd.  
Wilsonville, OR 97070

Dear Brooke,

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 site access from SW Sherman Dr. onto the property, and the planned traffic pattern and turnaround will allow our trucks to safely maneuver and service the trash and recycle at the designated enclosure.

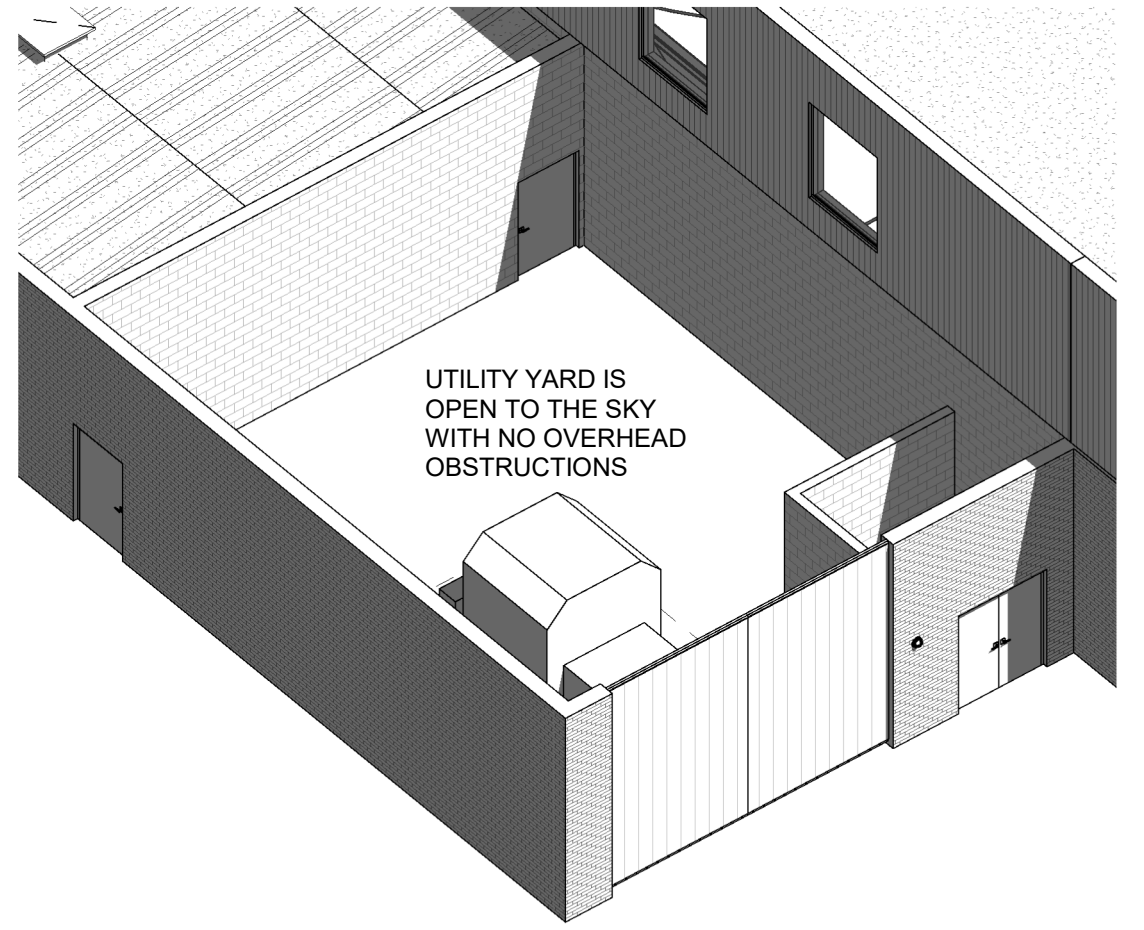
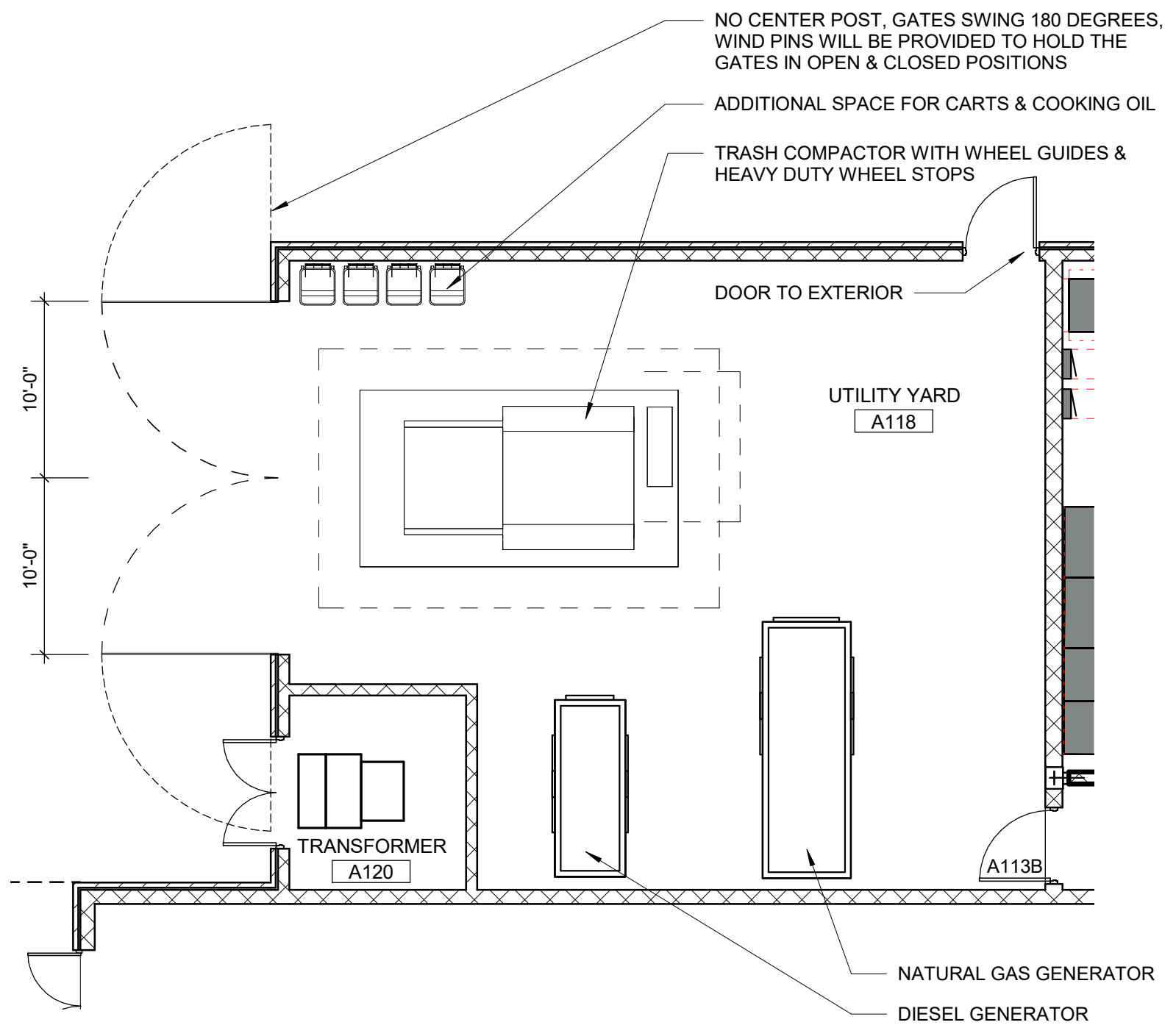
The enclosure design plan including a double gate opening width of 20' Ft. free space, wind pins attached to secure gates in the open and closed position, and gate swing radius of 180 degrees will allow access to the receptacles. The surface transition from the enclosure to driveway will be smooth, level, and free of any obstruction or curbing. The trash compactor placement and recycle equipment storage space will provide versatility for sideload carts and/or frontload container storage to accommodate the anticipated commingle recycling volumes for this facility.

The design plan of the self-contained 12 cubic yard trash compactor, to include wheel guides and wheel stops, accessible HPU hose disconnects and power shut-off is adequate. Our operations team will require confirmation of the compactor compatibility with our trucks superior endless chain roll off system and ground set up at the time of installation.

Thanks Brooke, for your help and concerns for our services prior to this project being developed.

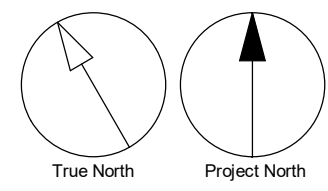
Sincerely,

Kelly Herrod  
Operations Supervisor  
Republic Services Inc.



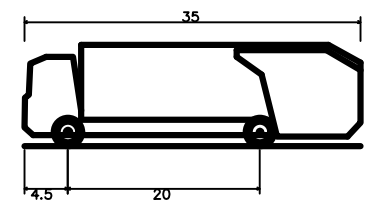
**1 FLOOR PLAN - UTILITY YARD**  
SCALE: 1/8" = 1'-0"

**2 AXONOMETRIC**  
SCALE:





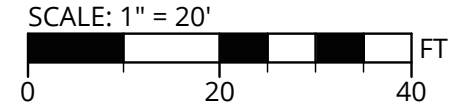
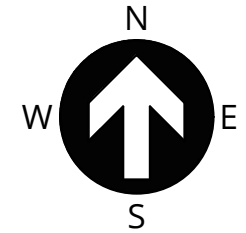
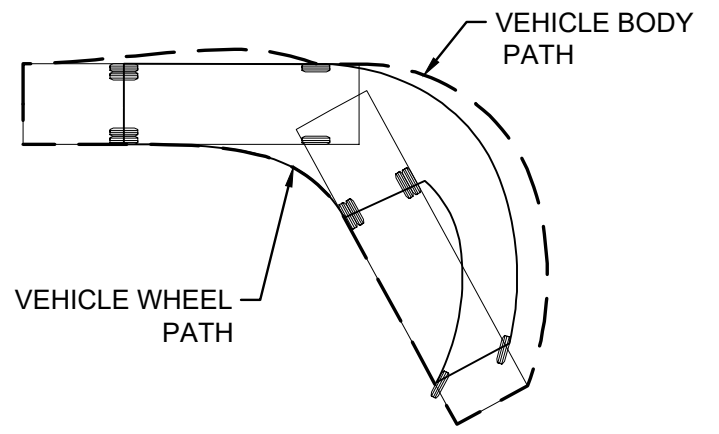
### MACK MRU HEIL FRONT LOADER



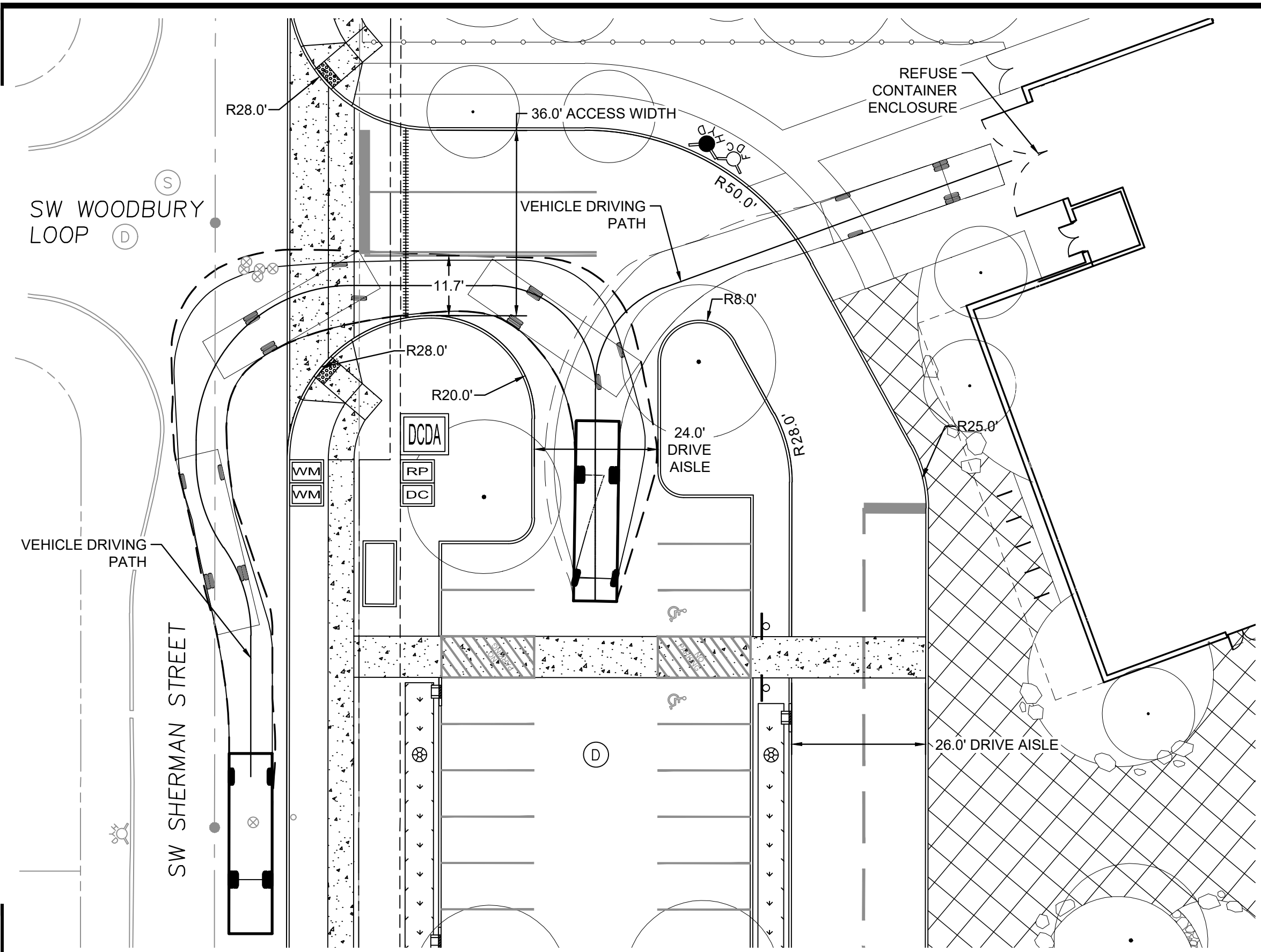
Rear-Load Garbage Truck	
Overall Length	35.000ft
Overall Width	8.375ft
Overall Body Height	10.546ft
Min Body Ground Clearance	1.000ft
Track Width	8.375ft
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	29.300ft

### VEHICLE MOVEMENT SIMULATION CRITERIA

2.5 MPH MIN SIMULATION SPEED



09/07/22



**FROG POND PRIMARY SCHOOL**

**WEST LINN / WILSONVILLE SCHOOL DISTRICT**

**SOLID WASTE VEHICULAR ACCESS PLAN (REPUBLIC SERVICES)**

**3J CONSULTING**  
CIVIL ENGINEERING . WATER RESOURCES . COMMUNITY PLANNING

## Tree Protection Specifications

It is critical that the following steps be taken to ensure that trees slated for retention are protected.

### **Before Construction Begins**

- 1. Tree removals** within the tree protection area.
  - a. Prior to construction, allow tree removal within the tree protection area to occur.
    - i. The project arborist shall oversee the removal of any trees within the tree protection zone.
  - b. Installing tree protection fencing immediately following the removal of trees within the tree protection area (see 3 below). Tree protecting shall be installed after removals to ensure:
    - i. Tree removals are performed safely.
    - ii. Tree protection fencing is not accidentally or intentionally moved.
- 2. Notify all contractors of the tree protection procedures.** For successful tree protection on a construction site, all contractors must know and understand the goals of tree protection. It can only take one mistake with a misplaced trench or other action to destroy the future of a tree.
  - a. Hold a Tree Protection meeting with all contractors to fully explain goals of tree protection.
  - b. Have all sub-contractors 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 outline by the Council of Tree & Landscape Appraisers current edition of the *Guide for Plant Appraisal*. Penalty is to be paid to owner of the property.
- 3. Fencing.**
  - a. Establish fencing around each tree or grove of trees to be retained. The tree protection fencing should be placed at 6X the diameter of the tree. For example: tree #2442 is a 27" DBH Pine.  $27 \times 0.5 = 13.5$ . The fencing should be thirteen-feet-six-inches away from the trunk in circumference of the tree,
  - b. The fencing is to be put in place before the ground is cleared in order to protect the trees and the soil around the trees from any disturbance at all.
  - c. Fencing is to be placed at the edge of the root protection zone. Root protection zones are to be established by the project arborist based on the needs of the site and the tree to be protected.
  - d. Fencing is to consist of a minimum of 4-foot-high metal fencing secured to the ground with metal posts to prevent it from being moved by contractors, sagging, or falling down OR as required by municipal code.
  - e. Fencing is to remain in the position that is established by the project arborist and not to be moved without written permission from the project arborist until the end of the project.

#### 4. Signage

- a. All tree protection fencing should have signage as follows so that all contractors understand the purpose of the fencing:

**VEGETATION/TREE PROTECTION ZONE**  
DO NOT REMOVE OR ADJUST THIS FENCING.  
The fence locations are approved to protect vegetation & trees.  
NOTE: Moving these fences is a civil violation.

Please contact the Code Enforcement Specialist and project arborist, if alterations to the approved location of the protection fencing is requested.

Project Arborist: TERAGAN & ASSOCIATES, INC 503-697-1975

- b. Signage should be placed as to be visible from all sides of a tree protection area and spaced every 35 feet.

#### During Construction

##### 1. Protection guidelines Within the Root Protection Zone

- a. No traffic shall be allowed within the root protection zone. No vehicle, heavy equipment, or even repeated foot traffic.
  - b. No storage of materials including but not limiting to soil, construction material, or waste from the site.
    - i. Waste includes but is not limited to concrete wash out, gasoline, diesel, paint, cleaner, thinners, etc.
  - c. Construction trailers are not to be parked / placed within the root protection zone without written clearance from project arborist.
  - d. No vehicles shall be allowed to park within the root protection areas.
  - e. No activity shall be allowed that will cause soil compaction within the root protection zone.
2. **Tree pruning.** The trees shall be protected from any cutting, skinning, or breaking of branches, trunks or roots.
  3. **Root pruning.** Any roots that are to be cut from existing trees that are to be retained, the project consulting arborist shall be notified to evaluate and oversee the proper cutting of roots with sharp cutting tools. Cut roots are to be immediately covered with soil or mulch to prevent them from drying out.
  4. **Grade changes.** No grade change should be allowed within the root protection zone.
  5. **Root protection zone changes.** Any necessary deviation of the root protection zone shall be cleared by the project consulting arborist or project owner.
  6. **Watering.** Provide water to trees during the summer months. 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.
  7. **Utilities.** Any necessary passage of utilities through the root protection zone shall be by means of tunneling under roots by hand digging or boring.

**After Construction**

1. **Landscaping.** Carefully landscape in the area of the tree. Do not allow trenching within the root protection zone. Carefully plant new plants within the root protection zone. Avoid cutting the roots of the existing trees.
2. **Irrigation.** Do not plan for irrigation within the root protection zone of existing trees unless it is drip irrigation for a specific planting or cleared by the project arborist.
3. **Drainage.** Provide for adequate drainage of the location around the retained trees.
4. **Tree pruning.** Pruning of the 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.
5. **Pest and disease inspection.** Provide for inspection and treatment of insect and disease populations that are capable of damaging the retained trees and plants.
6. **Fertilization.** Trees that are retained may need to be fertilized as called for by project arborist after final inspection.



**FIRE CODE / LAND USE / BUILDING REVIEW  
APPLICATION**

Item 3.



**North Operating Center**  
11945 SW 70<sup>th</sup> 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: Rebecca Grant  
 Address: 907 SW Harvey Milk Street, Portland, Oregon 97205  
 Phone: (971) 227-5066  
 Email: rebecca.grant@ibigroup.com  
 Site Address: 7151 Boeckman Road  
 City: Wilsonville  
 Map & Tax Lot #: \_\_\_\_\_  
 Business Name: West Linn-Wilsonville School District  
 Land Use/Building Jurisdiction: Wilsonville  
 Land Use/ Building Permit # \_\_\_\_\_

Choose from: Beaverton, Tigard, Newberg, Tualatin, North Plains, West Linn, Wilsonville, Sherwood, Rivergrove, Durham, King City, Washington County, Clackamas County, Multnomah County, Yamhill County

**Project Description**

The new Primary School will be a starter primary school with 350 student capacity for grade levels pre-K-5. A future learning neighborhood addition will increase the capacity to 550 students.

The new facility will be built on a green-field site east of Boeckman Creek and north of Boeckman Road, in the City of Wilsonville. The school must be operational at the beginning of the 2024-2025 school year.

**Permit/Review Type (check one):**

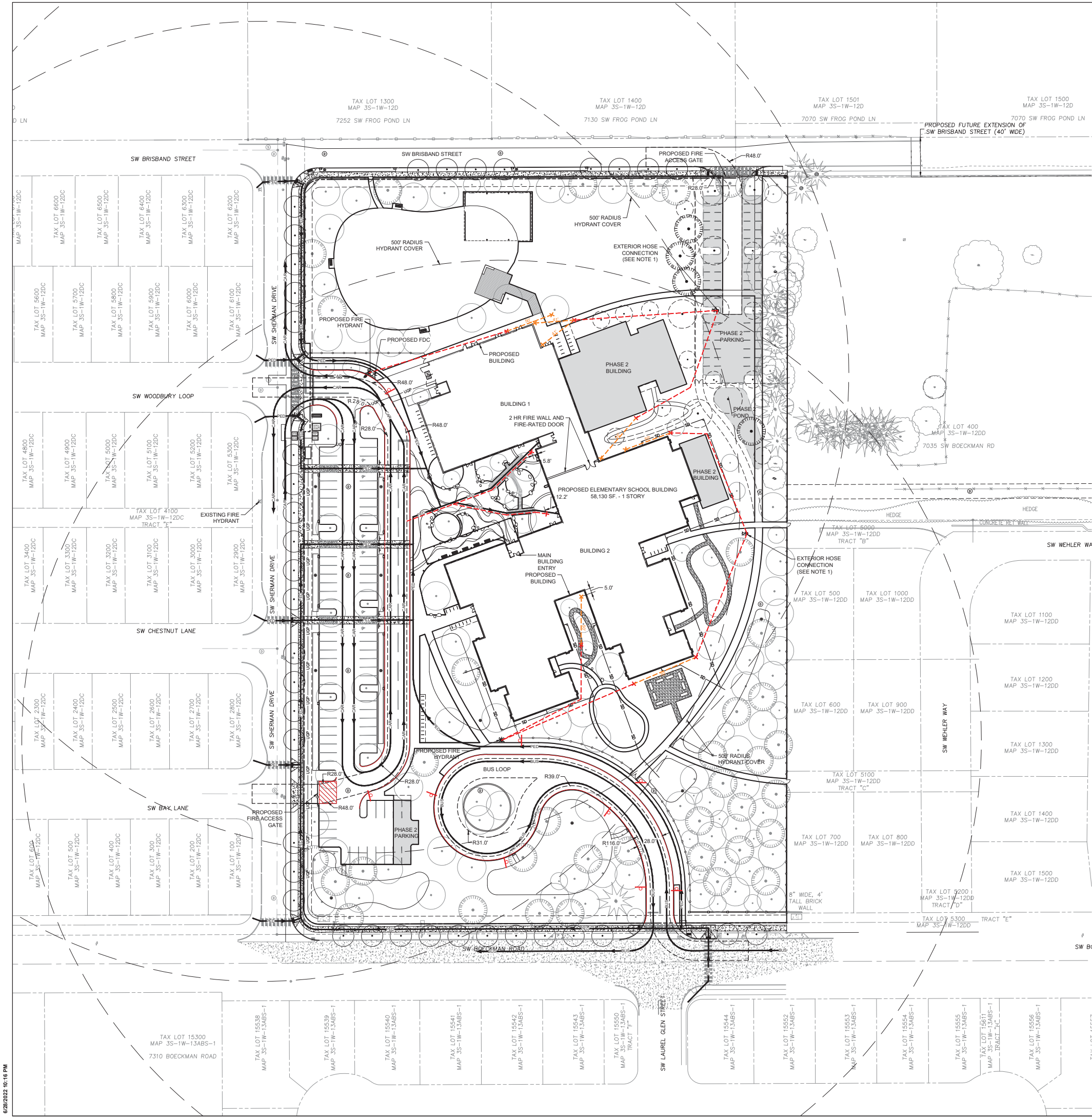
Land Use / Building Review - Service Provider Permit  
 Emergency Radio Responder Coverage Install/Test  
 LPG Tank (Greater than 2,000 gallons)  
 Flammable or Combustible Liquid Tank Installation (Greater than 1,000 gallons)  
 \* Exception: Underground Storage Tanks (UST) are deferred to DEQ for regulation.  
 Explosives Blasting (Blasting plan is required)  
 Exterior Toxic, Pyrophoric or Corrosive Gas Installation (in excess of 810 cu.ft.)  
 Tents or Temporary Membrane Structures (in excess of 10,000 square feet)  
 Temporary Haunted House or similar  
 OLCC Cannabis Extraction License Review  
 Ceremonial Fire or Bonfire (For gathering, ceremony or other assembly)

**For Fire Marshal's Office Use Only**

TVFR Permit # 2022-0111  
 Permit Type: SPP  
 Submittal Date: 9/6/2022  
 Assigned To: McGladrey  
 Due Date: 10/4/2022  
 Fees Due: 0  
 Fees Paid: 0

**Approval/Inspection Conditions**  
(For Fire Marshal's Office Use Only)

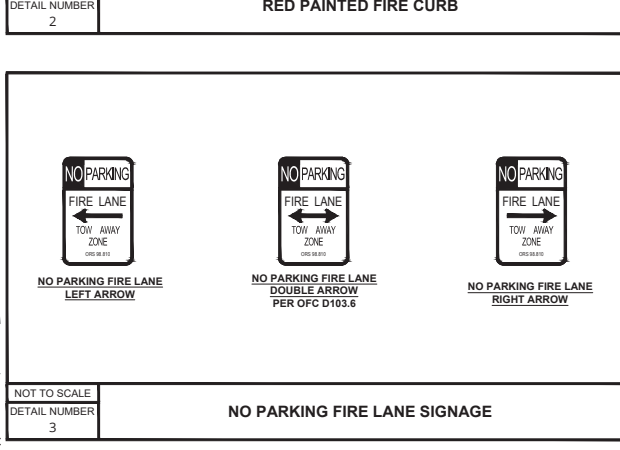
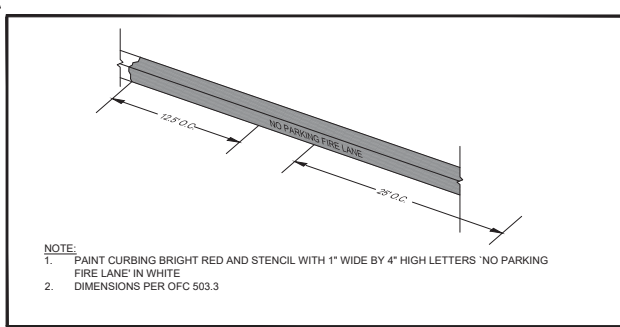
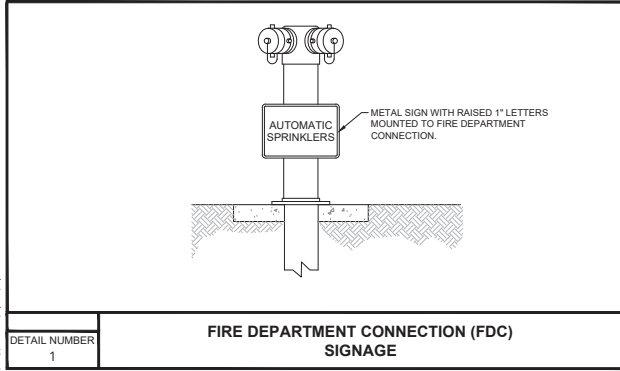
<p align="center"><b>This section is for application approval only</b></p> <p><u>McGladrey</u> <u>10/4/2022</u>              Fire Marshal or Designee Date</p> <p>Conditions: <u>A Final TVFR inspection is required.</u></p> <p><u>ERRC system requires approval of Washington County Consolidated Emergency Agency</u></p> <p>See Attached Conditions: <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Site Inspection Required: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>	<p align="center"><b>This section used when site inspection is required</b></p> <p>Inspection Comments:</p>     <p>Final TVFR Approval Signature &amp; Emp ID _____ Date _____</p>
--	---



**LEGEND**

- PROPOSED FIRE HOSE PULL (150')
- PROPOSED FIRE HOSE PULL EXTENTS (EXCEEDS 150')
- PROPOSED 450' HYDRANT COVER RADIUS
- PROPOSED FIRE HYDRANT
- PROPOSED EXTERIOR HOSE CONNECTION WITH POST INDICATOR VALVE
- PROPOSED FDC
- PROPOSED 20' WIDE FIRE ACCESS PATH INSIDE RADIUS 28 FT, OUTSIDE RADIUS 48 FT
- PROPOSED NO PARKING FIRE LANE CURB STRIPING
- PROPOSED NO PARKING FIRE LANE SIGN
- BUS → BUS CIRCULATION ROUTE
- CAR → CAR CIRCULATION ROUTE
- PED → PEDESTRIAN CIRCULATION ROUTE

- NOTES**
- ALTERNATE METHOD PROPOSED IN LIEU OF FIRE DEPARTMENT ACCESS ON THE NORTH AND EAST SIDES OF THE BUILDING (150-FT FIRE HOSE PULL RULE). ALTERNATE METHOD UTILIZES EXTERNAL HOSE CONNECTIONS IN CONJUNCTION WITH THE INTERNAL PLUMBING AND WET SPRINKLER SYSTEM.
  - BUILDING TO BE FULLY SPRINKLERED.
  - LEVEL 1 BUILDING LAYOUT SHOWN.



CLIENT  
West Linn  
School  
Item 3.  
2755 SW Boekman Road,  
Tualatin, OR 97062

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IBI Group Architects (USA) Inc.  
is a member of the IBI Group of USA Inc.

ISSUES	DESCRIPTION	DATE
1	100% DESIGN DEVELOPMENT	2022-09-01

**NOT FOR CONSTRUCTION**

The North  
Project North

**CONSULTANTS**

**3J CONSULTING**  
CIVIL ENGINEERING  
WATER RESOURCES  
COMMUNITY PLANNING  
9600 SW HAMBURG AVE., SUITE 100, BEAVERTON, OR 97008

**PRIME CONSULTANT**

**IBI GROUP**  
907 SW Harvey Milk Street  
Portland, OR 97205, USA  
tel 503 228 6900 fax 503 273 9192  
ibi@ibi-group.com

**PROJECT**  
New Wilsonville Primary School  
7151 Boeckman Road  
Wilsonville, OR 97070

**PROJECT NO:**  
137469

**SHEET TITLE**  
FIRE SITE PLAN

**SHEET NUMBER**  
655

**FS-1**

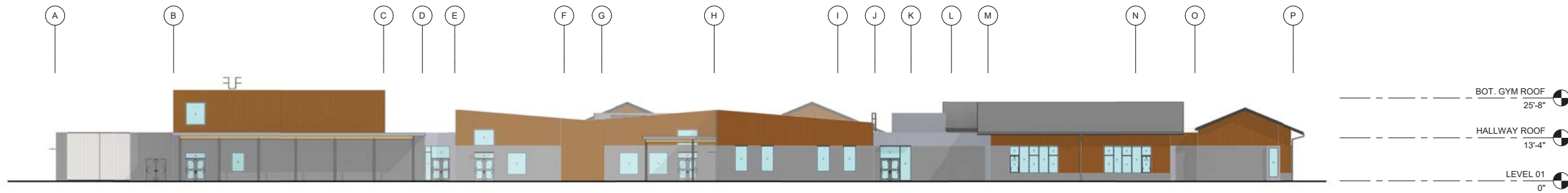
**811**  
Know what's below.  
Call before you dig.

SCALE: 1" = 40'

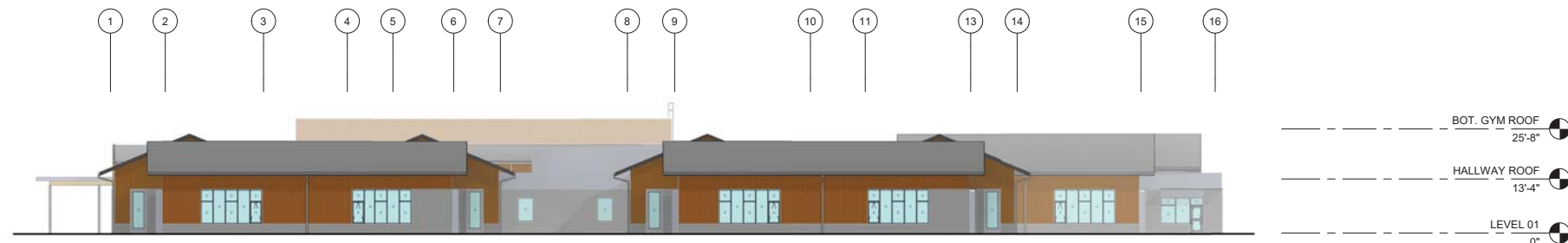
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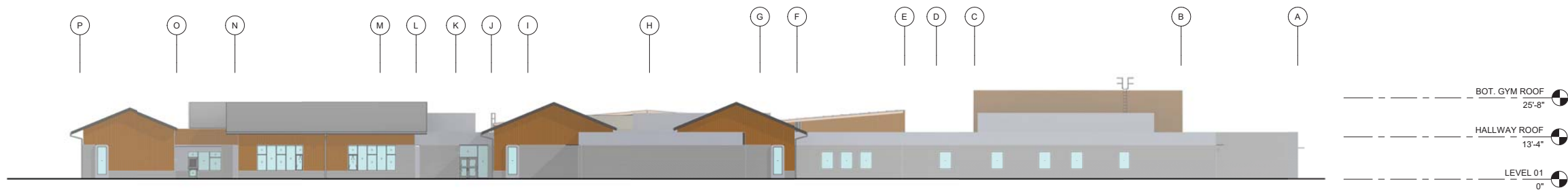
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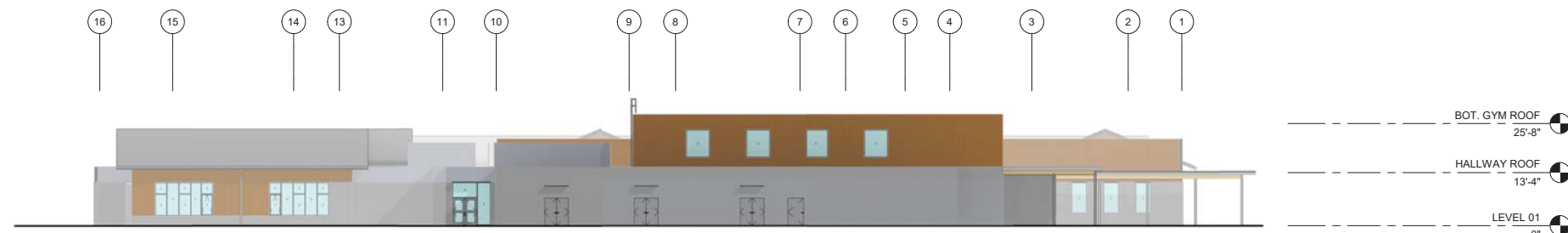
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SCALE: 1/16" = 1'-0"



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SCALE: 1/16" = 1'-0"



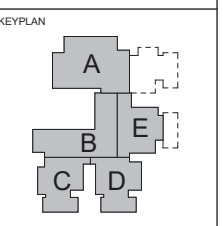
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PROJECT  
**Frog Pond Primary School**  
7151 Boeckman Road  
Wilsonville, OR 97070

PROJECT NO.  
137469

SHEET TITLE  
**OVERALL BUILDING ELEVATIONS**

SHEET NUMBER  
**656**  
FS-2



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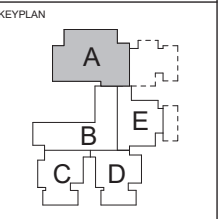
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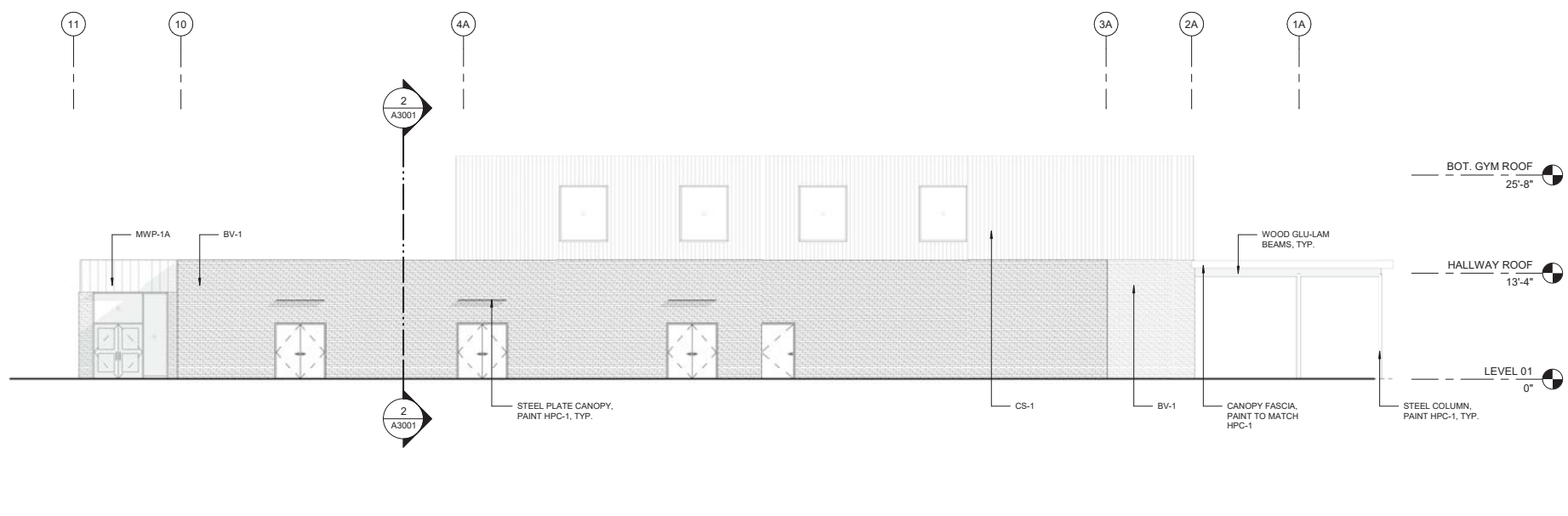
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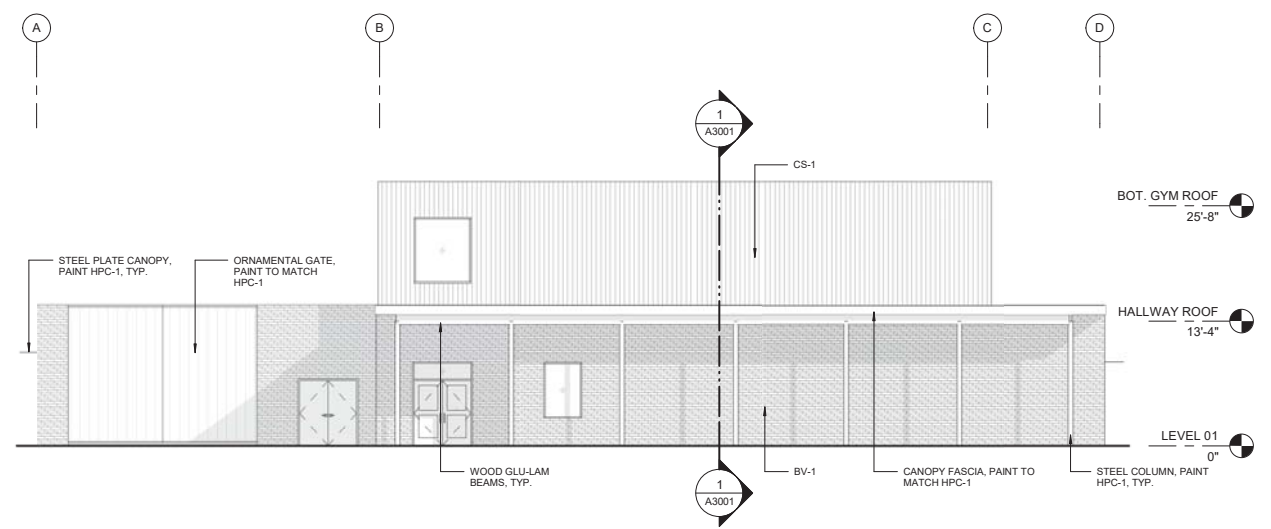
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**SHEET TITLE**  
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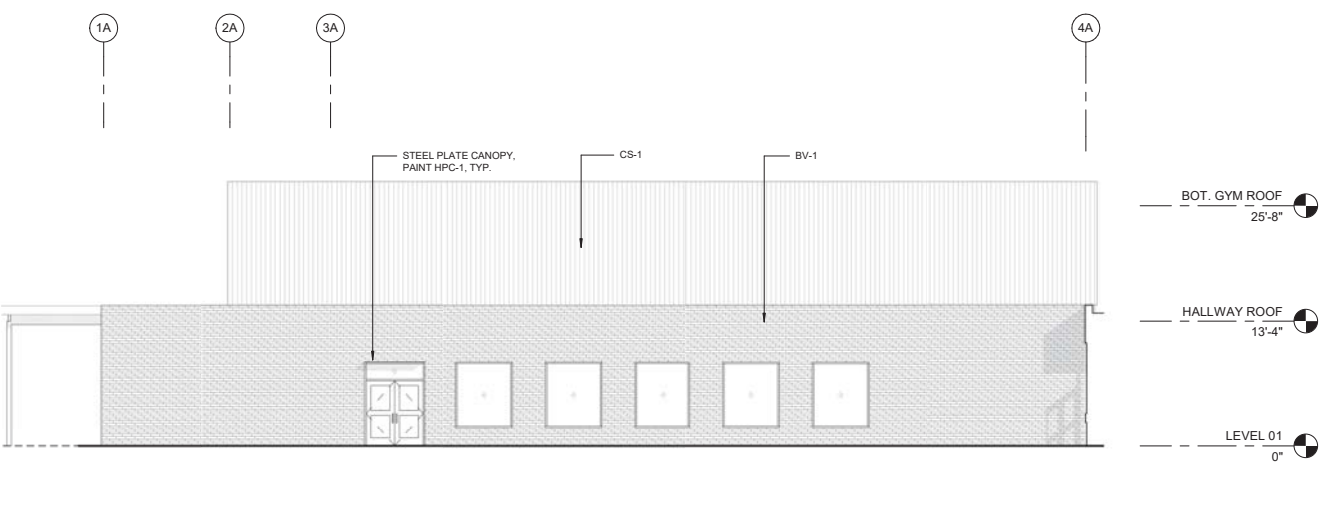
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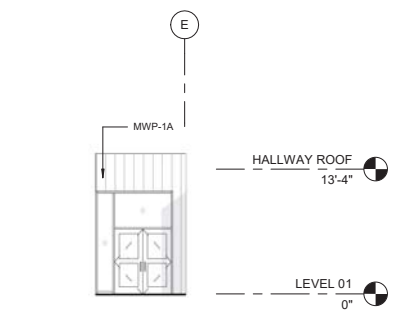
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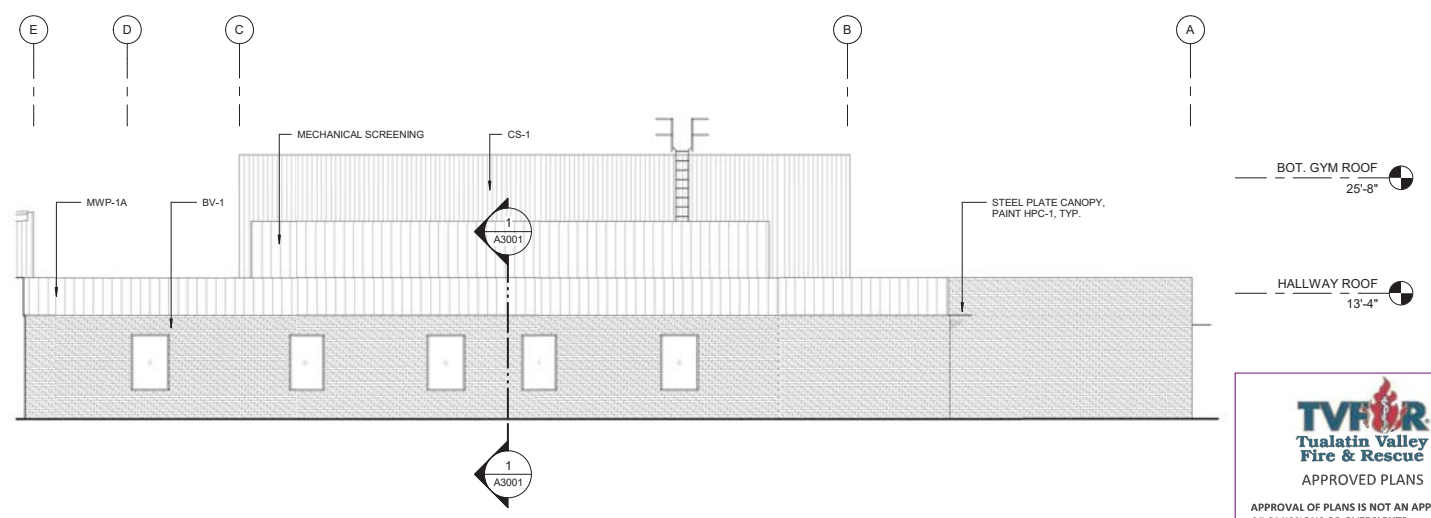
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 SCALE: 1/8" = 1'-0"



**4 WEST ELEVATION - SECTOR A**  
 SCALE: 1/8" = 1'-0"



**1 EAST ELEVATION - SECTOR A**  
 SCALE: 1/8" = 1'-0"

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**EXTERIOR ELEVATIONS NOTES:**

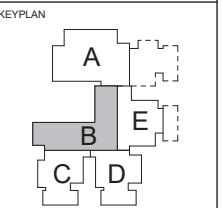
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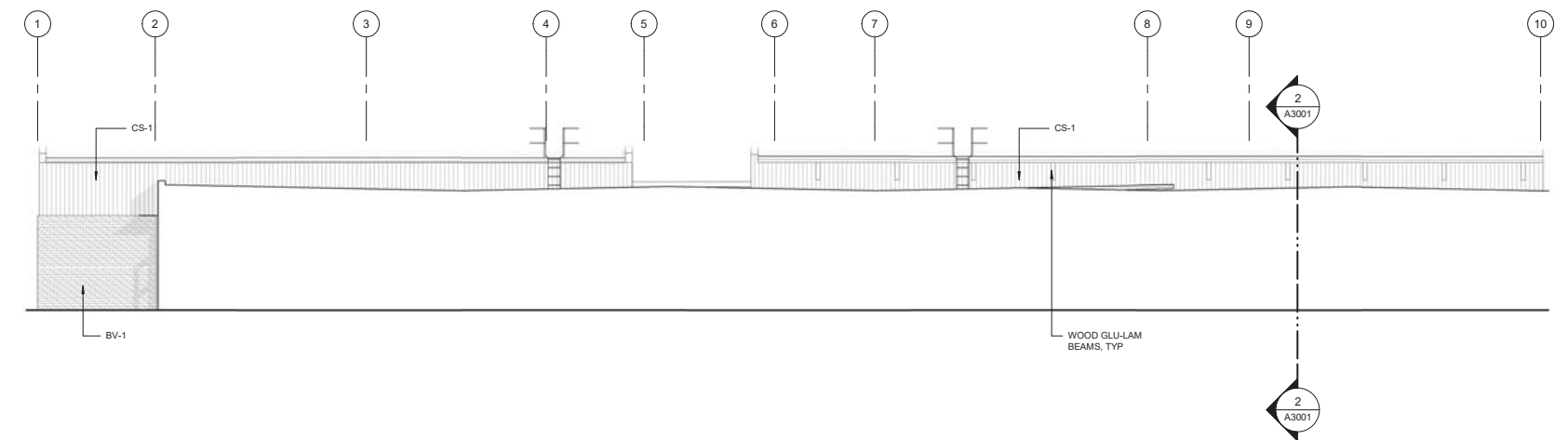
PROJECT  
**Frog Pond Primary School**  
 7151 Boeckman Road  
 Wilsonville, OR 97070

PROJECT NO:  
 137469

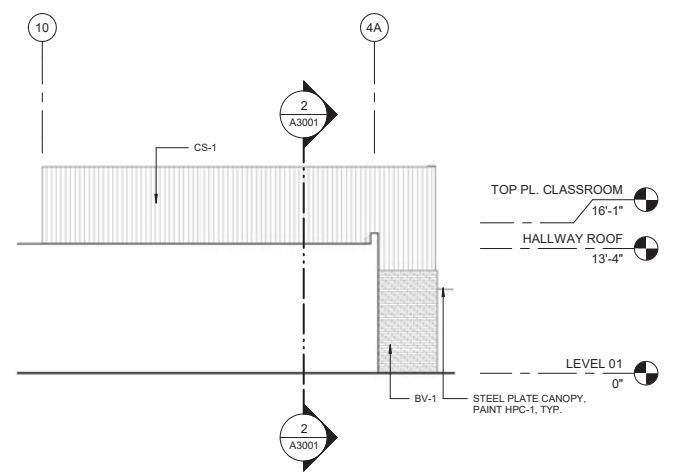
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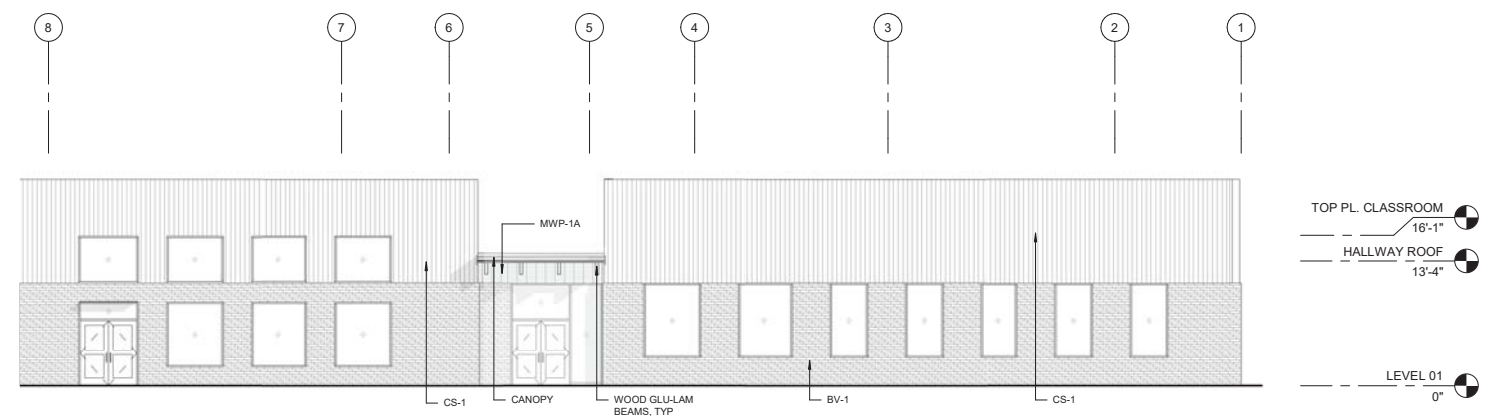
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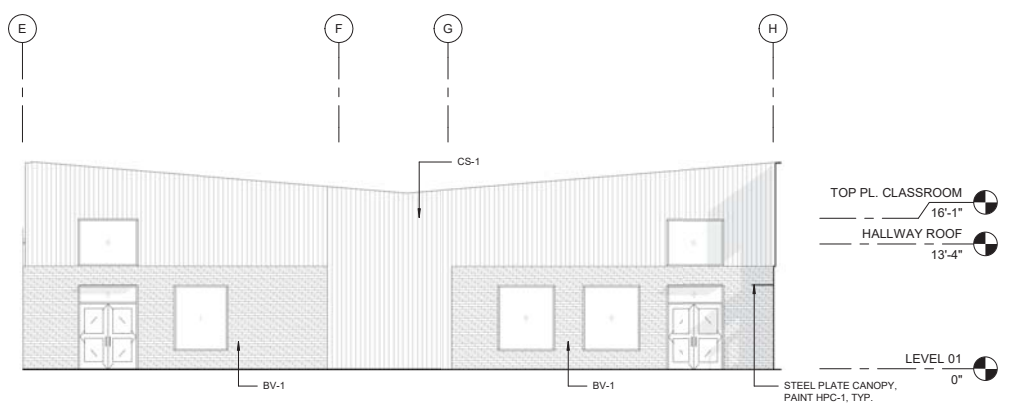
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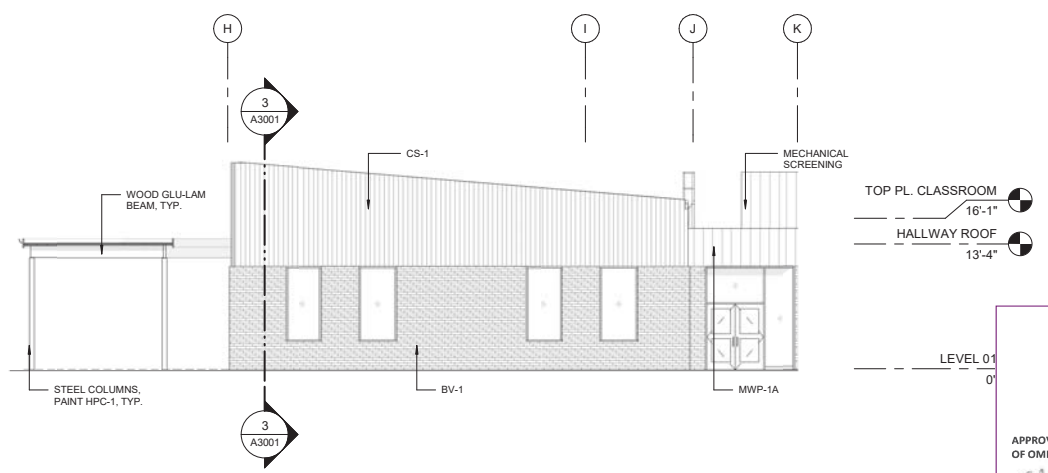
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**5 WEST ELEVATION - SECTOR B**  
 SCALE: 1/8" = 1'-0"



**1 WEST ELEVATION - SECTOR B**  
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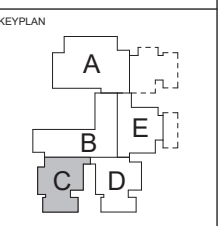
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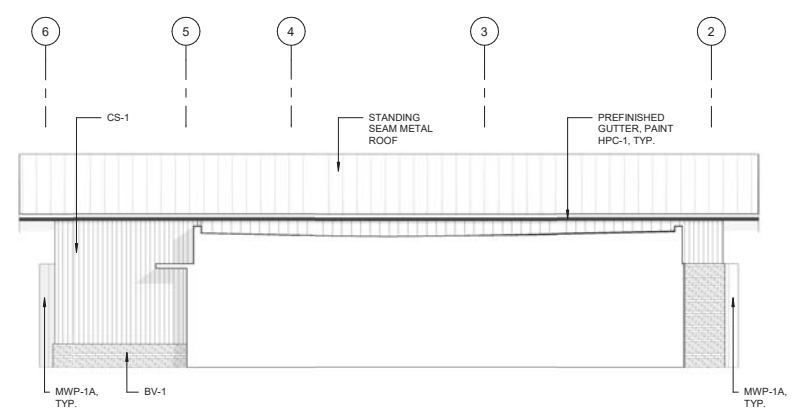
**PROJECT**  
 Frog Pond Primary School  
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 Wilsonville, OR 97070

**PROJECT NO.**  
 137469

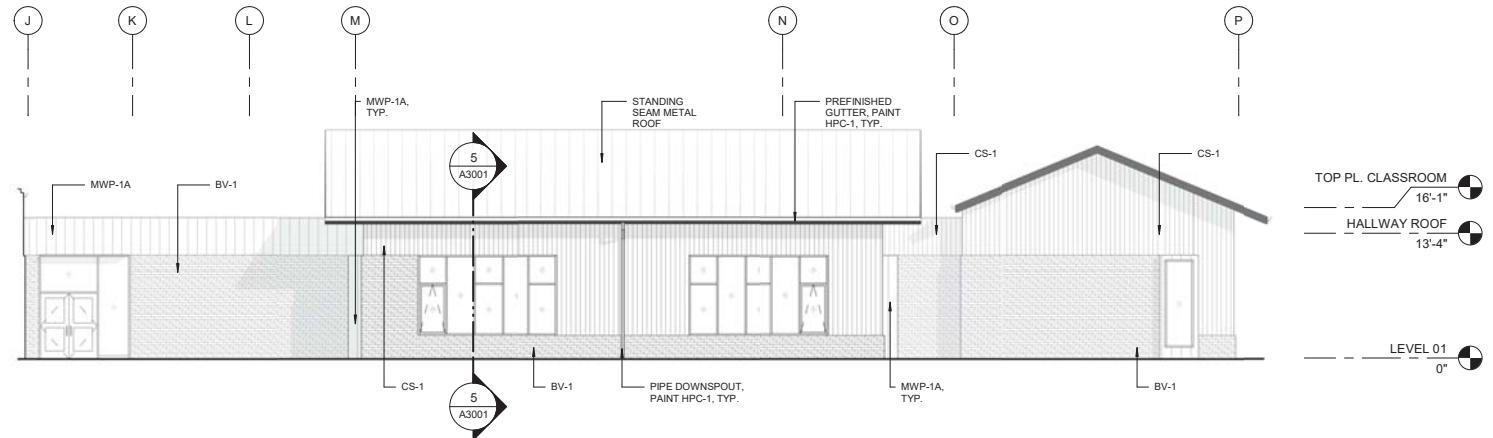
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**SHEET NUMBER**  
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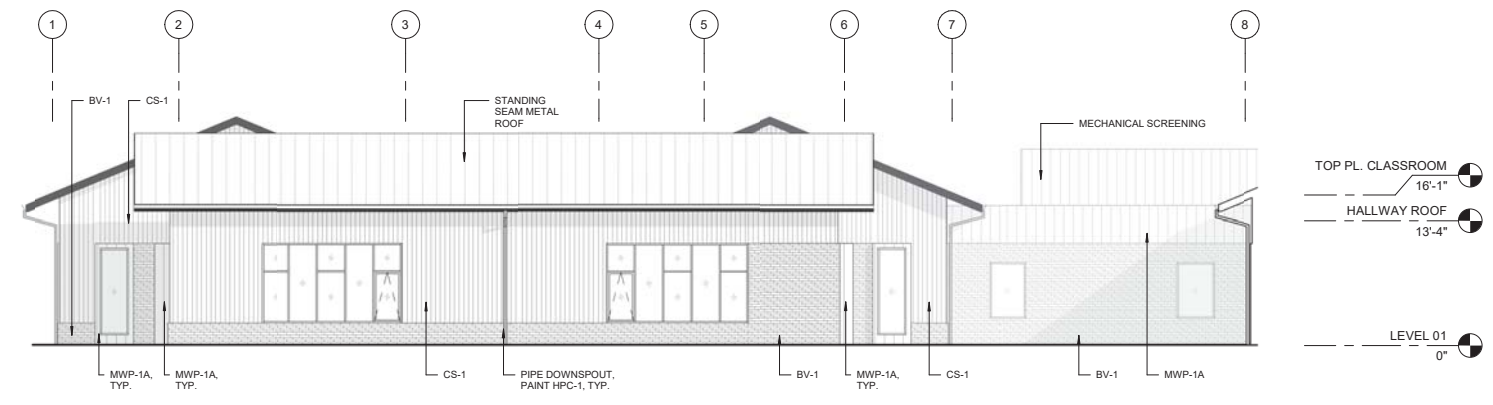
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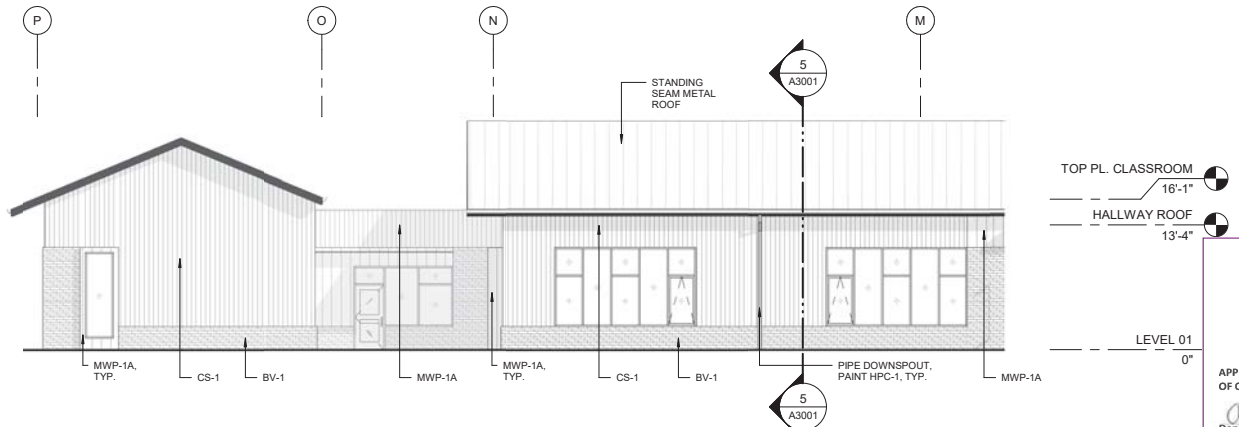
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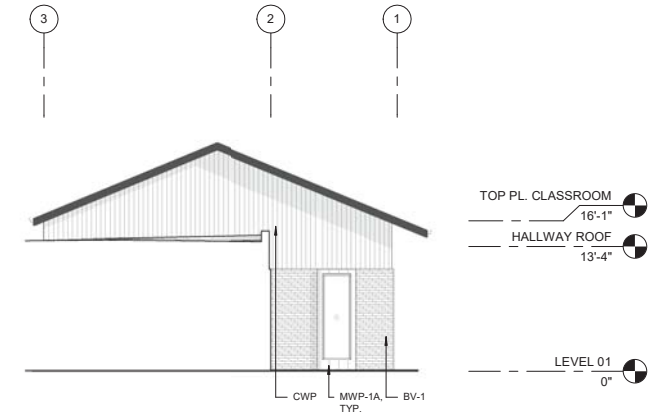
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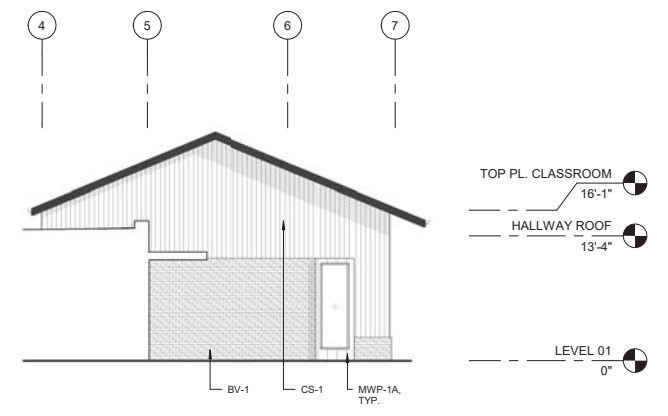
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**1 EAST ELEVATION - SECTOR C**  
 SCALE: 1/8" = 1'-0"



**5 NORTH ELEVATION 2 - SECTOR C**  
 SCALE: 1/8" = 1'-0"



**2 SOUTH ELEVATION 3 - SECTOR C**  
 SCALE: 1/8" = 1'-0"



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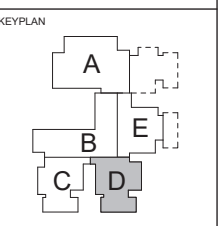
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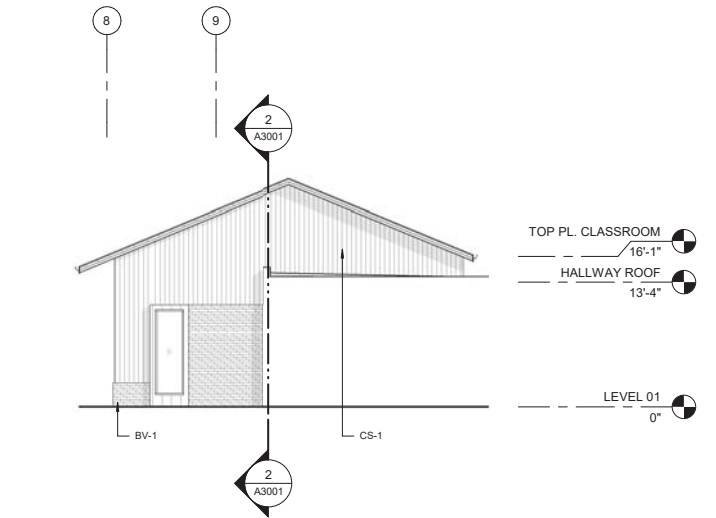
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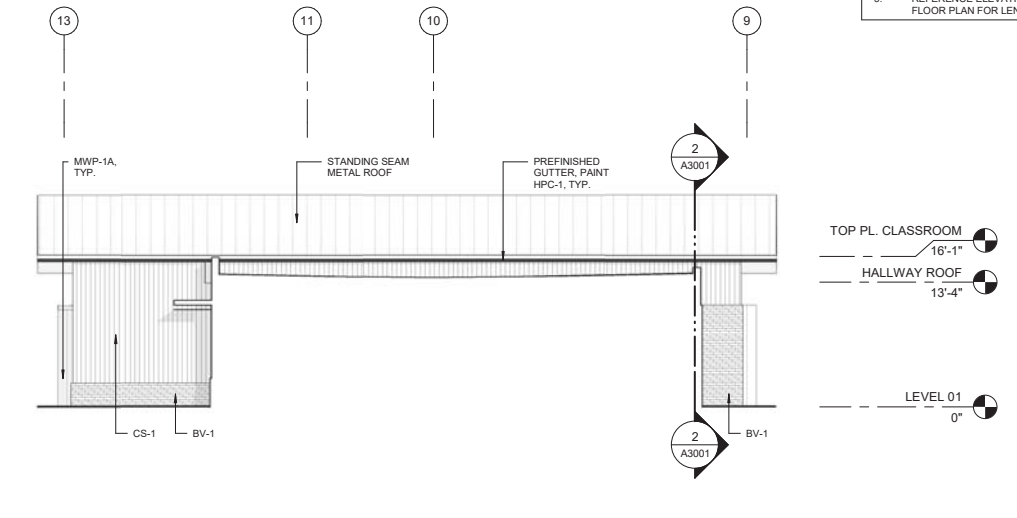
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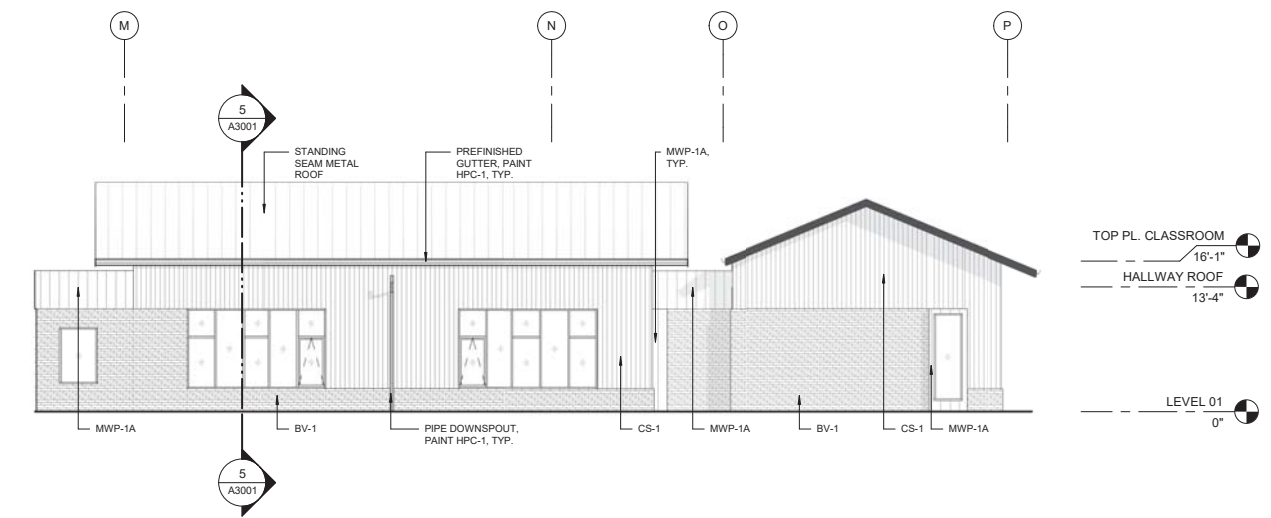
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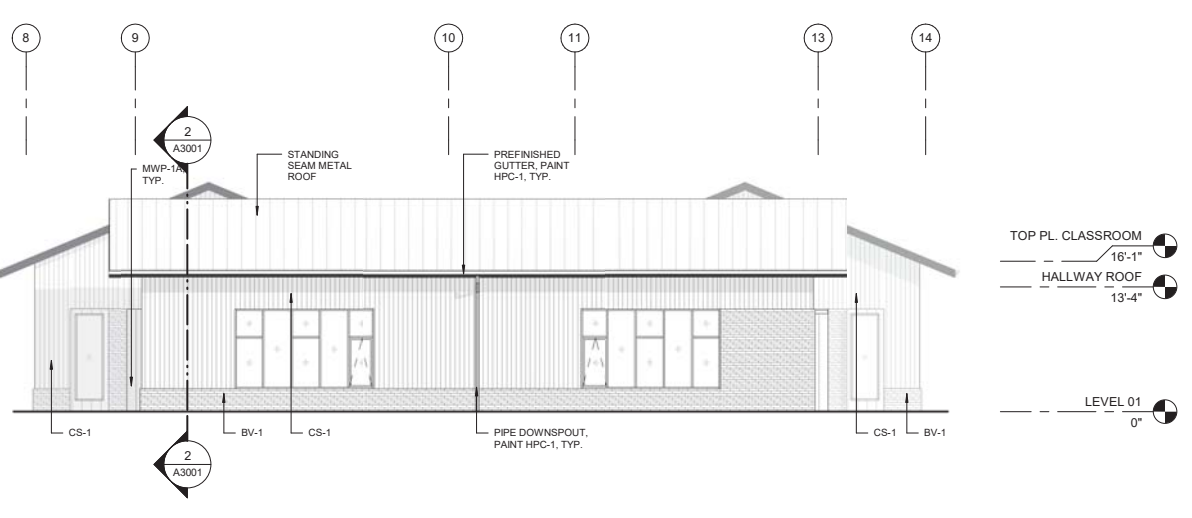
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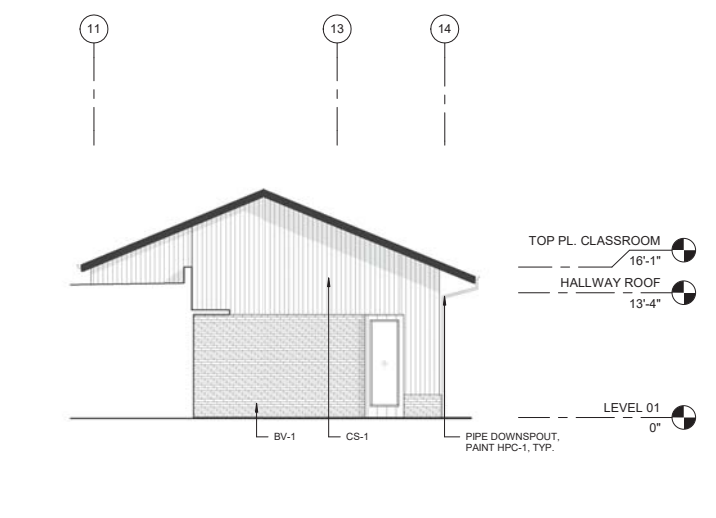
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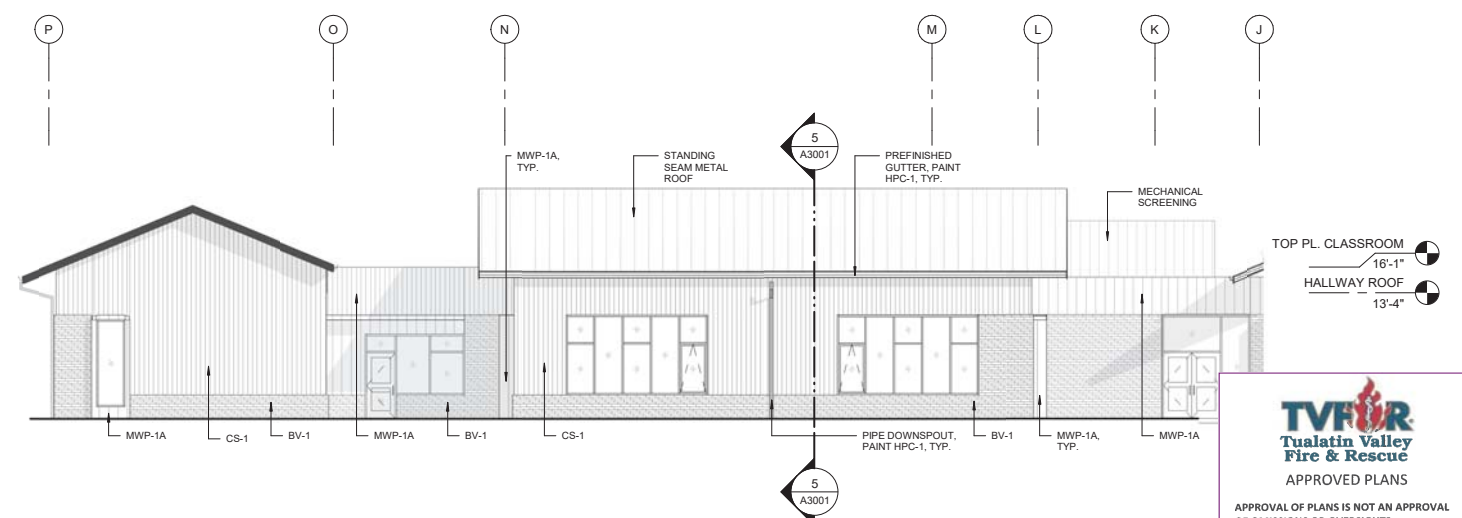
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 SCALE: 1/8" = 1'-0"



**2 SOUTH ELEVATION 2 - SECTOR D**  
 SCALE: 1/8" = 1'-0"



**4 SOUTHELEVATION 1 - SECTOR D**  
 SCALE: 1/8" = 1'-0"



**1 EAST ELEVATION - SECTOR D**  
 SCALE: 1/8" = 1'-0"

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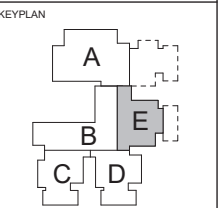
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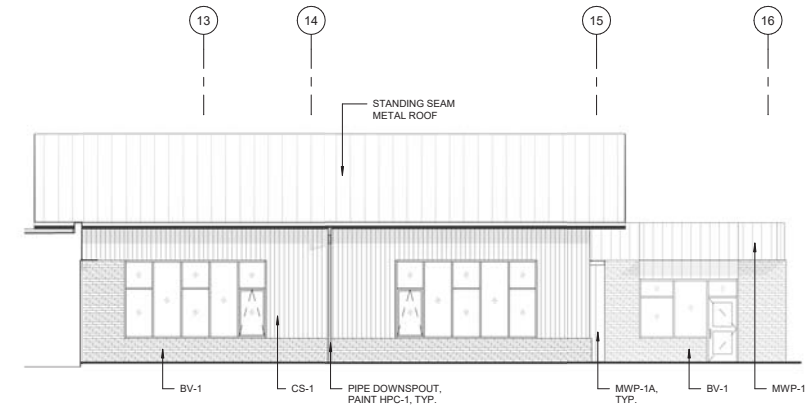
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**PROJECT NO.**  
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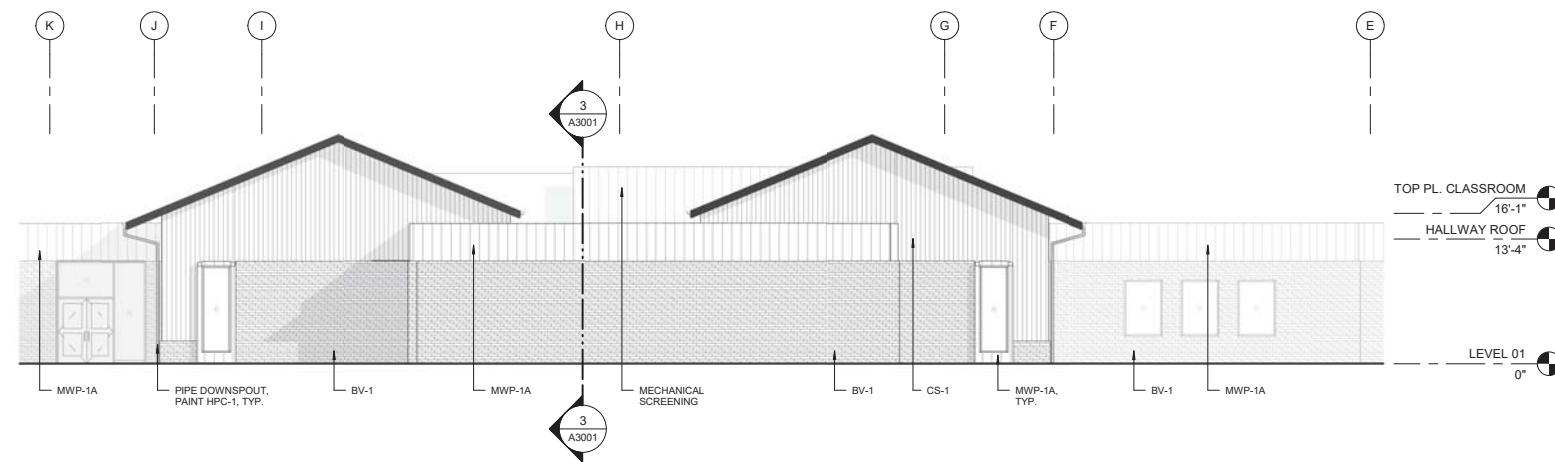
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**SHEET NUMBER**  
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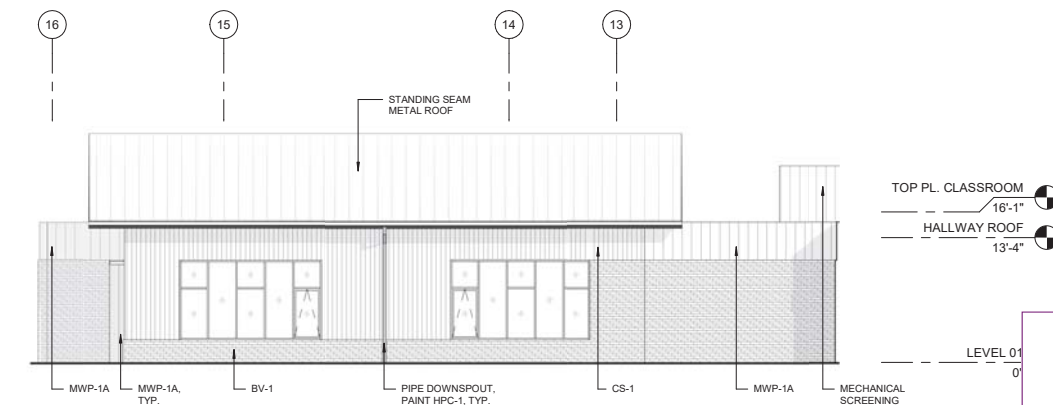
661



**3 SOUTH ELEVATION - SECTOR E**  
 SCALE: 1/8" = 1'-0"



**2 EAST ELEVATION - SECTOR E**  
 SCALE: 1/8" = 1'-0"



**1 NORTH ELEVATION - SECTOR E**  
 SCALE: 1/8" = 1'-0"

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CIVIL ENGINEERING | WATER RESOURCES | COMMUNITY PLANNING

## PRELIMINARY DRAINAGE REPORT

NEW WILSONVILLE PRIMARY SCHOOL  
7151 BOECKMAN ROAD  
WILSONVILLE, OREGON

Planning DB No. TBD

November 2, 2022

Applicant:

West Linn-Wilsonville School District  
22210 SW Stafford Road  
Tualatin, Oregon 97062  
503-673-7000



EXPIRES:12/31/2023

Prepared By:  
3J Consulting, Inc.  
9600 SW Nimbus Avenue, Suite 100  
Beaverton, Oregon 97008  
Project No: 21680  
Kathleen Freeman, PE  
Water Resources Project Manager

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## EXECUTIVE SUMMARY

The proposed project is a new primary school located in Frog Pond Area Plan boundary. The 9.95 acre site is located at 7151 Boeckman Road, in Wilsonville, OR on Tax Lot 4500 on Tax Map 3S-1W-12DC. The property is zoned Public Facility (PF) in the Frog Pond planning area. The project site is within the jurisdiction of the City of Wilsonville. Design and analysis pertaining to stormwater management will be in accordance with the *City of Wilsonville Public Works Standards (WPWS, 2015)*.

The existing site is a farm containing a home, outbuilding and grass (majority mowed for hay). The majority of the site slopes west towards the Morgan Farm Subdivision. The remaining area slopes east towards Stafford Meadows Subdivision. There is currently no stormwater management system for the site.

The project proposes the construction of a new primary elementary school for grade levels pre-K-5 and is planned to be constructed in two phases. Infrastructure design will accommodate the future phase of development on the site. Frontage improvements will be constructed along Boeckman Road to the south and SW Sherman Drive to the west. Along the northern boundary, SW Brisband Street will be constructed and finish the street connectivity.

Runoff from the proposed and future impervious areas will be conveyed to Low Impact Development (LID) facilities that have been designed using the BMP Sizing Tool created for Clackamas County. The areas currently draining to the east and west will be respected and continue as closely as possible to follow the same drainage patterns. Due to the surrounding developments and topography, offsite runoff is not expected to reach the site.

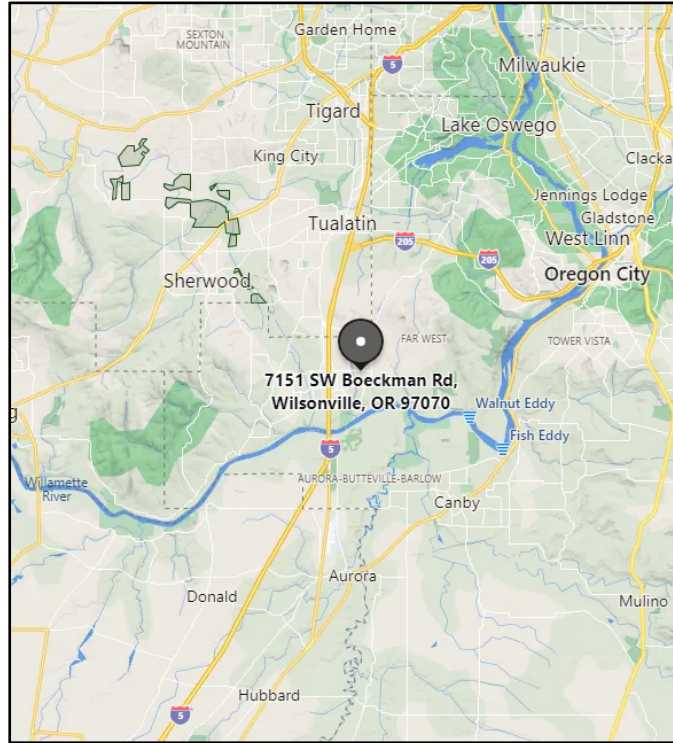
As part of the Stafford Meadows Subdivision, OTAK performed a downstream analysis that included the future build-out of the school site draining east. The analysis showed that the downstream conveyance system has capacity for the development of the school site. Additionally, the subdivision installed a 36" box culvert in SW Wehler Way to convey Willow Creek draining north to south. The new culvert was sized to convey future flows from the school site.

The post-developed western portion of the site will discharge treated and detained runoff to the existing storm system installed in Phase 1 and 2 of the Morgan Farm Subdivision. The downstream analysis based on as-built plans and reports indicates the existing systems will not have capacity issues.

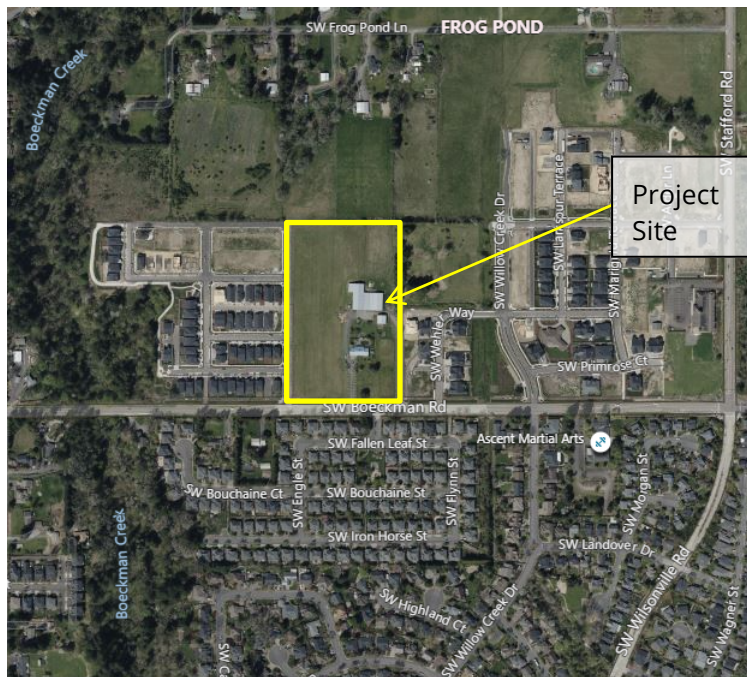
A draft Operations & Maintenance Plan (OMP) has been prepared as part of this report and attached herein.

The purpose of this report is to accomplish the following.

- Describe pre- and post-development basins and drainage;
- Describe the design and analysis of the proposed stormwater management facilities; and,
- Demonstrate compliance with the WPWS pertaining to stormwater management.



**Figure 1 - Vicinity Map**



**Figure 2 - Location Map**



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## PROJECT DESCRIPTION

The proposed project is a new primary school located in Frog Pond Area Plan boundary. The 9.95 acre site is located at 7151 Boeckman Road, in Wilsonville, OR on Tax Lot 4500 on Tax Map 3S-1W-12DC. The property is zoned Public Facility (PF) in the Frog Pond planning area. The site does not contain jurisdictional wetlands. The project proposes the construction of a new primary school for grade levels pre-K-5. Landscaping, parking lots, playgrounds and utilities, in addition to the building will be constructed. Additionally, infrastructure design will accommodate the future phase of development on the site.

## EXISTING CONDITIONS

### Site Description

The existing site is a farm containing a home, outbuilding and grass (majority mowed for hay). There is currently no stormwater management system for the site (See Technical Appendix: Exhibits – Existing Drain Basin Plan).

**Topography:** The initial onsite survey was performed by Compass Land Surveyors in September 2021. Onsite slopes are mild (i.e., 1.5%-3.5%). The majority of the site slopes west towards the Morgan Farm Subdivision. The remaining area slopes east towards Stafford Meadows Subdivision. The site contains no natural or constructed channels, wetlands, creeks, ravines, gullies, steep slopes, springs or any other sensitive areas.

**Soils:** USDA's Web Soil Survey indicates that the project site is underlain with Aloha and Concord Silt Loam (See Technical Appendix: Exhibits - Hydrologic Soil Group – Clackamas County Area, Oregon). Both soils are associated with hydrologic soil group (HSG) C/D.

**Existing Drainage:** The West Drainage Basin ultimately discharges into Boeckman Creek on the west side of Morgan Farm Subdivision. The East Drainage Basin ultimately discharges to Willow Creek with the Stafford Meadows Subdivision. Both creeks eventually discharge into the Willamette River.

**Offsite Drainage:** The area to the east and west of the property is comprised of newly constructed subdivisions. Directly south of the property is Boeckman Road. The properties directly to the north are comprised of homes on large tracks of land which will eventually be developed.

The northern property at 7130 SW Frog Pond Lane currently drains southwest towards Morgan Farm Subdivision and southeast towards Willow Creek and Stafford Meadows Subdivision (See Technical Appendix: Exhibits - City of Wilsonville: GIS 2ft Contours). All other surrounding areas slope away from the school property.

**Flood Map:** The site is located within Zone X (unshaded) per flood insurance rate map (FIRM) community-panel number 41005C0234D (See Technical Appendix: Exhibits – National Flood Hazard Layer FIRMette). FEMA's definition of Zone X (un-shaded) is an area of minimal flood hazard.

### Geotechnical Report & Infiltration Testing

A Geotechnical Report for the site was prepared on June 1, 2022 by NV5 (See Technical Appendix: Geotechnical Report (excerpts only)). Groundwater was encountered at depths between 4 and 10 feet below ground surface (BGS). Additionally, the east side of the site may have shallower groundwater depths than the west side. Infiltration testing was performed at three test pit excavations between 3 and 5 feet BGS. The measured infiltration rates were 0.2, 0.3 and 0.5 in/hr at depths 3, 4 and 5 feet BGS, respectively. Due to the high groundwater and minimal infiltration capacity, infiltration of stormwater runoff is not a feasible option.

### Onsite Basin Areas

Table 1 outlines the existing basin areas within the proposed site. Although there is currently impervious area onsite, it is assumed to be 100% pervious covered in grass for predeveloped conditions. The basins include the frontage improvement areas.

<b>Pre-Developed Conditions</b>	<b>sf</b>	<b>ac</b>
<sup>1</sup> West Drainage Basin	289,543	6.65
East Drainage Basin	143,912	3.30
<b>Total Area</b>	<b>433,455</b>	<b>9.95</b>

<sup>1</sup>Does not include asphalt replacement on Sherman Drive

**Table 1 - Basin Area Summary - Predeveloped Conditions**

## PROPOSED CONDITIONS

### Site Description

Impervious areas will be constructed consisting of roof area, asphalt parking, and concrete sidewalks. Additionally, a playground area will be constructed in the northwest corner of the site consisting of an artificial turf surface. Landscaping, open space, and surface stormwater management will comprise the pervious portions of the site. Frontage improvements will be constructed along Boeckman Road to the south and SW Sherman Drive to the west. Along the northern boundary, SW Brisband Street will be constructed. All future build-out conditions have been included in the stormwater management design.

### Stormwater Management Strategy

The stormwater management system for the new Wilsonville Primary School was designed using the following methods and standards:

- **Water Quality:** The City of Wilsonville requires capture and treatment of 80 percent of the average annual runoff. The City of Wilsonville has adopted the BMP Sizing Tool to aid in the design of water quality and detention LID facilities. The BMP Sizing Tool was used to size minimum footprint areas to meet the water quality treatment requirements.
- **Flow Control:** The City requires flow duration matching whereby the duration of peak flow rates from post development conditions shall be less than or equal to the duration of peak flow rates from pre-development conditions for all peak flows between 42% of the 2-year storm peak flow rate up to the 10-year peak flow rate. The BMP Sizing Tool was used to size minimum footprint areas to meet the flow control requirements.
- **Conveyance:** Conveyance calculations will be completed in the final design phase of the project to convey the 25-year, 24-hour storm with at least 1 foot of freeboard. The Santa Barbara Urban Hydrograph method using XPSTORM software will be used.

### Drainage Changes

Onsite drainage patterns will be maintained as closely as possible. A new road to the north of the property will be constructed to connect to SW Brisband Street in Morgan Farm Subdivision (Phase 2). A new storm system will be constructed in the street to connect to with the existing storm system in SW Brisband Street.

### Impervious Area Reduction

The proposed project will not be implementing any impervious area reductions.

**Post-Developed Basin Areas**

Table 2 show the area breakdown between the west and east basin in proposed conditions (See Technical Appendix: Exhibits – Proposed Drainage Basin Plan).

<b>Proposed Conditions</b>	<b>sf</b>	<b>ac</b>
West Basin		
<sup>1</sup> Impervious Area	112,305	2.58
Pervious Area	173,186	3.98
Total Area	285,491	6.55
East Basin		
Impervious Area	95,164	2.18
Pervious Area	60,721	1.39
Total Area	155,885	3.59

<sup>1</sup>Includes 7,921 sf of asphalt replacement on Sherman Drive

**Table 2 – Basin Area Summary – Post-Developed Drainage Basins**

**HYDROLOGIC ANALYSIS**

**Conveyance Modeling**

Design Guidelines

To meet the Conveyance Standards and model the downstream system in Morgan Farm Subdivision, the SBUH method will be performed via XPSTORM software. Other than basin area, the SBUH method requires a runoff curve number and time of concentration, which will be discussed in the following subsections.

The method will also be used in conjunction with 24-hr design storm depths organized in the NRCS Type IA rainfall distribution. Conveyance calculations require the 25-year storm event which has a rainfall depth of 3.90 inches.

Runoff Curve Number

The runoff curve number (CN) represents stormwater runoff potential whose major contributing factors include hydrologic soil group, cover type, treatment, hydrologic condition, and antecedent runoff condition.

The project site is completely underlain with C/D soils and proposed cover types include landscaping, concrete, pavement, and roofs. All proposed pervious areas will be modeled with a CN of 80, which corresponds to open space lawn in good condition. Pavement, concrete, and roofs will be modeled with a CN of 98.

Time of Concentration

Proposed Basins were assumed to have Tc’s of 5 minutes due to their size and imperviousness.

**BMP Sizing Tool**

Design Guidelines

The City requires predeveloped conditions for hydrologic modeling, which is historical vegetation prior to human settlement. The predeveloped area conditions within the Frog Pond planning area included Oak Savannah; the City allows Oak Savannah to be modeled as grass for predeveloped conditions. For post-

developed conditions, paved conditions were used for all impervious areas including roofs, sidewalks, and asphalt. Disturbed landscape areas were set to Landscape. The BMP Sizing Tool has been used to determine minimum footprint sizes, as well as orifice sizes.

## DESIGN FOR WATER QUALITY TREATMENT

### **Low Impact Development**

Per Section 301.1.05 of the WPWS, LID approaches that maximize groundwater recharge through infiltration shall be designed, to the maximum extent practicable. Multiple LID approaches have been designed throughout the site to provide water quality treatment.

### **Water Quality Facilities**

Filtration rain gardens and planters have been designed using the BMP Sizing Tool. The calculation reports are provided in the Technical Appendix.

New impervious areas on Boeckman Road will not be treated, and it's understood that the City will provide treatment once the road is improved in a future project. SW Sherman Drive will be constructed to sheet flow to new road side planters.

## DESIGN FOR FLOW CONTROL

Per Section 301.4.04(d) of the WPWS, post-developed release rates shall be less than or equal to the duration of peak flow rates from pre-development conditions for all peak flows between 42% of the 2-year storm up to the 10-year peak flow rate. The BMP Sizing Tool was designed to accommodate these flow requirements (See Technical Appendix: Calculations).

Each proposed filtration rain garden and planter will have flow control structures located immediately downstream of the facilities, per the City's standard detail. Orifices will be installed at the ends of the underdrain pipes. Table 3 summarizes the proposed facilities for the site. All facilities are sized for both water quality treatment and flow control.



Contributing Basin	Facility ID	Minimum LID Size (sf)	LID Size Provided (sf)	Orifice Diameter (in)
12	RG1	577	1,337	1.40
10	RG2	1,597	7,455	2.24
8	RG3	501	3,655	1.21
15	RG4	812	3,603	1.50
14,17-19,21	RG5	2,746	3,063	2.66
4,20	RG6 FUTURE	1,986	2,000	2.51
7	PLTR1	334	861	1.22
16C	PLTR2	253	577	1.06
16B	PLTR3	289	300	1.26
16A	PLTR4	236	300	1.12
6	PLTR5	193	330	0.93
5	PLTR6	204	352	0.96
22	PLTR7	131	489	0.75
23	PLTR8	206	750	0.94
24	PLTR9	387	1,311	1.35
25	PLTR10	101	520	0.68
26	PLTR11	125	520	0.77
27	PLTR12	243	520	1.08

**Table 3 – LID Approach Summary Table**

## CONVEYANCE ANALYSIS & DESIGN

Per Section 301.1.13 of the WPWS, conveyance systems shall be designed to convey and contain at least the peak runoff for the 25-year design storm, with a minimum 1 foot of freeboard. Conveyance of the proposed storm system will be provided in the final design phase once final grades have been established.

## DOWNSTREAM ANALYSIS

A downstream review has been completed for each basin per section 301.5.01 of the City’s Standards, which are as follows:

- Verify the 25-year design storm can be conveyed in the downstream system.
- Extend the review to a point in the drainage system where the proposed development site contributes 10% or less of the total tributary drainage flow or for ¼ mile downstream of the approved point of discharge.

### East Basin

As part of the Stafford Meadows Subdivision, OTAK performed a downstream analysis that included the future build-out of the school site draining east. The analysis showed that the downstream conveyance system has

capacity for the development of the school site (See Technical Appendix: Downstream Analysis – Stafford Meadows: Appendix C-Downstream Analysis, by OTAK, Dated 01/16/2018). Additionally, the subdivision installed a 36” box culvert in SW Wehler Way to convey Willow Creek draining north to south. The new culvert was sized to convey future flows from the school site. The analysis has been reviewed and concur that the system will have capacity to convey the 25-year flows from the school site.

### West Basin

Approximately 5.48 acres of the post-developed western portion of the site will continue discharging runoff to the existing storm system installed in the Morgan Farm Phase 1 Subdivision. Two new connections will be made from the school site to Morgan Farm Subdivision: 1) At SDMH-1A near the intersection of SW Sherman Drive and Boeckman Road, 2) At SDMH-2D near the intersection of SW Bay Lane and SW Sherman Drive. Both manhole labels reflect the labeling in the Morgan Farm Phase 1 Subdivision plans. An XPSTORM model was created for the existing storm system based on the Morgan Farm Phase 1 Record Drawings, dated April 24, 2019, and the Final Storm Drainage Report, dated July 11, 2018. All basin areas, percent impervious, and Curve Numbers from the subdivision utilized the Stormwater Conveyance Calculations from the final storm report (See Technical Appendix: Downstream Analysis – Morgan Farm Phase 1). The conveyance system, including detention pond and flow control structure were modeled utilizing the pertinent storm sheets from the Record Drawings.

The City has expressed concerns that the existing pond does not currently empty which would cause backwater in the existing system; however, the model shows that the system will have the capacity to convey the 25-year storm event from the proposed school site with no out of system flooding and at least 0.69 feet of freeboard. This indicates that the City may want to further investigate this situation to ensure the pond was either constructed per the plans or some blockage exists. The downstream analysis ended at the existing discharge in Boeckman Creek.

Approximately 0.90 acres in the northern portion of the post-developed site will continue discharging runoff to the existing storm system installed in the Morgan Farm Phase 2 Subdivision. One new connection will be made on SW Brisband Street. An XPSTORM model was created for the existing storm system based on the Morgan Farm Phase 2 Record Drawings, dated December 18, 2019, and the Final Storm Drainage Report, dated January 16, 2019. All basin areas, percent impervious and Curve Numbers from the subdivision utilized the Stormwater Conveyance Calculations from the final storm report (See Technical Appendix: Downstream Analysis – Morgan Farm Phase 2). The conveyance system, including swales and flow control structure were modeled utilizing the pertinent storm sheets from the Record Drawings. The Model shows that the system will have the capacity to convey the 25-year storm event from the proposed school site with no out of system flooding and at least 3.49 feet of freeboard.

## **OPERATION & MAINTENANCE**

All vegetated facilities will be maintained by the School District. The Operations and Maintenance requirements have been included in the Technical Appendix.

## **CONCLUSION**

The proposed New Wilsonville Primary School development’s stormwater management systems have been designed to meet the standards of the City of Wilsonville. Currently 4.58 acres of impervious area will be created. Impervious areas will be treated and detained through filtration rain gardens and planters. Approximately 0.24 acres of impervious area will leave the site untreated due to grading constraints.

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## **TECHNICAL APPENDIX**

### **Exhibits**

- Existing Drain Basin Plan
- Hydrologic Soil Group – Clackamas County Area, Oregon
- City of Wilsonville: GIS 2ft Contours
- National Flood Hazard Layer FIRMette
- Proposed Drainage Basin Plan & Table
- Table 2-2a Runoff Curve Numbers

### **Calculations**

- WES BMP Sizing Report

### **Geotechnical Report**

- Report of Geotechnical Engineering Services by NV5, dated June 1, 2022

### **Downstream Analysis**

- Stafford Meadows
  - o Appendix C-Downstream Analysis, by OTAK, Dated 01/16/2018
- Morgan Farm Phase 1
  - o XPSTORM Hydraulic Layout: Morgan Farm Phase 1 Storm System
  - o XPSTORM Runoff Data – Morgan Farm Phase 1
  - o XPSTORM Conveyance Data – Morgan Farm Phase 1
  - o Record Drawings Morgan Farm Phase 1: Sheets C4.3, C5.0-C5.4 and C5.6
  - o Stormwater Conveyance Calculations (Excerpt from Final Storm Drainage Report)
- Morgan Farm Phase 2
  - o XPSTORM Hydraulic Layout: Morgan Farm Phase 2 Storm System
  - o XPSTORM Runoff Data – Morgan Farm Phase 2
  - o XPSTORM Conveyance Data – Morgan Farm Phase 2
  - o Record Drawings Morgan Farm Phase 2: Sheets C3.0, C4.0, C4.7 C5.1-C5.5
  - o Stormwater Conveyance Calculations (Excerpt from Final Storm Drainage Report)

### **Operations & Maintenance**

- O&M Plan


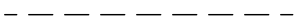

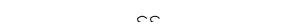








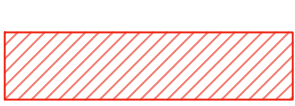
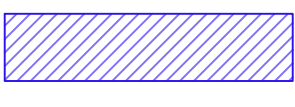

## **REFERENCES**

1. *City of Wilsonville 2015 Stormwater & Surface Water Design & Construction Standards*
2. Morgan Farm Phase 2 Final Storm Drainage Report, dated July 11, 2018, by Pioneer Design Group, Inc
3. Morgan Farm Phase 2 Final Storm Drainage Report, dated January 16, 2019, by Pioneer Design Group, Inc
4. Stafford Meadows Stormwater Management Plan, dated June 22, 2018 by OTAK

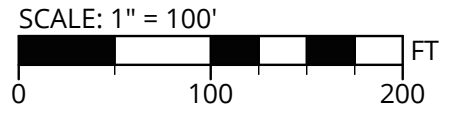
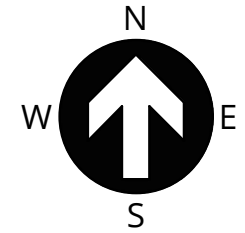
# EXHIBITS



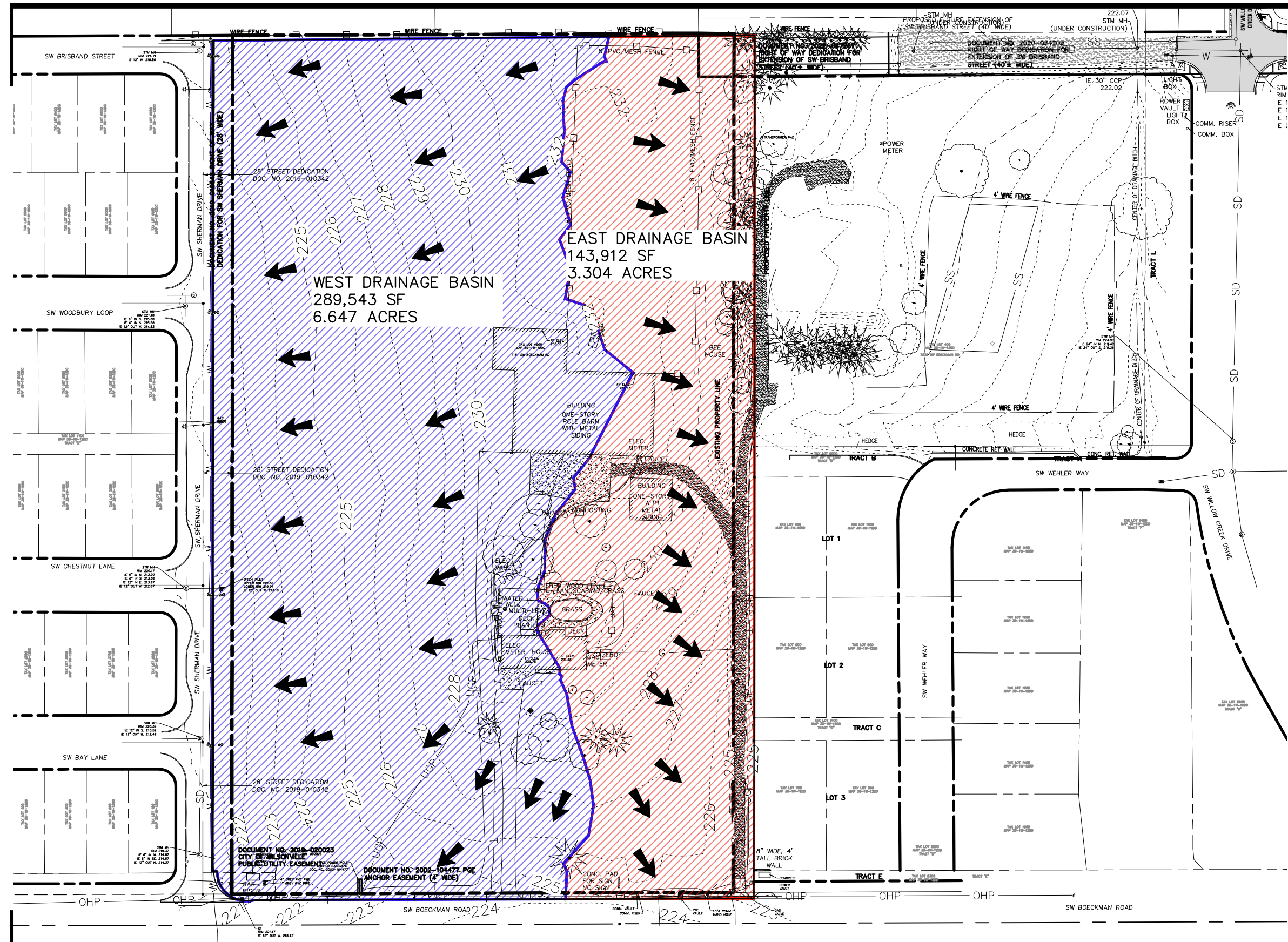
### DRAINAGE BASIN LEGEND

-  PROPERTY LINE
-  EASEMENT LINE
-  STORM LINE
-  SEWER LINE
-  WATER LINE
-  GAS LINE
-  UNDERGROUND POWER LINE
-  OVERHEAD POWER LINE
-  COMMUNICATIONS LINE
-  FENCE
-  MAJOR CONTOUR
-  MINOR CONTOUR
-  EAST DRAINAGE BASIN
-  WEST DRAINAGE BASIN
-  DIRECTION OF FLOW

NOTE:  
SW BOECKMAN RD CURRENTLY HAS NO STORM SYSTEM



SEPT 2022



## NEW WILSONVILLE PRIMARY SCHOOL

WEST LINN / WILSONVILLE SCHOOL DISTRICT

## EXISTING DRAIN BASIN PLAN

**3J CONSULTING**  
CIVIL ENGINEERING . WATER RESOURCES . COMMUNITY PLANNING

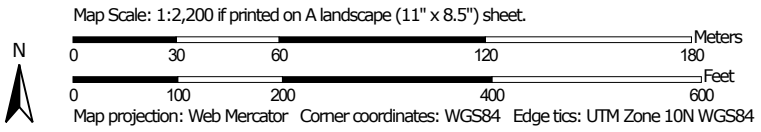


Hydrologic Soil Group—Clackamas County Area, Oregon

































Item 3.



Soil Map may not be valid at this scale.



### MAP LEGEND

- Area of Interest (AOI)**
  -  Area of Interest (AOI)
- Soils**
  - Soil Rating Polygons**
    -  A
    -  A/D
    -  B
    -  B/D
    -  C
    -  C/D
    -  D
    -  Not rated or not available
  - Soil Rating Lines**
    -  A
    -  A/D
    -  B
    -  B/D
    -  C
    -  C/D
    -  D
    -  Not rated or not available
  - Soil Rating Points**
    -  A
    -  A/D
    -  B
    -  B/D
- Water Features**
  -  Streams and Canals
- Transportation**
  -  Rails
  -  Interstate Highways
  -  US Routes
  -  Major Roads
  -  Local Roads
- Background**
  -  Aerial Photography
- Other**
  -  C
  -  C/D
  -  D
  -  Not rated or not available

### MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

**Warning:** Soil Map may not be valid at this scale.  
 Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service  
 Web Soil Survey URL:  
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Clackamas County Area, Oregon  
 Survey Area Data: Version 16, Jun 11, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Aug 1, 2019—Sep 12, 2019

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

## Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
1A	Aloha silt loam, 0 to 3 percent slopes	C/D	12.9	90.0%
1B	Aloha silt loam, 3 to 6 percent slopes	C/D	0.1	0.9%
21	Concord silt loam	C/D	1.3	9.1%
<b>Totals for Area of Interest</b>			<b>14.3</b>	<b>100.0%</b>

### Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.



## Rating Options

*Aggregation Method:* Dominant Condition

*Component Percent Cutoff:* None Specified

*Tie-break Rule:* Higher



→ Runoff Direction

↑  
NTS

CITY OF WILSONVILLE: GIS 2FT CONTOURS



# National Flood Hazard Layer FIRMette



122°45'21"W 45°19'20"N



## Legend

Item 3.

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM

- |                             |  |  |
|-----------------------------|--|--|
| SPECIAL FLOOD HAZARD AREAS  |  | Without Base Flood Elevation (BFE)<br><i>Zone A, V, A99</i>  |
|                             |  | With BFE or Depth <i>Zone AE, AO, AH, VE, AR</i>   |
|                             |  | Regulatory Floodway  |
| OTHER AREAS OF FLOOD HAZARD |  | 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile <i>Zone X</i> |
|                             |  | Future Conditions 1% Annual Chance Flood Hazard <i>Zone X</i>  |
|                             |  | Area with Reduced Flood Risk due to Levee. See Notes. <i>Zone X</i>  |
|                             |  | Area with Flood Risk due to Levee <i>Zone D</i>  |
| OTHER AREAS                 |  | NO SCREEN Area of Minimal Flood Hazard <i>Zone X</i>   |
|                             |  | Effective LOMRs  |
| GENERAL STRUCTURES          |  | Area of Undetermined Flood Hazard <i>Zone D</i>  |
|                             |  | Channel, Culvert, or Storm Sewer   |
|                             |  | Levee, Dike, or Floodwall  |
| OTHER FEATURES              |  | 20.2 Cross Sections with 1% Annual Chance Water Surface Elevation  |
|                             |  | 17.5 Cross Sections with 1% Annual Chance Water Surface Elevation  |
|                             |  | Coastal Transect   |
|                             |  | Base Flood Elevation Line (BFE)  |
|                             |  | Limit of Study   |
| MAP PANELS                  |  | Jurisdiction Boundary  |
|                             |  | Coastal Transect Baseline  |
|                             |  | Profile Baseline   |
|                             |  | Hydrographic Feature   |
|                             |  | Digital Data Available   |
|                             |  | No Digital Data Available  |
|                             |  | Unmapped   |
|                             |  | The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.                                     |



This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 7/26/2021 at 6:55 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

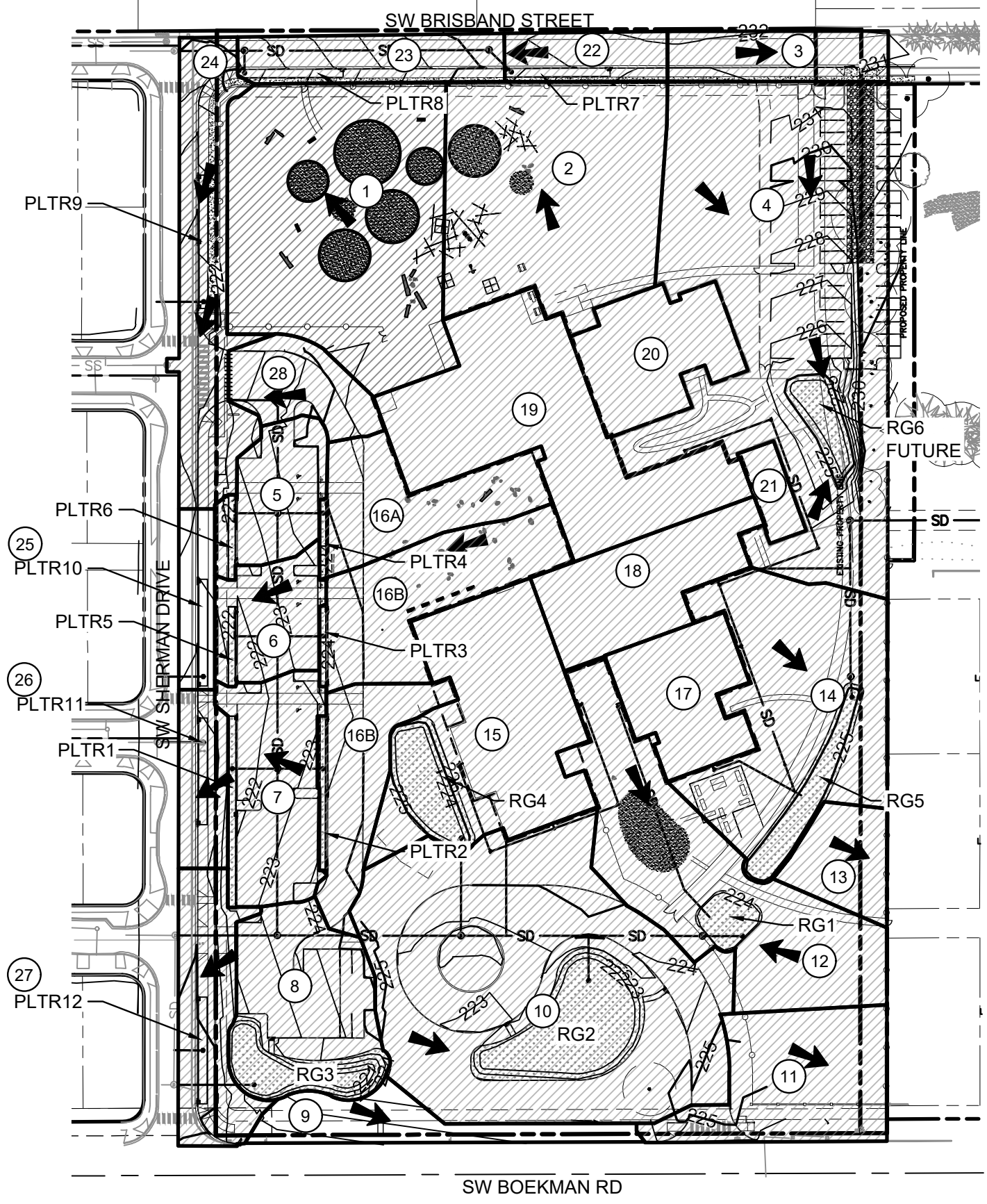
This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community id, FIRM panel number, and FIRM effective date. Map is unmapped and unmodernized areas cannot be used for regulatory purposes.

680








0 250 500 1,000 1,500 2,000 Feet 1:6,000

122°44'43"W 45°18'55"N

Basemap: USGS National Map: Orthoimagery: Data refreshed October, 2020




### LEGEND

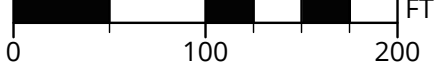
-  PROPERTY LINE
-  EXTG. RIGHT OF WAY
-  STORM STRUCTURES
-  MAJOR DESIGN CONTOUR
-  MINOR DESIGN CONTOUR
-  DRAINAGE BASIN
-  DIRECTION OF FLOW

### EAST / WEST BASIN TOTALS

EAST	155,885 SF - 3.59 ACRES
WEST	277,571 SF - 6.37 ACRES

NOTE:  
 SEE PROPOSED DRAINAGE BASIN TABLE  
 TABLE ABOVE DOES NOT INCLUDE 7,921 SF OF REPAVING  
 ON SHERMAN DRIVE FOR HALF STREET IMPROVEMENTS

N  
  
 W E S

SCALE: 1" = 100'  
 FT

NOV 2022

**NEW WILSONVILLE PRIMARY SCHOOL**  
 WEST LINN / WILSONVILLE SCHOOL DISTRICT

**PROPOSED DRAINAGE BASIN PLAN**

**3J CONSULTING**  
 CIVIL ENGINEERING . WATER RESOURCES . COMMUNITY PLANNING



**DRAINAGE BASIN TABLE**

#	IMP AREA (SF)	PERV AREA (SF)	DIRECTION OF DRAINAGE	FACILITY ID	MIN LID SIZE (FT)	ORIFICE SIZE (IN)
1	0	33,544	MF PH1	OFFSITE	N/A	N/A
2	0	27,467	MF PH2	OFFSITE	N/A	N/A
3	5,855	374	EAST	OFFSITE	N/A	N/A
4	11,720	40,771	SM CULVERT	RG6 FUTURE	1,986	2.51
5	5,493	1,856	MF PH1	PLTR6	204	0.96
6	5,323	1,592	MF PH1	PLTR5	194	0.93
7	9,428	2,447	MF PH1	PLTR1	334	1.22
8	8,338	5,983	MF PH1	RG3	501	1.21
9	0	6,876	MF PH1	OFFSITE	N/A	N/A
10	17,937	31,413	MF PH1	RG2	1597	2.24
11	759	12,609	EAST	OFFSITE	N/A	N/A
12	3,464	20,578	MF PH1	RG1	576	1.45
13	0	5,222	EAST	OFFSITE	N/A	N/A
14	22,325	1,745	SM CULVERT	RG5	2746	2.66
15	16,032	6,105	MF PH1	RG4	812	1.50
16A	2,675	7,393	MF PH1	PLTR4	236	1.12
16B	2,749	9,853	MF PH1	PLTR3	290	1.26
16C	7,205	1,755	MF PH1	PLTR2	253	1.06
17	8,633	0	SM CULVERT	RG5	SEE BASIN 14	
18	10,815	0	SM CULVERT	RG5	SEE BASIN 14	
19	23,645	0	SM CULVERT	RG5	SEE BASIN 14	
20	9,398	0	SM CULVERT	RG6 FUTURE	SEE BASIN 4	
21	2,014	0	SM CULVERT	RG5	SEE BASIN 14	
22	4,016	489	MF PH2	PLTR7	131	0.75
23	6,352	750	MF PH2	PLTR8	206	0.94
24	9,127	5,375	MF PH1	PLTR9	289	1.18
25	2,639	1,015	MF PH1	PLTR10	64	0.55
26	2,685	2,119	MF PH1	PLTR11	89	0.67
27	5,017	4,384	MF PH1	PLTR12	176	0.95
28	3,795	2,192	MF PH1	NOT TREATED	N/A	N/A
TOTAL	207,469	233,907				

<sup>1</sup>MF PH1 = MORGAN FARM SUBDIVISION PHASE 1  
 MF PH1 = MORGAN FARM SUBDIVISION PHASE 2  
 SM CULVERT = STAFFORD MEADOWS CULVERT  
 BASINS 24-27 INCLUDE HALF STREET IMPROVEMENTS TO SHERMAN

**PROPOSED DRAINAGE BASIN TABLE**

Table 2-2a Runoff curve numbers for urban areas <sup>1/</sup>

Cover description	Average percent impervious area <sup>2/</sup>	Curve numbers for hydrologic soil group			
		A	B	C	D
<i>Fully developed urban areas (vegetation established)</i>					
Open space (lawns, parks, golf courses, cemeteries, etc.) <sup>3/</sup> :					
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	98	98
Paved; open ditches (including right-of-way) .....		83	89	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) <sup>4/</sup> .....		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
<i>Developing urban areas</i>					
Newly graded areas					
(pervious areas only, no vegetation) <sup>5/</sup> .....		77	86	91	94
Idle lands (CN's are determined using cover types similar to those in table 2-2c).					

<sup>1</sup> Average runoff condition, and  $I_a = 0.2S$ .

<sup>2</sup> The average percent impervious area shown was used to develop the composite CN's. Other assumptions are as follows: impervious areas are directly connected to the drainage system, impervious areas have a CN of 98, and pervious areas are considered equivalent to open space in good hydrologic condition. CN's for other combinations of conditions may be computed using figure 2-3 or 2-4.

<sup>3</sup> CN's shown are equivalent to those of pasture. Composite CN's may be computed for other combinations of open space cover type.

<sup>4</sup> Composite CN's for natural desert landscaping should be computed using figures 2-3 or 2-4 based on the impervious area percentage (CN = 98) and the pervious area CN. The pervious area CN's are assumed equivalent to desert shrub in poor hydrologic condition.

<sup>5</sup> Composite CN's to use for the design of temporary measures during grading and construction should be computed using figure 2-3 or 2-4 based on the degree of development (impervious area percentage) and the CN's for the newly graded pervious areas.

# CALCULATIONS

WES BMP Sizing Software Version 1.6.0.2, May 2018

## WES BMP Sizing Report

## Project Information

Project Name	Frog Pond ES
Project Type	Commercial
Location	7151 Boeckman Rd, Wilsonville, OR
Stormwater Management Area	0
Project Applicant	WLWV School District
Jurisdiction	OutofDistrict

## Drainage Management Area

Name	Area (sq-ft)	Pre-Project Cover	Post-Project Cover	DMA Soil Type	BMP
16A PERV	7,393	Grass	LandscapeDsoil	D	PLTR4
16A IMP	2,675	Grass	ConventionalConcrete	D	PLTR4
15 PERV	6,105	Grass	LandscapeDsoil	D	RG4
15 IMP	16,032	Grass	ConventionalConcrete	D	RG4
17-19 & 21 IMP	45,107	Grass	Roofs	D	RG5
14 PERV	1,745	Grass	LandscapeDsoil	D	RG5
14 IMP	22,328	Grass	ConventionalConcrete	D	RG5
12 PERV	20,578	Grass	LandscapeDsoil	D	RG1
12 IMP	0	Grass	ConventionalConcrete	D	RG1
10 PERV	31,413	Grass	LandscapeDsoil	D	RG2
10 IMP	17,937	Grass	ConventionalConcrete	D	RG2
8 PERV	5,983	Grass	LandscapeDsoil	D	RG3
8 IMP	8,338	Grass	ConventionalConcrete	D	RG3
7 PERV	2,447	Grass	LandscapeDsoil	D	PLTR1
7 IMP	9,428	Grass	ConventionalConcrete	D	PLTR1
6 PERV	1,592	Grass	LandscapeDsoil	D	PLTR5
6 IMP	5,323	Grass	ConventionalConcrete	D	PLTR5
5 IMP	5,493	Grass	ConventionalConcrete	D	PLTR6



			ncrete		
5 PERV	1,856	Grass	LandscapeDsoil	D	PLTR6
16B IMP	2,749	Grass	ConventionalCo ncrete	D	PLTR3
16B PERV	9,853	Grass	LandscapeDsoil	D	PLTR3
16C IMP	7,205	Grass	ConventionalCo ncrete	D	PLTR2
16C PERV	1,755	Grass	LandscapeDsoil	D	PLTR2
4 IMP	11,720	Grass	ConventionalCo ncrete	D	RG6 FUTURE
4 PERV	40,771	Grass	LandscapeDsoil	D	RG6 FUTURE
20 IMP	9,398	Grass	Roofs	D	RG6 FUTURE
22 IMP	4,016	Grass	ConventionalCo ncrete	D	PLTR7
22 PERV	489	Grass	LandscapeDsoil	D	PLTR7
23 IMP	6,353	Grass	ConventionalCo ncrete	D	PLTR8
23 PERV	750	Grass	LandscapeDsoil	D	PLTR8
24 IMP	9,127	Grass	ConventionalCo ncrete	D	PLTR9
24 PERV	5,375	Grass	LandscapeDsoil	D	PLTR9
25 IMP	2,639	Grass	ConventionalCo ncrete	D	PLTR10
25 PERV	1,015	Grass	LandscapeDsoil	D	PLTR10
26 IMP	2,685	Grass	ConventionalCo ncrete	D	PLTR11
26 PERV	2,119	Grass	LandscapeDsoil	D	PLTR11
27 IMP	5,017	Grass	ConventionalCo ncrete	D	PLTR12
27 PERV	4,384	Grass	LandscapeDsoil	D	PLTR12

### LID Facility Sizing Details

LID ID	Design Criteria	BMP Type	Facility Soil Type	Minimum Area (sq-ft)	Planned Areas (sq-ft)	Orifice Diameter (in)
RG4	FlowControlA ndTreatment	Rain Garden - Filtration	D1	812.2	3,603.0	1.5
RG5	FlowControlA ndTreatment	Rain Garden - Filtration	D1	2,746.3	3,063.0	2.7
RG1	FlowControlA ndTreatment	Rain Garden - Filtration	D1	576.2	1,337.0	1.4
RG2	FlowControlA ndTreatment	Rain Garden - Filtration	D1	1,597.0	7,455.0	2.2
RG3	FlowControlA	Rain Garden	D1	501.0	3,655.0	1.2

	ndTreatment	- Filtration				
RG6 FUTURE	FlowControlAndTreatment	Rain Garden - Filtration	D1	1,986.3	2,000.0	2.5
PLTR4	FlowControlAndTreatment	Stormwater Planter - Filtration	D1	235.5	300.0	1.1
PLTR1	FlowControlAndTreatment	Stormwater Planter - Filtration	D1	334.2	861.0	1.2
PLTR5	FlowControlAndTreatment	Stormwater Planter - Filtration	D1	193.1	330.0	0.9
PLTR6	FlowControlAndTreatment	Stormwater Planter - Filtration	D1	203.8	352.0	1.0
PLTR3	FlowControlAndTreatment	Stormwater Planter - Filtration	D1	289.4	300.0	1.3
PLTR2	FlowControlAndTreatment	Stormwater Planter - Filtration	D1	253.0	577.0	1.1
PLTR7	FlowControlAndTreatment	Stormwater Planter - Filtration	D1	130.7	489.0	0.8
PLTR8	FlowControlAndTreatment	Stormwater Planter - Filtration	D1	206.3	750.0	0.9
PLTR9	FlowControlAndTreatment	Stormwater Planter - Filtration	D1	386.7	1,311.0	1.3
PLTR10	FlowControlAndTreatment	Stormwater Planter - Filtration	D1	100.5	520.0	0.7
PLTR11	FlowControlAndTreatment	Stormwater Planter - Filtration	D1	125.0	520.0	0.8
PLTR12	FlowControlAndTreatment	Stormwater Planter - Filtration	D1	242.6	520.0	1.1

### 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.

# GEOTECHNICAL REPORT

**REPORT OF GEOTECHNICAL ENGINEERING SERVICES**

Boeckman Road School  
7151 Boeckman Road  
Wilsonville, Oregon

For  
West Linn-Wilsonville School District  
June 1, 2022

Project: WLWSchDist-7-01



June 1, 2022

West Linn-Wilsonville School District  
 22210 SW Stafford Road  
 Tualatin, OR 97062

Attention: Brooke Besheone

**Report of Geotechnical Engineering Services**

Boeckman Road School  
 7151 Boeckman Road  
 Wilsonville, Oregon  
 Project: WLWSchDist-7-01

NV5 is pleased to submit this report of geotechnical engineering services for the proposed Boeckman Road School located at 7151 Boeckman Road in Wilsonville, Oregon. Our services for this project were conducted in accordance with our proposal dated March 9, 2022.

We appreciate the opportunity to be of service to you. Please contact us if you have questions regarding this report.

Sincerely,

NV5

Shawn M. Dimke, P.E., G.E.  
 Principal Engineer

cc: Rebecca Grant, IBI Group (via email only)  
 Aaron Stoczek, KPFF Consulting Engineers (via email only)  
 Angela Caffrey, West Linn-Wilsonville School District (via email only)

SPM:SMD:kt  
 Attachments  
 One copy submitted (via email only)  
 Document ID: WLWSchDist-7-01-060122-geor.docx  
 © 2022 NV5. All rights reserved.

Washington and northeastern Oregon. The CRBG is considered the geologic basement unit for this report (Gannett and Caldwell, 1998; Burns et al., 1997; Schlicker and Finlayson, 1979; Hart and Newcomb, 1965).

### **3.3 SUBSURFACE CONDITIONS**

We explored subsurface conditions by excavating nine test pits (TP-1 through TP-9) to depths between 5 and 15.5 feet BGS, conducting DCP testing in three of the test pits, and conducting two CPTs (CPT-1 and CPT-2) to depths of approximately 60.5 and 100.5 feet BGS. A description of the field explorations and laboratory testing program, the test pit logs, and results of laboratory testing are presented in Appendix A. Results of DCP testing are presented in Appendix B. The CPT logs are presented in Appendix C. All exploration locations are shown on Figure 2.

The explorations generally encountered layers of silt and clay to the maximum depth explored. We observed an approximate 2- to 6-inch thick root zone and 8- to 14-inch thick agricultural tilled zone at the ground surface. The following provides a description of the soil unit encountered.

#### **3.3.1 Silt/Clay**

Layers of silt and clay were encountered from the ground surface to the maximum depth explored. The silt/clay soil contains trace to minor amounts of fine sand in the upper approximately 40 feet. CPT logs indicate that the sand content generally increases and clay content generally decreases at depths below 40 feet BGS. Hand probing and observation during test pit excavation indicate that the silt/clay is soft in the agricultural tilled zone (upper 8 to 14 inches) and generally medium stiff to very stiff below the tilled zone. CPT logs indicate that the soil strength gradually increases to very stiff to hard at depths of approximately 40 to 60 feet BGS and then strength decreases to medium stiff to stiff at depths of 60 to 100 feet BGS.

Laboratory testing of select samples of the silt/clay indicated moisture content between 31 and 38 percent at the time of exploration and a fines content between 81 and 98 percent by weight. Atterberg limits testing of one select clay sample indicated moderate plasticity.

#### **3.3.2 Groundwater**

Groundwater was encountered at depths between 4 and 10 feet BGS in the test pits. Groundwater depths are presented on Figure 2 and indicate that groundwater is shallower on the east side of the site. The depth to groundwater is expected to fluctuate in response to seasonal changes, changes in surface topography, local river levels, and other factors not observed in the site vicinity.

### **3.4 INFILTRATION TESTING**

We performed infiltration testing in three test pit excavations. Testing was performed at depths between 3 and 5 feet BGS in 6-inch-diameter PVC pipes inserted into the test pits. Pipes were pushed into the soil at the bottom of the pits to create a seal and backfill was placed around the pipes. After backfilling, water was injected into the pipes and the soil was allowed to soak for a period of one hour before beginning the test. After the soak period, we measured the drop in water level over a period of at least one hour. The measured average infiltration rates are presented in Table 1.

**Table 1. Infiltration Test Results**

Location	Depth (feet BGS)	Soil Type at Test Depth	Measured Infiltration Rate (inches per hour)	Fines Content <sup>1</sup> (percent)
TP-2	5	Silt, some clay, trace sand	0.3	98
TP-4	3	Silt, some clay, trace sand	0.2	97
TP-5	4	Silt, some clay, trace sand	0.5	NA

1. particles finer than 75  $\mu\text{m}$  by dry weight

#### 4.0 DESIGN RECOMMENDATIONS

##### 4.1 FOUNDATION SUPPORT

###### 4.1.1 General

Based on the results of the explorations, the planned building loads, and the grading plan (see “Project Understanding” section), the building can be supported by shallow foundations bearing on undisturbed native soil or structural fill overlying undisturbed native soil. Foundations should not be established over the existing agricultural tilled zone. Where identified within foundation subgrade soil, tilled zone material should be removed and replaced with structural fill in accordance with the “Structural Fill” section.

The results of our subsurface explorations, laboratory testing, and geotechnical analysis indicate that total post-construction consolidation-induced settlement under static conditions should be less than 1 inch with differential settlement of less than ½ inch between footings. As discussed in the “Seismic Design” section, shallow foundations could also be subject to 1 inch to 1.5 inches of liquefaction-induced settlement during the design-level earthquake (0.5 to 0.75 inch of differential settlement over a span of 50 feet). While ASCE 7-16 does not require foundation ties for the estimated differential settlement magnitude, the project structural engineer should verify that foundations can tolerate the estimated settlement.

###### 4.1.2 Dimensions and Design Parameters

Continuous wall and isolated spread footings should be at least 16 and 20 inches wide, respectively. The bottom of exterior footings should be at least 18 inches below the lowest adjacent exterior grade. The bottom of interior footings should be established at least 12 inches below the base of the slab. Footings established on subgrade prepared as recommended above should be sized based on an allowable bearing pressure of 2,500 psf. This value is a net bearing pressure; the weight of the footing and overlying backfill can be ignored in calculating footing sizes. The recommended allowable bearing pressure applies to the total of dead plus long-term live loads and can be increased by one-half for short-term loads, such as those resulting from wind or seismic forces.

###### 4.1.3 Resistance to Sliding

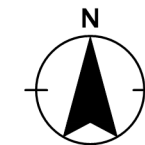
Lateral loads on footings can be resisted by passive earth pressure on the sides of footings and by friction on the base of the footings. Our analysis indicates that the available passive earth pressure for footings confined by on-site soil and structural fill is 250 pcf, modeled as an





**LEGEND:**

- TP-1 ■ TEST PIT
- CPT-1 ▲ CPT
- (9.5) DEPTH TO GROUNDWATER (FEET BGS)



**NOTES:**

1. SITE PLAN BASED ON IMAGE OBTAINED FROM IBI GROUP ON MAY 6, 2022.
2. AERIAL PHOTOGRAPH OBTAINED FROM GOOGLE EARTH PRO MAY 26, 2022.



DEPTH FEET	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION DEPTH	TESTING	SAMPLE	MOISTURE CONTENT %	COMMENTS
0.0		Soft, pale brown with orange mottled and black speckled SILT (ML), some clay, trace sand and organics (rootlets); moist, sand is fine (10-inch-thick tilled zone, 3-inch-thick root zone). medium stiff to stiff at 0.9 foot					
2.5				PP			PP = 0.5 tsf
					PP		
		wet at 4.0 feet					
5.0		Exploration completed at a depth of 5.0 feet.	5.0				
					P200		
7.5							No groundwater seepage observed to the depth explored. No caving observed to the depth explored.
10.0							Surface elevation was not measured at the time of exploration.
12.5							
15.0							
17.5							
20.0							

EXCAVATED BY: Dan J. Fischer Excavating, Inc.

LOGGED BY: S. Freeman

COMPLETED: 03/28/22

EXCAVATION METHOD: backhoe (see document text)



WLWSCHDIST-7-01

TEST PIT TP-2

JUNE 2022

BOECKMAN ROAD SCHOOL  
WILSONVILLE, OR

FIGURE A 694

TEST PIT LOG - NV5 - 1 PER PAGE WLWSCHDIST-7-01-TP1\_9.GPJ GDLNV5.GDT PRINT DATE: 5/31/22:KT

DEPTH FEET	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION DEPTH	TESTING	SAMPLE	● MOISTURE CONTENT %	COMMENTS
0.0		Soft, brown with orange and pale brown mottled and black speckled SILT (ML), some clay, trace sand and organics (rootlets); moist, sand is fine (12-inch-thick tilled zone, 6-inch-thick root zone). stiff at 1.0 foot					
2.5				PP	☒		PP = 3.5 tsf
5.0				PP	☒	●	Infiltration test at 4.0 feet. PP = 3.0 tsf
5.5		Exploration completed at a depth of 5.5 feet.	5.5		☒		No groundwater seepage observed to the depth explored. No caving observed to the depth explored.  Surface elevation was not measured at the time of exploration.
7.5							
10.0							
12.5							
15.0							
17.5							
20.0							

EXCAVATED BY: Dan J. Fischer Excavating, Inc.

LOGGED BY: S. Freeman

COMPLETED: 03/28/22

EXCAVATION METHOD: backhoe (see document text)



WLWSCHDIST-7-01

TEST PIT TP-5

JUNE 2022

BOECKMAN ROAD SCHOOL  
WILSONVILLE, OR

FIGURE A 695

TEST PIT LOG - NV5 - 1 PER PAGE WLWSCHDIST-7-01-TP1\_9.GPJ GDLNV5.GDT PRINT DATE: 5/31/22:KT

# DOWNSTREAM ANALYSIS

# STAFFORD MEADOWS



## Appendix C—Downstream Analysis



# Technical Memorandum

**To:** Mike Peebles, PE  
Otak, Inc.

**From:** Mojoy Rostaminia, PhD  
Rose Horton, PE

**Copies:** File

**Date:** 1/16/2018

**Subject:** Downstream Impact Analysis  
Stafford Meadows Development

**Project No.:** 17868

## Introduction

Otak has conducted a downstream impact analysis on the downstream storm conveyance system for the proposed Stafford Meadows Development, per City of Wilsonville standards. This proposed development is located north of SW Boeckman Road, as shown on Figure 1.



Figure 1 Vicinity map

The development will meet the City of Wilsonville Public Work Standards Section 301.4.04 which requires flow control from post-development conditions for peak flow rates generated by between 42% of the 2-year storm up to the 10-year storm.

In order to meet the requirements of City of Wilsonville Public Work Standards Section 301.5.01, a downstream analysis shall include:

- verifying that the downstream system has the capacity to convey the 25-year design storm
- extending the analysis downstream to a point in the drainage system where the proposed development site contributes 10% or less of the total tributary drainage flow or for one-quarter mile downstream of the approved point of discharge. The later was applied in this case.

### Existing Conveyance System

The existing conveyance system used in this analysis is shown on Figure 2, which also includes drainage basin delineation, time of concentration (Tc) flow paths, and runoff node locations represented in the hydraulic model. Details of the downstream conveyance system used to create the hydraulic model were primarily obtained from City GIS as-built information, and field observation. The proposed Stafford Meadows development will discharge runoff into the existing Willow Creek channel running south through the site. The creek is conveyed south under SW Boeckman Road through a pair of 18” culverts and then runs in a grassed channel through a neighborhood. The channel is collected in a 36” diameter pipe that crosses under SW Willow Creek Drive where it is joined by runoff from the neighborhood. The combined flows then drain to a deep channel which outfalls to the Willamette River approximately one mile downstream of the end of this analysis.

The proposed development for this site is located above the 100-year floodplain delineated in the Flood Insurance Rate Map (FEMA, 2008) and in non-printed unmapped Flood Map Boundary Area. See Appendix B for the FIRMette corresponding to the proposed site.

### Field Visit and Assessment

The project site is located in the headwaters of Willow Creek. The headwaters are currently in an agriculture condition. The proposed Stafford Meadows development is one of the first developments added per the *Frog Pond West Master Plan* (Wilsonville, 2017). The basins downstream of SW Boeckman Road are developed single family residential areas and the channel is wide grassed and stable. Flow from the grassed channel is conveyed in a 36” storm pipe through the neighborhood and outfalls through a concrete box energy dissipater into a natural channel. Channel incision persists throughout this reach. Incision is occurring via upstream migration of multiple headcuts, measuring one to two-foot in height, through the fine grained soil. Riparian habitat was observed in sections above the active channel along the creek with high proportions of non-native, invasive plant species dominating the riparian community. In-stream wood is dispersed throughout the reach due to the scattering of riparian trees available for recruiting.

The stretch of channel downstream of the project site was visited on December 1<sup>st</sup>, 2017 after several days of wet weather. The field assessment started at the onsite drainage channel directly upstream of SW Boeckman Road and extended one quarter mile downstream through the section of channel adjacent to Willow Creek Park.

The purpose of the field visit was to observe and document existing channel conditions, road crossings, outfalls, and contributing waterways. Visual documentation of the drainage system along the channel is included in the Photo Log in Appendix A. The estimated downstream distances (in feet), referred to as Stations in this analysis, are referenced to Node 1 at station 0+00. The following section discusses the observations made through each of the reaches.

Table 1 identifies six nodes where drainage basins contribute to the creek. Existing and potential problems are highlighted. Field observations and references to photos are listed in the last column with the goal of emphasizing the more significant channel modifications caused by the existing flow rates.



**Table 1: Downstream Impact Analysis - Drainage System Table**

Station	Drainage Component	Contributing Drainages (See Figure 2 for referenced basins)	Existing Problems	Potential Problems	Observations (Referenced Photos are in Appendix B)
0+00 to 0+35	Node 1: Existing stream south of development and upstream of outfall.	<b>Basin 1 and Site</b> Agricultural properties with homestead buildings north of Boeckman Road	None	None	Shallow natural channel and wetland located adjacent to Stafford Meadows property. The channel is in good condition without indicators of degradation. <b>(Photo 1)</b>
0+35 to 1+25	Existing pair of 18-inch dia, 80-ft long concrete culverts at SW Boeckman Road	—	None	None	Culvert inlets in <b>Photo 2</b> . Gravels accumulating at downstream end of culverts in <b>Photo 3</b> .
1+25 to 6+65	Grassed channel with brushy sides	<b>Basin 2</b> SW Boeckman Road runoff discharged to channel through culvert and rocked swale	None	None	Grassed channel with brushy banks. Channel typically 6-ft wide, 4H:1V side slopes. Banks vary 2-3' height. Blackberry dominates much of the riparian corridor in this reach. <b>(Photo 4)</b>
6+65 to 7+75	Grassed channel with maintained sides	—	None	None	Channel widens and vegetated side slopes steeper. 10.5-ft bottom width, banks 4-5-ft high. <b>(Photo 5)</b>
7+75 to 7+90	Upstream input from 18-inch, CCP	<b>Basin 3</b> Neighborhood west of channel managed with two upstream stormwater facilities	None	None	Accumulation of silt and leaves in culvert bottom reduces capacity. <b>(Photo 6)</b>
7+90 to 10+70	36-in dia, 295-ft long concrete culvert at SW Willow creek Drive with angle at manhole halfway	<b>Basin 4</b> Residential neighborhood located adjacent of channel	None	None	295-ft long, 36-in dia. CPP culvert under SW Willow Creek Dr <b>(Photo 7)</b> . Accumulation of debris at upstream grate. Downstream end of culvert drops into grated concrete box <b>(Photo 8)</b> with 24-inch concrete outfall onto riprap <b>(Photo 9)</b> . Approximately 3-ft of drop from culvert to channel.

**Table 1: Downstream Impact Analysis - Drainage System Table**

		<b>Basin 5</b>			
	Natural channel	Park area and channel	Incision	Incision	
10+70 11+15			Incision	Incision	Slightly meandering, 8-ft wide fine grained channel <b>(Photo 10)</b> . Incised vertical banks 2-ft high. Top of slope about 10-ft above channel bottom. Slopes heavily vegetated with blackberry, ferns and trees.
11+15 to 11+30	Natural channel	—	Incision	Incision	Channel narrows to 4-ft. A pair of 10-inch drops over 1-ft to 3-ft dia rocks. <b>(Photo 11)</b>
11+30 to 11+45	Natural channel	—	Incision	Incision	Channel narrows to 1-ft wide and 1-ft deep. Vertical right bank 5-ft high. Left bank vertical for 1-ft and then more gradual slope above. <b>(Photo 12)</b>
11+45 to 11+90	Natural channel	—	Incision	Incision	Channel widens to 6-ft width, left bank 18-inches high and right 4-ft high vertically. Large rocks in channel and large wood across. <b>(Photo 13)</b>
11+90 to 12+70	Natural channel	—	None	None	Channel narrows to 3-ft width, 1-ft drop. Left bank 4-ft high (steep) and right bank 3-ft high. Large rocks in channel with ferns established on banks at 3-ft each side. <b>(Photo 14)</b>
12+70 to 13+40	Natural channel	—	None	None	Channel about 2-ft bottom width. 2-ft drops spaced about every 20-ft and wood in channel. Side slopes 1:1. <b>(Photo 15)</b>
13+40 to 13+80	24-inch dia. CPP culvert outfall perched 3-ft above channel.	<b>Basin 6</b> Residential area west of the channel.			Perched culvert on right side <b>(Photo 16)</b> . Channel width 4-ft. 2-ft drop in channel. Right bank near vertical for 10-ft and left 5-ft high with 6-ft wide bench with another 5-ft slope to top. <b>(Photo 17)</b>

## Hydrology

Peak runoff rates from the drainage basins delineated in Figure 2, during existing and proposed conditions were calculated using XPSWMM V14. The Santa Barbara Urban Hydrograph (SBUH) method was used to apply the conveyance design event (25-year recurrence interval, 24-hour duration, NRCS Type 1A rainfall distribution), per Section 301.5.01. Time of Concentration values were calculated for each delineated drainage basin using TR-55 equations. Time of Concentration (Tc) flow paths are shown in Figure 2 and corresponding calculations for each drainage basin are included in Appendix B. A time of concentration of 5 minutes, the minimum allowable, was applied to developed impervious areas.

Most of the study area is comprised of silt loam categorized in the hydrologic soil group (HSG) D. HSG D soils generally exhibit very slow infiltration rates when thoroughly wet. A small upland area is categorized as HSG C with low to moderate infiltration, and a section of the channel is HSG B with moderate infiltration. A Curve Number (CN) of 98 was used for all impervious areas. The pervious areas were open space with good grass cover, thus a CN of 61 (HSG B), 74 (HSG C), or 80 (HSG D) was used as applicable.

The basins downstream of the proposed project site are developed residential areas. Impervious percentages were estimated based on existing impervious surfaces captured in 2007 aerial imagery. Basin 1 and the 15.3-acre proposed Stafford Meadows development are currently agricultural with few homes, outbuildings, and driveways. Per the *Frog Pond West Master Plan* (Wilsonville, 2017), Basin 1 is to be developed into primarily a mix of small, medium, and large lot single family homes. Based on a published Clackamas County Water and Environmental Services (WES) study of impervious surfaces (WES, 2005), impervious percentages for future land uses in Basin 1 were estimate and averaged for the basin (see Appendix B). The impervious percentage for the proposed site was calculated using the proposed site plan. The existing two-lane SW Boeckman Road, included in Basin 2, is anticipated to be widened to include bicycle lanes and sidewalks in the near future and this improvement is included the Basin1 Fully Developed scenario.

Table 2 summarizes the 25-year existing and developed peak flowrates in Willow Creek for proposed project conditions calculated in XP-SWMM. The stationing represents the 1,380 feet measured downstream from the starting point of the downstream impact analysis.

Table 2: Peak 25-Year Flowrates					
Node	Station	Contributing Basin Area (ac)	Existing Flow Rate (cfs)	Proposed Flow Rate (cfs)	Basin 1 Fully Developed Flow Rate (cfs)
1	0+00	55.80	20.83	28.06	44.61
2	1+25	5.84	24.91	31.10	47.92
3	7+75	5.89	29.62	35.28	52.56
4	7+90	11.87	40.45	46.89	63.32
5	10+70	1.32	40.59	47.13	63.14
6	13+40	9.80	48.44	55.07	71.07

## Downstream Conveyance Modeling Analysis

The stormwater conveyance network was analyzed in XP-SWMM. The conveyance system was modeled to determine whether the existing downstream system has sufficient capacity to support the Stafford Meadows development runoff undetained during the 25-year, 24-hour storm event. The pipe network reflects inverts from GIS As-built data. A Manning's n value of 0.013 was applied to the storm conveyance pipes in the network and a value of 0.035 was applied to the open channel reach of Willow Creek upstream of SW Willow Creek Drive. A value of 0.04 was applied to the channel and 0.08 was applied to the banks of the open channel reach of Willow Creek downstream of SW Willow Creek Drive. A minimum of one-foot of freeboard between the hydraulic grade line (HGL) and the structure rim elevations was confirmed; therefore it is assumed that adequate capacity exists. Appendix C includes output information from the XP-SWMM model, summarizing the pipe network characteristics and results of the hydraulic routing during the design storm. The existing channel on the Stafford Meadows (XPSWMM Link 1) site is only about 1.5-ft in depth. The runoff generated by the Fully Developed Basin 1 will over top the existing channel banks and the downstream SW Boeckman Road.

Directly downstream of the project site a pair of 18-inch diameter culverts convey Willow Creek beneath SW Boeckman Road. These culverts are approximately 80 feet long and invert elevations were obtained through survey. The hydraulic capacity of these culverts, referred to as Culvert West and Culvert East, were modeled using HY-8 software. The peak flow rate entering the culverts is the 26.8 cfs from the upstream channel (XPSWMM Link 1) under proposed conditions. The results of the hydraulic calculations (see Appendix C) show that the existing culverts do not have adequate capacity to convey the 25-year flow rate without overtopping the existing roadway.

## Conclusions

The downstream stormwater conveyance system analyzed as part of this downstream analysis extends from the proposed development approximately one quarter of a mile downstream to the open channel adjacent to Willow Creek Park. The system consists of both open channel and piped conveyance components. A site visit along the downstream reach provided a qualitative assessment of the storm conveyance system, and found no evidence of capacity restrictions under existing conditions. The storm sewer was modeled using XP-SWMM software, and shows adequate capacity for the proposed flows and that the onsite channel lacks capacity for Basin 1 Fully Buildout flow rates. The culverts beneath SW Boeckman Road were modeled using HY-8 software, and lack adequate capacity to convey the proposed undetained flows from the Stafford Meadows development. The proposed development will need to detain high flows on site or increase the capacity at the crossing under SW Boeckman Road to meet City standards.

## References

City of Wilsonville. *City of Wilsonville Public Works Standards. Section 3, Stormwater & Surface Water Design and Construction Standards*, City of Wilsonville, Revised December 2015.

FEMA, 2008. *Flood Insurance Rate Map (FIRM) for Clackamas County, Oregon, Incorporated Areas, Panel 243*, Federal Emergency Management Agency, June 17, 2008.

National Resource Conservation Services, United States Department of Agriculture. "Web Soil Survey." <<http://websoilsurvey.nrcs.usda.gov/>> Accessed: December 14, 2017.

WES, 2005. *Results of evaluation and analysis of impervious surface and current and future land use types in CCSD#1 and the Damascus UGB expansion area*. Clackamas County Water Environment Services, July 2005

Wilsonville, 2017. *Frog Pond West Master Plan*, City of Wilsonville, July 17, 2017.



## Downstream Analysis

### F i g u r e s



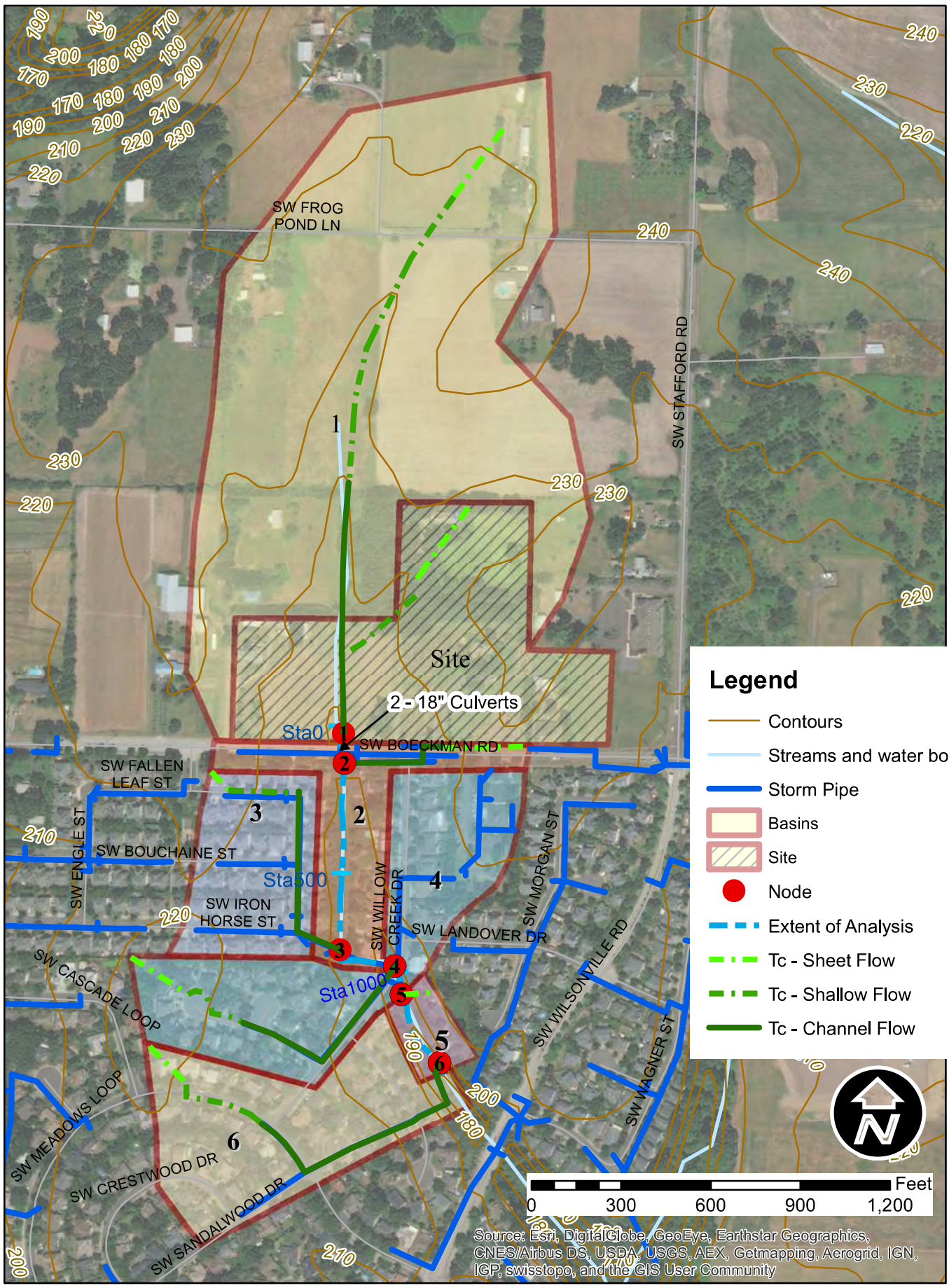


FIGURE 2





## Downstream Analysis

# A p p e n d i c e s



Downstream Analysis

A p p e n d i x A — P h o t o L o g





Downstream Analysis



Photo 1 Channel in ROW on Frog Property



Photo 2 Upstream Ends of Culverts





Photo 3 Downstream of culvert with gravel accumulation



Photo 4 Vegetated section of channel





Photo 5 Vegetated channel with taller banks and logs channeling flow



Photo 6 Partly submerged 18-inch CCP contributing culvert





Photo 7 36-inch culvert under SW Willow Creek Drive



Photo 8 36-inch Outfall into Concrete Box





Photo 9 24-inch Outfall from energy dissipation Concrete Box at outfall from 36-inch Pipe





Photo 10 Wide Incised Channel



Photo 11 Channel with Drops adjacent to rocks in the channel





Photo 12 Confined channel section



Photo 13 Widened channel with rock and large wood





Photo 14 Channel with steep and eroding banks, and rock in channel



Photo 15 2-ft high drops in Channel





**Photo 16 Perched Culvert on Right Bank**



**Photo 17 Channel at downstream extent of analysis**

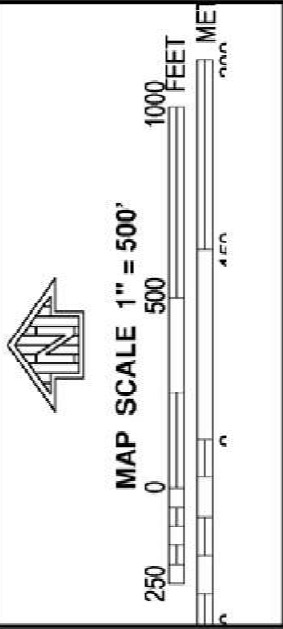


**Downstream Analysis**

A p p e n d i x B — H y d r o l o g y







**NFIP** PANEL 0234D

**FIRM**  
**FLOOD INSURANCE RATE MAP**  
**CLACKAMAS COUNTY,**  
**OREGON**  
**AND INCORPORATED AREAS**

**PANEL 234 OF 1175**  
 (SEE MAP INDEX FOR FIRM PANEL LAYOUT)

**CONTAINS:**

<b>COMMUNITY</b>	<b>NUMBER</b>	<b>PANEL</b>	<b>SUFFIX</b>
CLACKAMAS COUNTY	415588	0234	0
WILSONVILLE CITY OF	410025	0234	0

**NOTE TO USER:** The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.

**MAP NUMBER**  
41005C0234D

**EFFECTIVE DATE**  
JUNE 17, 2008

Federal Emergency Management Agency

**NATIONAL FLOOD INSURANCE PROGRAM**

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps, check the FEMA Flood Map Store at [www.msc.fema.gov](http://www.msc.fema.gov)

JOINS PANEL 0253

Site located in non-printed area





Basin Areas  
17868 Stafford Meadows Downstream Analysis

Existing Conditions												
Basin	HSG	% HSG Type	Basin Area (ac)	Time of Concentration (Tc)	% Impervious	Total Impervious Area (ac)	Area HSG D (ac)	Area HSG C (ac)	Area HSG B (ac)	Total Pervious Area (ac)	Drains To Node	
1	C/D	100	40.30	36.1	10	4.03	36.27	0.00	0.00	36.27	1	
Site	C/D	100	15.30	33.4	8	1.17	14.13	0.00	0.00	14.13	1	
2	C/D	100	5.84	5.0	45	2.63	3.21	0.00	0.00	3.21	2	
3	C/D	100	5.89	12.2	60	3.53	2.36	0.00	0.00	2.36	3	
4	C/D	100	11.87	5.0	60	7.12	4.75	0.00	0.00	4.75	4	
5	C/D, B	41, 59	1.32	8.0	5	0.07	0.51	0.74	0.00	1.25	5	
6	C/D, C, B	94, 3, 3	9.80	34.8	60	5.88	3.69	0.12	0.12	3.92	6	

Proposed Conditions												
Basin	HSG	% HSG Type	Basin Area (ac)	Time of Concentration (Tc)	% Impervious	Total Impervious Area (ac)	Area HSG D (ac)	Area HSG C (ac)	Area HSG B (ac)	Total Pervious Area (ac)	Drains To Node	
1	C/D	100	40.30	36.1	10	4.03	36.27	0.00	0.00	36.27	1	
Site_developed	C/D	100	15.30	5.0	44	6.70	8.60	0.00	0.00	8.60	1	
2	C/D	100	5.84	5.0	45	2.63	3.21	0.00	0.00	3.21	2	
3	C/D	100	5.89	12.2	60	3.53	2.36	0.00	0.00	2.36	3	
4	C/D	100	11.87	5.0	60	7.12	4.75	0.00	0.00	4.75	4	
5	C/D, B	41, 59	1.32	8.0	5	0.07	0.51	0.74	0.00	1.25	5	
6	C/D, C, B	94, 3, 3	9.80	34.8	60	5.88	3.69	0.12	0.12	3.92	6	

Basins 1 Fully Developed												
Basin	HSG	% HSG Type	Basin Area (ac)	Time of Concentration (Tc)	% Impervious	Total Impervious Area (ac)	Area HSG D (ac)	Area HSG C (ac)	Area HSG B (ac)	Total Pervious Area (ac)	Drains To Node	
1_developed	C/D	100	40.30	28.9	55	22.17	18.14	0.00	0.00	18.14	1	
Site_developed	C/D	100	15.30	5.0	44	6.70	8.60	0.00	0.00	8.60	1	
2_developed*	C/D	100	5.84	5.0	60	3.50	2.34	0.00	0.00	2.34	2	
3	C/D	100	5.89	12.2	60	3.53	2.36	0.00	0.00	2.36	3	
4	C/D	100	11.87	5.0	60	7.12	4.75	0.00	0.00	4.75	4	
5	C/D, B	41, 59	1.32	8.0	5	0.07	0.51	0.74	0.00	1.25	5	
6	C/D, C, B	94, 3, 3	9.80	34.8	60	5.88	3.69	0.12	0.12	3.92	6	

\*Includes widening of Boeckman Road

WES 2005 Memo Data		
Description	Density (units/acre)	Impervious Area (%)
Ras-A Small Lot Single Family	10.45	53
Ras-B	9.57	58
school (ID-6)	NA	35
school (ID-29)	NA	16

Summary of Basin 1 Full Buildout Impervious % by Land Use			
Description	Density (units/acre)	Impervious Area (%)	% of Basin
R-10 Large Lot Single Family	4.3	50*	4.9
R-7 Medium Lot Single Family	6.2	60*	57.9
R-5 Small Lot Single Family	8.7	60*	20.2
Public Facilities	NA	35	13.6
Civic	NA	35	0.6
SROZ	NA	0	2.8

\*Values reflect an increase of 5% to account for future collector roads.





## Time of Concentration Calculations

17868 Stafford Meadows Downstream Analysis

BASINS		1	1 developed	Site	2
<b>SHEET FLOW</b>					
INPUT					
Surface Description (from Table 3-1)		Short grass	Short grass	Short grass	Paved
Manning's Roughness Coefficient		0.15	0.15	0.15	0.011
Flow Length, L (<300 ft)	ft	295	295	300	268
2-Year, 24-Hour Rainfall, P <sub>2</sub>	in	2.5	2.5	2.5	2.5
Land Slope, s	ft/ft	0.020	0.020	0.017	0.025
OUTPUT					
Travel Time	hr	0.44	0.44	0.48	0.05
<b>SHALLOW CONCENTRATED FLOW</b>					
INPUT					
Surface Description (paved or unpaved)		Unpaved		Unpaved	
Flow Length, L	ft	1039		491	
Watercourse Slope, s	ft/ft	0.017		0.018	
OUTPUT					
Average Velocity, V	ft/s	2.12		2.16	
Travel Time	hr	0.14		0.06	
<b>CHANNEL FLOW</b>					
INPUT					
Cross Sectional Flow Area, a	ft <sup>2</sup>	3.14	3.14	25	4.71
Wetted Perimeter, p <sub>w</sub>	ft	0.79	0.79	16.8	1.77
Channel Slope, s	ft/ft	0.006	0.012	0.011	0.017
Manning's Roughness Coefficient		0.035	0.035	0.035	0.035
Flow Length, L	ft	872	1911	325	373
OUTPUT					
Average Velocity, V	ft/s	8.09	11.72	5.84	10.79
Hydraulic Radius, r = a/p <sub>w</sub>	ft	3.97	3.97	1.49	2.66
Travel Time	hr	0.030	0.045	0.015	0.010
<b>Basin Time of Concentration, T<sub>c</sub></b>	<b>hrs</b>	<b>0.60</b>	<b>0.48</b>	<b>0.56</b>	<b>0.06</b>
	<b>min</b>	<b>36.1</b>	<b>28.9</b>	<b>33.4</b>	<b>3.3 *</b>

\* Minimum T<sub>c</sub> of 5 minutes applied to analysis.

## Time of Concentration Calculations

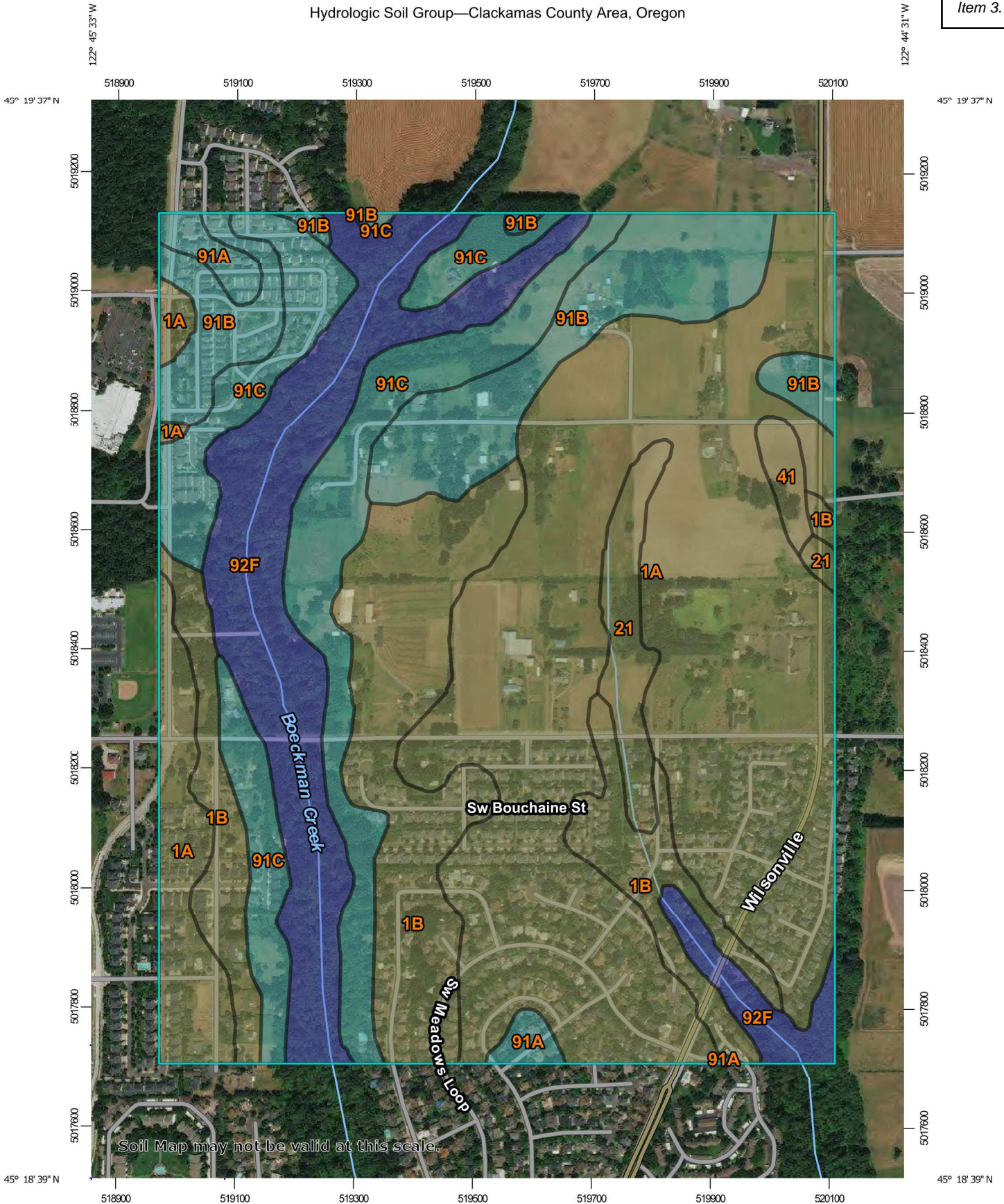
17868 Stafford Meadows Downstream Analysis

BASINS		3	4	5	6
<b>SHEET FLOW</b>					
INPUT					
Surface Description (from Table 3-1)		short grass	Short grass	Short grass	Short grass
Manning's Roughness Coefficient		0.15	0.15	0.15	0.15
Flow Length, L (<300 ft)	ft	82	228	125	175
2-Year, 24-Hour Rainfall, P <sub>2</sub>	in	2.5	2.5	2.5	2.5
Land Slope, s	ft/ft	0.018	0.010	0.070	0.005
OUTPUT					
Travel Time	hr	0.16	0.48	0.13	0.52
<b>SHALLOW CONCENTRATED FLOW</b>					
INPUT					
Surface Description (paved or unpaved)		paved	paved		paved
Flow Length, L	ft	231	243		312
Watercourse Slope, s	ft/ft	0.011	0.029		0.013
OUTPUT					
Average Velocity, V	ft/s	2.16	3.45		2.33
Travel Time	hr	0.03	0.02		0.04
<b>CHANNEL FLOW</b>					
INPUT					
Cross Sectional Flow Area, a	ft <sup>2</sup>	3.14	3.14		6.28
Wetted Perimeter, p <sub>w</sub>	ft	0.79	0.79		3.14
Channel Slope, s	ft/ft	0.013	0.012		0.031
Manning's Roughness Coefficient		0.035	0.035		0.035
Flow Length, L	ft	471	700		885
OUTPUT					
Average Velocity, V	ft/s	12.26	11.77		11.85
Hydraulic Radius, r = a/p <sub>w</sub>	ft	3.97	3.97		2.00
Travel Time	hr	0.011	0.017		0.021
Basin Time of Concentration, T <sub>c</sub>	hrs	0.20	0.04	0.13	0.58
	min	12.2	2.2 *	8.0	34.8

\* Minimum T<sub>c</sub> of 5 minutes applied to analysis.

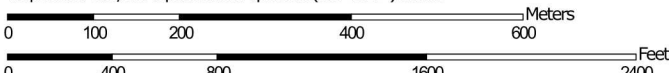
Hydrologic Soil Group—Clackamas County Area, Oregon

Item 3.



Soil Map may not be valid at this scale.

Map Scale: 1:8,800 if printed on A portrait (8.5" x 11") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N WGS84



































Natural Resources Conservation Service

Web Soil Survey National Cooperative Soil Survey

12/14/2017 Page 1 of 4

732

## MAP LEGEND

<b>Area of Interest (AOI)</b>	 C
 Area of Interest (AOI)	 C/D
<b>Soils</b>	 D
<b>Soil Rating Polygons</b>	 Not rated or not available
 A	<b>Water Features</b>
 A/D	 Streams and Canals
 B	<b>Transportation</b>
 B/D	 Rails
 C	 Interstate Highways
 C/D	 US Routes
 D	 Major Roads
 Not rated or not available	 Local Roads
<b>Soil Rating Lines</b>	<b>Background</b>
 A	 Aerial Photography
 A/D	
 B	
 B/D	
 C	
 C/D	
 D	
 Not rated or not available	
<b>Soil Rating Points</b>	
 A	
 A/D	
 B	
 B/D	

## MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service  
 Web Soil Survey URL:  
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Clackamas County Area, Oregon  
 Survey Area Data: Version 12, Sep 19, 2017

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Aug 19, 2015—Sep 13, 2016

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.



## Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
1A	Aloha silt loam, 0 to 3 percent slopes	C/D	169.0	42.0%
1B	Aloha silt loam, 3 to 6 percent slopes	C/D	64.8	16.1%
21	Concord silt loam	C/D	10.5	2.6%
41	Huberly silt loam	C/D	3.0	0.7%
91A	Woodburn silt loam, 0 to 3 percent slopes	C	5.0	1.3%
91B	Woodburn silt loam, 3 to 8 percent slopes	C	38.6	9.6%
91C	Woodburn silt loam, 8 to 15 percent slopes	C	55.0	13.7%
92F	Xerochrepts and Haploxerolls, very steep	B	55.9	13.9%
<b>Totals for Area of Interest</b>			<b>401.8</b>	<b>100.0%</b>

## Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

## Rating Options

*Aggregation Method:* Dominant Condition

*Component Percent Cutoff:* None Specified

*Tie-break Rule:* Higher

**Table 2-2a** Runoff curve numbers for urban areas <sup>1/</sup>

Cover description	Average percent impervious area <sup>2/</sup>	Curve numbers for hydrologic soil group			
		A	B	C	D
<i>Fully developed urban areas (vegetation established)</i>					
Open space (lawns, parks, golf courses, cemeteries, etc.) <sup>3/</sup> :					
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	98	98
Paved; open ditches (including right-of-way) .....					
		83	89	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) <sup>4/</sup> .....					
		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
<i>Developing urban areas</i>					
Newly graded areas (pervious areas only, no vegetation) <sup>5/</sup> .....					
		77	86	91	94
Idle lands (CN's are determined using cover types similar to those in table 2-2c).					

<sup>1/</sup> Average runoff condition, and  $I_a = 0.2S$ .<sup>2/</sup> The average percent impervious area shown was used to develop the composite CN's. Other assumptions are as follows: impervious areas are directly connected to the drainage system, impervious areas have a CN of 98, and pervious areas are considered equivalent to open space in good hydrologic condition. CN's for other combinations of conditions may be computed using figure 2-3 or 2-4.<sup>3/</sup> CN's shown are equivalent to those of pasture. Composite CN's may be computed for other combinations of open space cover type.<sup>4/</sup> Composite CN's for natural desert landscaping should be computed using figures 2-3 or 2-4 based on the impervious area percentage (CN = 98) and the pervious area CN. The pervious area CN's are assumed equivalent to desert shrub in poor hydrologic condition.<sup>5/</sup> Composite CN's to use for the design of temporary measures during grading and construction should be computed using figure 2-3 or 2-4 based on the degree of development (impervious area percentage) and the CN's for the newly graded pervious areas.





## Downstream Analysis

# A p p e n d i x C — H y d r a u l i c s

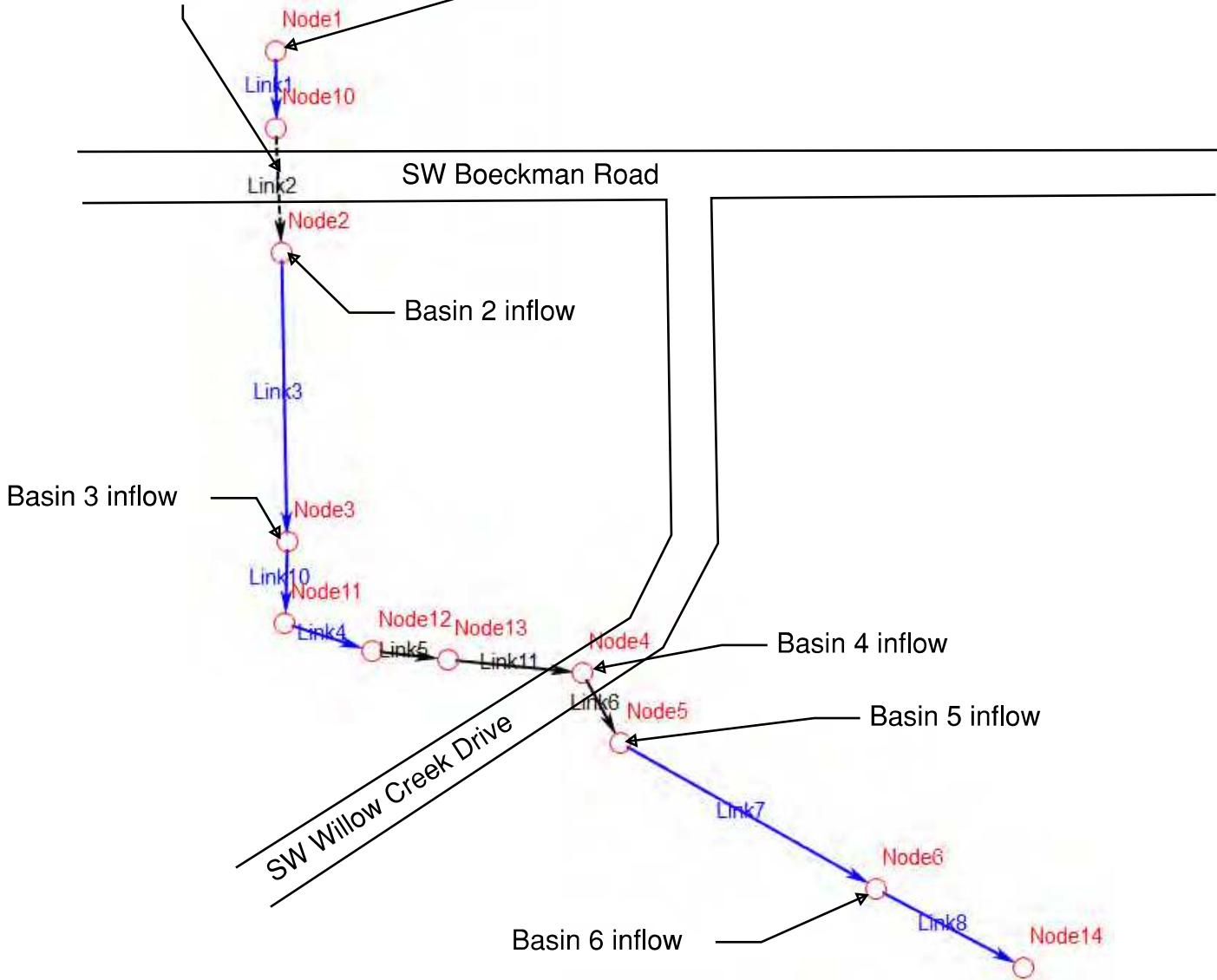


# XP-SWMM Layout

## Stafford Meadows Downstream Analysis

18" culverts (East and West)

Basin 1 and Site inflow



**XP-SWMM RUNOFF DATA**  
**Stafford Meadows Development**

**SCS Type 1A 25-Year Storm Event**

**Existing Conditions**

XP-SWMM Input Data					XP-SWMM Output Data		
Node Name	Total Area (ac)	Impervious %	Curve Number	Tc (min)	Unit Hydrograph Method	Infiltration Depth (in)	Surface Runoff Flow (cfs)
Node1	4.030	100	98	5.0	Santa Barbara	2.02	4.727
Node1	36.270	0	80	36.1	Santa Barbara	0.00	10.501
Node1	1.170	100	98	5.0	Santa Barbara	0.00	1.372
Node1	14.130	0	80	33.4	Santa Barbara	0.00	4.234
Node2	2.630	100	98	5.0	Santa Barbara	2.02	3.085
Node2	3.210	0	80	5.0	Santa Barbara	0.00	1.855
Node3	3.530	100	98	5.0	Santa Barbara	2.02	4.141
Node3	2.360	0	80	12.2	Santa Barbara	0.00	1.074
Node4	7.120	100	98	5.0	Santa Barbara	2.02	8.352
Node4	4.750	0	80	5.0	Santa Barbara	0.00	2.745
Node5	0.070	100	98	5.0	Santa Barbara	2.44	0.082
Node5	0.510	0	80	8.0	Santa Barbara	0.00	0.265
Node5	0.740	0	74	8.0	Santa Barbara	0.00	0.259
Node6	5.880	100	98	5.0	Santa Barbara	3.18	6.898
Node6	3.690	0	79	34.8	Santa Barbara	0.00	1.086
Node6	0.120	0	79	34.8	Santa Barbara	0.00	0.023
Node6	0.120	0	79	43.8	Santa Barbara	0.00	0.006



**XP-SWMM RUNOFF DATA**  
**Stafford Meadows Development**

SCS Type 1A 25-Year Storm Event							
Proposed Conditions							
XP-SWMM Input Data					XP-SWMM Output Data		
Node Name	Total Area (ac)	Impervious %	Curve Number	Tc (min)	Unit Hydrograph Method	Infiltration Depth (in)	Surface Runoff Flow (cfs)
Node1	4.030	100	98	5.0	Santa Barbara	2.02	4.727
Node1	36.270	0	79	36.1	Santa Barbara	0.00	10.501
Node1	6.700	100	80	5.0	Santa Barbara	0.00	7.860
Node1	8.600	0	79	5.0	Santa Barbara	0.00	4.971
Node2	2.630	100	80	5.0	Santa Barbara	2.02	3.085
Node2	3.210	0	79	5.0	Santa Barbara	0.00	1.855
Node3	3.530	100	80	5.0	Santa Barbara	2.02	4.141
Node3	2.360	0	79	12.2	Santa Barbara	0.00	1.074
Node4	7.120	100	80	5.0	Santa Barbara	2.02	8.352
Node4	4.750	0	79	5.0	Santa Barbara	0.00	2.745
Node5	0.070	100	80	5.0	Santa Barbara	2.44	0.082
Node5	0.510	0	79	8.0	Santa Barbara	0.00	0.265
Node5	0.740	0	80	8.0	Santa Barbara	0.00	0.259
Node6	5.880	100	74	5.0	Santa Barbara	3.18	6.898
Node6	3.690	0	79	34.8	Santa Barbara	0.00	1.086
Node6	0.120	0	79	34.8	Santa Barbara	0.00	0.023
Node6	0.120	0	79	43.8	Santa Barbara	0.00	0.006

**XP-SWMM RUNOFF DATA**  
**Stafford Meadows Development**

SCS Type 1A 25-Year Storm Event							
Basin I Fully Developed Conditions							
XP-SWMM Input Data					XP-SWMM Output Data		
Node Name	Total Area (ac)	Impervious %	Curve Number	Tc (min)	Unit Hydrograph Method	Infiltration Depth (in)	Surface Runoff Flow (cfs)
Node1	22.170	100	98	5.0	Santa Barbara	2.02	26.007
Node1	18.140	0	79	28.9	Santa Barbara	0.00	5.769
Node1	6.700	100	98	5.0	Santa Barbara	0.00	7.860
Node1	8.600	0	80	5.0	Santa Barbara	0.00	4.971
Node2	3.500	100	98	5.0	Santa Barbara	2.02	4.106
Node2	2.340	0	80	5.0	Santa Barbara	0.00	1.352
Node3	3.530	100	98	5.0	Santa Barbara	2.02	4.141
Node3	2.360	0	80	12.2	Santa Barbara	0.00	1.074
Node4	7.120	100	98	5.0	Santa Barbara	2.02	8.352
Node4	4.750	0	80	5.0	Santa Barbara	0.00	2.745
Node5	0.070	100	98	5.0	Santa Barbara	2.44	0.082
Node5	0.510	0	80	8.0	Santa Barbara	0.00	0.265
Node5	0.740	0	79	8.0	Santa Barbara	0.00	0.259
Node6	5.880	100	80	5.0	Santa Barbara	3.18	6.898
Node6	3.690	0	74	34.8	Santa Barbara	0.00	1.086
Node6	0.120	0	79	34.8	Santa Barbara	0.00	0.023
Node6	0.120	0	79	43.8	Santa Barbara	0.00	0.006

**XP-SWMM HYDRAULICS DATA**  
**17868 Stafford Meadows Downstream Analysis**

SCS Type 1A 25-Year Storm Event																			
Existing Conditions																			
Location			Conduit Properties				Conduit Profile						Conduit Results						
Link Name	Node Limits		Diameter		Length	Slope	Ground Elevation (ft)		Invert Elevation (ft)		Freeboard (ft)		Max. HGL Elevation (ft)		Design Flow	Max. Flow	Max. Velocity	Max. Depth	y/d0
	From	To	in	ft	ft	%	US	DS	US	DS	US	DS	US	DS	(cfs)	(cfs)	(ft/s)	(ft)	
Link1 +	Node1	Node10	18	1.5	35	0.2	214.70	216.00	212.70	212.63	0.6	2.2	214.1	213.8	17.40	19.99	2.24	1.36	0.90
Link2 *	Node10	Node2	18	1.5	80	2.0	216.00	214.50	212.63	211.00	2.2	2.6	213.8	211.9	14.99	10.06	6.81	1.21	0.81
Link2 **	Node10	Node2	18	1.5	80	2.0	216.00	214.50	212.64	211.06	2.2	2.6	213.8	211.9	14.76	9.91	6.73	1.20	0.80
Link2 ***	Node10	Node2	0	0.0	0	0.0	216.00	214.50	0.00	0.00	2.2	2.6	213.8	211.9	0.00	0.00	0.00	0.00	0.00
Link3 +	Node2	Node3	24	2.0	540	1.2	214.50	209.00	211.00	204.40	2.6	3.9	211.9	205.1	152.09	24.41	3.07	0.87	0.43
Link4 +	Node11	Node12	48	4.0	15	3.3	208.00	207.60	203.10	202.60	4.3	4.0	203.7	203.6	1736.29	29.35	3.66	1.01	0.25
Link5	Node12	Node13	36	3.0	32	3.9	207.60	206.00	202.52	201.27	4.0	3.9	203.6	202.1	131.82	29.36	12.93	1.09	0.36
Link6	Node4	Node5	36	3.0	104	6.4	206.00	200.00	195.11	188.58	9.5	13.5	196.5	186.6	167.13	39.88	12.90	1.39	0.46
Link7 +	Node5	Node6	120	10.0	270	4.3	200.00	184.00	185.50	174.00	13.5	7.8	186.6	176.2	5327.19	40.43	5.29	2.16	0.22
Link8 +	Node6	Node14	120	10.0	40	1.0	184.00	184.00	174.00	173.60	7.8	9.4	176.2	174.6	674.27	48.05	5.65	2.16	0.22
Link10+	Node3	Node11	48	4.0	110	1.2	209.00	208.00	204.40	203.10	3.9	4.3	205.1	203.7	1033.85	29.36	3.43	0.66	0.17
Link11	Node13	Node4	36	3.0	144	3.9	206.00	206.00	200.97	195.31	3.9	9.5	202.1	196.5	132.23	29.35	12.33	1.19	0.40

Proposed Conditions																			
Location			Conduit Properties				Conduit Profile						Conduit Results						
Link Name	Node Limits		Diameter		Length	Slope	Ground Elevation (ft)		Invert Elevation (ft)		Freeboard (ft)		Max. HGL Elevation (ft)		Design Flow	Max. Flow	Max. Velocity	Max. Depth	y/d0
	From	To	in	ft	ft	%	US	DS	US	DS	US	DS	US	DS	(cfs)	(cfs)	(ft/s)	(ft)	
Link1 +	Node1	Node10	18	1.5	35	0.2	214.70	216.00	212.70	212.63	0.1	1.4	214.6	214.6	17.40	26.74	2.25	1.98	1.00
Link2 *	Node10	Node2	18	1.5	80	2.0	216.00	214.50	212.63	211.00	1.4	2.5	214.6	212.0	14.99	13.06	7.61	1.98	1.32
Link2 **	Node10	Node2	18	1.5	80	2.0	216.00	214.50	212.64	211.06	1.4	2.5	214.6	212.0	14.76	13.15	7.59	1.97	1.31
Link2 ***	Node10	Node2	0	0.0	0	0.0	216.00	214.50	0.00	0.00	1.4	2.5	214.6	212.0	0.00	0.00	0.00	0.00	0.00
Link3 +	Node2	Node3	24	2.0	540	1.2	214.50	209.00	211.00	204.40	2.5	3.9	212.0	205.1	152.09	30.64	3.26	0.98	0.49
Link4 +	Node11	Node12	48	4.0	15	3.3	208.00	207.60	203.10	202.60	4.2	3.9	203.8	203.7	1736.29	35.62	3.76	1.14	0.28
Link5	Node12	Node13	36	3.0	32	3.9	207.60	206.00	202.52	201.27	3.9	3.8	203.7	202.2	131.82	35.63	13.49	1.22	0.41
Link6	Node4	Node5	36	3.0	104	6.4	206.00	200.00	195.11	188.58	9.3	13.4	196.7	186.6	167.13	46.41	13.14	1.55	0.52
Link7 +	Node5	Node6	120	10.0	270	4.3	200.00	184.00	185.50	174.00	13.4	7.7	186.6	176.3	5327.19	46.95	5.51	2.34	0.23
Link8 +	Node6	Node14	120	10.0	40	1.0	184.00	184.00	174.00	173.60	7.7	9.2	176.3	174.8	674.27	54.64	5.92	2.34	0.23
Link10+	Node3	Node11	48	4.0	110	1.2	209.00	208.00	204.40	203.10	3.9	4.2	205.1	203.8	1033.85	35.62	3.68	0.73	0.18
Link11	Node13	Node4	36	3.0	144	3.9	206.00	206.00	200.97	195.31	3.8	9.3	202.2	196.7	132.23	35.63	12.75	1.35	0.45

+ open channel  
\* 18" culvert west  
\*\* 18" culvert east  
\*\*\* road surface

**XP-SWMM HYDRAULICS DATA**  
**17868 Stafford Meadows Downstream Analysis**

SCS Type 1A 25-Year Storm Event																			
Basin 1 Fully Developed																			
Location			Conduit Properties				Conduit Profile						Conduit Results						
Link Name	Node Limits		Diameter		Length	Slope	Ground Elevation (ft)		Invert Elevation (ft)		Freeboard (ft)		Max. HGL Elevation (ft)		Design Flow	Max. Flow	Max. Velocity	Max. Depth	y/d0
	From	To	in	ft	ft	%	US	DS	US	DS	US	DS	US	DS	(cfs)	(cfs)	(ft/s)	(ft)	
Link1 +	Node1	Node10	47	3.9	35.0	0.2	216.70	216.83	212.70	212.63	0.3	0.4	216.4	216.4	222.42	43.34	2.25	3.77	0.97
Link2 *	Node10	Node2	18	1.5	80.0	2.0	216.83	214.50	212.63	211.00	0.4	2.3	216.4	212.2	14.99	17.65	10.02	3.77	2.52
Link2 **	Node10	Node2	18	1.5	80.0	2.0	216.83	214.50	212.64	211.06	0.4	2.3	216.4	212.2	14.76	17.26	9.69	3.76	2.51
Link2 ***	Node10	Node2	0	0.0	0.0	0.0	216.83	214.50	0.00	0.00	0.4	2.3	216.4	212.2	0.00	7.55	0.00	0.00	0.00
Link3 +	Node2	Node3	24	2.0	540.0	1.2	214.50	209.00	211.00	204.40	2.3	3.7	212.2	205.3	152.09	47.35	3.65	1.23	0.62
Link4 +	Node11	Node12	48	4.0	15.0	3.3	208.00	207.60	203.10	202.60	4.0	3.6	204.0	204.1	1736.29	52.22	3.82	1.45	0.36
Link5	Node12	Node13	36	3.0	32.0	3.9	207.60	206.00	202.52	201.27	3.6	3.4	204.1	202.6	131.82	52.22	14.66	1.53	0.51
Link6	Node4	Node5	36	3.0	104.0	6.4	206.00	200.00	195.11	188.58	9.0	13.2	197.0	186.8	167.13	62.52	13.57	1.93	0.64
Link7 +	Node5	Node6	120	10.0	270.0	4.3	200.00	184.00	185.50	174.00	13.2	7.2	186.8	176.8	5327.19	63.06	5.93	2.76	0.28
Link8 +	Node6	Node14	120	10.0	40.0	1.0	184.00	184.00	174.00	173.60	7.2	8.9	176.8	175.1	674.27	70.55	6.48	2.76	0.28
Link10+	Node3	Node11	48	4.0	110.0	1.2	209.00	208.00	204.40	203.10	3.7	4.0	205.3	204.0	1033.85	52.24	4.21	0.90	0.23
Link11	Node13	Node4	36	3.0	144.0	3.9	206.00	206.00	200.97	195.31	3.4	9.0	202.6	197.0	132.23	52.22	13.48	1.73	0.58

+ open channel  
\* 18" culvert west  
\*\* 18" culvert east  
\*\*\* road surface functioning as weir



# HY-8 Culvert Analysis Report

## Roadway Data for Crossing: SW Boeckman Road

Roadway Profile Shape: Irregular Roadway Shape (coordinates)

Roadway Surface: Paved

Roadway Top Width: 68.00 ft

## Tailwater Channel Data - SW Boeckman Road

Tailwater Channel Option: Trapezoidal Channel

Bottom Width: 6.00 ft

Side Slope (H:V): 4.00 (4:1)

Channel Slope: 0.0120

Channel Manning's n: 0.0350

Channel Invert Elevation: 211.00 ft

## Crossing Discharge Data

Discharge Selection Method: Specify Minimum, Design, and Maximum Flow

Minimum Flow: 20 cfs

Design Flow: 26.8 cfs

Maximum Flow: 43.3 cfs

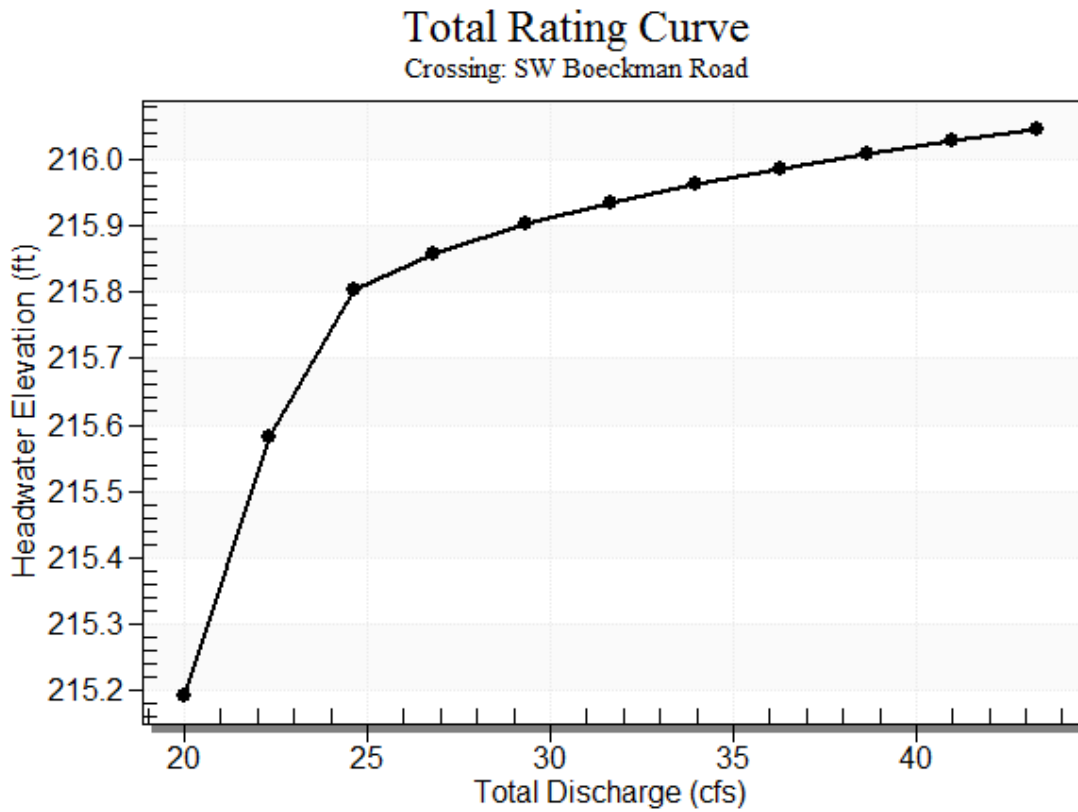
Table 1 - Downstream Channel Rating Curve (Crossing: SW Boeckman Road)

Flow (cfs)	Water Surface Elev (ft)	Depth (ft)	Velocity (ft/s)	Shear (psf)	Froude Number
20.00	211.73	0.73	3.09	0.54	0.73
22.33	211.77	0.77	3.19	0.58	0.74
24.66	211.81	0.81	3.28	0.61	0.75
26.80	211.85	0.85	3.36	0.64	0.75
29.32	211.89	0.89	3.45	0.67	0.75
31.65	211.93	0.93	3.52	0.69	0.76
33.98	211.96	0.96	3.59	0.72	0.76
36.31	211.99	0.99	3.66	0.74	0.77
38.64	212.03	1.03	3.73	0.77	0.77
40.97	212.06	1.06	3.79	0.79	0.77
43.30	212.09	1.09	3.85	0.81	0.77

Table 2 - Summary of Culvert Flows at Crossing: SW Boeckman Road

Headwater Elevation (ft)	Total Discharge (cfs)	Culvert West Discharge (cfs)	Culvert East Discharge (cfs)	Roadway Discharge (cfs)	Iterations
215.19	20.00	10.02	9.99	0.00	6
215.58	22.33	11.14	11.11	0.00	40
215.80	24.66	11.74	11.71	1.12	19
215.86	26.80	11.88	11.86	2.93	8
215.90	29.32	12.00	11.98	5.26	7
215.94	31.65	12.08	12.06	7.37	5
215.96	33.98	12.16	12.13	9.61	5
215.99	36.31	12.22	12.19	11.76	4
216.01	38.64	12.27	12.25	14.01	4
216.03	40.97	12.32	12.30	16.27	4
216.05	43.30	12.37	12.35	18.53	4
215.69	22.84	11.43	11.41	0.00	Overtopping

Rating Curve Plot for Crossing: SW Boeckman Road



Site Data - Culvert West

Site Data Option: Culvert Invert Data

Inlet Station: 0.00 ft

Inlet Elevation: 212.63 ft

Outlet Station: 79.01 ft

Outlet Elevation: 211.00 ft

Number of Barrels: 1

Culvert Data Summary - Culvert West

Barrel Shape: Circular

Barrel Diameter: 1.50 ft

Barrel Material: Concrete

Embedment: 0.00 in

Barrel Manning's n: 0.0130

Culvert Type: Straight

Inlet Configuration: Mitered to Conform to Slope

Inlet Depression: NONE



Table 3 - Culvert Summary Table: Culvert West

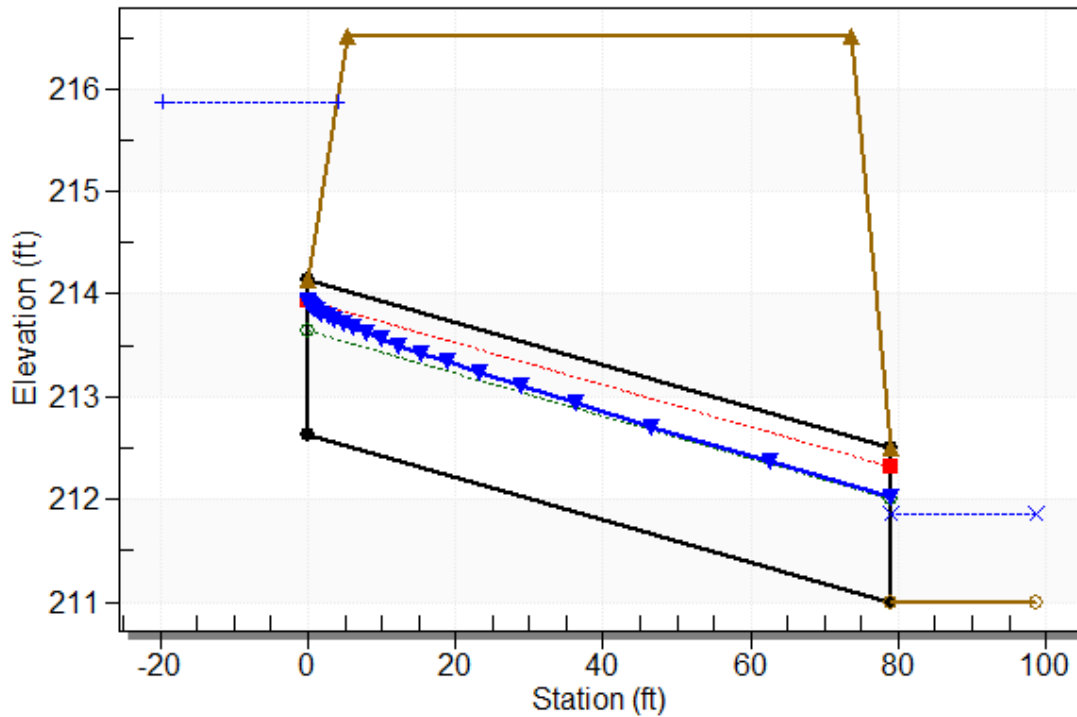
Total Discharge (cfs)	Culvert Discharge (cfs)	Headwater Elevation (ft)	Inlet Control Depth (ft)	Outlet Control Depth (ft)	Flow Type	Normal Depth (ft)	Critical Depth (ft)	Outlet Depth (ft)	Tailwater Depth (ft)	Outlet Velocity (ft/s)	Tailwater Velocity (ft/s)
20.00	10.02	215.19	2.563	1.292	5-S2n	0.892	1.218	0.907	0.728	8.973	3.085
22.33	11.14	215.58	2.952	1.691	5-S2n	0.958	1.276	0.974	0.771	9.165	3.186
24.66	11.74	215.80	3.172	1.917	5-S2n	0.995	1.303	1.010	0.813	9.284	3.280
26.80	11.88	215.86	3.228	1.974	5-S2n	1.004	1.309	1.019	0.849	9.310	3.359
29.32	12.00	215.90	3.273	2.021	5-S2n	1.011	1.314	1.026	0.890	9.333	3.447
31.65	12.08	215.94	3.305	2.053	5-S2n	1.016	1.317	1.030	0.926	9.350	3.522
33.98	12.16	215.96	3.333	2.082	5-S2n	1.021	1.320	1.034	0.961	9.366	3.594
36.31	12.22	215.99	3.356	2.106	5-S2n	1.024	1.323	1.039	0.994	9.371	3.662
38.64	12.27	216.01	3.378	2.128	5-S2n	1.028	1.324	1.043	1.026	9.373	3.726
40.97	12.32	216.03	3.398	2.149	5-S2n	1.031	1.326	1.046	1.057	9.379	3.788
43.30	12.37	216.05	3.416	2.168	5-S2n	1.034	1.328	1.049	1.088	9.384	3.847

\*\*\*\*\*  
 Straight Culvert  
 Inlet Elevation (invert): 212.63 ft, Outlet Elevation (invert): 211.00 ft  
 Culvert Length: 79.03 ft, Culvert Slope: 0.0206  
 \*\*\*\*\*

## Water Surface Profile Plot for Culvert: Culvert West

## Crossing - SW Boeckman Road, Design Discharge - 26.8 cfs

Culvert - Culvert West, Culvert Discharge - 11.9 cfs



## Site Data - Culvert East

Site Data Option: Culvert Invert Data

Inlet Station: 0.00 ft

Inlet Elevation: 212.64 ft

Outlet Station: 78.87 ft

Outlet Elevation: 211.06 ft

Number of Barrels: 1

## Culvert Data Summary - Culvert East

Barrel Shape: Circular

Barrel Diameter: 1.50 ft

Barrel Material: Concrete

Embedment: 0.00 in

Barrel Manning's n: 0.0130

Culvert Type: Straight

Inlet Configuration: Mitered to Conform to Slope

Inlet Depression: NONE

Table 4 - Culvert Summary Table: Culvert East

Total Discharge (cfs)	Culvert Discharge (cfs)	Headwater Elevation (ft)	Inlet Control Depth (ft)	Outlet Control Depth (ft)	Flow Type	Normal Depth (ft)	Critical Depth (ft)	Outlet Depth (ft)	Tailwater Depth (ft)	Outlet Velocity (ft/s)	Tailwater Velocity (ft/s)
20.00	9.99	215.19	2.553	1.331	5-S2n	0.899	1.217	0.913	0.728	8.872	3.085
22.33	11.11	215.58	2.942	1.730	5-S2n	0.966	1.275	0.982	0.771	9.062	3.186
24.66	11.71	215.80	3.162	1.955	5-S2n	1.004	1.302	1.017	0.813	9.194	3.280
26.80	11.86	215.86	3.218	2.012	5-S2n	1.013	1.308	1.027	0.849	9.208	3.359
29.32	11.98	215.90	3.263	2.059	5-S2n	1.021	1.313	1.035	0.890	9.223	3.447
31.65	12.06	215.94	3.295	2.092	5-S2n	1.026	1.316	1.040	0.926	9.234	3.522
33.98	12.13	215.96	3.323	2.120	5-S2n	1.030	1.319	1.045	0.961	9.244	3.594
36.31	12.19	215.99	3.346	2.144	5-S2n	1.034	1.322	1.049	0.994	9.253	3.662
38.64	12.25	216.01	3.368	2.166	5-S2n	1.038	1.323	1.052	1.026	9.261	3.726
40.97	12.30	216.03	3.388	2.187	5-S2n	1.041	1.325	1.055	1.057	9.268	3.788
43.30	12.35	216.05	3.406	2.206	5-S2n	1.044	1.327	1.058	1.088	9.275	3.847

\*\*\*\*\*

Straight Culvert

Inlet Elevation (invert): 212.64 ft, Outlet Elevation (invert): 211.06 ft

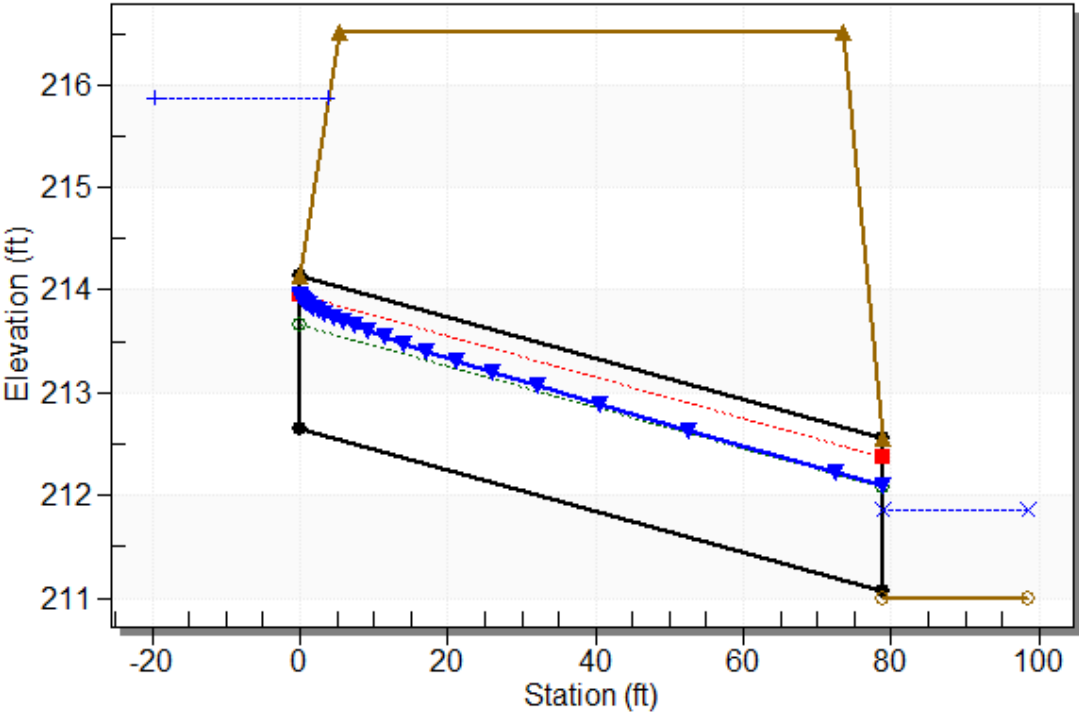
Culvert Length: 78.89 ft, Culvert Slope: 0.0200

\*\*\*\*\*

Water Surface Profile Plot for Culvert: Culvert East

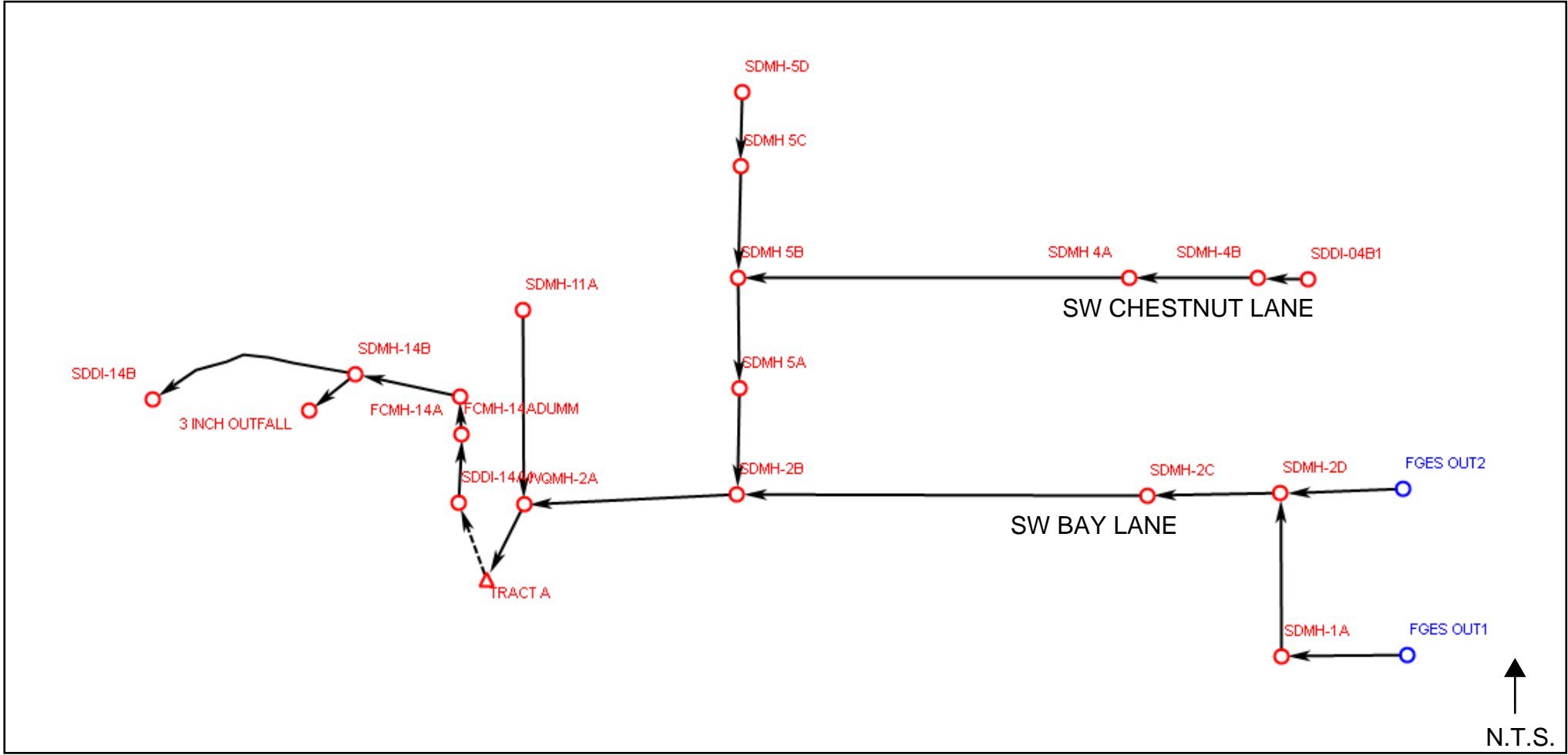
Crossing - SW Boeckman Road, Design Discharge - 26.8 cfs

Culvert - Culvert East, Culvert Discharge - 11.9 cfs





# MORGAN FARM PHASE 1

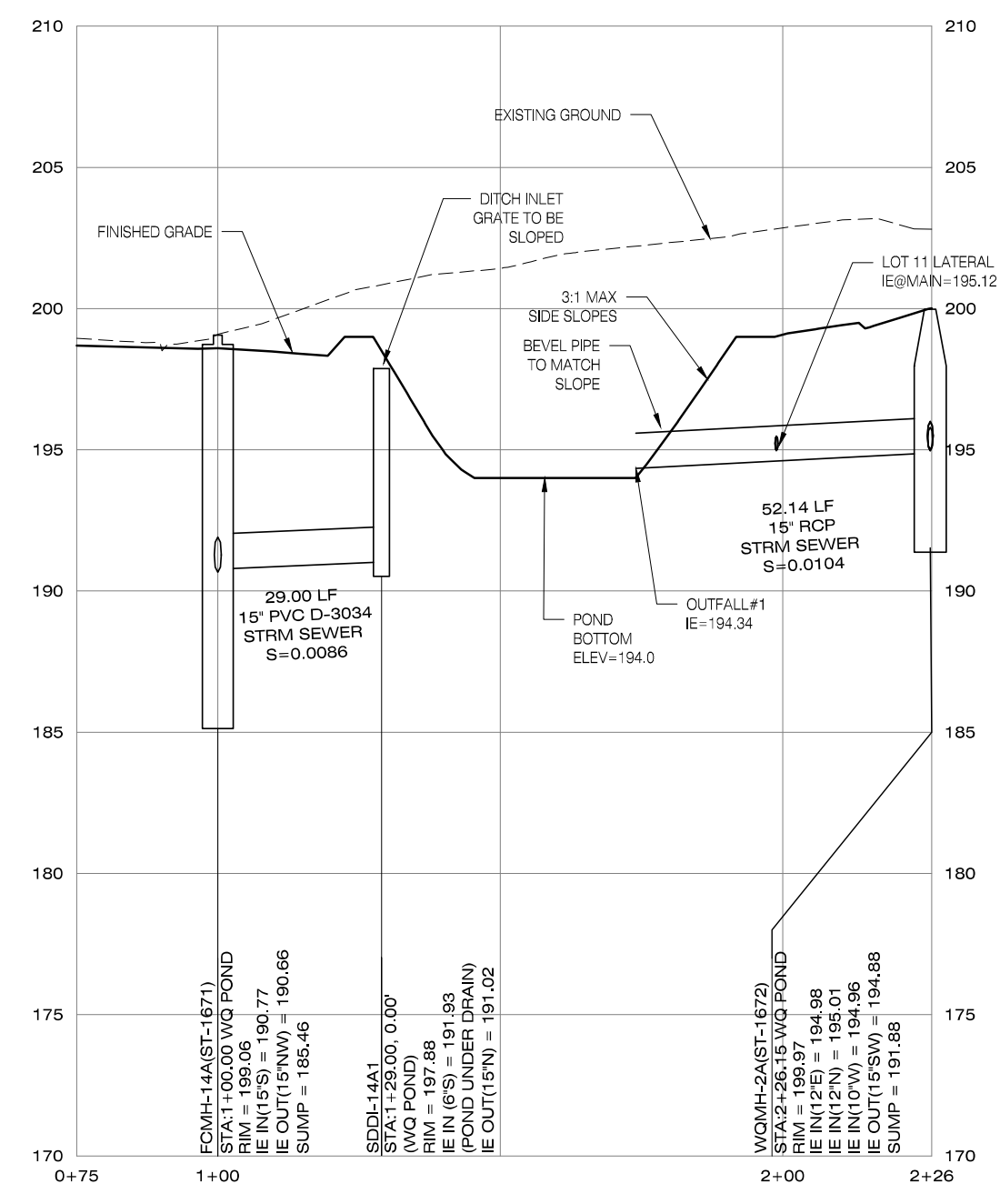
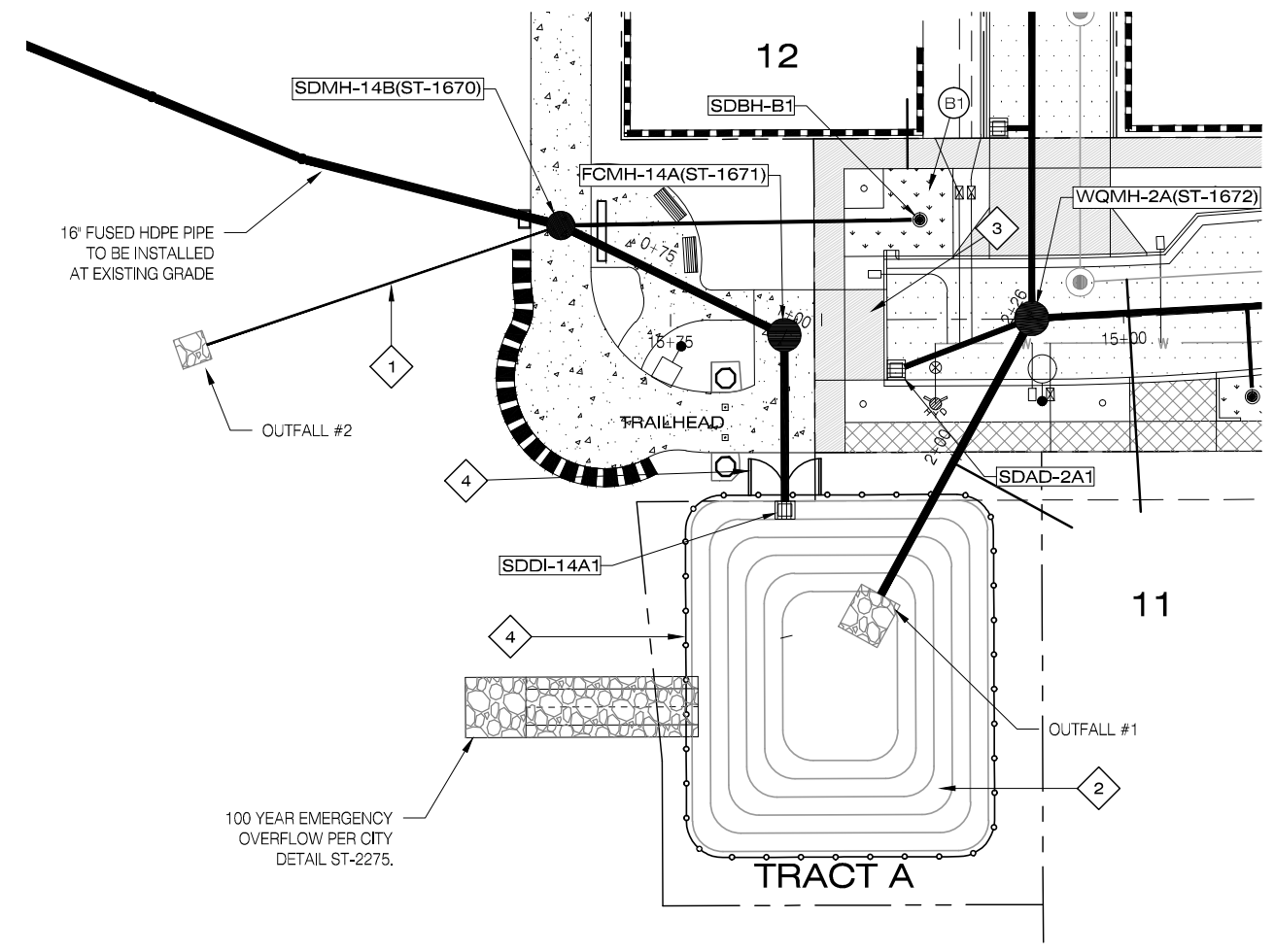
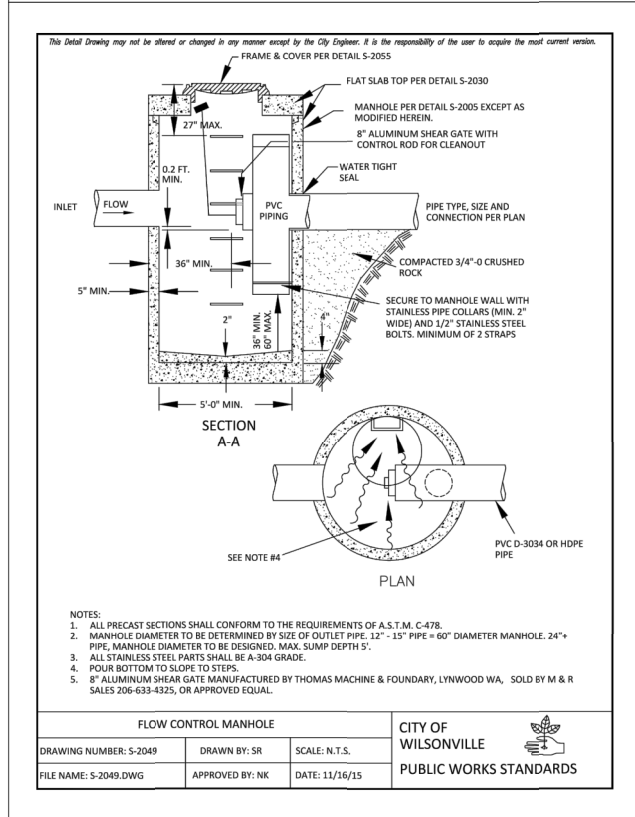
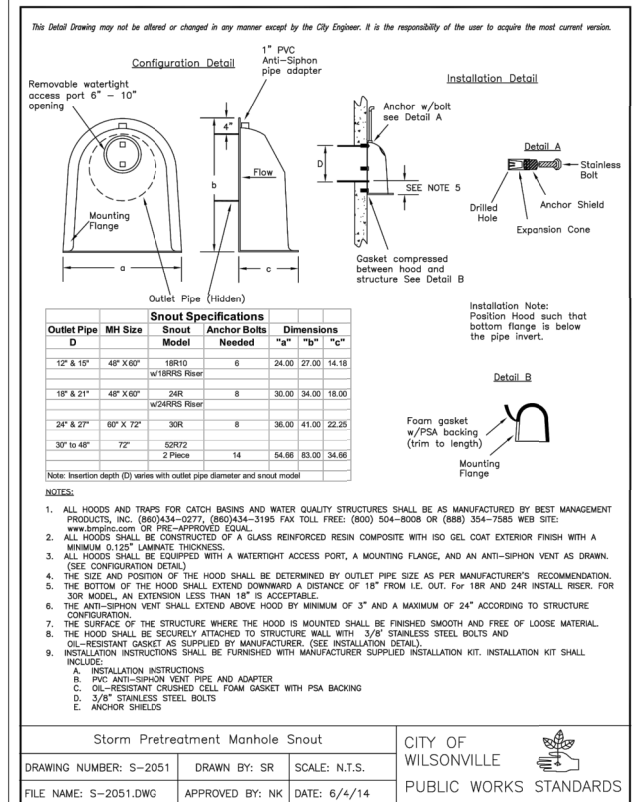
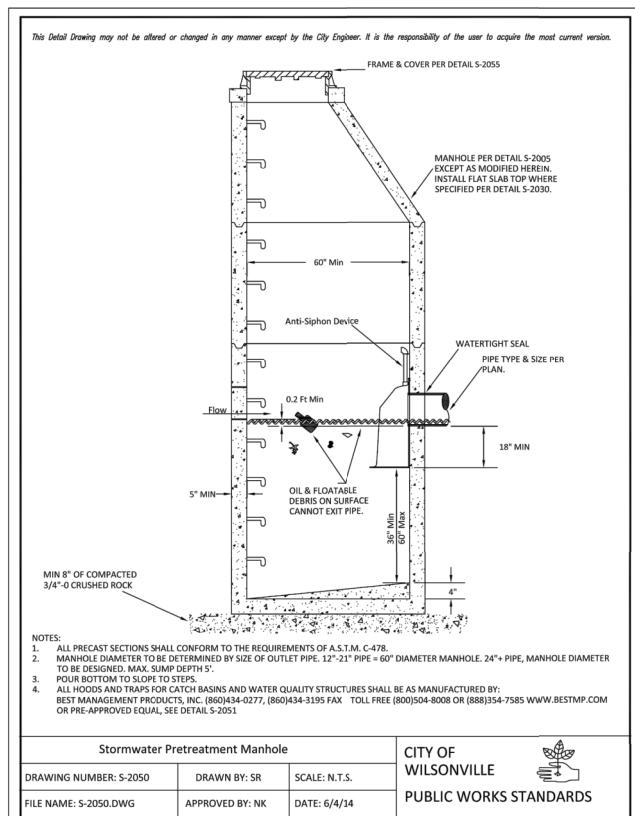


**XPSTORM HYDRAULIC LAYOUT: MORGAN FARM PHASE 1 STORM SYSTEM**

XPSTORM RUNOFF DATA - MORGAN FARM PHASE 1 - HYDRAULIC ANALYSIS						
DOWNSTREAM STORM ANALYSIS						
Node Name	Runoff Parameters (Input)					Output
	Area	Imp	CN	Tc	Precip	Peak
	ac	%		min.	in	cfs
<b>25-YEAR</b>						
SDMH-1A	0.18	67.4	74	5	3.90	0.13
SDMH-2D	0.20	67.4	74	5	3.90	0.15
SDMH-2B	0.56	67.4	74	5	3.90	0.41
WQMH-2A	0.03	67.4	74	5	3.90	0.02
SDMH-4B	0.26	67.4	74	5	3.90	0.19
SDMH 4A	1.09	67.4	74	5	3.90	0.80
SDMH 5B	0.29	67.4	74	5	3.90	0.21
SDMH 5A	0.34	67.4	74	5	3.90	0.25
SDMH-2C	1.59	67.4	74	5	3.90	1.16
SDMH-11A	0.63	67.4	74	5	3.90	0.46
SDMH 5C	0.43	67.4	74	5	3.90	0.31
SDMH-5D	0.15	67.4	74	5	3.90	0.11
SDMH-14B	0.06	67.4	74	5	3.90	0.04
FGES OUT1	0.62	100	98	10	3.90	0.61
	0.17	0	80	10		
FGES OUT2	2.49	100	98	10	3.90	3.52
	3.15	0	80	10		

XPSTORM CONVEYANCE DATA - MORGAN FARM PHASE 1																			
DOWNSTREAM STORM ANALYSIS - 25 YEAR ANALYSIS																			
Location			Conduit Properties			Conduit Results						Conduit Profile							
Link	Station		Diameter	Length	Slope	Design Capacity	Qmax/ Qdesign	Max Flow	Max Velocity	Max Flow Depth	y/d0	US Ground Elev.	DS Ground Elev.	US IE	DS IE	US Freeboard	DS Freeboard	US HGL	DS HGL
	From	To																	
	ft	ft	%	cfs	cfs	ft/s	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft
Link-110	SDMH-1A	SDMH-2D	1.00	111.21	0.5	2.48	0.31	0.76	1.88	1.17	1.17	219.39	220.42	214.30	213.56	4.42	5.49	214.97	214.93
Link-119	SDMH-2D	SDMH-2C	1.00	89.13	0.9	3.33	1.31	4.38	5.75	1.37	1.37	220.42	218.48	213.56	212.58	5.49	5.18	214.93	213.30
Link-112	SDMH-2B	WQMH-2A	1.00	143.23	3.1	6.32	1.22	7.72	9.57	6.19	6.19	210.03	199.97	199.48	191.88	4.36	0.69	205.67	199.28
Link-113	WQMH-2A	TRACT A	1.25	52.14	1.0	6.57	1.25	8.19	6.57	4.40	3.52	199.97	199.00	191.88	191.93	0.69	0.53	199.28	198.47
Link-124	TRACT A	SDDI-14A1	0.50	10.00	0.0	0.02	158.78	2.82	13.55	6.54	13.07	199.00	197.88	191.93	191.02	0.53	1.45	198.47	196.43
Link-114	SDDI-04B1	SDMH-4B	1.00	28.50	1.0	3.53	0.00	0.00	0.00	0.00	0.00	221.10	220.26	213.28	212.80	7.82	7.32	213.28	212.94
Link-115	SDMH-4B	SDMH 4A	1.00	88.25	1.7	4.66	0.04	0.19	2.90	0.14	0.14	220.26	219.76	212.80	211.09	7.32	8.40	212.94	211.36
Link-116	SDMH 4A	SDMH 5B	1.00	266.75	3.0	6.15	0.16	0.99	5.56	2.84	2.84	219.76	210.55	211.09	202.95	8.40	4.57	211.36	205.99
Link-117	SDMH 5B	SDMH 5A	1.00	73.22	2.1	5.22	0.31	1.61	5.52	4.47	4.47	210.55	208.36	202.95	201.18	4.57	2.51	205.99	205.85
Link-118	SDMH 5A	SDMH-2B	1.00	73.11	2.1	5.10	0.36	1.84	4.40	5.99	5.99	208.36	210.03	201.18	199.48	2.51	4.36	205.85	205.67
Link-120	SDMH-2C	SDMH-2B	1.00	278.87	3.9	7.04	0.78	5.51	9.38	3.97	3.97	218.48	210.03	212.58	199.48	5.18	4.36	213.30	205.67
Link-121	SDMH-11A	WQMH-2A	1.00	167.84	2.6	5.70	0.08	0.46	1.84	4.26	4.26	205.35	199.97	199.31	191.88	5.85	0.69	199.50	199.28
Link-122	SDMH 5C	SDMH 5B	1.00	119.01	4.6	7.60	0.06	0.42	4.95	2.84	2.84	215.27	210.55	208.57	202.95	6.54	4.57	208.73	205.99
Link-123	SDMH-5D	SDMH 5C	1.00	38.49	1.1	3.72	0.03	0.11	2.11	0.12	0.12	215.75	215.27	209.39	208.57	6.24	6.54	209.51	208.73
Link-125	SDDI-14A1	FCMH-14ADUMM	1.25	29.00	0.0	6.00	1.35	8.08	6.45	5.41	4.33	197.88	199.06	191.02	185.46	1.45	3.07	196.43	195.99
Link-127	FCMH-14A	SDMH-14B	1.25	41.24	1.1	6.75	1.20	8.07	6.72	1.27	1.01	199.06	198.78	185.46	189.88	7.13	8.45	191.93	190.33
Link-128	SDMH-14B	3 INCH OUTFALL	0.08	10.00	0.5	0.00	3.06	0.01	1.87	0.45	5.41	198.78	190.33	189.88	189.83	8.45	0.42	190.33	189.91
Link-130	SDMH-14B	SDDI-14B	1.33	290.50	18.5	32.80	0.25	8.10	19.54	0.45	0.34	198.78	139.17	189.88	136.07	8.45	2.65	190.33	136.52
Link-131	FGES OUT1	SDMH-1A	1.00	60.00	1.0	3.56	0.17	0.61	3.36	0.47	0.47	220.00	219.39	215.10	214.30	4.62	4.42	215.38	214.97
Link-132	FGES OUT2	SDMH-2D	1.00	76.42	1.0	3.55	0.99	3.51	5.02	1.17	1.17	219.00	220.42	214.52	213.56	3.39	5.49	215.61	214.93





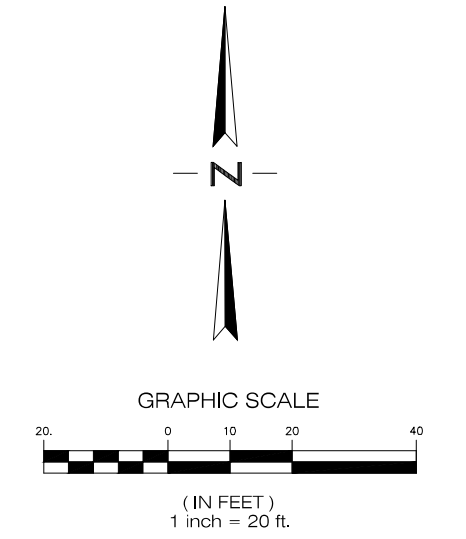
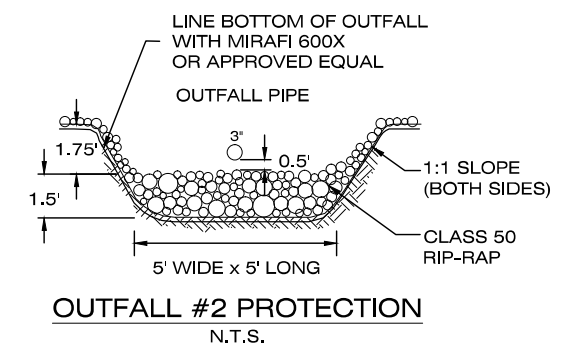
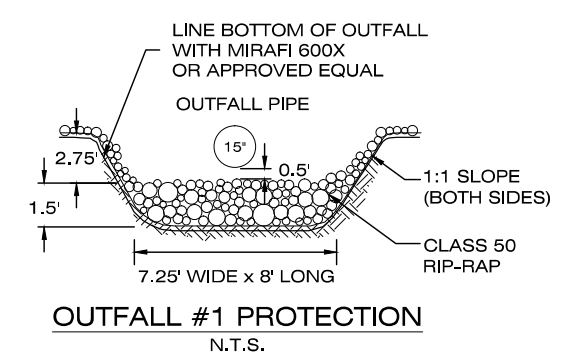
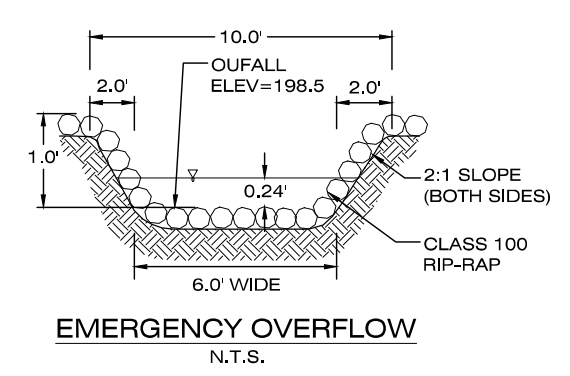
PUBLIC CATCH BASIN DATA

TAG	TYPE	STATION	RIM ELEV	IE IN	IE OUT	SLOPE	PIPE
SDBH-B1	BEEHIVE INLET	15+33.65 SW BAY LN	197.37		193.39	0.0240	59.47 LF 6" PVC D-3034

- CONSTRUCTION NOTES
- 61.86 LF 3" HDPE  
IE IN = 189.90  
IE OUT = 188.21  
S = 0.0273
  - CONSTRUCT WATER QUALITY AND DETENTION POND PER CITY DETAIL 6060.
  - INSTALL 15' WIDE DRIVEWAY ACCESS AND CONCRETE PAD TO FLOW-CONTROL MANHOLE.
  - INSTALL 4' HIGH CHAIN-LINK FENCE WITH 12' WIDE ACCESS GATE. SEE LANDSCAPE PLANS FOR FENCING DETAILS.

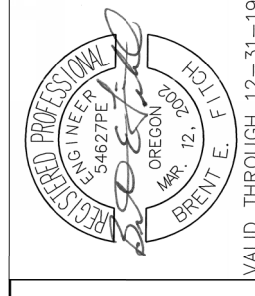
FLOW CONTROL MANHOLE DETAILS

INLET PIPE ELEVATION	190.77
INLET PIPE DIAMETER (IN.)	15 IN.
OUTLET PIPE ELEVATION	190.66
OUTLET PIPE DIAMETER (IN.)	15 IN.
LOWER ORIFICE INVERT ELEVATION	189.51
LOWER ORIFICE DIAMETER (IN.)	2.7 IN.
UPPER ORIFICE ELEVATION	194.21
UPPER ORIFICE DIAMETER (IN.)	6.8 IN.
OVERFLOW WEIR ELEVATION	195.51
OVERFLOW WEIR LENGTH (FT)	6.3 FT. (24" VERTICAL PIPE)



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WILSONVILLE, OREGON 97123  
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**PDR**  
PIONEER DESIGN GROUP, INC.



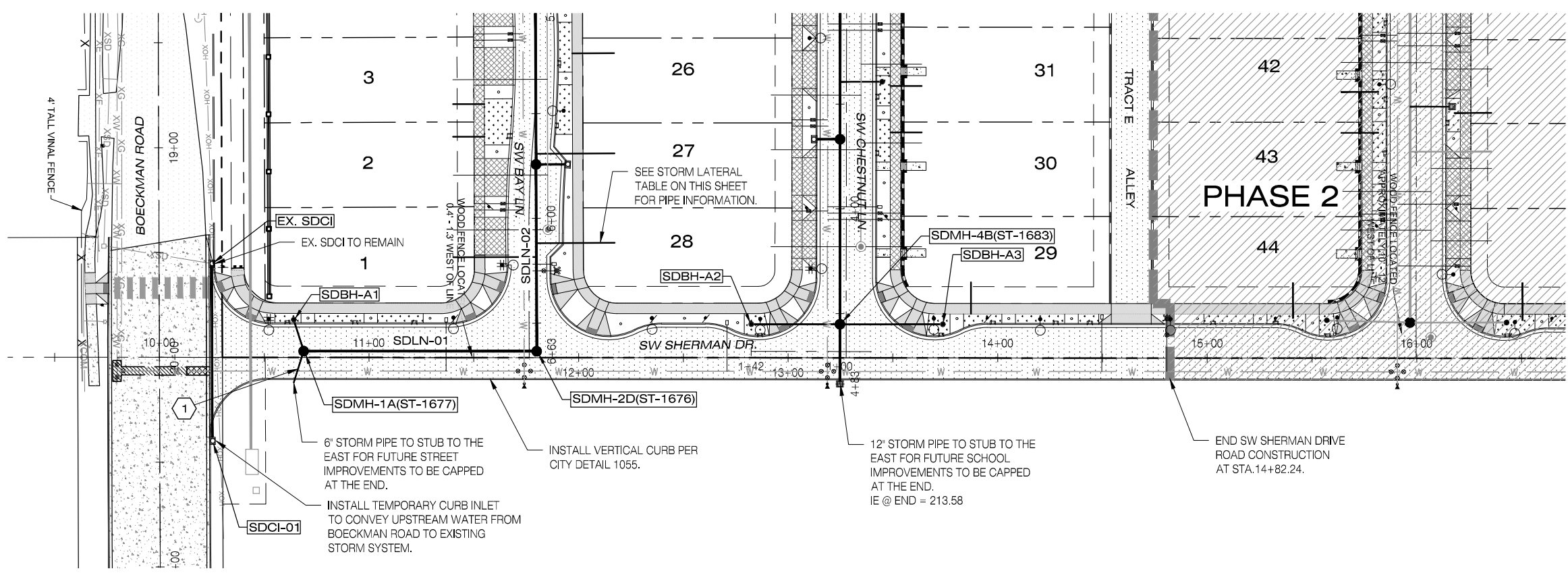
WQ AND DETENTION POND -  
PLAN AND PROFILE

MORGAN FARM - PHASE 1 - AS BUILT  
CITY OF WILSONVILLE, OREGON

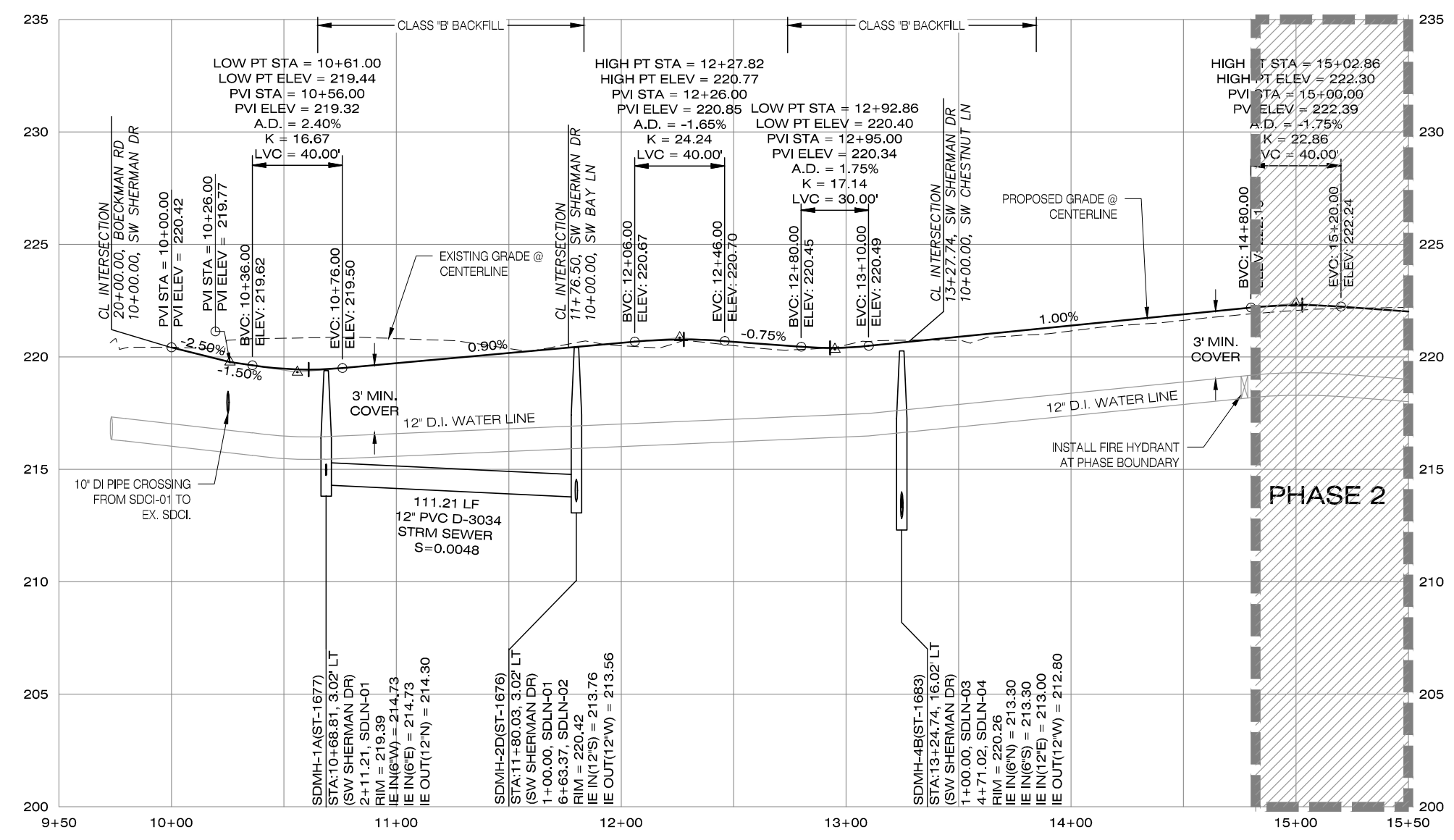
RECORD DRAWINGS  
DATE 04/24/2019 THESE RECORD DRAWINGS HAVE BEEN PREPARED BASED ON FIELD OBSERVATION AND SURVEYED INFORMATION

No.	Date	Revision	By	Designed By	Date	TCC	Drawn By	Date	TCC	Reviewed By	Date	REF.
	04/19				04/19			04/19				

Project: MORGAN FARM - PH.1  
No. 321-002  
Type AS-BUILTS  
Sheet **C4.3** of **52**



SW SHERMAN DR / SDLN-01 / SDLN-04 (PUBLIC) PLAN  
SCALE: 1"=40' (H)



SW SHERMAN DR / SDLN-01 / SDLN-04 (PUBLIC) PROFILE  
SCALE: 1"=40' (H), 1"=4' (V)

LEGEND

- PROPOSED SIDEWALK WITH FACILITY PERMIT
- PROPOSED SIDEWALK (BY HOMEBUILDER)
- PROPOSED CONCRETE CURB AND GUTTER
- PROPOSED STORM LINE & MANHOLE
- PROPOSED SANITARY LINE & MANHOLE
- PROPOSED WATERLINE & VALVE
- PROPOSED PAVEMENT

CONSTRUCTION NOTES

- 1 15.73 LF - 6" D-3034 STORM LINE FOR FUTURE BEEHIVE.  
IE @ MH = 214.82  
IE @ PLUG = 215.00  
S = 0.0114

STORM LATERAL DATA

LOT NO.	D.S. M.H.	DIST. FROM D.S. M.H.	LENGTH	INV. EL. @ MAINLINE	INV. EL. @ PLUG	SLOPE	DEPTH @ PLUG
29	LIDA	--	15.0'	220.74	220.89	0.0100	0.45'

LIDA STRUCTURE DATA

TAG	TYPE	STATION	D.S. M.H.	DIST. FROM D.S. M.H.	RIM ELEV	IE OUT	SLOPE	PIPE
SDBH-A1	Beehive Inlet	10+64.07 18.00' LT SW SHERMAN	1A	0.00	218.97	215.18	0.0286	15.73 LF 6" PVC D-3034
SDBH-A2	Beehive Inlet	12+82.39 18.00' LT SW SHERMAN	4B	0.00	220.04	215.79	0.0588	42.33 LF 6" PVC D-3034
SDBH-A3	Beehive Inlet	13+73.79 18.00' LT SW SHERMAN	4B	0.00	220.68	216.46	0.0644	49.05 LF 6" PVC D-3034

PUBLIC CATCH BASIN DATA

TAG	TYPE	STATION	TC ELEV	IE IN	IE OUT	SLOPE	PIPE
EX. SDCI	Existing Inlet	19+55.45 23.75' LT BOECKMAN	219.81*	217.06	216.96*	--	--
SDCI-01	CG-30	20+39.94 23.75' LT BOECKMAN	221.46	--	218.01	0.0113	84.49 LF 10" DUCTILE IRON PIPE

\*EXISTING ELEVATION

CONSTRUCTION NOTES

ALL 6" STORM LATERALS THAT OUTFALL INTO STREET SIDE SWALES WILL BE DUCTILE IRON PIPE AND INSTALLED AT S=0.0100 TO MAXIMIZE COVER AT THE END OF THE PIPE.

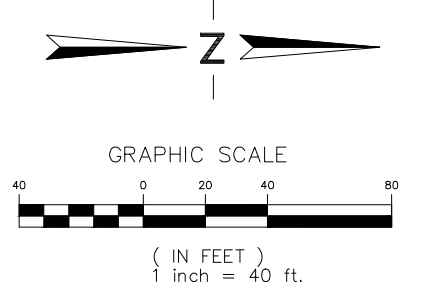
STORM SEWER NOTES

UNLESS OTHERWISE NOTED, ALL LATERALS ARE TO BE 6" PVC (ASTM D3034) WITH A MINIMUM SLOPE OF 0.0100. LATERAL CONNECTIONS TO MAIN SEWER LINE TO BE MADE WITH MANUFACTURED TEES.

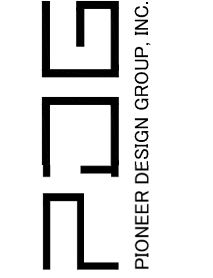
ALL 2" x 4" STORM SERVICE CONNECTION MARKERS TO BE COLOR CODED WHITE. CONTRACTOR TO NOTE LENGTH OF BOARD USED ON EACH MARKER.

BACKFILL NOTE: PIPES UNDER PAVED SURFACES REQUIRE GRANULAR BACKFILL. FOR PIPES OUTSIDE PAVEMENT, NATIVE BACKFILL IS PERMITTED, UNLESS OTHERWISE NOTED.

THE CONTRACTOR SHALL FIELD VERIFY THE SIZE, LOCATION & DEPTH OF EXISTING UTILITIES PRIOR TO CONSTRUCTION.



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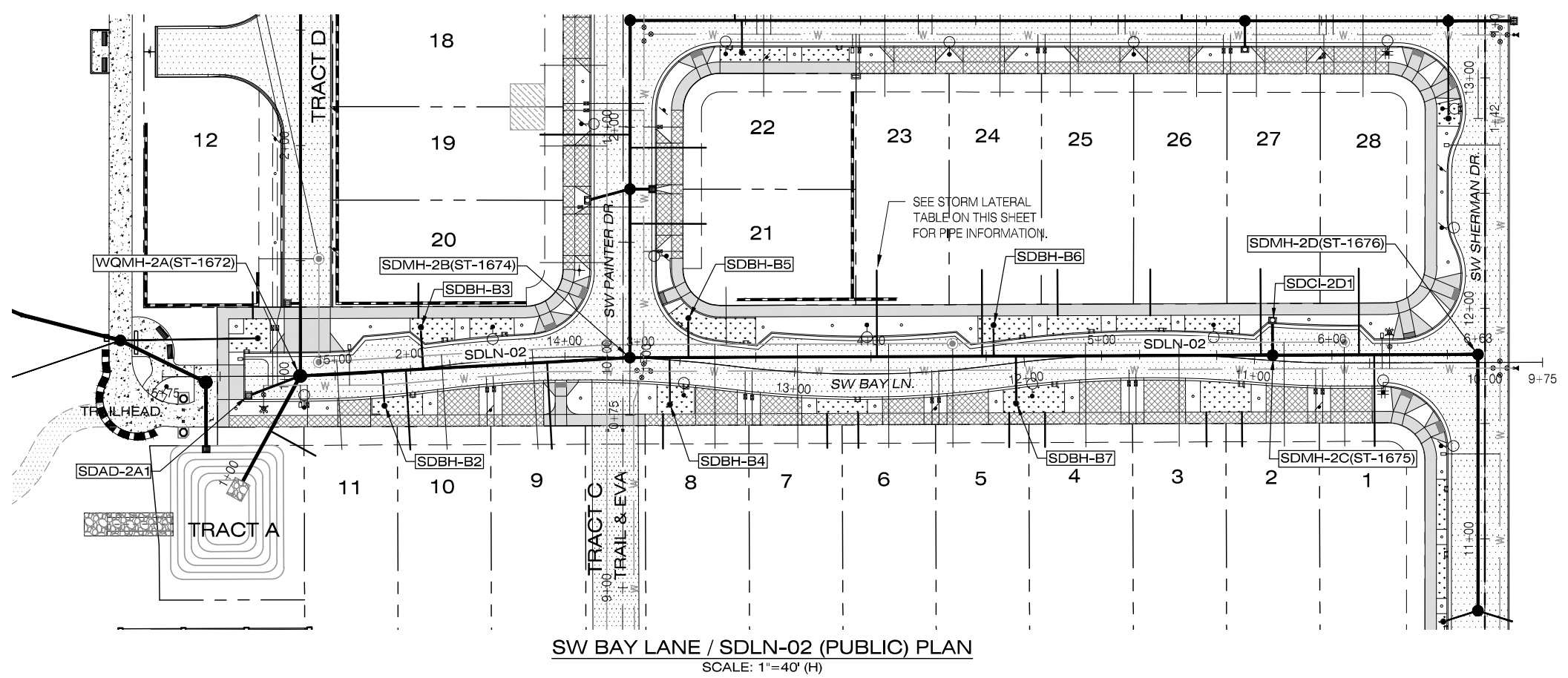
SHERMAN DRIVE- SDLN-01- SDLN-04  
PLAN AND PROFILE

MORGAN FARM - PHASE 1 - AS BUILTS  
CITY OF WILSONVILLE, OREGON

By	Date	Revision
Designed by	04/19	TCC
Drawn by	04/19	TCC
Reviewed by	04/19	BEF
Project No.	321-002	REF.
Horiz. Scale:	1"=40'	
Vert. Scale:	1"=4'	

**RECORD DRAWINGS**  
DATE 04/24/2019 THESE RECORD DRAWINGS HAVE BEEN PREPARED BASED ON FIELD OBSERVATION AND SURVEYED INFORMATION

Project  
MORGAN FARM - PH.1  
No.  
321-002  
Type  
AS-BUILTS  
Sheet



SW BAY LANE / SDLN-02 (PUBLIC) PLAN  
SCALE: 1"=40' (H)

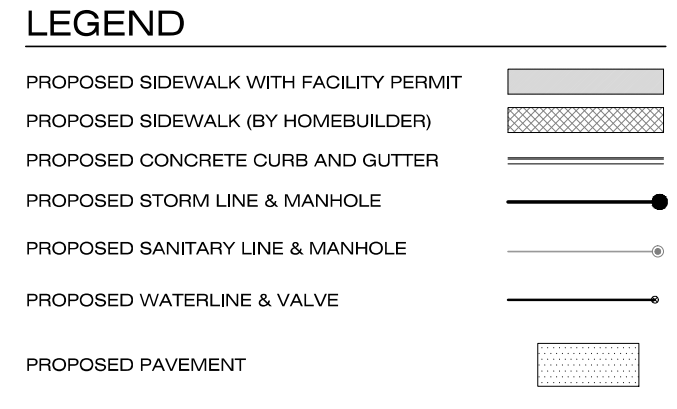
**STORM SEWER NOTES**

UNLESS OTHERWISE NOTED, ALL LATERALS ARE TO BE 6" PVC (ASTM D3034) WITH A MINIMUM SLOPE OF 0.0100. LATERAL CONNECTIONS TO MAIN SEWER LINE TO BE MADE WITH MANUFACTURED TEES.

ALL 2'x 4' STORM SERVICE CONNECTION MARKERS TO BE COLOR CODED WHITE. CONTRACTOR TO NOTE LENGTH OF BOARD USED ON EACH MARKER.

BACKFILL NOTE: PIPES UNDER PAVED SURFACES REQUIRE GRANULAR BACKFILL. FOR PIPES OUTSIDE PAVEMENT, NATIVE BACKFILL IS PERMITTED, UNLESS OTHERWISE NOTED.

THE CONTRACTOR SHALL FIELD VERIFY THE SIZE, LOCATION & DEPTH OF EXISTING UTILITIES PRIOR TO CONSTRUCTION.



**STORM LATERAL DATA**

LOT NO.	D.S. M.H.	DIST. FROM D.S. M.H.	LENGTH	INV. EL. @ MAINLINE	INV. EL. @ PLUG	SLOPE	DEPTH @ PLUG
1	2C	44.12'	39.5'	213.42	214.71	0.0327	5.0'
2	LIDA	--	15.0'	217.70	217.85	0.0100	0.6'
3	LIDA	--	15.0'	217.44	217.59	0.0100	0.6'
4	LIDA	--	15.0'	216.15	216.30	0.0100	5.0'
5	LIDA	--	15.0'	215.85	216.00	0.0100	0.6'
6	LIDA	--	15.0'	214.07	214.22	0.0100	0.6'
7	LIDA	--	15.0'	213.50	213.65	0.0100	0.6'
8	LIDA	--	15.0'	210.37	210.52	0.0100	0.6'
9	2A	107.24'	37.7'	198.60	203.42	0.1278	5.0'
10	2A	45.82'	34.5'	196.67	199.89	0.0933	5.0'
11	POND	24.91'	22.4'	194.97	198.50	0.1571	3.0'
20	LIDA	--	15.0'	204.22	204.37	0.0100	3.8'
23	2B	107.25'	37.5'	206.13	209.70	0.0952	5.0'
24	2B	152.85'	37.5'	207.91	211.67	0.1003	5.0'
25	LIDA	--	20.0'	216.45	216.65	0.0100	5.0'
26	LIDA	--	20.0'	217.10	217.30	0.0100	0.6'
27	2B	273.75'	37.5'	212.63	213.72	0.0291	5.0'
28	2C	37.53'	37.5'	213.36	214.58	0.0326	5.0'

**PUBLIC CATCH BASIN DATA**

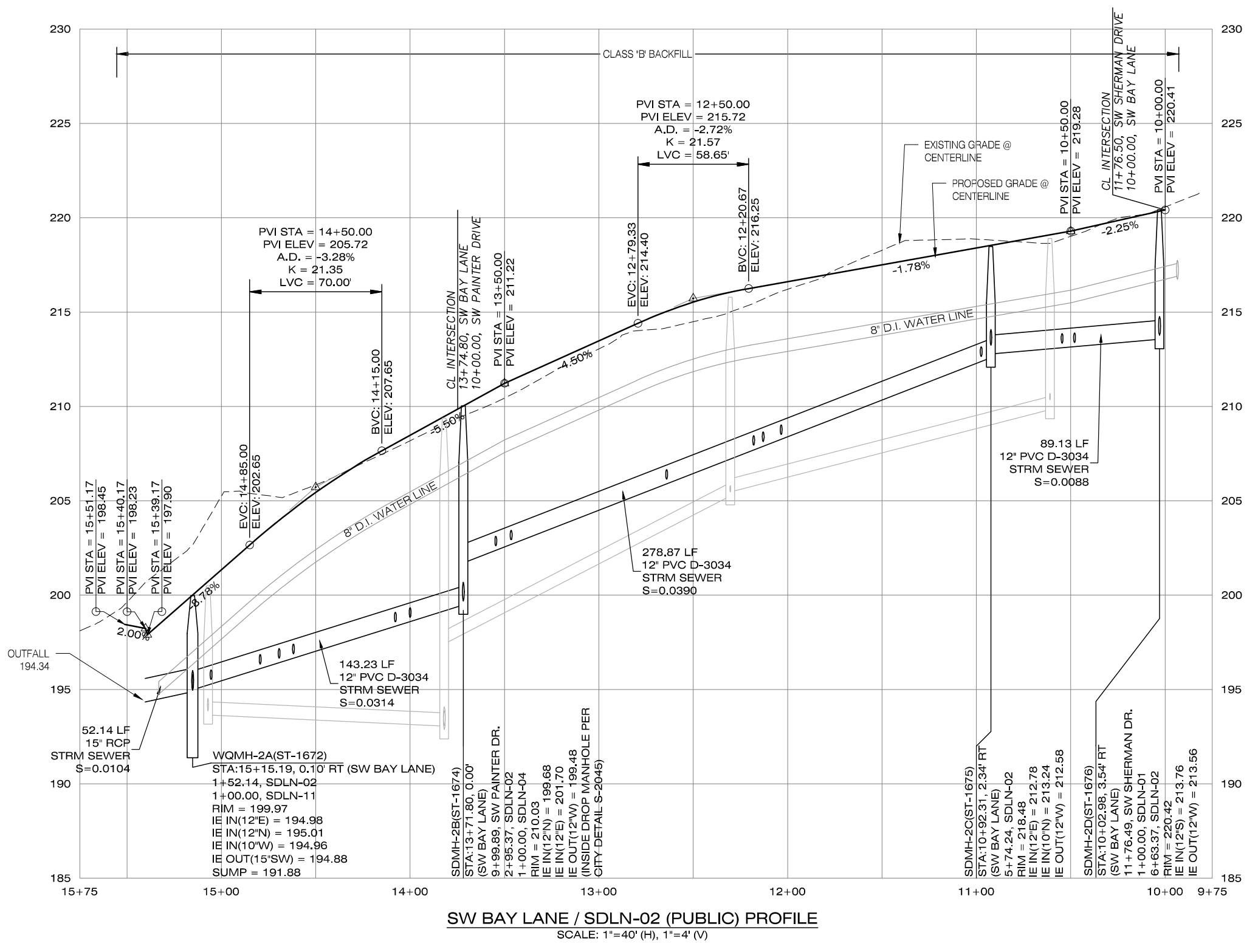
TAG	TYPE	STATION	TC ELEV	IE IN	IE OUT	SLOPE	PIPE
SDAD-2A1	AREA DRAIN	15+37.66 10.00' LT SW BAY LN	197.62'	--	195.60	0.0267	24.01 LF 10" PVC C900
SDCI-2D1	CG-30	10+92.16 16.00' RT SW BAY LN	218.67'	--	215.04	0.1194	15.08 LF 10" PVC C900

**LIDA STRUCTURE DATA**

TAG	TYPE	STATION	D.S. M.H.	DIST. FROM D.S. M.H.	RIM ELEV	IE OUT	SLOPE	PIPE
SDBH-B2	Beehive Inlet	14+79.43 14.50' LT SW BAY LN	2A	35.73	202.62	198.37	0.1347	14.98 LF 6" PVC D-3034
SDBH-B3	Beehive Inlet	14+61.80 17.64' RT SW BAY LN	2A	53.38	204.39	200.55	0.2007	18.15 LF 6" PVC D-3034
SDBH-B4	Beehive Inlet	13+54.52 19.46' LT SW BAY LN	2B	17.25	210.68	206.30	0.1790	20.54 LF 6" PVC D-3034
SDBH-B5	Beehive Inlet	13+46.31 20.44' RT SW BAY LN	2B	25.43	210.66	206.00	0.1801	16.98 LF 6" PVC D-3034
SDBH-B6	Beehive Inlet	12+13.48 17.34' RT SW BAY LN	2B	157.85	216.13	212.04	0.2921	13.46 LF 6" PVC D-3034
SDBH-B7	Beehive Inlet	12+03.75 17.59' LT SW BAY LN	2B	167.50	215.98	211.91	0.1668	20.54 LF 6" PVC D-3034

**CONSTRUCTION NOTES**

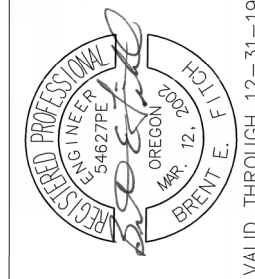
ALL 6" STORM LATERALS THAT OUTFALL INTO STREET SIDE SWALES WILL BE DUCTILE IRON PIPE AND INSTALLED AT S=0.0100 TO MAXIMIZE COVER AT THE END OF THE PIPE.



SW BAY LANE / SDLN-02 (PUBLIC) PROFILE  
SCALE: 1"=40' (H), 1"=4' (V)

9000 SW WASHINGTON SQUARE RD.  
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**PDR**  
PIONEER DESIGN GROUP, INC.



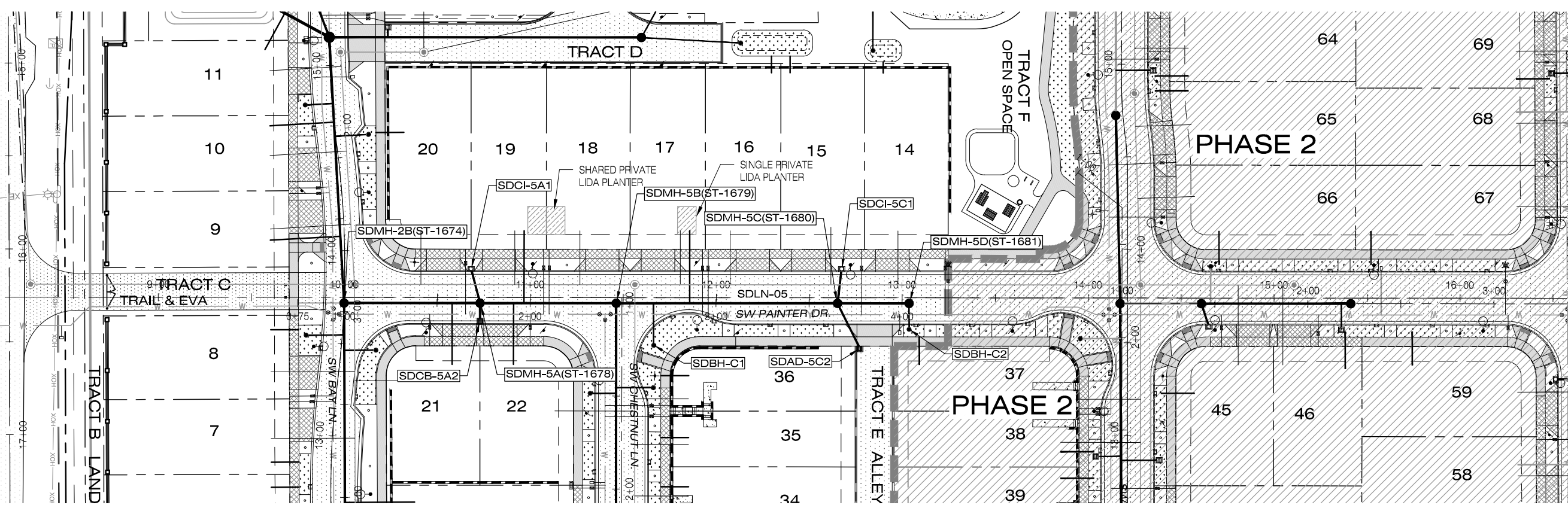
**BAY LANE - SDLN-02  
PLAN AND PROFILE**

MORGAN FARM - PHASE 1 - AS BUILT  
CITY OF WILSONVILLE, OREGON

**RECORD DRAWINGS**  
DATE 04/24/2019 THESE RECORD DRAWINGS HAVE BEEN PREPARED BASED ON FIELD OBSERVATION AND SURVEYED INFORMATION.

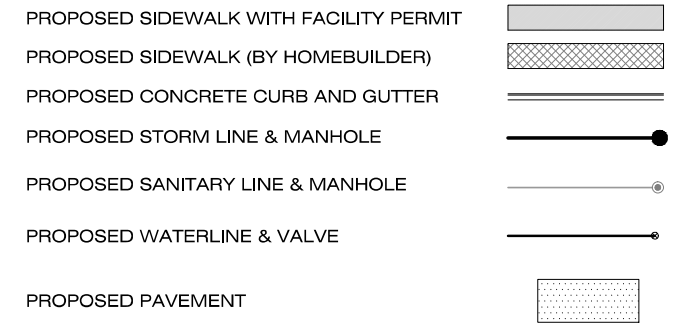
No.	Date	Revision	By	Designed by	TCC	Date	Drawn by	TCC	Date	Reviewed by	REF.	Date
	04/19					04/19						04/19

Project: MORGAN FARM - PH.1  
No.: 321-002  
Type: AS-BUILTS  
Sheet: **C5.1** of **52**



PAINTER DR / SDLN-05 (PUBLIC) PLAN  
SCALE: 1"=40' (H)

**LEGEND**



**STORM LATERAL DATA**

LOT NO.	D.S. M.H.	DIST. FROM D.S. M.H.	LENGTH	INV. EL. @ MAINLINE	INV. EL. @ PLUG	SLOPE	DEPTH @ PLUG
17	5B	39.44'	39.0'	205.20	206.69	0.0383	6.0'
19	5A	23.65'	39.0'	202.14	203.39	0.0322	6.0'
21	2B	58.11'	33.0'	201.12	203.99	0.0869	5.0'
22	5A	18.00'	33.0'	202.02	204.13	0.0641	5.0'
37	LIDA	--	15.0'	215.25	215.40	0.0100	0.9'

NOTE: STORMWATER FOR LOTS 18 & 19 TO BE CONVEYED TO A SHARED LATERAL.

**PUBLIC CATCH BASIN DATA**

TAG	TYPE	STATION	TC ELEV	IE IN	IE OUT	SLOPE	PIPE
SDAD-5C2	AREA DRAIN	12+77.35 26.00' RT PAINTER DR	215.43	--	210.88	0.0571	27.34 LF 10" PVC C900
SDCB-5A2	CG-2	10+73.00 12.75' RT PAINTER DR	208.09*	--	202.64	0.0985	9.75 LF 10" PVC C900
SDCI-5A1	CG-30	10+68.15 14.00' LT PAINTER DR	208.63	--	204.33	0.1395	18.99 LF 10" PVC C900
SDCI-5C1	CG-30	12+65.23 14.00' LT PAINTER DR	215.40	--	210.75	0.0746	18.50 LF 10" PVC C900

\*FLOW LINE ELEVATION IN GUTTER.

**LIDA STRUCTURE DATA**

TAG	TYPE	STATION	D.S. M.H.	DIST. FROM D.S. M.H.	RIM ELEV	IE OUT	SLOPE	PIPE
SDBH-C1	Beehive Inlet	11+66.36 17.00' RT PAINTER DR	5B	20.14	210.02	205.82	0.0663	22.68 LF 6" PVC D-3034
SDBH-C2	Beehive Inlet	13+03.72 13.81' RT PAINTER DR	5D	0.00	215.41	211.14	0.0736	14.00 LF 6" PVC D-3034

**CONSTRUCTION NOTES**

- ALL 6" STORM LATERALS THAT OUTFALL INTO STREET SIDE SWALES WILL BE DUCTILE IRON PIPE AND INSTALLED AT S=0.0100 TO MAXIMIZE COVER AT THE END OF THE PIPE.
- CONTRACTOR TO STEEPEN CROSS SLOPE OF STREET IN FRONT OF SDCB-5A2 TO MAKE THE LOW POINT OF THE GUTTER LINE AT THE CATCH BASIN.

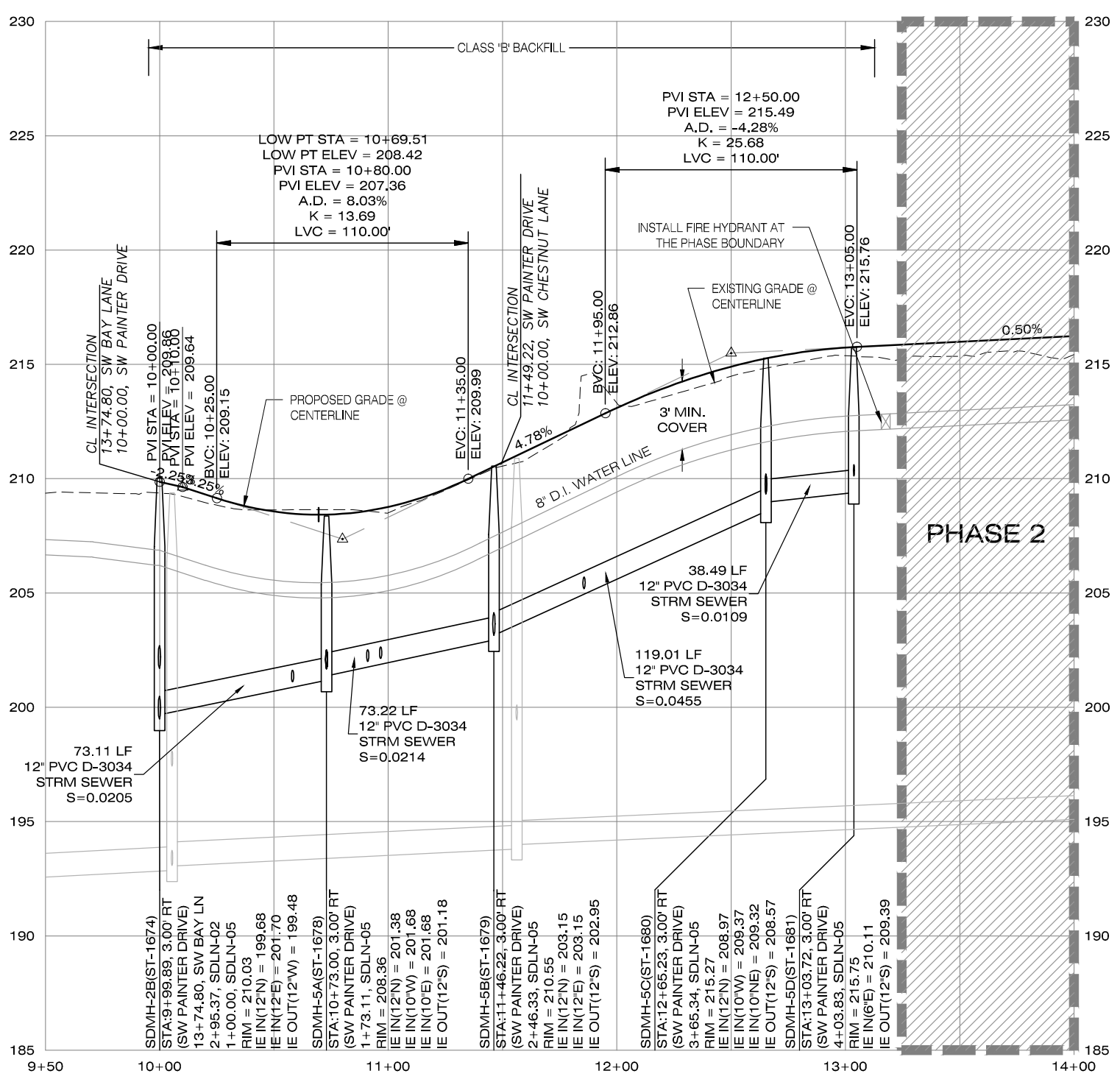
**STORM SEWER NOTES**

UNLESS OTHERWISE NOTED, ALL LATERALS ARE TO BE 6" PVC (ASTM D3034) WITH A MINIMUM SLOPE OF 0.0100. LATERAL CONNECTIONS TO MAIN SEWER LINE TO BE MADE WITH MANUFACTURED TEES.

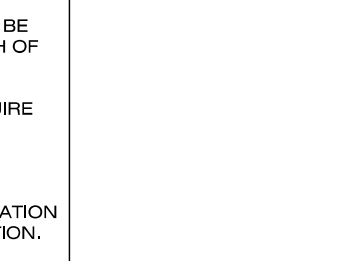
ALL 2"x 4" STORM SERVICE CONNECTION MARKERS TO BE COLOR CODED WHITE. CONTRACTOR TO NOTE LENGTH OF BOARD USED ON EACH MARKER.

BACKFILL NOTE: PIPES UNDER PAVED SURFACES REQUIRE GRANULAR BACKFILL. FOR PIPES OUTSIDE PAVEMENT, NATIVE BACKFILL IS PERMITTED, UNLESS OTHERWISE NOTED.

THE CONTRACTOR SHALL FIELD VERIFY THE SIZE, LOCATION & DEPTH OF EXISTING UTILITIES PRIOR TO CONSTRUCTION.



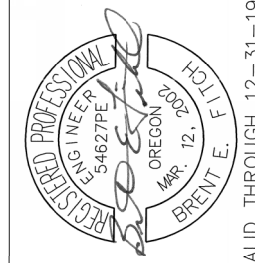
PAINTER DR / SDLN-05 (PUBLIC) PROFILE  
SCALE: 1"=40' (H), 1"=4' (V)



WILSONVILLE APP. NO. DB18-0018 - DB18-0021

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P 503.443.8296 F 503.443.8296  
WWW.P2G-INC.COM

**P2G**  
PIONEER DESIGN GROUP, INC.



**PAINTER DRIVE - SDLN-05  
PLAN AND PROFILE**

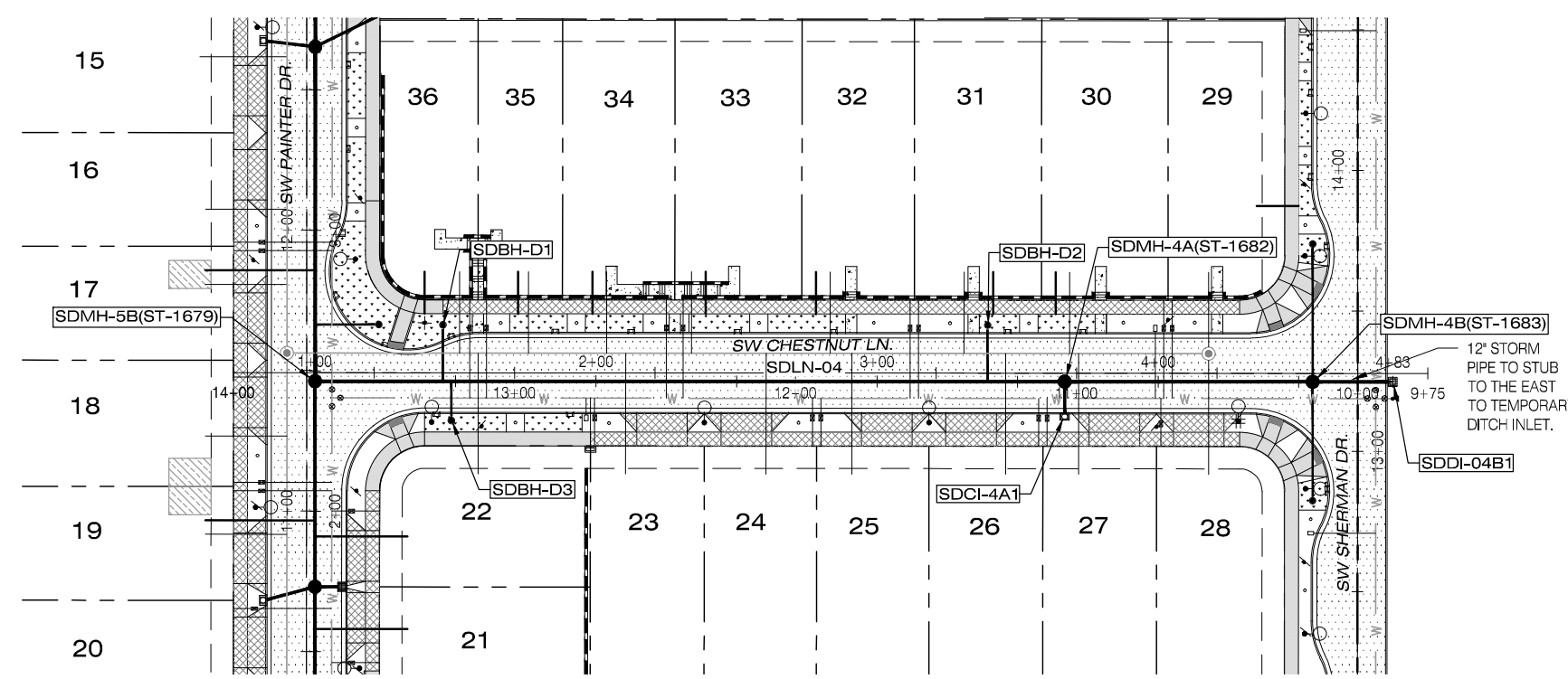
MORGAN FARM - PHASE 1 - AS BUILT  
CITY OF WILSONVILLE, OREGON

By	Date	Revision	Date
Designed By	04/19	TCC	04/19
Drawn By	04/19	TCC	04/19
Reviewed By	04/19	REF	04/19
Project No.	321-002	REF.	
Horizontal Scale:	1" = 40'		
Vertical Scale:	1" = 4'		

**RECORD DRAWINGS**  
DATE 04/24/2019 THESE RECORD DRAWINGS HAVE BEEN PREPARED BASED ON FIELD OBSERVATION AND SURVEYED INFORMATION.

Project: MORGAN FARM - PH.1  
No. 321-002  
Type AS-BUILTS  
Sheet





CHESTNUT LANE / SDLN-04 (PUBLIC) PLAN  
SCALE: 1"=40' (H)

LEGEND

- PROPOSED SIDEWALK WITH FACILITY PERMIT
- PROPOSED SIDEWALK (BY HOMEBUILDER)
- PROPOSED CONCRETE CURB AND GUTTER
- PROPOSED STORM LINE & MANHOLE
- PROPOSED SANITARY LINE & MANHOLE
- PROPOSED WATERLINE & VALVE
- PROPOSED PAVEMENT

STORM LATERAL DATA							
LOT NO.	D.S. M.H.	DIST. FROM D.S. M.H.	LENGTH	INV. EL. @ MAINLINE	INV. EL. @ PLUG	SLOPE	DEPTH @ PLUG
29	LIDA	--	15.0'	220.74	220.89	0.0100	0.5'
30	LIDA	--	15.0'	218.91	219.06	0.0100	1.3'
31	LIDA	--	15.0'	218.49	218.64	0.0100	1.5'
32	LIDA	--	15.0'	216.33	216.48	0.0100	2.5'
33	LIDA	--	15.0'	214.26	214.41	0.0100	3.8'
34	LIDA	--	15.0'	211.58	211.73	0.0100	5.6'
35	LIDA	--	15.0'	209.88	210.03	0.0100	6.8'
36	LIDA	--	15.0'	209.27	209.42	0.0100	6.8'

PUBLIC CATCH BASIN DATA							
TAG	TYPE	STATION	TC ELEV	IE IN	IE OUT	SLOPE	PIPE
SDCI-4A1	CG-30	11+04.25 14.00' LT CHESTNUT LN	219.76	--	214.01	0.2116	12.38 LF 10" PVC C900

LIDA STRUCTURE DATA								
TAG	TYPE	STATION	D.S. M.H.	DIST. FROM D.S. M.H.	RIM ELEV	IE OUT	SLOPE	PIPE
SDBH-D1	Beehive Inlet	13+25.57 17.00' RT CHESTNUT LN	5B	45.45	209.55	205.12	0.0184	20.00 LF 6" PVC D-3034
SDBH-D2	Beehive Inlet	12+03.25 17.00' RT CHESTNUT LN	5B	239.33	218.88	214.34	0.1908	20.00 LF 6" PVC D-3034
SDBH-D3	Beehive Inlet	13+22.52 17.00' LT CHESTNUT LN	5B	48.50	209.53	205.50	0.0469	14.00 LF 6" PVC D-3034

CONSTRUCTION NOTES

ALL 6" STORM LATERALS THAT OUTFALL INTO STREET SIDE SWALES WILL BE DUCTILE IRON PIPE AND INSTALLED AT S=0.0100 TO MAXIMIZE COVER AT THE END OF THE PIPE.

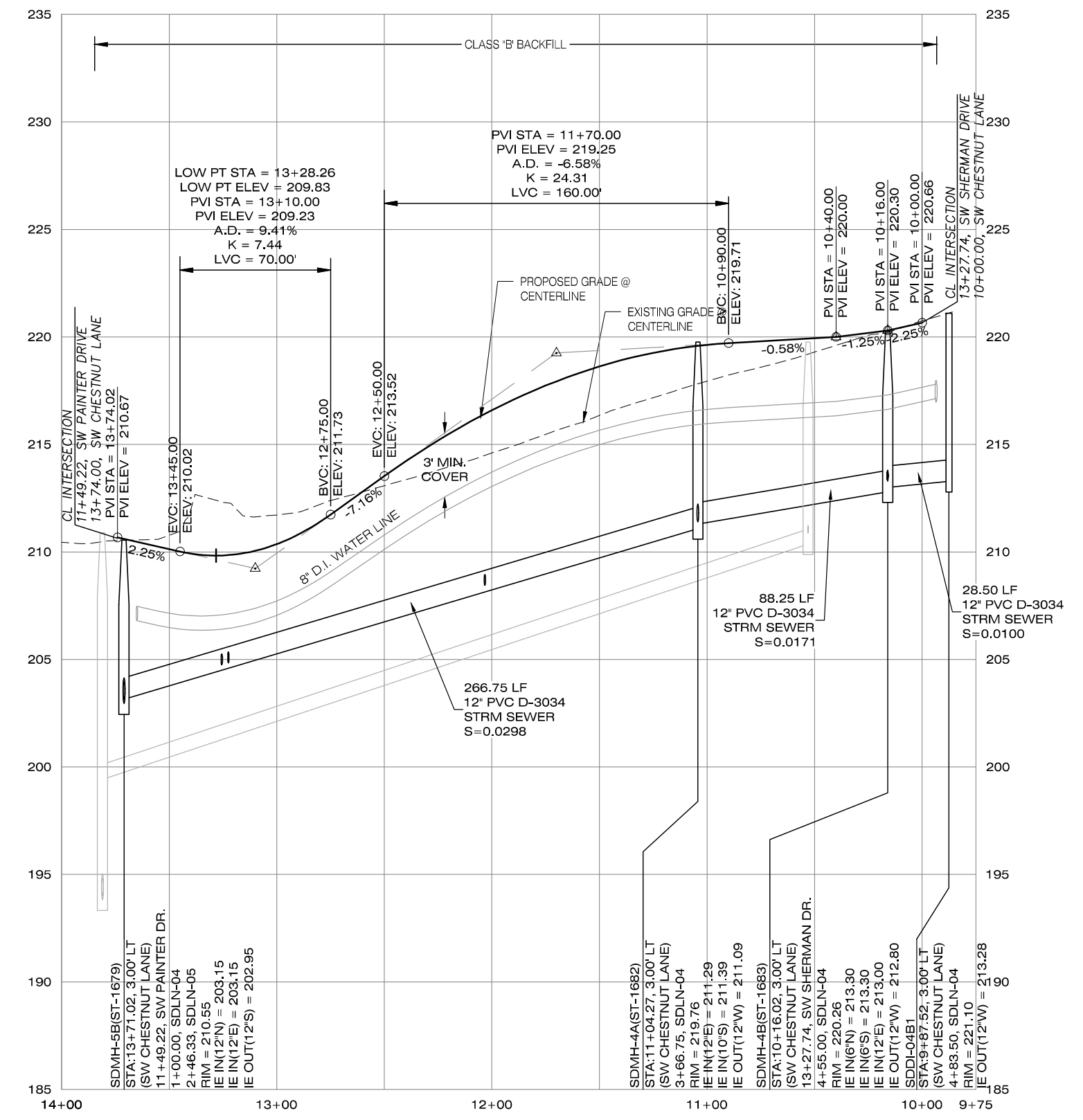
STORM SEWER NOTES

UNLESS OTHERWISE NOTED, ALL LATERALS ARE TO BE 6" PVC (ASTM D3034) WITH A MINIMUM SLOPE OF 0.0100. LATERAL CONNECTIONS TO MAIN SEWER LINE TO BE MADE WITH MANUFACTURED TEES.

ALL 2' x 4' STORM SERVICE CONNECTION MARKERS TO BE COLOR CODED WHITE. CONTRACTOR TO NOTE LENGTH OF BOARD USED ON EACH MARKER.

BACKFILL NOTE: PIPES UNDER PAVED SURFACES REQUIRE GRANULAR BACKFILL. FOR PIPES OUTSIDE PAVEMENT, NATIVE BACKFILL IS PERMITTED, UNLESS OTHERWISE NOTED.

THE CONTRACTOR SHALL FIELD VERIFY THE SIZE, LOCATION & DEPTH OF EXISTING UTILITIES PRIOR TO CONSTRUCTION.



CHESTNUT LANE / SDLN-04 (PUBLIC) PROFILE  
SCALE: 1"=40' (H), 1"=4' (V)

CONSTRUCTION NOTES

ALL 6" STORM LATERALS THAT OUTFALL INTO STREET SIDE SWALES WILL BE DUCTILE IRON PIPE AND INSTALLED AT S=0.0100 TO MAXIMIZE COVER AT THE END OF THE PIPE.

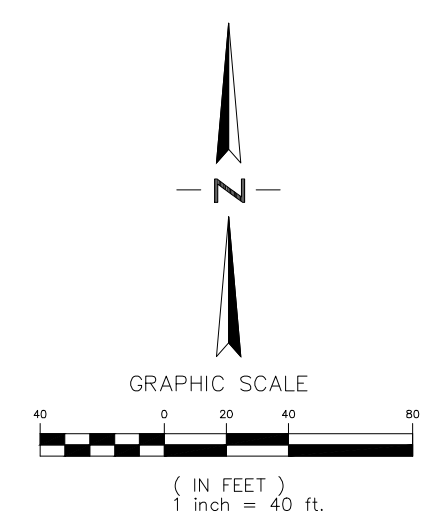
STORM SEWER NOTES

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SUITE 170  
WILSONVILLE, OREGON 97223  
P 503.643.8296  
F 503.643.8296  
www.pfi-grp.com

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PIONEER DESIGN GROUP, INC.

REGISTERED PROFESSIONAL ENGINEER  
No. 154827P  
OREGON  
EXPIRES 12/31/2025  
BRENT E. BRENT E.

VALID THROUGH 12-31-19

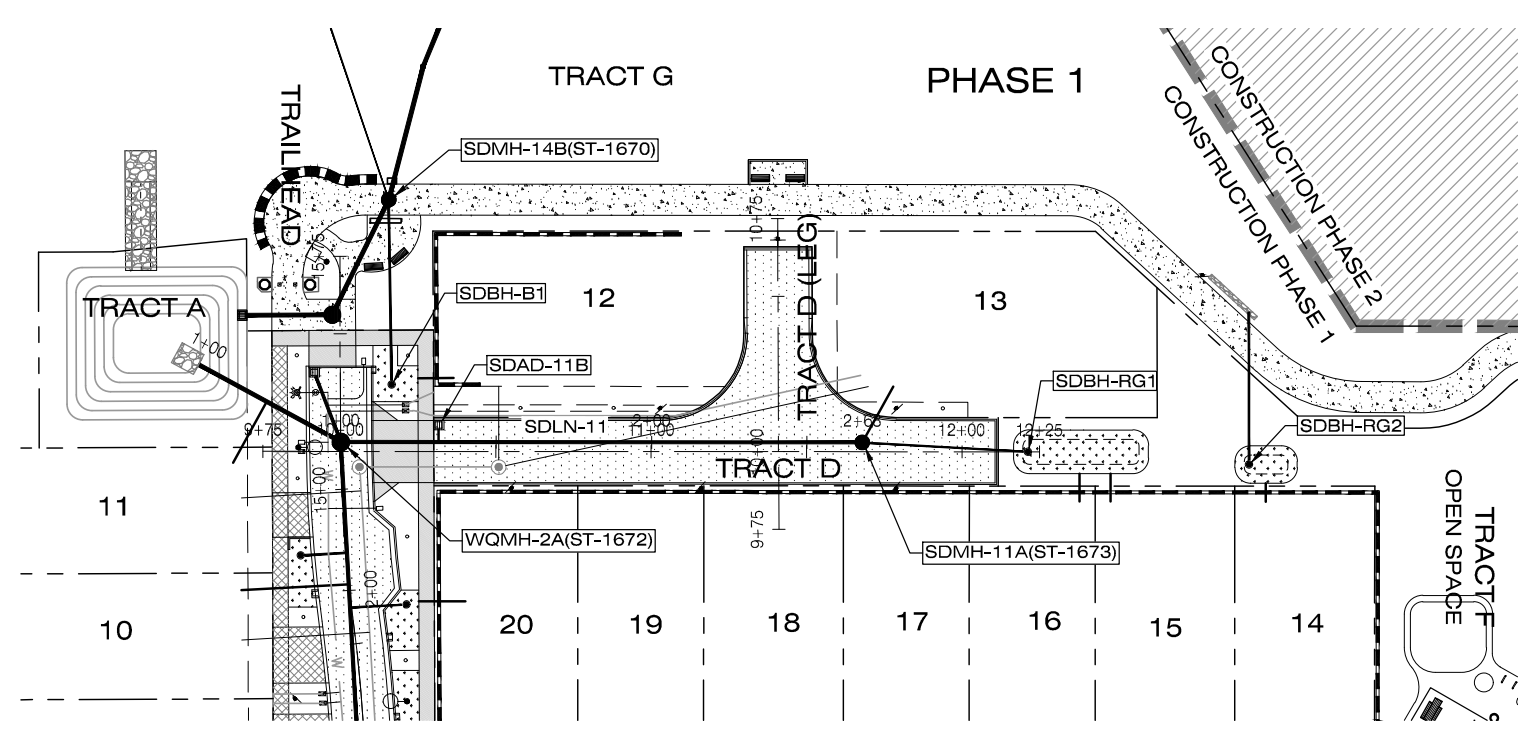
CHESTNUT LANE - SDLN-04  
PLAN AND PROFILE

MORGAN FARM - PHASE 1 - AS BUILT  
CITY OF WILSONVILLE, OREGON

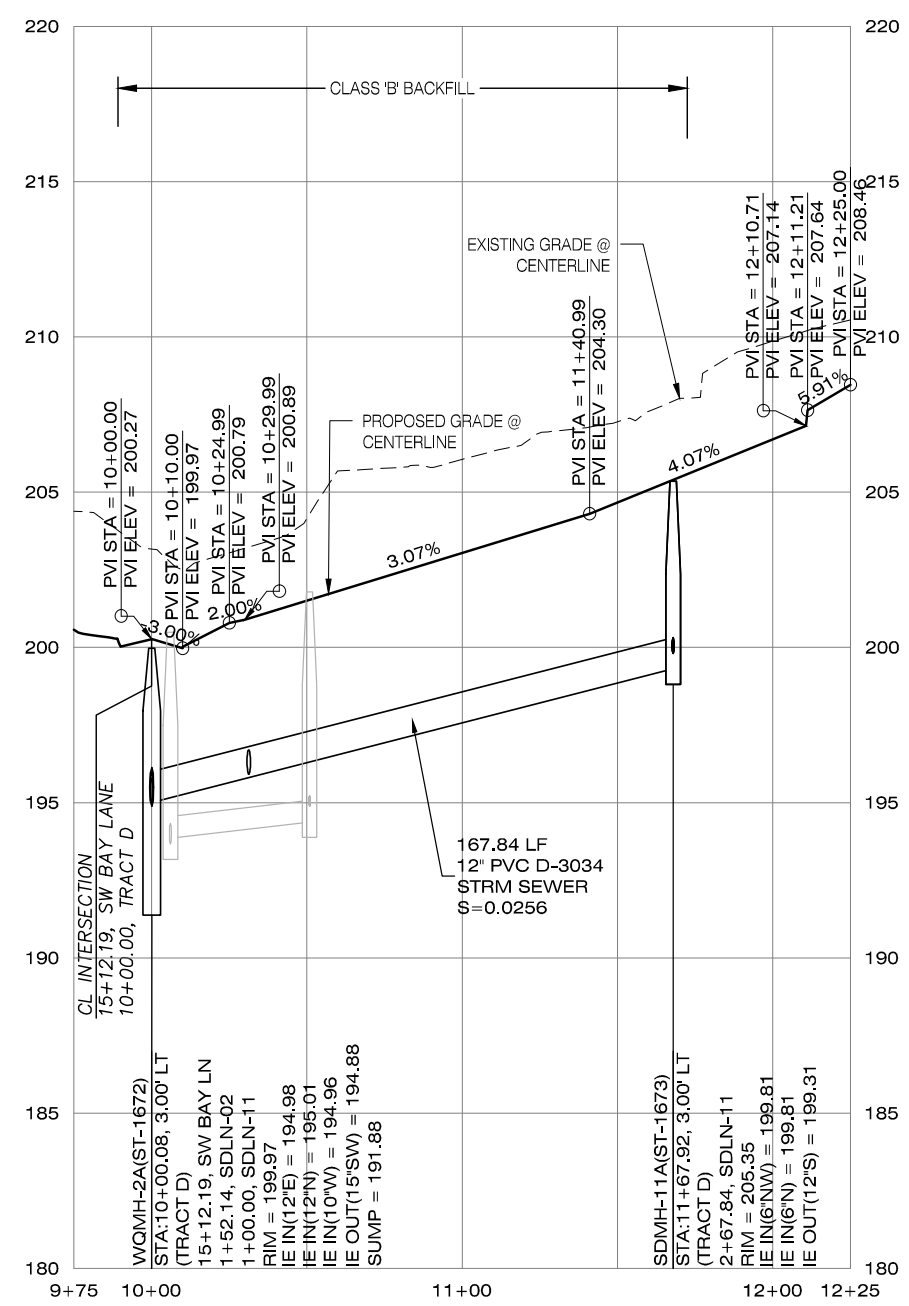
Designed By	TCC	Date	04/19
Drawn By	TCC	Date	04/19
Reviewed by	BEF	Date	04/19
Project No.	321-002	REF.	
Horizontal Scale:	1" = 40'		
Vertical Scale:	1" = 4'		

**RECORD DRAWINGS**  
DATE 04/24/2019 THESE RECORD DRAWINGS HAVE BEEN PREPARED BASED ON FIELD OBSERVATION AND SURVEYED INFORMATION.

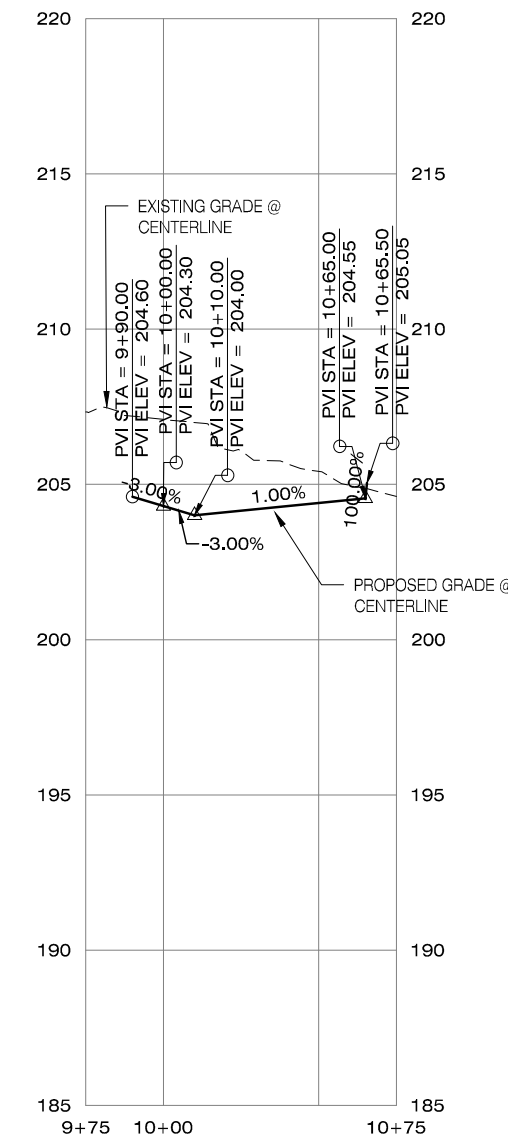
Project: MORGAN FARM - PH.1  
No. 321-002  
Type AS-BUILTS  
Sheet **C5.3** of **52**



TRACT D / SDLN-11 (PUBLIC) PLAN  
SCALE: 1"=40' (H)



TRACT D / SDLN-11 (PUBLIC) PROFILE  
SCALE: 1"=40' (H), 1"=4' (V)



TRACT D LEG (PUBLIC) PROFILE  
SCALE: 1"=40' (H), 1"=4' (V)

LEGEND

- PROPOSED SIDEWALK WITH FACILITY PERMIT
- PROPOSED SIDEWALK (BY HOMEBUILDER)
- PROPOSED CONCRETE CURB AND GUTTER
- PROPOSED STORM LINE & MANHOLE
- PROPOSED SANITARY LINE & MANHOLE
- PROPOSED WATERLINE & VALVE
- PROPOSED PAVEMENT

LOT NO.	D.S. M.H.	DIST. FROM D.S. M.H.	LENGTH	INV. EL. @ MAINLINE	INV. EL. @ PLUG	SLOPE	DEPTH @ PLUG
12	LIDA	--	11.5'	197.90	198.01	0.0100	5.8'
13	11A	0.00'	20.6'	199.81	200.89	0.0524	5.0'
14	LIDA	--	6.0'	210.50	210.56	0.0100	5.3'
15	LIDA	--	9.0'	205.50	205.59	0.0100	9.0'
16	LIDA	--	9.0'	205.50	205.59	0.0100	9.3'

TAG	TYPE	STATION	RIM ELEV	IE IN	IE OUT	SLOPE	PIPE
SDAD-11B	AREA DRAIN	10+31.59 10.00' LT TRACT D	200.59		196.69	0.1435	5.50 LF 10" PVC C900

TAG	TYPE	STATION	D.S. M.H.	DIST. FROM D.S. M.H.	RIM ELEV	IE OUT	SLOPE	PIPE
SDBH-RG1	Beehive Inlet	12+21.21 0.02' LT TRACT D	11A	0.00	206.00	202.25	0.0457	53.37 LF 6" PVC D-3034
SDBH-RG2	Beehive Inlet	--	--	--	210.42	206.92	0.0100	49.11 LF 6" PVC D-3034

CONSTRUCTION NOTES

ALL 6" STORM LATERALS THAT OUTFALL INTO STREET SIDE SWALES WILL BE DUCTILE IRON PIPE AND INSTALLED AT S=0.0100 TO MAXIMIZE COVER AT THE END OF THE PIPE.

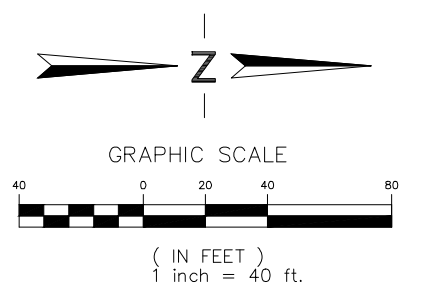
STORM SEWER NOTES

UNLESS OTHERWISE NOTED, ALL LATERALS ARE TO BE 6" PVC (ASTM D3034) WITH A MINIMUM SLOPE OF 0.0100. LATERAL CONNECTIONS TO MAIN SEWER LINE TO BE MADE WITH MANUFACTURED TEES.

ALL 2" x 4" STORM SERVICE CONNECTION MARKERS TO BE COLOR CODED WHITE, CONTRACTOR TO NOTE LENGTH OF BOARD USED ON EACH MARKER.

BACKFILL NOTE: PIPES UNDER PAVED SURFACES REQUIRE GRANULAR BACKFILL. FOR PIPES OUTSIDE PAVEMENT, NATIVE BACKFILL IS PERMITTED, UNLESS OTHERWISE NOTED.

THE CONTRACTOR SHALL FIELD VERIFY THE SIZE, LOCATION & DEPTH OF EXISTING UTILITIES PRIOR TO CONSTRUCTION.



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SUITE 170 WILSONVILLE, OREGON 97223  
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REGISTERED PROFESSIONAL ENGINEER  
OREGON  
LICENSE NO. 12-31-19  
BRENT E.

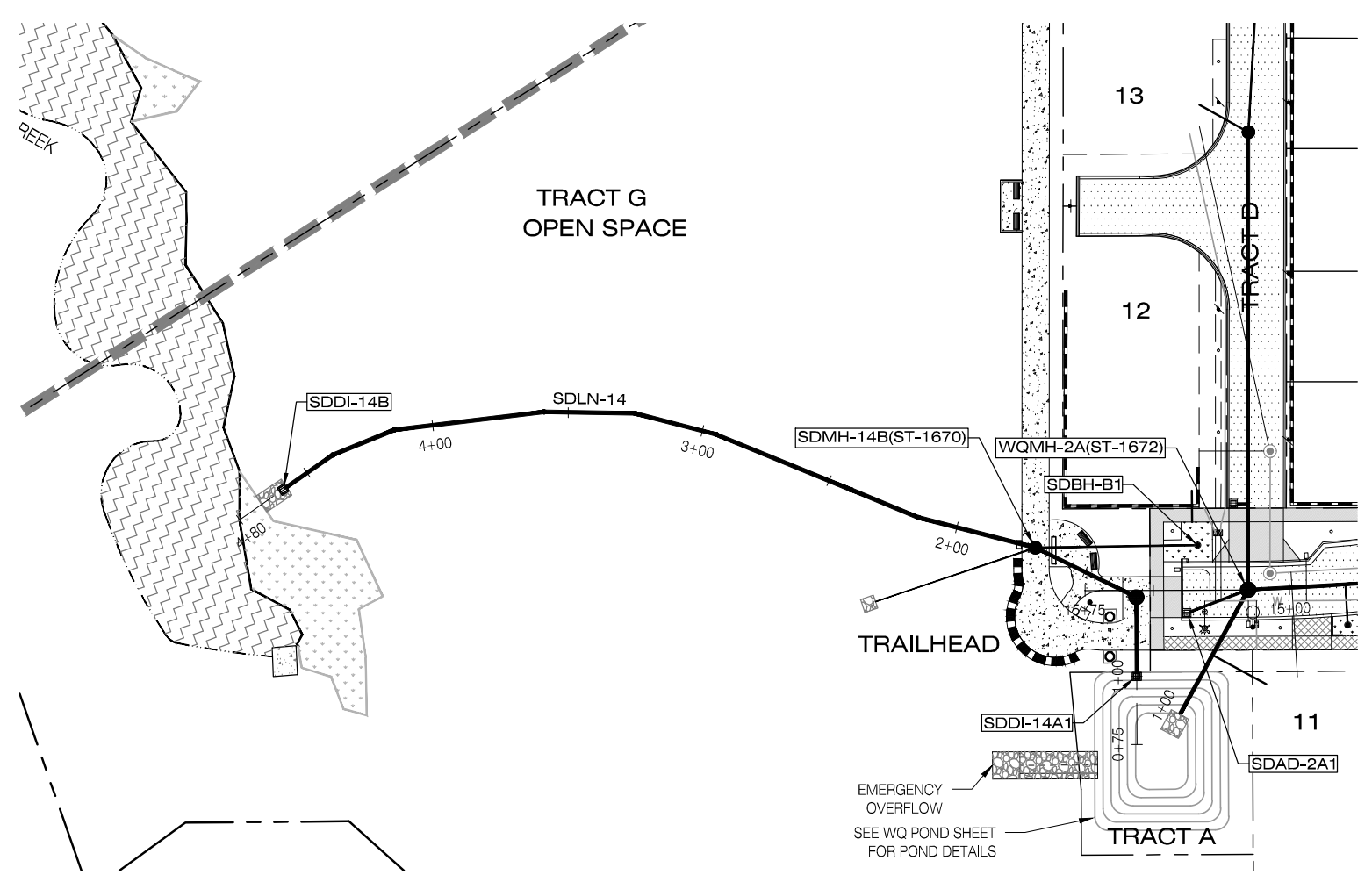
TRACT D - SDLN-11 - PLAN AND PROFILE  
MORGAN FARM - PHASE 1 - AS BUILT  
CITY OF WILSONVILLE, OREGON

Designed By	Date	TCC	Reviewed By	Date	REF.
	04/19			04/19	
	04/19			04/19	

**RECORD DRAWINGS**  
DATE 04/24/2019 THESE RECORD DRAWINGS HAVE BEEN PREPARED BASED ON FIELD OBSERVATION AND SURVEYED INFORMATION

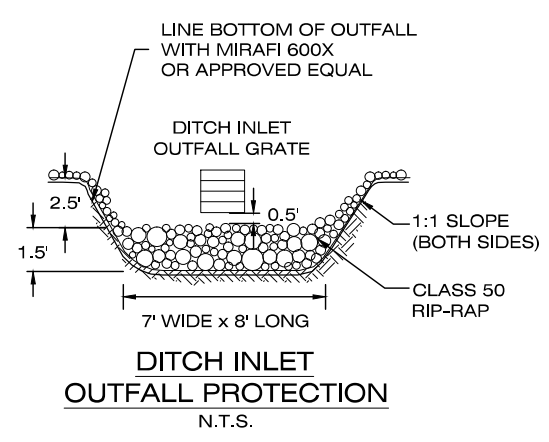
No.	Date	Revision

Project: MORGAN FARM - PH.1  
No. 321-002  
Type AS-BUILTS  
Sheet



**SDLN-14 (PUBLIC) PLAN**  
SCALE: 1"=40' (H)

LIDA STRUCTURE DATA								
TAG	TYPE	STATION	D.S. M.H.	DIST. FROM D.S. M.H.	RIM ELEV	IE OUT	SLOPE	PIPE
SDBH-B1	Beehive Inlet		14B	0.00	197.37	193.39	0.0240	59.47 LF 6" PVC D-3034



**DITCH INLET  
OUTFALL PROTECTION**  
N.T.S.

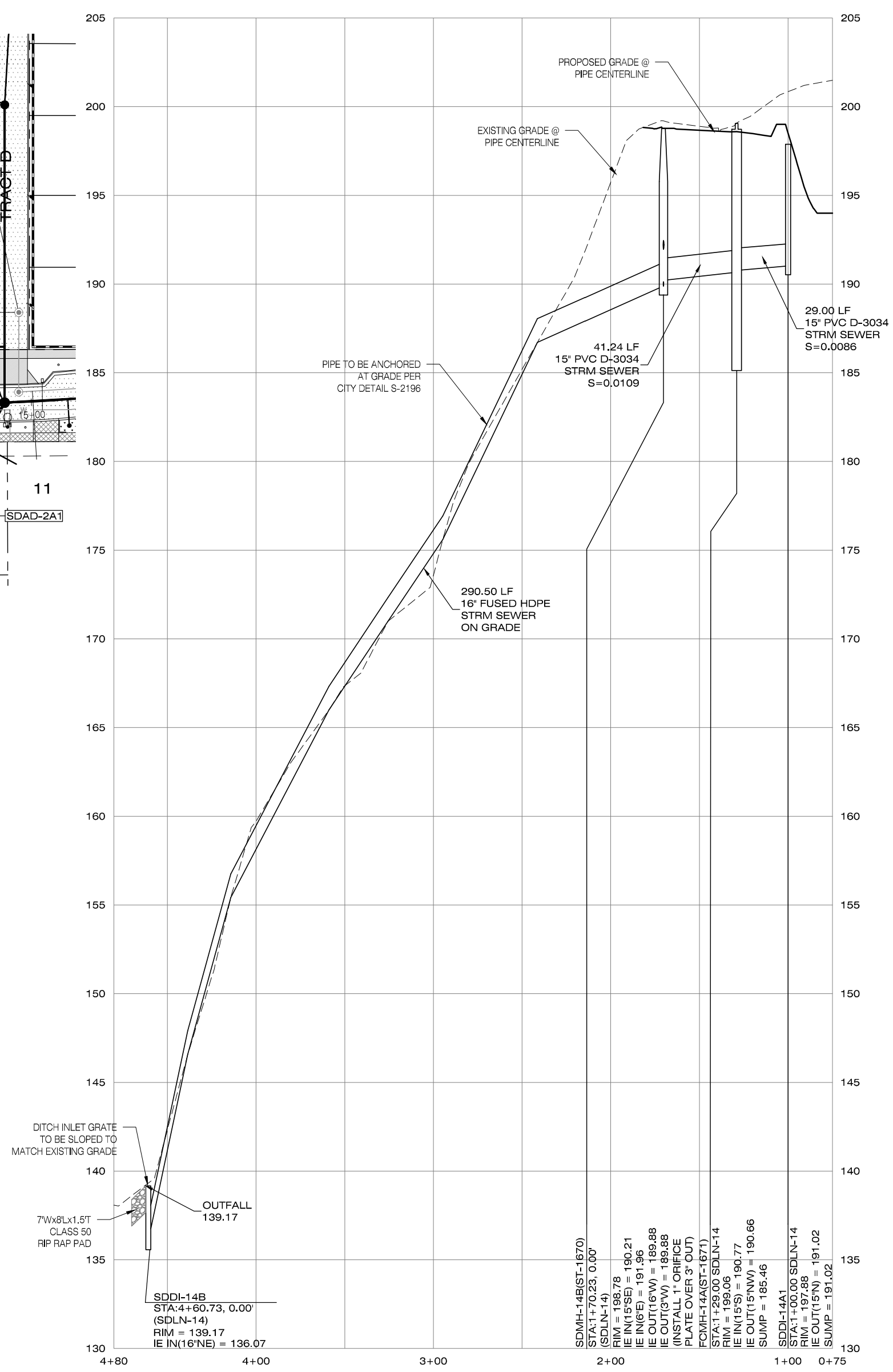
**STORM SEWER NOTES**

UNLESS OTHERWISE NOTED, ALL LATERALS ARE TO BE 6" PVC (ASTM D3034) WITH A MINIMUM SLOPE OF 0.0100. LATERAL CONNECTIONS TO MAIN SEWER LINE TO BE MADE WITH MANUFACTURED TEES.

ALL 2' x 4' STORM SERVICE CONNECTION MARKERS TO BE COLOR CODED WHITE. CONTRACTOR TO NOTE LENGTH OF BOARD USED ON EACH MARKER.

BACKFILL NOTE: PIPES UNDER PAVED SURFACES REQUIRE GRANULAR BACKFILL. FOR PIPES OUTSIDE PAVEMENT, NATIVE BACKFILL IS PERMITTED, UNLESS OTHERWISE NOTED.

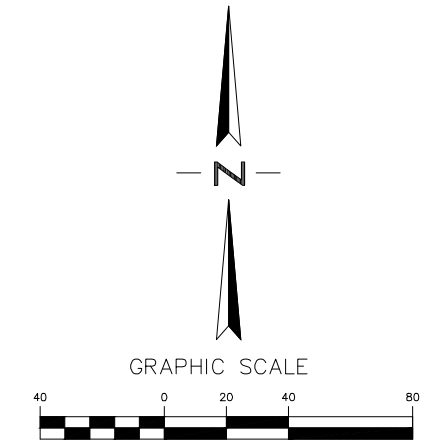
THE CONTRACTOR SHALL FIELD VERIFY THE SIZE, LOCATION & DEPTH OF EXISTING UTILITIES PRIOR TO CONSTRUCTION.



**SDLN-14 (PUBLIC) PROFILE**  
SCALE: 1"=40' (H), 1"=4' (V)

**LEGEND**

- PROPOSED SIDEWALK WITH FACILITY PERMIT
- PROPOSED SIDEWALK (BY HOMEBUILDER)
- PROPOSED CONCRETE CURB AND GUTTER
- PROPOSED STORM LINE & MANHOLE
- PROPOSED SANITARY LINE & MANHOLE
- PROPOSED WATERLINE & VALVE
- PROPOSED PAVEMENT



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SUITE 170 WILSONVILLE, OREGON 97223  
P 503.443.8296 F 503.443.8296 www.pdg-inc.com

**PDG**  
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REGISTERED PROFESSIONAL ENGINEER  
STATE OF OREGON  
NO. 12  
BRENT E.

VALID THROUGH 12-31-19

**SDLN-14 PLAN AND PROFILE**

MORGAN FARM - PHASE 1 - AS BUILTS  
CITY OF WILSONVILLE, OREGON

Designed By	Date	TCC	Reviewed By	Date	REF.
	04/19			04/19	
Drawn By		TCC	Reviewed by		
Project No.	321-002				
Horizontal Scale:	1" = 40'				
Vertical Scale:	1" = 4'				

3381\_CS-6STRM.dwg

**RECORD DRAWINGS**  
DATE 04/24/2019 THESE RECORD DRAWINGS HAVE BEEN PREPARED BASED ON FIELD OBSERVATION AND SURVEYED INFORMATION.

Project: MORGAN FARM - PH.1  
No. 321-002  
Type AS-BUILTS  
Sheet **C5.6** of **52**



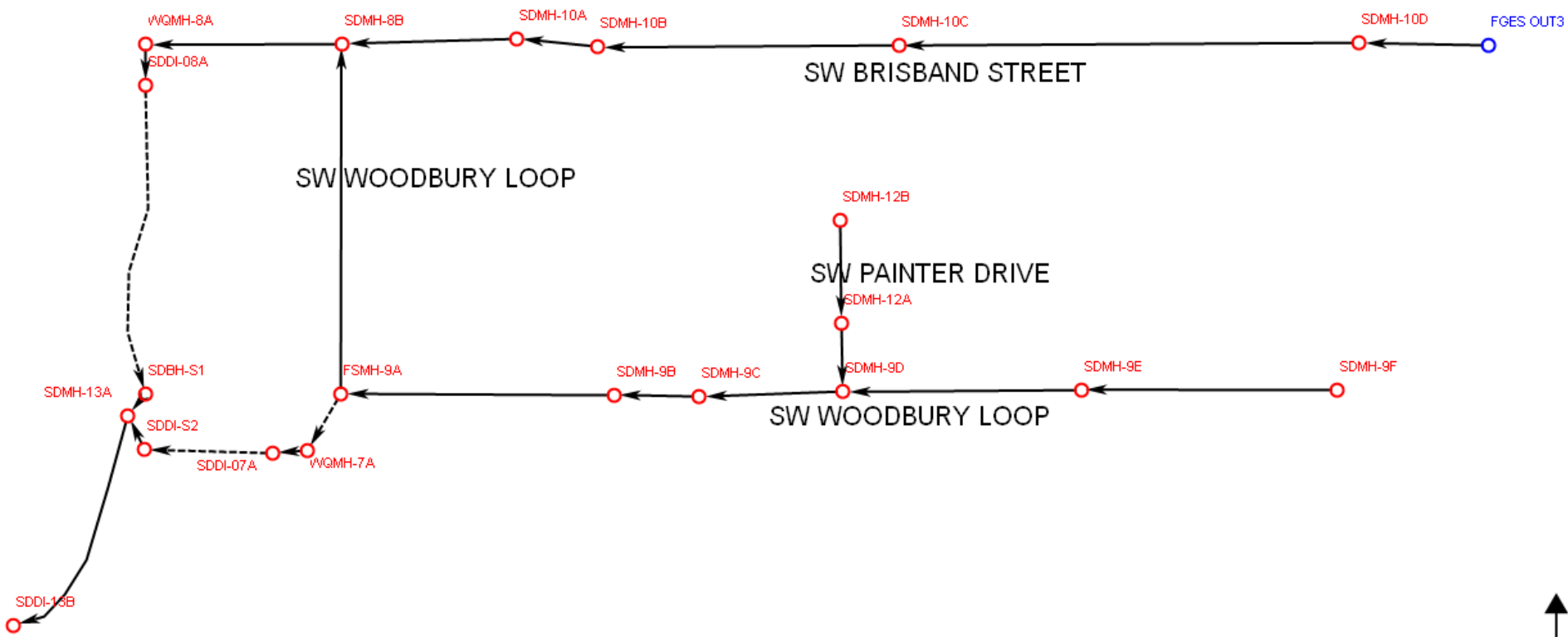
**STORMWATER CONVEYANCE CALCULATIONS**

JOB NUMBER: 321-002  
 PROJECT: Morgan Farm - Ph.1  
 FILE: 3212\_FINAL hydro  
 Design Storm: 25 YR  
 Storm Duration: 24 HRS  
 Precipitation: 3.9 IN  
 Manning's "n" 0.013

LINE	INC. AREA (AC)	AREA TOTAL (AC)	% IMP.	AREA PERV. (AC)	CN PER.	AREA IMP. (AC)	CN IMP.	TIME (MIN)	Q (CFS)	PIPE SIZE (IN)	SLOPE (FT/FT)	Qf (CFS)	Q/Qf (%)	Vf (FPS)	V/Vf (%)	ACTUAL V (FPS)	LENGTH (FT)	INC. TIME (MIN)
<b>SOUTH BASIN</b>																		
<b>SDLN-1</b>																		
SDMH 1A TO 2D	0.18	0.18	67.4	0.06	74	0.12	98	5.00	0.14	12	0.0050	2.53	5.68%	3.22	0.26	0.83	111.21	2.24
<b>SDLN-2</b>																		
SDMH 2D TO 2C	0.20	0.38	67.4	0.12	74	0.26	98	7.24	0.28	12	0.0050	2.53	11.19%	3.22	0.31	1.00	89.13	1.48
SDMH 2C TO 2B	1.59	1.97	67.4	0.64	74	1.33	98	8.72	1.44	12	0.0391	7.06	20.43%	8.99	0.40	3.64	278.87	1.28
<b>SDLN-4</b>																		
SDMH 4B TO 4A	0.26	0.26	67.4	0.08	74	0.18	98	5.00	0.21	12	0.0170	4.66	4.45%	5.93	0.24	1.45	88.25	1.01
SDMH 4A TO 5B	1.09	1.35	67.4	0.44	74	0.91	98	6.01	1.03	12	0.0302	6.21	16.64%	7.90	0.37	2.90	266.75	1.54
<b>SDLN-5</b>																		
SDMH 5D TO 5C	0.15	0.15	67.4	0.05	74	0.10	98	5.00	0.12	12	0.0081	3.22	3.72%	4.09	0.24	0.97	38.49	0.66
SDMH 5C TO 5B	0.43	0.58	67.4	0.19	74	0.39	98	5.66	0.45	12	0.0488	7.89	5.70%	10.05	0.26	2.58	119.01	0.77
SDMH 5B TO 5A	0.29	2.22	67.4	0.72	74	1.50	98	7.55	1.65	12	0.0078	3.15	52.21%	4.02	0.72	2.90	73.22	0.42
SDMH 5A TO 2B	0.34	2.56	67.4	0.83	74	1.73	98	7.97	1.89	12	0.0050	2.53	74.89%	3.22	0.95	3.05	73.11	0.40
<b>SDLN-2 (CONT.)</b>																		
SDMH 2B TO 2A	0.56	5.09	67.4	1.66	74	3.43	98	10.00	3.67	12	0.0459	7.65	47.89%	9.74	0.68	6.62	143.23	0.36
<b>SDLN-11</b>																		
SDMH 11A TO 2A	0.63	0.63	67.4	0.21	74	0.42	98	5.00	0.50	12	0.0244	5.58	9.00%	7.10	0.29	2.06	167.84	1.36
<b>SDLN-2 (CONT.)</b>																		
SDMH 2A TO POND	0.03	5.75	67.4	1.87	74	3.88	98	10.36	4.12	15	0.0100	6.48	63.59%	5.28	0.84	4.41	52.14	0.20
																	8.0'L x 7.25'W x 1.5'D CL 50 Riprap Pad	
<b>SDLN-14</b>																		
SDDI-14A1 TO FCMH 14A	0.00	5.75	67.4	1.87	74	3.88	98	5.00	4.59	16	0.0089	7.26	63.19%	5.20	0.83	4.32	38.13	0.15
FCMH 14A TO SDMH 14B	0.00	5.75	67.4	1.87	74	3.88	98	5.15	4.56	16	0.0075	6.66	68.41%	4.77	0.88	4.22	41.24	0.16
SDMH 15A TO SDDI 14B (OUTFALL)	0.06	5.81	67.4	1.89	74	3.92	98	5.31	4.57	16	0.0342	14.23	32.15%	10.19	0.52	5.31	277.55	0.87



**MORGAN FARM PHASE 2**

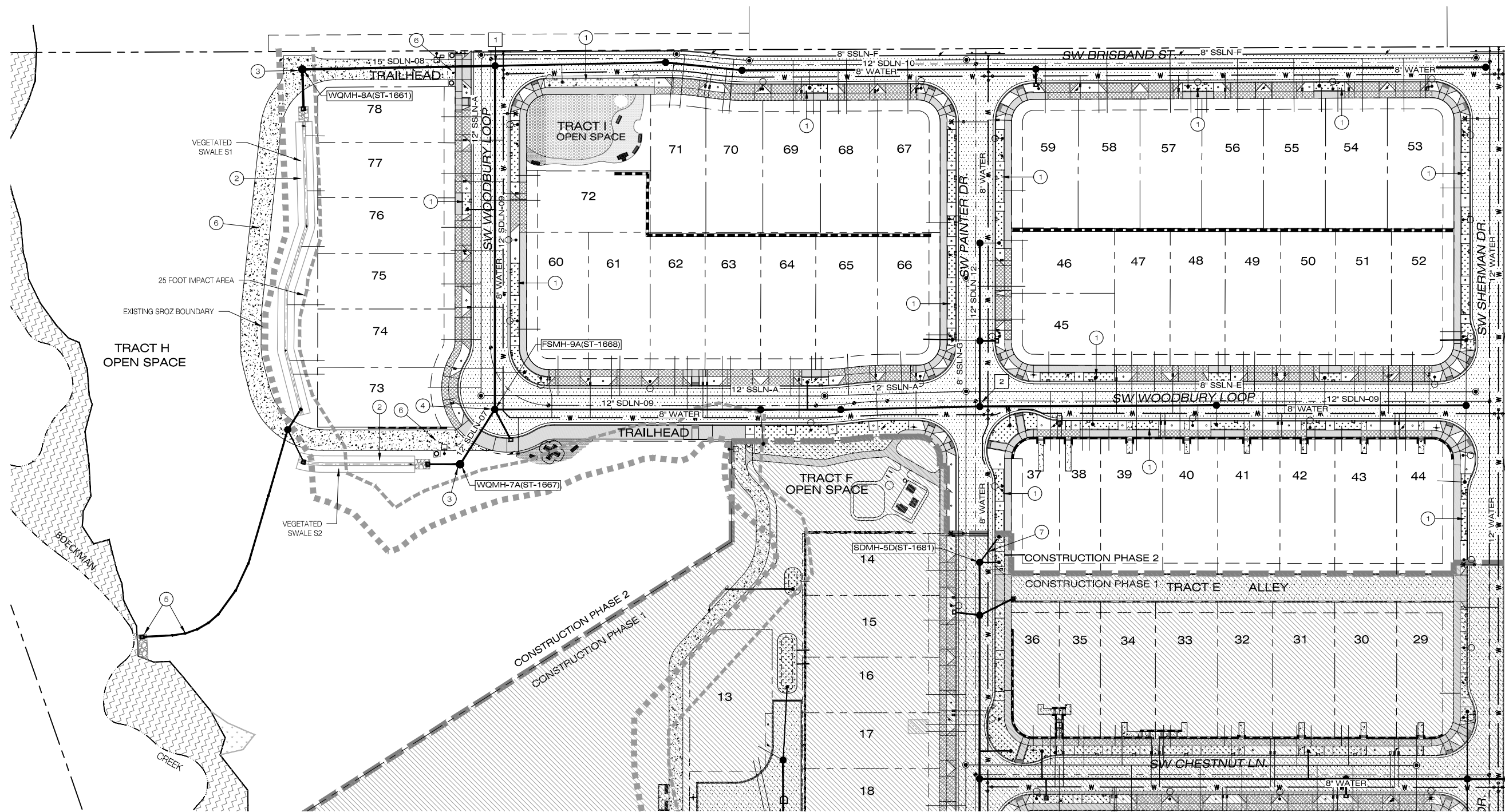


**XPSTORM HYDRAULIC LAYOUT: MORGAN FARM PHASE 1 STORM SYSTEM**

XPSTORM RUNOFF DATA - MORGAN FARM PHASE 2 - HYDRAULIC ANALYSIS						
DOWNSTREAM STORM ANALYSIS						
Node Name	Runoff Parameters (Input)					Output
	Area	Imp	CN	Tc	Precip	Peak
	ac	%		min.	in	cfs
<b>25-YEAR</b>						
SDMH-10D	0.72	64.3	74	5	3.90	0.51
SDMH-10C	0.25	64.3	74	5	3.90	0.18
SDMH-10B	0.09	64.3	74	5	3.90	0.06
SDMH-10A	0.38	64.3	74	5	3.90	0.27
SDBH-S1	0.56	64.3	74	5	3.90	0.40
SDMH-9E	1.24	64.3	74	5	3.90	0.88
SDMH-9C	0.27	64.3	74	5	3.90	0.19
SDMH-9B	0.70	64.3	74	5	3.90	0.50
FSMH-9A	0.78	64.3	74	5	3.90	0.55
SDMH-12B	0.26	64.3	74	5	3.90	0.19
SDMH-12A	0.36	64.3	74	5	3.90	0.26
SDMH-9F	0.90	64.3	74	5	3.90	0.64
FGES OUT3	0.24	100	98	5	3.90	0.52
	0.66	0	80	5		

XPSTORM RUNOFF DATA - MORGAN FARM PHASE 2 - HYDRAULIC ANALYSIS						
DOWNSTREAM STORM ANALYSIS						
Node Name	Runoff Parameters (Input)					Output
	Area	Imp	CN	Tc	Precip	Peak
	ac	%		min.	in	cfs
<b>25-YEAR</b>						
SDMH-10D	0.72	64.3	74	5	3.90	0.51
SDMH-10C	0.25	64.3	74	5	3.90	0.18
SDMH-10B	0.09	64.3	74	5	3.90	0.06
SDMH-10A	0.38	64.3	74	5	3.90	0.27
SDBH-S1	0.56	64.3	74	5	3.90	0.40
SDMH-9E	1.24	64.3	74	5	3.90	0.88
SDMH-9C	0.27	64.3	74	5	3.90	0.19
SDMH-9B	0.70	64.3	74	5	3.90	0.50
FSMH-9A	0.78	64.3	74	5	3.90	0.55
SDMH-12B	0.26	64.3	74	5	3.90	0.19
SDMH-12A	0.36	64.3	74	5	3.90	0.26
SDMH-9F	0.90	64.3	74	5	3.90	0.64
FGES OUT3	0.24	100	98	5	3.90	0.52
	0.66	0	80	5		





THIS DESIGN COMPLIES WITH ORS 92.044 (7) IN THAT NO UTILITY INFRASTRUCTURE IS DESIGNED TO BE WITHIN ONE (1) FOOT OF A SURVEY MONUMENT LOCATION SHOWN ON A SUBDIVISION OR PARTITION PLAT. NO DESIGN EXCEPTIONS NOR FINAL FIELD LOCATION CHANGES SHALL BE PERMITTED IF THAT CHANGE WOULD CAUSE ANY UTILITY INFRASTRUCTURE TO BE PLACED WITHIN THE PROHIBITED AREA.

**PROPOSED UTILITY NOTES**

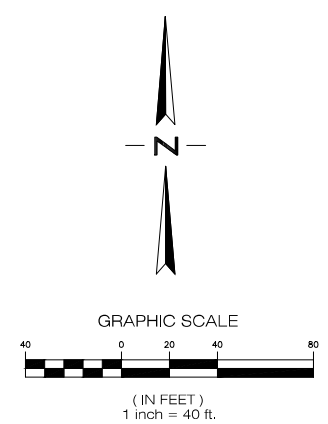
- 1 ORIENT MANHOLE CONE, STEPS, AND MANHOLE COVER TO THE SOUTHEAST TO PROVIDE ADDITIONAL CLEARANCE BETWEEN THE MANHOLE STRUCTURE AND THE MONUMENT BOX. CURRENT CLEARANCE IS 2.32'.
- 2 ORIENT MANHOLE CONE, STEPS, AND MANHOLE COVER TO THE SOUTHEAST TO PROVIDE ADDITIONAL CLEARANCE BETWEEN THE MANHOLE STRUCTURE AND THE MONUMENT BOX. CURRENT CLEARANCE IS 1.50'.

**CONSTRUCTION NOTES**

- 1 INSTALL ON-STREET LIDA SWALE (TYP.) PER WILSONVILLE DETAIL 6045. SEE LIDA DETAIL SHEETS FOR DESIGN DETAILS.
- 2 PROPOSED 12" WIDE VEGETATED SWALE WITH UNDER DRAIN SYSTEM TO BE CONSTRUCTED PER WILSONVILLE DETAIL ST-6045. SEE SHEET C4.7 FOR SWALE DETAILS. THESE SWALES ARE TO BE COMPLETELY LINED WITH A 30 MIL LINER OR APPROVED EQUAL.
- 3 PROPOSED 60 INCH STORMWATER PRETREATMENT MANHOLE TO BE CONSTRUCTED PER WILSONVILLE DETAILS S-2050 & S-2051.
- 4 PROPOSED FLOW SPLITTER MANHOLE. SEE SHEET C4.7 FOR FLOW SPLITTER MANHOLE DETAILS.
- 5 12" FUSED HDPE OUTFALL PIPE TO BE INSTALLED AT GRADE TO DISCHARGE INTO THE EXISTING DRAINAGE WAY. SEE STORM LINE PROFILE FOR DESIGN DETAILS.
- 6 PROPOSED 15' WIDE CONCRETE TRAIL FOR MAINTENANCE ACCESS TO VEGETATED SWALES AND CONTROL STRUCTURES.
- 7 CONTRACTOR TO TRENCH OUT AND CONNECT 6 INCH LATERAL TO EXISTING MANHOLE SDMH-5D (ST-1681). REPAIR STREET PAVEMENT PER CITY OF WILSONVILLE DETAIL S-2145. FINAL PAVEMENT REPAIR LIMITS TO BE DETERMINED BY THE CITY INSPECTOR IN THE FIELD.

**LEGEND**

- PROPOSED EASEMENT LINE
- PROPOSED LIDA SWALE/PLANTER
- PROPOSED PRIVATE LIDA PLANTER
- PROPOSED STORM LINE & MANHOLE
- PROPOSED SANITARY LINE & MANHOLE
- PROPOSED WATERLINE & VALVE
- PROPOSED WATER METER & SERVICE
- PROPOSED IRRIGATION METER & SERVICE
- \* PROPOSED HYDRANT
- PROPOSED STREET LIGHT LOCATION
- PROPOSED TRAIL HEAD LIGHT LOCATION



**COMPOSITE UTILITY PLAN**

Designed by	Date	TCC
	12/2018	
Drawn by	Date	TCC
	12/2018	
Reviewed by	Date	BEF
	12/2018	
Project No.	REF.	321-002
Horiz. Scale	N/A	
Vert. Scale	N/A	

**RECORD DRAWINGS**  
 DATE 12/18/2018 THESE RECORD DRAWINGS HAVE BEEN PREPARED BASED ON FIELD OBSERVATION AND SURVEYED INFORMATION.

Project: MORGAN FARM PH.2  
 No.: 321-002  
 Type: AS-BUILTS  
 Sheet: 770

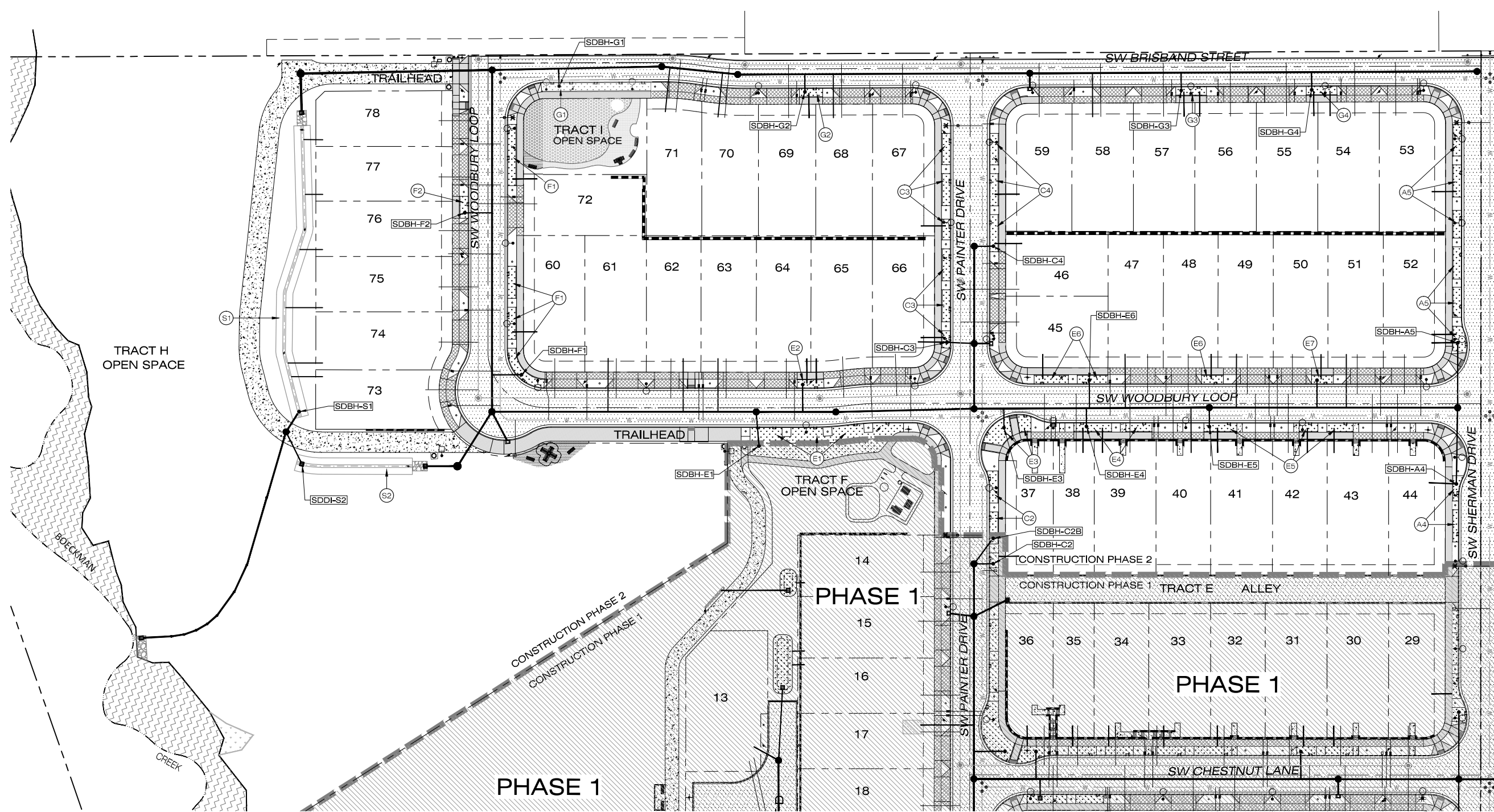
**C3.0**

**Item 3.**  
**PIONEER DESIGN GROUP**  
 CIVIL ENGINEERING • LAND USE PLANNING • LAND SURVEYING • LANDSCAPE  
 9020 SW WASHINGTON SQUARE RD. SUITE 170 PORTLAND, OR 97224  
 P 503.843.8286



**MORGAN FARM PHASE 2**  
 CITY OF WILSONVILLE, OREGON

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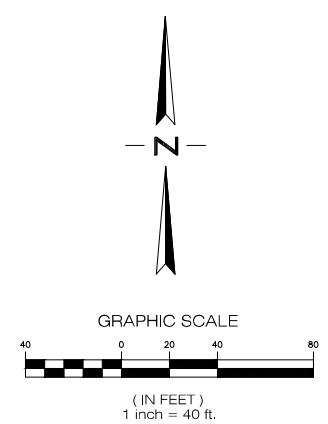


CONTRACTOR TO INSTALL MONOLITHIC CURB AND 5 FOOT SIDEWALKS ADJACENT TO STREET SIDE SWALES WITH SWALE CONSTRUCTION.

BEEHIVE #	ORIFICE DIAMETER SIZE (IN)	BEEHIVE #	ORIFICE DIAMETER SIZE (IN)
SDBH-A4	0.83	SDBH-E6	1.07
SDBH-A5	1.18	SDBH-E7	0.79
SDBH-C2B	0.3	SDBH-F1	1.21
SDBH-C3	1.06	SDBH-F2	0.42
SDBH-C4	1.00	SDBH-G1	0.96
SDBH-E1	0.94	SDBH-G2	0.76
SDBH-E2	1.00	SDBH-G3	0.97
SDBH-E3	0.36	SDBH-G4	0.99
SDBH-E4	0.89	SDBH-S1	2.26
SDBH-E5	1.23	SDBH-S2	1.50

**LIDA FACILITY NOTES**  
 (L) ON-STREET LIDA SWALE CALL OUT  
 L = LETTER OF STREET SWALE IS LOCATED ON  
 # = LIDA SWALE CALL OUT NUMBER

- LEGEND**
- PROPOSED EASEMENT LINE
  - PROPOSED PUBLIC LIDA SWALE/PLANTER
  - ▨ PROPOSED PRIVATE LIDA PLANTER
  - PROPOSED STORM LINE & MANHOLE
  - PROPOSED SANITARY LINE & MANHOLE
  - W—W— PROPOSED WATERLINE & VALVE
  - |— PROPOSED WATER METER & SERVICE
  - |— PROPOSED IRRIGATION METER & SERVICE



Item 3.

**PIONEER DESIGN GROUP**  
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 8020 SW WASHINGTON SQUARE RD. SUITE 170 PORTLAND, OR 97225  
 P 503.843.8286

REGISTERED PROFESSIONAL ENGINEER  
 LICENSE NO. 344827PE  
 DRECON 0008  
 MAR. 12, 2008  
 BRENT E.

VALID THROUGH 12-31-19

**LIDA SWALE SITE PLAN**

MORGAN FARM PHASE 2  
 CITY OF WILSONVILLE, OREGON

Designed by	Date	Reviewed by	Date	Project No.	Horiz. Scale	Vert. Scale
TCC	12/2018	BEF	12/2018	321-002	N/A	N/A
TCC	12/2018	BEF	12/2018	321-002	N/A	N/A
REF.		REF.				

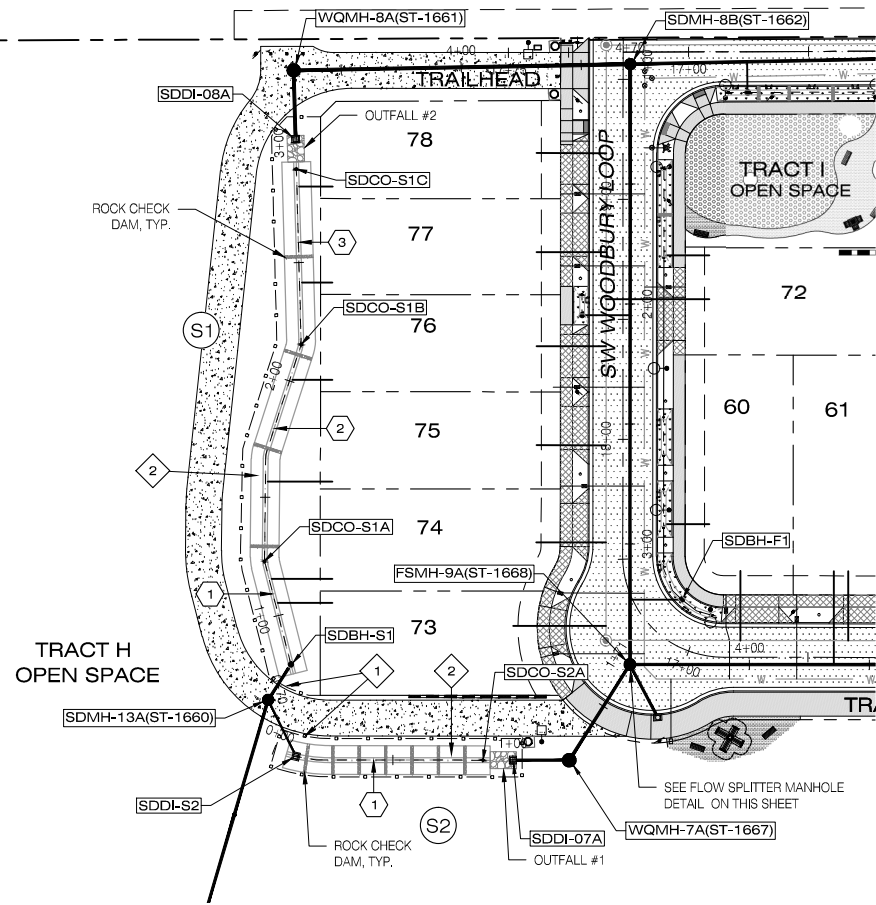
3381\_C4-CLIDA.dwg

**RECORD DRAWINGS**  
 DATE 12/18/2018 THESE RECORD DRAWINGS HAVE BEEN PREPARED BASED ON FIELD OBSERVATION AND SURVEYED INFORMATION.

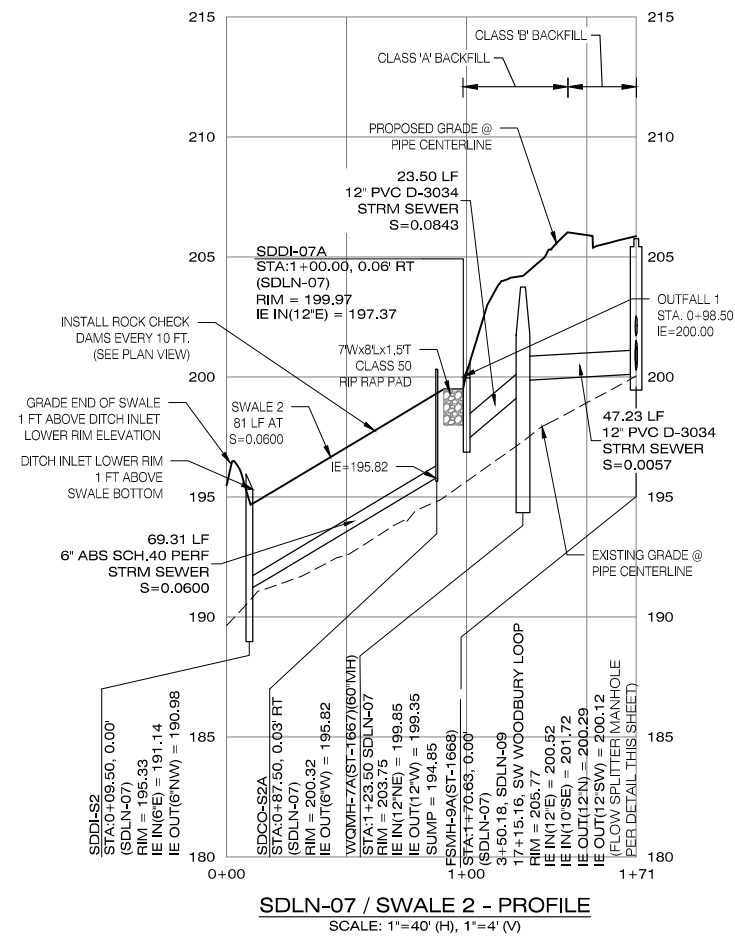
Project: MORGAN FARM PH.2  
 No.: 321-002  
 Type: AS-BUILTS  
 Sheet: **771**

C4.0

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SDLN-07 / SDLN-08 / SWALES 1 & 2 - PLAN  
SCALE: 1"=40' (H)

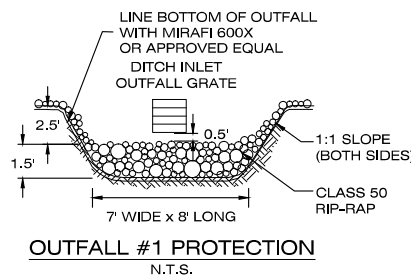


SDLN-07 / SWALE 2 - PROFILE  
SCALE: 1"=40' (H), 1"=4' (V)

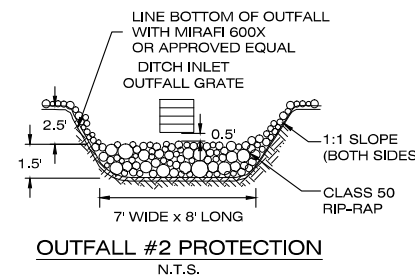
BEEHIVE INLET STRUCTURE DATA							
TAG	TYPE	STATION	RIM ELEV	IE IN	IE OUT	SLOPE	PIPE
SDBH-S1	Beehive Inlet	0+78.89 0.00' RT SDLN-08	193.85	189.35	188.48	0.0337	17.50 LF 12" PVC D-3034
SDDI-S2	Ditch Inlet	0+09.50 0.00' RT SDLN-07	195.33	191.14	190.98	0.1091	26.21 LF 6" PVC D-3034

VEGETATED SWALE 1	
SWALE SIZE (SF)	2604 SF
①	44.5 LF - 6" ABS SCH.40 PERF PIPE
②	92.6 LF - 6" ABS SCH.40 PERF PIPE
③	73.1 LF - 6" ABS SCH.40 PERF PIPE

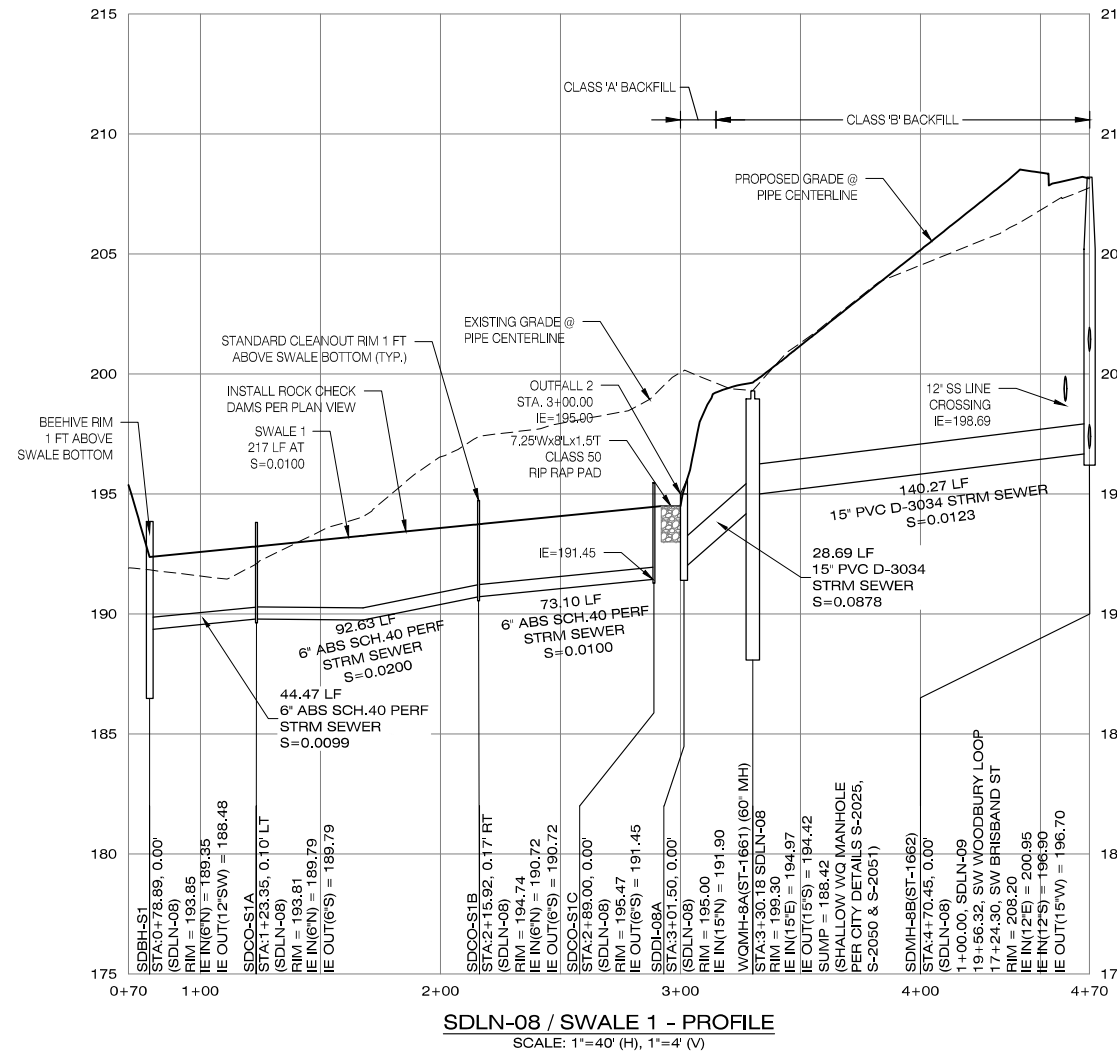
VEGETATED SWALE 2	
SWALE SIZE (SF)	1020 SF
①	78.0 LF - 6" ABS SCH.40 PERF PIPE



OUTFALL #1 PROTECTION  
N.T.S.



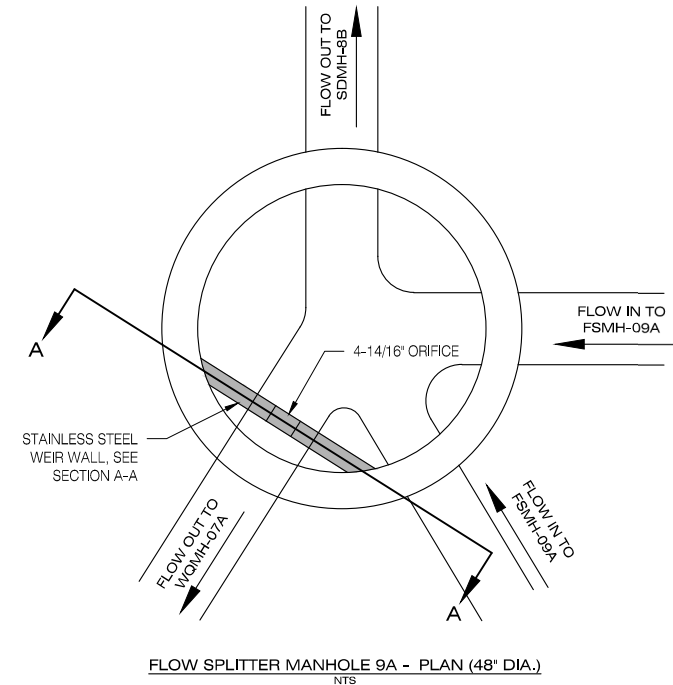
OUTFALL #2 PROTECTION  
N.T.S.



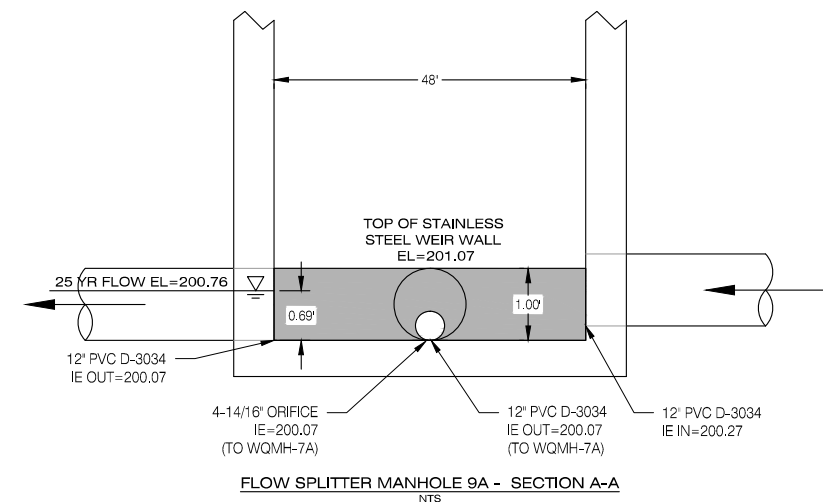
SDLN-08 / SWALE 1 - PROFILE  
SCALE: 1"=40' (H), 1"=4' (V)

CONSTRUCTION NOTES

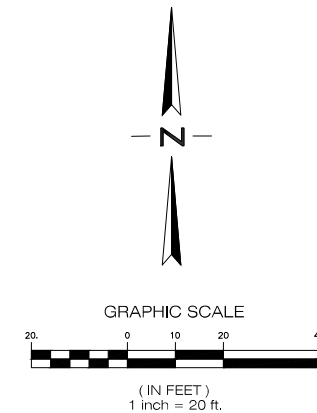
- ① INSTALL 4' HIGH ORNAMENTAL FENCE WITH 12' WIDE ACCESS GATE. SEE LANDSCAPE PLANS FOR FENCING DETAILS.
- ② VEGETATED SWALES TO BE COMPLETELY LINED WITH 30 MIL PLASTIC LINER OR APPROVED EQUAL PER CITY DETAIL ST-6045.



FLOW SPLITTER MANHOLE 9A - PLAN (48" DIA.)  
NTS



FLOW SPLITTER MANHOLE 9A - SECTION A-A  
NTS



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PIONEER DESIGN GROUP  
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P 503.843.8286



SDLN-07, SDLN-08, SWALES 1 & 2 - PLAN AND PROFILE

MORGAN FARM PHASE 2  
CITY OF WILSONVILLE, OREGON

Designed by	TCC	Date	12/2018
Drawn by <td>TCC</td> <td>Date</td> <td>12/2018</td>	TCC	Date	12/2018
Reviewed by <td>BEF</td> <td>Date</td> <td>12/2018</td>	BEF	Date	12/2018
Project No.	321-002	REF.	
Horiz. Scale	1"=40'		
Vert. Scale	N/A		

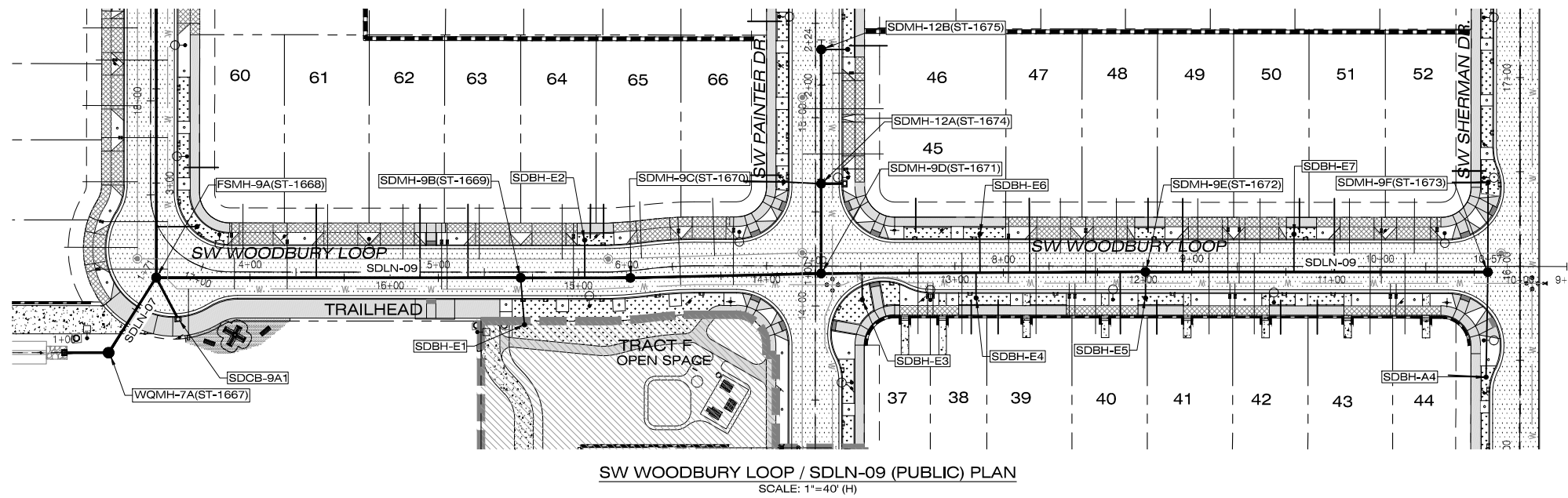
RECORD DRAWINGS  
DATE: 12/18/2018. THESE RECORD DRAWINGS HAVE BEEN PREPARED BASED ON FIELD OBSERVATION AND SURVEYED INFORMATION.

Project: MORGAN FARM PH.2  
No.: 321-002  
Type: AS-BUILTS  
Sheet: 772

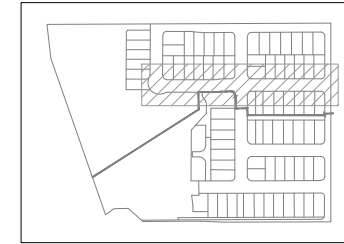




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SW WOODBURY LOOP / SDLN-09 (PUBLIC) PLAN  
SCALE: 1"=40' (H)



KEY MAP  
NTS

**LEGEND**

- PROPOSED SIDEWALK WITH FACILITY PERMIT
- PROPOSED SIDEWALK (BY HOMEOWNER)
- PROPOSED CONCRETE CURB AND GUTTER
- PROPOSED STORM LINE & MANHOLE
- PROPOSED SANITARY LINE & MANHOLE
- PROPOSED WATERLINE & VALVE
- PROPOSED PAVEMENT

**STORM LATERAL DATA**

LOT NO.	D.S. M.H.	DIST. FROM D.S. M.H.	LENGTH	INV. EL. @ MAINLINE	INV. EL. @ PLUG	SLOPE	DEPTH @ PLUG
38	LIDA	--	18.0'	214.06	214.24	0.0100	2.8'
39	LIDA	--	18.0'	214.05	214.23	0.0100	3.2'
40	9D	158.73'	32.9'	210.46	212.12	0.0503	5.0'
41	LIDA	--	18.0'	215.48	215.66	0.0100	3.1'
42	LIDA	--	18.0'	217.12	217.30	0.0100	2.9'
43	LIDA	--	18.0'	217.55	217.73	0.0100	2.9'
45	LIDA	--	18.0'	213.87	214.05	0.0100	1.1'
47	9D	110.73'	39.4'	210.16	210.92	0.0193	5.0'
48	LIDA	--	18.0'	215.43	215.61	0.0100	0.9'
49	9E	19.80'	39.0'	211.31	212.61	0.0333	5.0'
50	LIDA	--	18.0'	217.37	217.55	0.0100	0.9'
51	9E	100.30'	39.0'	213.28	214.48	0.0308	5.0'
61	9A	85.00'	39.0'	202.41	202.86	0.0114	5.0'
62	9A	140.00'	39.0'	203.47	204.69	0.0313	5.0'
63	9A	165.50'	39.0'	203.96	205.50	0.0395	5.0'
64	LIDA	--	18.0'	211.12	211.30	0.0100	1.1'
65	LIDA	--	18.0'	211.17	211.35	0.0100	1.1'

NOTE: STORM LATERALS TO BE 6" PVC D-3034

**PUBLIC CATCH BASIN DATA**

TAG	TYPE	STATION	TC ELEV	IE IN	IE OUT	SLOPE	PIPE
SDCB-9A1	CG-30	17+02.26 27.70' LT WOODBURY	205.54	-	202.54	0.0330	24.87 LF 10" PVC C900

**BEEHIVE LATERAL DATA**

BEEHIVE NO.	D.S. M.H.	DIST. FROM D.S. M.H.	LENGTH	INV. EL. @ MAINLINE	INV. EL. @ BEEHIVE	SLOPE
E1	9B	0.00'	25.1'	204.80	206.56	0.0702
E2	9B	34.00'	20.0'	206.37	208.05	0.0840
E3	9D	18.80'	14.1'	209.70	210.88	0.0839
E4	9D	82.21'	13.5'	210.08	210.75	0.0497
E5	9E	0.00'	14.0'	211.02	212.08	0.0757
E6	9D	84.41'	20.5'	210.10	210.66	0.0273
E7	9E	78.80'	20.0'	212.75	213.95	0.0600

**CONSTRUCTION NOTES**

ALL 6" STORM LATERALS THAT OUTFALL INTO STREET SIDE SWALES WILL BE DUCTILE IRON PIPE INSTALLED UNDER THE SIDEWALK AT S=0.0100 TO MAXIMIZE COVER AT THE END OF THE PIPE. SEE STORM LATERAL TO SWALE DETAIL ON SHEET C4.2.

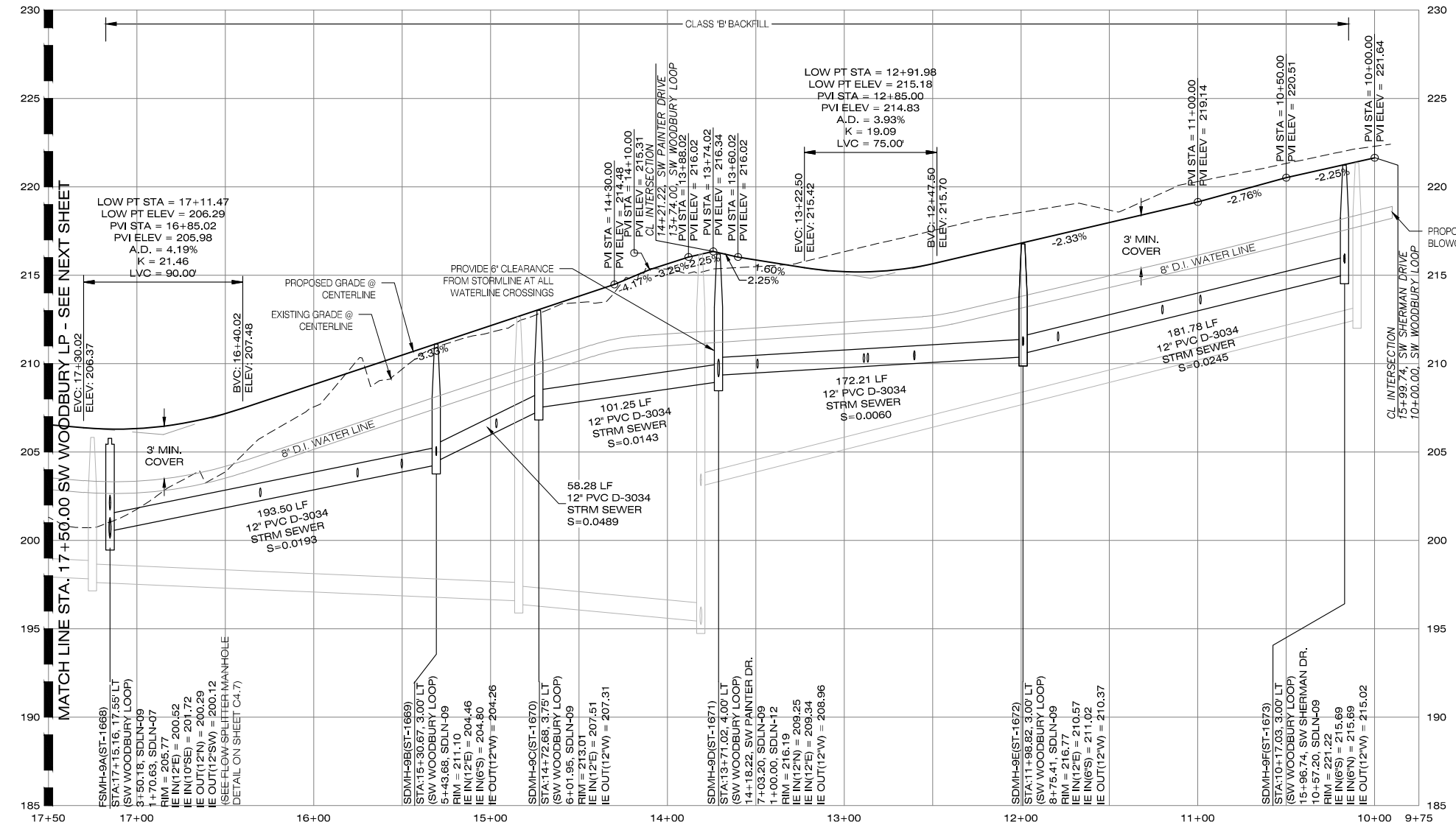
**STORM SEWER NOTES**

UNLESS OTHERWISE NOTED, ALL LATERALS ARE TO BE 6" PVC (ASTM D3034) WITH A MINIMUM SLOPE OF 0.0100. LATERAL CONNECTIONS TO MAIN SEWER LINE TO BE MADE WITH MANUFACTURED TEES.

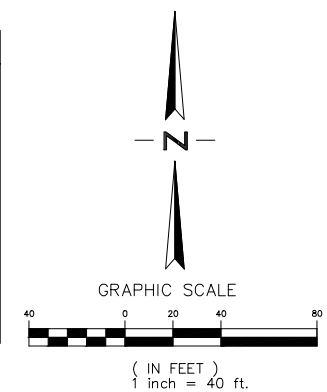
ALL 2"x 4" STORM SERVICE CONNECTION MARKERS TO BE COLOR CODED WHITE. CONTRACTOR TO NOTE LENGTH OF BOARD USED ON EACH MARKER.

BACKFILL NOTE: PIPES UNDER PAVED SURFACES REQUIRE GRANULAR BACKFILL. FOR PIPES OUTSIDE PAVEMENT, NATIVE BACKFILL IS PERMITTED, UNLESS OTHERWISE NOTED.

THE CONTRACTOR SHALL FIELD VERIFY THE SIZE, LOCATION & DEPTH OF EXISTING UTILITIES PRIOR TO CONSTRUCTION.



SW WOODBURY LOOP / SDLN-09 (PUBLIC) PROFILE  
SCALE: 1"=40' (H), 1"=4' (V)



**Item 3.**

**PIONEER DESIGN GROUP**  
CIVIL ENGINEERING • LAND USE PLANNING • LAND SURVEYING • LANDSCAPE ARCHITECTURE  
9020 SW WASHINGTON SQUARE RD., SUITE 170 PORTLAND, OR 97225  
P 503.843.8286

**REGISTERED PROFESSIONAL ENGINEER**  
No. 54027PE  
DREC. 0000  
MAR. 12, 2008  
BRENT E.

VALID THROUGH 12-31-19

**SW WOODBURY LOOP - SDLN-09 PLAN AND PROFILE**

MORGAN FARM PHASE 2  
CITY OF WILSONVILLE, OREGON

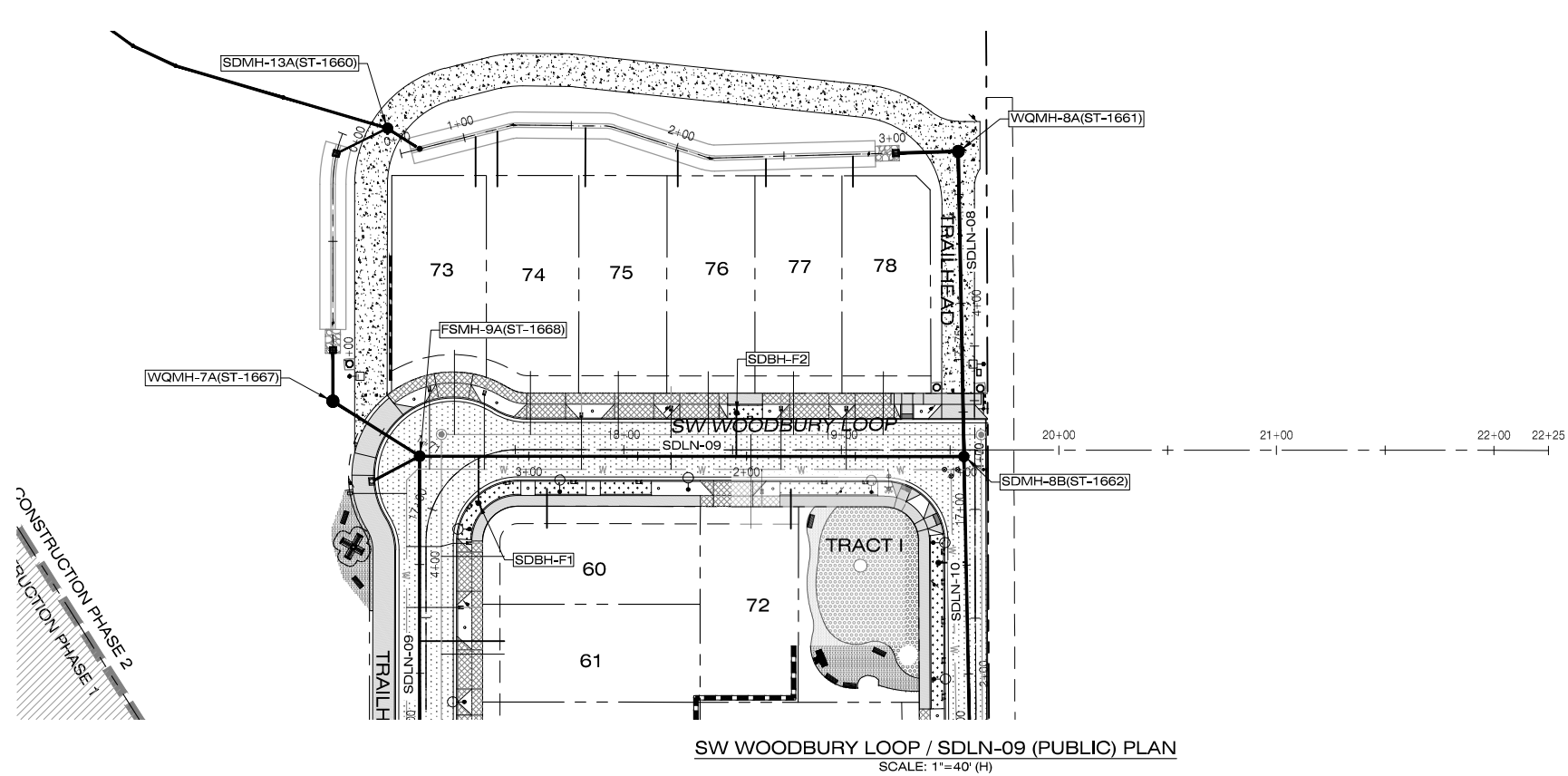
Designed by	TCC	Date	12/2018
Drawn by <td>TCC</td> <td>Date</td> <td>12/2018</td>	TCC	Date	12/2018
Reviewed by <td>BEF</td> <td>Date</td> <td>12/2018</td>	BEF	Date	12/2018
Project No.	321-002	REF.	
Horiz. Scale:	1" = 40'		
Vert. Scale:	1" = 4'		

**RECORD DRAWINGS**  
DATE 12/18/2018 THESE RECORD DRAWINGS HAVE BEEN PREPARED BASED ON FIELD OBSERVATION AND SURVEYED INFORMATION.

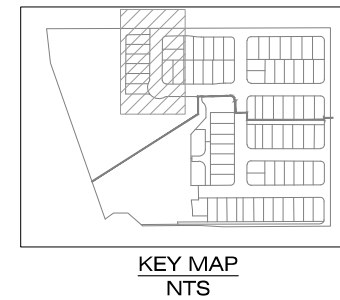
Project: MORGAN FARM PH.2  
No. 321-002  
Type AS-BUILTS  
Sheet **774**

**C5.2**

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SW WOODBURY LOOP / SDLN-09 (PUBLIC) PLAN  
SCALE: 1"=40' (H)



**LEGEND**

- PROPOSED SIDEWALK WITH FACILITY PERMIT
- PROPOSED SIDEWALK (BY HOMEBUILDER)
- PROPOSED CONCRETE CURB AND GUTTER
- PROPOSED STORM LINE & MANHOLE
- PROPOSED SANITARY LINE & MANHOLE
- PROPOSED WATERLINE & VALVE
- PROPOSED PAVEMENT

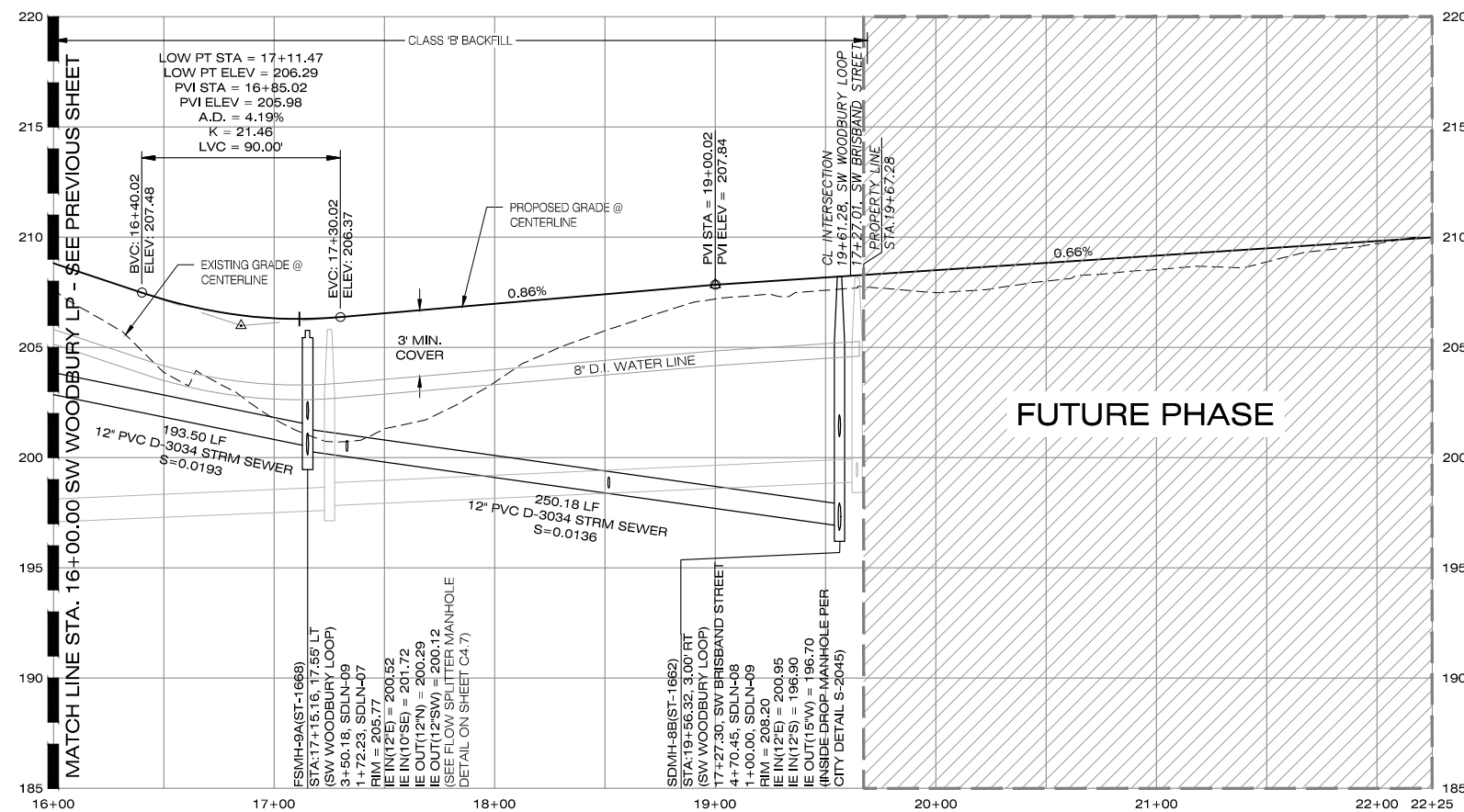
**STORM LATERAL DATA**

LOT NO.	D.S. M.H.	DIST. FROM D.S. M.H.	LENGTH	INV. EL. @ MAINLINE	INV. EL. @ PLUG	SLOPE	DEPTH @ PLUG
1) 60	LIDA	--	18.0'	205.22	205.40	0.0100	0.90'
1) 72	LIDA	--	18.0'	206.31	206.49	0.0100	0.5'
73	LIDA	--	22.8'	192.83	193.06	0.0100	3.4'
74	LIDA	--	25.3'	193.00	193.25	0.0100	3.3'
75	LIDA	--	26.9'	193.15	193.42	0.0100	3.9'
76	LIDA	--	16.7'	193.75	193.92	0.0100	3.5'
77	LIDA	--	12.8'	194.20	194.33	0.0100	3.5'
78	LIDA	--	13.9'	194.54	194.68	0.0100	3.5'

1) STORM LATERAL TO BE 6" D.I.P.

**BEEHIVE LATERAL DATA**

BEEHIVE NO.	D.S. M.H.	DIST. FROM D.S. M.H.	LENGTH	INV. EL. @ MAINLINE	INV. EL. @ BEEHIVE	SLOPE
F1	8B	223.13'	21.6'	200.02	201.90	0.0870
F2	8B	104.59'	20.0'	198.50	202.32	0.1910



SW WOODBURY LOOP / SDLN-09 (PUBLIC) PROFILE  
SCALE: 1"=40' (H), 1"=4' (V)

**CONSTRUCTION NOTES**

ALL 6" STORM LATERALS THAT OUTFALL INTO STREET SIDE SWALES WILL BE DUCTILE IRON PIPE INSTALLED UNDER THE SIDEWALK AT S=0.0100 TO MAXIMIZE COVER AT THE END OF THE PIPE. SEE STORM LATERAL TO SWALE DETAIL ON SHEET C4.2.

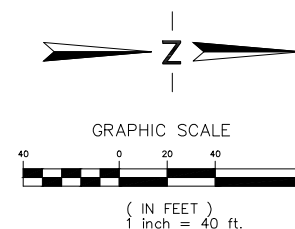
**STORM SEWER NOTES**

UNLESS OTHERWISE NOTED, ALL LATERALS ARE TO BE 6" PVC (ASTM D3034) WITH A MINIMUM SLOPE OF 0.0100. LATERAL CONNECTIONS TO MAIN SEWER LINE TO BE MADE WITH MANUFACTURED TEES.

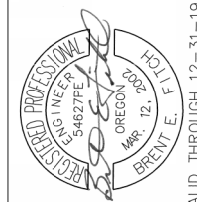
ALL 2"x 4" STORM SERVICE CONNECTION MARKERS TO BE COLOR CODED WHITE. CONTRACTOR TO NOTE LENGTH OF BOARD USED ON EACH MARKER.

BACKFILL NOTE: PIPES UNDER PAVED SURFACES REQUIRE GRANULAR BACKFILL. FOR PIPES OUTSIDE PAVEMENT, NATIVE BACKFILL IS PERMITTED, UNLESS OTHERWISE NOTED.

THE CONTRACTOR SHALL FIELD VERIFY THE SIZE, LOCATION & DEPTH OF EXISTING UTILITIES PRIOR TO CONSTRUCTION.



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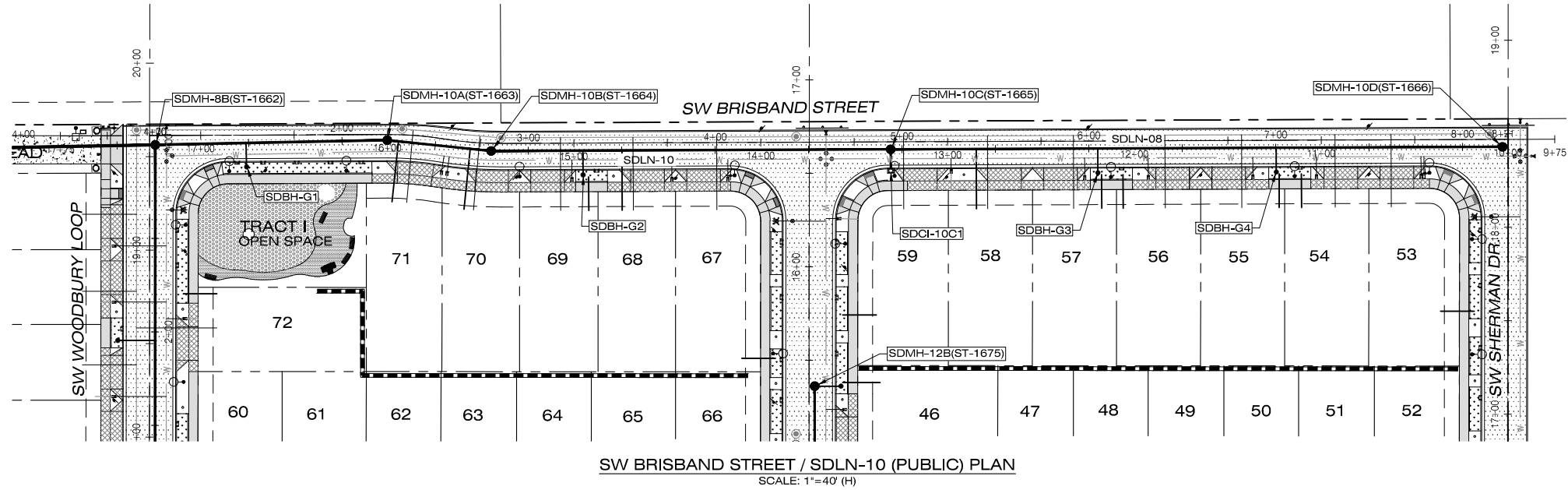
SW WOODBURY LOOP -  
SDLN-09 PLAN AND  
PROFILE  
MORGAN FARM PHASE 2  
CITY OF WILSONVILLE, OREGON

Designed by	Date	TCC
TCC	12/2018	
Drawn by	Date	TCC
TCC	12/2018	
Reviewed by	Date	BEF
BEF	12/2018	
Project No.	321-002	REF.
321-002		
Horiz. Scale:	1" = 40'	
Vert. Scale:	1" = 4'	

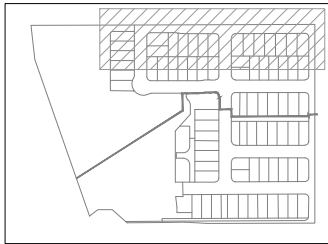
**RECORD DRAWINGS**  
DATE: 12/18/2018. THESE RECORD DRAWINGS HAVE BEEN PREPARED BASED ON FIELD OBSERVATION AND SURVEYED INFORMATION.

Project: MORGAN FARM PH.2  
No.: 321-002  
Type: AS-BUILTS  
Sheet: **775**  
**C5.3**

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SW BRISBAND STREET / SDLN-10 (PUBLIC) PLAN  
SCALE: 1"=40' (H)



KEY MAP  
NTS

LEGEND

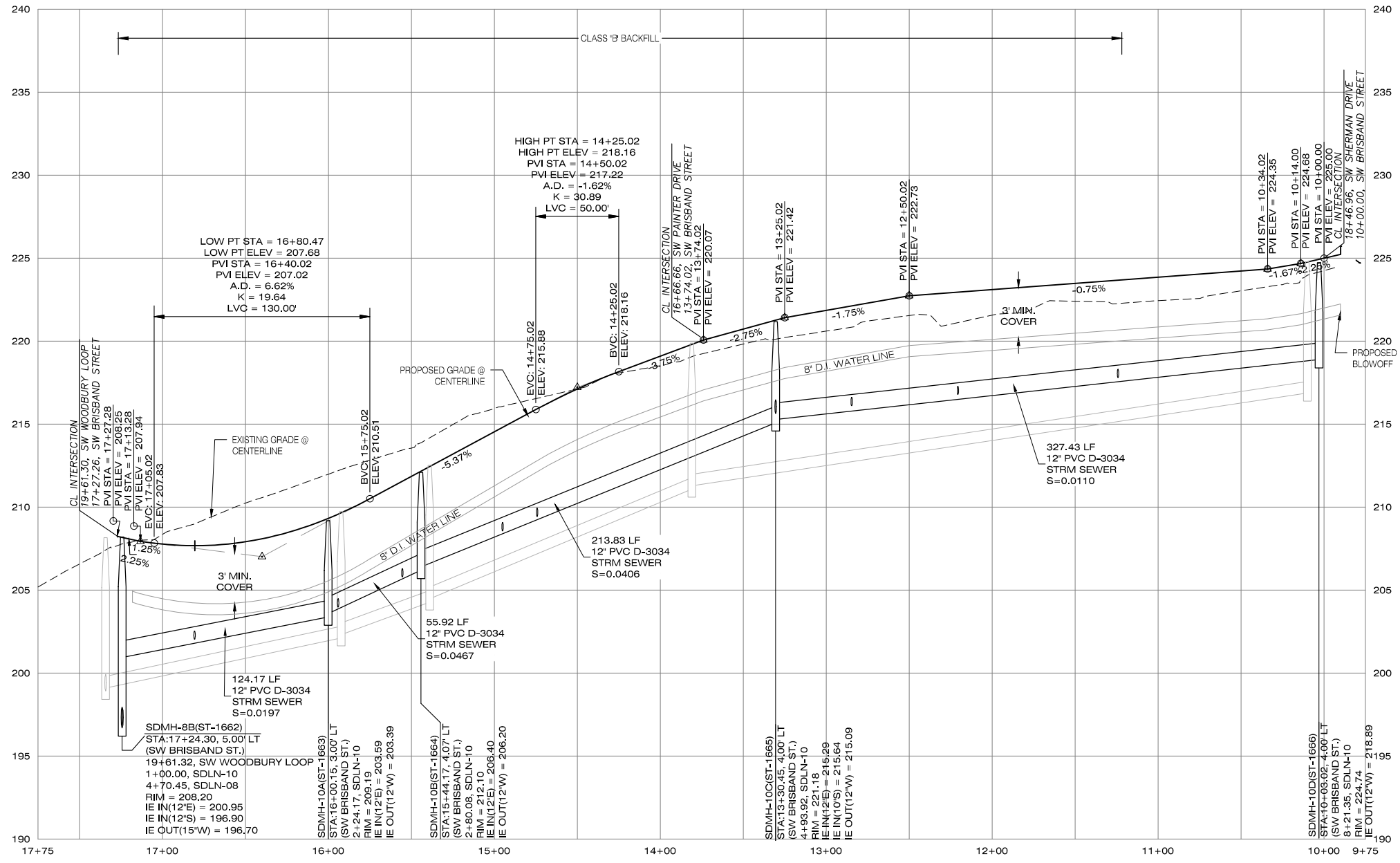
- PROPOSED SIDEWALK WITH FACILITY PERMIT
- PROPOSED SIDEWALK (BY HOMEBUILDER)
- PROPOSED CONCRETE CURB AND GUTTER
- PROPOSED STORM LINE & MANHOLE
- PROPOSED SANITARY LINE & MANHOLE
- PROPOSED WATERLINE & VALVE
- PROPOSED PAVEMENT

STORM LATERAL DATA							
LOT NO.	D.S. M.H.	DIST. FROM D.S. M.H.	LENGTH	INV. EL. @ MAINLINE	INV. EL. @ PLUG	SLOPE	DEPTH @ PLUG
1) 54	LIDA	--	18.0'	222.37	222.55	0.0100	0.9'
1) 55	LIDA	--	18.0'	222.50	222.68	0.0100	0.9'
1) 56	LIDA	--	18.0'	221.94	222.12	0.0100	0.9'
1) 57	LIDA	--	18.0'	221.57	221.75	0.0100	0.9'
58	10C	45.80'	32.0'	216.04	217.43	0.0434	5.0'
68	10B	69.94'	32.0'	209.49	211.36	0.0584	5.0'
1) 69	LIDA	--	18.0'	213.75	213.93	0.0100	1.0'
70	10A	44.71'	32.5'	205.93	207.08	0.0354	5.0'
71	10A	6.00'	32.6'	204.12	205.07	0.0292	5.0'

1) STORM LATERAL TO BE 6" DUCTILE IRON PIPE.

PUBLIC CATCH BASIN DATA						
TAG	TYPE	STATION	TC ELEV	IE IN	IE OUT	PIPE
SDCI-10C1	CG-30	13+30.47 14.00' LT BRISBAND	221.30	--	216.40	11.38 LF 10" PVC C900

BEEHIVE LATERAL DATA						
BEEHIVE NO.	D.S. M.H.	DIST. FROM D.S. M.H.	LENGTH	INV. EL. @ MAINLINE	INV. EL. @ BEEHIVE	SLOPE
G1	8B	43.63'	12.8'	202.06	202.23	0.0133
G2	10B	49.13'	13.0'	208.64	210.38	0.1338
G3	10C	109.80'	13.0'	216.75	217.35	0.0462
G4	10C	206.30'	13.0'	217.80	218.42	0.0474



SW BRISBAND STREET / SDLN-10 (PUBLIC) PROFILE  
SCALE: 1"=40' (H), 1"=4' (V)

CONSTRUCTION NOTES

ALL 6" STORM LATERALS THAT OFFFALL INTO STREET SIDE SWALES WILL BE DUCTILE IRON PIPE INSTALLED UNDER THE SIDEWALK AT S=0.0100 TO MAXIMIZE COVER AT THE END OF THE PIPE. SEE STORM LATERAL TO SWALE DETAIL ON SHEET C4.2.

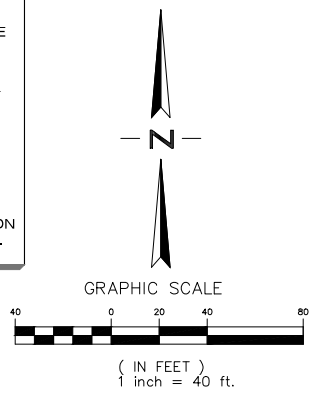
STORM SEWER NOTES

UNLESS OTHERWISE NOTED, ALL LATERALS ARE TO BE 6" PVC (ASTM D3034) WITH A MINIMUM SLOPE OF 0.0100. LATERAL CONNECTIONS TO MAIN SEWER LINE TO BE MADE WITH MANUFACTURED TEES.

ALL 2"x 4" STORM SERVICE CONNECTION MARKERS TO BE COLOR CODED WHITE. CONTRACTOR TO NOTE LENGTH OF BOARD USED ON EACH MARKER.

BACKFILL NOTE: PIPES UNDER PAVED SURFACES REQUIRE GRANULAR BACKFILL. FOR PIPES OUTSIDE PAVEMENT, NATIVE BACKFILL IS PERMITTED, UNLESS OTHERWISE NOTED.

THE CONTRACTOR SHALL FIELD VERIFY THE SIZE, LOCATION & DEPTH OF EXISTING UTILITIES PRIOR TO CONSTRUCTION.



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P 503.843.8286



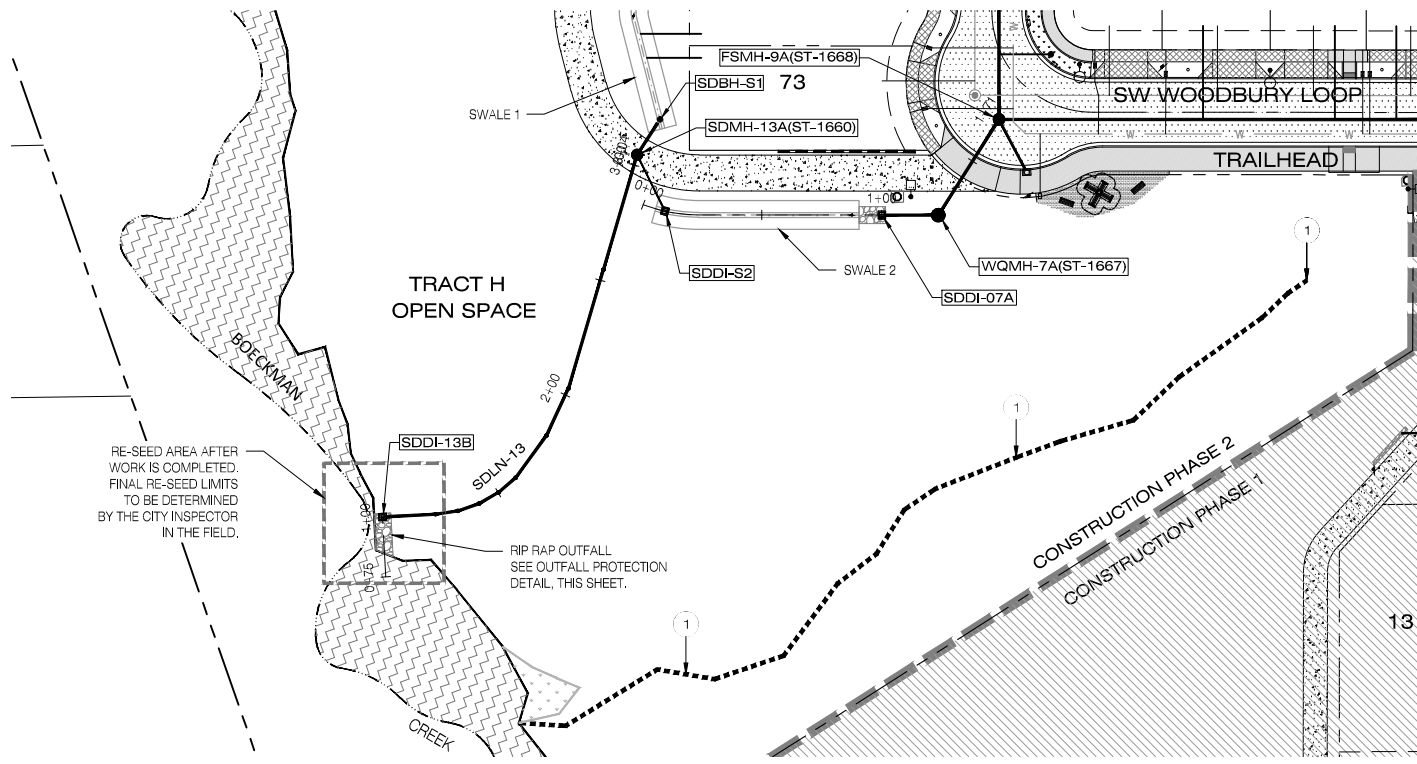
SW BRISBAND STREET -  
SDLN-10 PLAN AND PROFILE  
MORGAN FARM PHASE 2  
CITY OF WILSONVILLE, OREGON

Designed by	TCC	Date	12/2018
Drawn by <td>TCC <td>Date <td>12/2018</td> </td></td>	TCC <td>Date <td>12/2018</td> </td>	Date <td>12/2018</td>	12/2018
Reviewed by <td>BEF <td>Date <td>12/2018</td> </td></td>	BEF <td>Date <td>12/2018</td> </td>	Date <td>12/2018</td>	12/2018
Project No.	321-002 <td>REF. <td></td> </td>	REF. <td></td>	
Horiz. Scale:	1" = 40'		
Vert. Scale:	1" = 4'		

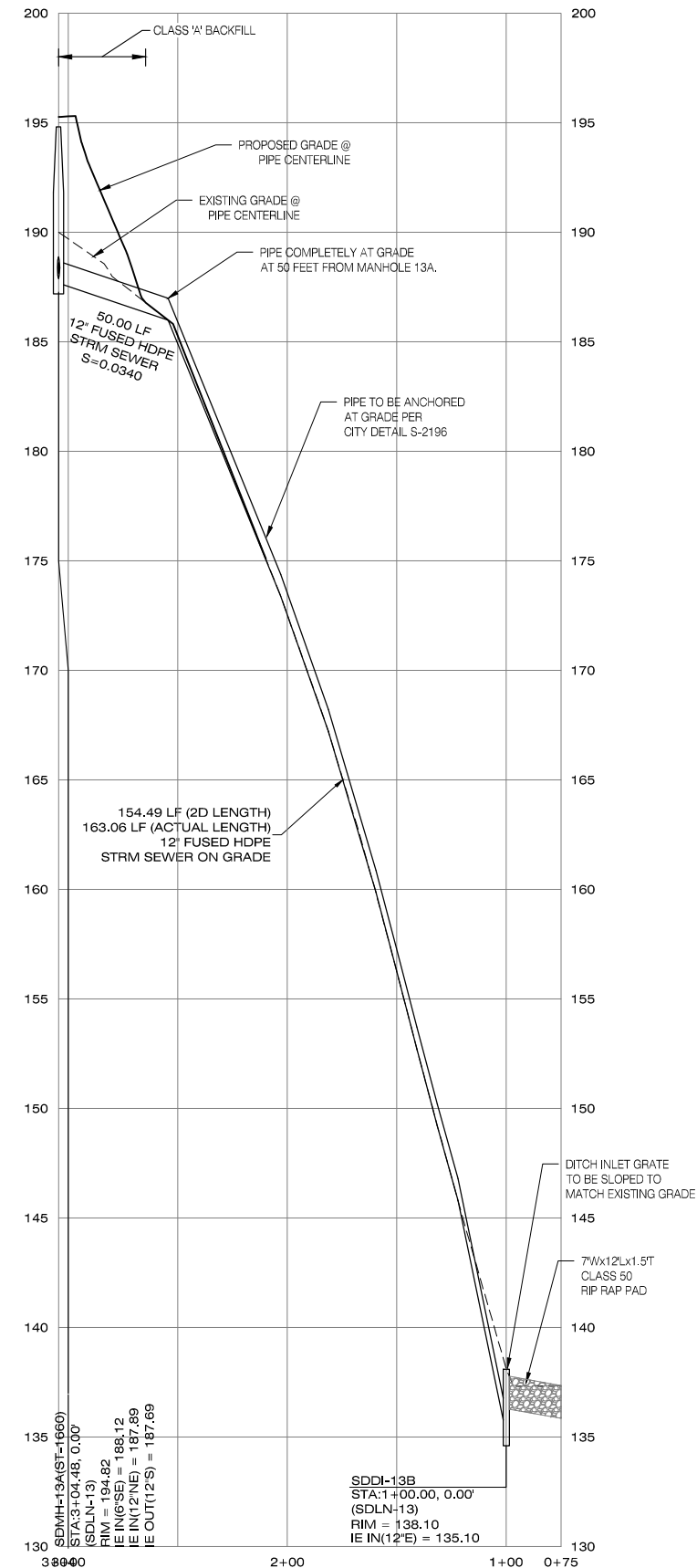
RECORD DRAWINGS  
DATE: 12/18/2018. THESE RECORD DRAWINGS HAVE BEEN PREPARED BASED ON FIELD OBSERVATION AND SURVEYED INFORMATION.

Project: MORGAN FARM PH.2  
No.: 321-002  
Type: AS-BUILTS  
Sheet: 776  
C5.4

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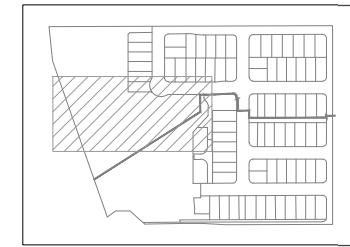
**SDLN-13 (PUBLIC) PLAN**  
SCALE: 1"=40' (H)



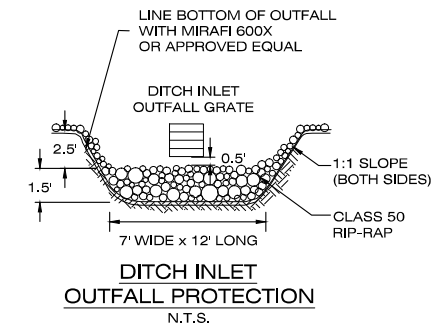
**SDLN-13 (PUBLIC) PROFILE**  
SCALE: 1"=40' (H), 1"=4' (V)

**LEGEND**

- PROPOSED SIDEWALK WITH FACILITY PERMIT
- PROPOSED SIDEWALK (BY HOMEBUILDER)
- PROPOSED CONCRETE CURB AND GUTTER
- PROPOSED STORM LINE & MANHOLE
- PROPOSED SANITARY LINE & MANHOLE
- PROPOSED WATERLINE & VALVE
- PROPOSED PAVEMENT



**KEY MAP**  
NTS



**DITCH INLET OFFFALL PROTECTION**  
N.T.S.

**STORM SEWER NOTES**

UNLESS OTHERWISE NOTED, ALL LATERALS ARE TO BE 6" PVC (ASTM D3034) WITH A MINIMUM SLOPE OF 0.0100. LATERAL CONNECTIONS TO MAIN SEWER LINE TO BE MADE WITH MANUFACTURED TEES.

ALL 2" x 4" STORM SERVICE CONNECTION MARKERS TO BE COLOR CODED WHITE. CONTRACTOR TO NOTE LENGTH OF BOARD USED ON EACH MARKER.

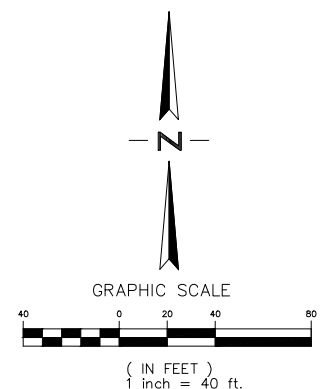
BACKFILL NOTE: PIPES UNDER PAVED SURFACES REQUIRE GRANULAR BACKFILL. FOR PIPES OUTSIDE PAVEMENT, NATIVE BACKFILL IS PERMITTED, UNLESS OTHERWISE NOTED.

THE CONTRACTOR SHALL FIELD VERIFY THE SIZE, LOCATION & DEPTH OF EXISTING UTILITIES PRIOR TO CONSTRUCTION.

**CONSTRUCTION NOTES**

- 1 STREAM STABILIZATION USING BEAVER DAM ANALOGS TO BE COMPLETED ALONG THE EXISTING DRAINAGEWAY, REFER TO APPROVED REPORT AND DESIGN PLANS FROM WOLFE WATER RESOURCES INC. DATED JULY 2018. THIS WORK WILL BE COMPLETED BY OTHERS AND IS NOTED FOR REFERENCE ONLY.

**CONTRACTOR TO VERIFY FINAL LOCATION OF FUSED HDPE PIPE IN THE FIELD PRIOR TO INSTALLATION. SHOULD THE LOCATION OF PIPE NEED TO CHANGE, CONTACT THE ENGINEER IMMEDIATELY .**



**Item 3.**

**PIONEER DESIGN GROUP**  
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8020 SW WASHINGTON SQUARE RD. SUITE 170 PORTLAND, OR 97225  
P 503.843.8286  
WWW.PDRGROUP.COM



**SDLN-13 PLAN AND PROFILE**

Designed by	Date	Reviewed by	Date	Project No.	Horiz. Scale	Vert. Scale
TCC	12/2018	BEF	12/2018	321-002	1" = 40'	1" = 4'

**RECORD DRAWINGS**  
DATE 12/18/2018 THESE RECORD DRAWINGS HAVE BEEN PREPARED BASED ON FIELD OBSERVATION AND SURVEYED INFORMATION.

Project: MORGAN FARM PH.2  
No. 321-002  
Type AS-BUILTS  
Sheet **777**  
**C5.5**





### STORMWATER CONVEYANCE CALCULATIONS

JOB NUMBER: 321-002  
 PROJECT: Morgan Farm Ph. 2  
 FILE: 3212\_FINAL hydro  
 Design Storm: 25 YR  
 Storm Duration: 24 HRS  
 Precipitation: 4 IN  
 Manning's "n" 0.013

LINE	INC. AREA (AC)	AREA TOTAL (AC)	% IMP.	AREA PERV. (AC)	CN PER.	AREA IMP. (AC)	CN IMP.	TIME (MIN)	Q (CFS)	PIPE SIZE (IN)	SLOPE (FT/FT)	Qf (CFS)	Q/Qf (%)	Vf (FPS)	V/Vf (%)	ACTUAL V (FPS)	LENGTH (FT)	INC. TIME (MIN)
<b>NORTH BASIN</b>																		
<b>SDLN-12</b>																		
SDMH 12B TO 12A	0.26	0.26	64.3	0.09	74	0.17	98	5.00	0.21	12	0.0098	3.54	5.89%	4.50	0.26	1.17	71.25	1.02
SDMH 12A TO 9D	0.36	0.62	64.3	0.22	74	0.40	98	6.02	0.48	12	0.0246	5.60	8.50%	7.13	0.29	2.03	46.75	0.38
<b>SDLN-9</b>																		
SDMH 9F TO 9E	0.90	0.90	64.3	0.32	74	0.58	98	5.00	0.72	12	0.0259	5.75	12.54%	7.32	0.33	2.38	181.78	1.27
SDMH 9E TO 9D	1.24	2.14	64.3	0.76	74	1.38	98	6.27	1.63	12	0.0050	2.53	64.46%	3.22	0.84	2.72	172.20	1.06
SDMH 9D TO 9C	0.00	2.76	64.3	0.99	74	1.77	98	7.33	2.06	12	0.0206	5.13	40.25%	6.53	0.60	3.93	101.28	0.43
SDMH 9C TO 9B	0.27	3.03	64.3	1.08	74	1.95	98	7.76	2.26	12	0.0170	4.66	48.45%	5.93	0.68	4.06	58.28	0.24
SDMH 9B TO 9A	0.70	3.73	64.3	1.33	74	2.40	98	8.00	2.77	12	0.0222	5.32	52.06%	6.78	0.72	4.88	192.50	0.66
↓ Q into Flow Splitter Manhole																		
<b>SDLN-7</b>																		
SDMH 9A TO 7A	0.00	0.57	64.3	0.20	74	0.37	98	8.65	0.42	12	0.0050	2.53	16.64%	3.22	0.37	1.18	47.23	0.67
↓ Area diverted to small swale																		
SDMH 7A TO SMALL SWALE	0.00	0.57	64.3	0.20	74	0.37	98	9.32	0.42	12	0.0050	2.53	16.49%	3.22	0.36	1.17	25.00	0.35
↓ Q into WQ Manhole 7A																		
<b>SDLN-9 (cont.)</b>																		
SDMH 9A TO 8B	0.78	3.94	64.3	1.41	74	2.53	98	8.65	2.90	12	0.0132	4.10	70.78%	5.23	0.91	4.74	252.18	0.89
↓ Area after diversion																		

**SDLN-10**

SDMH 10E TO 10D	0.63	0.63	64.3	0.22	74	0.41	98	5.00	0.50	12	0.0107	3.70	13.66%	4.70	0.34	1.58	206.30	2.17
SDMH 10D TO 10C	0.09	0.72	64.3	0.26	74	0.46	98	7.17	0.54	12	0.0359	6.77	7.96%	8.62	0.28	2.41	143.89	1.00
SDMH 10C TO 10B	0.25	0.97	64.3	0.35	74	0.62	98	8.17	0.72	12	0.0508	8.05	8.93%	10.25	0.29	2.97	69.94	0.39
SDMH 10B TO 10A	0.09	1.06	64.3	0.38	74	0.68	98	8.56	0.78	12	0.0473	7.77	10.07%	9.89	0.30	2.97	47.19	0.26
SDMH 10A TO 8B	0.38	1.44	64.3	0.51	74	0.93	98	8.82	1.06	12	0.0187	4.89	21.69%	6.22	0.42	2.59	132.92	0.85

**SDLN-8**

SDMH 8B TO 8A	0.00	5.38	64.3	1.92	74	3.46	98	9.68	3.91	15	0.0118	7.04	55.62%	5.73	0.76	4.34	140.32	0.54
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↓  
Q into WQ Manhole 8A

SDMH 8A TO LARGE SWALE	0.00	5.38	64.3	1.92	74	3.46	98	10.22	3.88	15	0.0050	4.58	84.78%	3.73	1.05	3.91	30.19	0.13
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8.0'L x 7.25'W x 1.5'D CL 50 Riprap Pad

**SDLN-13**

SDBH S1 TO SDMH 13A	0.56	5.94	64.3	2.12	74	3.82	98	5.00	4.76	12	0.0371	6.88	69.16%	8.76	0.89	7.81	17.50	0.04
SDBH S2 TO SDMH 13A	0.00	0.57	64.3	0.20	74	0.37	98	5.00	0.46	6	0.1114	1.88	24.32%	9.56	0.44	4.24	26.21	0.10

SDMH 13A TO OUTFALL	0.00	6.51	64.3	2.32	74	4.19	98	5.00	5.22	12	0.0356	6.74	77.38%	8.58	0.97	8.36	204.54	0.41
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↓  
(slope used for pipe sizing)

SDMH 13A TO OUTFALL	0.00	6.51	64.3	2.32	74	4.19	98	5.00	5.22	12	0.4836	24.84	20.99%	31.63	0.41	12.97	204.54	0.26
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↓  
(slope used for velocity calculations)  
Ditch Inlet Energy Dissipater used with  
12.0'L x 7.0'W x 1.5'D CL 50 Riprap Pad

OPERATIONS &  
MAINTENANCE DRAFT

## Stormwater Planters Operations & Maintenance Plan

What to Look For	What to Do
<b>Structural Components</b> , including inlets and outlets/overflows, shall freely convey stormwater.	
Clogged inlets or outlets	-Remove sediment and debris from catch basins, trench drains and curb inlets and pipes to maintain at least 50% conveyance capacity at all times.
Cracked Drain Pipes	-Repair/seal cracks. Replace when repair is insufficient.
Check Dams	-Maintain 4 to 10 inch deep rock check dams at design intervals.
<b>Vegetation</b>	
Dead or strained vegetation	-Replant per original planting plan, or substitute from Appendix A. -Irrigate as needed. Mulch banks annually. DO NOT apply fertilizers, herbicides, or pesticides.
Tall Grass and Vegetation	-Cut back grass and prune overgrowth 1-2 times per year. Remove cuttings
Weeds	-Manually remove weeds. Remove all plant debris.
<b>Growing/Filter Medium</b> , including soil and gravels, shall sustain healthy plant cover and infiltrate within 72 hours.	
Gullies	-Fill, lightly compact, and plant vegetation to disperse flow.
Erosion	-Replace splash blocks or inlet gravel/rock.
Slope Slippage	-Stabilize 3:1 slopes/banks with plantings from Appendix A
Ponding	-Rake, till, or amend to restore infiltration rate.

**Annual Maintenance Schedule:**

*Summer.* Make any structural repairs. Improve filter medium as needed. Clear drain. Irrigate as needed.

*Fall.* Replant exposed soil and replace dead plants. Remove sediment and plant debris.

*Winter.* Monitor infiltration/flow-through rates. Clear inlets and outlets/overflows to maintain conveyance.

*Spring.* Remove sediment and plant debris. Replant exposed soil and replace dead plants. Mulch.

*All seasons.* Weed as necessary.

*Maintenance Records:* Record date, description, and contractor (if applicable) for all structural repairs, landscape maintenance, and facility cleanout activities. Keep work orders and invoices on file and make available upon request of the inspector.

*Access:* Maintain ingress/egress to design standards.

*Infiltration/Flow Control:* All facilities shall drain within 72 hours. Record time/date, weather, and site conditions when ponding occurs.

*Pollution Prevention:* All sites shall implement best management practices to prevent hazardous or solid wastes or excessive oil and sediment from contaminating stormwater. Contact \_\_\_\_\_ for immediate assistance responding to spills. Record time/date, weather, and site conditions if site activities contaminate stormwater.

*Vectors (Mosquitoes & Rodents):* Stormwater facilities shall not harbor mosquito larvae or rats that pose a threat to public health or that undermine the facility structure. Monitor standing water for small wiggling sticks perpendicular to the water's surface. Note holes/burrows in and around facilities. Call Clackamas County Vector Control for immediate assistance to eradicate vectors. Record time/date, weather, and site conditions when vector activity observed.

**Stormwater Planter O & M Plan**

DRAWING NUMBER: ST-6015

DRAWN BY: SR

SCALE: N.T.S.

FILE NAME: ST-6015.DWG

APPROVED BY: NK

DATE: 10/8/14

**CITY OF  
WILSONVILLE**



**PUBLIC WORKS STANDARD**



## Rain Gardens Operations & Maintenance Plan

What to Look For	What to Do
<b>Structural Components, including inlets and outlets/overflows, shall freely convey stormwater.</b>	
Clogged inlets or outlets	-Remove sediment and debris from catch basins, trench drains and curb inlets and pipes to maintain at least 50% conveyance capacity at all times.
Cracked Drain Pipes	-Repair/seal cracks. Replace when repair is insufficient.
Check Dams	-Maintain 4 to 10 inch deep rock check dams at design intervals.
<b>Vegetation</b>	
Dead or strained vegetation	-Replant per original planting plan, or substitute from Appendix A. -Irrigate as needed. Mulch banks annually. DO NOT apply fertilizers, herbicides, or pesticides.
Tall Grass and Vegetation	-Cut back grass and prune overgrowth 1-2 times per year. Remove cuttings
Weeds	-Manually remove weeds. Remove all plant debris.
<b>Growing/Filter Medium, including soil and gravels, shall sustain healthy plant cover and infiltrate within 72 hours.</b>	
Gullies	-Fill, lightly compact, and plant vegetation to disperse flow.
Erosion	-Replace splash blocks or inlet gravel/rock.
Slope Slippage	-Stabilize 3:1 slopes/banks with plantings from Appendix A
Ponding	-Rake, till, or amend to restore infiltration rate.

### Annual Maintenance Schedule:

*Summer.* Make any structural repairs. Improve filter medium as needed. Clear drain. Irrigate as needed.

*Fall.* Replant exposed soil and replace dead plants. Remove sediment and plant debris.

*Winter.* Monitor infiltration/flow-through rates. Clear inlets and outlets/overflows to maintain conveyance.

*Spring.* Remove sediment and plant debris. Replant exposed soil and replace dead plants. Mulch.

*All seasons.* Weed as necessary.

*Maintenance Records:* Record date, description, and contractor (if applicable) for all structural repairs, landscape maintenance, and facility cleanout activities. Keep work orders and invoices on file and make available upon request of the inspector.

*Access:* Maintain ingress/egress to design standards.

*Infiltration/Flow Control:* All facilities shall drain within 72 hours. Record time/date, weather, and site conditions when ponding occurs.

*Pollution Prevention:* All sites shall implement best management practices to prevent hazardous or solid wastes or excessive oil and sediment from contaminating stormwater. Contact \_\_\_\_\_ for immediate assistance responding to spills. Record time/date, weather, and site conditions if site activities contaminate stormwater.

*Vectors (Mosquitoes & Rodents):* Stormwater facilities shall not harbor mosquito larvae or rats that pose a threat to public health or that undermine the facility structure. Monitor standing water for small wiggling sticks perpendicular to the water's surface. Note holes/burrows in and around facilities. Call Clackamas County Vector Control for immediate assistance to eradicate vectors. Record time/date, weather, and site conditions when vector activity observed.

### Rain Garden O & M Plan

DRAWING NUMBER: ST-6030

DRAWN BY: SR

SCALE: N.T.S.

FILE NAME: ST-6030.DWG

APPROVED BY: NK

DATE: 10/15/14

CITY OF  
WILSONVILLE



PUBLIC WORKS STANDARD

## Vegetated Swales Operations & Maintenance Plan

What to Look For	What to Do
<b>Structural Components, including inlets and outlets/overflows, shall freely convey stormwater.</b>	
Clogged inlets or outlets	-Remove sediment and debris from catch basins, trench drains, curb inlets and pipes to maintain at least 50% conveyance capacity at all times.
Cracked Drain Pipes	-Replace/seal cracks. Replace when repair is insufficient.
Check Dams	-Maintain 4 - 10 inch deep rock check dams at design intervals.
<b>Vegetation</b>	
Dead or strained vegetation	-Replant per original planting plan, or substitute from Appendix A. -Irrigate as needed. Mulch banks annually. DO NOT apply fertilizers, herbicides, or pesticides.
Tall Grass and Vegetation	-Cut back to 4-6 inches, 1-2 times per year. Remove cuttings
Weeds	-Manually remove weeds. Remove all plant debris.
<b>Growing/Filter Medium, including soil and gravels, shall sustain healthy plant cover and infiltrate within 72 hours.</b>	
Gullies	-Fill, lightly compact, and plant vegetation to disperse flow.
Erosion	-Restore or create outfalls, checkdams, or splash blocks where necessary.
Slope Sippage	-Stabilize Slope.
Ponding	-Rake, till, or amend to restore infiltration rate.

### Annual Maintenance Schedule:

*Summer.* Make any structural repairs. Improve filter medium as needed. Clear drain. Irrigate as needed.

*Fall.* Replant exposed soil and replace dead plants. Remove sediment and plant debris.

*Winter.* Monitor infiltration/flow-through rates. Clear inlets and outlets/overflows to maintain conveyance.

*Spring.* Remove sediment and plant debris. Replant exposed soil and replace dead plants. Mulch.

*All seasons.* Weed as necessary.

*Maintenance Records:* Record date, description, and contractor (if applicable) for all structural repairs, landscape maintenance, and facility cleanout activities. Keep work orders and invoices on file and make available upon request of the inspector.

*Access:* Maintain ingress/egress to design standards.

*Infiltration/Flow Control:* All facilities shall drain within 72 hours. Record time/date, weather, and site conditions when ponding occurs.

*Pollution Prevention:* All sites shall implement best management practices to prevent hazardous or solid wastes or excessive oil and sediment from contaminating stormwater. Contact \_\_\_\_\_ for immediate assistance responding to spills. Record time/date, weather, and site conditions if site activities contaminate stormwater.

*Vectors (Mosquitoes & Rodents):* Stormwater facilities shall not harbor mosquito larvae or rats that pose a threat to public health or that undermine the facility structure. Monitor standing water for small wiggling sticks perpendicular to the water's surface.

Note holes/burrows in and around facilities. Call Clackamas County Vector Control for immediate assistance to eradicate vectors. Record time/date, weather, and site conditions when vector activity observed.

### Vegetated Swale O & M Plan

DRAWING NUMBER: ST-6055

DRAWN BY: SR

SCALE: N.T.S.

FILE NAME: ST-6055.DWG

APPROVED BY: NK

DATE: 10/8/14

CITY OF  
WILSONVILLE



PUBLIC WORKS STANDARD

## Detention Pond Operations & Maintenance Plan

Detention Pond removes pollutants through several processes: sedimentation, filtration, and biological processes. The facility owner must keep a log, recording all inspection dates, observations, and maintenance activities. The following items shall be inspected and maintained as stated:

What to Look For	What to Do
<b>Structural Components, including inlets and outlets/overflows, shall freely convey stormwater.</b>	
Clogged inlets or outlets	-Remove sediment and debris from catch basins, trench drains, curb inlets and pipes to maintain at least 50% conveyance capacity at all times.
Cracked Drain Pipes	-Repair/seal cracks. Replace when repair is insufficient.
Check Dams	-Maintain 4 - 10 inch deep rock check dams at design intervals.
<b>Vegetation shall cover 90% of the facility.</b>	
Dead or strained vegetation	-Replant per original planting plan, or substitute from Appendix A. -Irrigate as needed. Mulch banks annually. DO NOT apply fertilizers, herbicides, or pesticides.
Tall Grass and Vegetation	-Cut back grass and prune overgrowth 1-2 times per year. Remove cuttings.
Weeds	-Manually remove weeds. Remove all plant debris.
<b>Growing/Filter Medium, including soil and gravels, shall sustain healthy plant cover and infiltrate within 72 hours.</b>	
Gullies	-Fill, lightly compact, and plant vegetation to disperse flow.
Erosion	-Replace splash blocks or inlet gravel/rock.
Slope Sippage	-Stabilize 3:1 Slopes/banks with plantings from Appendix A
Ponding	-Rake, till, or amend to restore infiltration rate.

### Annual Maintenance Schedule:

*All facility components, vegetation, and source controls shall be inspected for proper operations and structural stability. These inspections shall occur, at a minimum, quarterly for the first 2 years from the date of installation, and 2 times per year thereafter, and within 48 hours after each major storm event.*

**Access:** Maintain ingress/egress to design standards.

**Infiltration/Flow Control:** All facilities shall drain within 72 hours. Record time/date, weather, and site conditions when ponding occurs.

**Pollution Prevention:** All sites shall implement best management practices to prevent hazardous or solid wastes or excessive oil and sediment from contaminating stormwater. Contact \_\_\_\_\_ for immediate assistance responding to spills. Record time/date, weather, and site conditions if site activities contaminate stormwater.

**Vectors (Mosquitoes & Rodents):** Stormwater facilities shall not harbor mosquito larvae or rats that pose a threat to public health or that undermine the facility structure. Monitor standing water for small wiggling sticks perpendicular to the water's surface. Note holes/burrows in and around facilities. Call Clackamas County Vector Control for immediate assistance to eradicate vectors. Record time/date, weather, and site conditions when vector activity observed.

### Detention Pond O & M Plan

DRAWING NUMBER: ST-6065

DRAWN BY: SR

SCALE: N.T.S.

FILE NAME: ST-6065.DWG

APPROVED BY: NK

DATE: 10/8/14

CITY OF  
WILSONVILLE



PUBLIC WORKS STANDARD

Site Bench

Item 3.

Willamette Bench by Huntco  
<https://huntco.com/willamette-bench>  
Color: TBD



Site Picnic Tables

Supplier: Wabash Valley

Products:

Signature Series

- (2) 6' picnic table, multi-pedestal, inground

- (1) 8' picnic table, multi-pedestal, inground, ADA accessible

Seat type: perforated

Color: TBD

<https://www.wabashvalley.com/product/picnic-table-multi-pedestal-signature-series-inground/>





Play Equipment

Item 3.

Manufacturer: Playworld and Landscape Structures  
All Colors TBD

Equipment, Cubes



Equipment, Dome

<https://playworld.com/products/unity-dome#gref>





Equipment, Spinner  
<https://playworld.com/products/accessible-whirl>



Equipment, Ramped





Equipment, Swings

Arch Swing with standard belt swing seats

<https://www.playlsi.com/en/commercial-playground-equipment/playground-components/5-arch-swing-frame2/>



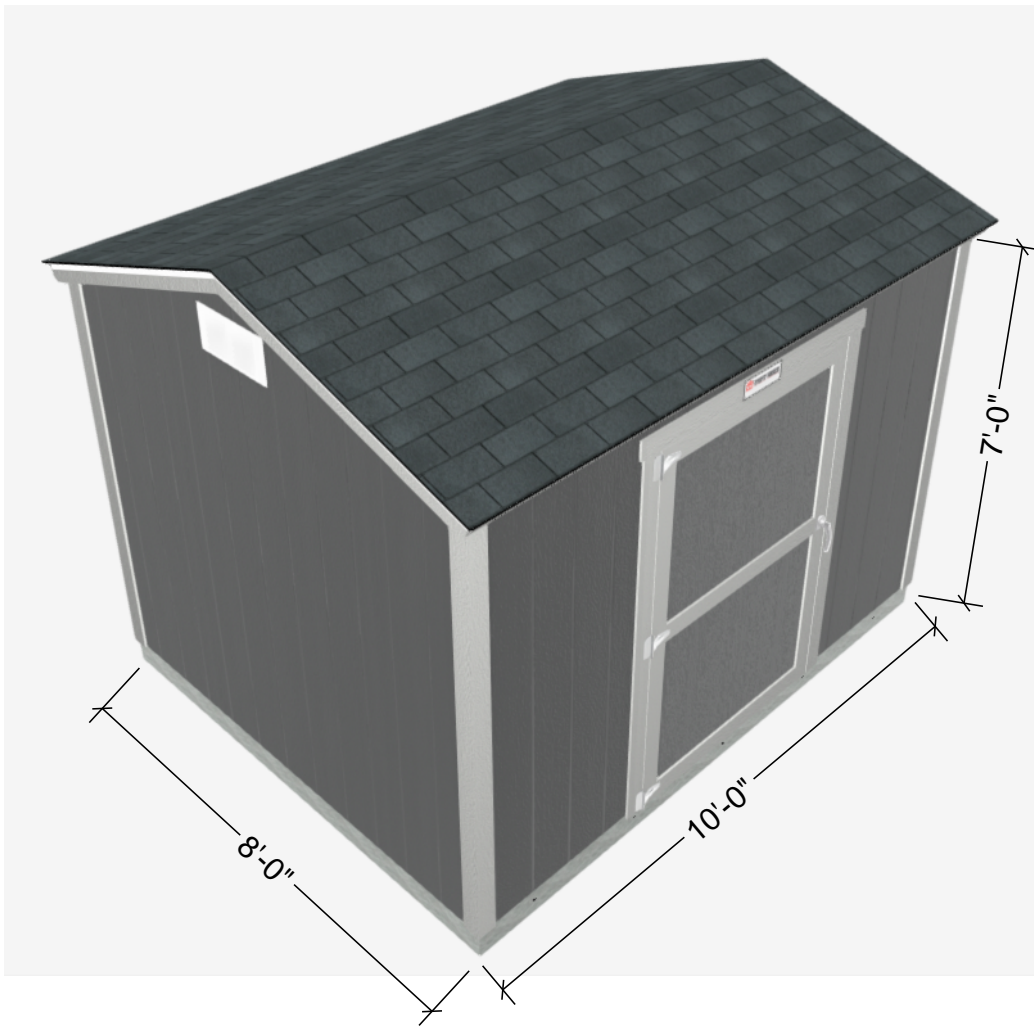
Friendship Swing

<https://www.playlsi.com/en/commercial-playground-equipment/playground-components/friendship-swing-with-5-arch-swing-frame/>





Storage Shed, basis of design: TuffShed.com



Raised planters, custom design, material: composite lumber







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No.	DESCRIPTION	DATE
CD CHECK SET #1		2022-11-04
60% CONSTRUCTION DOCUMENTS		2022-12-16

**ISSUES**

**NOT FOR CONSTRUCTION**

**CONSULTANTS**

**SEAL**

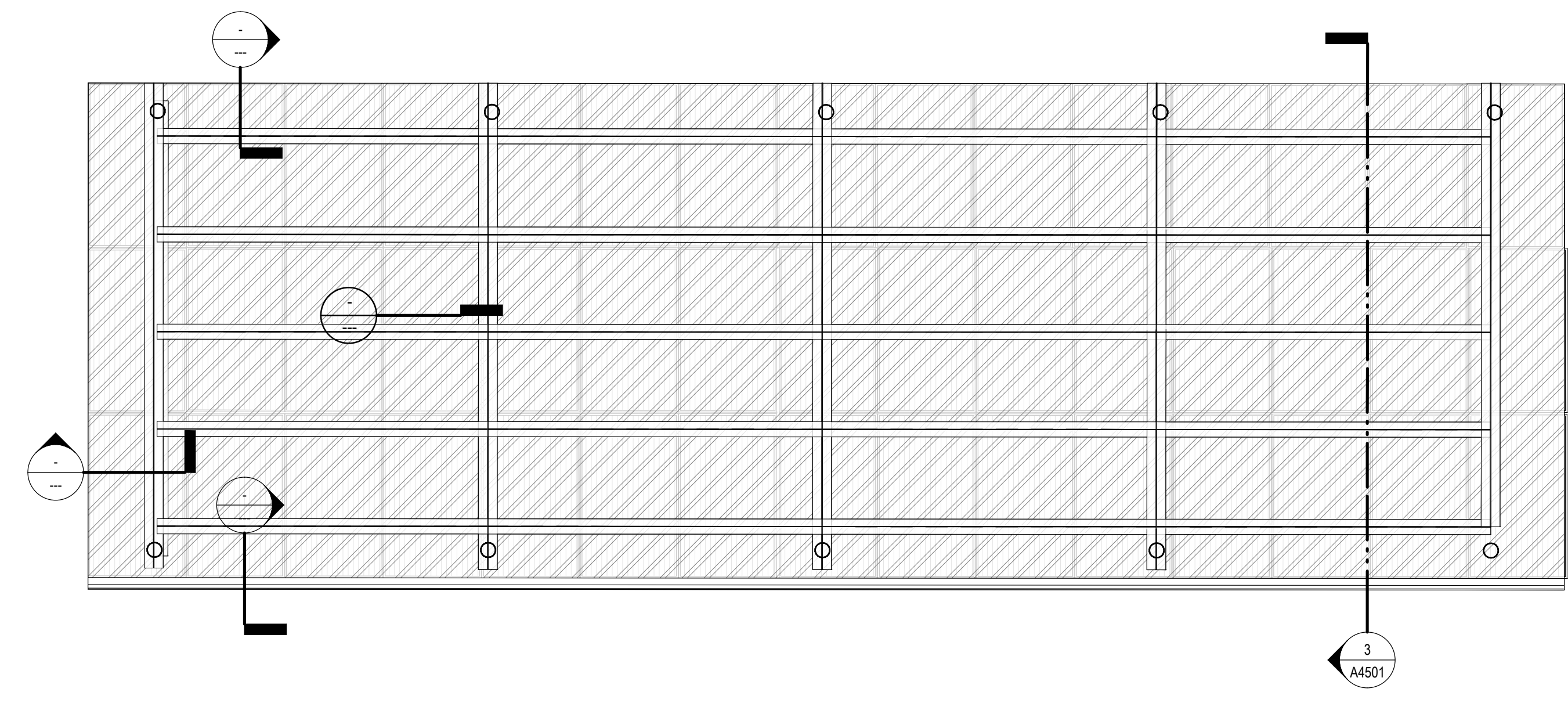
**PRIME CONSULTANT**  
IBI GROUP  
907 SW Harvey Milk Street  
Portland, OR 97205, USA  
tel 503 226 8950 fax 503 273 9192  
ibigroup-usa.com

**PROJECT**  
New Wilsonville Primary School  
7151 Boeckman Road  
Wilsonville, OR 97070

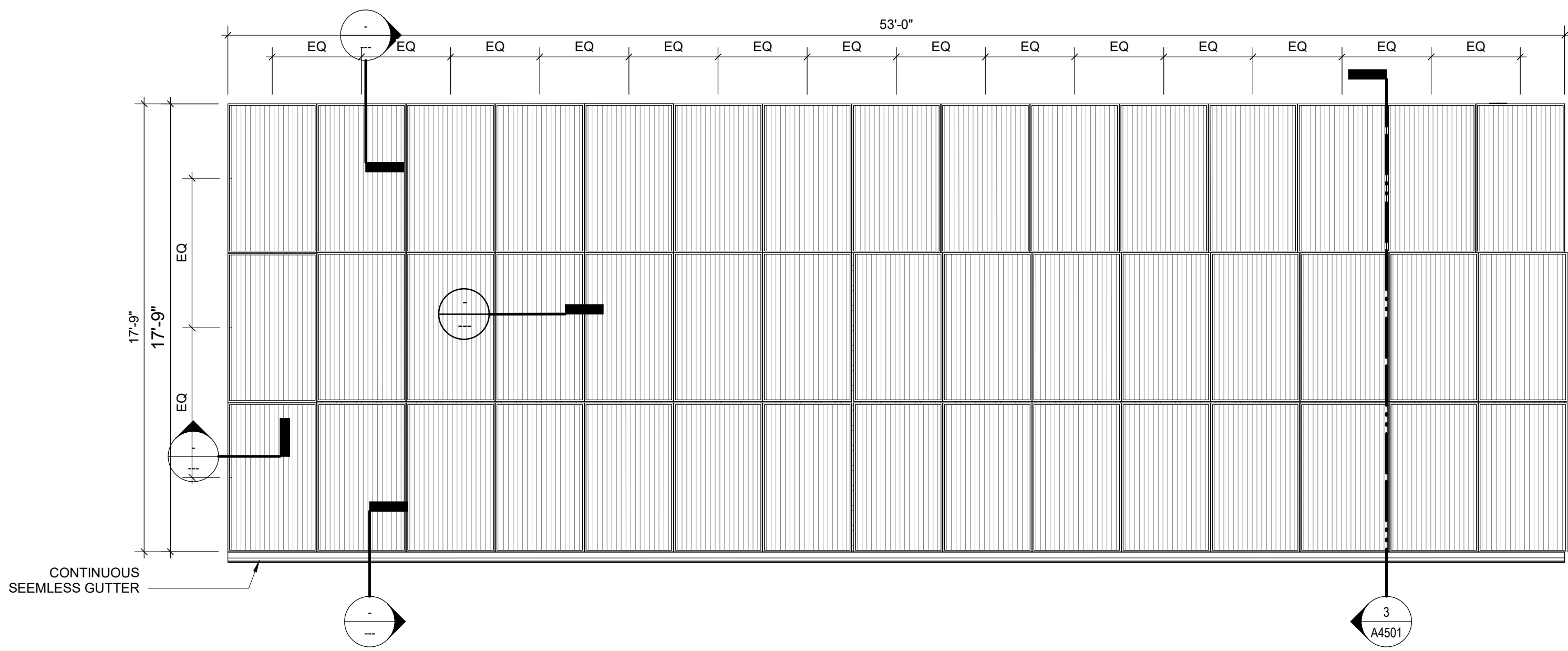
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137469

**SHEET TITLE**  
CANOPY TYPE - PV

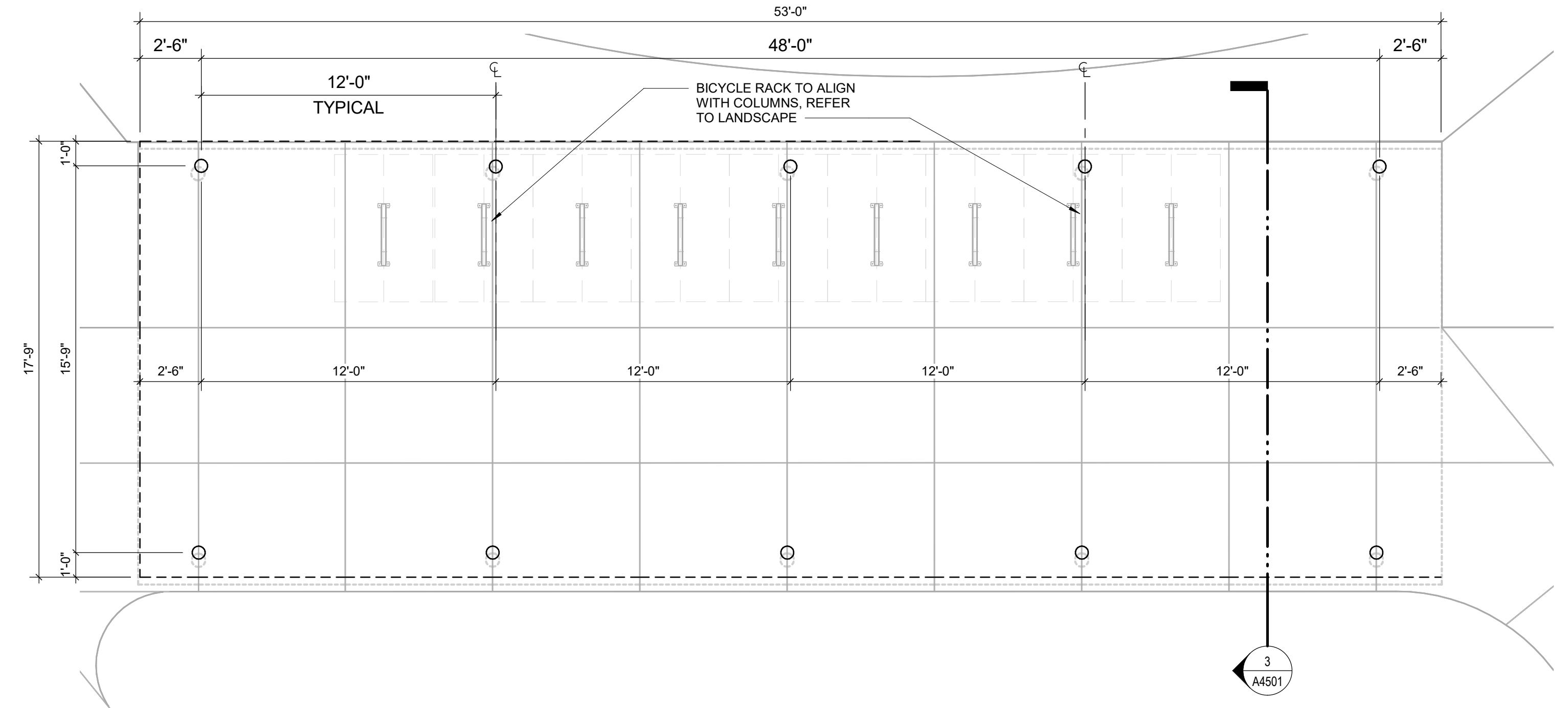
**SHEET NUMBER**  
A4501



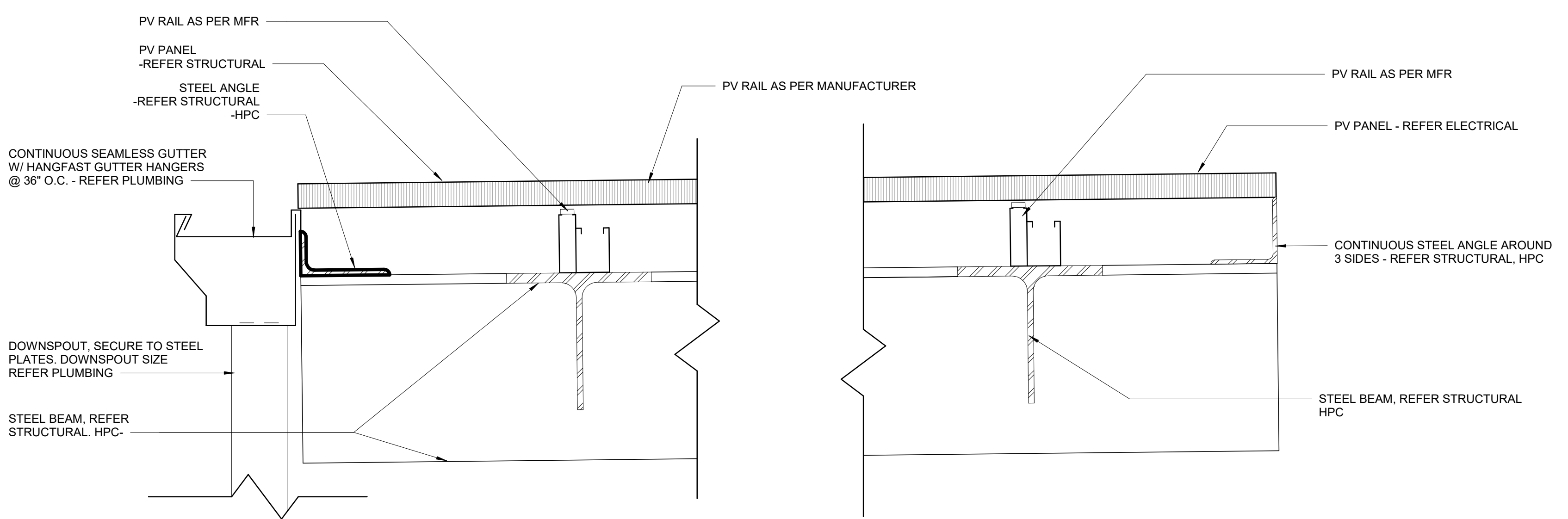
**5 PV CANOPY REFLECTED CEILING PLAN**  
SCALE: 1/4" = 1'-0"



**2 PV CANOPY ROOF PLAN**  
SCALE: 1/4" = 1'-0"

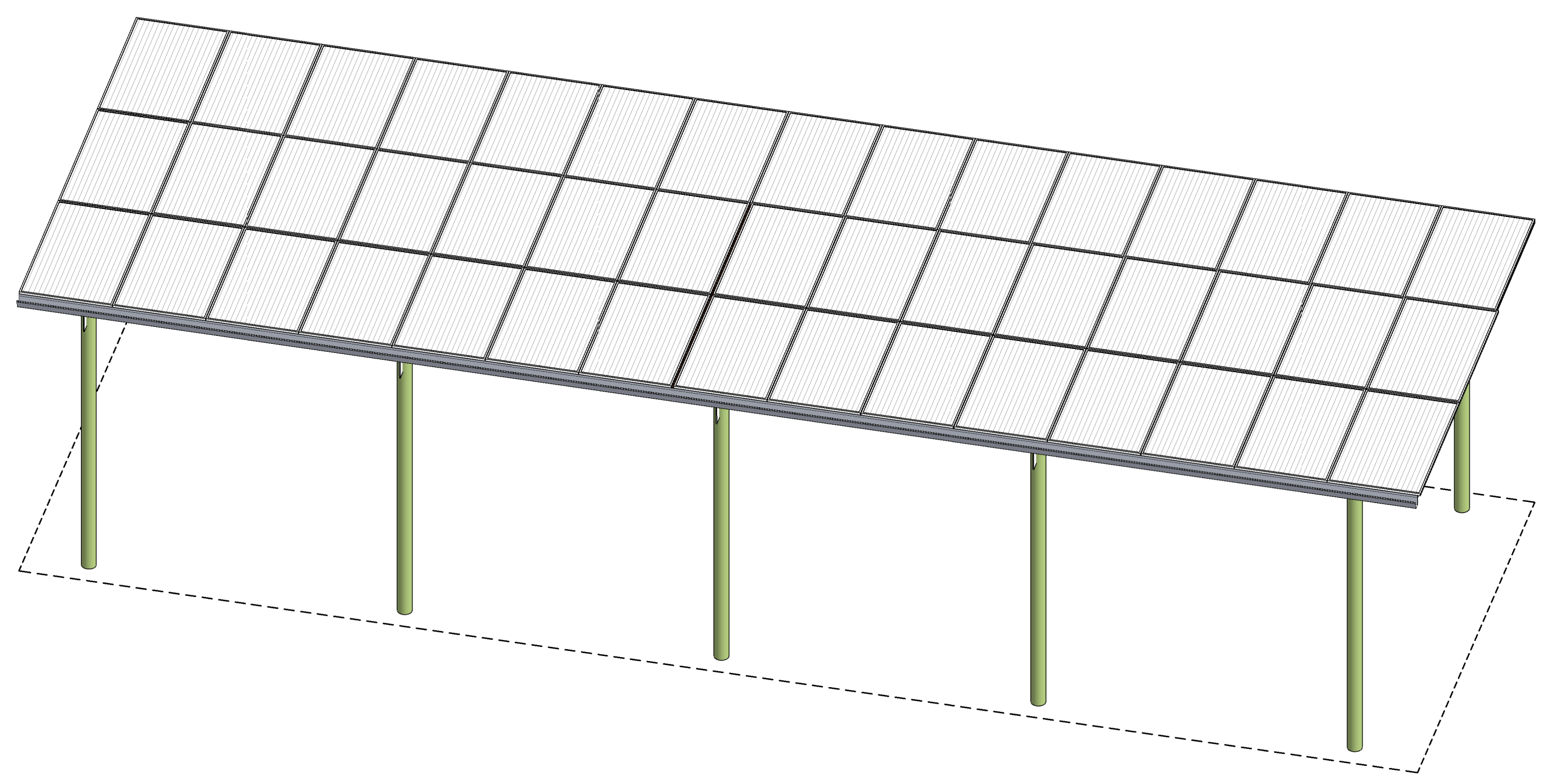


**1 PV CANOPY PLAN**  
SCALE: 1/4" = 1'-0"

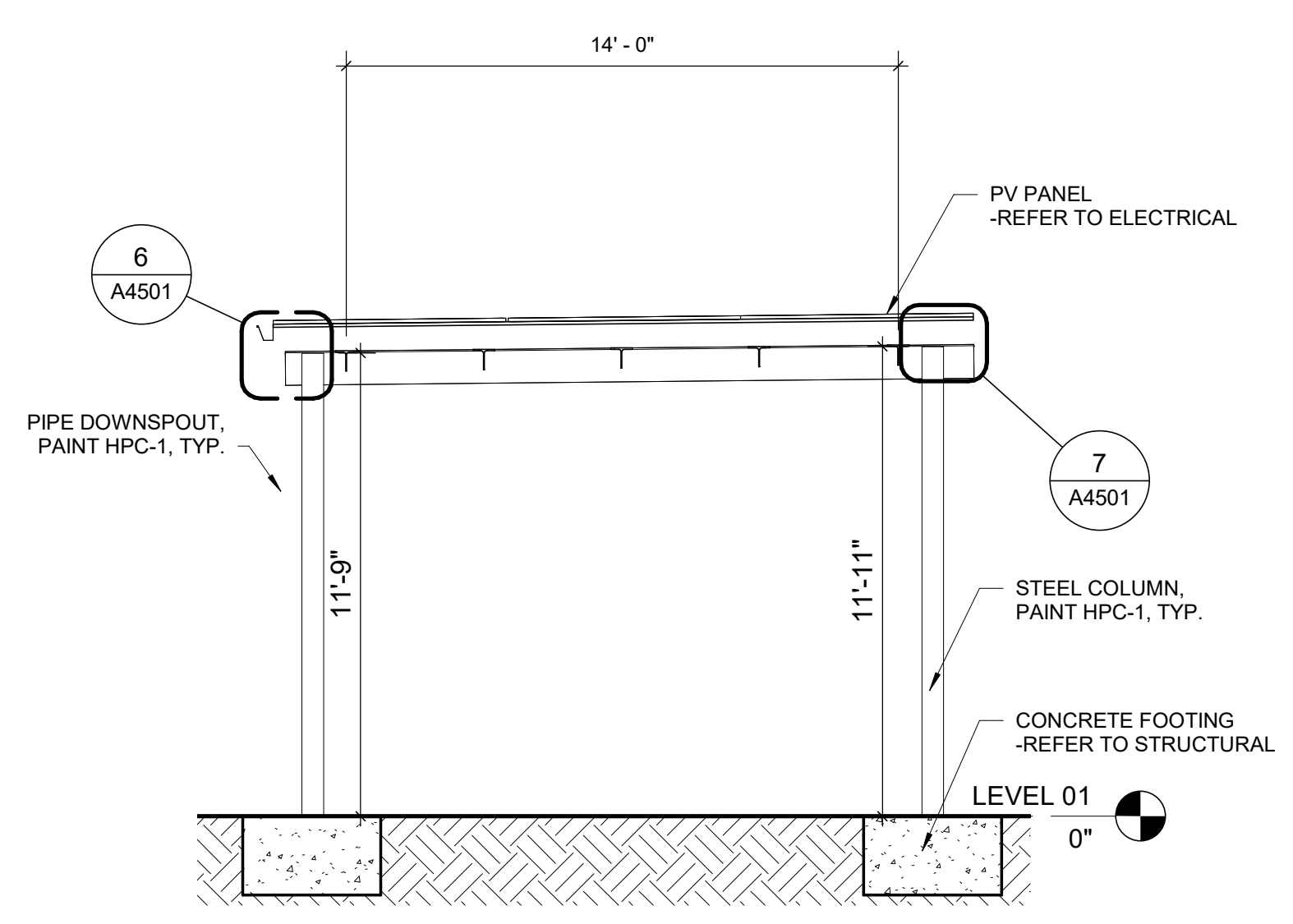


**6 PV CANOPY GUTTER**  
SCALE: 3" = 1'-0"

**7 PV CANOPY EDGE**  
SCALE: 3" = 1'-0"



**4 PV CANOPY AXONOMETRIC**  
SCALE:



**3 PV CANOPY SECTION**  
SCALE: 1/4" = 1'-0"



# Frog Pond Primary School

Land Use  
01/13/2022





## Radean Post Top LED Area Luminaire

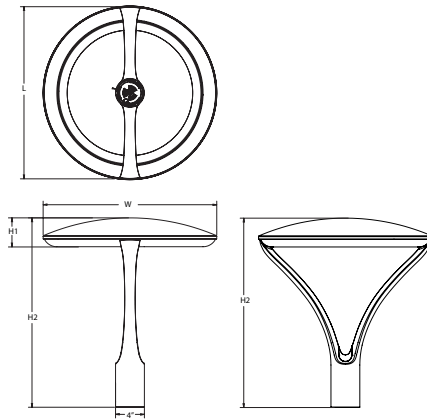


Catalog Number
Notes
Type

Hit the Tab key or mouse over the page to see all interactive elements.

### Specifications

- EPA:** 1.02 ft<sup>2</sup> (0.105 m<sup>2</sup>)
- Length:** 24" (61cm)
- Width:** 24" (61cm)
- H1 Luminaire Height:** 4" (10.16cm)
- H2 Luminaire Height:** 26" (66.04cm)
- Weight:** 38lbs (17.24Kg)



### Introduction

The architecturally-inspired shape of the RADEAN™ post top area luminaire embodies the grace and strength of the RADEAN family. The twin copper-core cast aluminum arms support the slender superstructure, creating a beautiful sculpture by day transforming into a beacon of comfort by night. Triangular arms redirect reflection maintaining its visually quiet appearance. With sleek lines and simple silhouettes, these LED luminaires use specialized lighting and visual comfort to transform common areas like courtyards, outdoor retail locations, universities and corporate campuses into pedestrian-friendly nighttime environments.

### Ordering Information

**EXAMPLE:** RADPT LED P3 30K SYM MVOLT PT4 PIR DNAXD

Series	Performance package	Color temperature	Distribution	Voltage	Mounting (required)
RADPT LED	P1 3,000 Lumens P2 5,000 Lumens P3 7,000 Lumens P4 10,000 Lumens P5 15,000 Lumens	27K 2700K 30K 3000K 35K 3500K 40K 4000K 50K 5000K	SYM Symmetric type V ASY Asymmetric type IV PATH Pathway Type III	MVOLT <sup>2</sup> 277 <sup>2</sup> 120 <sup>2</sup> 347 208 <sup>2</sup> 480 240 <sup>2</sup>	PT4 <sup>3</sup> Slips inside a 4" OD round metal pole RADPT20 Slips over a 2 3/8" diameter tenon RADPT25 Slips over a 2 7/8" diameter tenon
Control options	Other options	Finish (required)			
Shipped installed NLTAIR2 nLight AIR 2.0 enabled <sup>4</sup> PIR Bi-level motion/sensor (100% to 30%) <sup>4,5,7</sup> PE Button photocell <sup>7</sup> FAO Field adjustable output <sup>5,9</sup>	SF Single Fuse <sup>2</sup> DF Double Fuse <sup>2</sup> R90 Rotated optics <sup>10</sup>	Shipped installed HS Houseside shield <sup>11</sup>	DDBXD Dark bronze DBLXD Black DNAXD Natural aluminum DWHXD White	DDBTXD Textured dark bronze DBLBXD Textured black DNATXD Textured natural aluminum DWHGXD Textured white	



COMMERCIAL OUTDOOR

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RADPT LED  
Rev. 04/19/22

## Ordering Information

### Accessories

Ordered and shipped separately.

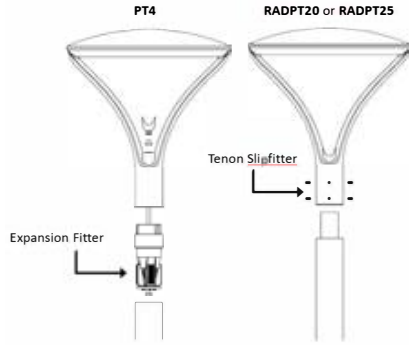
RADHS	House-side shield (shield is white)
RADCS DDBXD U	Decorative clamshell base for 4" RSS pole (specify finish)
RADFC DDBXD U	Full base cover for 4" RSS pole (specify finish)

For more control options, visit [DTL](#) and [RCAM](#) online.

### NOTES

- 2700K and 3500K may require extended lead-times.
- MVOLT driver operates on any line voltage from 120-277V (50/60 Hz). Single fuse (SF) requires 120, 277 or 347 voltage option. Double fuse (DF) requires 208, 240 or 480 voltage option.
- Required nominal 4" round straight metal pole.
- NLTAR2 not available with PIR, PE or FAO. Must link to external nLight Air network.
- PIR will work with FAO, if adjustable low-end trim is required.
- PIR must specify 120V, 277V, 347V or 480V. Not available in MVOLT, 208V or 240V.
- PE and PIR are available together.
- PIR for use only on luminaires mounted under 15'.
- Field adjustable high-end trim.
- For left rotation, select R90 and rotate luminaire 180° on pole.
- Also available as a separate accessory; see Accessories information at left. HS not available with R90. Shield is field rotatable shield in 180° increments.

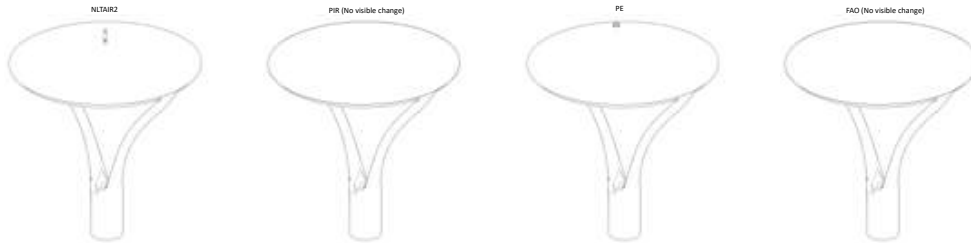
## Mounting



Recommended Poles for use with RADEAN RADPT LED Luminaires.			
Acuity Part Number	Description	For luminaires	Used with Mounting
RSS 10 4B PT DDBXD	10' Round Straight Steel - 4" O.D. - Open Top	RADPT LED	PT4
RSS 12 4B PT DDBXD	12' Round Straight Steel - 4" O.D. - Open Top	RADPT LED	PT4
RSS 14 4B PT DDBXD	14' Round Straight Steel - 4" O.D. - Open Top	RADPT LED	PT4
RSS 16 4B PT DDBXD	16' Round Straight Steel - 4" O.D. - Open Top	RADPT LED	PT4
RSS 18 4B PT DDBXD	18' Round Straight Steel - 4" O.D. - Open Top	RADPT LED	PT4
RSS 20 4B PT DDBXD	20' Round Straight Steel - 4" O.D. - Open Top	RADPT LED	PT4
RSS 25 4B PT DDBXD	25' Round Straight Steel - 4" O.D. - Open Top	RADPT LED	PT4
RSS 10 4B T20 DDBXD	10' Round Straight Steel - 4" O.D. - Tenon Top	RADPT LED	RADPT20
RSS 12 4B T20 DDBXD	12' Round Straight Steel - 4" O.D. - Tenon Top	RADPT LED	RADPT20
RSS 14 4B T20 DDBXD	14' Round Straight Steel - 4" O.D. - Tenon Top	RADPT LED	RADPT20
RSS 16 4B T20 DDBXD	16' Round Straight Steel - 4" O.D. - Tenon Top	RADPT LED	RADPT20
RSS 18 4B T20 DDBXD	18' Round Straight Steel - 4" O.D. - Tenon Top	RADPT LED	RADPT20
RSS 20 4B T20 DDBXD	20' Round Straight Steel - 4" O.D. - Tenon Top	RADPT LED	RADPT20
RSS 25 4B T20 DDBXD	25' Round Straight Steel - 4" O.D. - Tenon Top	RADPT LED	RADPT20

\* Customer must verify pole loading per required design criteria and specified wind speed. Consult pole specification sheet for additional details.

## Control Options



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RADPT LED  
Rev. 04/19/22



Performance Data

Lumen Output

Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of the configurations shown. Contact factory for performance data on any configurations not shown here.

Performance Package	Input Wattage	Distribution	2700K				3000K				3500K				4000K				5000K								
			Lumens	B	U	G	LPW	Lumens	B	U	G	LPW	Lumens	B	U	G	LPW	Lumens	B	U	G	LPW	Lumens	B	U	G	LPW
P1	25	ASY	2,924	2	1	2	115	3,022	2	2	2	119	3,095	2	2	2	122	3,168	2	2	2	125	3,168	2	2	2	125
		PATH	2,529	2	1	2	100	2,613	2	2	2	103	2,676	2	2	2	105	2,739	2	2	2	108	2,739	2	2	2	108
		SYM	3,086	2	1	1	121	3,189	2	1	1	126	3,266	2	1	1	129	3,344	2	1	1	132	3,344	2	1	1	132
P2	38	ASY	4,521	3	2	3	119	4,672	3	2	3	123	4,785	3	2	3	126	4,898	3	2	3	129	4,898	3	2	3	129
		PATH	3,909	2	2	2	103	4,040	2	2	2	106	4,137	2	2	2	109	4,235	3	2	3	111	4,235	3	2	3	111
		SYM	4,772	2	2	1	126	4,931	3	2	1	130	5,050	3	2	1	133	5,169	3	2	1	136	5,169	3	2	1	136
P3	54	ASY	6,387	3	2	3	119	6,600	3	2	3	123	6,760	3	2	3	126	6,919	3	2	3	129	6,919	3	2	3	129
		PATH	5,523	3	2	3	103	5,707	3	2	3	106	5,845	3	2	3	109	5,983	3	2	3	112	5,983	3	2	3	112
		SYM	6,741	3	2	2	126	6,966	3	2	2	130	7,135	3	2	2	133	7,303	3	2	2	136	7,303	3	2	2	136
P4	86	ASY	10,150	4	2	4	118	10,489	4	2	4	122	10,742	4	2	4	125	10,996	4	2	4	128	10,996	4	2	4	128
		PATH	8,777	3	2	3	102	9,070	3	2	3	106	9,289	3	2	3	108	9,509	3	2	3	111	9,509	3	2	3	111
		SYM	10,713	3	2	2	125	11,071	3	2	2	129	11,338	3	2	2	132	11,606	3	2	2	135	11,606	3	2	2	135
P5	123	ASY	14,250	4	2	4	116	14,724	4	2	4	120	15,081	4	3	4	123	15,437	4	3	4	126	15,437	4	3	4	126
		PATH	12,322	4	2	4	101	12,733	4	3	4	104	13,041	4	3	4	106	13,349	4	3	4	109	13,349	4	3	4	109
		SYM	15,040	4	2	3	123	15,541	4	2	3	127	15,917	4	2	3	130	16,293	4	2	3	133	16,293	4	2	3	133

Lumen Ambient Temperature (LAT) Multipliers

Use these factors to determine relative lumen output for average ambient temperatures from 0-40°C (32-104°F).

Ambient		LAT Factor
0°C	32°F	1.06
5°C	41°F	1.05
10°C	50°F	1.04
15°C	59°F	1.02
20°C	68°F	1.01
<b>25°C</b>	<b>77°F</b>	<b>1.00</b>
30°C	86°F	0.99
35°C	95°F	0.98
40°C	104°F	0.96

Projected LED Lumen Maintenance

Data references the extrapolated performance projections for the RADPT LED platform in a 25°C ambient, based on 10,000 hours of LED testing (tested per IESNA LM-80-08 and projected per IESNA TM-21-11).

To calculate LMF, use the lumen maintenance factor that corresponds to the desired number of operating hours below. For other lumen maintenance values, contact factory.

	Projected LED Lumen Maintenance			
	0	25,000	50,000	100,000
P1	1.00	0.96	0.91	0.82
P2	1.00	0.96	0.91	0.82
P3	1.00	0.96	0.91	0.82
P4	1.00	0.96	0.91	0.82
P5	1.00	0.95	0.89	0.78

Electrical Load

Lumen Package	LED Drive Current	Voltage	Wattage	Current (A)						
				120	208	240	277	347	480	
P1	500	42.8	21.4	Input Current	0.22	0.13	0.11	0.1	0.08	0.06
				System Watts	26	26	26	27	25	26
P2	770	43	33.1	Input Current	0.33	0.19	0.16	0.14	0.11	0.08
				System Watts	39	39	39	39	38	38
P3	1100	43.2	47.5	Input Current	0.46	0.26	0.23	0.2	0.16	0.12
				System Watts	55	54	54	54	54	54
P4	900	87.3	78.6	Input Current	0.73	0.42	0.36	0.32	0.25	0.18
				System Watts	87	86	86	86	86	86
P5	1250	88.2	110.2	Input Current	1	0.58	0.5	0.44	0.35	0.25
				System Watts	120	119	119	119	120	120



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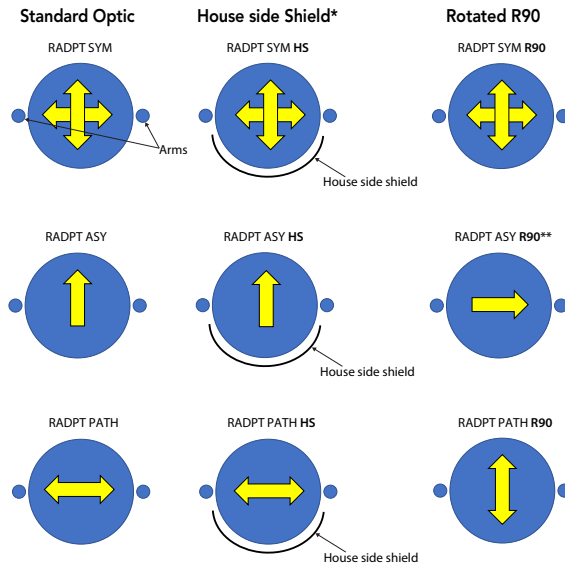
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**Orientation Diagrams**

To see complete photometric reports or download .ies files for this product, visit Lithonia Lighting's [RADPT LED homepage](#).

Isfootcandle plots are considered to be representative of available optical distributions.



\*HS not available with R90  
 \*\*For L90, use R90 and rotate luminaire 180° on pole

**FEATURES & SPECIFICATIONS**

**INTENDED USE**

Pedestrian areas such as parks, campuses, pathways, courtyards and pedestrians malls.

**CONSTRUCTION**

Single-piece die-cast aluminum housing with nominal wall thickness of 0.125" on a 6mm thick acrylic waveguide is fully gasketed with a single piece tubular silicone gasket.

**FINISH**

Exterior parts are protected by a zinc-infused Super Durable TGIC thermoset powder coat finish that provides superior resistance to corrosion and weathering. A tightly controlled multi-stage process ensures a minimum 3 mils thickness for a finish that can withstand extreme climate changes without cracking or peeling. Standard Super Durable colors include dark bronze, black, natural aluminum and white. Available in textured and non-textured finishes.

**OPTICS**

6MM thick acrylic waveguide with 360° flexible LED board. Available in 2700K, 3000K, 3500K, 4000K and 5000K (80CRI) CCT configurations.

**ELECTRICAL**

Light engine consists of 96 high-efficacy LEDs mounted to a flexible circuit board and aluminum heat sink, ensuring optimal thermal management and long life. Class 1 electronic driver has a power factor >90%, THD <20%, and has an expected life of 100,000 hours with <1% failure rate. Easily-serviceable 10kV surge protection device meets a minimum Category C Low for operation (per ANSI/IEEE C62.41.2).

**INSTALLATION**

Standard post-top mounting configuration fits into a 4" OD open pole top (round pole only). Alternate tenon (2-3/8" or 2-7/8") mounting also available.

**LISTINGS**

CSA certified to U.S. and Canadian standards. Luminaire is IP65 rated. Rated for -40°C minimum ambient.

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International Dark-Sky Association (IDA) Fixture Seal of Approval (FSA) is available for all products on this page utilizing 3000K color or less. U.S. Patent No. D925,088S

**BUY AMERICAN**

This product is assembled in the USA and meets the Buy America(n) government procurement requirements under FARS, DFARS and DOT. Please refer to [www.acuitybrands.com/resources/buy-american](http://www.acuitybrands.com/resources/buy-american) for additional information.

**WARRANTY**

5-year limited warranty. This is the only warranty provided and no other statements in this specification sheet create any warranty of any kind. All other express and implied warranties are disclaimed. Complete warranty terms located at: [www.acuitybrands.com/support/customer-support/terms-and-conditions](http://www.acuitybrands.com/support/customer-support/terms-and-conditions)

**Note:** Actual performance may differ as a result of end-user environment and application. All values are design or typical values, measured under laboratory conditions at 25 °C. Specifications subject to change without notice.



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## Radean Post Top LED Area Luminaire

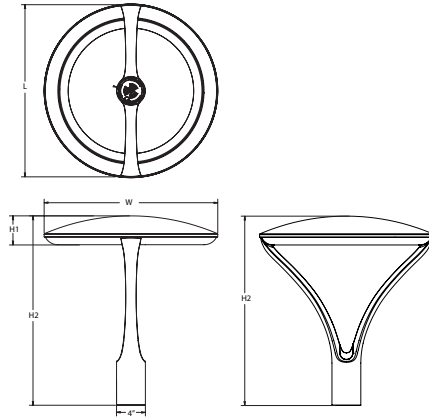


Catalog Number
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### Specifications

- EPA:** 1.02 ft<sup>2</sup> (0.105 m<sup>2</sup>)
- Length:** 24" (61cm)
- Width:** 24" (61cm)
- H1 Luminaire Height:** 4" (10.16cm)
- H2 Luminaire Height:** 26" (66.04cm)
- Weight:** 38lbs (17.24Kg)



### Introduction

The architecturally-inspired shape of the RADEAN™ post top area luminaire embodies the grace and strength of the RADEAN family. The twin copper-core cast aluminum arms support the slender superstructure, creating a beautiful sculpture by day transforming into a beacon of comfort by night. Triangular arms redirect reflection maintaining its visually quiet appearance. With sleek lines and simple silhouettes, these LED luminaires use specialized lighting and visual comfort to transform common areas like courtyards, outdoor retail locations, universities and corporate campuses into pedestrian-friendly nighttime environments.

### Ordering Information

**EXAMPLE:** RADPT LED P3 30K SYM MVOLT PT4 PIR DNAXD

Series	Performance package	Color temperature	Distribution	Voltage	Mounting (required)
RADPT LED	P1 3,000 Lumens P2 5,000 Lumens P3 7,000 Lumens P4 10,000 Lumens P5 15,000 Lumens	27K 2700K 30K 3000K 35K 3500K 40K 4000K 50K 5000K	SYM Symmetric type V ASY Asymmetric type IV PATH Pathway Type III	MVOLT <sup>2</sup> 277 <sup>2</sup> 120 <sup>2</sup> 347 208 <sup>2</sup> 480 240 <sup>2</sup>	PT4 <sup>3</sup> Slips inside a 4" OD round metal pole RADPT20 Slips over a 2 3/8" diameter tenon RADPT25 Slips over a 2 7/8" diameter tenon
Control options	Other options	Finish (required)			
Shipped installed NLTAIR2 nLight AIR 2.0 enabled <sup>4</sup> PIR Bi-level motion/sensor (100% to 30%) <sup>4,5,7</sup> PE Button photocell <sup>7</sup> FAO Field adjustable output <sup>5,9</sup>	SF Single Fuse <sup>2</sup> DF Double Fuse <sup>2</sup> R90 Rotated optics <sup>10</sup>	Shipped installed HS Houseside shield <sup>11</sup>	DOBXD Dark bronze DBLXD Black DNAXD Natural aluminum DWHXD White	DOBTXD Textured dark bronze DBL BXD Textured black DNATXD Textured natural aluminum DWHGXD Textured white	



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## Ordering Information

### Accessories

Ordered and shipped separately.

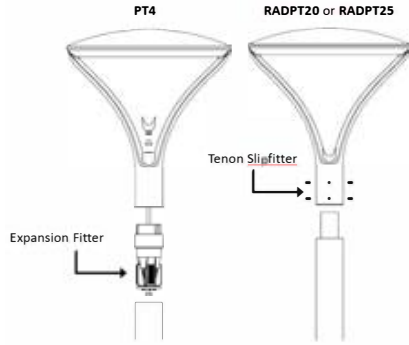
RADHS	House-side shield (shield is white)
RADCS DDBXD U	Decorative clamshell base for 4" RSS pole (specify finish)
RADFC DDBXD U	Full base cover for 4" RSS pole (specify finish)

For more control options, visit [DTL](#) and [RCAM](#) online.

### NOTES

- 2700K and 3500K may require extended lead-times.
- MVOLT driver operates on any line voltage from 120-277V (50/60 Hz). Single fuse (SF) requires 120, 277 or 347 voltage option. Double fuse (DF) requires 208, 240 or 480 voltage option.
- Required nominal 4" round straight metal pole.
- NLTAR2 not available with PIR, PE or FAO. Must link to external nLight Air network.
- PIR will work with FAO, if adjustable low-end trim is required.
- PIR must specify 120V, 277V, 347V or 480V. Not available in MVOLT, 208V or 240V.
- PE and PIR are available together.
- PIR for use only on luminaires mounted under 15'.
- Field adjustable high-end trim.
- For left rotation, select R90 and rotate luminaire 180° on pole.
- Also available as a separate accessory; see Accessories information at left. HS not available with R90. Shield is field rotatable shield in 180° increments.

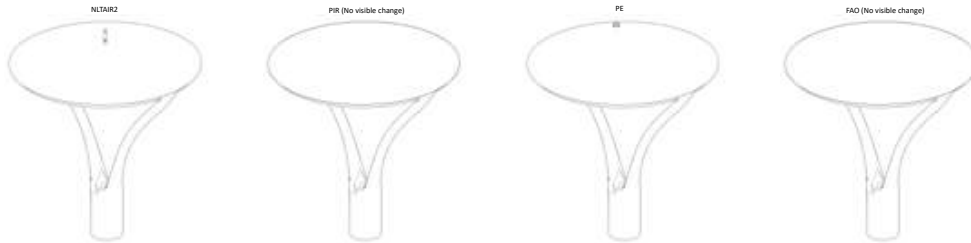
## Mounting



Recommended Poles for use with RADEAN RADPT LED Luminaires.			
Acuity Part Number	Description	For luminaires	Used with Mounting
RSS 10 4B PT DDBXD	10' Round Straight Steel - 4" O.D. - Open Top	RADPT LED	PT4
RSS 12 4B PT DDBXD	12' Round Straight Steel - 4" O.D. - Open Top	RADPT LED	PT4
RSS 14 4B PT DDBXD	14' Round Straight Steel - 4" O.D. - Open Top	RADPT LED	PT4
RSS 16 4B PT DDBXD	16' Round Straight Steel - 4" O.D. - Open Top	RADPT LED	PT4
RSS 18 4B PT DDBXD	18' Round Straight Steel - 4" O.D. - Open Top	RADPT LED	PT4
RSS 20 4B PT DDBXD	20' Round Straight Steel - 4" O.D. - Open Top	RADPT LED	PT4
RSS 25 4B PT DDBXD	25' Round Straight Steel - 4" O.D. - Open Top	RADPT LED	PT4
RSS 10 4B T20 DDBXD	10' Round Straight Steel - 4" O.D. - Tenon Top	RADPT LED	RADPT20
RSS 12 4B T20 DDBXD	12' Round Straight Steel - 4" O.D. - Tenon Top	RADPT LED	RADPT20
RSS 14 4B T20 DDBXD	14' Round Straight Steel - 4" O.D. - Tenon Top	RADPT LED	RADPT20
RSS 16 4B T20 DDBXD	16' Round Straight Steel - 4" O.D. - Tenon Top	RADPT LED	RADPT20
RSS 18 4B T20 DDBXD	18' Round Straight Steel - 4" O.D. - Tenon Top	RADPT LED	RADPT20
RSS 20 4B T20 DDBXD	20' Round Straight Steel - 4" O.D. - Tenon Top	RADPT LED	RADPT20
RSS 25 4B T20 DDBXD	25' Round Straight Steel - 4" O.D. - Tenon Top	RADPT LED	RADPT20

\* Customer must verify pole loading per required design criteria and specified wind speed. Consult pole specification sheet for additional details.

## Control Options



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## Performance Data

### Lumen Output

Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of the configurations shown. Contact factory for performance data on any configurations not shown here.

Performance Package	Input Wattage	Distribution	2700K				3000K				3500K				4000K				5000K								
			Lumens	B	U	G	LPW	Lumens	B	U	G	LPW	Lumens	B	U	G	LPW	Lumens	B	U	G	LPW	Lumens	B	U	G	LPW
P1	25	ASY	2,924	2	1	2	115	3,022	2	2	2	119	3,095	2	2	2	122	3,168	2	2	2	125	3,168	2	2	2	125
		PATH	2,529	2	1	2	100	2,613	2	2	2	103	2,676	2	2	2	105	2,739	2	2	2	108	2,739	2	2	2	108
		SYM	3,086	2	1	1	121	3,189	2	1	1	126	3,266	2	1	1	129	3,344	2	1	1	132	3,344	2	1	1	132
P2	38	ASY	4,521	3	2	3	119	4,672	3	2	3	123	4,785	3	2	3	126	4,898	3	2	3	129	4,898	3	2	3	129
		PATH	3,909	2	2	2	103	4,040	2	2	2	106	4,137	2	2	2	109	4,235	3	2	3	111	4,235	3	2	3	111
		SYM	4,772	2	2	1	126	4,931	3	2	1	130	5,050	3	2	1	133	5,169	3	2	1	136	5,169	3	2	1	136
P3	54	ASY	6,387	3	2	3	119	6,600	3	2	3	123	6,760	3	2	3	126	6,919	3	2	3	129	6,919	3	2	3	129
		PATH	5,523	3	2	3	103	5,707	3	2	3	106	5,845	3	2	3	109	5,983	3	2	3	112	5,983	3	2	3	112
		SYM	6,741	3	2	2	126	6,966	3	2	2	130	7,135	3	2	2	133	7,303	3	2	2	136	7,303	3	2	2	136
P4	86	ASY	10,150	4	2	4	118	10,489	4	2	4	122	10,742	4	2	4	125	10,996	4	2	4	128	10,996	4	2	4	128
		PATH	8,777	3	2	3	102	9,070	3	2	3	106	9,289	3	2	3	108	9,509	3	2	3	111	9,509	3	2	3	111
		SYM	10,713	3	2	2	125	11,071	3	2	2	129	11,338	3	2	2	132	11,606	3	2	2	135	11,606	3	2	2	135
P5	123	ASY	14,250	4	2	4	116	14,724	4	2	4	120	15,081	4	3	4	123	15,437	4	3	4	126	15,437	4	3	4	126
		PATH	12,322	4	2	4	101	12,733	4	3	4	104	13,041	4	3	4	106	13,349	4	3	4	109	13,349	4	3	4	109
		SYM	15,040	4	2	3	123	15,541	4	2	3	127	15,917	4	2	3	130	16,293	4	2	3	133	16,293	4	2	3	133

### Lumen Ambient Temperature (LAT) Multipliers

Use these factors to determine relative lumen output for average ambient temperatures from 0-40°C (32-104°F).

Ambient	32°F	LAT Factor
0°C	32°F	1.06
5°C	41°F	1.05
10°C	50°F	1.04
15°C	59°F	1.02
20°C	68°F	1.01
<b>25°C</b>	<b>77°F</b>	<b>1.00</b>
30°C	86°F	0.99
35°C	95°F	0.98
40°C	104°F	0.96

### Projected LED Lumen Maintenance

Data references the extrapolated performance projections for the **RADPT LED** platform in a **25°C ambient**, based on 10,000 hours of LED testing (tested per IESNA LM-80-08 and projected per IESNA TM-21-11).

To calculate LMF, use the lumen maintenance factor that corresponds to the desired number of operating hours below. For other lumen maintenance values, contact factory.

	Projected LED Lumen Maintenance			
	0	25,000	50,000	100,000
P1	1.00	0.96	0.91	0.82
P2	1.00	0.96	0.91	0.82
P3	1.00	0.96	0.91	0.82
P4	1.00	0.96	0.91	0.82
P5	1.00	0.95	0.89	0.78

### Electrical Load

Lumen Package	LED Drive Current	Voltage	Wattage	Current (A)						
				120	208	240	277	347	480	
P1	500	42.8	21.4	Input Current	0.22	0.13	0.11	0.1	0.08	0.06
				System Watts	26	26	26	27	25	26
P2	770	43	33.1	Input Current	0.33	0.19	0.16	0.14	0.11	0.08
				System Watts	39	39	39	39	38	38
P3	1100	43.2	47.5	Input Current	0.46	0.26	0.23	0.2	0.16	0.12
				System Watts	55	54	54	54	54	54
P4	900	87.3	78.6	Input Current	0.73	0.42	0.36	0.32	0.25	0.18
				System Watts	87	86	86	86	86	86
P5	1250	88.2	110.2	Input Current	1	0.58	0.5	0.44	0.35	0.25
				System Watts	120	119	119	119	120	120



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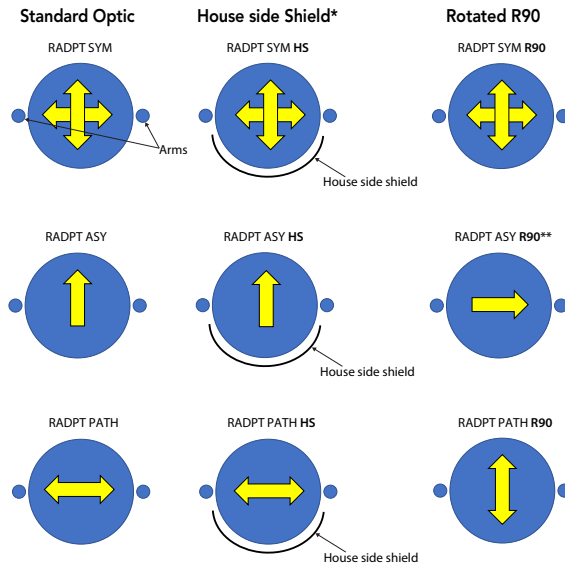
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**Orientation Diagrams**

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Isofootcandle plots are considered to be representative of available optical distributions.



\*HS not available with R90  
 \*\*For L90, use R90 and rotate luminaire 180° on pole

**FEATURES & SPECIFICATIONS**

**INTENDED USE**

Pedestrian areas such as parks, campuses, pathways, courtyards and pedestrians malls.

**CONSTRUCTION**

Single-piece die-cast aluminum housing with nominal wall thickness of 0.125" on a 6mm thick acrylic waveguide is fully gasketed with a single piece tubular silicone gasket.

**FINISH**

Exterior parts are protected by a zinc-infused Super Durable TGIC thermoset powder coat finish that provides superior resistance to corrosion and weathering. A tightly controlled multi-stage process ensures a minimum 3 mils thickness for a finish that can withstand extreme climate changes without cracking or peeling. Standard Super Durable colors include dark bronze, black, natural aluminum and white. Available in textured and non-textured finishes.

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6MM thick acrylic waveguide with 360° flexible LED board. Available in 2700K, 3000K, 3500K, 4000K and 5000K (80CRI) CCT configurations.

**ELECTRICAL**

Light engine consists of 96 high-efficacy LEDs mounted to a flexible circuit board and aluminum heat sink, ensuring optimal thermal management and long life. Class 1 electronic driver has a power factor >90%, THD <20%, and has an expected life of 100,000 hours with <1% failure rate. Easily-serviceable 10kV surge protection device meets a minimum Category C Low for operation (per ANSI/IEEE C62.41.2).

**INSTALLATION**

Standard post-top mounting configuration fits into a 4" OD open pole top (round pole only). Alternate tenon (2-3/8" or 2-7/8") mounting also available.

**LISTINGS**

CSA certified to U.S. and Canadian standards. Luminaire is IP65 rated. Rated for -40°C minimum ambient.

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International Dark-Sky Association (IDA) Fixture Seal of Approval (FSA) is available for all products on this page utilizing 3000K color or less. U.S. Patent No. D925,0885

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**WARRANTY**

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LED wall luminaire - light output on one side

BEGA

**Application**

This LED wall mounted luminaire has light output in one direction. Arranged individually or in groups, it is a great design element for a host of lighting applications. Downward orientation only.

**Materials**

Luminaire housing and constructed of die-cast marine grade, copper free (± 0.3% copper content) A360.0 aluminum alloy  
Matte safety glass  
High temperature silicone gasket  
Mechanically captive stainless steel fasteners

**NRTL** listed to North American Standards, suitable for wet locations  
Protection class IP65  
Weight: 4.2 lbs

**Electrical**

Operating voltage 120-277VAC  
Minimum start temperature -20°C  
LED module wattage 15.4W  
System wattage 20.5W  
Controllability 0-10V, TRIAC, and ELV dimmable  
Color rendering index Ra > 80  
Luminaire lumens 1024 lumens (3000K)  
LED service life (L70) 60,000 hours

**LED color temperature**

- 4000K - Product number + **K4**
- 3500K - Product number + **K35**
- 3000K - Product number + **K3 (EXPRESS)**
- 2700K - Product number + **K27**
- Amber - Product number + **AMB**

**Wildlife friendly amber LED - Optional**

Luminaire is optionally available with a narrow bandwidth, amber LED source (585-600nm) approved by the FWC. This light output is suggested for use within close proximity to sea turtle nesting and hatching habitats. Electrical and control information may vary from standard luminaire.

LED module wattage 12.0W (Amber)  
System wattage 15.0W (Amber)  
Luminaire lumens 243 lumens (Amber)

**BEGA** can supply you with suitable LED replacement modules for up to 20 years after the purchase of LED luminaires - see website for details

**Finish**

All BEGA standard finishes are matte, textured polyester powder coat with minimum 3 mil thickness.

- Available colors  Black (BLK)     White (WHT)     RAL:  
 Bronze (BRZ)     Silver (SLV)     CUS:

Type:  
BEGA Product:  
Project:  
Modified:



LED wall luminaire - light output on one side

	LED	A	B	C
<b>22360</b>		15.4W	12 1/2	4 3/8 4



**BEGA** 1000 BEGA Way, Carpinteria, CA 93013 (805) 684-0533 info@bega-us.com

Due to the dynamic nature of lighting products and the associated technologies, luminaire data on this sheet is subject to change at the discretion of BEGA North America. For the most current technical data, please refer to bega-us.com  
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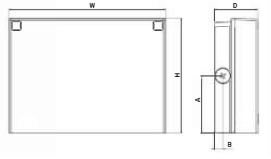
# WPX LED Wall Packs



Catalog Number	
Notes	
Type	

Hit the tab key or mouse over the page to see all interactive elements.

## Specifications



Luminaire	Height (H)	Width (W)	Depth (D)	Side Conduit Location		Weight
				A	B	
WPX1	8.1" (20.6 cm)	11.1" (28.3 cm)	3.2" (8.1 cm)	4.0" (10.3 cm)	0.6" (1.6 cm)	6.1 lbs (2.8kg)
WPX2	9.1" (23.1 cm)	12.3" (31.1 cm)	4.1" (10.5 cm)	4.5" (11.5 cm)	0.7" (1.7 cm)	8.2 lbs (3.7kg)
WPX3	9.5" (24.1 cm)	13.0" (33.0 cm)	5.5" (13.7 cm)	4.7" (12.0 cm)	0.7" (1.7 cm)	11.0 lbs (5.0kg)

## Introduction

The WPX LED wall packs are energy-efficient, cost-effective, and aesthetically appealing solutions for both HID wall pack replacement and new construction opportunities. Available in three sizes, the WPX family delivers 1,550 to 9,200 lumens with a wide, uniform distribution.

The WPX full cut-off solutions fully cover the footprint of the HID glass wall packs that they replace, providing a neat installation and an upgraded appearance. Reliable IP66 construction and excellent LED lumen maintenance ensure a long service life. Photocell and emergency egress battery options make WPX ideal for every wall mounted lighting application.

## Ordering Information

EXAMPLE: WPX2 LED 40K MVOLT DDBXD

Series	Color Temperature	Voltage	Options	Finish
WPX1 LED P1	1,550 Lumens, 11W <sup>1</sup> 30K 3000K	MVOLT 120V - 277V	(blank) None	DDBXD Dark bronze
WPX1 LED P2	2,900 Lumens, 24W 40K 4000K	347 347V <sup>3</sup>	E4WH Emergency battery backup, CEC compliant (4W, 0°C min) <sup>2</sup>	DWHXD White
WPX2 LED	6,000 Lumens, 47W 50K 5000K		E14WC Emergency battery backup, CEC compliant (14W, -20°C min) <sup>2</sup>	DBLXD Black
WPX3 LED	9,200 Lumens, 69W		PE Photocell <sup>1</sup>	Note : For other options, consult factory.

Note: The lumen output and input power shown in the ordering tree are average representations of all configuration options. Specific values are available on request.

- NOTES**
- All WPX wall packs come with 6kV surge protection standard, except WPX1 LED P1 package which comes with 2.5kV surge protection standard. Add SPD6KV option to get WPX1 LED P1 with 6kV surge protection. Sample nomenclature: WPX1 LED P1 40K MVOLT SPD6KV DDBXD
  - Battery pack options only available on WPX1 and WPX2.
  - Battery pack options not available with 347V and PE options.

## FEATURES & SPECIFICATIONS

**INTENDED USE**  
The WPX LED wall packs are designed to provide a cost-effective, energy-efficient solution for the one-for-one replacement of existing HID wall packs. The WPX1, WPX2 and WPX3 are ideal for replacing up to 150W, 250W, and 400W HID luminaires respectively. WPX luminaires deliver a uniform, wide distribution. WPX is rated for -40°C to 40°C.

**CONSTRUCTION**  
WPX feature a die-cast aluminum main body with optimal thermal management that both enhances LED efficacy and extends component life. The luminaires are IP66 rated, and sealed against moisture or environmental contaminants.

**ELECTRICAL**  
Light engine(s) configurations consist of high-efficacy LEDs and LED lumen maintenance of L90/100,000 hours. Color temperature (CCT) options of 3000K, 4000K and 5000K with minimum CRI of 70. Electronic drivers ensure system power factor >90% and THD <20%. All luminaires have 6kV surge protection (Note: WPX1 LED P1 package comes with a standard surge protection rating of 2.5kV. It can be ordered with an optional 6kV surge protection). All photocell (PE) operate on MVOLT (120V - 277V) input.

Note: The standard WPX LED wall pack luminaires come with field-adjustable drive current feature. This feature allows tuning the output current of the LED drivers to adjust the lumen output (to dim the luminaire).

**INSTALLATION**  
WPX can be mounted directly over a standard electrical junction box. Three 1/2 inch conduit ports on three sides allow for surface conduit wiring. A port on the back surface allows poke-through conduit wiring on surfaces that don't have an electrical junction box. Wiring can be made in the integral wiring compartment in all cases. WPX is only recommended for installations with LEDs facing downwards.

**LISTINGS**  
CSA Certified to meet U.S. and Canadian standards. Suitable for wet locations. IP66 Rated. DesignLights Consortium® (DLC) qualified product. Not all versions of this product may be DLC qualified. Please check the DLC Qualified Products List at [www.designlights.org/DPL](http://www.designlights.org/DPL) to confirm which versions are qualified. International Dark Sky Association (IDA) Fixture Seal of Approval (FSA) is available for all products on this page utilizing 3000K color temperature only.

**WARRANTY**  
5-year limited warranty. This is the only warranty provided and no other statements in this specification sheet create any warranty of any kind. All other express and implied warranties are disclaimed. Complete warranty terms located at: [www.acuitybrands.com/CustomerResources/Terms\\_and\\_conditions.aspx](http://www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx).

**Note:** Actual performance may differ as a result of end-user environment and application. All values are design or typical values, measured under laboratory conditions at 25°C. Specifications subject to change without notice.



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WPX LED  
Rev. 03/08/22

COMMERCIAL OUTDOOR



### Performance Data

#### Electrical Load

Luminaire	Input Power (W)	120V	208V	240V	277V	347V
WPX1 LED P1	11W	0.09	0.05	0.05	0.04	0.03
WPX1 LED P2	24W	0.20	0.12	0.10	0.09	0.07
WPX2	47W	0.39	0.23	0.20	0.17	0.14
WPX3	69W	0.58	0.33	0.29	0.25	0.20

#### Projected LED Lumen Maintenance

Data references the extrapolated performance projections in a 25°C ambient, based on 6,000 hours of LED testing (tested per IESNA LM-80-08 and projected per IESNA TM-21-11).

To calculate LLF, use the lumen maintenance factor that corresponds to the desired number of operating hours below. For other lumen maintenance values, contact factory.

Operating Hours	50,000	75,000	100,000
Lumen Maintenance Factor	>0.94	>0.92	>0.90

#### Lumen Output

Luminaire	Color Temperature	Lumen Output
WPX1 LED P1	3000K	1,537
	4000K	1,568
	5000K	1,602
WPX1 LED P2	3000K	2,748
	4000K	2,912
	5000K	2,954
WPX2	3000K	5,719
	4000K	5,896
	5000K	6,201
WPX3	3000K	8,984
	4000K	9,269
	5000K	9,393

#### Lumen Ambient Temperature (LAT) Multipliers

Use these factors to determine relative lumen output for average ambient temperatures from 0-50°C (32-122°F).

Ambient	Ambient	Lumen Multiplier
0°C	32°F	1.05
5°C	41°F	1.04
10°C	50°F	1.03
15°C	59°F	1.02
20°C	68°F	1.01
25°C	77°F	1.00
30°C	86°F	0.99
35°C	95°F	0.98
40°C	104°F	0.97

#### HID Replacement Guide

Luminaire	Equivalent HID Lamp	WPX Input Power
WPX1 LED P1	100W	11W
WPX1 LED P2	150W	24W
WPX2	250W	47W
WPX3	400W	69W

#### Emergency Egress Battery Packs

The emergency battery backup is integral to the luminaire — no external housing or back box is required. The emergency battery will power the luminaire for a minimum duration of 90 minutes and deliver minimum initial output of 550 lumens. Both battery pack options are CEC compliant.

Battery Type	Minimum Temperature Rating	Power (Watts)	Controls Option	Ordering Example
Standard	0°C	4W	E4WH	WPX2 LED 40K MVOLT E4WH DDBXD
Cold Weather	-20°C	14W	E14WC	WPX2 LED 40K MVOLT E14WC DDBXD

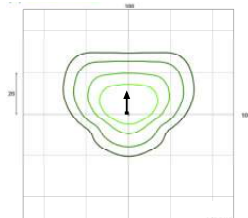
### Photometric Diagrams

To see complete photometric reports or download .ies files for this product, visit the Lithonia Lighting [WPX LED](#) homepage. Tested in accordance with IESNA LM-79 and LM-80 standards

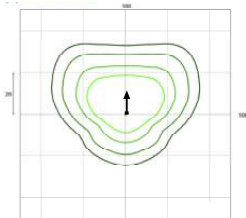
#### LEGEND

- 0.1 fc
- 0.2 fc
- 0.5 fc
- 1.0 fc

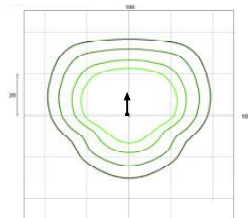
WPX1 LED P1



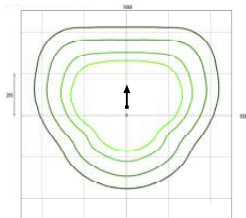
WPX1 LED P2



WPX2 LED



WPX3 LED



Mounting Height = 12 Feet.



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WPX LED  
Rev. 03/08/22

COMMERCIAL OUTDOOR

**DELTA STAR LED**

IP66 RATED

DATE: \_\_\_\_\_ PROJECT: \_\_\_\_\_ TYPE: \_\_\_\_\_

CATALOG NUMBER LOGIC:



*\*Designed for use with LED transformer. Requires magnetic low voltage dimmer.*

*\*\*Please see Adjust-e-Lume photometry to determine desired intensity.*

*\*\*\*The 360SL cost is already included in the price of UPM, UPM dual, and Power Canopy.*

**CATALOG NUMBER LOGIC**

Example: B - DS - LED - e64 - SP - A7 - BZP - 12 - 11 - A - 360SL

**MATERIAL**

(Blank) - Aluminum B - Brass S - Stainless Steel

**SERIES**

DS - Delta Star

**SOURCE**

LED - with Integral Dimming Driver (25W min. load when dimmed)\*

**LED TYPE**

e64 - 7W LED/2700K e66 - 7W LED/4000K

e65 - 7W LED/3000K e74 - 7W LED/Amber

**OPTICS**

NSP - Narrow Spot (13°) MFL - Medium Flood (23°)

SP - Spot (16°) WFL - Wide Flood (31°)

**ADJUST-E-LUME® OUTPUT INTENSITY\*\***

A9 (Standard), A8, A7, A6, A5, A4, A3, A2, A1

**FINISH (See page 2 for full-color swatches)**

Standard Finishes (BZP, BZW, BLP, BLW, WHP, WHW, SAP, VER)

Premium Finish (ABP, AMG, AQW, BCM, BGE, BPP, CAP, CMG, CRI, CRM, HUG, MDS, NBP, OCP, RMG, SDS, SMG, TXF, WCP, WIR)

Also available in RAL Finishes

Brass Finishes (MAC, POL, MIT)

Stainless Steel Finishes (MAC, POL)

**LENS TYPE**

12 - Soft Focus 13 - Rectilinear

**SHIELDING**

11 - Honeycomb Baffle

**CAP STYLE**

A - 45°

B - 90°

C - Flush Lens

D - 45° Less Weephole (Interior use only)

E - 90° Less Weephole (Interior use only)

F - 90° with Flush Lens

**OPTIONS**

360SL - Knuckle Mounting System\*\*\*

**B-K LIGHTING**

MADE IN THE USA

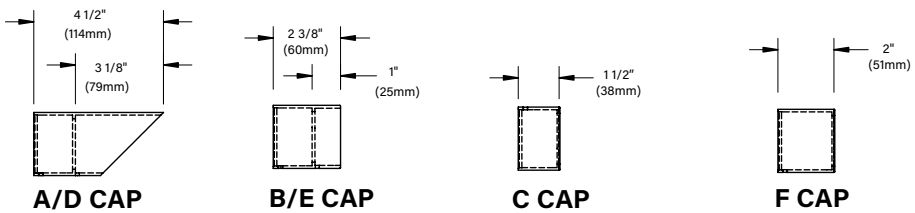
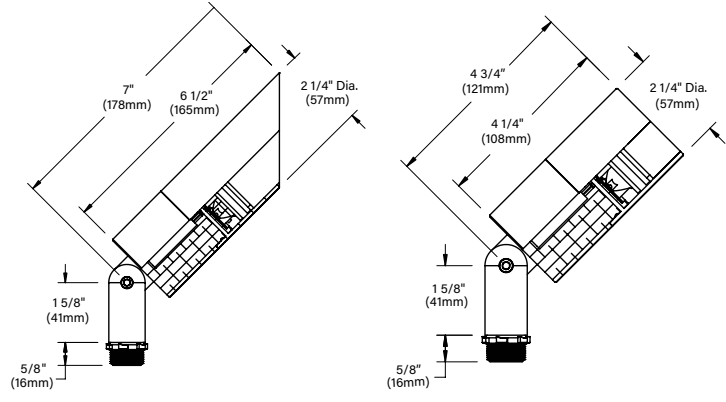
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01/15/2020 SKU-739 SUB000930

**DELTA STAR LED** IP66 RATED

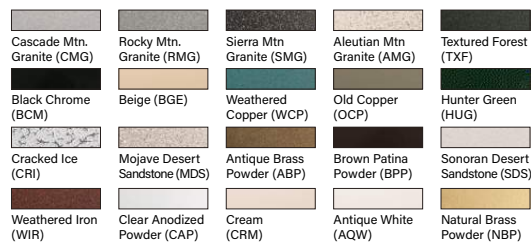
DATE: \_\_\_\_\_ PROJECT: \_\_\_\_\_ TYPE: \_\_\_\_\_



**STANDARD FINISHES**



**PREMIUM FINISHES**



[Click Here](#) to view larger, full-color swatches of all available finishes on our website.

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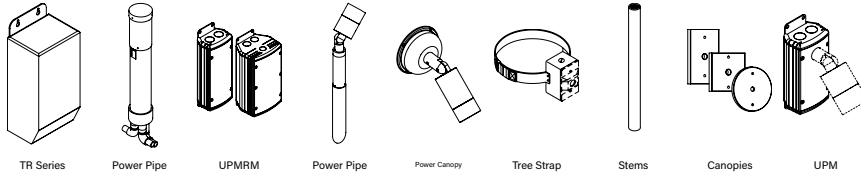
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**DELTA STAR LED**

IP66 RATED

DATE: \_\_\_\_\_ PROJECT: \_\_\_\_\_ TYPE: \_\_\_\_\_

Accessories (Configure separately)



**SPECIFICATIONS**

ELECTRICAL	WATTAGE	7W LED
	WIRING REMOTE TRANSFORMER	XLPE, 18GA,150C, 600V, rated and certified to UL3321. For use with 12VAC remote transformer or magnetic transformers only. B-K Lighting cannot guarantee performance with third party manufacturers' transformers.
PHYSICAL	MATERIALS	Furnished in copper-free aluminum (6061-T6), brass (360) or stainless steel (304).
	BODY	Unibody design with enclosed, water-proof wireway and integral heat sink is fully machined from solid billet.
	KNUCKLE	LOCK Knuckle is integral to the body and features an interior taper machined from solid billet and a second, reverse angle taper allowing full 180° vertical adjustment without the use of aim-limiting serrated teeth. High temperature, silicone 'O' Ring provides water-tight seal and compressive resistance to maintain fixture position. Design withstands 73 lbs. static load prior to movement for optical alignment with a ½" pipe thread for mounting. Optional 360SL provides biaxial source control with 360° horizontal rotation in addition to vertical adjustment.
	CAP	Fully machined and accommodates two (2) lens or louver media.
	LENS	Shock-resistant, tempered glass lens is factory adhered to fixture cap and provides hermetically sealed optical compartment.
	LED	Integrated solid state system and modular design with electrical disconnects allow for easy field upgrade and maintenance. High power, forward throw source complies with ANSI C78.377 binning requirements and exceeds ENERGY STAR® lumen maintenance requirements. LM-80 certified components. Integral, constant current driver. 12VAC/VDC input. 50/60Hz. Proprietary input control scheme achieves power factor correction and eliminates inrush current (limited to <250mA non-dimming). Output, overvoltage, open-circuit, and short circuit protected. Conforms to Safety Std. C22.2 No. 25013-12.
	DIMMING	Line voltage dimmable via magnetic low voltage dimmer with dedicated neutral conductor. Remote magnetic transformer with LED loads should be loaded to 25% of the transformer VA (watts) rated value.
	ADJUST-E-LUME	Integral electronics allow for dynamic lumen response at the individual fixture. Indexed (100% to 25% nom.) lumen output. Maintains output at desired level or may be changed. Specify factory preset output intensity.
	OPTICS	Interchangeable OPTIKIT modules permit optical field changes. Color-code: Narrow Spot (NSP) = red; Spot (SP) = green; Medium Flood (MFL) = yellow; Wide Flood (WFL) = blue.
	HARDWARE	Tamper-resistant, stainless steel hardware. LOCK aiming screw is black oxide treated for additional corrosion resistance.
FINISH	StarGuard, our 15-stage chromate-free process cleans and conversion coats aluminum components prior to application of Class 'A' TGIC polyester powder coating and is RoHS compliant. Powder coat or metal finish options available for brass material and metal finish option only for stainless steel material.	
WARRANTY	5-year limited warranty.	
CERTIFICATION & LISTING	ITL tested to IESNA LM-79. UL Listed. Certified to CAN/CSA/ANSI Standards. RoHS compliant. Suitable for indoor or outdoor use, in wet locations, and for installation within 4' of the ground. IP66 Rated. Made in the USA with sustainable processes.	



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**LAMP & DRIVER DATA (e64, e65, e66, e74)**

DATE: PROJECT: TYPE:

CATALOG NUMBER LOGIC:

<b>DRIVER DATA</b>	<b>Input Volts</b> 12VAC/DC 50/60Hz	<b>InRush Current</b> <250mA (non-dimmed)	<b>Operating</b> 700mA	<b>Dimmable</b> Magnetic Low Voltage Dimmer	<b>Operation Ambient Temperature</b> -22°F-194°F (-30°C - 90°C)
--------------------	--	--	---------------------------	--	--

LM79 DATA				L70 DATA		OPTICAL DATA			
BK No.	CCT (Typ.)	CRI (Typ.)	Input Watts (Typ.)	Minimum Rated Life (hrs.) 70% of initial lumens (L <sub>70</sub> )		Angle	CBCP	Delivered Lumens	Multiplier
e64	2700K	80	7	50,000		13°	5993	456	0.87
	2700K	80	7	50,000		16°	4546	445	0.87
	2700K	80	7	50,000		23°	1726	397	0.87
	2700K	80	7	50,000		31°	1131	399	0.87
e65	3000K	80	7	50,000		13°	6131	466	0.89
	3000K	80	7	50,000		16°	4650	455	0.89
	3000K	80	7	50,000		23°	1766	406	0.89
	3000K	80	7	50,000		31°	1157	409	0.89
e66	4000K	80	7	50,000		13°	6889	524	
	4000K	80	7	50,000		16°	5225	511	
	4000K	80	7	50,000		23°	1984	456	
	4000K	80	7	50,000		31°	1300	459	
e74	Amber	80	7	50,000		13°	3,927	299	0.57
	Amber	80	7	50,000		16°	2,978	291	0.57
	Amber	80	7	50,000		23°	1,131	260	0.57
	Amber	80	7	50,000		31°	741	262	0.57

**OPTICS**

Optic	Angle
NSP - Narrow Spot	13°
SP - Spot	16°
MFL - Medium Flood	23°
WFL - Wide Flood	31°

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LED wall luminaire - light output on one side

**Application**

The LED wall mounted luminaire has light output on one side. Arranged individually or in groups, this is a great design element for a host of lighting applications. For downlight applications only.

**Materials**

Luminaire housing constructed of die-cast and extruded marine grade, copper free (≤0.3% copper content) A360.0 aluminum alloy  
 Matte safety glass  
 High temperature silicone gasket  
 Mechanically captive stainless steel fasteners

**NRTL** listed to North American Standards, suitable for wet locations  
 Protection class IP65  
 Weight: 26.2 lbs

**Electrical**

Operating voltage 120-277V AC  
 Minimum start temperature -30° C  
 LED module wattage 30.4 W  
 System wattage 36 W  
 Controllability 0-10V dimmable  
 Color rendering index Ra > 80  
 Luminaire lumens 1399 lumens (3000K)  
 Lifetime at Ta = 15° C >500,000 h (L70)  
 Lifetime at Ta = 45° C 229,000 h (L70)

**LED color temperature**

- 4000K - Product number + **K4**
- 3500K - Product number + **K35**
- 3000K - Product number + **K3**
- 2700K - Product number + **K27**

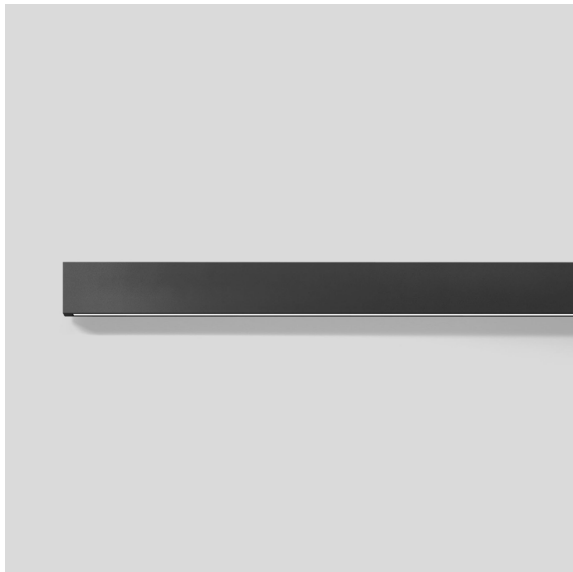
**BEGA** can supply you with suitable LED replacement modules for up to 20 years after the purchase of LED luminaires - see website for details

**Finish**

All BEGA standard finishes are matte, textured polyester powder coat with minimum 3 mil thickness.

Available colors	Black (BLK)	White (WHT)	RAL:
	Bronze (BRZ)	Silver (SLV)	CUS:
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Type:  
 BEGA Product:  
 Project:  
 Modified:



LED wall luminaire · light output on one side					Required wiring box
	LED	A	B	C	
<b>44 419</b>	30.4 W	59 7/8	4 1/8	5	<b>19537</b>

**BEGA** 1000 BEGA Way, Carpinteria, CA 93013 (805) 684-0533 info@bega-us.com

Due to the dynamic nature of lighting products and the associated technologies, luminaire data on this sheet is subject to change at the discretion of BEGA North America. For the most current technical data, please refer to bega-us.com  
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Surface mounted downlight - Partially frosted crystal glass

BEGA

**Application**

A very compact ceiling mounted downlight with partially frosted crystal glass. This luminaire is designed for down lighting atriums, canopies, passages and other interior and exterior locations.

**Materials**

Luminaire housing and faceplate constructed of die-cast marine grade, copper free ( $\leq 0.3\%$  copper content) A360.0 aluminum alloy  
Partially frosted crystal glass  
Reflector made of pure anodized aluminum  
High temperature silicone gasket

**NRTL** listed to North American Standards, suitable for wet locations  
Protection class IP65  
Weight: 2.6 lbs

**Electrical**

Operating voltage 120-277 VAC  
Minimum start temperature  $-30^{\circ}\text{C}$   
LED module wattage 4.8W  
System wattage 6.4W  
Controllability 0-10V dimmable  
Color rendering index  $Ra > 80$   
Luminaire lumens 591 lumens (4000K)  
LED service life 60,000 h (L70)

**LED color temperature**

- 4000K - Product number + **K4 (EXPRESS)**
- 3500K - Product number + **K35**
- 3000K - Product number + **K3 (EXPRESS)**
- 2700K - Product number + **K27**

**BEGA** can supply you with suitable LED replacement modules for up to 20 years after the purchase of LED luminaires - see website for details

**Finish**

All BEGA standard finishes are matte, textured polyester powder coat with minimum 3 mil thickness.

- Available colors  Black (BLK)     White (WHT)     RAL:  
 Bronze (BRZ)     Silver (SLV)     CUS:

Type:

BEGA Product:

Project:

Modified:

**Available options**

- FSC** Fusing
- MGU** Marine grade undercoat

See individual accessory spec sheet for details.



Surface mounted downlight - Partially frosted crystal glass

	LED	$\beta$	A	B
<b>66056</b>	4.8W	65°	4 7/8"	4 7/8"

$\beta$  = Beam angle

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# American Beacon

The Proper Way to Light Your Flag!

**An American Beacon Flagpole Lighting Package unites the patented Beacon Down Light with a Lifetime Pole Shaft Warranty from the industry's oldest and most recognized name in aluminum flagpoles... Concord American Flagpole.**

The American Beacon is the most environmentally correct way to illuminate flags during night hours. For the first time, flags can be properly lit during nighttime hours without lighting adjoining property and the night sky. Patent #7,275,495.

- Minimize Light Pollution
- Rotates With The Flag, Focusing All Light On The Flag as the Wind Blows it Around the Flagpole
- Energy Efficient LED Bulbs Provide Years of Maintenance-Free Use
- Available for Flagpole Heights of 20' to 80'
- Residential Options Available
- Solar Packages Available
- Made in the USA

The Proper Way to Light Your Flag!

Official U.S. Flag Code  
Section 2

A. "...when a patriotic effect is desired, the flag may be displayed twenty-four hours a day if properly illuminated during the hours of darkness."



**Intertek**  
4010565  
Conforms to UL STD 1598

**International Dark Sky Association (IDA)** is the recognized authority on light pollution and is the leading organization combating light pollution worldwide.

The IDA Device Seal of Approval was created to recognize a wide range of Dark Sky Friendly Technologies that aid in the mitigation of light pollution.

The American Beacon is certified by the International Dark Sky Association (IDA) as an IDA Approved Dark-Sky Friendly Fixture.



IDA Approved Dark-Sky  
Friendly Fixture





### American Beacon – Internal Halyard Series

The American Beacon Internal Halyard Series provides lighting options for both Winch and Cam Cleat flagpoles systems in heights from 20’ – 80’. These options provide the most environmentally correct way for flagpole illumination, properly lighting the flag during nighttime hours without lighting adjoining properties and the night sky!

- Internal Halyard 359° Revolving Truck
- 12 Volt System With Driver Contained Inside the Truck
- Warm White, 3000K LED Lights Rated for 25,000+ Hours
- 110V / 120V Input, 12 Volt Output
- Wire Provided For Flagpole Height Plus 10' (Flagpole Height To Be Provided in Part #)
- Standard 1-1/4" NPT Spindle
- Solar Options Available
- Standard 1/2"-13NC Top Drilling on Dual and Quad Internal Winch Models (5/8"-11NC Available Upon Request)

Patent #7,275,495

\*\*\* - Specify Finish Option  
 SAT = Satin  
 BZT = BronzeTone Powder Coat  
 BLK = Black Powder Coat  
 WHT = White Powder Coat

### Internal Halyard Beacon - Dual Light Winch System - Wire Halyard

FLAGPOLE MAX TOP DIA.	DESCRIPTION	TOTAL LUMENS	BEACON SIZE	PART NUMBER	1+ SATIN	1+ POWDERCOAT
Beacon						
3.5"	BEACON - Dual Light	500	6" Dia.	ABW2-##FS-***	\$4,091	\$4,206
4"	BEACON - Dual Light	500	8" Dia.	ABW2-##4S-***	\$5,227	\$5,342
Beacon Plus						
3.5"	BEACONPLUS - Dual Light	572	6" Dia.	ABW2-##FP-***	\$4,634	\$4,749
4"	BEACONPLUS - Dual Light	572	8" Dia.	ABW2-##4P-***	\$5,227	\$5,342

**Example Part #: ABW2-30FS-SAT**  
 American Beacon Internal Halyard Dual Light, 30' Flagpole, 3.5" Max Top Flagpole Diameter, Standard Beacon, Satin Finish

## = Specify Flagpole Height (20, 25, 30 etc.)  
 \*\*\* = Specify Finish Option



**Beacon Plus - Dual Light**  
 Illuminate the flag while at rest! The Internal Halyard, Dual Light Beacon Plus incorporates two vertical 2 Watt MR16 LED bulbs.

### Internal Halyard Beacon - Quad Light Winch System - Wire Halyard

FLAGPOLE MAX TOP DIA.	DESCRIPTION	TOTAL LUMENS	BEACON SIZE	PART NUMBER	1+ SATIN	1+ POWDERCOAT
Beacon						
4"	BEACON - Quad Light	1000	8" Dia.	ABW4-##4S-***	\$5,380	\$5,495
Beacon Plus						
4"	BEACONPLUS - Quad Light	1072	8" Dia.	ABW4-##4P-***	\$5,999	\$6,114

**Example Part #: ABW4-604P-BZT**  
 American Beacon Internal Halyard Quad Light, 60' Flagpole, 4" Max Top Flagpole Diameter, Beacon Plus, BronzeTone Powder Coat Finish

## = Specify Flagpole Height (20, 25, 30 etc.)  
 \*\*\* = Specify Finish Option



**Beacon Plus - Quad Light**  
 Illuminate the flag while at rest! The Internal Halyard, Quad Light Beacon Plus incorporates two vertical 2 Watt MR16 LED bulbs.

### Internal Halyard Cam Cleat Beacon Rope Halyard - Cam Cleat System

- 8" Gold or Silver Anodized Ball Only
- Accepts up to 5/16" Rope Halyard

FLAGPOLE MAX TOP DIA.	BALL COLOR	DESCRIPTION	TOTAL LUMENS	BEACON SIZE	PART NUMBER	1+ SATIN	1+ POWDERCOAT
Beacon							
3"	Gold	Cam Cleat BEACON	500	8" Dia.	ABCC-##3S-GLD-***	\$3,582	\$3,697
3.5"	Gold	Cam Cleat BEACON	500	8" Dia.	ABCC-##FS-GLD-***	\$3,660	\$3,775
4"	Gold	Cam Cleat BEACON	500	8" Dia.	ABCC-##4S-GLD-***	\$4,508	\$4,551
3"	Silver	Cam Cleat BEACON	500	8" Dia.	ABCC-##3S-SIL-***	\$3,582	\$3,697
3.5"	Silver	Cam Cleat BEACON	500	8" Dia.	ABCC-##FS-SIL-***	\$3,660	\$3,775
4"	Silver	Cam Cleat BEACON	500	8" Dia.	ABCC-##4S-SIL-***	\$4,508	\$4,623
Beacon Plus							
3"	Gold	Cam Cleat BEACON PLUS	572	8" Dia.	ABCC-##3P-GLD-***	\$4,203	\$4,318
3.5"	Gold	Cam Cleat BEACON PLUS	572	8" Dia.	ABCC-##FP-GLD-***	\$4,160	\$4,275
4"	Gold	Cam Cleat BEACON PLUS	572	8" Dia.	ABCC-##4P-GLD-***	\$5,128	\$5,243
3"	Silver	Cam Cleat BEACON PLUS	572	8" Dia.	ABCC-##3P-SIL-***	\$4,203	\$4,318
3.5"	Silver	Cam Cleat BEACON PLUS	572	8" Dia.	ABCC-##FP-SIL-***	\$4,172	\$4,286
4"	Silver	Cam Cleat BEACON PLUS	572	8" Dia.	ABCC-##4P-SIL-***	\$5,128	\$5,243

**Example Part #: ABCC-25FS-GLD-BLK** American Beacon Internal Halyard Cam Cleat, 25' Flagpole, 3.5" Max Top Flagpole Diameter, Standard Beacon, Gold Anodized Ball, Black Powder Coat Finish

## = Specify Flagpole Height (20, 25, 30 etc.)  
 \*\*\* = Specify Finish Option  
 (Specified Finishes Applied to Truck Only.)



**Beacon Plus - Internal Cam Cleat**  
 Illuminate the flag while at rest! The Internal Halyard Beacon Plus incorporates two vertical 2 Watt MR8 bulbs.



### American Beacon – External Halyard Series

The American Beacon External Halyard Series provide lighting options for flagpole systems in heights from 20' – 50'. These options provide the most environmentally correct way for flagpole illumination, properly lighting the flag during nighttime hours without lighting adjoining properties and the night sky!

- External Halyard 359° Revolving Truck
- 12 Volt System With Driver Contained Inside the Ball
- Warm White, 3000K LED Lights Rated for 25,000+ Hours
- 110V / 120V Input, 12 Volt Output
- Wire Provided For Flagpole Height Plus 10' (Flagpole Height To Be Provided in Part #)
- Standard, 1-1/4" NPT Spindle
- Solar Options Available
- Double Truck Systems are NOT Available

**Patent #7,275,495**

**\*\*\* - Specify Finish Option**  
 SAT = Satin  
 BZT = BronzeTone Powder Coat  
 BLK = Black Powder Coat  
 WHT = White Powder Coat



### External Halyard Beacon - Standard Rope Halyard - Revolving - Spindle Truck

FLAGPOLE TOP DIA.	BALL COLOR	DESCRIPTION	TOTAL LUMENS	BEACON DIA.	PART NUMBER	1+ SATIN	1+ POWDERCOAT
Beacon							
3.5"	Gold	External Halyard BEACON - Standard	500	8"	ABES-##FS-GLD-***	\$2,021	\$2,136
3.5"	Silver	External Halyard BEACON - Standard	500	8"	ABES-##FS-SIL-***	\$2,039	\$2,154
Beacon Plus							
3.5"	Gold	Ext. Halyard BEACON PLUS - Standard	572	8"	ABES-##FP-GLD-***	\$2,660	\$2,775
3.5"	Silver	Ext. Halyard BEACON PLUS - Standard	572	8"	ABES-##FP-SIL-***	\$2,660	\$2,775



**Beacon Plus - Standard External**  
 Illuminate the flag while at rest!  
 The Standard External Halyard Beacon Plus incorporates two vertical 2 Watt MR8 bulbs.

**Example Part #: ABES-30FS-GLD-SAT**    ## = Specify Flagpole Height (20, 25, 30 etc.)  
 American Beacon External Halyard (Standard)\*\*\* = Specify Finish Option  
 30' Flagpole, 3.5" Max Top Flagpole Diameter, Standard Beacon, Gold Anodized Ball, Satin Finish  
**(Specified Finishes Applied to Truck Only.)**



### External Halyard Beacon - Heavy-Duty Rope Halyard - Revolving - Spindle Truck

FLAGPOLE TOP DIA.	BALL COLOR	DESCRIPTION	TOTAL LUMENS	BEACON SIZE	PART NUMBER	1+ SATIN	1+ POWDERCOAT
Beacon							
5"	Gold	Ext. Halyard BEACON - Heavy-Duty	500	8" Dia.	ABEH-##5S-GLD-***	\$3,370	\$3,485
5"	Silver	Ext. Halyard BEACON - Heavy-Duty	500	8" Dia.	ABEH-##5S-SIL-***	\$3,370	\$3,485
Beacon Plus							
5"	Gold	Ext. Halyard BEACON PLUS - Heavy-Duty	572	8" Dia.	ABEH-##5P-GLD-***	\$3,987	\$4,102
5"	Silver	Ext. Halyard BEACON PLUS - Heavy-Duty	572	8" Dia.	ABEH-##5P-SIL-***	\$3,987	\$4,102



**Beacon Plus - Heavy-Duty External**  
 Illuminate the flag while at rest!  
 The Heavy-Duty External Halyard Beacon Plus incorporates two vertical 2 Watt MR8 bulbs.

**Example Part #: ABEH-505P-SIL-BZT**    ## = Specify Flagpole Height (20, 25, 30 etc.)  
 American Beacon Heavy-Duty External Halyard, 50' Flagpole, 5" Max Top Flagpole Diameter, Beacon Plus, Silver Anodized Ball, BronzeTone Powder Coat Finish  
 \*\*\* = Specify Finish Option  
**(Specified Finishes Applied to Truck Only.)**



### Outrigger Stationary Beacon Rope Halyard - Stationary - Cap Style Truck

FLAGPOLE TOP DIA.	BALL COLOR	DESCRIPTION	TOTAL LUMENS	BEACON SIZE	PART NUMBER	1+ SATIN	1+ POWDERCOAT
Beacon							
2"	Gold	Outrigger Stationary Beacon	500	8" Dia.	ABOS-202S-GLD-***	\$2,063	\$2,178
2.5"	Gold	Outrigger Stationary Beacon	500	8" Dia.	ABOS-20DS-GLD-***	\$2,063	\$2,178

**Example Part #: ABOS-20DS-GLD-SAT**  
 American Beacon Outrigger Stationary Truck, 20' Flagpole, 2.5" Top Flagpole Diameter, Standard Beacon, Gold Anodized Ball, Satin Finish  
**Standard wire length on the Outrigger Stationary Beacon is 30'.**  
 \*\*\* = Specify Finish Option  
**(Specified Finishes Applied to Truck Only.)**

### American Beacon – Residential Series

The American Beacon Residential Series offers lighting options for External Halyard flagpoles in both Revolving and Stationary designs. These options provide the most environmentally correct way for flagpole illumination, properly lighting the flag during nighttime hours without lighting adjoining properties and the night sky!

- Revolving Option - External Halyard 359° Revolving Cap Style Truck
- 110 Volt System With Driver Contained Inside the Ball
- Can Be Converted to 12V for Solar Power Options
- Warm White, 3000K LED Light Rated for 25,000+ Hours
- 110V / 120V Input, 12 Volt Output
- Revolving Option - Wire Provided For Flagpole Height Plus 10' (Stationary Option Wire Length is 30')

Patent #7,275,495

\*\*\* - Specify Finish Option  
 SAT = Satin  
 BZT = BronzeTone Powder Coat  
 BLK = Black Powder Coat  
 WHT = White Powder Coat

### Residential Revolving Beacon Rope Halyard - Revolving - Cap Style Truck

FLAGPOLE TOP DIA.	BALL COLOR	DESCRIPTION	TOTAL LUMENS	BEACON DIA.	PART NUMBER	1+ SATIN	1+ POWDERCOAT
1.875"-2"	Gold	Residential Revolving Beacon	250	5" Dia.	ABRR-##2S-GLD-***	\$969	\$1,084
1.875"-2"	Silver	Residential Revolving Beacon	250	5" Dia.	ABRR-##2S-SIL-***	\$969	\$1,084

## = Specify Flagpole Height (20, 25, etc.)  
 \*\*\* = Specify Finish Option  
 (Specified Finishes Applied to Truck Only.)



### Residential Stationary Beacon Rope Halyard - Stationary - Cap Style Truck

FLAGPOLE TOP DIA.	DESCRIPTION	TOTAL LUMENS	BEACON DIA.	PART NUMBER	1+ SATIN	1+ POWDERCOAT
Gold						
1.875"-2"	Residential Stationary Beacon	250	5" Dia.	ABRS-##2S-GLD-***	\$588	\$703
2.5"	Residential Stationary Beacon	250	5" Dia.	ABRS-##DS-GLD-***	\$690	\$805
3"	Residential Stationary Beacon	250	5" Dia.	ABRS-##3S-GLD-***	\$713	\$828
Silver						
1.875"-2"	Residential Stationary Beacon	250	5" Dia.	ABRS-##2S-SIL-***	\$588	\$703
2.5"	Residential Stationary Beacon	250	5" Dia.	ABRS-##DS-SIL-***	\$690	\$805
3"	Residential Stationary Beacon	250	5" Dia.	ABRS-##3S-SIL-***	\$713	\$828

## = Specify Flagpole Height (20, 25, etc.)  
 \*\*\* = Specify Finish Option  
 (Specified Finishes Applied to Truck Only.)



### Solar Power Package

WATTAGE	PANEL DIMENSIONS	MAX POWER VOLTAGE	MAX POWER CURRENT	OPEN CURRENT VOLTAGE	PART NUMBER	1+
20W	470mm x 430mm x 17mm	17.3V	1.16A	21.4V	ABSP-2000	\$3,191
30W	360mm x 678mm x 25mm	18.25V	1.64A	21.96V	ABSP-3000	\$3,383
40W	678mm x 500mm x 25mm	18.25V	2.19A	21.96V	ABSP-4000	\$3,520

The American Beacon Solar Power Package includes one Solar Power Collector (20W, 30W, or 40W), one Battery Pack (9Ah, 12Ah, or 15Ah), and one Solar Power Pole Mount. Designed for use with our 12V Solar American Beacon designs (sold separately), this package allows for the proper illumination of the flag without the additional power expense.

#### Solar Power Pole Mount

- Used to attach a solar panel to the side of a flagpole
- Ultra-light and strong 5052 Aluminum

#### Solar Power Collector

- Panel Material – Monocrystalline High Efficiency Photovoltaic
- High Conversion Efficiency
- Low Power Tolerance of 0~+3%
- Low Degradation Under Light Exposure
- Withstands High Wind-Pressure, Snow Loads and Extreme Temperatures
- ISO 9001:2008 (Quality Management System) Certified Factory
- IEC61215, IEC61730, MCS CEC Certified Products
- TUV, CE Conformity



#### Solar Power Battery

- 3.2V 3000mAh Lithium Iron Phosphate Batteries
- Automatic Cell Balancing
- External on/off switch (Off: For shipping and storage. On: Fully automatic mode)
- Dusk to Dawn Auto-Switching Function
- All units field tested
- Internally fused: 1 Amp







A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps/ Fixture	C # of Fixture	D Fixture Watt.	(C X D)
S2A/S2A-HS: Other:	1	23	25	575
<u>Emergency services, loading area (1399 ft2): Non-tradable Wattage</u>				
S5: Other:	1	5	24	120
Total Tradable Proposed Watts =				2104

**Exterior Lighting PASSES: Design 72% better than code**

**Exterior Lighting Compliance Statement**

*Compliance Statement:* The proposed exterior lighting design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed exterior lighting systems have been designed to meet the 90.1 (2019) Standard requirements in COMcheck Version COMcheckWeb and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

Jamie Tills



01/13/2023

Name - Title

Signature

Date



# Inspection Checklist

Energy Code: 90.1 (2019) Standard

Requirements: 15.0% were addressed directly in the COMcheck software

Text in the "Comments/Assumptions" column is provided by the user in the COMcheck Requirements screen. For each requirement, the user certifies that a code requirement will be met and how that is documented, or that an exception is being claimed. Where compliance is itemized in a separate table, a reference to that table is provided.

Section # & Req.ID	Plan Review	Complies?	Comments/Assumptions
4.2.2, 8.4.1.1, 8.4.1.2, 8.7 [PR6] <sup>2</sup>	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the electrical systems and equipment and document where exceptions are claimed. Feeder connectors sized in accordance with approved plans and branch circuits sized for maximum drop of 3%.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
9.7 [PR8] <sup>1</sup>	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the exterior lighting and electrical systems and equipment and document where exceptions to the standard are claimed. Information provided should include exterior lighting power calculations, wattage of bulbs and ballasts, transformers and control devices.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.  <b>Location on plans/spec:</b> See luminaire schedule.

## Additional Comments/Assumptions:

1 High Impact (Tier 1)    2 Medium Impact (Tier 2)    3 Low Impact (Tier 3)

Section # & Req.ID	Rough-In Electrical Inspection	Complies?	Comments/Assumptions
8.4.2 [EL10] <sup>2</sup>	At least 50% of all 125 volt 15- and 20-Amp receptacles are controlled by an automatic control device.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
8.4.3 [EL11] <sup>2</sup>	New buildings have electrical energy use measurement devices installed. Where tenant spaces exist, each tenant is monitored separately. In buildings with a digital control system the energy use is transmitted to to control system and displayed graphically.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
9.4.1.4 [EL3] <sup>2</sup>	Automatic lighting controls for exterior lighting installed.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met. <b>Location on plans/spec:</b> See LU4003.
9.4.1.4d [EL21] <sup>2</sup>	Outdoor parking area luminaires $\geq$ 78W and $\leq$ 24 ft height controlled to reduce wattage by 50% when area unoccupied over 15 minutes. Controlled power limited to $\leq$ 1500W.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	<b>Exception:</b> Requirement does not apply.

**Additional Comments/Assumptions:**

1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)
---	----------------------	---	------------------------	---	---------------------

Section # & Req.ID	Final Inspection	Complies?	Comments/Assumptions
9.4.2 [FI19] <sup>1</sup>	Exterior lighting power is consistent with what is shown on the approved lighting plans, demonstrating proposed watts are less than or equal to allowed watts.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	See the Exterior Lighting fixture schedule for values.

**Additional Comments/Assumptions:**

1 High Impact (Tier 1)	2 Medium Impact (Tier 2)	3 Low Impact (Tier 3)
------------------------	--------------------------	-----------------------



# New Wilsonville Primary School

7151 Boeckman Road  
Wilsonville, OR 97070

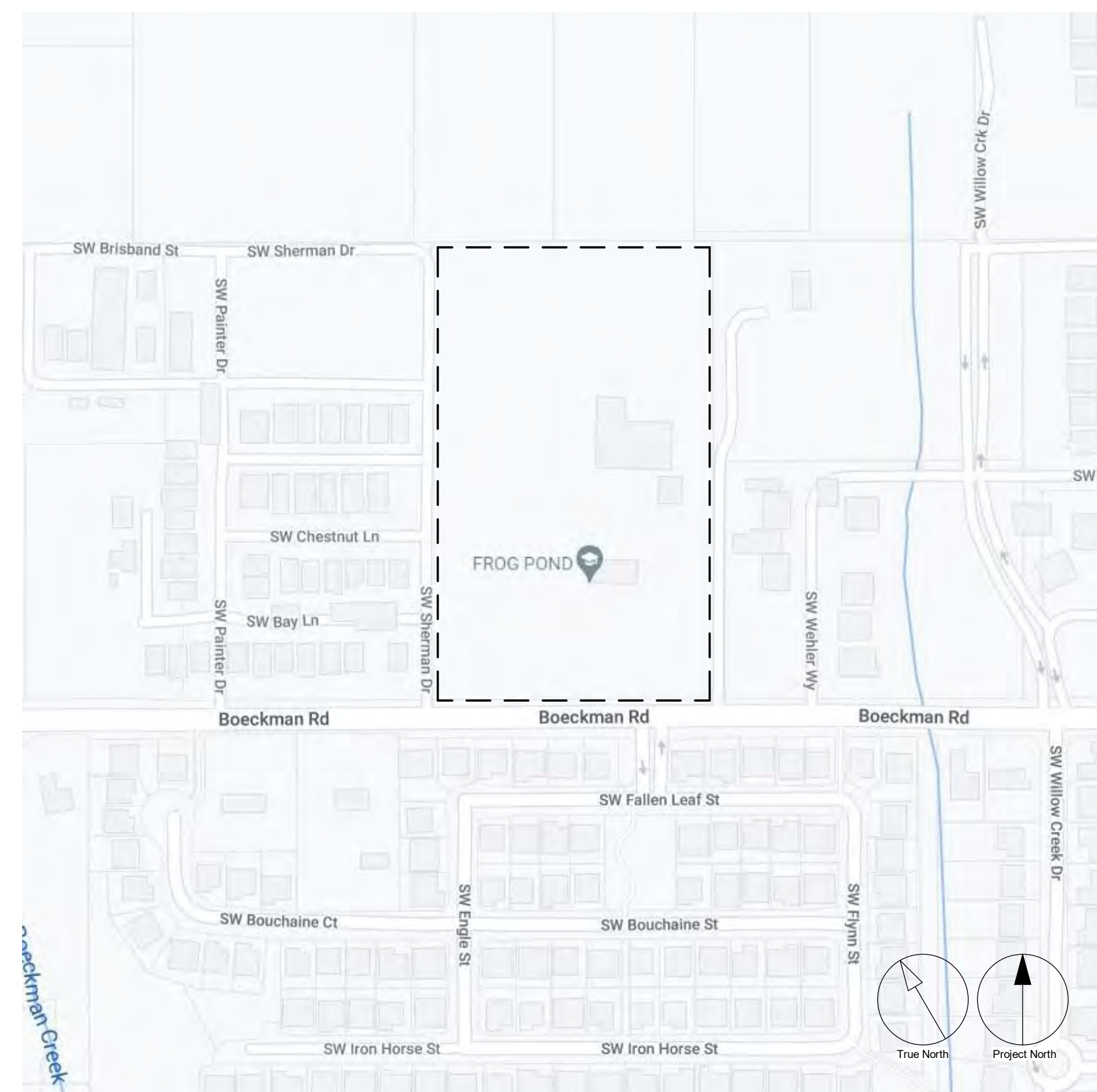
## VOLUME 1 OF 1

### CONTENT

The new Primary School at the Frog Pond site in the City of Wilsonville will be a starter primary school with 350 student capacity and provide for a complete academic curriculum for grade levels pre-K-5, while supporting an equitable complement of interior and exterior physical education areas. The new facility will be built on a green-field site east of Boeckman Creek and north of Boeckman Road, in the City of Wilsonville. The school must be operational at the beginning of the 2024-2025 school year. A future learning neighborhood addition will increase the capacity to 550 students. The administration area, wellness commons, library, music and makerspace will be designed for 550 student capacity.



### VICINITY MAP



### SHEET INDEX

LU 000 COVER SHEET

#### CIVIL

- LU 100 EXISTING CONDITIONS PLAN
- LU 110 DEMOLITION PLAN
- LU 120 SITE PLAN
- LU 130 FIRE ACCESS & CIRCULATION PLAN
- LU 140 GRADING & EROSION CONTROL PLAN
- LU 150 COMPOSITE UTILITY PLAN

#### LANDSCAPE

- LU 200 LANDSCAPE KEY PLAN
- LU 201 TREE PROTECTION AND REMOVAL PLAN

- LU 202 SITE - PARTIAL PLAN - NORTH
- LU 203 SITE - PARTIAL PLAN - SOUTH

- LU 204 IRRIGATION - PARTIAL PLAN - NORTH
- LU 205 IRRIGATION - PARTIAL PLAN - SOUTH

- LU 206 PLANT SCHEDULE AND PLANTING NOTES
- LU 207 PLANTING - TREES PARTIAL PLAN - NORTH
- LU 208 PLANTING - TREES PARTIAL PLAN - SOUTH
- LU 209 PLANTING KEY PLAN
- LU 210 PLANTING - SHRUBS - PARTIAL PLAN - PLAYGROUND
- LU 211 PLANTING - SHRUBS - PARTIAL PLAN - COURTYARD
- LU 212 PLANTING - SHRUBS - PARTIAL PLAN - PARKING LOT
- LU 213 PLANTING - SHRUBS - PARTIAL PLAN - EAST ENTRIES
- LU 214 PLANTING - SHRUBS - PARTIAL PLAN - SOUTH EDGE

- LU 215 SITE DETAILS
- LU 216 SITE DETAILS
- LU 217 SITE DETAILS

#### ARCHITECTURAL

LU 300 ARCHITECTURAL SITE PLAN

- LU 310 BUILDING ISOMETRICS SE & SW - PHASE 1 ONLY
- LU 311 BUILDING ISOMETRICS NE & NW - PHASE 1 ONLY
- LU 312 BUILDING ISOMETRICS SE & SW - PHASE 1 & 2
- LU 313 BUILDING ISOMETRICS NE & NW - PHASE 1 & 2

- LU 320 FLOOR PLAN - PHASE 1 ONLY
- LU 321 FLOOR PLAN - PHASE 1 & 2

- LU 330 BUILDING ELEVATIONS - PHASE 1 ONLY
- LU 331 BUILDING ELEVATIONS - PHASE 1 & 2

LU 340 EXTERIOR MATERIALS

LU 350 BUILDING SIGNAGE & MONUMENT SIGN

#### LIGHTING

LU 401 LUMINAIRE SCHEDULE

- LU 402 SITE LIGHTING PLAN
- LU 403 SITE LIGHTING PLAN - PHOTOMETRICS

ISSUES		
No.	DESCRIPTION	DATE
	LAND USE APPLICATION	2022-11-04
	LAND USE INCOMPLETENESS RESPONSE	2023-01-17

PROJECT  
**New Wilsonville  
Primary School**

PROJECT NO:  
137469

DATE:  
2022-12-16

Land Use  
Application

SHEET NUMBER  
**LU 000**





2755 SW Borland Road,  
Tualatin, OR 97062

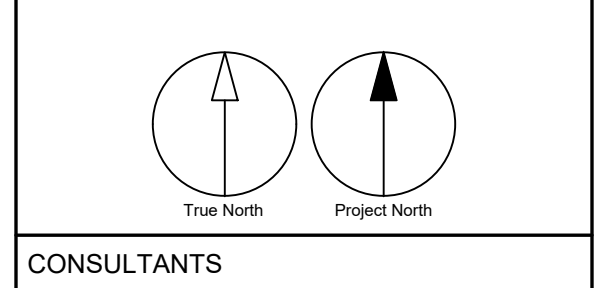
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No.	DESCRIPTION	DATE
1	LAND USE APPLICATION	2022-11-04
2	LAND USE INCOMPLETENESS RESPONSE	2023-01-17

**ISSUES**

No.	DESCRIPTION	DATE
1	LAND USE APPLICATION	2022-11-04
2	LAND USE INCOMPLETENESS RESPONSE	2023-01-17

**NOT FOR CONSTRUCTION**



**CONSULTANTS**  
**3J CONSULTING**  
CIVIL ENGINEERING  
WATER RESOURCES  
COMMUNITY PLANNING  
9600 SW HAMBURG AVE., SUITE 1100 SEASIDE, OR 97138

CLACKAMAS COUNTY D.O.T.	503-722-6301
CLACKAMAS COUNTY D.O.T.-CBX	503-722-6663
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FRONTIER	800-778-9140
NW NATURAL	503-220-2415
PORTLAND GENERAL ELECTRIC	503-255-4634
CENTURYLINK	800-778-9140
360 NETWORKS USA	888-267-1063

**SEAL**

**PRIME CONSULTANT**  
**IBI GROUP**  
907 SW Harvey Milk Street  
Portland, OR 97205, USA  
tel 503 226 8900 fax 503 273 9192  
ibi@ibi-group.com

**PROJECT**  
New Wilsonville Primary  
School  
7151 Boeckman Road  
Wilsonville, OR 97070

**PROJECT NO:**  
137469

**SHEET TITLE**  
EXISTING CONDITIONS  
PLAN

**SHEET NUMBER**  
LU 100

**EXISTING LEGEND**

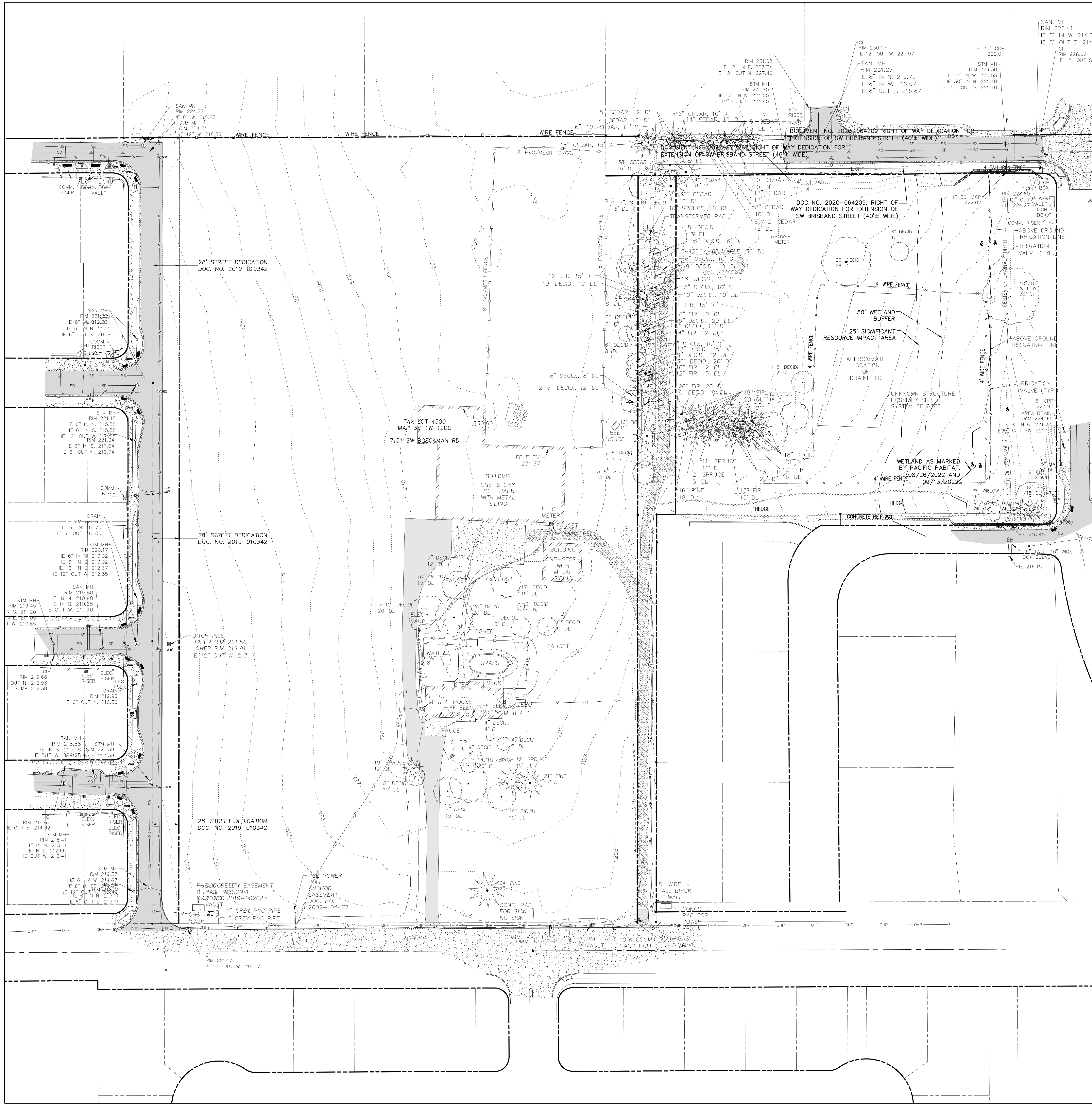
---	PROPERTY LINE	⊙	STORM MANHOLE
---	EASEMENT LINE	□	CATCH BASIN
SD	STORM LINE	□	CLEANOUT/ROOF DRAIN
SS	SEWER LINE	○	SEWER MANHOLE
W	WATER LINE	⊗	FIRE HYDRANT
G	GAS LINE	⊕	WATER METER
UGP	UNDERGROUND POWER LINE	⊕	WATER VALVE
OHP	OVERHEAD POWER LINE	⊕	GAS METER
T	COMMUNICATIONS LINE	⊕	GAS VALVE
---	FENCE	□	ELECTRICAL VAULT/BOX
---	MAJOR CONTOUR	⊗	LIGHT POLE
---	MINOR CONTOUR	⊗	UTILITY POLE
---	EDGE OF BRUSH	---	UTILITY POLE ANCHOR
---	CURB	---	SIGN
---	EXTG BUILDING	---	MAILBOX
---	BUILDING EAVE	---	CONIFEROUS TREE
---	WALL	---	DECIDUOUS TREE
---	ASPHALT	---	SEPTIC TANK
---	CONCRETE	---	
---	GRAVEL PATH	---	

**EXISTING CONDITIONS PLAN**  
THIS PLAN HAS BEEN PREPARED FOR ILLUSTRATIVE PURPOSES ONLY. SITE BACKGROUND INFORMATION AND FEATURES HAVE BEEN GENERATED FROM A COMBINATION OF PUBLIC GIS DATA SOURCES, AERIAL PHOTOS, TAX ASSESSOR MAPS AND PHYSICAL SITE OBSERVATIONS. PROPOSED SITE FEATURES ARE PRELIMINARY IN NATURE AND SUBJECT TO CHANGE. NO WARRANTY OR GUARANTEE IS EXPRESSED OR IMPLIED.

**SURVEYORS NOTES**

- VERTICAL DATUM: NAVD '88, OREGON REAL TIME GNSS NETWORK (ORGN).
- HORIZONTAL DATUM: OREGON COORDINATE REFERENCE SYSTEM, PORTLAND ZONE, BASED UPON OBSERVATIONS TIED TO THE OREGON REAL TIME GNSS NETWORK, (ORGN) NAD '88 (2011) EPOCH 2010.00.
- UTILITY INFORMATION SHOWN ON THIS MAP IS BASED UPON OBSERVED FEATURES AND UTILITY LOCATES. NO WARRANTIES ARE MADE REGARDING THE ACCURACY OR COMPLETENESS OF THE UTILITY INFORMATION SHOWN. ADDITIONAL UTILITIES MAY EXIST. INTERESTED PARTIES ARE HEREBY ADVISED THAT UTILITY LOCATIONS SHOULD BE VERIFIED PRIOR TO DESIGN OR CONSTRUCTION OF ANY CRITICAL ITEMS.
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COMCAST	800-778-9140
FRONTIER	800-778-9140
NW NATURAL	503-220-2415
PORTLAND GENERAL ELECTRIC	503-255-4634
CENTURYLINK	800-778-9140
360 NETWORKS USA	888-267-1063



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

SCALE: 1" = 40'  
0 40 80 FT





2755 SW Borland Road,  
Tualatin, OR 97062

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No.	DESCRIPTION	DATE
1	LAND USE APPLICATION	2022-11-04
2	LAND USE INCOMPLETENESS RESPONSE	2023-01-17

**NOT FOR CONSTRUCTION**

**EXISTING LEGEND**

- PROPERTY LINE
- EASEMENT LINE
- SD --- STORM LINE
- SS --- SEWER LINE
- W --- WATER LINE
- G --- GAS LINE
- UGP --- UNDERGROUND POWER LINE
- OHP --- OVERHEAD POWER LINE
- T --- COMMUNICATIONS LINE
- FENCE
- XXO --- MAJOR CONTOUR
- XX1 --- MINOR CONTOUR
- EDGE OF BRUSH
- CURB
- EXTG BUILDING
- BUILDING EAVE
- WALL
- ASPHALT
- CONCRETE
- GRAVEL PATH
- ⊕ STORM MANHOLE
- CATCH BASIN
- CLEANOUT/ROOF DRAIN
- SEWER MANHOLE
- ⊕ FIRE HYDRANT
- ⊕ WATER METER
- ⊕ WATER VALVE
- ⊕ GAS METER
- ⊕ GAS VALVE
- ⊕ ELECTRICAL VAULT/BOX
- ⊕ LIGHT POLE
- ⊕ UTILITY POLE
- ⊕ UTILITY POLE ANCHOR
- ⊕ SIGN
- ⊕ MAILBOX
- ⊕ CONFEROUS TREE
- ⊕ DECIDUOUS TREE
- ⊕ SEPTIC TANK

**DEMOLITION LEGEND**

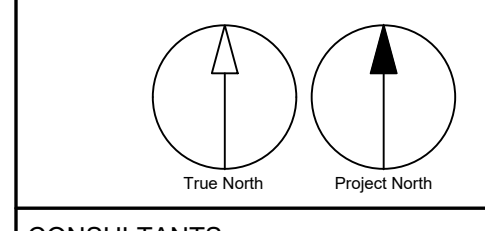
- UTILITY/SITE FEATURE REMOVAL, AS NOTED
- CONCRETE REMOVAL, AS NOTED
- AC PAVING REMOVAL, AS NOTED
- GRAVEL SURFACE REMOVAL, AS NOTED

**DEMOLITION KEY NOTES**

- 1 EXISTING BUILDING, ASSOCIATED UTILITIES, AND FOUNDATION TO BE DEMOLISHED.
- 2 REMOVE EXISTING AC PAVEMENT/ CONCRETE PAVEMENT AND BASE ROCK WITHIN AREA INDICATED. REMOVE PAVING AND DISPOSE OFFSITE.
- 3 REMOVE AND DISPOSE OF EXISTING CONCRETE CURB.
- 4 REMOVE EXISTING GRAVEL WITHIN AREA INDICATED AND DISPOSE OFFSITE.
- 5 REMOVE EXISTING UTILITY AND ASSOCIATED STRUCTURES/ APPURTENANCES TO LIMITS SHOWN.
- 6 REMOVE FENCING, GATES, POSTS, CONCRETE FOOTINGS AND ALL ASSOCIATED APPURTENANCES. DISPOSE OF MATERIALS OFFSITE UNLESS OTHERWISE DIRECTED BY OWNER.
- 7 REMOVE EXISTING WELL AND ALL ASSOCIATED APPURTENANCES.
- 8 REMOVE EXISTING COMPOST PIT.
- 9 REMOVE EXISTING DITCH INLET STORM DRAIN STRUCTURE AND DISPOSE OFFSITE.
- 10 REMOVE EXISTING WATER VALVE. CONTRACTOR TO COORDINATE WITH CITY OF WILSONVILLE PRIOR TO ANY DISTURBANCE.
- 11 REMOVE EXISTING TREE. SEE LANDSCAPE ARCHITECT PLANS FOR TREE PRESERVATION PLAN.
- 12 REMOVE FAUCET AND ASSOCIATED APPURTENANCES.
- 13 REMOVE EXISTING BEE KEEPING STRUCTURE.
- 14 REMOVE EXISTING WELL HOUSE STRUCTURE.
- 15 REMOVE FILL AND ALL REMNANTS OF ABANDONED POOL AND ASSOCIATED APPURTENANCES INCLUDING ALL PIPING, ELECTRICAL AND CONCRETE.

**TREE REMOVAL AND PRESERVATION**

SEE LANDSCAPE PLANS FOR ALL TREE REMOVAL AND PRESERVATION CONSIDERATIONS.



CONSULTANTS

**3J CONSULTING**  
CIVIL ENGINEERING  
WATER RESOURCES  
COMMUNITY PLANNING  
9600 SW HAMBURG AVE., SUITE 100, SEASIDE, OR 97138

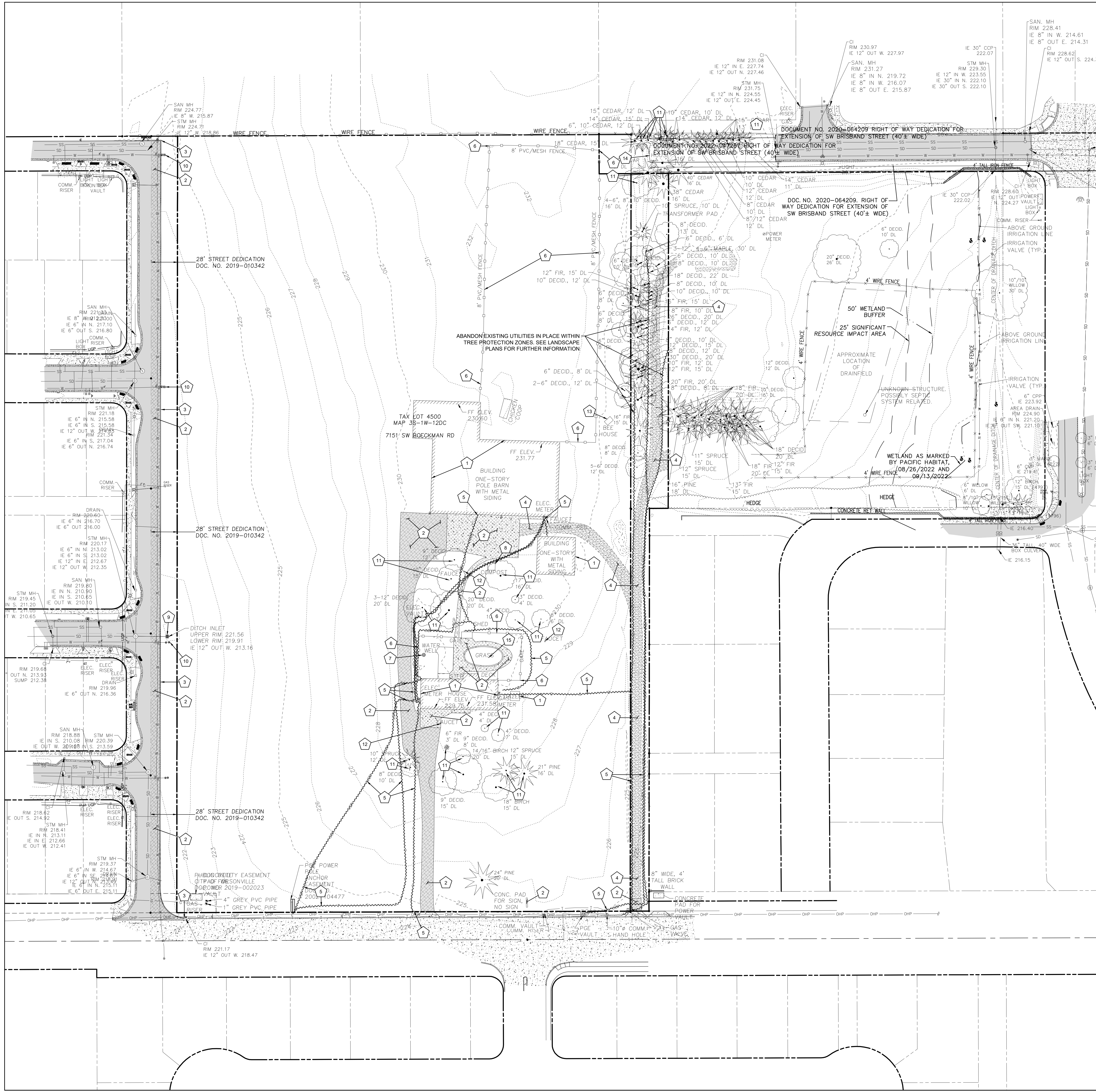
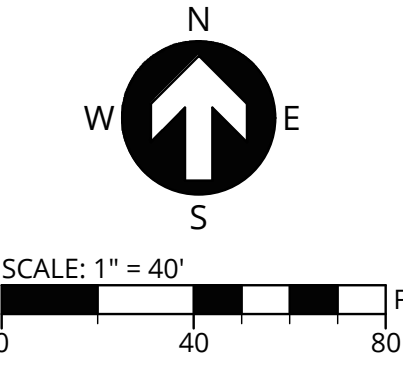
**PRIME CONSULTANT**  
**IBI GROUP**  
907 SW Harvey Milk Street  
Portland, OR 97205, USA  
tel 503 226 8900 fax 503 273 9192  
ibi@ibi-group.com

**PROJECT**  
New Wilsonville Primary  
School  
7151 Boeckman Road  
Wilsonville, OR 97070

**PROJECT NO:**  
137469

**SHEET TITLE**  
DEMOLITION PLAN

**SHEET NUMBER**  
LU 110







2755 SW Borland Road,  
Tualatin, OR 97062

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No.	DESCRIPTION	DATE
1	LAND USE APPLICATION	2022-11-04
2	LAND USE INCOMPLETENESS RESPONSE	2023-01-17

**ISSUES**

**CONSTRUCTION KEY NOTES**

- 1 CONSTRUCT ASPHALT PAVING WITHIN LIMITS SHOWN.
- 2 CONSTRUCT CONCRETE PAVING WITHIN LIMITS SHOWN.
- 3 CONSTRUCT STANDARD CURB.
- 4 CONSTRUCT CONCRETE DRIVEWAY.
- 5 CONSTRUCT FRONTAGE IMPROVEMENTS. SEE DIMENSIONS, THIS SHEET.
- 6 INSTALL ADA PARKING SIGNS.

**SITE STATISTICS**

SITE ADDRESS	7151 SW BOECKMAN RD
TAX MAP	31W12DC04500
JURISDICTION	CITY OF WILSONVILLE, OREGON
SITE AREA	9.19 ACRES
ZONING	PUBLIC FACILITY (PF)

**SITE AREA TABLE**

EXISTING SITE AREA	9.19 ACRES
SITE AREA AFTER LOT LINE ADJUSTMENT	9.68 ACRES
SITE AREA AFTER ROW DEDICATION ON BRISBAND STREET AND SW BOECKMAN ROAD FOR NEW FRONTAGE IMPROVEMENTS	9.11 ACRES

**OFF-STREET PARKING STATISTICS**

PARKING TYPE	STALL COUNT	STALL LENGTH (FT.)	STALL WIDTH (FT.)	STALL ANGLE
PHASE 1 PROPOSED STANDARD PARKING STALLS:	71	18	9	90°
PHASE 1 PROPOSED ADA PARKING STALLS:	6	18	9	90°
PHASE 2 - PROPOSED STANDARD PARKING STALLS:	42	18	9	90°
TOTAL STALLS	119			

**BICYCLE PARKING STATISTICS**

PARKING TYPE	TOTAL COUNT	AMOUNT COVERED
PHASE 1 - PROPOSED BICYCLE PARKING:	52	26
PHASE 2 - PROPOSED BICYCLE PARKING:	48	24
TOTAL STALLS	100	50

**BUILDING AREA TABLE**

PHASE 1 BUILDING	58,130 SF
PHASE 2 BUILDINGS	11,500 SF

**PRIME CONSULTANT**

**IBI GROUP**  
907 SW Harvey Mill Street  
Portland, OR 97205, USA  
tel 503 226 8900 fax 503 273 9192  
ibi@ibi-group.com

**PROJECT**  
New Wilsonville Primary School  
7151 Boeckman Road  
Wilsonville, OR 97070

**PROJECT NO:**  
137469

**SHEET TITLE**  
SITE PLAN

**SHEET NUMBER**  
LU 120

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

**SCALE:** 1" = 40' FT

**LEGEND**

- PROPOSED RIGHT-OF-WAY LINE
- PROPOSED EASEMENT LINE
- PROPOSED CURB
- PROPOSED STRIPING LINE
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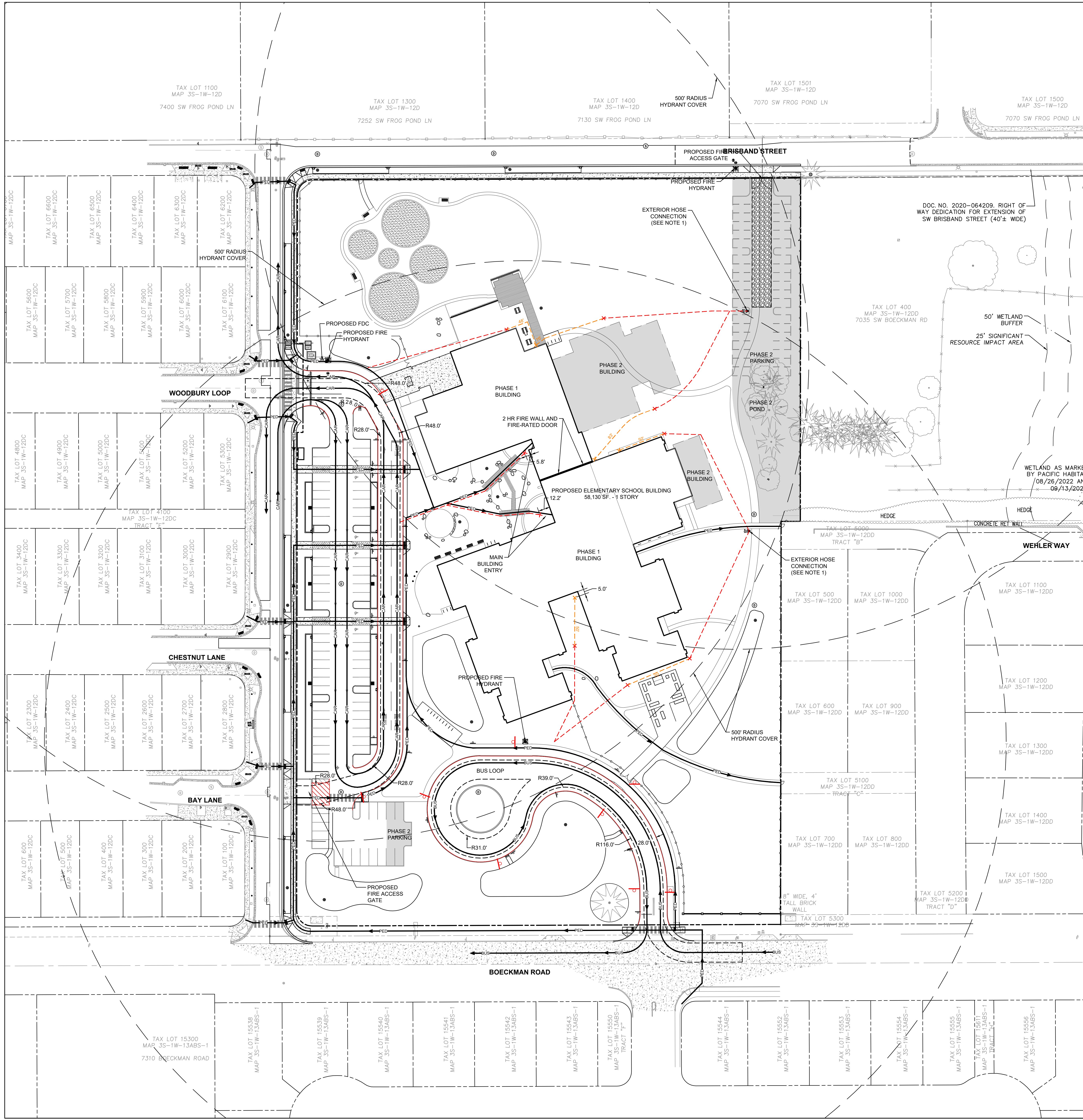
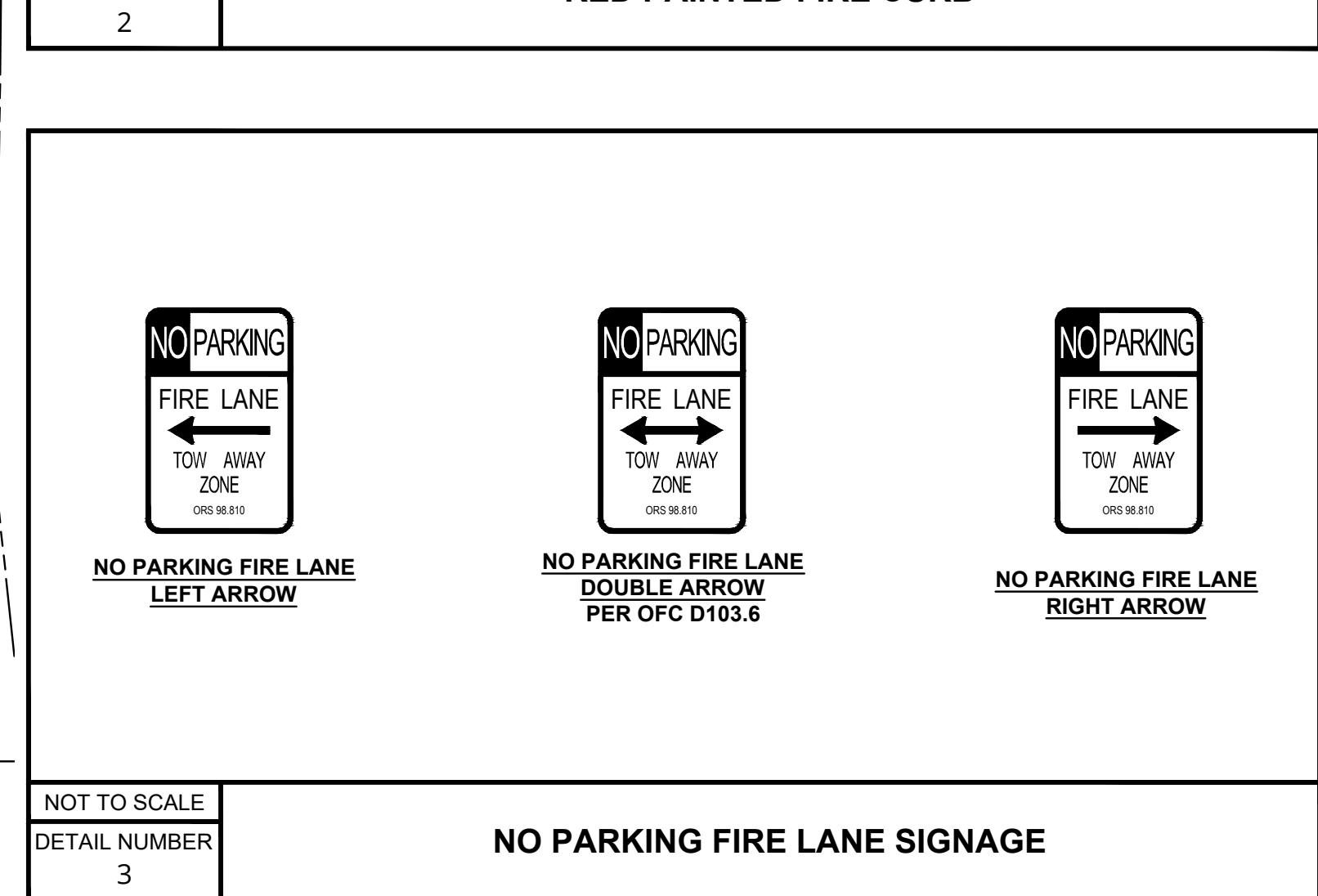
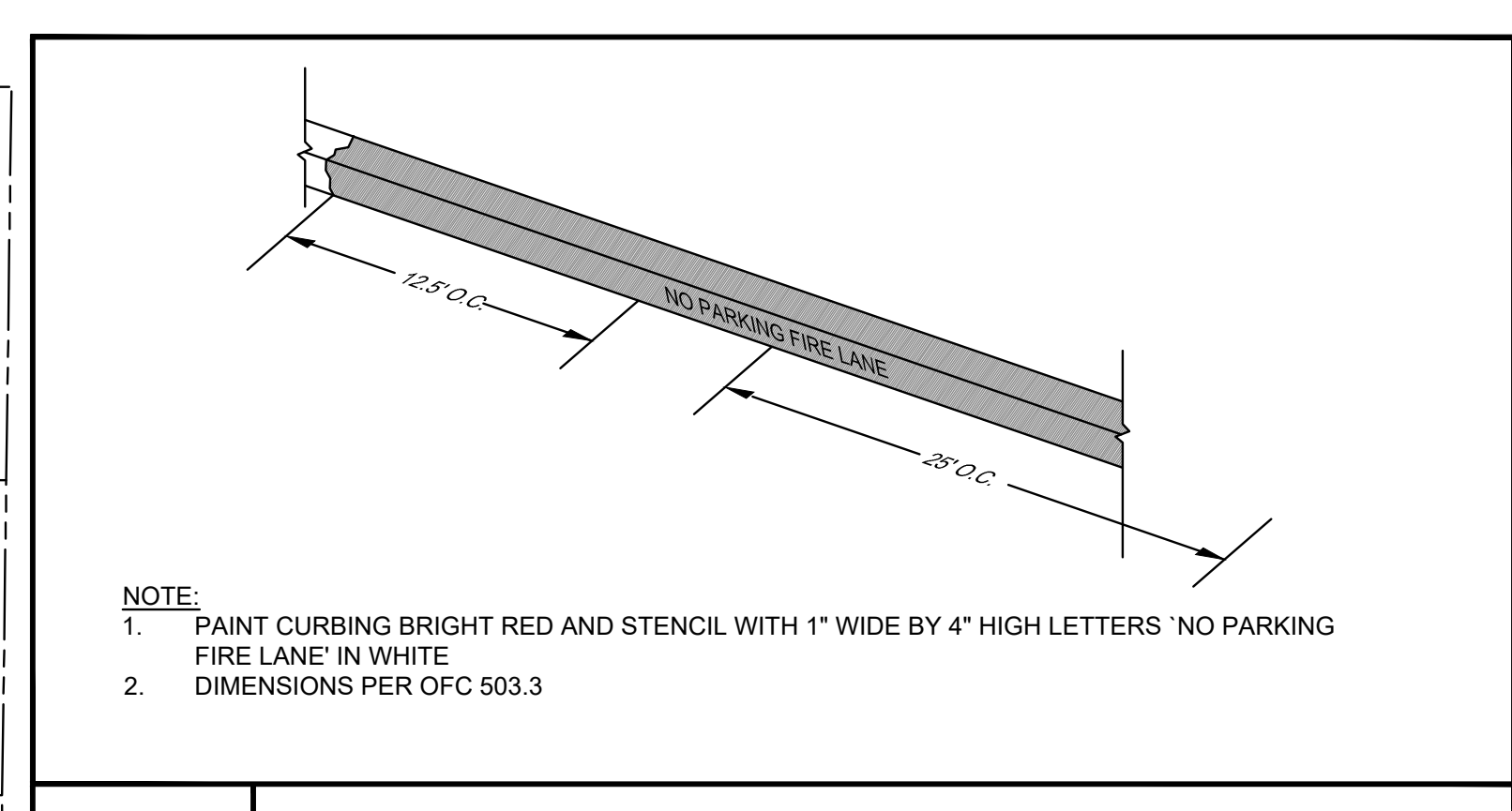
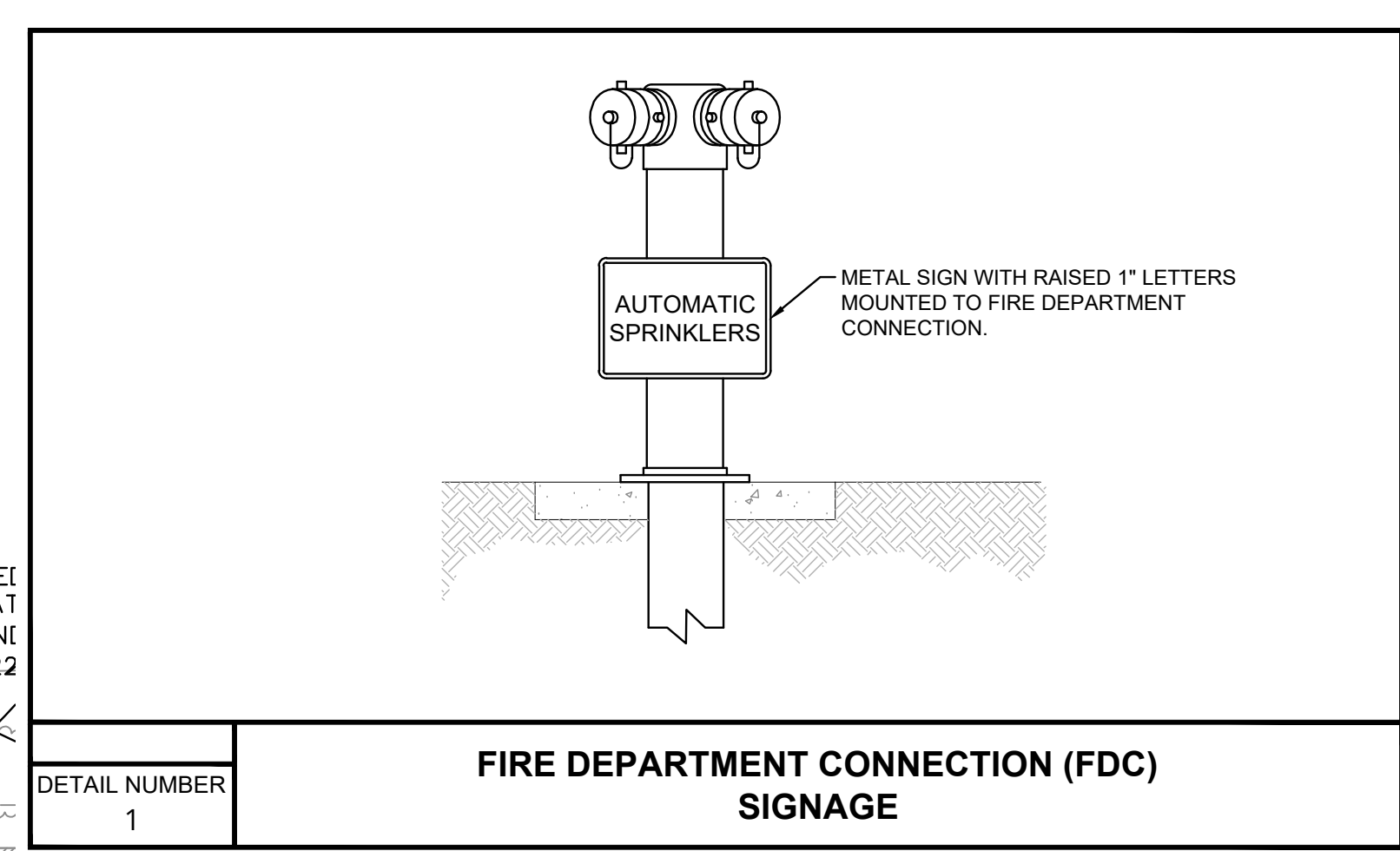
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**NOT FOR CONSTRUCTION**

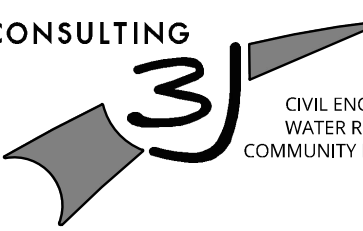
**LEGEND**

- PROPOSED FIRE HOSE PULL (150')
- PROPOSED FIRE HOSE PULL EXTENTS (EXCEEDS 150')
- PROPOSED 450' HYDRANT COVER RADIUS
- PROPOSED FIRE HYDRANT
- PROPOSED EXTERIOR HOSE CONNECTION WITH POST INDICATOR VALVE
- PROPOSED FDC
- PROPOSED 20' WIDE FIRE ACCESS PATH INSIDE RADIUS 28 FT, OUTSIDE RADIUS 48 FT
- PROPOSED NO PARKING FIRE LANE CURB STRIPING
- PROPOSED NO PARKING FIRE LANE SIGN
- BUS → BUS CIRCULATION ROUTE
- CAR → CAR CIRCULATION ROUTE
- PED → PEDESTRIAN CIRCULATION ROUTE

- NOTES**
- ALTERNATE METHOD PROPOSED IN LIEU OF FIRE DEPARTMENT ACCESS ON THE NORTH AND EAST SIDES OF THE BUILDING (150-FT FIRE HOSE PULL RULE). ALTERNATE METHOD UTILIZES EXTERNAL HOSE CONNECTIONS IN CONJUNCTION WITH THE INTERNAL PLUMBING AND WET SPRINKLER SYSTEM.
  - BUILDING TO BE FULLY SPRINKLERED.
  - LEVEL 1 BUILDING LAYOUT SHOWN.



CONSULTANTS

**3J CONSULTING**  
  
 CIVIL, ENGINEERING, WATER RESOURCES, COMMUNITY PLANNING  
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PROJECT

**New Wilsonville Primary School**  
 7151 Boeckman Road  
 Wilsonville, OR 97070

PROJECT NO:  
 137469


SHEET TITLE  
**FIRE ACCESS & CIRCULATION PLAN**

SHEET NUMBER  
**LU 130**

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

SCALE: 1" = 40'  
 0 40 80 FT



**CLIENT**  
**West Linn-Wilsonville School District**  
  
 2755 SW Borland Road,  
 Tualatin, OR 97062


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2	LAND USE INCOMPLETENESS RESPONSE	2023-01-17

**NOT FOR CONSTRUCTION**

**CONSULTANTS**

**3J CONSULTING**  
  
 CIVIL, ENGINEERING,  
 WATER RESOURCES,  
 COMMUNITY PLANNING  
 9605 SW HAMBUS AVE., SUITE 100, SEASIDE, OR 97138

**SEAL**

**PRIME CONSULTANT**

**IBI GROUP**  
 907 SW Harvey Mill Street  
 Portland, OR 97205, USA  
 tel 503 226 8900 fax 503 273 9192  
 ibigroup-usa.com

**PROJECT**  
**New Wilsonville Primary School**  
 7151 Boeckman Road  
 Wilsonville, OR 97070

**PROJECT NO:**  
 137469

**SHEET TITLE**  
**GRADING & EROSION CONTROL PLAN**

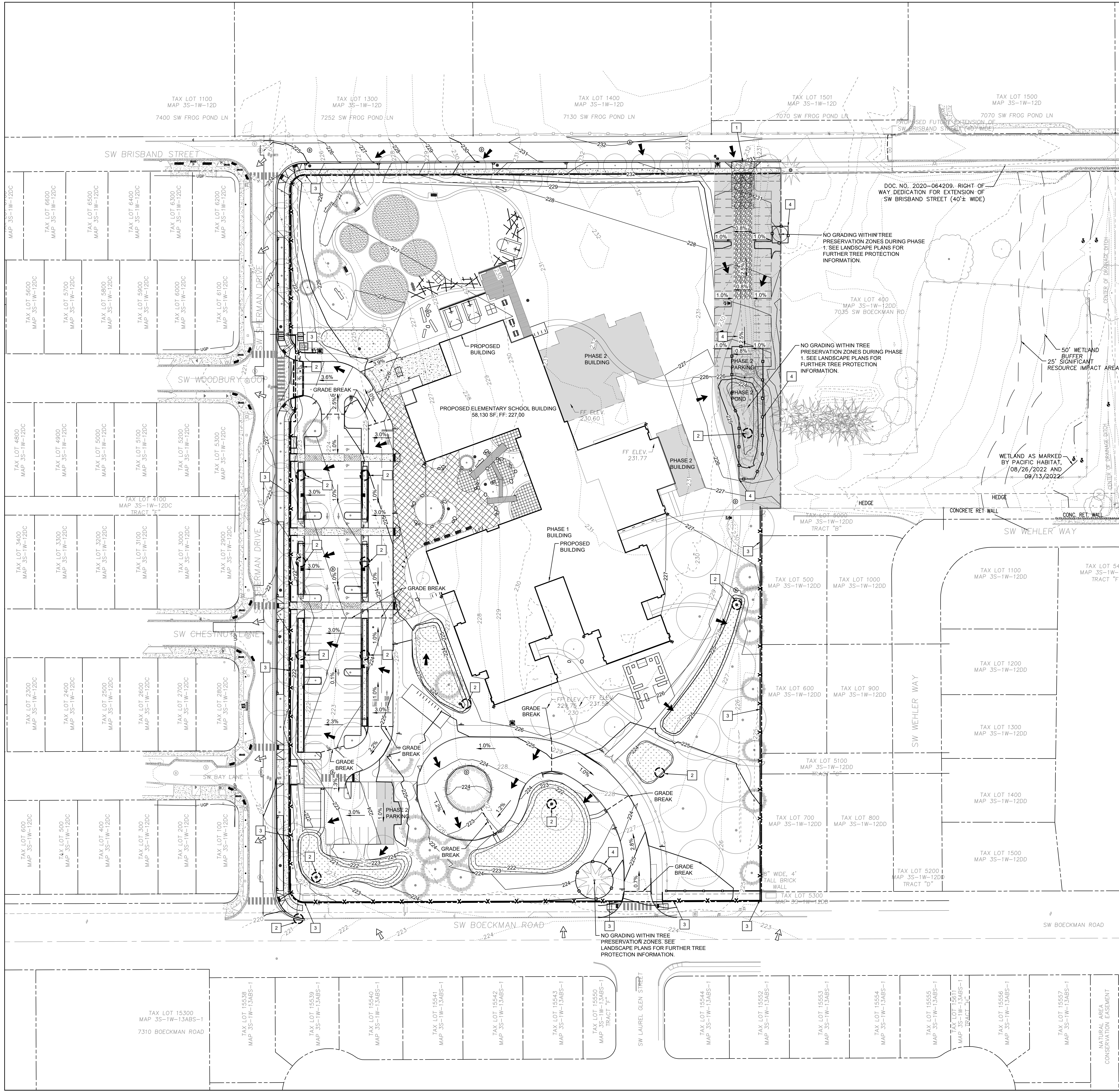
**SHEET NUMBER**  
**LU 140**

**LEGEND**

- - - - - XX0 - - - - - EXISTING MAJOR CONTOUR
- - - - - XX1 - - - - - EXISTING MINOR CONTOUR
- XX0 — PROPOSED MAJOR CONTOUR
- XX1 — PROPOSED MINOR CONTOUR
- X — PROPOSED SILT FENCE
- — PROPOSED TREE PROTECTION FENCE
- — PROPOSED INLET PROTECTION
- — EXISTING GRADE SURFACE RUN-OFF FLOW ARROW
- — FINISHED GRADE SURFACE RUN-OFF FLOW ARROW
- ▨ — CONSTRUCTION ENTRANCE
- — PHASE 2 AREA, AS NOTED

**EROSION & SEDIMENT CONTROL KEY NOTES**

- 1 PROPOSED CONSTRUCTION ENTRANCE
- 2 PROPOSED INLET PROTECTION
- 3 PROPOSED SILT FENCE
- 4 PROPOSED TREE PROTECTION FENCE



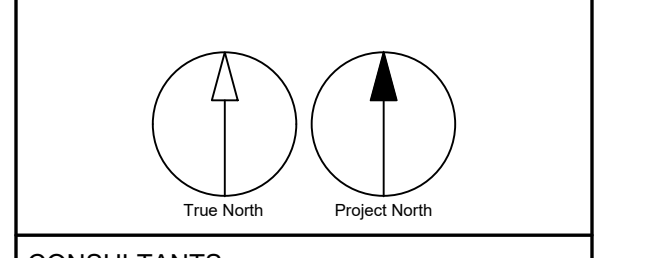
**811**  
 Know what's below.  
 Call before you dig.

SCALE: 1" = 40'  
 0 40 80 FT



No.	DESCRIPTION	DATE
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SEAL

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**IBI GROUP**  
907 SW Harvey Mill Street  
Portland, OR 97205, USA  
tel 503 226 8950 fax 503 273 9192  
ibi@ibi-group.com

PROJECT  
**New Wilsonville Primary School**  
7151 Boeckman Road  
Wilsonville, OR 97070

PROJECT NO:  
137469

SHEET TITLE  
COMPOSITE UTILITY PLAN

SHEET NUMBER  
**LU 150**

**LEGEND**

- SD PROPOSED STORM DRAIN PIPE
- SS PROPOSED SANITARY SEWER PIPE
- WM PROPOSED WATER MAIN PIPE
- DW PROPOSED WATER DOMESTIC SERVICE PIPE
- FW PROPOSED WATER FIRE SERVICE PIPE
- R PROPOSED IRRIGATION SERVICE PIPE
- (D) PROPOSED STORM MANHOLE
- (S) PROPOSED STORM INLET
- (C) PROPOSED DRAINAGE CURB CUT
- ===== PROPOSED STORM TRENCH DRAIN
- PROPOSED BUILDING FOUNDATION DRAIN
- PROPOSED BUILDING ROOF DRAIN POINT OF CONNECTION
- [Pattern] PROPOSED LIDA STORM FACILITY
- (S) PROPOSED SEWER MANHOLE
- (C) PROPOSED SEWER CLEANOUT
- SS- PROPOSED SANITARY SEWER POINT OF CONNECTION WITH BUILDING
- [Symbol] PROPOSED REDUCED PRESSURE BACKFLOW ASSEMBLY
- [Symbol] PROPOSED DOUBLE CHECK DETECTOR ASSEMBLY
- [Symbol] PROPOSED WATER METER
- [Symbol] PROPOSED HYDRANT
- [Symbol] PROPOSED EXTERIOR HORIZONTAL STANDPIPE
- [Symbol] PROPOSED POST INDICATOR VALVE
- FW- PROPOSED FIRE SERVICE POINT OF CONNECTION WITH BUILDING
- DW- PROPOSED DOMESTIC WATER POINT OF CONNECTION WITH BUILDING
- UGP UNDERGROUND POWER LOCATION SHOWN FOR REFERENCE ONLY

**STORM DRAIN KEY NOTES**

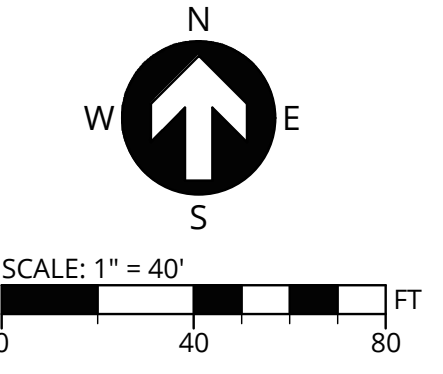
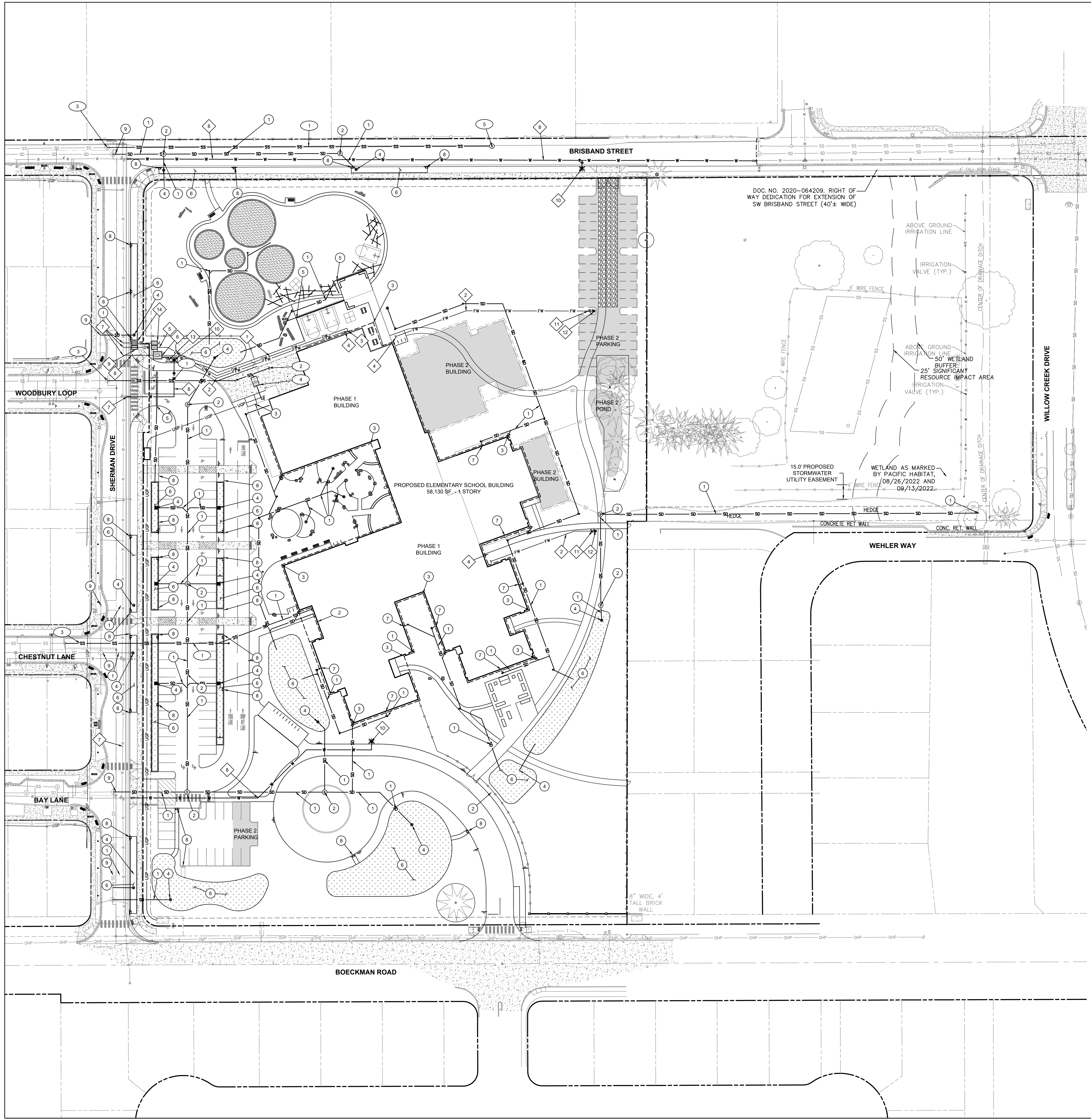
- 1 INSTALL STORM DRAIN PIPE.
- 2 INSTALL STANDARD STORM MANHOLE.
- 3 PROPOSED BUILDING FOUNDATION DRAIN.
- 4 INSTALL BEEHIVE-STYLE FLOW CONTROL INLET.
- 5 INSTALL STORM TRENCH DRAIN.
- 6 CONSTRUCT LIDA STORM FACILITY.
- 7 PROPOSED BUILDING ROOF DRAIN POINT OF CONNECTION (SEE MEP PLANS FOR CONTINUATION).
- 8 CONSTRUCT DRAINAGE CURB CUT.
- 9 CONNECT TO EXISTING STORM SYSTEM.

**SANITARY SEWER KEY NOTES**

- 1 INSTALL SANITARY SEWER PIPE.
- 2 PROPOSED SANITARY SEWER POINT OF CONNECTION WITH BUILDING (SEE MEP PLANS FOR CONTINUATION).
- 3 PROPOSED SANITARY SEWER CONNECTION TO EXISTING PUBLIC SANITARY SEWER MAIN.
- 4 PROPOSED GREASE TRAP. SEE PLUMBING PLANS FOR CONTINUATION OF PIPING WITHIN BUILDING.
- 5 PROPOSED SANITARY SEWER MANHOLE.

**WATER SYSTEM KEY NOTES**

- 1 INSTALL DOMESTIC WATER SERVICE LATERAL.
- 2 INSTALL FIRE SERVICE LATERAL.
- 3 PROPOSED DOMESTIC WATER POINT OF CONNECTION (SEE MEP PLANS FOR CONTINUATION).
- 4 PROPOSED FIRE SERVICE POINT OF CONNECTION (SEE MEP PLANS FOR CONTINUATION).
- 5 INSTALL REDUCED PRESSURE BACKFLOW ASSEMBLY.
- 6 INSTALL DOUBLE CHECK DETECTOR ASSEMBLY.
- 7 PROPOSED POINT OF CONNECTION TO EXISTING PUBLIC WATER MAIN.
- 8 INSTALL WATER MAIN LINE.
- 9 INSTALL DOMESTIC SERVICE WATER METER.
- 10 INSTALL PUBLIC FIRE HYDRANT.
- 11 INSTALL POST INDICATOR VALVE.
- 12 INSTALL EXTERIOR HORIZONTAL STANDPIPE.
- 13 INSTALL FIRE DEPARTMENT CONNECTION.
- 14 INSTALL DEDICATED IRRIGATION WATER METER & DOUBLE CHECK BACKFLOW ASSEMBLY.

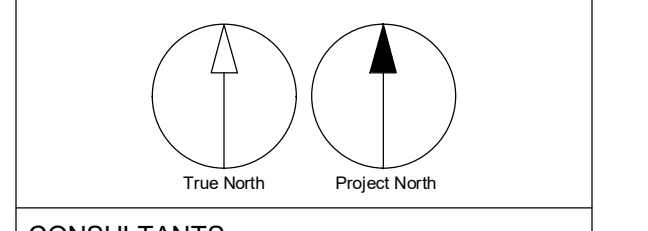




**ISSUES**

No.	DESCRIPTION	DATE
	LAND USE APPLICATION	2022-11-04
	LAND USE INCOMPLETENESS RESPONSE	2023-01-17

**NOT FOR CONSTRUCTION**



**CONSULTANTS**  
**Mayer/Reed**  
 Mayer/Reed, Inc.  
 319 SW Washington St.  
 Suite 820  
 Portland, Oregon 97204  
 503.223.5953

SEAL

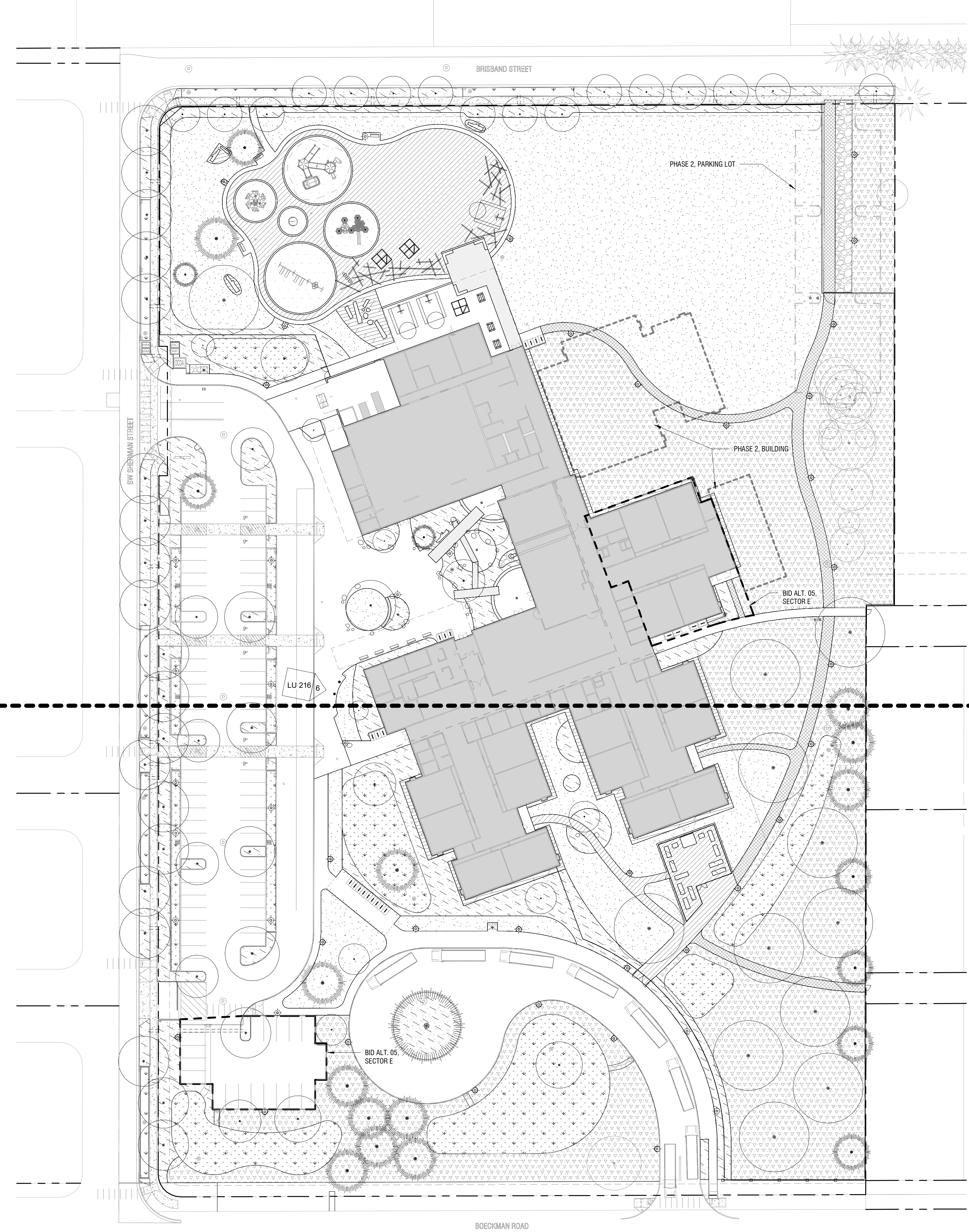
**PRIME CONSULTANT**  
**IBI GROUP**  
 907 SW Harvey Milk Street  
 Portland, OR 97205, USA  
 tel 503.226.8950 fax 503.273.9192  
 ibigroup@ibigrp.com

**PROJECT**  
**Frog Pond Primary School**  
 7151 Boeckman Road  
 Wilsonville, OR 97070

**PROJECT NO.**  
 137469

**SHEET TITLE**  
 LANDSCAPE KEY PLAN

**SHEET NUMBER**  
**LU 200**



**GENERAL ABBREVIATIONS**

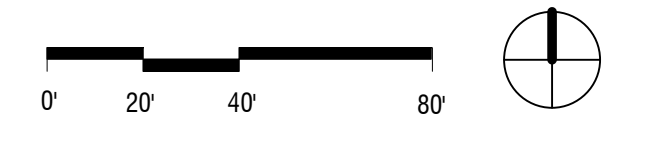
- ARCH ARCHITECTURAL/ARCHITECT
- CAL CALIPER
- CONC CONCRETE
- DIA DIAMETER
- DBH DIAMETER AT BREAST HEIGHT
- DWG DRAWINGS
- EQ EQUAL
- HT HEIGHT
- L.A. LANDSCAPE ARCHITECT
- N/A NOT APPLICABLE
- NO. NUMBER
- O.C. ON CENTER
- PA PLANTING AREA
- R RADIUS
- SF SQUARE FEET
- SIM SIMILAR

**GENERAL NOTES**

1. LANDSCAPE DOCUMENTS ARE BASED ON A SURVEY BY COMPASS LAND SURVEYORS DATED MARCH, 2022. NOTIFY OWNER'S REPRESENTATIVE OF ANY DISCREPANCIES IDENTIFIED ON SITE RELATED TO SURVEY INFORMATION PRIOR TO INSTALLATION.
2. REFERENCE CIVIL DRAWINGS FOR UNDERGROUND UTILITIES AND VEHICULAR AREAS INCLUDING PAVING, CURBS, STRIPING AND SIGNAGE.
3. REFERENCE ELECTRICAL DRAWINGS FOR SITE LIGHTING.
4. REFERENCE ARCHITECTURAL DRAWINGS FOR BUILDING, COVERED PLAY SHELTER, BIKE CANOPY AND SITE SIGNAGE, INCLUDING THE ENTRY MONUMENT.
5. REFERENCE DEMOLITION PLANS FOR SITE REMOVALS.
6. REFERENCE L-001 FOR EXISTING TREE REMOVALS AND PROTECTION.
7. IMPROVEMENTS WITHIN THE RIGHT OF WAY ARE FOR REFERENCE ONLY. REFERENCE SEPARATE CIVIL PUBLIC IMPROVEMENTS PACKAGE.

LU 202 - SITE - PARTIAL PLAN - NORTH  
 LU 204 - IRRIGATION - PARTIAL PLAN - NORTH  
 LU 207 - PLANTING - TREES - PARTIAL PLAN - NORTH  
 LU 203 - SITE - PARTIAL PLAN - SOUTH  
 LU 205 - IRRIGATION - PARTIAL PLAN - SOUTH  
 LU 208 - PLANTING - TREES - PARTIAL PLAN - SOUTH

**1 SITE PLAN - KEY PLAN**  
 SCALE: 1" = 40'-0"





ISSUES

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Mayer/Reed, Inc.  
319 SW Washington St.  
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Portland, Oregon 97204  
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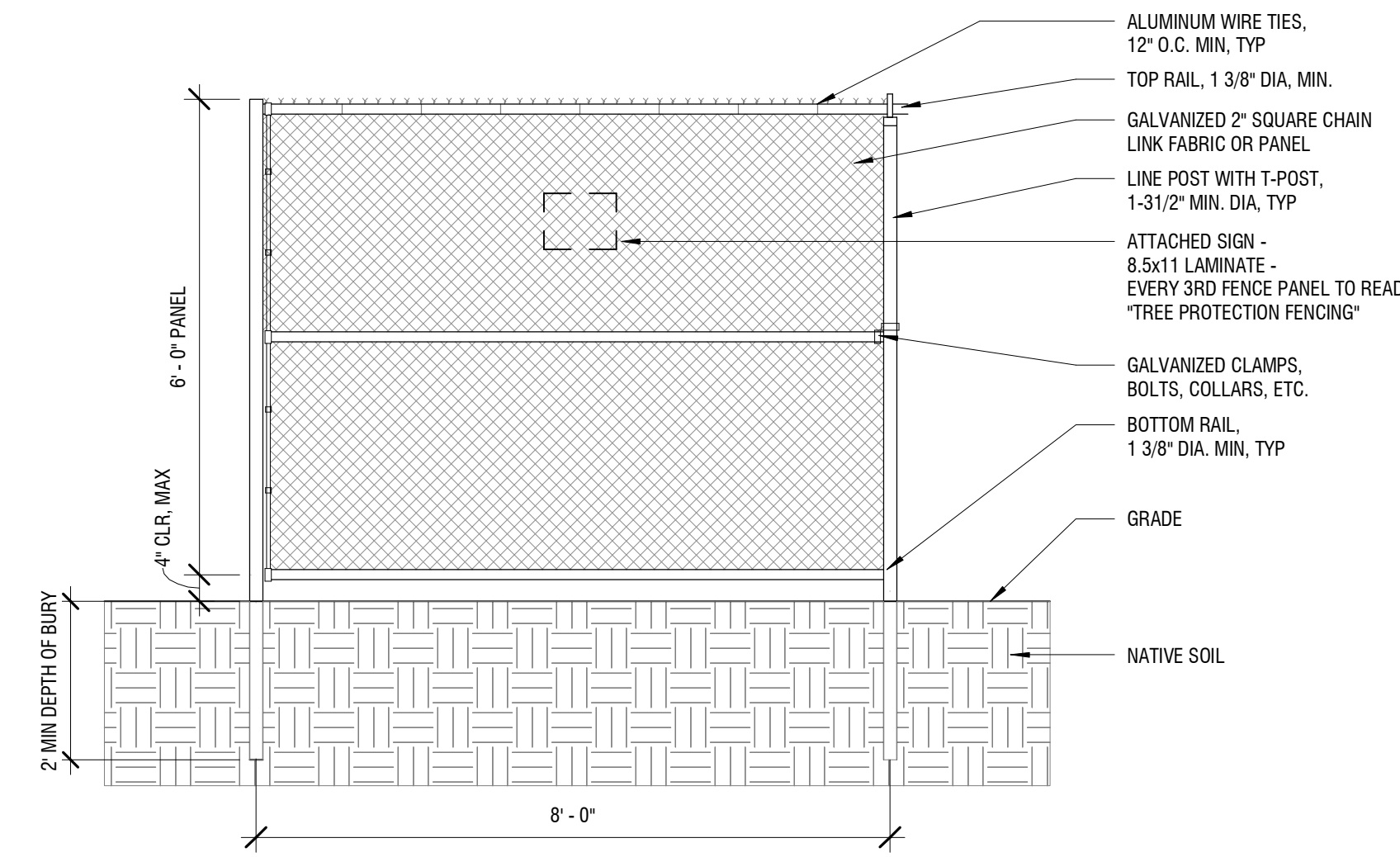
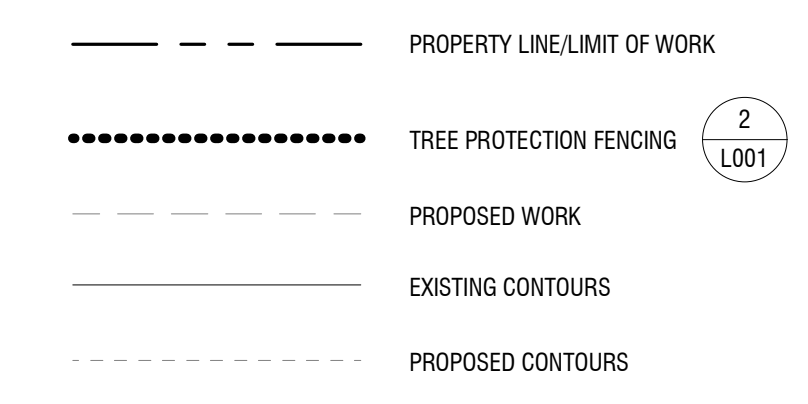
PRIME CONSULTANT  
**IBI** GROUP  
907 SW Harvey Milk Street  
Portland, OR 97205, USA  
Tel 503.226.8950 fax 503.273.9192  
ibigroup@ibigroup.com

PROJECT  
**Frog Pond Primary School**  
7151 Bockman Road  
Wilsonville, OR 97070

PROJECT NO:  
137469

SHEET TITLE  
**TREE PROTECTION AND  
REMOVAL PLAN**

### TREE PROTECTION AND REMOVAL LEGEND



- NOTES:  
1. LOCATE FENCE AT DRIP LINE OF TREES OR OTHERWISE AS SHOWN ON THE TREE PROTECTION PLAN.  
2. EXISTING FENCING OR CONSTRUCTION FENCING MAY BE USED IN LIEU OF TREE PROTECTION FENCING WITH APPROVAL FROM CITY'S AUTHORIZED REPRESENTATIVE.  
3. POSTS AND RAILS TO BE GALVANIZED STEEL OR ALUMINUM.  
4. FENCE SHALL REMAIN IN PLACE UNTIL THE COMPLETION OF CONSTRUCTION ACTIVITIES. MOVEMENT OF REMOVAL OF FENCE REQUIRES APPROVAL BY CITY'S AUTHORIZED REPRESENTATIVE.

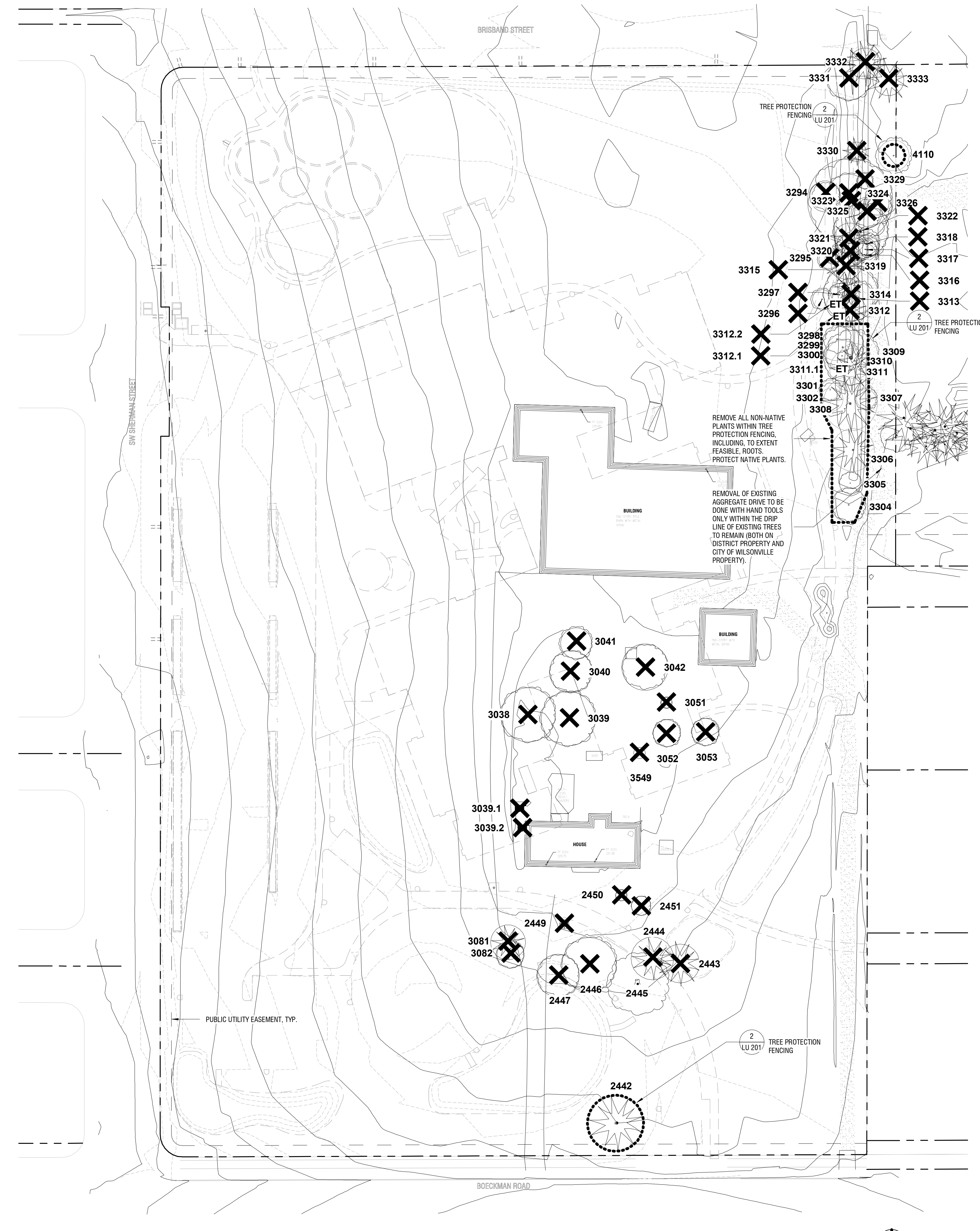
2 TREE PROTECTION FENCING - SECTION  
SCALE: 1/2" = 1'-0"

### TREE REMOVAL NOTES

- 1. PROTECT ALL TREES INDICATED TO REMAIN, INCLUDING BARK AND ROOT ZONES. INSTALL PROTECTIVE FENCING WHERE INDICATED ON THE TREE PROTECTION PLAN. PROTECTIVE BARRIERS SHALL BE PLACED BEFORE DEVELOPMENT STARTS AND SHALL STAY IN PLACE UNTIL AFTER PLANNING OFFICIAL AUTHORIZES THEIR REMOVAL OR A FINAL CERTIFICATE OF OCCUPANCY IS ISSUED, WHICHEVER OCCURS FIRST.  
2. TREE PROTECTION FENCING SHALL BE CHAIN LINK, MINIMUM OF 6' HEIGHT, SECURED WITH STEEL POSTS, INSTALLED 5' BEYOND THE EDGE OF THE ROOT ZONE OR AS INDICATED ON THE TREE REMOVAL AND PROTECTION PLAN.  
3. EXCAVATION WITHIN THE TREE PROTECTION ZONE WILL BE PERFORMED USING ONLY NON-MOTORIZED HANDHELD TOOLS AND SHALL BE THE MINIMUM NECESSARY TO ACCOMPLISH THE PURPOSE FOR THE EXCAVATION AND TO ENSURE LONG-TERM SURVIVAL OF THE TREE.  
4. TREE PROTECTION FENCING SHALL BE FLUSH WITH THE INITIAL UNDISTURBED GRADE.  
5. APPROVED SIGNS SHALL BE ATTACHED TO PROTECTION FENCING, AND VISIBLY STATING THAT INSIDE THE FENCING IS A TREE PROTECTION ZONE, NOT TO BE DISTURBED UNLESS PRIOR APPROVAL HAS BEEN OBTAINED FROM THE COUNTY MANAGER.  
6. NO CONSTRUCTION ACTIVITY SHALL OCCUR WITHIN THE TREE PROTECTION ZONE, INCLUDING, BUT NOT LIMITED TO DUMPING OR STORAGE OF MATERIALS SUCH AS BUILDING SUPPLIES, SOIL, WASTE ITEMS, OR PARKED VEHICLES AND EQUIPMENT.  
7. THE TREE PROTECTION ZONE SHALL REMAIN FREE OF CHEMICALLY INJURIOUS MATERIALS AND LIQUIDS SUCH AS PAINTS, THINNERS, CLEANING SOLUTIONS, PETROLEUM PRODUCTS, AND CONCRETE OR DRY WALL EXCESS, CONSTRUCTION DEBRIS, OR RUMPOFF.  
8. NO EXCAVATION, TRENCHING, GRADING, ROOT PRUNING OR OTHER ACTIVITY SHALL OCCUR WITHIN THE TREE PROTECTION ZONE UNLESS DIRECTED BY AN ARBORIST PRESENT ON SITE AND APPROVED BY THE CITY MANAGER.  
9. NO FILL OR COMPACTION SHALL OCCUR WITHIN THE CRITICAL ROOT ZONES OF ANY OF THE TREES. IF COMPACTION IS UNAVOIDABLE, MEASURES SHALL BE TAKEN AS RECOMMENDED BY A CERTIFIED ARBORIST TO REDUCE OR MITIGATE THE IMPACT OF THE FILL OR COMPACTION.  
10. CONTRACTOR TO GIVE OWNER 30 DAYS NOTICE PRIOR TO REMOVAL OF PLANTS TO BE RELOCATED.

### EXISTING TREES

Tree No.	Botanical Name	Common Name	Comments	Removing		Credits		Removing Ph2		Credits Ph2	
				Phase 1 Construction	Phase 2 Construction	Phase 1 Construction	Phase 2 Construction	Phase 1 Construction	Phase 2 Construction	Phase 1 Construction	Phase 2 Construction
2442	Pinus nigra	Austrian Pine	27' DBH, 23' DL	NO	0	4	0	0	0	0	4
2443	Pinus ponderosa	Ponderosa Pine	23' DBH, 22' DL	YES	1	0	0	0	0	0	0
2444	Cedrus atlantica 'Glauca'	Blue Atlas Cedar	13' DBH, 17' DL	YES	1	0	0	0	0	0	0
2445	Betula pendula	European Birch	10' DBH, 14' DL	YES	1	0	0	0	0	0	0
2446	Betula pendula	European Birch	17' DBH, 19' DL	YES	1	0	0	0	0	0	0
2447	Fraxinus excelsior	European Ash	10' DBH, 12' DL	YES	1	0	0	0	0	0	0
2449	Picea glauca 'Conica'	Dwarf Alberta Spruce	4' DBH, 3' DL	YES	0	0	0	0	0	0	0
2450	Acer palmatum	Laceleaf Japanese Maple	5' DBH, 5' DL	YES	0	0	0	0	0	0	0
2451	Cornus florida	Flowering Dogwood	5' DBH, 8' DL	YES	0	0	0	0	0	0	0
3038	Malus domestica	Orchard Apple	23' DBH, 17' DL	YES	1	0	0	0	0	0	0
3039	Malus domestica	Orchard Apple	19' DBH, 21' DL	YES	1	0	0	0	0	0	0
3039.1	Prunus avium	Sweet Cherry	5.5, 5.3' DBH, 12' DL	YES	1	0	0	0	0	0	0
3039.2	Quercus garryana	Oregon White Oak	5' DBH, 9' DL	YES	1	0	0	0	0	0	0
3040	Malus domestica	Orchard Apple	10' DBH, 13' DL	YES	1	0	0	0	0	0	0
3041	Pyrus sp.	Orchard Pear	10' DBH, 12' DL	YES	1	0	0	0	0	0	0
3042	Malus domestica	Orchard Apple	16' DBH, 16' DL	YES	1	0	0	0	0	0	0
3051	Pyrus sp.	Orchard Pear	3' DBH, 5' DL	YES	0	0	0	0	0	0	0
3052	Prunus avium	Sweet Cherry	5' DBH, 9' DL	YES	0	0	0	0	0	0	0
3053	Pyrus sp.	Orchard Pear	5' DBH, 8' DL	YES	0	0	0	0	0	0	0
3081	Picea abies	Norway Spruce	11' DBH, 12' DL	YES	1	0	0	0	0	0	0
3082	Quercus garryana	Oregon White Oak	9' DBH, 12' DL	YES	1	0	0	0	0	0	0
3294	Salix scouleriana	Scoulers Willow	6' DBH, 7' DL	YES	1	0	0	0	0	0	0
3295	Populus trichocarpa	Black Cottonwood	6' DBH, 8' DL	YES	1	0	0	0	0	0	0
3296	Populus trichocarpa	Black Cottonwood	6' DBH, 10' DL	YES	1	0	0	0	0	0	0
3297	Populus trichocarpa	Black Cottonwood	7' DBH, 6' DL	YES	1	0	0	0	0	0	0
3298	Populus trichocarpa	Black Cottonwood	10' DBH, 15' DL	NO	0	0	YES	1	0	0	0
3299	Populus trichocarpa	Black Cottonwood	14' DBH, 20' DL	NO	0	0	YES	1	0	0	0
3300	Populus trichocarpa	Black Cottonwood	9' DBH, 10' DL	NO	0	0	YES	1	0	0	0
3301	Populus trichocarpa	Black Cottonwood	7' DBH, 10' DL	NO	0	0	YES	1	0	0	0
3302	Populus trichocarpa	Black Cottonwood	9.8' DBH, 18' DL	NO	0	0	YES	1	0	0	0
3304	Salix scouleriana	Scoulers Willow	6.6, 6.6' DBH, 20' DL	NO	0	4	YES	1	0	0	0
3305	Betula nigra	River Birch	8' DBH, 12' DL	NO	0	0	YES	1	0	0	0
3306	Pseudotsuga menziesii	Douglas Fir	16' DBH, 15' DL	NO	0	0	YES	1	0	0	0
3307	Populus trichocarpa	Black Cottonwood	10' DBH, 11' DL	NO	0	0	YES	1	0	0	0
3308	Pseudotsuga menziesii	Douglas Fir	19' DBH, 21' DL	NO	0	3	YES	1	0	0	0
3309	Populus trichocarpa	Black Cottonwood	35' DBH, 20' DL	NO	0	5	YES	1	0	0	0
3310	Pseudotsuga menziesii	Douglas Fir	11' DBH, 15' DL	NO	0	0	YES	1	0	0	0
3311	Pseudotsuga menziesii	Douglas Fir	15' DBH, 15' DL	NO	0	0	YES	1	0	0	0
3311.1	Populus trichocarpa	Black Cottonwood	16' DBH, 15' DL	NO	0	0	0	0	0	0	0
3312	Pseudotsuga menziesii	Douglas Fir	15' DBH, 15' DL	YES	1	0	0	0	0	0	0
3312.1	Populus trichocarpa	Black Cottonwood	8' DBH, 10' DL	YES	1	0	0	0	0	0	0
3312.2	Populus trichocarpa	Black Cottonwood	6' DBH, 8' DL	YES	1	0	0	0	0	0	0
3313	Populus trichocarpa	Black Cottonwood	7' DBH, 7' DL	YES	1	0	0	0	0	0	0
3314	Populus trichocarpa	Black Cottonwood	30' DBH, 20' DL	YES	1	0	0	0	0	0	0
3315	Pseudotsuga menziesii	Douglas Fir	9' DBH, 9' DL	YES	1	0	0	0	0	0	0
3316	Populus trichocarpa	Black Cottonwood	11' DBH, 14' DL	YES	1	0	0	0	0	0	0
3317	Populus trichocarpa	Black Cottonwood	8' DBH, 5' DL	YES	1	0	0	0	0	0	0
3318	Populus trichocarpa	Black Cottonwood	9' DBH, 3' DL	YES	1	0	0	0	0	0	0
3319	Pseudotsuga menziesii	Douglas Fir	16' DBH, 15' DL	YES	1	0	0	0	0	0	0
3320	Populus trichocarpa	Black Cottonwood	10' DBH, 10' DL	YES	1	0	0	0	0	0	0
3321	Pseudotsuga menziesii	Douglas Fir	12' DBH, 18' DL	YES	1	0	0	0	0	0	0
3322	Populus trichocarpa	Black Cottonwood	18, 14' DBH, 22' DL	YES	1	0	0	0	0	0	0
3323	Salix scouleriana	Scoulers Willow	12, 12, 10, 10, 10, 10, 4, 4' DBH, 25' DL	YES	1	0	0	0	0	0	0
3324	Populus trichocarpa	Black Cottonwood	14' DBH, 18' DL	YES	1	0	0	0	0	0	0
3325	Populus trichocarpa	Black Cottonwood	8' DBH, 20' DL	YES	1	0	0	0	0	0	0
3326	Populus trichocarpa	Black Cottonwood	8' DBH, 20' DL	YES	1	0	0	0	0	0	0
3329	Fraxinus oxycarpa 'Raywood'	Raywood Ash	6' DBH, 10' DL	YES	1	0	0	0	0	0	0
3330	Picea pungens	Colorado Blue Spruce	10' DBH, 10' DL	YES	1	0	0	0	0	0	0
3331	Salix scouleriana	Scoulers Willow	10, 8, 8, 5, 5, 5, 3, 3' DBH, 23' DL	YES	1	0	0	0	0	0	0
3332	Sedouadendron giganteum	Giant Sequoia	30' DBH, 15' DL	YES	1	0	0	0	0	0	0
3333	Sedouadendron giganteum	Giant Sequoia	34' DBH, 20' DL	YES	1	0	0	0	0	0	0
3549	Laurus nobilis	Grejan Laurel	6' DBH, 10' DL	YES	1	0	0	0	0	0	0
4110	Liquidambar styraciflua	Sweet Gum	8' DBH, 8' DL	NO	0	0	0	0	0	0	0



1 LU - TREE PROTECTION AND REMOVAL - PLAN  
SCALE: 1" = 40'-0"







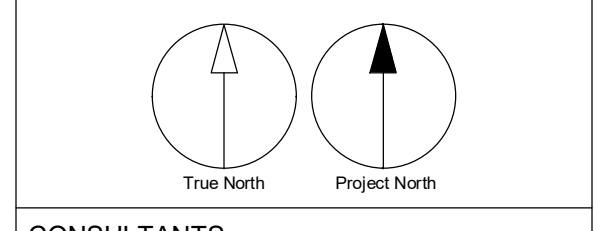
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IBI Group Architects (USA) Inc.  
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ISSUES		
No.	DESCRIPTION	DATE
	LAND USE APPLICATION	2022-11-04
	LAND USE INCOMPLETENESS RESPONSE	2023-01-17

- PROPOSED TREE, DECIDUOUS
- PROPOSED TREE, EVERGREEN
- PLANTING AREA, REF. L400 SERIES
- VEHICULAR ASPHALT PAVING - REF. CIVIL DWGS
- PEDESTRIAN ASPHALT PAVING
- COMPACTED AGGREGATE PAVING
- MULCH AT BUILDING

**NOT FOR CONSTRUCTION**

- GENERAL NOTES**
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  - REFERENCE ELECTRICAL DRAWINGS FOR SITE LIGHTING.
  - REFERENCE ARCHITECTURAL DRAWINGS FOR BUILDING, COVERED PLAY SHELTER, BIKE CANOPY AND SITE SIGNAGE, INCLUDING THE ENTRY MONUMENT.
  - REFERENCE DEMOLITION PLANS FOR SITE REMOVALS.
  - REFERENCE L-001 FOR EXISTING TREE REMOVALS AND PROTECTION.



**CONSULTANTS**

**Mayer/Reed**

Mayer/Reed, Inc.  
319 SW Washington St.  
Suite 820  
Portland, Oregon 97204  
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SEAL

**PRIME CONSULTANT**

**IBI GROUP**  
907 SW Harvey Milk Street  
Portland, OR 97205, USA  
tel 503 226 8950 fax 503 273 9192  
ibigroup@ibigroup.com

**PROJECT**

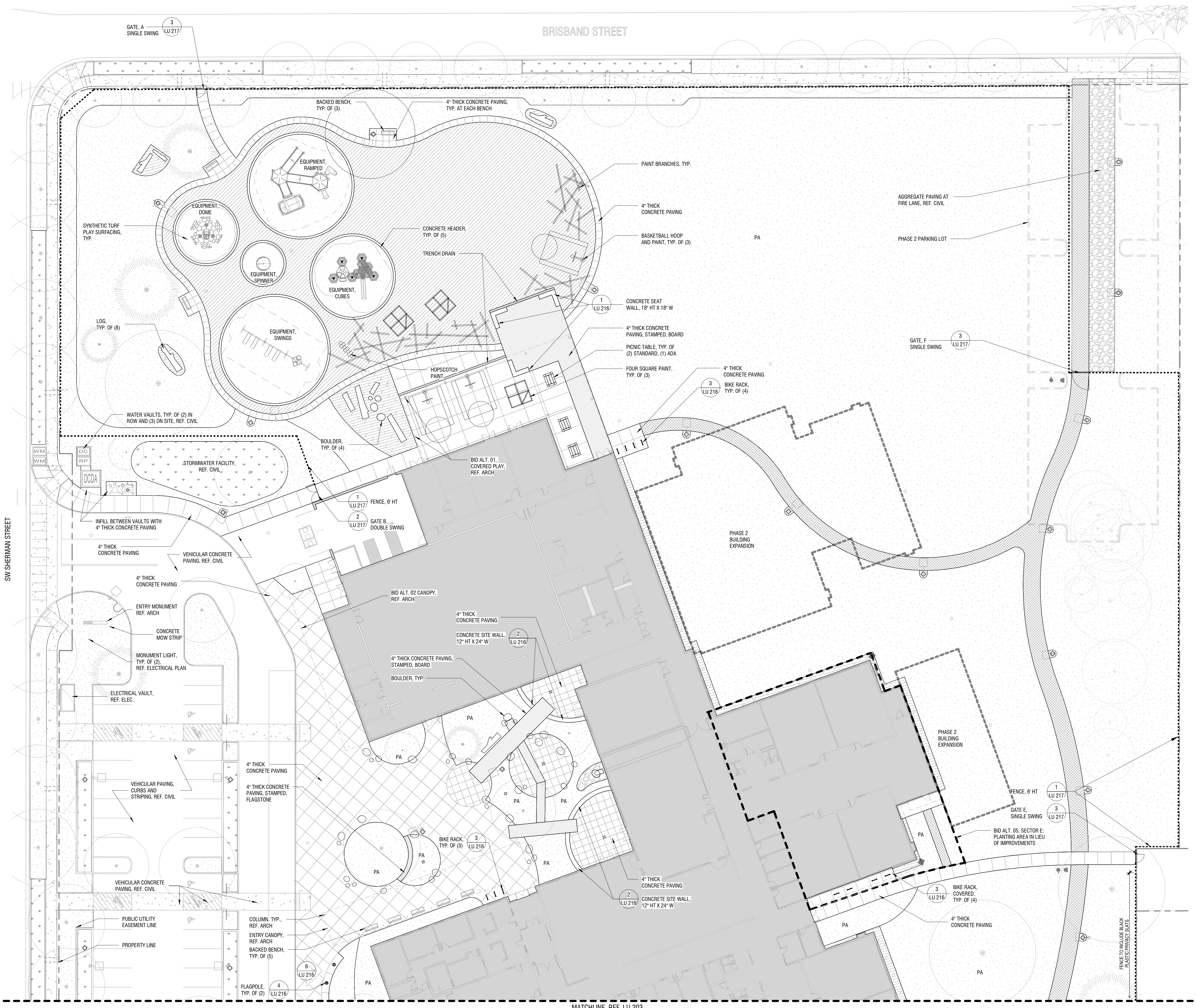
**Frog Pond Primary School**

7151 Boeckman Road  
Wilsonville, OR 97070

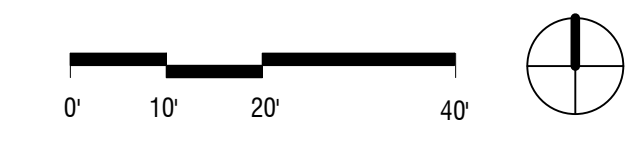
**PROJECT NO:**  
137469

**SHEET TITLE**  
SITE - PARTIAL PLAN - NORTH

**SHEET NUMBER**  
LU 202



1 LU - SITE - PARTIAL PLAN - NORTH  
SCALE: 1" = 20'-0"



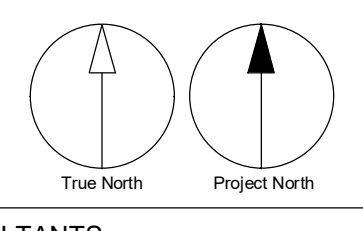




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No.	DESCRIPTION	DATE
	LAND USE APPLICATION	2022-11-04
	LAND USE INCOMPLETENESS RESPONSE	2023-01-17

**NOT FOR CONSTRUCTION**



CONSULTANTS  
**Mayer/Reed**  
Mayer/Reed, Inc.  
319 SW Washington St.  
Suite 820  
Portland, Oregon 97204  
503.223.5953

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PROJECT  
**Frog Pond Primary School**  
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PROJECT NO:  
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SHEET TITLE  
**SITE - PARTIAL PLAN - SOUTH**

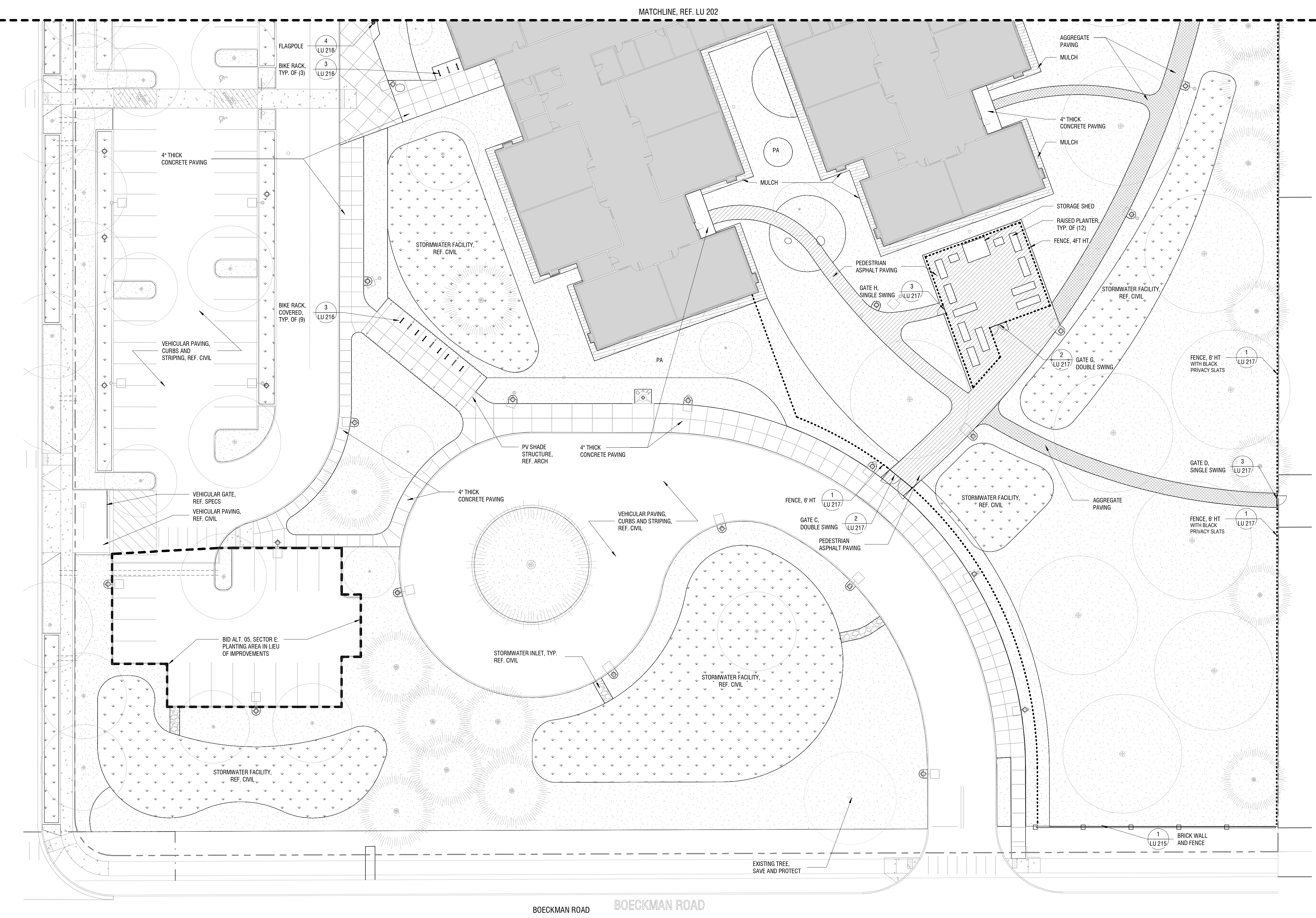
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**GENERAL LEGEND**

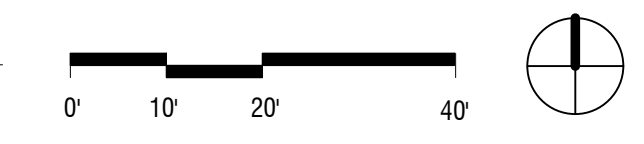
- PROPERTY LINE
- FENCE
- o AREA DRAIN, REF. CIVIL
- TRENCH DRAIN, REF. CIVIL
- + LIGHT POLE, REF. ELECTRICAL
- BOLLARD, REF. CIVIL
- PROPOSED TREE, DECIDUOUS
- PROPOSED TREE, EVERGREEN
- PA PLANTING AREA, REF. L400 SERIES
- VEHICULAR ASPHALT PAVING - REF. CIVIL DWGS
- PEDESTRIAN ASPHALT PAVING
- COMPACTED AGGREGATE PAVING
- MULCH AT BUILDING

**GENERAL NOTES**

- LANDSCAPE DOCUMENTS ARE BASED ON A SURVEY BY COMPASS LAND SURVEYORS DATED MARCH, 2022. NOTIFY OWNER'S REPRESENTATIVE OF ANY DISCREPANCIES IDENTIFIED ON SITE RELATED TO SURVEY INFORMATION PRIOR TO INSTALLATION.
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- REFERENCE DEMOLITION PLANS FOR SITE REMOVALS.
- REFERENCE L-001 FOR EXISTING TREE REMOVALS AND PROTECTION.



1 LU - SITE - PARTIAL PLAN - SOUTH  
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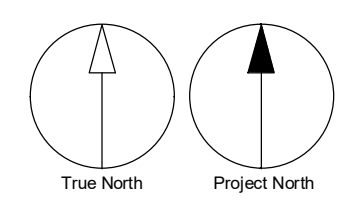




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PROJECT  
**Frog Pond Primary School**

7151 Boeckman Road  
Wilsonville, OR 97070

PROJECT NO:  
137469

SHEET TITLE  
**IRRIGATION - PARTIAL  
PLAN - NORTH**

SHEET NUMBER  
**LU 204**

### GENERAL LEGEND

- PROPERTY LINE
- LANDSCAPE LIMIT OF WORK
- FENCING
- AREA DRAIN, REF. CIVIL
- TRENCH DRAIN
- LIGHT POLE, REF. ELEC
- SITE BOULDER
- ROLLARD
- TREE TO REMAIN
- APPROXIMATE CANOPY

### GENERAL NOTES

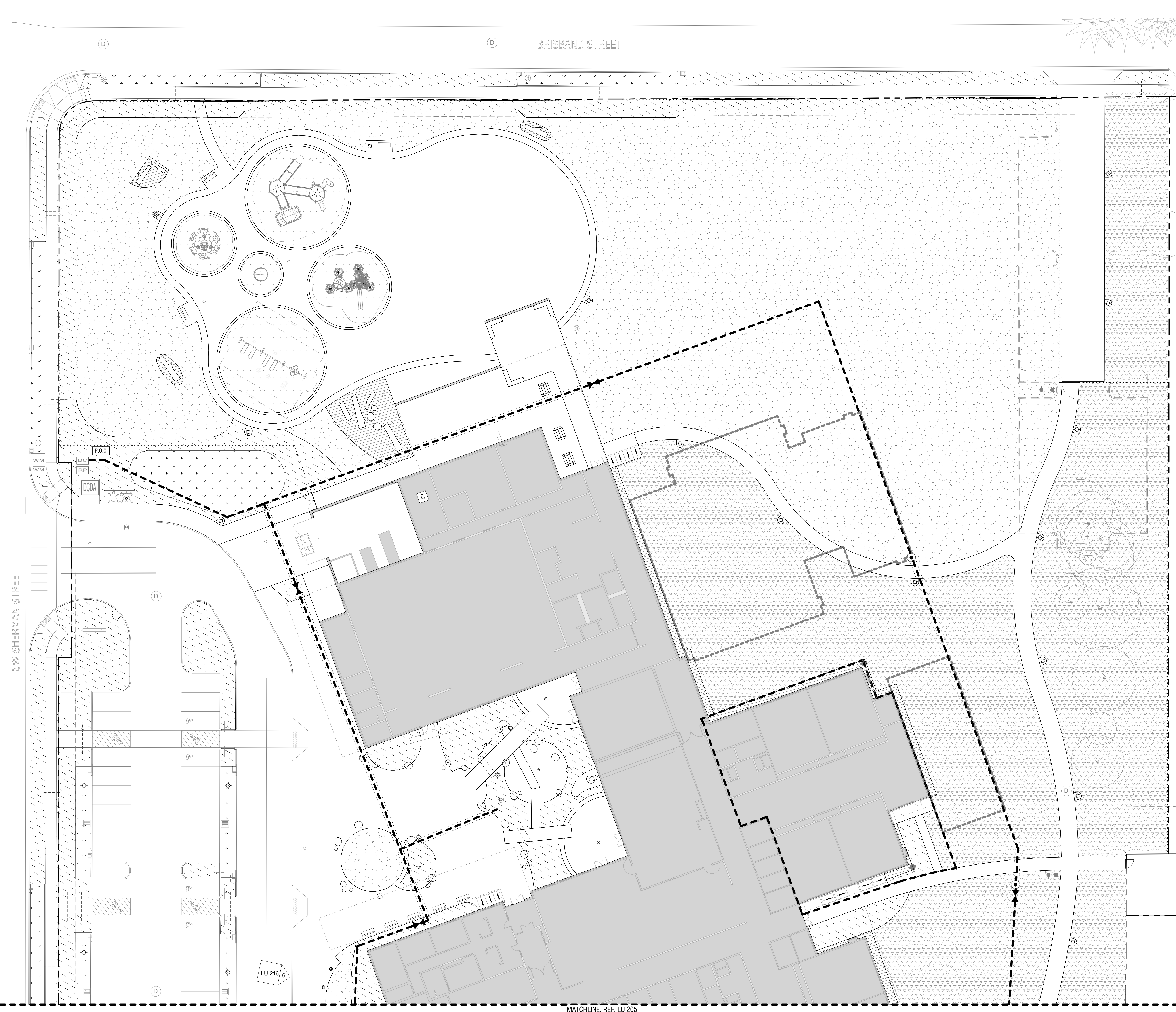
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### IRRIGATION LEGEND

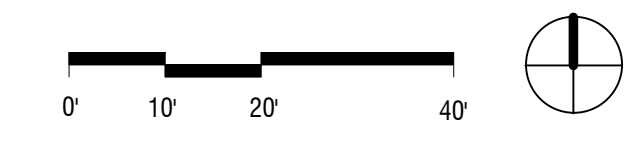
- POINT OF CONNECTION
- CONTROLLER
- ISOLATION VALVE
- QUICK COUPLER
- MAINLINE: 2" SCHEDULE 40 PVC
- SCHEDULE 40 PVC SLEEVES  
SIZE PER PLAN, 12" PAST PAVING EDGE
- SEEDED LAWN, AUTOMATIC IRRIGATION, SPRAY, 6" POP-UP
- SEEDED MEADOW, TEMPORARY ESTABLISHMENT IRRIGATION, SPRAY
- SHRUBS, AUTOMATIC IRRIGATION, SPRAY, 12" POP-UP
- STORMWATER PLANTING, AUTOMATIC IRRIGATION, SPRAY, 12" POP-UP

### IRRIGATION NOTES

- IT IS THE IRRIGATION CONTRACTOR'S RESPONSIBILITY TO COORDINATE ANY REQUIRED IRRIGATION SLEEVING WITH RESPECTIVE SUBCONTRACTORS BEFORE CONSTRUCTION BEGINS.
- CONTRACTOR TO VERIFY AVAILABLE P.S.I. AT THE POINT OF CONNECTION BEFORE COMMENCEMENT OF INSTALLATION.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE A FULLY FUNCTIONAL AUTOMATIC IRRIGATION SYSTEM PROVIDING FULL COVERAGE TO ALL PLANTING AREAS AND TREE WELLS AS DESCRIBED ON THE DRAWINGS AND IN THE SPECIFICATIONS. CONTRACTOR TO COORDINATE WITH SCHOOL MAINTENANCE STAFF AS TO EXISTING CONDITIONS AND SYSTEM REQUIREMENTS INCLUDING, QUICK COUPLER LOCATIONS, CONTROL VALVES, ETC.
- THE LAYOUT OF THE IRRIGATION SYSTEM IS DIAGRAMMATIC ONLY. MODIFY LAYOUT AS REQUIRED TO ACCOMMODATE PLANT PLACEMENT, UTILITIES, AND UNDERGROUND OBSTRUCTIONS. REVIEW MODIFICATIONS WITH THE LANDSCAPE ARCHITECT PRIOR TO PROCEEDING.
- SLEEVES SHALL BE INSTALLED 24 INCHES (MIN.) BELOW FINISHED PAVED SURFACE. ADJUST HEIGHT AS NEEDED TO ROUTE AROUND UTILITIES. EXTEND SLEEVES AT LEAST 12 INCHES INTO LAWN AND PLANTING AREAS, TYP.
- INSTALL TRACE WIRE OVER ALL MAINLINE PIPE AND OVER CONTROL WIRE WHICH IS NOT INSTALLED IN TRENCH WITH PIPE. ROUTE FROM CONTROLLER TO ENDS OF PIPE. MAKE ALL CONNECTIONS WATER TIGHT.
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1 LU - IRRIGATION - PARTIAL PLAN - NORTH  
SCALE: 1" = 20'-0"



MATCHLINE, REF. LU 205

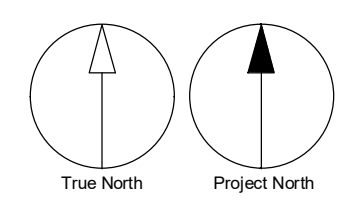




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PROJECT NO:  
137469  
SHEET TITLE  
**IRRIGATION - PARTIAL  
PLAN - SOUTH**

SHEET NUMBER  
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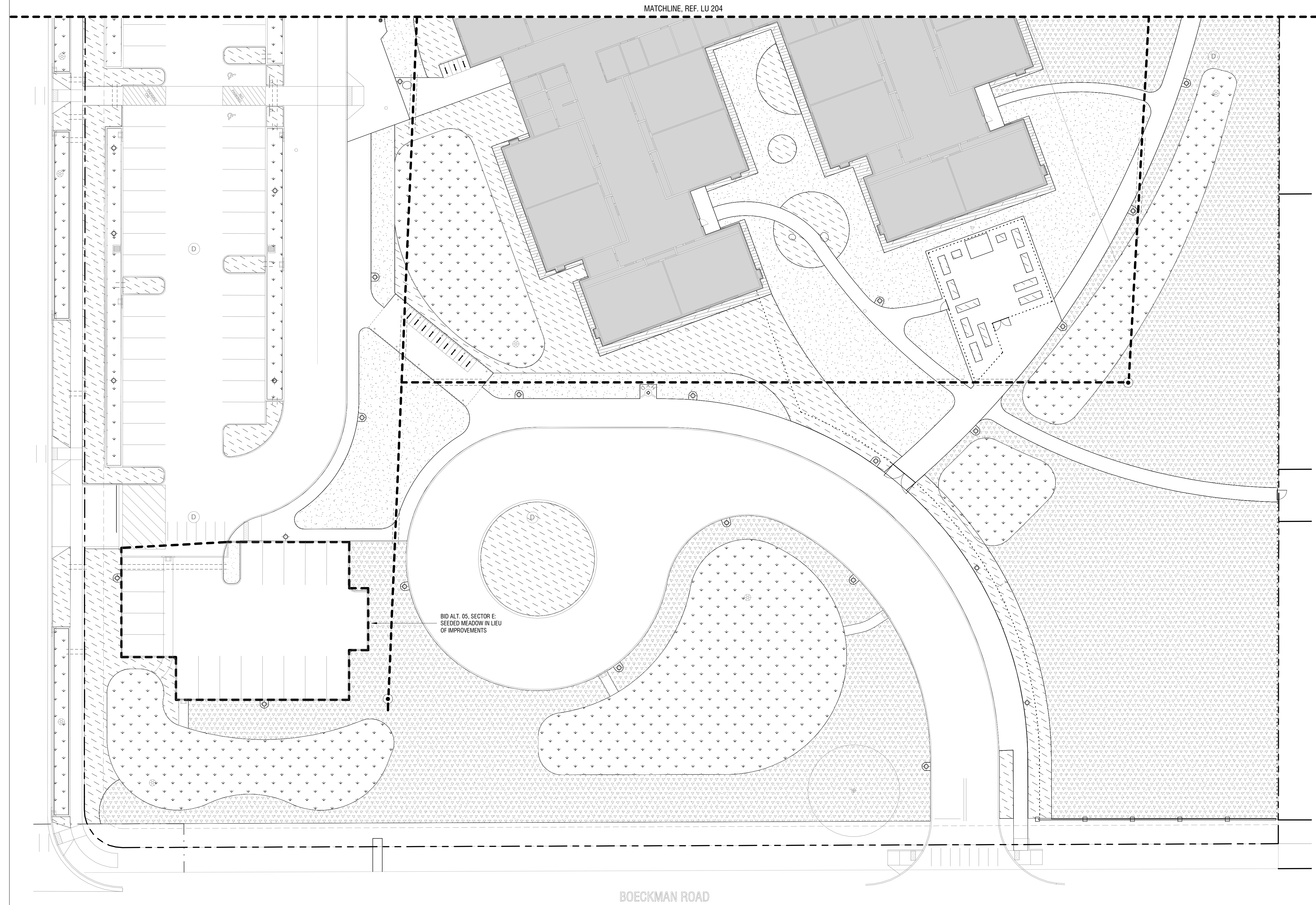
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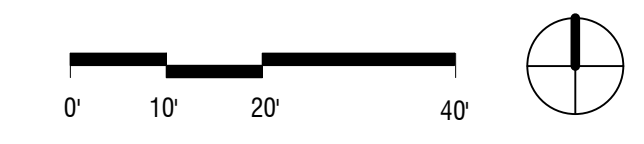
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SCALE: 1" = 20'-0"



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**PROJECT**  
**Frog Pond Primary School**  
7151 Bockman Road  
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**PROJECT NO:**  
137469  
**SHEET TITLE**  
PLANT SCHEDULE AND  
PLANTING NOTES

**SHEET NUMBER**  
**LU 206**

### PLANTING NOTES

- DO NOT BEGIN PLANTING UNTIL IRRIGATION SYSTEM IS INSTALLED, TESTED AND APPROVED.
- DO NOT BEGIN PLANTING UNTIL SOIL PREPARATION IS COMPLETE AND APPROVED. REF. SPECIFICATIONS FOR PLANTING SOIL PLACEMENT AND DEPTHS.
- LOCATE PLANTS AS DIMENSIONED ON THE PLANS AND AS SHOWN IN THE PLANT SCHEDULE. PLANT SPACING IS MEASURED CENTER TO CENTER. PLANT LOCATIONS MAY BE ADJUSTED BY THE LANDSCAPE ARCHITECT TO MEET FIELD CONDITIONS.
- VERIFY ALL QUANTITIES AND VARIETIES SHOWN ON THE DRAWINGS PRIOR TO ORDERING. OWNER MUST APPROVE ANY NECESSARY SUBSTITUTIONS DURING SUBMITTALS PROCESS. REVIEW PROCESS TO BE ESTABLISHED AT PRE-CONSTRUCTION MEETING.
- THOROUGHLY WATER IN ALL PLANTS WITHIN 6 HOURS OF PLANTING.
- APPLY SPECIFIED MULCH OVER PLANTING AREAS WITHIN TWO DAYS OF INSTALLING PLANTS, UNLESS OTHERWISE NOTED.
- ALL PLANTS ARE REQUIRED TO MEET AMERICAN STANDARD FOR NURSERY STOCK, ANSI Z60.1-2014.
- TO CALCULATE THE QUANTITY OF PLANTS PER AREA, USE THE FOLLOWING SPACING MULTIPLIERS:

TRIANGULAR SPACING	9"	12"	15"	18"	24"	30"	36"	48"
SQUARE FT MULTIPLIER	2.027	1.156	0.513	0.322	0.238	0.184	0.128	0.072

### LU CODE CALCULATIONS, PLANTING AND SCREENING

PARKING LOT, 4,155.02

**TREES:**  
REQUIRED: 1 TREE / 8 SPACES  
PROPOSED: 1 TREE / 8 SPACES

**SCREENING FROM ROW:**  
10% OF PARKING LOT

**TREES**  
TOTAL PARKING LOT PERIMETER AT ROW:  
488.5 LF X 10% = 48.85 LF = 3 REQUIRED  
TREES AT PERIMETER = 3 PROPOSED

**SHRUBS**  
25,096 SF PARKING LOT X 10% = 2509.6 SF REQUIRED  
488.5 LF X 8 FT DEPTH = 3908 SF PROPOSED

**GENERAL LANDSCAPING, 4,176.02 C**

30 FT OR GREATER: 1 TREE/ 800 SF AND 2 HIGH OR 3 LOW SHRUBS / 400 SF

396,812 SF X 15% OF SITE = 59,522 SF

**TREES**  
59,522 SF / 800 = 75 REQUIRED  
MITIGATION TREES FOR REMOVALS = 41 REQUIRED  
75 - 41 = 34 TREES REQUIRED  
59 TREES PROPOSED

**SHRUBS**  
31,576 SF / 400 = 79 GROUPS OF SHRUBS REQUIRED  
264 HIGH / 2 = 132 GROUPS  
1932 LOW / 3 = 644 GROUPS  
132 + 644 = 776 GROUPS PROPOSED

**PLANT MATERIALS, 4,176.06**

**SHRUB SIZES REQUIRED: 2 GAL AND LARGER**  
**SHRUB SIZES PROPOSED: 2 GAL AND LARGER**

**TREE SIZES REQUIRED**  
**DECIDUOUS: 1.75" CALIPER <**  
**EVERGREEN: 3 FT HT <**

**TREE SIZES PROPOSED**  
**DECIDUOUS: 2" CALIPER**  
**EVERGREEN: 6 FT HT <**

**TURFLAWN**  
LAWN AREA 10% MAX OF VEGETATED AREA = 22,481 SF REQUIRED  
LAWN AREA = 62,280 SF PROPOSED

### PLANT SCHEDULE - TREES

Code	Botanical Name	Common Name	Size / Container	Spacing	Comments	Quantity
AM	ACER MACROPHYLLUM	BIGLEAF MAPLE	6'-8" HT/B&B	AS SHOWN		2
AT	ACER TRUNCATUM X A. PLATANOIDES	'KEITHSFORM' NORWEGIAN SUNSET MAPLE	2" CAL / B&B	AS SHOWN		4
BN	BETULA NIGRA 'DURA HEAT'	DURA HEAT RIVER BIRCH	6'-10" HT. / B&B	AS SHOWN	CLUMP, 3 TREES	1
CD	CALOCEDRUS DECURRENS	INCENSE CEDAR	6'-8" HT/B&B	AS SHOWN		4
CC	CERCIS CANADENSIS	EASTERN REDBUD	2" CAL / B&B	AS SHOWN		3
DI	DAVIDIA INVOLUCRADA	DOVE TREE	2" CAL / B&B	AS SHOWN		1
GB	GINKGO BILOBA 'AUTUMN GOLD'	AUTUMN GOLD GINKGO	2" CAL / B&B	AS SHOWN		1
PA	PARROTIA PERSICA	PERSIAN IRONWOOD	6'-8" HT/B&B	AS SHOWN		1
PN	PINUS NIGRA	AUSTRIAN PINE	6'-8" HT/B&B	AS SHOWN		6
PP	PINUS PONDEROSA	PONDEROSA PINE	6'-8" HT/B&B	AS SHOWN		6
PI	PINUS STROBUS	EASTERN WHITE PINE	6'-8" HT/B&B	AS SHOWN		1
PT	PINUS THUNBERGII	JAPANESE BLACK PINE	2" CAL / B&B	AS SHOWN		2
QG	QUERCUS GARRYANA	OREGON WHITE OAK	2" CAL / B&B	AS SHOWN		10
QP	QUERCUS PHELLOS	WILLOW OAK	2" CAL / B&B	AS SHOWN		2
QR	QUERCUS RUBRA	RED OAK	2" CAL / B&B	AS SHOWN		1
SB	SALIX BABYLONICA	WEeping WILLOW	6'-8" HT/B&B	AS SHOWN		2
SG	SEQUIADENDRON GIGANTEUM	GIANT SEQUOIA	6'-8" HT/B&B	AS SHOWN		1
TD	TAXODIUM DISTICHUM	BALD CYPRESS	6'-8" HT/B&B	AS SHOWN		1
TA	TILIA AMERICANA	AMERICAN BASSWOOD	2" CAL / B&B	AS SHOWN		16
UA	ULMUS ACCOLADE	ACCOLADE ELM	2" CAL / B&B	AS SHOWN		2
UJ	ULMUS AMERICANA 'JEFFERSON'	JEFFERSON AMERICAN ELM	2" CAL / B&B	AS SHOWN		2
UF	ULMUS FRONTIER	FRONTIER ELM	2" CAL / B&B	AS SHOWN		2
UP	ULMUS X 'PATRIOT'	PATRIOT ELM	2" CAL / B&B	AS SHOWN		3
ZS	ZELKOVA SERRATA 'VILLAGE GREEN'	VILLAGE GREEN ZELKOVA	2" CAL / B&B	AS SHOWN		21

NOTE: PLANT SYMBOLS ARE NOT TO SCALE

### PLANT SCHEDULE - SHRUBS

Code	Botanical Name	Common Name	Size / Container	Spacing	Quantity
AC	ACER CIRCINATUM	VINE MAPLE	6'-8" HT/B&B	AS SHOWN	18
CES	CEANOTHUS SANGUINEUS	RED STEM CEANOTHUS	#5 CONT.	AS SHOWN	17
CEV	CEANOTHUS VELUTINUS	SNOWBRUSH	#5 CONT.	AS SHOWN	5
CHD	CHOISYA X DEWITTEANA 'AZTEC PEARL'	MEXICAN ORANGE 'AZTEC PEARL'	#2 CONT.	AS SHOWN	103
HAI	HAMAMELLIS X INTERMEDIA	HYBRID WITCHHAZEL	#5 CONT.	AS SHOWN	2
HOD	HOLODISCUS DISCOLOR	OCEANSPRAY	#5 CONT.	AS SHOWN	9
KEJ	KERRIA JAPONICA 'PLENIFOLIA'	KERRIA	#2 CONT.	AS SHOWN	7
PHL	PHILADELPHUS LEWISII	MOCK ORANGE	#2 CONT.	30" O.C.	3
SPD	SPRAEA DOUGLASHII	DOUGLAS SPIRAEA	#5 CONT.	48" O.C.	15
SPT	SPRAEA THUNBERGII	THUNBERG SPIRAEA	#5 CONT.	AS SHOWN	39
WEF	WEIGELA FLORIDA 'SONIC BLOOM'	SONIC BLOOM WEIGELA	#2 CONT.	AS SHOWN	55
273					
<b>SHRUBS - LOW</b>					
CAS	CAMELLIA SASANQUA 'CHANSOINETTE'	CHANSOINETTE CAMELLIA	#5 CONT.	AS SHOWN	37
CLA	CLETHRA ALNIFOLIA 'CRYSTALLINA'	SWEET PEPPERBUSH	#2 CONT.	AS SHOWN	537
DEG	DEUTZIA GRACILIS 'NIKKO'	SLENDER DEUTZIA	#2 CONT.	AS SHOWN	133
DIR	DISTYLISUM FACIOSUM 'BLUE CASCADE'	DISTYLISUM BLUE CASCADE	#5 CONT.	36" O.C.	379
ITV	ITEA VIRGINICA 'LITTLE HENRY'	LITTLE HENRY SWEET SPIRE	#2 CONT.	AS SHOWN	1
POF	POTENTILLA FRUTICOSA	SHRUBBY CINQUEFOIL	#2 CONT.	30" O.C.	79
SPB	SPRAEA BETULIFOLIA	BIRCH-LEAFED SPIRAEA	#5 CONT.	30" O.C.	739
SPN	SPRAEA NIPPONICA 'WEDDING CAKE'	WEDDING CAKE SPIREA	#5 CONT.	AS SHOWN	36
1941					
<b>FERNS, GRASSES, PERENNIALS</b>					
ATFF	ATHYRIUM FILIX-FEMINA	LADY FERN	#2 CONT.	24" O.C.	55
POMU	POLYSTICHUM MUNITUM	WESTERN SWORD FERN	#2 CONT.	24" O.C.	98
SCMI	SCIRPUS MICROCARPUS	PANICLED BULLRUSH	#2 CONT.	AS SHOWN	3
SYSU	SYMPHOTRICHUM SUBSPICATUS	DOUGLAS ASTER	#2 CONT.	AS SHOWN	1
TEGR	TELLIMA GRANDIFLORA	FRINGECUP	#2 CONT.	AS SHOWN	134
291					
<b>GROUND COVER</b>					
CEGL	CEANOTHUS GLORIOSUS 'PF. REYES'	POINT REYES CEANOTHUS	#1 CONT.	AS SHOWN	555
EPRIU	EPIMEDIUM X RUBRUM	BISHOP'S HAT	#1 CONT.	18" O.C.	1
ERCA	ERICA CARNEA	WINTER HEATH	#1 CONT.	18" O.C.	1
IBSE	IBERIS SEMPERVIRENS	CANDYTUFT	#1 CONT.	12" O.C.	1
PATE	PACHYSANDRA TERMINALIS	PACHYSANDRA	4" POT	9" O.C.	1
STBY	STACHYS BYZANTINA	LAMB'S EAR	#1 CONT.	18" O.C.	1
560					
<b>STORMWATER MIX</b>					
CAQU	CAMASSIA QUAMASH	CAMAS	#1 CONT.	AS SHOWN	1
CADE	CAREX Densa	DENSE SEDGE	#1 CONT.	18" O.C.	1
JUEN	JUNCUS ENSIFOLIUS	DAGGER-LEAF RUSH	#1 CONT.	24" O.C.	1
JUPA	JUNCUS PATENS	CALIFORNIA GRAY RUSH	#1 CONT.	24" O.C.	1
4					

NOTE: PLANT SYMBOLS ARE NOT TO SCALE

### PLANT SCHEDULE - SEED MIXES

Code	Product	Seed	Quantity	Product and Application Rate per Specifications
M1	MEADOW SEED MIX	SEED	1LB/1000SF	PRODUCT AND APPLICATION RATE PER SPECIFICATIONS
M2	LAWN SEED MIX	SEED		PRODUCT AND APPLICATION RATE PER SPECIFICATIONS

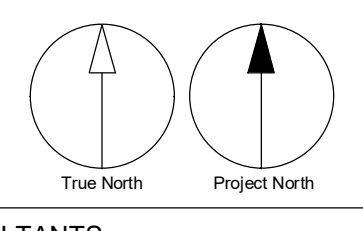




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ISSUES		
No.	DESCRIPTION	DATE
	LAND USE APPLICATION	2022-11-04
	LAND USE INCOMPLETENESS RESPONSE	2023-01-17

**NOT FOR CONSTRUCTION**



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319 SW Washington St.  
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Portland, Oregon 97204  
503.223.5953

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tel 503 226 8950 fax 503 273 9192  
ibigroup.com

PROJECT  
**Frog Pond Primary School**

7151 Boeckman Road  
Wilsonville, OR 97070

PROJECT NO:  
137469

SHEET TITLE  
**PLANTING - TREES -  
PARTIAL PLAN - NORTH**

SHEET NUMBER  
**LU 207**

### GENERAL LEGEND

- PROPERTY LINE
- FENCING
- AREA DRAIN, REF. CIVIL
- TRENCH DRAIN
- LIGHT POLE, REF. ELEC
- SITE BOULDER
- ROLLARD
- EXISTING TREE
- APPROXIMATE CANOPY

### GENERAL NOTES

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### PLANT LEGEND

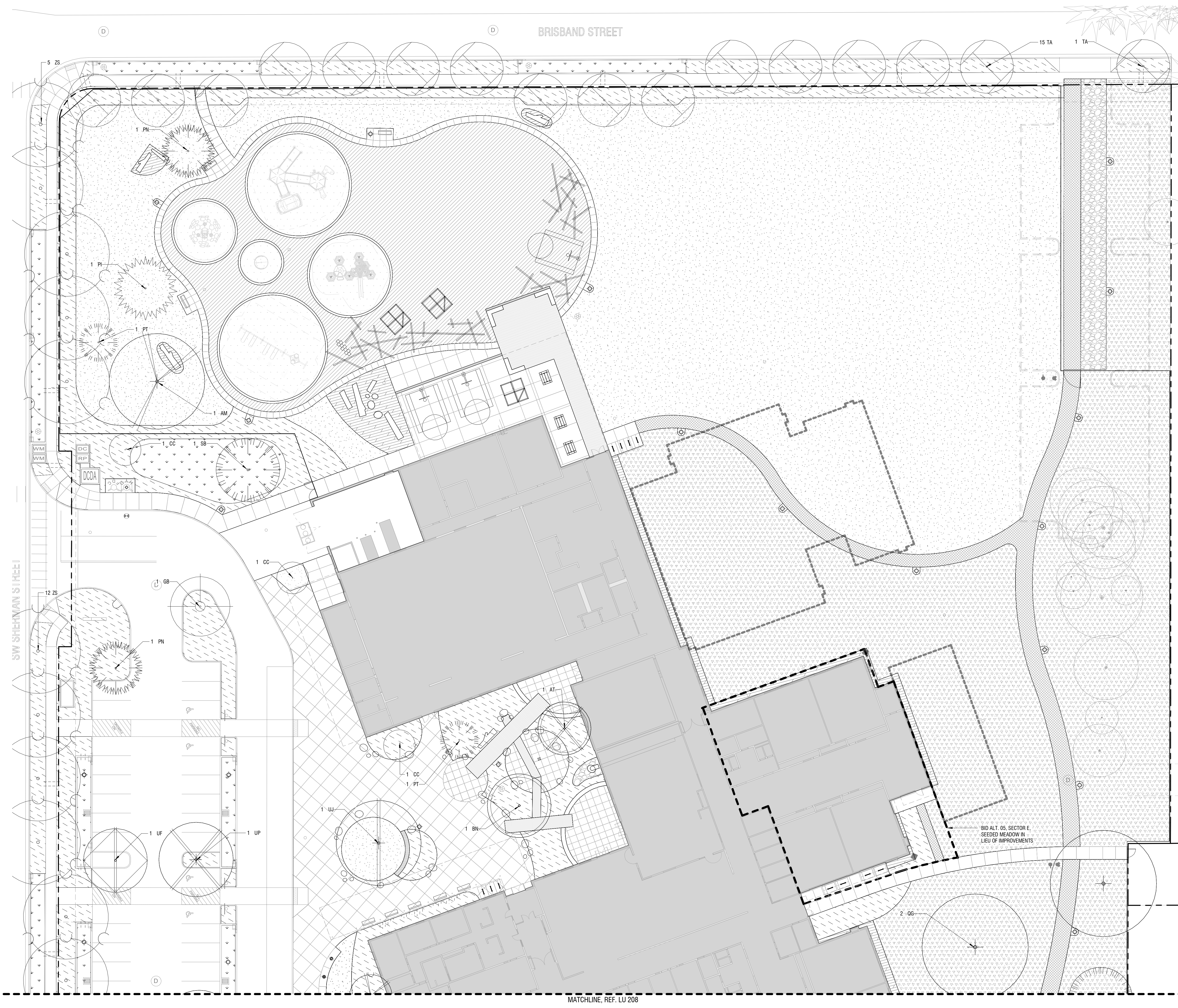
NOTE: REF. L400 FOR FULL PLANT LISTS

- SEEDED LAWN
- SEEDED MEADOW
- SHRUB PLANTING
- MULCH
- STORMWATER PLANTING

### PLANTING NOTES

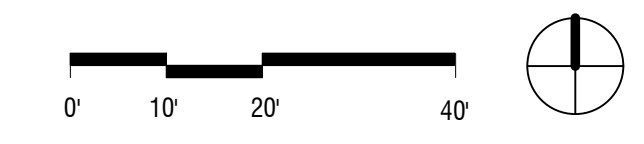
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- LOCATE PLANTS AS DIMENSIONED ON THE PLANS AND AS SHOWN IN THE PLANT SCHEDULE. PLANT SPACING IS MEASURED CENTER TO CENTER. PLANT LOCATIONS MAY BE ADJUSTED BY THE LANDSCAPE ARCHITECT TO MEET FIELD CONDITIONS.
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TRIANGULAR SPACING	9"	12"	15"	18"	24"	30"	36"	48"
SQUARE FT MULTIPLIER	2.027	1.156	0.513	0.322	0.288	0.184	0.128	0.072



MATCHLINE, REF. LU 208

1 LU - PLANTING - TREES - PARTIAL PLAN - NORTH  
SCALE: 1" = 20'-0"



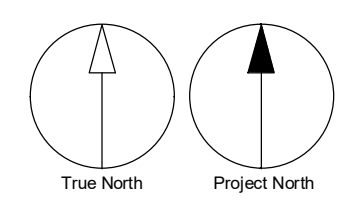




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ISSUES		
No.	DESCRIPTION	DATE
	LAND USE APPLICATION	2022-11-04
	LAND USE INCOMPLETENESS RESPONSE	2023-01-17

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PROJECT  
**Frog Pond Primary School**  
7151 Bockman Road  
Wilsonville, OR 97070

PROJECT NO:  
137469  
SHEET TITLING  
**PLANTING - TREES - PARTIAL PLAN - SOUTH**

SHEET NUMBER  
**LU 208**

**GENERAL LEGEND**

- PROPERTY LINE
- FENCING
- ⊠ AREA DRAIN, REF. CIVIL
- ▨ TRENCH DRAIN
- ⊕ LIGHT POLE, REF. ELEC
- SITE BOULDER
- BOLLARD
- EXISTING TREE
- APPROXIMATE CANOPY

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**PLANT LEGEND**

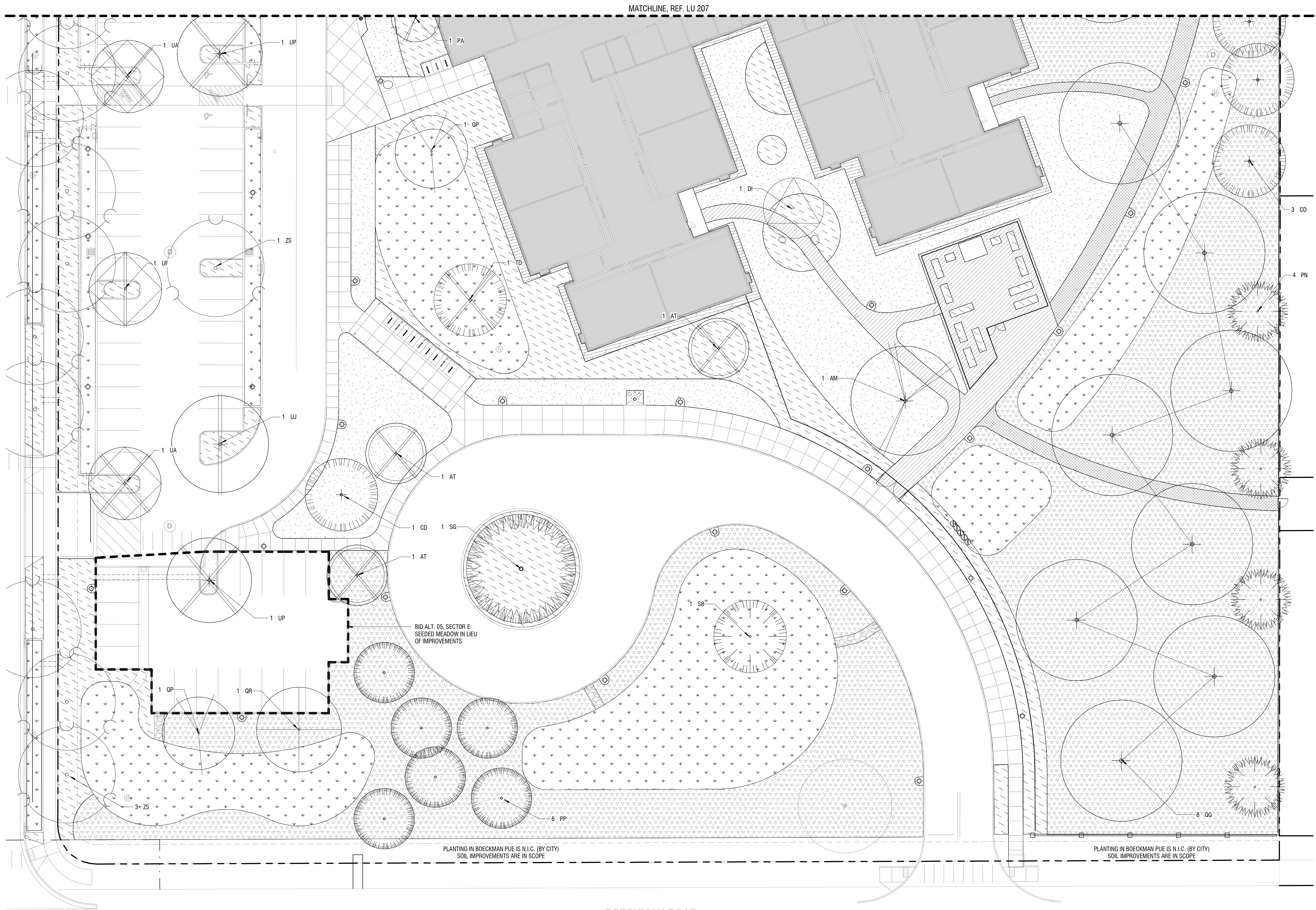
NOTE: REF. L-000 FOR FULL PLANT LISTS

- ▨ SEEDED LAWN
- ▨ SEEDED MEADOW
- ▨ SHRUB PLANTING
- ▨ MULCH
- ▨ STORMWATER PLANTING

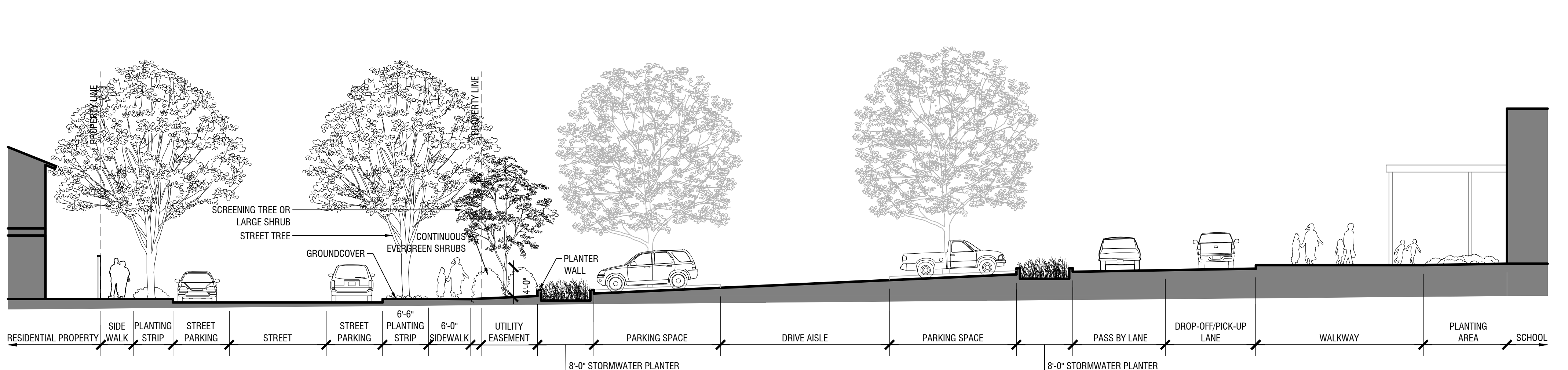
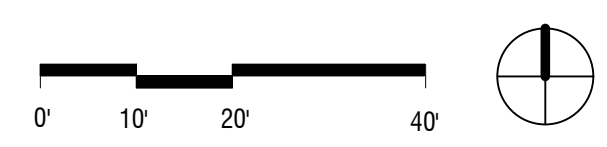
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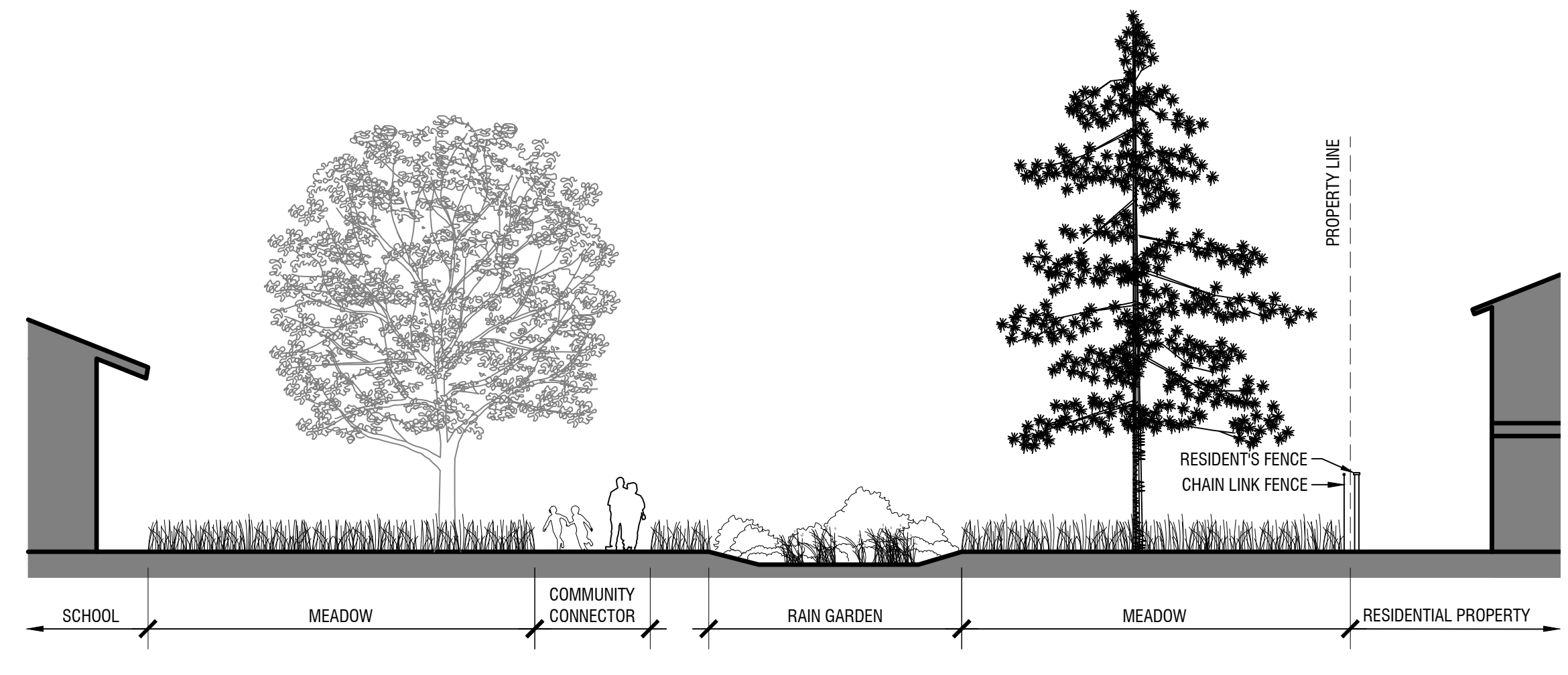
	9"	12"	15"	18"	24"	30"	36"	48"
TRIANGULAR SPACING								
SQUARE FT MULTIPLIER	2.027	1.156	0.513	0.322	0.288	0.184	0.128	0.072



1 LU - PLANTING - TREES - PARTIAL PLAN - SOUTH  
SCALE: 1" = 20'-0"



2 SHERMAN RIGHT OF WAY - SECTION  
SCALE: 1" = 10'-0"



3 SCHOOL TO EAST RESIDENCES - SECTION  
SCALE: 1" = 10'-0"





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ISSUES		
No.	DESCRIPTION	DATE
	LAND USE APPLICATION	2022-11-04
	LAND USE INCOMPLETENESS RESPONSE	2023-01-17

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CONSTRUCTION**

### GENERAL LEGEND

- PROPERTY LINE
- FENCING
- AREA DRAIN, REF. CIVIL
- TRENCH DRAIN
- LIGHT POLE, REF. ELEC
- SITE BOULDER
- BOLLARD
- EXISTING TREE
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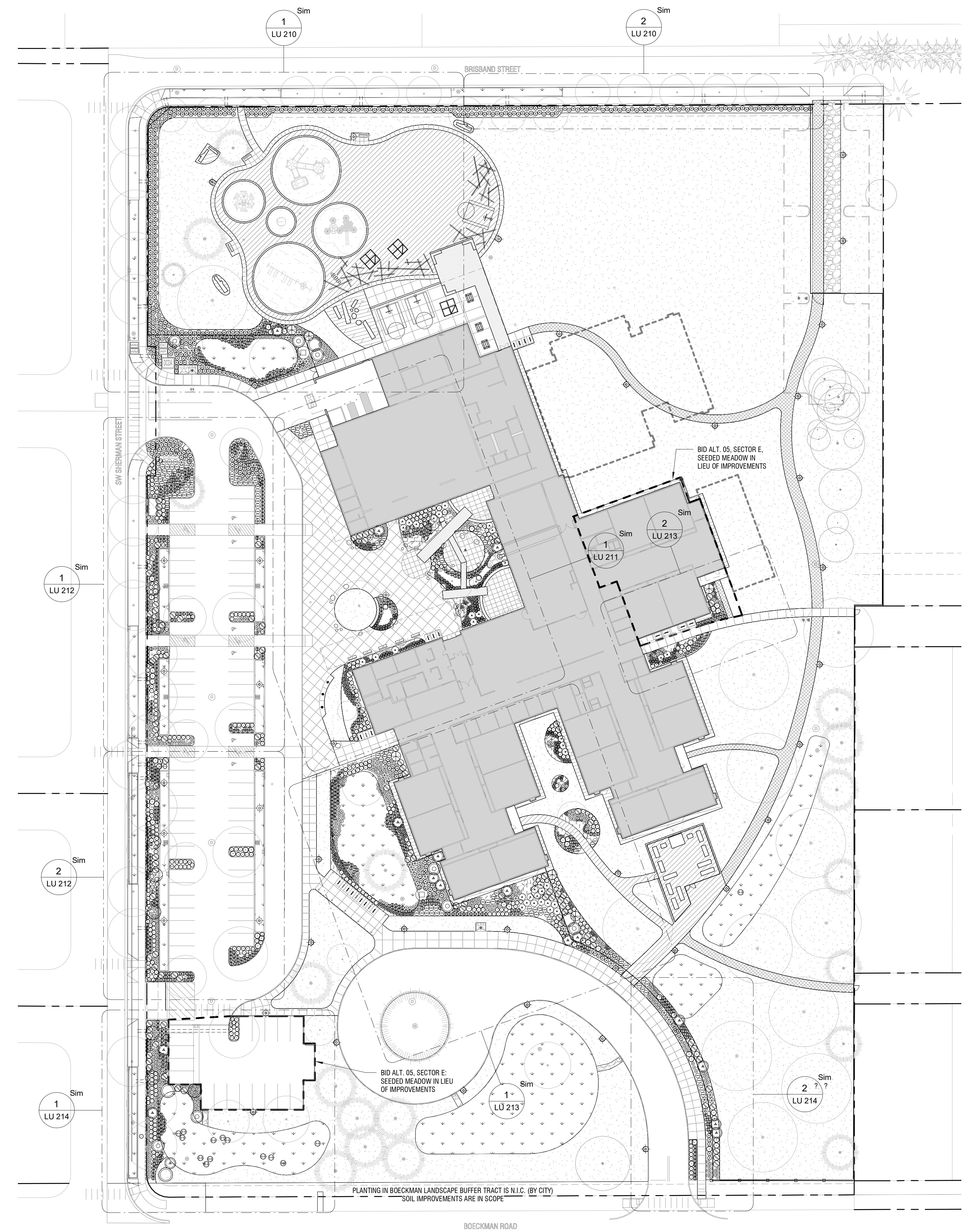
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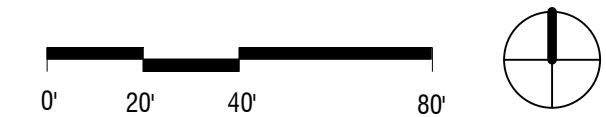
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1 ARCHITECTURAL SITE PLAN  
SCALE: 1" = 40'



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PROJECT  
**Frog Pond Primary School**  
7151 Boeckman Road  
Wilsonville, OR 97070

PROJECT NO:  
137469  
SHEET TITLE  
**PLANTING KEY PLAN**

SHEET NUMBER  
**LU 209**





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ISSUES		
No.	DESCRIPTION	DATE
	LAND USE APPLICATION	2022-11-04
	LAND USE INCOMPLETENESS RESPONSE	2023-01-17

**NOT FOR  
CONSTRUCTION**

### GENERAL LEGEND

- PROPERTY LINE
- FENCING
- AREA DRAIN, REF. CIVIL
- TRENCH DRAIN
- LIGHT POLE, REF. ELEC
- SITE BOULDER
- ROLLARD
- EXISTING TREE
- APPROXIMATE CANOPY

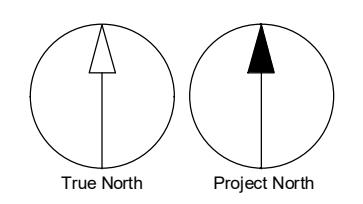
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PROJECT

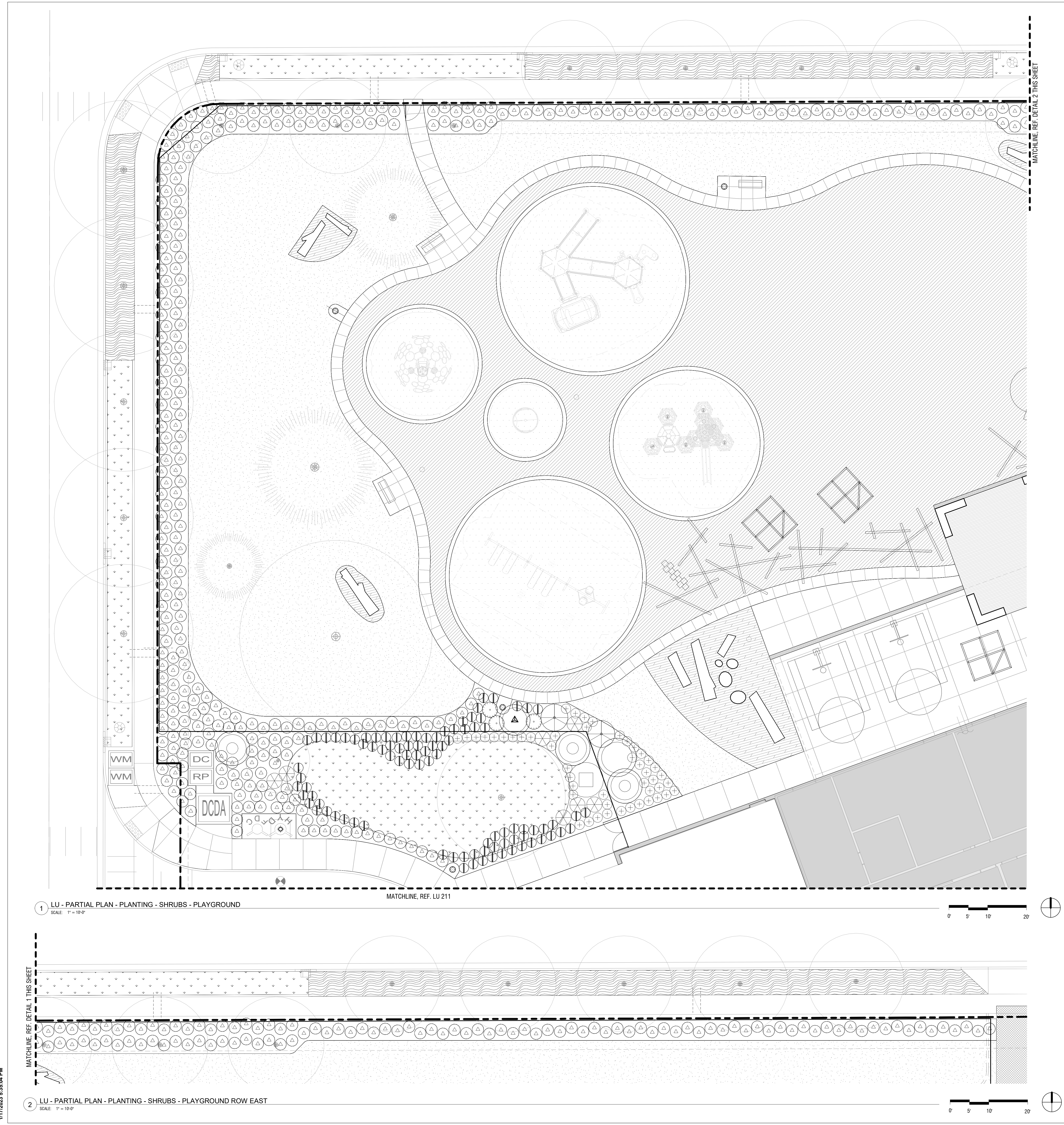
**Frog Pond Primary School**

7151 Boeckman Road  
Wilsonville, OR 97070

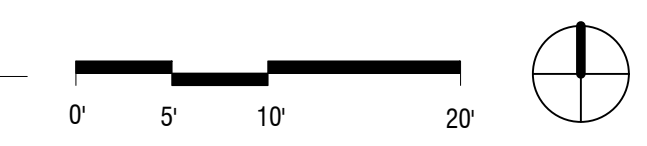
PROJECT NO:  
137469

SHEET TITLE  
**PLANTING- SHRUBS -  
PARTIAL PLAN -  
PLAYGROUND**

SHEET NUMBER  
**LU 210**

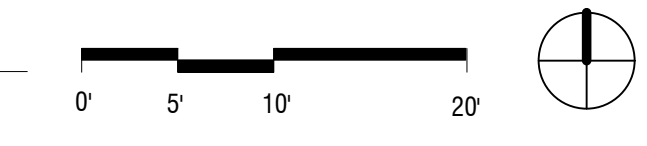


1 LU - PARTIAL PLAN - PLANTING - SHRUBS - PLAYGROUND  
SCALE: 1" = 10'-0"



MATCHLINE, REF. DETAIL 1 THIS SHEET

2 LU - PARTIAL PLAN - PLANTING - SHRUBS - PLAYGROUND ROW EAST  
SCALE: 1" = 10'-0"



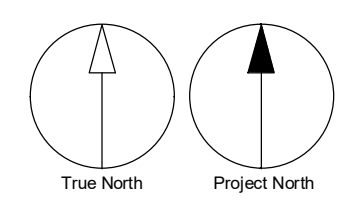




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ISSUES		
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PROJECT  
**Frog Pond Primary School**  
  
7151 Boeckman Road  
Wilsonville, OR 97070

PROJECT NO:  
137469

SHEET TITLE  
**PLANTING- SHRUBS -  
PARTIAL PLAN -  
COURTYARD**

SHEET NUMBER  
**LU 211**

**GENERAL LEGEND**

- PROPERTY LINE
- FENCING
- AREA DRAIN, REF. CIVIL
- TRENCH DRAIN
- LIGHT POLE, REF. ELEC
- SITE BOULDER
- BOLLARD
- EXISTING TREE
- APPROXIMATE CANOPY

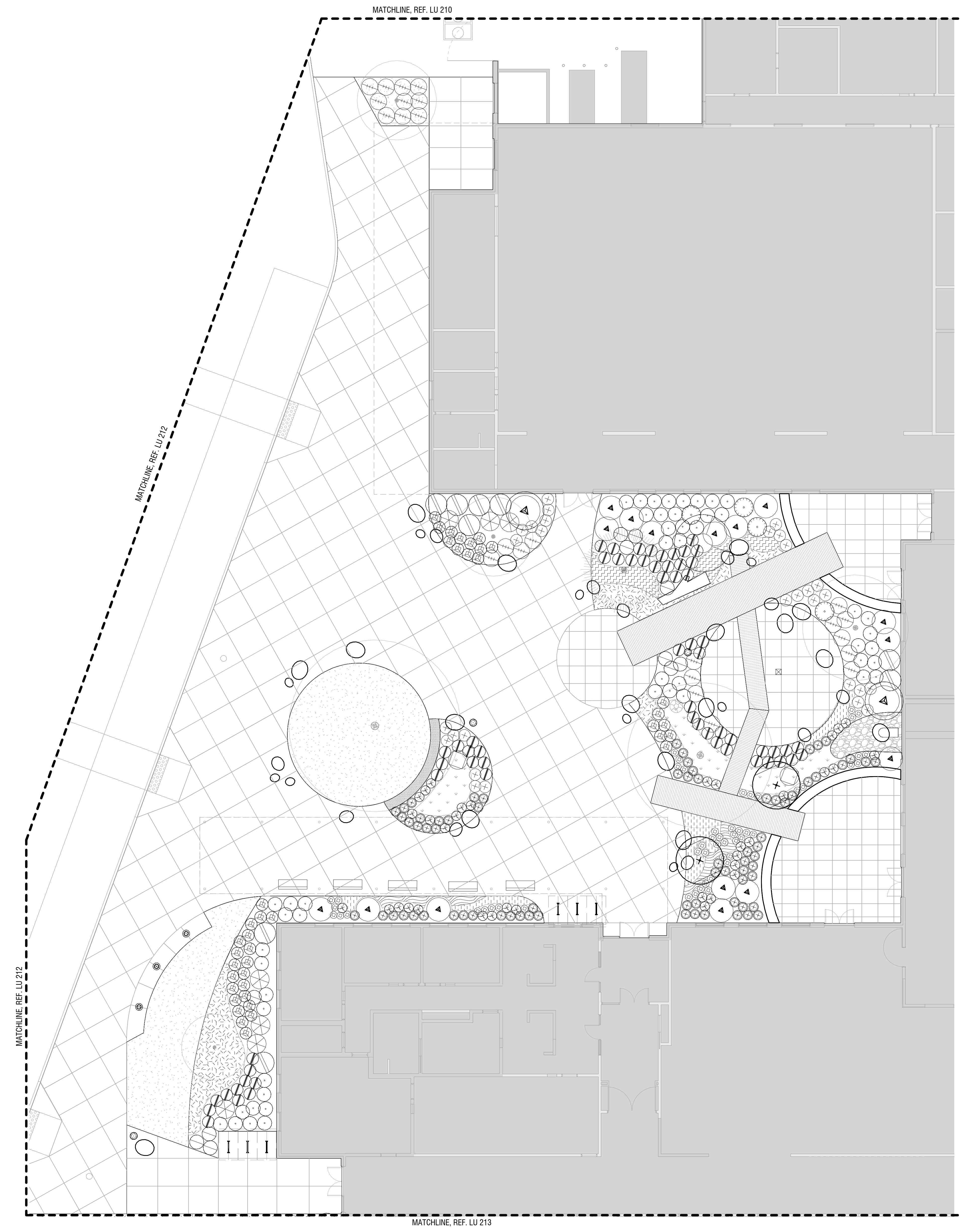
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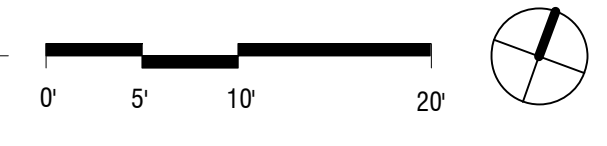
**PLANTING NOTES**

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- DO NOT BEGIN PLANTING UNTIL SOIL PREPARATION IS COMPLETE AND APPROVED. REF. SPECIFICATIONS FOR PLANTING SOIL PLACEMENT AND DEPTHS.
- LOCATE PLANTS AS DIMENSIONED ON THE PLANS AND AS SHOWN IN THE PLANT SCHEDULE. PLANT SPACING IS MEASURED CENTER TO CENTER. PLANT LOCATIONS MAY BE ADJUSTED BY THE LANDSCAPE ARCHITECT TO MEET FIELD CONDITIONS.
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TRIANGULAR SPACING	9"	12"	15"	18"	24"	30"	36"	48"
SQUARE FT MULTIPLIER	2.027	1.156	0.513	0.322	0.288	0.184	0.128	0.072



1 LU - PARTIAL PLAN - PLANTING - SHRUBS - COURTYARD  
SCALE: 1" = 10'-0"

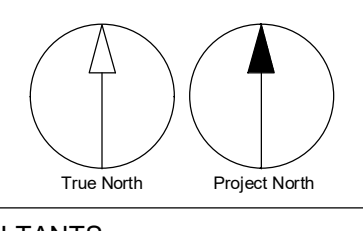




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ISSUES		
No.	DESCRIPTION	DATE
	LAND USE APPLICATION	2022-11-04
	LAND USE INCOMPLETENESS RESPONSE	2023-01-17

**NOT FOR  
CONSTRUCTION**



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907 SW Harvey Milk Street  
Portland, OR 97205, USA  
tel 503 226 8950 fax 503 273 9192  
siggroup@ibigroup.com

PROJECT  
**Frog Pond Primary School**

7151 Boeckman Road  
Wilsonville, OR 97070

PROJECT NO:  
137469

SHEET TITLE  
**PLANTING- SHRUBS -  
PARTIAL PLAN - PARKING  
LOT**

SHEET NUMBER  
**LU 212**

**GENERAL LEGEND**

- PROPERTY LINE
- FENCING
- AREA DRAIN, REF. CIVIL
- TRENCH DRAIN
- LIGHT POLE, REF. ELEC
- SITE BOULDER
- ROLLARD
- EXISTING TREE
- APPROXIMATE CANOPY

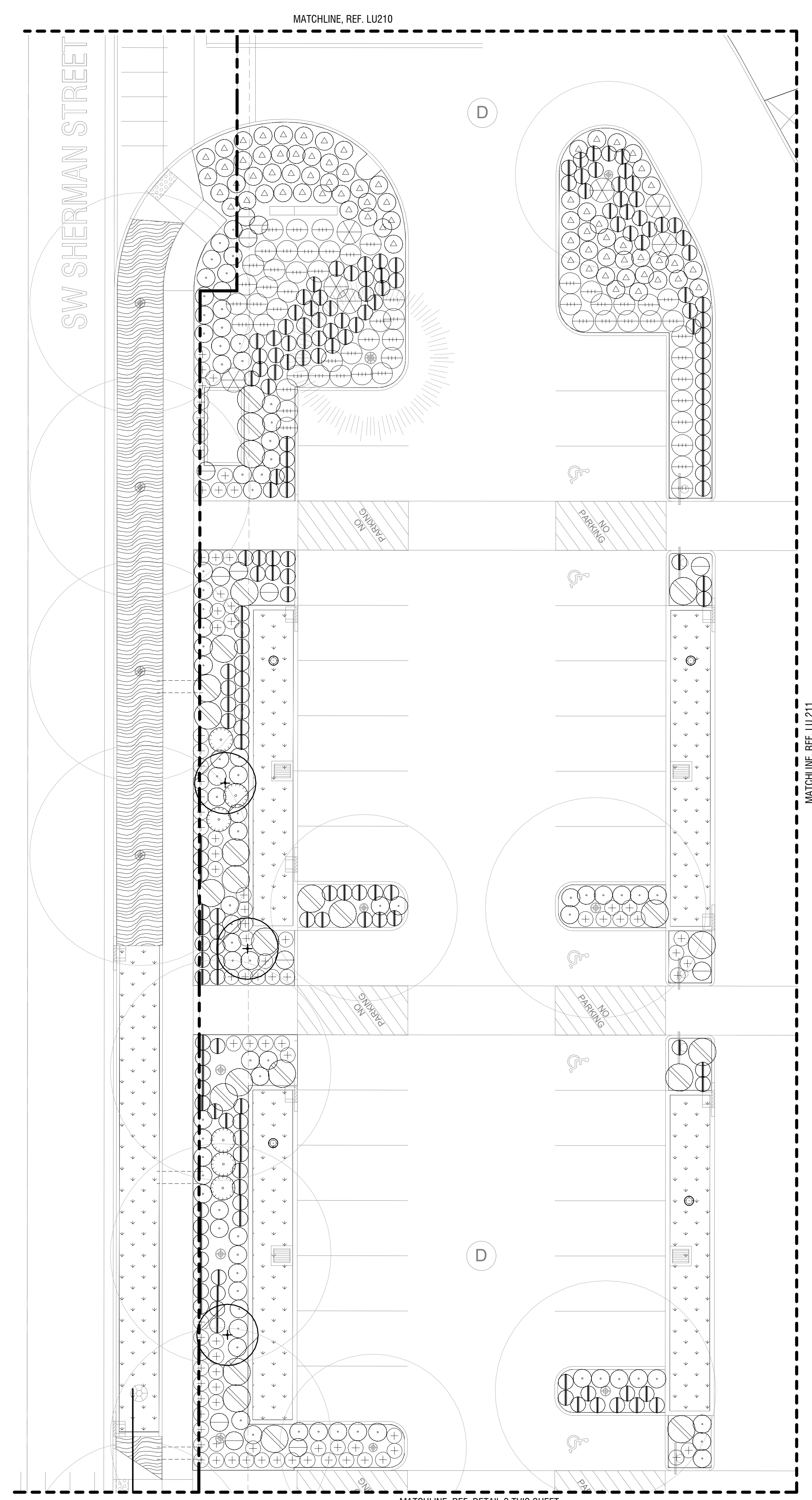
**GENERAL NOTES**

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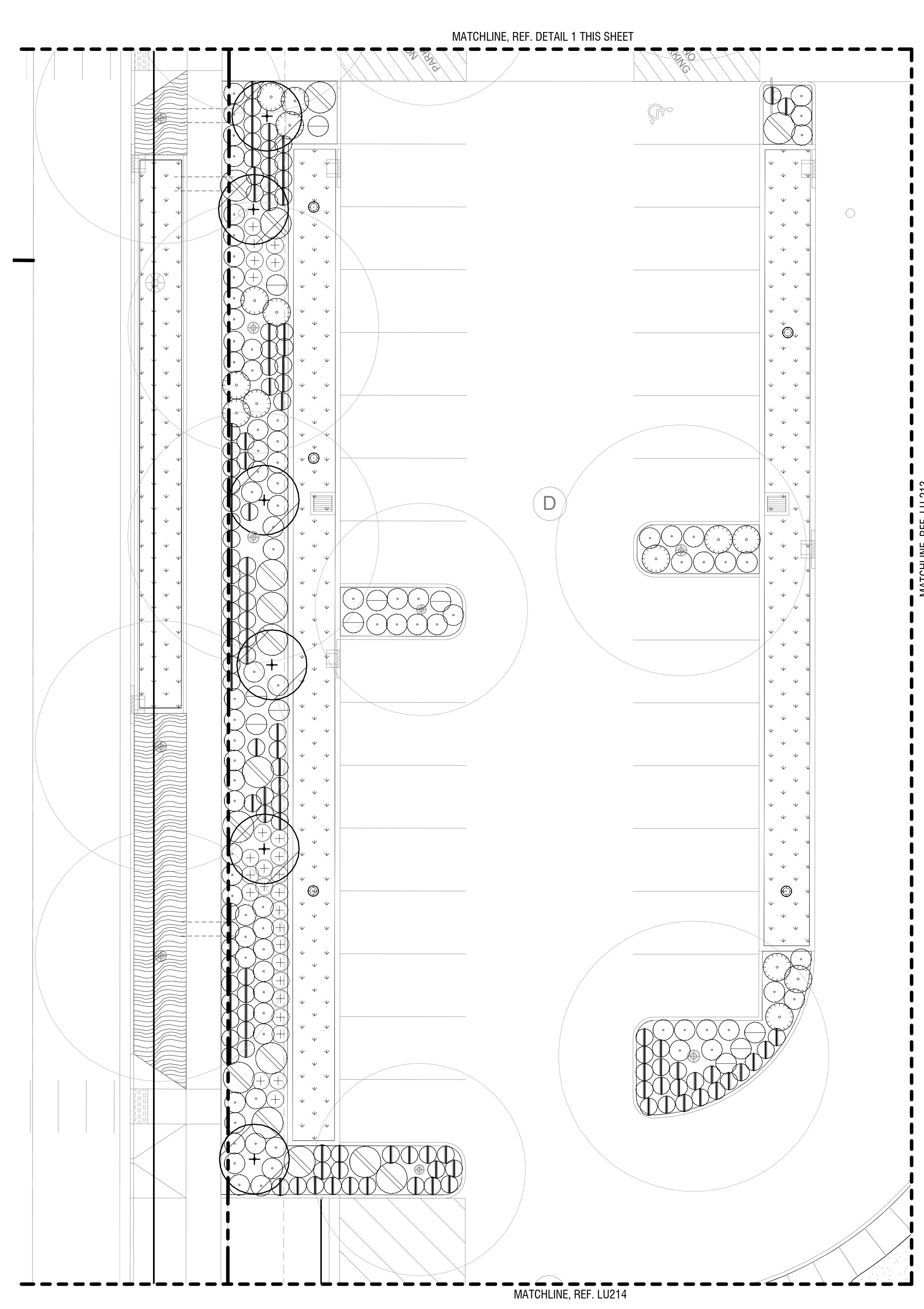
**PLANTING NOTES**

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- DO NOT BEGIN PLANTING UNTIL SOIL PREPARATION IS COMPLETE AND APPROVED. REF. SPECIFICATIONS FOR PLANTING SOIL PLACEMENT AND DEPTHS.
- LOCATE PLANTS AS DIMENSIONED ON THE PLANS AND AS SHOWN IN THE PLANT SCHEDULE. PLANT SPACING IS MEASURED CENTER TO CENTER. PLANT LOCATIONS MAY BE ADJUSTED BY THE LANDSCAPE ARCHITECT TO MEET FIELD CONDITIONS.
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TRIANGULAR SPACING	9"	12"	15"	18"	24"	30"	36"	48"
SQUARE FT MULTIPLIER	2.027	1.156	0.513	0.322	0.288	0.184	0.128	0.072



1 LU - PARTIAL PLAN - PLANTING - SHRUBS - PARKING LOT NORTH  
SCALE: 1" = 10'-0"



2 LU - PARTIAL PLAN - PLANTING - SHRUBS - PARKING LOT SOUTH  
SCALE: 1" = 10'-0"

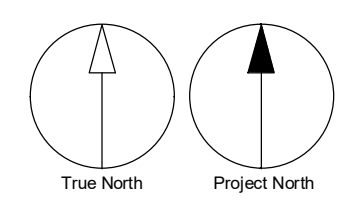




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ISSUES		
No.	DESCRIPTION	DATE
	LAND USE APPLICATION	2022-11-04
	LAND USE INCOMPLETENESS RESPONSE	2023-01-17

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907 SW Harvey Milk Street  
Portland, OR 97205, USA  
tel 503 226 8950 fax 503 273 9192  
ibigroup.com

PROJECT  
**Frog Pond Primary School**

7151 Boeckman Road  
Wilsonville, OR 97070

PROJECT NO:  
137469

SHEET TITLE  
**PLANTING- SHRUBS - PARTIAL PLAN - EAST ENTRIES**

SHEET NUMBER  
**LU 213**

**GENERAL LEGEND**

- PROPERTY LINE
- FENCING
- AREA DRAIN, REF. CIVIL
- TRENCH DRAIN
- LIGHT POLE, REF. ELEC
- SITE BOULDER
- BOLLARD
- EXISTING TREE
- APPROXIMATE CANOPY

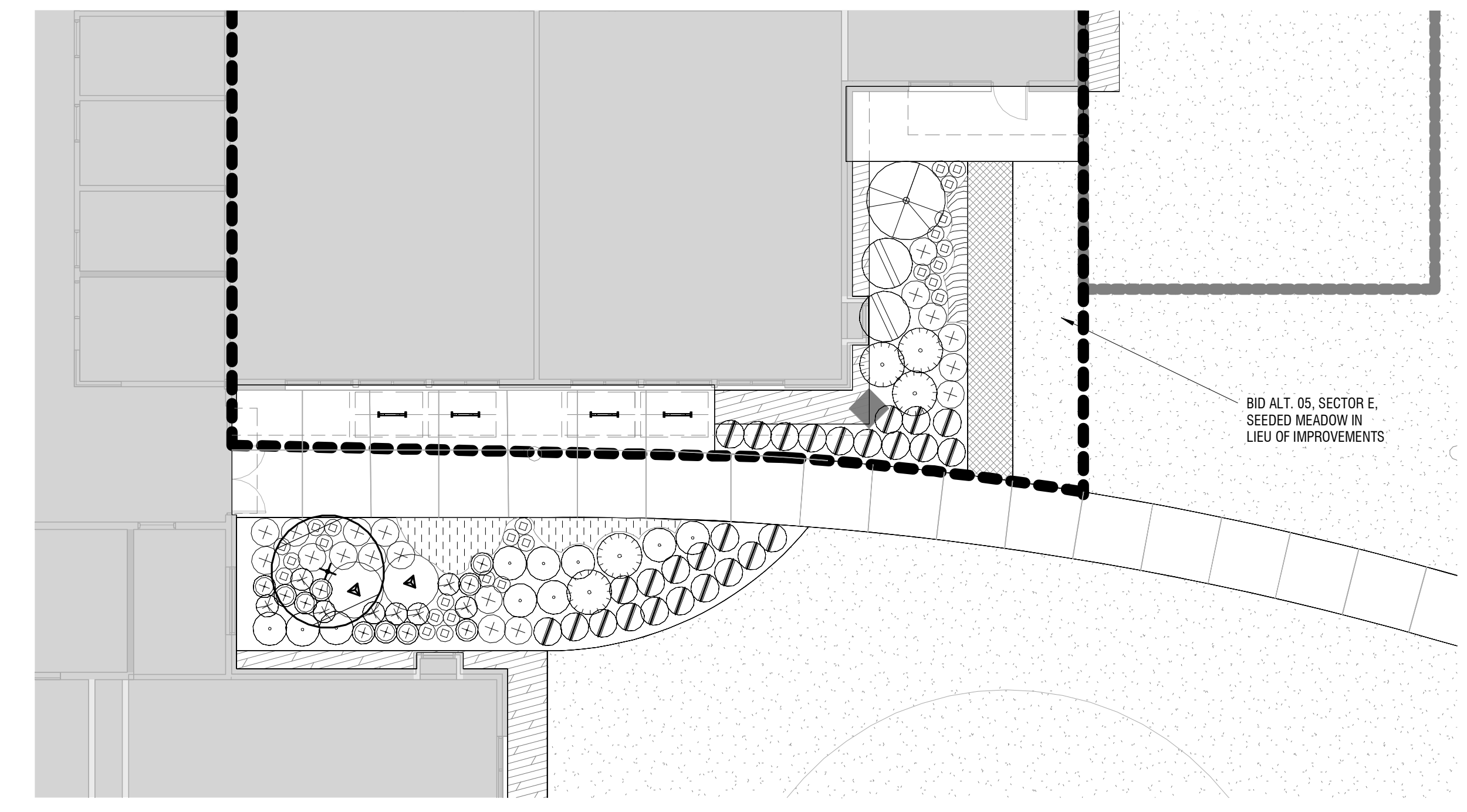
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1 LU - PARTIAL PLAN - PLANTING - SHRUBS - ENTRY SOUTH  
SCALE: 1" = 10'-0"

MATCHLINE, REF. LU 214



2 LU - PARTIAL PLAN - PLANTING - SHRUBS - ENTRY EAST  
SCALE: 1" = 10'-0"



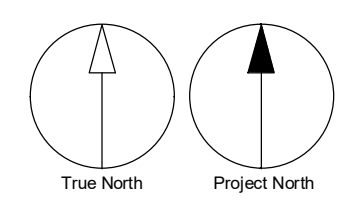




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ISSUES		
No.	DESCRIPTION	DATE
	LAND USE APPLICATION	2022-11-04
	LAND USE INCOMPLETENESS RESPONSE	2023-01-17

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ibigroup.com

PROJECT  
**Frog Pond Primary School**  
7151 Boeckman Road  
Wilsonville, OR 97070

PROJECT NO:  
137469

SHEET TITLE  
**PLANTING- SHRUBS -  
PARTIAL PLAN - SOUTH  
EDGE**

SHEET NUMBER  
**LU 214**

**GENERAL LEGEND**

- PROPERTY LINE
- FENCING
- AREA DRAIN, REF. CIVIL
- TRENCH DRAIN
- LIGHT POLE, REF. ELEC
- SITE BOULDER
- BOLLARD
- EXISTING TREE
- APPROXIMATE CANOPY

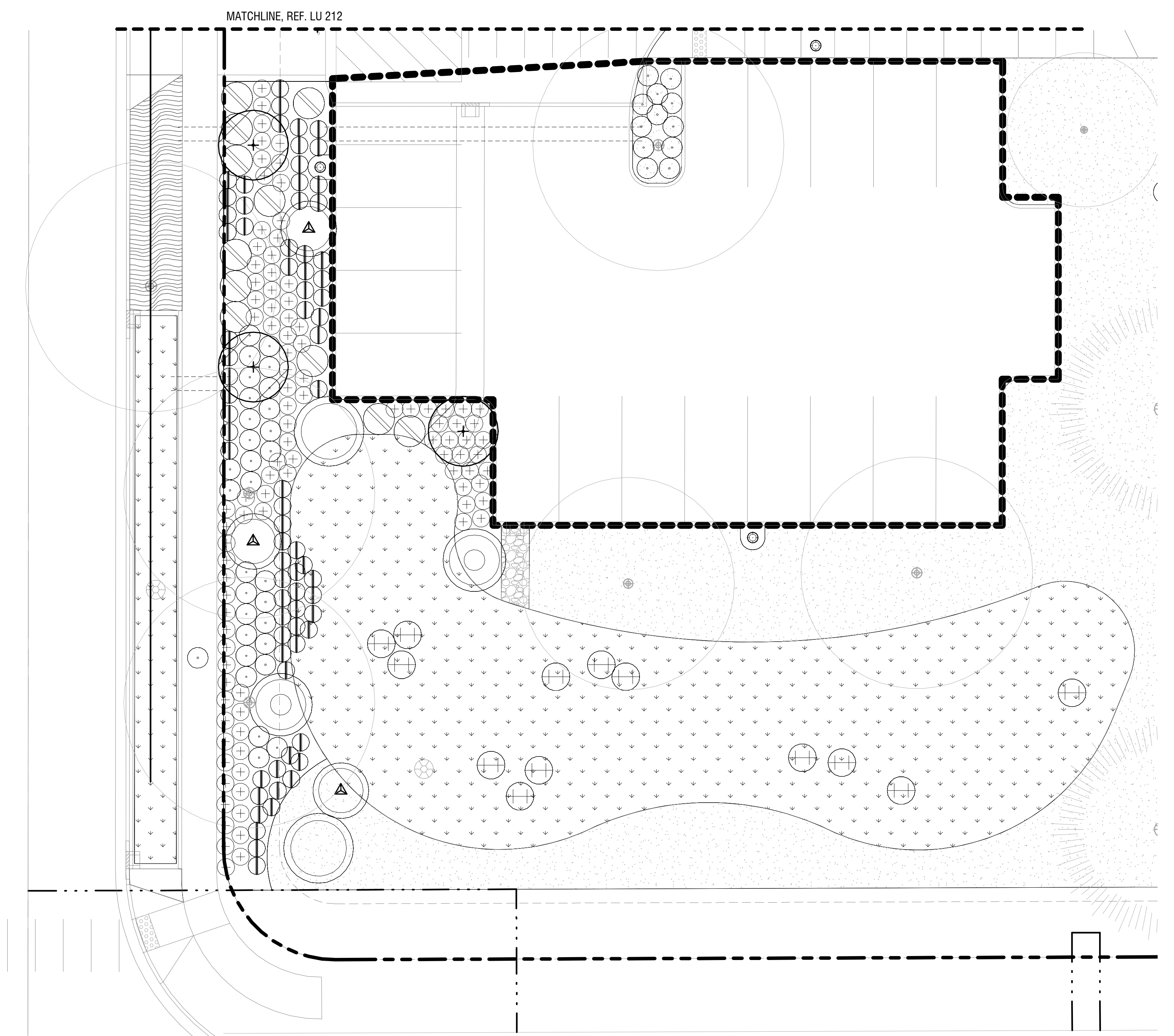
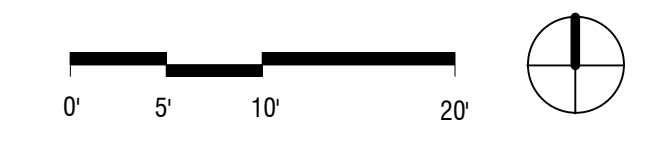
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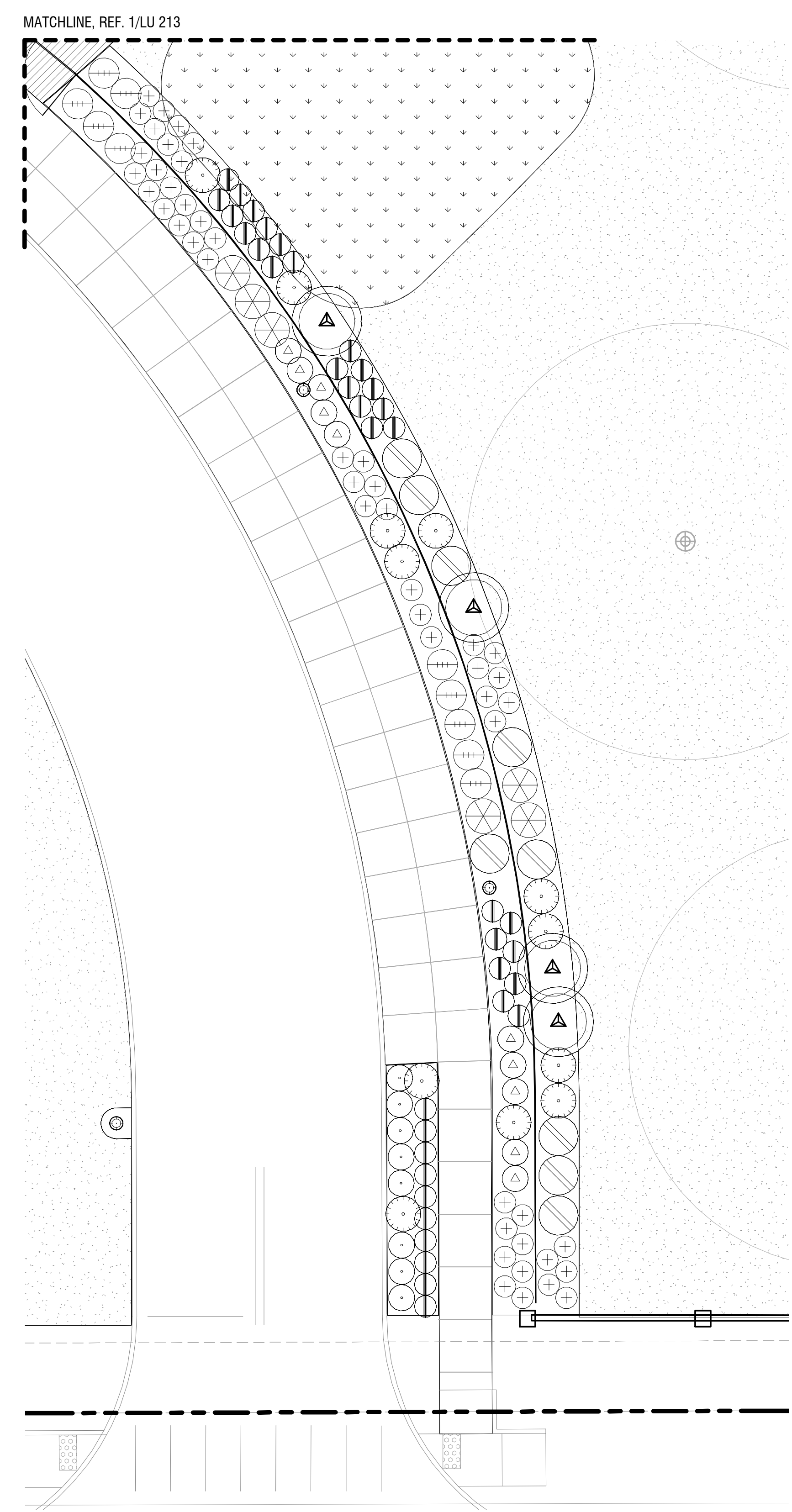
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1 LU - PARTIAL PLAN - PLANTING - SHRUBS - ADDITIONAL PARKING  
SCALE: 1" = 10'-0"



2 LU - PARTIAL PLAN - PLANTING - SHRUBS - BUS ENTRY  
SCALE: 1" = 10'-0"



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**ISSUES**

No.	DESCRIPTION	DATE
	LAND USE APPLICATION	2022-11-04
	LAND USE INCOMPLETENESS RESPONSE	2023-01-17

**NOT FOR CONSTRUCTION**

**CONSULTANTS**

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503.223.5953

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**PRIME CONSULTANT**  
**IBI GROUP**  
907 SW Harvey Milk Street  
Portland, OR 97205, USA  
tel 503 226 8950 fax 503 273 9192  
ibigroup.com

**PROJECT**

Frog Pond Primary School  
7151 Bockman Road  
Wilsonville, OR 97070

**PROJECT NO.**

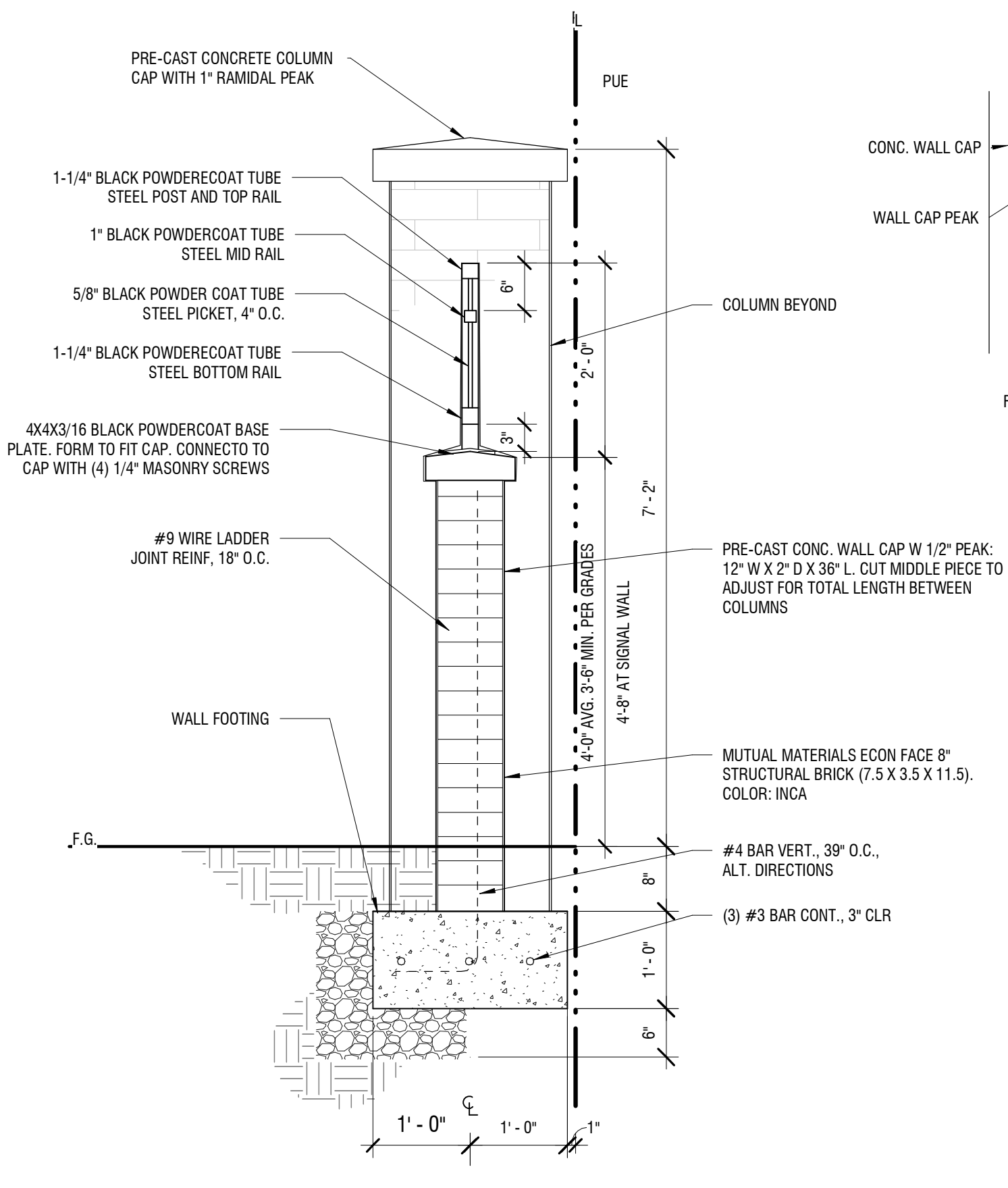
137469

**SHEET TITLE**

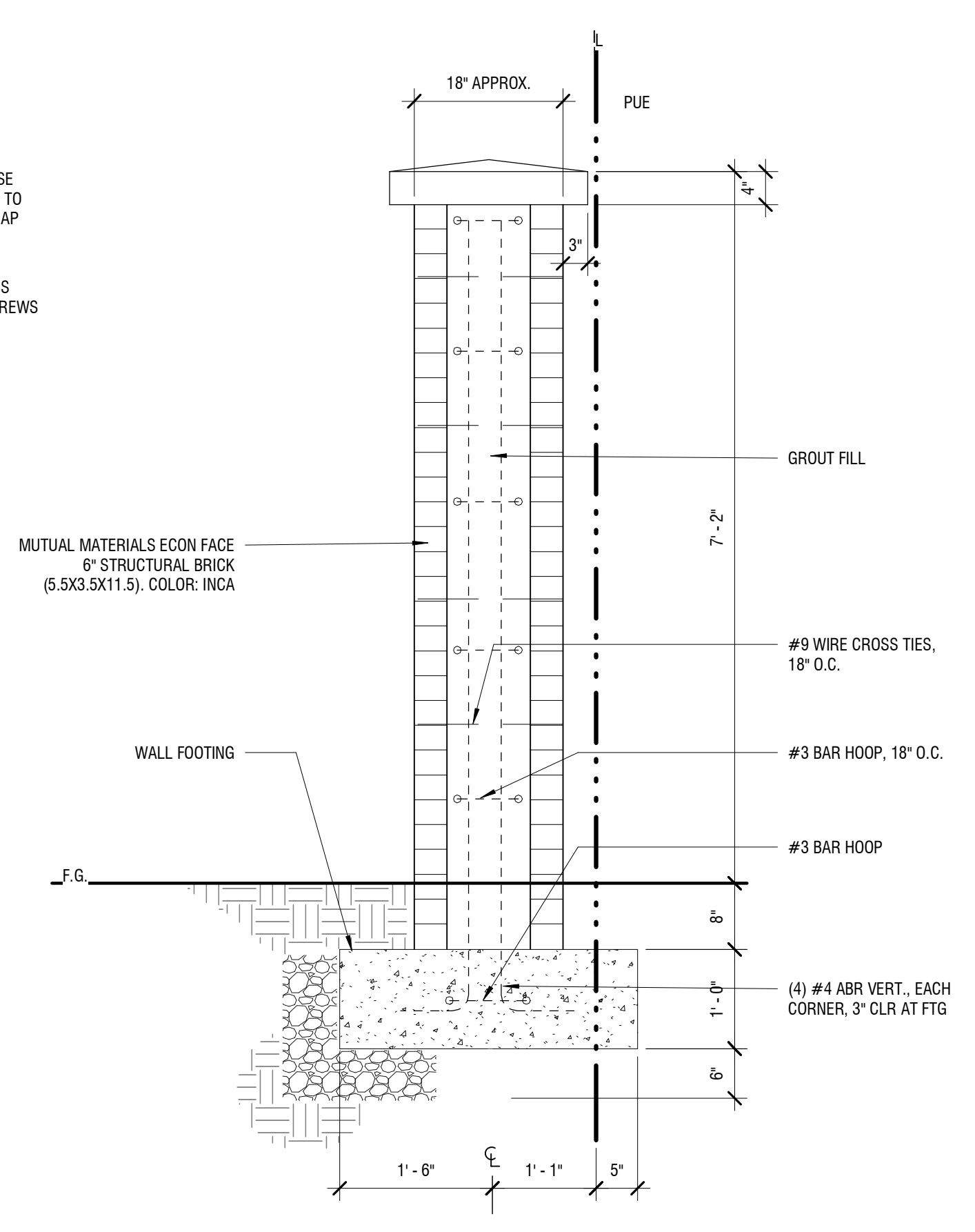
SITE DETAILS

**SHEET NUMBER**

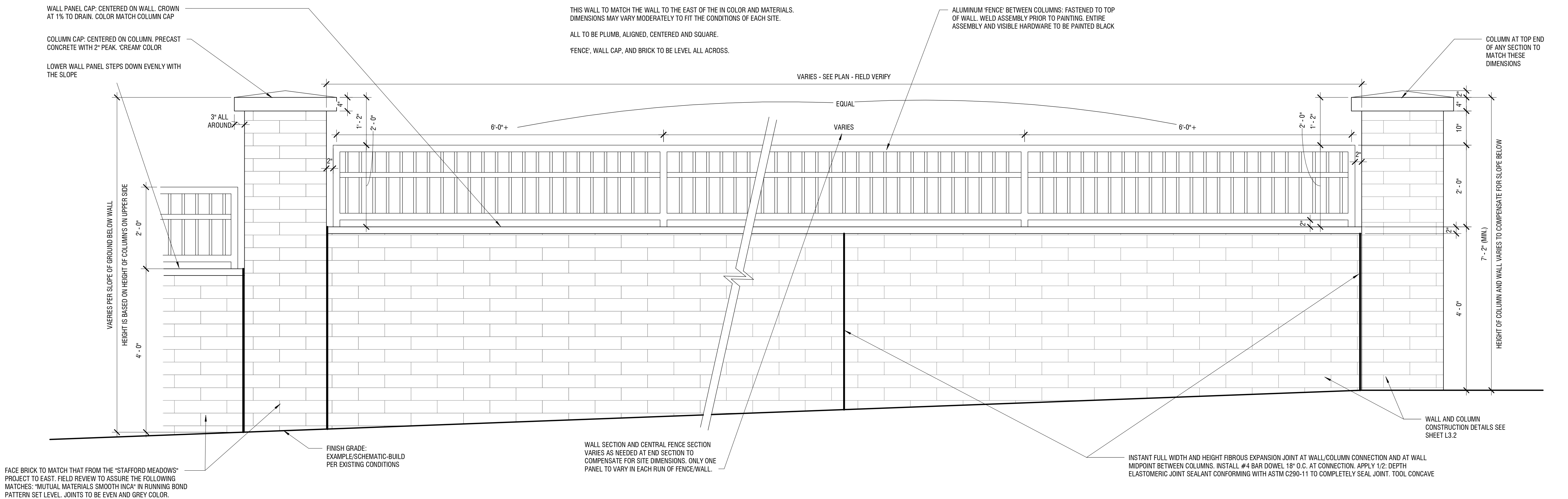
LU 215



**BRICK LANDSCAPE WALL SECTION**



**BRICK WALL COLUMN SECTION**



**BRICK LANDSCAPE WALL ELEVATION**

**1 BRICK LANDSCAPE WALL**

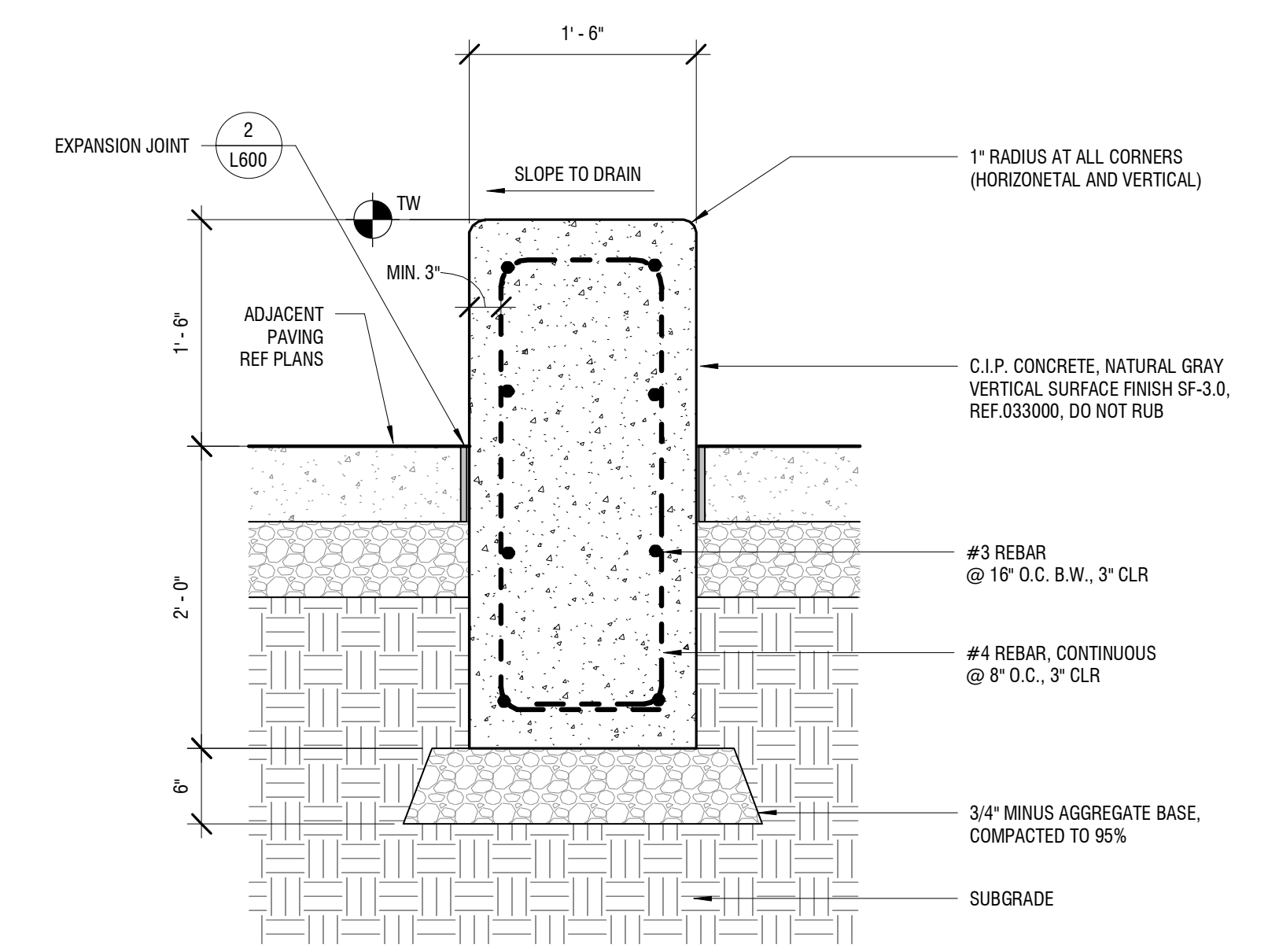
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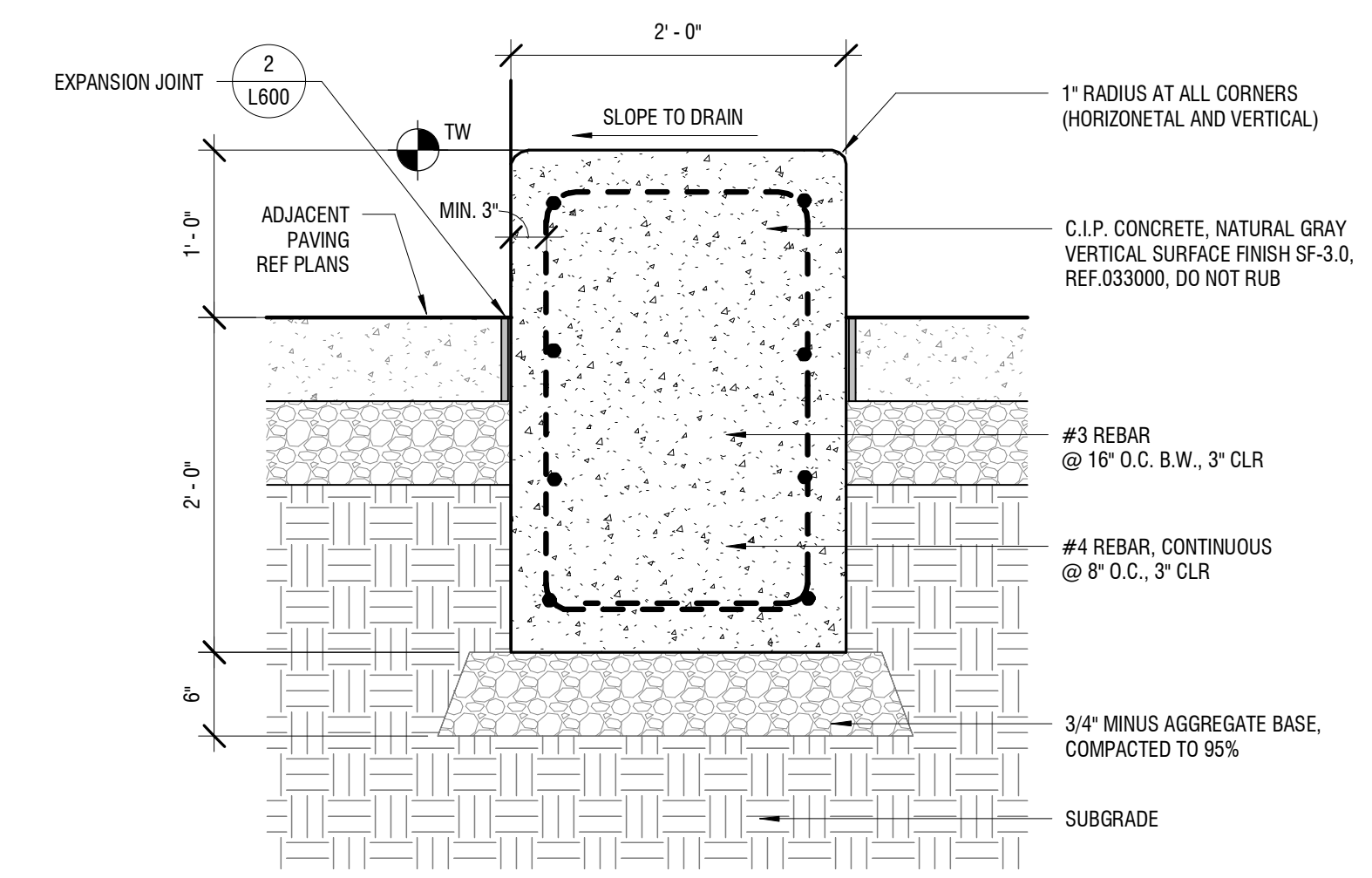
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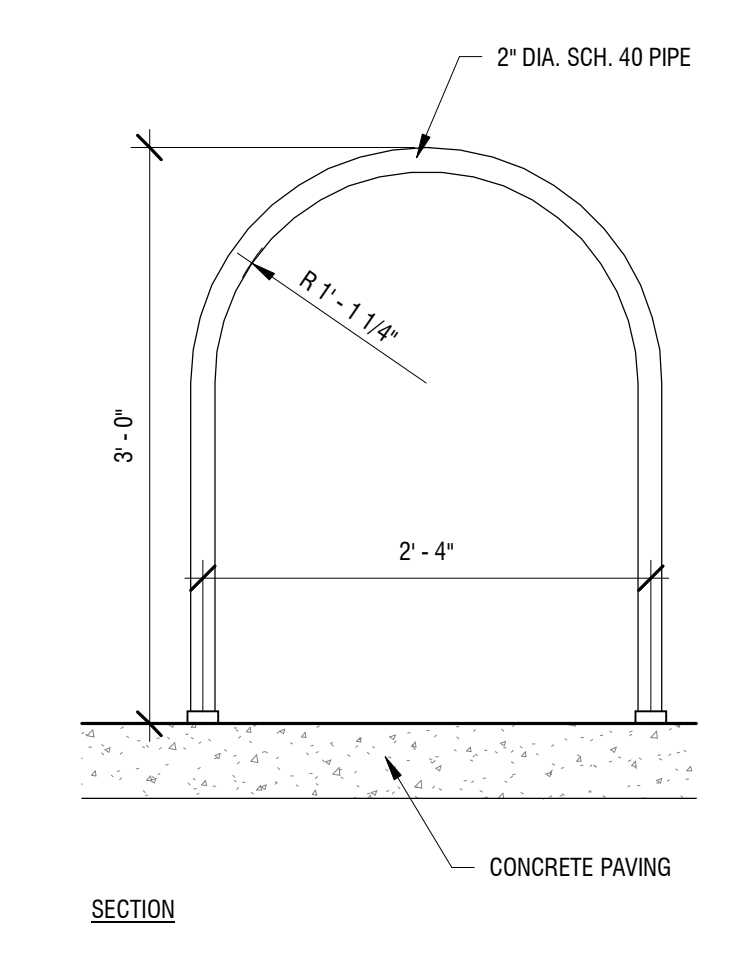
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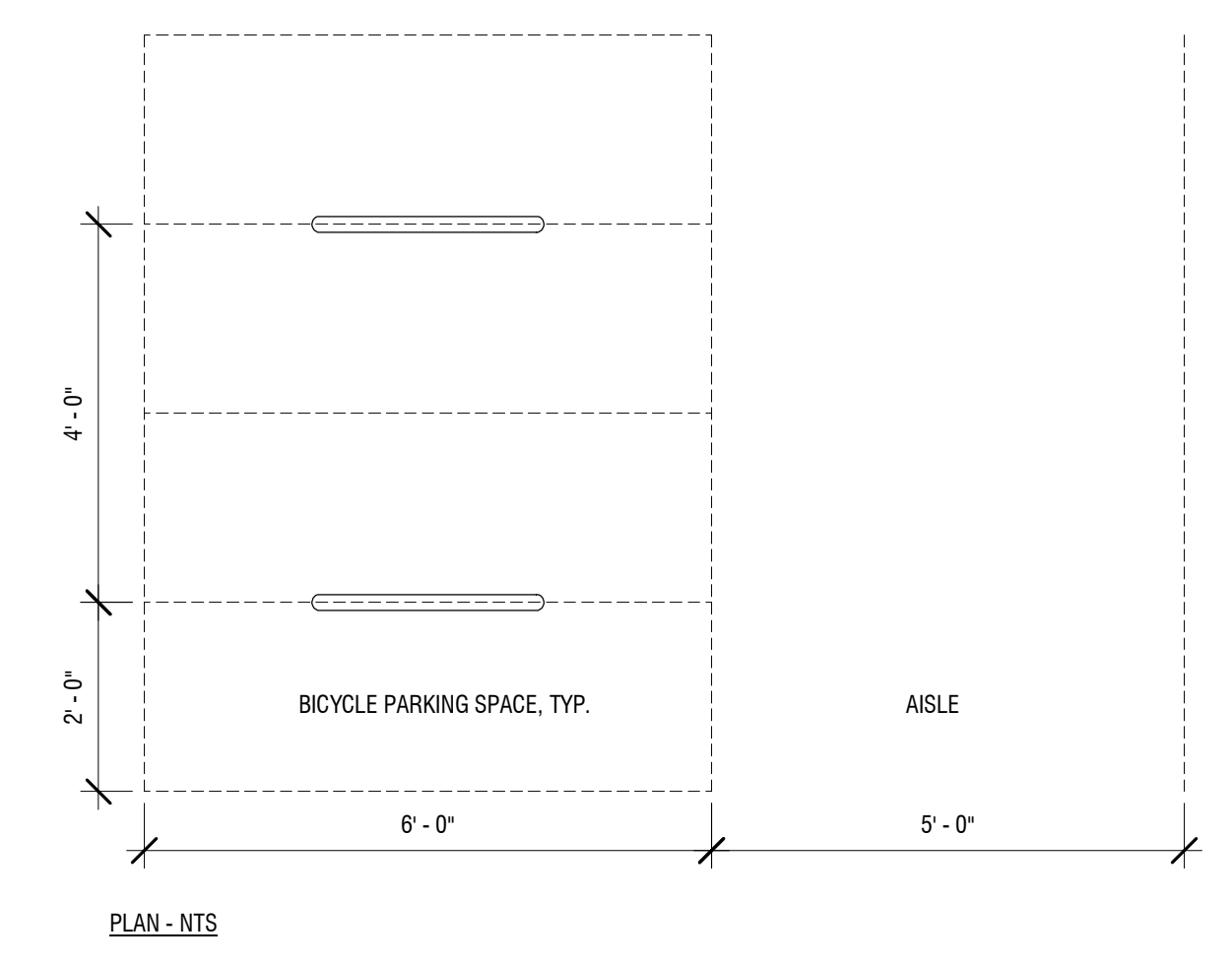
1 CONCRETE SITE WALL, 18" TALL - SECTION  
SCALE: 1" = 1'-0"



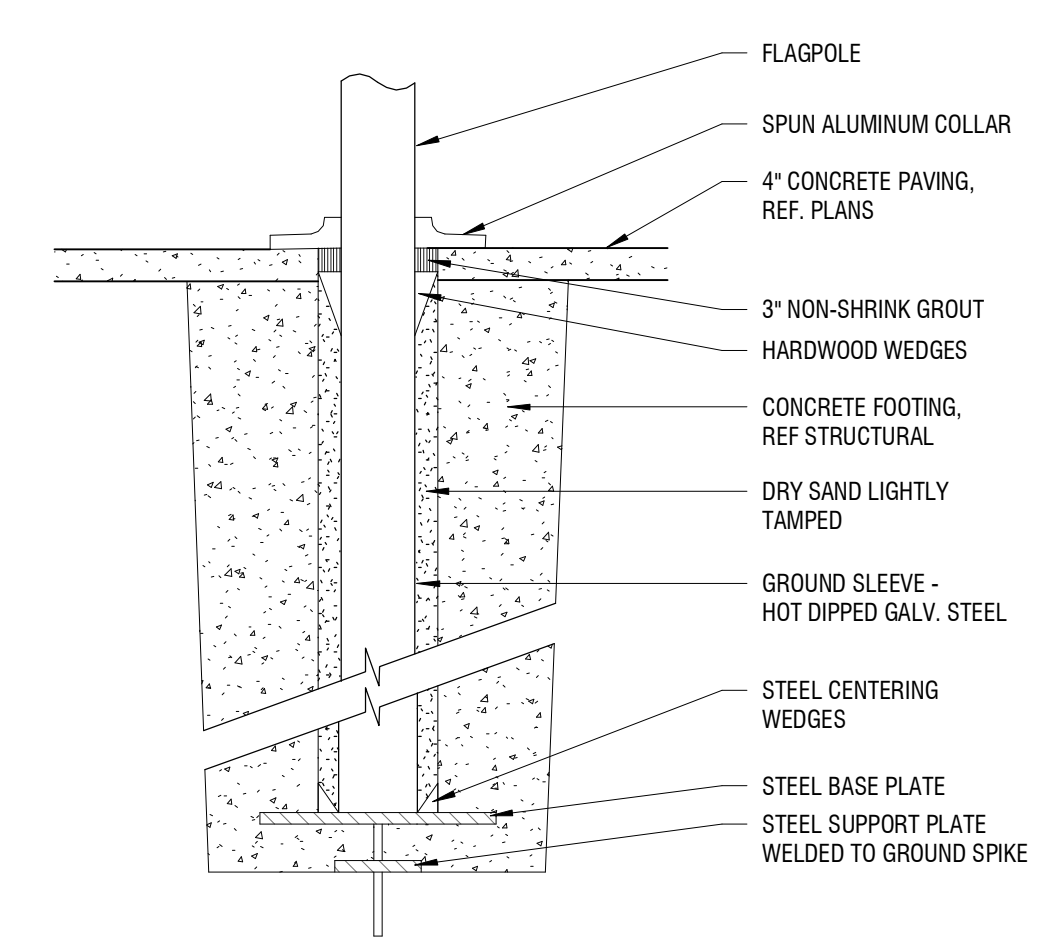
2 CONCRETE SITE WALL, 12" TALL - SECTION  
SCALE: 1" = 1'-0"



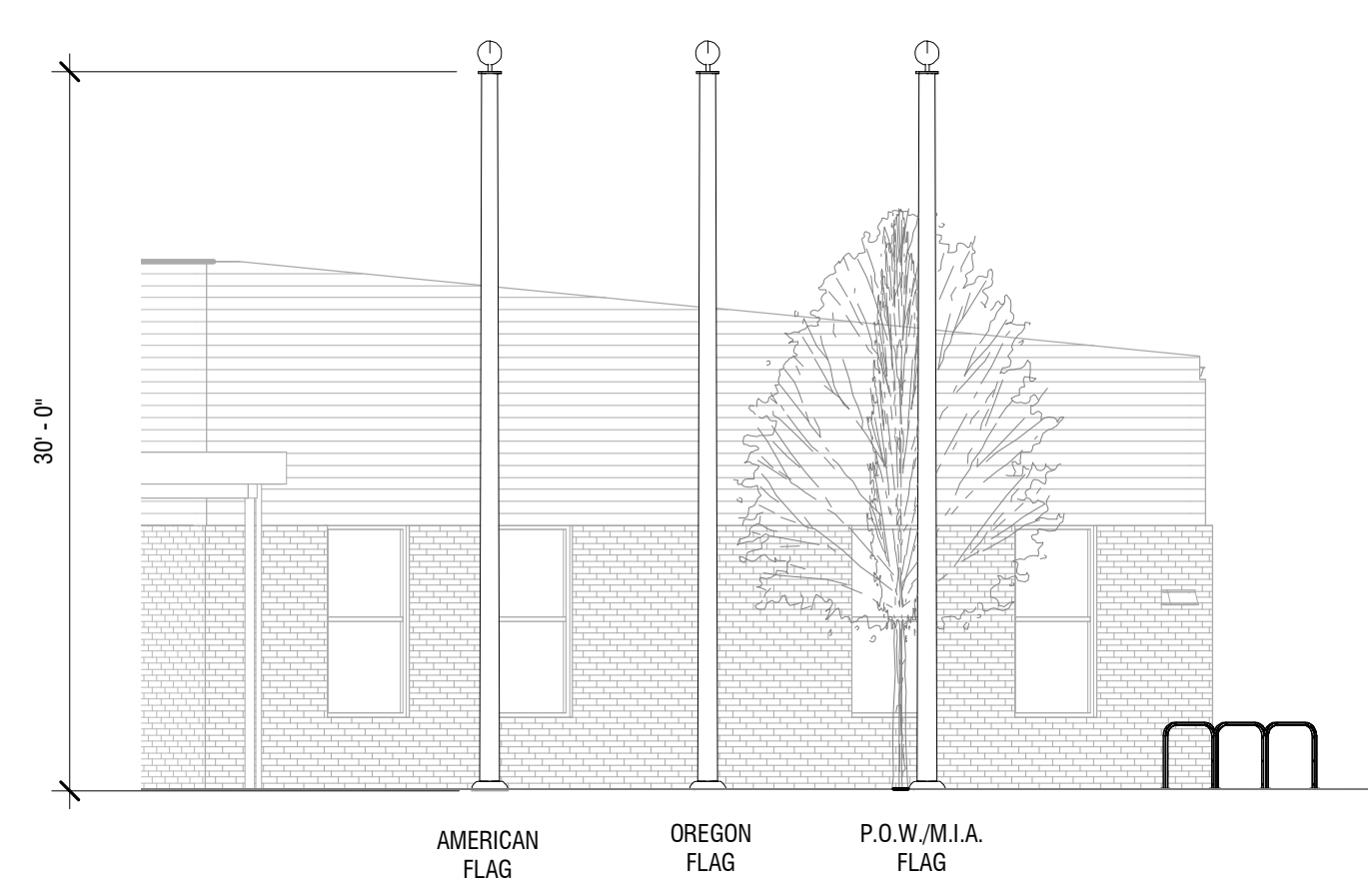
3 BIKE RACK  
SCALE: 1" = 1'-0"



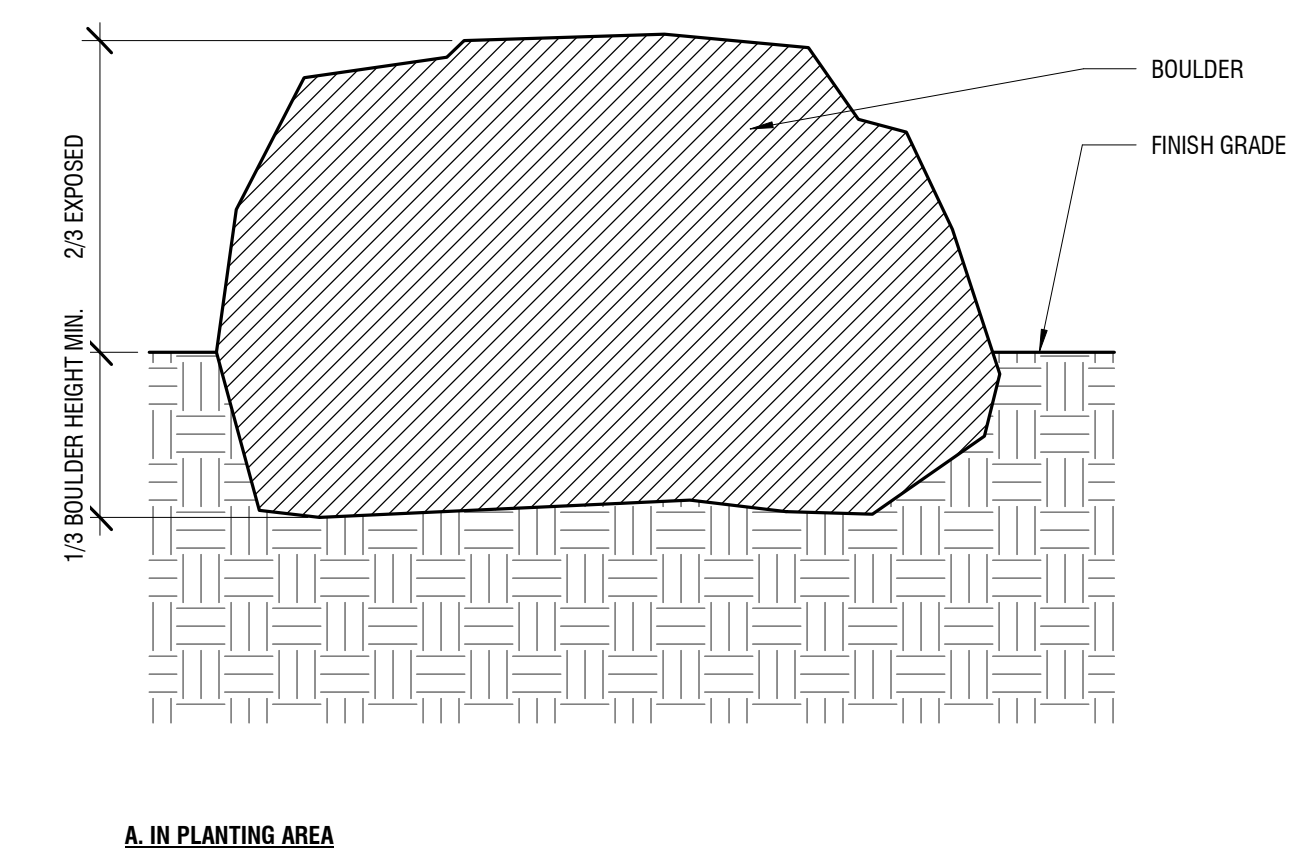
PLAN - NTS



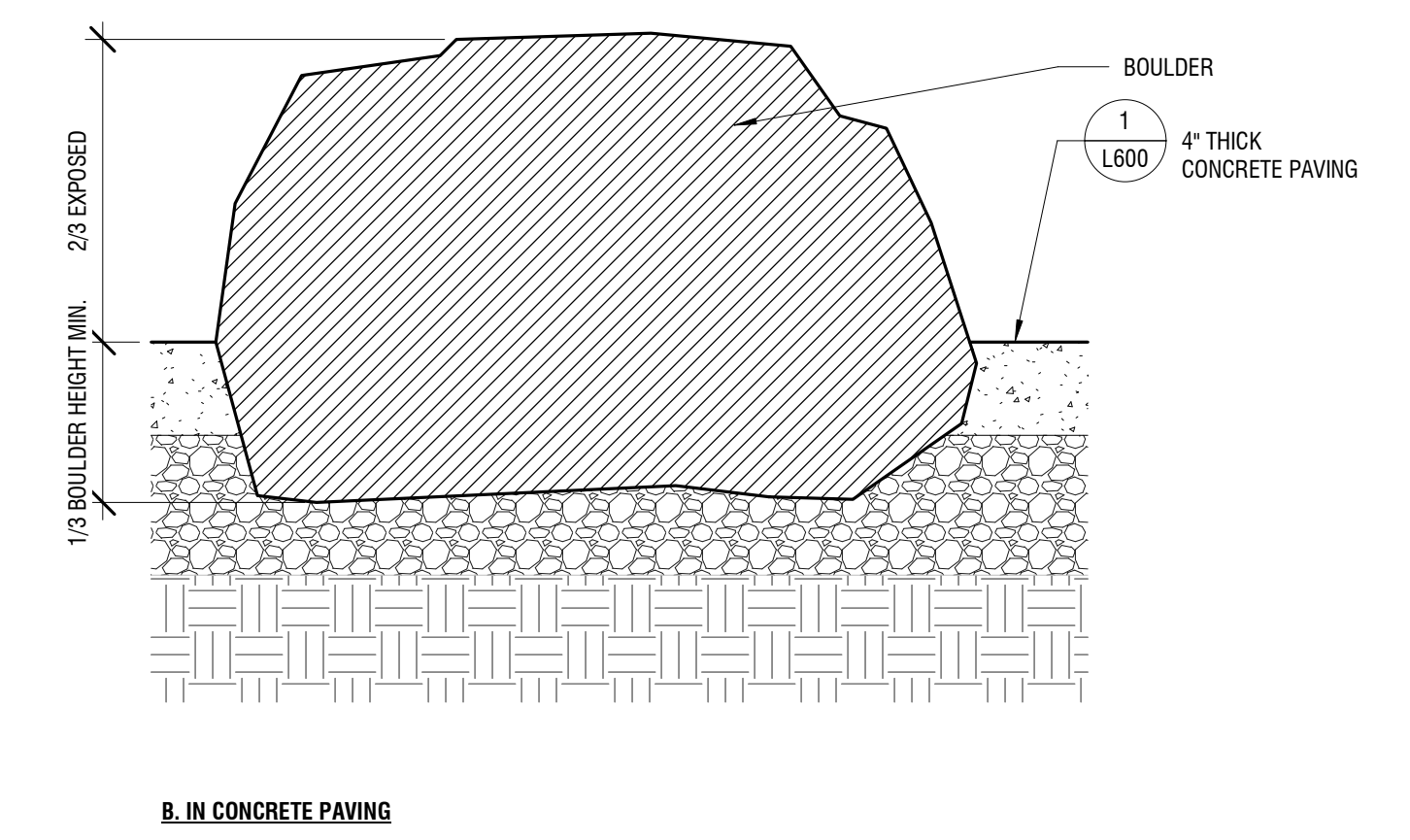
4 FLAG POLE - SECTION  
SCALE: 1/2" = 1'-0"



6 FLAGPOLES - ELEVATION  
SCALE: 1/8" = 1'-0"



7 SITE BOULDER - SECTION  
SCALE: 1 1/2" = 1'-0"



B. IN CONCRETE PAVING

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Portland, OR 97205, USA  
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ibigroup.com

PROJECT  
**Frog Pond Primary School**  
7151 Boeckman Road  
Wilsonville, OR 97070

PROJECT NO.  
137469

SHEET TITLE  
SITE DETAILS

SHEET NUMBER  
**LU 216**





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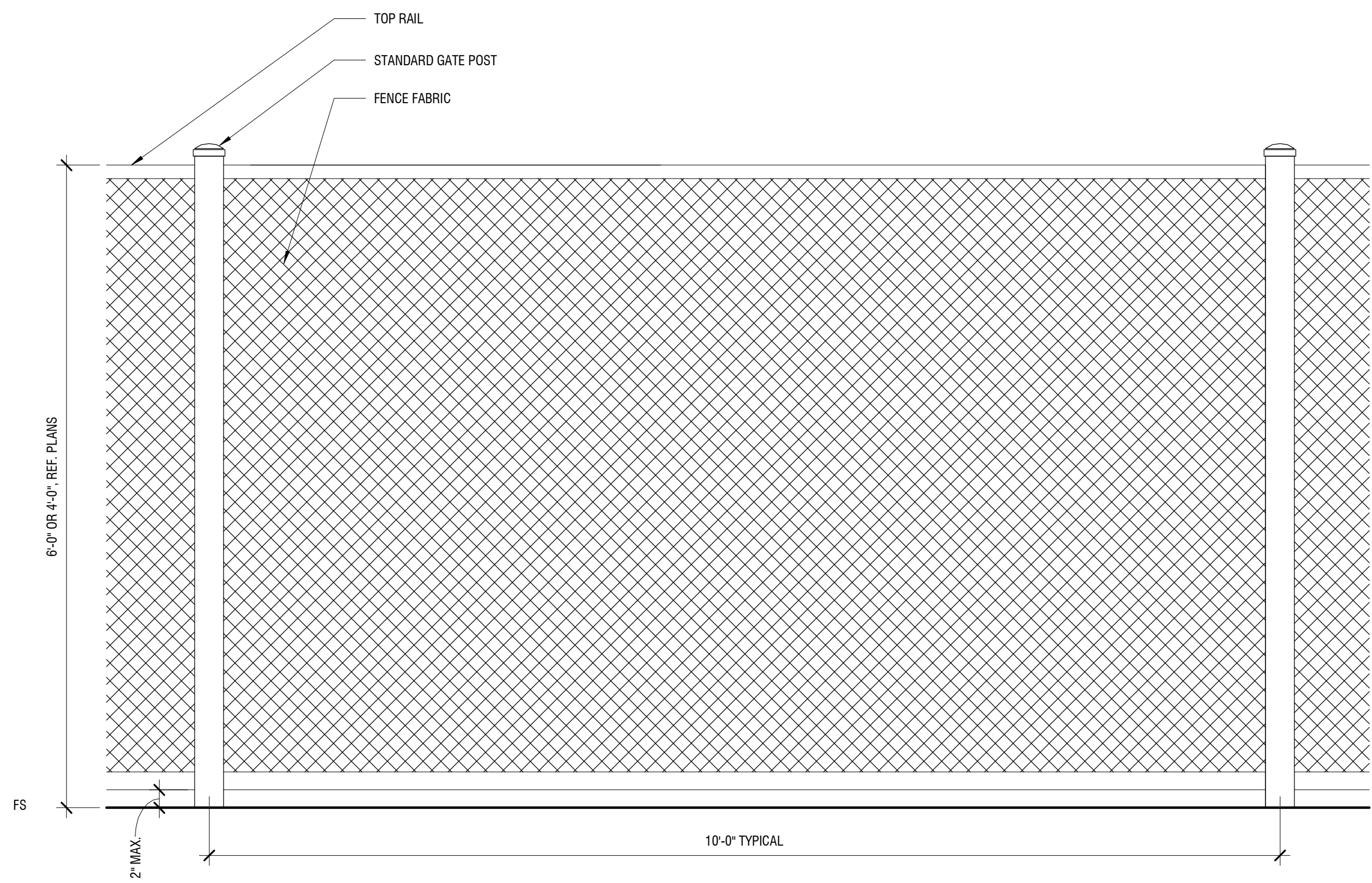
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Portland, OR 97205, USA  
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siggroup@sigm.com

PROJECT  
**Frog Pond Primary School**  
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Wilsonville, OR 97070

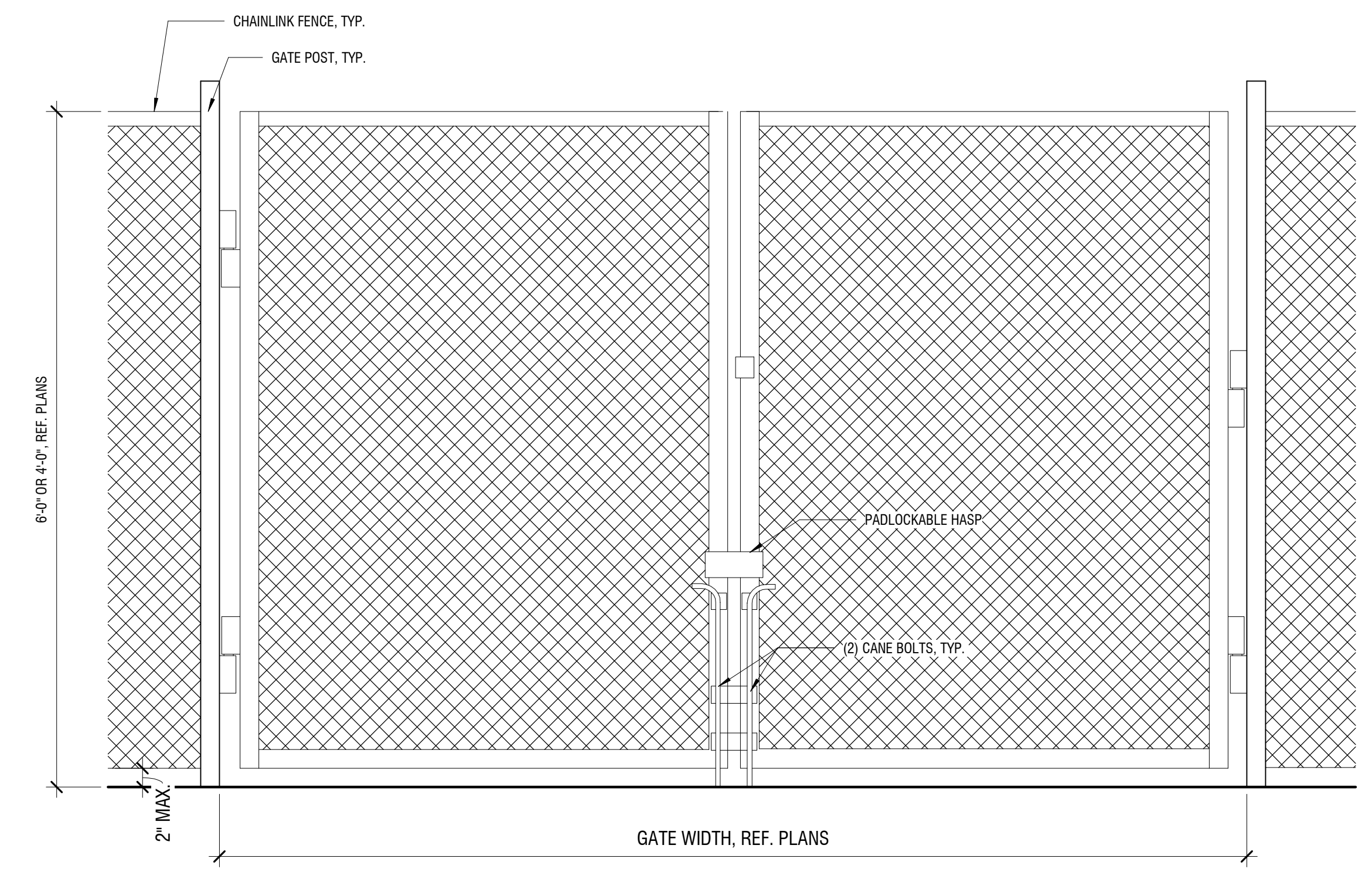
PROJECT NO:  
137469

SHEET TITLE  
**SITE DETAILS**

SHEET NUMBER  
**LU 217**

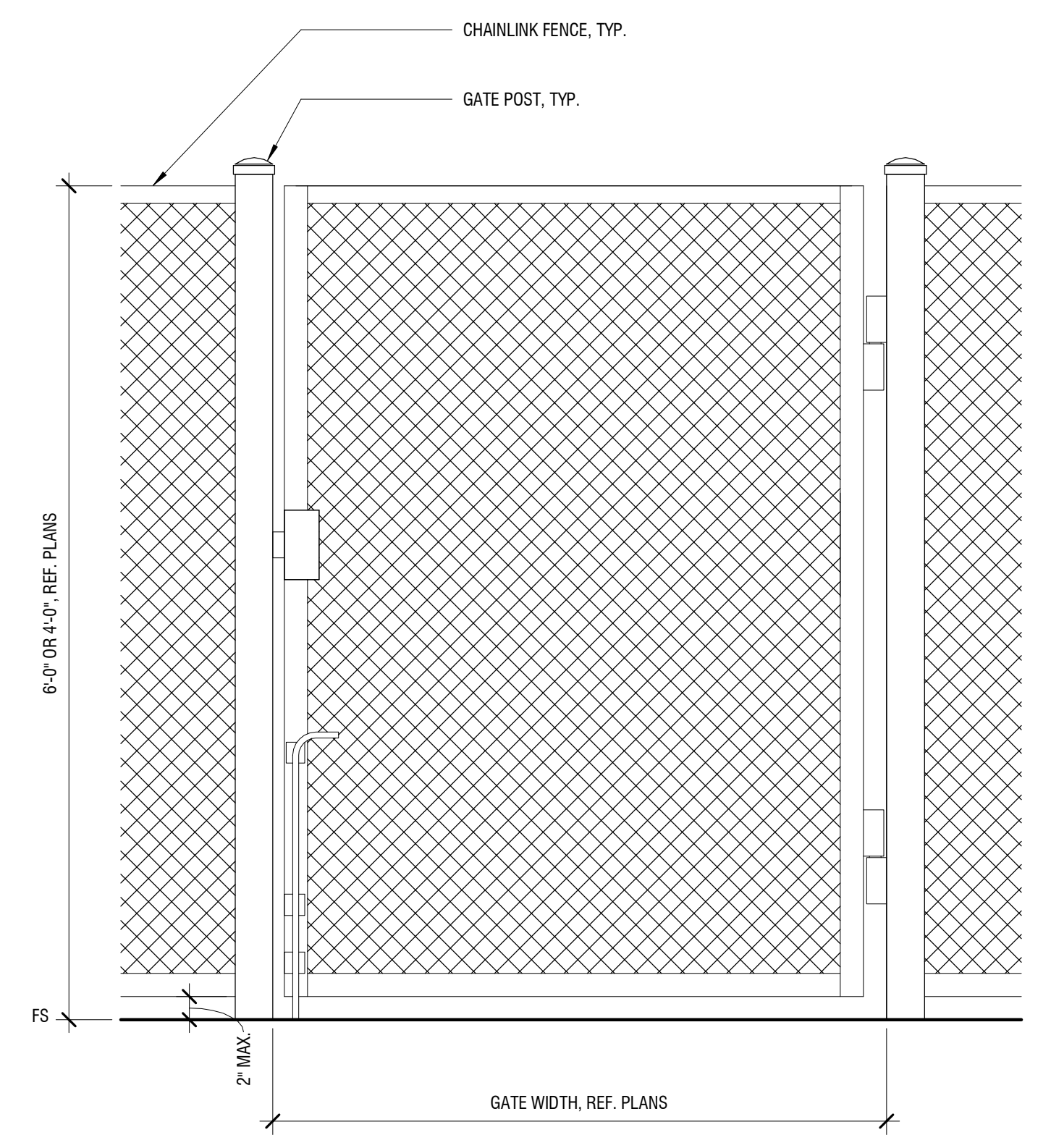


1 FENCE - STANDARD - ELEVATION  
SCALE: 1" = 1'-0"



NOTES: DRILL 3" DEPTH HOLE IN CONCRETE PAVING TO ACCEPT CANE BOLTS; AT CLOSED AND 90 DEGREE OPEN (FOUR HOLES PER DOUBLE SWING GATE).

2 GATE - DOUBLE SWING - ELEVATION  
SCALE: 1" = 1'-0"



3 GATE - SINGLE SWING - ELEVATION  
SCALE: 1" = 1'-0"



FOR BUILDING SIGNAGE AND  
MONUMENT SIGN ELEVATIONS  
SEE SHEET LU 350 BUILDING  
SIGNAGE & MONUMENT PLAN

Item 3.

CLIENT  
West Linn-Wilsonville  
School District

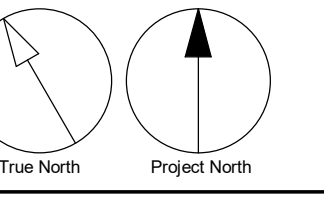


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No.	DESCRIPTION	DATE
	LAND USE APPLICATION	2022-11-04
	LAND USE INCOMPLETENESS RESPONSE	2023-01-17

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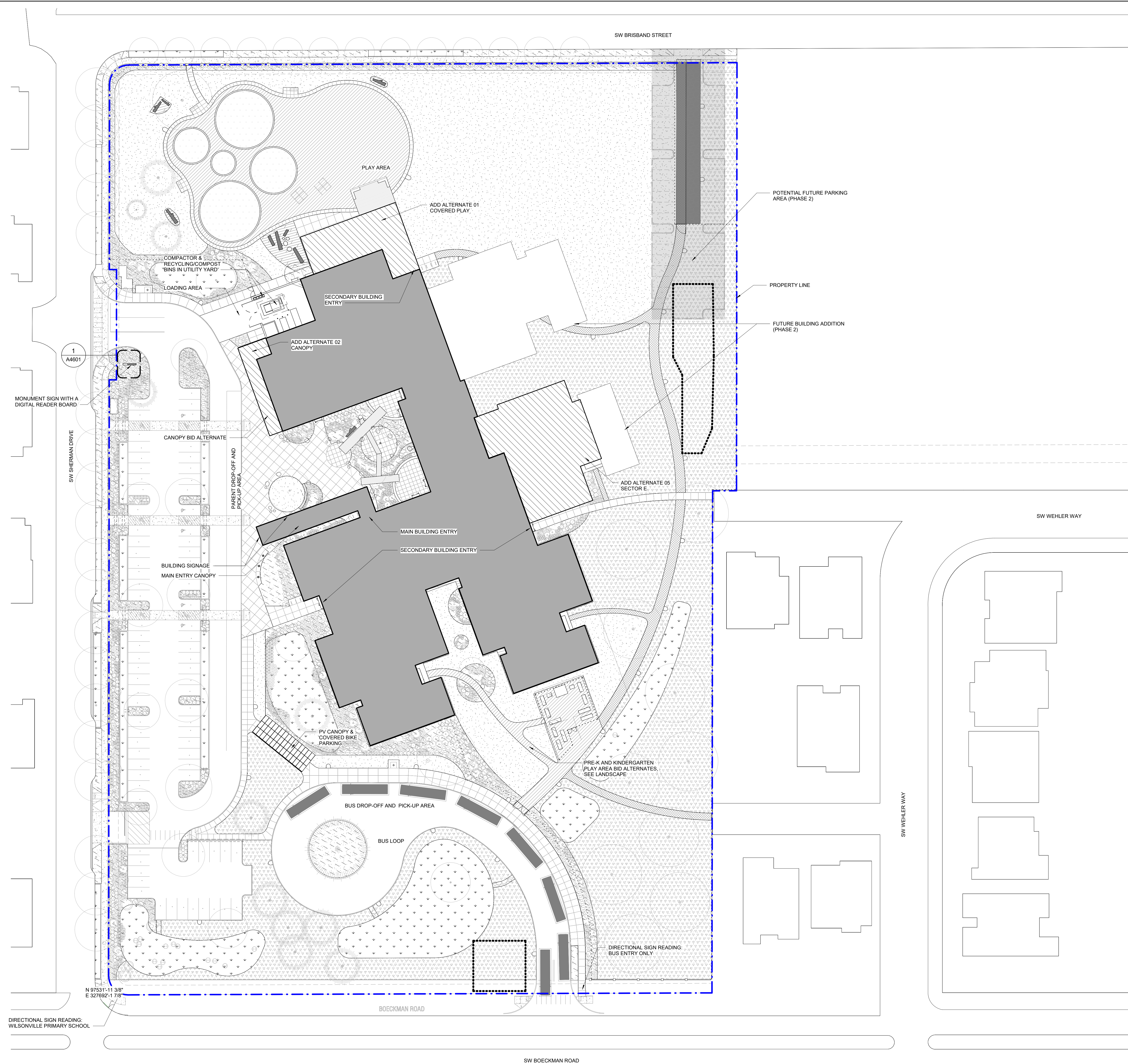
PRIME CONSULTANT  
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Portland, OR 97205, USA  
tel 503 226 8900 fax 503 273 9192  
ibigroup-usa.com

PROJECT  
New Wilsonville Primary  
School  
7151 Boeckman Road  
Wilsonville, OR 97070

PROJECT NO:  
137469

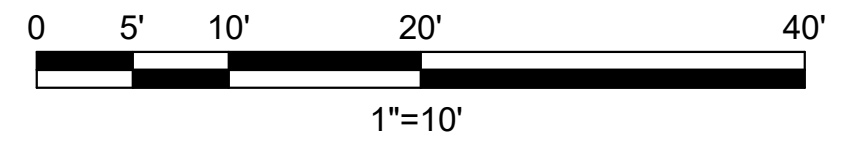
SHEET TITLE  
ARCHITECTURAL SITE  
PLAN - PHASE 1 ONLY

SHEET NUMBER  
**LU 300**



N 97531-11 3/8"  
E 327692-1 7/8"

DIRECTIONAL SIGN READING:  
WILSONVILLE PRIMARY SCHOOL



**1 ARCHITECTURAL SITE PLAN**  
SCALE: 1/32" = 1'-0"

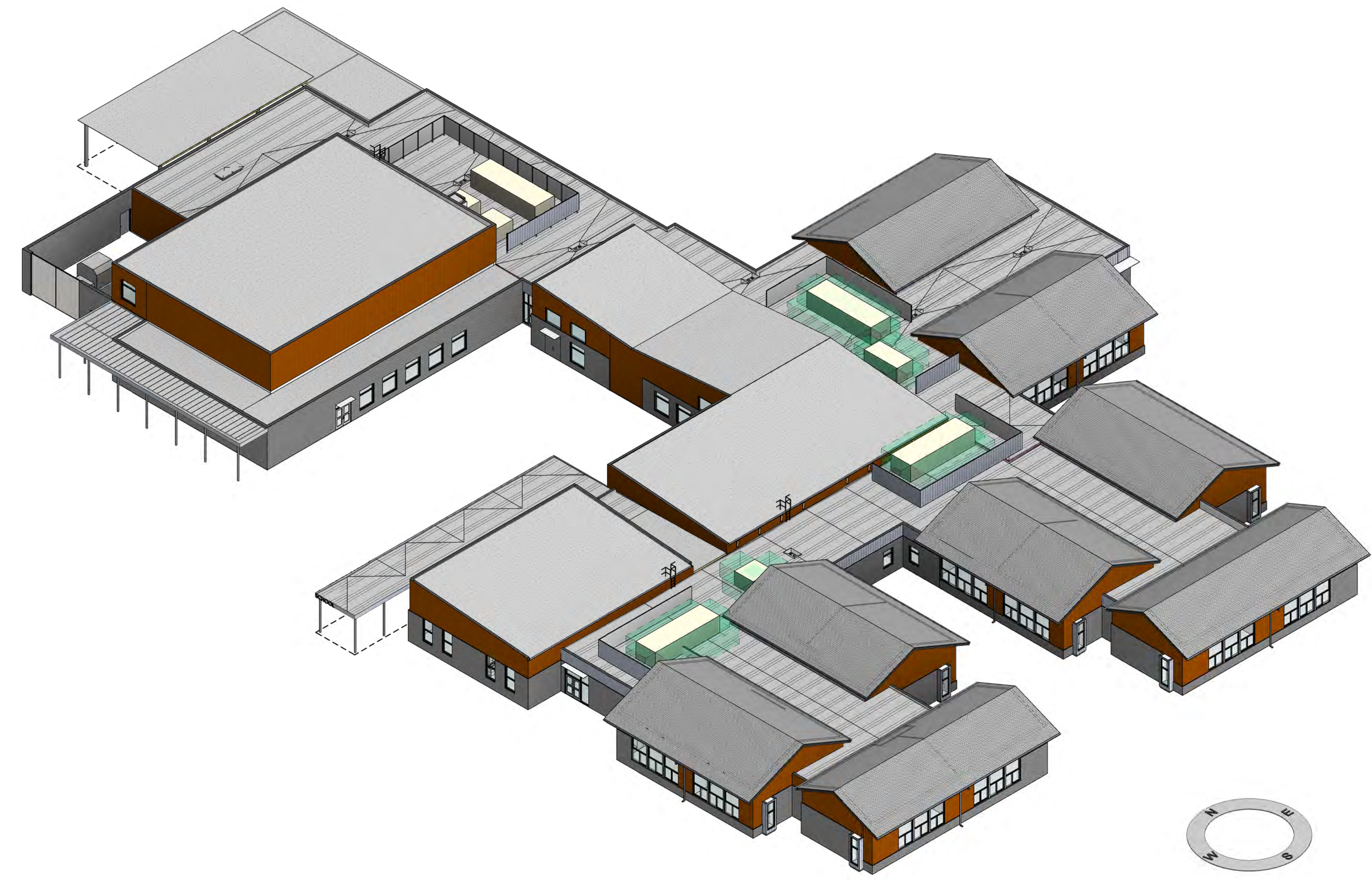
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M:\work\Drawings\137469-Frog Pond-FS\_R0202117469\_FrogPondES\_R22.rvt  
 IBI GROUP  
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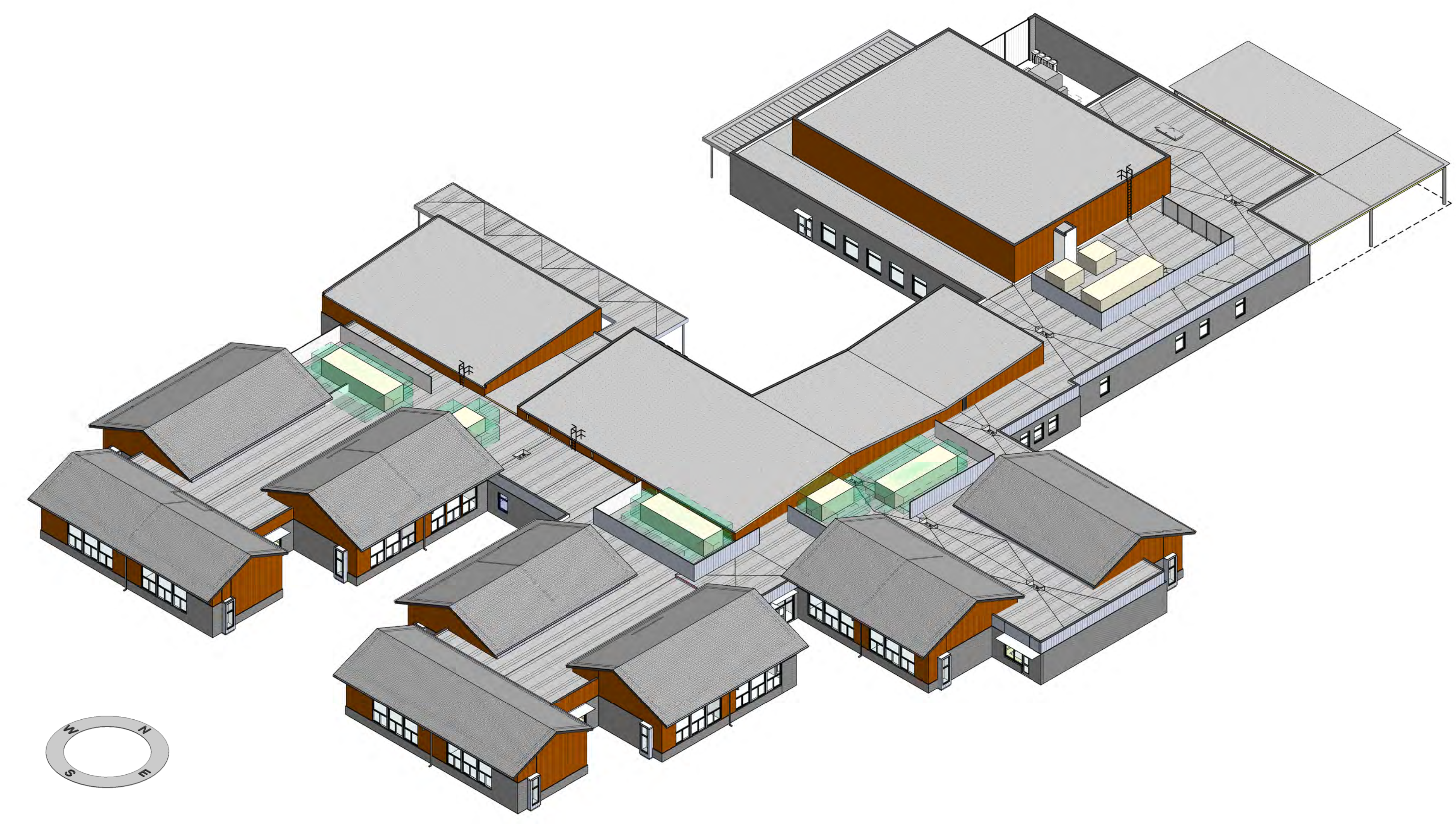


ISSUES		
No.	DESCRIPTION	DATE
	LAND USE APPLICATION	2022-11-04

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**1 OVERALL BUILDING SW**  
 SCALE:



**2 OVERALL BUILDING SE**  
 SCALE:

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PROJECT  
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 7151 Boeckman Road  
 Wilsonville, OR 97070

PROJECT NO:  
 137469

SHEET TITLE  
**BUILDING ISOMETRICS SE  
 & SW - PHASE 1 ONLY**

SHEET NUMBER  
**LU 310**





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1	LAND USE APPLICATION	2022-11-04

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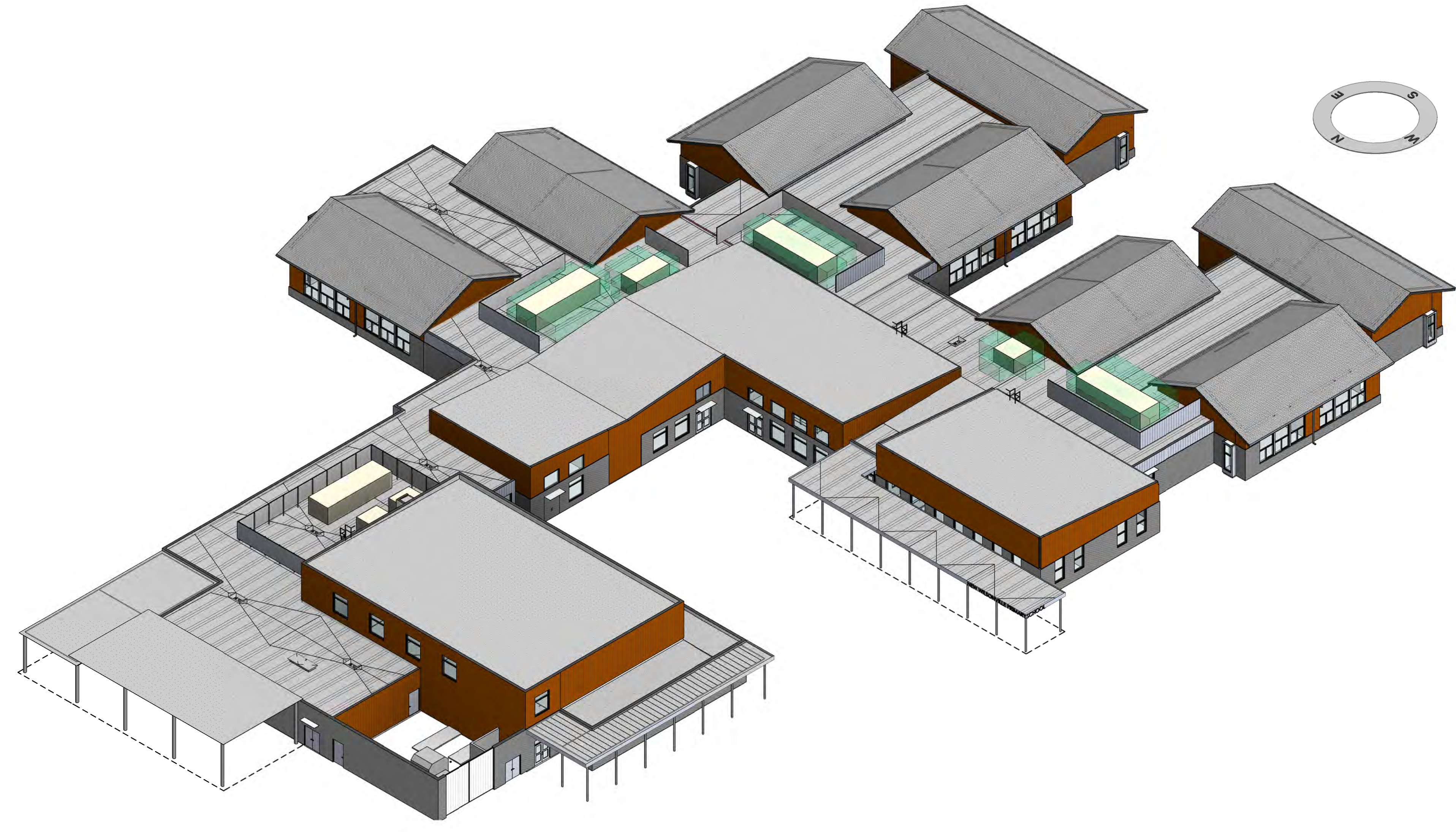
**IBI GROUP**  
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PROJECT  
**New Wilsonville Primary  
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 Wilsonville, OR 97070

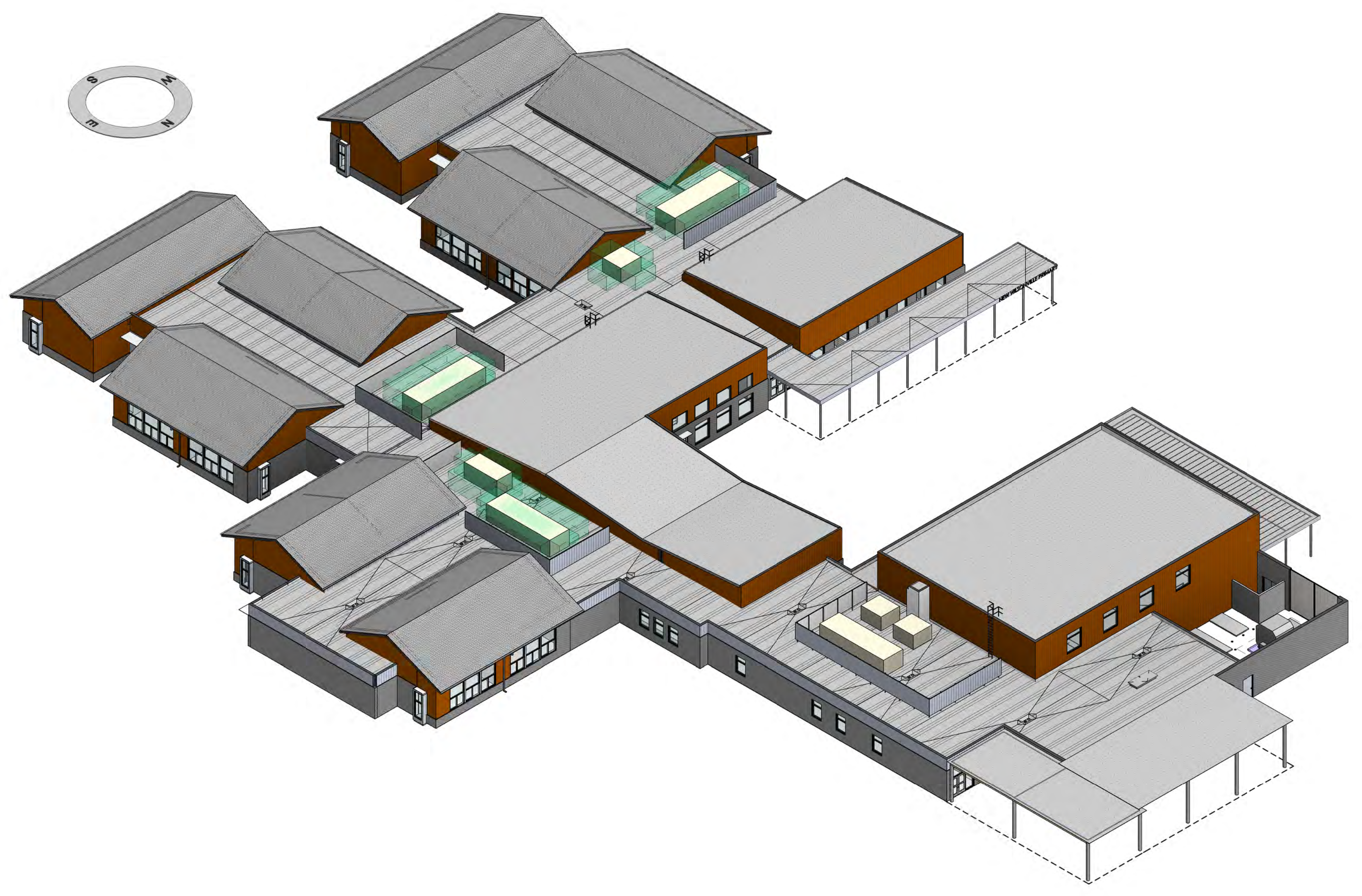
PROJECT NO:  
 137469

SHEET TITLE  
**BUILDING ISOMETRICS NE  
 & NW - PHASE 1 ONLY**

SHEET NUMBER  
**LU 311**



**2 OVERALL BUILDING NW**  
SCALE:



**1 OVERALL BUILDING NE**  
SCALE:



CLIENT  
West Linn-Wilsonville  
School District

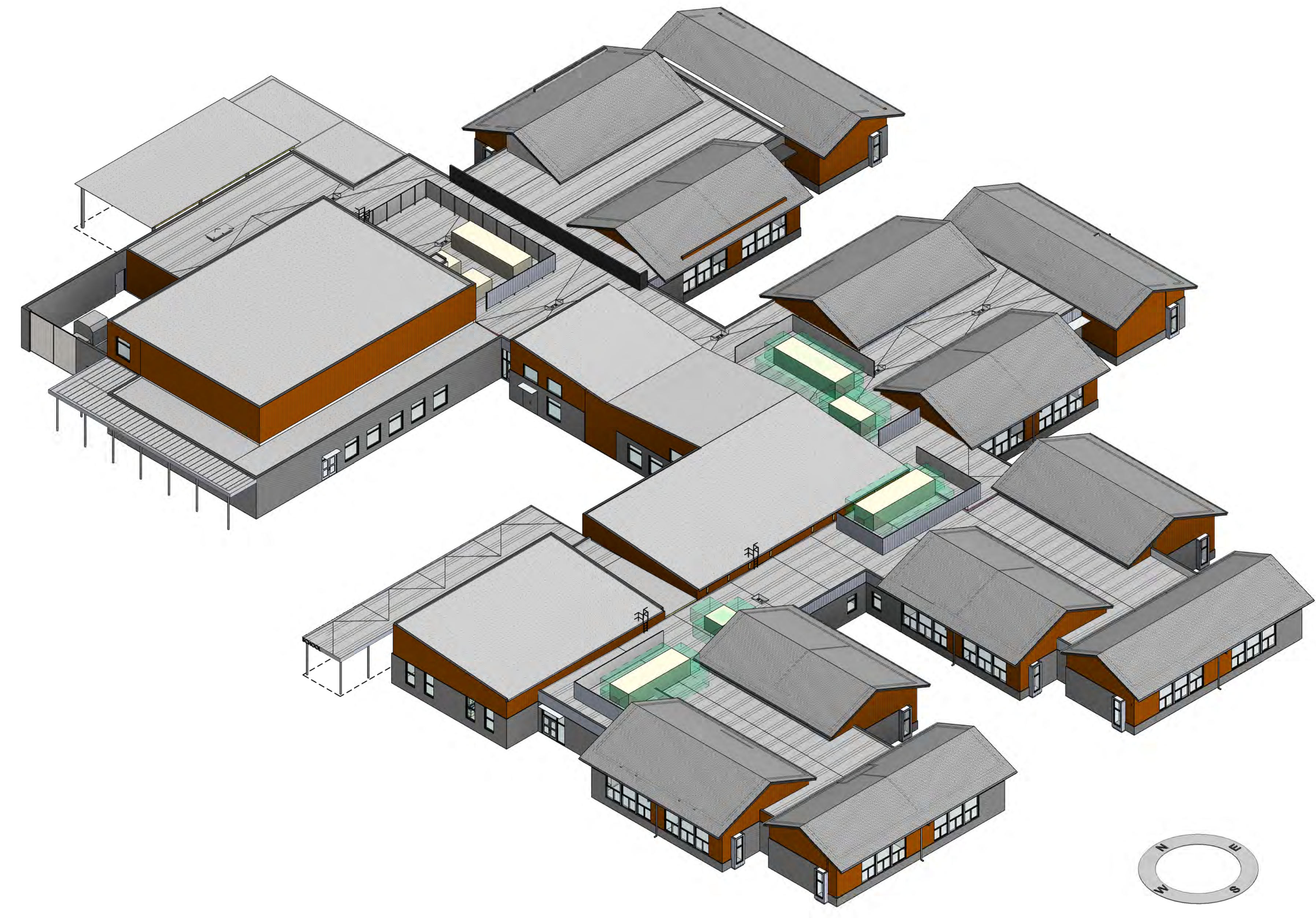


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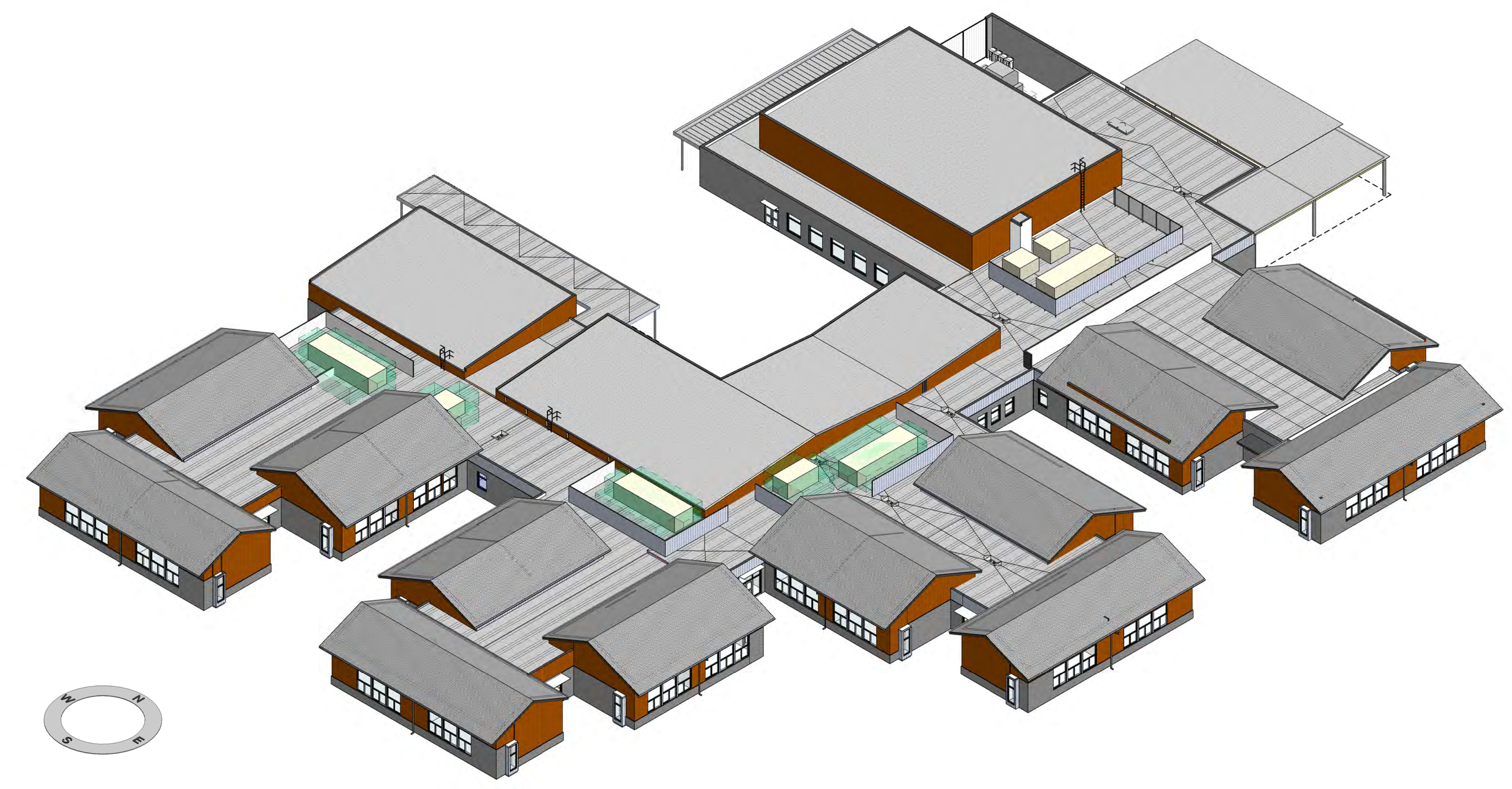
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No.	DESCRIPTION	DATE
	LAND USE APPLICATION	2022-11-04

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**1 OVERALL BUILDING SW**  
SCALE:



**2 OVERALL BUILDING SE**  
SCALE:

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PROJECT  
**New Wilsonville Primary School**  
7151 Boeckman Road  
Wilsonville, OR 97070

PROJECT NO:  
137469

SHEET TITLE  
**BUILDING ISOMETRICS SE  
& SW - PHASE 1 & 2**

SHEET NUMBER  
**LU 312**








**ISSUES**

No.	DESCRIPTION	DATE
	LAND USE APPLICATION	2022-11-04
	LAND USE INCOMPLETENESS RESPONSE	2023-01-17

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PROJECT  
**New Wilsonville Primary School**  
 7151 Boeckman Road  
 Wilsonville, OR 97070

PROJECT NO:  
 137469

SHEET TITLE  
**FLOOR PLAN PHASE 1 ONLY**

SHEET NUMBER  
**LU 320**

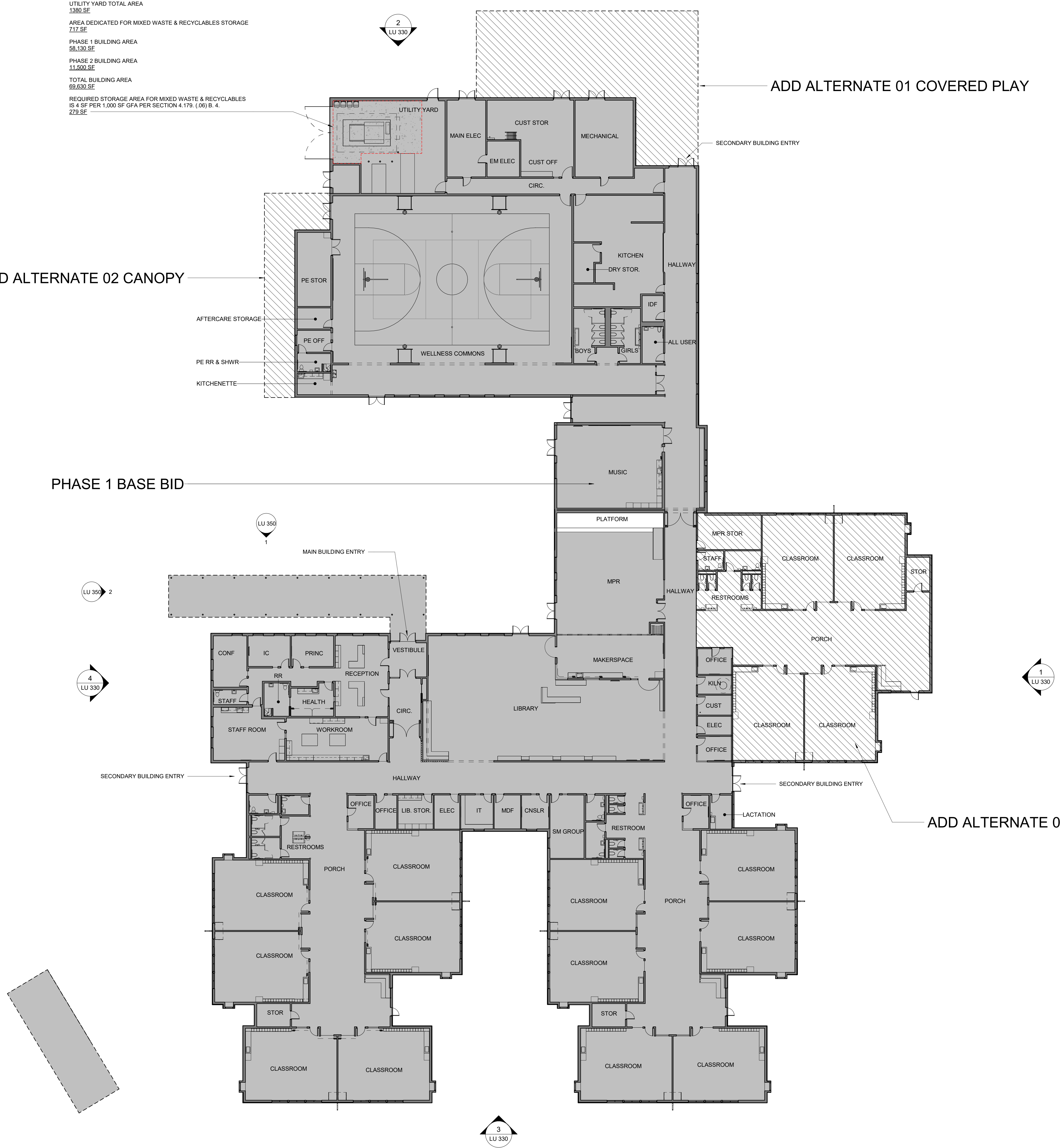
UTILITY YARD TOTAL AREA  
 1380 SF  
 AREA DEDICATED FOR MIXED WASTE & RECYCLABLES STORAGE  
 717 SF  
 PHASE 1 BUILDING AREA  
 58,130 SF  
 PHASE 2 BUILDING AREA  
 11,500 SF  
 TOTAL BUILDING AREA  
 69,630 SF  
 REQUIRED STORAGE AREA FOR MIXED WASTE & RECYCLABLES  
 IS 4 SF PER 1,000 SF GFA PER SECTION 4.179, (.06) B. 4,  
 273 SF

ADD ALTERNATE 02 CANOPY

ADD ALTERNATE 01 COVERED PLAY

PHASE 1 BASE BID

ADD ALTERNATE 05 SECTOR E



**1 OVERALL FLOOR PLAN - PHASE 1 ONLY**  
 SCALE: 1/16" = 1'-0"



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ISSUES		
No.	DESCRIPTION	DATE
	LAND USE APPLICATION	2022-11-04
	INCOMPLETENESS RESPONSE	2023-01-17

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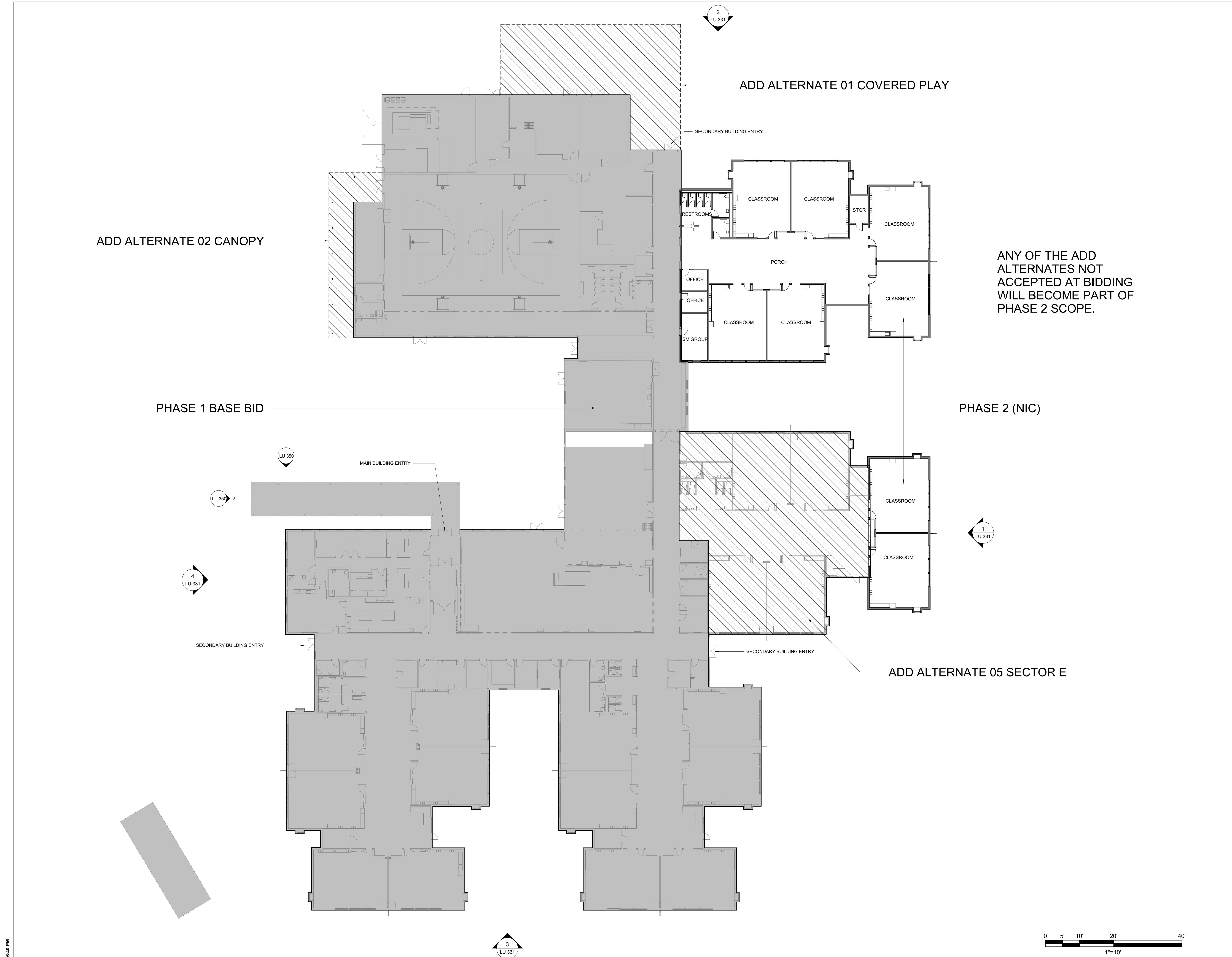
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PROJECT  
**New Wilsonville Primary School**  
7151 Boeckman Road  
Wilsonville, OR 97070

PROJECT NO:  
137469

SHEET TITLE  
**FLOOR PLAN PHASE 1 & PHASE 2**

SHEET NUMBER  
**LU 321**



ADD ALTERNATE 01 COVERED PLAY

SECONDARY BUILDING ENTRY

ADD ALTERNATE 02 CANOPY

RESTROOMS

CLASSROOM

CLASSROOM

STOR.

CLASSROOM

PORCH

OFFICE

OFFICE

SM GROUP

CLASSROOM

CLASSROOM

CLASSROOM

PHASE 1 BASE BID

LU 350

MAIN BUILDING ENTRY

LU 350

LU 331

SECONDARY BUILDING ENTRY

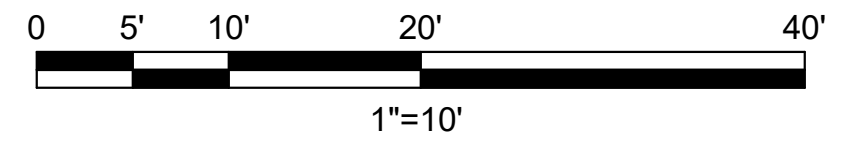
SECONDARY BUILDING ENTRY

ADD ALTERNATE 05 SECTOR E

LU 331

LU 331

**1 OVERALL FLOOR PLAN - PHASE 1 & 2**  
SCALE: 1/16" = 1'-0"





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**ISSUES**

No.	DESCRIPTION	DATE
	LAND USE APPLICATION	2022-11-04
	LAND USE INCOMPLETENESS RESPONSE	2023-01-17

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**CONSULTANTS**

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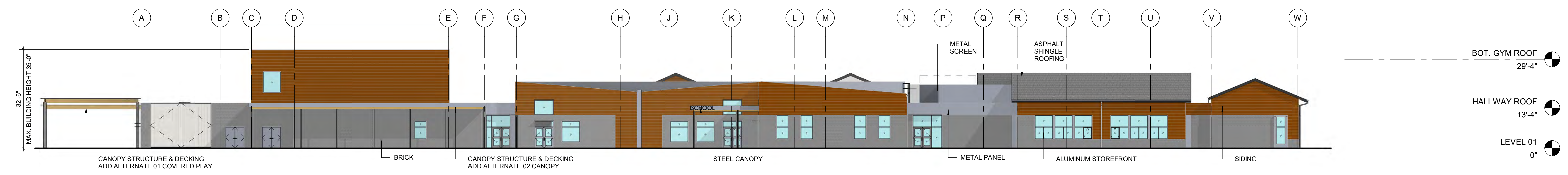
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 tel 503 226 8950 fax 503 273 9192  
 ibigroup@ibigroup.com

**PROJECT**  
**New Wilsonville Primary School**  
 7151 Boeckman Road  
 Wilsonville, OR 97070

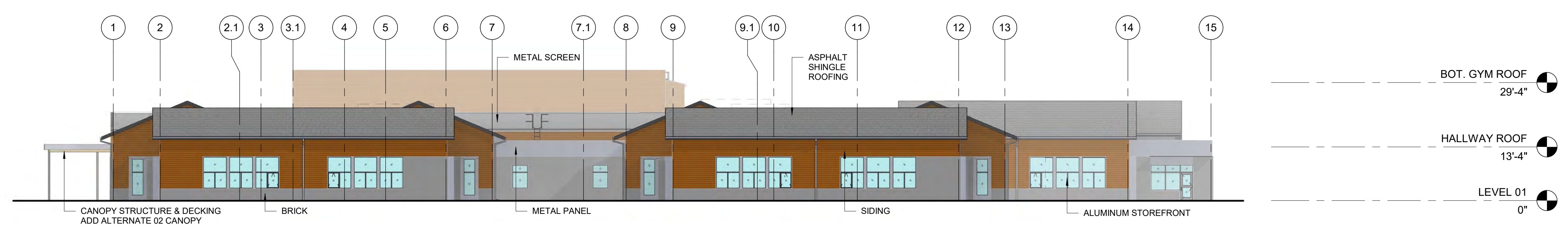
**PROJECT NO.**  
 137469

**SHEET TITLE**  
**BUILDING ELEVATIONS  
 PHASE 1 ONLY**

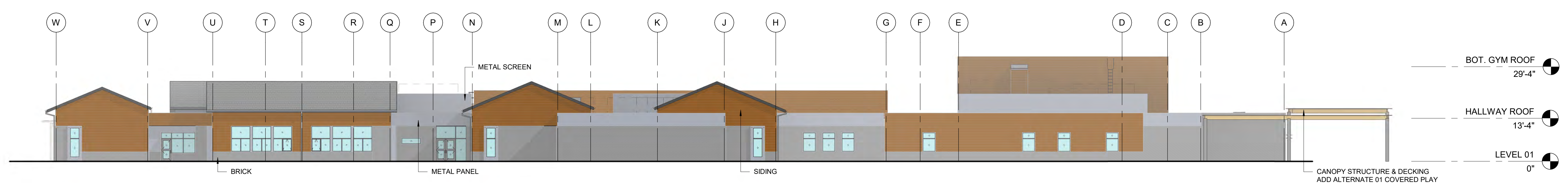
**SHEET NUMBER**  
**LU 330**



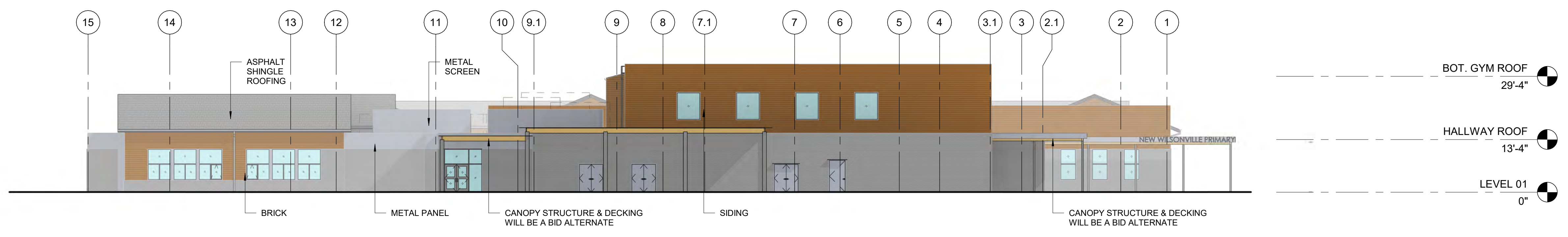
**4 WEST ELEVATION - OVERALL**  
 SCALE: 1/16" = 1'-0"



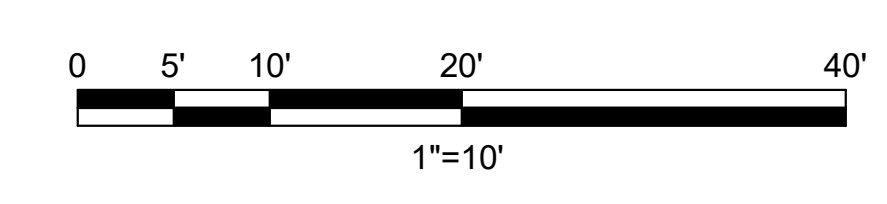
**3 SOUTH ELEVATION - OVERALL**  
 SCALE: 1/16" = 1'-0"



**1 EAST ELEVATION - OVERALL**  
 SCALE: 1/16" = 1'-0"



**2 NORTH ELEVATION - OVERALL**  
 SCALE: 1/16" = 1'-0"






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1	LAND USE APPLICATION	2022-11-04
2	LAND USE INCOMPLETENESS RESPONSE	2023-01-17

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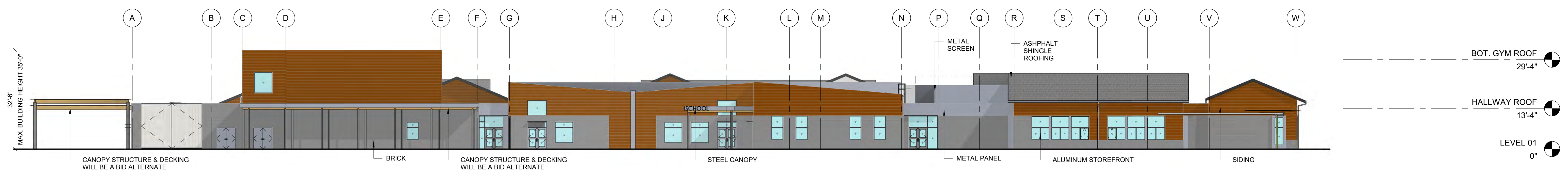
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PROJECT  
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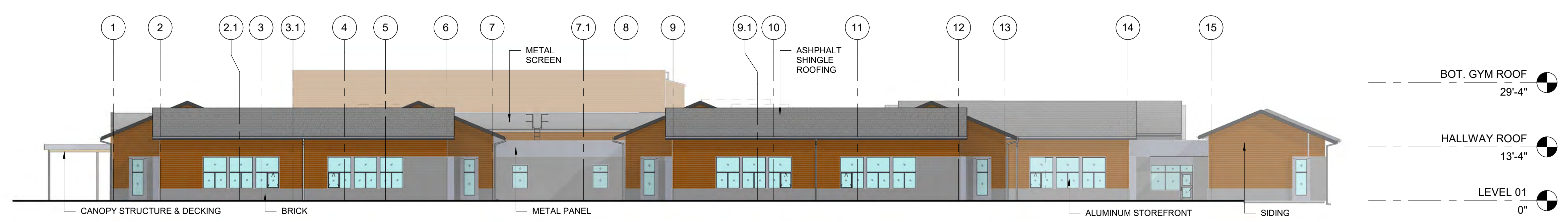
PROJECT NO:  
 137469

SHEET TITLE  
**BUILDING ELEVATIONS  
 PHASE 1 & PHASE 2**

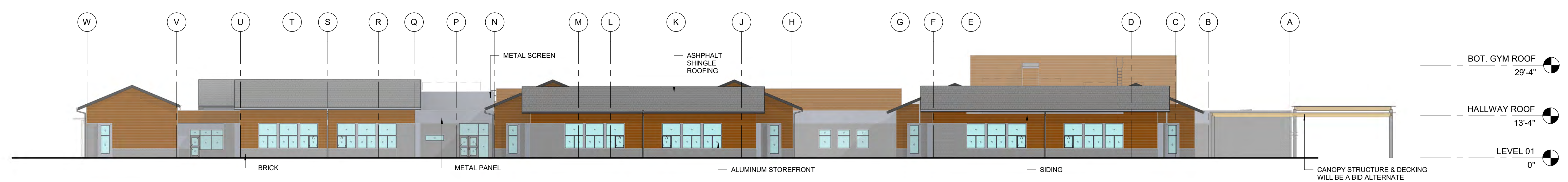
SHEET NUMBER  
**LU 331**



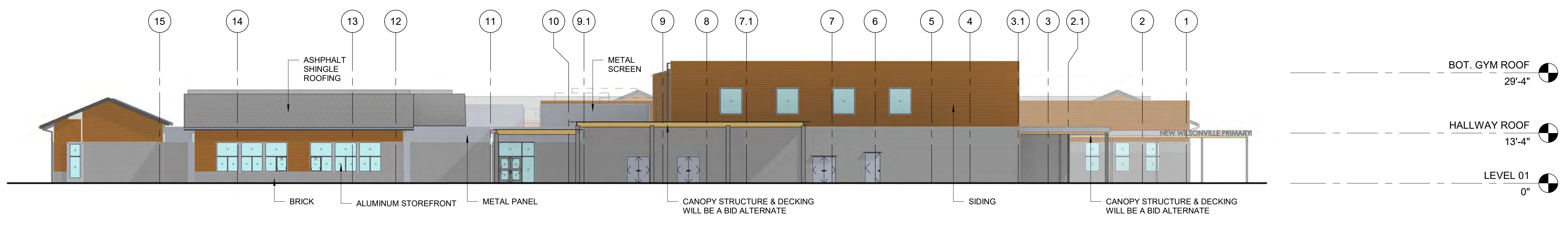
**4 WEST ELEVATION - OVERALL**  
 SCALE: 1/16" = 1'-0"



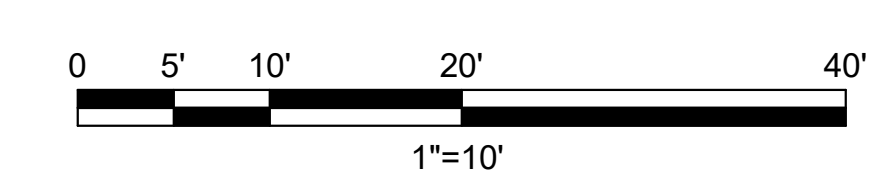
**3 SOUTH ELEVATION - OVERALL**  
 SCALE: 1/16" = 1'-0"



**1 EAST ELEVATION - OVERALL**  
 SCALE: 1/16" = 1'-0"



**2 NORTH ELEVATION - OVERALL**  
 SCALE: 1/16" = 1'-0"





ISSUES		
No.	DESCRIPTION	DATE
	LAND USE APPLICATION	2022-11-04

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PROJECT  
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PROJECT NO:  
 137469

SHEET TITLE  
**EXTERIOR MATERIALS**

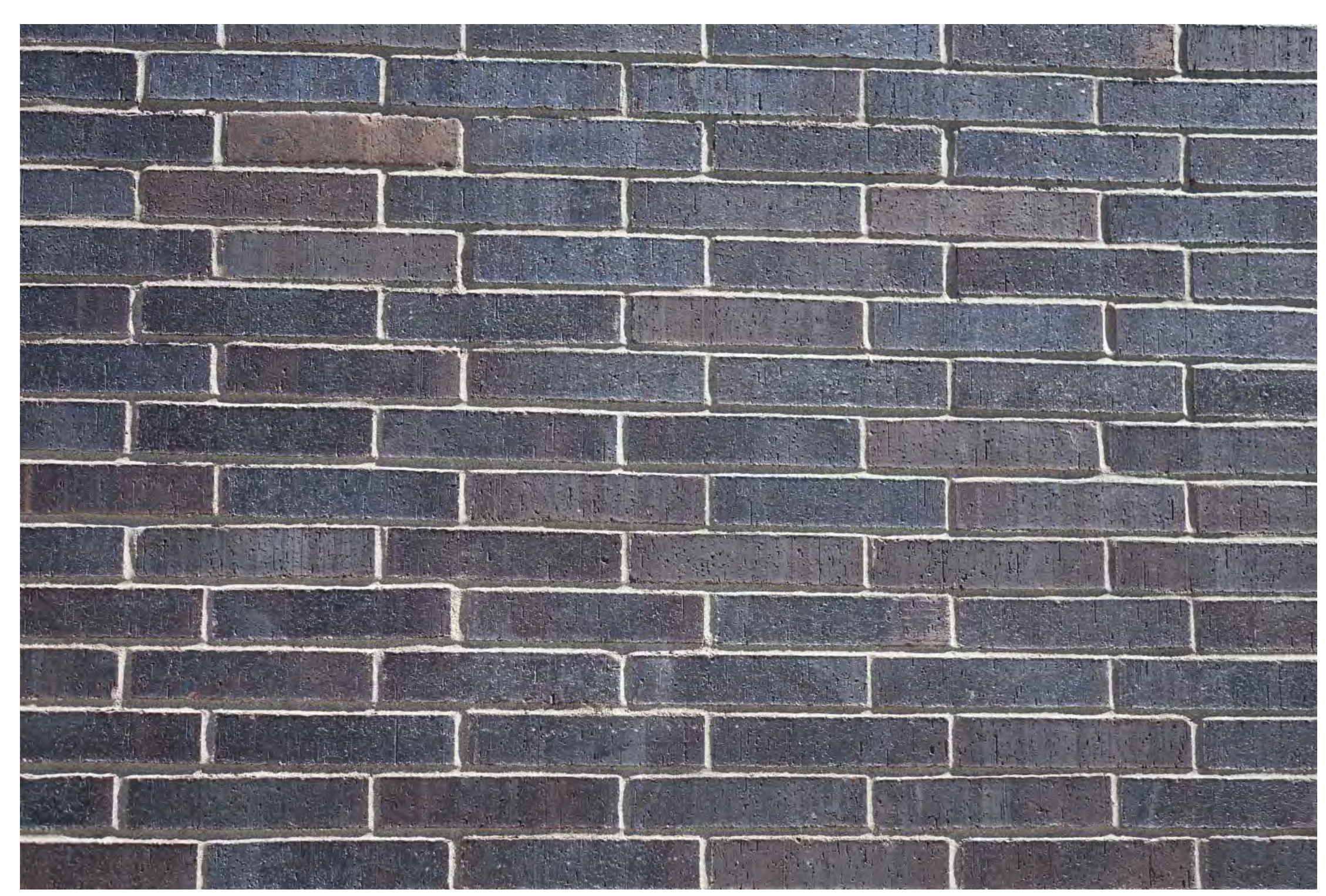
SHEET NUMBER  
**LU 340**



Asphalt Shingle Roofing



Siding



Brick



Canopy Structure and Decking



Aluminum Storefront, Steel Canopy, Metal Panels, and Mechanical Screens

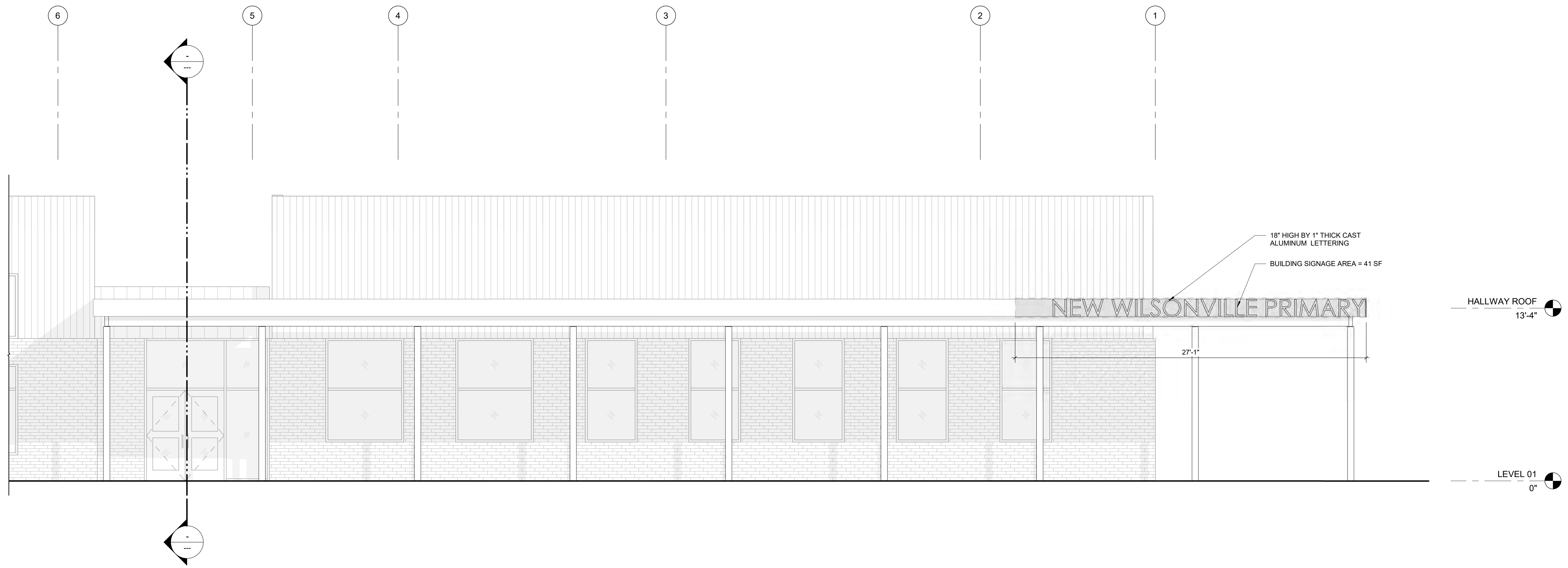




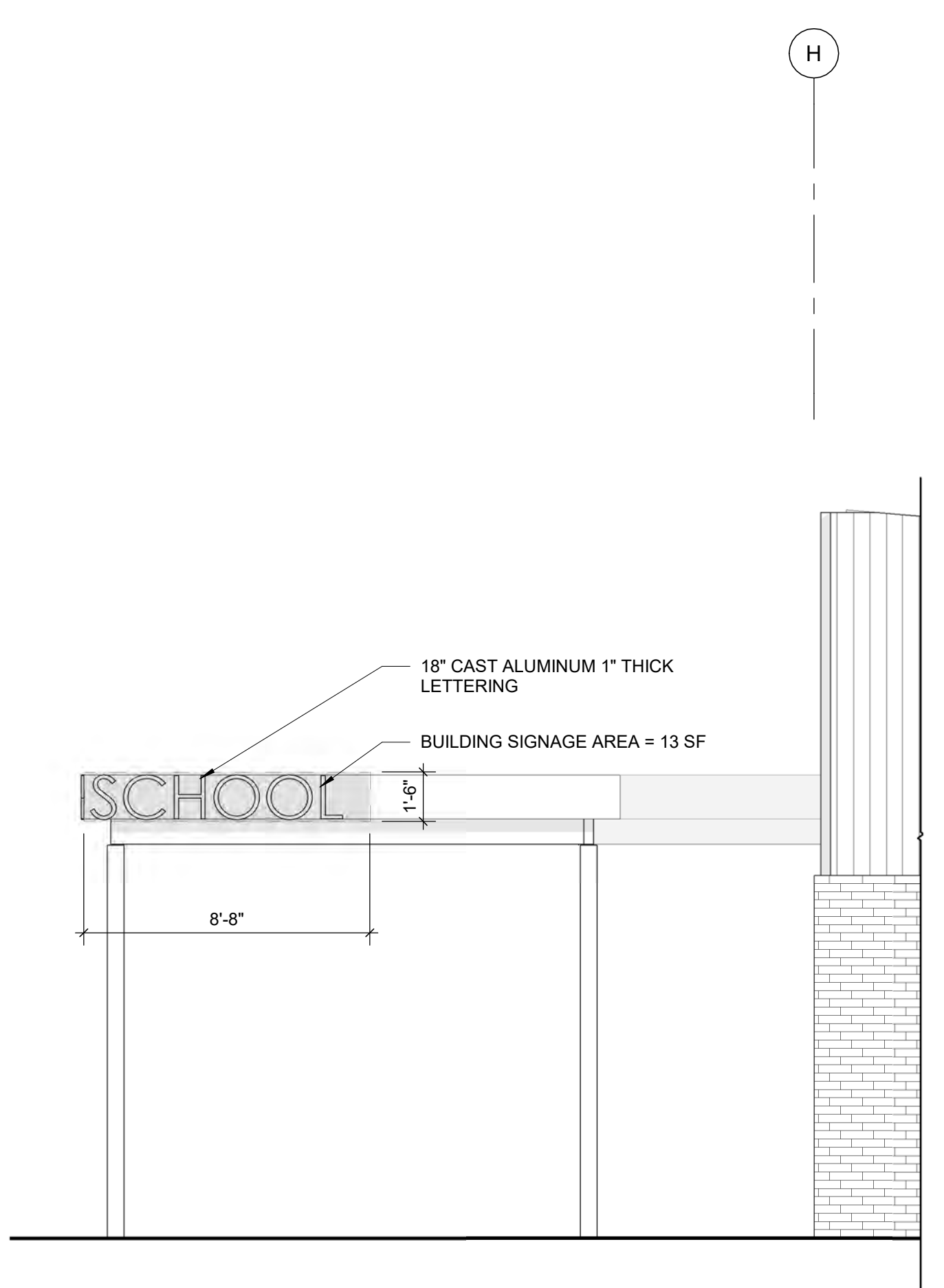
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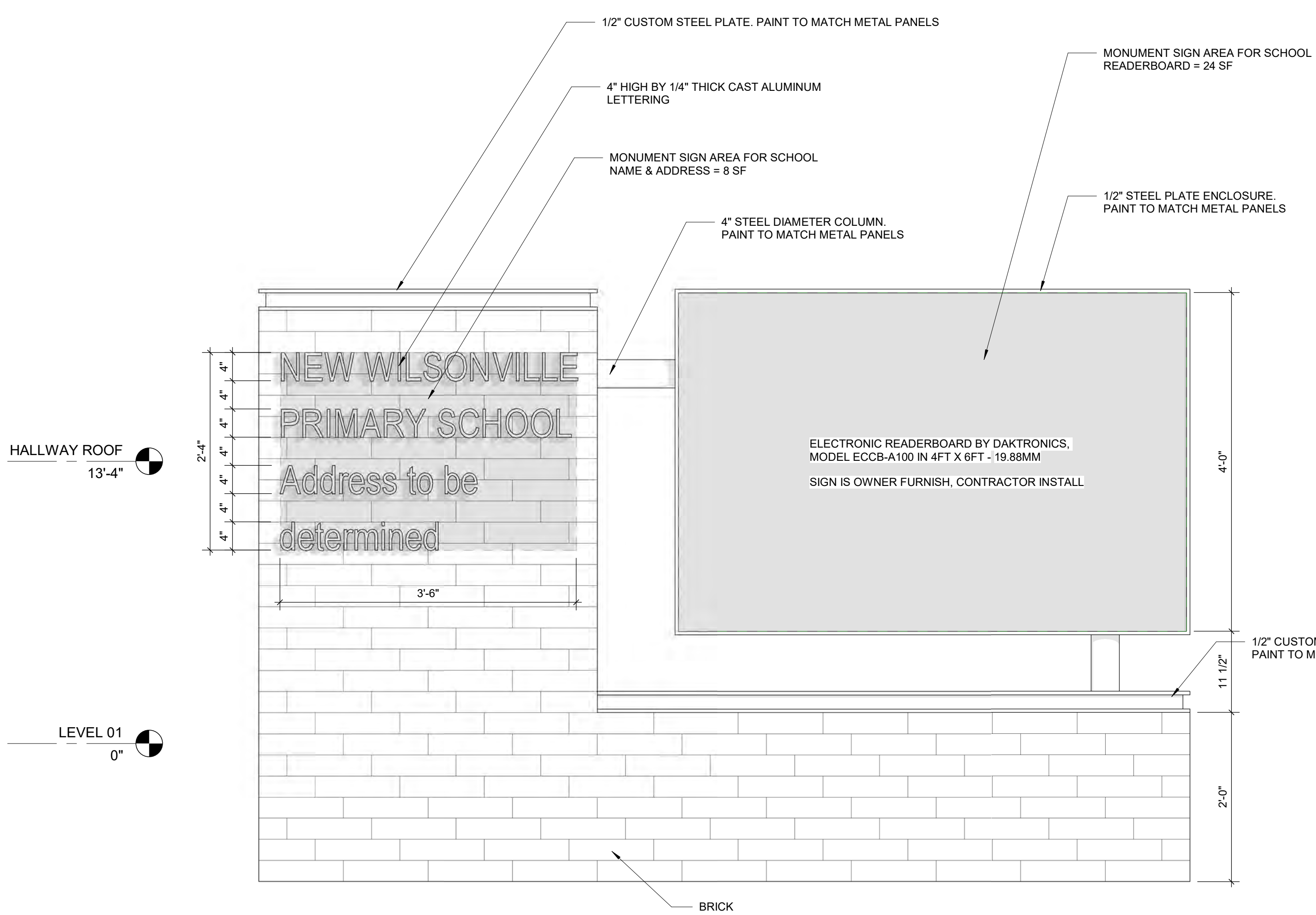
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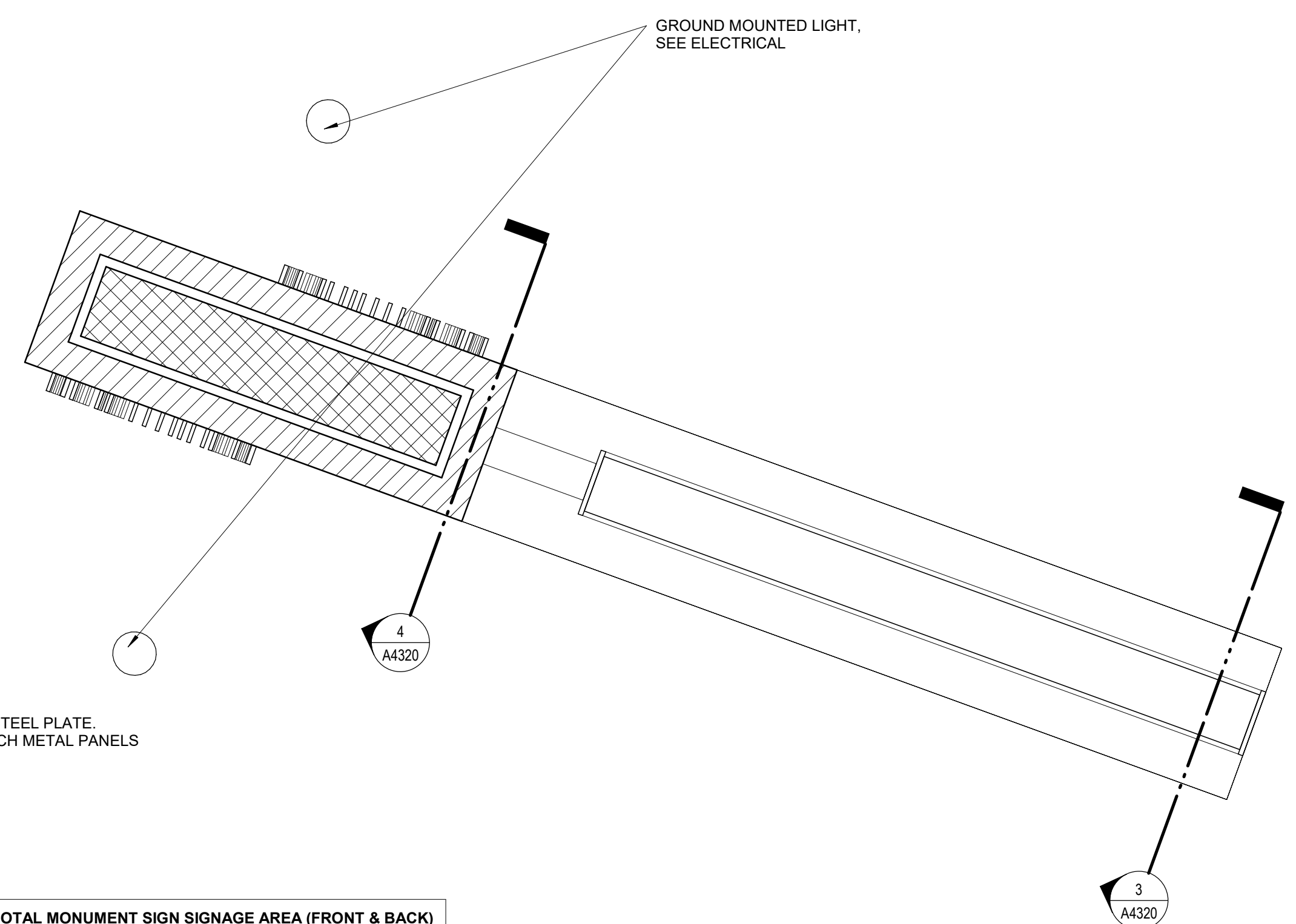
**1 ENTRY CANOPY - FRONT ELEVATION**  
SCALE: 1/4" = 1'-0"



**2 ENTRY CANOPY - SIDE ELEVATION**  
SCALE: 1/4" = 1'-0"



**3 MONUMENT SIGN ELEVATION - FRONT & BACK**  
SCALE: 1" = 1'-0"



**4 MONUMENT SIGN PLAN**  
SCALE: 1" = 1'-0"

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PROJECT  
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School  
7151 Boeckman Road  
Wilsonville, OR 97070

PROJECT NO:  
137469

SHEET TITLE  
BUILDING SIGNAGE &  
MONUMENT SIGN

SHEET NUMBER  
**LU 350**





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No.	DESCRIPTION	DATE
1	LAND USE APPLICATION	2022-11-04
2	LAND USE INCOMPLETE BUSINESS RESPONSE	2023-01-17

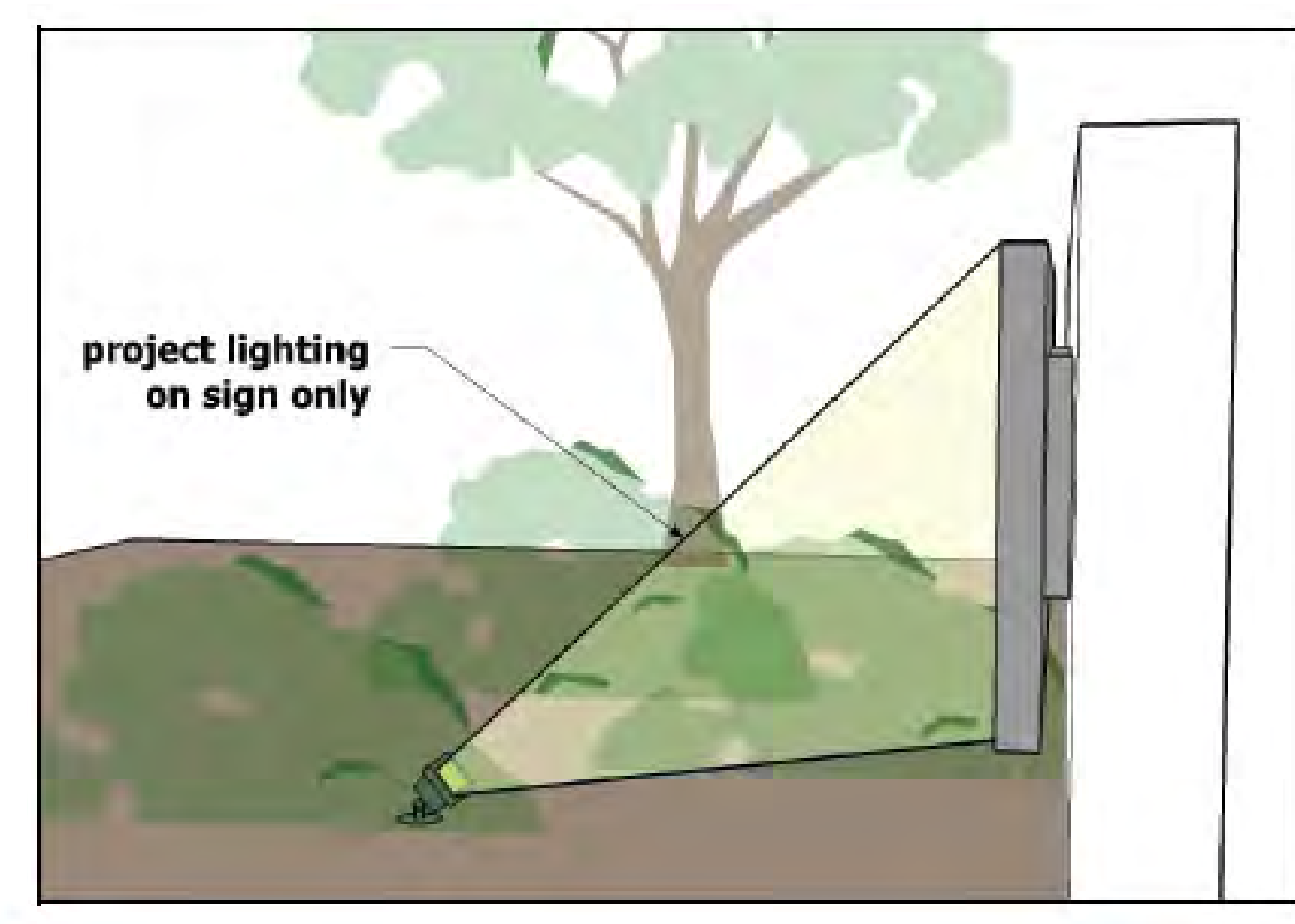
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**LUMINAIRE SCHEDULE - LAND USE**

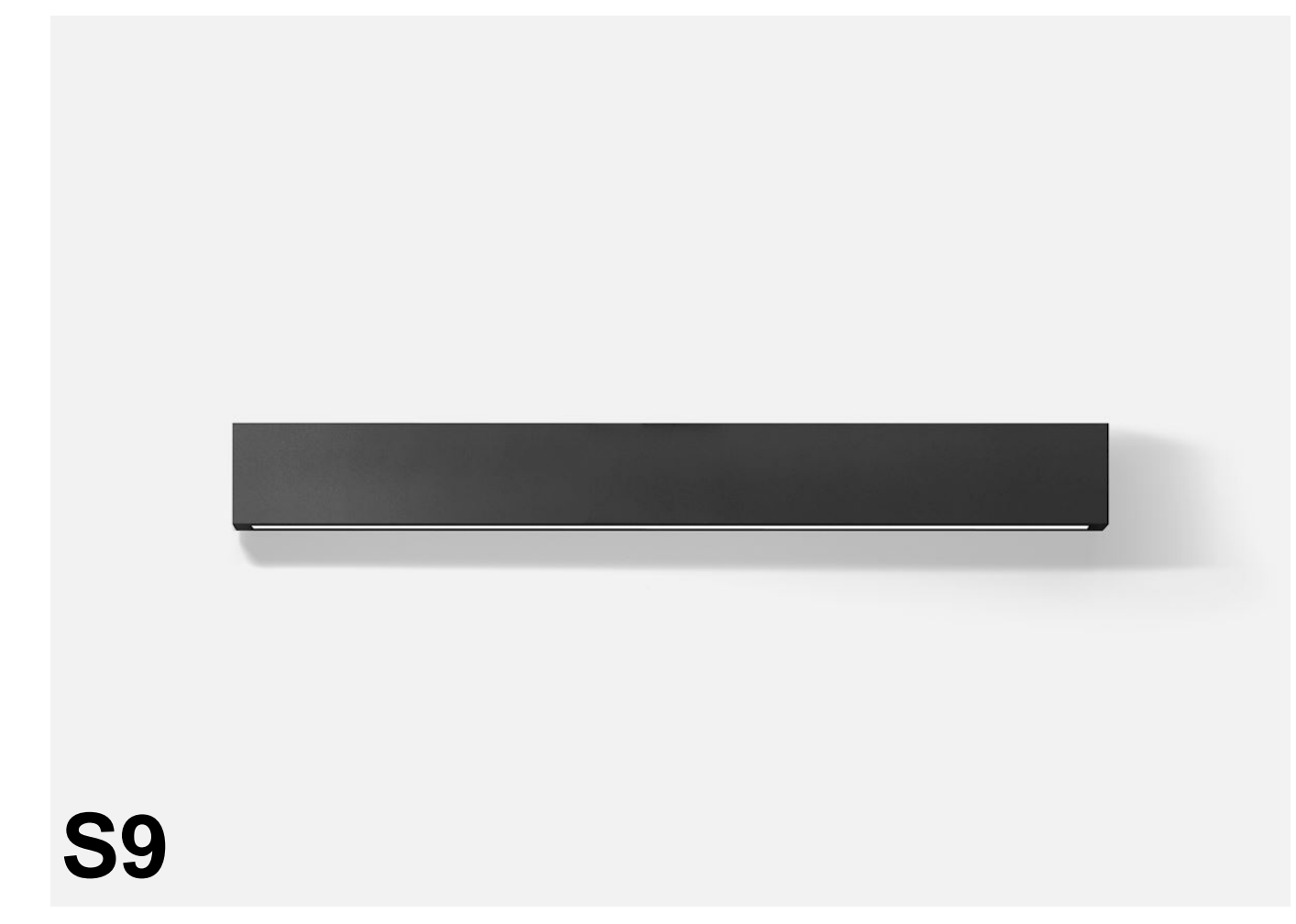
TAG	DESCRIPTION	LAMP			CCT	MANUFACTURER	MODEL	POWER SUPPLY		VOLTAGE	LOAD	MOUNTING		COMMENTS
		TYPE	LUMENS	CRI				DRIVER	DIMMING TYPE			TYPE	HEIGHT	
S1C	AREA LIGHT WITH TYPE 4 DISTRIBUTION MOUNTED TO ROUND STRAIGHT 20-FOOT POLE	LED	5000	80	3000K	LITHONIA	RADPT LED P2 30K ASY MVOLT RADPT20 NLTAR2 DDBXD POLE: LITHONIA RSA 20' 4C T20 DDBXD	INTEGRAL ELECTRONIC	0-10V	277 V	38.0 W	POLE	20'-0"	CONFIRM POLE FOOTING REQUIREMENTS WITH STRUCTURAL ENGINEER
S1C-HS	AREA LIGHT WITH TYPE 4 DISTRIBUTION MOUNTED TO ROUND STRAIGHT 20-FOOT POLE, PROVIDE WITH HOUSE SIDE SHIELD	LED	5000	80	3000K	LITHONIA	RADPT LED P2 30K ASY MVOLT HS RADPT20 NLTAR2 DDBXD POLE: LITHONIA RSA 20' 4C T20 DDBXD	INTEGRAL ELECTRONIC	0-10V	277 V	38.0 W	POLE	20'-0"	CONFIRM POLE FOOTING REQUIREMENTS WITH STRUCTURAL ENGINEER
S2A	PEDESTRIAN LIGHT WITH TYPE 3 DISTRIBUTION MOUNTED TO ROUND STRAIGHT 10-FOOT POLE	LED	3000	80	3000K	LITHONIA	RADPT LED P1 30K PATH MVOLT RADPT20 NLTAR2 DDBXD POLE: LITHONIA RSA 10' 4C T20 DDBXD	INTEGRAL ELECTRONIC	0-10V	277 V	25.0 W	POLE	10'-0"	CONFIRM POLE FOOTING REQUIREMENTS WITH STRUCTURAL ENGINEER
S2A-HS	PEDESTRIAN LIGHT WITH TYPE 3 DISTRIBUTION MOUNTED TO ROUND STRAIGHT 10-FOOT POLE, PROVIDE WITH HOUSE SIDE SHIELD	LED	3000	80	3000K	LITHONIA	RADPT LED P1 30K PATH MVOLT HS RADPT20 NLTAR2 DDBXD POLE: LITHONIA RSA 10' 4C T20 DDBXD	INTEGRAL ELECTRONIC	0-10V	277 V	25.0 W	POLE	10'-0"	CONFIRM POLE FOOTING REQUIREMENTS WITH STRUCTURAL ENGINEER
S2B	PEDESTRIAN LIGHT WITH TYPE 5 DISTRIBUTION MOUNTED TO ROUND STRAIGHT 12-FOOT POLE	LED	5000	80	3000K	LITHONIA	RADPT LED P2 30K SYM MVOLT RADPT20 NLTAR2 DDBXD POLE: LITHONIA RSA 12' 4C T20 DDBXD	INTEGRAL ELECTRONIC	0-10V	277 V	38.0 W	POLE	12'-0"	CONFIRM POLE FOOTING REQUIREMENTS WITH STRUCTURAL ENGINEER
S2C	PEDESTRIAN LIGHT WITH TYPE 4 DISTRIBUTION MOUNTED TO ROUND STRAIGHT 10-FOOT POLE	LED	3000	80	3000K	LITHONIA	RADPT LED P1 30K ASY MVOLT RADPT20 NLTAR2 DDBXD POLE: LITHONIA RSA 10' 4C T20 DDBXD	INTEGRAL ELECTRONIC	0-10V	277 V	25.0 W	POLE	10'-0"	CONFIRM POLE FOOTING REQUIREMENTS WITH STRUCTURAL ENGINEER
S4	12-INCH WIDE WALL MOUNTED LUMINAIRE WITH DIRECT DISTRIBUTION ONLY	LED	1024	80	3000K	BEGA	22360 K3	INTEGRAL ELECTRONIC	0-10V	277 V	20.5 W	WALL	8'-0", UON	
S5	BACK-OF-HOUSE WALL PACK	LED	2900	80	3000K	LITHONIA	WPX1 LED P2 30K MVOLT	INTEGRAL ELECTRONIC	0-10V	277 V	24.0 W	WALL	8'-0"	
S6	GROUND MOUNTED FLOOD LIGHT	LED	406	80	3000K	BK LIGHTING	DS LED e65 WFL A9 FINISH 12 11 A 360SL	INTEGRAL ELECTRONIC	ON-BOARD	277 V	7.0 W	GRADE	-	PROVIDE WITH ACCESSORIES TO ALLOW FOR VERTICAL ADJUSTMENT
S9	60-INCH WALL MOUNTED LINEAR LUMINAIRE WITH DIRECT DISTRIBUTION ONLY	LED	1399	80	3000K	BEGA	44419 K3	INTEGRAL ELECTRONIC	0-10V	277 V	36.0 W	WALL	10'-0"	
S10	5-INCH ROUND SURFACE MOUNTED DOWNLIGHT WITH DECORATIVE LENS	LED	591	80	3000K	BEGA	66056 K3	INTEGRAL ELECTRONIC	0-10V	277 V	6.4 W	SURFACE	-	
S11	FLAGPOLE MOUNTED DOWNLIGHT AT TOP OF POLE	LED	1072	90	3000K	CONCORD AMERICAN	BEACON PLUS QUAD LIGHT	REMOTE ELECTRONIC	SWITCHED	277 V	12.0 W	SURFACE	-	LOCATE REMOTE POWER SUPPLY IN HANDHOLE ADJACENT TO FLAGPOLE



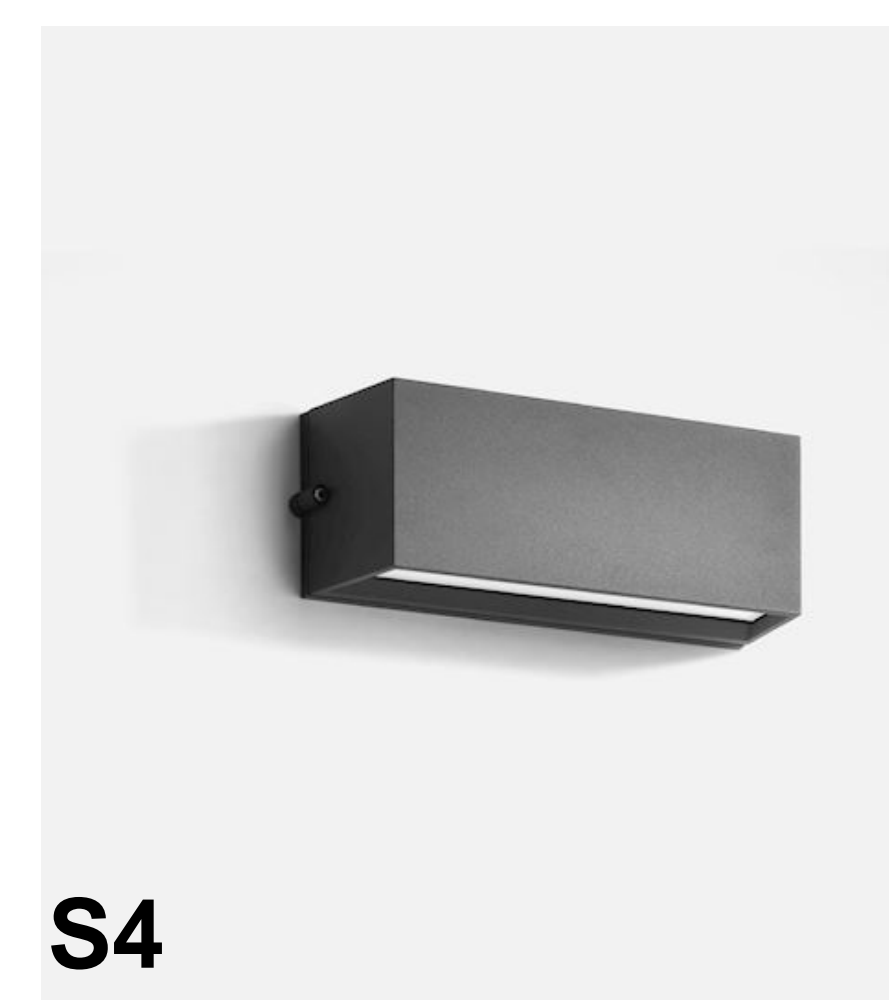
S6



S1  
S1-HS  
S2A  
S2A-HS  
S2C



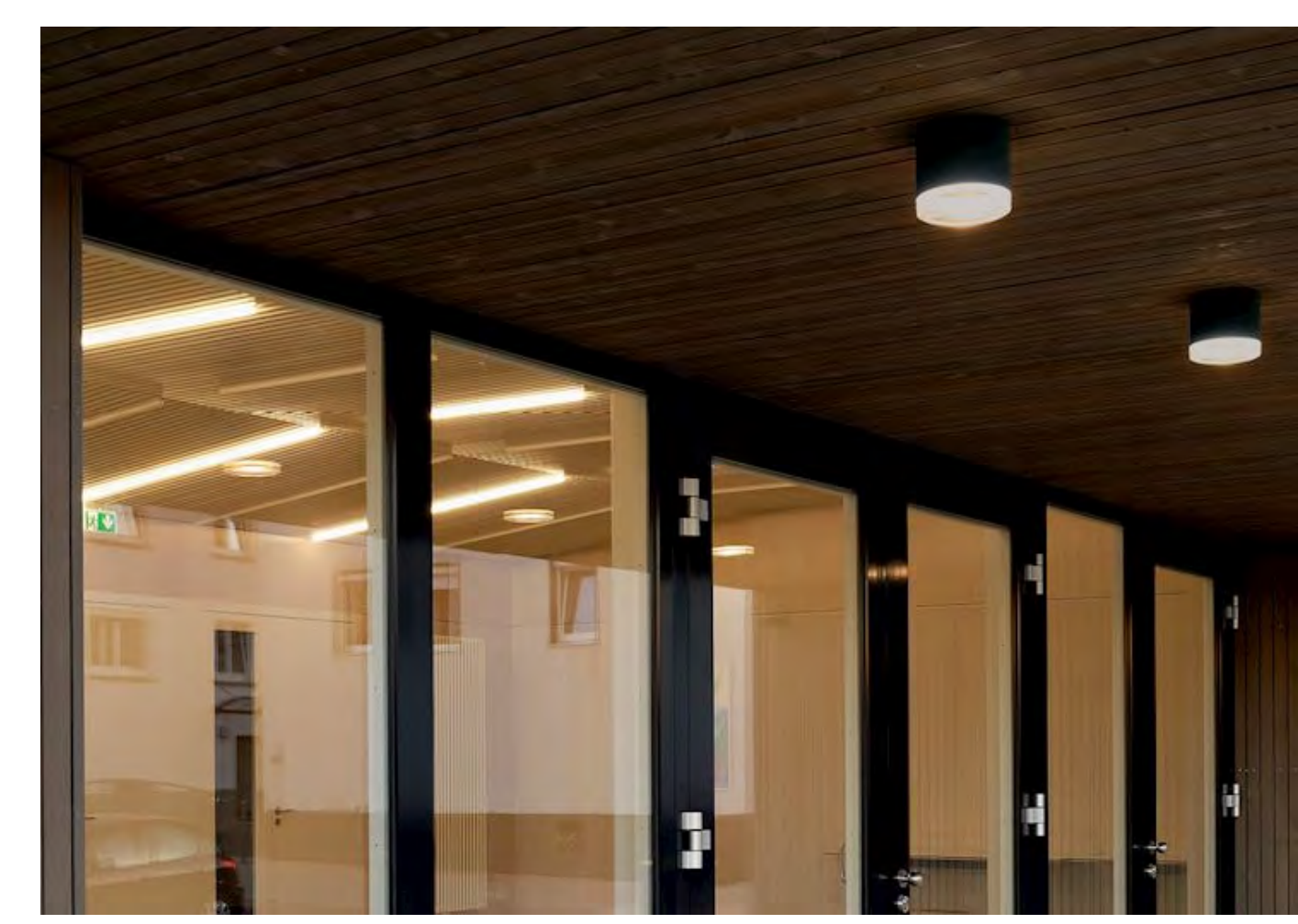
S9



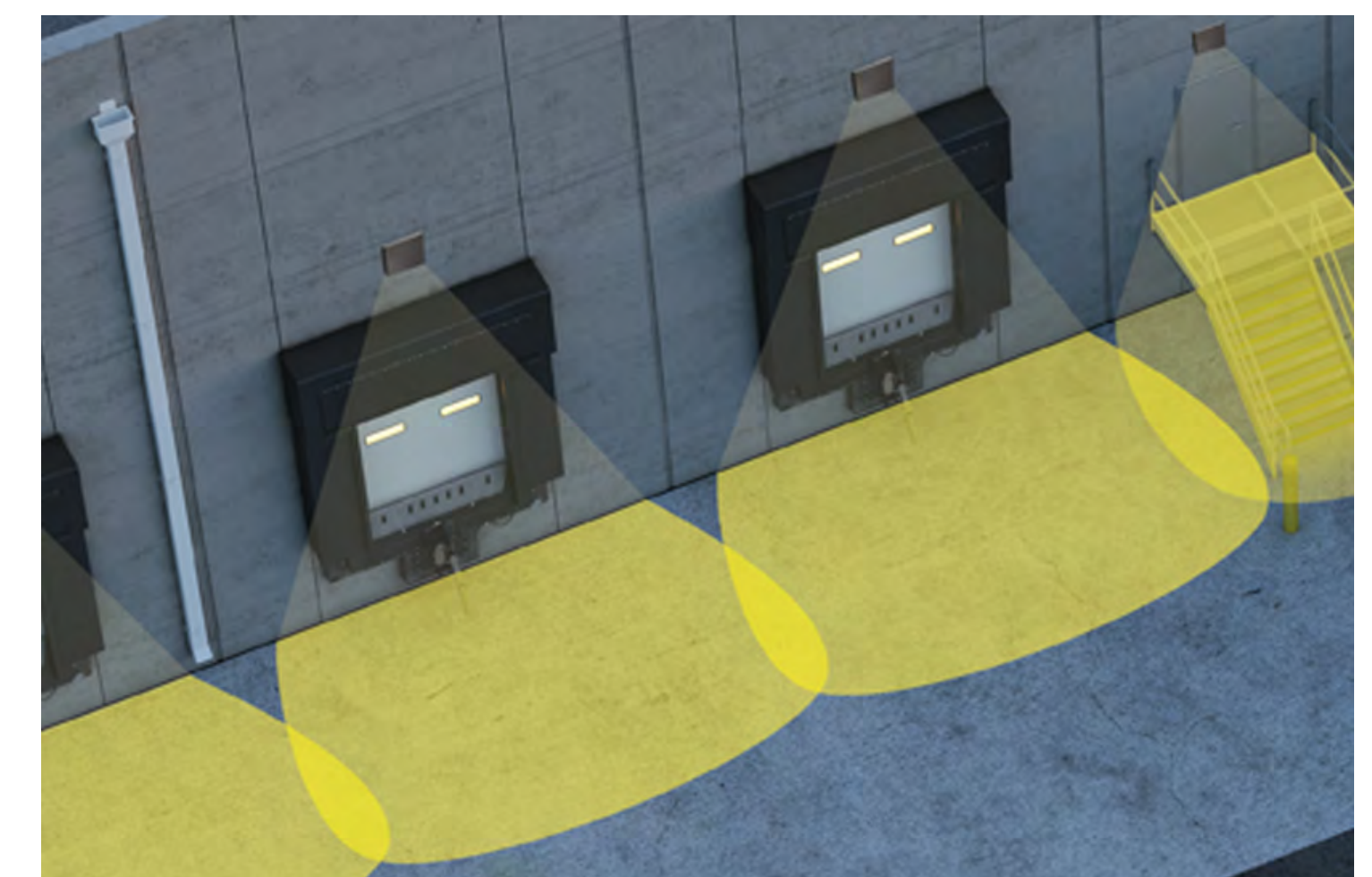
S4



S10



S5



S11



CONSULTANTS

**GLUMAC**  
A TETRA TECH COMPANY  
engineers for a sustainable future  
900 SW Fifth Ave., Suite 1600  
Portland, OR 97204  
www.glumac.com  
T: 503.227.6200  
Project Manager: William Driscoll  
Job No.: 150-220500324

SEAL

PRIME CONSULTANT  
**IBI GROUP**  
907 SW Harvey Milk Street  
Portland, OR 97205, USA  
tel 503 226 8950 fax 503 273 9192  
ibigroup@ibigroup.com

PROJECT  
**Frog Pond**  
7151 Bockman Road  
Wilsonville, OR 97070

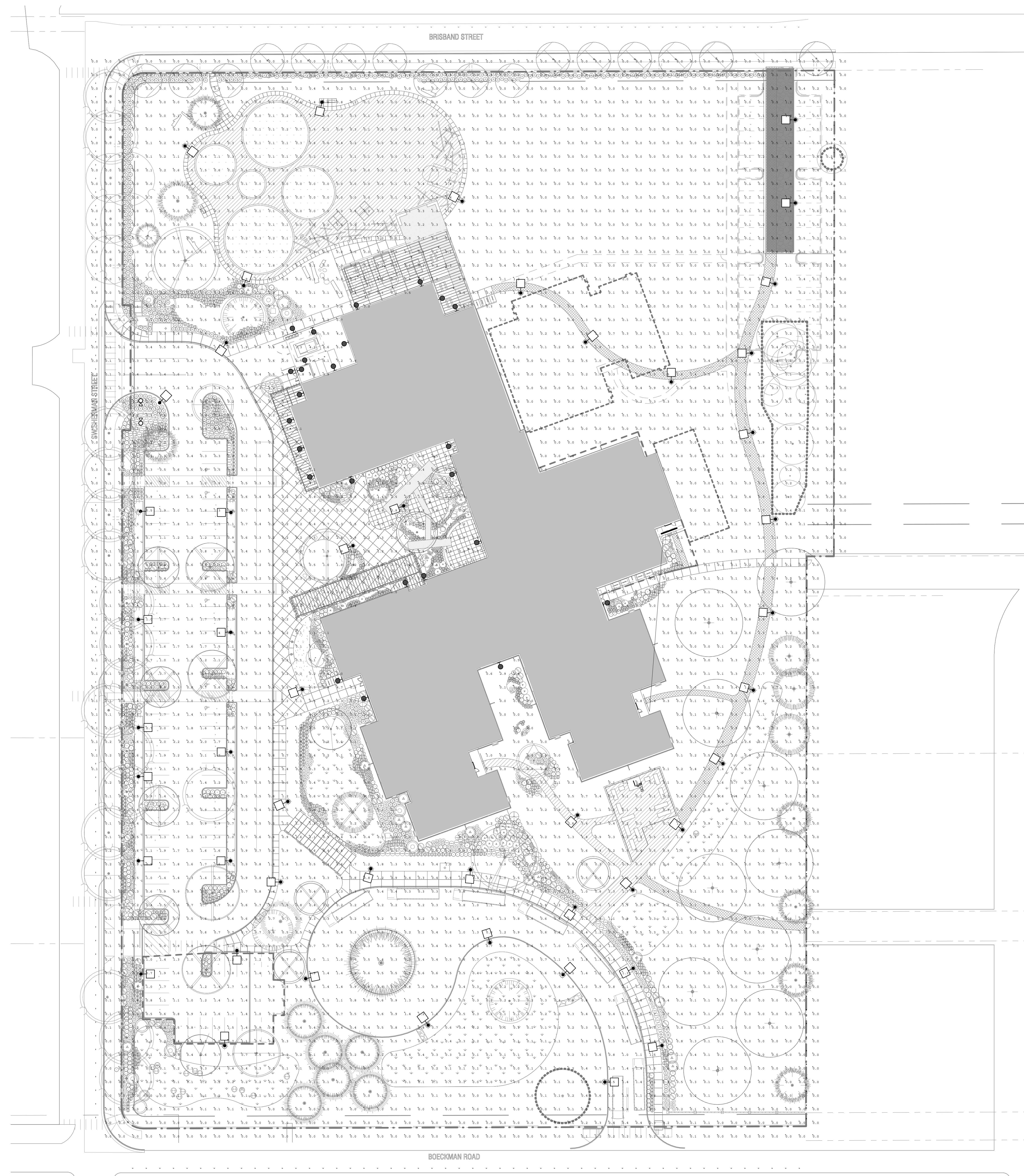
PROJECT NO:  
137469  
SHEET TITLE  
**LUMINAIRE SCHEDULE**

SHEET NUMBER  
**LU 401**







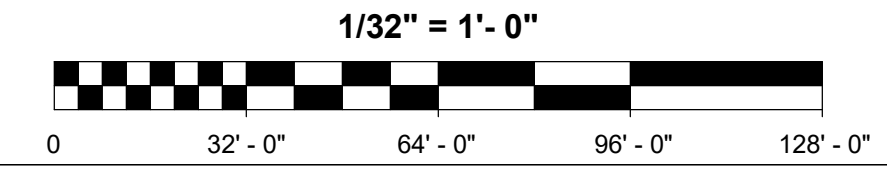


**LAND USE NOTES**

- A. DESIGN AND CALCULATIONS ARE PER THE WILSONVILLE CODE OF ORDINANCES SECTION 4.199 OUTDOOR LIGHTING. LIGHTING SHOWN IS IN COMPLIANCE WITH THE PERFORMANCE OPTION.
- B. REFER TO PLANS FOR PROPERTY LINE BOUNDARY.
- C. ASSUMED LIGHT LOSS FACTOR (LLF) IS 0.9 FOR ALL LIGHTING. ALL LUMINAIRES SPECIFIED INCLUDE LED SOURCES ONLY.
- D. THE PROJECT FALLS UNDER LIGHTING ZONE 2 (LZ2). ALL CALCULATIONS SHOWN IN THE TABLE BELOW ARE IN COMPLIANCE WITH MAXIMUM VALUES SHOWN FOR LZ2 AS PER TABLE 9.
  - a. REFERENCE "VERTICAL PLANE - XXX" FOR VERTICAL ILLUMINANCE CALCULATION SHOWING ILLUMINATION IN THE VERTICAL PLANE AT THE PROPERTY LINE FROM GRADE TO 10'-0" HIGHER THAN THE HEIGHT OF THE TALLEST POLE (EQUAL TO 30'-0").
    - NOTE THAT FOR THE NORTH, SOUTH, AND WEST PLANES, THE CALCULATION IS PERFORMED AT THE ADJACENT PROPERTY LINE TO THE RIGHT-OF-WAY (AS PER EXCEPTION 1).
  - b. REFERENCE "PROPERTY LINE - XXX" FOR HORIZONTAL ILLUMINANCE CALCULATION SHOWING ILLUMINATION IN THE HORIZONTAL PLANE AT GRADE IMMEDIATELY OFF OF THE OTHER SUBJECT PROPERTY.
  - c. REFERENCE (LUM/LR (LIGHT WASTE RATIO)) FOR THE WEIGHTED AVERAGE PERCENTAGE OF DIRECT UPLIGHT LUMENS (EXPRESSED IN DECIMAL FORM).
- E. ALL EXTERIOR LIGHTING SHALL BE CONTROLLED BY ASTRONOMICAL TIMELOCK THAT TURNS LIGHTING ON AT DUSK AND TURNS LIGHTING OFF AT OR BEFORE 10:00PM PER CURFEW REQUIREMENTS AND OREGON ENERGY EFFICIENCY SPECIALTY CODE.

Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
SITE	ILLUMINANCE	FC	0.45	10.9	0.0	N.A.	N.A.
VERTICAL PLANE - EAST, NORTH END	ILLUMINANCE	FC	0.01	0.1	0.0	N.A.	N.A.
VERTICAL PLANE - EAST, SOUTH END	ILLUMINANCE	FC	0.00	0.1	0.0	N.A.	N.A.
VERTICAL PLANE - NORTH	ILLUMINANCE	FC	0.00	0.0	0.0	N.A.	N.A.
VERTICAL PLANE - SOUTH	ILLUMINANCE	FC	0.01	0.1	0.0	N.A.	N.A.
VERTICAL PLANE - WEST	ILLUMINANCE	FC	0.04	0.2	0.0	N.A.	N.A.
DRIVE - SOUTH	ILLUMINANCE	FC	0.12	1.5	0.0	1.40	7.50
ENTRY COURTYARD	ILLUMINANCE	FC	1.35	5.4	0.1	13.50	54.00
PARKING LOT - NORTH	ILLUMINANCE	FC	0.18	1.7	0.0	N.A.	N.A.
PARKING LOT - WEST	ILLUMINANCE	FC	0.89	2.3	0.1	8.90	23.00
PARKING WALK	ILLUMINANCE	FC	0.48	1.9	0.0	N.A.	N.A.
PROPERTY LINE - EAST, NORTH END	ILLUMINANCE	FC	0.06	0.2	0.0	N.A.	N.A.
PROPERTY LINE - EAST, SOUTH END	ILLUMINANCE	FC	0.00	0.1	0.0	N.A.	N.A.
PROPERTY LINE - NORTH	ILLUMINANCE	FC	0.00	0.1	0.0	N.A.	N.A.
PROPERTY LINE - SOUTH	ILLUMINANCE	FC	0.00	0.0	0.0	N.A.	N.A.
PROPERTY LINE - WEST	ILLUMINANCE	FC	0.07	0.2	0.0	N.A.	N.A.
ULCL Area Summary		USLR					
ULCL		USLR					
ULCL		USLR					

**1 SITE PLAN - LIGHTING - PHOTOMETRICS - LAND USE**  
SCALE: 1/32" = 1'-0"



CLIENT

**2755 SW Borland Road, Tualatin, OR 97062**

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**ISSUES**

No.	DESCRIPTION	DATE
1	LAND USE APPLICATION	2022-11-04
2	LAND USE INCOMPLETENESS RESPONSE	2023-01-17

**NOT FOR CONSTRUCTION**

CONSULTANTS

**GLUMAC**  
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PROJECT

**Frog Pond**  
7151 Bockman Road  
Wilsonville, OR 97070

PROJECT NO:  
137469

SHEET TITLE  
**SITE LIGHTING PLAN - PHOTOMETRICS**

SHEET NUMBER  
**LU 403**

1/17/2023 3:52:29 PM

AutoCAD Doc/1712469-FrogPond\_ILS\_R02023M01\_Frog Pond\_L22.rvt

DEVELOPMENT REVIEW BOARD MEETING  
APRIL 10, 2023  
6:30 PM

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Item 4.

Board Member Communications:

4. Results of the March 27, 2023 DRB Panel B meeting



## City of Wilsonville

**Development Review Board Panel B Meeting  
Meeting Results**

<b>DATE:</b> MARCH 27, 2023	
<b>LOCATION:</b> 29799 SW TOWN CENTER LOOP EAST, WILSONVILLE, OR	
<b>TIME START:</b> 6:30 P.M.	<b>TIME END:</b> 6:56 P.M.

**ATTENDANCE LOG**

BOARD MEMBERS	STAFF
Rachelle Barrett	Daniel Pauly
John Andrews	Kimberly Rybold
Megan Chuinard	Georgia McAlister
Alice Galloway	Cindy Luxhoj
	Shelley White

**AGENDA RESULTS**

AGENDA	ACTIONS
CITIZENS' INPUT	None.
CONSENT AGENDA	
1. Approval of February 27, 2023 Minutes	1. Unanimously approved as presented.
PUBLIC HEARING	
<p>2. <b>Resolution No. 414. Street Name Change in Frog Pond West.</b> The applicant is requesting approval of a proposal to change the name of a street in the Frog Pond West neighborhood from SW Columbine Avenue to SW Ponderosa Avenue located on the western edge of the Frog Pond Ridge Subdivision.</p> <p>Case Files:</p> <p>DB23-0002 Street Name Change</p> <ul style="list-style-type: none"> <li>- Modify Conditions of Approval (MCOA23-0001)</li> </ul> <p><i>The DRB action on this item is a recommendation to the City Council.</i></p> <p>3. <b>Resolution No. 413. Precision Countertops Project.</b> The applicant is requesting approval of a Stage 1 Preliminary Plan, Stage 2 Final Plan, Site Design Review, Waiver, Class 3 Sign Permit, and Type C Tree Removal Plan for development of a 66,000 square foot corporate headquarters and fabrication facility on property located at 25540 SW Garden Acres Road.</p> <p>Case Files:</p> <p>DB22-0011 Precision Countertops</p> <ul style="list-style-type: none"> <li>- Stage 1 Preliminary Plan (STG122-0006)</li> <li>- Stage 2 Final Plan (STG222-0007)</li> <li>- Site Design Review (SDR22-0007)</li> </ul>	<p>2. Unanimously approved Resolution No. 414.</p> <p>3. Staff noted the public hearing would be re-noticed when a new public hearing date was determined.</p>

- Waiver (WAIV22-0003)
- Class 3 Sign Permit (SIGN22-00011)
- Type C Tree Removal Plan (TPLN22-0006)

**This item is being rescheduled to a date to be determined (TBD).**

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

Case Files:

DB22-0007 Delta Logistics Site Expansion

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

**This item is being rescheduled to a date to be determined (TBD).**

4. Staff noted the public hearing would be re-noticed when a new public hearing date was determined

**BOARD MEMBER COMMUNICATIONS**

No Comments

- 5. Results of the March 13, 2023 DRB Panel A Meeting
- 6. Recent City Council Action Minutes

**STAFF COMMUNICATIONS**

DEVELOPMENT REVIEW BOARD MEETING  
APRIL 10, 2023  
6:30 PM

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Item 5.

Board Member Communications:

5. Recent City Council Action Minutes



City Council Meeting Action Minutes  
March 6, 2023

**COUNCILORS PRESENT**

Mayor Fitzgerald  
Council President Akervall  
Councilor Linville  
Councilor Berry  
Councilor Dunwell

Amanda Guile-Hinman, City Attorney  
Kimberly Veliz, City Recorder  
Jeanna Troha, Assistant City Manager  
Beth Wolf, Senior Systems Analyst  
Katherine Smith, Assistant Finance Director  
Dan Pauly, Planning Manager  
Zach Weigel, City Engineer  
Scott Simonton, Fleet Services Manager  
Chris Neamtzu, Community Development Director

**STAFF PRESENT**

Bryan Cosgrove, City Manager

AGENDA ITEM	ACTIONS
<b>WORK SESSION</b>	<b>START:</b> 5:01 p.m.
<ul style="list-style-type: none"> <li>A. Transportation System Plan Amendments for Frog Pond East and South</li>   <li>B. Prohibited Camping Code Update Project</li> </ul>	<p>Council heard a review and provided feedback on the draft amendments to the City’s Transportation System Plan to integrate the Frog Pond East and South Master Plan transportation projects.</p> <p>Staff continued discussion with Council on the prohibited camping code project.</p>
<b>REGULAR MEETING</b>	
<u>Mayor’s Business</u>	
<ul style="list-style-type: none"> <li>A. Upcoming Meetings</li> </ul>	<p>Upcoming meetings were announced by the Mayor as well as the regional meetings she attended on behalf of the City.</p>
<u>Communications</u>	
<ul style="list-style-type: none"> <li>A. Climate-Friendly and Equitable Communities Overview</li> </ul>	<p>Staff provided a presentation on the Climate-Friendly and Equitable Communities (CFEC), which addresses climate change with land use and transportation strategies aimed at reducing greenhouse gas emissions.</p>
<u>Consent Agenda</u>	
<ul style="list-style-type: none"> <li>A. <b><u>Resolution No. 3040</u></b> A Resolution Of The City Of Wilsonville Granting An Exemption From Property Taxes Under ORS 307.540 To ORS 307.548 For Autumn Park Apartments, A Low-Income Apartment Development Owned And Operated By Northwest Housing Alternatives, Inc.</li> </ul>	<p>The Consent Agenda was approved 5-0.</p>

**B. Resolution No. 3041**

A Resolution Of The City Of Wilsonville Granting An Exemption From Property Taxes Under ORS 307.540 To ORS 307.548 For Charleston Apartments, A Low-Income Apartment Development Owned And Operated By Northwest Housing Alternatives, Inc.

**C. Resolution No. 3042**

A Resolution Of The City Of Wilsonville Granting An Exemption From Property Taxes Under ORS 307.540 To ORS 307.548 For Creekside Woods LP, A Low-Income Apartment Development Owned And Operated By Northwest Housing Alternatives, Inc.

**D. Resolution No. 3043**

A Resolution Of The City Of Wilsonville Granting An Exemption From Property Taxes Under ORS 307.540 To ORS 307.548 For Rain Garden Limited Partnership, A Low-Income Apartment Development Owned And Operated By Caritas Community Housing Corporation.

**E. Resolution No. 3044**

A Resolution Of The City Of Wilsonville Granting An Exemption From Property Taxes Under ORS 307.540 To ORS 307.548 For Wiedemann Park, A Low-Income Apartment Development Owned And Operated By Accessible Living, Inc.

**F. Resolution No. 3048**

A Resolution Of The City Of Wilsonville Supporting A 2023 Grant Application To The Oregon State Parks, Local Government Grant Program For The Boones Ferry Restroom Replacement Project.

**G. Resolution No. 3049**

A Resolution Of The City Of Wilsonville Authorizing The Purchase Of One 40' Bucket Truck From Global Rental Co.

New Business

A. None.

Continuing Business

A. None.

<u>Public Hearing</u> A. None.	
<u>City Manager's Business</u>	Council was shown a video on the City of Wilsonville that was created August 7, 1984. The video was entitled " <i>City With A Lot Growing On.</i> "  The City Manager reminded Council of the process for adopting Council Goals.
<u>Legal Business</u>	No report.
<b>ADJOURN</b>	8:16 p.m.



City Council Meeting Action Minutes  
 March 20, 2023

**COUNCILORS PRESENT**

Mayor Fitzgerald  
 Council President Akervall  
 Councilor Linville  
 Councilor Berry  
 Councilor Dunwell

Kimberly Veliz, City Recorder  
 Jeanna Troha, Assistant City Manager  
 Beth Wolf, Senior Systems Analyst  
 Keith Katko, Assistant Finance Director  
 Katherine Smith, Assistant Finance Director  
 Zach Weigel, City Engineer  
 Delora Kerber, Public Works Director  
 Kris Ammerman, Parks and Recreation Director  
 Andrea Villagrana, Human Resource Manager

**STAFF PRESENT**

Bryan Cosgrove, City Manager  
 Amanda Guile-Hinman, City Attorney

AGENDA ITEM	ACTIONS
<b>WORK SESSION</b>	<b>START: 5:00 p.m.</b>
A. Prohibited Camping Code Update Project  B. City Council Work Plan Goal 5/Strategy 5.1	Council provided feedback on draft revisions to the City’s prohibited camping code.  Staff provided guidance for the Council on alternative funding mechanisms that the City might consider for funding several planned future Parks and Facilities infrastructure projects Council then directed staff to gather additional public input to inform the funding priorities.
<b>REGULAR MEETING</b>	
<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.
<u>Communications</u> A. None.	
<u>Consent Agenda</u> A. <b>Resolution No. 2989</b> A Resolution of the City of Wilsonville Authorizing the City Manager to Enter into a Master License and Right-of-Way Use Agreement for Small Wireless Facilities in the Public Rights-of-Way with New Cingular Wireless PCS, LLC.	The Consent Agenda was approved 5-0.

- B. **Resolution No. 3035**  
A Resolution Of The City Of Wilsonville Authorizing The City Manager To Execute An Intergovernmental Agreement For The Lending Of Personnel Within Clackamas County When Personnel Are Unable To Get To Their Normal Reporting Location.
  
- C. **Resolution No. 3051**  
A Resolution Of The City Of Wilsonville Authorizing The City Manager To Execute A Professional Services Agreement With Water Systems Consulting, Inc. To Provide Capital Project Engineering Services Assistance To The Wilsonville Engineering Division.
  
- D. Minutes of the February 23, 2023 and March 6, 2023 City Council Meeting.

**New Business**

- A. **Resolution No. 3055**  
A Resolution of the City of Wilsonville Authorizing the Mayor to Execute an Intergovernmental Agreement between the City of Wilsonville and the Tri-County Metropolitan Transportation District of Oregon for the Adjustment of TriMet District Boundaries and an Associated Memorandum of Understanding between the City of Wilsonville and the Tri-County Metropolitan Transportation District of Oregon Regarding Future Adjustment of TriMet District Boundaries.

Resolution No. 3055 was adopted 5-0.

**Continuing Business**

- A. None.

**Public Hearing**

- B. **Resolution No. 3045**  
A Resolution Of The City Of Wilsonville Authorizing A Supplemental Budget Adjustment For Fiscal Year 2022-23.
  
- C. **Ordinance No. 875**  
An Ordinance of the City of Wilsonville Annexing Approximately 9.63 Acres of Property Located at 25540 SW Garden Acres Road for Development of a Corporate Headquarters/Fabrication Facility and Associated Site Improvements.

After a public hearing was conducted, Resolution No. 3045 was adopted 5-0.

After a public hearing was conducted, Ordinance No. 875 was adopted on first reading by a vote of 5-0.

<p><b>D. Ordinance No. 876</b> An Ordinance of the City of Wilsonville Approving a Zone Map Amendment from the Washington County Future Development - 20 Acre (FD-20) Zone to the Planned Development Industrial - Regionally Significant Industrial Area (PDI-RSIA) Zone on Approximately 9.63 Acres Located at 25540 SW Garden Acres Road for Development of a Corporate Headquarters/Fabrication Facility and Associated Site Improvements.</p>	<p>After a public hearing was conducted, Ordinance No. 876 was adopted on first reading by a vote of 5-0.</p>
<p><u>City Manager's Business</u></p>	<p>No report.</p>
<p><u>Legal Business</u></p>	<p>The City Attorney publically appreciated those assisting the Legal Department with the Prohibited Camping Code Update Project.</p>
<p><b>EXECUTIVE SESSION</b></p>	<p>Executive Session held pursuant to:</p> <ul style="list-style-type: none"><li>• ORS 192.660(2)(h) Legal Counsel/Litigation</li><li>• ORS 192.660(2)(i) Performance Evaluations of Public Officer and Employees</li></ul>
<p><b>ADJOURN</b></p>	<p>9:59 p.m.</p>