



**Clackamas County Planning and Zoning Division
Department of Transportation and Development**

Development Services Building
150 Beaver Creek Road | Oregon City, OR 97045

503-742-4500 | zoninginfo@clackamas.us
www.clackamas.us/planning

NOTICE OF LAND USE APPLICATION IN YOUR AREA

Date: 07/29/2019
Permit Number: Z0299-19
Application: Design Review
From: Clackamas County Planning and Zoning
Notice Mailed To: Property owners within 300 feet
Community Planning Organizations (CPO)
Interested Citizens and Agencies

Application Proposal:

DESIGN REVIEW of MULTI-FAMILY HOUSING - Design review of a new multi-family housing development located adjacent to the Fuller Road MAX Station. The proposal is for a 6-story, 100-unit building with a mix of unit sizes. Project will include new site access, circulation, landscaping, and right of way improvements.

This project has been scheduled to be presented to the Design Review Committee on Tuesday, September 3rd at 8:30 am. The meeting will be held in the Room 115 of Clackamas County's Development Services Building, located at 150 Beaver Creek Road in Oregon City.

Property Owner: TRI-COUNTY METRO TRANS DISTRICT OF OR
710 NE HOLLADAY ST
PORTLAND, OR 97232

Applicant: LANGE, KAREN
419 SW 11TH AVE STE 200
PORTLAND, OR 97205

Address: 9730 SE FULLER RD
HAPPY VALLEY, OR 97086

Legal Description: 12E28CB02100

Acres:

Zone: SCMU STATION COMMUNITY MIXED USE

Staff: Clayton Glasgow 503-742-4520 **E-mail:** clayg@co.clackamas.or.us

How to Comment on this Application:

1. To be sure your comments will be considered prior to the decision, we need to have them within 20 days of the date of this notice.

Permit Number: Z0299-19

2. You may use the space provided below, mail a separate letter or e-mail the information. Please include the permit number, address the information to the staff member handling this matter, and focus your comments on the approval criteria for the application.

3. Return your mailed comments to: Clackamas County Planning and Zoning, 150 Beaver Creek Rd, Oregon City, OR 97045; FAX to (503) 742-4550.

Community Planning Organization: The following recognized Community Planning Organization (CPO) has been notified of this application. This organization may develop a recommendation on this application. You are welcome to contact this organization and attend their meeting. If this Community Planning Organization is currently inactive, and you are interested in becoming involved in Land Use Planning in your area, please contact the Citizen Involvement Office at (503) 655-8552.

SOUTHGATE (INACTIVE)

OR

Decision Process: In order to be approved, this proposal must meet the approval criteria in the Zoning and Development Ordinance, Section(s)

Sections 510, 1000 series, 1102, and 1307

The Ordinance criteria for evaluating this application can be obtained from this office or viewed at www.clackamas.us/planning/zdo.html. You may view the submitted application at the following link, <https://accela.clackamas.us/citizenaccess/> within five days of the date of this notice, or at our office during weekday lobby hours, 8:00 am to 4:00 pm, Monday through Thursday and 8:00 am to 3:00 pm Friday.

A decision on this proposal will be made and a copy will be mailed to you. If you disagree with the decision you may appeal to the Land Use Hearings Officer who will conduct a public hearing. There is a \$250 appeal fee.

Comments:

Your Name/Organization

Telephone Number

Clackamas County is committed to providing meaningful access and will make reasonable accommodations, modifications, or provide translation, interpretation or other services upon request. Please contact us at 503-742-4545 or email DRenhard@clackamas.us.

503-742-4696: ¿Traducción e interpretación? |Требуется ли вам устный или письменный перевод? | 翻译或口译? | Cán Biên dịch hoặc Phiên dịch? | 번역 또는 통역?



Planning & Zoning
 Development Services Building
 150 Beavercreek Road | Oregon City, OR | 97045
 Phone: (503) 742-4500 | Fax: (503) 742-4550
 E-mail: zoninginfo@co.clackamas.or.us
 Web: <http://www.clackamas.us/transportation/planning/>

LAND USE APPLICATION

DEEMED COMPLETE

ORIGINAL DATE SUBMITTED: 06/27/2019
 FILE NUMBER: Z0299-19-D
 APPLICATION TYPE: DESIGN REVIEW

The Planning and Zoning Division staff deemed this application complete for the purposes of Oregon Revised Statutes (ORS) 215.427 on: 7/23/19

[Signature]
 Signature

SR Planner
 Title

Anthony Khedea
 Print Name

Comments: _____

Check one:

The subject property is located inside an urban growth boundary. The 120-day deadline for final action on the application pursuant to ORS 215.427(1) is:
Friday, November 23, 2019

The subject property is not located inside an urban growth boundary. The 150-day deadline for final action on the application pursuant to ORS 215.427(1) is:



Application for Design Review

May 2018

*******A Pre-Application Conference is required prior to filing this application.*******

Sec ZPAC0015-19
 Date Received: 6/27/19 File No.: _____
 Staff Member: Totum Design Review Fee: \$ 36,835.00
 Zone: SCMU .384% of Construction Cost: \$ _____
 Comp. Plan: _____ (\$650.00 Minimum / \$36,835.00 Maximum Fee)
 Development No.: _____ Project No.: _____

Name of Applicant: Karen Lange, Waterleaf Architecture
 Mailing Address: 419 SW 11th Avenue, Suite 200
 Phone: 503-228-7571 Email: karenl@waterleaf.com

What is proposed?:

New transit-oriented, mixed-income housing development

Proposed title: Fuller Station Housing Sq. ft. of each structure: 129,945 sf
 Estimated completion date: 6/2021 Estimated cost of constr (labor & materials): \$ 26M
 Site Address: Southern portion of SE Fuller Road MAX Park & Ride, 9608 SE Fuller Road
 Total Land Area : 2.08 Acres
 Legal Description: T 1 R 2 Section: 28 Tax Lot(s): Portions of 2100, 500, 2000, 1000, 600
 Adjacent Properties Under Same Ownership: T _____ R _____ Section _____ Tax Lot(s) _____

Other persons (if any) to be mailed notices regarding this application:

Name	Address	Relationship
Anna Geller, Northwest Real Estate Developers LLC	8370 SE Causey Avenue, Suite B Happy Valley, OR 97086	Contract Purchaser
Name	Address	Relationship
Bob Hastings, TriMet	1800 SW 1st Avenue, Suite 300 Portland, OR 97201	Property Owner

I hereby certify the statements contained herein, along with the evidence submitted, are in all respects true and correct to the best of my knowledge.

Bob Hastings for TriMet
 Property Owner's Name (Print)
Robt. Hastings 6/26/19
 Property Owner's Signature Date

Karen Lange
 Applicant's Name (Print)
[Signature] 6/26/19
 Applicant's Signature Date

Anna Geller
 Contract Purchaser's Name (Print)

Anna L Geller 6/26/19
 Contract Purchaser's Signature Date



**Clackamas County Planning and Zoning Division
Department of Transportation and Development**

Development Services Building
150 Beaver Creek Road | Oregon City, OR 97045
503-742-4500 | zoninginfo@clackamas.us
www.clackamas.us/planning

NOTICE OF INCOMPLETE APPLICATION

ORIGINAL DATE SUBMITTED: June 27, 2019
FILE NUMBER: Z0299-19-D
APPLICATION TYPE: Design Review
STAFF CONTACT: Anthony Riederer, (503) 742-4528
DATE OF THIS NOTICE: July 3, 2019
180 DAYS AFTER DATE SUBMITTED: December 24, 2019
Date of **CERTIFIED MAILING:** July 3, 2019

MAILED TO:

Karen Lange
Waterleaf Architecture
419 SW 11th Ave., Suite 200
Portland, Oregon 97205

Emailed to:
Karen Lange, Applicant
Bob Hastings, TriMet
Anna Geller, Project Developer

MISSING INFORMATION REQUIRED FOR A COMPLETE APPLICATION:

After reviewing the materials submitted in support of this Design Review application, the following elements appear to be absent from the application. These items are drawn directly from ZDO Section 1102.02 "Submittal Requirements" which outlines the required elements for a Design Review application to be complete.

- 1) Preliminary statements of feasibility from Clackamas River Water and Water and Environment Services as required pursuant to ZDO 1006 [1102.02(C)]
- 2) A transportation impact study as required pursuant to ZDO 1107 [1102.02(D)]

Please keep in mind that, though the items listed in ZDO section 1102.02 are necessary for an application to meet the minimum requirements to be deemed 'complete', the onus is on the applicant to provide sufficient evidence that staff can make defensible findings on all pertinent ZDO criteria. As such, staff may seek further information through the review process.

ADDITIONAL ADVISORY INFORMATION

The following are NOT completeness items but are offered to the applicant as areas, identified through this preliminary completeness review, which staff recommends be considered for revision relative to ZDO criteria.

This is a preliminary review and it is possible that additional items will be identified as the review process moves forward.

General Note: In previous project meetings, a reduction in the required off-street parking was premised on the applicant submitting evidence demonstrating to the Planning Director that such a reduction was warranted. Please supply the research/information used to substantiate the proposed reduction in off-street parking for review.

General Note: Frequently, with a project of this scale and complexity, the applicant submits a code analysis demonstrating, in narrative form and with reference to the submitted drawings. It would be helpful in staff's analysis of the project to understand how the applicant feels each of applicable standard is being met. Staff is happy to make the relevant ZDO sections available in Word format, if it is helpful in creating this document.

1010: The signage indicated in the drawings appears to be for example only. The final signage will need to be reviewed for compliance with ZDO 1010. Though this can be done as under a separate permit/review, it might be more efficient to include it in the principal Design Review approval.

IMPORTANT

Your application will be deemed complete, if, within 180 days of the date the application was first submitted, the Planning Division receives one of the following:

1. **All of the missing information; or**
2. **Some of the missing information and written notice from you (the applicant) that no other information will be provided; or**
3. **Written notice from you (the applicant) that none of the missing information will be provided.**

If any one of these options is chosen within 180 days of the date of the initial submittal, approval or denial of your application will be subject to the relevant criteria in effect on the date the application was first submitted.

NOTICE

Your application will be considered **Void** if, on the 181st day after the date the application was first submitted, you have been mailed this notice and have not provided the information requested in Options 1 – 3 above. In this case, no further action will be taken on your application.

Applicant or authorized representative, please check one of the following and return this notice to: Clackamas County Planning Division; 150 Beaver Creek Road, Oregon City, Oregon, 97045

- I am submitting the required information (attached); or.
- I am submitting some of the information requested (attached) and no other information will be submitted; or
- I will not be submitting the requested information. Please accept the application as submitted for review and decision.


Signed _____

7/18/2019
Date _____

Karen Lange
Print Name _____



WATER
ENVIRONMENT
SERVICES

Water Quality Protection
Surface Water Management
Wastewater Collection & Treatment

Gregory Geist
Director

July 8, 2019

Eric Evans, PE
CMERIO Design
6445 SW Fallbrook Place, Suite 100
Beaverton, OR 97008

RE: Fuller Station Apartments, WES Log# 46-19
Modification Request Approval
Section 5.3 Stormwater Infiltration Standards (Infiltration/Retention Systems)

I have received your letter dated June 5, 2019 requesting a modification to the Stormwater Standards, Section 5.3 Stormwater Infiltration Standards (Infiltration/Retention Systems). I reviewed your letter in conjunction with Terra Dolce Consultants, Inc. geotechnical report dated June 29, 2019, which notes the low to zero infiltration testing results.

Based on the project engineer's recommendation, and in accordance with Section 1.6.2 and 1.6.3, I hereby approve your request to utilize the BMP Sizing Tool that the District developed as an acceptable equivalent alternative to the required infiltration/retention standard. The BMP tool is based on HSPF continuous rainfall model simulation, and sizes facilities so that post development peak flow durations will match the pre development peak flow durations (ranging from 42% of the 2-year, to the 10-year flows as determined by the continuous model simulation).

Approval of this modification request shall not constitute a precedent for use at any other locations with potentially similar circumstances. Any deviation from this modification approval must have prior authorization from the District. The District shall review and approve the subdivision plans, reports and supporting documentation in conjunction with the approved modification request.

If you have any questions, please call me at 503-742-4577 or email donkern@clackamas.us.

Don Kemp
Development Review Supervisor

cc: File, Ron Wierenga – WES Stormwater Manager

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JUN 23 2019

**Clackamas County
Planning & Zoning Division**



PRELIMINARY STATEMENT OF FEASIBILITY

To be completed by the applicant:

Applicant's Name: Anna Geller, Geller Silvis & Associates
 Property Legal Description: T 1 S, R 2, Section 28, Tax Lot(s) Portions of 2100, 500, 2000, 1000, 600
 Site Address: Southern half of 9608 SE Fuller Road Project Engineer: Emerio Design
 Project Title/Description of Proposed Development: _____
Fuller Station Housing, 100 unit multifamily affordable housing development

To be completed by the service provider or surface water management authority:

Check all that apply:

- Sanitary sewer capacity in the wastewater treatment system and the sanitary sewage collection system is available to serve the development or can be made available through improvements completed by the developer or the system owner.
- Adequate surface water treatment and conveyance is available to serve the development or can be made available through improvements completed by the developer or the system owner.
- Water service is available in levels appropriate for the development, and adequate water system capacity is available in source, supply, treatment, transmission, storage and distribution or such levels and capacity can be made available through improvements completed by the developer or the system owner. This statement applies does not apply to fire flows.*

**If water service is adequate with the exception of fire flows, the applicant shall submit a statement from the fire district serving the subject property that states that an alternate method of fire protection, such as an on-site water source or a sprinkler system, is acceptable.*

- This statement is issued subject to conditions of approval set forth in the attached.

Adequate sanitary sewer service, surface water management, water service cannot be provided.

Don Kemp
 Signature of Authorized Representative
Permitting Supervisor
 Title

7/8/2019
 Date
WES
 Name of Service Provider or Surface Water Management Authority

Completion of this statement does not reserve capacity for the development and does not alter an applicant's obligation to comply with the service provider's or surface water management authority's regulations. Completion of this statement does not obligate the service provider or surface water management authority to finance or construct improvements necessary to provide adequate service for the proposed development. Completion of this statement does not guarantee that land use approval **RECEIVED** proposed development will be granted.

JUN 23 2019



PRELIMINARY STATEMENT OF FEASIBILITY

To be completed by the applicant:

Applicant's Name: Anna Geller, Geller Silvis and Associates, Inc
 Property Legal Description: T 1 S, R 2E, Section 28CB, Tax Lot(s) 500, 600, 1000 2000 & 2100
 Site Address: No situs, Happy Valley 97086 Project Engineer: Emerio Design
 Project Title/Description of Proposed Development: New transit-oriented, mixed income housing development, 100 units

To be completed by the service provider or surface water management authority:

Check all that apply:

- Sanitary sewer capacity in the wastewater treatment system and the sanitary sewage collection system is available to serve the development or can be made available through improvements completed by the developer or the system owner.
- Adequate surface water treatment and conveyance is available to serve the development or can be made available through improvements completed by the developer or the system owner.
- Water service is available in levels appropriate for the development, and adequate water system capacity is available in source, supply, treatment, transmission, storage and distribution or such levels and capacity can be made available through improvements completed by the developer or the system owner. This statement applies does not apply to fire flows.*

**If water service is adequate with the exception of fire flows, the applicant shall submit a statement from the fire district serving the subject property that states that an alternate method of fire protection, such as an on-site water source or a sprinkler system, is acceptable.*

This statement is issued subject to conditions of approval set forth in the attached.

- Adequate sanitary sewer service, surface water management, water service cannot be provided.

Betty Johnson
 Signature of Authorized Representative

Engineering Associate
 Title

July 9, 2019
 Date

Clackamas River Water
 Name of Service Provider or Surface Water Management Authority

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Completion of this statement does not reserve capacity for the development and does not alter an applicant's obligation to comply with the service provider's or surface water management authority's regulations. Completion of this statement does not obligate the service provider or surface water management authority to finance or construct improvements necessary to provide adequate service for the proposed development. Completion of this statement does not guarantee that land use approval for ~~RECEIVED~~ development will be granted.

**Clackamas County
 Planning & Zoning Division**

JUN 18 2019



Clackamas River Water

Attachment County Preliminary Statement of Feasibility

To: Anna Geller, Geller Silvis and Associates, Inc

From: Betty Johnson

Date: July 9, 2019

Re: No site address; east side of SE Fuller Road, between Otty Road and Johnson Creek Boulevard.

● Comments:

- A. Development will require waterline looping per Clackamas River Water Rules and Regulations.
- B. *“Water service will be provided only from pipes or mains located within public street, alleys or rights-of-way, or within easements furnished to CRW, and to property or premises with frontage to such mains.... Each dwelling or building will be provided with its own water service connection and meter ...No person shall furnish water to other buildings or premises without the written approval of the Board, which may be granted in the sole discretion of the Board, and then only under the specific terms of an agreement approved by CRW”*
- C. Fire hydrant number and distribution shall be in accordance with the Oregon Fire Code C105.1
- D. Placement of fire hydrant systems shall be in accordance with the Oregon Fire Code 507.5.1
- E. Unless Noted on plans or specified otherwise, all construction and backflow devices are to be in accordance with the most recent version of Clackamas River Water standards and the Oregon Administration Rules (OAR), Chapter 333.
- F. All water facilities design, construction, testing and maintenance, where applicable, shall conform to the latest adopted revision of the Oregon state Health Division administrative Rules chapter 333 on Public water System except where provisions outlined in the Clackamas River Water rules and regulations.
- G. For design of District’s water system improvements, hydraulic system must be analyzed using the worst- case scenario envisioned in the district’s current Water System Facilities Plan. The water system analysis shall be conducted using a simultaneous demand for the maximum (peak) day demand or peak hour non-fire demand, whichever is greater, and the fire demand.
- H. Any substantial deviation from the approved construction plans must have prior approval of the Water District.
- I. Easements for water facilities shall be provided along property lines and designated on the final plat, as deemed necessary by the Water District.
- J. Resale of water purchased from the Water District will not be permitted. No user shall resell or permit resale of water directly to any person, or for any use.

F:\1B County & City Design Review\Pre-App, Design Review & Land Use Applications\12E28CB00500_600_1000_2000_2100 - Fuller Max Station Housing Development\Preliminary Statement of Feasibility\12E28CB00500 - Statement of Feasibility Conditions.docx

- K. An approved water system capable of supplying required fire flow for fire protection shall be provided to all premises upon which buildings are to be constructed.
- L. If water service is adequate with the exception of fire flows, the applicant shall submit a statement to Clackamas River Water from the fire district serving the subject property that states that if and /or what alternate method of fire protection is acceptable.
- M. The Engineer of record shall provide a “pressure available“ chart on the water system plan sheet of the construction plans; this sheet shall indicate the calculated pressures theoretically available to each lot during static and peak demands.
- N. Upon plan review there may be additional requirements as set forth by the Water District.

Memorandum

To: Clackamas County Department of Transportation and Development
From: Brian Davis
Date: July 18, 2019
Subject: Fuller Station Trip Generation Assessment



**LANCASTER
ENGINEERING**

321 SW 4th Ave., Suite 400
Portland, OR 97204
phone: 503.248.0313
fax: 503.248.9251
lancasterengineering.com

Introduction & Project Description

This memorandum summarizes the trip generation and net impacts of the new multifamily housing building proposed for development along the 9700 block of SE Fuller Road in Clackamas County, Oregon.

The site is currently used as surface parking to support the adjacent SE Fuller Road MAX Station. The proposal is to construct a new 6-story, 100-unit multifamily housing building on the southwestern portion of the site. The parking area on the southeastern portion will be reconfigured to serve residents and visitors of the new housing, and a new street ("D Street") will be added to provide access to the development and to existing TriMet parking. The northern half of the site will not be impacted by the proposal.

Under existing conditions the Fuller Road park-and-ride facility includes 630 stalls, 299 of which are on the southern portion of the site. Following development of the site as proposed, there will be a total of 104 stalls on the southern portion, including existing parking that will be retained (47 stalls); new off-street parking (30 stalls); new off-street ADA parking (4 stalls); and new on-street stalls along D Street (23 spaces). Thus, the net reduction will be 195 stalls.

The site plan and nearby vicinity of the project is shown in Figure 1.

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JUN 18 2019

**Clackamas County
Planning & Zoning Division**



Figure 1: Site Plan and Location of Proposed Project

Trip Generation

Proposed New Housing

To estimate trip generation of the proposed development, trip rates from the *Trip Generation Manual*¹ were used. The land use code that best describes the proposed new building is #221, *Multifamily Housing (Mid-Rise)*. For this land use, trip generation rates are based on the number of dwelling units.

The trip generation calculations show that the proposed 100-unit building projected to generate **36 morning peak hour trips; 44 evening peak hour trips; and 544 weekday site trips**. It is noted that afternoon peak hour trips are not directly provided for this land use; however midday peak hour trips can be estimated

¹ Institute of Transportation Engineers (ITE), *Trip Generation Manual*, 10th Edition, 2017.



utilizing the hourly trip counts provided in the appendix of the Tenth Edition of the *Trip Generation Manual*. These data indicate that the busiest hour during the midday peak for this land use (1:00-2:00 pm) has a trip generation rate of approximately 51% of the rate during the busiest hour during the evening peak (4:30-5:30 pm). Thus, the projected afternoon trip generation for this use is **22 midday peak hour trips**.

The trip generation estimates are summarized in Table 1. Detailed trip generation calculations are included as an attachment to this study.

Park and Ride Facility

To estimate the trip generation of the existing park-and-ride facility, trip rates were utilized from the South Corridor Traffic Impact Study (TIS), provided by staff from Clackamas County. This analysis was conducted in 2004 as part of the Environmental Impact Statement (EIS) for the MAX Green Line, and examined several then-existing park-and-ride facilities and high-level commuting patterns to calculate projected trip rates for new park-and-ride facilities along the Green Line.

Based upon this research, the trip generation for the park-and-ride developed for the TIS is based upon the number of parking stalls, and for the evening peak hour is estimated to be **0.7 trips per stall**, with **0.2 trips entering** and **0.5 trips exiting** the site. The evening peak hour trip generation of the existing 630-stall Fuller Street Station park-and-ride is thus projected to be 441 trips, with 315 entering and 126 exiting.

It is noted that the TIS did not consider morning or afternoon peak hours, and so the trip generation for the existing park-and-ride is only provided for the evening peak hour. However, since the park-and-ride can be assumed to serve primarily commuter traffic, the daily trip generation patterns of land use #710, *General Office*, can be used to estimate morning and afternoon rates. This data indicates that the morning peak hour trip generation can be expected to be largely identical to that of the evening peak hour (1.16 trips per 1,000 s.f. in the morning versus 1.15 in the evening, with approximately opposite in/out splits). As with land use #221, the *Trip Generation Manual* does not include explicit projections for midday peak hours, but these can be estimated using hourly count data provided in the appendices. These data indicate that the busiest hour during the midday peak for this land use (12:00-1:00 pm) has a trip generation rate of approximately 86% of the rate during the busiest hour during the evening peak (4:15-5:15 pm). Thus, the projected morning and afternoon trip generation for the existing 630-stall Fuller Street Station park-and-ride is **441 morning peak hour trips** and **378 midday peak hour trips**.

The daily trip generation is projected to be 8.47 times the evening peak hour trip generation, consistent with consistent with data for land use #710. Thus, the ADT of the existing facility is **3,735 average daily trips**. It is noted that the ADT of the site is not utilized in determining traffic impact study requirements in Clackamas County and is thus provided for informational purposes.



The trip generation estimates are summarized in Table 1. Detailed trip generation calculations are included as an attachment to this study.

Net Trip Generation

As described above, the proposal will result in a net reduction of 195 stalls at the site, with 630 stalls existing presently and 435 stalls planned following the development of the site as proposed. However, all 104 spaces remaining on the southern half of the site will be designated for residents and visitors of the new building, with distinct accesses from the new roadway. These 104 stalls will not generate additional trips, as the trip generation data for this land use includes the impact of these spaces.

The net overall reduction in the number of spaces for the park-and-ride facility is therefore 299 parking stalls, for 630 stalls under existing conditions to 331 stalls following development of the proposed site plan. Thus based on the methodology and data described above, the proposal will result in a reduction in primary trips to the site during all three peak hours. The site will generate **173 fewer morning peak hour trips, 158 fewer midday peak hour trips, and 165 fewer evening peak hour trips**. The net trip generation for the site is summarized in Table 1, with detailed calculations provided in the appendix.

Table 1: Trip generation rates for the existing and proposed uses

Land Use	Peak Hour Trips			Daily Trips
	Morning	Midday	Evening	Total
Existing Site				
<i>630-stall park-and-ride</i>	441	378	441	3,735
Proposed Site				
<i>331-stall park-and-ride</i>	232	198	232	1,965
<i>100-unit multifamily building</i>	36	22	44	544
Net Trip Generation	<i>(173)</i>	<i>(158)</i>	<i>(165)</i>	<i>(1,226)</i>



July 18, 2019
Page 5 of 6

Conclusions

The proposed project represents an overall reduction in primary site trip, even without accounting for the likelihood that the proximity of the proposed housing to transit will result in a decreased overall trip rate versus that projected by the *Trip Generation Manual*. Based upon guidance given in Clackamas County's *Road Rules*, the development will not require a formal transportation impact study to address capacity issues.

If you have any questions or would like any additional information, please do not hesitate to contact us.



July 18, 2019
Page 6 of 6

Appendix

TRIP GENERATION CALCULATIONS

Land Use: Multifamily Housing (Mid-Rise)
Land Use Code: 221
Setting/Location: General Urban/Suburban
Variable: Dwelling Units
Variable Value: 100

AM PEAK HOUR

Trip Rate: 0.36

	Enter	Exit	Total
Directional Distribution	26%	74%	
Trip Ends	9	27	36

PM PEAK HOUR

Trip Rate: 0.44

	Enter	Exit	Total
Directional Distribution	61%	39%	
Trip Ends	27	17	44

WEEKDAY

Trip Rate: 5.44

	Enter	Exit	Total
Directional Distribution	50%	50%	
Trip Ends	272	272	544

SATURDAY

Trip Rate: 4.91

	Enter	Exit	Total
Directional Distribution	50%	50%	
Trip Ends	246	246	492

1e

TRIP GENERATION CALCULATIONS

Land Use: Park-and-Ride
Land Use Code: N/A
Setting/Location: General Urban/Suburban
Variable: Stalls
Variable Value: 630

AM PEAK HOUR

Trip Rate: 0.7

	Enter	Exit	Total
Directional Distribution	71%	29%	
Trip Ends	315	126	441

PM PEAK HOUR

Trip Rate: 0.70

	Enter	Exit	Total
Directional Distribution	29%	71%	
Trip Ends	126	315	441

MIDDAY PEAK HOUR

Trip Rate: 0.60

	Enter	Exit	Total
Directional Distribution	50%	50%	
Trip Ends	189	189	378

TRIP GENERATION CALCULATIONS

Land Use: Park-and-ride
Land Use Code: N/A
Setting/Location: General Urban/Suburban
Variable: Stalls
Variable Value: 331

AM PEAK HOUR

Trip Rate: 0.70

	Enter	Exit	Total
Directional Distribution	71%	29%	
Trip Ends	165	67	232

PM PEAK HOUR

Trip Rate: 0.70

	Enter	Exit	Total
Directional Distribution	29%	71%	
Trip Ends	67	165	232

MIDDAY PEAK HOUR

Trip Rate: 0.60

	Enter	Exit	Total
Directional Distribution	50%	50%	
Trip Ends	99	99	198



Project: Fuller Station Family Housing
Portion of 9608 SE Fuller Road
Clackamas, OR 97086
ZPAC0015-19

Project No.: 1617.00

Subject: Narrative for Design Review

Date: June 27, 2019

INTRODUCTION

Fuller Station Family Housing is proposed as a new transit-oriented, mixed-income housing development on 2.08 acres of the Fuller Station Park and Ride, presently owned by TriMet. The site is in the North Clackamas Revitalization Area Urban Renewal District and abuts a portion of the Miles Fiberglass site now owned by Clackamas County.

A pre-application conference was held on February 27, 2019.

DEVELOPER BACKGROUND

The Developer of this property is Northwest Real Estate Developers LLC (NRED), a related company of Geller Silvis & Associates, Inc. (GSA). GSA will serve as Developer and will oversee the Fuller Station Family Housing development and its subsequent operation of the property. GSA has been developing affordable housing in Oregon for twenty-five years and has developed and served as General Partner on three other affordable housing developments in North Clackamas County. GSA is a strong supporter of Clackamas County's goals and efforts to reduce poverty, reduce houselessness, add workforce housing options, and increase prosperity for all households County-wide.

PROPERTY OWNERSHIP

NRED is purchasing the southern portion of TriMet's Park and Ride property. The property currently includes several tax lots which will be consolidated/created as part of the purchase and sale agreement to apportion the land intended for the housing development. This will be a separate replat application. Ownership of the property will transfer from TriMet to NRED upon closing which will be March 31, 2020.

PROJECT SCOPE & GOALS

Fuller Station Family Housing will include 100 units of mixed-income housing. Approximately 90-95% of the residential units will be affordable to households earning 30-60% of Area Median Income and the remainder will be market rate units. Most of the units will include 2 or 3 bedrooms, addressing the need for family-sized affordable homes in our community. Fuller Station Affordable Housing will include amenities for the benefit of the residents,

such as community rooms, play area, community garden, secure bike storage and space available to local community groups for their on-site use. With the light rail just steps away, residents will have access to transit that will connect them to work, school, services, retail and recreation.

Goals for the development include, without limitation, the following:

- Provide affordable housing to County residents in a location ripe with workforce, transit, and recreational opportunities
- Assist Clackamas County and the Clackamas Housing Authority in meeting the need for affordable housing and longer-term anti-poverty goals
- Provide high-quality transit-oriented housing
- Stimulate future economic development in this Urban Renewal District

The developer plans to affirmatively market to households that are currently underserved in the community, including households of color and those experiencing or at risk of homelessness.

The developer is coordinating with the County's completion of a full street access roadway on the southern end of the property that will also serve the County's property at the Miles Fiberglass site.

SITE UTILITIES

The county's consultant (HPR) is currently designing a storm drainage pipe system that will provide points of connection on this site's south boundary. An extensive downstream storm system will also be designed and installed to safely convey the 25-year design storm per WES's standards.

Similarly, the county's consultant will be providing a design for a water main in the southern roadway. The subject site will make connections to this new watermain to address all domestic and fire water supplies.

A Statement of Feasibility will be submitted when received.

TRAFFIC IMPACT ANALYSIS

The development team understands that a Traffic Impact Analysis is required for this design review, per Section 295 of the Roadway Standards, with analysis periods including weekday midday and PM peak hour operations analysis at the following intersections: site access at Fuller, site access at Otty, and Fuller & Otty. The housing development will be removing parking spaces from the park and ride. The team is in the process of assessing the number of trips that would be generated by the number of parking stalls that are being removed and will compare that to the trip generation of the housing development based on the number of units. If the number of trips is less than what was assumed for the park and ride, it is understood that a true TIA would not be necessary. The team will follow up with the county and submit this report as soon as it becomes available.

EMERIO *Design*

CIVIL ENGINEERS & PLANNERS

**Drainage Report for
Fuller Station Housing
Apartments
Clackamas County, Oregon
(TL 01000 & 02000, & 02100
Tax Map 1S2E 28CB)**

Emerio Project Number: 0569-002
WES Permit Numbers: TBD
Date: 06/27/2019



Prepared For:

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(503) 974-9126
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List of Appendices:

APPENDIX A

- (1) Vicinity Map

APPENDIX B

- (1) Soil Classification Map—"Soils Survey for Clackamas County"
- (2) Curve Number Table
- (3) Geotech Report
- (4) Basin Area Tabulated Data
- (5) Conveyance Spreadsheet

APPENDIX C

- (1) BMP Sizing Tool Report
- (2) 25-Year Conveyance HydroCAD Plots

APPENDIX D

- (1) Pre-Developed Basin Maps
- (2) Post-Developed Basin Maps

Project Overview and Description:

The proposed site will convert a portion of an existing TriMet Park & Ride parking lot into an apartment building with associated parking areas. Currently, the site is nearly 100% impervious with parking and drive aisles, and small areas of planter area. The site is on the east side of SE Fuller Road, 540 feet north of the intersection of SE Fuller Road & SE Otty Road.

This project includes input from three separate teams. The first team relates to the apartment site itself where Emerio Design is providing the civil engineering design services. The second team will address the roadway to the south and the associated utilities will be funded by Clackamas County with HHPR as their consultant. HHPR will also provide design to upgrade the downstream storm system. The last team is TriMet with their consultant Jacobs, will design the removal of the existing storm system from this site and engineer a replacement system somewhere upstream of the apartment site to manage TriMet's stormwater.

Soil Classification:

The NRCS soil survey of Clackamas County, Oregon classifies all of the onsite soils as Powell silt loam and Multnomah silt loam. The associated hydrologic group of this soil is D and B respectively. Most of the site is Powell silt loam and for conservatism, this classification will be used for the whole site. The associated curve numbers utilized in this design are 80 and 89 for the class D soil for pre-developed and post-developed pervious surfaces respectively. A curve number of 98 is set for impervious surfaces, reference appendices B(1) and B(2).

Methodology:

The site area currently flows from the east to the west in the parking lot to stormwater planter areas. Runoff is captured by the onsite stormwater system and routed to underground detention chambers. The existing underground detention system is located within the footprint of the proposed building and will be removed.

Proposed grading will continue to allow runoff to flow from east to west to the proposed stormwater facilities. The proposed site stormwater runoff will be addressed according to the three topographic portions of the site: the west apartment area, the middle north-south road, and the east parking lot:

West Portion

Stormwater runoff from the building roof drains will be routed to onsite flow-through planters for water quality and flow control. Parking areas and the playground area will drain toward curb inlets into flow-through planters.

Middle Portion

Curb inlets will capture surface runoff from the road running north to south and route to flow-through planters along the sidewalk.

East Portion

Curb inlets will capture surface runoff from the parking lot and route to proposed flow-through planter areas.

Outflows from the stormwater facilities of all three sections of the site will be connected by onsite pipe and connect to the D Street Project that will route a stormwater line south to SE Otty Road near the existing Walmart driveway.

The 2013 Clackamas County Service District (CCSD) No. 1 Stormwater Standards was used to design the stormwater systems for this project. All stormwater modeling was performed using the WES BMP Sizing Tool and HydroCAD V.10 with the SBUH runoff method accounting for pervious and impervious areas.

Basin Delineation:

Onsite basins were created after the determination of how stormwater runoff was to flow after development. Basins 20A & 20B contain the apartment roof (north and south). Basins 21A & 21B contains the recreation area and the west parking area. Basins 22A & 22B contain the middle north-south road and sidewalks. Basins 23A & 23B contain the east parking lot.

Reference Appendix D(2) for an overall Post-Developed basin delineation map. Tabulated in Appendix B(4) is a list of areas determined for each delineated basin/sub-basin.

Conveyance:

Onsite conveyance pipe proposed at 6" and 8" was determined to have sufficient capacity to route the 25-year design storm. Conveyance analysis was performed to the point of site discharge at the four locations to proposed stormwater pipe in D Street (E-W) to be designed by others. See Appendix C(2) & B(5) for modeling output and the conveyance spreadsheet for summary of results.

Infiltration:

The infiltration standard is to infiltrate up to one-half inch of rainfall during a 24-hour storm per CCSD No. 1 standards. May 24, 2019, Terra Dolce Consultants, Inc. performed infiltration testing at this site (see Appendix B(3)). Testing yielded an infiltration rate of 0 inches/hour at a depth of 4 feet below ground surface. Due to the inability to infiltration per WES standards and recommendation of the report, infiltration facilities will not be used and infiltration will not be provided.

This project is requesting a standard modification in design primarily for meeting the infiltration standard. The WES BMP Sizing Tool from the WES list of alternatives will be used to size a flow-through planter that will reduce the peak runoff flow rate for the infiltration and detention design storms, and meet the water quality standard. Note that the BMP Sizing Tool refers to a flow-through planter as a "filtration" planter (not to be confused with an infiltration planter) in the attached appendix.

Water Quality:

The water quality standard per CCSD#1 code section 5.2, requires stormwater facilities to be designed to capture and treat the first 1-inch of stormwater runoff from a 24-hour storm event. Per the request for modification in design, the WES BMP Sizing Tool will be used to size a standard flow-through planter using WES modified detail 1b with flow control structure per city of Wilsonville details ST-6105 as referenced by the BMP Sizing Tool. This planter will be sized using a WES listed alternative to stormwater facility sizing, the WES BMP Sizing Tool. Reference Appendix C(1) for the WES BMP Sizing Report.

Water quality will be achieved by means of the flow-through planters located throughout the site. Runoff will filter down through the soil media layer for water quality effects before being collected in the underdrain and conveyed offsite.

Quantity Control/Detention:

Per the request for modification in design and the User's Guide for the BMP Sizing Tool, facilities are sized with the post-developed pond outflows equal or lower than the pre-developed condition flows ranging from 42 percent of the 2-year to the 10-year peak flow using continuous simulation hydrologic modeling. Flows are detained via flow-through planters located throughout the site as described in the methodology of this report. Reference Appendix C(1) for the WES BMP Sizing Report.

Flow is controlled for the maximum water quality event and the 2-year flows via one orifice set in a flow control structure for each planter area. The planter areas have an overflow set 12 inches above the planter surface in the event of flows greater than the design storm. A minimum of 4 inches of freeboard is maintained above the design storm event.

Table 1: Flow-through Planter Area and Orifice Summary

	North Roof	South Roof	Rec. & Parking Area	Middle Road 1	Middle Road 2	East Parking 1	East Parking 2
Planter Area (SF)	445	235	446	164	164	346	602
Orifice Diameter (in)	1.36	0.99	1.49	0.83	0.83	1.19	1.58

The detention requirement is met by using the BMP sizing tool for a flow-through planter design. See the summary of the BMP Sizing Tool results in the table above.

100-Year Overflow Routing:

Emergency flow paths during the 100-year design storm event were determined considering all stormwater conveyance in a plugged or non-functioning state. HydroCAD was used to model the overland flow path during the 100-year storm event. In the event of planter outlet failure, flows will overtop the planter to the north and flow west to SE Fuller Road. Planters in the recreation and west parking areas will overflow south toward the proposed private road, then toward SE Fuller Road. The east parking area and middle road area will both overflow west into the west parking area and follow the same overflow path south, then west into SE Fuller Road.

Downstream Analysis:

Per the Stormwater Standards for CCSD#1 Appendix G, this basin containing this site (Johnson Creek Storm Basin) has been identified as having limited downstream conveyance capacity, therefore requiring this site to provide detention greater than the normal standard. There are existing downstream deficiencies as noted in prior stormwater drainage analysis for the installation of the current TriMet parking areas, specifically the downstream stormwater line in SE Otty Road flowing from SE 82nd Avenue that is surcharging within the manhole, but not reaching the rim or surface.

The proposed developments to occur with the associated D Street Project along the south of Fuller Station Housing project will provide a downstream conveyance system for the stormwater discharge from this Fuller Station Housing project, will be designed to remove downstream deficiencies, and have capacity during the 25-year storm event. The installation of the downstream conveyance system will offset the requirement to provide over-detention per CCSD#1 Appendix G on this site will be removed; therefore, the onsite

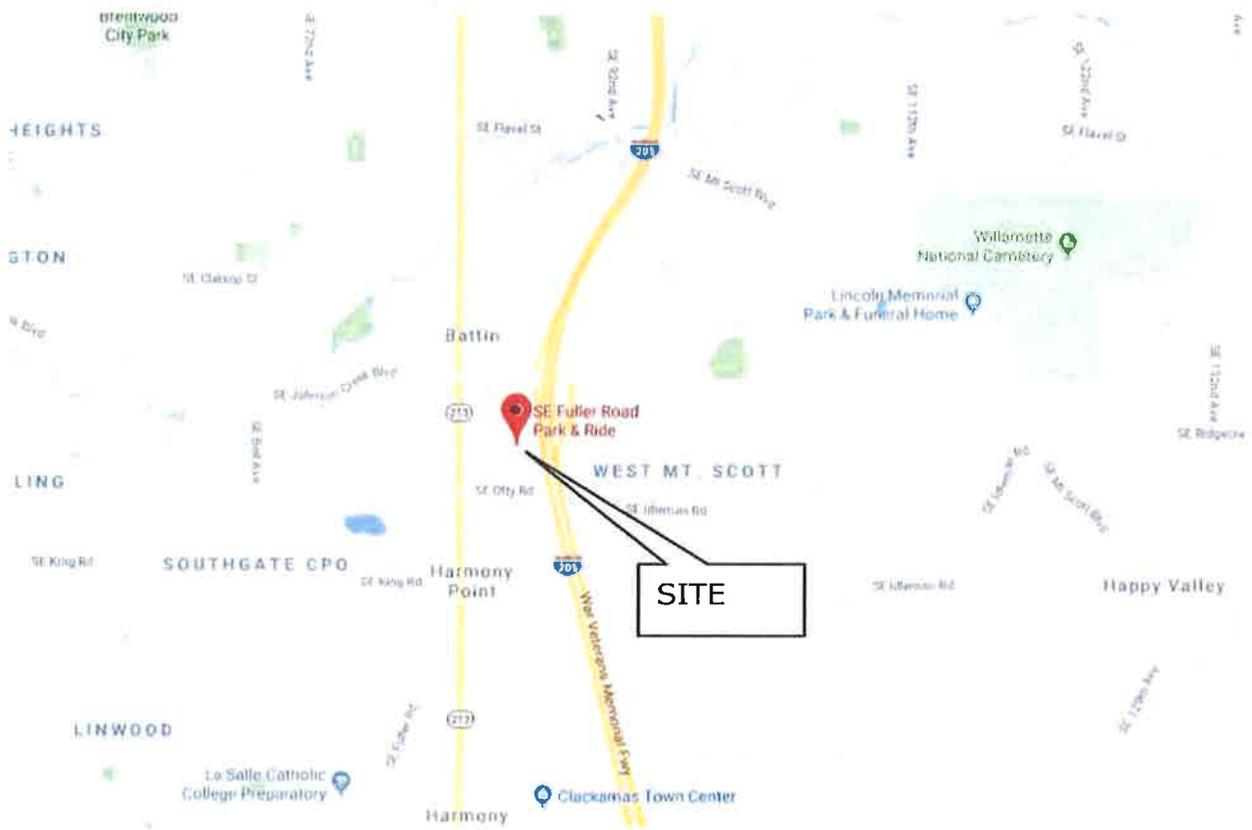
system will detain to the standards described in section "Quantity Control/Detention" of this report with no properties downstream negatively impacted.

Conclusion:

The design of the proposed site satisfies the conveyance water quality, and detention standards set by the Water Environment Services (WES) and Clackamas County.

Appendix A:

Appendix A(1)
Vicinity Map



Appendix B:

Appendix B(1)
Soil Classification Map



Tables - Hydrologic Soil Group - Summary by Map Unit

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

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
61A	Multnomah silt loam, 0 to 3 percent slopes	B	0.6	24.0%
70B	Powell silt loam, 0 to 8 percent slopes	D	1.9	76.0%
Totals for Area of Interest			2.6	100.0%

RUNOFF CURVE NUMBERS (TR55)

Table 2-2a: Runoff curve numbers for urban areas

RUNOFF CURVE NUMBERS (TR55)					
Table 2-2a: Runoff curve numbers for urban areas ¹					
Cover description		CN for hydrologic soil group			
Cover type and hydrologic condition	Average percent Impervious area²	A	B	C	D
<i>Fully developed urban areas (vegetation established)</i>					
Open space (lawns, parks, golf courses, cemeteries, etc.) ³ :					
Poor condition (grass cover <50%)		68	79	86	89
Fair condition (grass cover 50% to 75%)		49	69	79	84
Good condition (grass cover >75%)		39	61	74	80
Impervious areas:					
Paved parking lots, roofs, driveways, etc. (excluding right-of-way)					
Streets and roads:					
Paved; curbs and storm sewers (excluding right-of-way)		83	89	92	93
Paved; open ditches (including right-of-way)		76	85	89	91
Gravel (including right-of-way)		72	82	87	89
Dirt (including right-of-way)					
Western desert urban areas:					
Natural desert landscaping (pervious areas only) ⁴					
		63	77	85	88
Artificial desert landscaping (impervious weed barrier, desert shrub with 1- to 2-inch sand or gravel mulch and basin borders)					
		96	96	96	96
Urban districts:					
Commercial and business	85	89	92	94	95
Industrial	72	81	88	91	93
Residential districts by average lot size:					
1/8 acre or less (town houses)	65	77	85	90	92
1/4 acre	38	61	75	83	87
1/3 acre	30	57	72	81	86
1/2 acre	25	54	70	80	85
1 acre	20	51	68	79	84
2 acres	12	46	65	77	82

Use CN = 80 for Powell silt loam; 89 post-developed

June 4, 2019
Project No 880-001

Anne Geller
NW Real Estate Developers, LLC
8370 SE Causey Avenue, Suite B
Happy Valley, Oregon 97089

GEOTECHNICAL SITE EVALUATION
INFILTRATION TESTING RESULTS
PROPOSED FULLER STATION AFFORDABLE HOUSING
9608 SE FULLER ROAD
HAPPY VALLEY, OREGON

Dear Anne:

Terra Dolce Consultants, Inc. (TDC) is pleased to present this letter summarizing the results of the infiltration testing completed at the referenced project site. This testing was completed in general accordance with our April 25, 2019 signed contract. TDC understands that Emerio Design, LLC is designing the stormwater management system.

SITE DESCRIPTION

The referenced property is located in Happy Valley, Oregon (see Figure 1). Presently, the property is developed as the parking lot for the Fuller Road Light Rail Station. The site is covered in asphalt and plantings that are typical for a parking lot. There are no permanent structures located in the proposed development area (see Figure 2).

The referenced site slopes slightly from east to west with about 11 feet of relief across the entire parking lot. The elevations range from 221 feet above mean sea level (MSL) at the eastern end and 210 feet msl in the western end.

TDC understands that stormwater on the site is presently managed with a StormTech® chamber system in the southwest corner of the parking lot (see Figure 2)

PROJECT DESCRIPTION

TDC understands that NW Real Estate Developers, LLC is in the process of developing the southern half of the TriMet SE Fuller Road Light Rail Station parking lot into affordable house. The proposed 6-story building will include 100 units of affordable housing (see Figure 2).

TDC understands that the proposed stormwater management system is to be designed to manage the stormwater onsite. As a result, TDC was asked to run three infiltration tests across the site in proposed borings B-1 through B-3 (see Figure 2).

Field Investigation

On May 8 and 24, 2019, TDC conducted a field investigation at the referenced site. The May 8th investigation included pushing three Cone Penetrometer Tests (CPT) up to 20 feet below ground surface (bgs). The CPT borings were not appropriate for the infiltration tests. On May 25, three borings (designated B-1, B-2, and B-3, see Figure 2 and Attached Boring Logs) were drilled for the proposed infiltration tests. Emerio Design provided the locations and the following proposed depths for testing: B-1 at 4 feet below the ground surface (bgs), in B-2 at 20 feet bgs, and in B-3 at 10 feet bgs (see Figure 2). The following conditions were encountered:

Boring B-1. Boring B-1 was drilled to 4 feet bgs. The top three (3) feet consisted of Asphalt, Base Rock and Silty Fill. Underlying the silty Fill was Silt. The Silt was brown, moist, medium stiff and contained trace Micaceous. No groundwater was encountered in the boring.

An encased falling head infiltration test was conducted in a 3-inch-diameter casing that was installed into the underlying native Silt. The soil was allowed to soak for four hours and then three (3) 1-hour long tests were completed in the boring. For the test, about 12 inches of water was poured into the casing. Water level measurements were taken in 10-minute intervals (see Attached Infiltration Test Results). The results indicate that the infiltration rate of the soils was at or near zero inches per hour.

Boring B-2. Boring B-2 was drilled to 20 feet bgs. The top 2.5 feet included Asphalt, Base Rock, and Silty Fill. From 2.5 feet to 4 feet bgs was Silt; from 4 feet to 18.5 feet was Silty Sand, and from 18.5 to 20 feet bgs, there was Sandy Gravel. Groundwater was encountered at 11.5 feet bgs.

Because of the shallow groundwater, no infiltration test was conducted in B-2.

Boring B-3. Boring B-3 was drilled to 50 feet bgs. The top 5 feet included Asphalt, Base Rock, and Silty Fill. From 5 feet to 10 feet bgs was Silty to sandy Silt; from 10 to 20 feet was Silty Sand; from 20 feet to 25 feet sandy Silt, and from 25 to 50 feet was Silty Sand.

Because of the shallow groundwater, no infiltration test was conducted in B-3.

Conclusion.

Based on the results presented above, it is our opinion that the site is not appropriate for onsite stormwater management.

LIMITATIONS

Our conclusions and recommendations are based on our May 24, 2019 Field Investigation. The conclusions and recommendations in this report are based on the information provided to us, results of our investigation, and professional judgment. We have observed only a small portion of the pertinent soil and groundwater conditions. The recommendations are based on the assumptions that the soil conditions do not deviate appreciably for those encountered during our site visit.

This report is issued with the understanding that it is the responsibility of the Client to ensure that the recommendations are communicated to their clients. Geotechnical engineering is characterized by a certain degree of uncertainty. Professional judgments presented are based partly on our understanding of the proposed construction and partly on our general experience. Our engineering work and judgments rendered meet current professional standards; no other warranties, either expressed or implied are made. This report is subject to review and should not be relied upon after a period of 3 years.

It has been a pleasure providing you the geotechnical services for this project. If you have any questions, please call at 503.502.5114.

Sincerely,
Terra Dolce Consultants, Inc.



EXPIRES. 6-30-2019

Cynthia L. Hovind, P.E., G.E.
Professional Geotechnical Engineer, OR-17857PE

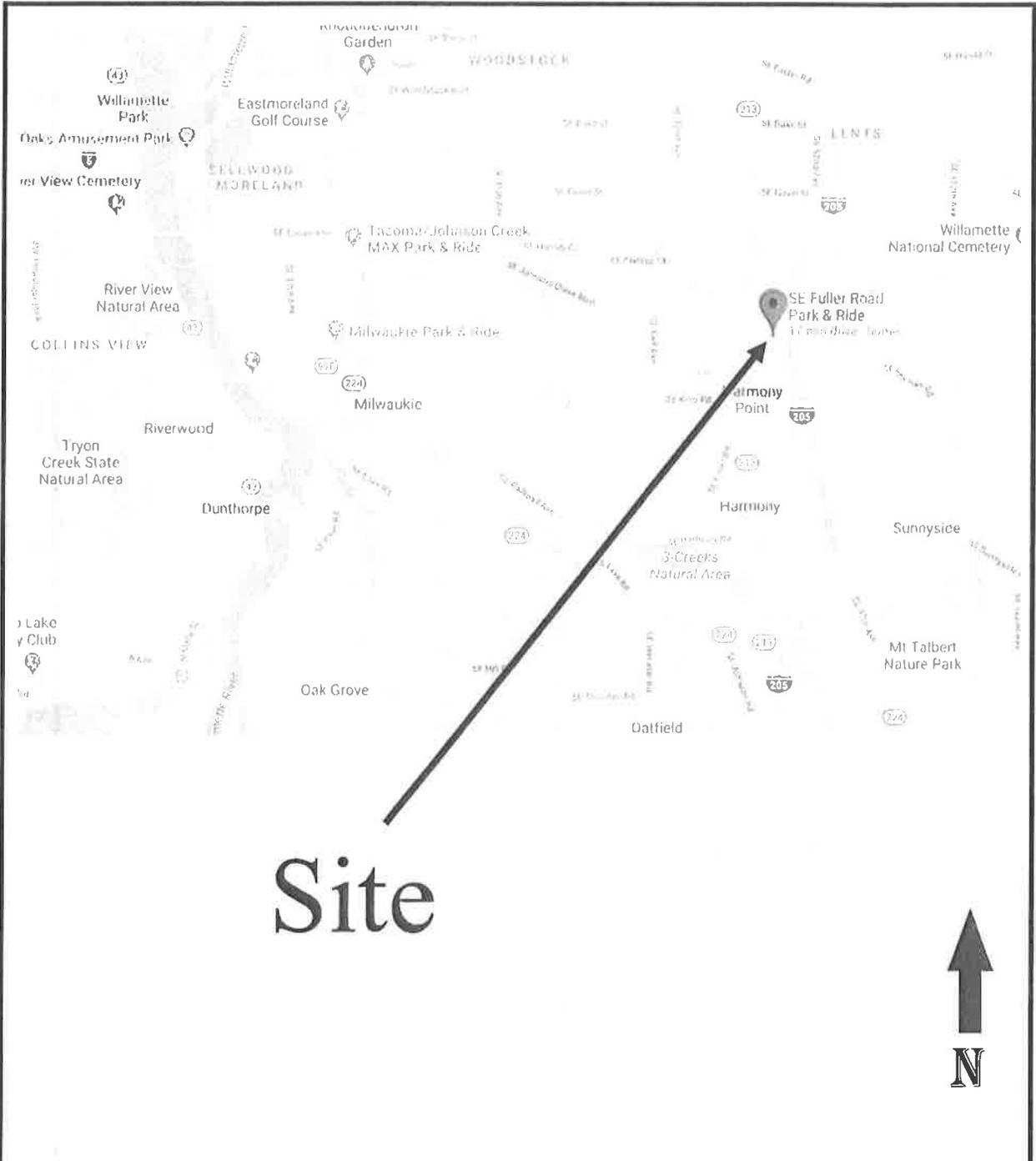
Attachments

Figure 1 – Vicinity Map

Figure 2 – Site Map

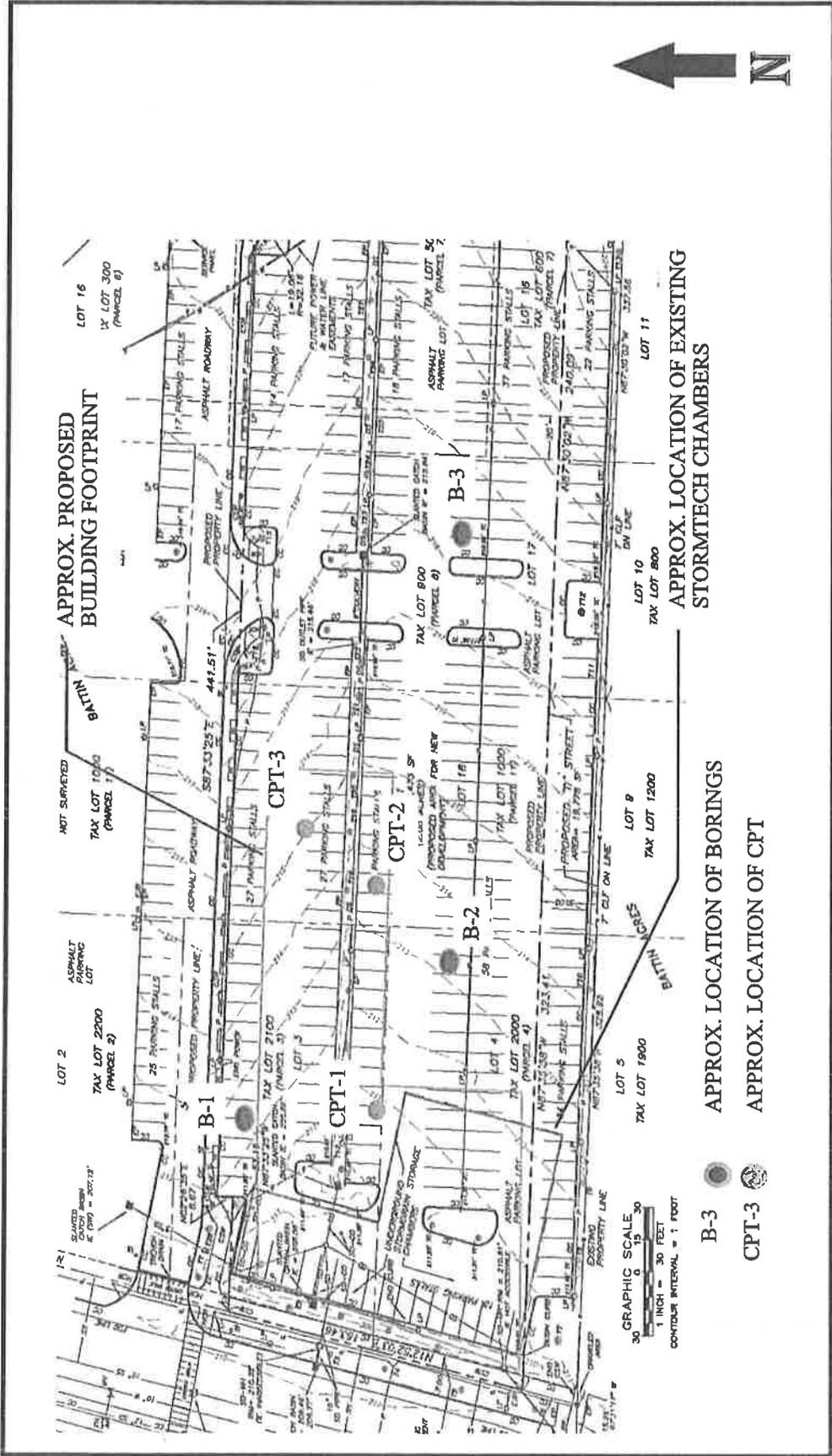
Boring Logs

Infiltration Test (B-1)



GOOGLE MAPS, 2019

<p>Terra Dolce Consultants, Inc. 4706 NE 75th Ave Portland, Oregon 97218 Phone 503.502.5114 Fax 503.206-5114</p>		<p>Fuller Station Affordable Housing 9608 SE Fuller Road Happy Valley, Oregon</p>	
<p>Project No. 880-001</p>	<p>June 4, 2019</p>	<p>Vicinity Map</p>	<p>Figure 1</p>



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 4706 NE 75th Ave
 Portland, Oregon 97218
 Phone 503.502.5114
 Fax 503.206-5114

Fuller Station Affordable Housing
 9608 SE Fuller Road
 Happy Valley, Oregon

BORING LOGS

Location: 9608 SE Fuller Rd. Clackamas, OR

WO#: 880-001

Method: 4" Solid Stem Auger

Ground EL: N/A

Hammer: Safety Hammer

Hammer weight (lb): 140

Hole depth (ft): 4

Sampler: 2" Split Spoon

Drop (in): 30

G.W.T. @ Drilling (ft): N/A

Sampled by: AS

Driller: Dan J. Fischer Excavating

Drill Date: 5/24/19

Logged by: AS

SuperLog CivilTech Software, USA www.civiltech.com File: L:\Users\Cindy\Documents\TDC Projects\880 Fuller Rd Station Housing\Field Work 1\Fuller station boring log.log Date: 6/4/2019

Depth	Strata	GWT	No.	Type	Blows Per 6"	USCS	Soil Description	SPT. blow/ft				Moisture %	Notes
								0	20	40	60		
0	Asphalt 4", base rock 8"												0
2	Silty Fill (ML), brown, moist, medium stiff, trace brick (Silty Fill)	GWT not encountered				ML							2
4	Silt (ML), brown, moist, medium stiff, trace micas (Silt)		1		4-3-4	ML							4
							Boring completed at depth of 4 feet						
6													6
8													8
10													10
12													12
14													14

Remarks:

Location: 9608 SE Fuller Rd. Clackamas, OR

WO#: 880-001

Method: 4" Solid Stem Auger

Ground EL: N/A

Hammer: Safety Hammer

Hammer weight (lb): 140

Hole depth (ft): 20

Sampler: 2" Split Spoon

Drop (In): 30

G.W.T. @ Drilling (ft): 11.5

Sampled by: AS

Driller: Dan J. Fischer Excavating

Drill Date: 5/24/19

Logged by: AS

Date: 6/4/2019
SuperLog CivilTech Software, USA www.civiltech.com
File: L:\Users\Cindy\Documents\tdc1\TDC Projects\880 Fuller Rd Station Housing\Field Work\1\Fuller station boring log.log

Depth	Strata	GWT	No.	Type	Blows Per 6"	USCS	Soil Description	SPT. blow/ft				Notes	
								0	20	40	60		
0	Asphalt 3", base rock 9"												0
2						ML	Silty Fill (ML), brown, moist, medium stiff (Silty Fill)						2
4			1	7-8-12		ML	Silt (ML), brown, moist, very stiff, trace mica, trace fine-to-medium-grain sand (Silt)						4
6			2	6-7-10		SM	Silty Sand (SM), brown, moist, medium dense, trace mica, fine-to-medium-grain sand (Silty Sand)						6
8			3	3-3-4		SM	Silty Sand (SM), brown, wet, loose, trace mica, fine-grain sand, trace medium-grain sand (Silty Sand)						8
10			4	2-2-2									10
12													12
14													14

Remarks:

Location: 9608 SE Fuller Rd. Clackamas, OR

WO#: 880-001

Method: 4" Solid Stem Auger

Ground EL: N/A

Hammer: Safety Hammer

Hammer weight (lb): 140

Hole depth (ft): 20

Sampler: 2" Split Spoon

Drop (In): 30

G.W.T. @ Drilling (ft): 11.5

Sampled by: AS

Driller: Dan J. Fischer Excavating

Drill Date: 5/24/19

Logged by: AS

File: L:\Users\Cindy\Documents\TDC Projects\880 Fuller Rd Station Housing\Field Work\Fuller station boring log.log
 Date: 6/4/2019
 SuperLog CivilTech Software, USA www.civiltech.com

Depth	Strata	GWT	No.	Type	Blows Per 6"	USCS	Soil Description	SPT. blow/ft				Notes	
								0	20	40	60		
14						SM	Silty Sand (SM), brown, wet, loose, trace mica, fine-grain sand, trace medium-grain sand (Silty Sand)						
16			5		3-3-4								
18													
20			6		11-10-10	GM	Sandy Gravel (GM), brown, wet, medium dense, fine-to-coarse-grain sand, trace silt (Sandy Gravel)						Gravels at 17 feet
20							Boring completed at depth of 20 feet						
22			7		14-9-10								Tough drilling at 18 feet
24													
26													
28													

Remarks:

Location: 9608 SE Fuller Rd. Clackamas, OR

WO#: 880-001

Method: 4" Solid Stem Auger

Ground EL: N/A

Hammer: Safety Hammer

Hammer weight (lb): 140

Hole depth (ft): 50

Sampler: 2" Split Spoon

Drop (in): 30

G.W.T. @ Drilling (ft): 14.5

Sampled by: AS

Driller: Dan J. Fischer Excavating

Drill Date: 5/24/19

Logged by: AS

Date: 6/4/2019
SuperLog CivilTech Software, USA www.civiltech.com
File: L:\Users\Cindy\Documents\TDC Projects\880 Fuller Rd Station Housing\Field Work\1\fuller station boring log.log

Depth	Strata	GWT	No.	Type	Blows Per 6"	USCS	Soil Description	SPT. blow/ft				Notes	
								0	20	40	60		
0							Asphalt 3", base rock 7", structural fill 12"						0
1			1	7-7-6		ML	Silty Fill (ML), brown mottled grey-orange, moist, stiff, trace mica, trace fine-grain sand, trace charcoal, trace tree roots (Silty Fill)						Structural fill under base rock 3/4"-2"
2			2	3-4-5		ML	Silt (ML), brown mottled grey-orange, moist, stiff, trace mica, trace fine-grain sand (Silt)						5
3			3	3-3-4		ML	Sandy Silt (ML), brown, moist, medium stiff, trace mica, fine-grain sand (Sandy Silt)						10
4			4	3-2-2		SM	Silty Sand (SM), grey-brown, moist-wet, soft, trace mica, fine-grain sand (Silty Sand)						15
5			5	2-1-1		ML	Sandy Silt (ML), grey-brown, wet, very soft, trace mica, fine-grain sand (Sandy Silt)						20
6			6	2-1-1		ML	Sandy Silt (ML), grey-brown, wet, very soft, trace mica, fine-grain sand (Sandy Silt)						25
7			7	2-1-3		SM	Silty Sand (SM), grey-brown, wet, soft, trace mica, fine-grain sand (Silty Sand)						30
8			8	2-2-5									35

Remarks:

Due to collapsing bore at 35', samples at 40' and 45' not taken.

Location: 9608 SE Fuller Rd. Clackamas, OR

WO#: 880-001

Method: 4" Solid Stem Auger

Ground EL: N/A

Hammer: Safety Hammer

Hammer weight (lb): 140

Hole depth (ft): 50

Sampler: 2" Split Spoon

Drop (In): 30

G.W.T. @ Drilling (ft): 14.5

Sampled by: AS

Driller: Dan J. Fischer Excavating

Drill Date: 5/24/19

Logged by: AS

File: L:\Users\Cindy\Documents\TDC Projects\880 Fuller Rd Station Housing\Field Work 1\Fuller station boring log.log
 SuperLog CivilTech Software, USA www.civilttech.com

Depth	Strata	GWT	No.	Type	Blows Per 6"	USCS	Soil Description	SPT. blow/ft				Moisture %				Notes	
								0	20	40	60	0	20	40	60		
35			9		2-1-1	SM	Silty Sand (SM), grey-brown, wet, soft, trace mica, fine-grain sand (Silty Sand)										Bore is collapsing on auger removal
40																	
45																	
50			10		4-7-7	ML-SM	Silty Sand-Sandy Silt (ML-SM), grey, wet, very stiff, fine-to-coarse-grain sand (Silty Sand-Sandy Silt) Boring completed at depth of 50 feet										
55																	
60																	
65																	
70																	

Remarks:

Due to collapsing bore at 35', samples at 40' and 45' not taken.

INFILTRATION TEST RESULTS

Onsite Basin Area Tabulated Data
Fuller Station Apartments

Appendix B(4)

Basin ID	Description	SF	Pervious	Treatment Area
20A	North Roof	14,833		445
20B	South Roof	7,833		235
21A	Rec. & Parking	13,658		446
21B	Rec. & Parking Pervious		4,147	
22A	N-S Middle Aisle 1	5,466		164
22B	N-S Middle Aisle 2	5,466		164
23A	East Parking 1	11,287		346
23B	East Parking 2	20,035		602

Appendix C:

WES BMP Sizing Report

Project Information

Project Name	Fuller Apartments
Project Type	Commercial
Location	
Stormwater Management Area	0
Project Applicant	
Jurisdiction	HappyValleyCCSD1

Drainage Management Area

Name	Area (sq-ft)	Pre-Project Cover	Post-Project Cover	DMA Soil Type	BMP
North Roof	14,833	Grass	Roofs	D	North Roof Planter
Rec. & Parking	13,658	Grass	Conventional Concrete	D	Rec. & Parking Area Planter
Rec. & Parking Pervious	4,147	Grass	Grass	D	Rec. & Parking Area Planter
Mid Aisle 1	5,466	Grass	Conventional Concrete	D	Mid Aisle Planter 1
East Parking 2	20,035	Grass	Conventional Concrete	D	East Parking Planter 2
East Parking 1	11,287	Grass	Conventional Concrete	D	East Parking Planter 1
South Roof	7,833	Grass	Roofs	D	South Roof Planter
Mid Aisle 2	5,466	Grass	Conventional Concrete	D	Mid Aisle Planter 2

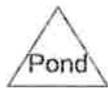
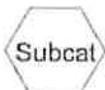
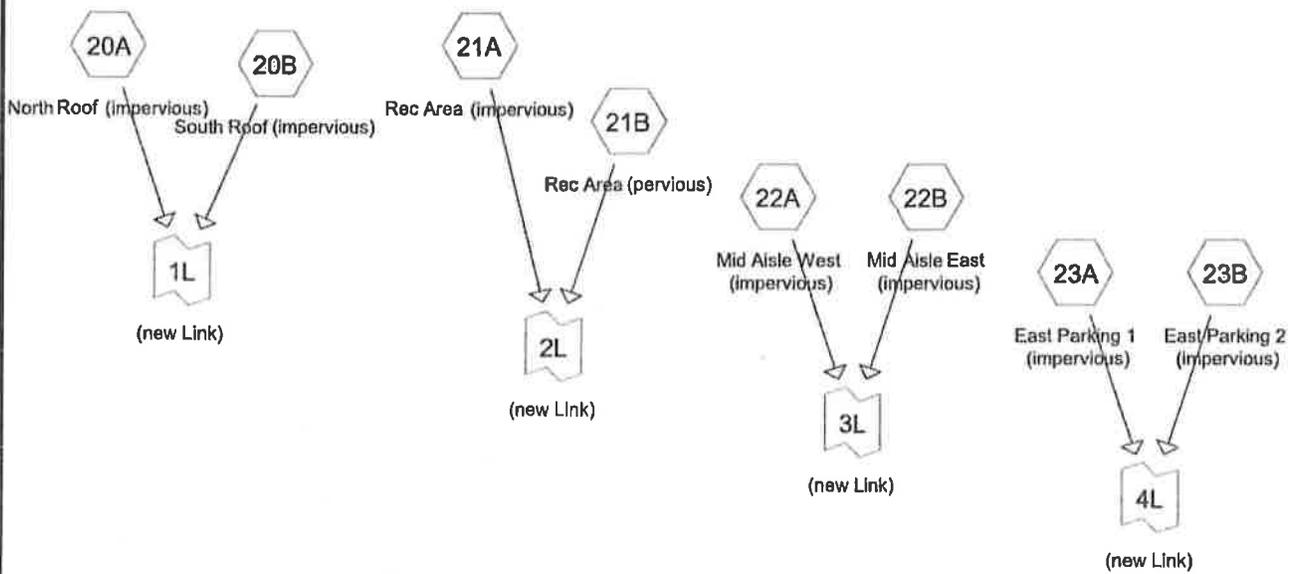
LID Facility Sizing Details

LID ID	Design Criteria	BMP Type	Facility Soil Type	Minimum Area (sq-ft)	Planned Areas (sq-ft)	Orifice Diameter (in)
North Roof Planter	FlowControlAndTreatment	Stormwater Planter - Filtration	Lined	445.0	445.0	1.4
Rec. & Parking Area Planter	FlowControlAndTreatment	Stormwater Planter - Filtration	Lined	445.8	446.0	1.5
Mid Aisle Planter 1	FlowControlAndTreatment	Stormwater Planter -	Lined	164.0	164.0	0.8

		Filtration				
East Parking Planter 2	FlowControlAndTreatment	Stormwater Planter - Filtration	Lined	601.1	602.0	1.6
East Parking Planter 1	FlowControlAndTreatment	Stormwater Planter - Filtration	Lined	338.6	346.0	1.2
South Roof Planter	FlowControlAndTreatment	Stormwater Planter - Filtration	Lined	235.0	235.0	1.0
Mid Aisle Planter 2	FlowControlAndTreatment	Stormwater Planter - Filtration	Lined	164.0	164.0	0.8

Pond Sizing Details

1. FCWQT = Flow control and water quality treatment, WQT = Water quality treatment only
2. Depth is measured from the bottom of the facility and includes the three feet of media (drain rock, separation layer and growing media).
3. Maximum volume of the facility. Includes the volume occupied by the media at the bottom of the facility.
4. Maximum water storage volume of the facility. Includes water storage in the three feet of soil media assuming a 40 percent porosity.



Summary for Subcatchment 20A: North Roof (impervious)

Runoff = 0.320 cfs @ 7.87 hrs, Volume= 4,654 cf, Depth= 3.77"

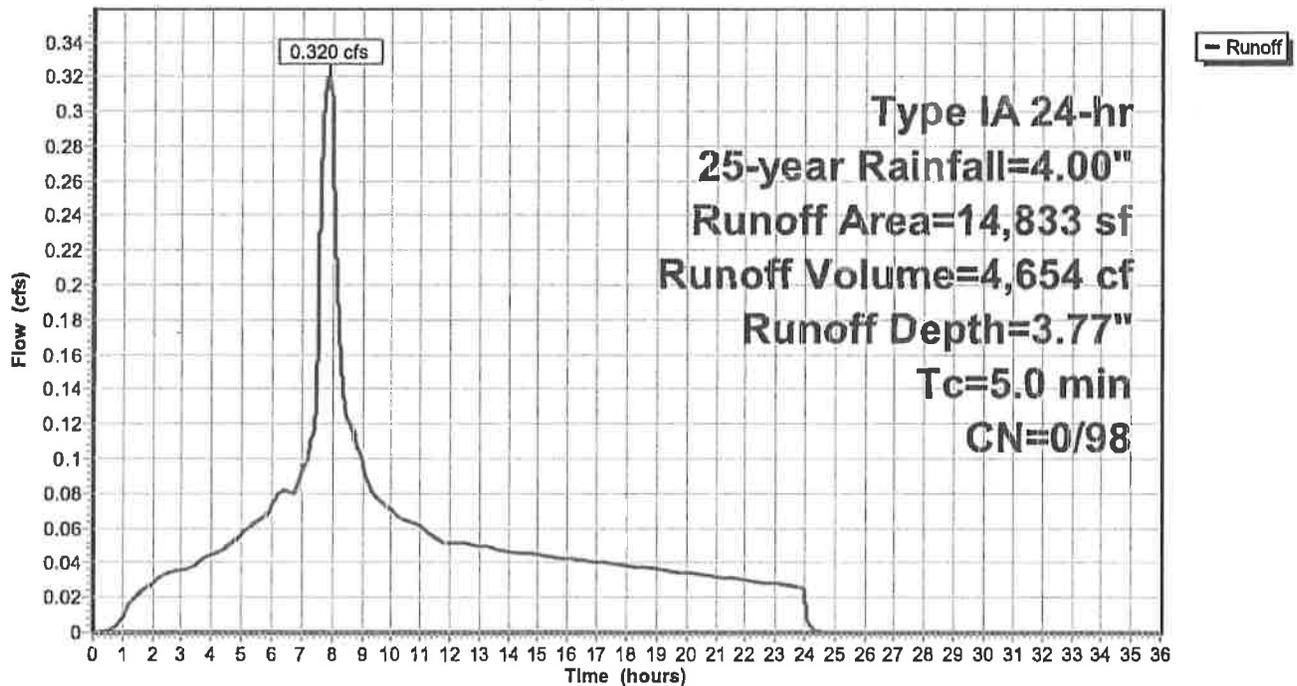
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-36.00 hrs, dt= 0.001 hrs
 Type IA 24-hr 25-year Rainfall=4.00"

	Area (sf)	CN	Description
*	14,833	98	imper, roof
	14,833	98	100.00% Impervious Area

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

Subcatchment 20A: North Roof (impervious)

Hydrograph



Summary for Subcatchment 20B: South Roof (impervious)

Runoff = 0.169 cfs @ 7.87 hrs, Volume= 2,458 cf, Depth= 3.77"

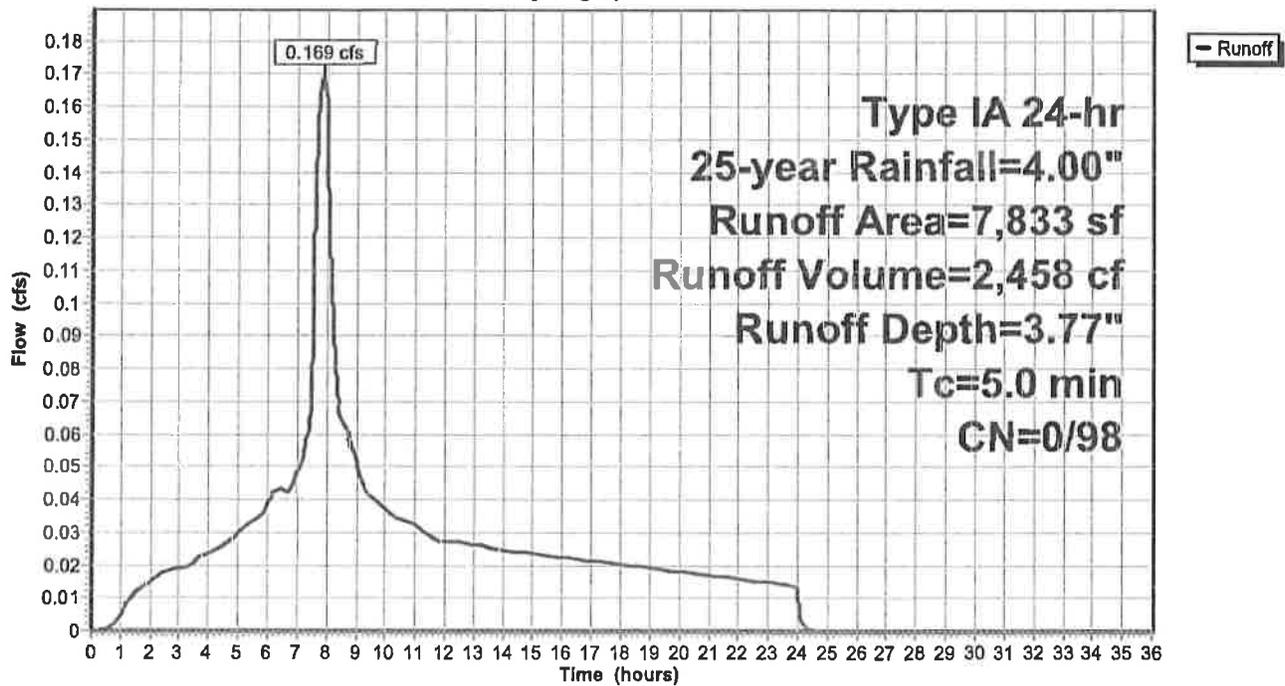
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-36.00 hrs, dt= 0.001 hrs
 Type IA 24-hr 25-year Rainfall=4.00"

	Area (sf)	CN	Description
*	7,833	98	imper, roof
	7,833	98	100.00% Impervious Area

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

Subcatchment 20B: South Roof (impervious)

Hydrograph



Summary for Subcatchment 21A: Rec Area (impervious)

Runoff = 0.295 cfs @ 7.87 hrs, Volume= 4,285 cf, Depth= 3.77"

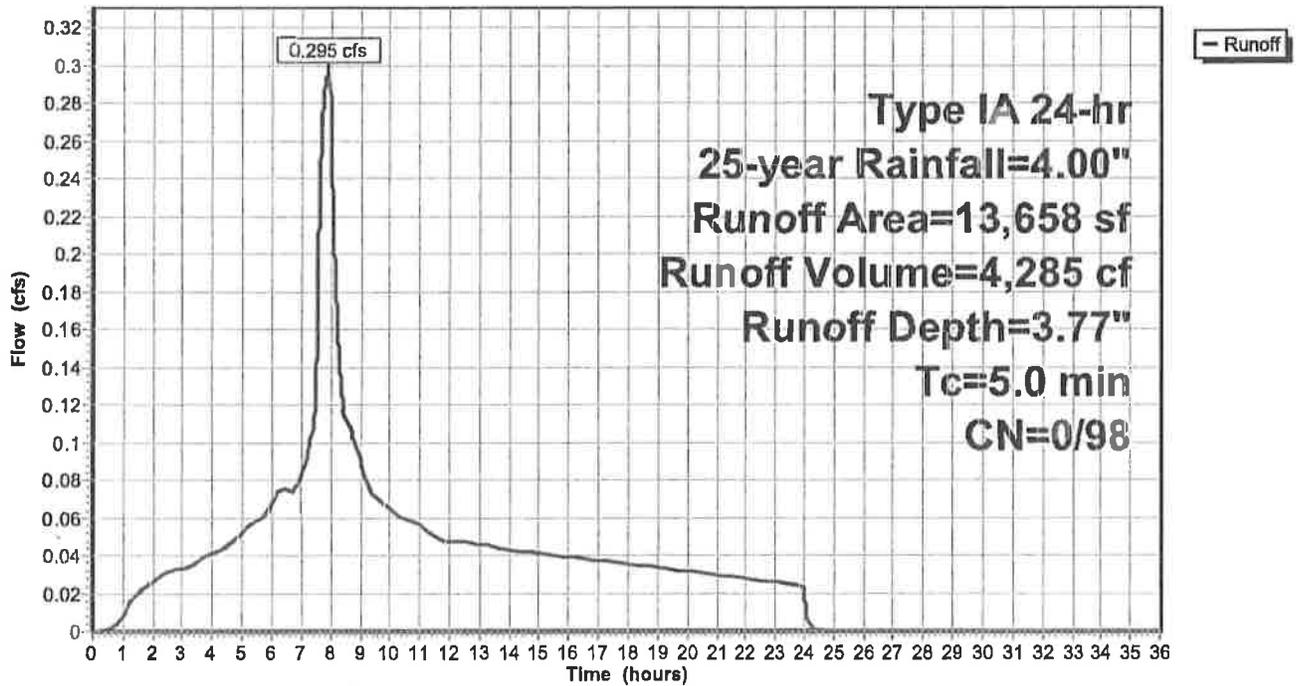
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-36.00 hrs, dt= 0.001 hrs
 Type IA 24-hr 25-year Rainfall=4.00"

	Area (sf)	CN	Description
*	13,658	98	imper, roof
	13,658	98	100.00% Impervious Area

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

Subcatchment 21A: Rec Area (impervious)

Hydrograph



Summary for Subcatchment 21B: Rec Area (pervious)

Runoff = 0.069 cfs @ 7.91 hrs, Volume= 976 cf, Depth= 2.82"

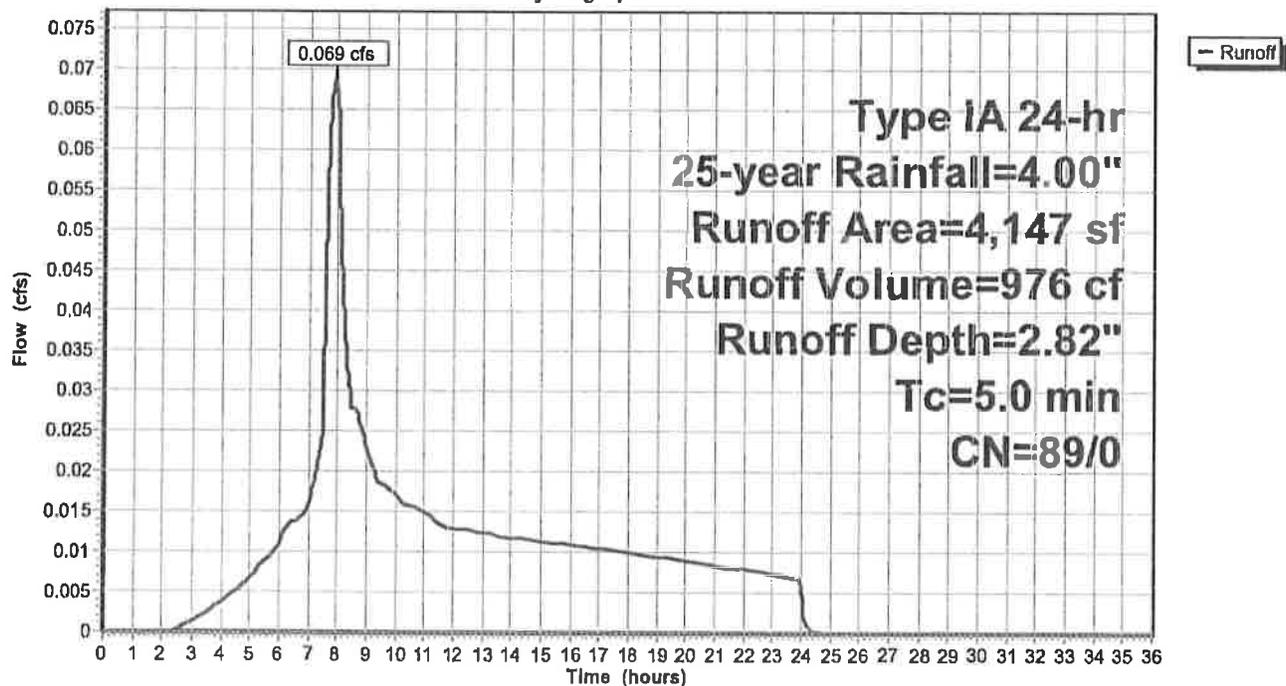
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-36.00 hrs, dt= 0.001 hrs
 Type IA 24-hr 25-year Rainfall=4.00"

Area (sf)	CN	Description
* 4,147	89	<50% Grass cover, Poor, HSG D
4,147	89	100.00% Pervious Area

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

Subcatchment 21B: Rec Area (pervious)

Hydrograph



Summary for Subcatchment 22A: Mid Aisle West (impervious)

Runoff = 0.118 cfs @ 7.87 hrs, Volume= 1,715 cf, Depth= 3.77"

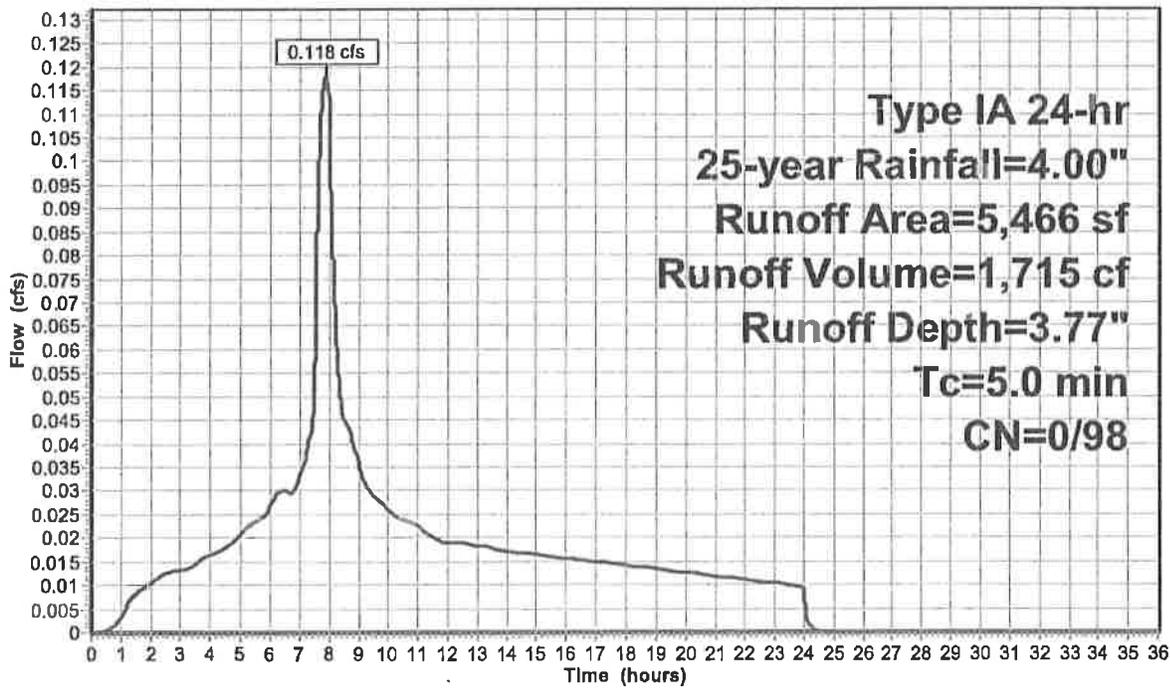
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-36.00 hrs, dt= 0.001 hrs
 Type IA 24-hr 25-year Rainfall=4.00"

Area (sf)	CN	Description
* 5,466	98	imper, parking
5,466	98	100.00% Impervious Area

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

Subcatchment 22A: Mid Aisle West (impervious)

Hydrograph



Summary for Subcatchment 22B: Mid Aisle East (impervious)

Runoff = 0.118 cfs @ 7.87 hrs, Volume= 1,715 cf, Depth= 3.77"

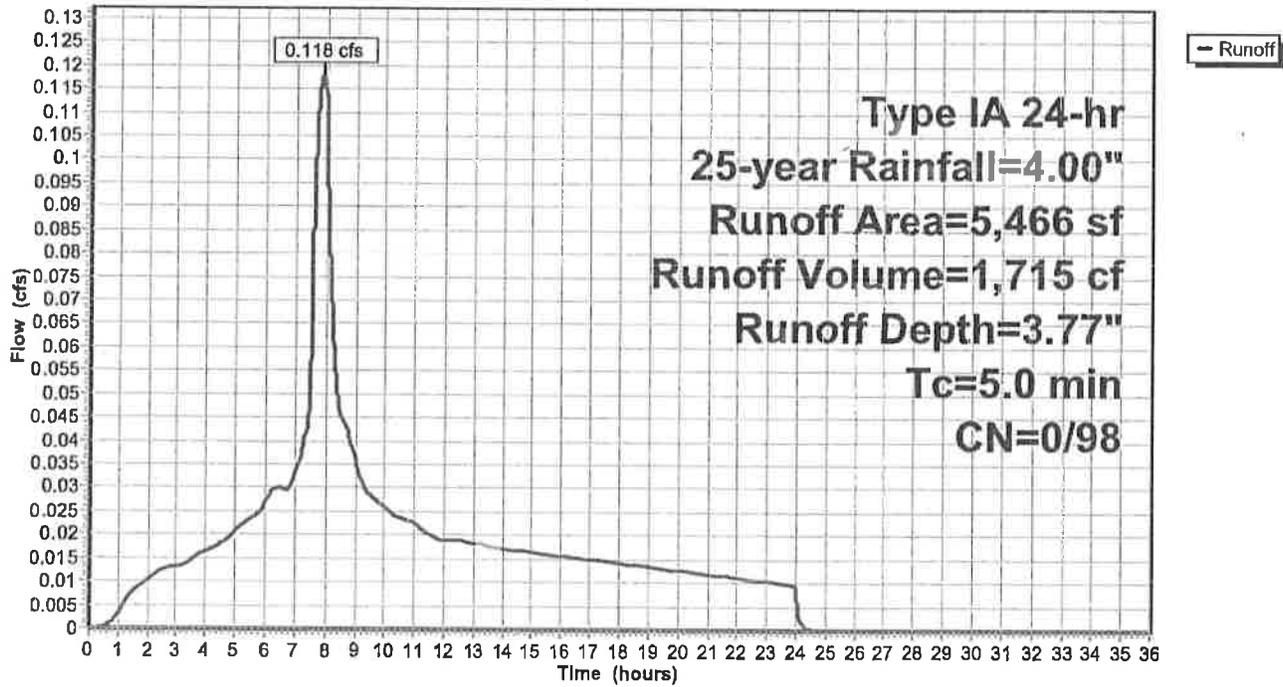
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-36.00 hrs, dt= 0.001 hrs
 Type IA 24-hr 25-year Rainfall=4.00"

Area (sf)	CN	Description
* 5,466	98	imper, parking
5,466	98	100.00% Impervious Area

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

Subcatchment 22B: Mid Aisle East (impervious)

Hydrograph



Summary for Subcatchment 23A: East Parking 1 (impervious)

Runoff = 0.244 cfs @ 7.87 hrs, Volume= 3,541 cf, Depth= 3.77"

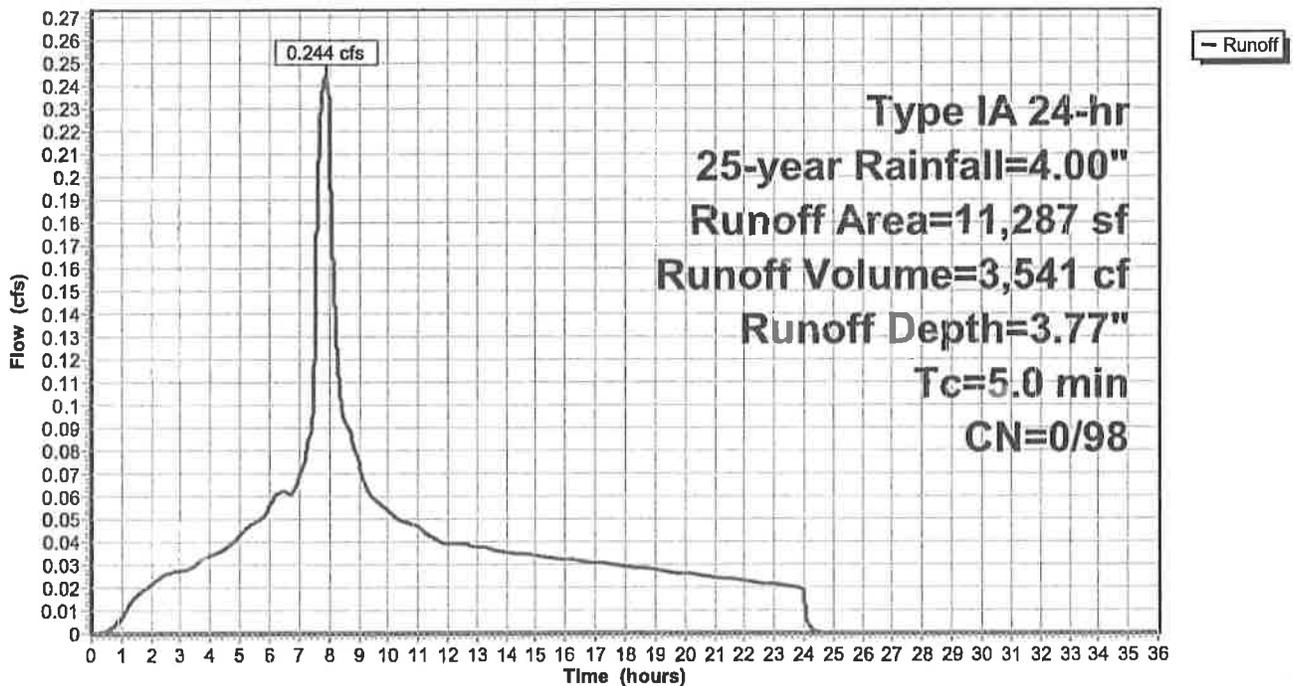
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-36.00 hrs, dt= 0.001 hrs
Type IA 24-hr 25-year Rainfall=4.00"

Area (sf)	CN	Description
* 11,287	98	imper, parking
11,287	98	100.00% Impervious Area

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

Subcatchment 23A: East Parking 1 (impervious)

Hydrograph



Summary for Subcatchment 23B: East Parking 2 (impervious)

Runoff = 0.433 cfs @ 7.87 hrs, Volume= 6,286 cf, Depth= 3.77"

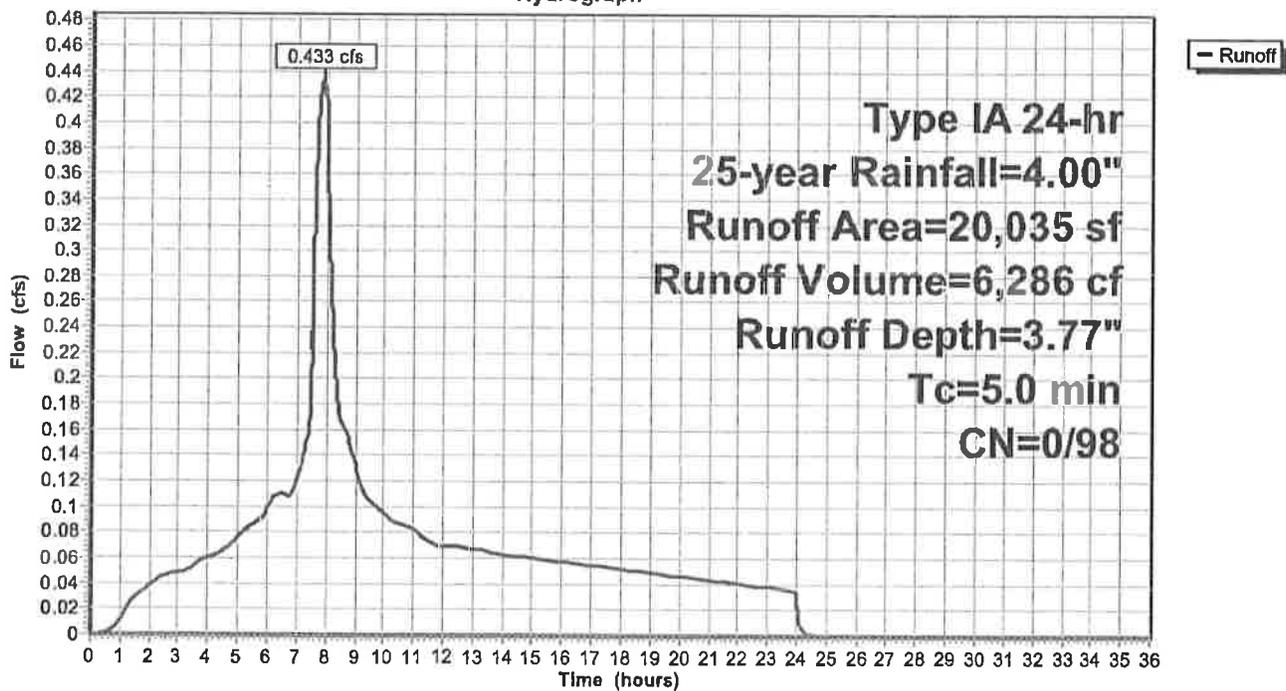
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-36.00 hrs, dt= 0.001 hrs
 Type IA 24-hr 25-year Rainfall=4.00"

Area (sf)	CN	Description
* 20,035	98	imper, parking
20,035	98	100.00% Impervious Area

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

Subcatchment 23B: East Parking 2 (impervious)

Hydrograph



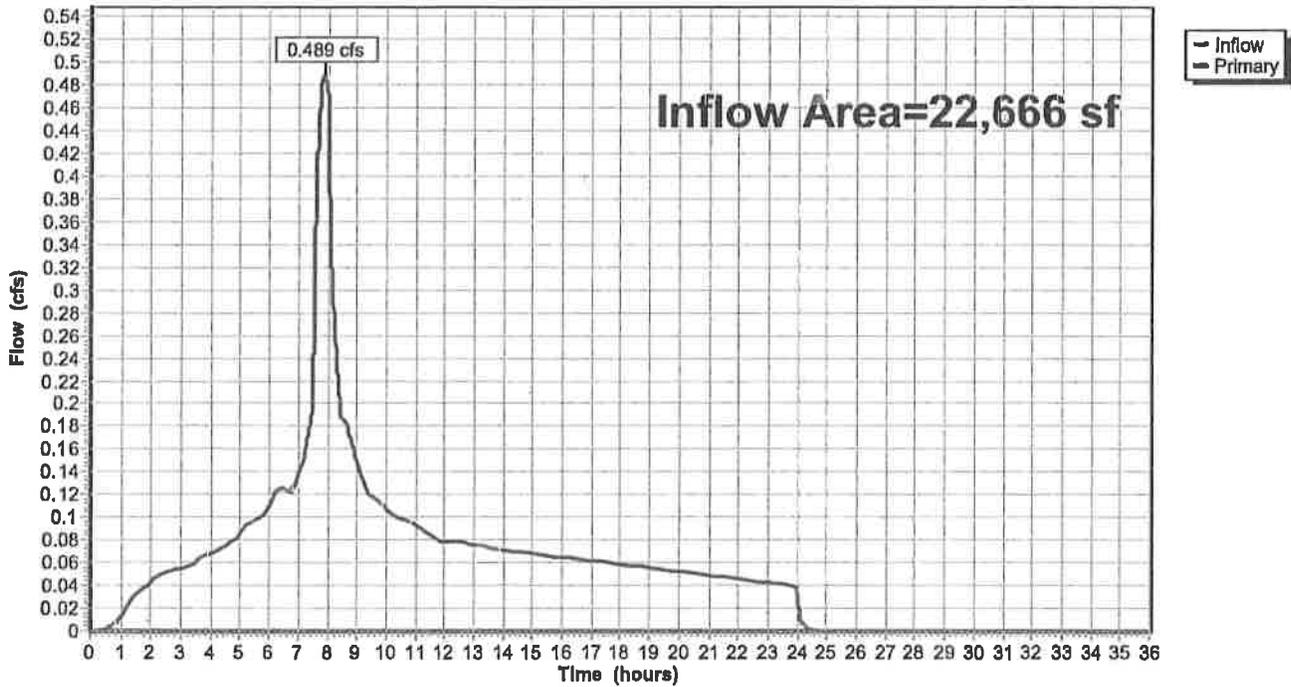
Summary for Link 1L: (new Link)

Inflow Area = 22,666 sf, 100.00% Impervious, Inflow Depth = 3.77" for 25-year event
Inflow = 0.489 cfs @ 7.87 hrs, Volume= 7,112 cf
Primary = 0.489 cfs @ 7.87 hrs, Volume= 7,112 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.001 hrs

Link 1L: (new Link)

Hydrograph



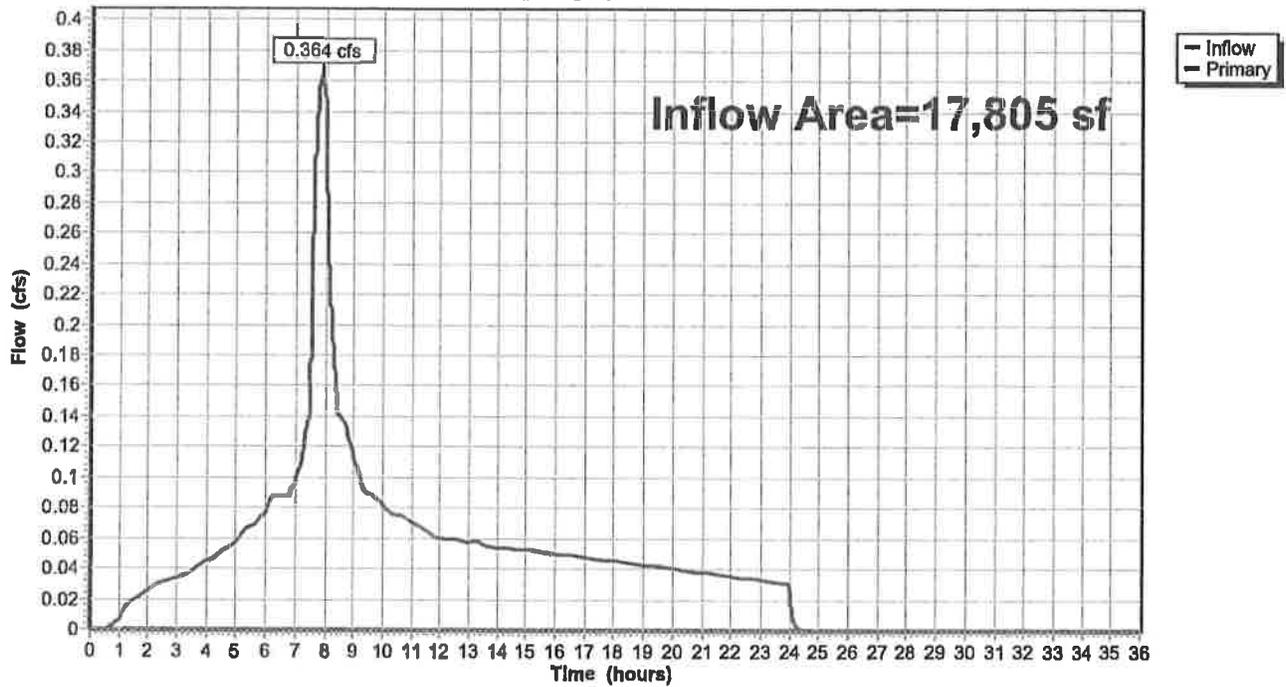
Summary for Link 2L: (new Link)

Inflow Area = 17,805 sf, 76.71% Impervious, Inflow Depth = 3.55" for 25-year event
Inflow = 0.364 cfs @ 7.88 hrs, Volume= 5,261 cf
Primary = 0.364 cfs @ 7.88 hrs, Volume= 5,261 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.001 hrs

Link 2L: (new Link)

Hydrograph



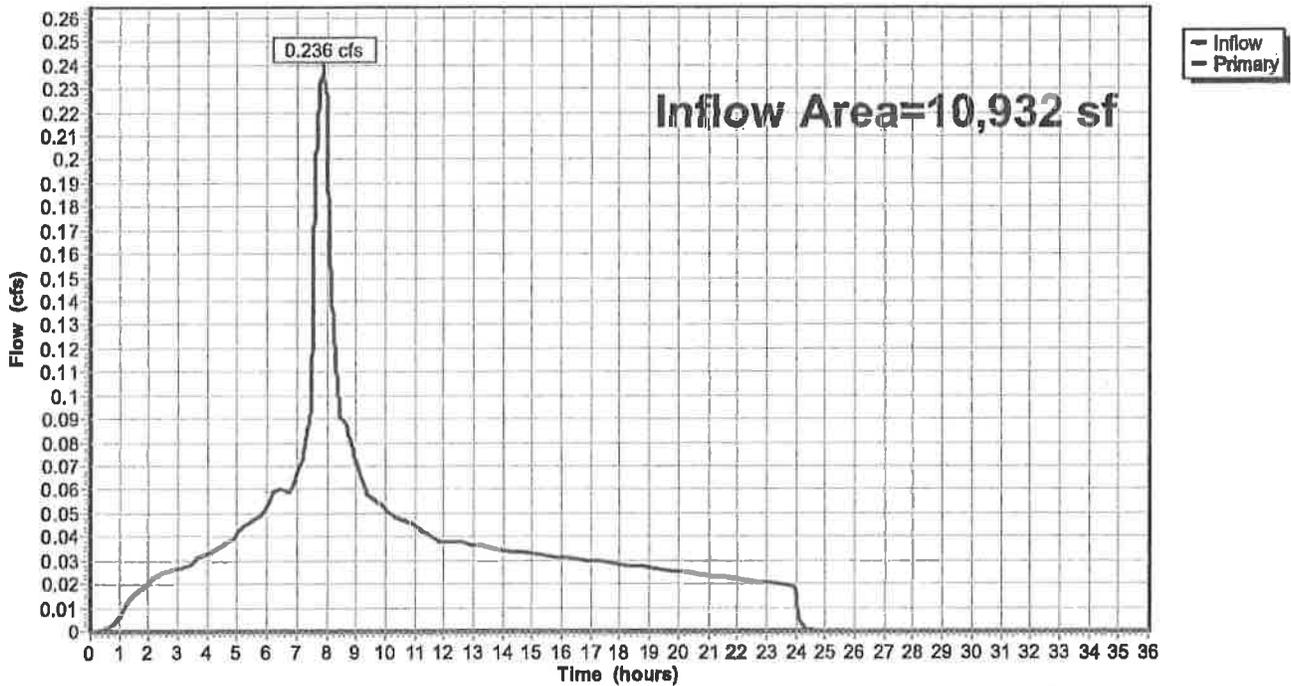
Summary for Link 3L: (new Link)

Inflow Area = 10,932 sf, 100.00% Impervious, Inflow Depth = 3.77" for 25-year event
Inflow = 0.236 cfs @ 7.87 hrs, Volume= 3,430 cf
Primary = 0.236 cfs @ 7.87 hrs, Volume= 3,430 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.001 hrs

Link 3L: (new Link)

Hydrograph



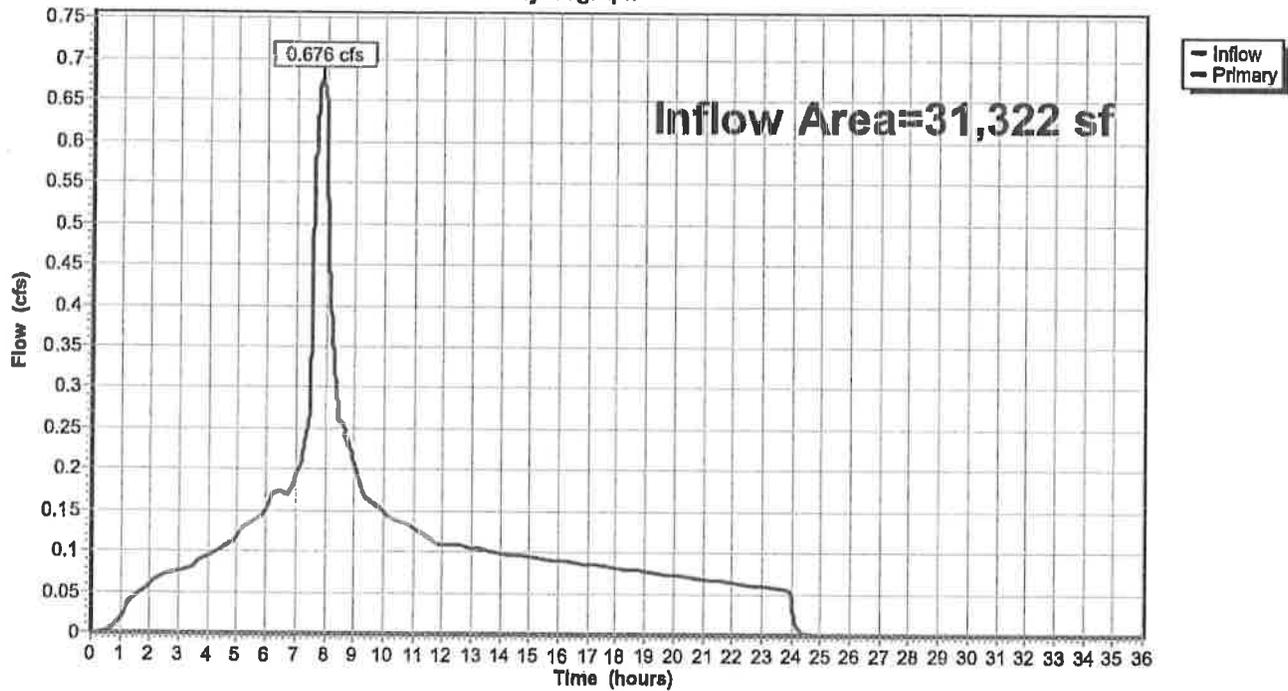
Summary for Link 4L: (new Link)

Inflow Area = 31,322 sf, 100.00% Impervious, Inflow Depth = 3.77" for 25-year event
Inflow = 0.676 cfs @ 7.87 hrs, Volume= 9,828 cf
Primary = 0.676 cfs @ 7.87 hrs, Volume= 9,828 cf, Atten= 0%, Lag= 0.0 min

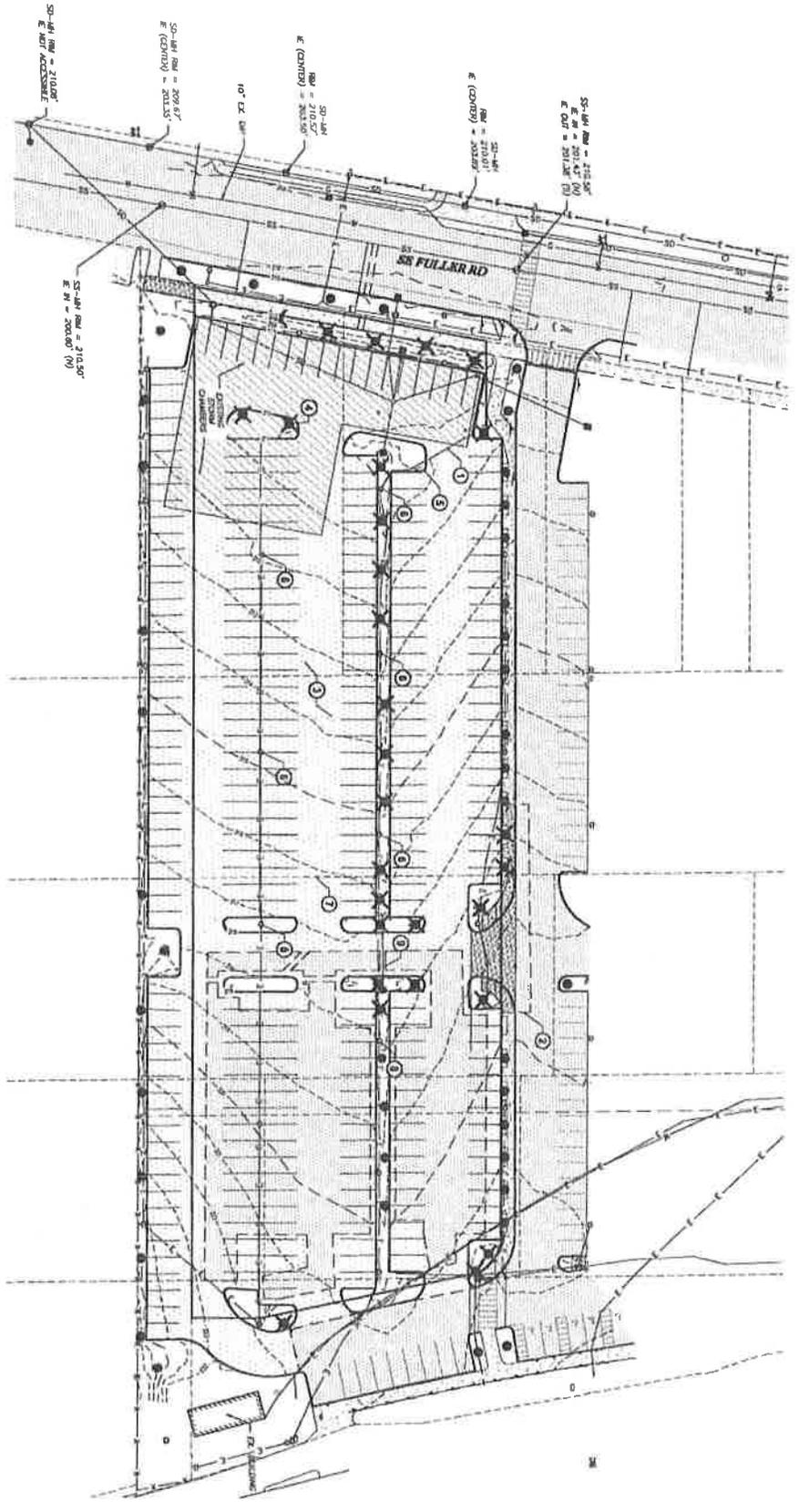
Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.001 hrs

Link 4L: (new Link)

Hydrograph



Appendix D:



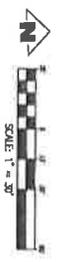
GENERAL NOTES:

- A. SEE GRADING SHEET AND EXIST IN THE IMMEDIACY OF STORM WATER OR MAINTENANCE REQUIREMENTS.
- B. EXISTING CURB AND GUTTERS SHALL BE IN PLACE BEFORE ANY SITE GRADING OR SIGN REMOVAL FROM THIS SITE.

CONSTRUCTION NOTES:

- 1 EX. STORM PIPE AND STRUCTURE TO BE REMOVED PER OTHERS (TYP)
- 2 EX. EXISTING CURB AND GUTTERS (TYP)
- 3 EX. EX. TO BE REMOVED (TYP)
- 4 EX. WELLS TO BE REMOVED (TYP)
- 5 EX. CURB TO BE REMOVED (TYP)

- 6 EX. LIGHT POLE AND ELECTRICAL TO BE REMOVED PER TO ELECTRICAL PLAN
- 7 EX. CURB TO BE CONSIDERED AS PER PROPERTY/EXISTENCE (TYP)
- 8 EX. LIGHT POLES TO REMAIN PER TO ELECTRICAL PLAN (TYP)
- 9 EX. STORM PIPE AND OTHER WELLS TO BE REMOVED



Project # 141720
 Date: 08/22/2014
 Designer: EMERIO DESIGN
 Reviewer: EMERIO DESIGN
 EXISTING CONDITIONS AND DEMOLITION PLAN
C1.4

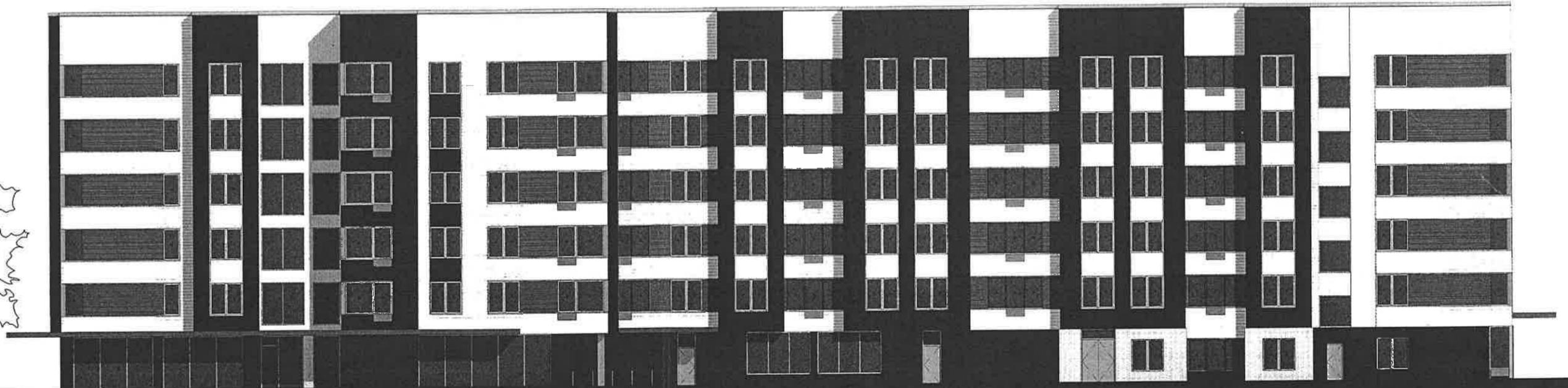
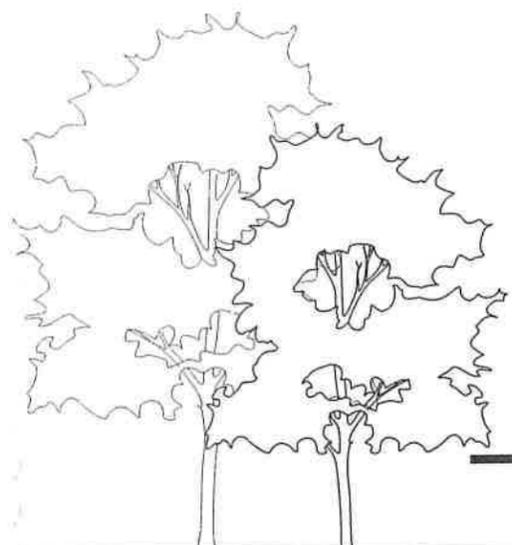
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FULLER STATION HOUSING
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architecture, interiors & planning





FULLER STATION HOUSING

DESIGN REVIEW SET JUNE 27, 2019
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Contact:
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steve@shapiro-la.com

DRAWING INDEX

ARCHITECTURE

- A0.01 PROJECT TEAM & DRAWING INDEX
- A0.02 VICINITY MAP
- SURVEY - SHEET 1
- SURVEY - SHEET 2
- A0.03 EXISTING CONDITIONS MAP
- A1.00 SITE PLAN
- A1.01 SITE PLAN LAND USE
- A1.02 SITE WALL DETAILS
- A1.03 SIGNAGE DETAILS
- A2.01 LEVEL 1 FLOOR PLAN
- A2.02 LEVELS 2-6 FLOOR PLAN
- A3.01 NORTH ELEVATIONS
- A3.02 EAST ELEVATIONS
- A3.03 SOUTH ELEVATIONS
- A3.04 WEST ELEVATIONS
- A3.05 ENLARGED ELEVATIONS
- A3.06 WINDOW TYPES

CIVIL

- C1.0 COVER SHEET
- C1.2 CONSTRUCTION NOTES
- C1.3 STREET SECTIONS & LEGEND
- C1.4 EXISTING CONDITIONS & DEMOLITION PLAN
- C1.5 SITE PLAN
- C1.6 GRADING PLAN
- C1.7 INTERIM STORM WATER MITIGATION PLAN
- C1.8 COMPOSITE UTILITY PLAN
- C1.9 (N-S) 'D' STREET PLAN & PROFILE
- C1.10 PRIVATE CONSTRUCTION DETAILS
- C1.11 PRIVATE CONSTRUCTION DETAILS
- C1.12 CLACKAMAS COUNTY CONSTRUCTION DETAILS
- C1.13 WATER ENVIRONMENT SERVICES CONSTRUCTION DETAILS
- C1.14 CLACKAMAS RIVER WATER CONSTRUCTION DETAILS

LANDSCAPE

- L101 LAYOUT AND MATERIALS PLAN
- L201 PLANTING PLAN
- L301 TREE REMOVAL & PROTECTION PLAN
- L401 IRRIGATION PLAN
- L501 PLANTING DETAILS
- L502 PLANTING DETAILS
- L503 PLANTING DETAILS
- L504 IRRIGATION DETAILS

ELECTRICAL

- E1.1 ELECTRICAL SITE PLAN
- E2.1 LIGHTING INFORMATION
- E2.2 LIGHTING INFORMATION
- E2.3 LIGHTING INFORMATION
- E2.4 LIGHTING INFORMATION

FULLER STATION HOUSING DESIGN REVIEW SET

9608 SE Fuller Road
Clackamas County, Oregon, 97086

PROJECT #: 1617.00
 SHEET ISSUE DATE: 6/27/2019
 REVISIONS:
 # DESCRIPTION DATE
 DESIGN REVIEW SUBMITTAL

DESIGN REVIEW
 DRAWING INDEX
A0.01



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 PH: 503.228.7571
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waterleaf

**FULLER STATION HOUSING
 50 % DESIGN
 DEVELOPMENT**

9608 SE Fuller Road
 Clackamas County, Oregon, 97086

PROJECT #: 1617.00
 SHEET ISSUE DATE: 6/27/2019

#	DESCRIPTION	DATE

DESIGN REVIEW SUBMITTAL

VICINITY MAP

A0.02

TITLE EXCEPTIONS AND EASEMENT NO.

RECORD EASEMENTS SHOWN ON THIS MAP ARE PER A FIDELITY NATIONAL TITLE COMPANY OF OREGON PRELIMINARY REPORT ORDER NO. 45141816385 DATED SEPTEMBER 10, 2018

1. TITLE EXCEPTIONS 9, 10, 11, 12, 13, 14, 15 AND 16 CONTAIN BUILDING RESTRICTIONS SUCH AS "NO WOOD YARDS OR AUTO WRECKING YARDS ALLOWED". THESE TITLE EXCEPTION DOCUMENTS DO NOT CONTAIN EASEMENTS.
2. TITLE EXCEPTIONS 17 AND 18 CONTAIN DEEDED ACCESS RESTRICTIONS TO I-205 FREEWAY.
3. TITLE EXCEPTION 19 IS A COVENANT GRANTED TO CLACKAMAS RIVER WATER THAT RESTRICTS WATER USAGE ON TAX LOT 901. THIS DOCUMENT DOES NOT CONTAIN AN EASEMENT.
4. TITLE EXCEPTION NO. 20, A DOCUMENT VACATING A PUBLIC ROAD DOES NOT CONTAIN OR RESERVE EASEMENTS. ANY PUBLIC UTILITY LINES THAT MAY EXIST WITHIN THE VACATED AREA ARE NOT SHOWN ON THIS MAP. THE SUBJECT AREA IS PLOTTED ON THIS MAP.
5. TITLE EXCEPTION NO. 21, A PUBLIC UTILITY EASEMENT PER DOCUMENT NO. 2011-052627 AFFECTS THE SUBJECT PROPERTY AND IS PLOTTED ON THIS MAP.
6. PROPOSED OR UNRECORDED EASEMENTS ARE NOT SHOWN ON THIS SURVEY. FUTURE UTILITY EASEMENTS WILL BE REQUIRED ON PARCEL 2 WHEN DEVELOPMENT OCCURS.

SURVEYOR'S CERTIFICATE

TO FIDELITY NATIONAL TITLE COMPANY OF OREGON, NORTHWEST REAL ESTATE DEVELOPERS LLC, AND TRI-COUNTY METROPOLITAN TRANSPORTATION DISTRICT OF OREGON;

THIS IS TO CERTIFY THAT THIS MAP AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE 2016 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/NSPS LAND TITLE SURVEYS, JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS, AND INCLUDES ITEMS 4, 5, 7(A), 8, 9, 11 AND 19 OF TABLE A THEREOF. THE FIELD WORK WAS COMPLETED ON JANUARY 21ST, 2019 AND UPDATED ON JANUARY 29, 2019 AND AGAIN ON MAY 1, 2019.

Steven P. Buckles MAY 2, 2019
STEVEN P. BUCKLES - OREGON PLS 2231 - DATE

TOPOGRAPHIC DESIGN SURVEY AND ALTA/NSPS LAND TITLE SURVEY

A PORTION OF LOTS 1 TO 4 AND 14 TO 18, BATTIN ACRES, SITUATED IN THE SW QUARTER OF SECTION 28, TOWNSHIP 1 SOUTH., RANGE 2 EAST., W.M., CLACKAMAS COUNTY, OREGON FOR: NORTHWEST REAL ESTATE DEVELOPERS LLC

NOTES

1. THE BOUNDARY AND BASIS OF BEARINGS ARE PER FOUND MONUMENTS AND SURVEY NUMBER 2010-1662 CLACKAMAS COUNTY SURVEY RECORDS.
2. THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND EXISTING DRAWINGS. THE SURVEYOR MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN-SERVICE OR ABANDONED. ALL UNDERGROUND UTILITY LINES MUST BE VERIFIED PRIOR TO CONSTRUCTION.
3. THIS MAP AND SURVEY IT IS BASED ON ARE REPRESENTATIVE OF THE CONDITIONS FOUND ON THE GROUND ON JANUARY 21, 2018 AND UPDATED ON JANUARY 29, 2019, AND AGAIN ON MAY 1, 2019. THE DATE THE FIELD WORK WAS COMPLETED.
4. RECORD EASEMENTS SHOWN ON THIS SURVEY ARE PER A PRELIMINARY TITLE REPORT PREPARED BY FIDELITY NATIONAL TITLE COMPANY OF OREGON, FILE NO. NC45141816385, DATED SEPTEMBER 10, 2018. SAID EASEMENTS ARE SHOWN ON THE ENTIRE TRIMET PROPERTY, INCLUDING PROPOSED PARCEL 1 AND PARCEL 2.
5. PARCEL 2, THE PROPOSED AREA OF DEVELOPMENT WAS SURVEYED TO INCLUDE A TOPOGRAPHIC DESIGN SURVEY. PARCEL 1 WAS NOT SURVEYED FOR DEVELOPMENT PURPOSES.
6. ELEVATIONS BASED ON OREGON STATE HIGHWAY VERTICAL CONTROL POINT R665 ELEVATION 241.425 FEET, A 2-1/2" BRASS DISK STAMPED "R665-1978" 1.5 FEET EAST OF THE NORTHWEST END OF THE OTTY ROAD OVERPASS CROSSING INTERSTATE I-205.
7. TREES 1 THROUGH 27 ARE A MIX OF CONIFER AND DECIDUOUS TREES ALL OVER 6" IN DIAMETER. THE REMAINING DECIDUOUS TREES SHOWN ON THIS MAP RANGE IN SIZE FROM 2" TO 5" IN DIAMETER.
8. A PORTION OF AN UNDERGROUND IRRIGATION LINE LABELED "WIR" ON THIS MAP WAS LOCATED NEAR THE EAST EDGE OF THE WORK AREA. IT APPEARS TO SERVICE THE UNDERGROUND IRRIGATION BETWEEN THE ISLANDS TO ACCOMMODATE THE SPRINKLER SYSTEM. THE LOCATION OF THE REMAINING IRRIGATION LINES WERE NOT LOCATED.
9. THERE ARE A TOTAL OF 244 PARKING SPACES WITHIN THE AREA OF PROPOSED PARCEL 2.

LEGAL DESCRIPTIONS

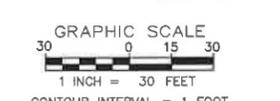
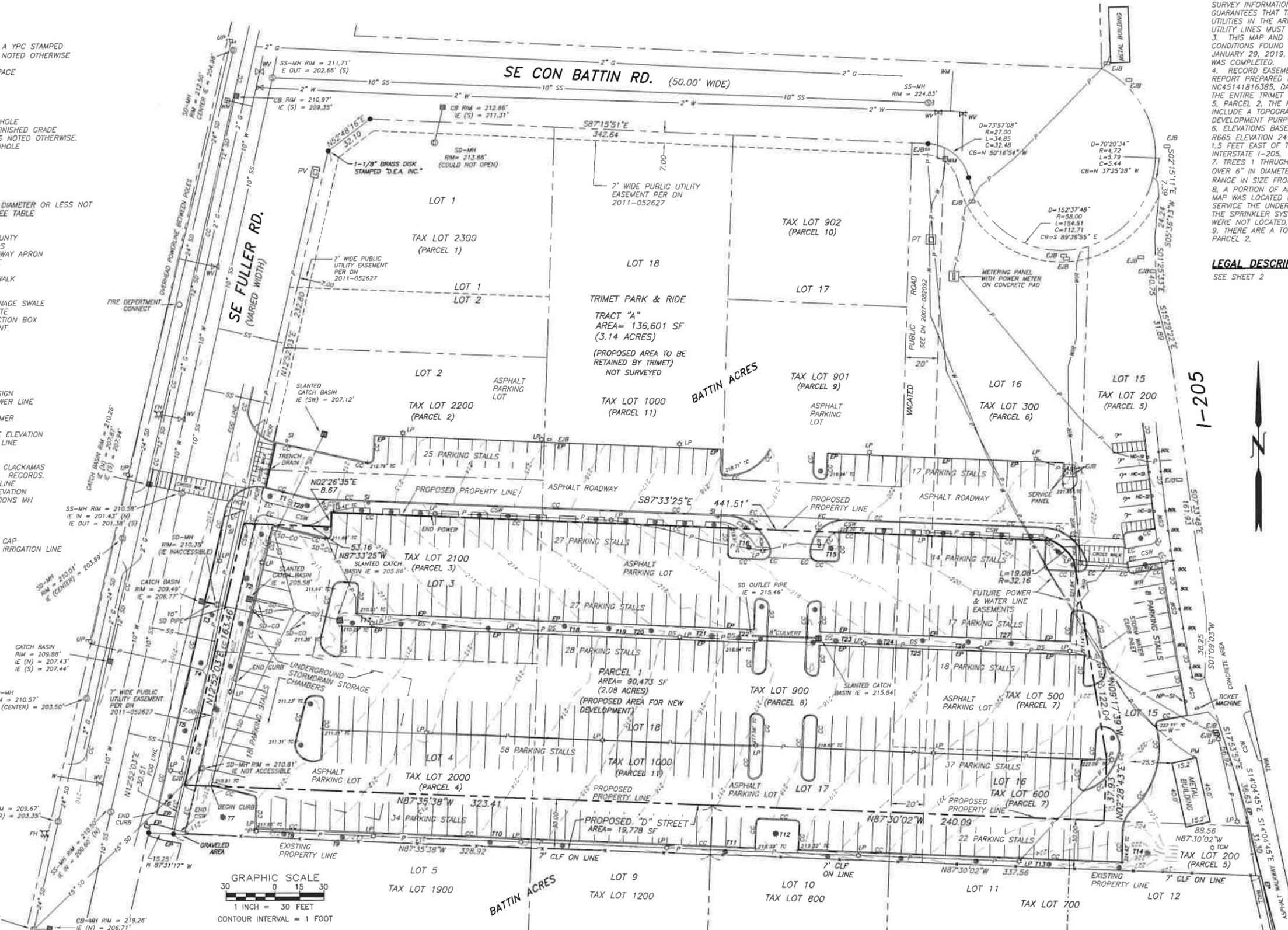
SEE SHEET 2

TREE TABLE

TREE NO.	DIAMETER	SPECIES
T1	7"	DECIDUOUS
T2	9"	CONIFEROUS
T3	8"	DECIDUOUS
T4	7"	DECIDUOUS
T5	9"	DECIDUOUS
T6	9"	DECIDUOUS
T7	15"	CONIFEROUS
T8	10"	DECIDUOUS
T9	8"	DECIDUOUS
T10	6"	DECIDUOUS
T11	7"	DECIDUOUS
T12	12"	CONIFEROUS
T13	6"	DECIDUOUS
T14	8"	CONIFEROUS
T15	6"	DECIDUOUS
T16	6"	DECIDUOUS
T17	12"	CONIFEROUS
T18	6"	DECIDUOUS
T19	6"	DECIDUOUS
T20	6"	DECIDUOUS
T21	7"	CONIFEROUS
T22	7"	CONIFEROUS
T23	8"	CONIFEROUS
T24	8"	CONIFEROUS
T25	6"	DECIDUOUS
T26	6"	DECIDUOUS
T27	6"	DECIDUOUS
T28	7"	DECIDUOUS

LEGEND

- = FOUND 5/8" IR WITH A YPC STAMPED "D.E.A. INC." UNLESS NOTED OTHERWISE
- = CATCH BASIN
- = DISABLED PARKING SPACE
- ⊕ = ELECTRICAL J BOX
- ⊕ = FIRE HYDRANT
- ⊕ = GAS VALVE
- ⊕ = LIGHT POLE
- ⊕ = POWER METER
- ⊕ = SANITARY SEWER MANHOLE
- ⊕ = SPOT ELEVATION AT FINISHED GRADE OR FLOWLINE, UNLESS NOTED OTHERWISE.
- ⊕ = STORM DRAINAGE MANHOLE
- ⊕ = UTILITY POLE
- ⊕ = WATER METER
- ⊕ = WATER VALVE
- ⊕ = CONIFEROUS TREE
- ⊕ = DECIDUOUS TREE, 5" DIAMETER OR LESS NOT REPORTED IN THE TREE TABLE
- CB = CATCH BASIN
- CC = CONCRETE CURB
- CCDR = CLACKAMAS COUNTY DEED RECORDS
- CDA = CONCRETE DRIVEWAY APRON
- CLF = CHAINLINK FENCE
- CO = CLEANOUT
- CSW = CONCRETE SIDEWALK NUMBER, CDDR
- DS = ENGINEERED DRAINAGE SWALE
- EC = EDGE OF CONCRETE
- EJB = ELECTRICAL JUNCTION BOX
- EP = EDGE OF PAVEMENT
- FH = FIRE HYDRANT
- G = NATURAL GAS LINE
- GV = GAS VALVE
- HCR = HANDICAP RAMP
- IE = INVERT ELEVATION
- LP = LIGHT POLE
- MH = MANHOLE
- NP-SI = NO PARKING SIGN
- P = UNDERGROUND POWER LINE
- PM = POWER METER
- PT = POWER TRANSFORMER
- PV = POWER VAULT
- RIM = RIM OF MANHOLE ELEVATION
- SD = STORM DRAINAGE LINE
- SI = SIGN
- SF = SQUARE FEET
- SN = SURVEY NUMBER, CLACKAMAS COUNTY SURVEY RECORDS.
- SS = SANITARY SEWER LINE
- TC = TOP OF CURB ELEVATION
- TCM = TELECOMMUNICATIONS MH
- UP = UTILITY POLE
- W = WATER LINE
- WM = WATER METER
- WV = WATER VALVE
- YPC = YELLOW PLASTIC CAP
- WIR = POSSIBLE WATER IRRIGATION LINE



REGISTERED PROFESSIONAL LAND SURVEYOR
Steven P. Buckles
OREGON JULY 17, 1986
STEVEN P. BUCKLES 2231
RENEWS: 12/31/19

SHEET 1 OF 2

REVISED MAY 2, 2019

REPPETO & ASSOCIATES, INC. LAND SURVEYORS

Plaza 125, Building G
12730 SE Stark Street
Portland, Oregon 97233
Phone: (503) 408-1507
www.reppetosurveying.com

DATE: JAN. 30, 2019 FILE: S18047.DWG
DRAWN BY: RL/SB JOB NO. 18047

**TOPOGRAPHIC DESIGN SURVEY AND
ALTA/NSPS LAND TITLE SURVEY**

A PORTION OF LOTS 1 TO 4 AND 14 TO 18, BATTIN ACRES,
SITUATED IN THE SW QUARTER OF SECTION 28, TOWNSHIP 1
SOUTH., RANGE 2 EAST., W.M., CLACKAMAS COUNTY, OREGON
FOR: NORTHWEST REAL ESTATE DEVELOPERS LLC

LEGAL DESCRIPTIONS

(RECORD DESCRIPTIONS PER TITLE REPORT OF ENTIRE TRIMET PROPERTY)

PARCEL 1: A parcel of land situated in the Southwest one-quarter of Section 28, Township 1 South, Range 2 East, Willamette Meridian, Clackamas County, Oregon, and being all that property described in Warranty Deed to Raymond Patridge and Irene Patridge recorded August 11, 1950 in Book 434, Page 644, Clackamas County Records, more particularly described as follows: Lots 1 and 2, BATTIN ACRES, in the County of Clackamas and State of Oregon, EXCEPTING THEREFROM that portion of said Lot 2 described in Deed to Ronald Aronson and Patricia Aronson recorded August 20, 1965 in Book 661, Page 790, Deed Records, said portion being described as follows: Beginning at the Southeast corner of said Lot 2; thence North 75.00 feet, along the East line of said Lot 2, to a point; thence West, parallel with the South line of said Lot 2 and 75.0 feet distant North, when measured at right angles to, the South line of said Lot 2, to the Southeast side of Fuller Road; thence Southwesterly along the Southeast side of said Fuller Road, to the Southwest corner of said Lot 2; thence East 192.02 feet along the South line of said Lot 2 to the point of beginning. ALSO EXCEPTING THEREFROM that portion conveyed to Clackamas County for public road and right-of-way by Document recorded September 15, 2001 at Recording No. 2011-052522. FURTHER EXCEPTING THEREFROM that portion conveyed to Clackamas County for public road and right-of-way by Document recorded September 15, 2011 at Recording No. 2011-052626.

PARCEL 2: A parcel of land situated in the Southwest one-quarter of Section 28, Township 1 South, Range 2 East, Willamette Meridian, Clackamas County, Oregon, and being all that property described in Warranty Deed to David Leatham, recorded June 8, 2004 as Document No. 2004-051900, Clackamas County Records. A portion of Lot 2, BATTIN ACRES, in the County of Clackamas and State of Oregon, described as follows: Beginning at the Southeast corner of said Lot 2; thence North 75.00 feet, along the East line of said Lot 2, to a point; thence West, parallel with the South line of said Lot 2 and 75.00 feet distant North, when measured at right angles to, the South line of said Lot 2, to the Southeast side of Fuller Road; thence Southwesterly, along the Southeast side of said Fuller Road, to the Southwest corner of said Lot 2; thence East 192.02 feet, along the South line of said Lot 2 to the point of beginning. EXCEPTING THEREFROM that portion conveyed to Clackamas County for public road and right-of-way by Document recorded September 15, 2001 at Recording No. 2011-052522.

PARCEL 3: A parcel of land situated in the Southwest one-quarter of Section 28, Township 1 South, Range 2 East, Willamette Meridian, Clackamas County, Oregon, and being all that property described in that Contract - Real Estate to Rory S. Sofranko, Dana L. Sofranko and David Leatham, recorded May 3, 1993 as Document No. 93 28399, Clackamas County Records, more particularly described as follows: Lot 3, BATTIN ACRES, in the County of Clackamas and State of Oregon. EXCEPTING THEREFROM that portion conveyed to Clackamas County for public road and right-of-way by Document recorded September 15, 2001 at Recording No. 2011-052522.

PARCEL 4: A parcel of land situated in the Southwest one-quarter of Section 28, Township 1 South, Range 2 East, Willamette Meridian, Clackamas County, Oregon, and being all that property described in Warranty Deed to E.D. Chase and Erma M. Chase, recorded June 2, 1950 in Book 431, Page 731, Clackamas County Records, more particularly described as follows: Lot 4, BATTIN ACRES, in the County of Clackamas and State of Oregon. EXCEPTING THEREFROM that portion conveyed to Clackamas County for public road and right-of-way by Document recorded September 15, 2001 at Recording No. 2011-052522.

PARCEL 5: A parcel of land situated in the Southwest one-quarter of Section 28, Township 1 South, Range 2 East, Willamette Meridian, Clackamas County, Oregon, and being all that property described as Parcel 1 in Statutory Warranty Deed to Miles Holding-Otty Road, LLC, recorded January 26, 2000, as Document No. 2000-004885, Clackamas County Records. A parcel of land lying in Lots 14 and 15, BATTIN ACRES, in the County of Clackamas and State of Oregon, the said parcel being that portion of said Lots 14 and 15 lying Westerly of the following described line: Beginning at a point opposite and 127 feet Westerly of Engineer's Station "SB3" 592+00 on the centerline of the Southbound lane of the East Portland Freeway; thence Southerly in a straight line to a point opposite and 129.11 feet Westerly of Engineer's Station "SB3" 592+42.51 on said center line; thence Southerly in a straight line to a point opposite and 131.52 feet Westerly of Engineer's Station "SB3" 592+75.88 on said center line; thence Southerly in a straight line to the Southerly line of said Lot 14 of a point 110.00 Westerly of, when measured at right angles to, said center line; thence Southerly parallel with said center line to a point opposite Engineer's Station "SB3" 598+50. The center line referred to herein is described as follows: Beginning at Engineer's center line Station "SB3" 550+56.38, said station being 1207.47 feet North and 52.56 feet East of the North quarter corner of Section 28, Township 1 South, Range 2 East, Willamette Meridian; thence South 36°0' West 164.55 feet; thence on a spiral curve left (the long chord of which bears South 35°27' West 399.98 feet) 400.00 feet; thence on a 5729.58 foot radius curve left (the long chord of which bears South 11°54'45" West 4330.51 feet) 4440.83 feet to Engineer's center line Station "SB3" 600+61.76. EXCEPTING THEREFROM that portion conveyed to Clackamas County for public road and right-of-way by Document recorded September 15, 2011 at Recording No. 2011-052626. FURTHER EXCEPTING THEREFROM that portion conveyed to the State of Oregon, by and through its Department of Transportation, by Deed recorded June 10, 2013 at Recording No. 2013-040130.

PARCEL 6: A parcel of land situated in the Southwest one-quarter of Section 28, Township 1 South, Range 2 East, Willamette Meridian, Clackamas County, Oregon, and being all that property described in Warranty Deed to Terry W. Emmert, recorded March 21, 2000, as Document No. 2000-017782, Clackamas County Records. A portion of Lot 16, BATTIN ACRES, in the County of Clackamas and State of Oregon, more particularly described as follows: Beginning at the Northeast corner of said Lot 16; thence North 88°44' West (Deed South 88°44' West) along the North line of said Lot, a distance of 90 feet to the East line of a 20 foot roadway conveyed to the public by Deed recorded August 23, 1962 in Book 609, Page 230, Deed Records; thence South along the East line of said roadway, a distance of 238.59 feet to the Northwest corner of that certain tract of land conveyed to Alex Craigen, et ux, by Deed recorded July 30, 1963 in Book 625, Page 617, Deed Records; thence East along the North line of said Craigen tract, a distance of 90 feet to the East line of said Lot 16; thence North along the East line of said Lot 16, a distance of 237.55 feet to the point of beginning. TOGETHER WITH that portion of vacated public road which inured thereto by Vacation Ordinance No. 2007-464, recorded September 24, 2007 at Recording No. 2007-082092. EXCEPTING THEREFROM that portion conveyed to Clackamas County for public road and right-of-way by Document recorded September 15, 2011 at Recording No. 2011-052626.

PARCEL 7: A parcel of land situated in the Southwest one-quarter of Section 28, Township 1 South, Range 2 East, Willamette Meridian, Clackamas County, Oregon, and being all that property described in Statutory Warranty Deed to Frank H. Carlin and Brenda M. Carlin, recorded August 1, 2001 as Document No. 2001-060862, Clackamas County Records. A portion of Lot 16, BATTIN ACRES, in the County of Clackamas, State of Oregon, described as follows: Beginning at a point which is South 88°04' East 20.00 feet and South 00°25' West 238.59 feet from the Northwest corner of said Lot 16; thence South 88°04' East 90.00 feet to the East line of said Lot 16; thence South 00°25' West 140.00 feet along said East line to the Northeast corner of a tract conveyed to Jacob Jensen by Deed recorded August 31, 1962 in Book 609, Page 799, Deed Records; thence North 89°04' West, along the North line of said Jensen tract, 90.00 feet to the Northwest corner of said Jensen tract; thence North 00°25' East 140.00 feet to the point of beginning. TOGETHER WITH that portion of vacated public road which inured thereto by Vacation Ordinance No. 2007-464, recorded September 24, 2007 at Recording No. 2007-082092. ALSO: A portion of Lot 16, BATTIN ACRES, in the County of Clackamas, State of Oregon, described as follows: Beginning at the Southeast corner of said Lot 16; thence running 90 feet North 89°04' West along the South line of said Lot 16; thence North 00°25' East 70 feet parallel with the East line of said Lot 16, to the Southwest corner of a tract conveyed to Alex Craigen, et utilities, by Deed recorded July 31, 1962, as Fee No. 16364, Deed Records; thence South 89°04' East 90 feet to the East line of said Lot 16; thence South 00°25' West 70 feet along the East line of said Lot 16 to the point of beginning. TOGETHER WITH that portion of vacated public road which inured thereto by Vacation Ordinance No. 2007-464, recorded September 24, 2007 at Recording No. 2007-082092.

PARCEL 8: A parcel of land situated in the Southwest one-quarter of Section 28, Township 1 South, Range 2 East, Willamette Meridian, Clackamas County, Oregon, and being all that property described in Warranty Deed to Frank H. Carlin and Brenda M. Carlin, recorded March 26, 1976 as Document No. 76 9437, Clackamas County Records. A portion of Tract 17, BATTIN ACRES, a recorded Plat, described as follows: Beginning at the Northeast corner of said Tract 17; thence South 00°25' West along the East line of said Tract 17, 220.00 feet to the True Point of Beginning of the tract of land herein to be described; thence North 88°44' West parallel with the North line of said Tract 17, 110.00 feet to a point in the West line of said Tract 17; thence South 00°25' West along the West line of said Tract 17, 228.83 feet to the Southwest corner thereof; thence South 89°04' East (South 88°44' East, Document No. 76 9437) along the South line of said Tract 17, 110.00 feet to the Southeast corner thereof; thence North 00°25' East along the East line of said Tract 17, 228.19 feet to the true point of beginning.

PARCEL 9: A parcel of land situated in the Southwest one-quarter of Section 28, Township 1 South, Range 2 East, Willamette Meridian, Clackamas County, Oregon, and being all that property described in Statutory Special Warranty Deed to David G. Bradley and Marlin E. Fleck, recorded February 4, 2004 as Document No. 2004-008554, Clackamas County Records. A portion of Tract 17, BATTIN ACRES, a recorded Plat, described as follows: Beginning at the Northeast corner of said Tract 17; thence South 00°25' West along the East line of said Tract, 110.00 feet to the True Point of Beginning of the tract of land herein to be described; thence North 88°44' West parallel with the North line of said Tract, 110.00 feet to a point in the West line of said Tract; thence South 00°25' West along the West line of said Tract, 110.00 feet; thence South 88°44' East parallel with the North line of said Tract, 110.00 feet to a point in the East line of said Tract; thence North 00°25' East along the East line of said Tract 110.00 feet to the true point of beginning.

PARCEL 10: A parcel of land situated in the Southwest one-quarter of Section 28, Township 1 South, Range 2 East, Willamette Meridian, Clackamas County, Oregon, and being all that property described in Statutory Warranty Deed to Edward F. Zachary and Mary L. Zachary, recorded August 1, 1985 as Document No. 85 26700, Clackamas County Records. A portion of Lot 17, BATTIN ACRES, in the County of Clackamas and State of Oregon, described as follows: Beginning at the Northeast corner of said Lot 17; thence South 00°25' West along the East line of said Lot 17, 110.00 feet; thence North 88°44' West parallel with the North line of said tract, 110.00 feet to the West line thereof; thence North 00°25' East 110.00 feet, along said West line to the Northwest corner thereof; thence East along the North line of said tract, 110.00 feet to the point of beginning. EXCEPTING THEREFROM the Northerly 5 feet conveyed to Clackamas County for road purposes by Deed recorded July 23, 1975 as Recorder's Fee No. 75-20126, Deed Records. FURTHER EXCEPTING THEREFROM that portion conveyed to Clackamas County for public road and right-of-way by Document recorded September 15, 2011 at Recording No. 2011-052626.

PARCEL 11: A parcel of land situated in the Southwest one-quarter of Section 28, Township 1 South, Range 2 East, Willamette Meridian, Clackamas County, Oregon, and being all that property described in Warranty Deed to Frances E. Mulick and Rose A. Mulick, recorded December 20, 1968 as Document No. 68 25543, Clackamas County Records, more particularly described as follows: Lot 18, BATTIN ACRES, in the County of Clackamas and State of Oregon. EXCEPTING THEREFROM that portion conveyed to Clackamas County for public road and right-of-way by Document recorded September 15, 2011 at Recording No. 2011-052626.

SHEET 2 OF 2



**REPPETO & ASSOCIATES, INC.
LAND SURVEYORS**

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DATE: JAN. 30, 2019 FILE: S18047.DWG
DRAWN BY: RL/SB JOB NO. 18047



architecture, interiors & planning

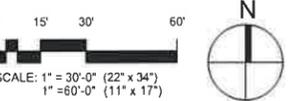
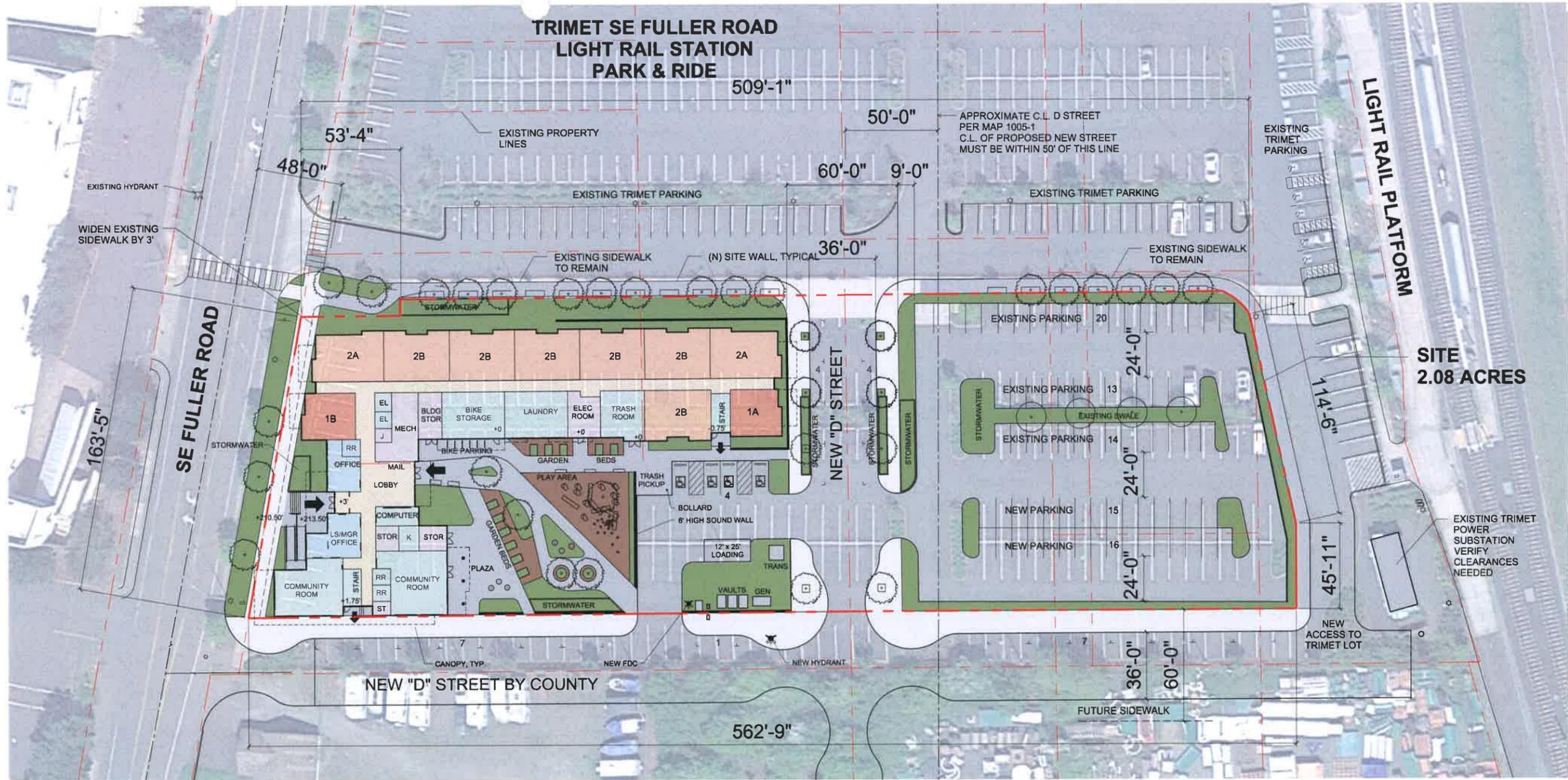
415 SW 11th Ave
Suite 200
Portland, OR 97205
PH: 503.228.7571
FX: 503.273.8891

FULLER STATION HOUSING

50% DESIGN

DEVELOPMENT

9608 SE Fuller Road
Clackamas County, Oregon, 97086



SITE PLAN
A1.1 SCALE: 1" = 30'-0"

GROUND FLOOR UNIT COUNT

1 BR	= 2 UNITS
2 BR	= 8 UNITS
TOTAL	= 10 UNITS

OVERALL UNIT COUNT

1 BR	= 17 UNITS (17%)
2 BR	= 63 UNITS (63%)
3 BR	= 20 UNITS (20%)
TOTAL	= 100 UNITS
6 STORIES (5 OVER 1)	

PARKING REQUIRED

1 BR = 1.25 SPACES PER UNIT x 18	= 22.50 SPACES
2 BR = 1.50 SPACES PER UNIT x 61	= 91.50 SPACES
3 BR = 1.75 SPACES PER UNIT x 21	= 36.75 SPACES
TOTAL REQUIRED	= 150.75 SPACES

TOTAL REQUIRED WITH 0.70 REDUCTION = 106 SPACES

PARKING PROVIDED

OFF STREET	= 81 SPACES
ON STREET	= 23 SPACES
TOTAL PROVIDED ON SITE	= 104 SPACES
20% OF REQUIRED	= 22 SPACES
ON SITE + 20%	= 126 TOTAL SPACES

BUILDING AREA

GROUND FLOOR	20,745 SF
UPPER FLOOR (x5)	21,240 SF
TOTAL BUILDING AREA	129,945 SF

BICYCLE PARKING

REQUIRED (0.5 PER UNIT)	= 50
PROVIDED:	
SECURE IN BUILDING	= 38
EXTERIOR, COVERED	= 12
TOTAL PROVIDED	= 50

(0.7 REDUCTION)
(ON TRIMET LOT PER SHARED AGREEMENT)
(0.85 REDUCTION)

SITE AREA = 2.08 ACRES OR 90,596 SF

LANDSCAPE AREA

REQUIRED (15% OF SITE AREA)	= 13,589 SF
PROVIDED (18% OF SITE AREA)	= 16,483 SF

OUTDOOR RECREATIONAL AREA

REQUIRED (CAL FOR 1ST 20 UNITS)	
200 SF PER 1 & 2 BR UNITS (15)	= 3,000 SF
300 SF PER 3 BR UNITS (5)	= 1,500 SF
TOTAL REQUIRED	= 4,500 SF

PROVIDED = 4,500 SF

ARCHITECTURAL SITE PLAN

A1.00

PROJECT #: 1617.00
SHEET ISSUE DATE: 6/27/2019

REVISIONS:

#	DESCRIPTION	DATE

DESIGN REVIEW SUBMITTAL



419 SW 11th Ave
 Suite 200
 Portland OR 97205
 Ph 503 228 7571
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FULLER STATION HOUSING

50 % DESIGN DEVELOPMENT

9608 SE Fuller Road
 Clackamas County, Oregon, 97086

PROJECT #: 1617.00
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ARCHITECTURAL SITE PLAN

A1.01

**TRIMET SE FULLER ROAD
 LIGHT RAIL STATION
 PARK & RIDE**

**SITE
 2.08 ACRES**

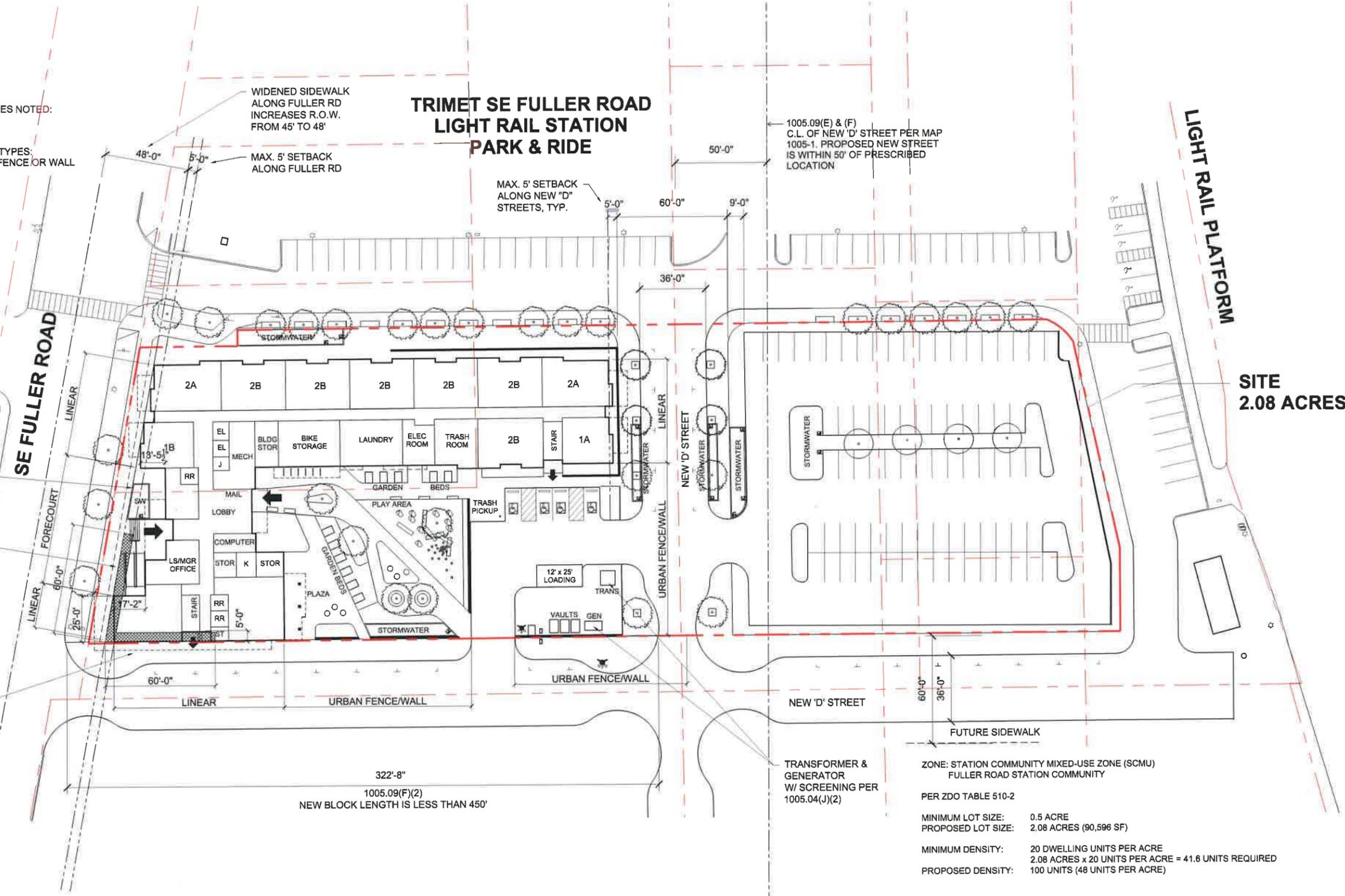
BUILDING FRONTAGE TYPES NOTED:
 1005.10(I) LINEAR
 1005.10(J) FORECOURT

LANDSCAPE SCREENING TYPES:
 1005.10(L)(2) URBAN FENCE OR WALL

1005.03(E)(2)
 1005.03(E)(3)(b)
 1005.04(B)(1)
 1005.09(B) & (C)

1005.10(G)(2)(a)
 BUILDING FRONTAGE
 REQUIRED

CANOPY SHOWN
 DASHED, TYP.



ZONE: STATION COMMUNITY MIXED-USE ZONE (SCMU)
 FULLER ROAD STATION COMMUNITY

PER ZDO TABLE 510-2

MINIMUM LOT SIZE: 0.5 ACRE
 PROPOSED LOT SIZE: 2.08 ACRES (90,596 SF)

MINIMUM DENSITY: 20 DWELLING UNITS PER ACRE
 2.08 ACRES x 20 UNITS PER ACRE = 41.6 UNITS REQUIRED
 PROPOSED DENSITY: 100 UNITS (48 UNITS PER ACRE)

1 SITE PLAN - ZONING STANDARDS COMPLIANCE
 A1.1 SCALE: 1" = 30'-0"





architecture, interiors & planning

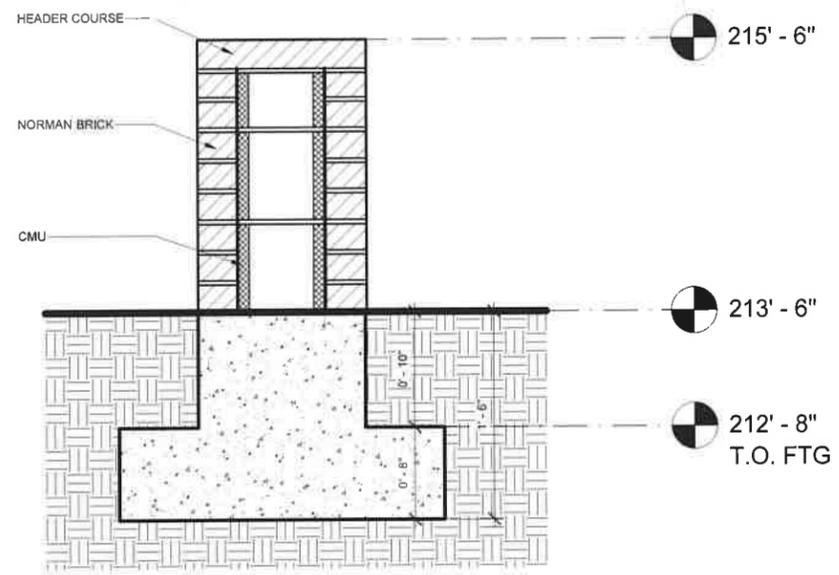
waterleaf
419 SW 11th Ave
Suite 200
Portland OR 97205
Ph 503 228 7271
Fx 503 273 8891

FULLER STATION HOUSING
DESIGN REVIEW SET

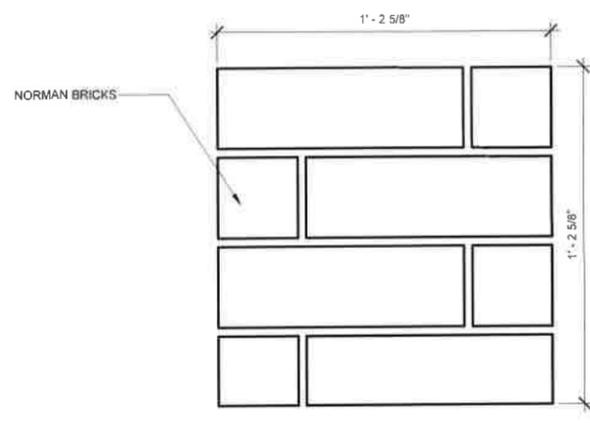
9608 SE Fuller Road
Clackamas County, Oregon, 97086

PROJECT #: 1617.00
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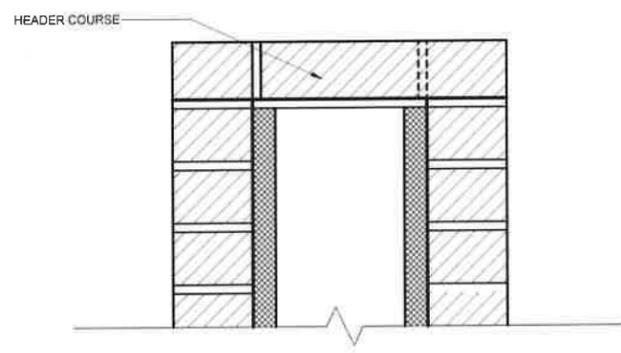
SITE WALL DETAILS
A1.02



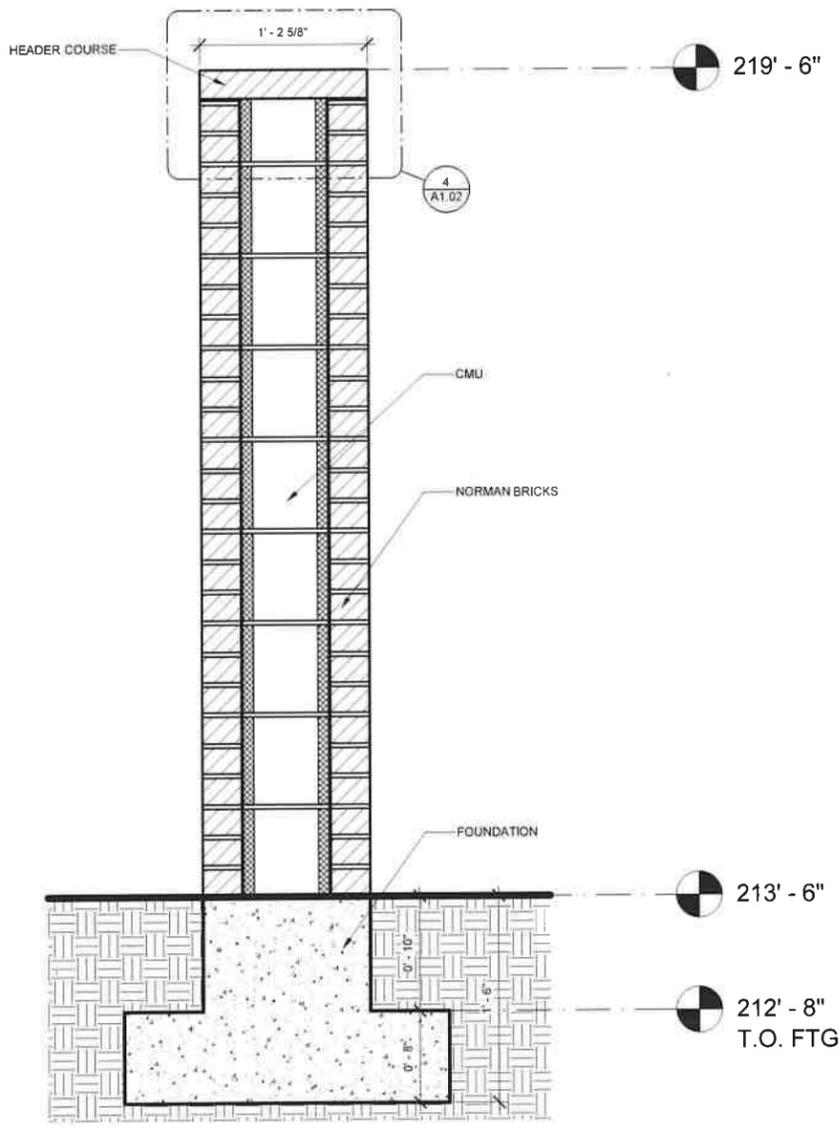
1 SITE WALL - SECTION
A1.02 1 1/2" = 1'-0"



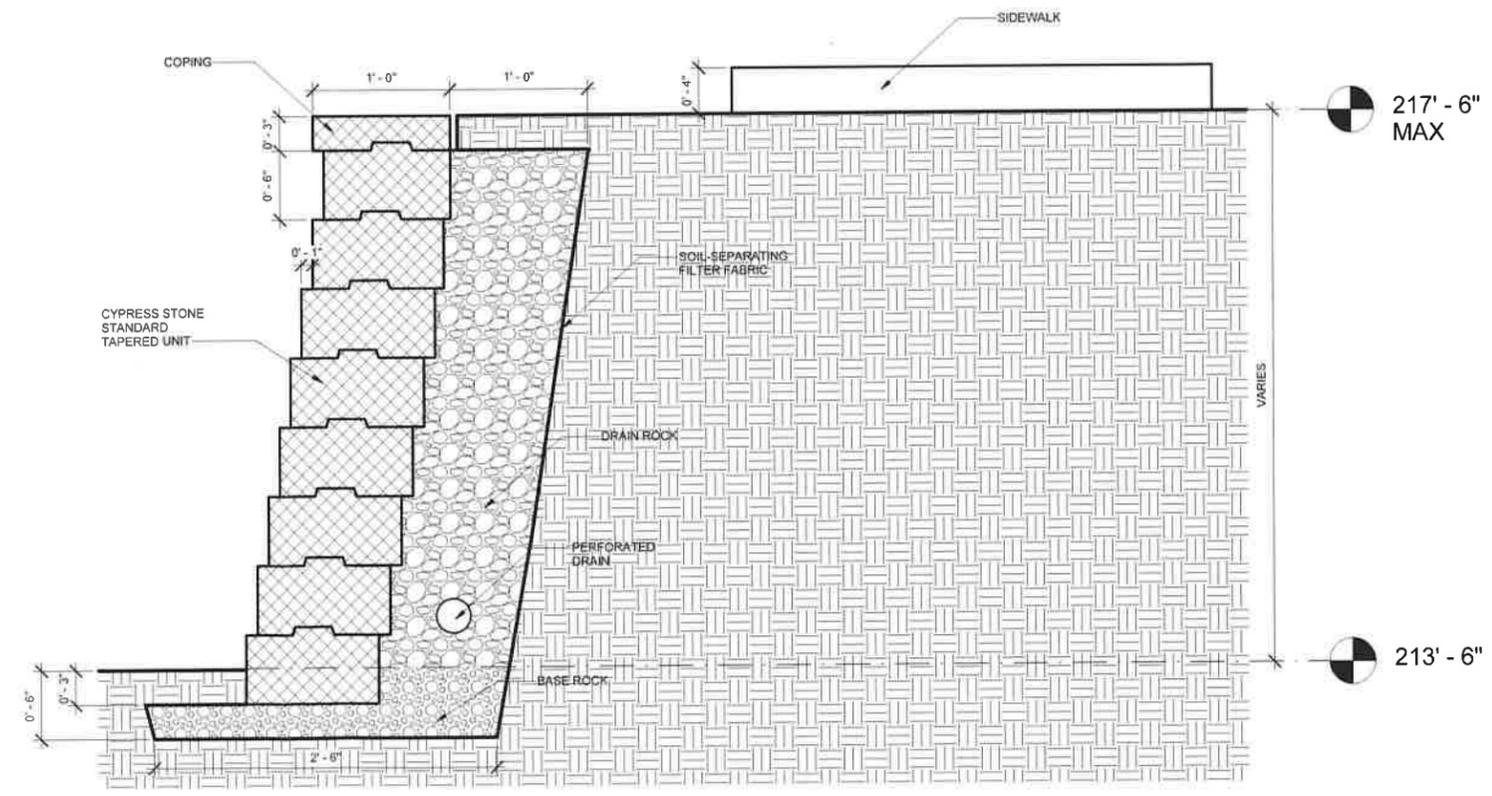
3 SITE WALL - PLAN
A1.02 3" = 1'-0"



4 SOUND WALL - ENLARGED ELEVATION
A1.02 3" = 1'-0"



2 SOUND WALL - SECTION
A1.02 1 1/2" = 1'-0"



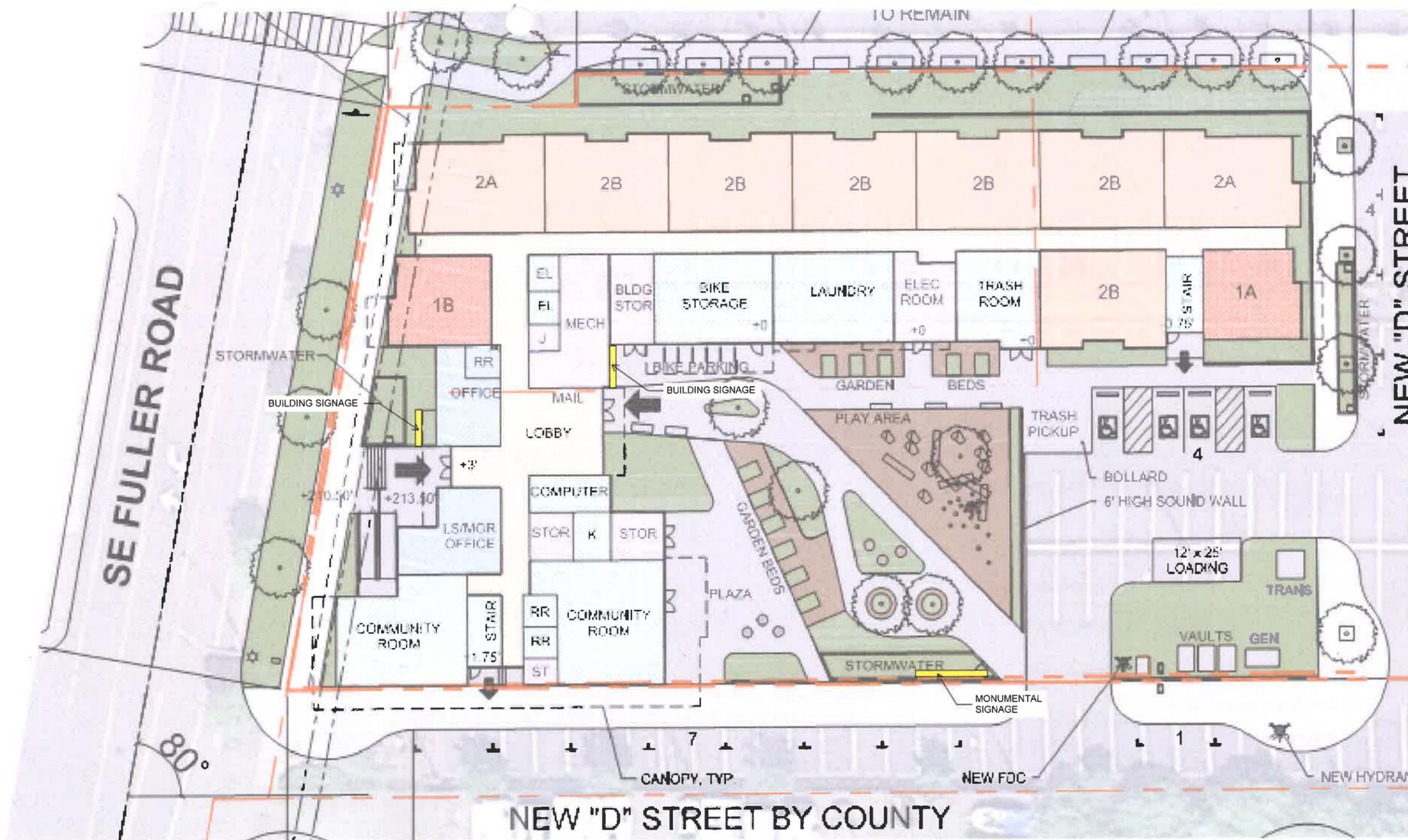
5 RETAINING WALL - SECTION
A1.02 1 1/2" = 1'-0"



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FULLER STATION HOUSING
 DESIGN REVIEW SET

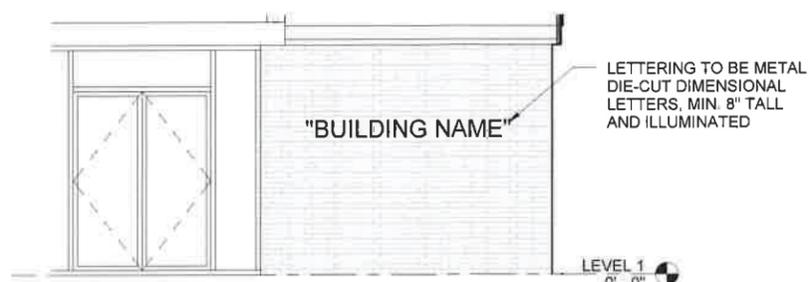
9608 SE Fuller Road
 Clackamas County, Oregon, 97086



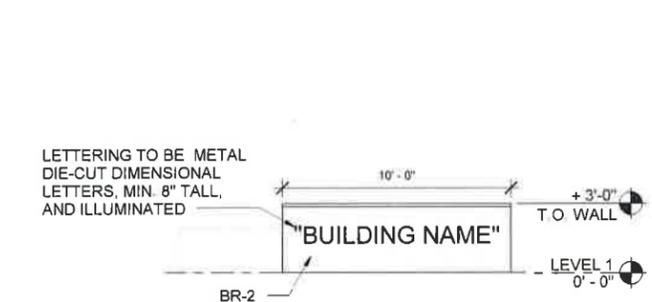
1 ARCHITECTURAL SITE PLAN
 A1.03 1/16" = 1'-0"



2 BUILDING SIGNAGE AT WEST ENTRY
 A1.03 1/4" = 1'-0"



3 BUILDING SIGNAGE AT EAST ENTRY
 A1.03 1/4" = 1'-0"



4 MONUMNETAL SIGN
 A1.03 1/4" = 1'-0"

PROJECT #: 1617.00
 SHEET ISSUE DATE: 6/27/2019
 REVISIONS:

#	DESCRIPTION	DATE

DESIGN REVIEW SUBMITTAL

SIGNAGE DETAILS
A1.03

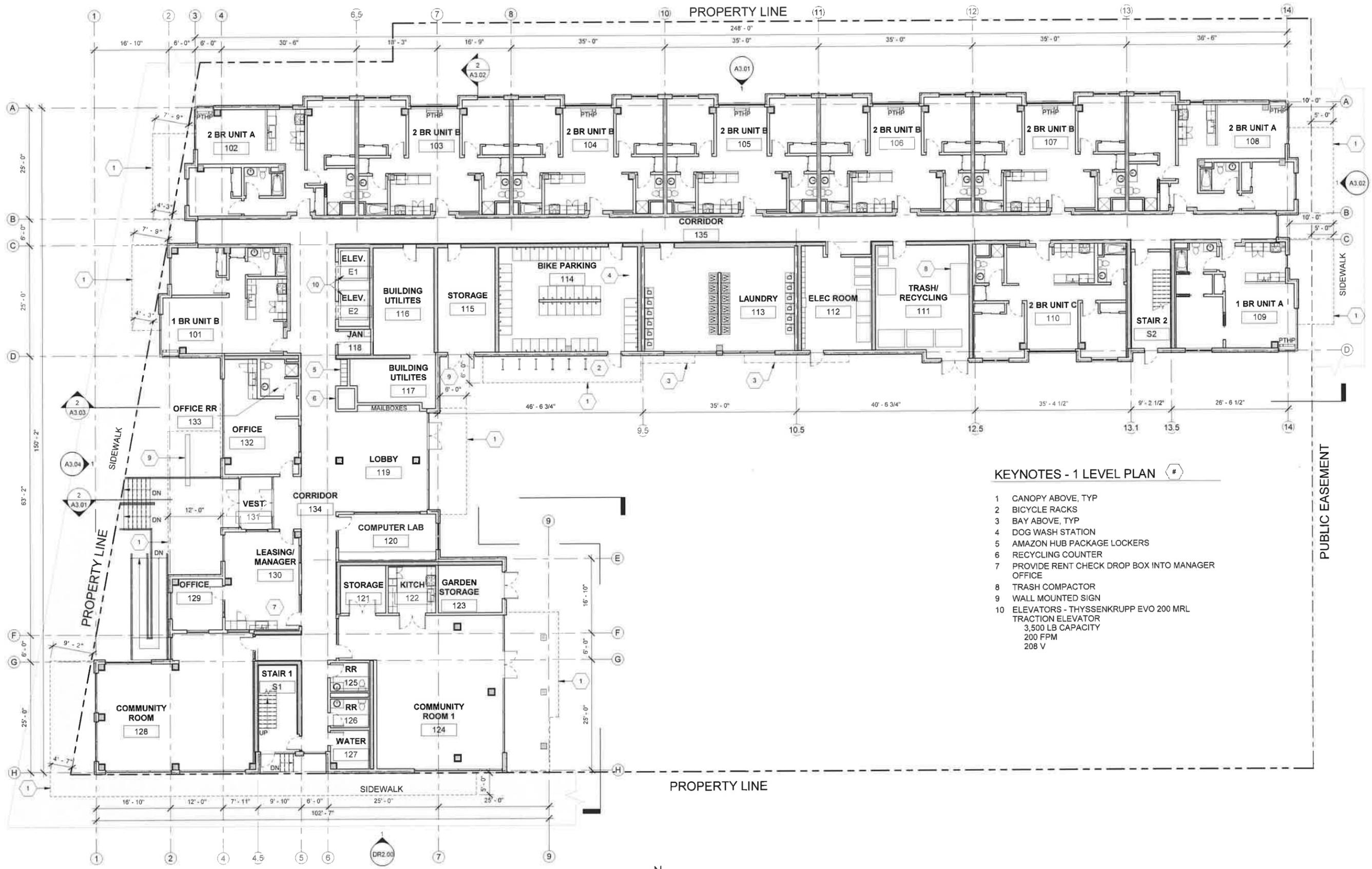


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FULLER STATION HOUSING DESIGN REVIEW SET

9608 SE Fuller Road
Clackamas County, Oregon, 97086



KEYNOTES - 1 LEVEL PLAN

- 1 CANOPY ABOVE, TYP
- 2 BICYCLE RACKS
- 3 BAY ABOVE, TYP
- 4 DOG WASH STATION
- 5 AMAZON HUB PACKAGE LOCKERS
- 6 RECYCLING COUNTER
- 7 PROVIDE RENT CHECK DROP BOX INTO MANAGER OFFICE
- 8 TRASH COMPACTOR
- 9 WALL MOUNTED SIGN
- 10 ELEVATORS - THYSSENKRUPP EVO 200 MRL
TRACTION ELEVATOR
3,500 LB CAPACITY
200 FPM
208 V

1 FLOOR PLAN - LEVEL 1
A2.01 3/32" = 1'-0"



PROJECT #: 1617.00
 SHEET ISSUE DATE: 6/27/2019
 REVISIONS:
 # DESCRIPTION DATE
 DESIGN REVIEW SUBMITTAL

LEVEL 1 FLOOR PLAN
A2.01



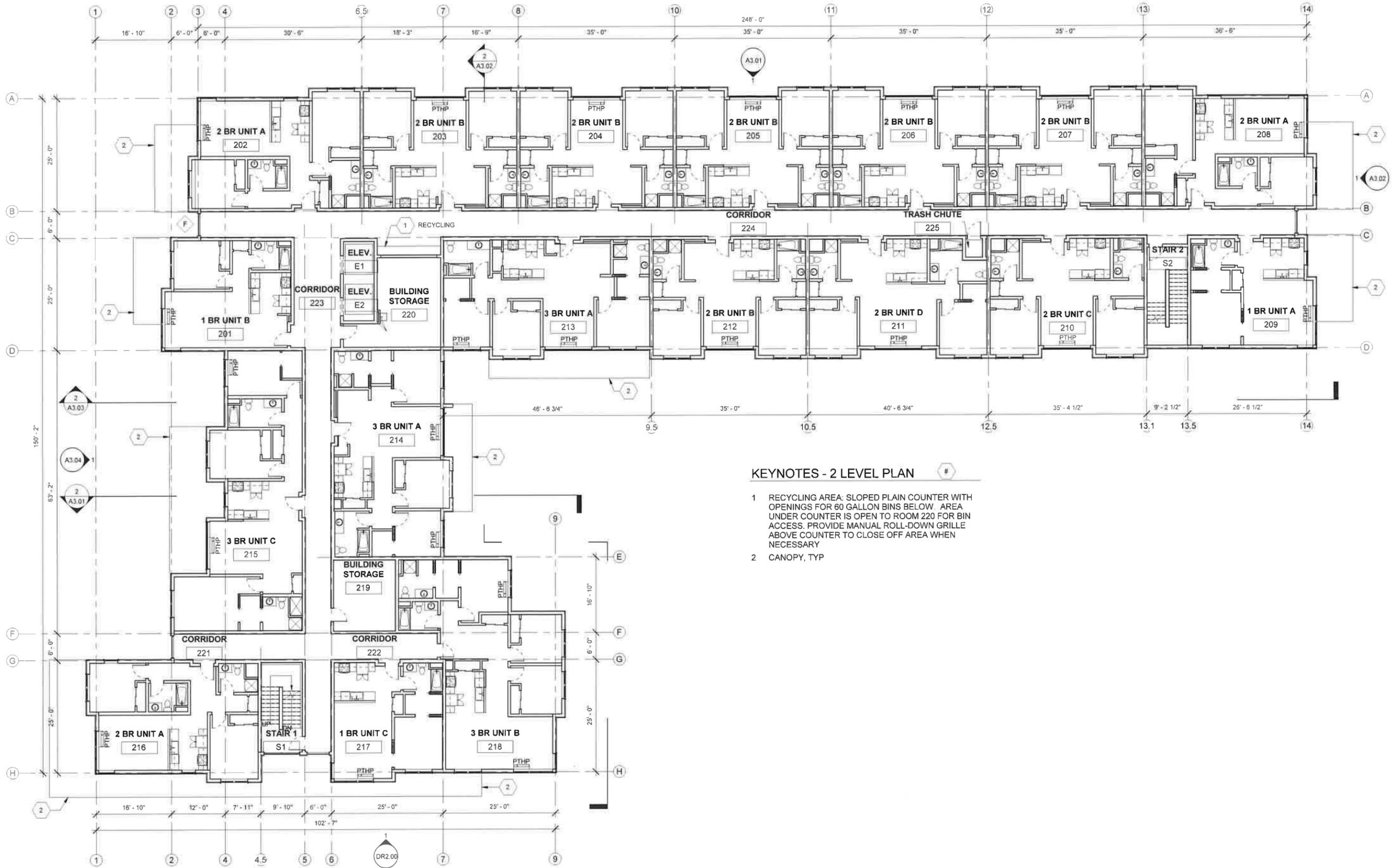
architecture, interiors & planning

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FULLER STATION HOUSING DESIGN REVIEW SET

9608 SE Fuller Road
Clackamas County, Oregon, 97086



KEYNOTES - 2 LEVEL PLAN

- 1 RECYCLING AREA: SLOPED PLAIN COUNTER WITH OPENINGS FOR 60 GALLON BINS BELOW. AREA UNDER COUNTER IS OPEN TO ROOM 220 FOR BIN ACCESS. PROVIDE MANUAL ROLL-DOWN GRILLE ABOVE COUNTER TO CLOSE OFF AREA WHEN NECESSARY.
- 2 CANOPY, TYP

1 FLOOR PLAN - LEVEL 2-6
A2.02 3/32" = 1'-0"



PROJECT #:	1617.00	
SHEET ISSUE DATE:	6/27/2019	
REVISIONS:		
#	DESCRIPTION	DATE
DESIGN REVIEW SUBMITTAL		

LEVEL 2-6 FLOOR
PLAN
A2.02

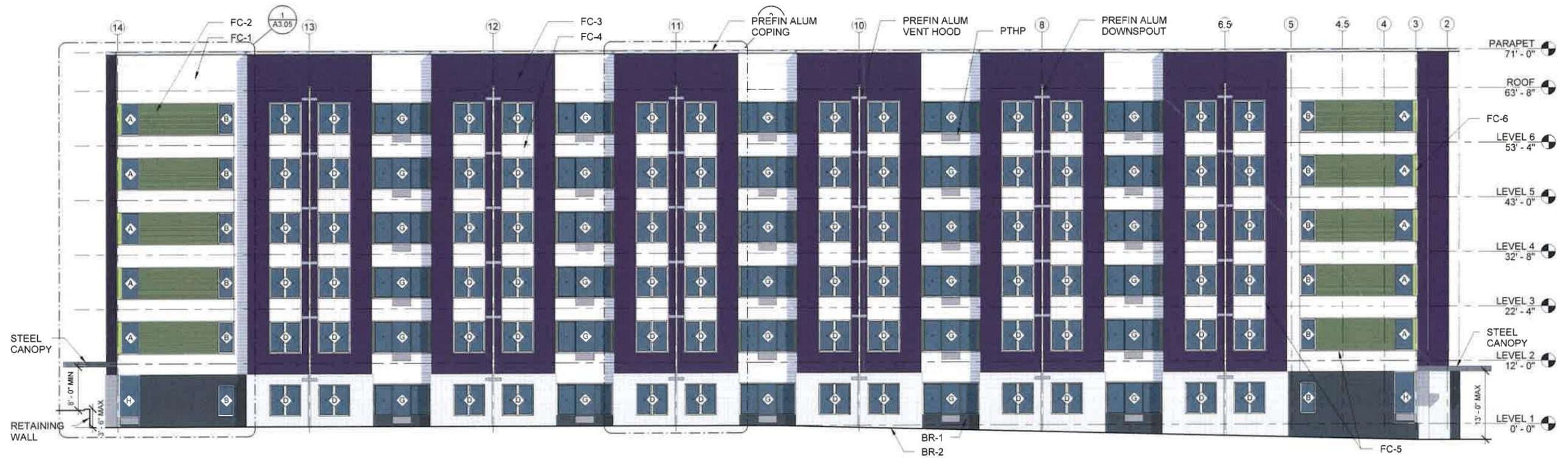


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FULLER STATION HOUSING
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Clackamas County, Oregon, 97086



1 NORTH ELEVATION A
A3.01 3/32" = 1'-0"

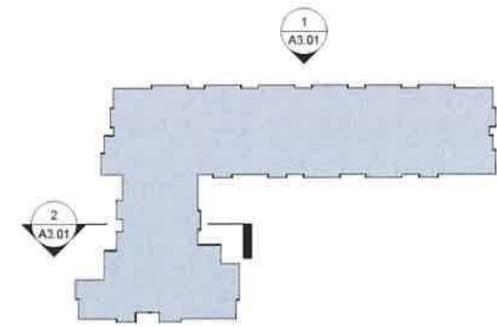


2 NORTH ELEVATION B
A3.01 3/32" = 1'-0"

MATERIAL NOTES - EXTERIOR ELEVATIONS

1. **FC-1:** HARDIEPLANK, LAP SIDING, 7" EXPOSURE
2. **FC-2:** HARDIEPLANK, LAP SIDING, 4" EXPOSURE
3. **FC-3:** HARDIESHINGLE, SIDING, STRAIGHT EDGE PANEL, PRIMED, 5/8" EXPOSURE
4. **FC-4:** ASPYREDESIGN, ARTISAN V-GROOVE SIDING, 7" EXPOSURE
5. **FC-5:** HARDIETRIM, SMOOTH BATTEN BOARD TRIM, 0-3/4" x 2-1/2"
 - PROVIDE TRIM BOARD AT EXTERIOR HEAD, JAMB AND SILL OF OPENINGS WITHIN FIELD OF FIBER CEMENT SIDING.
 - PROVIDE TRIM BOARD AT HORIZONTAL AND VERTICAL CHANGES BETWEEN FC-1, FC-2, FC-3 & FC-4.
 - PROVIDE TRIM BOARD AT PERIMETER OF PTHP WITHIN FIELD OF FIBER CEMENT SIDING.
6. **FC-6:** ASPYREDESIGN, ARTISAN ACCENT TRIM, 1-1/2" x 5-1/2"
 - CORNER VERTICAL CASING AT CORNER WINDOWS, LEVELS 2-6.
7. **FC-7:** HARDIEPLANK, VERTICAL SIDING, SMOOTH
 - INFILL PANEL ADJACENT TO PTHP AND/OR BELOW WINDOWS.
8. **BR-1:** MUTUAL MATERIALS, MODULAR NORMAN, TEXTURE: MISSION, COLOR: BURGUNDY/RAVEN/COAL CREEK BLEND
 - INCLUDE PENETRATIVE ANTI-GRAFFITI COATING
9. **BR-2:** MUTUAL MATERIALS, MODULAR NORMAN, TEXTURE: MISSION, COLOR: DESERT WHITE/LIMESTONE/ASPEN BLEND
 - INCLUDE PENETRATIVE ANTI-GRAFFITI COATING.
8. **STEEL CANOPIES**
 - 1-1/2" SLOPED METAL DECK ATTACHED TO TUBE STEEL FRAME.
 - C8 X 11.5 PERIMETER C-CHANNEL STEEL FRAME (3 SIDES)
 - STRUCTURAL SUPPORT FRAME UNDERNEATH SIDE OF PT SLAB.
 - PAINTED.
9. **STEEL GUARDRAILS & HANDRAILS**
 - GUARDRAIL VERTICAL POSTS: 1/2" FLAT BAR AT 4'-0" O.C.
 - GUARDRAIL VERTICAL PICKETS: 1/2" SQUARE BAR AT 4'-0" O.C.
 - HANDRAIL: 1-1/2" OUTSIDE DIAMETER PIPE.
 - PAINTED.
10. **WINDOWS:** SEE SHEET A3.06 FOR WINDOW TYPES.

KEY PLAN



PROJECT #: 1617.00
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NORTH ELEVATIONS
A3.01



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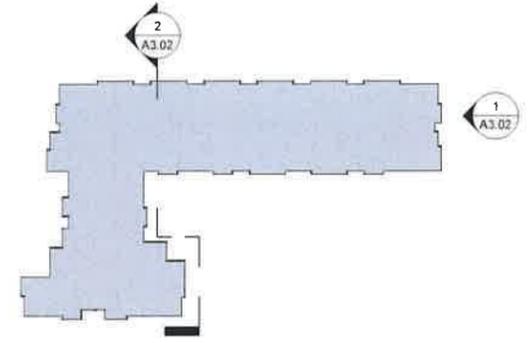
FULLER STATION HOUSING
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9608 SE Fuller Road
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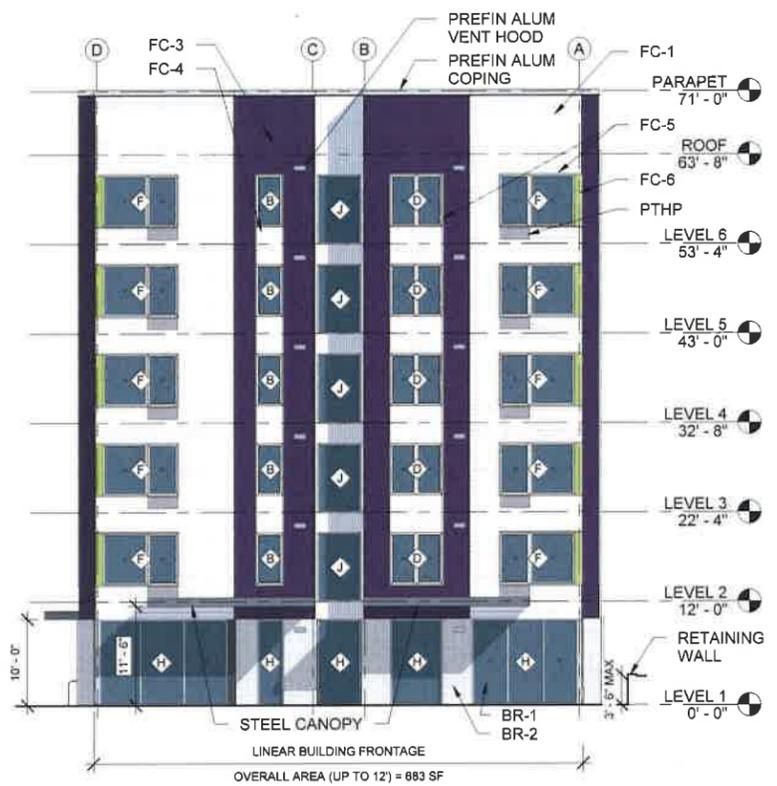
EAST ELEVATIONS
A3.02

KEY PLAN



MATERIAL NOTES - EXTERIOR ELEVATIONS

1. **FC-1:** HARDIEPLANK, LAP SIDING, 7" EXPOSURE
2. **FC-2:** HARDIEPLANK, LAP SIDING, 4" EXPOSURE
3. **FC-3:** HARDIESHINGLE, SIDING, STRAIGHT EDGE PANEL, PRIMED, 6.976" EXPOSURE
4. **FC-4:** ASPYREDESIGN, ARTISAN V-GROOVE SIDING, 7" EXPOSURE
5. **FC-5:** HARDIETRIM, SMOOTH BATTEN BOARD TRIM, 0-3/4" x 2-1/2"
 • PROVIDE TRIM BOARD AT EXTERIOR HEAD, JAMB AND SILL OF OPENINGS WITHIN FIELD OF FIBER CEMENT SIDING
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 • INFILL PANEL ADJACENT TO PTHP AND/OR BELOW WINDOWS
8. **BR-1:** MUTUAL MATERIALS, MODULAR NORMAN, TEXTURE: MISSION, COLOR: BURGUNDY/RAVEN/COAL CREEK BLEND
 • INCLUDE PENETRATIVE ANTI-GRAFFITI COATING
9. **BR-2:** MUTUAL MATERIALS, MODULAR NORMAN, TEXTURE: MISSION, COLOR: DESERT WHITE/LIMESTONE/ASPEN BLEND
 • INCLUDE PENETRATIVE ANTI-GRAFFITI COATING.
8. **STEEL CANOPIES**
 • 1-1/2" SLOPED METAL DECK ATTACHED TO TUBE STEEL FRAME.
 • C8 X 11.5 PERIMETER C-CHANNEL STEEL FRAME (3 SIDES).
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 • PAINTED.
10. **WINDOWS:** SEE SHEET A3.06 FOR WINDOW TYPES.



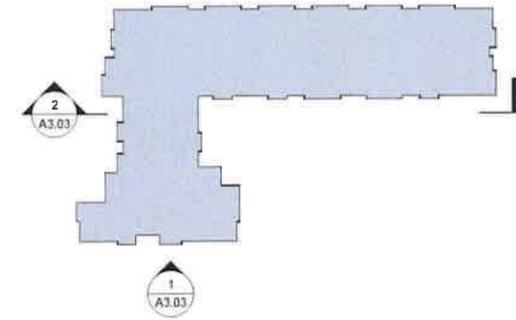
1 EAST ELEVATION A
 3/32" = 1'-0"
 LINEAR BUILDING FRONTAGE GLAZING = 61% (60% REQ)
 (417 SF GLAZING / 683 SF TOTAL AREA)



2 EAST ELEVATION B
 3/32" = 1'-0"



KEY PLAN



MATERIAL NOTES - EXTERIOR ELEVATIONS

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9. **BR-2:** MUTUAL MATERIALS, MODULAR NORMAN, TEXTURE: MISSION, COLOR: DESERT WHITE/LIMESTONE/ASPEN BLEND
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 - PAINTED.
10. **WINDOWS:** SEE SHEET A3.06 FOR WINDOW TYPES.



1 SOUTH ELEVATION A
3/32" = 1'-0"

LINEAR BUILDING FRONTAGE GLAZING = 61% (60% REQ)
(682 SF GLAZING / 1,122 SF TOTAL AREA)



2 SOUTH ELEVATION B
3/32" = 1'-0"

FULLER STATION HOUSING
DESIGN REVIEW SET

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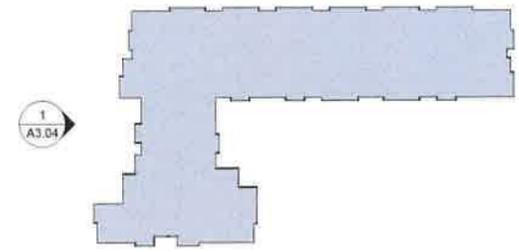
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waterleaf

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KEY PLAN



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9. **BR-2:** MUTUAL MATERIALS, MODULAR NORMAN, TEXTURE: MISSION, COLOR: DESERT WHITE/LIMESTONE/ASPEN BLEND
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 - PAINTED.
10. **WINDOWS:** SEE SHEET A3.06 FOR WINDOW TYPES.



1 WEST ELEVATION
3/32" = 1'-0"

LINEAR BUILDING FRONTAGE GLAZING = 61% (60% REQ)
(608 SF GLAZING / 993 SF TOTAL AREA)

FORECOURT BUILDING FRONTAGE GLAZING = 50% (50% REQ)
(671 SF GLAZING / 1,334 SF TOTAL AREA)

LINEAR BUILDING FRONTAGE OVERALL AREA (UP TO 12') = 683 SF
FORECOURT BUILDING FRONTAGE OVERALL AREA (UP TO 12' 3 SIDES) = 1,334 SF
LINEAR BUILDING FRONTAGE OVERALL AREA (UP TO 12') = 310 SF

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WEST ELEVATION
A3.04



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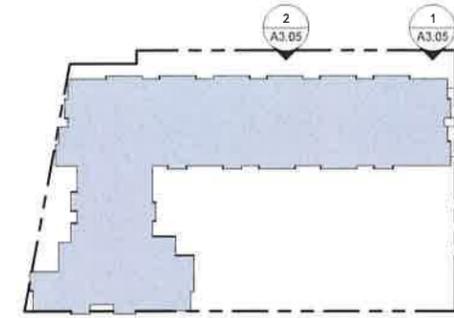
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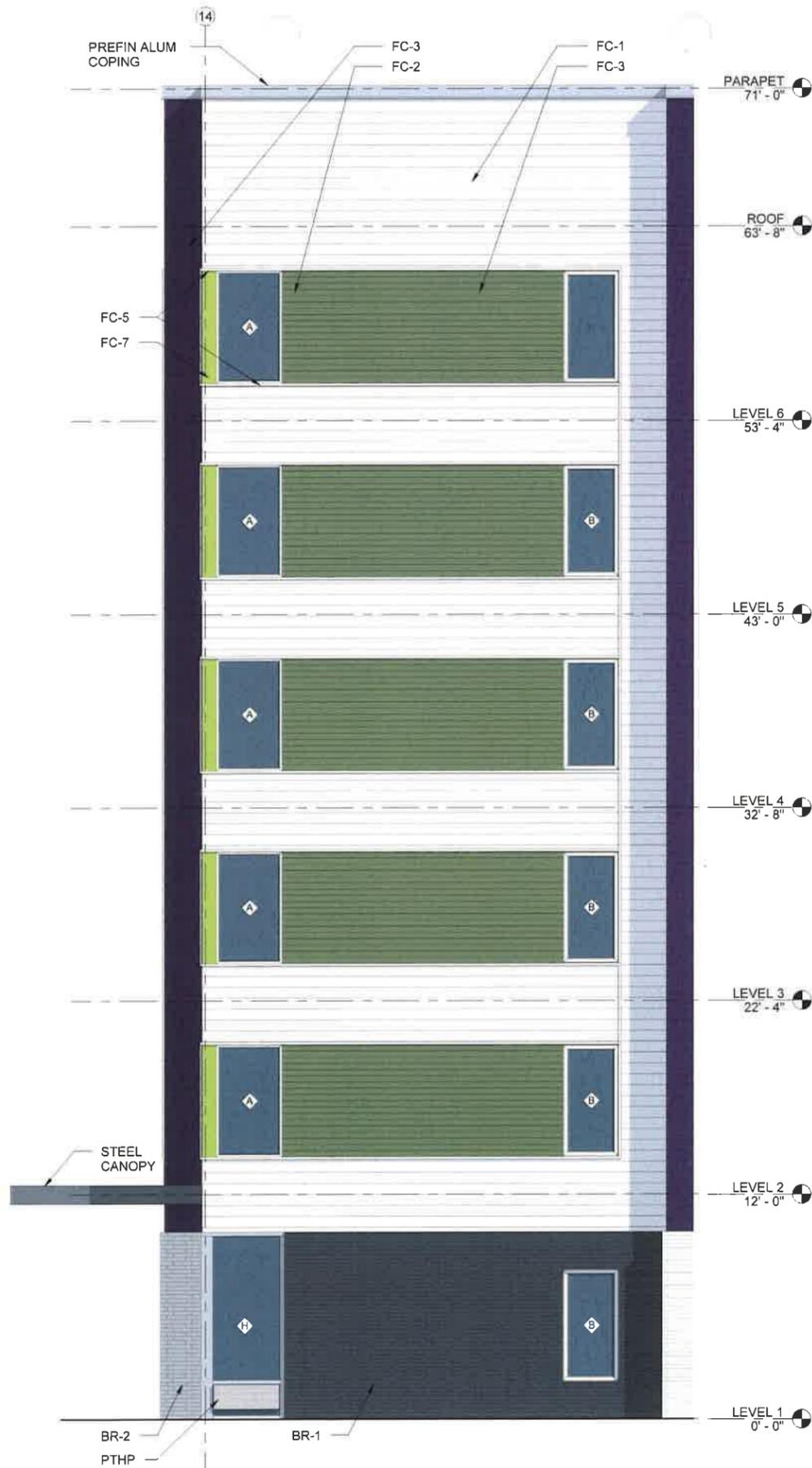
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 • PAINTED.
10. **WINDOWS:** SEE SHEET A3.06 FOR WINDOW TYPES.



1 TYP END BAY - ENLARGED
 1/4" = 1'-0"



2 TYP CENTER BAY - ENLARGED
 1/4" = 1'-0"

PROJECT #: 1617.00
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ENLARGED
 ELEVATIONS
A3.05



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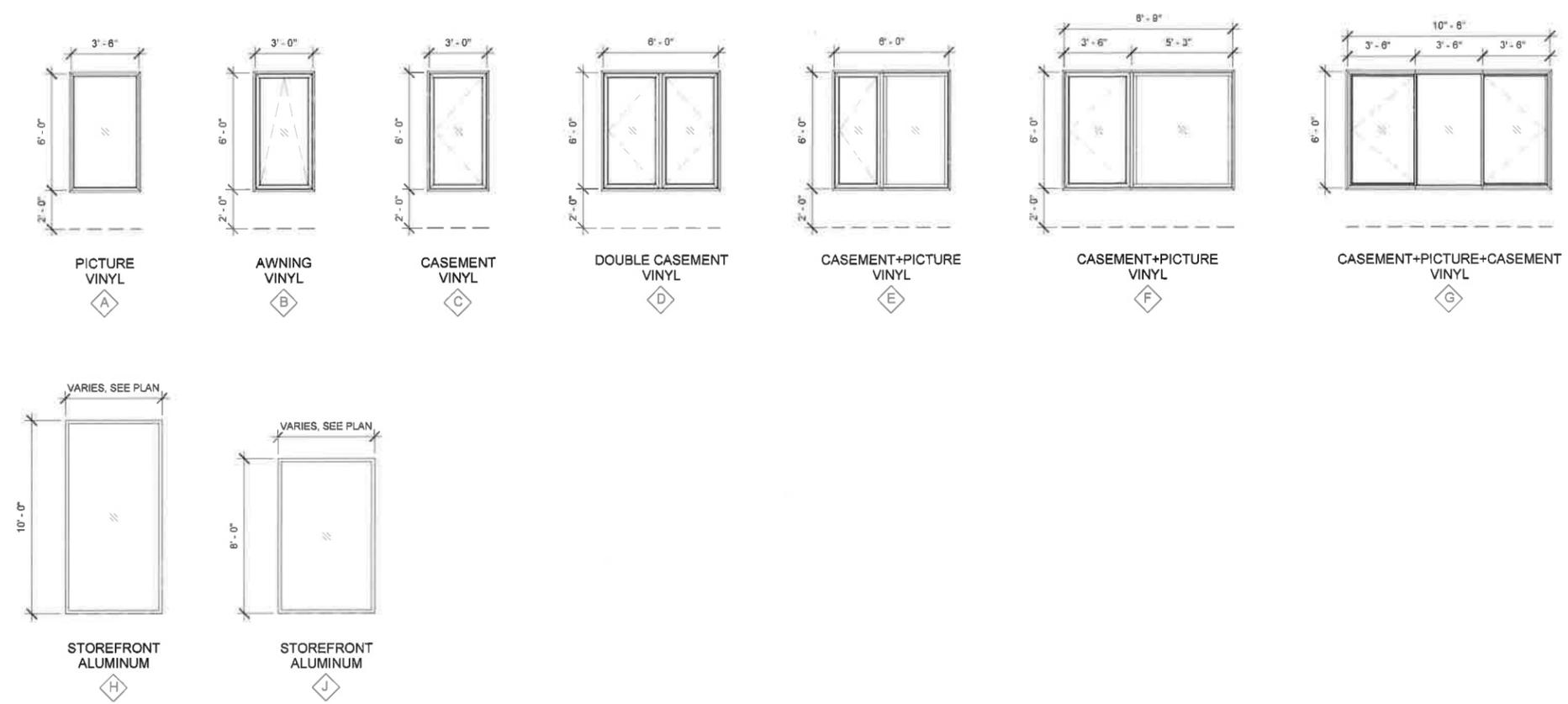
FULLER STATION HOUSING
DESIGN REVIEW SET

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GENERAL NOTES

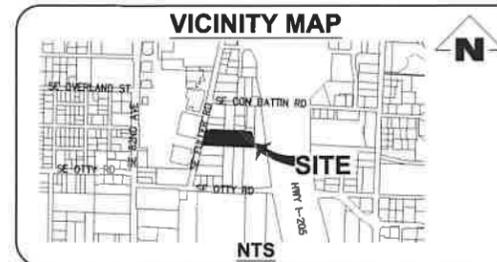
1. WINDOWS MAY BE REVERSED. CONTRACTOR TO VERIFY CONFIGURATION AND LOCATION OF OPERABLE SASHES WITH ELEVATIONS
2. PROVIDE TEMPERED GLAZING WHERE REQUIRED BY OSSC 2014 CODE.
3. VERIFY ALL LOCATIONS, SIZES, AND CONFIGURATIONS WITH DRAWINGS.
4. WINDOW SIZES INDICATED ARE TO ROUGH OR NOMINAL OPENINGS. SEE DETAILS AND MANUFACTURER'S RECOMMENDATIONS FOR EXACT WINDOW SIZES.



WINDOW TYPES

FULLER STATION

APARTMENT COMPLEX SITE DESIGN
 TAX LOTS 500, 600, 900, 1000, 2000, AND 2100
 CLACKAMAS COUNTY, OR



SHEET LEGEND

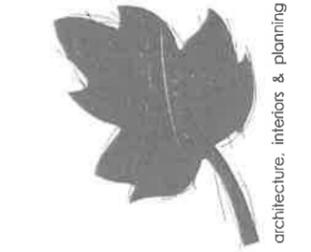
NO.	SHEET
C1.0	COVER SHEET
C1.2	CONSTRUCTION NOTES
C1.3	STREET SECTIONS & LEGEND
C1.4	EXISTING CONDITIONS AND DEMOLITION PLAN
C1.5	SITE PLAN
C1.6	GRADING PLAN
C1.7	INTERIM STORM WATER MITIGATION PLAN
C1.8	COMPOSITE UTILITY PLAN
C1.9	(N-S) 'D' STREET PLAN & PROFILE
C1.10	PRIVATE CONSTRUCTION DETAILS
C1.11	PRIVATE CONSTRUCTION DETAILS
C1.12	CLACKAMAS COUNTY CONSTRUCTION DETAILS
C1.13	WATER ENVIRONMENT SERVICES CONSTRUCTION DETAILS
C1.14	CLACKAMAS RIVER WATER CONSTRUCTION DETAILS



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CLACKAMAS, OREGON

FULLER STATION HOUSING

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FAX: (503) 639-9592
www.emeriodesign.com



Project #: 1617.00
File #:
Date: © 06.21.2019
Revisions:

DESIGN REVIEW SUBMITTAL
CONSTRUCTION NOTES

C1.2

STREET NOTES:

- ALL WORK AND MATERIAL SHALL CONFORM TO THESE PLANS AND THE APPLICABLE PROVISIONS OF THE CITY'S DEVELOPMENT ORDINANCE, THE CITY'S DESIGN STANDARDS, THE MOST RECENT EDITION OF THE UNIFORM PLUMBING CODE, THE MOST RECENT EDITION OF THE INTERNATIONAL BUILDING CODE, AND APWA STANDARDS.
- THE LOCATIONS, DEPTHS AND DESCRIPTIONS OF EXISTING UTILITIES SHOWN ARE COMPILED FROM AVAILABLE RECORDS AND/OR FIELD SURVEYS. THE ENGINEER OR UTILITY COMPANIES DO NOT GUARANTEE THE ACCURACY OR THE COMPLETENESS OF SUCH RECORDS. ADDITIONAL UTILITIES MAY EXIST WITHIN THE WORK AREA.
- THE LOCATION OF EXISTING UTILITIES SHOWN ON THE PLANS ARE APPROXIMATE AND ARE SHOWN FOR INFORMATION PURPOSES ONLY. THE CONTRACTOR SHALL HAVE ALL UTILITIES LOCATED PRIOR TO COMMENCING CONSTRUCTION. NOTIFY ENGINEER OF ANY DISCREPANCIES PRIOR TO CONSTRUCTION.
- CONTRACTOR MUST VERIFY ALL EXISTING UTILITIES FOR BOTH VERTICAL ELEVATION AND HORIZONTAL LOCATION PRIOR TO START OF WORK (POTHOLE BEFORE DIGGING IF NECESSARY). SHOULD CONFLICTS ARISE AND REDESIGN OR RELOCATION OF FACILITIES IS NECESSARY, IT SHALL BE DONE AT THE CONTRACTOR'S EXPENSE. CHANGES MUST BE APPROVED BY THE PROJECT ENGINEER IN ADVANCE OF WORK. CONTRACTOR SHALL COORDINATE THE WORK APPLICABLE AGENCIES.
- TRENCHES WITHIN RIGHTS-OF-WAY, PAVEMENT, OR CONCRETE AREAS SHALL BE BACKFILLED WITH APPROVED CRUSHED ROCK (USE CITY OR COUNTY ROAD BACKFILL REQUIREMENTS IN RIGHT-OF-WAY) OR COF. AS SPECIFIED ON THESE PLANS. TRENCHES OUTSIDE OF THE PAVED OR CONCRETE AREAS MAY BE FILLED WITH NATIVE MATERIAL IN ACCORDANCE WITH COMPACTION SPECIFICATIONS FOR WES BACKFILL-CLASS "A" CONTRACTOR SHALL CHECK WITH PROJECT ENGINEER AND VERIFY.
- SUBSEQUENT SETTLEMENT OR CRACKING OF FINISHED SURFACES WITHIN THE WARRANTY PERIOD SHALL BE CONSIDERED TO BE A FAILURE OF THE SUBGRADE, AND REPAIRED IN A MANNER ACCEPTABLE TO AND AT NO COST TO THE CITY, COUNTY, OR DEVELOPER.
- THE CONTRACTOR SHALL CONTROL TRAFFIC THROUGH THE PROJECT SITE IN CONFORMANCE WITH THE LATEST EDITION OF "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES," OREGON SUPPLEMENTS," AND COUNTY REQUIREMENTS. THE CONTRACTOR SHALL AT ALL TIMES MAINTAIN LOCAL ACCESS FOR OWNERS NEAR THE PROJECT SITE. THE CONTRACTOR SHALL PROVIDE A PROJECT-SPECIFIC TRAFFIC CONTROL PLAN, APPROVED BY THE CITY AND/OR COUNTY, AND AVAILABLE ON THE PROJECT SITE.
- CONTRACTOR SHALL COORDINATE AND SCHEDULE ALL EARTHWORK, TRENCH BACKFILL, ROAD CONSTRUCTION COMPACTION TESTS, AND GEOTECHNICAL REVIEWS WITH THE PROJECT'S GEOTECHNICAL ENGINEER.
- CONTRACTOR SHALL MAINTAIN BENCHMARKS, PROPERTY CORNERS, AND MONUMENTS. IF SUCH POINTS ARE DISTURBED OR DESTROYED BY CONSTRUCTION ACTIVITIES, THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER IMMEDIATELY AND IF REQUIRED BY ORS 209, THE CONTRACTOR SHALL PAY FOR THEIR REPLACEMENT BY EMPLOYING A PROFESSIONAL LAND SURVEYOR TO RESET PROPERTY CORNERS AND OTHER SUCH MONUMENTS.
- PRIOR TO BEGINNING WORK, THE CONTRACTOR SHALL PROVIDE THE FOLLOWING ITEMS:
A. LIST OF SUBCONTRACTORS
B. PROJECT SCHEDULE
C. TRAFFIC CONTROL PLAN
D. EMERGENCY CONTACT NAME AND PHONE NUMBER
- PRIOR TO FINAL ACCEPTANCE AND PAYMENT, THE CONTRACTOR SHALL CLEAN THE WORK SITE AND ADJACENT AREAS OF ANY DEBRIS, DISCARDED ASPHALTIC CONCRETE MATERIAL, OR OTHER ITEMS DEPOSITED BY THE CONTRACTOR'S PERSONNEL DURING THE PERFORMANCE OF THE CONTRACT.
- PUBLIC ROADWAYS SHALL NOT BE CLOSED TO TRAFFIC AT ANY TIME, WITHOUT HAVING FIRST OBTAINED A STREET CLOSURE PERMIT FROM THE CITY AND/OR COUNTY. THE CONTRACTOR IS RESPONSIBLE FOR PROVISION OF TIMELY NOTIFICATION OF TRAFFIC FLOW DISRUPTIONS TO AREA-WIDE EMERGENCY SERVICES AND THE SCHOOL DISTRICT.
- TRAFFIC CONTROL DEVICES, FLAG PERSONS, ETC., SHALL BE IN PLACE PRIOR TO INITIATION OF CONSTRUCTION WORK AND SHALL BE ACTIVELY MAINTAINED. A TRAFFIC CONTROL PLAN SHALL BE SUBMITTED TO THE CITY AND/OR COUNTY FOR APPROVAL PRIOR TO ANY WORK WITHIN EXISTING RIGHT-OF-WAY.
- THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER FORTY-EIGHT (48) HOURS PRIOR TO ANY STAGED INSPECTION.
- A COPY OF THE PERMIT WITH ALL ATTACHMENTS, A COPY OF THE APPROVED CONSTRUCTION PLANS, AND ALL AMENDMENTS SHALL BE AVAILABLE TO THE PROJECT SITE AT ALL TIMES. ALL WORK SHALL CONFORM TO THE PERMIT TERMS, CONDITIONS/PROVISIONS, CITY/COUNTY-APPROVED CONSTRUCTION PLANS, APPROVED PLAN AMENDMENTS, AND THE GENERAL CONDITIONS. CHANGES TO ANY OF THE AFORESAID MUST BE APPROVED BY THE PROJECT ENGINEER, CITY, AND COUNTY IN ADVANCE OF WORK PERFORMANCE.
- MAINTENANCE OF THE WORK AREA AND APPROACH ROADS IS THE RESPONSIBILITY OF THE CONTRACTOR. THE WORK AREA AND APPROACH ROADS SHALL BE MAINTAINED IN A CLEAN AND SANITARY CONDITION FREE FROM OBSTRUCTIONS, HANDS, DEBRIS, AND TRASH AT ALL TIMES. A COPY OF THE CONTRACTOR CERTIFICATE OF INSURANCE SHALL BE AVAILABLE AT THE WORK AREA.
- THE SPREADING OF MUD OR DEBRIS OR STORAGE OF MATERIAL OR EQUIPMENT OF ANY KIND UPON ANY PUBLIC ROADWAY IS STRICTLY PROHIBITED AND VIOLATION SHALL BE CAUSE FOR IMMEDIATE SUSPENSION OF THE PERMIT. THE PROJECT ENGINEER, CITY, AND/OR COUNTY MAY AT ANY TIME ORDER IMMEDIATE CLEAN UP AND STOPPAGE OF WORK TO ACCOMPLISH CLEAN-UP.
- EFFECTIVE EROSION CONTROL DEVICES MUST BE INSTALLED AND MAINTAINED THROUGHOUT CONSTRUCTION. EROSION CONTROL MEASURES SHALL BE APPROVED BY THE CITY, COUNTY, AND OREGON STATE DEO.
- PROPERTY DISTURBED BY CONSTRUCTION ACTIVITY SHALL BE REPAIRED. GRASS, SHRUBS, FLOWERS, BARK DUST, EXISTING SIGNS, PAVEMENT MARKINGS, MAILBOXES, ETC. DISTURBED BY CONSTRUCTION ACTIVITY SHALL BE RE-ESTABLISHED, REINSTALLED OR REPLACED, WITH LIKE KIND AND MATERIAL.
- EFFECTIVE DRAINAGE CONTROL IS REQUIRED. DRAINAGE SHALL BE CONTROLLED WITHIN THE SITE AND SHALL BE ROUTED SO THAT ADJACENT PRIVATE PROPERTY, PUBLIC PROPERTY, AND THE RECEIVING SYSTEM ARE NOT ADVERSELY IMPACTED. THE PROJECT ENGINEER, CITY, AND/OR COUNTY MAY AT ANY TIME ORDER CORRECTIVE ACTION AND STOPPAGE OF WORK TO ACCOMPLISH EFFECTIVE DRAINAGE CONTROL.
- A TEMPORARY HARD-SURFACE PATCH (COLD MIX AC OR HOT MIX BASE PAVING) SHALL BE PLACED ON TRENCHES WITHIN EXISTING ROADWAYS AT THE END OF EACH DAY'S WORK. NO TRENCH, ON-SITE OR OFF-SITE, SHALL BE LEFT AT ANY TIME IN AN UNSAFE CONDITION. THE CONTRACTOR IS RESPONSIBLE AND LIABLE FOR HAZARDS OR DAMAGE RESULTING FROM THE PROSECUTION OF THE WORK.
- WORK PROVIDED FOR UNDER THE PERMIT SHALL INCLUDE REPAIR OF EXISTING FACILITIES (DROPS, DITCHES, ETC.) AS MAY BE NECESSARY. IN THE PROJECT ENGINEER'S OPINION, TO OVERCOME DETERIORATION OR DAMAGES OCCURRED IN CONJUNCTION WITH THE WORK AUTHORIZED BY THE PERMIT CORRECTIVE WORK SHALL BE DONE AT THE CONTRACTOR'S EXPENSE.
- THE PROJECT ENGINEER MAY, AT THEIR DISCRETION, REQUIRE THE PROVISION OF TESTS AND/OR REPORTS FROM THE CONTRACTOR TO VALIDATE CLAIMS OF MATERIAL OR CONSTRUCTION ADEQUACY/COMPLIANCE. SUCH TESTS/REPORTS SHALL BE PROVIDED AT THE CONTRACTOR'S EXPENSE.
- THE CONTRACTOR IS TO COORDINATE CONSTRUCTION OF DRY UTILITIES WITH THE UTILITY COMPANIES (POWER, TELEPHONE, GAS, AND CABLE TELEVISION).
- POWER, TELEPHONE, GAS, AND CABLE TELEVISION TRENCHING AND CONDUITS ARE TO BE INSTALLED PER UTILITY COMPANY REQUIREMENTS WITH PULL WIRE. VERIFY WITH UTILITY COMPANY FOR SIZE AND TYPE OF CONDUIT PRIOR TO CONSTRUCTION.
- THE PROJECT ENGINEER RESERVES THE RIGHT TO ADJUST GRADES OR ALIGNMENT TO ACCOMMODATE OTHER UTILITIES AS REQUIRED; SUCH ADJUSTMENTS OR REVISIONS SHALL BE REVIEWED BY THE CITY OR COUNTY AND APPROVED PRIOR TO COMMENCEMENT OF WORK.

- PROPERTY AND RIGHT-OF-WAY LINES SHOWN ARE APPROXIMATE. THESE PLANS ARE NOT MEANT TO SERVE BOUNDARY SURVEY PURPOSES.
- THE CONTRACTOR SHALL OBTAIN ALL REQUIRED PERMITS AND LICENSES BEFORE STARTING CONSTRUCTION.
- THE CONTRACTOR SHALL MAKE PROVISIONS TO KEEP ALL EXISTING UTILITIES IN SERVICE AND PROTECT THEM DURING CONSTRUCTION. CONTRACTOR SHALL IMMEDIATELY REPAIR OR REPLACE ANY DAMAGED UTILITIES USING MATERIALS AND METHODS APPROVED BY THE UTILITY OWNER. NO SERVICE INTERRUPTIONS SHALL BE PERMITTED WITHOUT PRIOR WRITTEN AGREEMENT WITH THE UTILITY PROVIDER.
- THE CONTRACTOR SHALL REMOVE AND DISPOSE OF TREES, STUMPS, BRUSH, ROOTS, TOPSOIL, AND OTHER MATERIAL IN THE ROADWAY AND WHERE INDICATED ON THE PLANS. MATERIAL SHALL BE DISPOSED OF IN SUCH A MANNER AS TO MEET ALL APPLICABLE REGULATIONS.
- UPON COMPLETION OF CONSTRUCTION, THE CONTRACTOR SHALL SUBMIT "REDLINE DRAWINGS" TO THE PROJECT ENGINEER. "REDLINE DRAWINGS" DOCUMENT ALL DEVIATIONS AND REVISIONS TO THE APPROVED PLANS; THEY ALSO RECORD A DESCRIPTION OF CONSTRUCTION MATERIALS ACTUALLY USED (PIPE MATERIAL, ETC.).
- THE CONTRACTOR SHALL PERFORM ALL WORK NECESSARY TO COMPLETE THIS PROJECT IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS INCLUDING SUCH INCIDENTALS, AS MAY BE NECESSARY TO MEET THE INTENT OF THE PROJECT CONTRACT DOCUMENTS, APPLICABLE AGENCY REQUIREMENTS, AND OTHER WORK AS NECESSARY TO PROVIDE A COMPLETE PROJECT.
- THE CONTRACTOR SHALL MAINTAIN AND COORDINATE ACCESS TO ALL AFFECTED PROPERTIES.
- IF GROUND WATER SPRINGS ARE ENCOUNTERED DURING CONSTRUCTION, THE CONTRACTOR SHALL TAKE MEASURES TO ENSURE THAT THE WATER IS NOT CONVEYED THROUGH UTILITY TRENCHES, AND THE NATURAL FLOW PATH OF THE SPRING IS ALTERED AS LITTLE AS PRACTICABLE.
- ANY INSPECTION BY THE CITY, COUNTY, STATE, FEDERAL AGENCY, OR PROJECT ENGINEER SHALL NOT, IN ANY WAY, RELIEVE THE CONTRACTOR FROM ANY OBLIGATION TO PERFORM THE WORK IN COMPLIANCE WITH THE APPLICABLE PLANS, CODES, REGULATIONS, STANDARDS, AND PROJECT CONTRACT DOCUMENTS.
- SAW CUT STRAIGHT MATCH LINES WHERE EXISTING PAVEMENT MEETS NEW PAVEMENT. SAND AND SEAL JOINT (TYPICAL).
- DUST SHALL BE CONTROLLED WITHIN THE DEVELOPMENT DURING CONSTRUCTION AND SHALL NOT BE PERMITTED TO DRIFT ONTO ADJACENT PROPERTIES.
- CONTRACTOR SHALL WORK TO PRESERVE ALL TEMPORARY SURVEY CONTROL POINTS, TEMPORARY BENCHMARKS, TEMPORARY GRADE STAKES, AND OTHER REFERENCE POINTS FOR AS LONG AS THEY ARE NEEDED FOR CONSTRUCTION ACTIVITIES.
- CONTRACTOR SHALL FOLLOW OSHA REQUIREMENTS.
- ALL TRENCHES SHALL BE PROPERLY SHORED AND BRACED TO PREVENT CAVING.
- NO TRENCHES SHALL BE ALLOWED TO REMAIN OPEN OVERNIGHT. ALL TRENCHES SHALL BE COVERED WITH STEEL PLATES OR FILLED IN AT NIGHT.
- UNIDENTIFIED UTILITIES SHALL NOT BE DISRUPTED OR CUT UNTIL UTILITY COMPANY HAS APPROVED THE CUT OR DISRUPTION.
- ALL FACILITIES SHALL BE MAINTAINED IN-PLACE BY THE CONTRACTOR UNLESS OTHERWISE SHOWN OR DIRECTED. CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO PROTECT, MAINTAIN, OR OTHERWISE PROTECT EXISTING UTILITIES AND OTHER FACILITIES AT ALL TIMES DURING CONSTRUCTION. CONTRACTOR SHALL LEAVE EXISTING FACILITIES IN AN EQUAL OR BETTER-THAN-ORIGINAL CONDITION.
- NOTIFY THE UTILITY COMPANY IMMEDIATELY OF ALL UTILITIES EXPOSED, UTILITIES OR INTERFERING PORTIONS OF UTILITIES THAT ARE ABANDONED IN PLACE SHALL BE REMOVED BY THE CONTRACTOR TO THE EXTENT NECESSARY TO ACCOMPLISH THE WORK.
- WHERE TRENCH EXCAVATION REQUIRES REMOVAL OF CURBS AND/OR SIDEWALKS, THE CURBS AND/OR SIDEWALKS SHALL BE SAW CUT AND REMOVED AT A TOOLED JOINT UNLESS OTHERWISE AUTHORIZED BY THE OWNER'S REPRESENTATIVE. THE SAWCUT LINES SHOWN ON THE DRAWINGS ARE SCHEMATIC AND NOT INTENDED TO SHOW THE EXACT ALIGNMENT OF SUCH CUTS.
- IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO REVIEW ALL OF THE DOCUMENTS ASSOCIATED WITH THE PROJECT WORK SCOPE PRIOR TO THE INITIATION OF CONSTRUCTION. SHOULD THE CONTRACTOR FIND A CONFLICT WITH THE DOCUMENTS RELATIVE TO THE SPECIFICATIONS OR THE RELATIVE CODES, IT IS THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE PROJECT ENGINEER IN WRITING PRIOR TO THE START OF CONSTRUCTION. FAILURE BY THE CONTRACTOR TO NOTIFY THE PROJECT ENGINEER SHALL CONSTITUTE ACCEPTANCE OF FULL RESPONSIBILITY BY THE CONTRACTOR TO COMPLETE THE SCOPE OF WORK AS DEFINED BY THE DOCUMENTS AND IN FULL COMPLIANCE WITH LOCAL, STATE, AND FEDERAL REGULATIONS AND CODES.
- THE CONTRACTOR SHALL PROVIDE ALL THE "MEANS AND METHODS" NECESSARY TO COMPLETE THE PROJECT IN ACCORDANCE WITH THE APPROVED DRAWINGS AND DOCUMENTS. THE CONTRACTOR IS RESPONSIBLE FOR ALL REPAIRS AND DAMAGE TO ALL ITEMS THAT ARE TO REMAIN. ALL REPAIRS SHALL USE NEW MATERIAL. REPAIRS SHALL RESTORE THE DAMAGED ITEM TO THE PRE-EXISTING CONDITION OR BETTER. SUCH REPAIRS SHALL BE PERFORMED AT THE CONTRACTOR'S SOLE EXPENSE.
- CONTRACTOR IS RESPONSIBLE FOR SITE JOB SAFETY, WHICH SHALL INCLUDE BUT NOT BE LIMITED TO THE INSTALLATION AND MAINTENANCE OF BARRIERS, FENCING, AND OTHER APPROPRIATE SAFETY ITEMS NECESSARY TO PROTECT THE PUBLIC FROM AREAS OF CONSTRUCTION AND CONSTRUCTION ACTIVITY.
- A SIGN SHALL BE POSTED CONSPICUOUSLY AT THE JOB SITE ENTRANCE PRIOR TO SITE CONSTRUCTION, AND SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION. USE 2-INCH HIGH BLACK LETTERS ON AN ORANGE BACKGROUND. THIS SIGN SHALL READ AS FOLLOWS:
CONSTRUCTION SHALL BE LIMITED TO 7:00 AM TO 8:00 PM ON WEDNEAYS, AND 8:00 AM TO 5:00 PM ON SATURDAYS AND SUNDAYS. HOWEVER, SITE CLEARING, EARTH MOVING, INSTALLATION OR CONSTRUCTION OF UNDERGROUND UTILITIES, PAVING OF STREETS AND SIDEWALKS, FOUNDATION FRAMING AND POURING, AND STRUCTURAL FRAMING SHALL BE ENTIRELY PROHIBITED ON SUNDAYS. TO REPORT VIOLATIONS CALL 503-783-3800. (SEE SHEET 10).
- DEBRIS AND TRASH SHALL NOT BE BURIED OR STOCKPILED ON THE SUBJECT SITE. ALL DEMOLITION WASTES AND DEBRIS SHALL BE DISPOSED OF IN ACCORDANCE WITH ALL COUNTY, STATE, AND FEDERAL LAWS AND REGULATIONS. THE CONTRACTOR SHALL MAINTAIN RECORDS TO DEMONSTRATE PROPER DISPOSAL ACTIVITIES. TO BE PROVIDED TO THE PROJECT ENGINEER UPON REQUEST.
- ALL FENCING, EGS MEASURES, AND CONSTRUCTION GRAVEL ENTRANCES SHALL BE INSTALLED AND MAINTAINED BY THE DEVELOPER AND INSPECTED BY THE CITY OF HAPPY VALLEY PRIOR TO BEGINNING WORK ON THE SITE. CALL FOR INSPECTION 24 HOURS IN ADVANCE, 503-783-3800.
- CONTRACTOR SHALL SECURE ALL NECESSARY PERMITS AND APPROVALS FOR OFF SITE DISPOSAL FACILITIES AND PROVIDE A COPY OF APPROVALS TO THE PROJECT ENGINEER UPON REQUEST.
- CONTRACTOR SHALL MONITOR THE HAULING OF DEBRIS TO ENSURE THAT ALL SPILLAGE FROM TRUCKS IS PROMPTLY AND COMPLETELY REMOVED AND CLEANED UP.
- ALL CONSTRUCTION TRUCKS SHALL PERFORM TRANSFER OF TRAILERS ON-SITE. SURROUNDING PUBLIC STREETS SHALL NOT BE USED AS A STAGING AREA FOR DUMP TRUCKS WITH TRANSFER TRAILERS.
- SANITARY AND STORM SEWER LINES SHALL BE LAID IN A STRAIGHT ALIGNMENT AND A UNIFORM GRADE BETWEEN MANHOLES AND CLEANOUTS. SANITARY AND STORM SEWER LINES SHALL BE INSTALLED SO THAT THE PIPE BELL IS POSITIONED AT HE UPSTREAM END OF THE LINE AND THE PIPE SPIGOT IS POSITIONED AS THE DOWNSTREAM END OF THE SEWER LINE.

- SANITARY AND STORM SEWER LINES WITH LESS THAN 2-FEET OF COVER SHALL BE CLASS 52 OR GREATER DUCTILE IRON PIPE. SANITARY AND STORM SEWER LINES WITH LESS THAN 3-FEET (BUT MORE THAN 2-FEET) OF COVER SHALL BE CLASS 52 OR GREATER DUCTILE IRON PIPE OR C900/C905 PVC.
- PIPE SLOPES LISTED ARE BASED ON HORIZONTAL LENGTHS FROM CENTER OF STRUCTURE (E.G. MANHOLE) TO CENTER OF STRUCTURE (E.G. MANHOLE). INVERT ELEVATIONS (LEES) LISTED ON STRUCTURES ARE BASED ON THE "THEORETICAL" IE AT THE CENTER OF THE STRUCTURE. FIELD STAKING IS BASED ON THESE PIPE SLOPES AND INVERT ELEVATIONS. FOR PIPES WITH STEEP SLOPES AND/OR SHORT PIPE RUNS, THE CONTRACTOR NEEDS TO MAKE ADJUSTMENTS FOR THE ACTUAL SLOPE FROM EDGE OF STRUCTURE TO EDGE OF STRUCTURE AND/OR MAKE SURE PRE-CAST STRUCTURES (E.G. MANHOLE BASE) ACCOMMODATES THE ACTUAL IE AT THE EDGE OF THE STRUCTURE.
- CATCH BASIN AND CURB INLET LEAD LENGTHS NOTED ARE TO THE CENTER (MIDPOINT) OF STRUCTURE AT FACE OF CURB. FIELD STAKING IS BASED ON CENTER (MIDPOINT) OF STRUCTURE AT FACE OF CURB UNLESS OTHERWISE NOTED OR OTHER ARRANGEMENTS ARE MADE WITH THE PROJECT SURVEYOR.
- A STREET OPENING PERMIT MUST BE OBTAINED FROM THE COUNTY PRIOR TO COMMENCEMENT OF UTILITY WORK WITHIN EXISTING RIGHTS OF WAY. CONTACT JOEL LAGERWEY AT (503) 353-4691.

WATER SUPPLY:

- WATER MAINS SHALL BE DUCTILE IRON PIPE CONFORMING TO ANWA C151. PIPE IS TO HAVE CEMENT MORTAR LINING AND BITUMINOUS SEAL COAT CONFORMING TO ANWA C104. JOINTS ARE TO BE FITTED JOINT (6-INCH TO 8-INCH PIPE IS TO BE CLASS 52; 12-INCH AND UP SHALL BE CLASS 52, UNLESS SPECIFIED BY THE AUTHORITY.) PIPE FITTINGS ARE TO BE CAST IRON, OR DUCTILE IRON, CONFORMING TO ANWA C110 OR C153. PIPE IS TO BE LAID SUCH THAT IT IS SUPPORTED ALONG ITS FULL LENGTH, INCLUDING DIGGING OF "BELL HOLES".
- WATER MAIN IS TO HAVE A MINIMUM COVER OF 36-INCHES.
- AN APPROVED MECHANICAL RESTRAINT SYSTEM IS TO BE USED AT ALL BRANCHES AND CHANGES IN DIRECTION.
- GATE VALVES (6-INCH THROUGH 12-INCH) SHALL BE RESILIENT-SEATED TYPE CONFORMING TO ANWA C509. BUTTERFLY VALVES 18-INCH AND LARGER SHALL BE CLASS 150 SHORT BODY TYPE IN CONFORMANCE WITH ANWA C504. WHERE WATER SYSTEM STATIC PRESSURES EXCEED 100 PSI, BUTTERFLY VALVES SHALL BE CLASS 2508, SHORT BODY TYPE. IN CONFORMANCE WITH ANWA C504, VALVE BOXES SHALL BE VANDUOVER 1810/18-INCHES LONG WITH 6-INCH P.V.C. 3034 AS BOTTOM SECTION. VALVE BOXES THAT ARE LOCATED OUTSIDE AREAS TO BE PAVED SHALL HAVE A 2'X 2'X 2" THICK COLLAR OF HOT ASPHALT PLACED AROUND THEM. WHERE THE TOP OF THE VALVE OPERATING NUT IS 48-INCHES OR MORE BELOW FINISH GRADE, OPERATING EXTENSIONS SHALL BE PROVIDED TO BRING THE OPERATING NUT TO A POINT 18-INCHES BELOW FINISH GRADE. THE EXTENSION STEM SHALL BE CONSTRUCTED OF STEEL.
- FIRE HYDRANTS SHALL BE MUELLER CENTURION, M4H 929 RELIANT, CLOW F-2500 OR KENNEDY GUARDIAN WITH 6-INCH MJ INLET AND 5-1/4 INCH VALVE OPENING. FIRE HYDRANTS ARE TO HAVE A 4-1/2 INCH AND TWO 2-1/2 INCH OUTLETS. PUMPER OUTLET TO FACE THE DIRECTION OF ACCESS.
- TAPPING SLEEVES SHALL BE EITHER EPOXY-COATED STEEL WITH STAINLESS STEEL BOLTS OR STAINLESS STEEL FULL CIRCLE TAPPING SLEEVE.
- GRANULAR MATERIAL USED FOR PIPE BASE, PIPE ZONE AND TRENCH BACKFILL SHALL BE 3/4" - 0" CRUSHED ROCK. PIPE BASE SHALL BE A MINIMUM OF 4-INCHES DEEP AT THE PIPE BARREL, AND NOT LESS THAN 3-INCHES DEEP AT THE BELL. GRANULAR BACKFILL IS TO BE COMPACTED TO 95% MAXIMUM DENSITY PER AASHTO 199 TEST METHOD AND NATIVE MATERIAL SHALL BE COMPACTED TO 85% OF IN-PLACE DENSITY OF SURROUNDING SOIL. BACKFILL WITHIN RIGHT-OF-WAY SHALL BE IN ACCORDANCE WITH APWA CLASS B BACKFILL.
- SERVICE LATERALS 1-INCH OR SMALLER SHALL BE TYPE K COPPER, SOFT. LATERAL SIZES SHALL BE 1-INCH THAT WILL SERVE TWO LOTS AND 3/4-INCH FOR LINES SERVING ONE LOT. CORPORATION STOPS, ANGLE CURB STOPS, AND SERVICE TEES SHALL BE:

	CORPORATION STOPS	ANGLE CURB STOPS	SERVICE TEES
MUELLER (BALL STYLE) OR-	B-25008	B-24258	H-15381
FORD (BALL STYLE)	FB-10003Q	BA-43-332WQ	T444-3330

- INSPECTION OF THE WATER IMPROVEMENTS WILL BE MADE BY SUNRISE WATER AUTHORITY PERSONNEL OR OTHERS DESIGNATED BY THE AUTHORITY. THE PRESSURE TEST IS TO BE MADE AFTER ALL SERVICES ARE INSTALLED. CURBS ARE IN, AND ROAD BASE ROCK IS PLACED. TEST PRESSURE SHALL BE 1.5 TIMES STATI LINE PRESSURE (MINIMUM 150PSI) AT THE LOWEST POINT IN THE SYSTEM BEING TESTED; 30 MINUTES DURATION; NO PRESSURE LOSS.
- ALL MATERIALS, INSTALLATIONS, TESTS, AND CHLORINATION ARE TO BE IN ACCORDANCE WITH THE STANDARDS AND CODES OF THE SUNRISE WATER AUTHORITY AND THE OREGON ADMINISTRATIVE RULES, CHAPTER 333, DIVISION 061.
- THE CONTRACTOR SHALL PROVIDE SUNRISE WATER AUTHORITY WITH CERTIFICATE OF INSURANCE AND WILL HAVE TO BE QUALIFIED BY THE WATER AUTHORITY, IF NOT ALREADY SO, TO DO WORK ON THE WATER SYSTEM. THE DEVELOPER SHALL PROVIDE SUNRISE WATER AUTHORITY WITH A 12-MONTH MAINTENANCE BOND, AN IRREVOCABLE LETTER OF CREDIT, OR AN ASSIGNMENT OF FUNDS, IN THE AMOUNT OF 25% OF THE COST OF THE WATER SYSTEM IMPROVEMENTS.
- WHERE SANITARY LINES CROSS WATER LINES, THE SYSTEMS NEED TO BE CONSTRUCTED SUCH THAT THE CROSSING WILL OCCUR AT THE CENTER OF A PIPE SEGMENT FOR BOTH LINES.
- PVC RE-USE WATER LINES WILL BE INSTALLED USING C-900 DR18 PURPLE PIPE WITH DUCTILE IRON FITTINGS. A TRACER WIRE, 12 GAUGE COPPER-NONE OR EQUIVALENT, MUST BE INSTALLED WITH PVC RE-USE WATER LINES. RE-USE IDENTIFICATION TAPE MUST BE INSTALLED ONE FOOT ABOVE RE-USE WATER LINES.

STORM DRAINAGE:

- UPON COMPLETION OF THE CONSTRUCTION THE CONTRACTOR SHALL HYDRO-CLEAN THE ENTIRE STORM DRAIN SYSTEM AND STRUCTURES. VIDEO INSPECT ALL OF THE STORM SEWER CONVEYANCE AND DETENTION STRUCTURES WHICH ARE 8-INCHES AND GREATER IN DIAMETER; SUBMIT A COPY OF THE REPORT AND VIDEO TO THE DISTRICT FOR REVIEW AND APPROVAL.
- ALL STORM SEWER PIPES SHALL HAVE A RUBBER GASKET. ALL STORM PIPE AND RELATED CONNECTIONS TO CATCH BASINS, MANHOLES, AND OTHER RELATED STRUCTURES SHALL BE WATER TIGHT.
- ALL MATERIALS, INSTALLATION, TESTS AND INSPECTIONS SHALL BE MADE IN STRICT ACCORDANCE WITH THE DISTRICT AND LOCAL ROAD AUTHORITY RULES, REGULATIONS AND STANDARDS.
- ALL STANDARD STORM STRUCTURES SHALL BE CONSTRUCTED ACCORDING TO THE DISTRICT STANDARD DETAILS. THE DISTRICT STANDARD DETAILS WILL BE STRICTLY ADHERED TO WHETHER THERE ARE INCLUDED IN THE APPROVED PLAN SET OR NOT. STORM STRUCTURES WITHIN THE RIGHT-OF-WAY SHALL BE CONSTRUCTED PER THE DISTRICT STANDARDS, UNLESS AUTHORIZED IN WRITING BY THE LOCAL ROAD AUTHORITY.
- ALL STORM DRAIN PIPE AND CULVERTS SHALL HAVE A MINIMUM DESIGN SERVICE LIFE OF 75 YEARS AS PER OREGON DEPARTMENT OF TRANSPORTATION STANDARDS.

STORM DRAINAGE CONT.:

- EACH STORM SYSTEM LATERAL SHALL BE PLUGGED WITH A RUBBER RING PLUG. A 2'X 4 MARKER PAINTED WHITE (TO DISTINGUISH IT FROM THE SANITARY LATERAL - GREEN) SHALL BE PLACED AT THE END OF THE PIPE PROTRUDING AT LEAST 1 FOOT ABOVE THE GROUND. A DETECTABLE WHITE MAGNETIC TAPE WITH THE WORD "STORM" AT REGULAR INTERVALS SHALL BE BURIED 1-FOOT ABOVE THE PIPE ALONG THE SERVICE LATERAL FROM THE MAINLINE TEE TO THE 2'X 4 WHITE MARKER.
- IF DURING THE COURSE OF INSTALLING UNDERGROUND UTILITIES DRAIN TILES ARE ENCOUNTERED, THE CONTRACTOR SHALL NOTIFY THE DESIGN ENGINEER TO DETERMINE HOW THE TILES SHALL BE ROUTED TO BYPASS THE ONSITE DETENTION SYSTEM. THE ENGINEER SHALL MAKE A RECOMMENDATION TO THE DISTRICT IN WRITING OR MODIFIED PLAN SUBMITTAL.
- THE ENGINEER, CONTRACTOR OR DESIGNATED INSPECTOR SHALL KEEP NOTES AND RECORDS OF ALL CONSTRUCTION IN REGARDS TO THE APPROVED PLANS. APPROVED PLANS SHALL BE MAINTAINED "RECORD DRAWINGS" DURING THE CONSTRUCTION PERIOD. RECORD DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER AT THE END OF THE PROJECT.
- THE CONTRACTOR SHALL AT ALL TIMES PROVIDE AND MAINTAIN AMPLE MEANS AND DEVICES TO REMOVE AND DISPOSE OF ALL WATER ENTERING THE TRENCH EXCAVATION DURING THE PROCESS OF LAYING THE PIPE. WATER AND DEBRIS SHALL NOT ENTER THE DISTRICT'S SANITARY SYSTEM. WATER AND DEBRIS SHALL BE DISPOSED OF IN AN APPROVED MANNER.
- IN UNSECURED AREAS ALL MANHOLES SHALL HAVE TAMPER-PROOF LIDS PER THE DISTRICT SPECIFICATIONS. IN VEGETATED AREAS THE RIM SHALL BE SIX INCHES (6") ABOVE FINISH GRADE; UNLESS AUTHORIZED BY THE DISTRICT.
- THE LOCATION AND ELEVATION OF AN APPROVED BENCHMARK SHALL BE SHOWN ON THE PLANS, OR IF NOT WITHIN THE PROPOSED AREA OF WORK, SHALL BE REFERENCED BY NUMBER AND LOCATION. ELEVATIONS SHALL BE BASED ON THE NVD88 DATUM.

SANITARY SEWER

- ALL WORK AND MATERIALS SHALL CONFORM WITH THE CONSTRUCTION STANDARDS AND SPECIFICATIONS OF CLACKAMAS COUNTY SERVICE DISTRICT #1 (CCSD#1).
- THE CONTRACTOR IS REQUIRED TO ATTEND A PRE-CONSTRUCTION CONFERENCE AT THE DISTRICT'S OFFICES PRIOR TO BEGINNING WORK ON THE SANITARY SEWER. THE OWNER OF CONTRACTOR IS ALSO REQUIRED TO PROVIDE THE DISTRICT A WARRANTY BOND FOR THE NEW SANITARY SEWER MAINS AND SERVICE CONNECTIONS AT THE COMPLETION OF CONSTRUCTION.
- THE ENGINEER IS REQUIRED TO HAVE AN INSPECTOR ON SITE AT ALL TIMES DURING CONSTRUCTION OF THE SANITARY SEWER. THE CONTRACTOR SHALL GIVE THE ENGINEER AT LEAST 24 HOURS NOTICE PRIOR TO BEGINNING WORK AT THE START OF CONSTRUCTION OR AFTER AN INTERVAL OF NOT WORKING ON THE SANITARY SEWER.
- MATERIALS:
 - POLYVINYL CHLORIDE PIPE (PVC) SHALL CONFORM TO THE REQUIREMENTS OF ASTM D-3034, SDR 35, AND JOINT TYPE SHALL BE ELASTOMERIC GASKET CONFORMING TO ASTM D-3212.
 - CONCRETE SEWER PIPE (CSP) TO CONFORM TO THE REQUIREMENTS OF ASTM C-14, CLASS 3 NON-REINFORCED CONCRETE PIPE WITH ELASTOMERIC GASKETS.
 - MANHOLES TO BE PRECAST CONCRETE SECTIONS WITH MINIMUM INSIDE DIAMETER OF 48-INCHES, CONFORMING TO THE REQUIREMENTS OF ASTM C-478, EXCEPT AS NOTED ON THE PLANS. Poured IN PLACE MANHOLES MAY BE SUBSTITUTED.
- INSTALLATION:
 - POLYVINYL CHLORIDE PIPE (PVC) SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. PVC SEWER PIPE SHALL BE CONNECTED TO CONCRETE MANHOLES BY MEANS OF AN APPROVED COUPLING WITH AN ELASTOMERIC GASKET, AN APPROVED WITH AN APPROVED WATERSTOP OR FLEXIBLE SLEEVE. USE OF PORTLAND CEMENT GROUT FOR CONNECTION OF PVC SEWER PIPE TO MANHOLES WILL NOT BE PERMITTED.
 - AFTER THE CONTRACTOR HAS BACKFILLED THE PIPE ZONE OF THE TRENCH AS REQUIRED HE SHALL THEN BACKFILL THE BALANCE OF THE TRENCH, WITH THE TYPE OF BACKFILL SPECIFIED, IN ONE FOOT (1') LAYERS, MECHANICALLY COMPACTING EACH LAYER TO 95% OF MAXIMUM DENSITY IN ROADWAYS AND 85% TO 90% IN ALL OTHER AREAS. MAXIMUM RELATIVE DENSITY SHALL BE DETERMINED PER AASHTO T-180. IN PLACE, DENSITY SHALL BE DETERMINED PER AASHTO T-191, T-205 OR T-238. ANY SUBSEQUENT SETTLEMENT OF THE TRENCH OR DITCH DURING THE GUARANTEE PERIOD SHALL BE CONSIDERED TO BE THE RESULT OF IMPROPER COMPACTION AND SHALL BE PROMPTLY CORRECTED BY THE CONTRACTOR AT NO EXPENSE TO THE DISTRICT OR OWNER.
 - SANITARY SEWER PIPE AND APPURTENANCES SHALL BE TESTED FOR LEAKAGE IN ACCORDANCE WITH CCSD#1 STANDARDS. LEAKAGE TEST INCLUDE AN AIR TEST OF THE SEWER MAINS AND SERVICE CONNECTIONS AND A WATER EXFILTRATION TEST OR VACUUM TEST OF THE MANHOLES. ANY PORTION OF THE SEWER WHICH FAILS TO PASS THESE TESTS SHALL BE EXCAVATED, REPAIRED OR REALIGNED, AND RETESTED. IN ADDITION TO HYDROSTATIC OF AIR TESTING, SANITARY SEWERS CONSTRUCTED OF PVC SEWER PIPE SHALL BE DEFLECTION TESTED NO LESS THAN 30-DAYS AFTER THE TRENCH BACKFILL AND COMPACTION HAS BEEN COMPLETED. THE TEST SHALL BE CONDUCTED BY PULLING AN APPROVED SOLID POINTED MANHOLE 95% OF THE INSIDE DIAMETER THROUGH THE PIPELINE ON A MANHOLE BASIS.
 - UNLESS OTHERWISE SPECIFIED ON THE PLANS OR DIRECTED BY THE ENGINEER, EACH SERVICE CONNECTION SHALL BE LAID IN A SEPARATE TRENCH ON A STRAIGHT LINE AND GRADIENT FROM THE TEE TO THE END OF THE SERVICE CONNECTION. AT THE PROPERTY LINE THE SERVICE CONNECTION SHALL BE AT LEAST 6 FEET BELOW THE GRADE OF THE STREET CENTER LINE. NO SERVICE CONNECTION SHALL BE LAID ON A SLOPE OF LESS THAN TWO PERCENT, UNLESS OTHERWISE DIRECTED BY THE ENGINEER OR SHOWN ON THE PLANS. THE ENGINEER WILL PROVIDE A CUT STAKE AT THE TERMINAL POINT OF EACH SERVICE CONNECTION, UNLESS OTHERWISE DIRECTED BY THE ENGINEER. THE CONTRACTOR WILL USE A GRADING LINE TO LAY THE PIPE AND THE SERVICE CONNECTION SHALL BE INSTALLED WITH THE SAME ACCURACY AS THE MAIN SEWER. EACH SERVICE CONNECTION SHALL BE PLUGGED WITH A RUBBER RING PLUG. A 2' X 4 MARKER PAINTED GREEN SHALL BE PLACED AT THE END OF EACH SERVICE CONNECTION, AND SHALL EXTEND FROM THE END OF THE PIPE TO A POINT ONE FOOT (1') ABOVE THE SURFACE OF THE GROUND. A DETECTABLE GREEN MAGNETIC TAPE (PHOSPHORATED SAFETY GREEN SANITARY SEWER REDBOW OR EQUAL) WITH THE WORD "SEWER" AT REGULAR INTERVALS SHALL BE PLACED ALONG THE SERVICE CONNECTION FROM THE MAINLINE TEE TO THE GROUND SURFACE.
 - IN EASEMENT AREAS ALL MANHOLES SHALL HAVE TAMPER-PROOF LIDS PER CCSD#1 SPECIFICATIONS, OR APPROVED EQUAL. CAUTION: NOT ALL TAMPER-PROOF LIDS MEET CCSD#1 SPECIFICATIONS. THE FRAME AND COVER SHALL BE SIX INCHES (6") ABOVE FINISH GRADE.
 - THE CONTRACTOR SHALL AT ALL TIMES PROVIDE AND MAINTAIN AMPLE MEANS AND DEVICES TO REMOVE AND DISPOSE OF ALL WATER ENTERING THE TRENCH EXCAVATION DURING THE PROCESS OF LAYING THE PIPE. WATER AND DEBRIS SHALL NOT ENTER INTO THE DISTRICT'S SEWER SYSTEM. WATER AND DEBRIS SHALL BE DISPOSED OF IN AN APPROVED MANNER.



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CLACKAMAS, OREGON



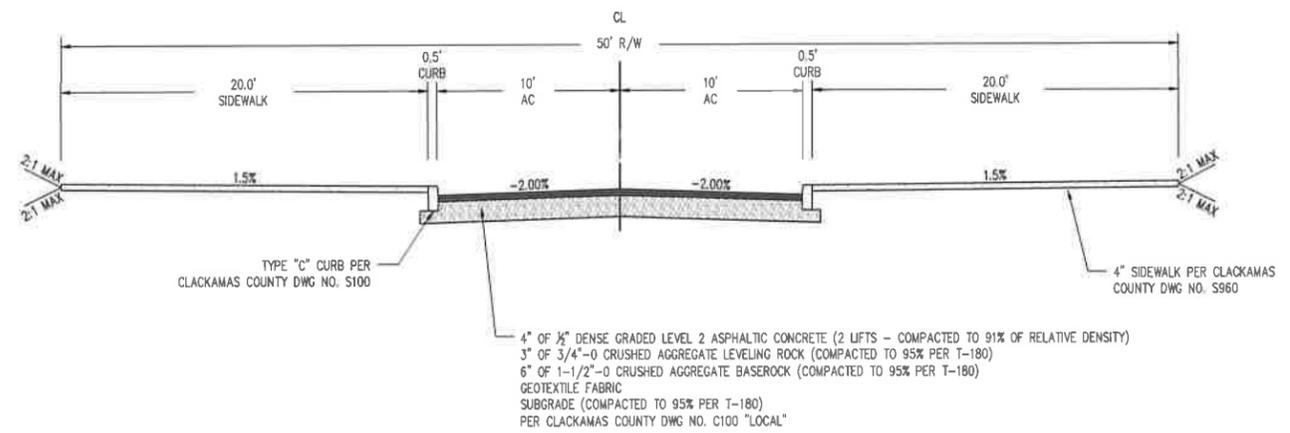
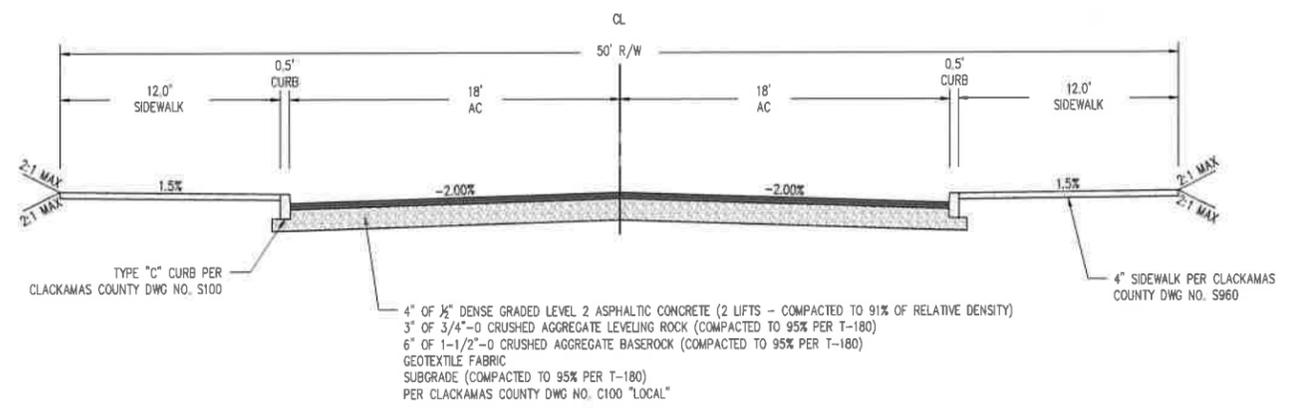
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Project #: 1617.00
 File #:
 Date: © 06.21.2019

Revisions:
 DESIGN REVIEW SUBMITTAL
STREET SECTIONS & LEGEND

C1.3



LEGEND

EXISTING		PROPOSED
X—X	FENCE	Proposed Storm Drain Manhole
-99-	MINOR CONTOUR	Proposed Storm Drain Catch Basin
-100-	MAJOR CONTOUR	Proposed Sanitary Lateral
---	PROJECT BOUNDARY/LIMITS	Proposed Water Line
---	RIGHT-OF-WAY	Proposed 1' Contour Line
---	ADJACENT/ADJOINING LOT LINE	Proposed 5' Contour Line
---	ROADWAY CENTERLINE	Proposed Curb
---	EASEMENT LINE	Proposed FDC Connection
SS—SS	SANITARY SEWER LINE	Proposed Fire Hydrant
SD—SD	STORM DRAIN LINE	Proposed Post Indicator Valve
G—G	GAS LINE	Proposed Irrigation and Domestic Backflow
W—W	WATER LINE	Proposed Double Check Vault
E—E	ELECTRIC LINE	Fence
☀	LIGHT POLE	Clean Out
⚡	FIRE HYDRANT	Beehive Storm Outlet
WM	WATER METER/SERVICE	Curb Cut and Storm Outfall
WV	WATER VALVE	Down Spout Connection
∇	STORM OUTFALL	
⊙	STORM DRAIN MANHOLE	
⊞	CATCH BASIN / AREA DRAIN	
⊙	SANITARY SEWER MANHOLE	
⊙	CLEAN OUT	
⊞	JUNCTION BOX	
⊞	ELECTRIC PEDESTAL	
SV	WATER QUALITY STORM VAULT	
⊞	COMMUNICATIONS PEDESTAL	
⊞	COMMUNICATIONS VAULT	
⊞	GAS PEDESTAL	
🌳	DECIDUOUS TREE	
✂	REMOVE TREE	
⊙	SIGN POST	

ABBREVIATIONS

AVE	=	AVENUE
CL	=	CLASS OR CENTERLINE
DIP	=	DUCTILE IRON PIPE
EX	=	EXISTING
PR	=	PROPOSED
FLG	=	FLANGE
GV	=	GALVANIZED
LF	=	LINEAR FEET
LT	=	LEFT
MJ	=	MECHANICAL JOINT
RT	=	RIGHT
STA	=	STATION
WL	=	WATERLINE
CRW	=	CLACKAMAS RIVER WATER
WES	=	WATER ENVIRONMENT SERVICES
R/W	=	RIGHT OF WAY
CC	=	CLACKAMAS COUNTY

ENGINEER'S NOTE TO CONTRACTOR

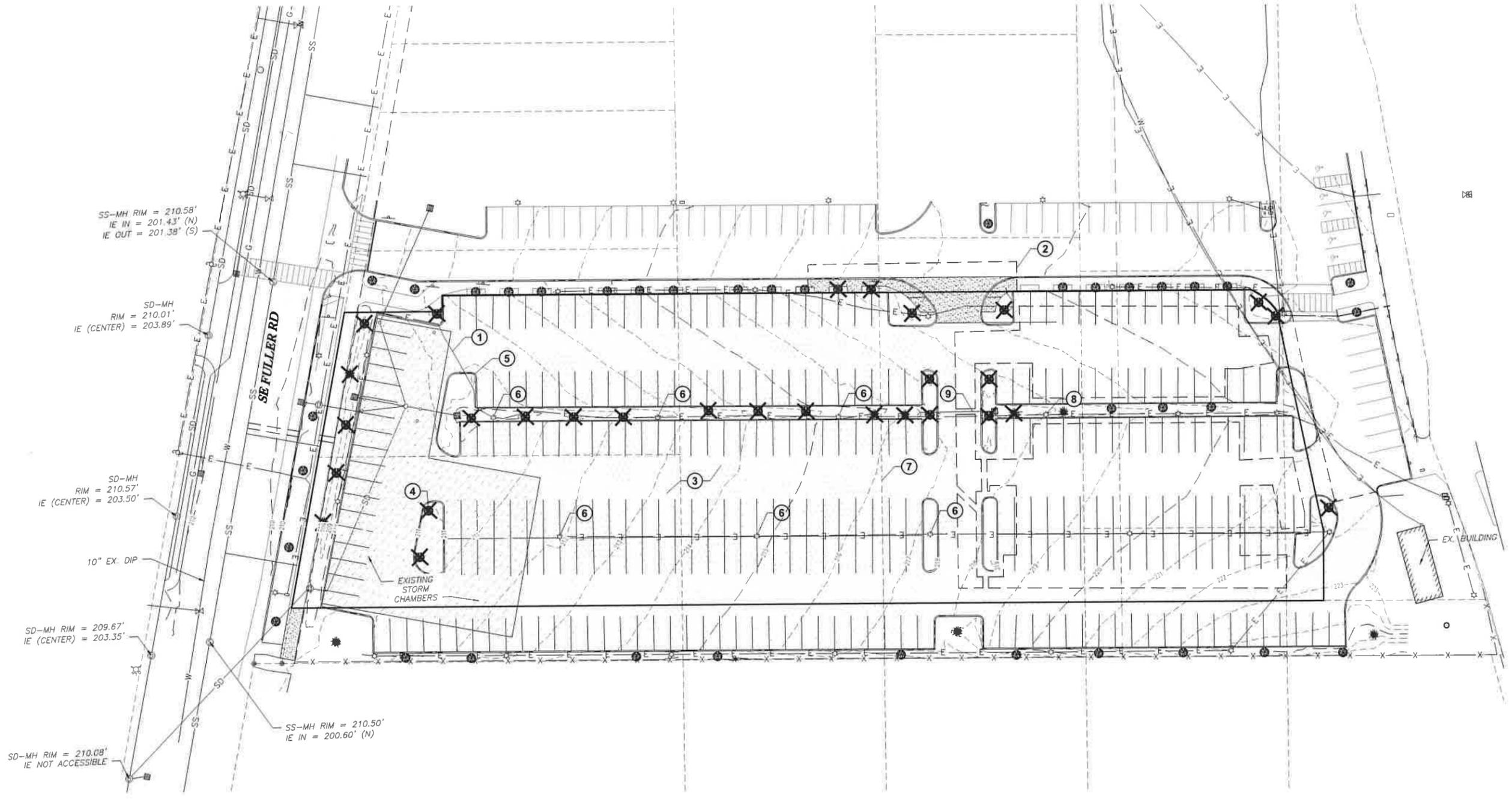
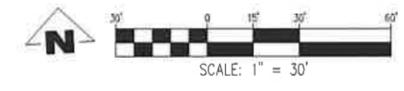
THE EXISTENCE AND LOCATION OF ANY UNDERGROUND UTILITIES OR STRUCTURES SHOWN ON THESE PLANS ARE OBTAINED BY A SEARCH OF AVAILABLE RECORDS. TO THE BEST OF OUR KNOWLEDGE, THERE ARE NO EXISTING UTILITIES EXCEPT THOSE SHOWN ON THESE PLANS. THE CONTRACTOR IS REQUIRED TO TAKE DUE PRECAUTIONARY MEASURES TO PROTECT THE UTILITY LINES SHOWN ON THESE DRAWINGS. THE CONTRACTOR FURTHER ASSUMES ALL LIABILITY AND RESPONSIBILITY FOR THE UTILITY PIPES, CONDUITS OR STRUCTURES SHOWN OR NOT SHOWN ON THESE DRAWINGS.

THE CONTRACTOR AGREES THAT HE SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR THE JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY; THAT THIS SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS; AND THAT THE CONTRACTOR SHALL DEFEND, INDEMNIFY AND HOLD THE OWNER AND THE ENGINEER HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPT FOR LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE OWNER OR THE ENGINEER.

CONTRACTOR SHALL VERIFY ALL CONDITIONS AND DIMENSIONS AND SHALL REPORT ANY DISCREPANCIES TO THE ENGINEER PRIOR TO THE COMMENCEMENT OF WORK.



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File #:
Date: © 06.21.2019

Revisions:
DESIGN REVIEW SUBMITTAL
EXISTING CONDITIONS AND DEMOLITION PLAN

GENERAL NOTES:

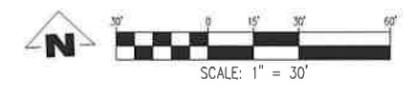
- A. SITE GRADING SHALL NOT RESULT IN THE IMPOUNDMENT OF STORM WATER ON ADJACENT PROPERTIES.
- B. EROSION CONTROL MEASURES SHALL BE IN PLACE BEFORE ANY SITE OR RIGHT OF WAY GRADING TAKES PLACE.

CONSTRUCTION NOTES:

- ① EX. STORM PIPE AND STRUCTURE TO BE REMOVED BY OTHERS (TYP.)
- ② SAWCUT EX. PAVEMENT AND SIDEWALK (TYP.)
- ③ EX. AC TO BE REMOVED (TYP.)
- ④ EX. TREES TO BE REMOVED (TYP.)
- ⑤ EX. CURB TO BE REMOVED (TYP.)

- ⑥ EX. LIGHT POLE AND ELECTRICAL TO BE REMOVED, REFER TO ELECTRICAL PLAN
- ⑦ EX. LOTS TO BE CONSOLIDATED WITHIN PROPERTY BOUNDARY (TYP.)
- ⑧ EX. LIGHT POLES TO REMAIN, REFER TO ELECTRICAL PLAN (TYP.)
- ⑨ EX. STORM PIPE AND DITCH INLET TO BE REMOVED

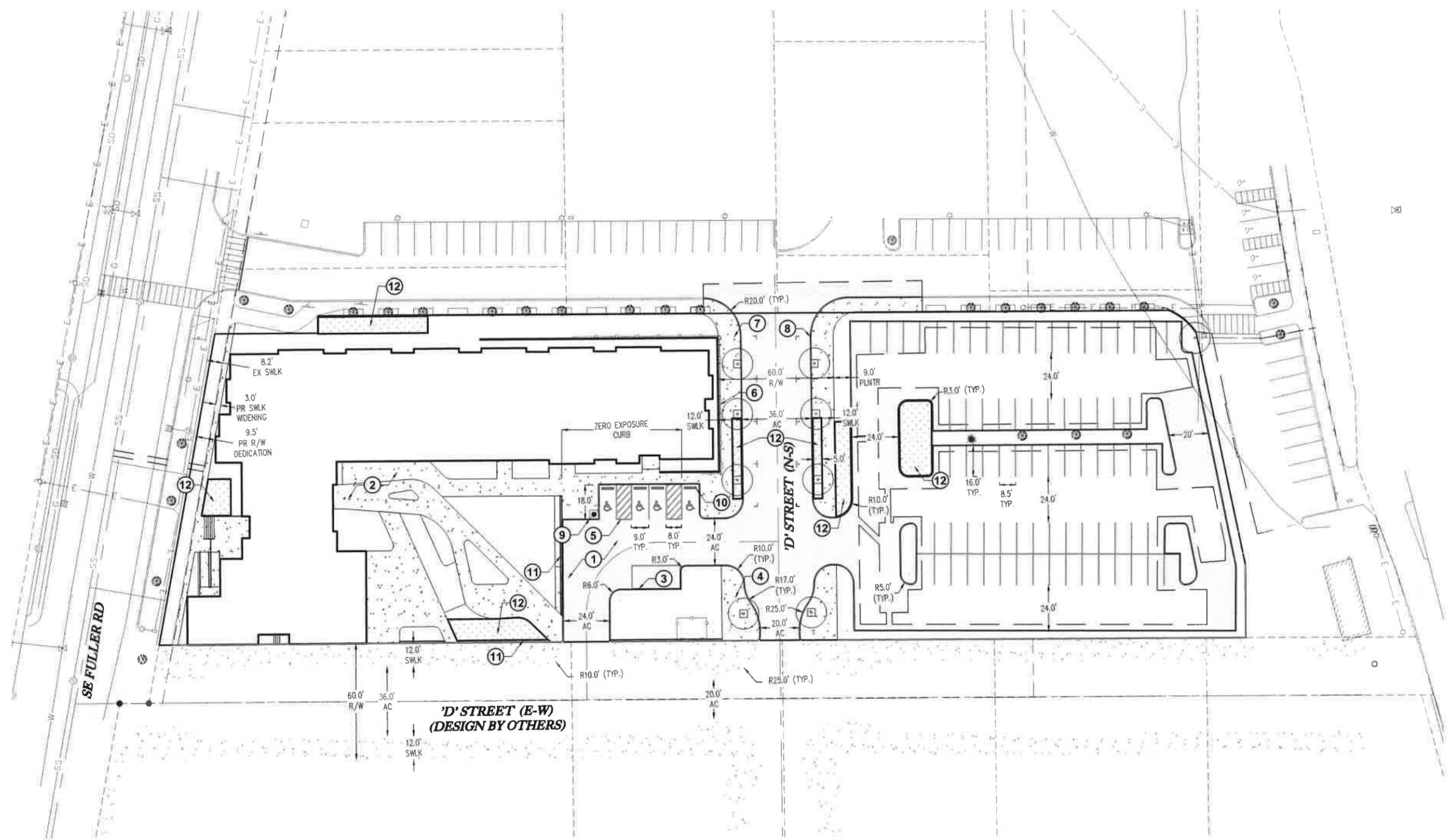
C1.4



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CONSTRUCTION NOTES:

- ① INSTALL STD DUTY ACE PAVEMENT PRIVATE CONSTRUCTION DETAIL 2 (TYP.)
- ② INSTALL STD CONCRETE SIDEWALK PER PRIVATE CONSTRUCTION DETAIL 1 (TYP.). REFER TO LANDSCAPE PLAN FOR DETAILS
- ③ INSTALL STD CONCRETE CURB PER PRIVATE CONSTRUCTION DETAIL 1 (TYP.)
- ④ LANDSCAPING PER LANDSCAPE ARCHITECT PLAN (TYP.)
- ⑤ INSTALL ADA PARKING AND STRIPING PER ODOT FIG 1 AND 3 (TYP.)
- ⑥ INSTALL HANDRAIL PER PRIVATE CONSTRUCTION DETAIL 7
- ⑦ INSTALL STD CONCRETE SWLK PER CC DWG. NO. S960 (TYP.)
- ⑧ INSTALL TYPE 'C' CONCRETE CURB PER CC DWG. NO. S100 (TYP.)
- ⑨ INSTALL BOLLARD PER PRIVATE CONSTRUCTION DETAIL 3
- ⑩ INSTALL WHEEL STOP PER PRIVATE CONSTRUCTION DETAIL 8 (TYP.)
- ⑪ INSTALL URBAN FENCE/WALL PER LANDSCAPE PLAN
- ⑫ INSTALL STORM SEWER PLANTERS PER WES 1B AND COMPOSITE UTILITY PLAN, SHEET C1.8

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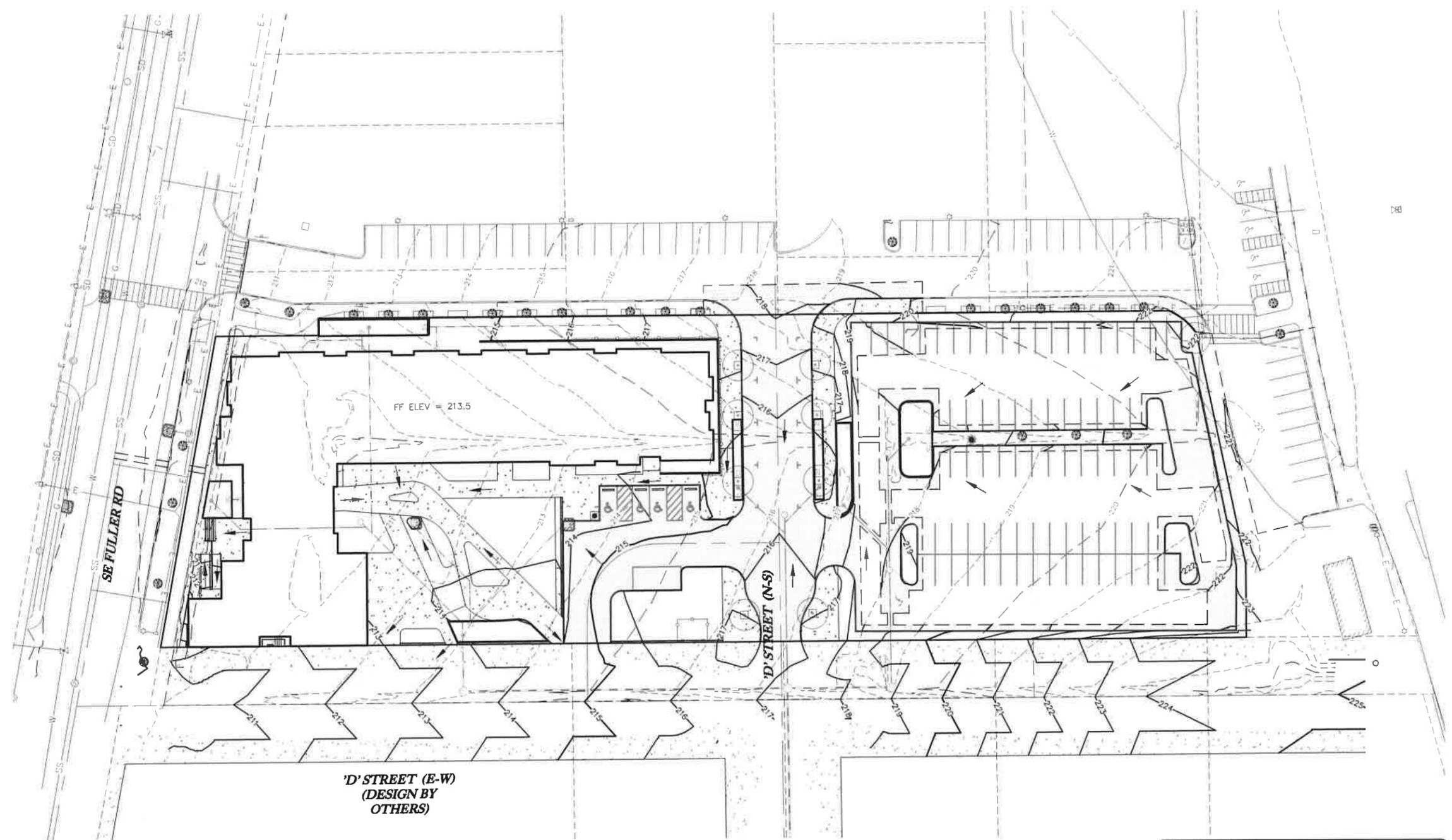
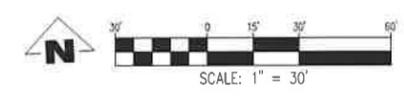
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DESIGN REVIEW SUBMITTAL
SITE PLAN

C1.5



GENERAL NOTES:

- A. SITE GRADING SHALL NOT RESULT IN THE IMPOUNDMENT OF STORM WATER ON ADJACENT PROPERTIES.
- B. EROSION CONTROL MEASURES SHALL BE IN PLACE BEFORE ANY SITE OR RIGHT OF WAY GRADING TAKES PLACE.

LEGEND

- CENTERLINE OF ROW
- PROPERTY LINE
- - - 249 - - - EXISTING 1' CONTOUR
- - - 250 - - - EXISTING 5' CONTOUR
- 249 — PROPOSED 1' CONTOUR
- 250 — PROPOSED 5' CONTOUR
- PROPOSED FLOW DIRECTION
- ☒ BIO-BAG AT AREA DRAIN/BASIN

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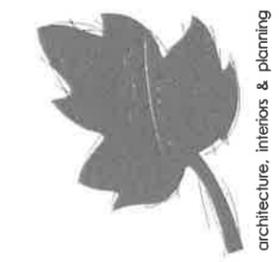
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GRADING PLAN

C1.6



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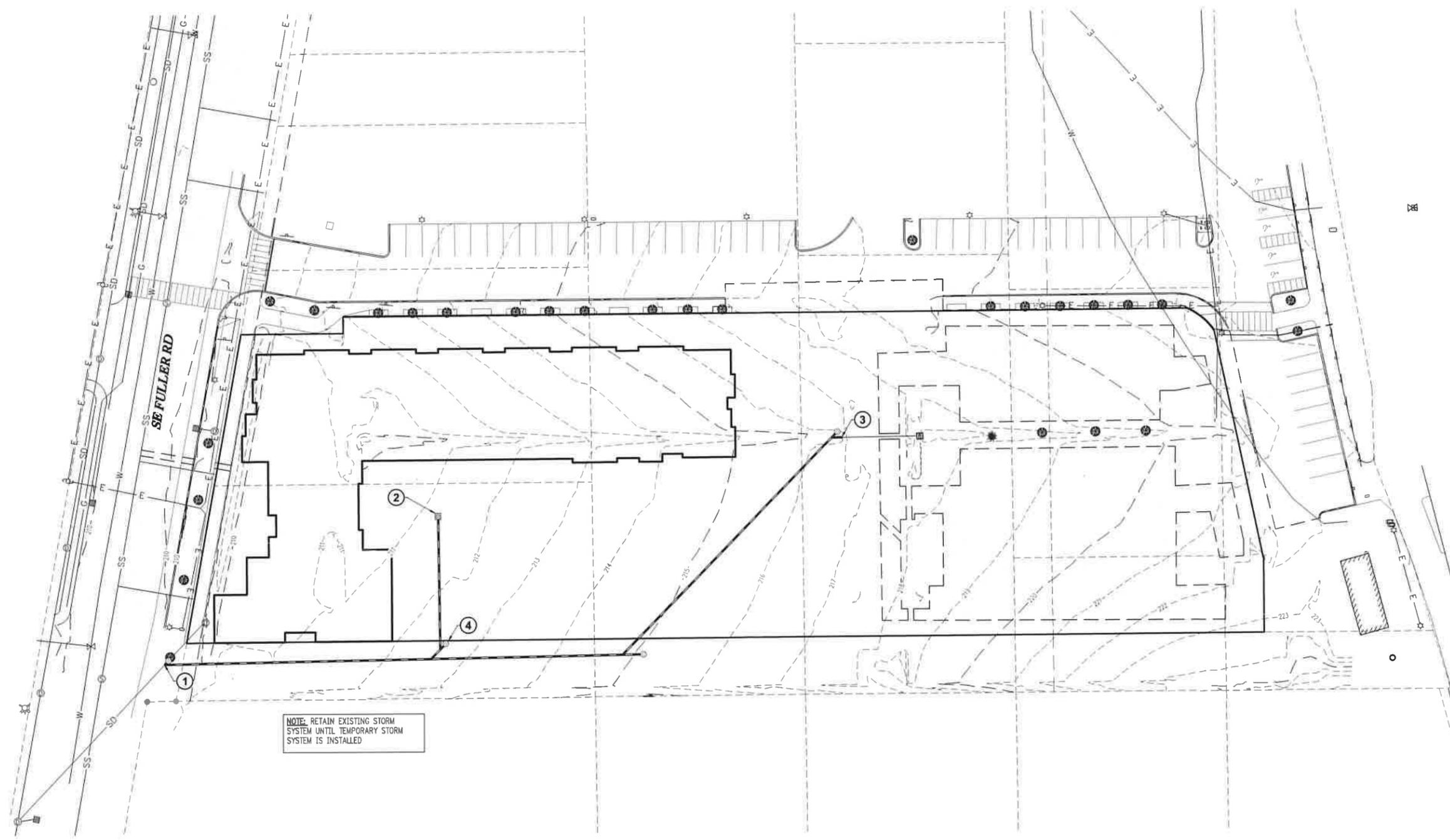
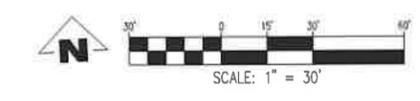
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**INTERIM STORM WATER
MITIGATION PLAN**

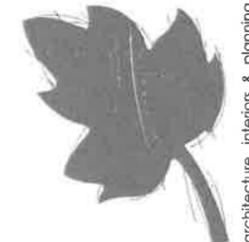
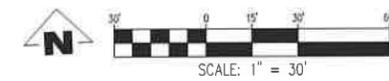
C1.7



NOTE: RETAIN EXISTING STORM SYSTEM UNTIL TEMPORARY STORM SYSTEM IS INSTALLED

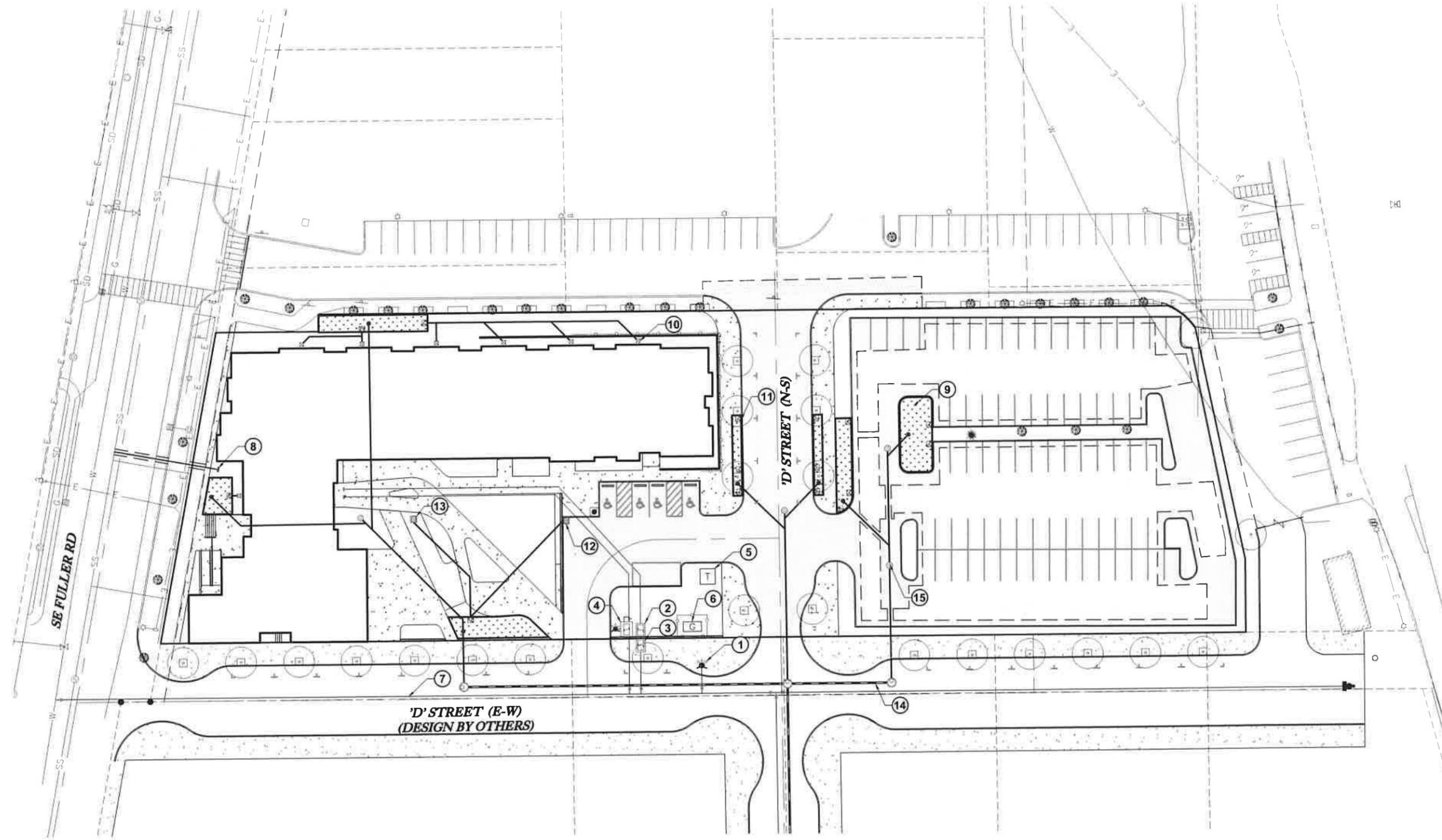
CONSTRUCTION NOTES:

- ① CUT EXISTING STORM PIPE AND CONNECT 10" TEMPORARY STORM SEWER SYSTEM
- ② INSTALL TEMPORARY GIBSON STYLE CATCH BASIN PER DWG NO. T2
- ③ CONNECT TO EXISTING OUTLET PIPE
- ④ INSTALL TEMPORARY CLEAN OUT (TYP.) PER PRIVATE CLEANOUT DETAIL NO. 5



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GENERAL NOTES:

1. THE CONTRACTOR SHALL FIELD VERIFY THE SIZE, LOCATION & DEPTH OF EXISTING UTILITIES PRIOR TO CONSTRUCTION.
2. BACKFILL NOTE: UNLESS NOTED OTHERWISE, PIPES UNDER PAVED SURFACE REQUIRE GRANULAR BACKFILL. FOR PIPES OUTSIDE PAVEMENT, NATIVE BACKFILL IS PERMITTED.

CONSTRUCTION NOTES:

1. FIRE HYDRANT TO BE INSTALLED BY OTHERS
2. INSTALL 3" DOMESTIC REDUCED PRESSURE BACKFLOW PREVENTER PER CRW DWG NO. 112
3. 3" DOMESTIC WATER SERVICE TO BE INSTALLED BY OTHERS
4. INSTALL 6" FIRE SERVICE BACKFLOW PREVENTER AND VAULT PER CRW DWG NO. 111. COORDINATE WITH ELECTRICIAN TO PROVIDE COMM/POWER TO VAULT
5. INSTALL TRANSFORMER PER ELECTRICAL PLAN.
6. INSTALL GENERATOR AND FENCING PER ELECTRICAL AND ARCHITECTURAL PLANS
7. OFFSITE WATER MAIN TO BE DESIGNED AND INSTALLED BY OTHERS
8. INSTALL 6" SANITARY SEWER SERVICE CONNECTION PER WES DWG NO. SAN 017

9. INSTALL STORM WATER PLANTER (TYP.) PER WES DWG NO. 1B
10. DOWNSPOUT CONNECTION (TYP.) PER ARCHITECTURAL PLAN
11. INSTALL CURB CUT (TYP.) PER WES DWG NO. SWM ST-6.0
12. INSTALL LYNCH STYLE CB PER GSB DWG NO. T2
13. INSTALL LANDSCAPE DRAIN PER GSB DWG NO. L1
14. OFFSITE STORM SEWER TO BE DESIGNED AND INSTALLED BY OTHERS
15. INSTALL STORM CLEAN OUT (TYP.) PER WES DWG NO. SWM ST-4.0

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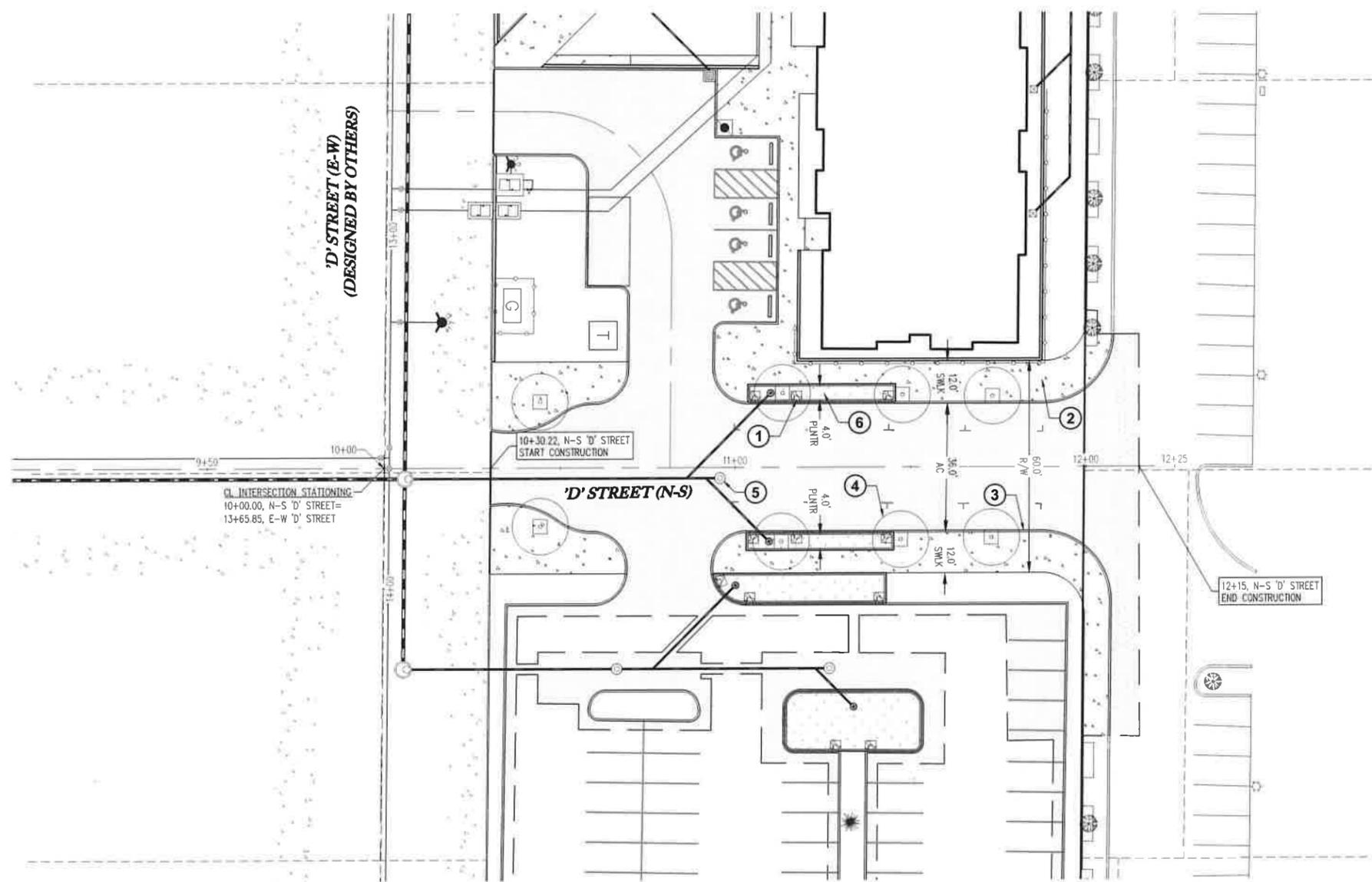
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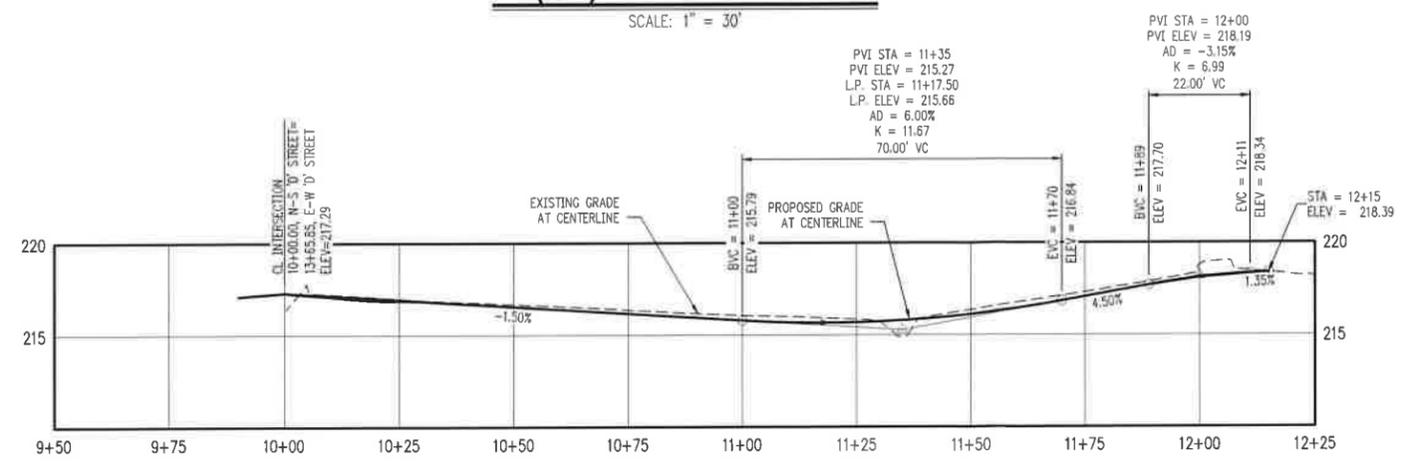
Revisions:
DESIGN REVIEW SUBMITTAL
COMPOSITE UTILITY PLAN

C1.8



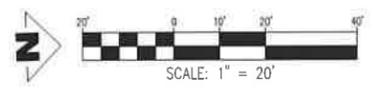
(N-S) 'D' STREET - PLAN

SCALE: 1" = 30'



(N-S) 'D' STREET - PROFILE

SCALE: 1" = 30' H, 1" = 5' V



GENERAL NOTES:

1. THE CONTRACTOR SHALL FIELD VERIFY THE SIZE, LOCATION & DEPTH OF EXISTING UTILITIES PRIOR TO CONSTRUCTION.
2. SEE SHEET C1.3 FOR TYPICAL STREET SECTIONS
3. BACKFILL NOTE: UNLESS NOTED OTHERWISE, PIPES UNDER PAVED SURFACE REQUIRE GRANULAR BACKFILL. FOR PIPES OUTSIDE PAVEMENT, NATIVE BACKFILL IS PERMITTED.

CONSTRUCTION NOTES:

1. INSTALL CURB CUT AND OUTFALL (TYP.) PER WES DWG NO. SWM ST-6.0
2. INSTALL STD CONCRETE SIDEWALK (TYP.) PER CC DWG NO. S960
3. INSTALL TYPE 'C' CONCRETE CURB (TYP.) PER CC DWG NO. S100
4. INSTALL STREET TREE (TYP.) PER CC DWG NO. L100
5. INSTALL STORM SEWER CLEAN OUT PER WES DWG NO. SWM ST-4.0
6. INSTALL STORM WATER PLANTER (TYP.) PER WES DWG NO. 1B



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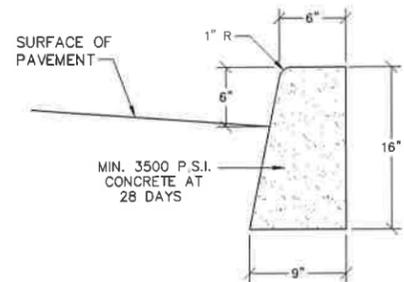
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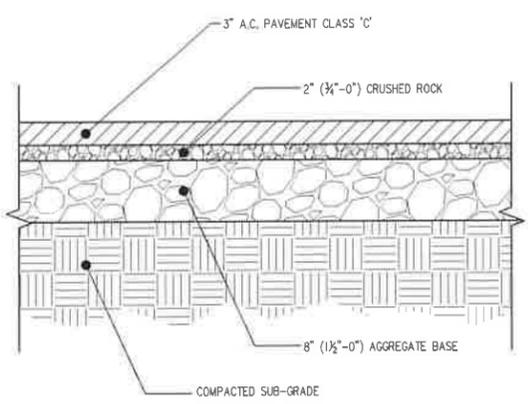
Revisions:
 DESIGN REVIEW SUBMITTAL
**(N-S) 'D' STREET
 PLAN & PROFILE**

C1.9

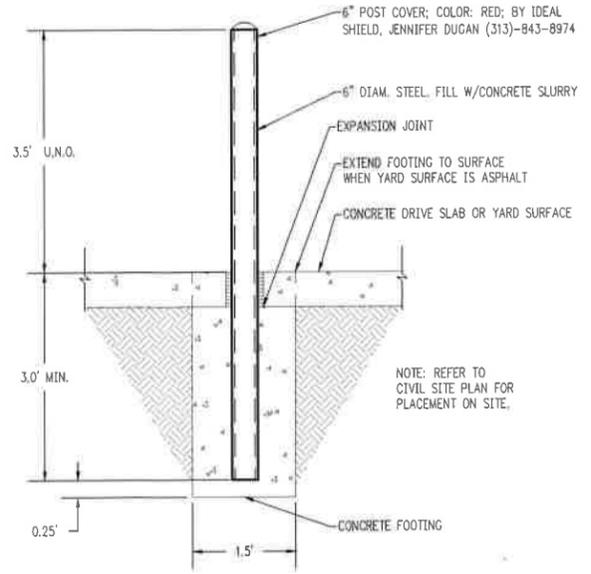


- NOTES:
1. EXPANSION JOINTS SHALL BE PROVIDED AT EACH POINT OF TANGENCY OF THE CURB. MATERIAL SHALL BE PRE-MOLDED, NON-EXTRUDING, WITH A MIN. THICKNESS OF 1/2".
 2. CONTRACTION JOINTS SHALL BE A MINIMUM OF 2" DEEP & SPACED A MAXIMUM OF 15 FT. APART.
 3. BASE ROCK - 1-1/2" MINUS, COMPACTED TO 95% AASHTO T-180 - SHALL BE TO SUBGRADE OF STREET STRUCTURE OR 4" IN DEPTH, WHICHEVER IS GREATER.

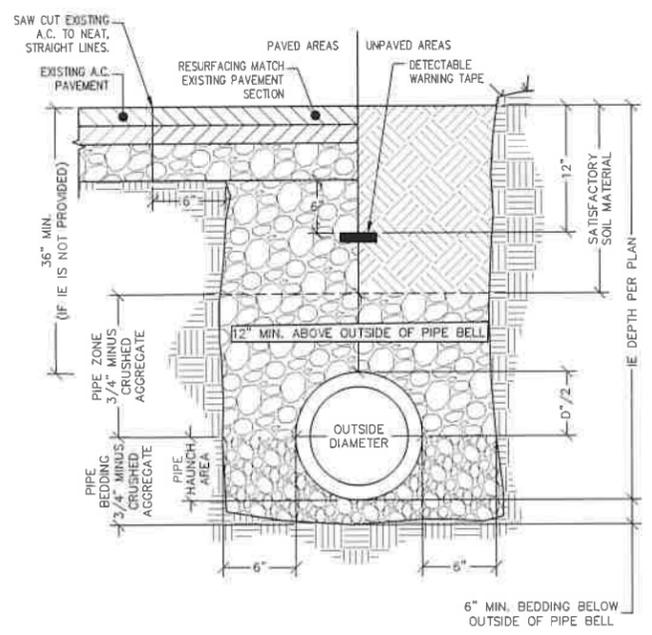
1 STANDARD 6" VERTICAL CURB - DETAIL
C1.5 NTS



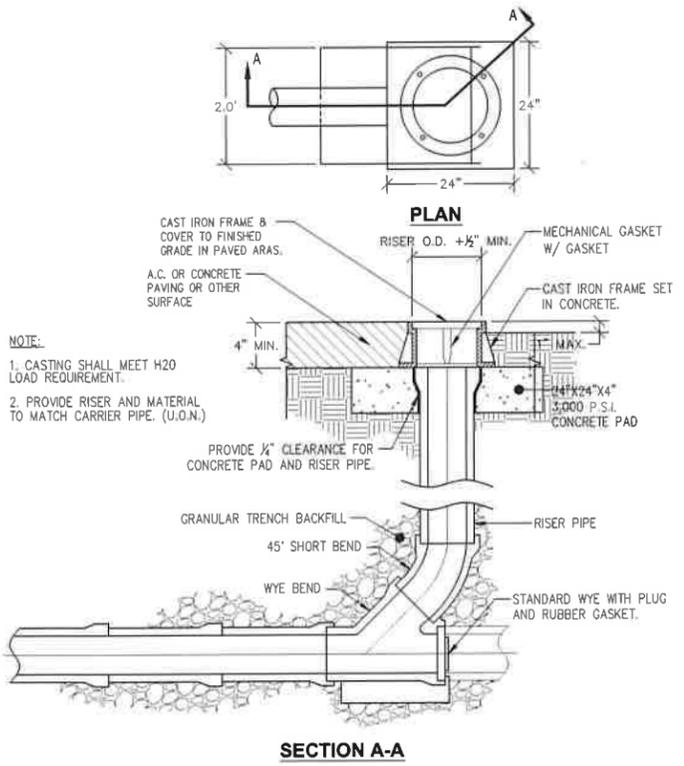
2 STANDARD DUTY AC PAVEMENT - DETAIL
C1.5 NTS



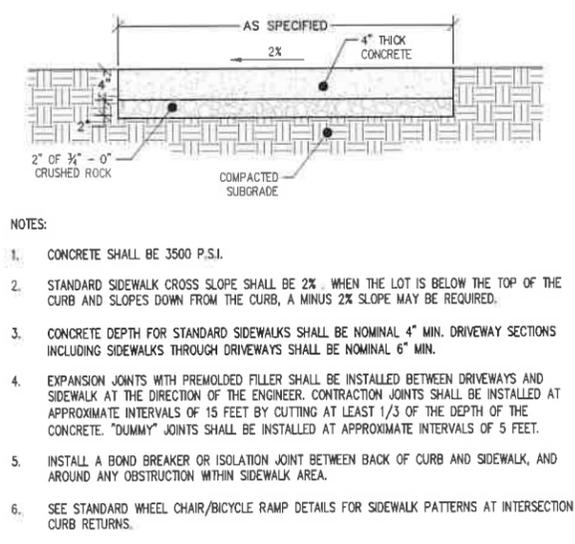
3 GUARD POST & PARKING BOLLARD
C1.5 SCALE: NTS



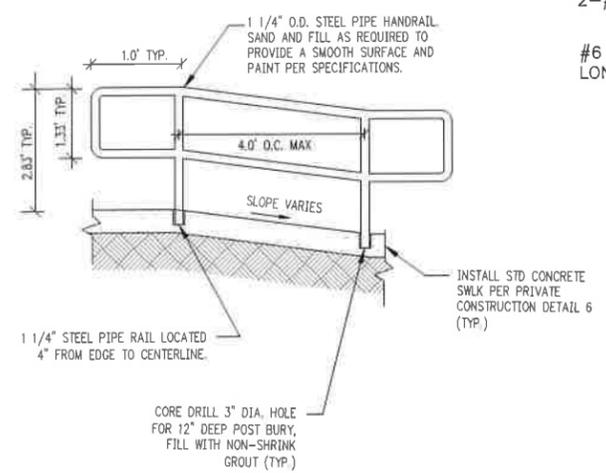
4 TRENCH BACKFILL & PIPE BEDDING - DETAIL
C1.8 NTS



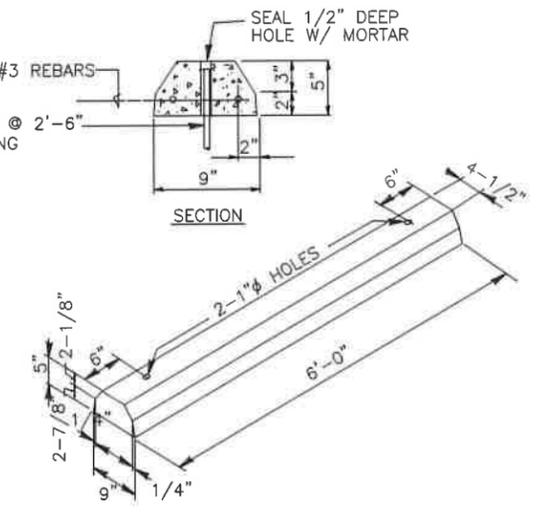
5 PRIVATE CLEANOUT - DETAIL
C1.8 NTS



6 PRIVATE SIDEWALK - DETAIL
C1.5 NTS



7 HANDRAIL - DETAIL
C1.5 NTS



8 PRECAST CONCRETE WHEEL STOP - DETAIL
C1.5 NTS



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PRIVATE CONSTRUCTION
DETAILS

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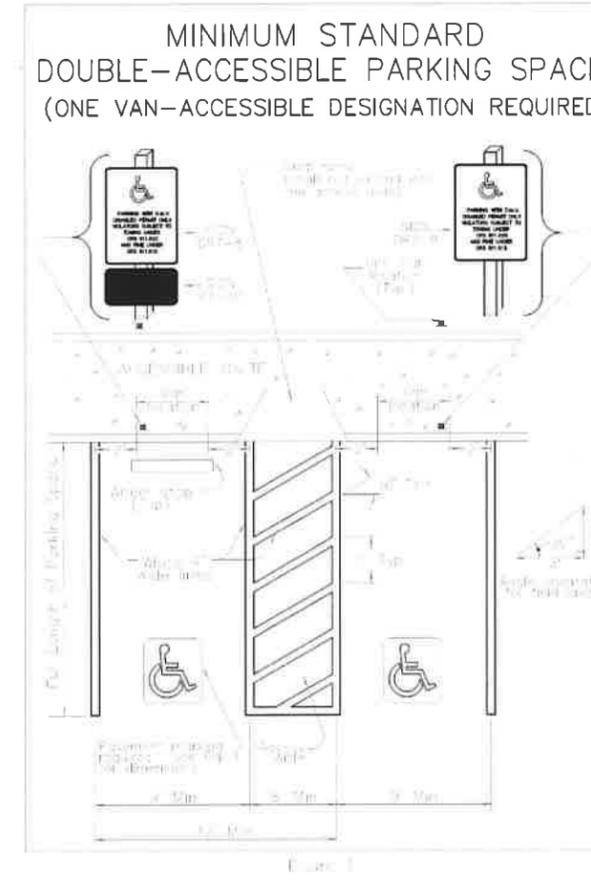
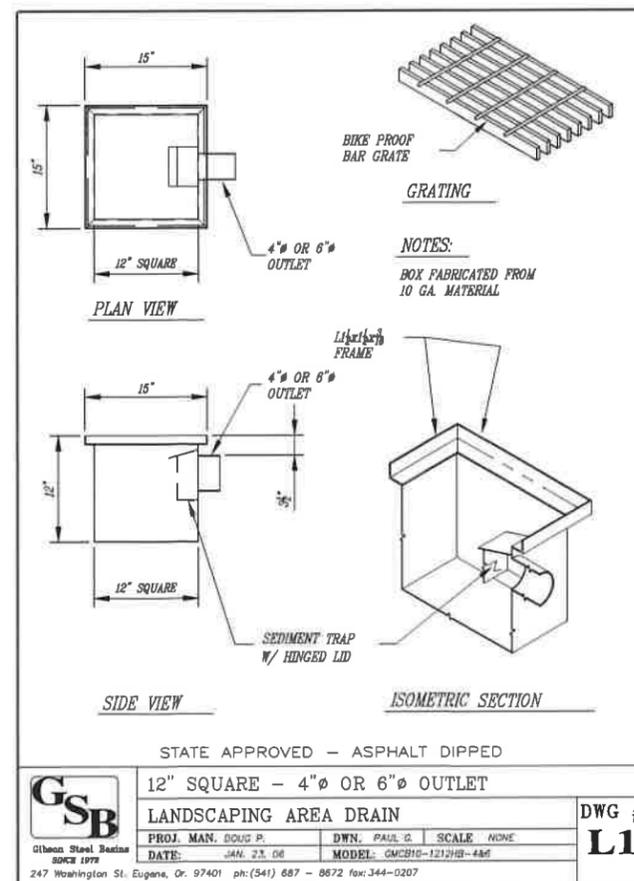
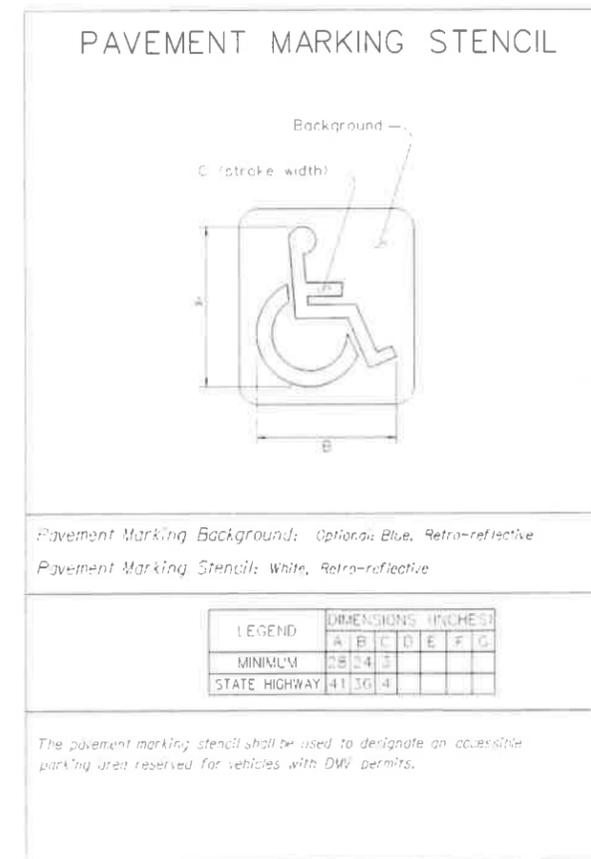
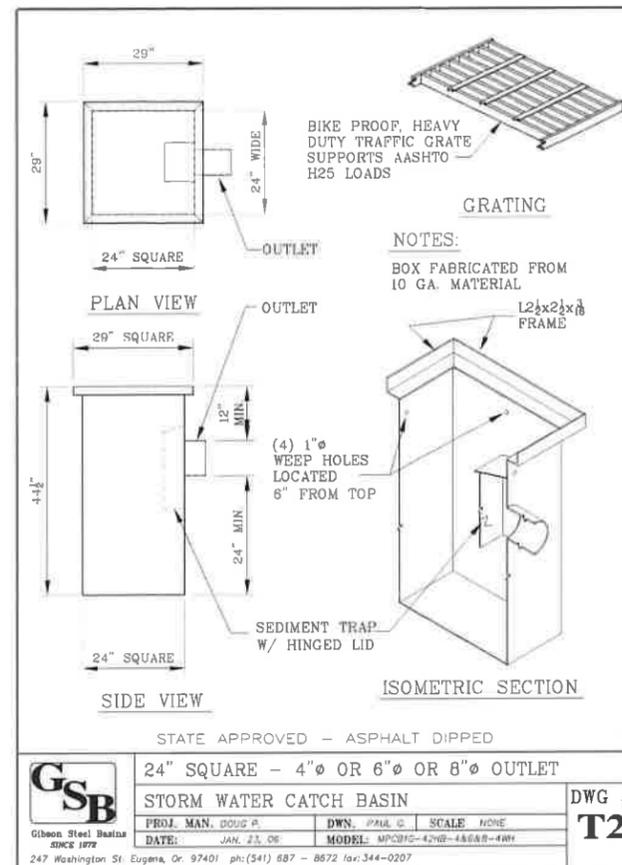
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PRIVATE CONSTRUCTION
DETAILS

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FUNCTIONAL CLASSIFICATION	ASPHALT CONCRETE DEPTH (IN.)		AGGREGATE LEVELING COURSE (3/4"-0") DEPTH (IN.)	AGGREGATE BASE COURSE (1 1/2"-0") DEPTH (IN.)	GEOTEXTILE FABRIC
	A	B			
LOCAL	4	3	3	6	REQUIRED
CONNECTOR	4	3	3	6	REQUIRED
COLLECTOR	6	6	6	10	REQUIRED
LOCAL, CONNECTOR, OR COLLECTOR SERVING COMMERCIAL/INDUSTRIAL	7-1/2	4	4	10	REQUIRED
MINOR/MAJOR ARTERIALS	7-1/2	4	4	10	REQUIRED

NOTES

- THE STREET SECTIONS ARE MINIMUMS. IF THE EXISTING STREET SECTION IS GREATER THAN THE MINIMUM REQUIRED, THE PROPOSED STREET SECTION SHALL BE CONSTRUCTED IN KIND, THE ENGINEER OF RECORD IS RESPONSIBLE FOR AN ADEQUATE STRUCTURAL SECTION.
- FOR IMPROVEMENTS TO EXISTING STREETS, SAW CUT LINE SHALL BE APPROVED BY COUNTY ENGINEERING STAFF PRIOR TO WORK COMMENCEMENT, AND SHOULD NOT EXCEED CENTERLINE.
- ASPHALTIC CONCRETE SHALL BE AS PER ODOT STANDARD SPECIFICATIONS SEC. 00744. ASPHALT TO BE LEVEL 2, PG. 70-22. ASPHALT TO BE PLACED IN LIFTS BETWEEN 2 INCHES TO 2 1/2 INCHES IN THICKNESS. THE TOP LIFT OF ASPHALT SHALL BE 1/2" DENSE GRADED AGGREGATE OVER BASE ASPHALT LIFTS OF 1/4" DENSE GRADED AGGREGATE.
- THE FINAL LIFT OF ASPHALTIC CONCRETE SHALL NOT BE PLACED ON LOCAL STREETS UNTIL 90% OF THE LOTS ASSOCIATED WITH A DEVELOPMENT ARE COMPLETE OR TWO YEARS HAVE ELAPSED AFTER THE INSTALLATION OF THE FIRST LIFT OF ASPHALT, WHICHEVER OCCURS FIRST.
- MATERIAL AND INSTALLATION SHALL CONFORM TO CURRENT ODOT/APWA STANDARD SPECIFICATIONS AND MANUFACTURER'S RECOMMENDATIONS.
- THE WIDTH AND EXTENT OF THE IMPROVEMENT SHALL BE DETERMINED BY ENGINEERING ACCORDING TO STREET CLASSIFICATION.

SECTION DATE: 1/17/18	DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT 150 BEAVERBROOK ROAD OREGON CITY, OR 97045	APPROVAL DATE: 1/17/18	SCALE: N.T.S.	STANDARD DRAWING: C100
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SECTION DATE: 1/17/18	DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT 150 BEAVERBROOK ROAD OREGON CITY, OR 97045	APPROVAL DATE: 1/17/18	SCALE: N.T.S.	STANDARD DRAWING: L100
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NOTES

- "A" CURB EXPOSURE, STANDARD 6". VARY AS SHOWN ON TYPICAL SECTION, OR AS DIRECTED.
- "B" CURB EXPOSURE ADJACENT TO DRIVEWAY, STANDARD 1", OR AS DIRECTED.
- "C" DRIVEWAY APRON WING, STANDARD RESIDENTIAL & COMMERCIAL 5" MIN, OR AS DIRECTED.
- "D" END CURB SECTION, TOP TO BE REMOVED UPON EXTENSION OF CURB.
- "E" WEEP HOLE, 4" PLASTIC DRAIN PIPE OR APPROVED EQUIVALENT, LOCATED AS INDICATED ON THE PLANS OR AS DIRECTED. DRAIN PIPE SHALL HAVE A BELL OR A 3" EXTENSION, FOR FUTURE HOOK-UP.
- "F" LEVELING COURSE, 3/4"-0" OR 1/2"-0" CRUSHED ROCK, 4" MIN.
- "G" EXPANSION JOINTS, MAX 45' SPACING AND AT BEGINNING AND END OF CURVES OR AS DIRECTED.
- "H" CONTRACTION JOINTS, MAX 15' SPACING AND AT LOCATIONS AS DIRECTED.

- CURB TO BE CLASS 3300 PORTLAND CEMENT CONCRETE.
- CONCRETE AND MISC. MATERIALS USED IN CURB CONSTRUCTION SHALL CONFORM TO CURRENT OREGON STANDARD SPECIFICATIONS FOR CONSTRUCTION.
- IF CUTTER SLOPE OR CURB LINE IS LESS THAN 1% DETAIL S150 SHALL BE USED.

SECTION DATE: 1/17/18	DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT 150 BEAVERBROOK ROAD OREGON CITY, OR 97045	APPROVAL DATE: 1/17/18	SCALE: N.T.S.	STANDARD DRAWING: S100
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NOTES

- CONCRETE AND MISC. MATERIALS USED IN CONSTRUCTION SHALL CONFORM TO CURRENT OREGON STANDARD SPECIFICATIONS FOR CONSTRUCTION. DETECTABLE WARNINGS ON WALKING SURFACES AS PER ADA REQUIREMENTS.
- DETECTABLE WARNINGS SHALL CONSIST OF RAISED TRUNCATED DOMES WITH A DIAMETER OF NOMINAL 0.9 in (23 mm) A HEIGHT OF NOMINAL 0.2 in (5 mm) AND A CENTER-TO-CENTER SPACING OF NOMINAL 2.35 in (60 mm) AND SHALL CONTRAST VISUALLY WITH ADJOINING SURFACES, EITHER LIGHT-ON-DARK, OR DARK-ON-LIGHT. THE MATERIAL USED TO PROVIDE CONTRAST SHALL BE AN INTEGRAL PART OF THE WALKING SURFACE. DETECTABLE WARNINGS USED ON INTERIOR SURFACES SHALL DIFFER FROM ADJOINING WALKING SURFACES IN RESISTENCY OR SOUND-ON-CAME CONTACT.
- EXPANSION JOINT SPACING EVERY 45' MIN. OR AT EQUAL INTERVALS CORRESPONDING TO CURB LINE. CONTRACTION JOINT EVERY 15', TOOLED JOINT EVERY 5 FEET.
- THE SURFACE FINISH SHALL BE CROSS BROOMED.
- CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3300 PSI IN 28 DAYS.
- APPROVAL MUST BE OBTAINED FROM ENGINEERING FOR SIDEWALK AT ANY LOCATION IN THE PUBLIC ROAD R/W.

SECTION DATE: 1/17/18	DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT 150 BEAVERBROOK ROAD OREGON CITY, OR 97045	APPROVAL DATE: 1/17/18	SCALE: N.T.S.	STANDARD DRAWING: S960
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NOTES

- THE EXISTING A.C. SHALL BE SAWCUT THROUGH ENTIRE A.C. SECTION PRIOR TO EXCAVATION.
- BACKFILL IN PIPE ZONE SHALL BE PLACED IN MAXIMUM 6" LIFTS AND COMPACTED.
- TRENCH BACKFILL SHALL BE PLACED IN MAXIMUM 12" LIFTS TO 95% DENSITY.
- THE USE OF CONTROL DENSITY FILL SHALL BE DETERMINED BY CLACKAMAS COUNTY, REFER TO STANDARD DRAWING U-250.
- SAWCUT EDGES TO BE TACKED WITH HOT LIQUID ASPHALT.
- WORK RESULTING IN IRREGULAR TRENCH WIDTHS OR INCIDENTAL DAMAGE TO THE ROADWAY SURFACE WILL REQUIRE ANOTHER SAWCUT AND SUBSEQUENT REMOVAL OF A.C. THE SAWCUT LINE SHALL BE APPROVED BY CLACKAMAS COUNTY PRIOR TO THE PERMANENT A.C. REPAIR.
- RESTORE A.C. SECTION WITH 4" OF 1/2" DENSE GRADED AGGREGATE MIX OR AN EQUAL THICKNESS OF THAT REMOVED WHICHEVER IS GREATER, PLACE A.C. IN MAXIMUM 2" LIFTS.
- A.C. JOINTS/SEAMS SHALL BE SEALED WITH HOT LIQUID ASPHALT, OR APPROVED EQUAL, AND SANDED.
- CLACKAMAS COUNTY SHALL BE NOTIFIED FOR INSPECTION.

SECTION DATE: 1/17/18	DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT 150 BEAVERBROOK ROAD OREGON CITY, OR 97045	APPROVAL DATE: 1/17/18	SCALE: N.T.S.	STANDARD DRAWING: U200
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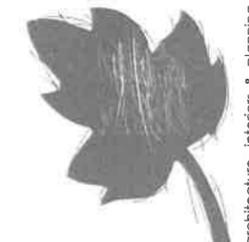


Project #: 1617.00
File #:
Date: © 06.21.2019

Revisions:
DESIGN REVIEW SUBMITTAL
CLACKAMAS COUNTY
CONSTRUCTION DETAILS

C1.12

architecture, interiors & planning



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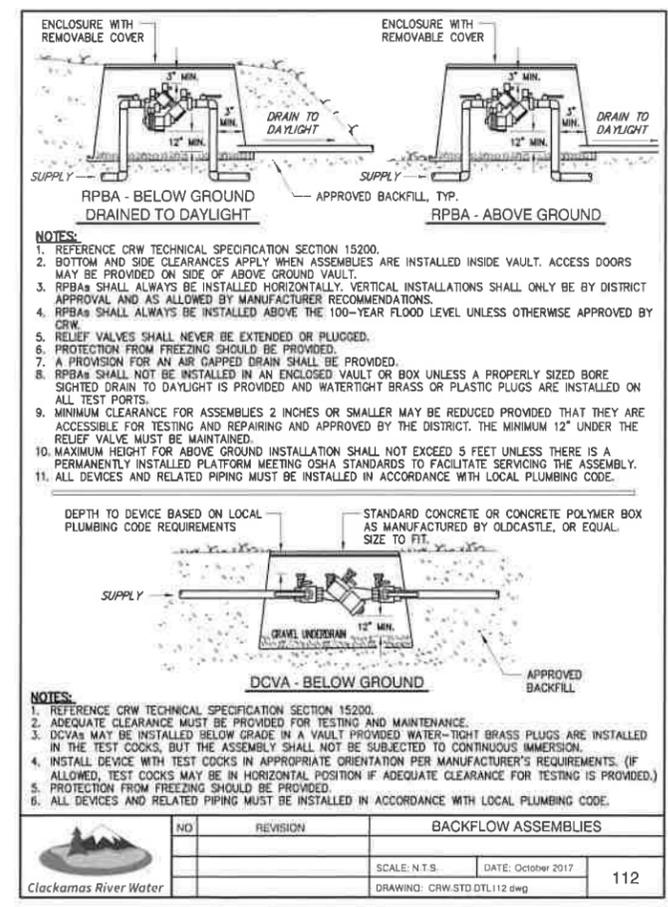
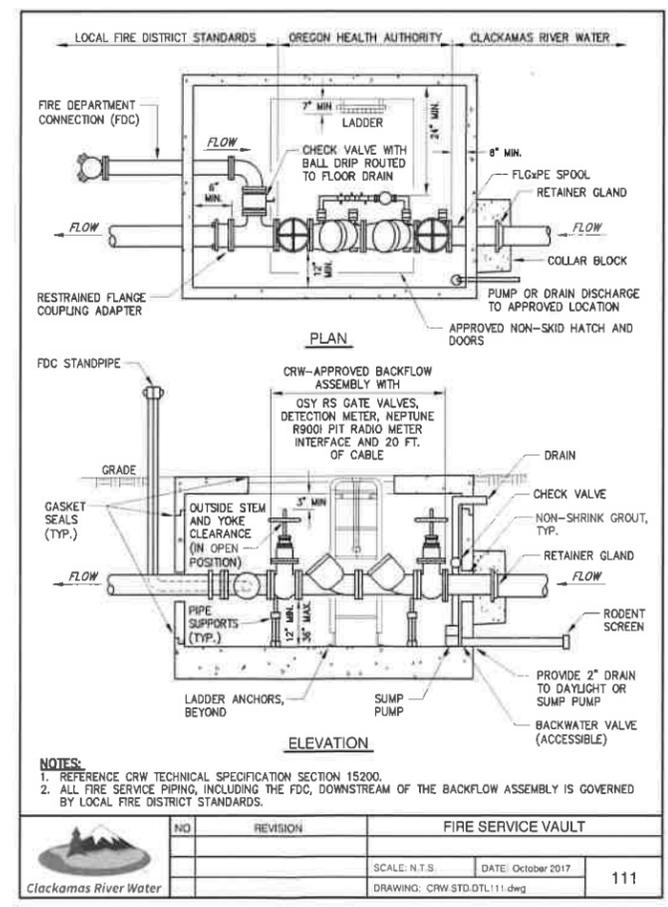
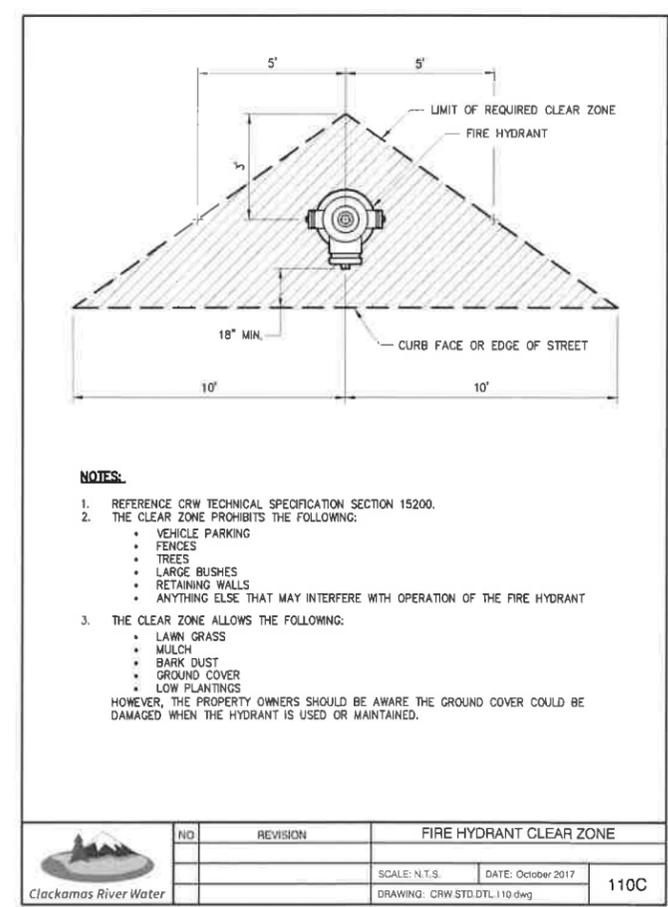
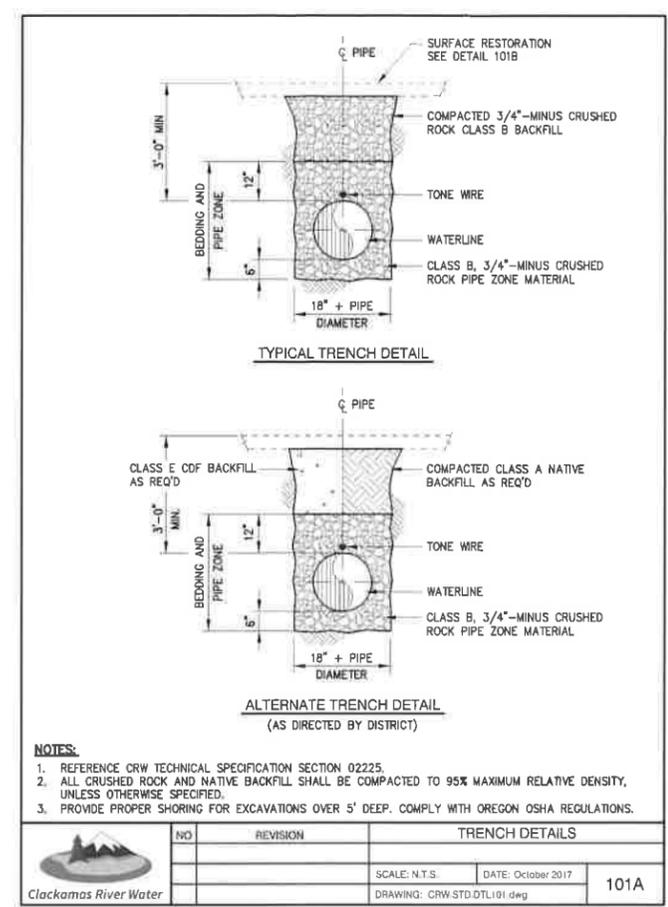
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CLACKAMAS RIVER WATER CONSTRUCTION DETAILS

C1.14



PLANT SCHEDULE

TREES	CODE	BOTANICAL / COMMON NAME	CONT.	CAL.	SIZE	SPACING	CONT.	SPACING
	AC	ACER CAMPESTRE 'PANACEK' METRO GOLD MAPLE	B & B	2" CAL			2 GAL	12' o.c.
	AV	ACER CIRCINATUM VINE MAPLE -MULTI STEM	B & B		6-8' H		1 GAL	12' o.c.
	AG	ACER GRISEUM PAPERBARK MAPLE	B & B	2" CAL			1 GAL	36' o.c.
	CB	CARPINUS BETULUS 'FRANZ FONTAINE' FRANZ FONTAINE HORNBEAM	B & B				5 GAL	12' o.c.
	FP	FRANGULA PURSHIANA CASCARA BUCKTHORN	B & B	2" CAL			1 GAL	18' o.c.
	HA	HAMAMELIS X INTERMEDIA WITCH HAZEL	15 GAL				1 GAL	18' o.c.
	MA	MAGNOLIA STELLATA STAR MAGNOLIA - MULTI STEM	B & B		6-8' H		1 GAL	18' o.c.
	MS	MAGNOLIA X SOULANGIAHA SAUCER MAGNOLIA	B & B	1.5' CAL			1 GAL	18' o.c.
	PA	PRUNUS X YEDOENSIS 'AKEBONO' FLOWERING CHERRY	B & B	2" CAL			1 GAL	12' o.c.
	SJ	STYRAX JAPONICUS JAPANESE SNOWBELL	B & B	2" CAL			1 GAL	24' o.c.
	SY	SYRINGA PUBESCENS 'MISS KIM' MISS KIM KOREAN LILAC- SINGLE TRUNK	15 GAL				1 GAL	24' o.c.
SHRUBS	CODE	BOTANICAL / COMMON NAME	SIZE	HT.	SPACING	CONT.	SPACING	
	BEV	BERBERIS VERRUCCIOSA WARTY BARBERRY	5 GAL			1 GAL	24' o.c.	
	CAM	CAMELLIA SASANQUA CHRISTMAS CAMELLIA	2 GAL			1 GAL	12' o.c.	
	CHO	CHOISYA TERNATA AZTEC PEARL MEXICAN ORANGE	2 GAL			1 GAL	12' o.c.	
GROUND COVERS	CODE	BOTANICAL / COMMON NAME	CONT.	SPACING				
	BERE	BERBERIS REPENS CREEPING BARBERRY	1 GAL	24' o.c.				
	CALK	CALAMAGROSTIS X ACUTIFLORA 'KARL FOERSTER' FEATHER REED GRASS	1 GAL	24' o.c.				
	CARD	CAREX DENSA DENSE SEDGE	1 GAL	12' o.c.				
	CAMO	CAREX MORROWII 'GOLD BAND' JAPANESE SEDGE	1 GAL	12' o.c.				
	COS	CORNUS SERICEA 'KELSEYI' KELSEYI DOGWOOD	3 GAL					
	DAP	DAPHNE ODORA WINTER DAPHNE	5 GAL					
	EUM	EUONYMUS JAPONICUS 'MICROPHYLLUS' BOXLEAF EUONYMUS	2 GAL					
	ICW	ILEX X MESERVEAE 'CASTLE WALL' CASTLE WALL HOLLY	5 GAL					
	IRI	IRIS SIBIRICA SIBERIAN IRIS	1 GAL					
	POM	POLYSTICHUM MUNITUM WESTERN SWORD FERN	1 GAL					
	POS	POLYSTICHUM SETIFERUM SOFT SHIELD FERN	1 GAL					
	ROS	ROSA X 'NOAMEL' WHITE GROUNDCOVER ROSE	1 GAL					
	SAR	SARCOCOCCA RUSCIFOLIA FRAGRANT SARCOCOCCA	3 GAL					
	CARV	CAREX MORROWII 'VARIEGATA' JAPANESE SEDGE	1 GAL	12' o.c.				
	CART	CAREX TESTACEA NEW ZEALAND ORANGE SEDGE	1 GAL	12' o.c.				
	CODA	COTONEASTER DAMMERI 'CORAL BEAUTY' BEARBERRY COTONEASTER	1 GAL	36' o.c.				
	HELN	HELLEBORUS NIGER CHRISTMAS ROSE	4 POT	12' o.c.				
	LAVH	LAVANDULA ANGUSTIFOLIA 'HIDCOTE SUPERIOR' HIDCOTE SUPERIOR LAVENDER	1 GAL	18' o.c.				
	LAVM	LAVANDULA ANGUSTIFOLIA 'MUNSTEAD' MUNSTEAD ENGLISH LAVENDER	1 GAL	18' o.c.				
	LAVP	LAVANDULA X INTERMEDIA 'PROVENCE' PROVENCE LAVENDIN	1 GAL	18' o.c.				
	LIRI	LIRIOPE MUSCARI 'BIG BLUE' BIG BLUE LILYTURF	1 GAL	12' o.c.				
	PEXH	PENNISETUM ALOPECUROIDES 'HAMELY' HAMELY DWARF FOUNTAIN GRASS	1 GAL	10' o.c.				
	SARH	SARCOCOCCA HOOKERIANA HUMILIS SWEET BOX	1 GAL	24' o.c.				
	THYM	THYMUS LANUGINOSUS WOOLLY THYME	4 POT	10' o.c.				

GENERAL SITE NOTES:

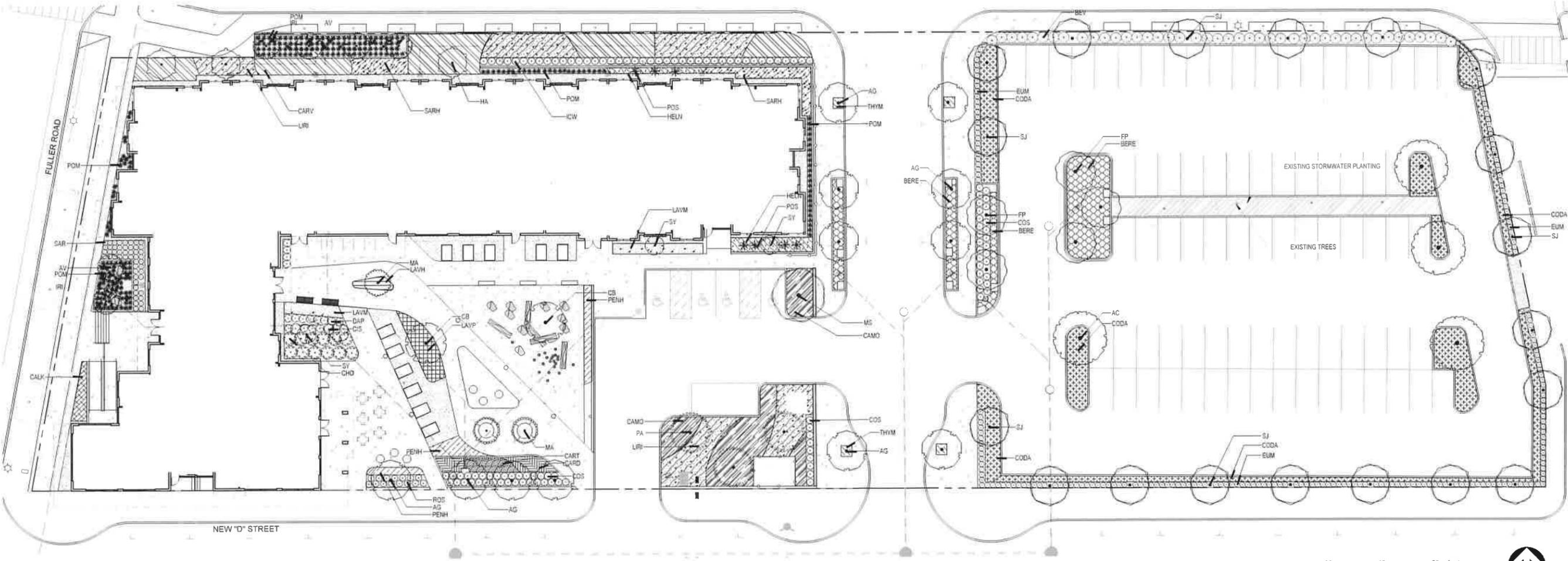
- A. ALL WORK WITHIN THE PUBLIC RIGHT OF WAY UNDER SEPARATE PERMIT SHOWN FOR REFERENCE ONLY REFER TO APPROVED RIGHT OF WAY DRAWINGS PRIOR TO CONSTRUCTION.
- B. REFERENCE CIVIL AND ARCHITECTURAL DRAWINGS FOR ADDITIONAL SITE WORK INFORMATION.
- C. ALL PLANTED AREAS TO BE IRRIGATED WITH A PERMANENT AUTOMATIC IRRIGATION SYSTEM.
- D. ALL PLANTING AREAS WITH EXPOSED SOIL SHALL RECEIVE A 3 INCH DEPTH OF MULCH UNLESS NOTED OTHERWISE.
- E. NOTIFY LANDSCAPE ARCHITECT OF ANY FIELD CHANGES TO THE SITE PLANS WHICH MAY REQUIRE ADJUSTMENT OF DESIGN.

PLANTING NOTES:

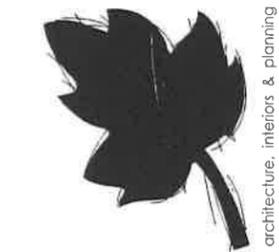
- A. DO NOT WILLFULLY PROCEED WITH PLANTING OPERATIONS WHEN IT IS OBVIOUS THAT UNKNOWN OBSTRUCTIONS AND GRADE DIFFERENCES EXIST THAT MAY NOT HAVE BEEN KNOWN THE DURING DESIGN PROCESS. BRING SUCH CONDITIONS IMMEDIATELY TO ATTENTION OF OWNER'S AUTHORIZED REPRESENTATIVE FOR RESOLUTION. ASSUME FULL RESPONSIBILITY FOR COSTS INCURRED AND REQUIRED MODIFICATIONS DUE TO LACK OF PROVIDING SUCH NOTIFICATION.
- B. ENSURE THAT FINISH GRADE ELEVATIONS OF PLANTING AREAS ARE SET AT THE PROPER ELEVATIONS RELATIVE TO PAVING FINISH SURFACE ELEVATIONS, UTILITY COVERS AND CURBS. SHRUBS PLANTING AREAS AT 2' BELOW AND LAWN 1' BELOW ADJACENT GRADE. NOTIFY OWNER OF ANY DISCREPANCIES.
- C. ASSURE POSITIVE DRAINAGE IN ALL PLANTING AREAS TO DRAIN AWAY FROM BUILDING, 2% MINIMUM.
- D. QUANTITIES GIVEN FOR PLANT MATERIALS SPECIFIED FOR "ON CENTER" SPACING ARE SHOWN FOR CONVENIENCE ONLY AND ARE SUBORDINATE TO THE SPACING GIVEN. VERIFY AND SUPPLY SUFFICIENT NUMBER OF PLANTS TO FULFILL SPACING REQUIREMENTS.
- E. EXACT LOCATIONS OF PLANT MATERIALS TO BE APPROVED BY THE LANDSCAPE ARCHITECT IN THE FIELD. STAKE ALL PLANT MATERIAL ON-SITE PER PLAN, IN THE PLANT CONTAINERS. LARGER TREES MAY BE CENTER MARKED BY PAINTING OR STAKES. NOTIFY LANDSCAPE ARCHITECT OF PLACEMENT 48 HOURS PRIOR TO REQUIRED INSPECTION BY LANDSCAPE ARCHITECT. LANDSCAPE ARCHITECT RESERVES THE RIGHT TO ADJUST PLANT PLACEMENT WHILE STILL IN THE CONTAINERS, AT NO ADDITIONAL COST TO THE OWNER, BEFORE GIVING APPROVAL TO THE FINAL LOCATION FOR PLANTING.
- F. PLANTING SHALL NOT BE PERFORMED PRIOR TO THE FOLLOWING APPROVAL BY THE OWNERS AUTHORIZED REPRESENTATIVE:
 - OPERATIONAL IRRIGATION SYSTEM PROVIDING HEAD TO HEAD COVERAGE
 - DECOMPACTION AND PRE-PLANTING SOIL AMENDMENTS ARE COMPLETE.
- G. IF CONFLICTS ARISE BETWEEN ACTUAL SIZE OF PLANTING AREAS ON-SITE AND THOSE AREAS INDICATED ON DRAWINGS, NOTIFY THE OWNERS AUTHORIZED REPRESENTATIVE PRIOR TO INSTALLATION.
- H. ALL EXPOSED SOIL PLANTING AREAS TO RECEIVE A 3-INCH DEEP LAYER OF LANDSCAPE ARCHITECT APPROVED MULCH.
- I. PROVIDE ROOT CONTROL BARRIERS FOR ALL TREES PLANTED WITHIN 9' OF A HARDSCAPE EDGE SUCH AS PAVING, WALLS, STEPS, ETC. REFER TO PLANTING DETAILS FOR ADDITIONAL INFORMATION.
- J. INSTALL PLANT MATERIAL WITH ITS BEST SIDE FACING PREDOMINATE VIEW OF PUBLIC.
- K. PROVIDE THE PROPER SETBACK BETWEEN UTILITIES AND TREES - CONTACT CITY INSPECTOR FOR REQUIRED SETBACKS IN THE CASE THAT THE DRAWINGS ARE NOT CLEAR.
- L. PROVIDE A 4 FT. DIAMETER MULCH CIRCLE AROUND ALL TREES PLANTED IN LAWN AREAS UNLESS NOTED OTHERWISE.
- M. PLANT SUBSTITUTIONS DUE TO AVAILABILITY, SHALL BE SUBMITTED IN WRITING TO LANDSCAPE ARCHITECT FOR APPROVAL.

STORMWATER FACILITY SOIL PLACEMENT NOTES:

- A. CONTRACTOR IS RESPONSIBLE FOR VERIFYING THAT THE REQUIRED CITY/COUNTY STORMWATER FACILITY INSPECTIONS HAVE BEEN PERFORMED AND APPROVED PRIOR TO PLACEMENT OF THE APPROVED TOPSOIL, IRRIGATION AND PLANTING ABOVE DRAIN ROCK AND PIPING.
- B. WATERPROOFING AND TERMINATION BAR ARE NOT INDICATORS TO SOIL FINISHED GRADE (FG) ELEVATION. REFER TO CIVIL ENGINEERS PLANS FOR SOIL (FG) FINISHED GRADE ELEVATION AND DEPTH PRIOR TO INSTALLING THE APPROVED TOPSOIL, IRRIGATION AND PLANTING.



1 PLANTING PLAN
1" = 20'



waterleaf

FULLER STATION HOUSING

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Project #: 1617.00
File #:
Date: © 06.11.2019

Revisions:
DESIGN REVIEW SUBMITTAL

PLANTING PLAN

L201

architecture, interiors & planning



SYMBOLS LEGEND

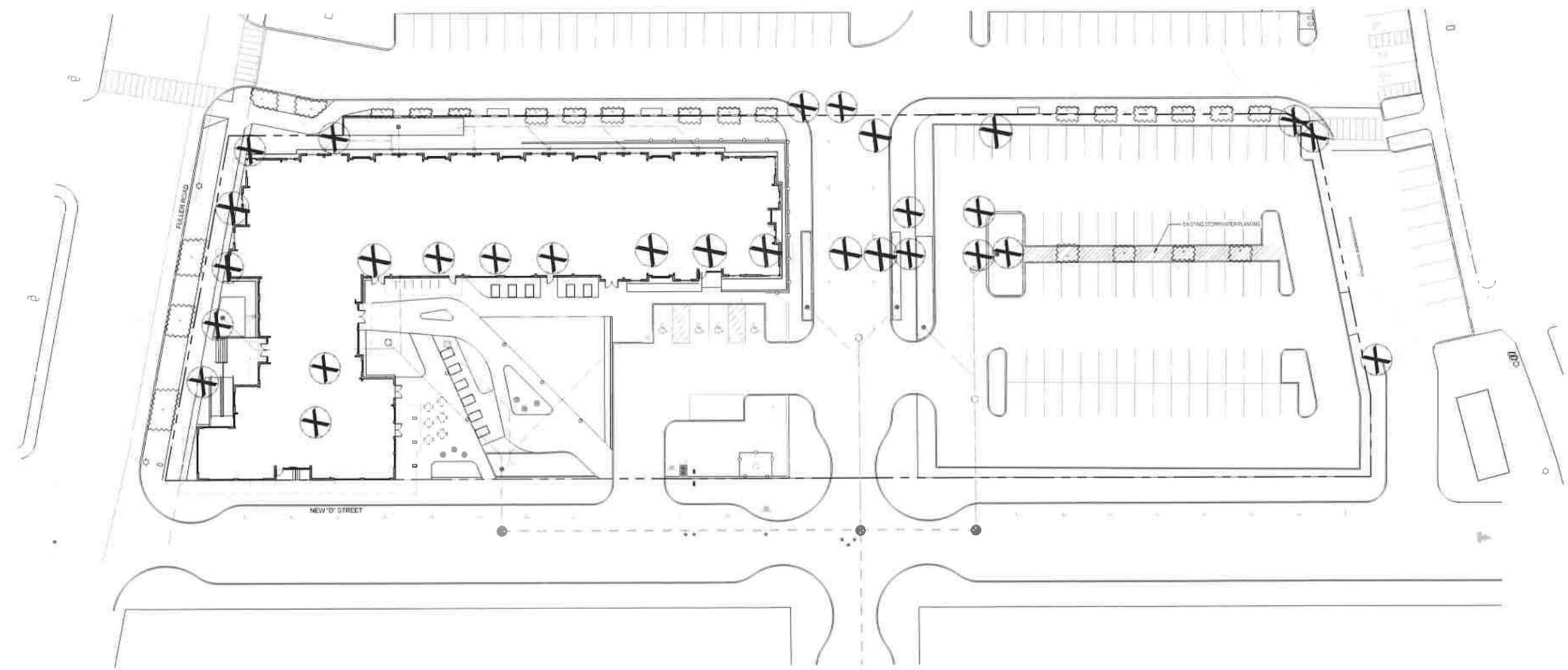
-  6 FOOT HIGH CHAIN LINK TREE PROTECTION FENCE
-  TREE -EXISTING TO BE REMOVED
-  TREE -EXISTING TO REMAIN AND BE PROTECTED
-  TREE PROTECTION

TREE PROTECTION NOTES

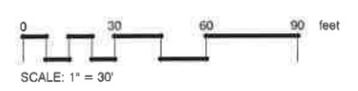
- 1. PROTECT ALL TREES INDICATED TO REMAIN, INCLUDING BARK AND ROOT ZONES.
- 2. CONSULT CITY FORESTER FOR PRESCRIBED PROTECTION REQUIREMENTS FOR EXISTING STREET TREES.
- 3. INSTALL FENCING PER EXISTING TREE OR TREE PROTECTION PLAN.
- 4. EXCAVATION WITHIN THE TREE PROTECTION ZONE SHALL BE PERFORMED WITH HANDHELD TOOLS OR AIR SPADE. EXCAVATE THE MINIMUM AMOUNT NECESSARY TO ACCOMPLISH PURPOSE FOR EXCAVATION.
- 5. THE FOLLOWING IS PROHIBITED WITHIN THE ROOT PROTECTION ZONE OF EACH TREE OR OUTSIDE THE LIMITS OF THE DEVELOPMENT IMPACT AREA: GROUND DISTURBANCE OR CONSTRUCTION ACTIVITY INCLUDING VEHICLE OR EQUIPMENT ACCESS (BUT EXCLUDING ACCESS ON EXISTING STREETS OR DRIVEWAYS), STORAGE OF EQUIPMENT OR MATERIALS INCLUDING SOIL, TEMPORARY OR PERMANENT STOCKPILING, PROPOSED BUILDINGS, IMPERVIOUS SURFACES, UNDERGROUND UTILITIES, EXCAVATION OR FILL, TRENCHING OR OTHER WORK ACTIVITIES.
- 6. PROTECTIVE FENCE SHALL BE INSTALLED BEFORE ANY GROUND DISTURBING ACTIVITIES INCLUDING CLEARING AND GRADING, OR CONSTRUCTION STARTS; AND SHALL REMAIN IN PLACE UNTIL FINAL INSPECTION.
- 7. SIGNAGE DESIGNATING THE PROTECTION ZONE AND PENALTIES FOR VIOLATIONS SHALL BE SECURED IN A PROMINENT LOCATION ON EACH PROTECTION FENCE.
- 8. TREE PROTECTION ZONE SHALL REMAIN FREE OF ALL CHEMICALLY INJURIOUS MATERIALS AND LIQUIDS.

MAINTENANCE NOTES FOR EXISTING TREES

- 1. WASH OFF FOLIAGE WHICH BECOMES SOILED DURING CONSTRUCTION.
- 2. WATER TREES AND OTHER VEGETATION WHICH ARE TO REMAIN AS NECESSARY TO MAINTAIN THEIR HEALTH DURING THE COURSE OF THE WORK. RATE AND FREQUENCY OF APPLICATION TO BE DETERMINED BY PROJECT ARBORIST.
- 3. ALL PRUNING SHALL BE PERFORMED BY A CURRENT ARBORIST LICENSED WITHIN THE STATE/COUNTY/CITY WHERE THE WORK IS TO BE COMPLETED.



1 TREE REMOVAL & PROTECTION PLAN
1" = 30'



Project #: 1617.00
 File #:
 Date: © 06.11.2019

Revisions:
 DESIGN REVIEW SUBMITTAL

TREE REMOVAL AND PROTECTION PLAN

L301

GENERAL IRRIGATION NOTES:

- A. ALL PLANTED AREAS TO BE IRRIGATED. WITH A PERMANENT AUTOMATIC IRRIGATION SYSTEM PLAN IS DIAGRAMMATIC. STAKE ALL VALVE BOX LOCATIONS FOR APPROVAL. SET VALVE BOXES SQUARE TO ADJACENT BUILDING, CURB, OR PAVING.
- B. ALL PIPE UNDER BUILDINGS, ROADS, WALKS, PARKING AREAS OR OTHER PAVED SURFACES SHALL BE SLEEVED, WHETHER SHOWN OR NOT. SLEEVES SHALL MINIMUM 4" DIAMETER, OR AS INDICATED. SLEEVING MAY BE INCLUDED FOR FUTURE WORK.
- C. ALL PIPE OR EQUIPMENT SHOWN IN PAVING ADJACENT AND PARALLEL TO PLANTED AREAS IS INTENDED TO BE PLACED IN THAT AREA WHERE POSSIBLE. ALL MATERIAL TO BE INSTALLED ON OWNER'S PROPERTY. MAKE ANY AND ALL REQUIRED ADJUSTMENTS TO THE IRRIGATION PLAN TO ASSURE COMPLETE AND ADEQUATE COVERAGE WITH MINIMUM OVERSPRAY.
- F. SEE PROJECT SPECIFICATIONS FOR ADDITIONAL INFORMATION.
- G. COORDINATE WITH MECHANICAL TO PROVIDE 1" PLASTIC BALL VALVES AT POINTS OF CONNECTION BALL VALVES SHALL BE INSTALLED AT MINIMUM 12" DEPTH.
- H. LATERAL LINE SHALL HAVE 12" OF COVER, AND MAIN LINES 18" - 24" MAXIMUM COVER.
- I. REFER TO PLANTING AND LAYOUT PLANS FOR EXACT LAYOUT. INTENT IS THAT ALL NEW PLANTINGS RECEIVE ADEQUATE WATER.
- J. VERIFY STATIC PRESSURE AT P.O.C. AT COMMENCEMENT OF CONTRACT. SUBMIT WRITTEN REPORT TO LANDSCAPE ARCHITECT PRIOR TO BEGINNING WORK. PRESSURE AT WATER METER IS EXPECTED TO BE APPROXIMATELY 57 TO 71 PSI.
- K. BACKFLOW INSTALLATION SHALL CONFORM TO PORTLAND WATER BUREAU BACKFLOW ASSEMBLY INSTALLATION REQUIREMENTS.
- L. PROTECT AND PRESERVE SLAB MEMBRANE ON ROOF AND/OR IN PLANTERS.
- M. SEE DETAILS SHEET.

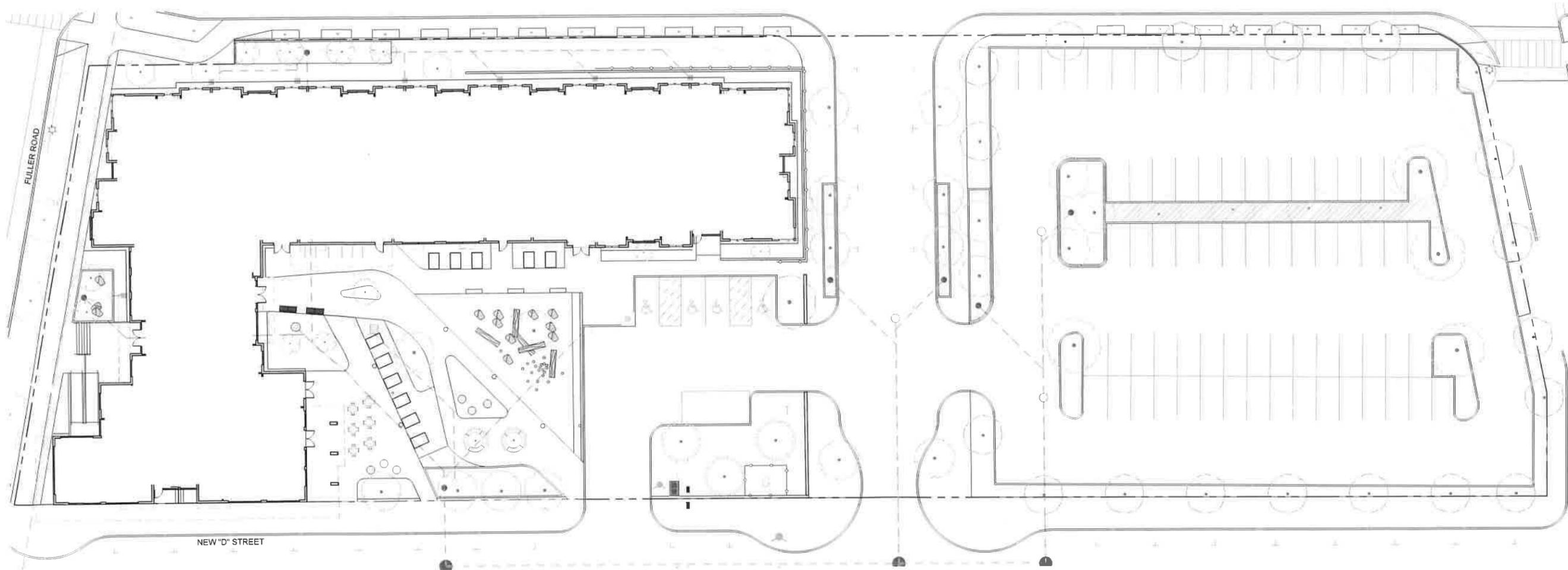
POINT OF CONNECTION NOTES:

- A. CONTRACTOR SHALL REFER TO IRRIGATION LEGEND FOR CONTROLLER TYPE, FINAL LOCATION OF CONTROLLER AND ELECTRICAL P.O.C. SHALL BE CONFIRMED WITH THE OWNER'S AUTHORIZED REPRESENTATIVE PRIOR TO COMMENCING WORK.
- B. IRRIGATION SYSTEM IS BASED ON THE MINIMUM OPERATING PRESSURE OF THE SPRINKLERS AND THE MAXIMUM FLOW DEMAND OF 700 GPM FOR STATIONS PROPOSED. CONTRACTOR SHALL VERIFY AVAILABLE WATER PRESSURE AT GRADE, TO PODIUM AND LEVEL 12 PRIOR TO CONSTRUCTION TO ENSURE IRRIGATION IS OPERATIONAL AS DESIGNED.
- C. LATERAL LINES MAY BE SHOWN WITHIN PAVING FOR CLARITY ONLY. ACTUAL LOCATION TO BE WITHIN PLANTER.
- D. P.O.C. AND EQUIPMENT LAYOUT INCLUDING, BUT NOT LIMITED TO, IRRIGATION WATER METER, BOOSTER PUMP ELECTRICAL, STUB-OUT, FILTER, MASTER VALVE, FLOW SENSOR IS DIAGRAMMATIC DUE TO THE SCALE OF THE DRAWING. LOCATIONS MAY BE SHOWN WITHIN PAVING AND/OR ORIENTED IN A CERTAIN DIRECTION FOR CLARITY ONLY. PLAN DOES NOT ACCOUNT FOR EQUIPMENT BY OTHERS WITHIN VICINITY OF P.O.C. CONTRACTOR SHALL VERIFY SPECIFIC LAYOUT ORIENTATION AND ACTUAL EQUIPMENT LOCATIONS WITH OWNER'S AUTHORIZED REPRESENTATIVE PRIOR TO INSTALLATION OF EQUIPMENT.
- E. CONTRACTOR IS TO CONFIRM PSI PRIOR TO INSTALLATION OF IRRIGATION SYSTEM IF THERE ARE INCONSISTENCIES IN PSI FROM THE DRAWINGS THE CONTRACTOR SHALL NOTIFY THE LANDSCAPE ARCHITECT.
- F. THIS DESIGN IS DIAGRAMMATIC. ALL EQUIPMENT SYMBOL SIZES ARE SHOWN IS FOR DESIGN CLARITY ONLY. CONTRACTOR SHALL MEASURE ALL DISTANCES AND SPACING FROM CENTER OF SYMBOLS ON THE PLAN AND TRANSFER THOSE DISTANCES TO THE FIELD USING A PROPER MEASURING DEVICE SUCH AS A MEASURE TAPE OR WHEEL.
- G. ALL LOCAL MUNICIPAL AND STATE LAWS, RULES AND REGULATIONS GOVERNING OR RELATING TO ANY PORTION OF THIS WORK ARE HEREBY INCORPORATED INTO AND MADE A PART OF THESE SPECIFICATIONS AND THEIR PROVISIONS SHALL BE CARRIED OUT BY THE CONTRACTOR.
- H. THE CONTRACTOR SHALL VERIFY SITE CONDITIONS, PROPERTY LINES, DIMENSIONS AND THE LOCATIONS OF ALL EXISTING UTILITIES, STRUCTURES AND SERVICES BEFORE COMMENCING WORK. THE LOCATIONS OF UTILITIES, STRUCTURES AND SERVICES SHOWN IN THESE PLANS ARE APPROXIMATE ONLY. ANY DISCREPANCIES BETWEEN THESE PLANS AND ACTUAL FIELD CONDITIONS SHALL BE REPORTED TO THE OWNER'S REPRESENTATIVE. CONTRACTOR SHALL THOROUGHLY FAMILIARIZE HIMSELF WITH ALL SITE CONDITIONS PRIOR TO BIDDING AND COMMENCING WORK.
- I. VERIFY THE ACTUAL LOCATION AND SIZE OF WATER METER AND WATER PRESSURE IN THE FIELD PRIOR TO STARTING WORK. IF ANY OF THE P.O.C. INFORMATION SHOWN ON THESE DRAWING IS FOUND TO BE DIFFERENT THAN THE ACTUAL P.O.C. INFORMATION GATHERED IN THE FIELD, IMMEDIATELY NOTIFY LANDSCAPE ARCHITECT. SHOULD THE CONTRACTOR FAIL TO VERIFY THE P.O.C. INFORMATION AND NOTIFY THE ABOVE, ANY CHANGES REQUIRED BY LOW OR HIGH PRESSURE OR VOLUME SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

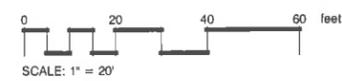
PIPE SIZE CHART SCHEDULE 40 PVC	
MAXIMUM WATER VELOCITY: 5 FEET PER SECOND	
ZONES OF 7 GPM OR LESS SHALL USE 3/4" PIPE. NO 1/2" PVC PIPE SHALL BE PERMITTED.	
WHEN PEK OR WRSBO PIPING IS USED, PIPE DIAMETER SHALL BE INCREASED BY A MIN. OF 1/2"	
PIPE SIZE	GPM
3/4"	0 - 7
1"	7 - 12
1 1/4"	12 - 22
1 1/2"	22 - 32
2"	32 - 52
2 1/2"	52 - 70
3"	70 - 110

SYSTEM DESIGN PARAMETERS

METER SIZE:
 SERVICE LINE SIZE:
 SERVICE LINE TYPE:
 AVAILABLE STATIC PSI:
 MAXIMUM FLOW AVAILABLE: GPM
 MAXIMUM FLOW DESIGNED: GPM
 MAXIMUM IRRIGATION VELOCITY: 5FPS



1 IRRIGATION PLAN



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 architecture, interiors & planning
 4150 SW Broadway
 Portland, OR 97214
 Phone: 503.232.0520
 Fax: 503.232.0501

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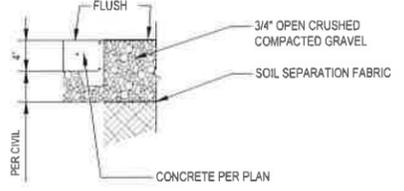
CLACKAMAS, OREGON

SHAPIRO / DIDWAY
 1204 SE Waller Ave
 Portland, Oregon 97214
 503.232.0520
 www.shaprodidway.com

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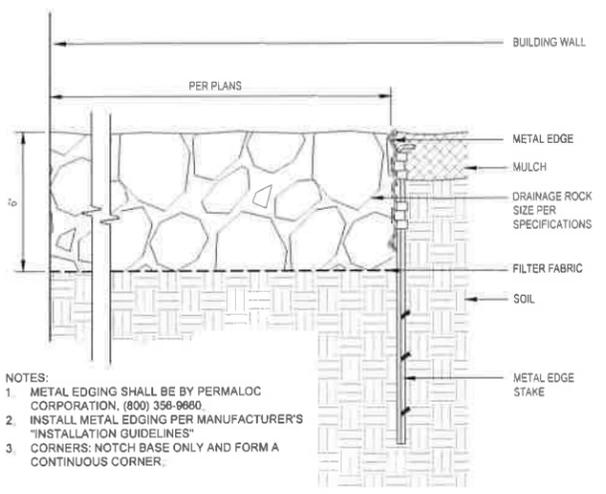
Revisions:
 DESIGN REVIEW SUBMITTAL
IRRIGATION PLAN

L401



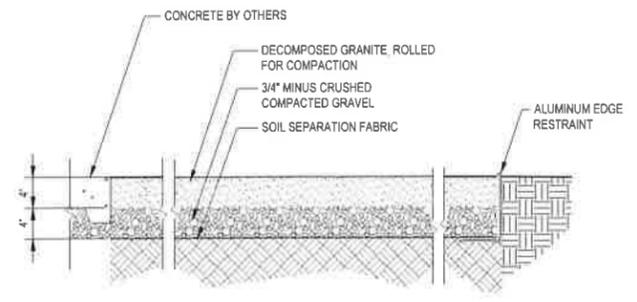
NOTES:
SOIL SEPARATION FABRIC
MIRAFI 140N OR EQUIVALENT

7 AGGREGATE SURFACING ON GRADE
1" = 1'-0" P-CO-19025-13



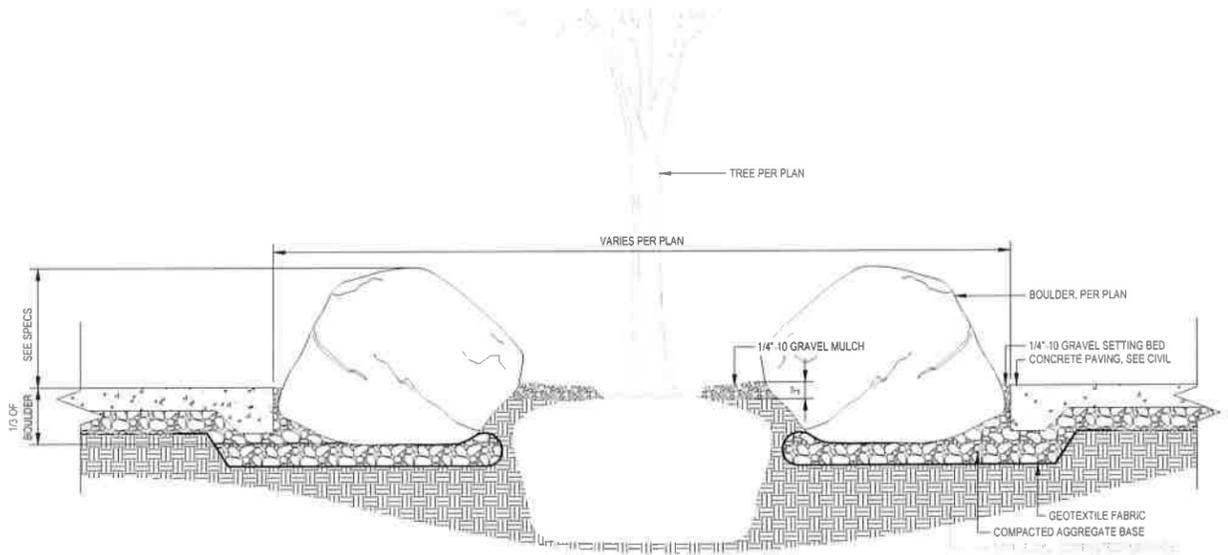
NOTES:
1. METAL EDGING SHALL BE BY PERMALOC CORPORATION, (800) 356-9660.
2. INSTALL METAL EDGING PER MANUFACTURER'S "INSTALLATION GUIDELINES"
3. CORNERS: NOTCH BASE ONLY AND FORM A CONTINUOUS CORNER.

4 MAINTENANCE STRIP ON GRADE
3" = 1'-0" P-CO-19025-11

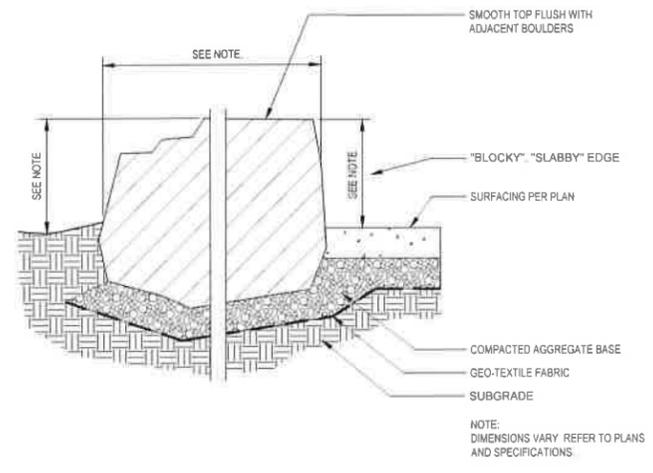


NOTES:
ALUMINUM EDGE RESTRAINT
MANUFACTURER: PERALOC
TYPE GEO EDGE

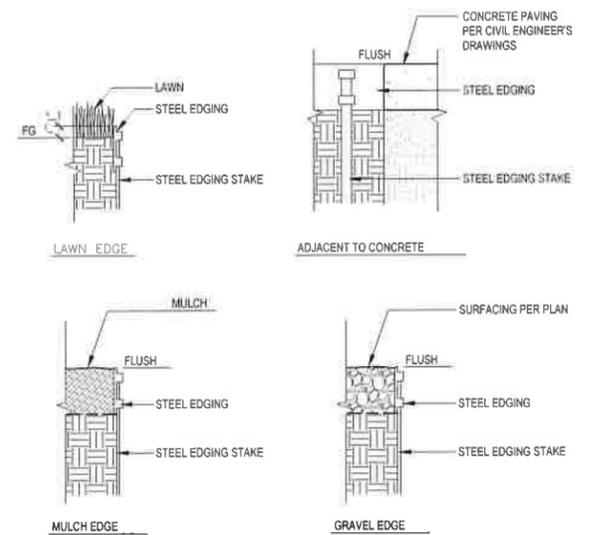
1 DECOMPOSED GRANITE ON GRADE
1" = 1'-0" P-CO-19025-02



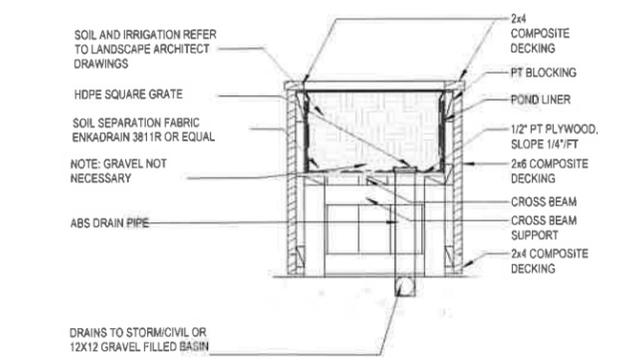
8 BOULDER PLACEMENT AT TREE PLANTING
3/4" = 1'-0" P-CO-19025-06



2 BOULDER SETTING
1" = 1'-0" P-CO-19025-01



6 STEEL LANDSCAPE EDGING
1 1/2" = 1'-0" P-CO-19025-17

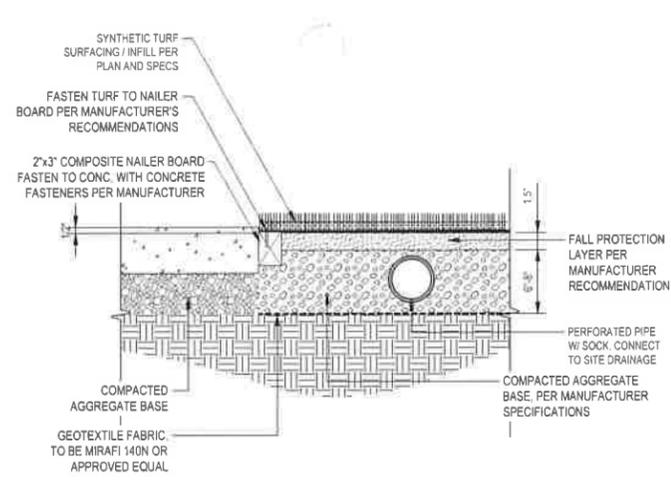


3 ACCESSIBLE GARDEN PLANTER
3/4" = 1'-0" P-CO-19025-43

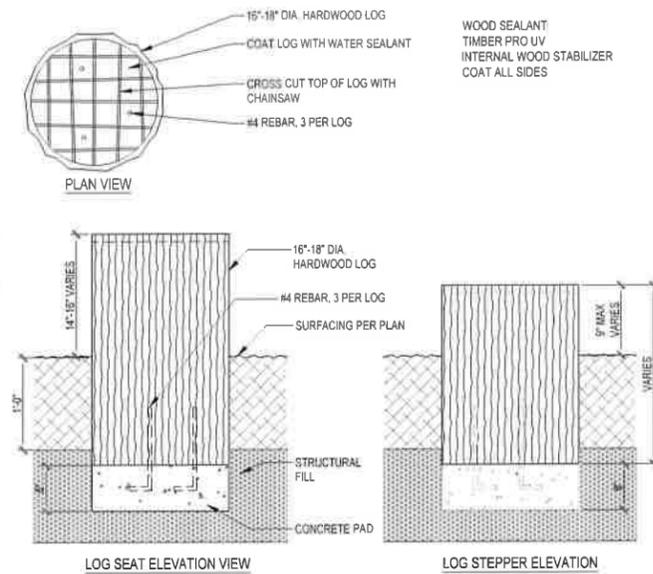
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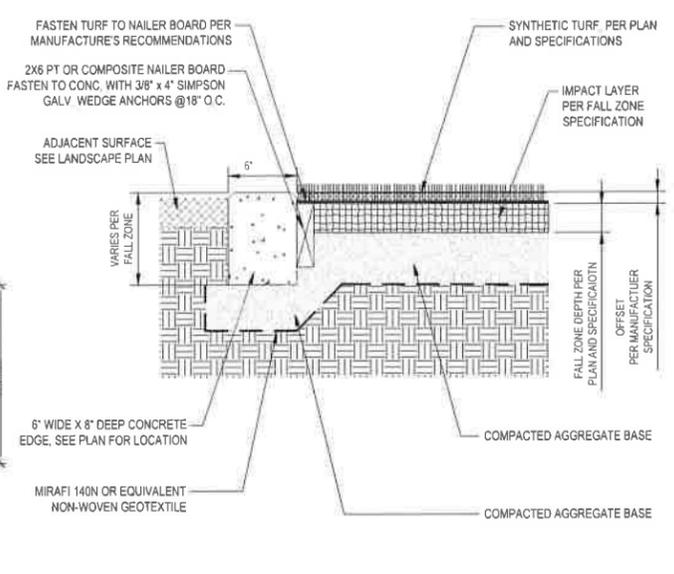
PLANTING
DETAILS



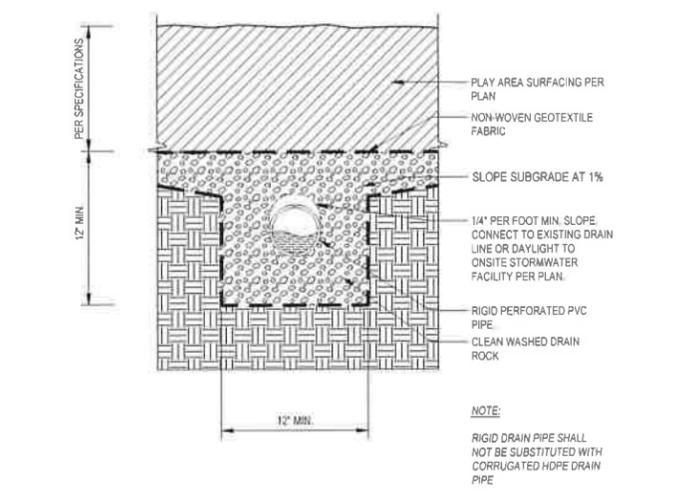
7 SYNTHETIC TURF ABUTTING CONCRETE PAVING
1 1/2" = 1'-0" P.CO-19025-21



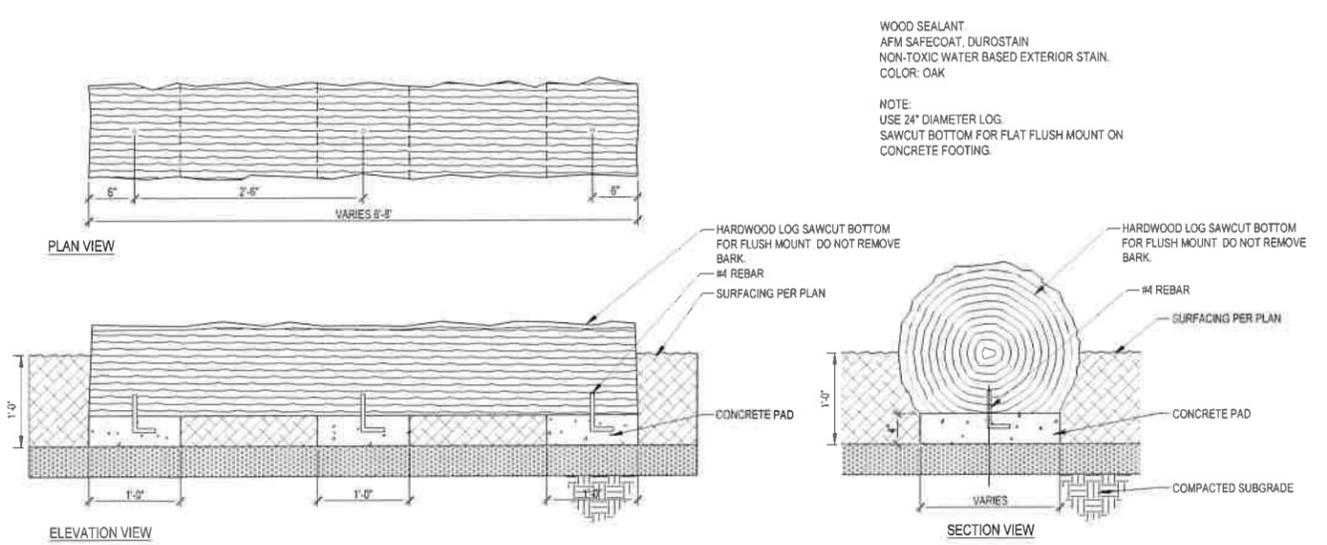
4 LOG SEAT AND STEPPER
1' = 1'-0" P.CO-19025-15



1 SYNTHETIC TURF WITH IMPACT LAYER
1 1/2" = 1'-0" P.CO-19025-19



2 PLAY AREA SURFACING AND SUB-DRAINAGE
1 1/2" = 1'-0" P.CO-19025-12



6 BALANCE AND SEATING LOG
1' = 1'-0" P.CO-19025-14



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File #
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DETAILS**

L502

SOIL PREPARATION

DECOMPACTION

- A. DE-COMPACT SOILS IN PLANTING AREAS BY ROTO-TILLING, DISKING OR RIPPING TO A MINIMUM DEPTH OF 6 - 8 IN MINIMUM AND/OR RECOMMENDED DEPTH OF 12-18 IN MULTIPLE PASSES AT VARYING ANGLES ACROSS THE AREA WHEN POSSIBLE
 - B. DE-COMPACTION OF SMALL PLANTER AREAS, SUCH AS THOSE IN PARKING LOT AREAS, MAY REQUIRE THE REMOVAL OF THE COMPACTED SOIL, ROCK AND GRAVEL TO A DEPTH OF 18 IN OR MORE AND THEN RE-INSTALLED LOOSELY WITH THE REQUIRED AMENDMENTS. ALWAYS REMOVE DEBRIS OVER 2 IN. SIZE OR LARGER FROM SOIL.
- AMENDMENTS**
- A. COLLECT AND SEND SOIL SAMPLES FOR EACH PLANTING AREA TYPE FOR ANALYSIS TO A&L WESTERN AGRICULTURAL LABORATORIES 503 968 9225 OR EQUAL THAT IS AN INDEPENDENT LABORATORY RECOGNIZED BY THE STATE DEPARTMENT OF AGRICULTURE WITH THE EXPERIENCE AND CAPABILITY TO CONDUCT THE TESTING INDICATED BELOW AND THAT SPECIALIZES IN AGRONOMIC SOIL ANALYSIS
 - B. REPORT SUITABILITY OF TOPSOIL FOR PLANT GROWTH WITH RECOMMENDED QUANTITIES OF NITROGEN PHOSPHORUS, POTASH NUTRIENTS AND SOIL AMENDMENTS (INCLUDING COMPOST) TO BE APPLIED TO PRODUCE SATISFACTORY TOPSOIL
 - C. FOR BIDDING PURPOSES, QUANTITIES AND TYPES OF SOIL AMENDMENTS SHALL BE BASED UPON THOSE LISTED BELOW. AMOUNT PER 1000' FT. AT 6-INCH MAXIMUM LIFTS.
 - 25 LBS. GYPSUM (CALCIUM SULFATE)
 - 35 LBS. CALCIUM CARBONATE LIMESTONE 'CALPRIL'
 - 35 LBS. DOLOMITE LIMESTONE 'DOLPRIL'
 - 8 LBS. TREBLE SUPERPHOSPHATE (0-45-0)
 - 3 LBS. AMMONIUM NITRATE
 - 4 OZS. ZINC SULFATE
 - 8 OZS. MANGANESE SULFATE
 - 1 OZS. LAUNDRY BORAX
 - 6 CU-YDS. COMPOST
 - D. TYPES OF AMENDMENTS REQUIRED AND QUANTITIES SHALL BE ADJUSTED AS NECESSARY BASED UPON ACTUAL RESULTS OF SOIL FERTILITY AND AGRICULTURAL SUITABILITY ANALYSIS AND RECOMMENDATIONS.
 - E. AFTER INITIAL SOIL DE-COMPACTION PROCEDURES ARE PERFORMED, SOIL AMENDMENTS SHOULD BE ADDED. THE ADDITION OF SOIL AMENDMENTS IS DETERMINED FROM SOIL TESTS CONDUCTED PRIOR TO WORK COMMENCING.
 - F. BLEND RECOMMENDED AMENDMENTS THOROUGHLY WITH EXISTING SOIL AS PER SOIL TEST ANALYSIS RECOMMENDATIONS. AN ADDITIONAL SOIL TEST SHALL BE TAKEN AND PROVIDED TO OWNER'S REPRESENTATIVE TO ENSURE PROPER SOIL CONDITIONS PRIOR TO PLANTING.
 - G. NOTIFY THE OWNER'S REPRESENTATIVE IF AREAS OF THE SITE HAVE BEEN RE-COMPACTED DUE TO THE USE OF EQUIPMENT AND VEHICLES. PRIOR TO INSTALLING PLANT MATERIAL IN THESE AREAS, THE COMPACTION IS TO BE REDUCED TO 85% STANDARD PROCTOR USING PREVIOUSLY DESCRIBED METHODS

IMPLEMENTATION NOTE

GENERAL CONTRACTOR IS TO CHOOSE WHICH IMPLEMENTATION OPTION TO USE

1. AMEND EXISTING SITE TOPSOIL OR SUBSOIL EITHER AT DEFAULT "PRE-APPROVED" RATES, OR AT CUSTOM CALCULATED RATES BASED ON TESTS OF THE SOIL AND AMENDMENT.
2. STOCKPILE EXISTING TOPSOIL DURING GRADING, AND REPLACE IT PRIOR TO PLANTING. STOCKPILED TOPSOIL MUST ALSO BE AMENDED IF NEEDED TO MEET THE ORGANIC MATTER OR DEPTH REQUIREMENTS, EITHER AT A DEFAULT "PRE-APPROVED" RATE OR AT A CUSTOM CALCULATED RATE.
3. QUANTITIES ARE FOR REFERENCE ONLY, AND BASED ON THE PLAN VIEW ONLY. SUBCONTRACTOR TO VERIFY ALL QUANTITIES.

TREE BACKFILL AMENDED AS FOLLOWS:

- 3 PARTS OF EXISTING TOPSOIL
- 1 PART COMPOST
- AS SPECIFIED SEE CHART

CALIPER SIZE	PERMAMATRIX POUNDS REQUIRED (DRY)
1.0"	5.00
1.5"	7.50
2.0"	10.00
2.5"	20.00
3.0"	30.00
3.5"	50.00

SHRUB, GRASSES AND GROUND COVER BACKFILL AMENDED AS FOLLOWS:

- 3 PARTS OF EXISTING TOPSOIL
- 1 PART COMPOST
- AS SPECIFIED SEE CHART

CONTAINER SIZE	PERMAMATRIX POUNDS REQUIRED (DRY)
PLUG	.05
4-INCH	.20
1 GAL.	.50
2 GAL.	.75
3 GAL.	1.25
6 GAL.	1.50
15 GAL.	5.00

PERMAMATRIX AVAILABLE LOCALLY FROM SUNMARK ENVIRONMENTAL 503.241.7333

4 PLANTING BACKFILL SOIL AMENDMENT

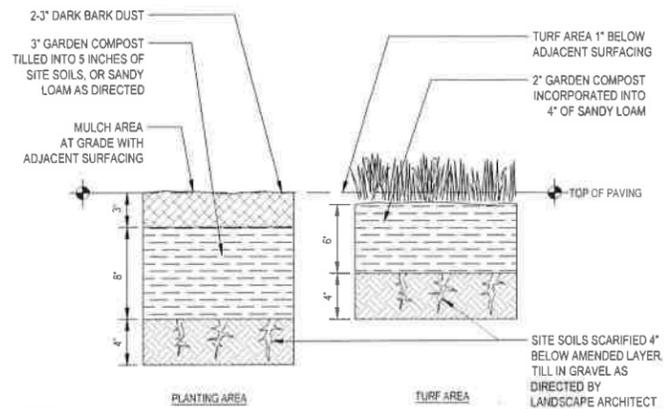
1" = 1'-0"

P.CO-19025-08

1 TREE PLANTING ON GRADE

NTS

P.CO-19025-10

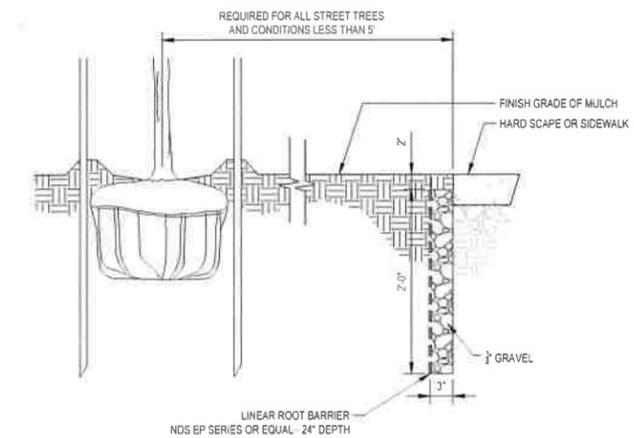


- NOTES:
- ALL SOIL AREAS DISTURBED OR COMPACTED DURING CONSTRUCTION AND NOT COVERED BY BUILDINGS SHALL BE AMENDED AS DESCRIBED.
 - 1. SUBSOIL SHALL BE SCARIFIED (TILLED) 4" BELOW AMENDMENT LAYER, EXCEPT WHERE SCARIFICATION WOULD DAMAGE TREE ROOTS OR AS DETERMINED BY LANDSCAPE ARCHITECT OR ARBORIST.
 - 2. PLANTING AREAS SHALL HAVE COMPOST TILLED TO A DEPTH OF 8" INTO EXISTING OR SPECIFIED SOILS.
 - 3. TURF AREAS SHALL HAVE COMPOST AND SANDY LOAM TILLED TO A DEPTH OF 6"
 - 4. PLANTING BEDS SHALL RECEIVE 3" OF DARK MULCH.
 - 5. DO NOT DISTURB COMPACTED SOILS ADJACENT TO STRUCTURAL FOOTINGS OR WALLS. CONTACT PROJECT CIVIL ENGINEER OR STRUCTURAL ENGINEER FOR RECOMMENDED SETBACKS PRIOR TO SITE WORK.

2 SOIL AMENDMENT AND DEPTH

1 1/2" = 1'-0"

P.CO-19025-09



INSTALL ALONG SIDEWALK OR HARDSCAPE EDGE FOR TREES PLANTED WITHIN 5' OR CLOSER, AS MEASURED FROM BASE OF TRUNK.

REFER TO DRAWINGS TO DETERMINE LENGTH REQUIRED, MINIMUM 3' MEASURED EACH WAY FROM BASE OF TRUNK.

3 ROOT BARRIER

1" = 1'-0"

P.CO-19025-18



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Project # 1617-00

File #

Date 05.11.2019

Revisions
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PLANTING
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L503



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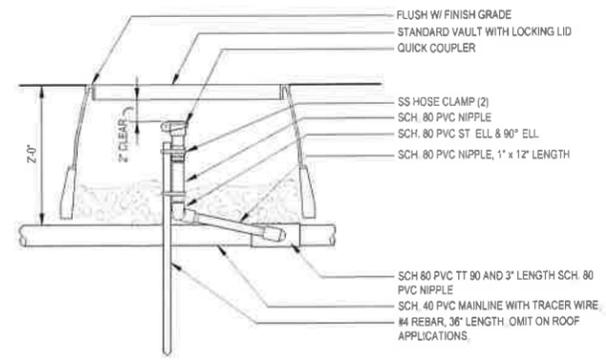
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Project # 1617 00
 File #
 Date 06 11 2019

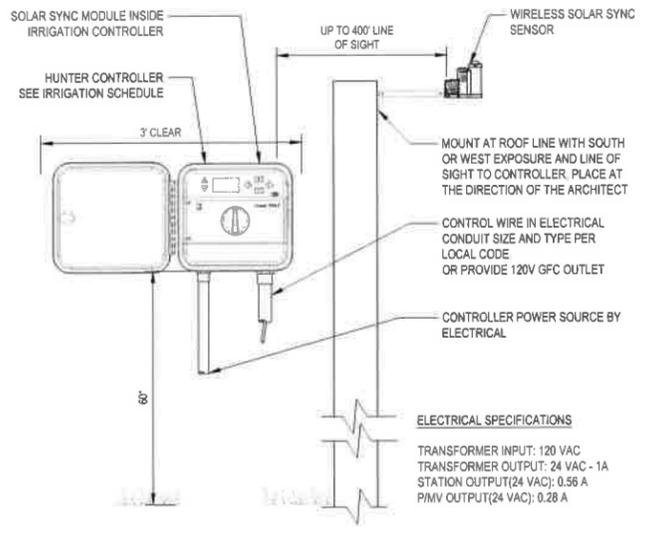
Revisions
 DESIGN REVIEW SUBMITTAL
IRRIGATION DETAILS

L504



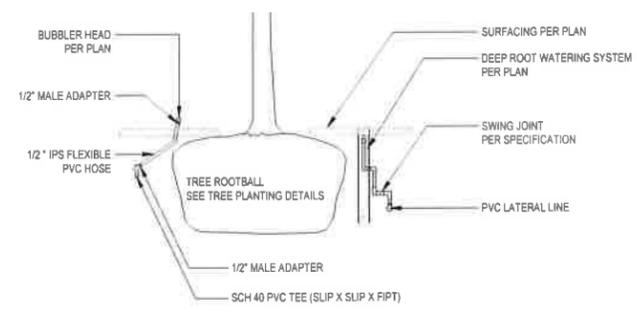
- NOTES:**
- DO NOT ALLOW VAULT TO REST ON PIPE. USE EXTENSIONS AS NECESSARY.
 - VALVE TO BE SET PLUMB & CENTERED IN VALVE BOX WITH SUFFICIENT ROOM TO SWING KEY.
 - CONTRACTOR TO PROVIDE (2) EACH QCV KEYS AND SWIVEL HOSE ELLS. PROVIDE 6" DEPTH DRAIN ROCK.

4 QUICK COUPLER VALVE
 3/4" x 1'-0" 3284-09

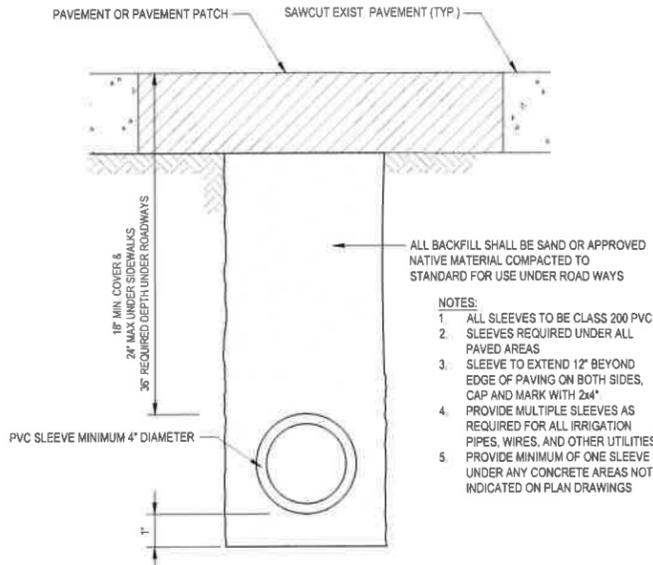


- ELECTRICAL SPECIFICATIONS**
- TRANSFORMER INPUT: 120 VAC
 - TRANSFORMER OUTPUT: 24 VAC - 1A
 - STATION OUTPUT(24 VAC): 0.56 A
 - PI/MV OUTPUT(24 VAC): 0.28 A

1 IRRIGATION CONTROLLER
 NTS 3284-01

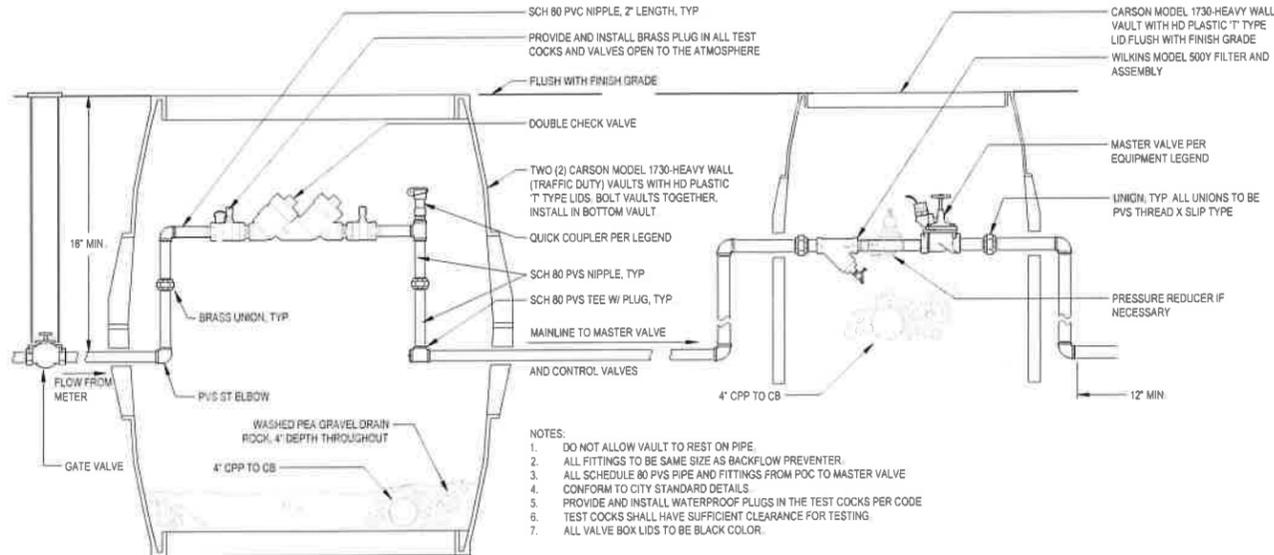


5 TREE DEEP ROOT / ON GRADE BUBBLER
 1/2" x 1'-0" 3284-35



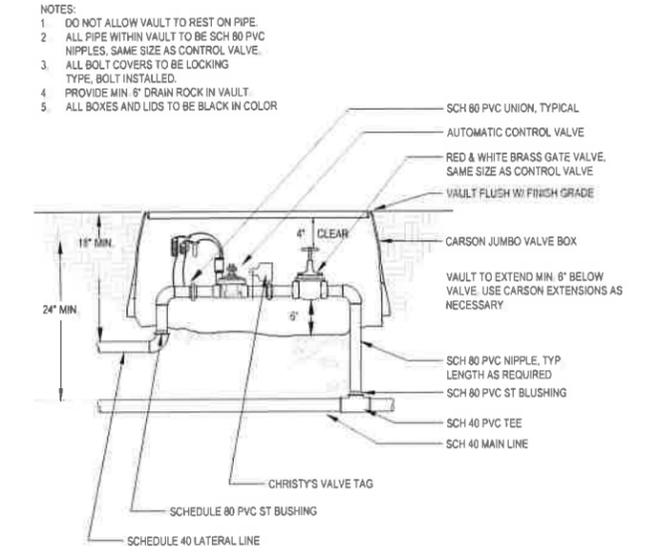
- ALL BACKFILL SHALL BE SAND OR APPROVED NATIVE MATERIAL COMPACTED TO STANDARD FOR USE UNDER ROADWAYS**
- NOTES:**
- ALL SLEEVES TO BE CLASS 200 PVC
 - SLEEVES REQUIRED UNDER ALL PAVED AREAS
 - SLEEVE TO EXTEND 12" BEYOND EDGE OF PAVING ON BOTH SIDES. CAP AND MARK WITH 2x4"
 - PROVIDE MULTIPLE SLEEVES AS REQUIRED FOR ALL IRRIGATION PIPES, WIRES, AND OTHER UTILITIES. PROVIDE MINIMUM OF ONE SLEEVE UNDER ANY CONCRETE AREAS NOT INDICATED ON PLAN DRAWINGS

2 UTILITY AND IRRIGATION SLEEVING
 NTS 3284-07



- NOTES:**
- DO NOT ALLOW VAULT TO REST ON PIPE.
 - ALL FITTINGS TO BE SAME SIZE AS BACKFLOW PREVENTER.
 - ALL SCHEDULE 80 PVS PIPE AND FITTINGS FROM POC TO MASTER VALVE CONFORM TO CITY STANDARD DETAILS.
 - PROVIDE AND INSTALL WATERPROOF PLUGS IN THE TEST COCKS PER CODE.
 - TEST COCKS SHALL HAVE SUFFICIENT CLEARANCE FOR TESTING.
 - ALL VALVE BOX LIDS TO BE BLACK COLOR.

9 BACKFLOW PREVENTOR AND MASTER VALVE ASSEMBLY
 NTS 3284-10



3 REMOTE CONTROL VALVE
 NTS 3284-08



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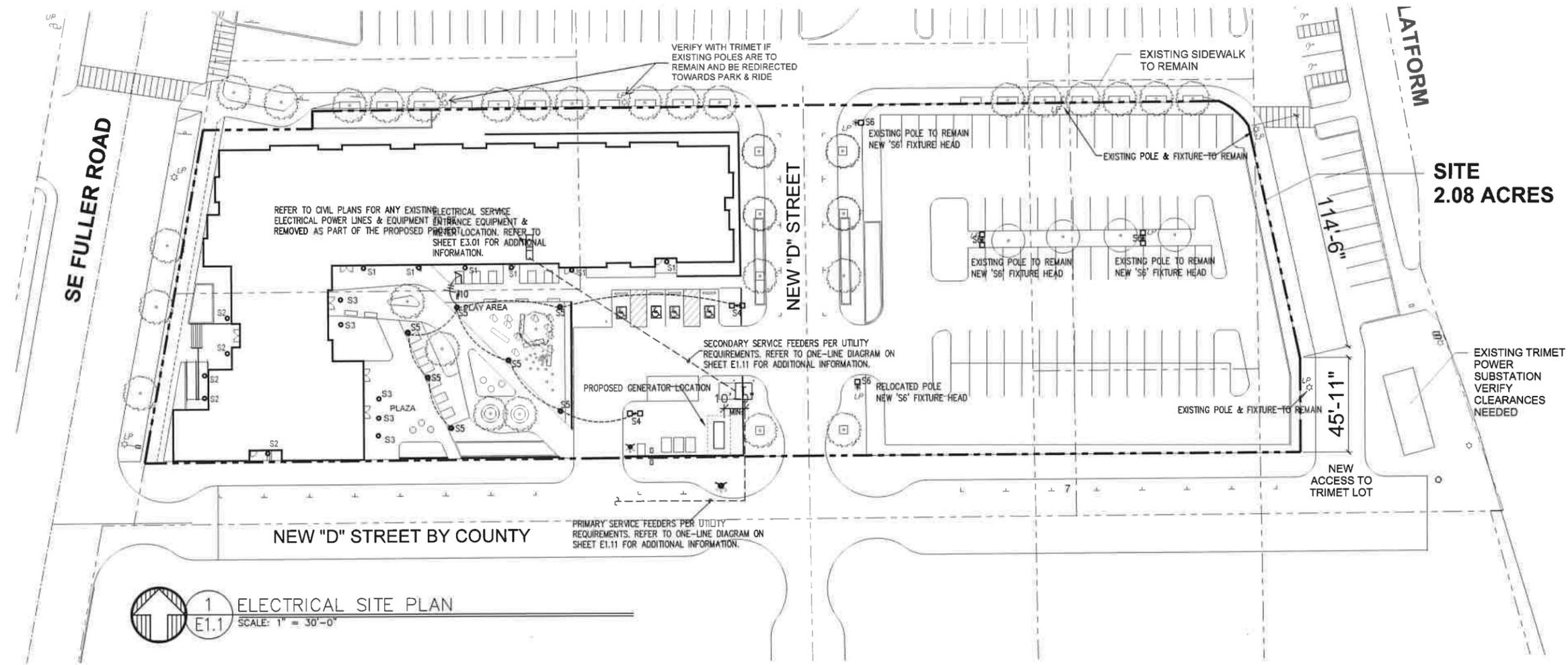
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A
INC. Consulting Engineers
2007 S.E. Ash St.
Portland, OR 97214
PHN: (503) 234-0548
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WWW.MFIA-ENG.COM
CONTACT: DENISE TAYLOR

Project #: 1617.00
File #:
Date: © 6/27/2019

Revisions:
DESIGN REVIEW SUBMITTAL

ELECTRICAL
SITE PLAN

E1.1



1 ELECTRICAL SITE PLAN
E1.1 SCALE: 1" = 30'-0"

GENERAL POWER NOTES:

- A. ALL PLANS ARE CONSIDERED DIAGRAMMATICAL. THEREFORE ALL EQUIPMENT SIZES AND DEVICE LOCATIONS ARE APPROXIMATE AND SUBJECT TO FIELD CONDITIONS AND PRODUCT APPROVAL.
- B. ELECTRICAL SERVICE ENTRANCE EQUIPMENT DESIGN IS BASED ON SIEMENS PRODUCTS. ACTUAL PRODUCTS USED MAY DIFFER IN SIZE AND CONFIGURATION AND SHALL BE NOTED IN FINAL PROJECT DOCUMENTS.
- C. COORDINATE WITH LOCAL UTILITY PROVIDER FOR EXACT SERVICE CONDUIT AND CONDUCTORS REQUIREMENTS.
- D. ALL UTILITY WORK SHALL BE DONE IN ACCORDANCE WITH PGE ELECTRICAL SERVICE REQUIREMENTS.
- E. U.G. PRIMARY FEEDER SHALL HAVE A MINIMUM 48 INCH BURY.
- F. U.G. SECONDARY FEEDER SHALL HAVE A MINIMUM 36 INCH BURY.
- G. REFER TO SHEET E1.2 FOR TYPICAL FEEDER SCHEDULE.
- H. SECONDARY CONDUIT SWEEPS SHALL BE MINIMUM 60 INCH RADIUS WITH A MINIMUM OR 7'-0" STRAIGHT CONDUIT RUN BETWEEN SWEEPS.
- I. LOCATION AND INSTALLATION OF THE PRIMARY AND SECONDARY CONDUITS, TRANSFORMER, ETC. SHALL BE PROVIDED PER PGE ELECTRICAL SERVICE REQUIREMENTS.
- J. REFER TO SHEET E3.1 FOR ELECTRICAL ROOM EQUIPMENT LAYOUT.
- K. SITE LIGHTING SHALL BE CONTROLLED VIA PHOTOCELL FOR DUSK-TIL-DAWN OPERATION AND PROVIDE LIGHTING REDUCTIONS FOR PERIODS OF LOW ACTIVITY.

KEYED POWER NOTES:

- 1. PROVIDE ONE 20A, 120V WEATHER PROOF GFCI RATED DUPLEX RECEPTACLE IN WATER VAULT. VERIFY WITH CIVIL ENGINEER. ROUTE CIRCUIT UNDERGROUND FROM HOUSE PANEL IN 3/4" PVC CONDUIT WITH MINIMUM 36" BURY.
- 2. REFER TO ONE-LINE DIAGRAM ON SHEET E1.2 AND CONSULT CIVIL UTILITY PLANS FOR ADDITIONAL INFORMATION.

PGE REQUIREMENTS

- 1. CUSTOMER TO PROVIDE ALL TRENCHING AND BACKFILLING. TRENCH TO BE 36 INCHES DEEP AND 30 INCHES WIDE, MEASURED FROM FINAL GRADE.
- 2. ALL PGE CONDUCTORS TO BE INSTALLED IN GREY SCHEDULE 40, ELECTRICAL GRADE, PVC CONDUIT WITH NYLON PULL STRINGS (MIN 500 LBS. TEST). PGE TO DETERMINE THE SIZE AND NUMBER OF CONDUITS REQUIRED. ALL ELBOWS TO BE 36 INCH (MIN) RADIUS. ALL BENDS MAY BE FACTORY MADE. IF MORE THAN 270 DEGREES OF BENDS OR IF RUN IS LONGER THAN 150 FEET, BENDS MUST BE RIGID STEEL.
- 3. CONSULT WITH PGE REPRESENTATIVE 2 WEEKS BEFORE STARTING MAIN POWER TRENCHING FOR A PRECONSTRUCTION CONFERENCE. INCLUDED IN THIS CONFERENCE WILL BE EXCAVATOR, PGE, TELCO, CATV, AND GAS.

CONTRACTOR TO LOCATE ALL UNDERGROUND UTILITIES BEFORE TRENCHING.

PARKING LOT LIGHTING NOTES:

- VERIFY EXISTING PARKING LOT FIXTURES TO REMAIN ARE LED. IF NOT, REPLACE HEADS WITH SIMILAR STYLE FIXTURE WITH LED LAMPS (TYPE 'S6').
- LAMPS SHOULD MATCH EXISTING FIXTURES FOR COLOR TEMPERATURE AND LUMEN OUTPUT.
- PARKING LOT LIGHTING SHALL BE PROVIDED WITH PHOTOCELLS FOR DUSK-TIL-DAWN OPERATION AND DIM BY 50% DURING PERIODS OF LOW ACTIVITY.
- ALL PARKING LOT FIXTURES TO BE NIGHT SKY FRIENDLY.



Stonco LytePro LED medium wall sconce LPW16 features outstanding value in a compact architectural design. This powerful and precise combination offers outstanding energy savings with excellent photometric performance. LPW16 is ideal for entryways and corridors in addition to wall lighting applications requiring strong lateral spacing and forward pattern projection.

Ordering guide

Profile	Wattage	LED Color/Gen	Distribution	Voltage	Options	Finish
LPW16	30 30W	HW-G3	Neutral White	3 Type 3	120	120V
				4 Type 4	208	208V
	60 60W	HW-G3	Warm White	3 Type 3	240	240V
				4 Type 4	277	277V
	60 60W	HW-G3	Dark Gray	3 Type 3	347	347V
				4 Type 4	480	480V
	60 60W	HW-G3	Medium Gray	3 Type 3	120	120V
				4 Type 4	208	208V
	60 60W	HW-G3	Customer specified	3 Type 3	120	120V
				4 Type 4	208	208V

Stocked accessories - Ordering guide

Catalog Number	Description	Master Pack Qty	UPC Code
LPW16-G3-B-BZ	LPW16 30W 600mA 4200K Type 3 120-277V Bronze textured paint	6	622252843872
LPW16-G3-B-DG	LPW16 30W 600mA 4200K Type 3 120-277V Dark Gray textured paint	6	622252843885

Stocked accessories - Ordering guide (Must be ordered separately)

Catalog Number	Description	Master Pack Qty	UPC Code
LPWCVRPLT-BZ ¹	LPW Universal wall cover mounting plate, Bronze textured paint	6 (each)	348032494088

Must specify voltage. Not available in 247V or 480V. Other colors available upon request as made-to-order.

Minimum order quantity: 30 per catalog item.



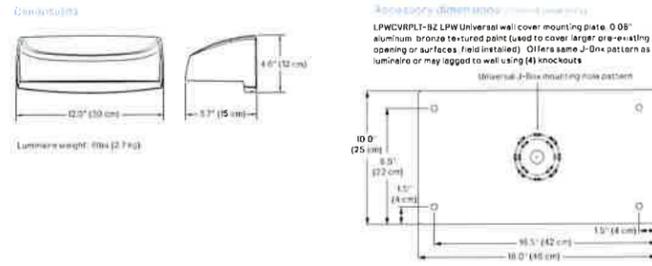
The Gardco 302 Line is a series of elegant cylindrical uplight/downlight in 4 sizes. With its simple, clean design, the 302 Line provides the Gardco 500 Series cylinders using a die-cast aluminum body. The 302 Line is available in a variety of finishes and is designed to be a variety of aesthetic choices on building surfaces.

Ordering Guide

Profile	Model	Mounting	Lamp Up ¹	Lamp Down ²	Trim Drive	Voltage	Power	Options	
302	O Open Downlight	W Wall	80MH	70MH	80MH	R Reflector	120	BRP Bronze Paint	F Fixing
			70MH ³	100MH ⁴	70MH	B Baffle (Black)	208	BLP Black Paint	PCB Custom Type Photometric
			100HPS	100HPS	100HPS	N Natural	240	NP White Paint	
			100HPS	100HPS	100HPS	B Baffle (Black)	277	NP Aluminum	
			P70MH	P100MH	P70MH ⁵	B Baffle (Black)	UNIV	OC Optional Color	
			P100MH	P100MH	P100MH ⁵	B Baffle (Black)	Paint	Paint	
	E Enclosed Downlight	W Wall	80MH	70MH	80MH	R Reflector	120	BRP Bronze Paint	F Fixing
			70MH ³	100MH ⁴	70MH	B Baffle (Black)	208	BLP Black Paint	PCB Custom Type Photometric
			100HPS	100HPS	100HPS	N Natural	240	NP White Paint	
			100HPS	100HPS	100HPS	B Baffle (Black)	277	NP Aluminum	
			P70MH	P100MH	P70MH ⁵	B Baffle (Black)	UNIV	OC Optional Color	
			P100MH	P100MH	P100MH ⁵	B Baffle (Black)	Paint	Paint	

Ordering guide for the 302 Line. Note: Gardco reserves the right to change specifications and configurations at any time without notice. For complete details, see the Gardco 500 Series cylinders using a die-cast aluminum body. The 302 Line is available in a variety of finishes and is designed to be a variety of aesthetic choices on building surfaces.

LPW16 LytePro LED medium wall sconce



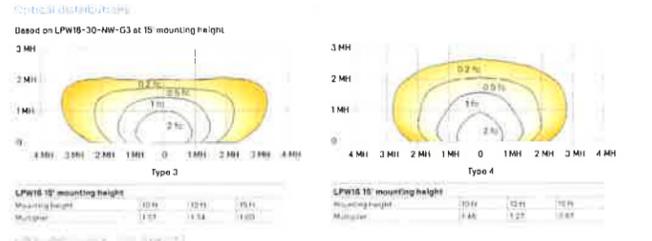
LED Wattage and Efficacy Values

Ordering Code	Total LEDs	Current (mA)	Color Temp.	Average System Watts	Lumen Output	BUG Rating	Efficacy (LPW)	Lumen Output	BUG Rating	Efficacy (LPW)
LPW16-30-WW-G3	16	400	4000	22.3	3,318	B1-U0-G1	104	2,242	B1-U0-G1	101
LPW16-30-NW-G3	16	400	4000	22.3	3,474	B1-U0-G1	101	3,264	B1-U0-G1	98
LPW16-30-WW-G3	16	400	4000	22.3	4,829	B1-U0-G1	96	4,482	B1-U0-G1	93
LPW16-30-WW-G3	16	400	3000	22.3	2,352	B1-U0-G1	96	2,065	B1-U0-G1	93
LPW16-30-WW-G3	16	400	3000	22.3	3,200	B1-U0-G1	93	3,098	B1-U0-G1	90
LPW16-60-WW-G3	16	800	3000	47.6	4,783	B1-U0-G1	90	4,528	B1-U0-G1	87

Values from photometric tests performed in accordance with IESNA LM-79 and are representative of the configurations shown. Actual performance may vary due to installation and environmental variables. LED and driver temperatures and heat measurement conditions are strongly recommended to confirm performance with a photometric layout. Note: Some data may be scaled based on test of similar (but not identical) luminaires. Contact factory for configuration not shown.

Predicted screen illuminance data

Ambient Temperature °C	Calculated Lux Hours	Lux per TM-21	Lumen Maintenance % at 60,000 hrs
up to 40°C	>200,000 hours	>54,000 hours	>90%



302 Line Uplight / Downlight

Specifications

Housings are cast in a single-piece cylindrical form of corrosion resistant alloy. 1/8" (3.2mm) wall thickness. Units measure 7 1/2" in outside diameter and 12" in height. Housings are secured to the wall and luminaire assembly using a cast mounting canopy/bracket.

The canopy includes a hanger bracket and a mounting bracket (secured over upper box).

Clear Lens (CL) Clear lens trims include a clear tempered glass lens mounted to a die-cast aluminum frame (supplied standard on all models - Trim Up).

Reflector (R) Reflectors are composed of spun Alzak components, electro-polished, anodized and sealed. Reflectors for compact fluorescent lamps feature a dual stage construction.

Baffle (B) Step black baffles are die-cast aluminum and finished with black TGIC powdercoat.

Lens (L) Lens units consist of a Solite® obscuring glass lens mounted to a die-cast aluminum trim support assembly.

Lens with Louver (LL) Lens with lower units consist of a Solite® obscuring glass lens mounted to a die-cast aluminum trim support assembly including 1 5/8" x 1 5/8" square louvers with a nominal depth of 1".

Forward Throw Reflector (FT/C and FT/D) Reflectors are composed of specular aluminum and faceted Alzak components, electro-polished, anodized and sealed. FT/D downlights feature a clear flat glass lens mounted within a die-cast aluminum frame. FT/C uplight units feature a clear frosted glass lens mounted within a die-cast aluminum frame. Reflector provides asymmetric forward throw distribution of light.

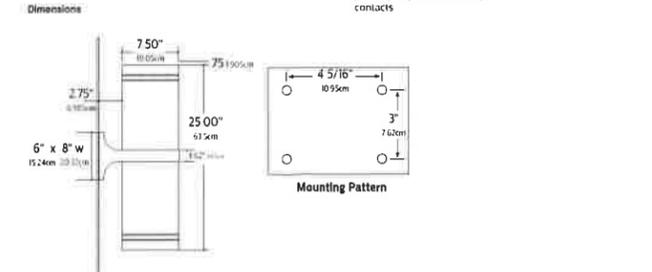
Internal ballast will be provided based on the specified lamp configuration.

Pulse rated medium base lampholders are glazed porcelain with a nickel-plated screw shell. Fluorescent sockets are high temperature plastic (PBT) with brass alloy contacts.

Each standard luminaire receives a fade and abrasion resistant, electrostatically applied, thermally cured, triglycidyl ether-based (TGE) powdercoat finish. Consult factory for special colors. The sand blaster is applied to match the housing.

All luminaires bear UL or CUL (where applicable) Wet Location labels.

Gardco luminaires feature a 5 year limited warranty. See Warranty Information on www.lighting.com for complete details and exclusions. Polycarbonate lenses carry a 1 year warranty only.



LPW16 LytePro LED medium wall sconce

General Description
LytePro LED medium wall sconce LPW16 combines excellent performance, design and value to meet the needs of the energy and budget conscious. The LPW16 is available for use in downward facing surface wall mount applications, over recessed boxes or where power can be directly fed through back surface, whereby connections splices can be made inside the luminaire housing. Two SPD's are available as in-stock configurations only (2-day quick ship).

IP Rating
Optical compartment is IP65 rated.
LED Board/Lens Array
Provides up to 124 lumens at the system level. Standard color temp is 4000K +/- 200K minimum 30 CRI.

Electrical
Driver efficiency (90% standard) 120-277V, 247-480V available. All drivers are dimmable. Temp range: -40°C (-40°F) to 40°C (104°F). Environmental class protection: inherent surge protection up to 10kV, PIIH compliant.
Surge protection (SPD) Surge protection device tested in accordance with ANSI/IEEE C82.45 per ANSI/IEEE C82.41 2-Scene 1 Category II. High Exposure 10kV/10kA waveform for Line-Ground, Line-Neutral and Neutral-Ground, and in accordance with DOE MS&C Model Specification for LED Roadway Luminaires Addressing Electrical Immunity High test level 10kV/10kA.

Mounting
Easy interlocking hook and mount housing/backplate design for easy installation. Mounts over 3 5/4" octagonal boxes and single gang switch boxes or can be directly lagged to surface. Ensure proper steps for gasket/sealing luminaire to surface.



419 SW 11th Ave
Suite 200
Portland OR 97205
Ph: 503 226 7571
Fx: 503 273 8891

FULLER STATION HOUSING
50 % DESIGN
DEVELOPMENT
9608 SE Fuller Road
Clackamas County, Oregon, 97086

PROJECT #: 1617.00
SHEET ISSUE DATE: 6/27/2019
REVISIONS:
DESCRIPTION DATE
DESIGN REVIEW SUBMITTAL

LIGHTING INFORMATION
E2.1

LIGHTOLIER
by **ignify**

Downlighting
LyteProfile
P4R 4" Round Aperture



Provides a comfortable 60° cut-off to both the actual and reflected source. Utilizes a robust frame-in-kit, light engine and reflector design that is designed for a wide variety of installation conditions with a plenum depth of 4-11.2".

Frame (frame + trim + complete product) example 4RN

Series	Aperture	Installation	Options
4	4"	N	<ul style="list-style-type: none"> Manufactured 120/277V Emergency Photometry Emergency LED Emergency LED Emergency LED

Trim example P4RDL20B35CDZ10U

Series	Style	Lumen	CRI/CCT	Reflector	Flange	Dimming	Voltage
P4R	DL	10	80/3000K	CL	1.5"	Z10	120/277V

Accessories

CAEM Field installable EM pack for use with or without frame only

AMS ActiLume multi-sensor suite with access for PoE configurations

SWZDT SpaceWire wireless controller with dwell time functionality compatible with all 0-10V options and SWZDT spec sheet

STRAINT Strain Relief Accessory for use with emergency photometry

P4R LyteProfile 4"
Round Downlight & Lensed Wall Wash

Features

- Optics**
- Provides a 60° cutoff (physical and reflected)
 - Wide beam distribution for general illumination
 - Spun and anodized reflectors available in specular (clear), semi-specular (comfort clear) and diffuse finishes. Also available in white and black painted finishes
- Quality of light**
- Lumen Maintenance: L80 at 60,000 hours
 - Color consistency: 3 SDCM
 - 80 CRI minimum

- Construction** (Innovative Construction)
- Colantrated stamped steel for dry / plaster ceilings
 - Pre-installed telescoping mounting bars (13"-24")
 - Frame accommodates C-channel, hick iron and 3/4" EMT for mounting distances greater than 24" between joists
 - Manufactured from 20 gauge galvanized steel construction with rolled edge aperture to guide cutting tools for perfect hole cutting

Max ceiling thickness is 1.5" (38 mm) including PoE frame 4.88" (124 mm).

- Patented Install Mounting frame**
- Pre-installed mounting bars allow for fast and tool-less install into T-grid & hat channel ceilings
 - Clove-cut aperture design eliminates an undesired gap between ceiling material and reflector
 - Slipstep ridge and gully construction between keypad and light engine lens below the ceiling allows for:
 - Easy upgrades
 - Technology changes
 - Repair and troubleshooting

- Dimming**
- Advance 0-10V 1% dimming
 - Lutron Hi-Lume EcoSystem H Series 1% dimming
 - EliteLED SOLDrive 0-10V 0.1% dimming
 - EliteLED DMX POWERdrive

- Light engine**
- Quick connect power pack allow for easy installation and replacement from below ceiling with no need for additional wiring. This allows for:
 - Frame and ceiling installation to be performed while still finalizing details such as lumen packages, CCT and control type
 - Easy replacement of electronics at end of life with minimal wasted material and labor required
 - Long and upgradability of technology

Optical systems

- Comfort throughout the space:** True 50° physical cutoff and 45° reflected cutoff
- Quality of light:** 2 SDCM ensures color consistency from fixture to fixture and over the luminaire's long lifetime

Wired Controls Options

- Interact Office Wired (PoE)**
- PoE based IoT connected lighting solution for large enterprises that span across multiple floors, buildings and require multiple gateway. Use Interact Office software and insights to increase building efficiency, achieve building wide integration and optimize space through occupancy analytics
 - Supports advanced IoT Apps on Personal Control, Space Management, wayfinding, room/deck reservation and offers open APIs for light control and data exchange
 - PoE lighting controller is accessible from below
 - Integral sensor option for occupancy sensing (PIR) and/or daylight harvesting available for additional energy savings
 - Optional integral emergency controller and battery pack provides 600lm nominal output
 - Test switch and indicator light mounted on side of reflector on light
 - Emergency battery has a 3 month pre-installed shelf life and must be stored and installed in environments of 20C to 30C (-4F to 86F) ambient and 45-95% relative humidity

- Interact Office Wired (PoE), Static White and Tunable White:**
- Advanced IoT connected lighting solution for large enterprises that span across multiple floors, buildings and require multiple gateway. View all your projects under one dashboard and easily compare insights from multiple projects in one view
 - Compatible ZigBee Green Power wall dimmer and wireless Occupancy or Daylight & Occupancy sensors available
 - Use Interact Office software and insights to increase building efficiency, achieve building wide integration and optimize space through occupancy analytics
 - Supports advanced IoT Apps on wayfinding, room/deck reservation and offers open APIs
 - Requires compatible Interact Office Gateway and internet connectivity for commissioning
 - For more information on Interact Office Wired visit www.interact-lighting.com/office or www.usa.lighting.philips.com/systems/systemaready

- Interact Office Wired (PoE), Static White and Tunable White:**
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- Interact Pro (IAP)**
- Interact Pro brings the power of connected lighting to small and medium businesses without the complexity usually associated with connected lighting
 - Interact Pro includes an app a portal and a broad portfolio of wireless luminaires, lamps and retrofit kits all working on the same system
 - Commissioning via Interact Pro App (Android or iPhone)
 - Prepare commissioning remotely via Interact Pro portal
 - Requires compatible Interact Pro Gateway and internet connectivity for commissioning
 - Compatible with IUD845/10 ZigBee Greenpower wireless dimmer switch
 - Compatible with wireless Occ sensor (OCC SENSOR IA CM IP42 WH ID1) or wireless Day/Occ sensor (OCC MULTI SENSOR IA CM WH ID1)
 - For more information on Interact Pro visit www.interact-lighting.com/pro
 - For more information on Interact Ready visit www.philips.com/interact-ready

Power over Ethernet

- Powered via Philips PoE lighting controller:** complies with FCC rules per Title 47 part 15 (Class A) for EM / RFI (conducted & radiated) PoE lighting controller accessible from below ceiling
- Rated life:** 60,000 hrs at 80% lumen maintenance based on IES LM-80-08 and TM-21-11

- Emergency**
- For reflector mounted test switch add "EM" to end of the catalog code (example P4RDL20B35CDZ10UEM) Leave blank for ceiling mounted test switch
 - Reflector mounted test switch requires above ceiling access and 1.25" max ceiling thickness for more details

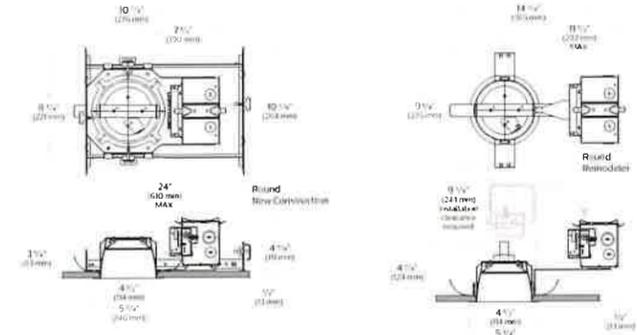
- ENERGY STAR® exceptions**
- 500lm configurations
 - Black finishes
 - PoE drivers

- Labels and Listings**
- eULUS listed for wet locations
 - cULCA (frames with LC walls)
 - ENERGY STAR® certified
 - RoHS certified

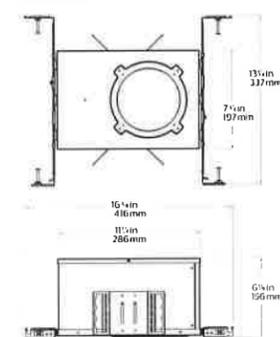
- Warranty**
- 5 year limited warranty
 - Visit usa.lighting.philips.com/warranty for more information on lighting & electrical 5-year limited warranty on complete luminaire systems

P4R LyteProfile 4"
Round Downlight & Lensed Wall Wash

Dimensions



AirSeal (A)



Electrical

For reflector mounted test switch add "EM" to end of the catalog code (example P4RDL20B35CDZ10UEM) Leave blank for ceiling mounted test switch

Reflector mounted test switch requires above ceiling access and 1.25" max ceiling thickness for more details

Product	Input Volts	Input Freq.	Input Current (A)	Input Power (W)
P4RDL20B35CDZ10U	120	60/50/40Hz	0.125	15
P4RDL20B35CDZ10U	277	60/50/40Hz	0.125	35
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P4RDL20B35CDZ10U	277	60/50/40Hz	0.125	35
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P4RDL20B35CDZ10U	277	60/50/40Hz	0.125	35

Product	Input Volts	Input Freq.	Input Current (A)	Input Power (W)
P4RDL20B35CDZ10U	120	60/50/40Hz	0.125	15
P4RDL20B35CDZ10U	277	60/50/40Hz	0.125	35
P4RDL20B35CDZ10U	120	60/50/40Hz	0.125	15
P4RDL20B35CDZ10U	277	60/50/40Hz	0.125	35



P4R LyteProfile 4"
Round Downlight & Lensed Wall Wash

P4RDL20B35CLZ10U • 20W LED, 80 CRI, 3500K

Report: YS10GFN

Output lumens: 2042lm
Spacing Coefficient: 1.4
Beam Angle: 60°
Input Watts: 19.7W

Angle	Mean CP Lumens	Single unit data	Coefficients of utilization
0	937	Height: Initial center beam: 1000mm Lighted Plane: Initial center beam: 1000mm	Existing: 80%, 80%, 80%, 80%, 80%, 80%, 80%, 80%, 80%, 80%
5	940		Wall: 79%, 79%, 79%, 79%, 79%, 79%, 79%, 79%, 79%, 79%
10	956		REC: 78%, 78%, 78%, 78%, 78%, 78%, 78%, 78%, 78%, 78%
15	981		REC: 77%, 77%, 77%, 77%, 77%, 77%, 77%, 77%, 77%, 77%
20	1016		REC: 76%, 76%, 76%, 76%, 76%, 76%, 76%, 76%, 76%, 76%
25	1061		REC: 75%, 75%, 75%, 75%, 75%, 75%, 75%, 75%, 75%, 75%
30	1116		REC: 74%, 74%, 74%, 74%, 74%, 74%, 74%, 74%, 74%, 74%
35	1181		REC: 73%, 73%, 73%, 73%, 73%, 73%, 73%, 73%, 73%, 73%
40	1256		REC: 72%, 72%, 72%, 72%, 72%, 72%, 72%, 72%, 72%, 72%
45	1341		REC: 71%, 71%, 71%, 71%, 71%, 71%, 71%, 71%, 71%, 71%
50	1436		REC: 70%, 70%, 70%, 70%, 70%, 70%, 70%, 70%, 70%, 70%
55	1541		REC: 69%, 69%, 69%, 69%, 69%, 69%, 69%, 69%, 69%, 69%
60	1656		REC: 68%, 68%, 68%, 68%, 68%, 68%, 68%, 68%, 68%, 68%
65	1781		REC: 67%, 67%, 67%, 67%, 67%, 67%, 67%, 67%, 67%, 67%
70	1916		REC: 66%, 66%, 66%, 66%, 66%, 66%, 66%, 66%, 66%, 66%
75	2061		REC: 65%, 65%, 65%, 65%, 65%, 65%, 65%, 65%, 65%, 65%
80	2216		REC: 64%, 64%, 64%, 64%, 64%, 64%, 64%, 64%, 64%, 64%
85	2381		REC: 63%, 63%, 63%, 63%, 63%, 63%, 63%, 63%, 63%, 63%
90	2556		REC: 62%, 62%, 62%, 62%, 62%, 62%, 62%, 62%, 62%, 62%

P4RDL20B35CLZ10U • 20W LED, 80 CRI, 3500K

Report: 1S8BGFN

Output lumens: 2042lm
Spacing Coefficient: 1.4
Beam Angle: 60°
Input Watts: 19.7W

Distance from ceiling (m)	1' from wall	2' from wall	3' from wall	4' from wall
1	10	10	10	10
2	10	10	10	10
3	10	10	10	10
4	10	10	10	10
5	10	10	10	10
6	10	10	10	10
7	10	10	10	10
8	10	10	10	10
9	10	10	10	10
10	10	10	10	10

waterleaf
 FULLER STATION HOUSING
 50% DESIGN DEVELOPMENT
 9608 SE Fuller Road
 Clackamas County, Oregon, 97086

PROJECT #: 1617.00
 SHEET ISSUE DATE: 6/27/2019
 REVISIONS:
 # DESCRIPTION DATE
 DESIGN REVIEW SUBMITTAL

LIGHTING INFORMATION
E2.2

1 Tested using absolute photometry as specified in LM79 (IESNA Approved Method for the Electrical and Photometric Measurements of Solid State Lighting Products)
 2 Wavelength controlled to within 5nm
 3 Correlated Color Temperature within spec as defined in ANSI/NEMA-ANSI/CIE 1977-2008, Specifications for the Chromaticity of Solid State Lighting Products

DESCRIPTION
The OVH LED area luminaire provides uncompromising optical performance and outstanding versatility for a wide variety of area and roadway applications. Patented modular LightBAR™ technology delivers uniform and energy-conscious illumination to walkways, parking lots and roadways. UL/cUL listed for wet locations.

Catalog #	Type
	S6
Project	Date
Comments	
Prepared by	

SPECIFICATION FEATURES

Construction
Heavy-duty cast aluminum housing and removable door. 3G vibration rated to ensure strength of construction and integrity in application. Die cast aluminum door frame features integral hinges for tool-less maintenance access.

Optics
Choice of twelve patented, high efficiency AccuLED Optica™ manufactured from injection-molded acrylic. Optics are precisely designed to shape the distribution maximizing efficiency and application spacing. AccuLED Optica create consistent distributions with the scalability to meet customized application requirements. Offered standard in 4000K (+/- 275K) CCT and nominal 70 CRI.

Electrical
LED drivers hard mount to die-cast aluminum back casing for optimal heat sinking and operation efficiency. 120-277V 50/60Hz, 347V 60Hz or 480V 60Hz operation. Shipped standard with the Eaton's proprietary circuit module designed to withstand 10kV of transient line surge. Thermal management incorporates both conduction and natural convection to transfer heat rapidly away from the LED source and retain optimal efficiency and light output. OVH LED luminaires is suitable for low temperature operation down to -40°C. Standard three-position tunnel type compression terminal block. 95% lumen maintenance expected at 60,000 hours per IESNA TM-21. LightBARs feature IP66 enclosure rating.

Mounting
Two-boltless bracket slipfitter with cast-in pipe stop and leveling stops. Thread-in pipe birgouard seals around 1-1/4" or 2" mounting arms.

Finish
Components finished in a standard grey five-stage Super TGIC polyester powder coat paint, 2.5 mil nominal thickness for superior protection against fade and wear. Consult your lighting representative at Eaton for a complete selection of standard colors including black and bronze. RAL and custom color matches available.

Warranty
Five-year warranty.

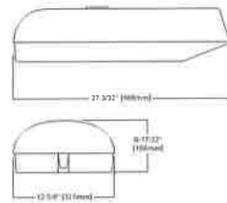


OVH LED

1 - 4 LightBARs LED

ROADWAY LUMINAIRE

DIMENSIONS



CERTIFICATION DATA
UL85, Listed
ESD 800V
FMV LightBar
3G Vibration Rated

ENERGY DATA
Electronics LED Driver
> 99 Power Factor
< 2% Total Harmonic Distortion
120-277V/50 & 60Hz, 347V/60Hz
480V/60Hz
40°C Maximum Temperature Rating
40°C Ambient Temperature Rating

EPA
Electrical Footprint Area (ft²): 1.6

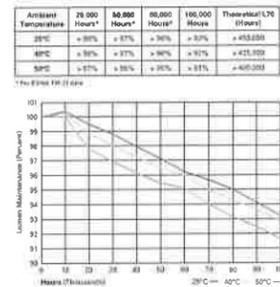
SHIPPING DATA
Approximate Net Weight:
21 lbs (9.5 kg)



POWER AND LUMENS BY BAR COUNT (21 LED LIGHTBARS)

Number of LightBARs	E01	E02	E03	E04
Drive Current	20mA Drive Current			
Power (Watts)	25W	32W	75W	97W
Current @ 120V (A)	0.22	0.44	0.63	0.83
Current @ 277V (A)	0.19	0.29	0.28	0.36
Current @ 347V (A)	0.11	0.19	0.28	0.39
Current @ 480V (A)	0.09	0.15	0.23	0.33
Lumens	2,999	5,997	9,994	13,991
T2	81-U0-G1	82-U0-G2	83-U0-G3	84-U0-G4
Lumens	2,998	5,972	9,957	13,942
T3	81-U0-G1	82-U0-G2	83-U0-G3	84-U0-G4
Lumens	2,938	5,875	9,818	13,754
T4	81-U0-G1	81-U0-G2	81-U0-G3	81-U0-G4
Lumens	2,988	5,987	9,986	13,984
SMD				
BUO Rating	81-U0-G1	82-U0-G2	83-U0-G3	84-U0-G4
Lumens	2,988	5,972	9,957	13,942
BYO	81-U0-G1	82-U0-G2	83-U0-G3	84-U0-G4
BUO Rating	81-U0-G1	82-U0-G2	83-U0-G3	84-U0-G4
Lumens	2,938	5,875	9,818	13,754
BYO	81-U0-G1	81-U0-G2	81-U0-G3	81-U0-G4
BUO Rating	81-U0-G1	81-U0-G2	81-U0-G3	81-U0-G4
Lumens	2,938	5,896	9,784	13,712
BL3	81-U0-G1	81-U0-G2	81-U0-G3	81-U0-G4
BUO Rating	81-U0-G1	81-U0-G2	81-U0-G3	81-U0-G4
Lumens	2,969	5,937	9,896	13,876
BL3	81-U0-G1	81-U0-G2	81-U0-G3	81-U0-G4
BUO Rating	81-U0-G1	81-U0-G2	81-U0-G3	81-U0-G4
Lumens	2,992	5,764	9,598	13,518
BL4	81-U0-G1	81-U0-G2	81-U0-G3	81-U0-G4
BUO Rating	81-U0-G1	81-U0-G2	81-U0-G3	81-U0-G4
Lumens	3,004	4,907	9,011	12,876
RW	81-U0-G1	83-U0-G3	83-U0-G3	83-U0-G3
BUO Rating	81-U0-G1	83-U0-G3	83-U0-G3	83-U0-G3
Lumens	2,983	5,781	9,040	13,778
BLL/BLR	81-U0-G1	81-U0-G2	81-U0-G3	81-U0-G4
BUO Rating	81-U0-G1	81-U0-G2	81-U0-G3	81-U0-G4

LUMEN MAINTENANCE



POWER AND LUMENS BY BAR COUNT (7 LED LIGHTBARS)

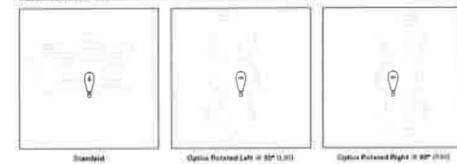
Number of LightBARs	F01	F02	F03	F04
Drive Current	10mA Drive Current			
Power (Watts)	29W	63W	78W	102W
Current @ 120V (A)	0.22	0.44	0.66	0.86
Current @ 277V (A)	0.19	0.21	0.29	0.37
Current @ 347V (A)	0.12	0.15	0.21	0.28
Current @ 480V (A)	0.09	0.09	0.13	0.18
Lumens	2,475	4,950	7,425	9,900
T2	81-U0-G1	82-U0-G2	83-U0-G3	84-U0-G4
Lumens	2,466	4,936	7,395	9,866
T3	81-U0-G1	82-U0-G2	83-U0-G3	84-U0-G4
Lumens	2,426	4,852	7,276	9,704
T4	81-U0-G1	81-U0-G2	81-U0-G3	81-U0-G4
Lumens	2,465	5,121	7,696	10,262
SMD				
BUO Rating	81-U0-G1	83-U0-G3	83-U0-G3	83-U0-G3
Lumens	2,531	5,061	7,592	10,122
BYO	81-U0-G1	83-U0-G3	83-U0-G3	84-U0-G4
Lumens	2,393	5,785	7,894	10,219
BYO	82-U0-G1	83-U0-G3	83-U0-G3	84-U0-G4
Lumens	2,417	4,834	7,397	9,869
BL3	81-U0-G1	81-U0-G2	81-U0-G3	81-U0-G4
Lumens	2,461	4,901	7,352	9,807
BL3	81-U0-G1	81-U0-G2	81-U0-G3	81-U0-G4
Lumens	2,378	4,738	7,128	9,537
BL4	81-U0-G1	81-U0-G2	81-U0-G3	81-U0-G4
Lumens	2,468	4,959	7,439	9,938
RW	81-U0-G1	83-U0-G3	83-U0-G3	83-U0-G3
BUO Rating	81-U0-G1	83-U0-G3	83-U0-G3	83-U0-G3
Lumens	2,324	4,647	6,671	8,984
BLL/BLR	81-U0-G1	81-U0-G2	81-U0-G3	81-U0-G4
BUO Rating	81-U0-G1	81-U0-G2	81-U0-G3	81-U0-G4

LUMEN MULTIPLIER

Ambient Temperature	Lumen Multiplier
15°C	1.03
20°C	1.02
25°C	1.00
30°C	0.99
35°C	0.98
40°C	0.96



OPTIC ORIENTATION



ORDERING INFORMATION

Product Family	Number of LightBARs	Lamp Type	Ballast Type	Voltage	Distribution	Color
OVH/BL/BLR Luminaire	E01+1) 21 LED LightBAR E02+1) 21 LED LightBARs E03+3) 21 LED LightBARs E04+4) 21 LED LightBARs F01+1) 7 LED LightBARs F02+2) 7 LED LightBARs F03+3) 7 LED LightBARs F04+4) 7 LED LightBARs	LED-Solid State Light Emitting Diode	E-Electronic	Universal (120-277V) E-480V E-347V	T2-Type II T3-Type III T4-Type IV BL3-Type III with 3-1/2" Circular BL4-Type IV with 3-1/2" Circular BL+Type IV with 3-1/2" Circular RW-Rectangular Single RW+Type V Square Multiple RW+Type IV Square Single RW+Type IV Square Multiple BL+90° Road Light Emission Right BL+90° Road Light Emission Right	AP-Grey BK-Black WH-White Aurora Alum. num. Unfinished
Options (add to suffix)						Assessments (Color Temperature)
AccuLED™ Tunable Photocolorid Resizable UV-UL and cUL Listed Ballast Indicator 25°C Temp. Circuit ECP LightBAR Color Plus Makes Housing Finish				90°-Optica Rotated Right 90° L90-Optica Rotated Left 90° 7000-70 CRI / 8000K CCT M90-90 CW / 2800K CCT 10A-60°C High Ambient	DA/RA100+HEMA Tunable Photocolorid - Multi-Step DA/RA100+HEMA Tunable Photocolorid - 120V DA/RA100+HCV Circuit Module Photocolorid DA/RA100+Photocolorid Shooting Cap L90+90° Road Light Emission Right L90+90° Road Light Emission Right	

NOTES
1. Customer is responsible for engineering make a technical specification for all applications. Refer to our website (www.eaton.com) for additional support information.
2. Insulated wire, CUL and ground (GND).
3. 10 LED LightBARs (E01, F01, F02, F03, F04) are not available for use with optional systems. Insulation provided courtesy of Eaton. Please contact your local Eaton representative for more information.
4. One (1) LED LightBAR is provided for each optional circuit. Not available with 347V or 480V. Requires up to two or three light bars.
5. Eaton listed and/or approved for use with optional circuit breaker. Not available with 347V or 480V. Requires up to two or three light bars.
6. Contact Eaton for lead times and form numbers.
7. Only for use with E01, E02, and E03 applications. Not available with L90 and R90 options.
8. One required for each light bar. Not available with L90 and R90 options.



S6 OVH LED

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waterleaf

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Suite 200
Portland OR 97205
Ph: 503.228.7571
F: 503.273.8891

FULLER STATION HOUSING

50 % DESIGN DEVELOPMENT

9608 SE Fuller Road
Clackamas County, Oregon, 97086

PROJECT #: 1617.00
SHEET ISSUE DATE: 6/27/2019
REVISIONS:
DESCRIPTION DATE
DESIGN REVIEW SUBMITTAL

LIGHTING INFORMATION

E2.4



