Clackamas County Planning and Zoning Division
Department of Transportation and Development

Development Services Building
150 Beavercreek Road | Oregon City, OR 97045

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

NOTICE OF LAND USE APPLICATION IN YOUR AREA

Date of Mailing of this Notice: 02/23/2026

Notice Mailed To: Property owners within 300 feet of the subject property
Community Planning Organizations (CPO)
Interested Agencies

File Number: Z0516-25

Application Type: Design Review

Proposal: The proposal is for two new buildings to house adult drug and alcohol treatment services, and associated transitional housing and site development. Building 1 is a two-story, 27,550 square foot building that will include 16 withdrawal management beds arranged for 24/7 nurse supervision. Patient stays in withdrawal management will last approximately one week. Building 1 also includes 24 beds for residential treatment, arranged in sleeping rooms of two patients per room. Spaces for group meetings, individual counseling, dining, and recreation are also included, and residential treatment stays last approximately three months. Administrative offices associated with treatment services will also be in Building 1. An enclosed private courtyard will be accessible from Building 1.
Building 2 is two stories and 17,175 square feet. Building 2 includes an outpatient treatment clinic with group meeting rooms, rooms for individual counseling, and a multipurpose room for larger gatherings. Building 2 includes 36 beds for transitional housing arranged into sleeping rooms of two patients per room. Patients will share restrooms, kitchen, and lounge space. Patients will live in the building for six months to a year while accessing intensive outpatient services on site. An enclosed private courtyard will be accessible from Building 2.

The County's Design Review Committee (DRC) will be reviewing the application on March 10, 2026 at 8:30AM. The meeting will be held on Zoom. The public is invited to attend the virtual meeting and will have an opportunity to provide oral testimony regarding this application. You can visit the county's website to access the link for the virtual meeting: https://www.clackamas.us/meetings/planning/designreview

Applicable Zoning and Development Ordinance (ZDO) Criteria: In order to be approved, this proposal must comply with ZDO Sections Section 202, 510, 903, 1000-series, 1102, and 1307. The ZDO criteria for evaluating this application can be viewed at https://www.clackamas.us/planning/zdo.html

Applicant: FORA HEALTH TREATMENT & RECOVERY CENTER

Property Owner: CLACKAMAS COUNTY

Site Address: 15301 SE 92ND AVE
CLACKAMAS, OR 97015

Location: Southwest corner of SE Tolbert St and SE 92nd Ave

Assessor's Map and Tax Lot: 22E09BD04900

Zoning: OSM - OPEN SPACE MANAGEMENT DISTRICT, C-3 - GENERAL COMMERCIAL

Staff Contact: Melissa Lord **E-mail:** MLord@clackamas.us

File Number: Z0516-25

Community Planning Organization: The following recognized Community Planning Organization (CPO) has been notified of this application. This organization may develop a recommendation. You are welcome to contact the CPO and attend their meeting on this matter, if one is planned.

CLACKAMAS CPO (INACTIVE)

If this CPO is currently inactive and you are interested in becoming involved in land use planning in your area, please contact Clackamas County Community Engagement at communityinvolvement@clackamas.us. In some cases where there is an inactive CPO, a nearby active CPO may review the application. To determine if that applies to this application, call or email the staff contact.

How to Review this Application: A copy of the application, all documents and evidence submitted by or on behalf of the applicant, and applicable criteria are available for inspection at no cost. Copies may be purchased at the rate of $2.00 per page for 8 1/2" x 11" or 11" x 14" documents, $2.50 per page for 11" x 17" documents, $3.50 per page for 18" x 24" documents and $0.75 per sq ft with a $5.00 minimum for large format documents. You may view or obtain these materials:

- Online at https://aca-prod.accela.com/clackamas. After selecting the Planning tab enter the file number to search. Select File Number and then select Attachments from the dropdown list, where you will find the submitted application; or
- By emailing or calling the staff contact.

Decision Process: Following the closing of the comment period, a written decision on this application will be made and a notice of decision 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.

How to Comment on this Application:
To ensure your comments are considered prior to issuance of the decision, they must be received within 20 days of the date of this notice. Comments may be submitted by email to the staff contact or by regular mail to the address at the top of this notice. Please include the file number on all correspondence, and focus your comments on the approval criteria identified above or other criteria that you believe apply to the decision.

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 least three (3) business days before the meeting at 503 -742-4545 or DRenhard@clackamas.us.

¿Traducción e interpretación? | Требуется ли вам устный или письменный перевод?| 翻译或口译？|Cần Biên dịch hoặc Phiên dịch? | 번역 또는 통역?

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STAFF USE ONLY

RECEIVED

Dec 22 2025

Clackamas County
Planning & Zoning Division

Staff Initials: *File Number:* Z0516-25

Land use application for:

DESIGN REVIEW

Application Fee:

0.384% of construction cost, with $1,377 minimum and $37,866 maximum (plus $4,142 if Hydrogeologic Review is required)

APPLICANT INFORMATION			
Applicant name: Fora Health Treatment & Recovery Center	Applicant email: Devarshi.Bajpai@forahealth.org	Applicant phone: 503.750.1195	
Applicant mailing address: 10230 SE Cherry Blossom Drive	City: Portland	State: OR	ZIP: 97216
Contact person name (if other than applicant): Sarah Vaz	Contact person email: svaz@holstarc.com	Contact person phone: (503) 233 9856	
Contact person mailing address: 123 NE 3rd Ave, Suite 301	City: Portland	State: OR	ZIP: 97214

PROPOSAL		
Brief description of proposal: Drug and alcohol treatment campus in two buildings, including detox, residential, and outpatient care, and transitional housing.	Estimated construction cost: 29,975,808.65	Pre-application conference file number: ZPAC0090-25

SITE INFORMATION		
Site address: 15301 SE 92nd Ave, Clackamas, OR 97015	Comprehensive Plan designation:	Zoning district:
Map and tax lot #: *Township:* _____ *Range:* _____ *Section:* _____ *Tax Lot:* 22E09BD0490 *Township:* _____ *Range:* _____ *Section:* _____ *Tax Lot:* _____ *Township:* _____ *Range:* _____ *Section:* _____ *Tax Lot:* _____		Land area: 6.54 acres
Adjacent properties under same ownership: *Township:* _____ *Range:* _____ *Section:* _____ *Tax Lot:* _____ *Township:* _____ *Range:* _____ *Section:* _____ *Tax Lot:* _____		

Printed names of all property owners:	Signatures of all property owners:	Date(s):
Clackamas County	Mary Rumbaugh Digitally signed by Mary Rumbaugh Date: 2025.12.16 13:53:26 -08'00'	

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

Applicant signature: _____ Date: 12/16/2025

Clackamas County Recovery Campus (CCRC)

APPLICATION: DESIGN REVIEW 2
REFERENCE: ZPAC0090-25 (PRE-APPLICATION CONFERENCE)
Z0169-25, Z0170-25 (COMPREHENSIVE PLAN MAP AMENDMENT AND ZONE CHANGE)

DESIGN REVIEW NARRATIVE

December 16, 2025
January 28, 2026 – updates in bold (p31)

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HOLST ARCHITECTURE
CONTACT: SARAH VAZ svaz@holstarc.com 503-233-9856

I. PROPOSAL:

The proposal is for two new buildings to house adult drug and alcohol treatment services, and associated transitional housing and site development.

Building 1 is proposed at 2 stories and 27,550 SF. Building 1 program includes 16 withdrawal management beds arranged for 24/7 nurse supervision. Patient stays in withdrawal management will last approximately one week. Building 1 program also includes 24 beds for residential treatment, arranged in sleeping rooms of 2 patients per room. Spaces for group meeting, individual counseling, dining, and recreation are also included, and residential treatment stays last approximately 3 months. Finally, administrative offices associated with treatment services will also be in Building 1. An enclosed private courtyard will be accessible from Building 1

Building 2 is proposed at 2 stories and 17,175 SF. Building 2 program includes an outpatient treatment clinic with group meeting rooms, rooms for individual counseling, and a multipurpose room for larger gathering. Building 2 program also includes 36 beds for transitional housing arranged into sleeping rooms of 2 patients per room. Patients will share restrooms, kitchen, and lounge space. Patients will live in the building for 6 months to a year while accessing intensive outpatient services on site. An enclosed private courtyard will be accessible from Building 2

The site is approximately 6.5 acres and is bound to the north by SE Tolbert St, to the east by SE 92nd Ave, to the south by residential properties, and to the west by Interstate 205. The area of the lot where the two buildings are proposed is zoned General Commercial (C-3). A portion of the lot to the north is zoned Open Space Management (OSM) but no development in this area is proposed with this design review.

ZDO sections are shown in *italics* and applicant responses are shown in orange.

II. SECTION 500: COMMERCIAL DISTRICTS

510 GENERAL COMMERCIAL C-3

TABLE 510-1: PERMITTED USES

Permitted Uses: Offices and Outpatient Clinics, Commercial Services
Note: Per pre-app conference notes dated 11/14/2025, building 1 use "falls into the residential treatment facility per ORS 443.400, as allowed by HB2005(2025)" and building 2 "units fit into the 'single room occupancy' definition (SRO). Although the use isn't currently listed in the C-3 zone, [staff] believe that [Clackamas] zoning code is out of compliance with state law and the ORS requires the County to allow SROs."
Proposed Uses: Offices and Outpatient Clinics, residential treatment facility, single-room occupancies (SROs)

TABLE 510-2: DIMENSIONAL STANDARDS

Minimum Lot Size: None
Current Lost Size: 6.63 acres (no change proposed)
Minimum Street Frontage: none (50% as determined by 1005 Site and Building Design)
Proposed Street Frontage: 253'-2" building length / 391'-0" development length = 64.7%
Maximum Front Setback: N/A
Minimum Front Setback: 15 feet
Proposed Front Setback: 15 feet

Minimum Rear Setback:15 feet plus one foot foe each one-foot increase in building height over 35 feet
Minimum Side Setback: 15 feet plus one foot for each one foot increase in building height over 35 feet
Proposed Side Setback: 15'-6" (to generator)
Proposed Rear Setback: 373'-7"
Maximum Building Height: None
Proposed Building Height: 35'-0"
Minimum Floor Area Ratio: None
Proposed Floor Area Ratio: 44,725 SF / 6.63 acres (288,802.8) SF = 0.15
Maximum Building Floor Area per Use: None
Proposed Floor Area per Use:

Building 1:
- Withdrawal Management: 6,150 SF
- Residential Treatment: 14,940 SF
- Administrative offices: 3,460 SF
- B.O.H: 3,000 SF

Building 2:
- Outpatient Treatment: 5,670 SF
- Transitional Housing: 11,505 SF

Minimum Residential Density: 20 dwelling units per net acre for residential development; none for mixed-use development
Maximum Residential Density: 60 dwelling units per acre
Sleeping rooms do not qualify as dwelling units, per staff interpretation. Residential density standards do not apply.

III. SECTION 1000: DEVELOPMENT STANDARDS

1002 PROTECTION OF NATURAL FEATURES

1002.01 HILLSIDES
Development is proposed on flat site, where grade is less than 20 percent. The section does not apply.

1002.02 DEVELOPMENT RESTRICTIONS FOLLOWING EXCESSIVE TREE REMOVAL
Excessive tree removal has not occurred in the five years preceding the date of this application. The section does not apply.

1002.03 TREES AND WOODED AREAS
No listed significant clumps or groves of trees and vegetation exist on site. Existing on-site trees are preserved where feasible and not in conflict with required R.O.W. improvements or building and site design. Site is designed to preserve trees at south property line. The standard is met.

1002.04 RIVER AND STREAM CORRIDORS
The development is inside the Metro UGB, this section does not apply.

1002.05 DEER AND ELK WINTER RANGE
The development is outside of the deer and elk winter range as identified on Comprehensive Plan Map 3-2 Scenic and Distinctive Resource Areas, this section does not apply.

1002.06 MOUNT HOOD RESOURCE PROTECTION OPEN SPACE

The development is outside of the areas shown as Resource Protection Open Space on Comprehensive Plan Maps 10-MH-1 through 10-MH-3 Resource Protection Open Space, this section does not apply.

1002.07 SIGNIFICANT NATURAL AREAS

The development is not proposed in or adjacent to any of the five significant natural areas identified on Comprehensive Plan Map 3-2 Scenic and Distinctive Resource Areas, this section does not apply.

1002.08 SIGNIFICANT LANDFORMS AND VEGETATION

No reduction to minimum front setbacks is requested with this application, this section does not apply.

1002.09 RESOURCE PROTECTION AREAS IN THE VR 4/5 AND VR 5/7 DISTRICTS

Development is not proposed within a Resource Protection Area shown on Comprehensive Plan Map 10-SV-1 Sunnyside Village Plan Land Use Plan Map, this section does not apply.

1003 HAZARDS TO SAFETY

1003.02 STANDARDS AND CRITERIA FOR MASS MOVEMENT HAZARD AREA DEVELOPMENT

Based on the State Department of Geology and Mineral Industries (DOGAMI) Bulletin 99 Geologic Hazard Map of the Lake Oswego and Gladstone Quadrangles, the site is located in a low (0-10%) severity of mass movement hazard area. This section does not apply.

1003.03 STANDARDS FOR FLOOD HAZARD AREAS

Based on the State Department of Geology and Mineral Industries (DOGAMI) Bulletin 99 Geologic Hazard Map of the Lake Oswego and Gladstone Quadrangles, the site is not located in a flood hazard area. This section does not apply.

1003.04 STANDARDS FOR SOIL HAZARD AREAS

Based on the State Department of Geology and Mineral Industries (DOGAMI) Bulletin 99 Geologic Hazard Map of the Lake Oswego and Gladstone Quadrangles, the site is not in an area with any of the following soil conditions: wet/high water table, high shrink-swell capability, compressible/organic, or shallow depth-to-bedrock. This section does not apply.

1003.05 STANDARDS FOR FIRE HAZARD AREAS

According to the Oregon CWPP Planning Tool, the site is located in a very low (0 - 0.0001000%) burn probability area. This section does not apply.

1004 HISTORIC PROTECTION

The property is not zoned Historic Landmark (HL), Historic District (HD), or Historic Corridor (HC). This section does not apply.

1005 SITE AND BUILDING DESIGN

1005.02 GENERAL SITE DESIGN STANDARDS

A. *Where feasible, cluster buildings within single and adjacent developments for efficient sharing of walkways, on-site vehicular circulation, connections to adjoining sites, parking, loading, transit-related facilities, plazas, recreation areas, and similar amenities.*
Two buildings have been located together at the east property line and share a single driveway and parking area. The standard is met.

B. *Where feasible, design the site so that so that the longest building elevations can be oriented within 20 degrees of true south in order to maximize the south-facing dimensions.*
Building 1 is designed with the long axis oriented to maximize the south-facing dimensions. This was not feasible for building 2 balancing site and parking access, and interaction with stree/pedestrian realm. **A modification is requested.**

C. *Minimum setbacks may be reduced by up to 50 percent as needed to allow improved solar access when solar panels or other active or passive solar use is incorporated into the building plan.*
Setback reduction is not required. The standard is not applicable.

D. *A continuous, interconnected on-site walkway system meeting the following standards shall be provided.*

1. *Walkways shall directly connect each building public entrance accessible to the public to the nearest sidewalk or pedestrian pathway, and to all adjacent streets, including streets that dead-end at the development or to which the development is not oriented.*
Walkways are proposed to connect all publicly accessible entrances to the nearest sidewalk at SE 92nd Ave, see proposed site plan DR.05. The standard is met.
2. *Walkways shall connect each building to outdoor activity areas including parking lots, transit stops, children's play areas, and plazas.*
Walkways are provided to connect all building outdoor activity areas, parking lots, and plazas, see proposed site plan DR.05. The standard is met.
3. *Walkways shall be illuminated. Separate lighting shall not be required if existing lighting adequately illuminates the walkway.*
Illumination is provided at all walkways, see photometric site plan DR.19. The standard is met.
4. *Walkways shall be constructed with a well-drained, hard-surfaced material or porous pavement and shall be at least five feet in unobstructed width.*
All walkways are concrete, graded as needed for drainage, and at least five feet in unobstructed width, see grading plans DR.06-08 and materials plans DR.14-15. The standard is met.
5. *Standards for walkways through vehicular areas:*
    a. *Walkways crossing driveways, parking areas, and loading areas shall be constructed to be clearly identifiable to motorists through the use of different paving material, raised elevation, warning signs, or other similar methods.*
    Walkways crossing entry drive and parking are clearly identifiable to motorists through different paving materials. The walkway at the entry drive is additionally identifiable through raised elevation. See materials plans DR.14-15. The standard is met.
    b. *Where walkways are adjacent to driveways, they shall be separated by a raised curb, bollards, landscaping, or other physical barrier.*
    Walkways adjacent to driveways are separated by a raised curb, see grading plans DR.06-08. The standard is met.
    c. *Inside the Portland Metropolitan Urban Growth Boundary (UGB), if the distance between the building public entrance and street is 75 feet or greater and located*

adjacent to a driveway or in a parking lot, the walkway shall be raised, with curbs, a minimum four-foot-wide landscape strip and shade trees planted a maximum of 30 feet on center.
Public entry at building 2 is greater than 75 feet from street and adjacent to a driveway. Walkway is raised with curbs and a four-foot-wide landscape strip with shade trees is provided, see material plan DR.15 and planting plan DR.18. The standard is met.

d. *The exclusive use of a painted crossing zone to make walkways identifiable to motorists may be used only for portions of walkways which are shorter than 30 feet and located across driveways, parking lots, or loading areas.*
Painted crossing zones are not proposed. The standard does not apply.

e. *Walkways bordering parking spaces shall be at least seven feet wide or a minimum of five feet wide when concrete bumpers, bollards, curbing, landscaping, or other similar improvements are provided which prevent parked vehicles or opening doors from obstructing the walkway.*
Walkways bordering parking spaces are protected by raised curbs and at least five feet wide, see grading plans DR.06-08. The standard is met.

6. *The interconnected onsite walkway system shall connect to walkways in adjacent developments, or stub to the adjacent property line if the adjacent land is vacant or is developed without walkways.*
   a. *Walkway stubs shall be located in consideration of topography and eventual redevelopment of the adjacent property.*

On-site walkways are not currently proposed as stubbed to adjacent properties. Stubbing a walkway to the south would be inappropriate as the property is a private residence. Stubbing walkways to the north or west would be impractical as a design for either is not yet in place. Additionally, the areas to the north and west are under the same ownership, and therefore the work to connect future walkways can be done at a future date without need for construction easements.

E. *Inside the UGB, except for industrial developments, a minimum of 50 percent of the street frontage of the development site shall have buildings located at the minimum front setback line.* Note: pre-app conference notes confirm that "for the purposes of this provision, the 'street frontage' is the C-3 zoned portion of the site."
C-3 zoned portion of the site is 391 LF, building frontage at the minimum front setback line is approximately 254 LF, or 64 percent of street frontage. See proposed site plan DR.05. The standard is met.

1. *If the minimum front setback standard is less than 20 feet, the front setback may be increased to a maximum of 20 feet provided pedestrian amenities are developed within the front setback area.*
Buildings 1 and 2 are located at the minimum front setback of 15'-0," see proposed site plan DR.05. The standard does not apply.

2. *Primary building entrances for buildings used to comply with Subsection 1005.02(E), shall:*
   a. *Face the street;*
   b. *Be located at an angle facing both the street and a parking lot; or*
   c. *Be located to the side of the building, provided that the walkway connecting to the street is a minimum of eight feet wide and is developed with landscaping and pedestrian amenities.*
   Primary entries for both buildings are located to the side of the building and connected to the street with an eight-foot-wide walkway developed with landscaping, see proposed site plan DR.05. The standard is met.

3. *If a development has frontage on more than one street, Subsection 1005.02(E) must be met on only one frontage, as follows:*
   a. *If one of the streets is a major transit street, the standard shall be met on that street.*
   b. *If neither or both are a major transit street, then the standard shall be met on the street with the higher functional classification.*
   c. *If neither 1005.02(E)(3)(a) or (b) applies, then the standard shall be met on the longest frontage.*

   Full site has area frontage on two streets, but area proposed for development only has frontage on SE 92nd Ave. The standard does not apply.

F. *Inside the UGB, parking lots larger than three acres in size shall be built with major on-site vehicular circulation ways that include raised walkways with curbs, a minimum four-foot-wide landscape strip, and shade trees planted a maximum of 30 feet on center.*

Parking lot is less than three acres in size. The standard does not apply.

G. *New retail, office, mixed use, and institutional buildings located on major transit streets shall have at least one public entrance facing a major transit street, or street intersecting a major transit street.*
   1. *A private street used to meet the standards in Subsection 1005.02(G) must have raised walking surfaces on both sides, street trees, curbs, and pedestrian-scale street lighting, and must connect at both ends to an existing or proposed street.*
   2. *If a development has frontage on more than one major transit street, this orientation requirement needs to be met on only one side.*
   3. *The public entrance orientation requirement does not apply to warehouses or industrial buildings with less than 5,000 square feet of attached offices.*

Development is not on a major transit street. The standard does not apply.

H. *New retail, office, mixed use, multifamily, and institutional buildings located at a major transit stop shall be set back a maximum of 20 feet from at least one of the following: the major transit stop, the major transit street or an intersecting street, or a pedestrian plaza at the major transit stop or a street intersection.*
   1. *For the purpose of Subsection 1005.02(H), a building is located at a major transit stop, if:*
      a. *The building is located on a lot that has frontage on the major transit street or an intersecting street; and*
      b. *Any portion of the building is within a 200-foot radius of the major transit stop.*
   2. *Lawfully established buildings that do not comply with the maximum setback standard may have additional height added as an expansion without being brought into conformance with the standard.*
   3. *The maximum setback standard does not apply to warehouses or industrial buildings with less than 5,000 square feet of attached offices.*

Development is not on a major transit stop. The standard does not apply.

I. *In the PMU District, there shall be no vehicular parking or circulation within the front setback area.*

Development is not in the PMU District. The standard does not apply.

J. *In the OC District, the design and siting of structures shall control public access points into office buildings, utilizing a central lobby design, entrance courtyard, internal pedestrian walkway or mall, or similar designs that protect business/professional uses from the disturbances of direct public access.*

Development is not in the OC District. The standard does not apply.

K. *Where a minimum floor area ratio (FAR) is required by the standards of the applicable zoning district, it shall be calculated as follows:*

C-3 zone has no minimum FAR. The standard does not apply.

1005.03 BUILDING DESIGN

A. The following standards apply to building facades visible from a public or private street or accessway and to all building facades where the primary entrance is located.

1. *Building facades shall be developed with architectural relief, variety and visual interest and shall avoid the effect of a single, long or massive wall with no relation to human size. Examples of elements that subdivide the wall: change in plane, texture, masonry pattern or color, or windows.*
   Design of both buildings uses changes in plane, material, color, and placement of windows to subdivide the façades with respect to human scale, see building elevations DR.25-26 and project images DR.34-35. The standard is met.
2. *Building facades shall have particular architectural emphasis at entrances and along sidewalks and walkways.*
   Entries and facades along sidewalks and walkways are emphasized via material and color changes, and the incorporation of weather protection (canopies and overhangs) at entries, see building elevations DR.25-26 and project images DR.34-35. The standard is met.
3. *Provide visual interest through use of articulation, placement and design of windows and entrances, building trim, detailing, ornamentation, planters, or modulating building masses.*
   Visual interest is provided via changes in plane, material, color, and placement of windows to subdivide the façades with respect to human scale, see building elevations DR.25-26 and project images DR.34-35. The standard is met.
4. *Utilize human scale, and proportion and rhythm in the design and placement of architectural features.*
   Architectural features are placed with respect to human scale by providing windows at the ground floor and incorporating weather protection (canopies or overhangs) at entries, see building elevations DR.25-26 and project images DR.34-35. The standard is met.
5. *Use architectural features which are consistent with the proposed use of the building, level and exposure to public view, exposure to natural elements, and ease of maintenance.*
   The design incorporates windows into office spaces and group rooms at ground level, as well as gable form roofs along 92nd Ave to reference residential construction in the neighborhood. A portion of the mass of building 1 uses a flat roof for ease of maintenance for the proposed rooftop solar. The standard is met.
6. *When uses between ground-level spaces and upper stories differ, provide differentiation through use of bays or balconies for upper stories, and awnings, canopies, trim, and other similar treatments for lower levels.*
   Different uses are generally expressed through the masses in building 1, where a different volume is designed for each of the three main programs – admin wing, residential treatment, and withdrawal management. Building 2 outpatient treatment is indicated via a material change at the ground floor entry on the street and from the walkway. The standard is met.

B. Requirements for building entries:

1. *Public entries shall be clearly defined, highly visible, and sheltered with an overhang or other architectural feature, with a depth of at least four feet.*
   All public entries are clearly defined with a material and color change, and an overhang or canopy of at least four feet, see building elevations DR.25-26 and project images DR.34-35. The standard is met.

2. *Commercial, mixed-use and institutional buildings sited to comply with 1005.02(E) shall have public entries that face streets and are open to the public during all business hours.*
   Buildings 1 and 2 have public entries that face 92nd Ave, see building elevations DR.25-26. The standard is met.

C. *The street-facing facade of commercial, mixed-use and institutional buildings sited to comply with 1005.02(E) shall meet the following requirements:*
   1. *Facades of buildings shall have transparent windows, display windows, entry areas, or arcades occupying a minimum of 60 percent of the first floor linear frontage.*
      The street-facing façades of buildings 1 and 2 have transparent windows of a length meeting the 60 percent requirement, see building elevations DR.25-26. The standard is met.
   2. *Transparent windows shall occupy a minimum of 40 percent of the first floor linear frontage. Such windows shall be designed and placed for viewing access by pedestrians.*
      The street-facing façades of buildings 1 and 2 have transparent windows of a length meeting the 40 percent requirement, see building elevations DR.25-26. The standard is met.
   3. *For large-format retail buildings greater than 50,000 square feet, features to enhance the pedestrian environment, other than transparent window, may be approved through design review. Such items may include, but are not limited to display cases, art, architectural features, wall articulation, landscaping, or seating, provided they are attractive to pedestrians, are built to human scale, and provide safety through informal surveillance.*
      The building is not a large-format retail building. The standard does not apply.

D. *Requirements for roof design:*
   1. *For buildings with pitched roofs:*
      a. *Eaves shall overhang at least 24 inches.*
         The building was designed with eaves that do not overhang to simplify the gable-form mass so that it could be more visually aligned with the flat roof portions of the mass. **A modification is requested.**
      b. *Roof vents shall be placed on the roof plane opposite the primary street.*
         Roof vents will be placed on the roof plane opposite the primary street where possible. The standard is met.
   2. *For buildings, other than industrial buildings, with flat roofs or without visible roof surfaces, a cornice or other architectural treatment shall be used to provide visual interest at the top of the building.*
      A minimal architectural parapet detail is proposed to maintain a simple and modern design aesthetic, see DR.32. The standard is met.

E. *Requirements for exterior building materials:*
   1. *Use architectural style, concepts, colors, materials, and other features that are compatible with the neighborhood's intended visual identity.*
      Neighboring buildings include several one and two-story single and multi-family homes, a church, and commercial spaces across 92nd Ave. Most roofs are gable-form asphalt-shingle, with one two-story building across 92nd Ave displaying a flat roof. Predominant exterior materials include vinyl and wood siding. The proposed building uses wood siding and an asphalt shingle gable-form roof on the building masses facing 92nd Ave to complement the existing neighborhood architectural style. The standard is met.

2. *Building materials shall be durable and consistent with the proposed use of the building, level and exposure to public view, exposure to natural elements, and ease of maintenance.*
   In addition to wood siding and asphalt shingle, the building exterior materials are integral-color fiber cement panel over exterior insulation, vinyl windows, and aluminum storefront. The materials are durable and low-maintenance, appropriate for a County-owned building. The standard is met.
3. *Walls shall be surfaced with brick, tile, masonry, stucco, stone or synthetic equivalent, pre-cast masonry, gypsum reinforced fiber concrete, wood lap siding, architecturally treated concrete, glass, wood, metal, or a combination of these materials.*
   Proposed exterior building materials include a combination of wood siding and fiber cement panel. The standard is met.
4. *The surfaces of metal exterior building materials that are subject to rust or corrosion shall be coated to inhibit such rust and corrosion, and the surfaces of metal exterior building materials with rust or corrosion shall be stabilized and coated to inhibit future rust and corrosion.*
   All flashing and attachment hardware will be galvanized or otherwise coated to inhibit rust and corrosion. No metal siding is proposed. The standard is met.

F. *Additional building design requirements for multifamily dwellings and middle housing, except middle housing developed pursuant to Section 845, Triplexes, Quadplexes, Townhouses, and Cottage Clusters:*
The proposal is not for multifamily dwellings or middle housing. The standard does not apply.

G. *Requirements to increase safety and surveillance:*
1. *Locate buildings and windows to maximize potential for surveillance of entryways, walkways, and parking, recreation, and laundry areas.*
2. *Provide adequate lighting for entryways, walkways, and parking, recreation, and laundry areas.*
3. *Locate parking and automobile circulation areas to permit easy police patrol.*
4. *Design landscaping to allow for surveillance opportunities.*
5. *Locate mail boxes where they are easily visible and accessible.*
6. *Limit fences, walls and, except for trees, landscaping between a parking lot and a street to a maximum of 30 inches in height.*
7. *Locate play areas for clear parental monitoring.*

Building windows from both buildings face the parking lot. Parking is located in the interior of the site but is easy accessible from the driveway off 92nd Ave. Parking area and on-site walkways will be adequately lit for visibility, and landscaping will support visibility across parking lot as well. No fences are proposed around the parking area. No play areas are proposed on site. The standards are met.

H. *Solar access requirements:*
1. *Except for uses with greater cooling needs than heating needs, such as many retail uses, concentrate window areas on the south side of buildings (within 20 degrees of due south) where there is good southern exposure.*
2. *Provide overhangs, balconies, or other shading devices to prevent excessive summer heat gains.*
3. *Use architectural features, shape of buildings, fences, natural landforms, berms, and vegetation to catch and direct summer breezes for natural cooling, and minimize effects of winter winds.*

Sleeping room windows in building 1 are all oriented south for solar exposure and views into the courtyard. Overhangs are provided at the 2nd floor patios for solar shading.

Overhanging 2nd floor along south façade of building provides shade at the ground level storefronts at dining and family visit. Building 1 is C-shaped to enclose the courtyard and minimize the effects of winter winds. Building 2 is oriented to meet frontage requirements and not solar access. The standard is met.

I. *Requirements for compatibility with the intent of the design type or with the surrounding area. For purposes of Subsection 1005.03(I), design types are Centers, Station Communities or Corridor Streets as identified on Comprehensive Plan Map IV-8, Urban Growth Concept; X-CRC-1, Clackamas Regional Center Area Design Plan, Regional Center, Corridors and Station Community; X-SC-1, Sunnyside Corridor Community Plan, Community Plan Area and Corridor Design Type Location; or X-MC-1, McLoughlin Corridor Design Plan, Design Plan Area. The intent of these design types is stated in Chapter 4 or 10 of the Comprehensive Plan.*
The Urban Growth Concept for the site is defined as 'Neighborhood' on Comprehensive Plan Map 4-8, and based on this map it is not located on a 'Corridor Street.' The site is not in any of the following: Clackamas Regional Center, Clackamas Regional Center Area, Station Community, Corridor (10-CRC-1), Sunnyside Corridor Community (10-SC-1), or McLoughlin Corridor (10-MC-1). The standard does not apply.

J. *Requirements for screening mechanical equipment:*
   1. *Rooftop mechanical equipment, except for solar energy systems, shall be screened from view by the use of parapet walls or a sight-obscuring enclosure around the equipment. The screen shall be constructed of one of the primary materials used on the primary facades, and shall be an integral part of the building's architectural design.*
      Rooftop mechanical equipment on building 1 is located on the flat roof, no part of the mechanical equipment is taller than the gable mass at 92nd Ave, and is thus screen from public view. Rooftop mechanical equipment on building 1 is located in a roof well that screens equipment from public view. See building sections DR.30-31. The standard is met.
   2. *Ground mounted mechanical equipment shall be located away from the intersection of two public streets, to the extent practicable, and shall be screened by ornamental fences, screening enclosures, or landscaping that blocks at least 80 percent of the view.*
      No ground mounted mechanical equipment is proposed. The standard does not apply.
   3. *Wall mounted mechanical equipment shall not be placed on the front of a building or on a facade that faces a street. Wall mounted mechanical equipment that extends six inches or more from the outer building wall shall be screened from view from the streets; from residential, public, and institutional properties; and from public areas of the site or adjacent sites through one of the screening techniques used in Subsection 1005.03(J)(1) or (2).*
      No wall mounted mechanical equipment is proposed. The standard does not apply.

K. *Requirements for specialized structures in industrial zoning districts:*
Development is not in an industrial district, section does not apply.

L. *Facades in the OA District: In the OA District, facades are subject to the following standards:*
Development is not in an OA District, section does not apply.

1005.04 OUTDOOR LIGHTING

A. *Outdoor lighting devices:*
   1. *Shall be architecturally integrated with the character of the associated structures, site design, and landscape.*

2. *Shall not direct light skyward.*
3. *Shall direct downward and shield light; or direct light specifically toward walls, landscape elements, or other similar features, so that light is directed within the boundaries of the subject property;*
4. *Shall be suitable for the use they serve (e.g. bollard lights along walkways, pole mounted lights for parking lots);*
5. *Shall be compatible with the scale and intensity of uses they are serving. The height of pole-mounted fixtures shall not exceed 25 feet or the height of the tallest structure onsite, whichever is less; and*
6. *At entrances, shall be glare-free. Entrance lighting may not exceed a height of 12 feet and must be directed downward.*

Site lighting has been chosen to be minimal and modern in keeping with the design aesthetic, and suitable for the use in scale and intensity. See photometric site plan DR.19 and lighting fixture cutsheets DR.20-21. The standard is met.

1005.05 ADDITIONAL REQUIREMENTS

Development shall comply with a minimum of one of the following techniques per 20,000 square feet of site area. Regardless of site size, a minimum of one and a maximum of five techniques are required. Partial site area numbers shall be rounded.

A. *Install a solar energy system in the development.*
   A solar energy system is proposed, to be mounted on the roof of building 1. The standard is met.
B. *Use passive solar heating or cooling techniques to reduce energy consumption. Examples of techniques:*
   1. *Modulate building masses to maximize solar access.*
   2. *For developments with more than one structure, locate taller structures to minimize negative impacts on solar access for the development site and adjacent sites.*
   3. *Locate buildings to maximize windbreaks.*
   4. *Locate structures and landscaping to avoid winter shading on the south side and optimize summer shading on the west and southwest sides of buildings.*
   5. *Utilize deciduous trees to provide summer shade and allow winter sun.* Y
   6. *Utilize deciduous vines on fences, trellises, and arbors to provide summer shade.* Y
   7. *Locate and form berms to protect buildings and exterior use spaces against winter winds or utilize dense evergreens or conifers to screen winter wind and protect against hostile winter elements.*
   8. *Provide skylights or clerestory windows to provide natural lighting, and/or solar heating of interior spaces.*

   Deciduous trees are retained along the south side of the site. Deciduous vines are proposed along the trellises of building 2 courtyard. Skylights are proposed in critical building 1 areas to reduce artificial light use. The standard is met.
C. *Use highly reflective (high albedo) materials on roof surfaces.*
   A high albedo TPO is proposed for the roof surface. The standard is met.
D. *Place major outdoor use areas such as plazas, playgrounds, gardens, etc. on the south side of buildings.*
   Major outdoor use proposed for this development is a courtyard for building 1, located on the south side of the building. The standard is met.
E. *Construct a minimum of 75 percent of walkway area of porous pavement.*
F. *Construct a minimum of 75 percent of all parking spaces with porous pavement.*
G. *Provide additional landscaping area at least 10 percent above the requirement for the site pursuant to Table 1009-1, Minimum Landscaped Area. For example, if the minimum*

area requirement is 20 percent, then 22 percent shall be provided. Credit shall be given for green roofs or other areas of vegetation that exceed the minimum area requirements.
Minimum landscape area in C-3 zone is 15 percent per Table 1009.1. 10 percent above minimum would be 16.5 percent. Current landscape area at 22.8 percent. The standard is exceeded.

H. *Include additional swales in development landscaping, pursuant to Section 1009, Landscaping. Credit shall be given for additional swale(s) that exceed the requirements of Subsection 1009.04(A)(2) by at least 10 percent of area. For example, if 1009.04(A)(2) requires 200 square feet of swale area, then an additional 20 square feet of swale area would be required.*
A single swale, 173'-6" long x 4' wide is required to meet the standard of 1009.03(A)(2). Two swales are provided, both 173'3" long x 5'-9" min. The standard is exceeded.

I. *Collect rainwater from roofs and/or other impervious surfaces and use it for irrigation.*

J. *Apply other techniques for onsite storm water treatment identified by the surface water management regulatory authority.*

K. *Lay out sites and locate buildings and on-site vehicular circulation to create functional open areas such as plazas, courtyards, outdoor recreation areas, mini-parks, and accessways that are open to the general public.*

L. *Enhance sidewalks and/or walkways by providing additional width, using higher quality materials; shielding from vehicular traffic with enhanced planting strips, street trees and on-street parking, and/or providing pedestrian amenities that are compatible with the design of the development as well as the neighborhood as a whole.*

M. *Coordinate development between adjacent uses to provide for a more attractive and lively streetscape, enhance connections, minimize conflicts, and provide common-use areas.*

N. *Enhance the pedestrian connection between the development and neighborhood shopping areas, nearby transit, trails, bikeways, or parks. Examples include additional width or pedestrian amenities.*

O. *Provide functional and accessible rooftop gardens.*

P. *For multifamily dwelling units that face the street, raise first floor units a minimum of two feet above street level.*

Q. *Provide structured or under-structure parking to meet all or part of the parking need.*

R. *Provide no more than the minimum number of surface parking spaces set out in Table 1015-1, Automobile Parking Space Requirements, or 1015-2, Minimum Automobile Parking Space Requirements for Dwellings, all of which shall be no greater than the minimum dimensions allowed in Subsection 1015.02(A)(2).*

S. *Lay out sites or orient structures, to maximize significant vistas.*

T. *Locate and design structures to protect scenic views or vistas from adjacent properties and public thoroughfares. Setbacks, building height, and bulk should be considered.*

U. *Utilize rail service opportunities abutting the site.*

V. *Inside the Portland Metropolitan Urban Growth Boundary (UGB), a minimum of 75 percent of the street frontage of the development site shall have buildings located at the minimum front setback line. If the minimum front setback standard is less than 20 feet, the front setback may be increased to a maximum of 20 feet provided pedestrian amenities are developed within the front setback area.*

W. *Outside the UGB, or for industrial developments, a minimum of 25 percent of the street frontage of the development site shall have buildings located at the minimum front setback line. Up to 20 feet of additional front setback area may be provided where pedestrian amenities are located.*

X. *Locate buildings at the minimum side setback line or within 10 feet of the side lot line, whichever is greater.*

1005.06 MODIFICATIONS

Modification of any standard identified in Subsections 1005.02 and 1005.03 may be approved as part of design review if the proposed modification will result in a development that achieves the purposes stated in Subsection 1005.01 as well or better than the requirement listed.

Two modifications are requested with this application:

- 1005.02(B)
  Standard: Building elevations must be oriented south
  Proposed: Building 2 long elevation is oriented E-W in order to interface with the sidewalk/public realm
- 1005.03(D)
  Standard: For buildings with pitched roofs, eaves shall overhang at least 24 inches.
  Proposed: Buildings 1 and 2 design incorporate both flat and pitched roof portions of the massing to break down the scale of the buildings. The pitched roof sections are proposed with no overhang to better tie in the detailing of those masses with the detailing of the flat roof parapet.

1006 UTILITIES, STREET LIGHTS, WATER SUPPLY, SEWAGE DISPOSAL, SURFACE WATER MANAGEMENT, AND EROSION CONTROL

Proposed utilities are underground unless prohibited by the service provider, see utility plans DR.10-11. Street improvements along SE Tolbert St are deferred until work on the open space. Preliminary statements of feasibility are included with this application. The standard is met.

1007 ROADS AND CIRCULATION

A copy of the traffic study completed for the zone change application is submitted with this application. The traffic study was sent to Abraham Tayar at ODOT following the pre-application conference, and no additional information was requested. The standard is met.

1009 LANDSCAPING

1009.01 GENERAL PROVISIONS

A. Landscaping materials shall be selected and sited to produce a hardy and low-maintenance landscaped area with an emphasis on fast-growing plants. Selection shall include consideration of soil type and depth, spacing, exposure to sun and wind, slope and contours of the subject property, building walls and overhangs, and compatibility with existing vegetation to be preserved. Notwithstanding the requirement for hardiness, annuals are permitted as provided in Subsection 1009.01(B).
The planting palette features a wide variety of plantings that are primarily either native or naturalized to the region. Plants with tolerance for varying levels of exposure were selected to allow for plant vitality across all micro-climate conditions of the proposed site, see planting plans DR16-18. The standard is met.

B. A variety of plants, intermixed throughout landscaped areas, shall be provided, as follows:

1. Evergreen and deciduous;

2. Trees, shrubs, and groundcover;

3. *Plants of varying textures;*
4. *Plants of varying widths and heights at maturity; and*
5. *Plants with seasonal color interest (e.g., foliage, flowering perennials, annuals).*

Proposed planting species were selected for both their compatibility with their location on site as well as variation in visual interest including evergreen species, texture, size, and seasonal interest. Reference DR.16 for a list of proposed species. The standard is met.

C. *The planting of invasive non-native or noxious vegetation shall be prohibited, and existing invasive non-native or noxious vegetation shall be removed.*
No invasive non-native or noxious vegetation is proposed. The standard is met.

D. *Landscaped areas shall not be used for other purposes, such as storage or display of automobiles, equipment, merchandise, or materials.*
No landscape areas proposed for use as storage or display of automobiles, equipment, merchandise, or materials. The standard is met.

E. *Landscaping of the unimproved area between a lot line and the improved portion of an adjacent road right-of-way shall be required when there are no immediate plans to develop or otherwise disturb the unimproved area, and one or more of the following apply:*
1. *The subject property is located inside the Portland Metropolitan Urban Growth Boundary;*
2. *Landscaping is necessary to present an appearance consistent with the proposed development as viewed from the road;*
3. *Landscaping is necessary to reduce dust, noise, erosion, or fire hazard; or*
4. *The road is designated as a scenic road on Comprehensive Plan Map 5-1, Scenic Roads.*

Right-of-way improvements are proposed between the lot line and adjacent road at 92nd Ave. The standard is met.

F. *Landscaping shall be used to highlight public entrances to buildings. If—due to the depth of a front setback, a required walkway, or both—there is insufficient area to permit a typical, in-ground landscaping bed between a public entrance and a front lot line, this requirement may be met with trellises, hanging baskets, or planters, any of which shall include plants.*
Landscaping is used to highlight public entrances. Shrub massings reduce in depth at locations of public entry, with generous ground cover drifts on either side of entry walks to clearly delineate doorways and public entries along the right of way. The standard is met.

G. *Where feasible, landscaping shall be required adjacent to walkways and other areas intended for pedestrian use.*
Landscape is provided next to all walkways where feasible. The standard is met.

H. *Existing significant plants, terrain, and other natural features shall be incorporated into the landscaping design and development if such features are required to be retained by other provisions of this Ordinance or if otherwise feasible.*
No significant plants, terrain, or other natural features exist on site. The standard is met.

1009.02 MINIMUM AREA STANDARDS

A. *Table 1009-1, Minimum Landscaped Area, establishes the minimum percentage of the area of the subject property that shall be landscaped.*
1. *The minimum landscaped area shall be calculated after subtracting any public dedications from the area of the subject property.*
Minimum landscaped are is 15 percent per Table 1009-1. Development area is approximately 118,275 SF not including the right-of-way, the OSM zoned space to

the north, or the future development area to the west. Proposed landscaped area is 27,912 SF, or 23.6 percent. The standard is met.

2. *Landscaping in adjacent rights-of-way shall not count toward compliance with the minimum landscaped area.*
   ROW landscaping is not counted towards compliance. The standard is met.
3. *Requirements for surface parking and loading area landscaping, screening and buffering, scenic roads landscaping, landscaping strips, and recreational areas and facilities set forth in Section 1009 apply regardless of whether compliance with those requirements results in landscaping a greater percentage of the subject property than is required by Table 1009-1.*
   Requirements for surface parking and loading landscaping, screening, and buffering is calculated separately from minimum landscape requirements.
4. *A minimum of 75 percent of the minimum landscaped area required by Table 1009-1—excluding any area occupied by pedestrian amenities, active recreational areas, or edible gardens—shall be landscaped with native or drought-tolerant plants.*
   All plant species proposed are either native or naturalized to the site's location and are adapted to the weather and climate conditions of the region. The standard is met.
   Table 1009-1: Minimum Landscaped Area
   Minimum Landscaped Area in a C-3 zoning district: 15%
   Proposed: 27,912 SF / 118,275 SF = 23.6%. The standard is met.
5. *Outdoor recreational areas required by Subsection 1009.08(A), as well as outdoor recreational areas in the MRR District, shall count toward the minimum landscaped area required by Table 1009-1, except that impervious surface area exceeding 25 percent of the outdoor recreational area shall be excluded.*
   The development is not in a listed district. The standard does not apply.
6. *Edible gardens may comprise a maximum of 10 percent of the minimum landscaped area required by Table 1009-1.*
   217.7 SF of the total 27,912 SF of planted area is made of up of edible garden plants. This is less than 1 percent of the minimum landscaped area required by Table 1009-1. The standard is met.
7. *Green roofs may comprise a maximum of 25 percent of the minimum landscaped area required by Table 1009-1.*
   No green roofs are proposed. The standard does not apply.
8. *Turf lawn may comprise a maximum of 10 percent of the minimum landscaped area required by Table 1009-1. However, this limitation shall not apply to active recreational areas, provided that no other areas of the subject property are planted in turf lawn, and it shall not apply to cemeteries.*
   No turf lawn is proposed within the development boundary. The standard does not apply.
9. *Pedestrian amenities may comprise a maximum of one-third of the minimum landscaped area required by Table 1009-1. However, no more than 15 percent of the minimum landscaped area required by Table 1009-1 and developed with pedestrian amenities shall have an impervious surface.*
   Pedestrian amenities are not included in the 27,911sf area takeoff of landscaped area. Pedestrian amenity area is not needed to meet landscape minimums. The standard does not apply.
10. *Area occupied by walls, fences, or trellises constructed to comply with Subsections 1009.03 and 1009.04 shall count toward the minimum landscaped area required by Table 1009-1.*
    Landscaped area is calculated without walls, fences, or trellises. The standard does not apply.

1009.03 SURFACE PARKING AND LOADING AREA LANDSCAPING

Surface parking and loading areas shall be landscaped as follows:

A. Surface parking areas that include more than 15 parking spaces shall comply with the following landscaping requirements:

1. Twenty-five square feet of landscaping per parking space, excluding perimeter parking spaces, shall be provided, except that the standard shall be reduced to 20 square feet for each parking space developed entirely with porous pavement.
98 parking spaces paved with asphalt are provided requiring 2,450 sf of interior parking lot landscaping as defined in section 1009.03. The proposal provides 6,336 sf of interior parking lot landscaping. The standard is met

2. One landscape swale located between two rows of parking spaces, as shown in Figure 1009-1, is required for every six rows of parking spaces, unless all parking spaces are developed entirely with porous pavement. Additional swales beyond the minimum requirement are allowed.

a. For the purpose of Subsection 1009.03(A)(2), a "row" of parking spaces is one space deep, meaning that where two spaces abut at their ends, it is considered two "rows".

b. Parking spaces separated by pedestrian or vehicle crossings perpendicular to the row of parking spaces are considered to be part of a single row.

c. The first required swale shall be developed for the entire length of the longest row of parking spaces.

d. Gaps in a required swale are permitted only to provide for pedestrian and vehicle crossings.

e. The parking lot shall be graded to allow surface water to flow into a swale. Curbs shall not separate parking spaces from the swale, and gaps between parking space tire stops are required to allow surface water to flow into a swale.
Curbs openings at low points allow water to flow through curb and into swale.

f. Swales shall be a minimum of four feet wide.

g. If the front portions of parking spaces are landscaped as allowed by Subsection 1015.02(A)(10), the landscaped portion of the parking space shall be adjacent and in addition to the swale, as shown in Figure 1009-1.

h. Turf lawn is prohibited in swales.
6 rows of parking are proposed, thus one swale is required. Required swale is 179'-6" long x 4' wide. Two swales are provided, both 173'-6" long x 5'-9" min. No turf lawn is proposed in swales. The standard is met.

3. Interior landscaping not developed as swales pursuant to Subsection 1009.03(A)(2) shall comply with the following standards:

a. It shall be arranged in areas at the ends of rows of parking or between parking spaces within rows of parking. See Figure 1009-2.

b. It may join perimeter landscaping as long as the interior landscape area extends at least four feet into the parking area from the perimeter landscape line. See Figure 1009-2.

c. Landscaping that abuts, but does not extend into, the parking area may be included as interior landscaping if all of the following are met:

i. The abutting landscaped area must be in addition to required perimeter landscaping;

ii. Only the first 10 feet of the abutting landscaped area, measured from the edge of the parking area, may be included as interior landscaping; and

iii. The landscaped area is not abutting and parallel to required perimeter landscaping. See Figure 1009-2.

d. The interior length and width of landscaped areas shall be a minimum of four feet.

All interior parking lot landscaping is developed as swales. The standard does not apply.

4. Interior landscaped areas, including swales, shall include a minimum of one tree located every eight interior parking spaces, or fraction thereof, except in the OA, VA, VCS, and VO Districts, where a minimum of one tree shall be located every six interior parking spaces.

a. Where necessary to accommodate other design considerations, variable spacing of the trees required by Subsection 1009.03(A)(4) is allowed, but in no case shall there be less than one tree planted in every 12 parking spaces.

b. The species of trees required shall be determined on the basis of the growth habit and the need to provide maximum shading of surface parking areas.

For 98 parking spaces, the standard requires 13 trees. 25 trees are proposed in the interior landscaped areas, exceeding this standard. The standard is met.

B. Perimeter landscaping requirements for surface parking and loading areas adjacent to abutting lots or rights-of-way are as follows:

1. A landscaping strip with a minimum width of five feet shall be provided adjacent to the perimeter of the surface parking or loading area, except:

a. In the OA, VA, VCS, and VO Districts, the minimum width shall be 10 feet;

b. In the BP and LI Districts, the minimum width shall be 15 feet abutting a front lot line; and

c. In the GI District, the minimum width shall be 10 feet abutting a front lot line.

2. The required landscaping strips shall comply with the following standards:

a. Sufficient low shrubs shall be planted to form a continuous screen three feet high and 95 percent opaque, year-round; or a three-foot-high masonry wall or berm may be substituted for the shrubs. When applied along front lot lines, the screen or wall is to be placed along the interior side of the landscaping strip and shall be 30 inches high instead of three feet high.

b. In addition, one tree is required for every 30 linear feet of landscaping strip, or as otherwise required to provide a tree canopy over the landscaping strip.

c. Ground cover plants must fully cover the remainder of the landscaped area.

3. A perimeter landscape strip is not required for a surface parking or loading area adjacent to an abutting lot if one or more interior driveways connect the two lots and if the abutting lot also is developed with a surface parking or loading area adjacent to the shared lot line.

4. Required walkways may cross perimeter landscaping strips.

Landscaping strips with a minimum width of five feet and meeting the stated landscape requirements are proposed along the north and west development boundaries, see planting plans DR.16-18. The standard is met.

1009.04 SCREENING AND BUFFERING

A. Screening shall be used to eliminate or reduce the visual impacts of the following:

1. Service areas and facilities, such as loading areas and receptacles for solid waste or recyclable materials;

2. Storage areas;

3. Ground-mounted rainwater collection facilities with a storage capacity of more than 100 gallons;

4. *Parking lots within or adjacent to an Urban Low Density Residential, VR-5/7, VR-4/5, RA-1, RA-2, RR, RRFF-5, FF-10, FU-10, or HR District; and*
5. *Any other area or use, as required by this Ordinance.*

B. *Screening shall be accomplished by the use of sight-obscuring evergreen plantings, vegetated earth berms, masonry walls, sight-obscuring fences, proper siting of disruptive elements, building placement, or other design techniques.*

C. *Screening shall be required to substantially block any view of material or equipment from any point located on a street or accessway adjacent to the subject property. Screening from walkways is required only for receptacles for solid waste or recyclable materials. A sight-obscuring fence at least six feet in height and up to a maximum of 10 feet in height shall be required around the material or equipment.*
A 7' sight obscuring fence is provided around service areas and facilities at the SE of the site as well as at the building 2 Trash Enclosure at the north of the site, see DR.30 enlargements. The standard is met.

D. *Buffering shall be used to mitigate adverse visual impacts, dust, noise, or pollution, and to provide for compatibility between dissimilar adjoining uses. Special consideration shall be given to buffering between residential uses and commercial or industrial uses, and in visually sensitive areas.*

E. *Buffering shall be accomplished by one of the following:*
1. *A landscaping strip with a minimum width of 15 feet and planted with:*
   a. *A minimum of one row of deciduous and evergreen trees staggered and spaced a maximum of 30 feet apart;*
   b. *A perennial, evergreen planting with sufficient foliage to obscure vision and which will grow to form a continuous hedge a minimum of six feet in height within two years of planting; and*
   c. *Low-growing evergreen shrubs and evergreen ground cover covering the balance of the area;*
2. *A berm with a minimum width of ten feet, a maximum slope of 40 percent on the side away from the area screened from view, and planted with:*
   a. *A perennial, evergreen planting with sufficient foliage to obscure vision and which will grow to form a continuous hedge within two years of planting. The minimum combined height of the berm and planting shall be six feet; and*
   b. *Low-growing evergreen shrubs and evergreen ground cover covering the balance of the area;*
3. *A landscaping strip with a minimum width of five feet and including:*
   a. *A masonry wall or sight-obscuring fence a minimum of six feet in height. The wall or fence is to be placed along the interior side of the landscaping strip;*
   b. *Evergreen vines, evergreen trees, or evergreen shrubs, any of which shall be spaced not more than five feet apart; and*
   c. *Low-growing evergreen shrubs and evergreen ground cover covering the balance of the area; or*
4. *Another method that provides an adequate buffer considering the nature of the impacts to be mitigated.*

F. *Required walkways shall be accommodated, even if such accommodation necessitates a gap in required screening or buffering.*
A 7' sight obscuring fence is provided along the South edge of the site where it abuts high density residential use lots. The fenceline sits within a 5' landscaped buffer that includes numerous existing established trees and shrubs which are to be preserved. The standard is met.

1009.05 SCENIC ROADS

In the RA-1, RA-2, RRFF-5, FF-10, FU-10, MRR, and HR Districts, buildings in developments adjacent to roads designated as scenic roads on Comprehensive Plan Map 5-1, Scenic Roads, shall be set back a sufficient distance from the right-of-way to permit a landscaped or natural buffer zone.

Project is not within a RA-1, RA-2, RRFF-5, FF-10, FU-10, MRR, and HR District. The standard does not apply.

1009.06 LANDSCAPING STRIPS

A. *In the BP and LI Districts, a landscaping strip a minimum of 15 feet wide shall be provided abutting front lot lines.*
   Project is not within a BP or LI District. The standard does not apply.
B. *In the GI District, a landscaping strip a minimum of 10 feet wide shall be provided abutting front lot lines.*
   Project is not within a GI District. The standard does not apply.
C. *In all other zoning districts, except SCMU, a landscaping strip a minimum of five feet wide shall be provided abutting front lot lines. (See Subsection 1005.09(L) for additional SCMU landscaping requirements.)*
   1. *This requirement will be waived or reduced in the NC, PMU, and VCS Districts, which are districts that have no minimum front setback standard, to the extent necessary to accommodate a building with a front setback of less than five feet.*
   2. *If—due to the depth of a front setback and the need to accommodate a required walkway, required pedestrian amenities, or both—there is insufficient area to permit a five-foot-wide landscaping strip, the landscaping strip may be reduced in width or the landscaping requirement may be met with a linear arrangement of trellises, hanging baskets, or planters, any of which shall include plants.*

   A five-foot-wide landscape strip is provided at the front lot line. The standard is met.

1009.07 FENCES AND WALLS

A. *Fences and walls shall be of a material, color, and design complementary to the development.*
   Proposed fences are stained wood to match the building. The standard is met.
B. *In the BP and LI Districts, the minimum front setback for fences and walls is 15 feet.*
   Project is not within a BP or LI District. The standard does not apply.
C. *In the GI District, the minimum front setback for fences and walls is 10 feet.*
   Project is not within a GI District. The standard does not apply.

1009.08 RECREATIONAL AREAS AND FACILITIES

A. *An outdoor recreational area shall be provided in developments of duplexes, triplexes, quadplexes, or multifamily dwellings in the MR-1, MR-2, and HDR Districts, and in developments of triplexes, quadplexes, or multifamily dwellings, including mixed-use developments that include these uses, in the SCMU District, as follows:*
   1. *A minimum of 200 square feet of usable outdoor recreational space per dwelling unit shall be provided for studio, one- bedroom, and two-bedroom units. The minimum shall be increased to 300 square feet per dwelling unit for units with three or more bedrooms. However, in the SCMU District:*
      a. *The requirement shall apply only to the first 20 dwelling units per acre, or prorated equivalent thereof; and*
      b. *The amount of required outdoor recreational area may be reduced, to the minimum extent necessary, if—when combined with the minimum landscaping*

requirements of Subsections 1005.09(L), 1009.03, and 1009.04—full compliance would result in landscaping more than 15 percent of the lot.

2. *Outdoor recreational areas may be designed for passive or active recreation, including edible gardening.*
3. *Outdoor recreational areas shall be designed for adequate surveillance opportunities.*
4. *Outdoor recreational areas shall be conveniently located and accessible to all dwelling units.*

Development is not a duplex, triplex, quadplex, or multifamily dwelling in the MR-1, MR-2, HDR, or SCMU District. The standard does not apply.

B. *In the SHD and RCHDR Districts, a residential development shall provide at least one of the following recreational facilities for the first 60 dwelling units, or portion thereof, and at least one additional facility for every additional 120 dwelling units, or portion thereof.*
   1. *An 800-square-foot or larger heated swimming pool;*
   2. *A minimum 1,000-square-foot exercise room with exercise equipment and mats;*
   3. *Two handball/racquetball courts;*
   4. *Whirlpool and sauna or steam bath rooms;*
   5. *Minimum 1,200-square-foot game room with pool and ping pong tables, folding tables and chairs, and kitchenette;*
   6. *An 800-square-foot shop equipped with hand tools, work benches, storage shelves, lockers,and ventilation;*
   7. *A 400-square-foot greenhouse with all-season solar exposure, equipped with benches, water, ventilation, summer shading materials, and storage areas for pots, tools, potting soil, fertilizers, etc;*
   8. *3,000 square feet of hard-surface play area, such as a tennis court, basketball court, or roller-skating area;*
   9. *4,200 square feet of soft surface play area with equipment provided for lawn games such as volleyball, badminton, croquet, and horseshoes; and*
   10. *Any other similar facility.*

   Project is not in the SHD or RCHDR District. The standard does not apply.

1009.09 EROSION CONTROL

A. *Graded areas shall be re-vegetated with suitable plants to ensure erosion control.*
   Entire site shall be re-vegetated where disturbed to ensure erosion control, see planting plans DR.16-19. The standard is met.

B. *Netting shall be provided, where necessary, on sloped areas while ground cover is being established.*
   The site does not contain sloped areas, netting is not necessary. The standard does not apply.

1009.10 PLANTING AND MAINTENANCE

A. *Impervious weed barriers (e.g, plastic sheeting) are prohibited.*
   Weed barriers are not proposed at planting areas. The standard is met.

B. *Plants shall not cause a hazard. Plants over walkways, sidewalks, pedestrian pathways, and seating areas shall be pruned to maintain a minimum of eight feet below the lowest hanging branches. Plants over streets, bikeways, accessways, and other vehicular use areas shall be pruned to maintain a minimum of 15 feet below the lowest hanging branches.*
   Plants will be maintained by property owner. The standard does not apply to this review.

C. *Plants shall be of a type that, at maturity, typically does not interfere with above- or below-ground utilities or paved surfaces.*

Plantings are located in a manner that considers and mitigates any potential future conflicts with utilities based on the utility depth and clearance requirements.

D. *Plants shall be installed to current nursery industry standards.*
Plants will be installed by contractor team to current nursery industry standards. The standard does not apply to this review.

E. *Plants shall be properly guyed and staked to current nursery industry standards as necessary. Stakes and guys shall not interfere with vehicular or pedestrian traffic, shall be loosened as needed to prevent girdling of trunks, and shall be removed as soon as sufficient trunk strength develops, typically one year after planting.*
(2) 2" dia. 8' length tree stakes are proposed at each tree planting location and are to be removed after establishment period.

F. *Landscaping materials shall be guaranteed for a period of one year from the date of installation. The developer shall either submit a signed maintenance contract for the one-year period or provide a performance surety pursuant to Section 1311, Completion of Improvements, Sureties, and Maintenance, covering the landscape maintenance costs for the one-year period.*
A minimum warranty period of 1 year from project closeout is included in the specification requirements. The standard is met.

G. *Plants shall be suited to the conditions under which they will be growing. As an example, plants to be grown in exposed, windy areas that will not be irrigated shall be sufficiently hardy to thrive under these conditions. Plants shall have vigorous root systems, and be sound, healthy, and free from defects and diseases.*
Proposed plantings include species well suited to the specific microclimates in which they are located. The standard is met.

H. *When planted, deciduous trees shall be fully branched, have a minimum caliper of two inches, and have a minimum height of eight feet.*
Proposed trees will be fully branched, high vigor plant stock only. All proposed deciduous trees are a minimum of 2" cal.

I. *When planted, evergreen trees shall be fully branched, have a minimum height of eight feet, and have only one leader.*
Proposed trees will be fully branched, high vigor plant stock only. All proposed evergreen trees are a minimum of 8' ht and 2" cal.

J. *Shrubs shall be supplied in minimum one-gallon containers or eight-inch burlap balls with a minimum spread of 12 inches.*
All proposed shrubs have a minimum size of 1 gal. containers.

K. *Ground cover shall be planted a maximum of 30 inches on center with a maximum of 30 inches between rows. Rows of plants shall be staggered. Ground cover shall be supplied in minimum four-inch containers, except that the minimum shall be reduced to two and one-quarter inches or equivalent if the ground cover is planted a minimum of 18 inches on center.*
Ground covers shall be installed with triangular planting with spacing under 30" O.C. for all proposed species, with a minimum size of 4" flats. The standard is met.

L. *Plants shall be spaced so that ground coverage three years after planting is expected to be 90 percent, except where pedestrian amenities, rainwater collection systems, or outdoor recreational areas count as landscaping pursuant to Subsection 1009.02. Areas under tree drip lines count as ground coverage.*
All proposed planting complies with the minimum size requirements and spacing is intended to result in full coverage within a period of 3 years

M. *Irrigation of plants shall be required, except in wooded areas, wetlands, and in river and stream buffers. The irrigation system shall be automatic, except that hose bibs and*

manually operated methods of irrigation may be permitted in small landscaped areas close to buildings. Automatic irrigation systems are subject to the following standards:

1. *An automatic irrigation controller shall be required for irrigation scheduling.*
2. *The system shall be designed to prevent runoff, low head drainage, overspray, or other similar conditions where irrigation water flows onto non-targeted areas, such as adjacent property, non-irrigated areas, hardscapes, roadways, or structures.*
3. *In mulched planting areas, the use of low volume irrigation is required to maximize water infiltration into the root zone.*
4. *Narrow or irregularly shaped areas, including turf lawn, less than eight feet in width in any direction shall be irrigated with subsurface or low volume irrigation.*
5. *Overhead sprinkler irrigation is prohibited within two feet of any impervious surface unless:*
   a. *The landscaped area is adjacent to permeable surfacing and no runoff occurs; or*
   b. *The adjacent impervious surfaces are designed and constructed to drain entirely to landscaping; or*
   c. *The irrigation designer specifies an alternative design or technology that complies with Subsection 1009.10(M)(2).*

All planting areas are to be fully irrigated with a combination of drip (where appropriate) and micro spray irrigation. The controller will be a smart controller working in conjunction with a rain and sola sensor.

N. *Appropriate methods of plant care and landscaping maintenance shall be provided by the property owner. Pruning shall be done to current nursery industry standards.*
Plants will be maintained by property owner. The standard does not apply to this review.

O. *Plants shall be protected from damage due to heavy foot traffic or vehicular traffic by protective tree grates, pavers, or other suitable methods.*
No planting is present in areas of heavy foot or vehicular traffic, heavy circulation routes around the site are paved with concrete or pavers.

1010 SIGNS

1010.02 GENERAL PROVISIONS

A. *Permits Required: If a sign other than one named in Subsection 1010.03 is to be placed, constructed, erected, or modified, a sign permit shall be secured.*
Sign permits will be required for signs at buildings 1 and 2, as well as a freestanding monument sign on site. The standard is met.

B. *Along State Highways: All off-premises signs which are visible from a state highway are subject to approval by the Oregon State Highway Division pursuant to the Oregon Motorists Information Act.*
Signage will not be visible from state highways. The standard does not apply.

C. *Oregon State Structural Specialty Code Compliance: All signs shall comply with the applicable provisions of the Oregon State Structural Specialty Code, except as otherwise provided in Section 1010.*
Signage will comply with applicable provisions of the OSSC. The standard is met.

D. *Address Display: The signing program for a multifamily, commercial, or industrial development shall include the display of the street number(s) for the development on the sign or building where it can be seen from adjacent roads and meet fire district standards.*
Addresses will be displayed at all primary entrances. The standard is met.

E. *Sign Clearances: A minimum of eight feet above sidewalks and 15 feet above driveways shall be provided under freestanding and projecting signs.*

No signs are proposed above sidewalks or driveways. The standard is met.

F. *Sight Distance: All signs shall comply with the intersection sight distance standards of the Department of Transportation and Development.*
Proposed freestanding sign complies with the ODOT Intersection Sight Distance standards. The standard is met.

G. *Setbacks: Unless otherwise specified, all signs shall observe the yard setback requirements of the zoning districts in which they are located.*
Monument sign currently in front setback for visibility. It is located behind the property line in conformance with 1010.09(A)(4). The standard is met.

H. *Blanketing: No sign shall be situated in a manner which results in the visual obstruction from an adjoining roadway or pedestrian way of an existing sign on adjacent property.*
Proposed signs do not visually obstruct existing signs. The standard is met.

I. *Illuminated Signs:*
   1. *Internally illuminated signs, or external lights used to illuminate signs, shall be placed, shielded, or deflected so they do not shine into dwellings or impair the vision of the driver of any vehicle.*
   2. *The light intensity of an illuminated sign shall conform to or be less than the accepted standards of the sign industry, as provided by the Oregon Electric Sign Association.*
   3. *Except for an electronic message center sign approved pursuant to Subsection 1010.14, no sign or illuminating devices shall have blinking, flashing, or fluttering lights.*

   Proposed signs will be internally illuminated in compliance with the Oregon Electric Sign Association. No electronic message center signs, or illuminating devices with blinking, flashing, or fluttering lights are proposed. The standard will be met, to be verified at time of signage permit.

J. *Signs or displays containing any electrical components or parts or illuminated by electrical lighting must be approved under the National Electrical Code as modified by the State of Oregon Rules and Regulations. Lights and illuminated signs requiring an outside power source shall use a state-approved power outlet.*
The standard will be met, to be verified at time of signage permit.

K. *Moving Signs: No sign, sign structure, or portion thereof, except flags (as per Subsection 1010.12) and temporary displays (as per Subsection 1010.13(B)) shall be designed to rotate, flutter, or appear to move.*
Proposed signs will not be designed to move. The standard is met.

L. *Maintenance: All signs, together with all of their supports, braces, guys, and anchors, shall be maintained in a safe condition, in compliance with all building and electrical codes, and in conformance with Section 1010, at all times.*
Proposed signs will be maintained with the buildings. The standard is met.

M. *Preexisting Signs: Notwithstanding Section 1206, signs and sign structures existing prior to September 12, 1996, which complied with applicable regulations existing when the sign was established, but which do not comply with one or more of the requirements of Section 1010 shall be subject to the following provisions:*
   1. *Alterations to a nonconforming sign which reduce or do not increase its noncompliance with the provisions of this Ordinance, including changes in display surface, sign areas, height, and setback, may be allowed subject to review under Subsection 1010.05, and*
   2. *Failure to use the copy area of a nonconforming sign for purposes permitted under Section 1010 for a period of more than 12 consecutive months shall constitute a "discontinuation of use" as provided under Subsection 1206.02 and such sign shall*

be removed or modified to satisfy all applicable requirements of Section 1010 and the underlying zoning district.

No preexisting signs on site are proposed for retention. The section does not apply.

N. *Hazards: No sign, light, electrical cord, streamer, flag, or other apparatus shall be situated or used in a manner which creates a hazard.*
Proposed signs will not create a hazard. The standard is met.

O. *Sign Structure: When visible, the supporting structure of the sign shall be incorporated into the overall sign design, and shall be in scale with the sign.*
Sign structure will be incorporated into the sign design. The standard is met.

1010.04 PROHIBITED SIGNS

The following signs and sign characteristics are prohibited:

A. *Temporary signs, except as provided by Subsection 1010.13;*
B. *Portable signs, except as provided by Subsection 1010.07(A)(2)(d), 1010.09(C)(2), or 1010.13;*
C. *Animated signs, except as provided by Subsection 1010.14;*
D. *Roof signs, except integral roof signs in Commercial and Industrial zoning districts;*
E. *Signs that obstruct free and clear vision of a traffic sign or signal from intended users, or otherwise constitute a traffic impediment;*
F. *Signs imitating or resembling official traffic signs or signals;*
G. *Any sign imitating or resembling an official county street or road sign, unless the sign is approved pursuant to Chapter 7.05, Addressing and Road Naming, of the Clackamas County Code;*
H. *Colored lights which might in any way be confused with or construed to be traffic signals or lights on emergency vehicles;*
I. *Strobe lights and signs containing strobe lights;*
J. *Any sign that emits sound, odor, or visible matter; and*
K. *Multiple reader signs designed to be read as a continued statement.*

No prohibited signs are proposed.

1010.09 COMMERCIAL SIGNS IN COMMERCIAL AND INDUSTRIAL DISTRICTS

A. *Commercial Freestanding Signs:*
   1. *Number: Only one sign shall be allowed for a development or complex, even when more than one tax lot or ownership is included in the development, unless through design review pursuant to Section 1102, the following is determined:*
      a. *An additional sign is needed to provide identification of the development at major public access points located on two different public roads, and/or*
      b. *When two single-faced signs oriented in two different directions are proposed in lieu of a two-sided identification sign.*
      c. *In mixed use developments a separate freestanding sign, not to exceed 32 square feet, may be allowed for the multifamily portion of the development.*
      d. *In the case of signs permitted under Subsection 1010.09(A)(1)(a) or (b), neither sign shall exceed the maximum sign size allowed.*
      e. *In the C-3 and RTL Districts, one additional freestanding sign may be allowed on a public, county, or state road when the frontage on that road exceeds 450 feet. In no case shall the number of freestanding signs exceed four for any development. The additional signs shall be a maximum of 60 square feet. This provision for an additional freestanding sign shall not allow an additional sign on any site located on a corner which qualifies for an additional sign by reason of that corner location under Subsection 1010.09(A)(1)(a).*

f. In the BP, LI, and GI Districts, one sign oriented toward offsite traffic may be provided at each public access point from a county or state road.

A single freestanding sign is proposed. The standard is met.

2. *Maximum top-of-sign height:*
   a. *Pole signs: In C-3 and RTL Districts, 25 feet. In all other commercial zoning districts, 20 feet.*
   b. *Monument signs: In all commercial zoning districts, six feet. In all industrial zoning districts, five feet.*

   Proposed freestanding sign is 3-ft tall. The standard is met.
3. *Maximum Sign Area: 60 square feet. Signs may be two sided. For developments of more than one use included on the same site, a sign area may be increased above this requirement an additional 10 square feet per tenant, up to a maximum of 200 square feet, subject to Subsection 1010.05. Additionally, multiple-tenant signs shall use a common background.*

   Proposed freestanding sign is two-sided and 24 SF. The standard is met.
4. *Setbacks: Behind property line.*

   Proposed freestanding sign is behind the property line. The standard is met.
5. *The sign supporting structure shall not be counted for purposes of determining sign area.*

   Supporting structure shall not be counted to meet the monument sign area. The standard is met.
6. *Illumination: Such signs may be internally or externally illuminated, subject to Subsection 1010.02(I).*

   Proposed freestanding sign is internally illuminated in compliance with Subsection 1010.02. The standard is met.

B. *Commercial Building Signs:*
   1. *Number: The maximum sign area may be distributed among any number of signs.*
   2. *Maximum size:*
      a. *If there is not a freestanding sign on the same site frontage, then one and one-half square feet of sign area per linear footage of the occupant's primary building wall.*
      b. *If there is a freestanding sign on the same site frontage, then one square foot of sign area per linear footage of the occupant's primary building wall.*
      c. *Wall signs based on the sign rights of a primary building wall may be placed on a secondary building wall; they may not be placed onto another primary building wall.*
      d. *Each tenant shall be allowed a minimum 32 square feet of building sign area.*
      e. *In no case shall a building sign exceed 200 square feet.*

      There is a freestanding sign on the primary site frontage, so one square foot of sign area per linear foot is allowed. Assuming linear foot to be calculated based on the primary building frontage along 92nd Ave, building 1 is allowed 83 SF of building signage, and building 2 is allowed 169 SF of building signage. Signs will be placed on primary and secondary building walls. Proposed signs do not exceed allowable SF, see building elevations DR.25-26.
   4. *Design: Building signs shall be incorporated into the design of the building, and shall not be placed in locations which interrupt, detract from, or change the architectural lines of the building.*

      Building signage will be located at main entrances and will align with architectural features. The standard is met.
   5. *Illumination: Building signs may be internally or externally illuminated, subject to Subsection 1010.02(I).*

Building signage will be internally illuminated in compliance with Subsection 1010.02(I). The standard is met.

C. *Mobile Vending Unit Signs:*
No mobile vending unit signs are proposed. The section does not apply.

D. *Drive-Thru Signs: In addition to signage permitted by Subsections 1010.09(A) or (B), drive-thru window services approved pursuant to Section 827, Drive-Thru Window Services, may have any number of drive-thru signs, of any total area.*
No drive-thru signs are proposed. The section does not apply.

1010.12 FLAGS

Flags are allowed in all zoning districts and, except for drive-thru signs, are subject to the following:

A. *Number: Three flags per site.*
B. *Maximum size: No flag shall exceed 40 square feet.*
C. *Height: Top of pole supporting flag shall not exceed 35 feet above finished ground elevation (not including berms or mounds specifically created for the sign).*
D. *All flags shall be located on one pole.*

No flags are proposed on site. The section does not apply.

1015 PARKING AND LOADING

1015.01 GENERAL STANDARDS

A. *Inside the Portland Metropolitan Urban Growth Boundary (UGB), parking, loading, and maneuvering areas shall be hard-surfaced, unless a permeable surface is required for surface water management pursuant to the regulations of the surface water management authority or in order to comply with Subsection 1006.06.*
Parking areas are hard-surfaced in either concrete or asphalt paving, see materials plans DR.13-15. The standard is met.

B. *Outside the UGB, areas used for parking, loading, and maneuvering of vehicles shall be surfaced with screened gravel or better, and shall provide for suitable drainage.*
The site is within the UGB. The standard does not apply.

C. *Parking and loading requirements for uses and structures not specifically listed in Tables 1015-1, Automobile Parking Space Requirements; 1015-2, Minimum Automobile Parking Space Requirements for Dwellings; 1015-3, Minimum Required Bicycle Parking Spaces; and 1015-4, Minimum Required Off-Street Loading Berths shall be subject to the requirements for the most similar use.*
Per our pre-app conference notes, "the Climate Friendly and Equitable Communities (CFEC) rules are in effect pursuant to OAR 660, Division 12. Per OAR 660-012-0400 through OAR 660-012-0450, a minimum number of off-street vehicular parking spaces cannot be required for any development that is within the Urban Growth Boundary and is served by an urban water and sanitary service. This property is eligible to follow the CFEC rules; therefore, no minimum vehicle parking is required." The standard does not apply.

D. *Motor vehicle parking, bicycle parking, and loading areas shall be separated from one another.*
Motor vehicle parking, bicycle parking, and loading areas are separated from one another, see proposed site plan DR.05. The standard is met.

E. *Required parking spaces and loading berths shall not be:*

a. *Rented, leased, or assigned to any other person or organization, except as provided for under Subsection 1015.02(D)(3)(a) for shared parking or Subsection 1015.04(C) for shared loading berths.*
b. *Used for storing or accumulating goods or storing a commercial or recreational vehicle, camper, or boat, rendering the space(s) useless for parking or loading operations.*
c. *Occupied by the conducting of any business activity, except for permitted temporary uses (e.g., farmers' markets).*

Parking spaces and loading berths are not proposed to be rented, leased, used for storing good, or occupied for the conducting of business activities. The standard is met.

1015.02 MOTOR VEHICLE PARKING AREA STANDARDS

A. *Off-street parking areas shall be designed to meet the following requirements:*
1. *Off-street motor vehicle parking areas shall be provided in defined areas of the subject property. No area shall be considered a parking space unless it can be shown that the area is accessible and usable for that purpose and has required maneuvering area for vehicles. Required backing and maneuvering areas shall be located entirely onsite.*
Parking is located in defined areas with required backing and maneuvering. The standard is met.
2. *Automobile parking spaces shall be a minimum of 8.5 feet wide and 16 feet long, except that parallel spaces shall be a minimum of 8.5 feet wide and 22 feet long.*
All automobile parking spaces meet the minimum dimensional requirements. The standard is met.
3. *A minimum of 25 percent of required parking spaces shall be no larger than 8.5 feet wide and 16 feet long.*
52 of 98, or approximately 53 percent parking stalls are no larger than 8.5 by 16 feet. The standard is met.
4. *Parking areas shall comply with minimum dimensions for curb length, stall depth, and aisle width established by the Clackamas County Roadway Standards; these dimensions are based on the orientation (e.g., 45-degree, 90-degree), length, and width of the spaces.*
Parking areas comply with Clackamas County Roadway Standards. The standard is met.
5. *Double-loaded, 90-degree angle parking bays shall be utilized where possible.*
Double-loaded, 90-degree angle parking bays are provided. The standard is met.
6. A minimum of one parking space or five percent of the required spaces, whichever is greater, shall be marked and signed for use as carpool/vanpool spaces. These spaces shall be the closest employee automobile parking spaces to the building entrances normally used by employees, but shall not take priority over any spaces required for individuals with disabilities.
Five van parking stalls are provided as shown on proposed site plan DR.05.
7. *In parking lots greater than one acre, major onsite circulation drive aisles and lanes crossing to adjacent developments shall not have parking spaces accessing directly onto them.*
The parking lot has a main drive aisle along the south off which no parking is accessed directly. The standard is met.
8. *Where feasible, shared driveway entrances, shared parking and maneuvering areas, and interior driveways between adjacent parking lots shall be required.*
The parking is shared between both buildings. The standard is met.

9. Except for parallel spaces, parking spaces heading into landscaped areas or along the perimeter of a parking lot shall be provided with a sturdy tire stop at least four inches high and located two feet within the space to prevent any portion of a car within the lot from extending over the property line.
   No parking is adjacent to any property line and parking spaces heading into landscaped areas are protected by a 6" curb. The standard does not apply.
10. For parking spaces heading into a landscaped area, the area in front of the tire stop that is included in the parking space dimension may be landscaped instead of paved or graveled according to the following standards:
    a. Landscaping shall be ground cover plants only;
    b. The area in front of the tire stop that is included in the parking space dimension shall be in addition to the required minimum dimension for a landscape planter; and
    c. The landscaped area in front of the tire stop may count toward overall site landscaping requirements established in Table 1009-1, Minimum Landscaped Area. However, it may not count toward perimeter landscaping requirements established in Section 1009.03(B)(1).

    The condition is not proposed. The standard does not apply.

B. Parking Minimums: The minimum number of parking spaces listed in Tables 1015-1, Automobile Parking Space Requirements, and 1015-2, Minimum Automobile Parking Space Requirements for Dwellings, applies unless modified in Subsection 1015.02(D).
There is no minimum requirement. The standard does not apply.

C. Parking Maximums:
1. Within the UGB, the parking maximums listed for Urban Zone A in Table 1015-1 and Note 4 of Table 1015-2 apply when an area has 20-minute peak hour transit service within one-quarter mile walking distance for bus transit or one-half mile walking distance for light rail transit.
2. Within the UGB, areas not meeting the requirements of Subsection 1015.02(C)(1), are subject to the parking maximums listed in Table 1015-1, Urban Zone B.
3. In case of expansion of a building or use with more parking spaces than the maximum allowed by Table 1015-1:
a. Existing parking spaces may be retained, replaced, or eliminated, provided that after the expansion, the total number of remaining spaces complies with the minimum parking space requirement of Table 1015-1 for the entire development; and
b. Additional parking spaces are allowed only if required to comply with the minimum parking space requirement of Table 1015-1 for the entire development after the expansion.

Per our pre-application conference notes, "vehicle parking maximums apply pursuant to OAR 660-012-0415 which limits parking to five spaces per 1,000 square feet of floor area of all commercial and retail uses. However, there is no limit to the number of parking spaces provided for residential uses. Since this is a mixed-use development with a shared/common parking lot for all uses, there is no reasonable way for staff to implement the maximum parking rule. Therefore, maximum parking will not be reviewed." The standard does not apply.

1015.03 BICYCLE PARKING STANDARDS

A. Bicycle parking areas shall meet the following on-site locational requirements:
1. Bicycle parking racks shall be located in proximity to an entrance but shall not conflict with pedestrian needs.

2. *At least 75 percent of the bicycle parking spaces shall be located within 50 feet of a public entrance to the building.*
3. *Bicycle parking may be provided within a building, if the location is easily accessible for bicycles.*
4. *Bicycle parking for multiple uses, or a facility with multiple structures, may be clustered in one or several locations within 50 feet of each building's entrance.*
5. *If the bicycle parking is not easily visible from the street or main building entrance, then a sign must be posted near the building entrance indicating the location of the parking facilities.*

All bike parking is located within 50 ft of a public entrance, see proposed site plan DR.05. The standard is met.

B. *Bicycle parking shall be designed to meet the following requirements:*
   1. *When more than seven bicycle parking spaces are required, a minimum of 50 percent of the spaces shall be covered. All of the required bicycle spaces for schools, park-and-ride lots, congregate housing facilities, quadplexes, and multifamily dwellings shall be covered.*
   2. *Cover for bicycle parking may be provided by building or roof overhangs, awnings, bicycle lockers, bicycle storage within buildings, or freestanding shelters.*
   3. *When more than 15 covered bicycle parking spaces are required, 50 percent of the required covered spaces shall be enclosed and offer a high level of security, e.g., bicycle lockers or a locked cage or room with locking facilities inside, to provide safe long-term parking.*
   4. *Required bicycle parking spaces shall be illuminated.*
   5. *Required bicycle parking areas shall be clearly marked and reserved for bicycle parking only.*
   6. *Bicycle parking space dimensions and standards:*
      a. *Bicycle parking spaces must be at least six feet long and two feet wide, and in covered situations the overhead clearance must be at least seven feet.*
      b. *An aisle a minimum of five feet wide must be provided for bicycle maneuvering.*
      c. *Bicycle racks must hold bicycles securely by the frame and be securely anchored.*
      d. *Hanging bicycle racks and/or enclosed, stackable bike lockers may be substituted for surface racks if comparable dimensions, maneuvering, and clearance are provided to the user.*
      e. *Bicycle racks must accommodate both:*
         i. *Locking the frame and one wheel to the rack with a high-security U-shaped shackle lock; and*
         ii. *Locking the frame and both wheels without removal of wheels to the rack with a chain or cable not longer than six feet.*
   7. *The minimum number of bicycle parking spaces listed in Table 1015-3, Minimum Required Bicycle Parking Spaces, are required. If a listed use is located with the Portland Metropolitan Urban Growth Boundary (UGB), it shall have a minimum of two bicycle parking spaces or the number required by Table 1015-3, whichever is greater.*
   8. *Within the UGB, quadplexes not developed pursuant to Section 845, Triplexes, Quadplexes, Townhouses, and Cottage Clusters, and multifamily residential, commercial, and institutional developments shall designate short-term bicycle parking (less than four hours) and long-term bicycle parking (four or more hours) spaces as needed for the development.*

A total of 20 bicycle parking spaces are required per Table 1015-3
Building 1:
- Admin offices + B.O.H (1 per 2,500 SF): 3,460 SF/2,500 SF = 2 required

- Residential care (1 per 8 beds): 40 beds/8 = 5 required

Building 2

- Offices and clinics (1 per 2,500 SF): 5,670 SF/2,500 SF = 3 required
- Dwelling units (0.5 per sleeping room): 20 rooms*0.5 = 10 required

12 of 20 spaces are covered, exceeding the 50 percent requirement, see DR.05 proposed site plan. Cover is provided by building overhangs and the spaces are illuminated, see DR.19 photometric site plan. The standard is met.

1015.04 OFF-STREET LOADING STANDARDS

A. No area shall be considered a loading berth unless it can be shown that the area is accessible and usable for that purpose, and has maneuvering area for vehicles.

B. In cases of expansion of a building or use, that prior to the expansion, does not meet the minimum loading berth requirements in Table 1015-4, Minimum Required Off-Street Loading Berths, the following provisions shall apply:

1. The minimum number of additional loading berths required shall be based only on the floor area or capacity added and not on the area or capacity existing prior to the expansion.

2. If the expansion covers any pre-expansion loading berths, lost loading berths shall be replaced, in addition to any required additional berths.

C. In the event several uses occupy a single structure or parcel of land and share the same loading berths, the total requirement for off-street loading shall be reduced by up to 25 percent of the sum of the requirements of the several uses computed separately.

D. The minimum off-street loading berths listed in Table 1015-4 are required.

One loading berth is provided for a total of two on-site. The standard is met.

1021 SOLID WASTE AND RECYCLING

See DR.32-33 for enlarged trash enclosure plans with information on size/quantity of containers per communication with Clackamas County Sustainability & Solid Waste Senior Sustainability Analyst Tenille Beseda Fillwock.

Response to Notice of Incomplete Application dated 1/21/26:
The truck will be able to turn to the left using the wide drive aisle we're already providing for fire access, and back into the 12.5' wide drive in front of the trash enclosure to provide easy access to the containers, which can be wheeled out. They should be able to then exit forward via the drive aisle.

END

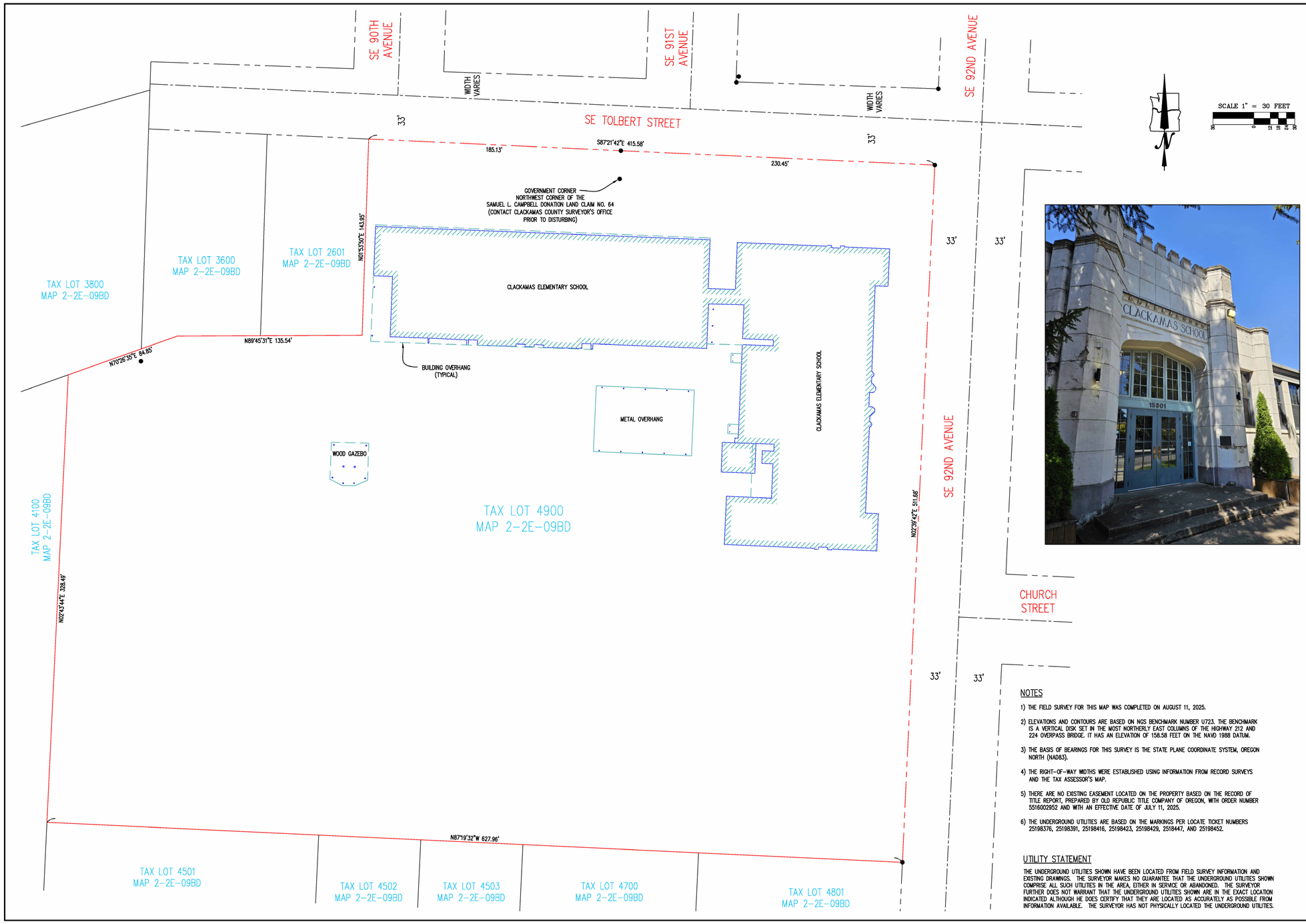
DESIGN REVIEW SHEET INDEX

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DR.01	EXISTING CONDITIONS PLAN 1/4
DR.02	EXISTING CONDITIONS PLAN 2/4
DR.03	EXISTING CONDITIONS PLAN 3/4
DR.04	EXISTING CONDITIONS PLAN 4/4
DR.05	PROPOSED SITE PLAN
DR.06	SITE GRADING PLAN
DR.07	ENLARGED GRADING PLAN BLDG 1
DR.08	ENLARGED GRADING PLAN BLDG 2
DR.09	SITE UTILITY PLAN
DR.10	ENLARGED UTILITY PLAN BLDG 1
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DR.12	LANDSCAPE KEY PLAN
DR.13	MATERIALS SCHEDULE
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DR.22	BUILDING 1 - LEVEL 1 FLOOR PLAN
DR.23	BUILDING 1 - LEVEL 2 FLOOR PLAN
DR.24	BUILDING 2 - FLOOR PLANS
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DR.27	MATERIAL CUTSHEETS 1/3
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DR.30	BUILDING 1 - SECTIONS
DR.31	BUILDING 2 - SECTIONS
DR.32	BUILDING 1 - ENLARGEMENTS + DETAILS
DR.33	BUILDING 2 - ENLARGEMENTS + DETAILS
DR.34	BUILDING 1 - PROJECT IMAGES
DR.35	BUILDING 2 - PROJECT IMAGES



CLACKAMAS COUNTY RECOVERY CAMPUS
DESIGN REVIEW
12.16.2025

HOLST



NOTES

1) THE FIELD SURVEY FOR THIS MAP WAS COMPLETED ON AUGUST 11, 2025.

2) ELEVATIONS AND CONTOURS ARE BASED ON NGS BENCHMARK NUMBER U723. THE BENCHMARK IS A VERTICAL DISK SET IN THE MOST NORTHERLY EAST COLUMNS OF THE HIGHWAY 212 AND 224 OVERPASS BRIDGE. IT HAS AN ELEVATION OF 158.58 FEET ON THE NAVD 1988 DATUM.

3) THE BASIS OF BEARINGS FOR THIS SURVEY IS THE STATE PLANE COORDINATE SYSTEM, OREGON NORTH (NAD83).

4) THE RIGHT-OF-WAY WIDTHS WERE ESTABLISHED USING INFORMATION FROM RECORD SURVEYS AND THE TAX ASSESSOR'S MAP.

5) THERE ARE NO EXISTING EASEMENT LOCATED ON THE PROPERTY BASED ON THE RECORD OF TITLE REPORT, PREPARED BY OLD REPUBLIC TITLE COMPANY OF OREGON, WITH ORDER NUMBER 5516002952 AND WITH AN EFFECTIVE DATE OF JULY 11, 2025.

6) THE UNDERGROUND UTILITIES ARE BASED ON THE MARKINGS PER LOCATE TICKET NUMBERS 25198376, 25198391, 25198416, 25198423, 25198429, 2518447, AND 25198452.

UTILITY STATEMENT

THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND EXISTING DRAWINGS. THE SURVEYOR MAKES NO GUARANTEE THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH HE DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE. THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES.

NORTHWEST SURVEYING, INC.
1815 NW 169th PLACE, SUITE 2090
BEAVERTON, OR 97006
PH: (503) 848-2127 FAX: (503) 848-2179
EMAIL: mail@nwsurveying.com

LOCATED IN THE NORTHWEST ONE-QUARTER OF SECTION 9, TOWNSHIP 2 SOUTH, RANGE 2 EAST, W.M., CLACKAMAS COUNTY, OREGON

15301 SE 93ND AVENUE TOPOGRAPHIC SURVEY CLACKAMAS COUNTY OREGON

TAX LOT 4900 TAX MAP 2-2E-09BD

DRAWING NO.: 2935 TOPO
SCALE: AS NOTED
DRAWING GENERATED BY: LD2004
DRAWN BY: ARS
CHECKED BY: CHS

PREPARED FOR:
FORA HEALTH, INC.
P.O. BOX 16040
PORTLAND, OREGON 97292

REVISIONS:
INITIAL RELEASE: AUG. 22, 2025

REGISTERED PROFESSIONAL LAND SURVEYOR
OREGON
JANUARY 15, 2003
CLINTON H. STUBBS JR.
55469LS
RENEWS: 06/30/26

JOB NUMBER
2935

SHEET
1 OF 4

HOLST
123 NE 3RD AVE.
SUITE 310
PORTLAND, OR
97232
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CLACKAMAS COUNTY RECOVERY CAMPUS

JOB NO. 24064

DESIGN REVIEW
12.16.2025

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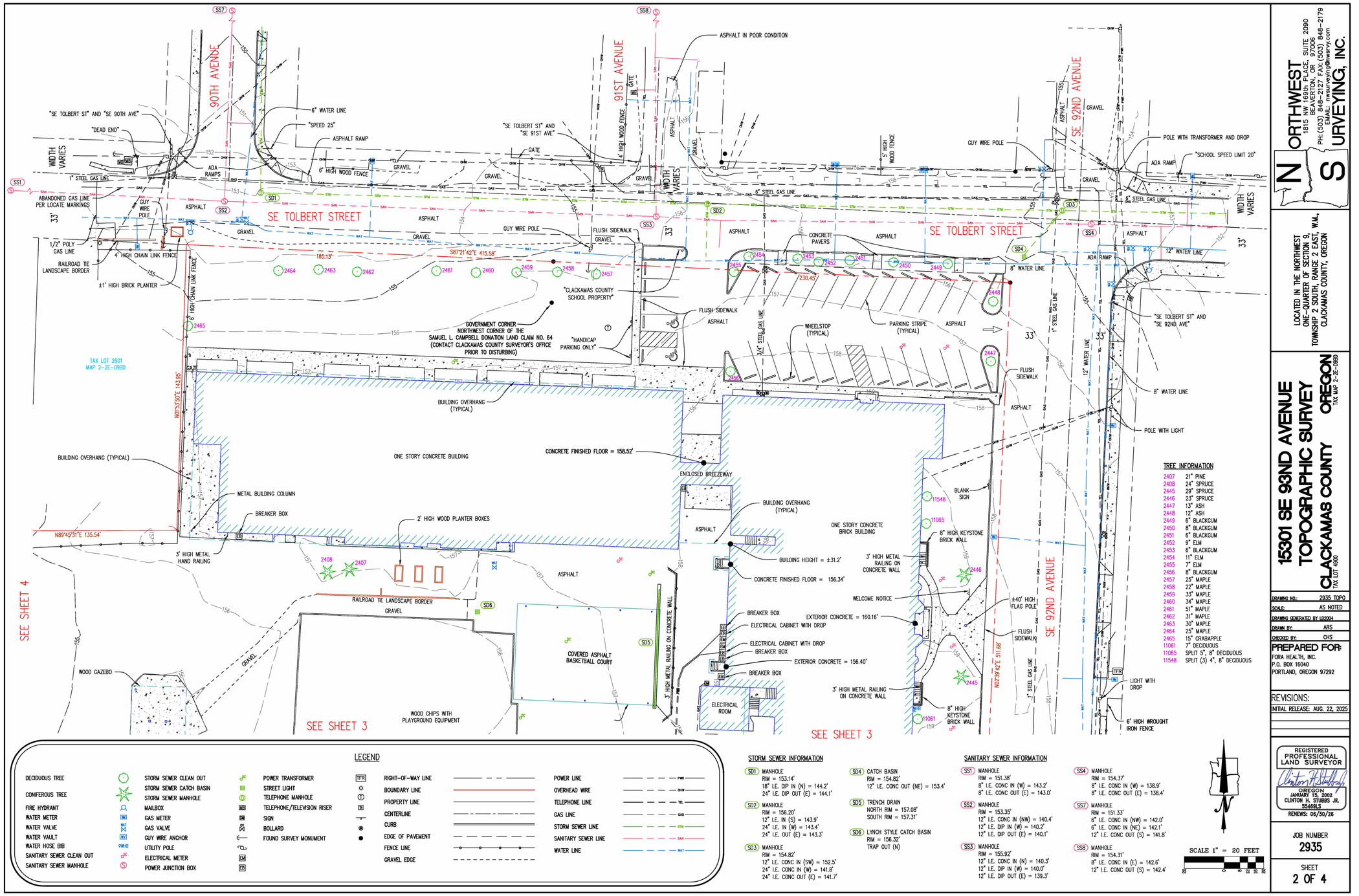
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EXISTING CONDITIONS PLAN 1/4

sheet:
DR.01

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TREE INFORMATION

2407	21" PINE
2408	24" SPRUCE
2445	29" SPRUCE
2446	23" SPRUCE
2447	13" ASH
2448	12" ASH
2449	6" BLACKGUM
2450	8" BLACKGUM
2451	6" BLACKGUM
2452	9" ELM
2453	6" BLACKGUM
2454	11" ELM
2455	7" ELM
2456	8" BLACKGUM
2457	25" MAPLE
2458	22" MAPLE
2459	33" MAPLE
2460	34" MAPLE
2461	51" MAPLE
2462	31" MAPLE
2463	30" MAPLE
2464	25" MAPLE
2465	15" CRABAPPLE
11061	7" DECIDUOUS
11065	SPLIT 5", 8" DECIDUOUS
11548	SPLIT (3) 4", 8" DECIDUOUS

LEGEND

DECIDUOUS TREE	STORM SEWER CLEAN OUT	POWER TRANSFORMER	RIGHT-OF-WAY LINE	POWER LINE
CONIFEROUS TREE	STORM SEWER CATCH BASIN	STREET LIGHT	BOUNDARY LINE	OVERHEAD WIRE
FIRE HYDRANT	STORM SEWER MANHOLE	TELEPHONE MANHOLE	PROPERTY LINE	TELEPHONE LINE
WATER METER	MAILBOX	TELEPHONE/TELEVISION RISER	CENTERLINE	GAS LINE
WATER VALVE	GAS METER	SIGN	CURB	STORM SEWER LINE
WATER VAULT	GAS VALVE	BOLLARD	EDGE OF PAVEMENT	SANITARY SEWER LINE
WATER HOSE BIB	GUY WIRE ANCHOR	FOUND SURVEY MONUMENT	FENCE LINE	WATER LINE
SANITARY SEWER CLEAN OUT	UTILITY POLE		GRAVEL EDGE	
SANITARY SEWER MANHOLE	ELECTRICAL METER			
	POWER JUNCTION BOX			

STORM SEWER INFORMATION

SD1 MANHOLE
RIM = 153.14'
18" I.E. DIP IN (N) = 144.2'
24" I.E. DIP OUT (E) = 144.1'

SD2 MANHOLE
RIM = 156.20'
12" I.E. IN (S) = 143.9'
24" I.E. IN (W) = 143.4'
24" I.E. OUT (E) = 143.3'

SD3 MANHOLE
RIM = 154.82'
12" I.E. CONC IN (SW) = 152.5'
24" I.E. CONC IN (W) = 141.8'
24" I.E. CONC OUT (E) = 141.7'

SD4 CATCH BASIN
RIM = 154.82'
12" I.E. CONC OUT (NE) = 153.4'

SD5 TRENCH DRAIN
NORTH RIM = 157.08'
SOUTH RIM = 157.31'

SD6 LYNCH STYLE CATCH BASIN
RIM = 156.32'
TRAP OUT (N)

SANITARY SEWER INFORMATION

SS1 MANHOLE
RIM = 151.38'
8" I.E. CONC IN (W) = 143.2'
8" I.E. CONC OUT (E) = 143.0'

SS2 MANHOLE
RIM = 153.35'
12" I.E. CONC IN (NW) = 140.4'
12" I.E. DIP IN (W) = 140.2'
12" I.E. DIP OUT (E) = 140.1'

SS3 MANHOLE
RIM = 155.92'
12" I.E. CONC IN (N) = 140.3'
12" I.E. DIP IN (W) = 140.0'
12" I.E. DIP OUT (E) = 139.3'

SS4 MANHOLE
RIM = 154.37'
8" I.E. CONC IN (W) = 138.9'
8" I.E. CONC OUT (E) = 138.4'

SS7 MANHOLE
RIM = 151.33'
8" I.E. CONC IN (NW) = 142.0'
6" I.E. CONC IN (NE) = 142.1'
12" I.E. CONC OUT (S) = 141.8'

SS8 MANHOLE
RIM = 154.31'
8" I.E. CONC IN (E) = 142.6'
12" I.E. CONC OUT (S) = 142.4'

SCALE 1" = 20 FEET

NORTHWEST SURVEYING, INC.
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15301 SE 93ND AVENUE TOPOGRAPHIC SURVEY

CLACKAMAS COUNTY, OREGON
TAX LOT 4900
TAX MAP 2-2E-09BD

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PREPARED FOR:
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P.O. BOX 16040
PORTLAND, OREGON 97292

REVISIONS:
INITIAL RELEASE: AUG. 22, 2025

REGISTERED PROFESSIONAL LAND SURVEYOR
OREGON
JANUARY 15, 2002
CLINTON H. STUBBS JR.
55469LS
RENEWS: 06/30/26

JOB NUMBER
2935

SHEET
2 OF 4

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CLACKAMAS COUNTY RECOVERY CAMPUS

JOB NO. 24064

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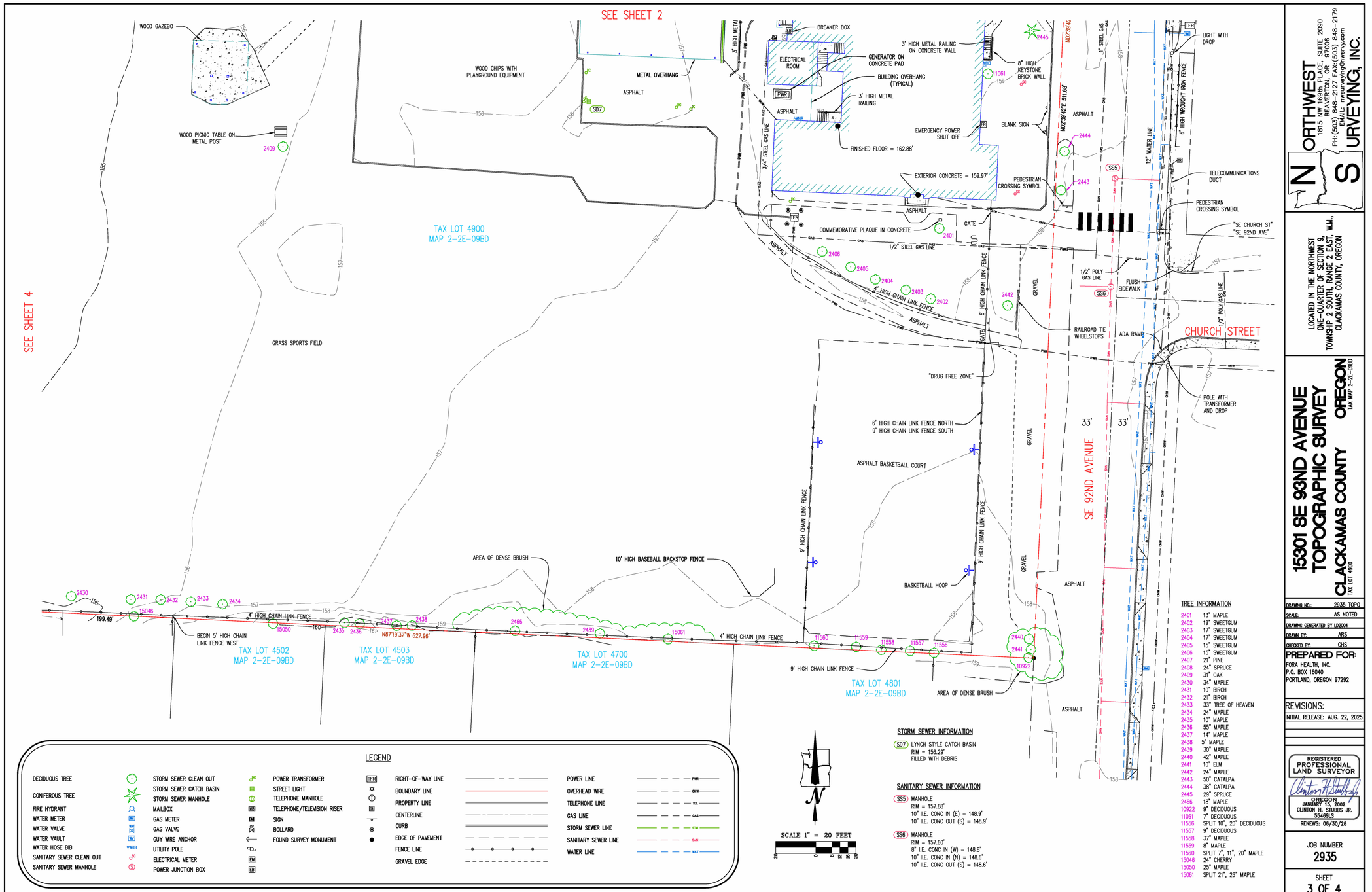
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LEGEND

DECIDUOUS TREE	STORM SEWER CLEAN OUT	POWER TRANSFORMER	RIGHT-OF-WAY LINE	POWER LINE
CONIFEROUS TREE	STORM SEWER CATCH BASIN	STREET LIGHT	BOUNDARY LINE	OVERHEAD WIRE
FIRE HYDRANT	STORM SEWER MANHOLE	TELEPHONE MANHOLE	PROPERTY LINE	TELEPHONE LINE
WATER METER	MAILBOX	TELEPHONE/TELEVISION RISER	CENTERLINE	GAS LINE
WATER VALVE	GAS METER	SIGN	CURB	STORM SEWER LINE
WATER VAULT	GAS VALVE	BOLLARD	EDGE OF PAVEMENT	SANITARY SEWER LINE
WATER HOSE BIB	GUY WIRE ANCHOR	FOUND SURVEY MONUMENT	FENCE LINE	WATER LINE
SANITARY SEWER CLEAN OUT	UTILITY POLE		GRAVEL EDGE	
SANITARY SEWER MANHOLE	ELECTRICAL METER			
	POWER JUNCTION BOX			

SCALE 1" = 20 FEET

STORM SEWER INFORMATION

SD7 LYNCH STYLE CATCH BASIN
RIM = 156.29'
FILLED WITH DEBRIS

SANITARY SEWER INFORMATION

SS5 MANHOLE
RIM = 157.88'
10" I.E. CONC IN (E) = 148.9'
10" I.E. CONC OUT (S) = 148.9'

SS6 MANHOLE
RIM = 157.60'
8" I.E. CONC IN (W) = 148.8'
10" I.E. CONC IN (N) = 148.6'
10" I.E. CONC OUT (S) = 148.6'

TREE INFORMATION

2401	13" MAPLE
2402	19" SWEETGUM
2403	17" SWEETGUM
2404	17" SWEETGUM
2405	15" SWEETGUM
2406	15" SWEETGUM
2407	21" PINE
2408	24" SPRUCE
2409	31" OAK
2430	34" MAPLE
2431	10" BIRCH
2432	21" BIRCH
2433	33" TREE OF HEAVEN
2434	24" MAPLE
2435	10" MAPLE
2436	55" MAPLE
2437	14" MAPLE
2438	5" MAPLE
2439	30" MAPLE
2440	42" MAPLE
2441	10" ELM
2442	24" MAPLE
2443	50" CATALPA
2444	38" CATALPA
2445	29" SPRUCE
2466	18" MAPLE
10922	9" DECIDUOUS
11061	7" DECIDUOUS
11556	SPLIT 10", 20" DECIDUOUS
11557	9" DECIDUOUS
11558	37" MAPLE
11559	8" MAPLE
11560	SPLIT 7", 11", 20" MAPLE
15046	24" CHERRY
15050	25" MAPLE
15061	SPLIT 21", 26" MAPLE

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15301 SE 93ND AVENUE TOPOGRAPHIC SURVEY

CLACKAMAS COUNTY OREGON
TAX LOT 4900 TAX MAP 2-2E-09BD

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SCALE: AS NOTED
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CHECKED BY: CHS

PREPARED FOR:
FORA HEALTH, INC.
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PORTLAND, OREGON 97292

REVISIONS:
INITIAL RELEASE: AUG. 22, 2025

REGISTERED PROFESSIONAL LAND SURVEYOR
OREGON
JANUARY 15, 2003
CLINTON H. STUBBS JR.
55469LS
RENEWS: 06/30/26

JOB NUMBER 2935

SHEET 3 OF 4

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CLACKAMAS COUNTY RECOVERY CAMPUS

JOB NO. 24064

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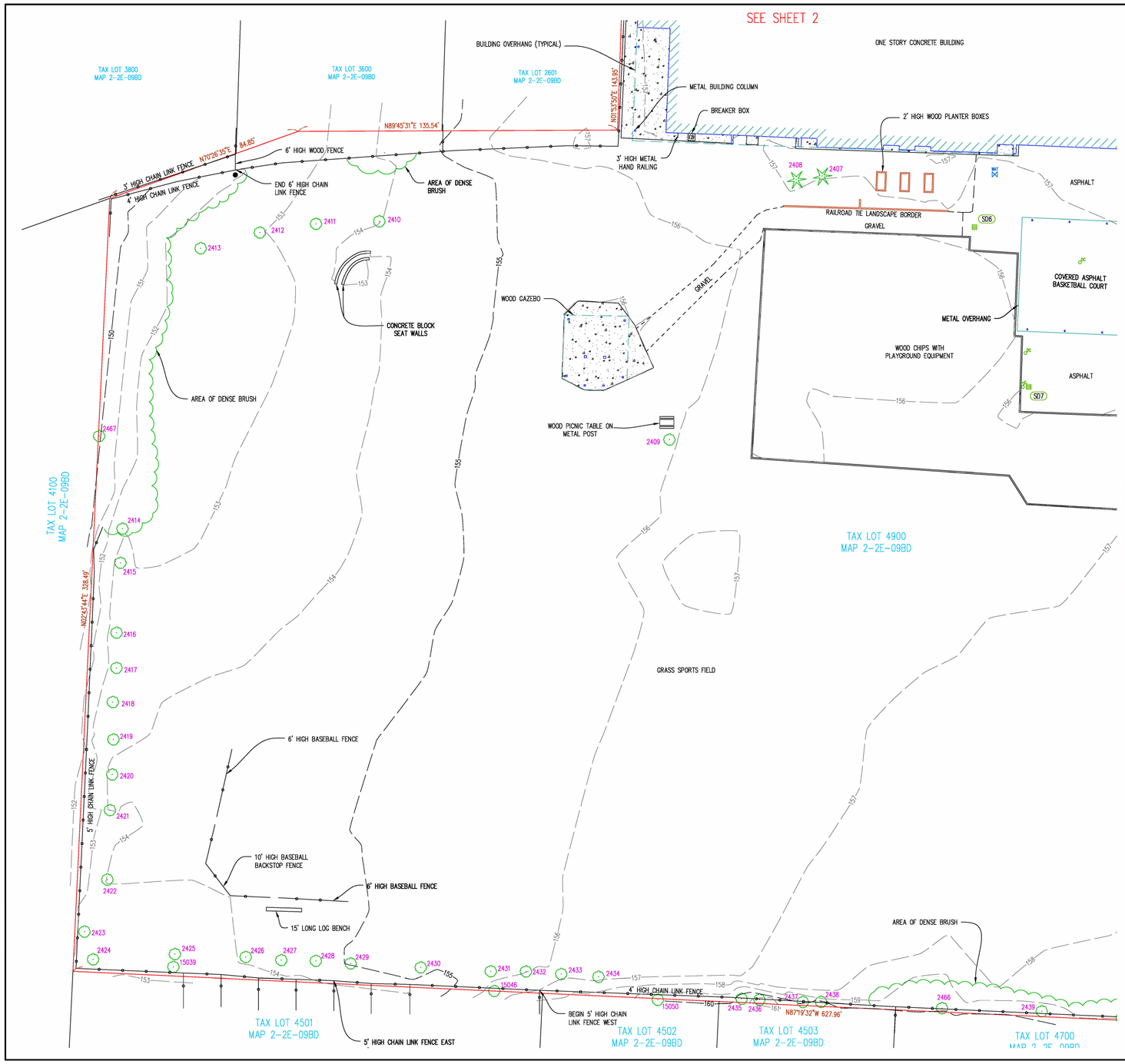
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LEGEND

- DECIDUOUS TREE
- CONIFEROUS TREE
- WATER VALVE
- STORM SEWER CLEAN OUT
- STORM SEWER CATCH BASIN
- STORM SEWER MANHOLE
- FOUND SURVEY MONUMENT
- BOUNDARY LINE
- PROPERTY LINE
- CENTERLINE
- CURB
- EDGE OF PAVEMENT
- FENCE LINE
- GRAVEL EDGE

TREE INFORMATION

2409	31" OAK
2410	35" OAK
2411	29" OAK
2412	30" OAK
2413	35" OAK
2414	22" MAPLE
2415	29" MAPLE
2416	29" MAPLE
2417	18" BIRCH
2418	23" BIRCH
2419	18" BIRCH
2420	27" MAPLE
2421	24" BIRCH
2422	18" BIRCH
2423	13" CHERRY
2424	7" CHERRY
2425	19" BIRCH
2426	16" BIRCH
2427	29" MAPLE
2428	23" BIRCH
2429	35" MAPLE
2430	34" MAPLE
2431	10" BIRCH
2432	21" BIRCH
2433	33" TREE OF HEAVEN
2434	24" MAPLE
2435	10" MAPLE
2436	55" MAPLE
2437	14" MAPLE
2438	5" MAPLE
2439	30" MAPLE
2466	18" MAPLE
2467	22" TREE OF HEAVEN
15039	6" CHERRY
15046	24" CHERRY
15050	25" MAPLE

STORM SEWER INFORMATION

SD6 LYNCH STYLE CATCH BASIN
RIM = 156.32'
TRAP OUT (N)

SD7 LYNCH STYLE CATCH BASIN
RIM = 156.29'
FILLED WITH DEBRIS

SCALE 1" = 20 FEET

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JOB NUMBER
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SHEET
4 OF 4

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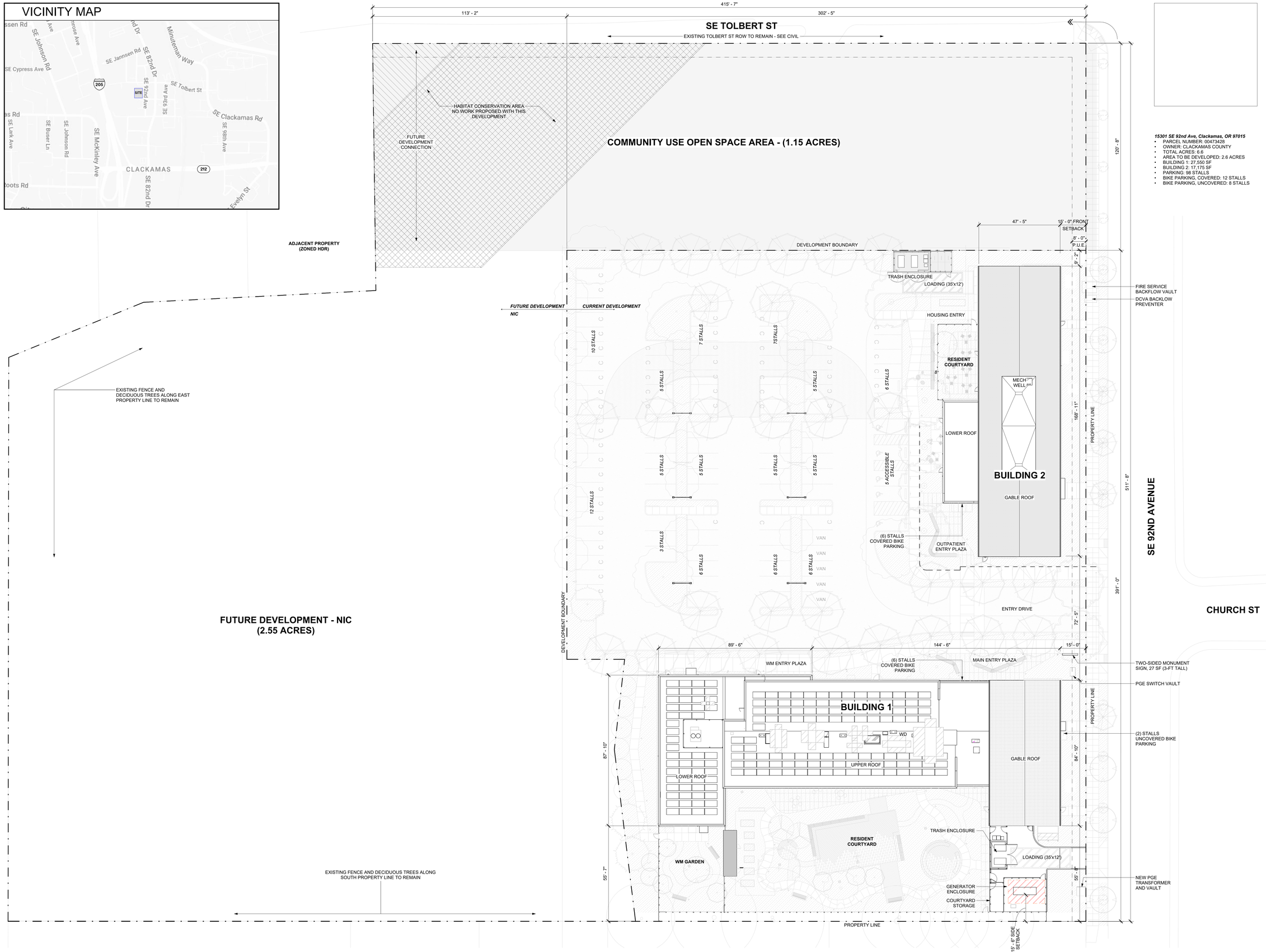
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15301 SE 92nd Ave, Clackamas, OR 97015

- PARCEL NUMBER: 00473426
- OWNER: CLACKAMAS COUNTY
- TOTAL ACRES: 6.6
- AREA TO BE DEVELOPED: 2.6 ACRES
- BUILDING 1: 27,550 SF
- BUILDING 2: 17,175 SF
- PARKING: 98 STALLS
- BIKE PARKING, COVERED: 12 STALLS
- BIKE PARKING, UNCOVERED: 8 STALLS

1 DR.05 SITE PLAN - DESIGN REVIEW
1" = 20'-0"

0' 10' 20' 40' 80'

NORTH

1/28/2026 4:55:48 PM

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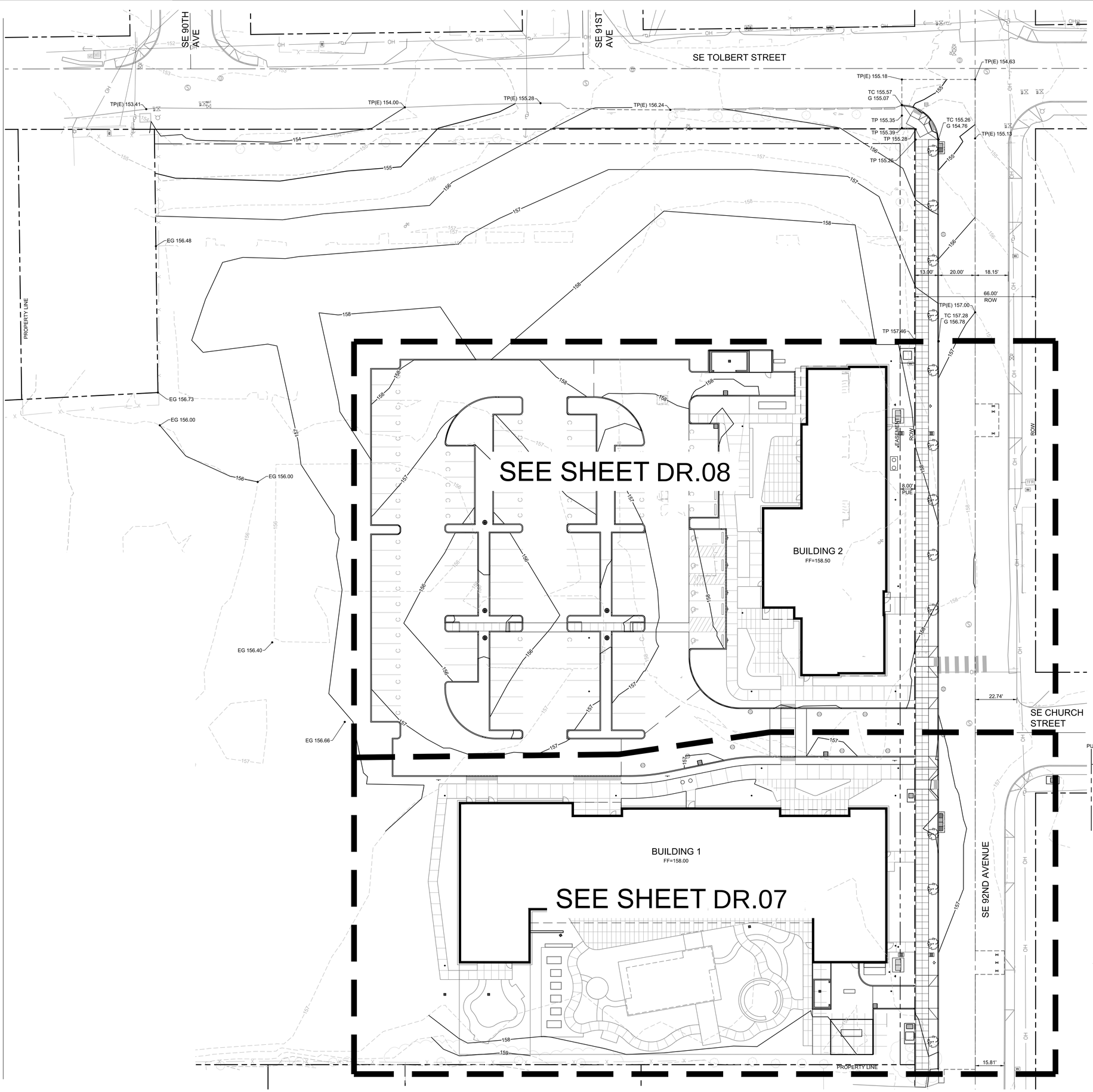
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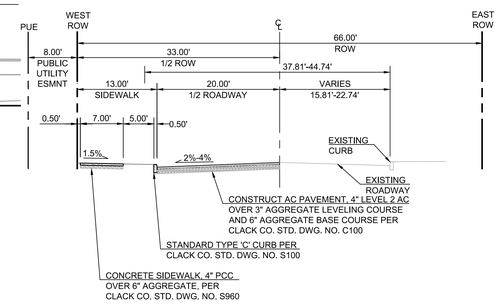
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title:
PROPOSED SITE PLAN

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GENERAL NOTES:

1. TYPICAL STREET SECTION PER CLACKAMAS CO. STD. DWG. NO. C110

① SE 92ND AVENUE TYPICAL SECTION

NTS

N

0 20 40

1 INCH = 20 FEET

GENERAL NOTES

1. INSTALL FILTER FABRIC INLET PROTECTION AT ALL DOWNSTREAM INLETS PER DETAIL 5/C500
2. INSTALL SEDIMENT FENCE ON PROPERTY SIDE OF ROW LINE PER DETAIL 2/C500

SHEET LEGEND

EG XXX.XX	EXISTING GRADE
FG XXX.XX	FINISHED GRADE
FF XXX.XX	FINISHED FLOOR ELEVATION
G XXX.XX	GRADE AT GUTTER
TC XXX.XX	GRADE AT TOP OF CURB
TP XXX.XX	GRADE AT TOP OF PAVEMENT
TW XXX.XX	GRADE AT TOP OF WALL
RIM	RIM ELEVATION
(E)	EXISTING
____GB____	GRADE BREAK

HOLST
123 NE 3RD AVE.
SUITE 310
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CLACKAMAS COUNTY RECOVERY CAMPUS

15301 SE 92nd AVE CLACKAMAS OR 97015

JOB NO. 24064

VEGA
CIVIL ENGINEERING LLC
503.662.1901 I WWW.VEGACIVIL.COM

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SITE GRADING PLAN

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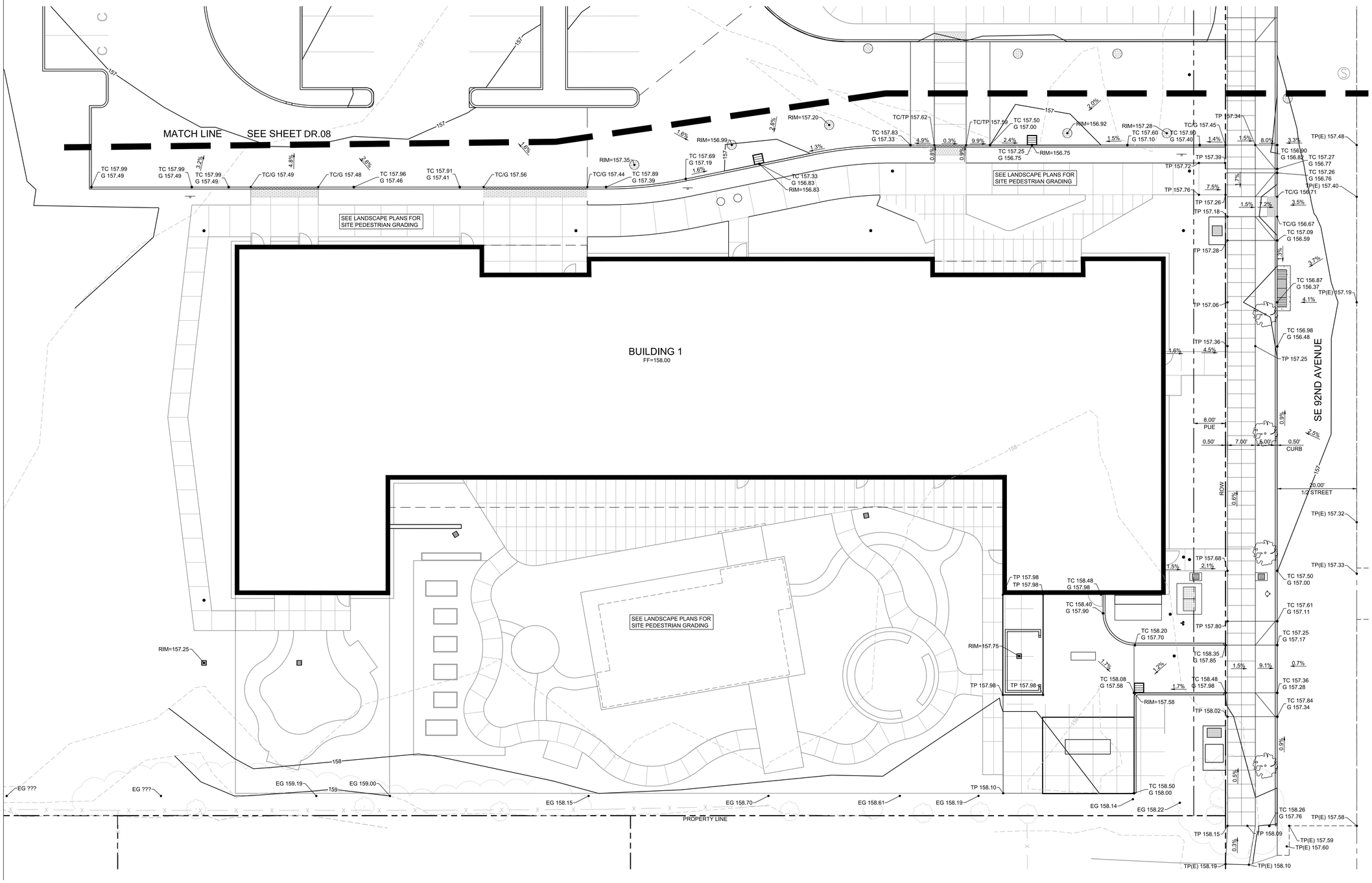
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GENERAL NOTES

1. INSTALL FILTER FABRIC INLET PROTECTION AT ALL DOWNSTREAM INLETS PER DETAIL 5/C500
2. INSTALL SEDIMENT FENCE ON PROPERTY SIDE OF ROW LINE PER DETAIL 2/C500

SHEET LEGEND

EG XXX.XX	EXISTING GRADE
FG XXX.XX	FINISHED GRADE
FF XXX.XX	FINISHED FLOOR ELEVATION
G XXX.XX	GRADE AT GUTTER
TC XXX.XX	GRADE AT TOP OF CURB
TP XXX.XX	GRADE AT TOP OF PAVEMENT
TW XXX.XX	GRADE AT TOP OF WALL
RIM	RIM ELEVATION
(E)	EXISTING
____GB____	GRADE BREAK



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JOB NO. 24064

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GENERAL NOTES

1. INSTALL FILTER FABRIC INLET PROTECTION AT ALL DOWNSTREAM INLETS PER DETAIL 5/C500
2. INSTALL SEDIMENT FENCE ON PROPERTY SIDE OF ROW LINE PER DETAIL 2/C500
3. SEE C700 SERIES FOR WORK IN THE PUBLIC RIGHT OF WAY

SHEET LEGEND

EG XXX.XX	EXISTING GRADE
FG XXX.XX	FINISHED GRADE
FF XXX.XX	FINISHED FLOOR ELEVATION
G XXX.XX	GRADE AT GUTTER
TC XXX.XX	GRADE AT TOP OF CURB
TP XXX.XX	GRADE AT TOP OF PAVEMENT
TW XXX.XX	GRADE AT TOP OF WALL
RIM	RIM ELEVATION
(E)	EXISTING
____GB____	GRADE BREAK

BUILDING 2
FFE=158.50

SEE LANDSCAPE PLANS FOR SITE PEDESTRIAN GRADING

SE 92ND AVENUE

MATCH LINE SEE SHEET DR.07

N

0 10 20
1 INCH = 10 FEET

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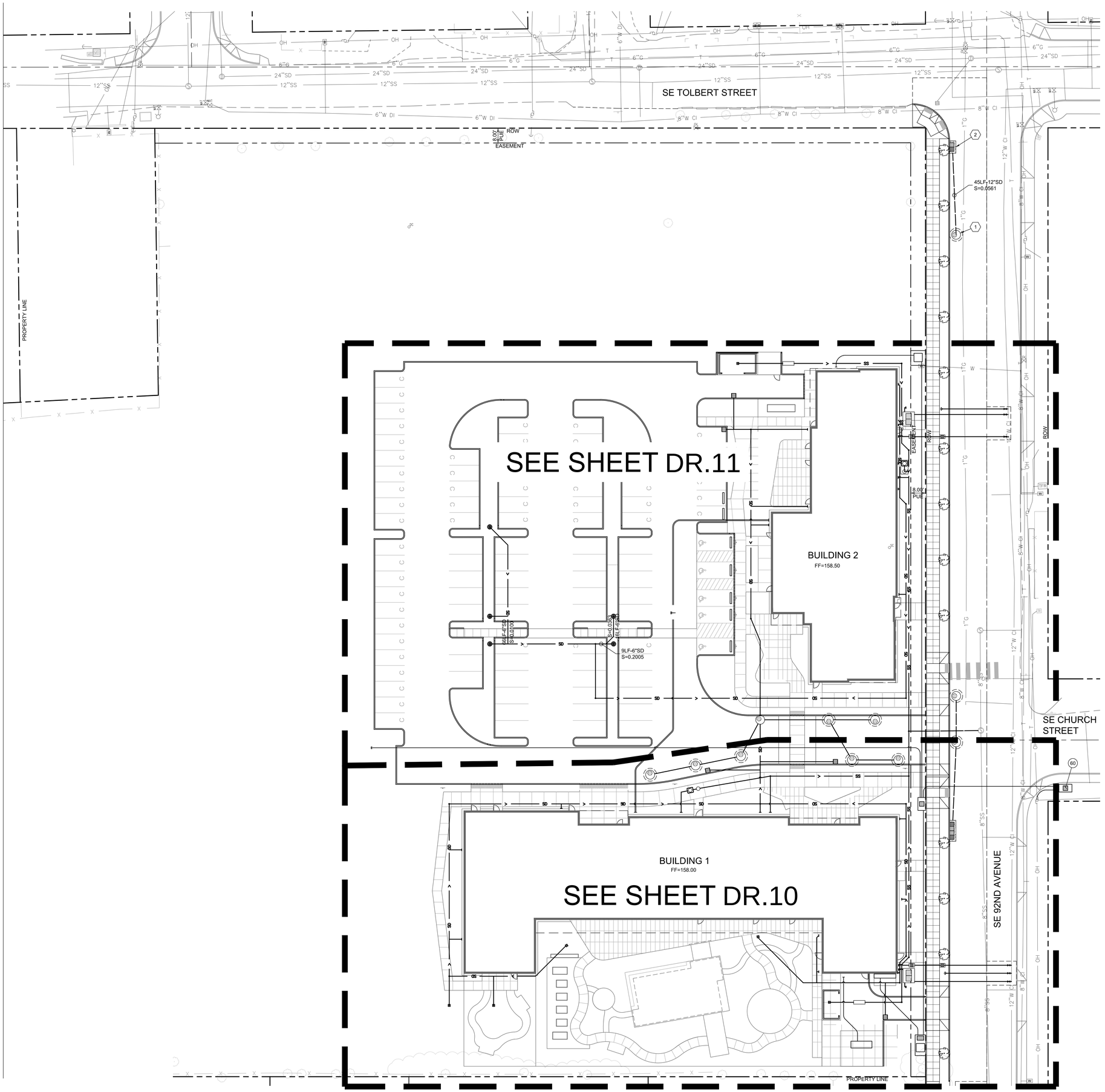
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GENERAL NOTES

1. ALL BUILDING SANITARY SEWER FIXTURES BELOW THE RIM OF THE UPSTREAM MANHOLE TO BE BACKFLOW PROTECTED.
2. ALL DOMESTIC WATER AND FIRE PROTECTION WORK IN THE PUBLIC RIGHT OF WAY BY CLACKAMAS RIVER WATER. CONTRACTOR TO COORDINATE WORK WITH CRW.

(#) STORMWATER NOTES

1. 25' DEEP PUBLIC DRYWELL WITH 15' PERFORATED SECTION, PER CLACKAMAS WES STD. DWG. NO. SWM-27
   RIM=155.84
   IE=149.70
   SUMP=130.84
2. CONTECH STORMFILTER CONCRETE WATER QUALITY CATCH BASIN WITH TWO 27" CARTRIDGES
   RIM=154.87
   12" IE, OUT (S)=151.82

(#) OTHER UTILITY NOTES

60. NEW SWITCH VAULT. COORDINATE WITH PGE

N

0 20 40

1 INCH = 20 FEET

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UTILITY PLAN

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STORMWATER NOTES

1. CONTECH STORMFILTER DUAL CONCRETE WATER QUALITY CATCH BASIN WITH THREE 27" CARTRIDGES
   RIM=156.37
   12" IE, OUT (N)=153.32
2. 25' DEEP PUBLIC DRYWELL WITH 15' PERFORATED SECTION, PER CLACKAMAS WES STD. DWG. NO. SWM-27
   RIM=156.99
   12" IE, IN (S)=150.82
   SUMP=131.99
3. ROOF DRAIN CONNECTION FROM BUILDING
4. 35' DEEP DRYWELL WITH 20' PERFORATED SECTION, PER DETAIL 4/C501
   RIM=157.30
   IE=150.97
5. 35' DEEP DRYWELL WITH 20' PERFORATED SECTION, PER DETAIL 4/C501
   RIM=156.99
   IE=150.48
6. 35' DEEP DRYWELL WITH 20' PERFORATED SECTION, PER DETAIL 4/C501
   RIM=157.35
   IE=150.23
7. TRAPPED CATCH BASIN PER DETAIL 1/C501
   RIM=156.75
   IE=154.75
8. 35' DEEP DRYWELL WITH 20' PERFORATED SECTION, PER DETAIL 4/C501
   RIM=157.24
   IE=150.57
9. 35' DEEP DRYWELL WITH 20' PERFORATED SECTION, PER DETAIL 4/C501
   RIM=157.46
   IE=159.35
10. CLEANOUT TO GRADE PER DETAIL 3/C501
11. DOWNSPOUT CONNECTION FROM BUILDING
12. TRAPPED CATCH BASIN PER DETAIL 1/C501
    RIM=157.58
    IE=155.58
13. AREA DRAIN PER DETAIL 2/C501
    RIM PER LANDSCAPE
    IE=156.50
14. AREA DRAIN PER DETAIL 2/C501
    RIM PER LANDSCAPE
    IE=156.50
15. AREA DRAIN PER DETAIL 2/C501
    RIM=157.25
    IE=155.75
16. AREA DRAIN PER DETAIL 2/C501
    RIM=157.75
    IE=156.25
17. TRAPPED CATCH BASIN PER DETAIL 1/C501
    RIM=156.83
    IE=154.83

WATER/FIRE NOTES

30. NEW FIRE HYDRANT PER CLACKAMAS RIVER WATER STD, DWG. NO. 110A
31. NEW HYDRANT CONNECTION FROM 12" CI MAIN. TAP TO BE PERFORMED BY CLACKAMAS RIVER WATER
32. NEW FIRE SERVICE CONNECTION FROM 12" CI MAIN. TAP TO BE PERFORMED BY CLACKAMAS RIVER WATER
33. FIRE SERVICE BACKFLOW, INSTALLED IN BELOW GRADE VAULT PER CLACKAMAS RIVER WATER STD. DWG. NO. 111. CONTRACTOR SHALL PROVIDE COPIES OF BACKFLOW TEST REPORTS TO CLACKAMAS RIVER WATER (503-722-9220).
34. FIRE DEPARTMENT CONNECTION (FDC)
35. 2" DOMESTIC WATER CONNECTION FROM 12" CI MAIN. TAP TO BE PERFORMED BY CLACKAMAS RIVER WATER
36. 2" DOMESTIC WATER METER PER CLACKAMAS RIVER WATER STD. DWG. NO. 109. SERVICE LINE AND METER TO BE PROVIDED AND INSTALLED BY CRW
37. 2" DCVA PER CLACKAMAS RIVER WATER STD. DWG. NO. 112. CONTRACTOR SHALL PROVIDE COPIES OF BACKFLOW TEST REPORTS TO CLACKAMAS RIVER WATER (503-722-9220).
38. DOMESTIC WATER CONNECTION TO BUILDING
39. FIRE SERVICE CONNECTION TO BUILDING

GENERAL NOTES

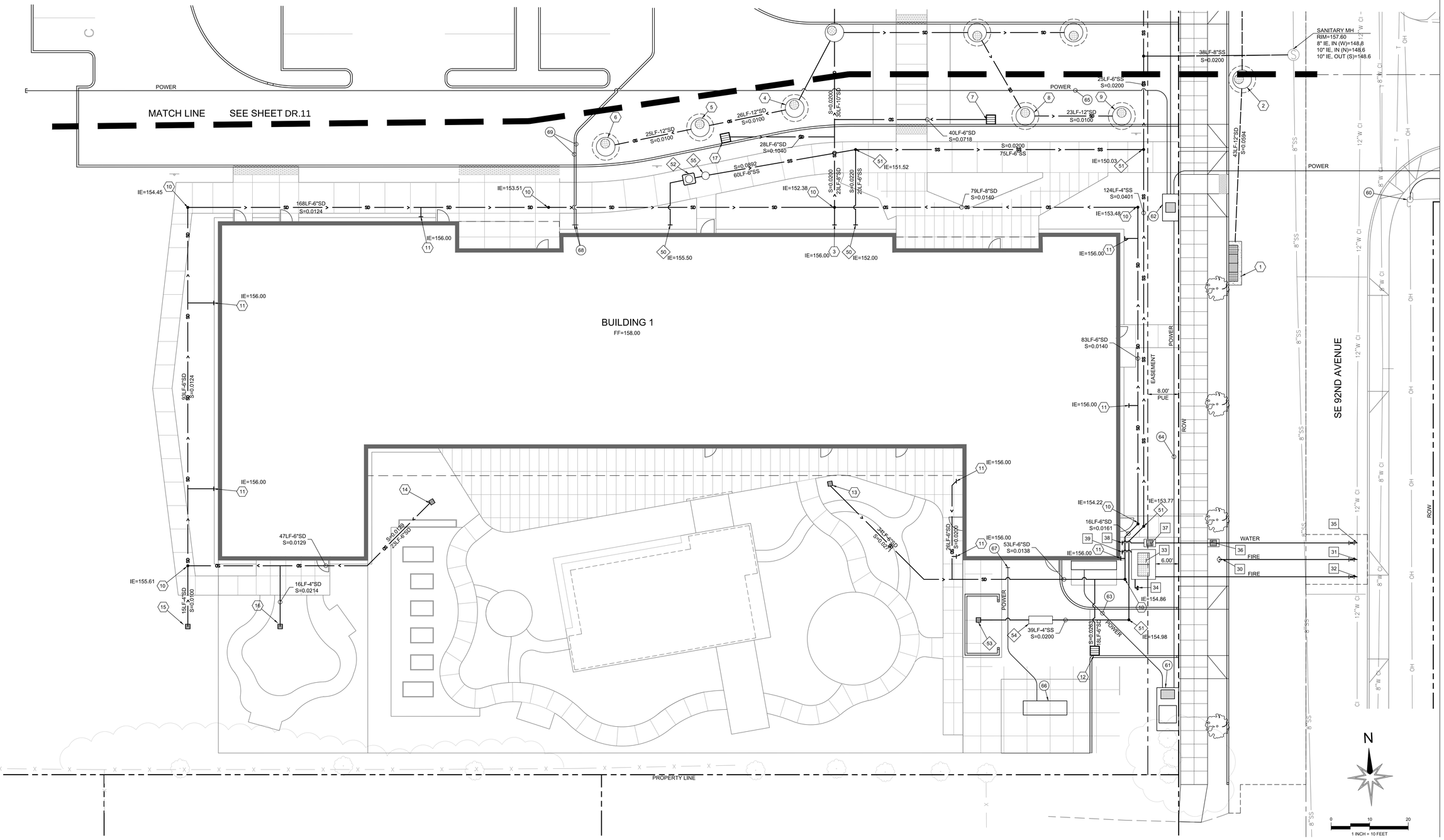
1. ALL BUILDING FIXTURES BELOW THE RIM OF THE UPSTREAM MANHOLE TO BE BACKFLOW PROTECTED.
2. ALL DOMESTIC WATER AND FIRE PROTECTION WORK IN THE PUBLIC RIGHT OF WAY BY CLACKAMAS RIVER WATER. CONTRACTOR TO COORDINATE WORK WITH CRW.

SANITARY NOTES

50. SANITARY CONNECTION FROM BUILDING
51. SANITARY CLEANOUT TO GRADE
52. GB-50 GREASE INTERCEPTOR
    RIM=157.80
    IE=156.55
53. TRASH DRAIN PER DETAIL 8/C501
    RIM=157.50
    IE=155.75
54. ACO SPILL CONTROL OIL WATER SEPARATOR WITH HEAVY DUTY COVER AND STEEL FRAME, OR APPROVED EQUAL
55. GREASE INTERCEPTOR MONITORING PORT

OTHER UTILITY NOTES

60. ELECTRICAL CONNECTION FROM EXISTING UTILITY POLE. COORDINATE WITH PGE
61. NEW 5106 PAD VAULT TRANSFORMER. COORDINATE WITH ELECTRICAL AND PGE
62. NEW 577 SWITCH VAULT. COORDINATE WITH ELECTRICAL AND PGE
63. ELECTRICAL CONDUIT TO BUILDING 1 SWITCH BOARD
64. (1) 4" CONDUIT SERVING BUILDING 1
65. (1) 4" CONDUIT STUB TO FUTURE WEST SITE
66. GENERATOR. COORDINATE WITH ELECTRICAL
67. GENERATOR CONNECTION TO BUILDING
68. TELECOM CONNECTION FROM BUILDING
69. (2) 4" TELECOM CONDUIT CONNECTING TO BUILDING 2



0 10 20
1 INCH = 10 FEET

N

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STORMWATER NOTES

1. TRAPPED CATCH BASIN PER DETAIL 1/C501
   RIM=157.60
   IE=155.60
2. 35' DEEP DRYWELL WITH 20' PERFORATED SECTION, PER DETAIL 4/C501
   RIM=157.34
   IE=150.58
3. 35' DEEP DRYWELL WITH 20' PERFORATED SECTION, PER DETAIL 4/C501
   RIM=157.45
   IE=150.36
4. CLEANOUT TO GRADE PER DETAIL 3/C501
5. DOWNSPOUT CONNECTION FROM BUILDING
6. SEDIMENTATION MH PER DETAIL 5/C501
   RIM=157.63
   10" IE, IN (N)=151.43
   10" IE, IN (S)=151.43
   12" IE, OUT (W)=150.93
   12" IE, OUT (E)=150.93
   SUMP=146.93
7. TRAPPED CATCH BASIN PER DETAIL 1/C501
   RIM=157.37
   IE=155.37
8. AREA DRAIN PER DETAIL 2/C501
   RIM=156.00
   IE=154.50
9. AREA DRAIN PER DETAIL 2/C501
   RIM=155.00
   IE=153.50
10. AREA DRAIN PER DETAIL 2/C501
    RIM=155.00
    IE=153.50
11. AREA DRAIN PER DETAIL 2/C501
    RIM=156.00
    IE=154.50
12. CURB OPENING PER DETAIL 11/C500
13. AREA DRAIN PER DETAIL 2/C501
    RIM=155.67
    IE=154.17
14. 25' DEEP PUBLIC DRYWELL WITH 15' PERFORATED SECTION, PER CLACKAMAS WES STD. DWG. NO. SWM-27
    RIM=157.18
    12" IE, IN (S)=150.59
    SUMP=132.18

WATER/FIRE NOTES

30. NEW FIRE HYDRANT PER CLACKAMAS RIVER WATER STD. DWG. NO. 110A
31. NEW HYDRANT CONNECTION FROM 12" CI MAIN. TAP TO BE PERFORMED BY CLACKAMAS RIVER WATER
32. NEW FIRE SERVICE CONNECTION FROM 12" CI MAIN. TAP TO BE PERFORMED BY CLACKAMAS RIVER WATER
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34. FIRE DEPARTMENT CONNECTION (FDC)
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36. 2" DOMESTIC WATER METER PER CLACKAMAS RIVER WATER STD. DWG. NO. 109. SERVICE LINE AND METER TO BE PROVIDED AND INSTALLED BY CRW
37. 2" DCVA PER CLACKAMAS RIVER WATER STD. DWG. NO. 112. CONTRACTOR SHALL PROVIDE COPIES OF BACKFLOW TEST REPORTS TO CLACKAMAS RIVER WATER (503-722-9220)
38. DOMESTIC WATER CONNECTION TO BUILDING
39. FIRE SERVICE CONNECTION TO BUILDING
40. REMOVE EXISTING WATER SERVICE. COORDINATE WITH CLACKAMAS RIVER WATER

SANITARY NOTES

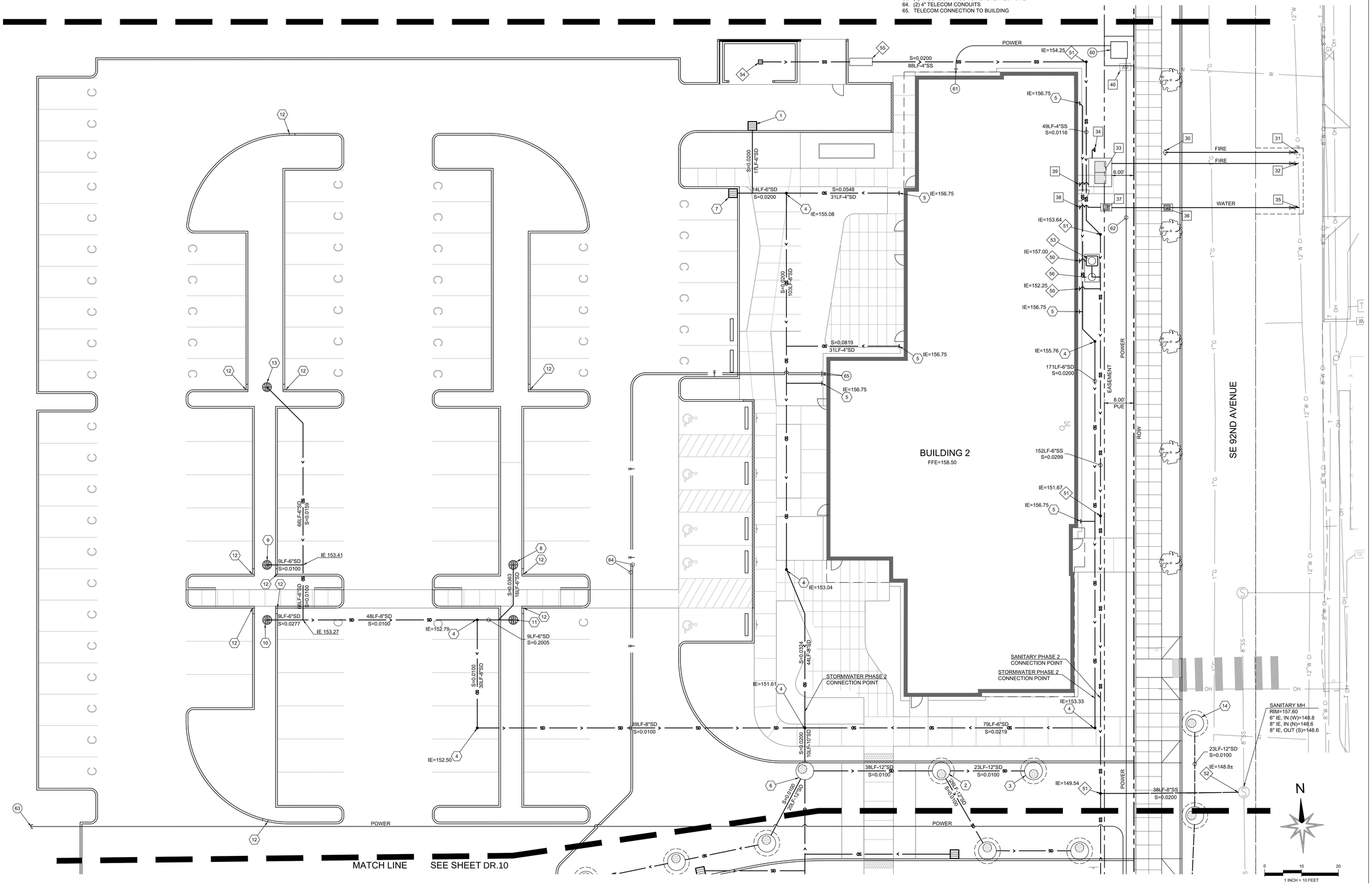
50. SANITARY CONNECTION FROM BUILDING
51. SANITARY CLEANOUT TO GRADE
52. CONNECT TO EXISTING COREHOLE FOR EX. SANITARY LATERAL. EXISTING LATERAL MAY BE REUSED IF SIZE, CONDITION, AND INVERT ALLOW. VERIFY CONDITION AND INVERT IN FIELD
53. GB-50 GREASE INTERCEPTOR
    RIM=158.16
    IE=156.93
54. TRASH DRAIN PER DETAIL 8/C5.01
    RIM=158.00
    IE=156.00
55. ACO SPILL CONTROL OIL WATER SEPARATOR WITH LIGHT DUTY COVER, OR APPROVED EQUAL
56. GREASE INTERCEPTOR MONITORING PORT

OTHER UTILITY NOTES

60. PAD MOUNT TRANFORMER. COORDINATE WITH ELECTRICAL AND PGE
61. ELECTRICAL CONDUIT TO BUILDING 2 SWITCH BOARD
62. (1) 4" CONDUIT SERVING BUILDING 2
63. (1) 4" CONDUIT STUB TO FUTURE WEST SITE
64. (2) 4" TELECOM CONDUITS
65. TELECOM CONNECTION TO BUILDING

GENERAL NOTES

1. ALL BUILDING FIXTURES BELOW THE RIM OF THE UPSTREAM MANHOLE TO BE BACKFLOW PROTECTED.
2. ALL DOMESTIC WATER AND FIRE PROTECTION WORK IN THE PUBLIC RIGHT OF WAY BY CLACKAMAS RIVER WATER. CONTRACTOR TO COORDINATE WORK WITH CRW.



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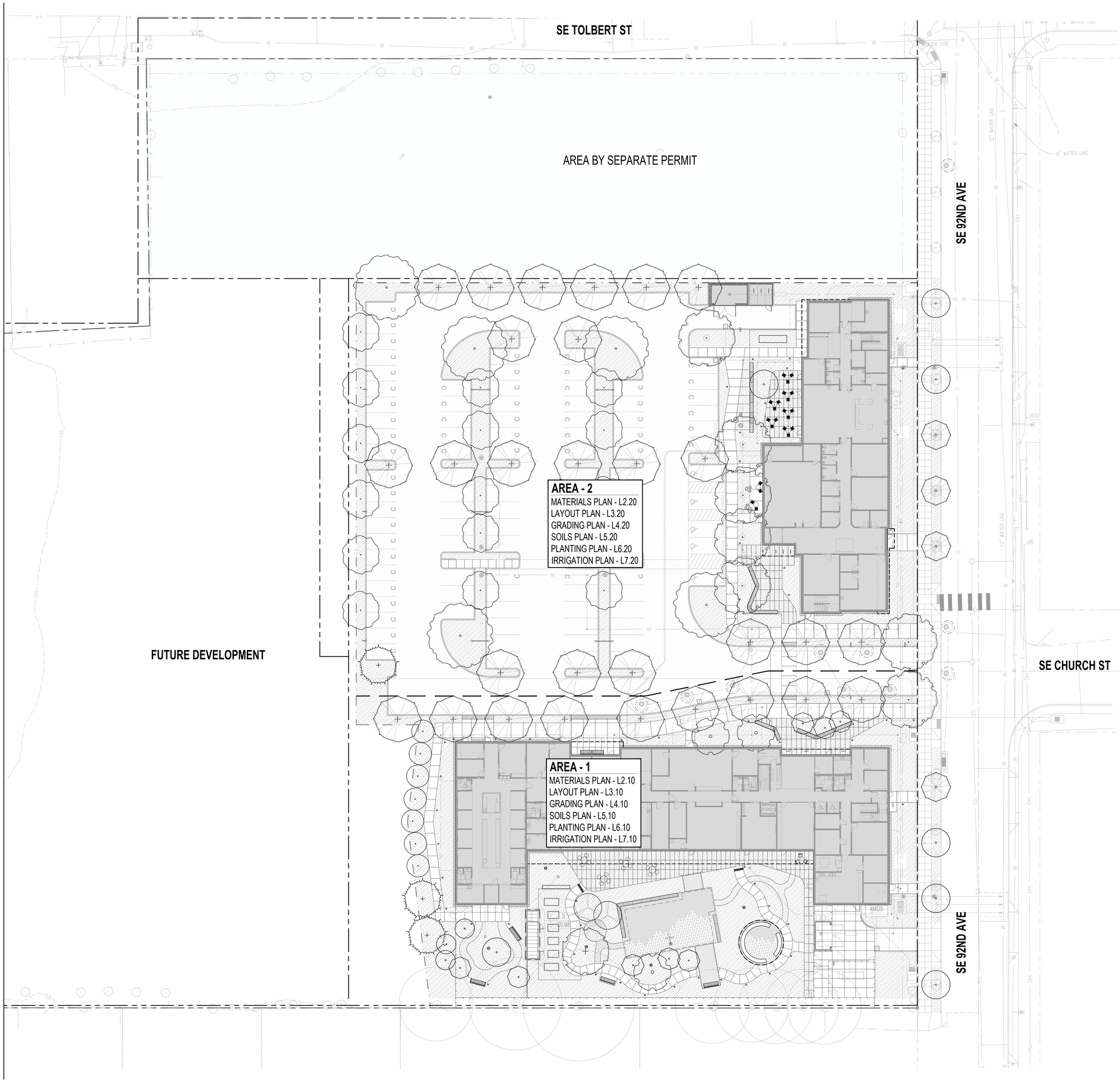
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GENERAL NOTES

1. INFORMATION REGARDING EXISTING CONDITIONS USED TO PREPARE THESE DOCUMENTS HAS BEEN PROVIDED BY OTHERS. CONTRACTOR TO FIELD VERIFY EXISTING CONDITIONS PRIOR TO COMMENCING CONSTRUCTION.
2. SHOULD THERE BE ANY DISCREPANCIES BETWEEN LANDSCAPE ARCHITECTURAL, ARCHITECTURAL, OR ENGINEERING DRAWINGS, THE CONTRACTOR IS TO CONTACT LANDSCAPE ARCHITECT TO REVIEW AND COORDINATE BEFORE PROCEEDING WITH WORK. THE LANDSCAPE ARCHITECT WILL ISSUE A WRITTEN DIRECTIVE IF FURTHER CLARIFICATION IS REQUIRED.
3. THE CONTRACTOR SHALL ENSURE THAT ALL WORK MEETS ALL APPLICABLE LOCAL AND NATIONAL BUILDING AND SAFETY CODES THAT PERTAIN TO THE PROJECT WORK. IF THERE IS A DISCREPANCY BETWEEN A CODE AND THE CONTENT OF THE PLANS, THE CONTRACTOR IS TO CONSULT LANDSCAPE ARCHITECT BEFORE PROCEEDING.
4. PARKING, EQUIPMENT AND MATERIAL STORAGE IS PERMITTED ONLY IN THE AREA PROVIDED ON THIS PLAN. PARKING FOR MATERIAL STORAGE OUTSIDE THIS AREA, EVEN TEMPORARILY, WILL NOT BE PERMITTED.
5. LANDSCAPE/PLANTING CONTRACTOR SHALL CONTACT THE LANDSCAPE ARCHITECT TO REVIEW PLANS BEFORE COMMENCING WORK IN ORDER TO ASSURE CLOSE COORDINATION.
6. PRIOR TO PROJECT COMPLETION, THE SITE IS TO BE THOROUGHLY CLEANED OF ALL CONSTRUCTION DEBRIS, SIGNS, ETC. AND REVIEWED BY LANDSCAPE ARCHITECT AND OTHER RELEVANT CONSULTANTS.
7. IT IS THE CONTRACTOR'S RESPONSIBILITY TO GROUND AND BOND ALL EXPOSED METAL OBJECTS IN LANDSCAPE.
8. CONTRACTOR MUST CLEAN UP ALL TRASH AND DEBRIS ON THE CONSTRUCTION SITE AT THE END OF EACH DAY. LIGHTWEIGHT MATERIAL, PACKING, AND OTHER ITEMS MUST BE COVERED OR WEIGHTED DOWN TO PREVENT WIND FROM BLOWING SUCH MATERIALS OFF THE CONSTRUCTION SITE. CONTRACTORS ARE PROHIBITED FROM DUMPING, BURYING, OR BURNING TRASH ANYWHERE ON THE SITE. DURING THE CONSTRUCTION PERIOD, THE CONSTRUCTION SITE MUST BE KEPT NEAT AND TIDY TO PREVENT IT FROM BECOMING AN EYESORE FOR SURROUNDING PROPERTY OWNERS. DIRT, MUD, OR OTHER DEBRIS RESULTING FROM ACTIVITY ON THE SITE MUST BE PROMPTLY REMOVED FROM SURROUNDING ROADS.
9. CONTRACTOR IS TO CREATE A WORK SCHEDULE AND DISTRIBUTE TO OWNER, LANDSCAPE ARCHITECT, AND ARCHITECT PRIOR TO COMMENCEMENT OF WORK. THE SCHEDULE IS TO CLEARLY OUTLINE DATES FOR:
   - 9.1. PRE-CONSTRUCTION MEETING TO REVIEW CONSTRUCTION FENCE, EROSION & SEDIMENT CONTROL MEASURES AND TREE PROTECTION MEASURES.
   - 9.2. REVIEW OF MATERIAL MOCKUPS (SEE MATERIAL NOTES).
   - 9.3. REVIEW OF SITE AND ARCHITECTURAL LAYOUTS.
   - 9.4. ALL RELEVANT ARCHITECTURAL, STRUCTURAL, POOL AND MEP REVIEWS.
   - 9.5. CONCRETE FOUNDATION AND SLAB REVIEW DATES.
   - 9.6. MASONRY REVIEW DATES.
   - 9.7. LANDSCAPE PLANTING TREE LAYOUTS (WITH FLAGS) AND PLANT QUANTITY REVIEW (BEFORE PLANTING).
   - 9.8. FINAL PLANTING AND HARDSCAPE REVIEW.
   - 9.9. PROJECT COMPLETION.

UTILITY NOTES

1. EXISTING UTILITY LOCATIONS SHOWN ARE APPROXIMATE.
2. VERIFY LOCATIONS AND DEPTHS OF ALL UTILITIES IN THE FIELD AND NOTIFY LANDSCAPE ARCHITECT OF ANY CONFLICTS BETWEEN LAYOUT/GRADING AND UTILITIES PRIOR TO CONSTRUCTION.
3. TRENCHING FOR UTILITIES WILL BE PERMITTED IN APPROVED LOCATIONS ONLY. CONTRACTOR MUST ALERT LANDSCAPE ARCHITECT PRIOR TO TRENCHING FOR LOCATION REVIEW AND APPROVAL.

SCALE 1"=20'

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NOT FOR CONSTRUCTION

GW GROUND WORKSHOP

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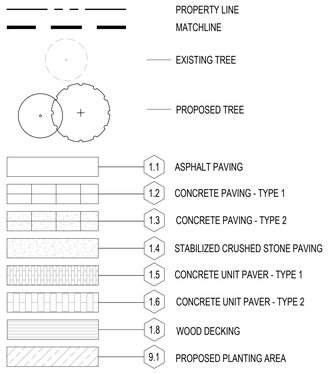
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KEY PLAN AND GENERAL NOTES

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LANDSCAPE LEGEND



MATERIAL NOTES

1. HATCH PATTERNS REPRESENTED ARE DIAGRAMMATIC AND DO NOT REPRESENT PAVING PATTERNS.
2. ALL VENEER, TREATMENT, OR TEXTURE TO CONTINUE A MINIMUM 6" BELOW FINISH GRADE UNLESS NOTED OTHERWISE.
3. SHOP DRAWINGS FOR ALL STEP, PAVING AND METALWORK LAYOUTS SHALL BE PROVIDED FOR REVIEW AND APPROVAL BY LANDSCAPE ARCHITECT BEFORE FABRICATION.
4. ANY MATERIALS NOT SPECIFIED IN PLANS SHOULD BE REVIEWED WITH AND APPROVED BY LANDSCAPE ARCHITECT PRIOR TO CONSTRUCTION.
5. PRICING MUST REFLECT IDENTIFIED MATERIAL SPECIFICATIONS AS OUTLINED. ANY DEVIATIONS OR SUBSTITUTES MUST BE APPROVED BY LANDSCAPE ARCHITECT.
6. SITE FURNISHINGS, UNLESS SPECIFIED, ARE EXCLUDED FROM THIS SITE DESIGN PACKAGE.
7. ALL PLANTING AREAS SHALL BE FULLY IRRIGATED, SEE IRRIGATION PLAN FOR MORE INFORMATION.
8. SEE LIGHTING PLANS FOR LIGHTING LAYOUT AND FIXTURE SCHEDULES.
9. QUANTITIES SHOWN IN DRAWINGS ARE FOR CONTRACTOR'S CONVENIENCE ONLY. CONTRACTOR IS RESPONSIBLE FOR VERIFYING EXACT MATERIAL TAKEOFFS BASED ON THIS PLAN.

DETAIL KEYNOTES

1.0 PAVEMENT, RAMPS, CURBS

#	DESCRIPTION	DETAIL / SHEET
1.1	ASPHALT PAVING	SEE CIVIL
1.2	CONCRETE PAVING - TYPE 1 FINISH: LIGHT BROOM, STANDARD COLOR	01/L8.10
1.3	CONCRETE PAVING - TYPE 2 FINISH: SAND ETCH, INTEGRAL COLOR	01/L8.10
1.4	STABILIZED CRUSHED STONE PAVING ASSUME 1/4" MINUS BASALT WITH STABILIZER SOLUTION	02/L8.10
1.5	CONCRETE UNIT PAVER- TYPE 1 ASSUME SAND SET STEPSTONE 6x18 CALARC PAVER	04/L8.10
1.6	CONCRETE UNIT PAVER- TYPE 2 ASSUME SAND SET STEPSTONE 12x36 CALARC PAVER	04/L8.10
1.7	DECORATIVE ROCK STRIP ASSUME 2" CLEAN CRUSHED BASALT	05/L8.10
1.8	WOOD DECKING	01/L8.11
1.9	TACTILE WARNING PAVER	10/L8.11

2.0 JOINTING

#	DESCRIPTION	DETAIL / SHEET
2.1	TOOLED JOINT	01/L8.10
2.2	EXPANSION JOINT	01/L8.10

3.0 STEPS

#	DESCRIPTION	DETAIL / SHEET
3.1	NOT USED	-

4.0 WALLS

#	DESCRIPTION	DETAIL / SHEET
4.1	CONCRETE SEATWALL - TYPE 1 FINISH: SAND ETCH, STANDARD COLOR SEE 5.1 FOR BENCH TOPPER	08/L8.10
4.2	CONCRETE SEAT WALL- TYPE 2 FINISH: SAND ETCH, STANDARD COLOR	09/L8.10

5.0 SITE FURNISHINGS

#	DESCRIPTION	DETAIL / SHEET
5.1	SEATWALL TOP SITE PIECES MONOLINE TOPPER, 60 IN, BACKED SITE PIECES MONOLINE TOPPER, 60 IN, FLAT	-
5.2	WOOD BENCH - TYPE 2 SITE PIECES MODULAR SWOOP SERIES BENCH MATERIAL: THERMALLY MODIFIED WOOD SLATS W/ POWDER-COATED ALUMINUM BASE, SURFACE MOUNT, COLOR TBD	-
5.3	WOOD BENCH - TYPE 3 SITE PIECES MODULAR VEER SERIES BENCH MATERIAL: THERMALLY MODIFIED WOOD SLATS W/ POWDER-COATED ALUMINUM BASE, SURFACE MOUNT, COLOR TBD	-
5.4	WOOD BENCH - TYPE 4 SITE PIECES MONOLINE BACKED BENCH LENGTH: 92 IN. MATERIAL: THERMALLY MODIFIED WOOD SLATS W/ POWDER-COATED ALUMINUM BASE, SURFACE MOUNT, COLOR TBD	-
5.5	MOVABLE FURNISHINGS	BY OWNER
5.6	BIKE RACK ASSUME HUNTCO BURNSIDE, SURFACE MOUNT	06/L8.10

6.0 RAILINGS, BARRIERS, FENCING

#	DESCRIPTION	DETAIL / SHEET
6.1	FENCE - TYPE 1	02/L8.12
6.2	FENCE - TYPE 2	02/L8.12
6.3	FENCE - TYPE 3	SEE ARCH.

7.0 LANDSCAPE LIGHTING

#	DESCRIPTION	DETAIL / SHEET
7.1	SITE LIGHTING	SEE ELECTRICAL

8.0 DRAINAGE

#	DESCRIPTION	DETAIL / SHEET
8.1	AREA DRAIN	SEE CIVIL

9.0 PLANTING, SOILS, LANDSCAPE

#	DESCRIPTION	DETAIL / SHEET
9.1	PLANTING AREA ASSUME 8"+ IMPORTED TOPSOIL, SEE SOILS PLANS	01/L8.50
9.2	PROPOSED TREE	06, 07, 08/L8.50

10.0 MISCELLANEOUS SITE FEATURES

#	DESCRIPTION	DETAIL / SHEET
10.1	STEEL EDGING	03/L8.10
10.2	RAISED STEEL PLANTER	SIM. 07/L8.10
10.3	HERB PLANTER	-
10.4	TOOL SHED	SEE ARCH
10.5	BASKETBALL HOOP ASSUME MEGA SLAM 54, INSTALL PER MANUF.	-
10.6	SITE BOULDER	01/L8.12
10.7	UTILITY TABLE ASSUME OFF THE SHELF STAINLESS STEEL	-
10.8	OVERHEAD SHADE STRUCTURE ASSUME SEMI-CUSTOM GUILDWORKS SHADE	-

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DESIGN REVIEW

12.16.2025

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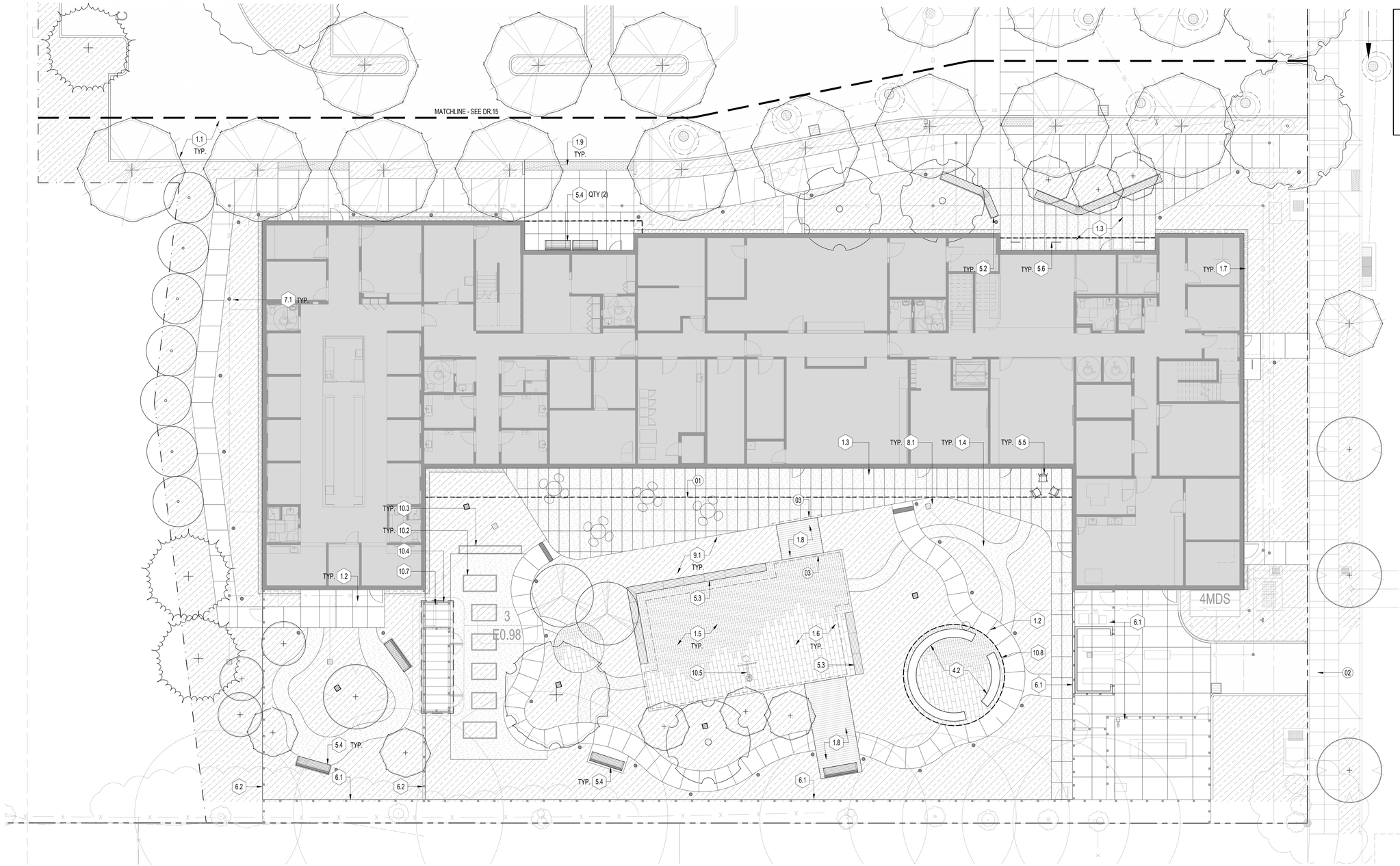
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DETAIL KEYNOTES

1.0 PAVEMENT, RAMPS, CURBS

#	DESCRIPTION	DETAIL / SHEET
1.1	ASPHALT PAVING	SEE CIVIL
1.2	CONCRETE PAVING - TYPE 1 FINISH: LIGHT BROOM, STANDARD COLOR	01/L8.10
1.3	CONCRETE PAVING - TYPE 2 FINISH: SAND ETCH, INTEGRAL COLOR	01/L8.10
1.4	STABILIZED CRUSHED STONE PAVING ASSUME 1/4" MINUS BASALT WITH STABILIZER SOLUTION	02/L8.10
1.5	CONCRETE UNIT PAVER- TYPE 1 ASSUME SAND SET STEPSTONE 6x18 CALARC PAVER	04/L8.10
1.6	CONCRETE UNIT PAVER- TYPE 2 ASSUME SAND SET STEPSTONE 12x36 CALARC PAVER	04/L8.10
1.7	DECORATIVE ROCK STRIP ASSUME 2" CLEAN CRUSHED BASALT	05/L8.10
1.8	WOOD DECKING	01/L8.11
1.9	TACTILE WARNING PAVER	10/L8.11

2.0 JOINTING

#	DESCRIPTION	DETAIL / SHEET
2.1	TOOLED JOINT	01/L8.10
2.2	EXPANSION JOINT	01/L8.10

4.0 STEPS

#	DESCRIPTION	DETAIL / SHEET
3.1	NOT USED	-

4.0 WALLS

#	DESCRIPTION	DETAIL / SHEET
4.1	CONCRETE SEATWALL - TYPE 1 FINISH: SAND ETCH, STANDARD COLOR SEE 5.1 FOR BENCH TOPPER	08/L8.10
4.2	CONCRETE SEAT WALL- TYPE 2 FINISH: SAND ETCH, STANDARD COLOR	09/L8.10

5.0 SITE FURNISHINGS

#	DESCRIPTION	DETAIL / SHEET
5.1	SEATWALL TOP SITE PIECES MONOLINE TOPPER, 60 IN, BACKED SITE PIECES MONOLINE TOPPER, 60 IN, FLAT	-
5.2	WOOD BENCH - TYPE 2 SITE PIECES MODULAR SWOOP SERIES BENCH MATERIAL: THERMALLY MODIFIED WOOD SLATS W/ POWDER-COATED ALUMINUM BASE, SURFACE MOUNT, COLOR TBD	-
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#	DESCRIPTION	DETAIL / SHEET
7.1	SITE LIGHTING	SEE ELECTRICAL

8.0 DRAINAGE

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9.0 PLANTING, SOILS, LANDSCAPE

#	DESCRIPTION	DETAIL / SHEET
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9.2	PROPOSED TREE	06, 07, 08/L8.50

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#	DESCRIPTION	DETAIL / SHEET
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10.5	BASKETBALL HOOP ASSUME MEGA SLAM 54, INSTALL PER MANUF.	-
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10.7	UTILITY TABLE ASSUME OFF THE SHELF STAINLESS STEEL	-
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LANDSCAPE LEGEND

- PROPERTY LINE
- MATCHLINE
- EXISTING TREE
- PROPOSED TREE
- 1.1 ASPHALT PAVING
- 1.2 CONCRETE PAVING - TYPE 1
- 1.3 CONCRETE PAVING - TYPE 2
- 1.4 STABILIZED CRUSHED STONE PAVING
- 1.5 CONCRETE UNIT PAVER - TYPE 1
- 1.6 CONCRETE UNIT PAVER - TYPE 2
- 1.8 WOOD DECKING
- 9.1 PROPOSED PLANTING AREA

MATERIAL NOTES

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KEYNOTES

01 STRUCTURE OVERHEAD SEE ARCH
02 SEE CIVIL FOR RIGHT OF WAY DESIGN
03 CONCRETE TURNDOWN, BELOW

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SCALE 1"=10'

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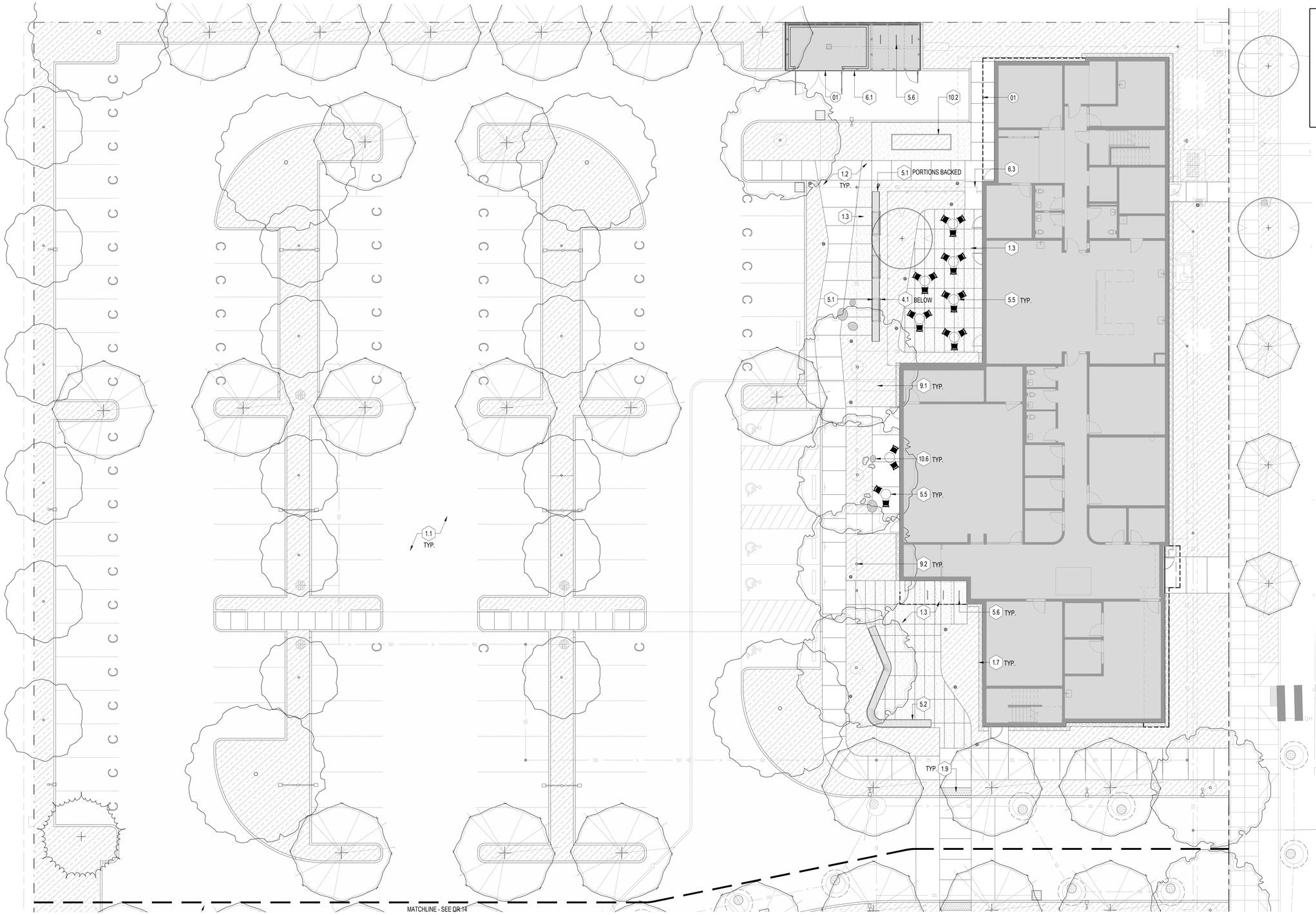
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KEYNOTES

01 STRUCTURE OVERHEAD SEE ARCH
02 SEE CIVIL FOR RIGHT OF WAY DESIGN
03 CONCRETE TURNDOWN, BELOW

LANDSCAPE LEGEND

PROPERTY LINE
MATCHLINE
EXISTING TREE
PROPOSED TREE

1.1 ASPHALT PAVING
1.2 CONCRETE PAVING - TYPE 1
1.3 CONCRETE PAVING - TYPE 2
1.4 STABILIZED CRUSHED STONE PAVING
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LANDSCAPE LEGEND

PROPERTY LINE

MATCHLINE

EXISTING TREE

PROPOSED TREE

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PLANTING SCHEDULE

TREES

SYM.	BOTANICAL NAME / COMMON NAME	SIZE	SPACING	QTY.
MD	FRUIT TREE - UP TO 5 VARIETIES SPECIES TBD	2" CAL.	AS SHOWN	7
AR	ACER RUBRUM 'OCTOBER GLORY' OCTOBER GLORY RED MAPLE	4" CAL.	AS SHOWN	7
CC	CARPINUS CAROLINIANA AMERICAN HORNBEAM	2" CAL.	AS SHOWN	7
CE	CERCIS CANADENSIS EASTERN REDBUD	2" CAL.	AS SHOWN	3
CW	CORNUS 'EDDIE'S WHITE WONDER' EDDIE'S WHITE WONDER DOGWOOD	2" CAL.	AS SHOWN	3
FP	FRANGULA PURSHIANA CASCARA	2" CAL.	AS SHOWN	8
GB	GINKO BILOBA 'PRINCETON SENTRY' PRINCETON SENTRY GINKO	2" CAL.	AS SHOWN	4
MV	MAGNOLIA VIRGINIANA 'MOONGLOW' SWEETBAY MAGNOLIA	2" CAL.	AS SHOWN	3
NS	NYSSA SYLVATICA 'WILDFIRE' WILDFIRE BLACK TUPELO	2" CAL.	AS SHOWN	16
PO	PINUS PONDEROSA WILLAMETTE VALLEY PONDEROSA PINE	2" CAL.	AS SHOWN	3
QC	QUERCUS COCCINEA SCARLET OAK	4" CAL.	AS SHOWN	5
QG	QUERCUS GARRYANA OREGON WHITE OAK	4" CAL.	AS SHOWN	1
ZS	ZELKOVA SERRATA 'GREEN VASE' GREEN VASE ZELKOVA	2" CAL.	AS SHOWN	29

SHRUBS

SYM.	BOTANICAL NAME / COMMON NAME	SIZE	SPACING	QTY.
AC	ACER CIRNATUM VINE MAPLE	6-8' HT. MULTI STEM	AS SHOWN	6
AG	AMELANCHIER X GRANDIFLORA 'AUTUMN BRILLIANCE' AUTUMN BRILLIANCE SERVICEBERRY	10-12' HT. MULTI STEM	AS SHOWN	6
CH	CHOISYA TERNATA MEXICAN ORANGE BLOSSOM	5 GAL.	AS SHOWN	21
CO	CALYCANTHUS OCCIDENTALIS WESTERN SPICEBUSH	7 GAL.	AS SHOWN	9
FG	FOTHERGILLA GARDENII 'JANE PLATT' JANE PLATT DWARF FOTHERGILLA	3 GAL.	AS SHOWN	10
IC	ILEX CRENATA ' COMPACTA' COMPACT JAPANESE HOLLY	3 GAL.	AS SHOWN	8
LP	LONICERA PILEATA PRIVET HONEYSUCKLE	3 GAL.	AS SHOWN	39
MA	MAHONA AQUIFOLIUM 'COMPACTA' COMPACT OREGON GRAPE	3 GAL.	AS SHOWN	22
MC	MORELLA CALIFORNICA PACIFIC WAX MYRTLE	5 GAL.	AS SHOWN	13
PM	PINUS MUGO VAR. PUMILIO DWARF MUGO PINE	7 GAL.	AS SHOWN	9
RA	RHUS AROMATICA 'GRO LOW' GROW LOW FRAGRANT SUMAC	3 GAL.	AS SHOWN	66
RM	RHODODENDRON MACROPHYLLUM PACIFIC RHODODENDRON	5 GAL.	AS SHOWN	26
RS	RIBES SANGUINEUM FLOWERING RED CURRANT	5 GAL.	AS SHOWN	3
RT	RHUS TYPHINA STAGHORN SUMAC	5-8' HT. MULTI STEM	AS SHOWN	7
SB	SPIREA BETULIFOLIA 'TOR' TOR BIRCHLEAF SPIREA	3 GAL.	AS SHOWN	11
SD	SPIREA DOUGLASII DOUGLAS SPIREA	3 GAL.	AS SHOWN	8
SH	SARCOCOCCA HOOKERIANA VAR. HUMILIS DWARF SWEET BOX	1 GAL.	AS SHOWN	51
SJ	TRACHELOSPERMUM JASMINOIDED STAR JASMINE	3 GAL.	AS SHOWN	34
SP	SALIX PURPUREA 'NANA' DWARF ARCTIC WILLOW	3 GAL.	AS SHOWN	5
SR	SARCOCOCCA RUSCIFOLIA FRAGRANT SWEET BOX	3 GAL.	AS SHOWN	18
ST	SALVIA ROSMARINUS 'TUSCAN BLUE' TUSCAN BLUE ROSEMARY	3 GAL.	AS SHOWN	4
SY	SYMPHORICARPOS ALBUS SNOWBERRY	3 GAL.	AS SHOWN	7
VC	VACCINIUM CORYMBOSUM 'EARLIBLUE' VACCINIUM CORYMBOSUM 'SPARTAN' EARLIBLUE AND SPARTAN HIGHBUSH BLUEBERRY	5 GAL.	AS SHOWN	4
VD	VIBURNUM DAVIDII DAVID VIBURNUM	3 GAL.	AS SHOWN	28
VE	VIBURNUM ELLIPTICUM OVAL-LEAFED VIBURNUM	5 GAL.	AS SHOWN	8
VO	VACCINIUM OVATUM EVERGREEN HUCKLEBERRY	3 GAL.	AS SHOWN	40
VT	VIBURNUM TINUS 'SPRING BOUQUET' SPRING BOUQUET LAURUSTINUS	5 GAL.	AS SHOWN	95

GROUNDCOVERS

SYM.	BOTANICAL NAME / COMMON NAME	SIZE	SPACING	QTY.
	AROMATIC GROUNDCOVERS AND HERBS LAVENDULA SPP. SALVIA SPP. NEPETA SPP. THYMUS SPP.	1-3 GAL.	AS SHOWN	120 SF
	RIPARIAN/SWALE GROUNDCOVERS LUPINUS SPP. CAREX OBNUPTA JUNCUS PATENS CAMAS SPP. POLYSTICHUM MUNITUM PTERIDIUM AQUILINUM	1-3 GAL.	AS SHOWN	815 SF
	DRIFTS OF ORNAMENTAL GRASSES AND FLOWERING PERENNIALS ACHILLEA MILLEFOLIUM ALLIUM SPHAEROCEPHALON AMSONIA HUBRICHTII ANAPHALIS MARGITACEA ECHINACEA BANNATICUS 'BLUE GLOW' ECHINACEA PURPUREA 'MAGNUS' NEPETA X 'WALKER'S LOW' RUDBECKIA HIRTA SEDUM 'AUTUMN JOY' SYMPHOTRICHUM SUBSPICATUM BOUTELOUA GRACILIS 'BLONDE AMBITION' SPOROBOLUS HETEROLEPIS	1-3 GAL.	AS SHOWN	4,654 SF
	ORNAMENTAL SHADE MIX MAHONIA NERVOSA GAULTHERIA SHALLON CAREX DIVULSA CLINOPODIUM DOUGLASII PTERIDIUM AUILINUM POLYSTICHUM MUNITUM TELLIMA GRANDIFLORA TIARELLA TRIFOLIATA VANCOUVERIA HEXANDRA 'RANDY'S EVERGREEN'	1-3 GAL.	AS SHOWN	2,643 SF
	HIGH-TRAFFIC GROUNDCOVERS/PARKING ISLANDS CAREX DIVULSA CEANOTHUS GLORIOSUS PACHYSANDRA TERMINALIS POLYSTICHUM MUNITUM SESLARIA AUTUMNALIS TEUCRIUM CHAMAEDRYS	1-3 GAL.	AS SHOWN	13,484 SF

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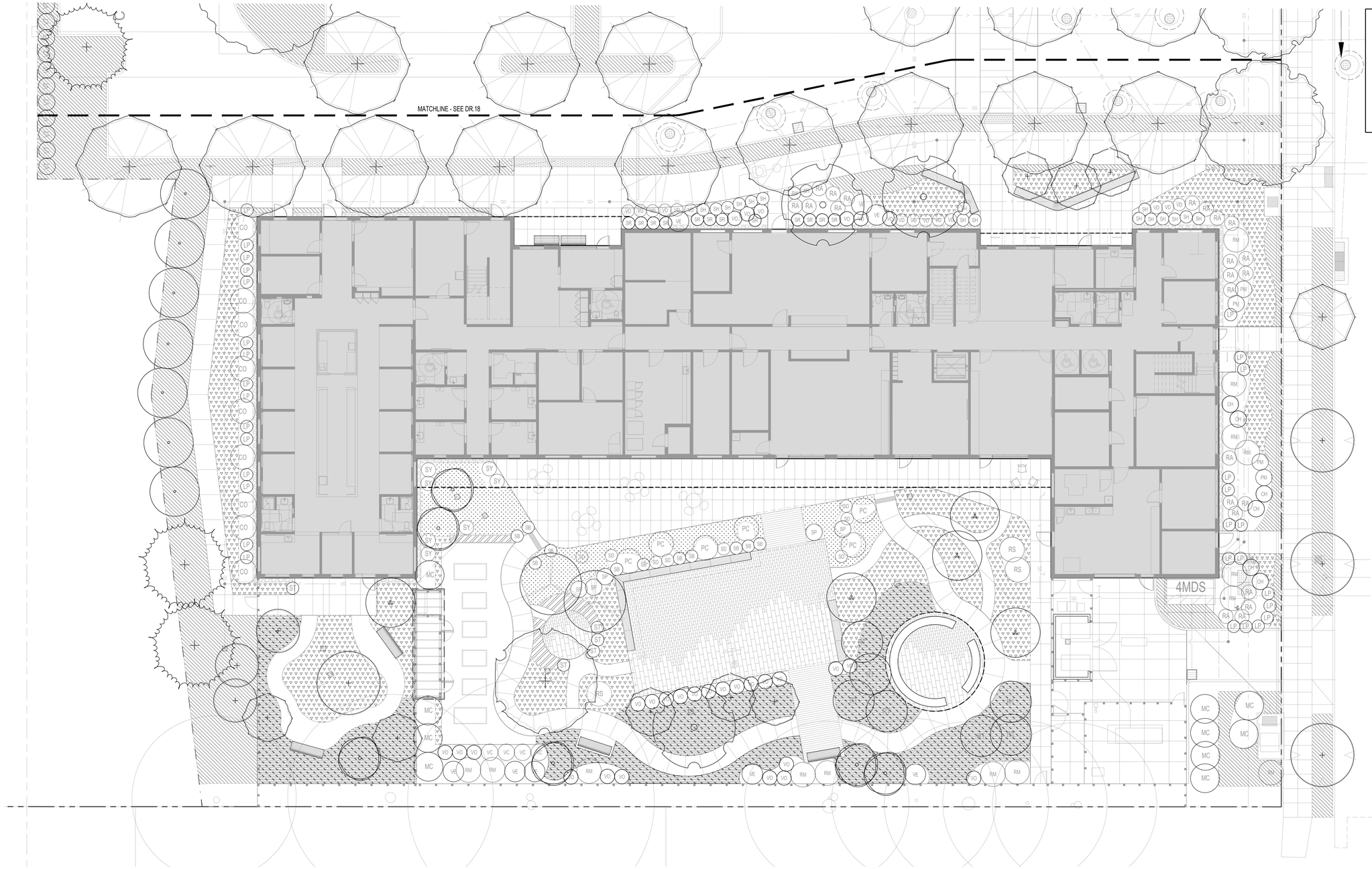
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LANDSCAPE LEGEND

- PROPERTY LINE
- MATCHLINE
- EXISTING TREE
- PROPOSED TREE

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0 5 10 20 30 50FT

SCALE 1"=10'

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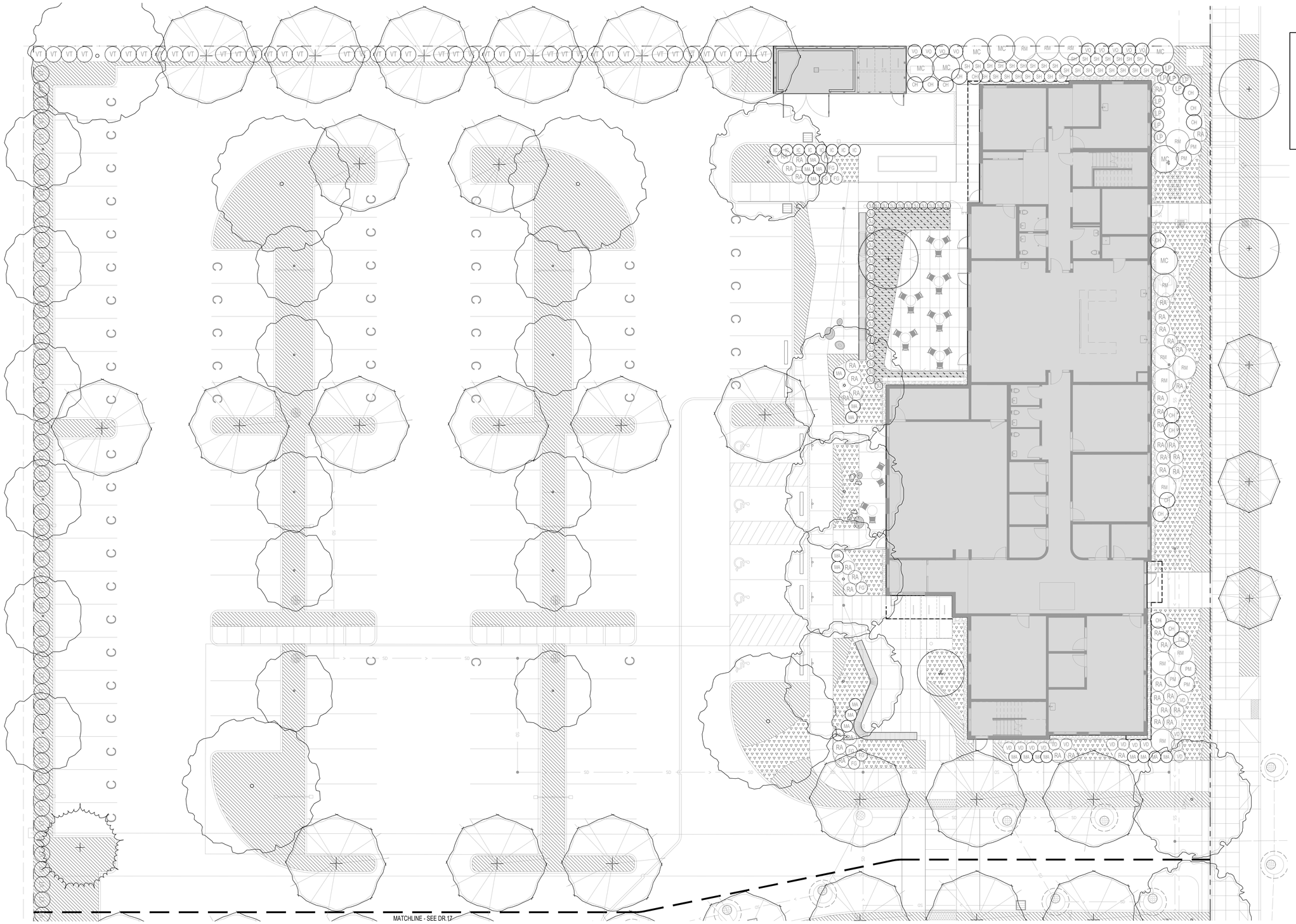
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CLACKAMAS COUNTY RECOVERY CAMPUS

15301 SE 92nd AVE CLACKAMAS OR 97015

JOB NO. 24064

NOT FOR CONSTRUCTION

GW
GROUND WORKSHOP

DESIGN REVIEW

01.28.2026

issue:	date:
50% SD	06.17.2025
100% SD	08.29.2025
50% DD	10.24.2025
100% DD	12.12.2025

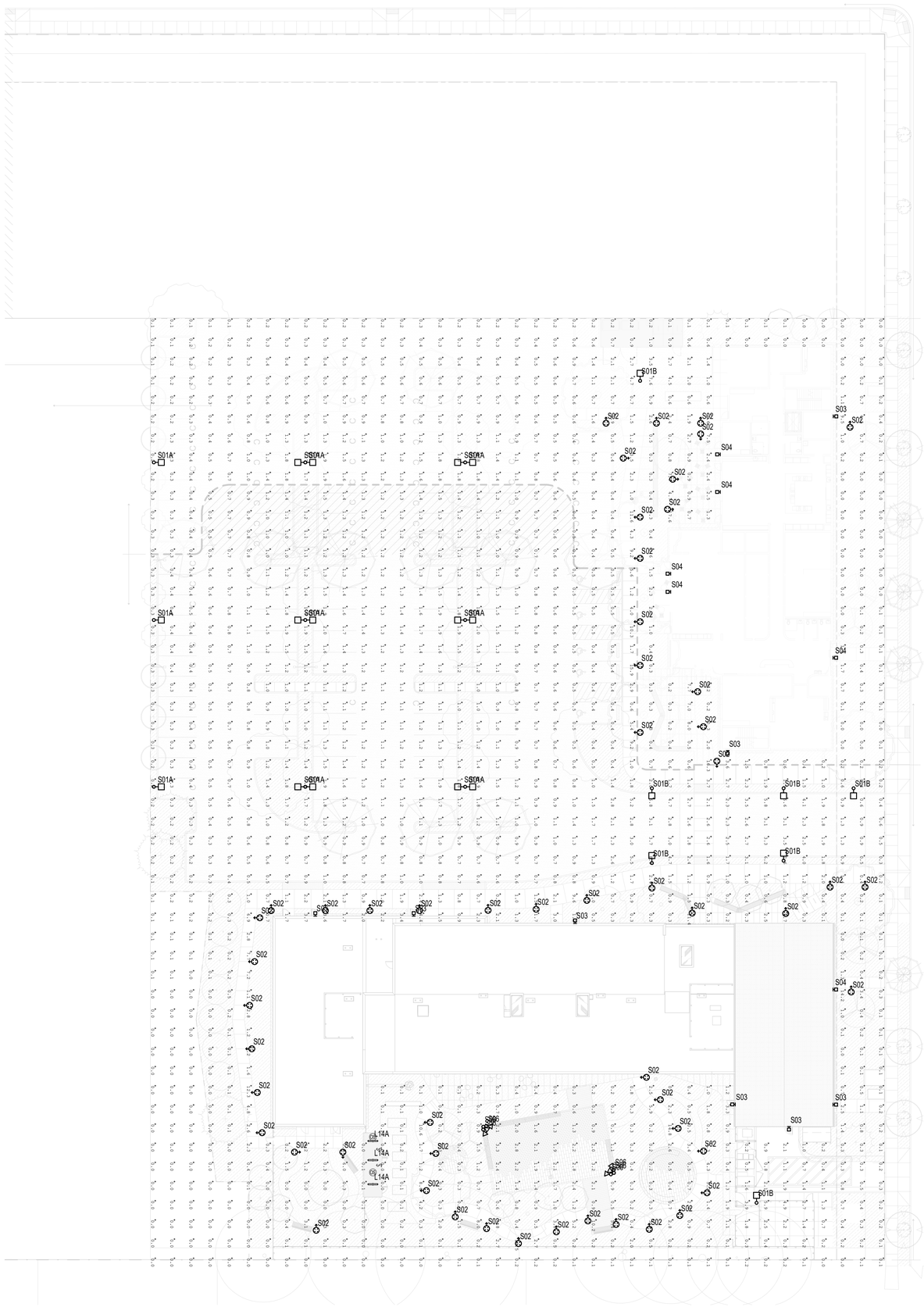
revision:	date:

title:
PLANTING PLAN AREA 2

sheet:
DR.18

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1 Print - 01 - Power - Site AGI Export
1" = 20'-0"

SITE LIGHTING GENERAL REQUIREMENTS:

A. SHALL NOT DIRECT LIGHT SKYWARD.

B. SHALL DIRECT DOWNWARD AND SHEILD LIGHT; OR DIRECT LIGHT SPECIFICALLY TOWARD WALLS, LANDSCAPE ELEMENTS, OR OTHER SIMILAR FEATURES, SO THAT LIGHT IS DIRECTED WITHIN THE BOUNDARIES OF THE SUBJECT PROPERTY.

C. THE HEIGHT OF POLE-MOUNTED FIXTURES SHALL NOT EXCEED 25 FEET.

D. ENTRANCE LIGHTING MAY NOT EXCEED A HEIGHT OF 12 FEET AND MUST BE DIRECTED DOWNWARD.

E. LUMINAIRE SCHEDULE SHOWN HERE IS FOR REFERENCE AND TO IDENTIFY THE LUMINAIRES AS PART OF LAND USE REVIEW PACKAGE. REFER TO LUMINAIRE SCHEDULE ON SHEET E0.51 FOR COMPLETE LUMINAIRE SPECIFICATION AND REQUIREMENTS.

	PRODUCT DESCRIPTION	BASIS OF DESIGN MANUFACTURER	SIZE (NOMINAL)	SOURCE (Type, CCT, Delivered Lumens)	DRIVER (Integral/Remote) (Electronic/Magn.) (Dimming Type)	MOUNTING
S01A	LED AREA DOUBLE HEAD PARKING LUMINAIRE	STRUCTURA LINEAL	NOMINAL 29 INCH X 3 INCH WIDE X 4 INCH DEEP	LED 3000K 4266 LUMEN TYPE 4 DISTRIBUTION	INTEGRAL 0-10V DIMMING DRIVER	25' STRAIGHT STEEL SQUARE POLE ARM MOUNT
S01B	LED AREA SINGLE HEAD PARKING LUMINAIRE	STRUCTURA LINEAL	NOMINAL 29 INCH X 3 INCH WIDE X 4 INCH DEEP	LED 3000K 4266 LUMEN TYPE 2 DISTRIBUTION	INTEGRAL 0-10V DIMMING DRIVER	12' STRAIGHT STEEL SQUARE POLE ARM MOUNT
S02	LED BOLLARD	STRUCTURA LINEAL BOLLARD	4" W x 36" H x 7" D	LED 3500K 721 LUMEN TYPE 2 DISTRIBUTION	INTEGRAL 0-10V DIMMING DRIVER	SURFACE
S03	EXTERIOR WALL PACK, VISUAL COMFORT FORWARD THROW	LITHONIA WDGE1	9" W x 8" H x 5.5" D	LED 3000K 750 LM 80+ CRI	INTEGRAL 0-10V DIMMING DRIVER	SURFACE WALL
S04	EXTERIOR DECORATIVE WALL SCONCE, SINGLE MODULE	STRUCTURA LINEAL SCONCE	4" W x 18" H x 8" D	LED 3000K 547 LUMEN TYPE 4 DISTRIBUTION	INTEGRAL 0-10V ELECTRONIC DIMMING TO 1%	SURFACE WALL
S05	EXTERIOR DOWNLIGHT SUITABLE FOR WET LOCATION	PRESCOLITE LTR-6	4 INCH APERTURE WITH 9 INCH X 9 INCH X 6-3/4 INCH DEEP RECESSED FRAME.	LED, 3000K 600 LUMEN MEDIUM DISTRIBUTION	INTEGRAL 0-10V ELECTRONIC DIMMING TO 1%	RECESSED CEILING
S06	LED SPOT LIGHT	STRUCTURA FELIX MINI	4" W x 6" H x 7 7/8" D	LED 3000K 70 DEGREE BEAM	REMOTE 0-10V DIMMING DRIVER	SURFACE ON 20' STRAIGHT STEEL POLE

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123 NE 3RD AVE.
SUITE 310
PORTLAND, OR
97232

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CLACKAMAS COUNTY RECOVERY CAMPUS - BUILDING 1

JOB NO. 24064

DESIGN REVIEW

12.16.2025

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revision:	date:

title:
PHOTOMETRIC SITE PLAN

sheet:
DR.19

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LED BOLLARD (S02)

Lineal Bollard Illuminated Aluminum Bollard

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FIXTURE TYPE: _____

PROJECT NAME: _____





High performance slender aluminum bollard with accent panel and configuration options.

FEATURES:

- Small 4" x 3" footprint
- Available with wood or aluminum front accent panel
- Multiple distribution options
- Concealed mounting hardware

SPECIFICATIONS:

CONSTRUCTION: Seamless aluminum housing comprised of 6005A-T61 extrusion and 6061-T6 end plates. Secures to an A36 steel base weldment. Gasketed handhole access behind accent panel.

ELECTRICAL: Powered by a Class P 120-277VAC primary integral power supply behind gasketed handhole cover behind accent panel. System is 0-10V dimmable. Minimum -40°C operating temperature.

OPTICAL SYSTEM: LED boards have solderless connections for field upgradability. Available in 2700K, 3000K, 3500k and 4000K color temperatures with >90 CRI. Optics are UV resistant molded PMMA in Type II and IV distributions. Consult factory for additional lumen output, CCT, and optical distribution options.

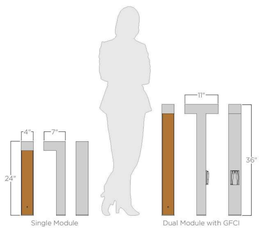
FINISHES AND MATERIALS: All exterior aluminum parts are polyester powder coat painted to AAMA-2604 standards. Wood pieces are finished with a low VOC waterborne matte exterior finish containing UV and mildew inhibitors. Care and Maintenance

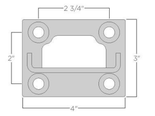
HARDWARE: All luminaire hardware is stainless steel. Anchor bolt kit is not dipped galvanized.

LISTINGS & RATINGS: Luminaire CSA listed according to CSA C22.2 No. 250.0-18/UL Standard 1598. Suitable for wet locations. LM-80 test reported L70 > 60,500 hours and calculated L70 > 154,000 hours.

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		Standard Output	
Module	Type	Lumens[1]	Watts
Single	II	721	11
Single	IV	725	11
Dual	II	1442	22
Dual	IV	1450	22
Dual	II/IV	1446	22
Dual	IV/II	1446	22

ORDERING GUIDE: EXAMPLE: LBL-S-36-L30SO-2-CS-P1/S3-UNV-STD

LBL			SO				UNV		STD
1	2	3	4	5	6	7	8	9	10	11

1	**Series**	5	**Light Source**[3]	8	**Panel Material**[5]
LBL	Lineal Bollard	SO	Standard Output	P1/S* P2/C*	Wood (specify color)[6] Aluminum (specify color)[6][8]
2	**Module**	6	**Distribution**[4]	9	**Voltage**
S	Single	2	Type II	UNV	120-277V
D	Dual	4	Type IV	10	**Options**
3	**Overall Height**	2/4	Front Type II/Back IV	GFCI	GFCI Box[7]
24	24"	4/2	Front Type IV/Back II	11	**Special**
36	36"	7	**Metal Finish**	STD	Standard
4	**Light Color**	C*	See color options on finishes technical sheet Custom Color		
L27	2700K[2]	CSM			
L30	3000K[2]				
L35	3500K				
L40	4000K				
AMB	Amber				

1. Lumen output based upon 2700K color temperature.
2. CCT of 2700K or 3000K color temperature required for DarkSky Approved.
3. Consult factory for other output options.
4. BUG rating of 80-U1-G1
5. Accent panel only on front side of bollard.
6. See color options on finishes technical sheet.
7. GFCI box requires 36" bollard height.

Product specification sheets subject to change.

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EXTERIOR WALL PACK (S03)



WDGE2 LED

Architectural Wall Sconce Visual Comfort Optic

Catalog Number

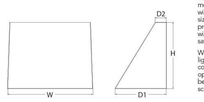
Notes

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Specifications

Depth (D1): 7"
Depth (D2): 1.5"
Height: 9"
Width: 11.5"
Weight: (without options) 13.5 lbs



Introduction

The WDGE LED family is designed to meet specifier's every wall-mounted lighting need in a widely accepted shape that blends with any architecture. The clean rectilinear design comes in four sizes with lumen packages ranging from 1,200 to 25,000 lumens, providing a true site-wide solution. Embedded with nLight® AIR wireless controls, the WDGE family provides additional energy savings and code compliance.

WDGE2 delivers up to 6,000 lumens with a soft, non-pixelated light source, creating a visually comfortable environment. When combined with multiple integrated emergency battery backup options, including an 18W cold temperature option, the WDGE2 becomes the ideal wall-mounted lighting solution for pedestrian scale applications in any environment.

design select Items marked by a shaded background qualify for the Design Select program and ship in 15 days or less. To learn more about Design Select, visit www.acuitybrands.com/designselect. *See ordering tree for details.

WDGE LED Family Overview

Luminaire	Optics	Standard EM, 0°C	Cold EM, -20°C	Sensor	Approximate Lumens (4000K, 80CRI)						
					P0	P1	P2	P3	P4	P5	P6
WDGE1 LED	Visual Comfort	4W			750	1,200	2,000	--	--	--	--
WDGE2 LED	Visual Comfort	10W	18W	Standalone / nLight	--	1,200	2,000	3,000	4,500	6,000	--
WDGE2 LED	Precision Refractive	10W	18W	Standalone / nLight	700	1,200	2,000	3,200	4,200	--	--
WDGE3 LED	Precision Refractive	15W	18W	Standalone / nLight	6,000	7,500	8,500	10,000	12,000	--	--
WDGE4 LED	Precision Refractive			Standalone / nLight	--	12,000	16,000	18,000	20,000	22,000	25,000

Ordering Information

EXAMPLE: WDGE2 LED P3 40K 80CRI VF MVOLT SRM DDBXD

Series	Package		Color Temperature		CRI	Distribution		Voltage	Mounting	
WDGE2 LED	P1[1]	P10W	27K	2700K	80CRI	VF	Visual comfort forward throw	MVOLT	**Shipped included**	
	P2[1]	P25W	30K	3000K	90CRI	VW	Visual comfort wide	347[1]	SRM Surface mounting bracket	**Shipped separately**
	P3[1]	P35W	35K	3500K				480[1]	ICW Indirect Canopy/Ceiling Washer bracket (ship w/lamp locations only)[2]	AWS 3/8inch Architectural wall spacer[3]
	P4[1]	Door with small window (LWA) is required to accommodate sensors. See page 2 for more details.	40K	4000K						PBBW Surface-mounted back box (top, left, right conduit entry). Use when there is no junction box available.[3]
	P5[1]		50K[1]	5000K						

Options			
E4WH	Emergency battery backup, Certified in CA Title 20 MAED5 (4W, 0°C min)	**Standalone Sensors/Controls** (only available with P1SW, P2SW & P3SW)	DDBXD Dark bronze
E10WH	Emergency battery backup, Certified in CA Title 20 MAED5 (10W, 0°C min)	PIR Bi-level (100/35%) motion sensor for 8-15' mounting heights. Intended for use on switched circuits with external dusk to dawn switching.	DBLXD Black
E20WC	Emergency battery backup, Certified in CA Title 20 MAED5 (10W, -20°C min)	PIRH Bi-level (100/35%) motion sensor for 15-30' mounting heights. Intended for use on switched circuits with external dusk to dawn switching.	DNAXD Natural aluminum
PE	Photocell, Button Type*	PIR1FC1V Bi-level (100/35%) motion sensor for 8-15' mounting heights with photocell pre-programmed for dusk to dawn operation.	DWHXD White
DS	Dual switching (comes with 2 drivers and 2 light engines; see page 3 for details)*	PIRH1FC1V Bi-level (100/35%) motion sensor for 15-30' mounting heights with photocell pre-programmed for dusk to dawn operation.	DSSXD Sandstone
DMG	0-10V dimming wires pulled outside fixture (for use with an external control, ordered separately)*	**Networked Sensors/Controls** (only available with P1SW, P2SW & P3SW)	DDBTXD Textured dark bronze
BCE	Bottom conduit entry for back box (PBBW). Total of 4 entry points.	NLTAIR2 PIR Embedded wireless controls by nLight with Passive Infrared Occ sensor and on/off photocell for 8-15' mounting heights.	DBLBXD Textured black
DSLE	Dual Switching (1 Driver, 2 Light Engines)	NLTAIR2 PIRH Embedded wireless controls by nLight with Passive Infrared Occ sensor and on/off photocell for 15-30' mounting heights.	DNATXD Textured natural aluminum
CCE	Coastal Construction*	NLTAIRM2 PIR Embedded wireless controls by nLight with UL924 listed emergency operation, Passive Infrared Occ sensor and on/off photocell for 8-15' mounting heights*	DWHGXD Textured white
		NLTAIRM2 PIRH Embedded wireless controls by nLight with UL924 listed emergency operation, Passive Infrared Occ sensor and on/off photocell for 15-30' mounting heights*	DSSTXD Textured sandstone

See page 4 for out of box functionality

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WDGE2 LED Rev. 04/02/25

EXTERIOR DECORATIVE WALL SCONCE (S04)

Lineal Sconce LED Wall Sconce

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FIXTURE TYPE: _____

PROJECT NAME: _____





High performance aluminum wall sconce with integral driver, accent panel, and configuration options.

FEATURES:

- Slender 4" wide x 3" deep body profile
- Available with wood, aluminum accent panel
- Multiple distribution options
- Mounting for a variety of junction boxes

SPECIFICATIONS:

CONSTRUCTION: Seamless aluminum housing comprised of 6005A-T61 extrusion and 6061-T6 end plates. Secures to junction boxes using an aluminum adapter plate and steel mounting bracket. Gasketed handhole behind accent panel for driver access.

ELECTRICAL: Powered by a Class P 120-277VAC primary integral power supply behind gasketed handhole cover behind accent panel. System is 0-10V dimmable. Minimum -40°C operating temperature.

OPTICAL SYSTEM: LED boards have solderless connections for field upgradability. Available in 2700K, 3000K, 3500k and 4000K color temperatures with >90 CRI. Optics are UV resistant molded PMMA in Type II and V distributions. Consult factory for additional lumen output, CCT, and optical distribution options.

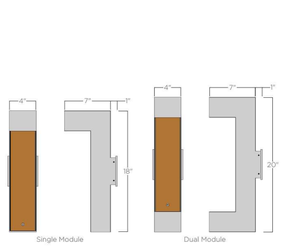
FINISHES AND MATERIALS: Wood pieces are finished with a low VOC waterborne matte exterior finish containing UV and mildew inhibitors. All exterior aluminum parts are polyester powder coat painted to AAMA-2604 standards. Care and Maintenance

HARDWARE: All luminaire hardware is stainless steel.

LISTINGS & RATINGS: Luminaire CSA listed according to CSA C22.2 No. 250.0-18/UL Standard 1598. Suitable for wet locations. LM-80 test reported L70 > 60,500 hours and calculated L70 > 154,000 hours.

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		Standard Output	
Module	Type	Lumens[1]	Watts
Single	II	554	8.4
Single	IV	547	8.4
Dual	II	1131	14.4
Dual	IV	1133	14.4
Dual	II/IV	1146	14.4

ORDERING GUIDE: EXAMPLE: LSC-D-L27SO-2/4-C6-P1/S2-UNV-STD

LSC		SO				UNV	
1	2	3	4	5	6	7	8	9

1	**Series**	4	**Light Source**[2]	7	**Panel Material**
LSC	Lineal Sconce	SO	Standard Output	P1/S* P2/C*	Wood (specify color)[4] Aluminum (specify color)[4]
2	**Module**	5	**Distribution**[3]	8	**Voltage**
S	Single	2	Type II	UNV	120-277V
D	Dual	4	Type IV	9	**Options**
3	**Light Color**	2/4	Top Type II/Bottom IV	STD	Standard
L27	2700K	6	**Metal Finish**	MOD	Modified
L30	3000K	C*	See color options on finishes technical sheet Custom Color		
L35	3500K	CSM			
L40	4000K				
AMB	Amber				

1. Lumen output based upon 3000K color temperature.
2. CCT of 2700K or 3000K color temperature required for DarkSky Approved.
3. BUG rating of 80-U1-G1 for Type 2 and 2/4, BUG rating of 80-U1-G0 for Type 4.
4. See color options on finishes technical sheet.

Product specification sheets subject to change.

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LED SPOT LIGHT (S06)

Felix Mini LED Floodlight Luminaire

structura

FIXTURE TYPE: _____

PROJECT NAME: _____



SPECIFICATIONS:

CONSTRUCTION: Housing comprised of aluminum die castings with machined aluminum 6061-T6 mounting brackets.

ELECTRICAL: Powered by an intergral 120-277VAC constant current driver. Standard output is 13W. Optional 0-10V dimming with remote driver. Operating temperature of -4°F to 122°F.

OPTICAL SYSTEM: COB LED has solderless connections for field upgradability. Available in color temperature of 2700, 3000, 3500, and 4000K with >80 CRI standard. Optional >90 CRI. Optical reflectors available in 15°, 30°, 60°, and 70° spot distributions. Covered by clear tempered glass. Consult factory for additional color temperatures or lumen outputs.

FINISHES: All exterior aluminum parts are polyester powder coat painted to meet AAMA-2604 standards. See Structura's finish options for available standard finishes. Care and Maintenance

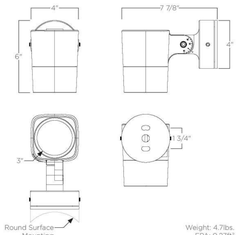
LISTINGS & RATINGS: Luminaire CSA listed according to CSA C22.2 No. 250.0-21/UL Standard 1598, 5th edition. Suitable for wet locations. LM-80 test reported L70 > 66,000 hours. IP66 rated.

WARRANTY: 5-year warranty on LED and drivers.



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		Output at 3000K, 80CRI			
Output	Wattage	Optic	Lumen	Efficacy	Candela
SO	13	15	1572	119.1	10,309
SO	13	30	1589	120.5	3,785
SO	13	60	1596	121.0	1,776
SO	13	70	1490	113.1	1,155

Weight: 4.7lbs.
EPA: 0.27ft²

ORDERING GUIDE: EXAMPLE: FELIX-MINI-L27SO-20-C5-UNV-R/4-STD

FELIX	MINI							
1	2	3	4	5	6	7	8	9	10

1	**Series**	5	**Distribution**	8	**Mounting**
FELIX	Felix	15	17° Beam	F	Flat Surface
2	**Size**	30	32° Beam	R/*	Round Surface/Diameter[4]
MINI	Mini	60	60° Beam	9	**Option**
3	**Color Temperature**[1]	70	70° Beam	90	>90 CRI[2]
L27	2700K	6	**Metal Finish**	HEX	Hexcell Louver
L30	3000K	C*	See color options on finishes technical sheet Custom Color	10	**Special**
L35	3500K	CSM		STD	Standard
L40	4000K	7	**Voltage**		
4	**Output**[3]	UNV	120-277V		
SO	Standard Output	REM	Remote 120-277V[2]		

1. Contact factory for alternative color temperatures or output options.
2. Remote driver is required for 0-10V dimming controls.
3. Diameterred specified in inches.
4. Standard CRI is >80.

Product specification sheets subject to change.

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CLACKAMAS COUNTY RECOVERY CAMPUS

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LIGHTING FIXTURE CUTSHEETS 1/2

sheet:

DR.20

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LED AREA SINGLE AND DOUBLE HEAD PARKING LUMINAIRE (S01A, SO1B)

Lineal LED Luminaire

structura

FIXTURE TYPE:

PROJECT NAME:





Lineal mounted on Structura Tilt pole.



Lineal mounted on Structura Kilo pole.

SPECIFICATIONS:

CONSTRUCTION: Seamless aluminum housing comprised of 6005A-T61 extrusion and 6061-T6 end plates. Gasketed aluminum electrical access cover attached with captive stainless steel hardware and safety cable.

ELECTRICAL: Integral Class P, 120-277V or 347-480V, dimmable constant current driver. Luminaire is pre-wired with watertight 5 conductor 18 gauge SJEOOW whip. 10kA surge suppression is standard with optional external 20kA surge suppression. Operating temperature of -40°C to 50°C.

OPTICAL SYSTEM: LED boards have solderless connections for field upgradability. Available in CCT of 2700, 3000, 3500, and 4000K, >80 CRI. Optics are UV resistant molded PMMA in Type II and IV distributions. Consult factory for additional lumen output, CCT, and optical distribution options.

CONTROLS: Dimming through 0-10V input is standard. Available with integral motion sensor with photocell providing on/off and full light to dim control. Also available with wireless smart city control. See SmartCity control documentation for more information.

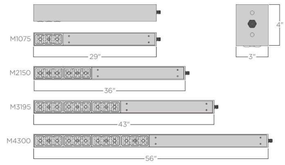
FINISHES: All exterior aluminum parts are polyester powder coat painted to meet AAMA 2604 standards. See Structura's finish options for available colors. Care and Maintenance

LISTINGS & RATINGS: Luminaire CSA listed according to CSA C22.2 No. 250.0-18/UL Standard 1598. Suitable for wet locations. LM-80 test reported L70 > 90,000 hours and calculated L70 > 110,000 hours. Bug rating B1-U0-G1. IP65 rated.

WARRANTY: 5-year warranty on LED and drivers.

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			2700K		3000K		3500K		4000K			
mA	Wattage	CRI	Lumen[1]	Efficacy	Lumen[1]	Efficacy	Lumen[1]	Efficacy	Lumen[1]	Efficacy	EPA	Weight
750	40	>80	4164	103.3	4266	105.9	4437	110.1	4620	114.6	0.81ft²	12.3lbs.
1500	76	>80	8327	109.6	8532	112.3	8837	116.8	9240	121.6	1.00ft²	14.2lbs.
1950	104	>80	10825	104.0	11091	106.6	11535	110.9	12012	115.5	1.19ft²	16.2lbs.
3000	152	>80	16653	109.6	17063	112.3	17745	116.7	18479	121.6	1.55ft²	20.7lbs.

ORDERING GUIDE: EXAMPLE: LIN-M2150-UNV-L30-4-CI-SP-WC-MS/L3-STD

1	2	3	4	5	6	7	8	9
LIN								

1 Series
LIN — Lineal

2 Output[2]
M1075 — 750mA, 1950mA
M2150 — 1950mA, 3000mA
M4300 — 3000mA

3 Voltage
UNV — 120-277V
HIGH — 347-480V

4 Color Temperature[3]
L27 — 2700K[3]
L30 — 3000K[3]
L35 — 3500K
L40 — 4000K
AMB — Amber

5 Distribution[2]
2 — Type II
4 — Type IV

6 Metal Finish
C* — See color options on finishes technical sheet
CSM — Custom Color

7 Mounting
SP — Structura Pole[4]
ST — Square steel pole by Structura[5]
NA — Pole by Others

8 Options
HSS — House-Side Shield
SP — 5-Pin Receptacle
MS/L* — Motion Sensor/Photocell[6]
NX — Hubbell NX controls
WC — Wireless Control[7]

9 Special
STD — Standard

1. Lumen output based upon Type II distribution.
2. Contact factory for alternative output, CCT, and distribution options.
3. CCT of 2700K or 3000K color temperature required for DarkSky Approved.
4. Structura pole specification sheet must be completed showing mounting locations and quantities as a separate item.
5. Specify steel pole on page 108 as a separate item.
6. Specify coverage pattern (see page 107 for detail). Requires wireless handheld configuration tool.
7. Synapse Wireless site gateway controller must be ordered seperately. Please contact factory for design assistance.

Product specification sheets subject to change.

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ST Straight Square Steel Pole

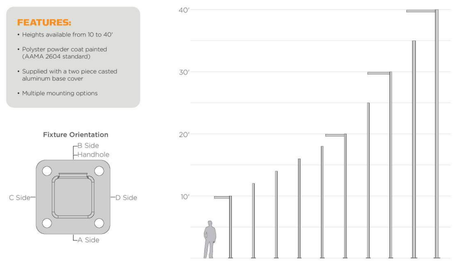
structura

FIXTURE TYPE:

PROJECT NAME:

FEATURES:

- Heights available from 10 to 40'
- Polyster powder coat painted (AAMA 2604 standard)
- Supplied with a two piece casted aluminum base cover
- Multiple mounting options



Fixture Orientation

ORDERING GUIDE: EXAMPLE: ST-20-4-5-C7-A20-B12-STD

1	2	3	4	5	6	7	8	9	10	11
ST										STD

1 Series
ST — Square Steel Pole

2 Pole Height
10 — 10'
40 — 40'
** — Specify

3 Pole Size
4 — 4"
5 — 5"
6 — 6"

4 Wall Thickness
5 — Standard Thick
T — Standard

5 Pole Finish
*** — See color options on finishes technical sheet Custom Color
CSM — Custom Color

6 A Side Fixture Mounting Height
Blank — No fixture on this side
A10 — 10' A Side
A12 — 12' A Side
A** — Specify

7 B Side Fixture Mounting Height
Blank — No fixture on this side
B** — Specify

8 Blank
C** — C Side Fixture Mounting Height
No fixture on this side
Specify

9 Blank
D** — D Side Fixture Mounting Height
No fixture on this side
Specify

10 Options
BNR — Banner[1]
GALV — Galvanization[2]
GFCI — GFCI Box
VD — Vibration Dampener

11 Special
STD — Standard

1. Consult factory for allowable EPA for banners.
2. Due to the nature of galvanization, some surface smoothness imperfections can be present.

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Product specification sheets subject to change.

EXTERIOR DOWNLIGHT SUITABLE FOR WET LOCATION (S05)

prescolite

LTR-6RD

LITESTRY 6" ROUND DOWNLIGHT

DATE: LOCATION:

TYPE: PROJECT:

CATALOG #:

LITESTRY

FEATURES

- 6" architectural LED downlight delivering 600 – 9000 lm
- Five beam distributions from 0.3 to 1.1 Spacing Criteria
- Quiet reflector appearance with superior 50° optical cutoff
- 2700K – 5000K, 80+ and 90+ CRI options
- Available for New Construction (non-IC), IC and Chicago Plenum applications
- Variety of dimming protocol options including 0-10V, DALI, DMX, and Lutron EcoSystem
- NX Lighting Controls wired and wireless controls capability available

BAA (BAA Options) TAA (TAA Options)

IP66 IK10 *Select models

SERVICE PROGRAMS

tradeSELECT CAS10

CONTROLS TECHNOLOGY

SPECIFICATIONS

CONSTRUCTION
- Standard Non-IC, Chicago Plenum and IC options
- Painted black durable steel platform with pre-installed bar hangers
- Pre-wired junction box with snap-on covers for easy access
- Snap-in connection from driver compartment allows easy installation
- Light Engine connections use plenum rated (CMP) cable

OPTICS
- Visually pleasing 50° cutoff to source and source image
- The light distribution is free of distracting bright spots or pixelation and the perimeter has a smooth transition
- Optical grade silicone lens integral to light engine
- High purity spun aluminum reflector, self-flanged
- Flush Mount flange option with mud-in ring available
- Large selection of anodized finishes and colors
- Painted cones and flange options available

ELECTRICAL
- Chip-on-board LED with 2 SDCM
- Multiple CCTs, 80+ or 90+ CRI
- Long LED life: L90 at >55,000 hours (TM-21)
- Universal voltage 120V–277V drive, 347V optional
- UL Class 2, inherent short circuit and overload protection

ELECTRICAL (CONTINUED)
- Philips' free 0-10V dimming with 1% or <1% performance
- DALI, DMX, and Lutron EcoSystem options
- NX Lighting Controls provides options for standalone and networked functionality with wired or wireless connectivity for NX system deployments
- Lutron Athena control options also available
- Integral and remote controller and battery pack options available
- Refer to additional spec sheets for information on SpectraSync™ Tunable White or Dim-to-Warm or solutions.

INSTALLATION
- Accommodates ceiling thickness up to 2" (SL, ML, ML), up to 1.25" (NL, XL) (See DIMENSIONS section for details)
- Universal adjustable mounting brackets also accept ½" EMT conduit or ¾" or ¾" lathing channel (by others) or Prescolite accessory bar hangers (B24 or B6)
- Light Engine/Driver fully serviceable from above or below the ceiling

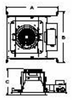
CERTIFICATIONS
- cCSAus certified to UL 1598
- Per J701, Marked spacing required 36" fixture center to center; 36" fixture center to building member; 0.5" above fixture
- Suitable for wet locations, covered ceiling, EM/ EMR; Suitable for damp locations

CERTIFICATIONS (CONTINUED)
- EM/EMR: Certified under UL 924 standard for emergency lighting and power equipment
- EM/EMR: Emergency battery packs are California Energy Commission (CEC) Title 20 Compliant
- When used with CE Bezel Trim Accessories: IP66/IP65K rating; also meets IK10 per IEC 60068-2-75 impact testing
- Approved for 8 (4 in/4 out) No. 12 AWG conductors rated for 90°C through wiring
- Per -BAA Option: This product meets federal procurement law requirements under the Buy American Act (FAR 52.225-9) See Buy American Solutions
- Per -TAA Option: Product configurations meet federal procurement law requirements under the Trade Agreements Act (FAR 52.225-5) See Buy American Solutions

WARRANTY
- 5 year warranty

KEY DATA	
Lumen Range	600–9000
Wattage Range	5–99
Efficacy Range (LPW)	94–104*
Reported Life (Hours)	L90 / >55,000
Input Current (mA)	65–825 (120V)

*Based on Specsmart 3K4, 80 CRI



Typical Dimensions and Weights			
Lumen Package	"A" Length Inches (mm)	"B" Width Inches (mm)	"C" Height Inches (mm)	Weight lbs (kg)
6RL - 7RL	14.55 (370)	14.36 (365)	5.9 (150)	7.6 (3.5)
2XL - 3XL	14.55 (370)	14.36 (365)	6.66 (170)	8.2 (3.7)
3XL - 4RL	14.55 (370)	14.36 (365)	7.96 (202)	8.8 (4)
5XL - 6XL	14.55 (370)	14.36 (365)	9.04 (230)	9.9 (4.5)
7XL - 9XL	14.55 (370)	15.56 (395)	11.56 (294)	10.6 (4.8)

See DIMENSIONS section for complete details

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prescolite

LTR-6RD

LITESTRY 6" ROUND DOWNLIGHT

DATE: LOCATION:

TYPE: PROJECT:

CATALOG #:

Grey Shading = Service Program tradeSELECT CAS10

ORDERING GUIDE

Example: LTR-6RD-H-5L XL-DMI-LTR-6RD-T-5L 35K/BMD-5

CATALOG #

HOUSING

LTR-6RD-H

Aperture/Shape/Function	Lumen Package	Lumen Output	Driver Options	Control Options	Voltage	Housing Options
LTR-6RD-H 6" Round Downlight New Construction Housing	5L Standard Lumen	06L 600	DMI 0-10V Dimming to 1%	NX Lighting Controls Networked Wireless	Standard (120-277V)	CP Chicago Plenum**
		10L 1000	DMOT 0-10V Dimming to 1%*	NXW NX Networked Wireless Radio Module NXRM2 and Bluetooth Programming, without Sensor *	34 347V*	IC IC rated**
		15L 1500	DMX DMX with RDM, dimming to 1%*			EN 7W Emergency Battery Pack (CEC Title 20 Compliant) with integral test switch and indicator light*
	6L Medium Lumen	20L 2000	DALI DALI Dimming to 1%*			ENR 7W Emergency Battery Pack (CEC Title 20 Compliant) with remote test switch and indicator light*
		25L 2500	EDIM Lutron Hi-Lume EcoSystem Dimming to 1%*	Networked Wireless		DTS Device Transfer Switch with Dimming Bypass**
		30L 3000	DMOD Lutron Athena compatible driver*	NXE NX Wired Dual RJ45 SmartPORTS, without Sensor *		GTD Generator Transfer Device**
	7L High Lumen	35L 3500		Other Lighting Controls Networked Wireless		F Fuse*
		40L 4000		ANWE Lutron Athena Enabled*		BAA Buy American Act (FAR 52.225-5) Compliant
		45L 4500				TAA Trade Agreements Act (FAR 52.225-5) Compliant
	VL Very High Lumen	50L 5000				
		55L 5500				
		60L 6000				
	XL Extra high Lumen*	70L 7000				
		80L 8000				
		90L 9000				

TRIM

LTR-6RD-T

Aperture/Shape/Function	Lumen Package	CCT	CRI	Distribution
LTR-6RD-T 6" Round Downlight Light Engine/Trim Assembly	5L Standard Lumen	27K 2700K	8 80+CRI	VNR Very Narrow (0.3 SCZP)
	6L Medium Lumen	30K 3000K	9 90+CRI	NR Narrow (0.5 SCZP)
	7L High Lumen	35K 3500K		MD Medium (0.6 SCZP)
	VL Very High Lumen	40K 4000K		WD Wide (0.9 SCZP)
	XL Extra High Lumen*	50K 5000K*		XW Extra Wide (1.1 SCZP)

TRIM CONTINUED

Reflector Finish	Reflector Color	Flange Color Options	Lower Trim Options	Reflector Options
Finish not applicable with painted reflectors (MC or RC)	Standard Clear	Standard matches reflector color	EM Pre-punched reflector for EM/integral test switch and indicator	AM Antimicrobial Coating *
S Specular	CG Champagne Gold	WT White Flange *	FM Flush Mount Mud-in Ring *	BAA Buy American Act (FAR 52.225-5) Compliant
SS Semi-Specular	BL Black	BT Black Flange *	WF Wide Flange	TAA Trade Agreements Act (FAR 52.225-5) Compliant
MPC American Matte*	LW Light Wheat			
VS Softgow*	PW Pewter			
VSS SoftShann*	WC Painted White Cone and Flange			
	BC Painted Black Cone and Flange			

Accessories	
B24	Set of two (2) 24" bar hangers for T-Bar ceilings
B6	Set of two bar hangers for ceiling joist up to 24" centers
FMRS-R	Flush Mount Mud-in Ring, 6" Round
LibeGear	LibeGear® Inverter, 120VA-250VA
LPS Series	LightPower Micro-Inverter, 20VA-55VA
MORS-R-WH	Metal Overspread Ring, 6" Round, White (10" outside diameter)
MORS-R-BL	Metal Overspread Ring, 6" Round, Black (10" outside diameter)
LTR-SCAS-__ (See next page for Bezel Trim Accessories for Complex Environments) *	Sloped Ceiling Adapter, 6", White *

Notes:
1. 5000K available in 80+ CRI only
2. EDIM available in 1L-3SL. DMX, DMXT, DALI not available on >55L
3. NW requires EM/EMR driver option, not available on <6SL
4. WT not needed for WC, BT not needed for BC.
5. Add available with WC or Specular Clear (Cx= SWT). Consult factory for other colors.
6. 347V available for DSL-3SL; requires DMI driver; not available with Controls, EM, EMR, DTS, GTD or F.
7. CP available up to 5SL; not available with DMX, Controls, or EMR options.
8. IC available up to 3SL; not available with Controls options.
9. Housing options (except Fuse, BAA/TAA) not available in combination.
10. Flush Mount Flange (FM) requires FMR accessory (sold seperately).
11. 1L-7SL-90(L) requires re-trim spacing. See Trim set for more details.
12. DTS available with DMI, DMXT, DALI, or DMXT. Not available with NXE.
13. Specify clock angle 5'-35' in 5° increments. Not available with EM, WF, or FM options.
14. See next page for option restrictions when using with bezel trim accessories.
15. DMOD must be selected with ANWE Lutron Athena controls option.
16. Not available with NXE.

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LTR-6RD

LITESTRY 6" ROUND DOWNLIGHT

DATE: LOCATION:

TYPE: PROJECT:

CATALOG #:

ACCESSORIES CONTINUED

Bezel Trim Accessories

For more demanding environments, LITESTRY™ offers bezel trim accessories that can be field installed onto standard housing/trim assemblies and are available with antimicrobial trim finish and/or vandal resistant hardware options.

FEATURES:
- Marina grade die cast aluminum bezel trim with low-copper alloy for durability
- Shatter resistant, 1/8" clear polycarbonate lens, completely flush for easy wipe down
- Closed cell silicone gasket protects against dust and water ingress
- Suitable for wet locations, covered ceiling
- IP65/IP65K rated (room side) when properly installed per installation instructions
- Meets IK10 per IEC 60068-2-75 impact testing
- Optional anti-microbial (AM) trim finish



IP66 IK10 IP65K

Complex Environment (Includes stainless steel Phillips head screws)	
☐ LTR-6RD-CE-WT	Bezel Trim Accessory, IP66/IP65K, 6" Round, White
☐ LTR-6RD-CE-WTAM	Bezel Trim Accessory, IP66/IP65K, 6" Round, White Antimicrobial

Vandal Resistant (Includes stainless steel Torx® screws with tamper resistant center pin reject)	
☐ LTR-6RD-CEVR-WT	Bezel Trim Accessory, Vandal Resistant/IP66/IP65K, 6" Round, White
☐ LTR-6RD-CEVR-WTAM	Bezel Trim Accessory, Vandal Resistant/IP66/IP65K, 6" Round, White Antimicrobial

Dimensional Data	
Aperture Opening	Ø 5.75" [146.1 mm]
Overall Flange	Ø 8.42" [213.3 mm]
Trim Height	0.42" [10.7 mm]
Ceiling Cutout	Ø 8.31" [208.6 mm]
Ceiling Thickness	0.50" to 2.00" [12.7 mm to 50.8 mm]

Notes:
1. Available up to 4000 Max Lumens.
2. Not available in combination with EML, PML or WP options.
3. Not available in combination with PMRL, LTRMOR or LTR-ECA accessories.
4. Refers to all Installation Instructions for complete details.

NX LIGHTING CONTROLS

Control Option Ordering Logic & Description		Control Option Functionality: Networkable	On/Off	Dimming	Occupancy Sensing (PIR)	Daylight Harvesting (PD)	Scene Control	Color Tuning	Control Option Components
NXW Wireless	NXW	NX Networked Wireless Radio Module NXRM2 and Bluetooth Programming, without Sensor	✓	✓	✓	–	–	✓	✓	NXRM2-H
NXE Wired	NXE	NX Wired Dual RJ45 SmartPORTS, without Sensor	✓	✓	✓	–	–	✓	✓	NXEDP

1 Requires NXSTC, order seperately

NX LIGHTING CONTROLS APP



The NX Lighting Controls App is a free to use mobile application for programming both an NX Lighting Controls System or Standalone Bluetooth Sensors. The mobile app allows you to configure devices, discover and setup wireless enabled luminaires and program your NX system settings.

Android Apple-iOS

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DESIGN REVIEW

12.16.2025

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LIGHTING FIXTURE CUTSHEETS 2/2

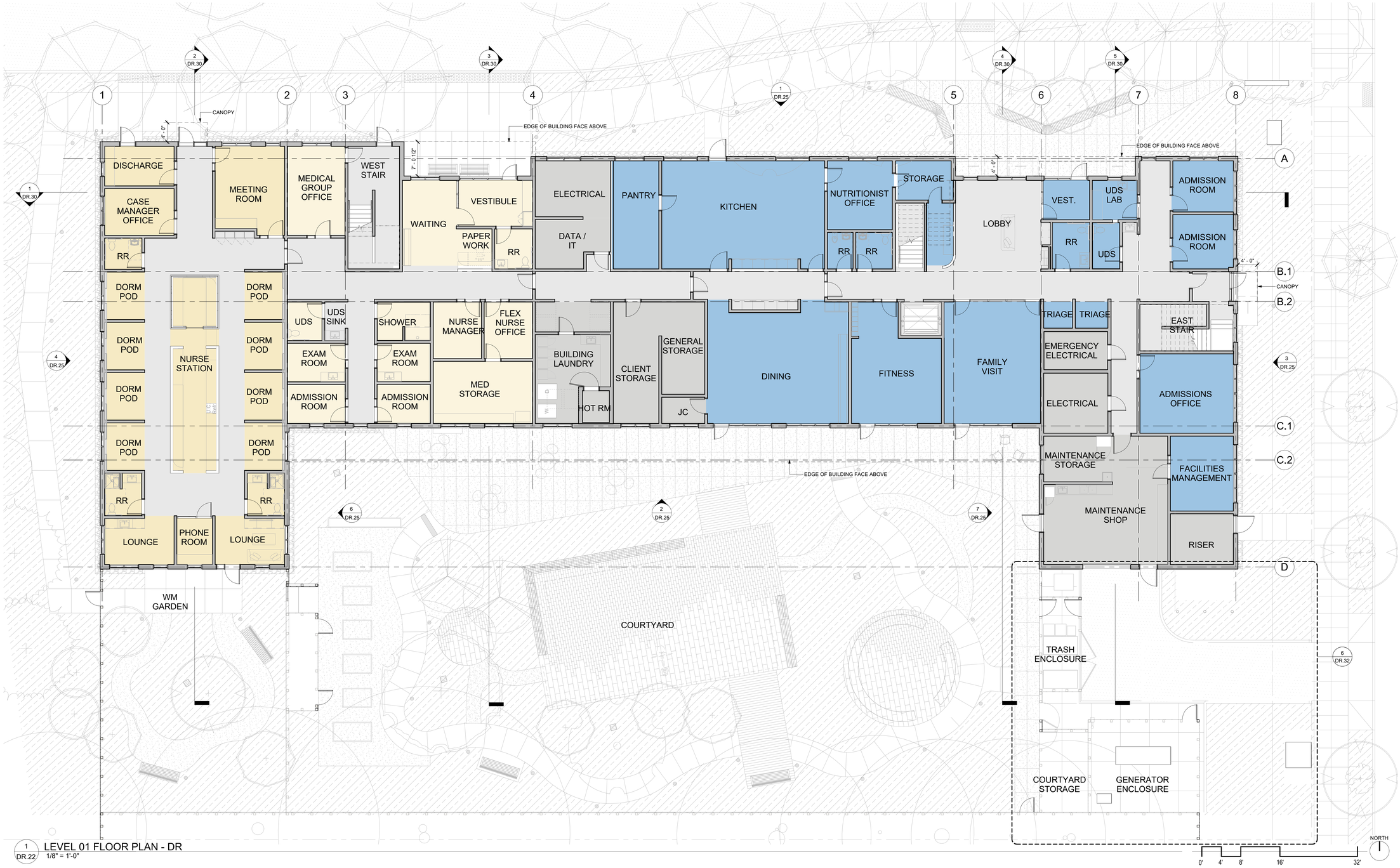
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PROGRAM LEGEND

- WITHDRAWAL MANAGEMENT - INTAKE AREAS
- WITHDRAWAL MANAGEMENT - DORM AREA
- RESIDENTIAL TREATMENT - INTAKE AND SHARED AREAS
- RESIDENTIAL TREATMENT - SLEEPING AREA
- ADMINISTRATIVE OFFICES
- CIRCULATION / B.O.H.



1 DR.22 LEVEL 01 FLOOR PLAN - DR
1/8" = 1'-0"

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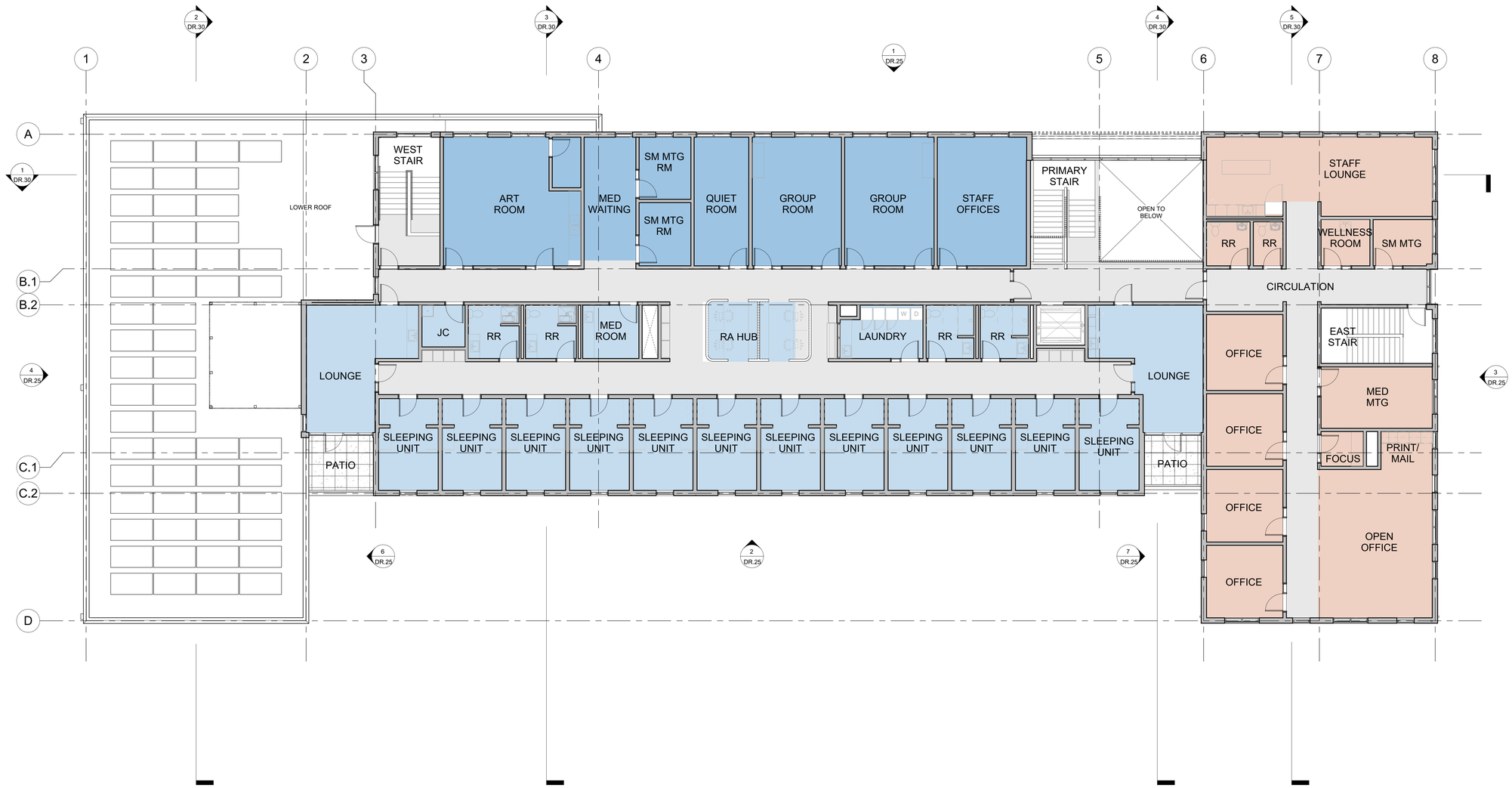
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BUILDING 1 - LEVEL 1 FLOOR PLAN

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- RESIDENTIAL TREATMENT - SLEEPING AREA
- ADMINISTRATIVE OFFICES
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1 DR.23 LEVEL 02 FLOOR PLAN - DR
1/8" = 1'-0"

NORTH

0' 4' 8' 16' 32'

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BUILDING 1 - LEVEL 2 FLOOR PLAN

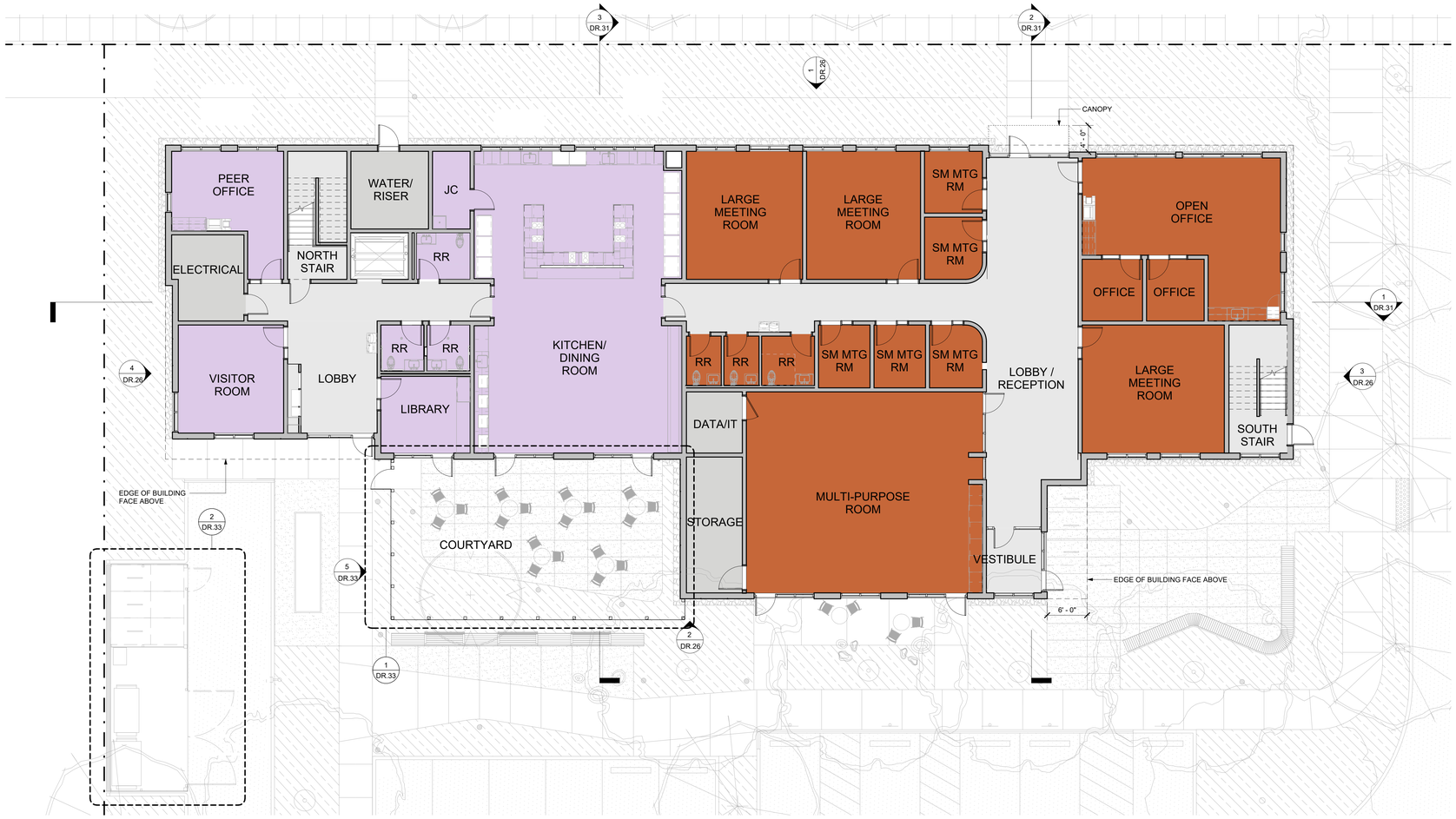
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2 DR.24 LEVEL 02 FLOOR PLAN
1/8" = 1'-0"



1 DR.24 LEVEL 01 FLOOR PLAN
1/8" = 1'-0"

0' 4' 8' 16' 32'

NORTH

PROGRAM LEGEND

- OUTPATIENT TREATMENT
- TRANSITIONAL HOUSING
- CIRCULATION / B.O.H.

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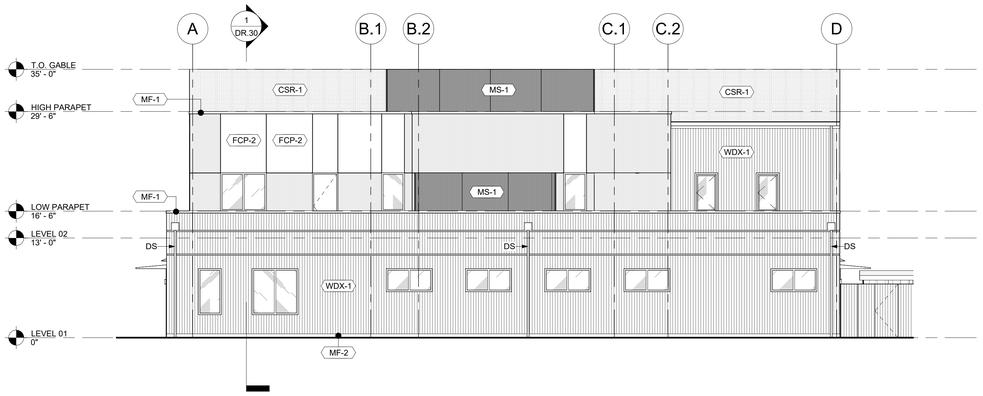
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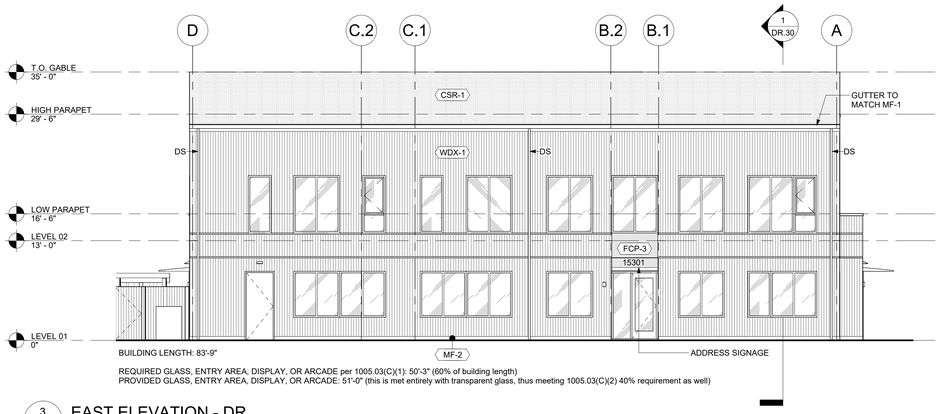
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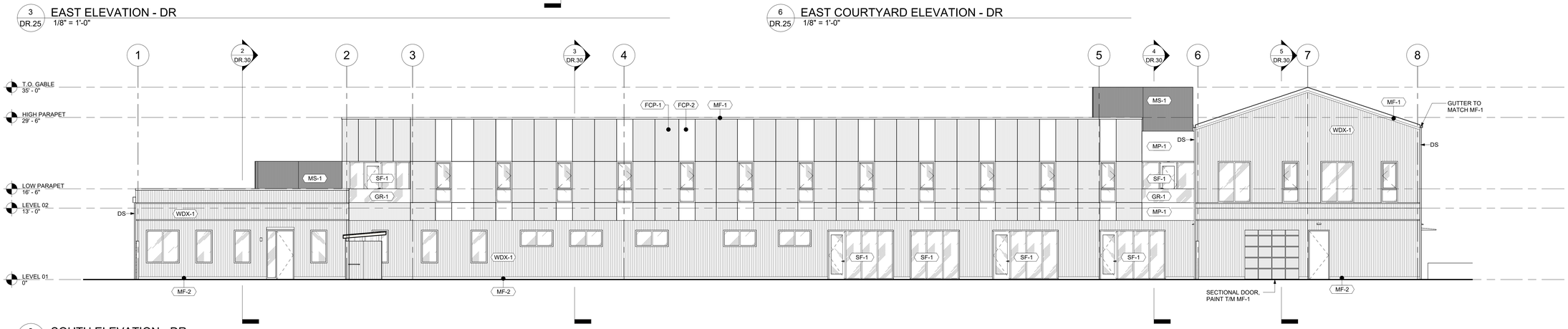
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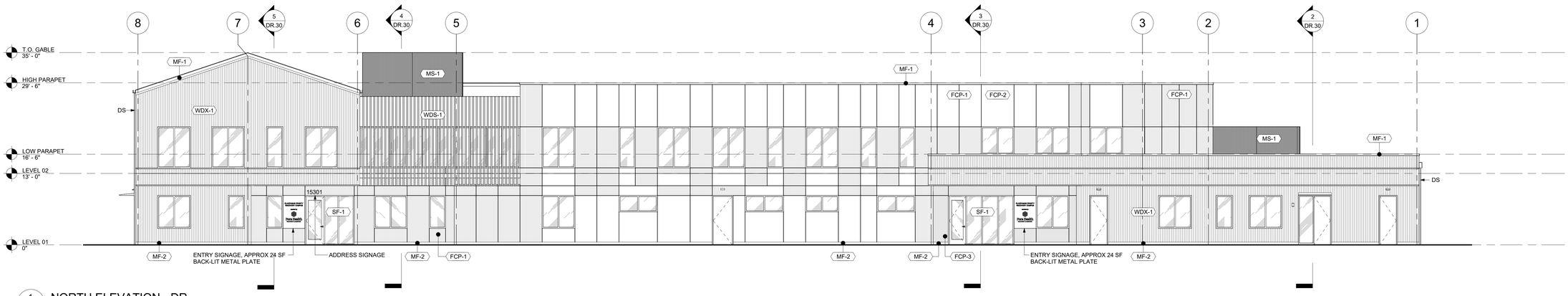
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1/8" = 1'-0"



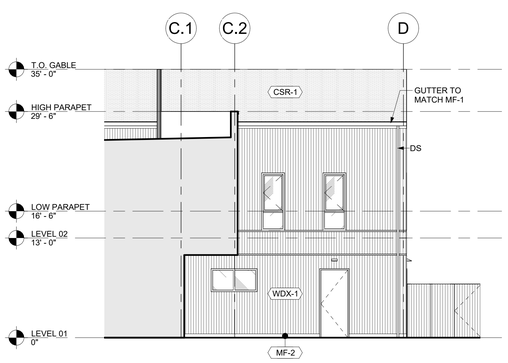
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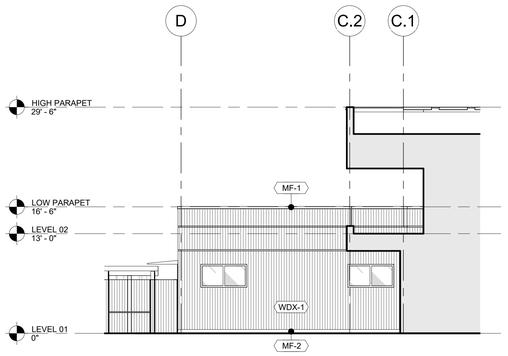
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1 DR.25 NORTH ELEVATION - DR
1/8" = 1'-0"



7 DR.25 WEST COURTYARD ELEVATION - DR
1/8" = 1'-0"



6 DR.25 EAST COURTYARD ELEVATION - DR
1/8" = 1'-0"

EXTERIOR MATERIALS
See A0.40 for Material Schedule

CSR-1	COMPOSITE SHINGLE ROOFING
EX-GB	EXTERIOR GYPSUM BOARD / FIBERGLASS FACED SHEATHING
FCP-1	FIBER CEMENTITIOUS PANEL - LIGHT, RIBBED
FCP-2	FIBER CEMENTITIOUS PANEL - LIGHT
FCP-3	FIBER CEMENTITIOUS PANEL - BLUE
GR-1	GLASS GUARDRAIL
MF-1	METAL FLASHING
MF-2	METAL FLASHING - PRE-FINISHED GALVANIZED STEEL
MLV-1	METAL LOUVERS
MP-1	METAL WALL PANEL - FLAT PROFILE
MS-1	METAL SCREEN PANEL - PERFORATED
PE-1	EXTERIOR PAINT
SF-1	ALUMINUM STOREFRONT AND ENTRANCES
TPO	TPO SINGLE PLY ROOFING MEMBRANE
WDX-1	EXTERIOR WOOD SIDING
WDS-1	EXTERIOR WOOD SLATS
X	COMMERCIAL VINYL WINDOW, SEE A0.31 FOR WINDOW TYPES
DS	DOWNSPOUT

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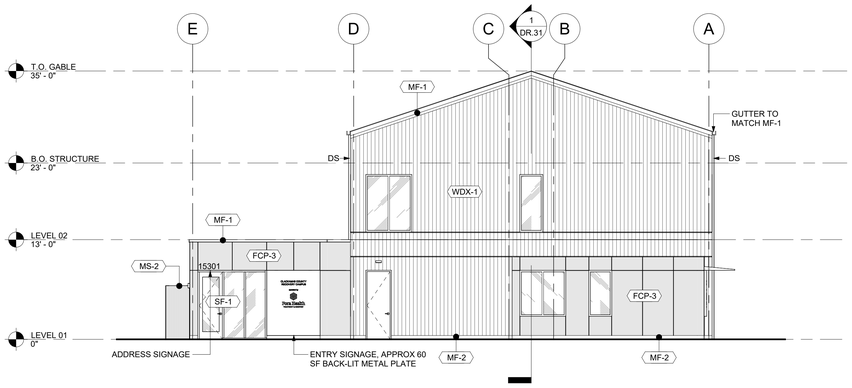
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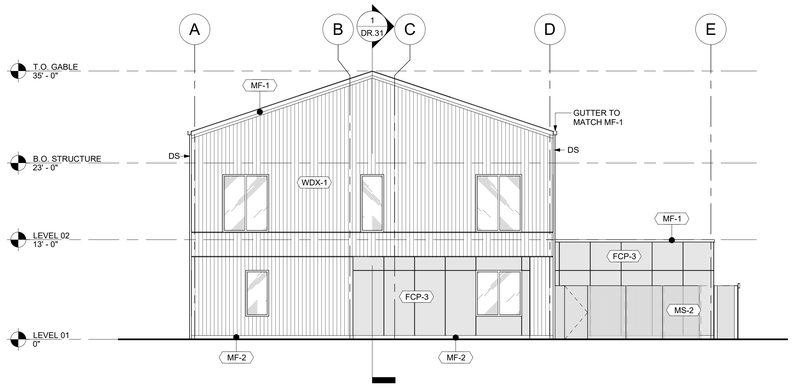
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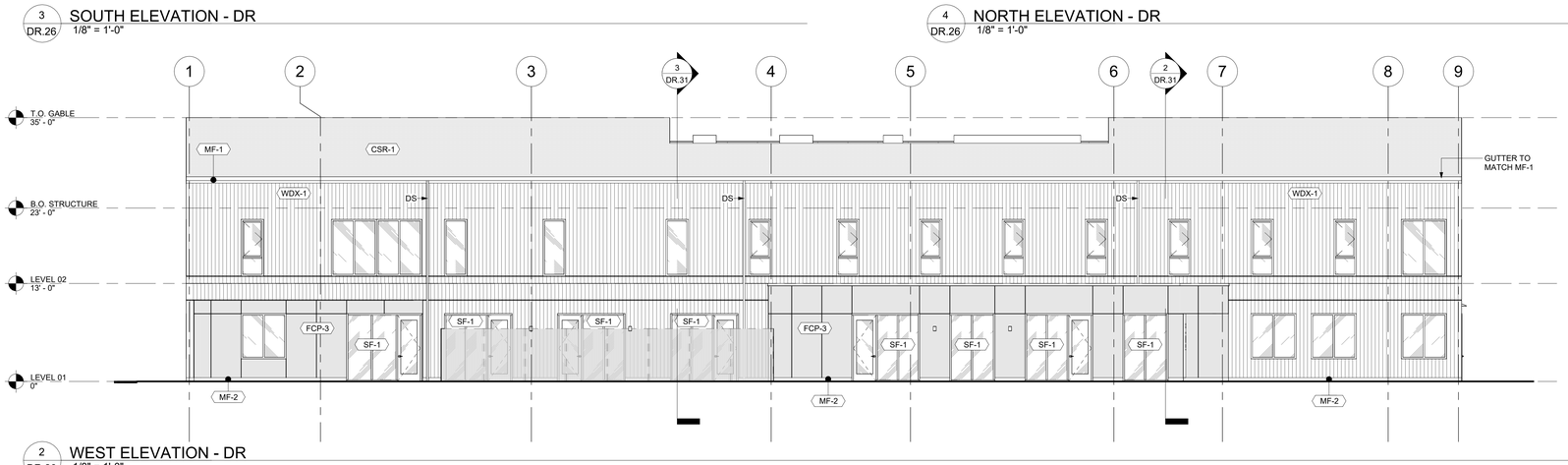
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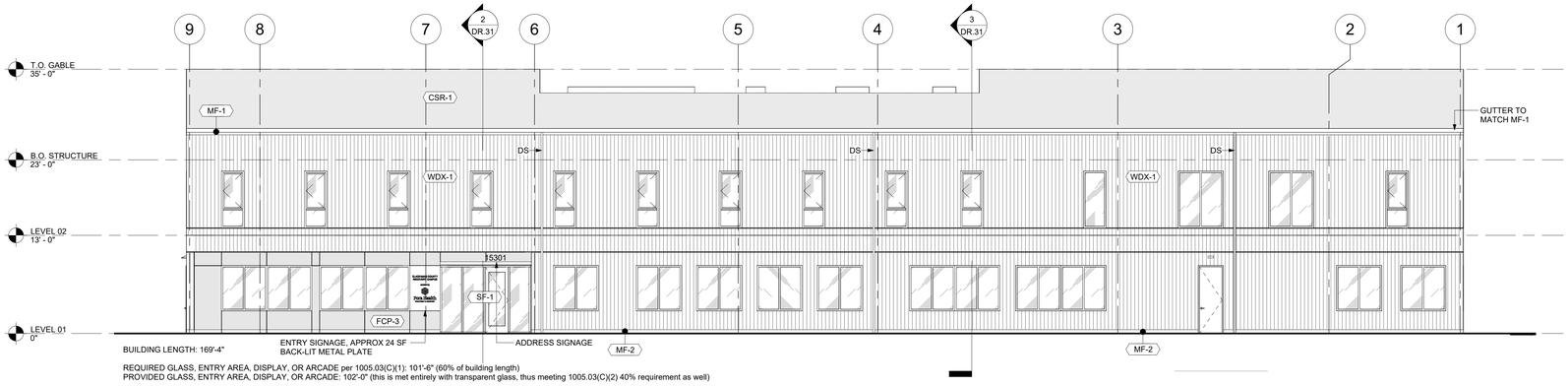
3 DR.26 SOUTH ELEVATION - DR
1/8" = 1'-0"



4 DR.26 NORTH ELEVATION - DR
1/8" = 1'-0"



2 DR.26 WEST ELEVATION - DR
1/8" = 1'-0"



1 DR.26 EAST ELEVATION - DR
1/8" = 1'-0"

EXTERIOR MATERIALS
See A0.40 for Material Schedule

CSR-1	COMPOSITE SHINGLE ROOFING
EX-GB	EXTERIOR GYPSUM BOARD / FIBERGLASS FACED SHEATHING
FCP-3	FIBER CEMENTITIOUS PANEL - BLUE
MF-1	METAL FLASHING - PRE-FINISHED GALVANIZED STEEL
MF-2	METAL FLASHING - PRE-FINISHED GALVANIZED STEEL
MLV-1	METAL LOUVERS
MS-2	METAL SCREEN PANEL - WELDED WIRE
PE-1	EXTERIOR PAINT
SF-1	ALUMINUM STOREFRONT AND ENTRANCES
TPO	TPO SINGLE PLY ROOFING MEMBRANE
WDX-1	EXTERIOR WOOD SIDING
X	COMMERCIAL VINYL WINDOW, SEE A0.31 FOR WINDOW TYPES
DS	DOWNSPOUT

HOLST

123 NE 3RD AVE.
SUITE 310
PORTLAND, OR
97232

HOLSTARC.COM

CLACKAMAS COUNTY RECOVERY CAMPUS - BUILDING 2

JOB NO. 24064

DESIGN REVIEW

12.16.2025

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100% SD	08.29.2025
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100% DD	12.12.2025

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title:
BUILDING 2 - ELEVATIONS

sheet:
DR.26

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FIBER CEMENT PANEL (FCP-1, FCP-2, FCP-3)



EQUITONE by etex

EQUITONE [tectiva]
Material Information Sheet

1. Product Appearance

EQUITONE [tectiva]isa high-density through-colored fiber cement panel with no coating. The panel has an honest, pure, and natural appearance with natural color variations and hues. The natural characteristic of the panel may be accentuated by the production process as well as light or dark inclusions.

The surface of the panel is characterized by fine sanding lines in the longitudinal direction. However, the panels are not considered directional and may be installed in any direction to enhance the natural look of the facade.

Thepanel has been made water-repellent by means of hydrophobation.

2. Color

Thecoloristhroughout the panel. Natural color variations, accentuated by the orientation of the panel, the viewing angle, and the effects of light and moisture, strengthen the natural look of the facade.

Color variations and random hues are part of the natural characteristics of the material. Each panel has its own individual character.

Color differences are measured according to a simplified CIELAB color model, by which only the parameter lightness ΔL of the color is followed. Tolerated color differences on a dry facade are ΔL*= ± 2.5.

Available colors



Note: It is not possible to realistically show available colors in literature, therefore thefinal choice of colors should be made with samples. Please order your samples on the website www.equitone.com.

etex inspiring ways of living

3. Product Composition

EQUITONE [tectiva]panelsconsistofcement, quartz sand, cellulose, natural calcium silicate, inorganic color pigments, water,andadditives.

4. Production Method

EQUITONE [tectiva] isahighlycompressed, autoclaved fiber cement material manufactured in Belgium (Europe).



EQUITONE [tectiva] panels are manufactured through the Hatschek process wherethe base materials which are mainly cement, sand, cellulose, pigments, and water are first mixed togethertoform a slurry. This slurry is then pumped into several vats with rotating cylindrical sieves on the surface ofwhich a film of fiber cement is formed through a sieving mechanism as they rotate, which is then transferredto a felt belt traveling overhead. This thin layer of fiber cement is then dewatered before being transferred via the felt belt to a forming drum on which several layers of fiber cement are collected and squeezed together until the required thickness is achieved. Once this occurs, this fresh sheet of fiber cement is cut by an automatic cutting knife. A conveyor then transports the sheet to where all the sheets are stacked with an interleaving steel plate. The stacked sheets are then highly compressed, resulting in a high-density material.

This is followed by a curing process in an autoclave where the panels harden under high temperature and pressure. After curing the panels receive their final finish.

Subsequently and finally, EQUITONE [tectiva] panels receive a hydrophobation making them water-repellant.

5. Dimensions and Tolerances (Imperial)

EQUITONE [tectiva] isavailablein a standard thickness of 5/16" and in3/8" thickness for specific applications or fixings (minimal order quantities may apply). The panels are available in either untrimmed (production dimension) or trimmed (maximum usable size) formats.

The panel must not be installed with untrimmed edges. Approximately 3/8" needs to be trimmed from each of the untrimmed (raw) edges.

Dimensions		
Nominal thickness	5/16 in	3/8 in

Width	
Trimmed	48 in
Untrimmed	48 3/4 in

Length	
Trimmed	98 in or 120 in
Untrimmed	99 in or 121 in

Tolerances1 (for trimmed panels)		
Thickness	-1/32 in / +1/16 in	-1/32 in / +1/16 in
Width	± 1/8 in	
Length	± 1/8 in	
Squareness	± 1/16 in/ft	

Tolerances1 (for untrimmed panels)		
Thickness	-1/32 in / +1/16 in	-1/32 in / +1/16 in
Width	± 3/16 in	
Length	± 3/16 in	
Squareness	± 1/16 in/ft	

Weight per ft² (nominal, ambient)		
	3.05lb/ft²	3.8lb/ft²

Weight per panel (without pallet)		
98" x 48" (trimmed) 120" x 48"	100lb	125lb
(trimmed) 99" x 48-3/4"	122lb	153lb
(untrimmed) 121 x 48-3/4"	103lb	128lb
(untrimmed)	125lb	156lb

Packaging		
Number of panels on a pallet	40	30

Usable surface per pallet		
98" x 48" (trimmed)	1313.2 ft²	984.9 ft²
120" x 48" (trimmed)	1601.7 ft²	1201.3 ft²

Color tolerance (CIELAB) 2	
ΔL*, brightness	± 2.5

[1] Factory tolerances for trimmed and untrimmed panels outperform the requirements of the EN 12467 Level I and II dimensional tolerances, respectively; as well as all criteria set forth in ASTM C1185.

[2] Color tolerance are only to be measured on dry surfaces.

[3] Imperial values are approximate and are based on the metric values.

WOOD SIDING STAIN (WDX-1)

Timber Pro UV

Log & Siding Formula

Stain, Seal and Protect Your Wood

Natural wood siding is too valuable to treat with just any stain or sealer. Timber Pro UV is an award winning protective stain with qualities others can't match!



New ! Customize Your Formula, choose between.....

Log & Siding Formula "Classic"

Timber Pro's original formula that was designed for rough sawn wood, shingles, or aged, porous wood. This type of thirsty wood can easily absorb a stain with higher oil solids.

Log & Siding Formula "Smooth"

This stain has the same blend of ingredients but has a slightly thinner consistency that will absorb better into new, smooth planed wood siding or new milled logs. Ideal for interior woodwork as well.

Only Timber Pro UV has ...

- ✔ **Nano Particle bio-based plant oils**
- ✔ **Deeply penetrating, not film forming**
- ✔ **Oils penetrate, bond, and dry hard**
- ✔ **Non-flammable, 2-3 LEED credits**
- ✔ **Low VOC's, Truly envirosafe**
- ✔ **Sprayable with water clean up**
- ✔ **Clear top coat leaves low sheen finish**
- ✔ **Grain enhancing clarity yet very durable**
- ✔ **Does not promote mildew or algae growth**
- ✔ **Easy re-coating for future maintenance**



Local and National Awards

2008 Green Log Living Award- Best Finish
2009 Portland's Best Sustainable Product
2009 US Commerce Assoc. Best Stain
2009 Oregon Manufacturer's Award



Factory and Showroom

2232 E. Burnside Ave, Portland OR 97214
Ph: (503) 232-1705
Toll Free: (888) 888-6095
Email: usainfo@timberprocoatings.com
www.TimberProCoatings.com

FORMULAS

Log and Siding Formula "Classic"
For rough sawn wood siding, shakes, shingles, or very aged, porous wood.

Log & Siding Formula "Smooth"
For smooth milled wood, or logs, especially milled logs. Both versions available in Transparent, Semi-Trans or Semi Solid Stain, and Clear UV stain.

RECOMMENDED NUMBER OF COATS

(Single coat back priming highly recommended on wood siding)

Transparent Series colors
The required process is 2 initial coats of a transparent stain color, plus one Clear UV topcoat. Consult with us if you are using a transparent gray tone, it is advisable to mix in a little of your gray with the Clear UV stain to eliminate possibility of the Clear UV casting a slightly amber tone over the gray on your third coat. Note: On interior wood siding, beams, or trim, apply 1-2 coats of Clear UV or tinted Clear UV stain.

Semi-Transparent Series
colors generally just require two flood coats; third coat of Clear UV is optional and may not be necessary due to higher pigment amounts in semi-trans colors. Test Clear UV topcoat before using over semi-transparent colors.

Semi-Solid colors
two coats only. No Clear UV top coat necessary. Recommended for rough sawn wood only.

COVERAGE

Log homes or log siding
Approx 225-275 sq ft per gal per coat depending on species & porosity of wood*.

Rough sawn siding or shingles:
Approx 150 - 225 sq ft per gal per coat depending on age and porosity.*

Cedar Shake Roofing
Apply at rate of one gallon per every 100 sq feet to dry, cool wood shakes.

** Clear UV topcoat over the Transparent Series colors, or semi-trans will spread 250-350 sq ft per gallon.*

CLEANUP

Clean tools immediately with soap and water. If Timber-Pro UV dries on tools, soak brushes or tools in a solution of one part Strip & Brite to 3 parts water until dried stain softens and washes out. Rinse thoroughly.

Before you begin a project, follow these steps to assure product knowledge and confidence:

1) On siding projects, do a full 3 coat color test if using Transparent Series colors (2 color coats, one Clear UV topcoat) on a sample of the same wood you are using to assure color satisfaction. Liquid samples available. Clear UV topcoat not necessary on some colors (see above in "coverage section") .

2) Read the full application guide on "Tips and Tech Info" tab at www.TimberProCoatings.com

MAINTENANCE AND LONGEVITY

Timber Pro finishes have the reputation of being extremely durable. Timber Pro UV is one of the original pioneers in the development of envirosafe, bio-oil based waterborne stain technology and their long history of success and growth is a testament to stain quality. As with any wood finish, the design and location of the structure, the proper preparation and application of the product, and the type and species of the wood will affect the longevity of the product. Natural wood siding requires consistent care and monitoring and should be cleaned yearly. Maintenance coats are applied "as needed", especially with transparent stain.

TECHNICAL DATA PROPERTIES:

Viscosity - 20-23 secs Zahn cup #2

Gloss Level - Satin 25 - 35 GU @ 60 degree

Solids by Weight - 23.2 % +/- 1%

Solids by Volume - 22.5% +/- 1%

V.O.C. - 85 grams per litre minus water

Weight per gallon - 8.45 lbs./Gal.

Specific Gravity - 1.01

Flammability - None

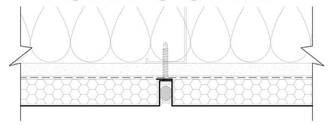
Dry Time - 2-4 touch dry, 10-16 hours thorough dry dependent on temperature and humidity. Note dry times will be extended at low temperatures and/or high humidity, and on smooth *or exotic wood species*.



METAL PANEL (MP-1)

SKYLINE SHEET METAL

SKYCORE



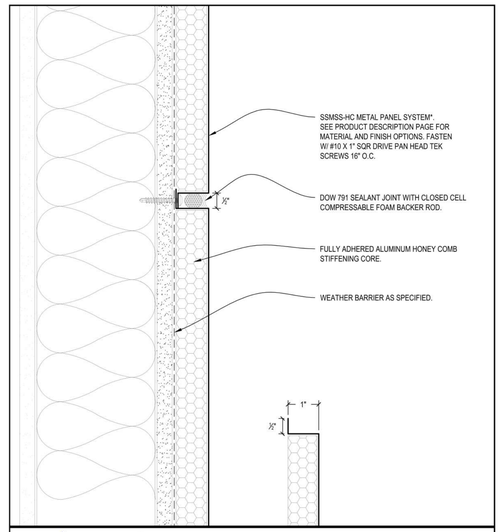
PRODUCT DESCRIPTION:

Skyline Sheet Metal SKYCORE wall cladding panels are formed from heavy guage aluminum or sheet steel backed with an aluminum honey comb stiffening core. The panels are mechanically attached with #10x1" square drive tek screws over a weather barrier to the stud framing of the structural wall. A finished 1/2" joint reveal is sealed with Dow 791 silicone to achieve a virtually watertight exterior cladding. .

FEATURES and BENIFITS:
Economical cost
20 year finish waranty
Industry leading flatness and deflection control
Lightweight

MATERIAL and FINISH OPTIONS:
Aluminum (.032-.040) Coil-coated Kynar 500 or Post-painted available in Std. and Custom colors
Steel (22ga) Coil-coated Kynar 500 or Post-painted available in Std. and Custom colors
Stainless Steel (22ga) Polished or Brushed
Copper
Zinc

www.skylinesheetmetal.com
1535 NW SUNDIAL RD TROUTDALE, OR 97060 PHONE 503-669-1156 FAX 503-666-8189



SKY LINE
TYPICAL HORIZONTAL JOINT
SCALE: 6" = 1'-0"
SECTION VIEW

SKYLINE SHEET METAL
SKYCORE PANEL SYSTEM
DATE: 01-01-2010
DRAWN: JASON YORK
SHEET 1

1535 NW SUNDIAL RD TROUTDALE, OR 97060 PHONE 503-669-1156 FAX 503-666-8189

HOLST
123 NE 3RD AVE.
SUITE 310
PORTLAND, OR
97232
HOLSTARC.COM

CLACKAMAS COUNTY RECOVERY CAMPUS

JOB NO. 24064

DESIGN REVIEW
12.16.2025

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title:
MATERIAL CUTSHEETS 1/3

sheet:
DR.27

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STOREFRONT (SF-1)

DESIGN AND PERFORMANCE VERSATILITY WITH UNMATCHED FABRICATION FLEXIBILITY



TRIFAB® VERSAGLAZE® 450, 451 & 451T (THERMAL) FRAMING SYSTEMS & TRIFAB® 451UT (ULTRA THERMAL) FRAMING SYSTEM

Trifab® VersaGlaze® is built on the proven and successful Trifab® platform – with all the versatility its name implies. There are enough framing system choices, fabrication methods, design options and performance levels to please the most discerning building owner,architect and installer. The 4.5" depth Trifab® VersaGlaze® Framing System family is available with non-thermal, thermal and ultra-thermal performance levels.
The ultra-thermal Trifab® 451UT Framing System, is designed for the most demanding thermal performance and employs adual Isolock® thermal break.

KAWNEER

Building Legacies

AESTHETICS

Trifab® VersaGlaze® Framing Systems offer designers a choice of front-, center-, back- or multi-plane glass applications. Structural silicone glazing (SSG) and weatherseal glazing options further expand designers' choice, allowing for a greater range of possibilities for specific project requirements and architectural styles. All systems have a 4-1/2" frame depth; Trifab® VersaGlaze® 450 has 1-3/4" sightlines, while Trifab®VersaGlaze® 451/451T and Trifab® 451UT have 2" sightlines.

With seamless incorporation of Kawneer entrances or windows, including GLASSvent® visually frameless ventilators, Trifab® framing can be used on almost any project. These framing systems can also be packaged with Kawneer curtain walls and overhead glazing, thereby providing a full range of proven, and tested, quality products for the owner, architect and installer from a single-source supplier.

ECONOMY

Trifab® VersaGlaze® 450/451/451T/451UT Framing Systems offer a variety of fabrication choices to suit your project:

- **Screw Spline** – for economical continuous runs utilizing two-piece vertical members that provide the option to pre-assemble units for efficient handling and installation. (available for all Trifab systems)
- **Shear Block** – for punched openings or continuous runs using tubular verticals with shear blocks to connect horizontal members. (available for 450/451/451T systems)
- **Stick** – for fast, easy field fabrication. Continuous sill and head receptors are installed with horizontals connected to tubular verticals with shear blocks. (available for 450/451/451T systems)
- **Pre-glazed** – The combination of screw spline construction with pre-glazing in the shop accelerates installation and reduces field labor time while minimizing disruption to the surrounding area or existing tenants. Making it an exceptional choice for new or retrofit applications, particularly in urban areas or where space is limited. (available for 451/451T/451UT framing)



All systems can be flush glazed from either the inside or outside. The weatherseal option provides an alternative to SSG vertical mullions for Trifab® VersaGlaze® 450/451/451T. This ABS/ASA rigid polymer extrusion allows complete inside glazing and creates a flush glass appearance on the building exterior without the added labor of scaffolding or swing stages. Additionally, high-performance flashing options are engineered to eliminate perimeter sill fasteners and associated blind seals.

FOR THE FINISHING TOUCH

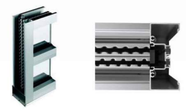
Architectural Class I anodized aluminum and painted finishes.fluoropolymer (AAMA 2605) and solvent-free powder coatings (AAMA 2604) offer a variety of color choices.

PERFORMANCE

Kawneer's Isolock® thermal break technology creates a composite section, prevents dry shrinkage and is available on Trifab® VersaGlaze® 451T. For even greater thermal performance, a dual Isolock® thermal break is used on Trifab® 451UT.

U-factor, CRF values and STC ratings for Trifab® framing systems vary depending upon the glass plane application. Project-specific U-factors can be determined for each individual project.

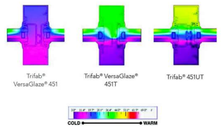
(See the Kawneer Architectural Manual or Kawneer.com for additional information.)



Trifab® 451UT uses a dual Isolock® thermal break (right) and features a new high performance sill design, which incorporates a screw-applied end dam (left), ensuring positive engagement and tight joints between the sill flashing and end dam.

PERFORMANCE TEST STANDARDS	
Air Infiltration	ASTM E283
Water	AAMA 501, ASTM E331
Structural	ASTM E330
Thermal	AAMA 1503
Thermal Break	AAMA 505, AAMA TIR-A8
Acoustical	AAMA 1801, ASTM E1425

Thermal simulations showing temperature variations from exterior/cold side to interior/warm side.



Trifab® VersaGlaze® 451 | Trifab® VersaGlaze® 451T | Trifab® 451UT



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Form Number 17-2241.8

KAWNEER

Technology Park/Atlanta
555 Guthridge Court
Norcross, GA 30092

COMMERCIAL VINYL WINDOWS (WND-X)

vpi Quality Windows

March 29, 2024

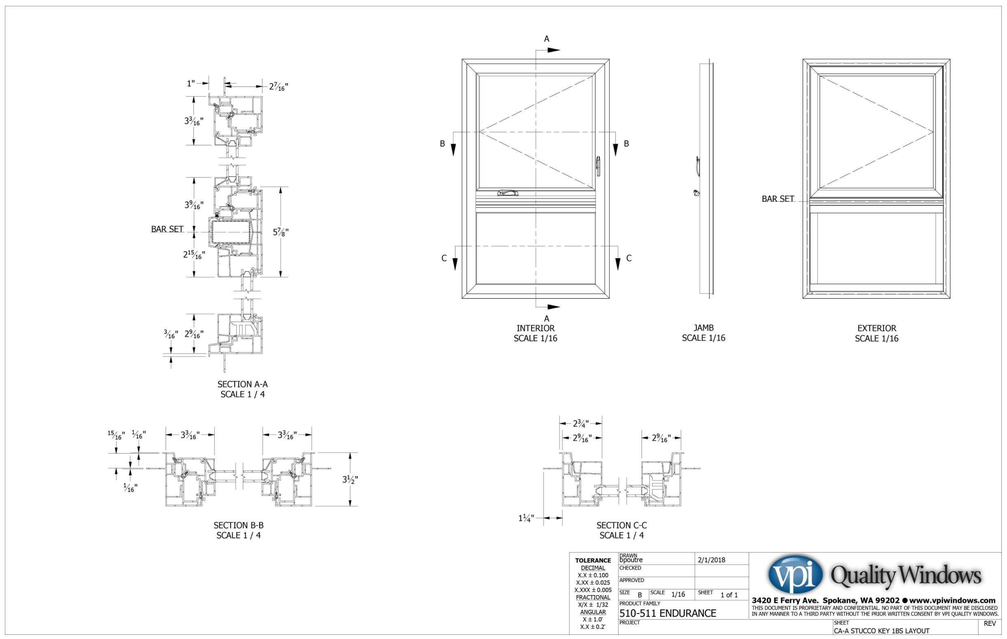


511 WINDOW INSTALLATION MANUAL

VPI QUALITY WINDOWS
3420 E Ferry Ave. Spokane WA. 99202

1

VPI_E220829_511_WINDOW_INSTALLATION_MANUAL



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123 NE 3RD AVE.
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CLACKAMAS COUNTY RECOVERY CAMPUS

JOB NO. 24064

DESIGN REVIEW

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MATERIAL CUTSHEETS 2/3

sheet:
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COMPOSITE SHINGLE ROOF (CSR-1)

TruDefinition®
DURATION®
Shingles with Patented SureNail® Technology
Tejas con tecnología patentada SureNail®



TruDefinition®
DURATION®
Shingles with Patented SureNail® Technology | Tejas con tecnología patentada SureNail®

- Brownwood®
- Chateau Green®
- Desert Rose®
- Driftwood®
- Estate Gray®
- Midnight Plum®[1]
- Onyx Black®
- Peppercorn®
- Sand Castle®[1] — Not available in Service Area 12 / No se puede obtener en el área de distribución 12
- Sierra Gray®
- Slatestone Gray®
- Teak®
- Terra Cotta®[1] — Not available in Service Area 12 / No se puede obtener en el área de distribución 12
- Williamsburg Gray®

COLOR AVAILABILITY MAP
Disponibilidad de colores por zonas/región



COLOR DISCLAIMER
As color experts, we know getting the shingle color right is a big part of any roofing purchase. Due to printing color variations, in addition to viewing shingle literature, we suggest you request an actual shingle sample to see how it will appear on your home and with your home's exterior elements in various natural lighting conditions. Lastly, we recommend you verify your color choice by seeing it installed on an actual home, your roofing contractor or supplier can provide a sample and may be able to direct you to a local installation.

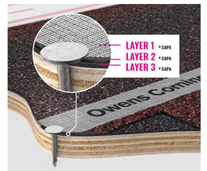
DESCARGO DE RESPONSABILIDAD SOBRE LOS COLORES
En tanto que especialistas en color, sabemos que obtener el color de teja perfecto es una parte importante en toda compra de techos. Debido a las variaciones en los colores impresos, además de mirar folletos de tejas, le sugerimos que solicite una muestra de la teja para ver como se verá en su hogar y con los elementos externos de la vivienda bajo distintas condiciones de luz natural. Finalmente, le recomendamos que para verificar su elección de colores, vea cómo lucen las tejas ya instaladas en una vivienda, su contratista de techos o su proveedor le pueden dar una muestra e incluso indicarle dónde ver un techo ya instalado.

THERE'S A LINE BETWEEN A GOOD SHINGLE AND A GREAT SHINGLE.®
It's the nailing line on your shingles. The difference between a good shingle and a great shingle is having Patented SureNail® Technology, only from Owens Corning.

HAY UNA GRAN DIFERENCIA ENTRE UNA BUENA TEJA Y UNA TEJA EXCELENTE™
Es la línea de clavado en su tejas. La diferencia entre una buena teja y una teja excelente es la tecnología patentada SureNail,® una exclusividad de Owens Corning.



- **Breakthrough Design** — Patented SureNail® Technology is the first and only reinforced nailing zone on the face of the shingle.
  Diseño innovador — La tecnología patentada SureNail® es la primera y la única que provee un área de clavado reforzada en la cara de la teja.
- **"No Guess" Wide Nailing Zone** — This tough, engineered woven-fabric strip is embedded in the shingle to create an easy-to-see, strong, durable fastener zone.
  Área de clavado ancha, sin cálculos "a ojo" — Esta banda resistente de tela mecánica tejida está incrustada en la teja para proveer un área de sujeción resistente, duradera y fácil de detectar.
- **Triple Layer Protection**™* — A unique "triple layer" of reinforcement occurs when the fabric overlays the two shingle layers, providing increased protection against "nail pull" from the wind.
  Triple Layer Protection™* — Cuando la tela cubre las dos capas de la teja, se forma una "triple capa" de refuerzo excepcional que ofrece una mayor protección ante el "arranque de clavos" debido al viento.
- **Double the Common Bond** — SureNail® features up to a 200% wider bond between the shingle layers in the nailing zone over standard shingles.
  Duplica la adherencia común — En comparación con las tejas comunes, SureNail® ofrece un área de unión hasta un 200 % más ancha entre las capas de la teja en el área de clavado.



THE PROOF IS IN THE PERFORMANCE
LA PRUEBA ESTÁ EN EL DESEMPEÑO



Up to **2.5X BETTER** NAIL PULL-THROUGH RESISTANCE
Hasta **2.5X MEJOR** RESISTENCIA A LA TRACCIÓN DE LOS CLAVOS



Up to **9X BETTER** NAIL BLOW-THROUGH RESISTANCE
Hasta **9X MEJOR** RESISTENCIA AL DESPRENDIMIENTO DE LOS CLAVOS



Up to **2X BETTER** DELAMINATION RESISTANCE
Hasta **2X MEJOR** RESISTENCIA A LA DELAMINACIÓN

Product Attributes

Warranty Length[1][2]	
Limited Lifetime (for as long as you own your home)	
Wind Resistance Limited Warranty[3]	
130-MPH	
Algae Resistance Limited Warranty[4][5]	
25 Years	
TRU PROtection® Non-Prorated Limited Warranty[6] **Period**	
10 Years	

Algae resistance available in areas shown in white.

TruDefinition® Duration® Shingles Product Specifications

Size	13¼" x 39¾"[7]
Application Exposure	5⅝"[8]
Shingles per Bundle	Not less than 20
Average Shingle Count per 3 Bundles	64
Average Coverage per 3 Bundles	98.4 sq. ft.

Applicable Standards and Codes

ASTM D3462
ASTM D228
ASTM D3018 (Type 1)
ICC-ES AC438[9]
ASTM D3161 (Class F Wind Resistance)
ASTM D7158 (Class H Wind Resistance)
ASTM E108/UL 790 (Class A Fire Resistance)
UL 2218 (Class 3 Impact Resistance)[2]
FM 4473 (Class 3 Impact Resistance)[2]
PRI ER 1378E01

Características del producto

Período de garantía[1][2]	
Garantía limitada de por vida (mientras sea propietario de la vivienda)	
Garantía limitada de resistencia al viento[3]	
210 km/h (130 mph)	
Garantía limitada de resistencia a las algas[4][5]	
25 años	
Período no prorrateado de garantía limitada TRU PROtection®[6]	
10 años	

Las tejas resistentes a las algas están disponibles en las áreas marcadas en blanco.

Especificaciones de las tejas Duration® TruDefinition®

Tamaño	33.65 x 100 cm (13¼ x 39¾ pulg)
Exposición de aplicación	14.3 cm (5⅝ pulg)
Tejas por paquete	20 como mínimo
Cantidad promedio de tejas por 3 paquetes	64
Cobertura promedio por 3 paquetes	9.14 m² (98.4 pies²)

Normas y códigos pertinentes

ASTM D3462
ASTM D228
ASTM D3018 (Tipo 1)
ICC-ES AC438[9]
ASTM D3161 (Resistencia al viento, Clase F)
ASTM D7158 (Resistencia al viento Clase H)
ASTM E108/UL 790 (Resistencia al fuego Clase A)
UL 2218 (Resistencia a impactos de clase 3)[2]
FM 4473 (Resistencia a impactos de clase 3)[2]
PRI ER 1378E01

* See actual warranty for complete details, limitations and requirements.
1 40-Year Limited Warranty on commercial projects.
† Owens Corning testing against competing products with wide, single-layer nailing zones when following manufacturers' installation instructions and nailing in the middle of the allowable nailing zone.
** TruBond® is a proprietary premium weathering-grade asphalt sealant that is blended by Owens Corning Roofing® and Asphalt, LLC.
+ The amount of Triple Layer Protection® may vary on shingle-to-shingle basis.
# International Code Council Evaluation Services Acceptance Criteria for Alternative Asphalt Shingles.
* Excludes non-Owens Corning® roofing products such as flashing, fasteners, pipe boots and wood decking.
1 See Color Disclaimer information on page 2 for additional details.
2 Shingles are algae resistant to control the growth of algae and discoloration.
3 Installation must include use of an Owens Corning® Hip & Ridge product. See actual warranty for details.
4 StreakGuard® Algae Resistance Technology is not available in the Compton and Denver service area.
5 Owens Corning® Bourbon and Midnight Plum shingles include a patent pending design.
6 Qualifying Owens Corning Hip & Ridge Shingles may be required to complete a UL 2218 and/or FM 4473 Class 3 Impact Resistant Roof System. Due to the variability in real storm conditions, a Class Rating on any product does not guarantee that it will withstand damage from hailstorms or other acts of God. Owens Corning shingles are not covered under a warranty for hail damage.
7 Homeowners should check with their insurance company to see if they qualify.
SureNail® Technology is not a guarantee of performance in all weather conditions.
For patent information, please visit owenscorning.com/patents.

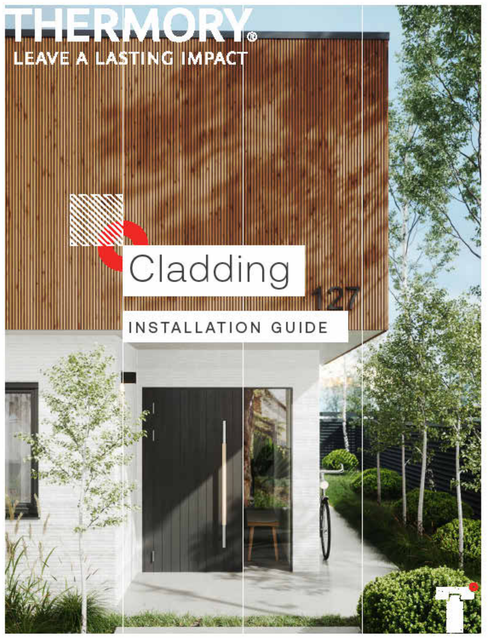
* Consulte la garantía para obtener una lista completa de detalles, limitaciones y requisitos.
1 Garantía limitada de 40 años para proyectos comerciales.
† Ensayos comparativos de Owens Corning con productos de la competencia con zonas de clavado ancho de una sola capa cuando se siguen las instrucciones de instalación del fabricante y se clava en el medio de la zona de clavado permitida.
** Tru-Bond® es un sellador asfáltico patentado de calidad premium formulado por Owens Corning Roofing® and Asphalt, LLC.
+ La cantidad de Triple Layer Protection® puede variar entre una teja y otra.
# Criterios de aceptación de los servicios de evaluación del Consejo Internacional de Códigos para tejas asfálticas alternativas.
* Se excluyen productos para techos no fabricados por Owens Corning®, como tapajuntas, sujetadores, botas de tubos y estructuras de soporte de madera.
1 Para obtener más información, consulte el Descargo de responsabilidad sobre los colores, en la página 3.
2 Las tejas son resistentes a las algas para controlar su desarrollo y la decoloración.
3 La instalación debe incluir el uso de un producto para limatesas y cumbreras de Owens Corning®.
La tecnología resistente a las algas StreakGuard® no está disponible en las áreas de distribución de Compton y Denver.
4 Las tejas de Owens Corning® Bourbon y Midnight Plum incluyen un diseño con patente pendiente.
5 Es posible que se requiera el uso de tejas aptas para limatesas y cumbreras de Owens Corning para completar un sistema de techo resistente a impactos UL 2218 y/o FM 4473 Clase 3. Debido a la variación de las tormentas reales, la clasificación de un producto no garantiza que resistirá los daños causados por granizadas o por otras tormentas de granizo u otras causas fortuitas. Las tejas de Owens Corning no están cubiertas por una garantía por daños de granizo.
6 Los propietarios deben verificar con su aseguradora para saber si califican.
La tecnología SureNail® no es una garantía de desempeño en todos los tipos de condiciones climáticas.
Para información sobre la patente, visite www.owenscorning.com/patents.

OWENS CORNING ROOFING AND ASPHALT, LLC
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1-800-GET-PINK® | 1-800-438-7465
www.owenscorning.com

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(Denver, Portland)

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WOOD SLATS (WDS-1)



THERMORY® cladding products undergo an intense thermal modification process that makes the wood more durable and stable in outdoor conditions while also emphasizing its characteristic grain pattern. Using the correct installation and maintenance techniques will result in beautiful, long-lasting cladding

These installation guidelines are based on the best knowledge currently available, and they should be read thoroughly and used accordingly.

Please read the entire installation guide and ensure your warranty is registered. Instructions can be found at the end of this guide.

IMPORTANT!

- Cladding boards for outdoor use must be stored a few weeks before installation, at the installation location, but protected from the rain, so that the wood can adapt to the humidity conditions of the future location. With this, you will reduce the expansion of the boards after installation.
- If being stored for an extended period before installation and whenever possible, Thermory® should be stored inside, out of the weather and sun. When this is not possible, Thermory® needs to be elevated off the ground, stacked uniformly and covered with a waterproof tarp. Leave the ends of the tarp open so moisture is not trapped inside, making certain the stored wood is not subjected to the elements or sun as the UV rays will fade the material. Under no circumstances should Thermory®, even in original packaging, be subjected to rain or any moisture as it cannot dry properly when stacked and/or packaged. When ready to install, follow the preceding guideline to acclimate the cladding to the location environment.
- Cladding boards for heated indoor use must be stored in a heated indoor space for a few weeks prior to installation.
- Handle Thermory thermally modified boards with care. The tongue-and-groove sections of boards may be fragile.
- Check the boards thoroughly for possible manufacturing and moisture defects, as well as transport-related damage prior to installation and never install defective boards.

ONCE INSTALLED, PRODUCTS ARE DEEMED TO HAVE BEEN ACCEPTED IN TERMS OF QUALITY.

Rainscreen System

- Like all quality wall assemblies, Thermory® cladding products require the use of a rainscreen system. It is a method of moisture management that not only drains away moisture that may penetrate from the outside but also allows the moisture that migrates through an insulated wall assembly from the inside to escape.

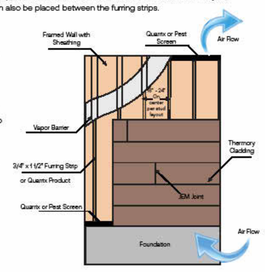
The rainscreen system utilizes an air space between the cladding and the vapor permeable water barrier and is created by using furring strips. This air space must be open at the top and bottom of a wall and any fenestration opening. These points of entry and exit must never be blocked or caulked. The free air space in a rainscreen system allows for continuous airflow behind the cladding and facilitates the natural drying of the wall assembly.

By effectively managing moisture, the rainscreen helps equalize the moisture in the cladding, adds to the longevity and prevents structural damage. Rainscreen mats or rainscreen vapor permeable barriers must not be used. They do not create the necessary free airspace for a rainscreen system to work and are prone to beading of moisture behind cladding.

Thermory® cladding products may be installed on traditional wooden furring, breathable/corrugated HDPE strips like Quamx, and our PaCS rail system.

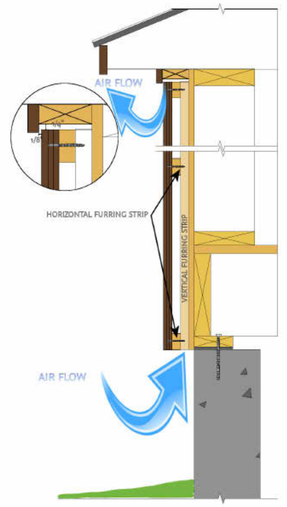
General Cladding Notes

- When installing horizontal Thermory® Cladding, the tongue and groove boards must be installed with the tongue pointing upwards.
- Furring strips must be placed at least every 24" and a minimum of 3/4" thick if solid. They should be aimed to attach with studs when at all possible. Ventilation should be provided behind the boards. As an alternative Quamx® furring strips may be used and purchased in conjunction with your Thermory® Cladding product.
- Fix horizontal cladding to vertical furring strip, the end of the board must sit on the batten. If JEM™ (joint end-matched) material is used, the ends can also be placed between the furring strips.
- Fix vertical cladding to horizontal furring strip, the end of the board must sit on the batten. If JEM™ (joint end-matched) is used, the ends can also be placed between the furring strips.
- It is recommended to leave minimum 12" gap at the bottom between the ground and cladding. At the very least the ventilation gap behind the cladding must stay open from below to ensure air circulation.
- In any case, we recommend to seal any raw ends of the board prior to installation to prevent water intake. It may be Cutek on raw cladding or matching paint or stain for prefinished products.



Vertical Cladding Installation

- One row of vertical wooden furring strips must be applied to the sheathing followed by a horizontal row before cladding can be installed to provide air flow behind cladding.
- Top and bottom must not be obstructed, leave at least 1/4" of gap from soffit on top or water table on bottom.



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JOB NO. 24064

DESIGN REVIEW
12.16.2025

issue:	date:
50% SD	06.17.2025
100% SD	08.29.2025
50% DD	10.24.2025
100% DD	12.12.2025

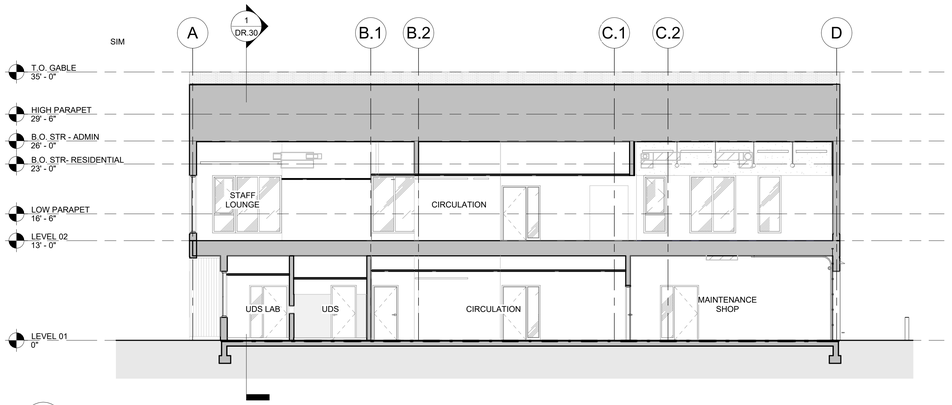
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MATERIAL CUTSHEETS 3/3

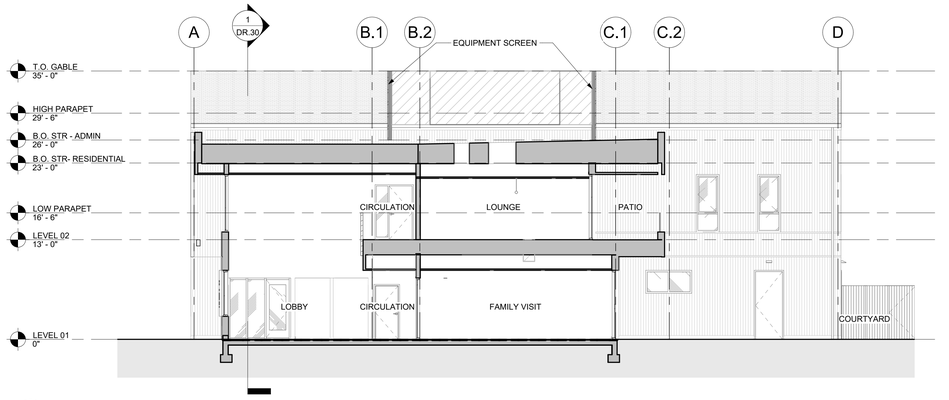
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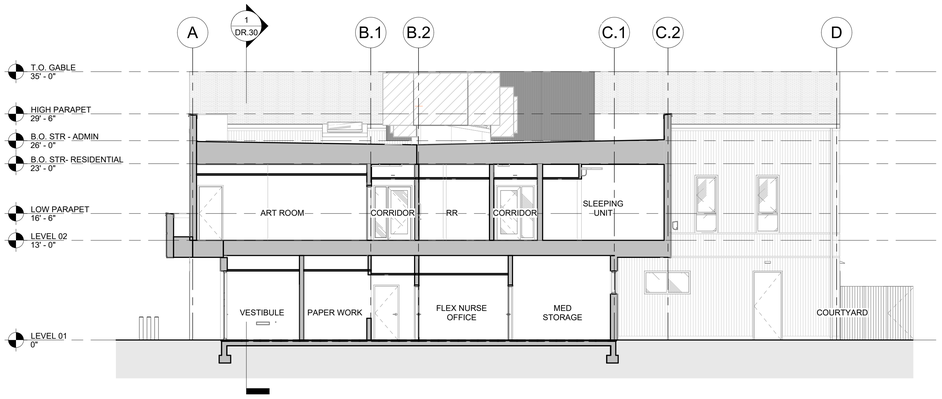
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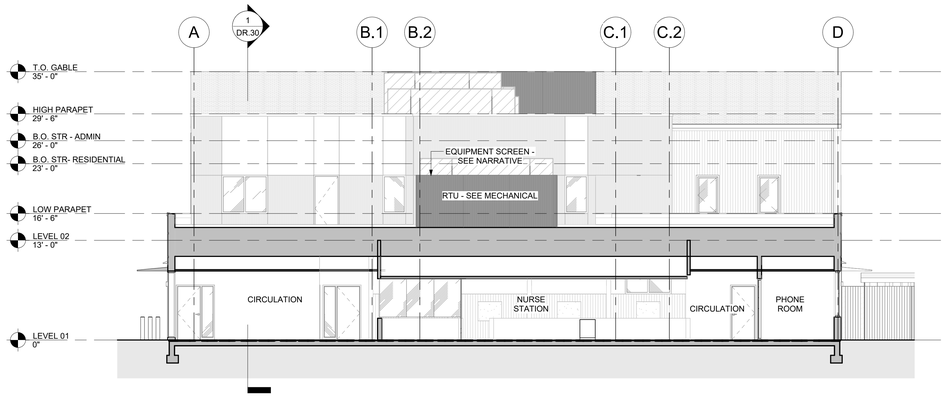
5 DR.30 N/S BUILDING SECTION 8 - DR
1/8" = 1'-0"



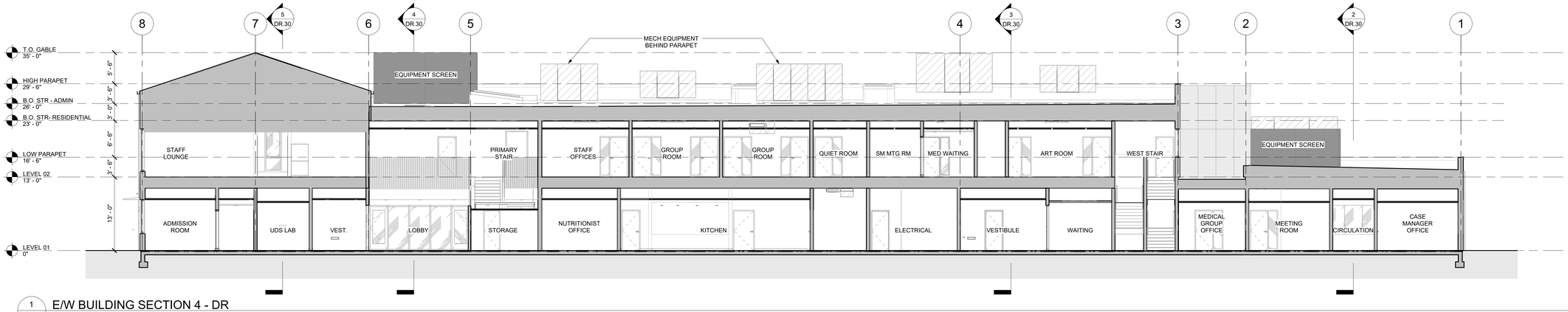
4 DR.30 N/S BUILDING SECTION 5 - DR
1/8" = 1'-0"



3 DR.30 N/S BUILDING SECTION 3 - DR
1/8" = 1'-0"



2 DR.30 N/S BUILDING SECTION 1 - DR
1/8" = 1'-0"



1 DR.30 E/W BUILDING SECTION 4 - DR
1/8" = 1'-0"

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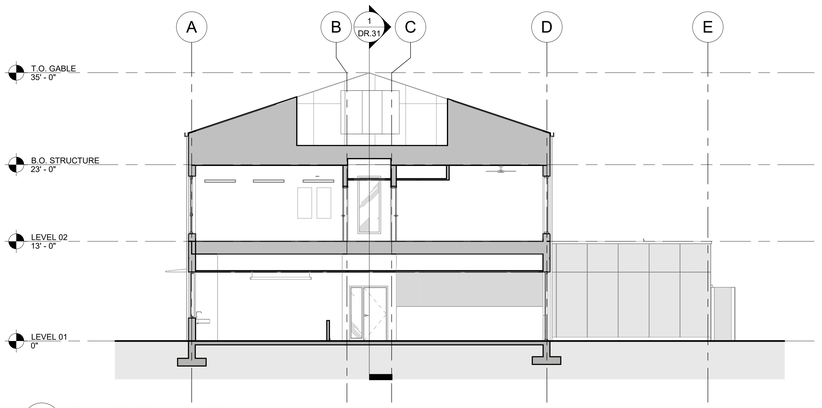
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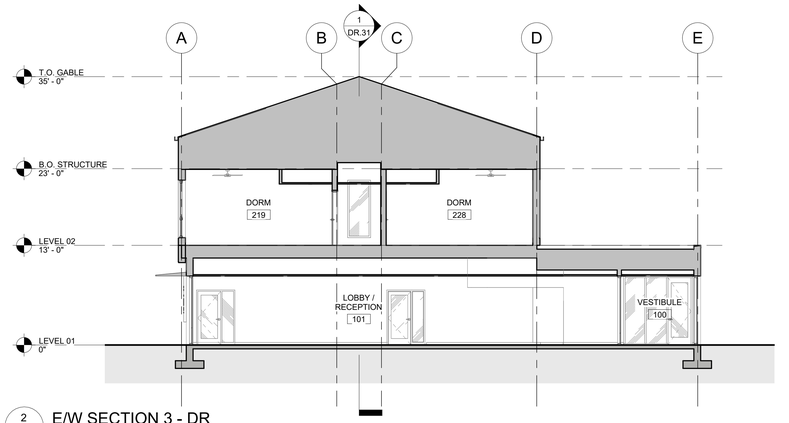
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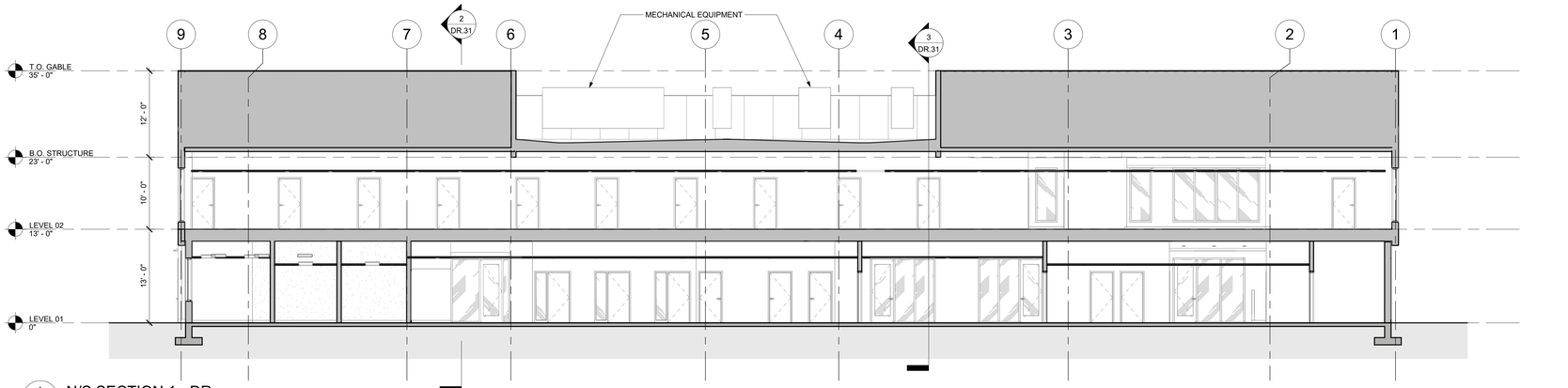
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3 DR.31 E/W SECTION 2 - DR
1/8" = 1'-0"



2 DR.31 E/W SECTION 3 - DR
1/8" = 1'-0"



1 DR.31 N/S SECTION 1 - DR
1/8" = 1'-0"

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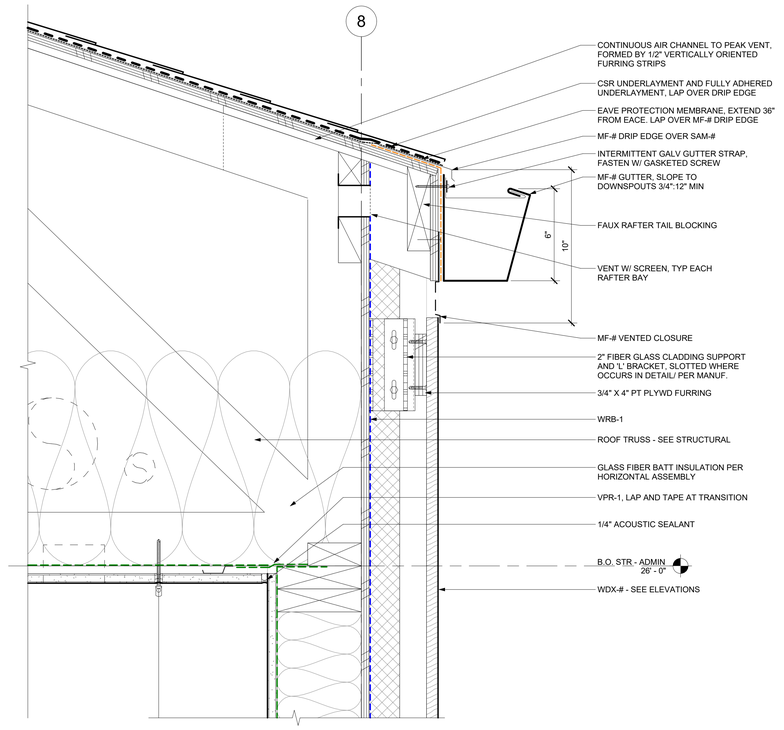
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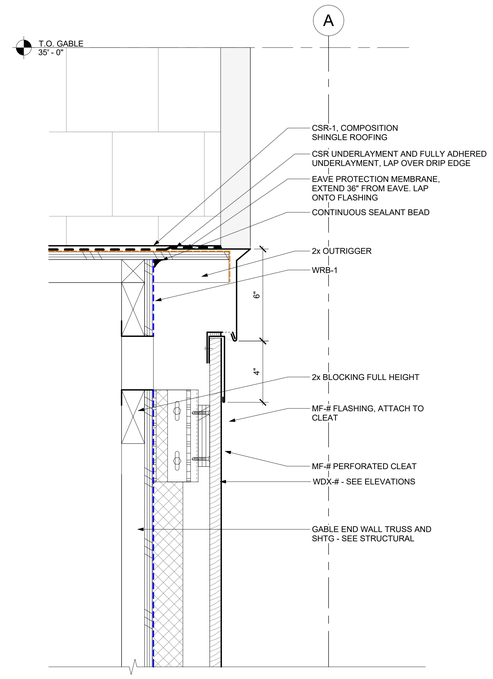
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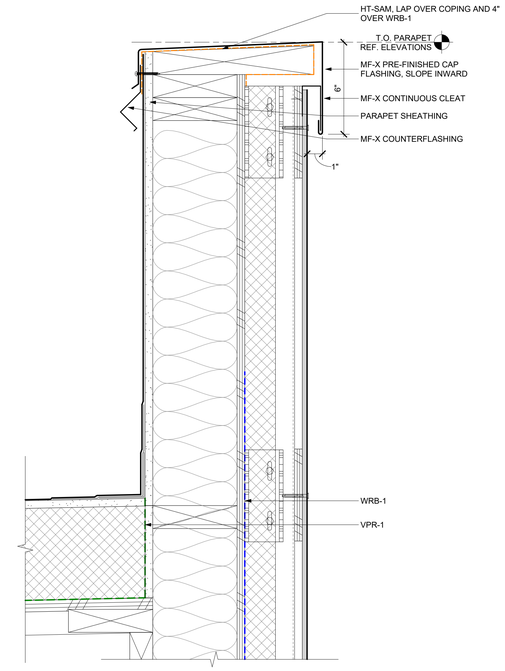
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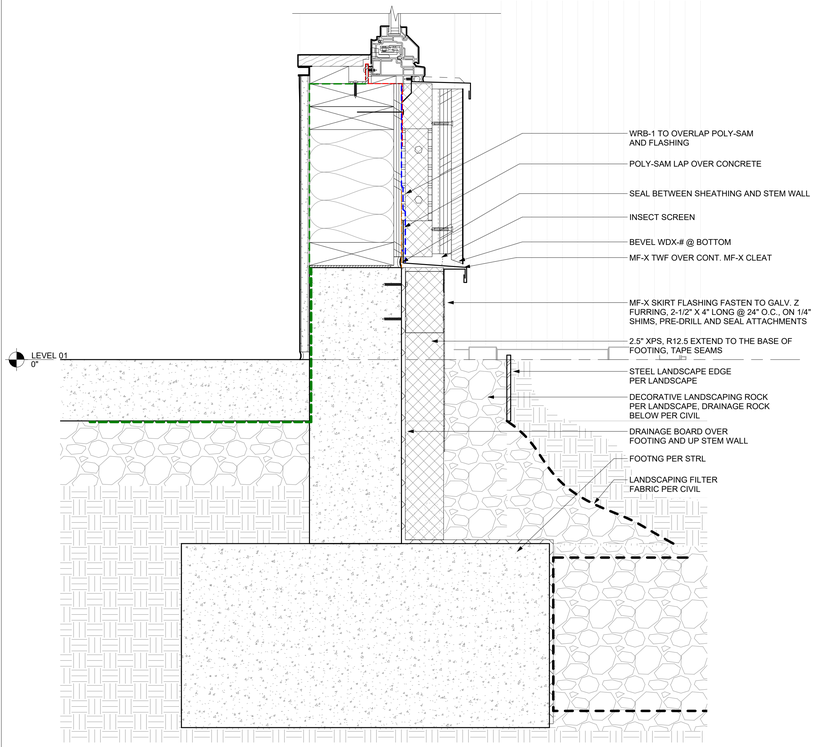
2 DR.32 TYPICAL DETAIL @ GABLE END - DR
3" = 1'-0"



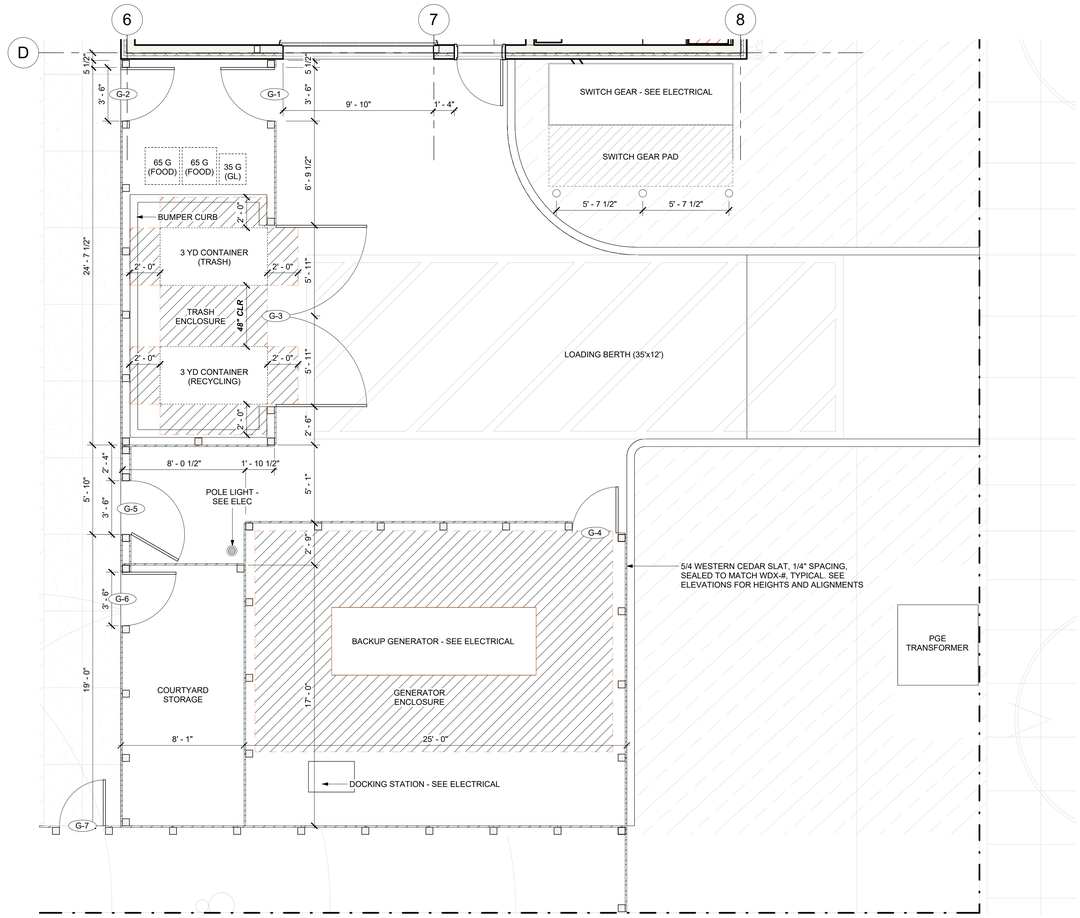
3 DR.32 TYPICAL DETAIL @ GABLE RAKE - DR
3" = 1'-0"



4 DR.32 TYPICAL DETAIL @ PARAPET FCP-X - DR
3" = 1'-0"



1 DR.32 TYPICAL BASE DETAIL @ WDX-1 - DR
3" = 1'-0"



6 DR.32 ENLARGED PLAN - LOADING DOCK - DR
1/4" = 1'-0"

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01.28.2026

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date: 06.13.2025

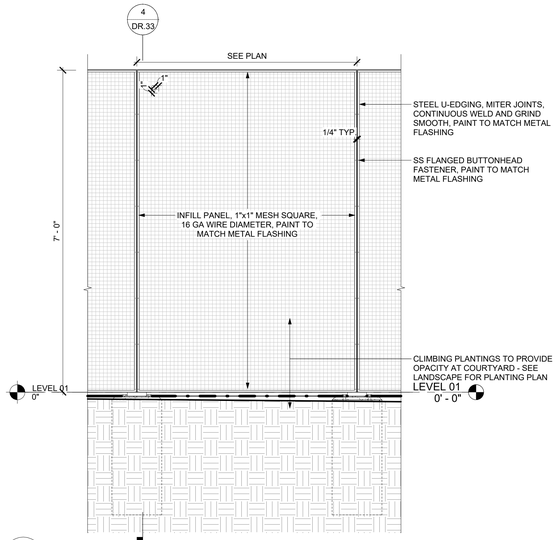
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BUILDING 1 - ENLARGEMENTS + DETAILS

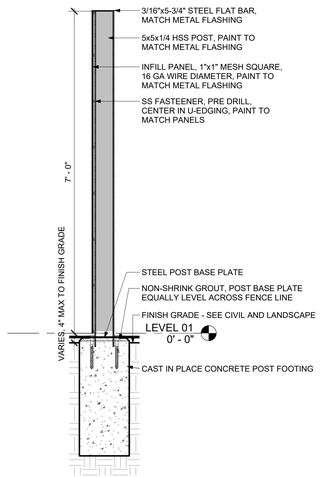
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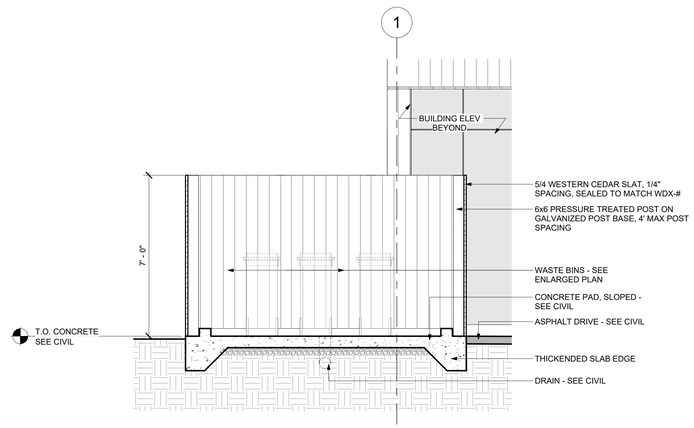
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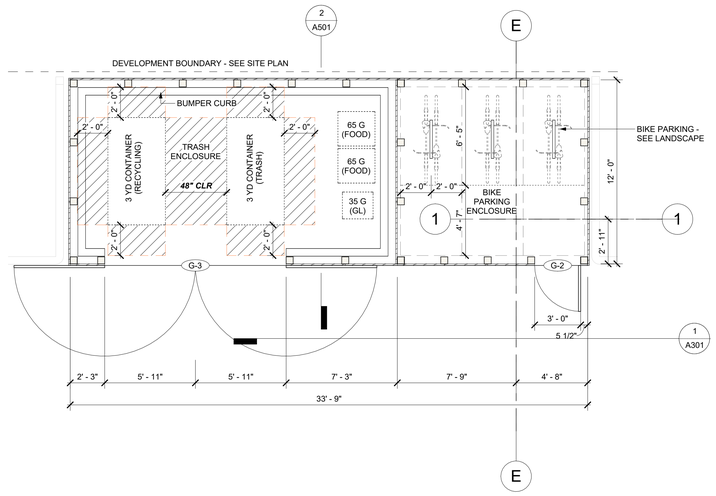
5 DR.33 ELEVATION DETAIL - COURTYARD FENCE - DR
3/4" = 1'-0"



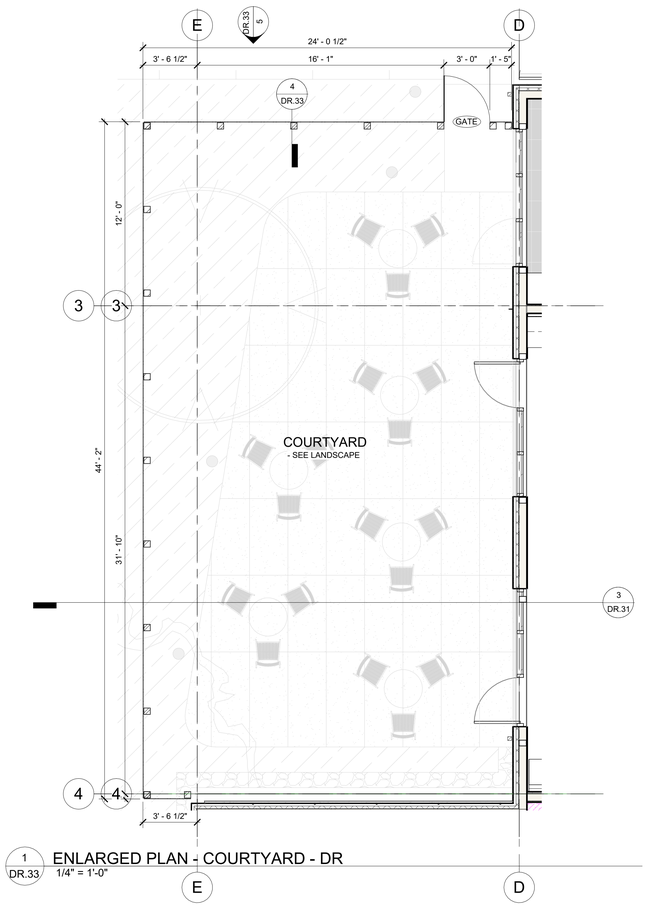
4 DR.33 SECTION DETAIL - COURTYARD FENCE - DR
3/4" = 1'-0"



3 DR.33 SECTION - TRASH ENCLOSURE - DR
3/8" = 1'-0"



2 DR.33 ENLARGED PLAN - TRASH ENCLOSURE - DR
1/4" = 1'-0"



1 DR.33 ENLARGED PLAN - COURTYARD - DR
1/4" = 1'-0"

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CLACKAMAS COUNTY RECOVERY CAMPUS - BUILDING 2

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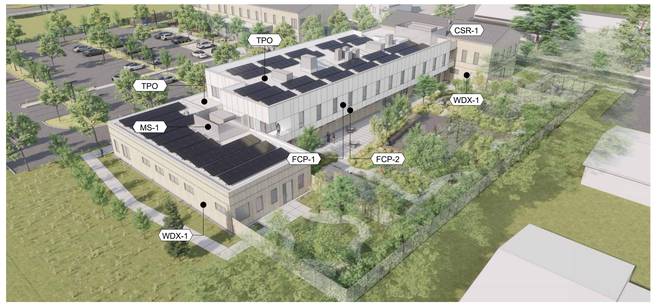
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title:
BUILDING 2 - ENLARGEMENTS + DETAILS

sheet:
DR.33

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8 DR.34 EXTERIOR VIEW - COURTYARD AERIAL - DR
6" = 1'-0"



7 DR.34 EXTERIOR VIEW - 92ND AERIAL - DR
6" = 1'-0"



6 DR.34 EXTERIOR VIEW - 92ND ENTRY - DR
6" = 1'-0"



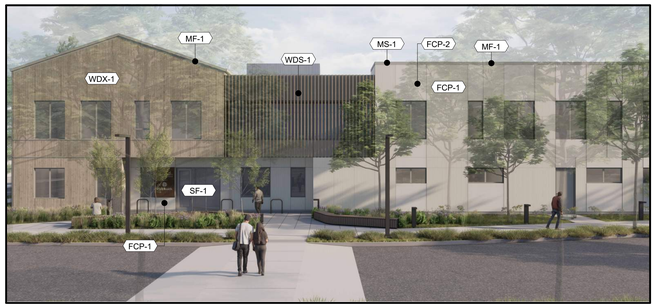
5 DR.34 EXTERIOR VIEW - SITE ENTRY - DR
6" = 1'-0"



4 DR.34 EXTERIOR VIEW - COURTYARD 1 - DR
6" = 1'-0"



3 DR.34 EXTERIOR VIEW - COURTYARD 2 - DR
6" = 1'-0"



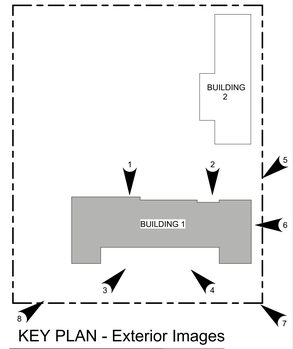
2 DR.34 EXTERIOR VIEW - RESIDENTIAL TREATMENT ENTRY - DR
6" = 1'-0"



1 DR.34 EXTERIOR VIEW - WITHDRAWAL MANAGEMENT ENTRY - DR
6" = 1'-0"

EXTERIOR MATERIALS
See A0.40 for Material Schedule

CSR-1	COMPOSITE SHINGLE ROOFING
EX-GB	EXTERIOR GYPSUM BOARD / FIBERGLASS FACED SHEATHING
FCP-1	FIBER CEMENTITIOUS PANEL - LIGHT, RIBBED
FCP-2	FIBER CEMENTITIOUS PANEL - LIGHT
FCP-3	FIBER CEMENTITIOUS PANEL - BLUE
GR-1	GLASS GUARDRAIL
MF-1	METAL FLASHING
MF-2	METAL FLASHING - PRE-FINISHED GALVANIZED STEEL
MLV-1	METAL LOUVERS
MP-1	METAL WALL PANEL - FLAT PROFILE
MS-1	METAL SCREEN PANEL - PERFORATED
PE-1	EXTERIOR PAINT
SF-1	ALUMINUM STOREFRONT AND ENTRANCES
TPO	TPO SINGLE PLY ROOFING MEMBRANE
WDX-1	EXTERIOR WOOD SIDING
WDS-1	EXTERIOR WOOD SLATS
X	COMMERCIAL VINYL WINDOW, SEE A0.31 FOR WINDOW TYPES
DS	DOWNSPOUT



KEY PLAN - Exterior Images

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CLACKAMAS COUNTY RECOVERY CAMPUS

JOB NO. 24064

DESIGN REVIEW

12.16.2025

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BUILDING 1 - PROJECT IMAGES

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DR.34

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6 DR.35 EXTERIOR VIEW - PARKING AERIAL - DR
6" = 1'-0"



5 DR.35 EXTERIOR VIEW - WEST AERIAL - DR
6" = 1'-0"



4 DR.35 EXTERIOR VIEW - HOUSING ENTRY - DR
6" = 1'-0"



3 DR.35 EXTERIOR VIEW - VIEW SW - DR
6" = 1'-0"



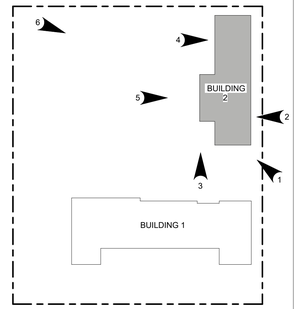
2 DR.35 EXTERIOR VIEW - 92ND ENTRY - DR
6" = 1'-0"



1 DR.35 EXTERIOR VIEW - VIEW SE - DR
6" = 1'-0"

EXTERIOR MATERIALS
See A0.40 for Material Schedule

CSR-1	COMPOSITE SHINGLE ROOFING
EX-GB	EXTERIOR GYPSUM BOARD / FIBERGLASS FACED SHEATHING
FCP-3	FIBER CEMENTITIOUS PANEL - BLUE
MF-1	METAL FLASHING - PRE-FINISHED GALVANIZED STEEL
MF-2	METAL FLASHING - PRE-FINISHED GALVANIZED STEEL
MLV-1	METAL LOUVERS
MS-2	METAL SCREEN PANEL - WELDED WIRE
PE-1	EXTERIOR PAINT
SF-1	ALUMINUM STOREFRONT AND ENTRANCES
TPO	TPO SINGLE PLY ROOFING MEMBRANE
WDX-1	EXTERIOR WOOD SIDING
X	COMMERCIAL VINYL WINDOW, SEE A0.31 FOR WINDOW TYPES
DS	DOWNSPOUT



KEY PLAN - Exterior Images

HOLST

123 NE 3RD AVE.
SUITE 310
PORTLAND, OR
97232

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CLACKAMAS COUNTY RECOVERY CAMPUS - BUILDING 2

JOB NO. 24064

DESIGN REVIEW

12.16.2025

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100% DD	12.12.2025

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BUILDING 2 - PROJECT IMAGES

sheet:
DR.35

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VEGA
CIVIL ENGINEERING LLC

Preliminary Stormwater Report

Clackamas County Recovery Campus

15301 SE 92nd Avenue
Clackamas County, OR 97015

Date:
December 16, 2025

Owner:
Clackamas County
2051 Kaen Rd
Oregon City, OR 97045

Prepared by:
Brynne Healy

Engineer of Record:
Martha Williamson, PE
Vega Civil Engineering, LLC
1300 SE Stark St #201
Portland, OR 97214
martha@vegacivil.com
(503) 662-1901

I hereby certify that this Stormwater Management Report for Clackamas County Recovery Campus has been prepared by me or under my supervision and meets minimum standards of Water Environment Services and normal standards of engineering practice. I hereby acknowledge that the jurisdiction does not and will not assume liability for the sufficiency, suitability, or performance of drainage facilities designed by me.



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Project Overview & Description	2
Methodology	3
Analysis	4
Engineering Conclusions	6

Appendices

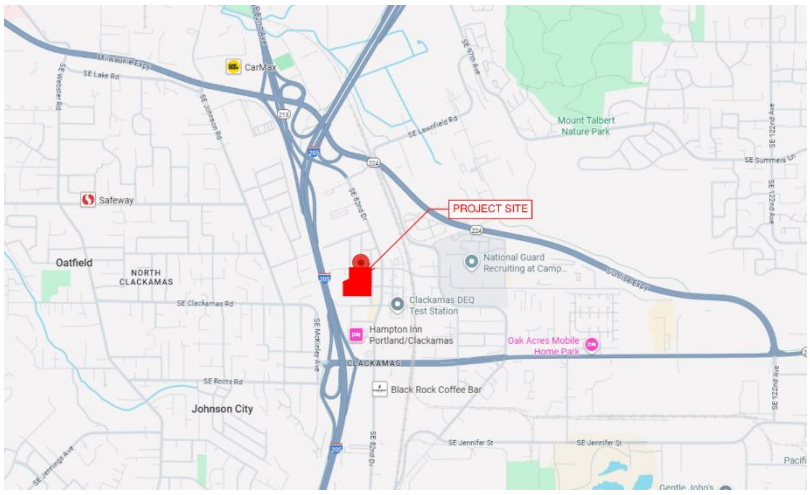
A Stormwater Facility Details / Exhibits
- Utility Plan
- Predeveloped Impervious Areas Map
- Post-Developed Impervious Areas Map
- Catchment Map
- Sedimentation MH Detail
- Drywell Detail
- Stormfilter Catch Basin Detail

B Calculations
- Private Site HydroCAD Report
- Public ROW HydroCAD Report
- Contech Stormfilter Calculations

C Conveyance Calculations
- Site Conveyance Calculations

D Associated Reports
- Infiltration Test Summary
- Report of Geotechnical Engineering Services by Columbia West, dated August 13, 2025

Project Overview and Description

Location	15301 SE 92nd Avenue
Site Area	113,185 SF (Onsite Development Boundary) 22,679 SF (ROW)
Vicinity Map	
Zoning	C-3
Development Type	Institutional / Transitional Housing
Existing Conditions	The existing site is bounded on the north by SE Tolbert St, the east by SE 92nd Ave, and the south and west by residential sites. occupied by the former Cascade Heights Public Charter school with open space to the south and west. The public right-of-way is currently partially paved with asphalt but does not have existing curbs.
Developed Conditions	A new substance treatment facility (Building 1) and transitional housing (Building 2) with a shared 110-stall parking lot. Proposed development will be located on the south and east portion of the site. West and north areas will remain open space. The project will construct half street improvements on SE 92nd Avenue, including new asphalt roadway, curbs, and sidewalks.

Methodology

Criteria	New development will be managed per the 2023 Water Environment Services Stormwater Standards. Requirements are as follows: <u>Water Quality</u> Water quality facilities shall be designed to capture and treat 80 percent of the average annual runoff volume, to the maximum extent practicable with the goal of 80 percent total suspended solids removal. The required treatment volume equates to a WQ Design Storm of 1.0 inches over 24 hours. <u>Water Quantity</u> Flow control facilities shall be designed so that the peak flow rates from post-development conditions shall be less than or equal to the peak flow rates from pre-development conditions for all peak flows between 42% of the 2-year storm event up to the 10-year storm event. Infiltration facilities will be sized to fully manage and infiltrate the 10-year storm event.
Existing Drainage	The south portion of the site drains generally south and west. The north portion of the site drains generally north.
Soil Type	53B – Latourell Loam, 3 to 8 percent slopes
Infiltration Testing Results	Geotechnical infiltration testing conducted by Columbia West found highly variable infiltration rates across the site. Shallow infiltration (above 5’ bgs) was approximately 1 in/hr, while deep infiltration (6’-30’ bgs) ranged from unfactored rates of 7.5 in/hr to 36 in/hr. The deepest onsite drywells will be located in the area of boring B-2, which found a rate of 36 in/hr at 30’ bgs, which will be the rate used for infiltration calculations. The shallower drywells in the public ROW will use a rate of 20 in/hr based on a similar soils profile to boring TP-1, where testing was conducted at 6’ bgs (see Appendix D).

Proposed Stormwater Management System	Private Site Runoff from the building and parking lot will be collected and piped to a sedimentation maintenance hole for water quality; it will then be conveyed to a system of (7) 35’ deep drywells with 20’ perforated sections, which have been sized to fully infiltrate runoff from the 10-year storm event. Public ROW Stormwater from the half street improvements in SE 92nd Avenue will managed for water quality and quantity. The north portion of the ROW drains north to the intersection with SE Tolbert St. This area will be collected and treated for water quality via a Contech stormfilter catch basin with (2) 27” filter cartridges, which will then connect to (1) 25’-deep drywell. The south portion of the ROW, along with the additional the drainage basin flowing from the south, will be collected and treated for water quality via a second Contech stormfilter catch basin with (3) 27” filter cartridges, and will then be piped to a system of (2) 25’-deep drywells. All public drywells have been designed per WES standards and will fully infiltrate the 10-year storm event.

Analysis

Relevant Design Storms	2yr – 2.4 inches 5yr – 2.85 inches 10yr – 3.2 inches 25yr – 4.0 inches 100yr – 4.8 inches WQ – 1.00 inches
Computation Methods & Software	HydroCAD was used for sizing the drywells
Safety Factors	A safety factor of 2 was applied to the tested infiltration rate.
Curve Numbers	A CN of 98 was used for proposed impervious area. A CN of 79 was used for proposed pervious area. This number was based on the curve number listed in WES 2023 SWMM Table 28, Appendix D, as the value for landscaped areas with 50 to 75% coverage in Hydrologic Soil Group B.

Time of Concentration	5 min.
Escape Route or Inundation Level for 24-hour 100-yr event	The drywells are located in the drive aisle near the entrance to the site. In the event of the 100-year storm event, stormwater will have safe overland flow to the public ROW.

Table 2 – Disposal Catchment and Facility Summary

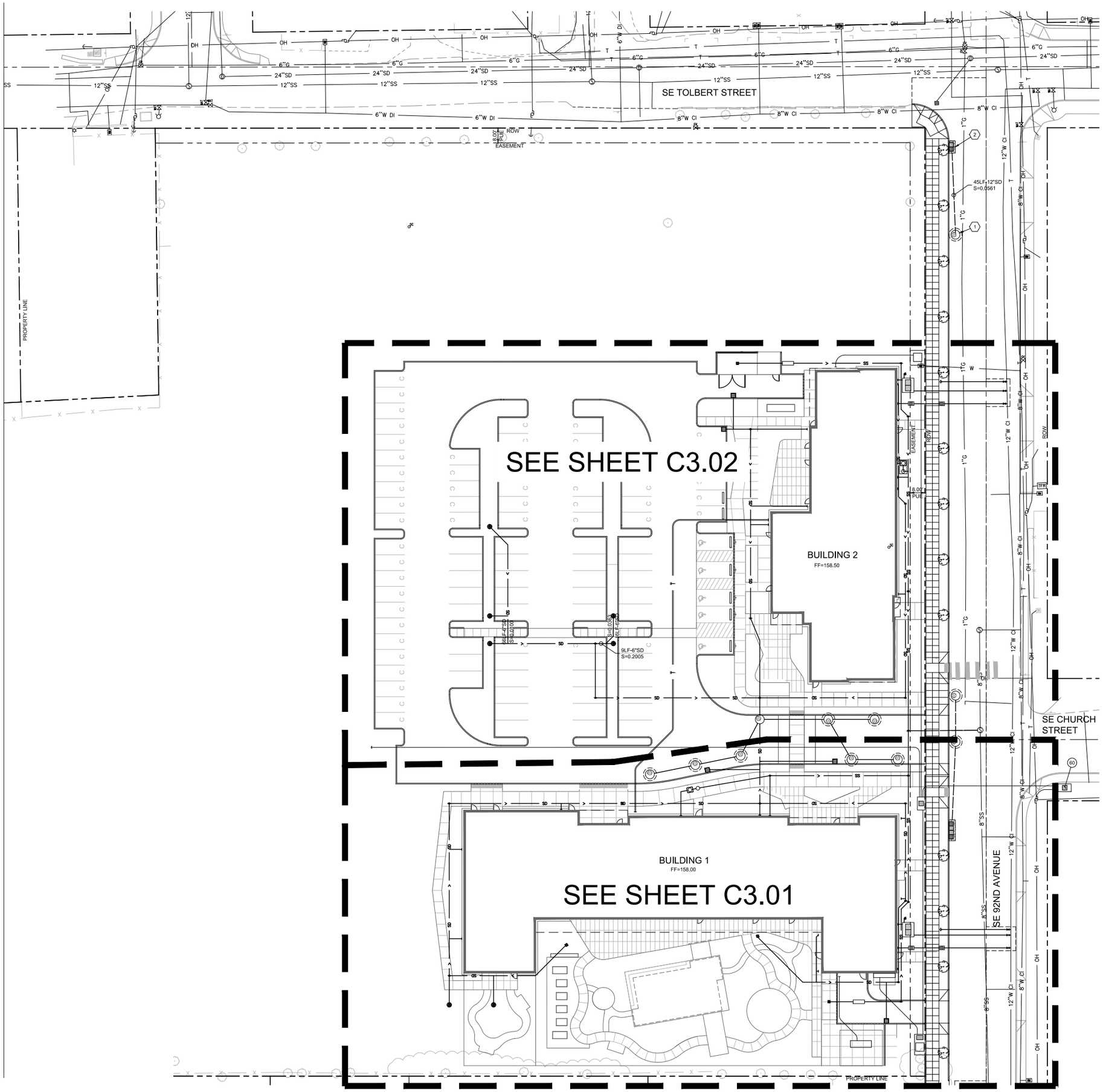
Catchment or Facility ID	Impervious Area Type	Area (sf)	Ownership (private/public)	WQ Treatment	Disposal Facility Type	Facility Size (sf)
Private Site (1S)	Roof, parking, and walkways	83,377	Private	(1) Sed Manhole	Private Drywells	(7) x 48" Dia x 20' Perforated Section
	Landscaping	29,808				
Development Boundary Total		**113,185**				
ROW-N (2S)	Half Street Improvements	8,774	Public	2-Cartridge Stormfilter Catch Basin	Public Drywell	(1) X 48" Dia x 15' Perforated Section
ROW-S (3S)	Half Street Improvements	8,955	Public	3-Cartridge Stormfilter Catch Basin	Public Drywell	(2) X 48" Dia x 15' Perforated Section
	Catchment South of Site	4,950				
Public ROW Total		**22,679**				

Engineering Conclusions

Water Quality	The proposed development will meet the requirements for water quality per the 2023 Water Environment Services Stormwater Standards. Stormwater routed to drywells in the public ROW will receive pretreatment via Contech Stormfilter catch basins, which have been sized for the treatment volume of the Water Quality Design Storm of 1.0 in/24 hr as dictated in the 2023 Water Environment Services Stormwater Standards. Stormwater on the private site will be treated using a sedimentation manhole.
Water Quantity	The proposed development will meet the requirements for water quality per the 2023 Water Environment Services Stormwater Standards. The drywell systems have been designed to fully infiltrate the 10-year storm event.
Conveyance	Calculations have been performed demonstrate that site piping is adequately sized to convey the 25-year, 24-hour storm event (see Appendix C)
Upstream / Downstream Impacts	All stormwater runoff will be managed via drywells, meaning that runoff will be removed from downstream systems. Therefore, the proposed development will not have an impact on upstream or downstream systems.

Appendix A - Stormwater Facility Details / Exhibits

Exhibit 1: Utility Plan
Exhibit 2: Predeveloped Impervious Areas Map
Exhibit 3: Postdeveloped Impervious Areas Map
Exhibit 4: Catchment Map
Sedimentation MH Detail
Drywell Detail
Stormfilter Catch Basin Detail
Public Sed MH Detail
Public Drywell Detail



GENERAL NOTES

1. ALL BUILDING SANITARY SEWER FIXTURES BELOW THE RIM OF THE UPSTREAM MANHOLE TO BE BACKFLOW PROTECTED.
2. ALL DOMESTIC WATER AND FIRE PROTECTION WORK IN THE PUBLIC RIGHT OF WAY BY CLACKAMAS RIVER WATER. CONTRACTOR TO COORDINATE WORK WITH CRW.

(#) STORMWATER NOTES

1. 25' DEEP PUBLIC DRYWELL WITH 15' PERFORATED SECTION, PER CLACKAMAS WES STD. DWG. NO. SWM-27
   RIM=155.84
   IE=149.70
   SUMP=130.84
2. CONTECH STORMFILTER CONCRETE WATER QUALITY CATCH BASIN WITH TWO 27" CARTRIDGES
   RIM=154.87
   12" IE, OUT (S)=151.82

(#) OTHER UTILITY NOTES

60. NEW SWITCH VAULT. COORDINATE WITH PGE

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UTILITY PLAN

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STORMWATER NOTES

1. CONTECH STORMFILTER DUAL CONCRETE WATER QUALITY CATCH BASIN WITH THREE 27" CARTRIDGES
   RIM=156.37
   12" IE, OUT (N)=153.32
2. 25' DEEP PUBLIC DRYWELL WITH 15' PERFORATED SECTION, PER CLACKAMAS WES STD. DWG. NO. SWM-27
   RIM=156.99
   12" IE, IN (S)=150.82
   SUMP=131.99
3. ROOF DRAIN CONNECTION FROM BUILDING
4. 35' DEEP DRYWELL WITH 20' PERFORATED SECTION, PER DETAIL 4/C5.01
   RIM=157.30
   IE=150.97
5. 35' DEEP DRYWELL WITH 20' PERFORATED SECTION, PER DETAIL 4/C5.01
   RIM=156.99
   IE=150.48
6. 35' DEEP DRYWELL WITH 20' PERFORATED SECTION, PER DETAIL 4/C5.01
   RIM=157.35
   IE=150.23
7. TRAPPED CATCH BASIN PER DETAIL 1/C5.01
   RIM=156.75
   IE=154.75
8. 35' DEEP DRYWELL WITH 20' PERFORATED SECTION, PER DETAIL 4/C5.01
   RIM=157.24
   IE=150.57
9. 35' DEEP DRYWELL WITH 20' PERFORATED SECTION, PER DETAIL 4/C5.01
   RIM=157.46
   IE=159.35
10. CLEANOUT TO GRADE PER DETAIL 3/C5.01
11. DOWNSPOUT CONNECTION FROM BUILDING
12. TRAPPED CATCH BASIN PER DETAIL 1/C5.01
    RIM=157.42
    IE=155.42
13. AREA DRAIN PER DETAIL 2/C5.01
    RIM PER LANDSCAPE
    IE=156.50
14. AREA DRAIN PER DETAIL 2/C5.01
    RIM PER LANDSCAPE
    IE=156.50
15. AREA DRAIN PER DETAIL 2/C5.01
    RIM=157.25
    IE=155.75
16. AREA DRAIN PER DETAIL 2/C5.01
    RIM=157.75
    IE=156.25
17. TRAPPED CATCH BASIN PER DETAIL 1/C5.01
    RIM=156.83
    IE=154.83

WATER/FIRE NOTES

30. NEW FIRE HYDRANT PER CLACKAMAS RIVER WATER STD. DWG. NO. 110A
31. NEW HYDRANT CONNECTION FROM 12" CI MAIN. TAP TO BE PERFORMED BY CLACKAMAS RIVER WATER
32. NEW FIRE SERVICE CONNECTION FROM 12" CI MAIN. TAP TO BE PERFORMED BY CLACKAMAS RIVER WATER
33. FIRE SERVICE BACKFLOW, INSTALLED IN BELOW GRADE VAULT PER CLACKAMAS RIVER WATER STD. DWG. NO. 111
34. FIRE DEPARTMENT CONNECTION (FDC)
35. 2" DOMESTIC WATER CONNECTION FROM 12" CI MAIN. TAP TO BE PERFORMED BY CLACKAMAS RIVER WATER
36. 2" DOMESTIC WATER METER PER CLACKAMAS RIVER WATER STD. DWG. NO. 109. SERVICE LINE AND METER TO BE PROVIDED AND INSTALLED BY CRW
37. 2" DCVA PER CLACKAMAS RIVER WATER STD. DWG. NO. 112
38. DOMESTIC WATER CONNECTION TO BUILDING
39. FIRE SERVICE CONNECTION TO BUILDING

GENERAL NOTES

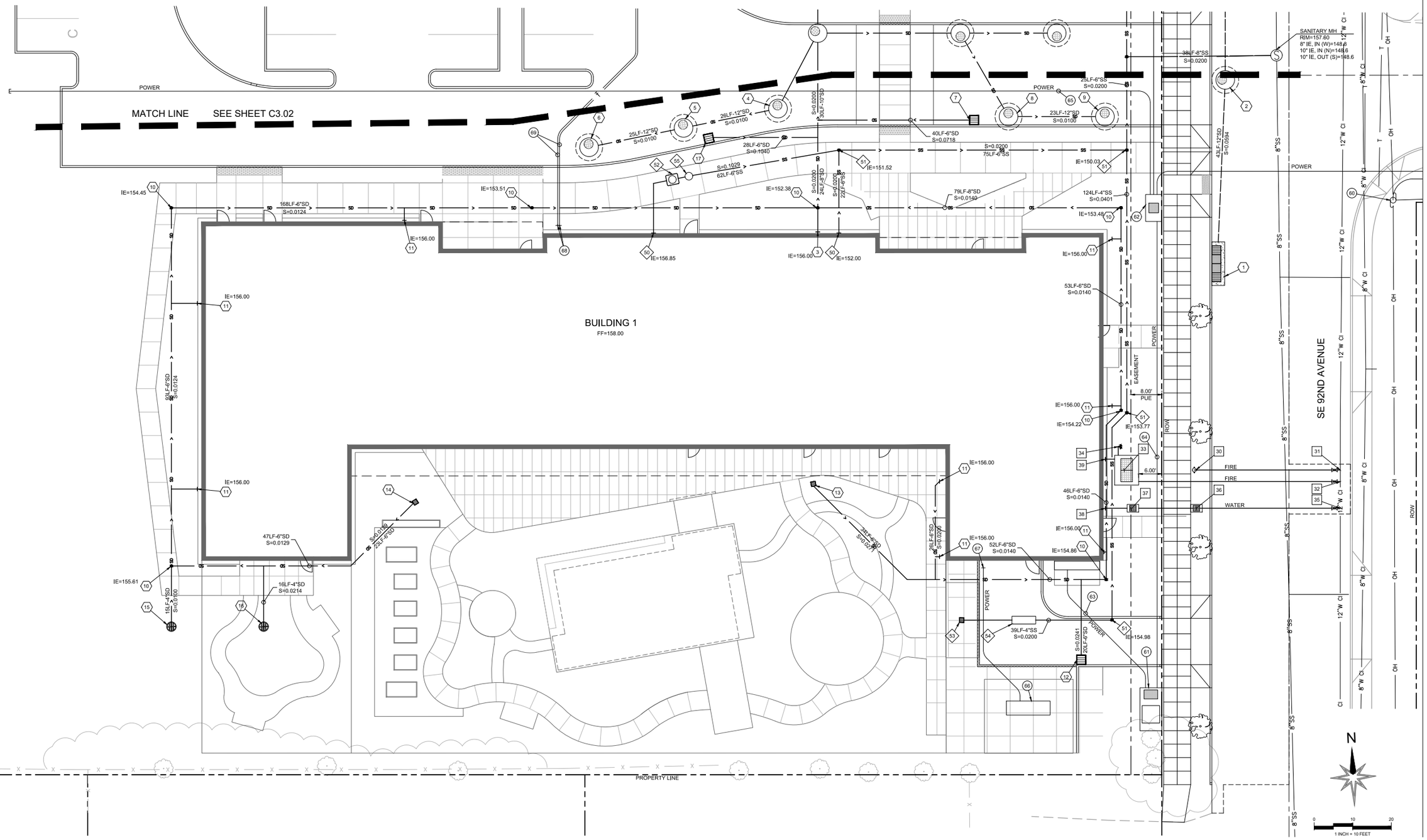
1. ALL BUILDING FIXTURES BELOW THE RIM OF THE UPSTREAM MANHOLE TO BE BACKFLOW PROTECTED.
2. ALL DOMESTIC WATER AND FIRE PROTECTION WORK IN THE PUBLIC RIGHT OF WAY BY CLACKAMAS RIVER WATER. CONTRACTOR TO COORDINATE WORK WITH CRW.

SANITARY NOTES

50. SANITARY CONNECTION FROM BUILDING
51. SANITARY CLEANOUT TO GRADE
52. GB-50 GREASE INTERCEPTOR
    RIM=157.80
    IE=156.55
53. TRASH DRAIN PER DETAIL 8/C5.01
    RIM=157.50
    IE=155.75
54. ACO SPILL CONTROL OIL WATER SEPARATOR WITH HEAVY DUTY COVER AND STEEL FRAME, OR APPROVED EQUAL
55. GREASE INTERCEPTOR MONITORING PORT

OTHER UTILITY NOTES

60. ELECTRICAL CONNECTION FROM EXISTING UTILITY POLE. COORDINATE WITH PGE
61. NEW 5106 PAD VAULT TRANSFORMER. COORDINATE WITH ELECTRICAL AND PGE
62. NEW 577 SWITCH VAULT. COORDINATE WITH ELECTRICAL AND PGE
63. ELECTRICAL CONDUIT TO BUILDING 1 SWITCH BOARD
64. (1) 4" CONDUIT SERVING BUILDING 1
65. (1) 4" CONDUIT STUB TO FUTURE WEST SITE
66. GENERATOR. COORDINATE WITH ELECTRICAL
67. GENERATOR CONNECTION TO BUILDING
68. TELECOM CONNECTION FROM BUILDING
69. (2) 4" TELECOM CONDUIT CONNECTING TO BUILDING 2



N

0 10 20
1 INCH = 10 FEET

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STORMWATER NOTES

1. TRAPPED CATCH BASIN PER DETAIL 1/C5.01
   RIM=157.60
   IE=155.60
2. 35' DEEP DRYWELL WITH 20' PERFORATED SECTION, PER DETAIL 4/C5.01
   RIM=157.34
   IE=150.58
3. 35' DEEP DRYWELL WITH 20' PERFORATED SECTION, PER DETAIL 4/C5.01
   RIM=157.45
   IE=150.36
4. CLEANOUT TO GRADE PER DETAIL 3/C5.01
5. DOWNSPOUT CONNECTION FROM BUILDING
6. SEDIMENTATION MH PER DETAIL 5/C5.01
   RIM=157.63
   10" IE, IN (N)=151.43
   10" IE, IN (S)=151.43
   12" IE, OUT (W)=150.93
   12" IE, OUT (E)=150.93
   SUMP=146.93
7. TRAPPED CATCH BASIN PER DETAIL 1/C5.01
   RIM=157.37
   IE=155.37
8. AREA DRAIN PER DETAIL 2/C5.01
   RIM=156.00
   IE=154.50
9. AREA DRAIN PER DETAIL 2/C5.01
   RIM=155.00
   IE=153.50
10. AREA DRAIN PER DETAIL 2/C5.01
    RIM=155.00
    IE=153.50
11. AREA DRAIN PER DETAIL 2/C5.01
    RIM=156.00
    IE=154.50
12. CURB OPENING PER DETAIL 11/C5.00
13. AREA DRAIN PER DETAIL 2/C5.01
    RIM=155.67
    IE=154.17
14. 25' DEEP PUBLIC DRYWELL WITH 15' PERFORATED SECTION, PER CLACKAMAS WES STD. DWG. NO. SWM-27
    RIM=157.18
    12" IE, IN (S)=150.59
    SUMP=132.18

WATER/FIRE NOTES

30. NEW FIRE HYDRANT PER CLACKAMAS RIVER WATER STD. DWG. NO. 110A
31. NEW HYDRANT CONNECTION FROM 12" CI MAIN. TAP TO BE PERFORMED BY CLACKAMAS RIVER WATER
32. NEW FIRE SERVICE CONNECTION FROM 12" CI MAIN. TAP TO BE PERFORMED BY CLACKAMAS RIVER WATER
33. FIRE SERVICE BACKFLOW, INSTALLED IN BELOW GRADE VAULT PER CLACKAMAS RIVER WATER STD. DWG. NO. 111
34. FIRE DEPARTMENT CONNECTION (FDC)
35. 2" DOMESTIC WATER CONNECTION FROM 12" CI MAIN. TAP TO BE PERFORMED BY CLACKAMAS RIVER WATER
36. 2" DOMESTIC WATER METER PER CLACKAMAS RIVER WATER STD. DWG. NO. 109. SERVICE LINE AND METER TO BE PROVIDED AND INSTALLED BY CRW
37. 2" DCVA PER CLACKAMAS RIVER WATER STD. DWG. NO. 112
38. DOMESTIC WATER CONNECTION TO BUILDING
39. FIRE SERVICE CONNECTION TO BUILDING

SANITARY NOTES

50. SANITARY CONNECTION FROM BUILDING
51. SANITARY CLEANOUT TO GRADE
52. CONNECT TO EXISTING COREHOLE FOR EX. SANITARY LATERAL. EXISTING LATERAL MAY BE REUSED IF SIZE, CONDITION, AND INVERT ALLOW. VERIFY CONDITION AND INVERT IN FIELD
53. GB-50 GREASE INTERCEPTOR
    RIM=158.16
    IE=156.93
54. TRASH DRAIN PER DETAIL 8/C5.01
    RIM=158.00
    IE=156.00
55. ACO SPILL CONTROL OIL WATER SEPARATOR WITH LIGHT DUTY COVER, OR APPROVED EQUAL
56. GREASE INTERCEPTOR MONITORING PORT

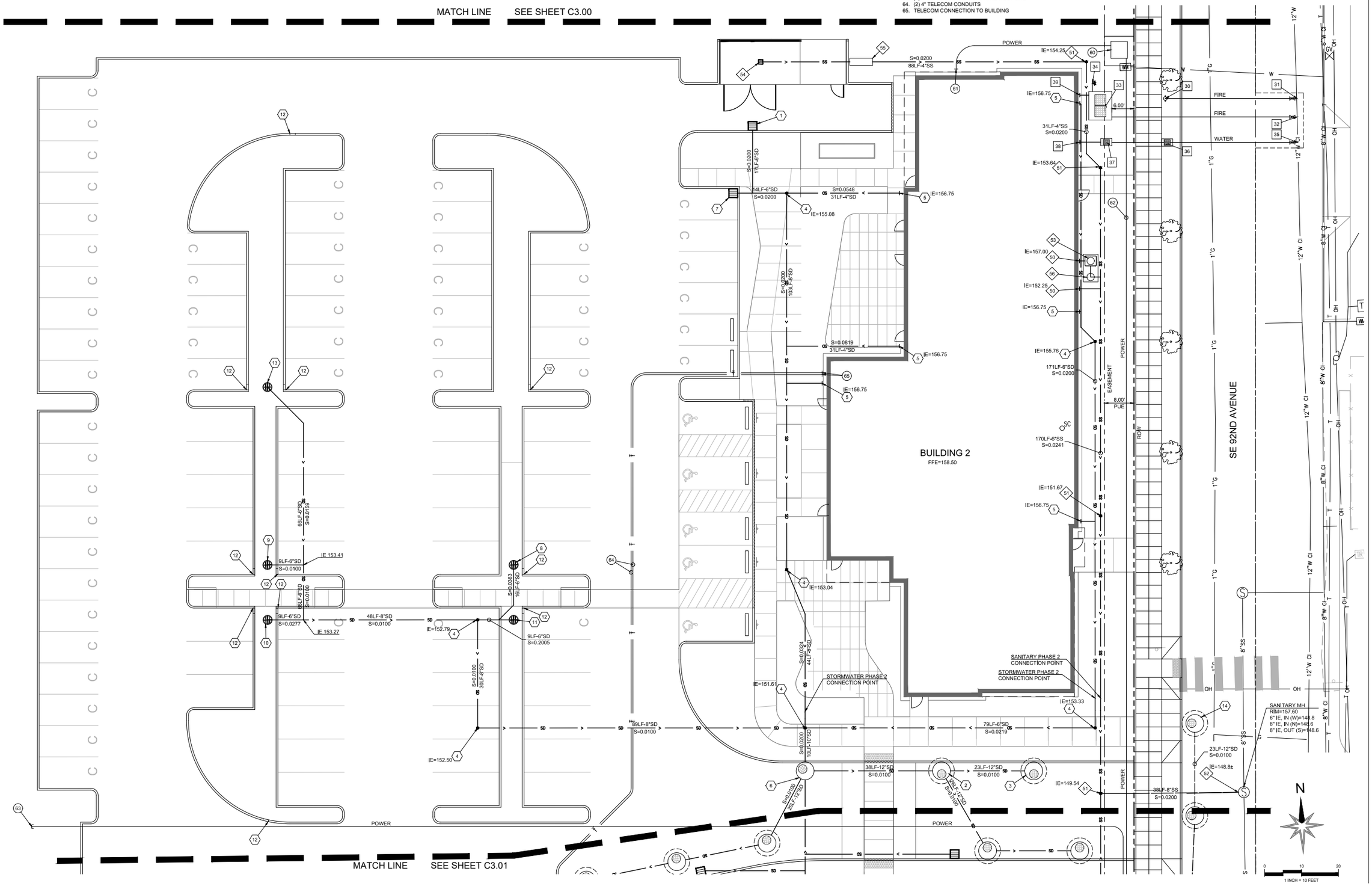
OTHER UTILITY NOTES

60. PAD MOUNT TRANFORMER. COORDINATE WITH ELECTRICAL AND PGE
61. ELECTRICAL CONDUIT TO BUILDING 2 SWITCH BOARD
62. (1) 4" CONDUIT SERVING BUILDING 2
63. (1) 4" CONDUIT STUB TO FUTURE WEST SITE
64. (2) 4" TELECOM CONDUITS
65. TELECOM CONNECTION TO BUILDING

GENERAL NOTES

1. ALL BUILDING FIXTURES BELOW THE RIM OF THE UPSTREAM MANHOLE TO BE BACKFLOW PROTECTED.
2. ALL DOMESTIC WATER AND FIRE PROTECTION WORK IN THE PUBLIC RIGHT OF WAY BY CLACKAMAS RIVER WATER. CONTRACTOR TO COORDINATE WORK WITH CRW.

MATCH LINE SEE SHEET C3.00



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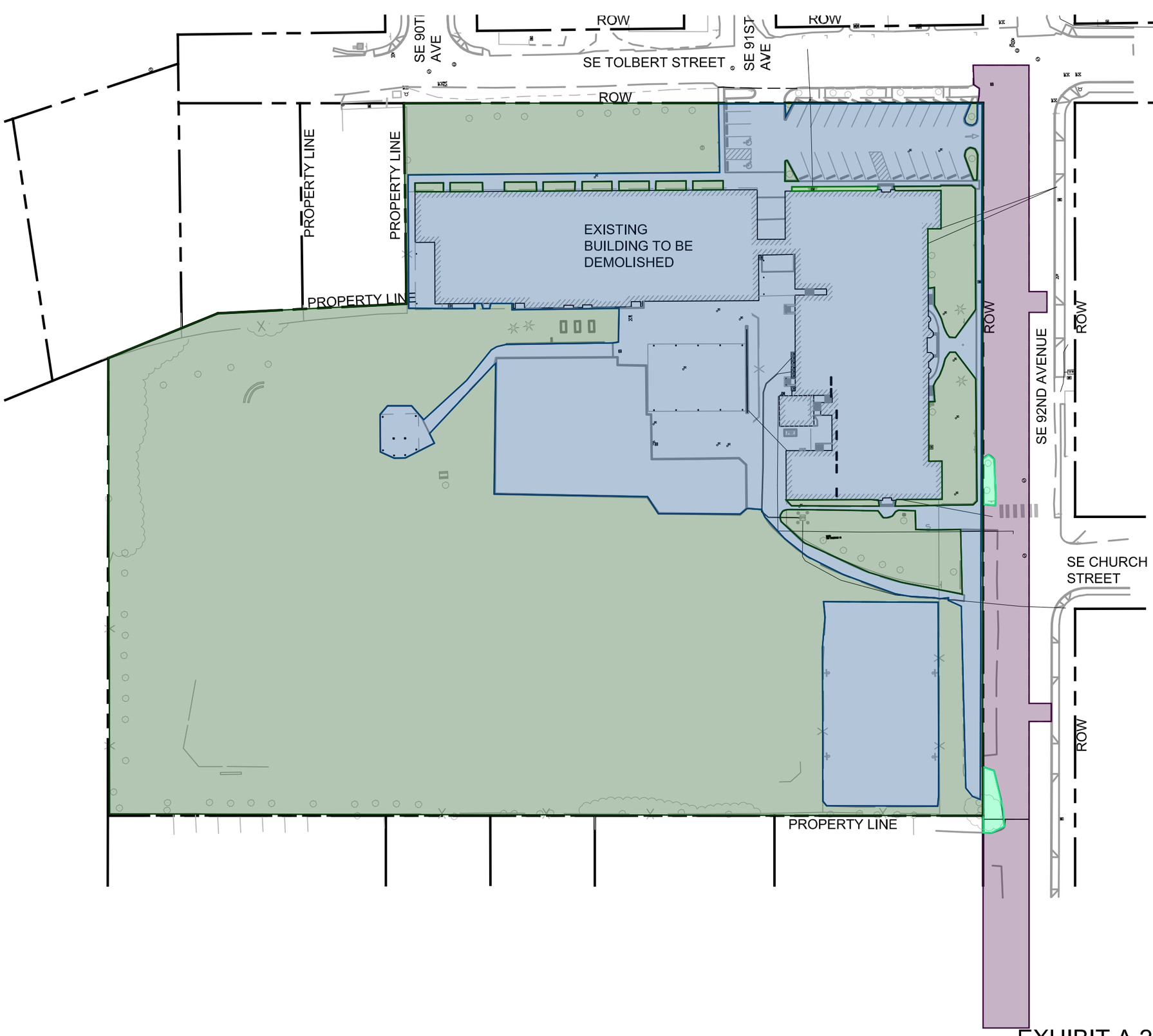
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LEGEND

EX. ONSITE IMPERVIOUS AREA=
105,541 SF

EX. ONSITE LANDSCAPE AREA=
182,610 SF

ONSITE TOTAL=
288,151 SF

EX. ROW IMPERVIOUS AREA=
21,839 SF

EX. ROW LANDSCAPE AREA=
840 SF

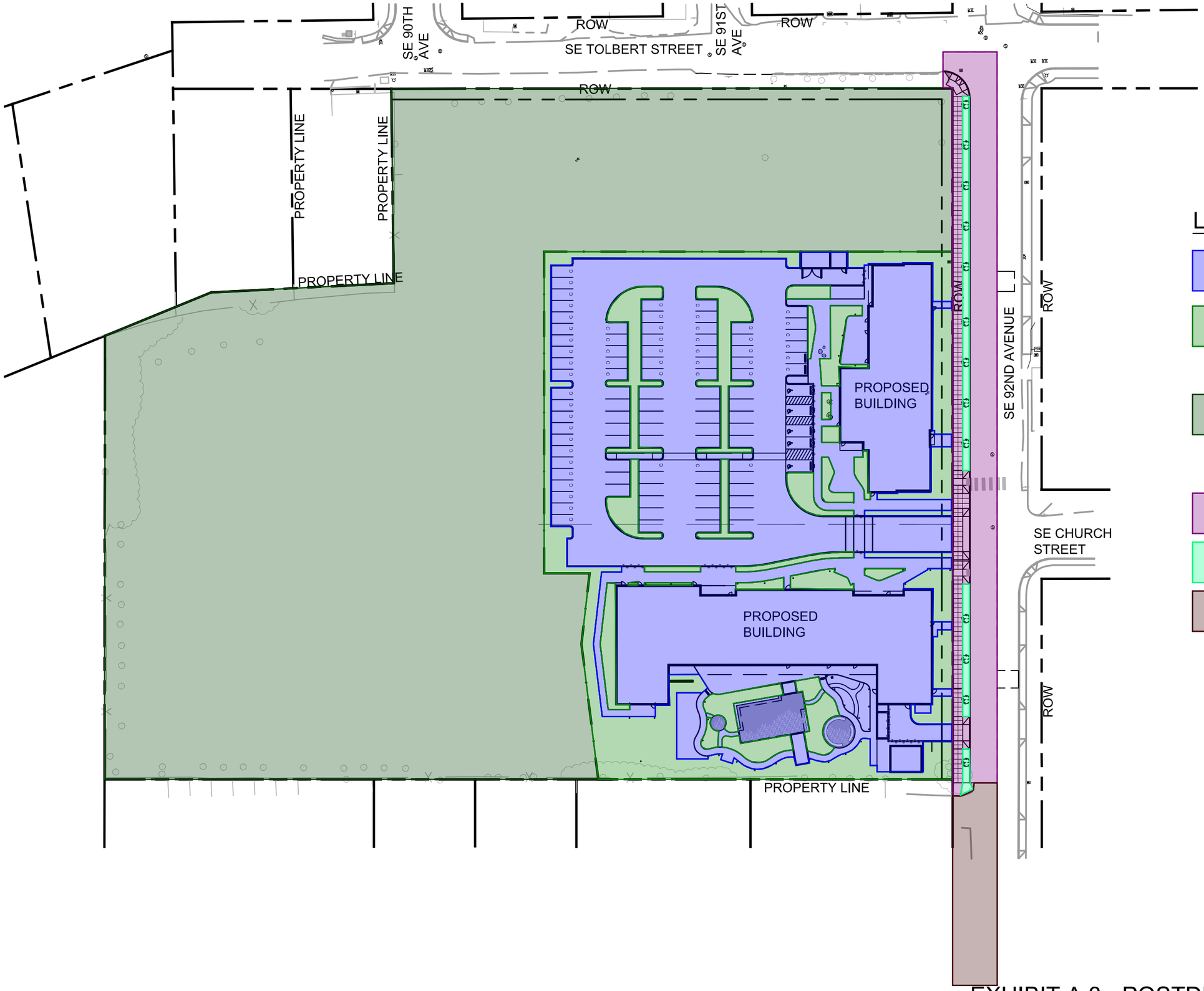
ROW TOTAL=
22,679 SF

N

0 70 140

1 INCH = 70 FEET

EXHIBIT A.2 - PREDEVELOPED IMPERVIOUS AREAS



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LEGEND

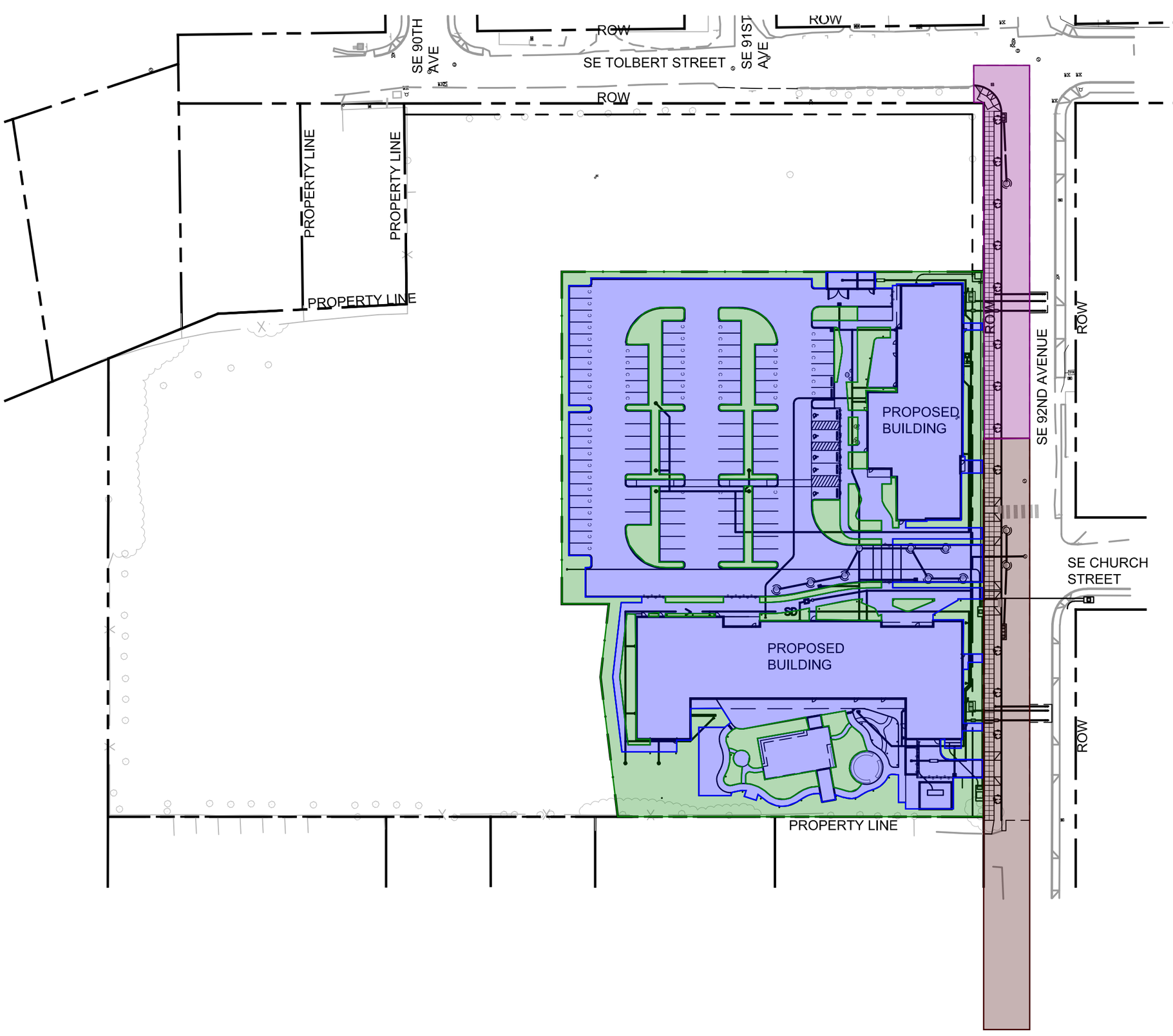
- NEW ONSITE IMPERVIOUS AREA= 83,377 SF
- NEW ONSITE LANDSCAPE AREA= 29,808 SF
- DEVELOPMENT BOUNDARY SUBTOTAL= 113,185 SF
- ONSITE OPEN SPACE AREA= 174,966 SF
- ONSITE TOTAL= 288,151 SF
- NEW HALF STREET IMPERVIOUS AREA= 15,598 SF
- NEW ROW LANDSCAPE AREA= 2,131 SF
- EX. SOUTH ROW BASIN= 4,950 SF
- ROW TOTAL= 22,679 SF

N

0 70 120

1 INCH = 70 FEET

EXHIBIT A.3 - POSTDEVELOPED IMPERVIOUS AREAS



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LEGEND

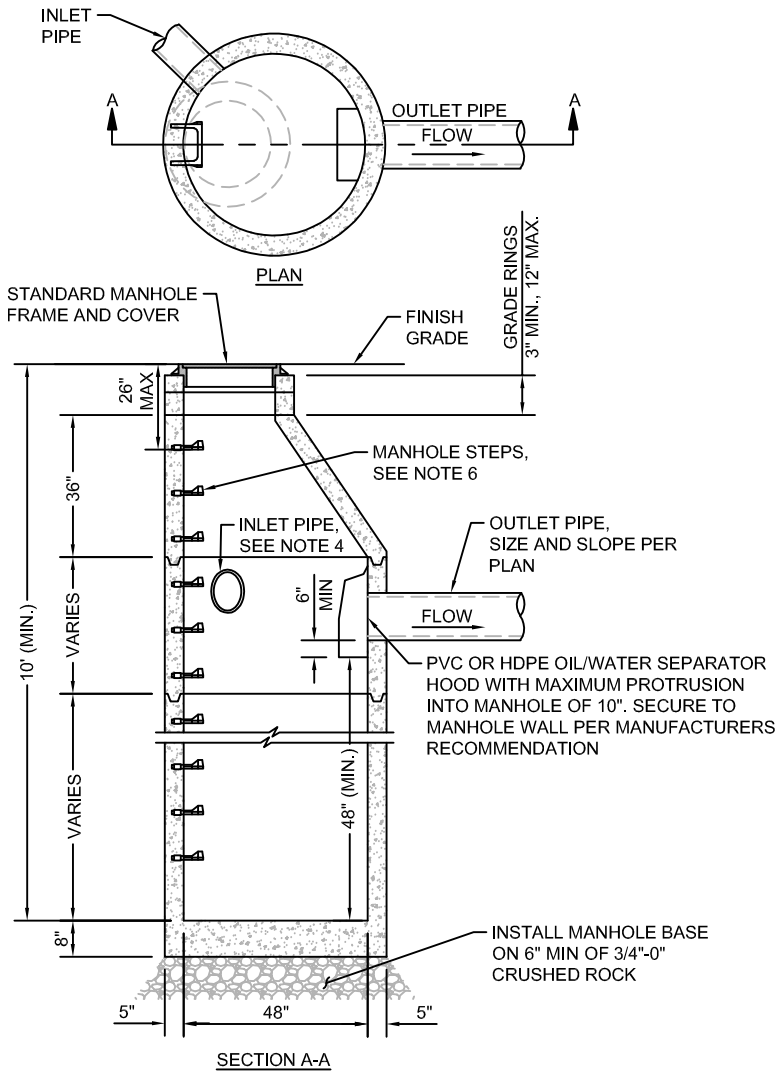
- PRIVATE SITE IMPERVIOUS AREA= 83,377 SF
- PRIVATE SITE LANDSCAPE AREA= 29,808 SF
- TOTAL PRIVATE SITE (1S) AREA= 113,185 SF
- ROW-N (2S) AREA= 8,774 SF
- ROW-SOUTH (3S) AREA= 13,905 SF
- ROW TOTAL= 22,679 SF

N

0 60 120

1 INCH = 60 FEET

EXHIBIT A.4 - CATCHMENT MAP



NOTES:

1. ALL PRECAST SECTIONS SHALL CONFORM TO THE REQUIREMENTS OF ASTM C478.

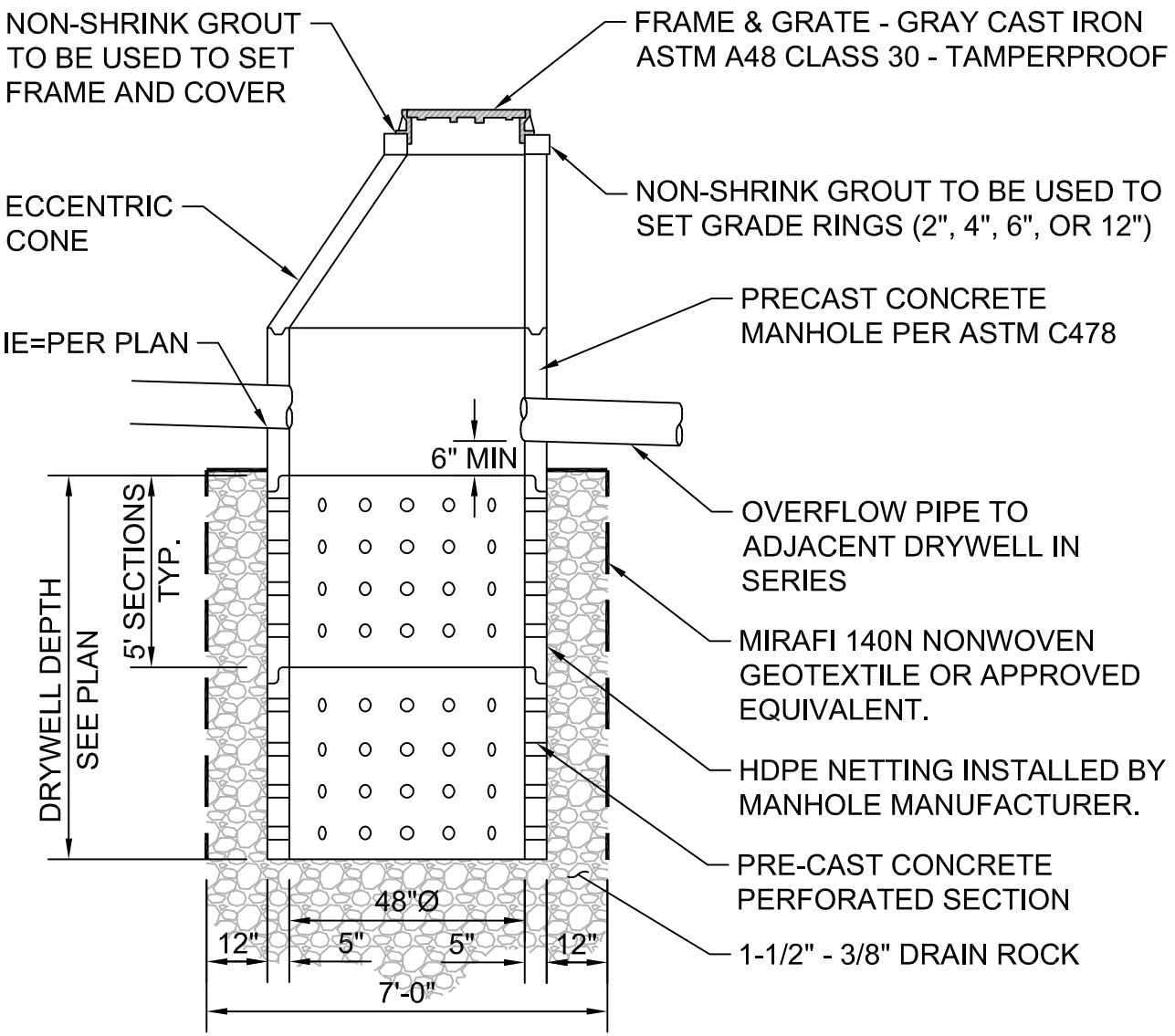
2. PROVIDE A FLEXIBLE JOINT FOR ALL CONNECTED PIPES:
   - RIGID PIPE <36 INCHES - 18 INCHES (MAX.) FROM OUTSIDE WALL
   - FLEXIBLE PIPE - 18 INCHES (MAX.) FROM THE OUTSIDE WALL UNLESS A FLEXIBLE JOINT FITTING IS INSTALLED AND ACCEPTED.

3. PROVIDE 12 INCHES (MIN.) OF SEPARATION BETWEEN A SECTION JOINT AND THE OUTER EDGE OF ANY OPENING.

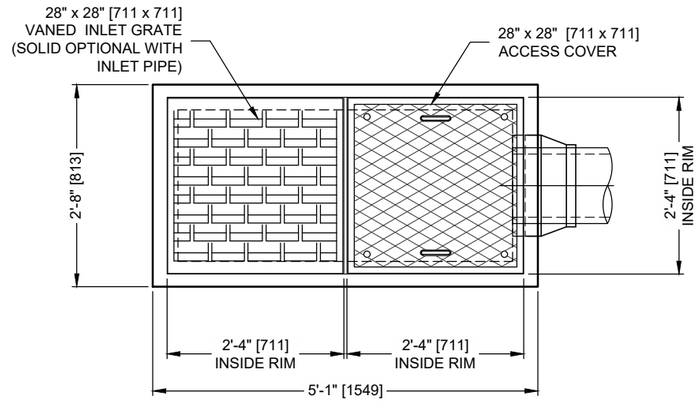
4. LOCATE INVERT OF ANY INLET LEAD 6 INCHES (MIN.) ABOVE THE OUTLET PIPE INVERT.

5. LOCATE THE FIRST MAINTENANCE HOLE STEP 6 INCHES BELOW THE TOP OF CONE AND NOT MORE THAN 26 INCHES BELOW FINISH GRADE. SUCCEEDING STEP SHALL BE SPACED 12 INCHES ON CENTER. STEPS TO BE 14" WIDE, BOLTED INTO MANHOLE WALL AT 3 INCHES MINIMUM DEPTH, AND PROTRUDE 5½ INCHES MINIMUM.

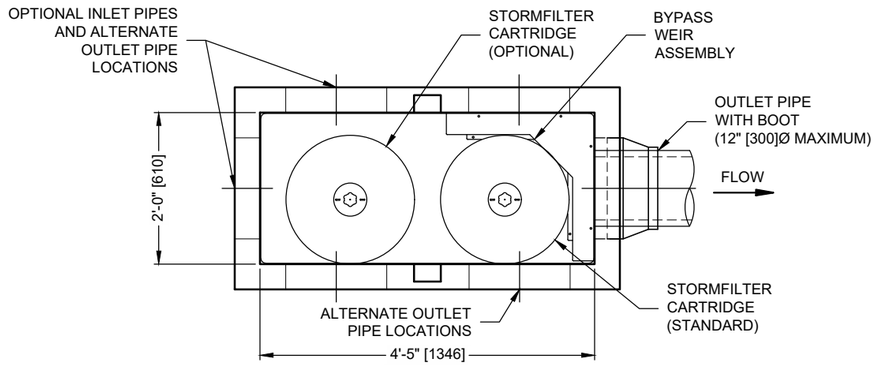
SEDIMENT MAINTENANCE HOLE



PRIVATE DRYWELL

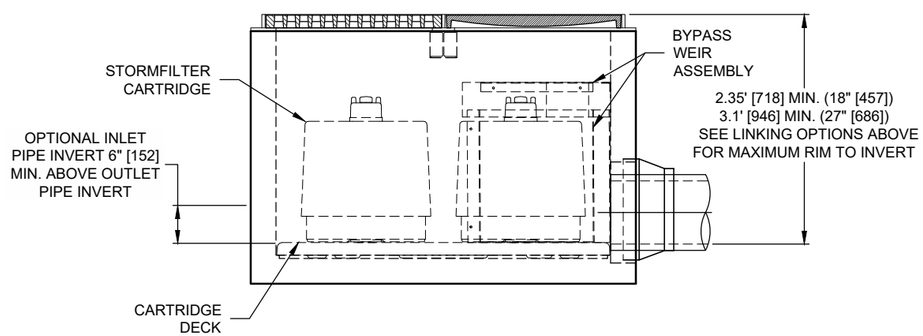


PLAN VIEW

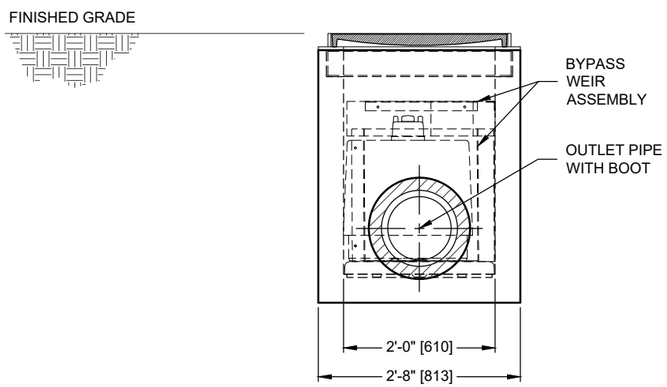


PLAN VIEW

CASTINGS NOT SHOWN



ELEVATION VIEW



RIGHT SIDE VIEW

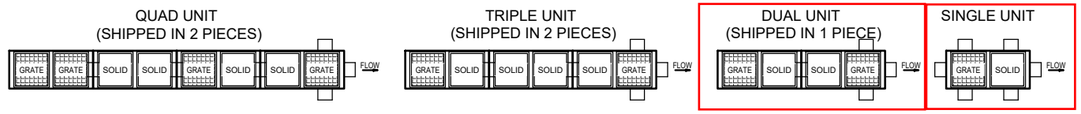
STORMFILTER DESIGN NOTES

- CONCRETE CATCHBASIN STORMFILTER TREATMENT CAPACITY VARIES BY CARTRIDGE COUNT AND LOCAL APPROVALS
- PEAK CONVEYANCE CAPACITY IS 1.3 CFS
- CONCRETE CATCHBASIN STORMFILTER IS AVAILABLE WITH UP TO TWO (2), 18" [457] OR 27" [686] TALL CARTRIDGES
- UP TO 4 INDIVIDUAL UNITS MAY BE LINKED FOR AN ULTIMATE CAPACITY OF EIGHT (8) CARTRIDGES

CARTRIDGE SIZE (in. [mm])	27 [686]			18 [457]		
RECOMMENDED HYDRAULIC DROP (ft. [mm])	3.05 [930]			2.3 [701]		
SPECIFIC FLOW RATE (gpm/sf [L/s/m^2])	2 [1.36]	1.67* [1.13]*	1 [0.68]	2 [1.36]	1.67* [1.13]*	1 [0.68]
CARTRIDGE FLOW RATE (gpm [L/s])	22.5 [1.4]	18.79 [1.19]	11.25 [0.71]	15 [0.95]	12.53 [0.79]	7.5 [0.47]

* 1.67 gpm/sf [1.13 L/s/m^2] SPECIFIC FLOW RATE IS APPROVED WITH PHOSPHOSORB® (PSORB) MEDIA ONLY

LINKING OPTIONS SHOWN BELOW. FLEXIBLE INLET PIPE, GRATED AND SOLID COVER PLACEMENT.
CONTACT YOUR CONTECH REPRESENTATIVE FOR MORE INFORMATION



MAXIMUM RIM TO OUTLET PIPE INVERT HEIGHT IS 6.05' [1844].

GENERAL NOTES

1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. DIMENSIONS MARKED WITH ( ) ARE REFERENCE DIMENSIONS. ACTUAL DIMENSIONS MAY VARY.
3. ALTERNATE DIMENSIONS ARE MILLIMETERS [mm] UNLESS NOTED OTHERWISE.
4. FOR FABRICATION DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHTS, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS LLC REPRESENTATIVE. www.ContechES.com
5. STORMFILTER WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING. CONTRACTOR TO CONFIRM STRUCTURE MEETS REQUIREMENTS OF PROJECT.
6. FILTER CARTRIDGES SHALL BE MEDIA-FILLED, PASSIVE, SIPHON ACTUATED, RADIAL FLOW, AND SELF CLEANING. RADIAL MEDIA DEPTH SHALL BE 7-INCHES [178]. FILTER MEDIA CONTACT TIME SHALL BE AT LEAST 38 SECONDS.
7. SPECIFIC FLOW RATE IS THE MEASURE OF THE FLOW (GPM [L/S]) DIVIDED BY THE MEDIA SURFACE CONTACT AREA (SF [m^2]).
8. STRUCTURE SHALL MEET AASHTO HS20 LOAD RATING, ASSUMING EARTH COVER OF 0' - 0'-2" [51] AND GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION. CASTINGS SHALL MEET AASHTO M306 AND BE CAST WITH THE CONTECH LOGO.

INSTALLATION NOTES

1. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
2. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE STORMFILTER STRUCTURE.
3. CONTRACTOR TO PROVIDE AND INSTALL PIPES. MATCH PIPE INVERTS SHOWN ON PROJECT SPECIFIC DRAWINGS.
4. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO PROTECT CARTRIDGES FROM CONSTRUCTION-RELATED EROSION RUNOFF.

SITE SPECIFIC DATA REQUIREMENTS

STRUCTURE ID	
WATER QUALITY FLOW RATE (cfs [L/s])	
PEAK FLOW RATE (cfs [L/s])	
RETURN PERIOD OF PEAK FLOW (yrs)	
CARTRIDGE SIZE (27, 18)	
CARTRIDGE FLOW RATE	
MEDIA TYPE (PERLITE, ZPG, PSORB)	
NUMBER OF CARTRIDGES REQUIRED	
RIM ELEVATION	

PIPE DATA:	INVERT	MATERIAL	DIAMETER
INLET PIPE 1			
INLET PIPE 2			
OUTLET PIPE			

NOTES/SPECIAL REQUIREMENTS:

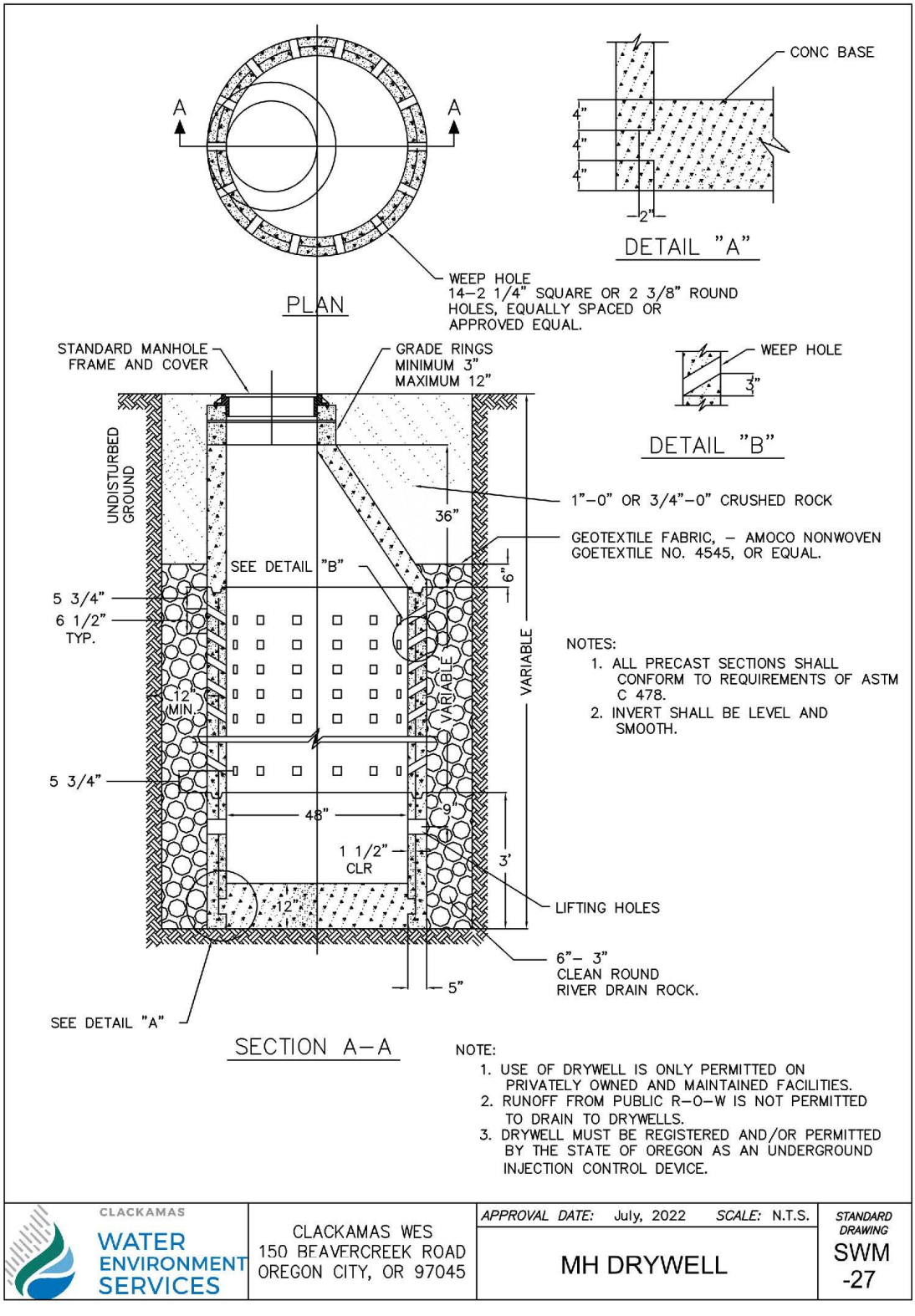
The Stormwater Management StormFilter®

THIS PRODUCT MAY BE PROTECTED BY ONE OR MORE OF THE FOLLOWING U.S. PATENTS: 5,322,629; 5,624,576; 5,707,527; 5,885,157; 6,027,639; 6,649,048; RELATED FOREIGN PATENTS, OR OTHER PATENTS PENDING.

CONTECH® ENGINEERED SOLUTIONS LLC
www.ContechES.com
11815 NE Glenn Widing Drive, Portland, OR 97220
800-548-4667 503-240-3393 800-561-1271 FAX

CONCRETE CATCHBASIN STORMFILTER STANDARD DETAIL

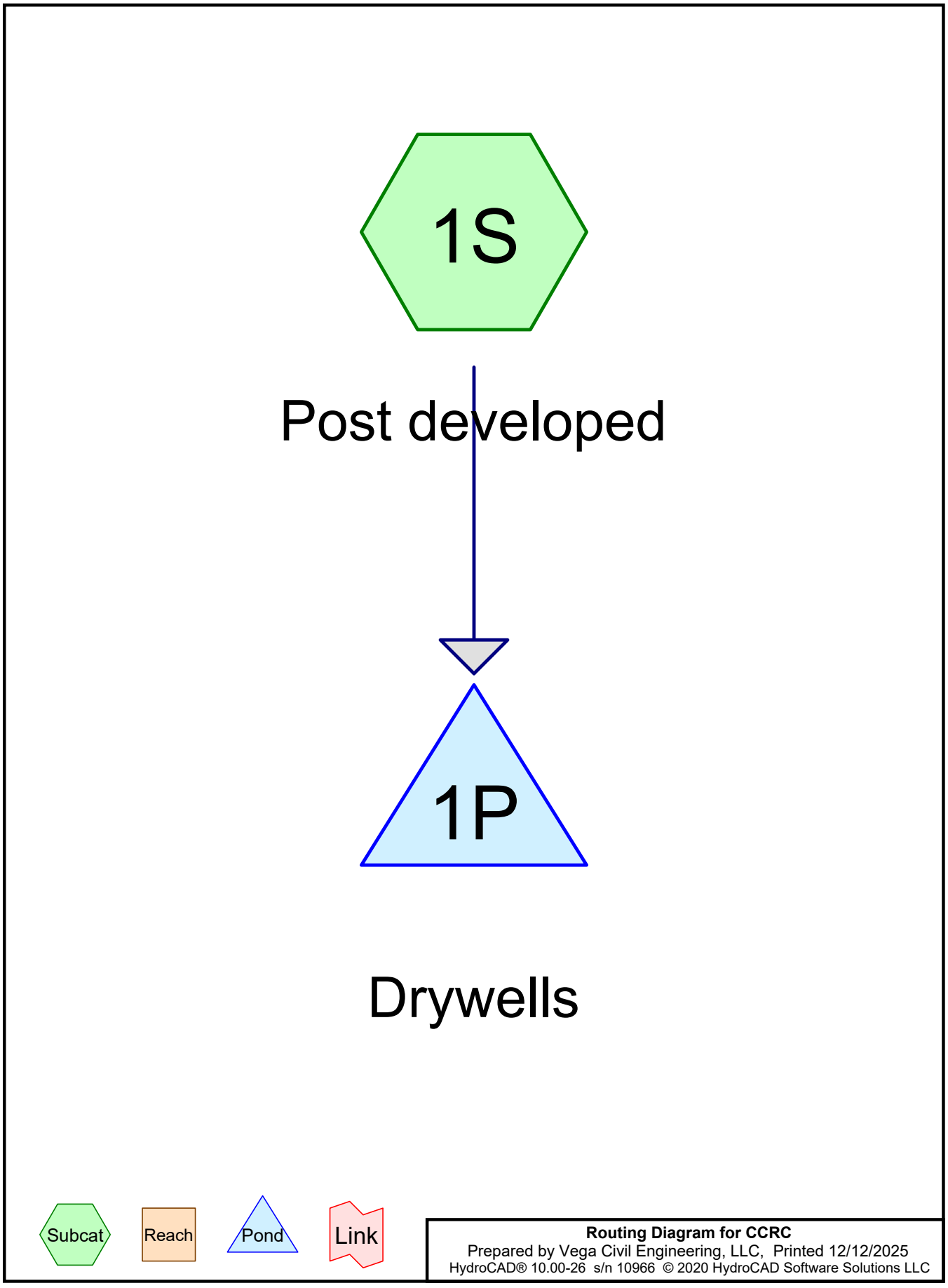
I:\COMMON\CAD\TREATMENT\10 STORMFILTER\40 STANDARD DRAWINGS\SFCB\SFCB-C\DWG\WEST DWG - CONTECH FORM AT CASCADE PRECAST\SFCB-C-DTL.DWG 12/16/2022 7:31 AM


A
A
PLAN
WEEP HOLE
14–2 1/4" SQUARE OR 2 3/8" ROUND
HOLES, EQUALLY SPACED OR
APPROVED EQUAL.
CONC BASE
4"
4"
4"
2"
DETAIL "A"
STANDARD MANHOLE
FRAME AND COVER
GRADE RINGS
MINIMUM 3"
MAXIMUM 12"
WEEP HOLE
3"
DETAIL "B"
UNDISTURBED
GROUND
1"–0" OR 3/4"–0" CRUSHED ROCK
36"
GEOTEXTILE FABRIC, – AMOCO NONWOVEN
GOETEXTILE NO. 4545, OR EQUAL.
SEE DETAIL "B"
6"
5 3/4"
6 1/2"
TYP.
VARIABLE
VARIABLE
12"
(MIN.)
5 3/4"
48"
9"
1 1/2"
CLR
3'
12"
LIFTING HOLES
6"– 3"
CLEAN ROUND
RIVER DRAIN ROCK.
5"
SEE DETAIL "A"
SECTION A–A
NOTES:
1. ALL PRECAST SECTIONS SHALL CONFORM TO REQUIREMENTS OF ASTM C 478.
2. INVERT SHALL BE LEVEL AND SMOOTH.
NOTE:
1. USE OF DRYWELL IS ONLY PERMITTED ON PRIVATELY OWNED AND MAINTAINED FACILITIES.
2. RUNOFF FROM PUBLIC R–O–W IS NOT PERMITTED TO DRAIN TO DRYWELLS.
3. DRYWELL MUST BE REGISTERED AND/OR PERMITTED BY THE STATE OF OREGON AS AN UNDERGROUND INJECTION CONTROL DEVICE.
CLACKAMAS
WATER ENVIRONMENT SERVICES
CLACKAMAS WES
150 BEAVERCREEK ROAD
OREGON CITY, OR 97045
APPROVAL DATE: July, 2022
SCALE: N.T.S.
MH DRYWELL
STANDARD DRAWING
SWM -27

Appendix B - Calculations

Private Site HydroCAD Report
Public ROW HydroCAD Report
Stormfilter Calculation Sheet

PRIVATE SITE DRYWELL CALCULATIONS



Routing Diagram for CCRC
Prepared by Vega Civil Engineering, LLC, Printed 12/12/2025
HydroCAD® 10.00-26 s/n 10966 © 2020 HydroCAD Software Solutions LLC

Summary for Subcatchment 1S: Post developed

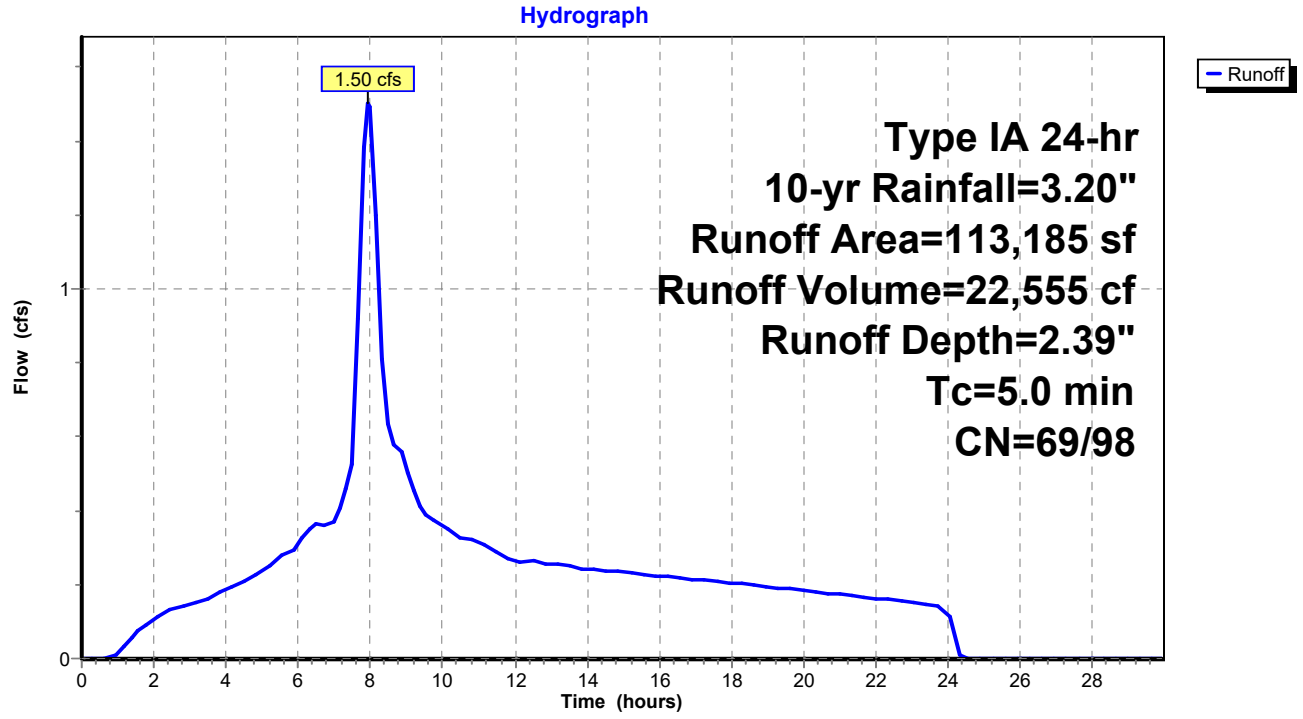
Runoff = 1.50 cfs @ 7.95 hrs, Volume= 22,555 cf, Depth= 2.39"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-29.92 hrs, dt= 0.17 hrs
Type IA 24-hr 10-yr Rainfall=3.20"

	Area (sf)	CN	Description
*	83,377	98	
*	29,808	69	50-75% Grass cover, Fair, HSG B
	113,185	90	Weighted Average
	29,808	69	26.34% Pervious Area
	83,377	98	73.66% Impervious Area

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

Subcatchment 1S: Post developed



Summary for Pond 1P: Drywells

Inflow Area = 113,185 sf, 73.66% Impervious, Inflow Depth = 2.39" for 10-yr event
Inflow = 1.50 cfs @ 7.95 hrs, Volume= 22,555 cf
Outflow = 0.45 cfs @ 7.65 hrs, Volume= 22,553 cf, Atten= 70%, Lag= 0.0 min
Discarded = 0.45 cfs @ 7.65 hrs, Volume= 22,553 cf

Routing by Stor-Ind method, Time Span= 0.00-29.92 hrs, dt= 0.17 hrs
Peak Elev= 126.23' @ 9.21 hrs Surf.Area= 269 sf Storage= 3,396 cf

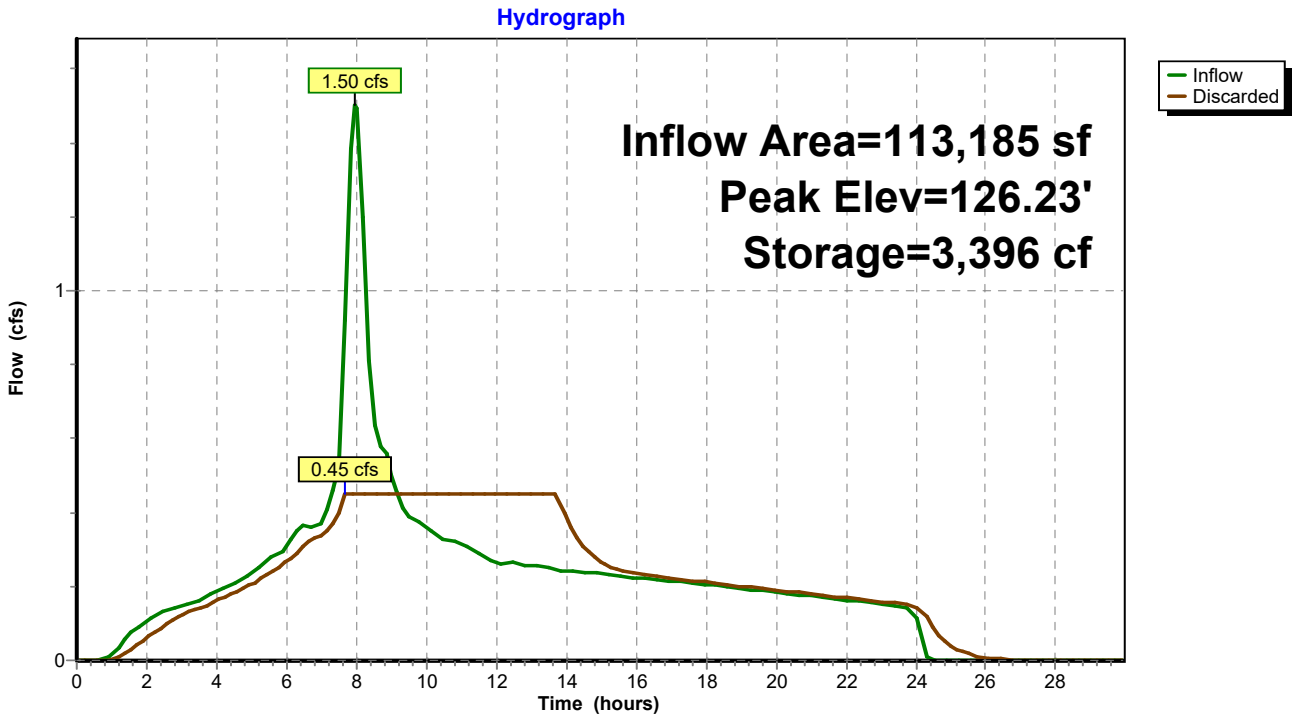
Plug-Flow detention time= 62.3 min calculated for 22,553 cf (100% of inflow)
Center-of-Mass det. time= 61.6 min (751.9 - 690.3)

Volume	Invert	Avail.Storage	Storage Description
#1	100.00'	1,089 cf	**7.00'D x 20.00'H Vertical Cone/Cylinder**x 7 5,388 cf Overall - 1,759 cf Embedded = 3,629 cf x 30.0% Voids
#2	100.00'	1,759 cf	**4.00'D x 20.00'H Vertical Cone/Cylinder**x 7 Inside #1
#3	120.00'	1,319 cf	**4.00'D x 15.00'H Vertical Cone/Cylinder**x 7 -Impervious
		4,167 cf	Total Available Storage

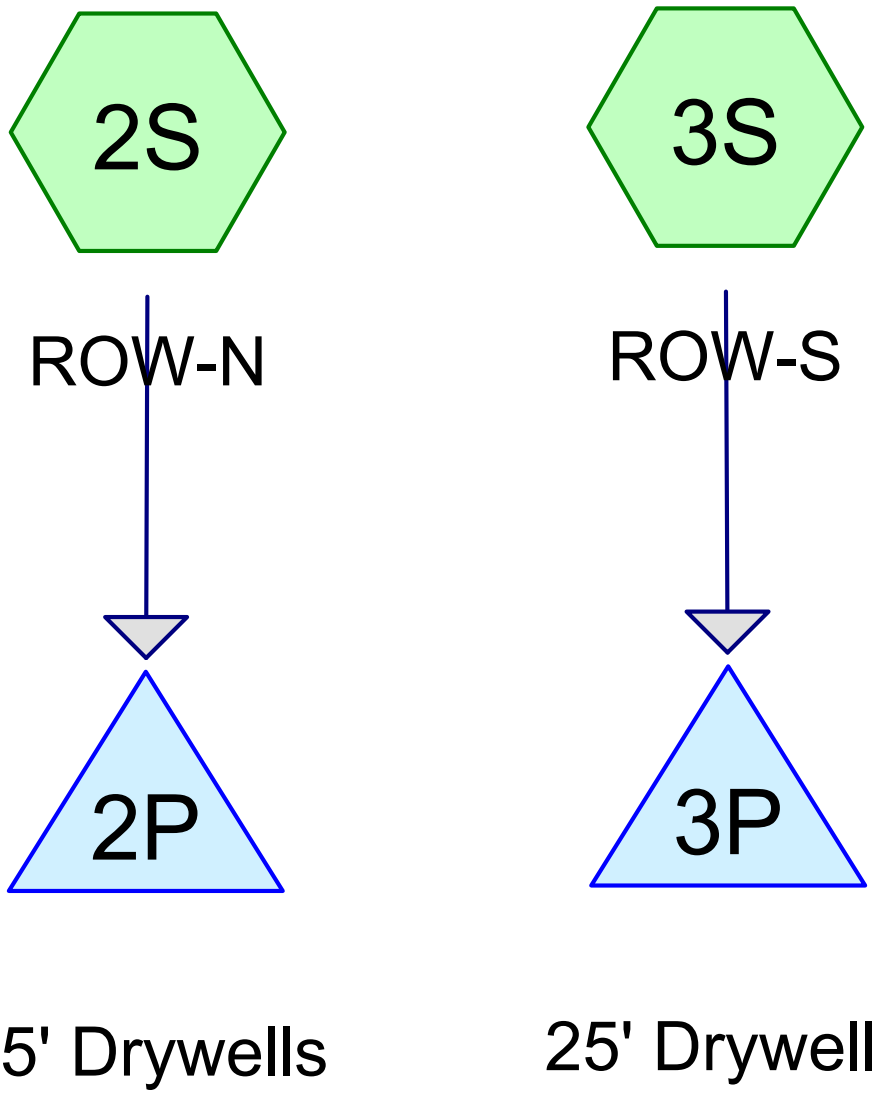
Device	Routing	Invert	Outlet Devices
#1	Discarded	100.01'	**18.000 in/hr Exfiltration over Wetted area from 100.01' - 107.00'** Excluded Wetted area = 271 sf
#2	Discarded	107.01'	**0.500 in/hr Exfiltration over Surface area from 107.01' - 120.00'** Excluded Surface area = 269 sf

Discarded OutFlow Max=0.45 cfs @ 7.65 hrs HW=107.51' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.45 cfs)
└**2=Exfiltration** (Exfiltration Controls 0.00 cfs)

Pond 1P: Drywells



ROW DRYWELL CALCULATIONS



Subcat Reach Pond Link

Routing Diagram for CCRC
Prepared by Vega Civil Engineering, LLC, Printed 12/12/2025
HydroCAD® 10.00-26 s/n 10966 © 2020 HydroCAD Software Solutions LLC

Summary for Subcatchment 2S: ROW-N

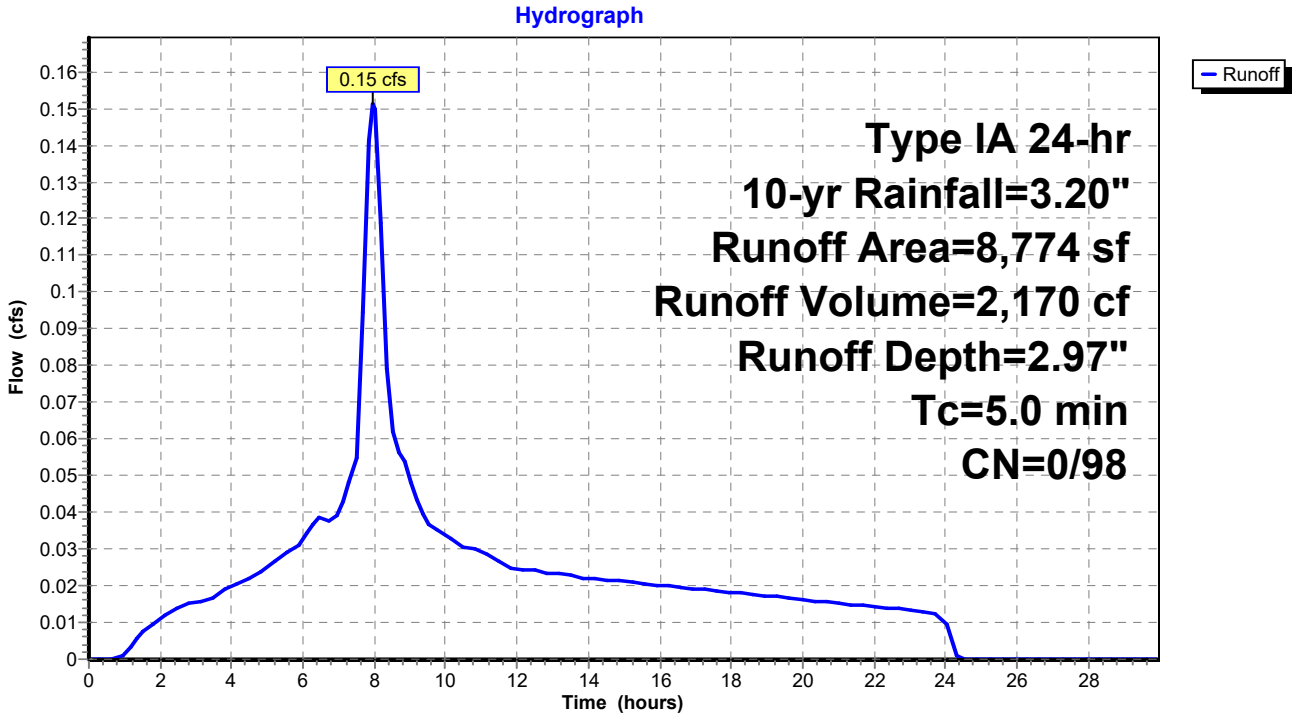
Runoff = 0.15 cfs @ 7.94 hrs, Volume= 2,170 cf, Depth= 2.97"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-29.92 hrs, dt= 0.17 hrs
Type IA 24-hr 10-yr Rainfall=3.20"

	Area (sf)	CN	Description
*	8,774	98	N 92nd
	8,774	98	100.00% Impervious Area

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

Subcatchment 2S: ROW-N



Summary for Pond 2P: 25' Drywells

Inflow Area = 8,774 sf,100.00% Impervious, Inflow Depth = 2.97" for 10-yr event
Inflow = 0.15 cfs @ 7.94 hrs, Volume= 2,170 cf
Outflow = 0.08 cfs @ 8.37 hrs, Volume= 2,169 cf, Atten= 47%, Lag= 25.6 min
Discarded = 0.08 cfs @ 8.37 hrs, Volume= 2,169 cf

Routing by Stor-Ind method, Time Span= 0.00-29.92 hrs, dt= 0.17 hrs
Peak Elev= 115.63' @ 8.37 hrs Surf.Area= 38 sf Storage= 318 cf

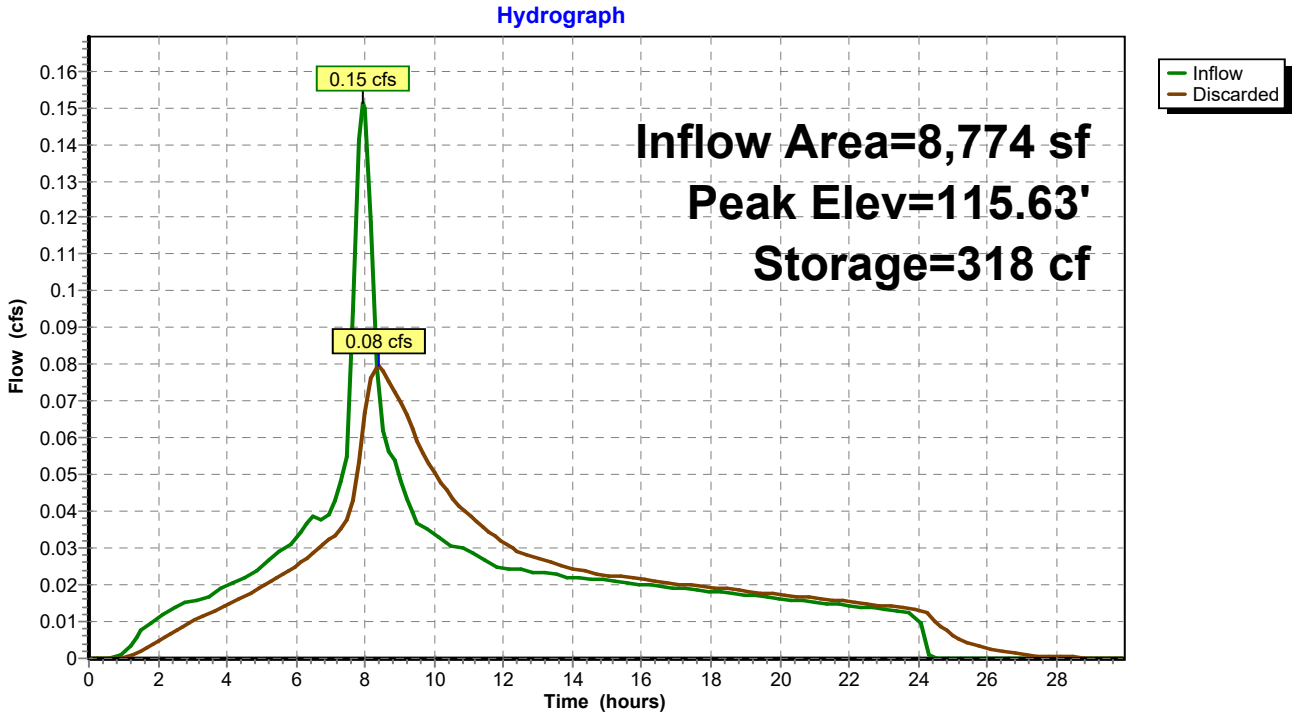
Plug-Flow detention time= 67.0 min calculated for 2,169 cf (100% of inflow)
Center-of-Mass det. time= 66.5 min (736.5 - 670.0)

Volume	Invert	Avail.Storage	Storage Description
#1	100.00'	140 cf	**7.00'D x 18.00'H Vertical Cone/Cylinder** 693 cf Overall - 226 cf Embedded = 467 cf x 30.0% Voids
#2	100.00'	38 cf	**4.00'D x 3.00'H Vertical Cone/Cylinder** Inside #1
#3	103.00'	188 cf	**4.00'D x 15.00'H Vertical Cone/Cylinder** Inside #1
#4	118.00'	88 cf	**4.00'D x 7.00'H Vertical Cone/Cylinder** Impervious
		454 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Discarded	100.01'	**10.000 in/hr Exfiltration over Wetted area above 100.01'** Excluded Wetted area = 39 sf

Discarded OutFlow Max=0.08 cfs @ 8.37 hrs HW=115.56' (Free Discharge)
1=Exfiltration (Exfiltration Controls 0.08 cfs)

Pond 2P: 25' Drywells



Summary for Subcatchment 3S: ROW-S

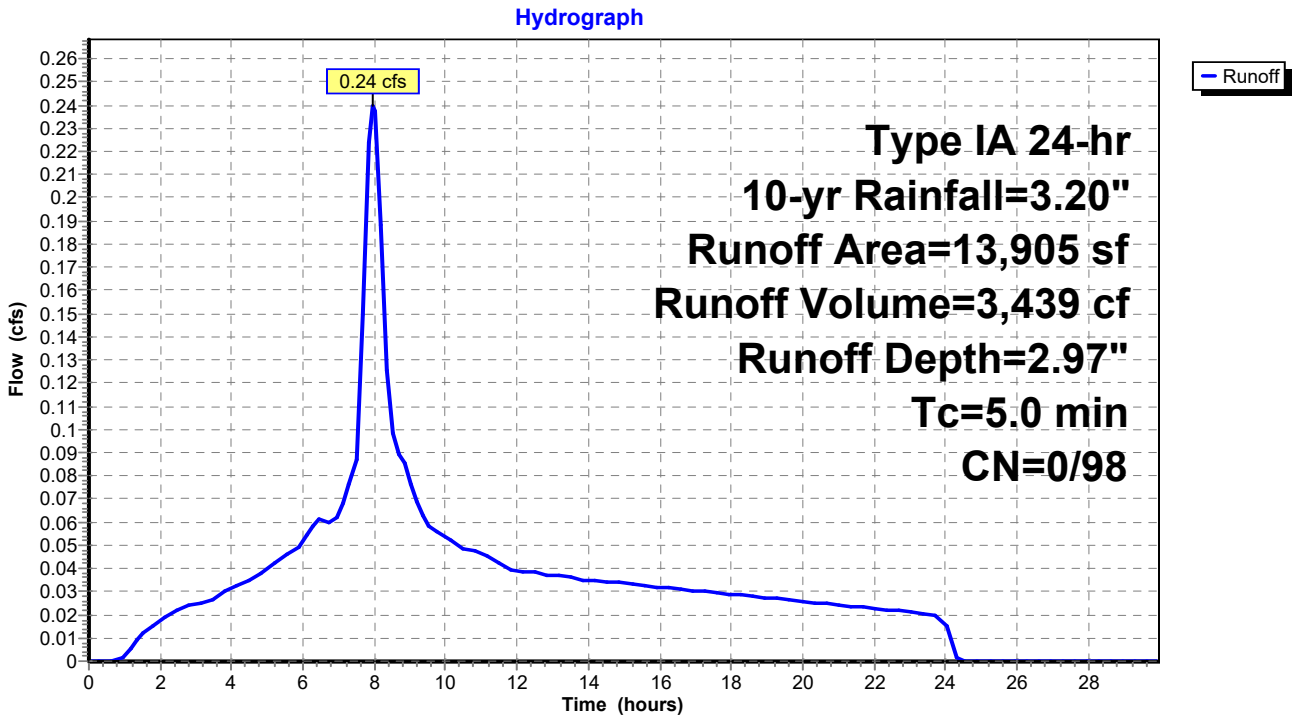
Runoff = 0.24 cfs @ 7.94 hrs, Volume= 3,439 cf, Depth= 2.97"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-29.92 hrs, dt= 0.17 hrs
Type IA 24-hr 10-yr Rainfall=3.20"

	Area (sf)	CN	Description
*	8,955	98	
*	4,950	98	South of Site
	13,905	98	Weighted Average
	13,905	98	100.00% Impervious Area

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

Subcatchment 3S: ROW-S



Summary for Pond 3P: 25' Drywells

Inflow Area = 13,905 sf,100.00% Impervious, Inflow Depth = 2.97" for 10-yr event
Inflow = 0.24 cfs @ 7.94 hrs, Volume= 3,439 cf
Outflow = 0.13 cfs @ 8.37 hrs, Volume= 3,438 cf, Atten= 47%, Lag= 25.6 min
Discarded = 0.13 cfs @ 8.37 hrs, Volume= 3,438 cf

Routing by Stor-Ind method, Time Span= 0.00-29.92 hrs, dt= 0.17 hrs
Peak Elev= 112.39' @ 8.37 hrs Surf.Area= 77 sf Storage= 504 cf

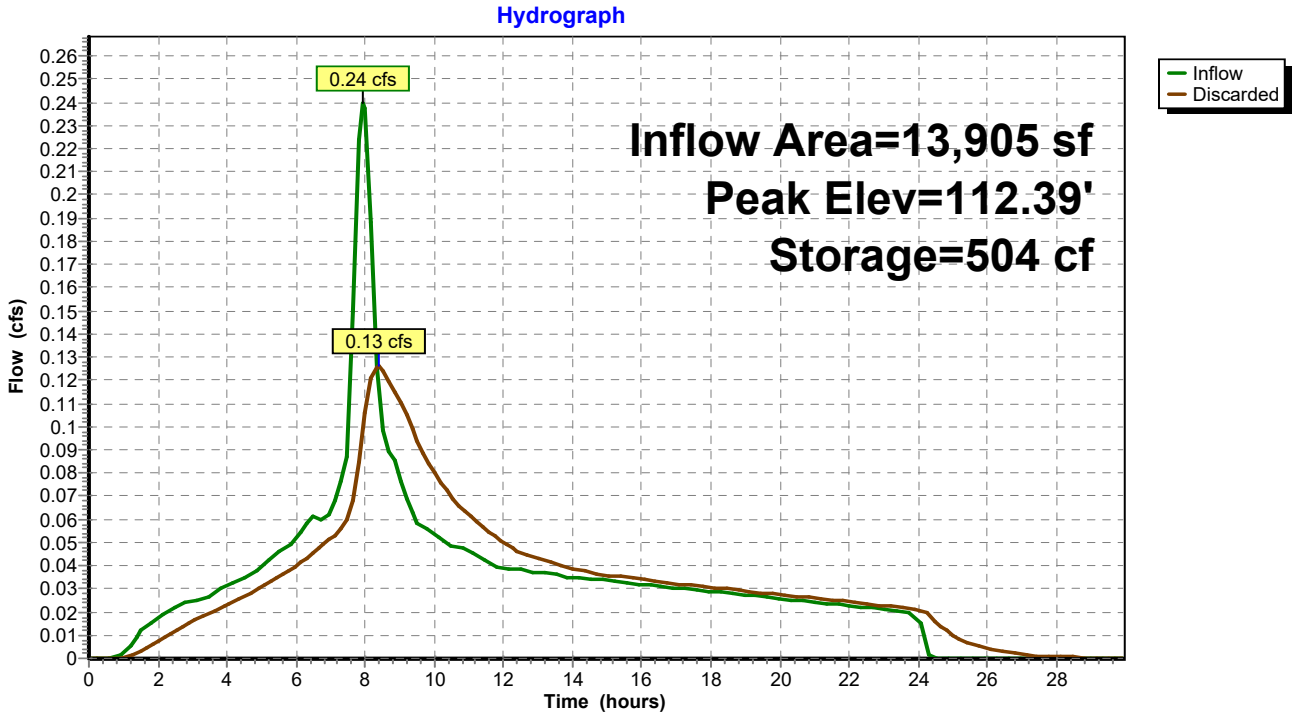
Plug-Flow detention time= 66.1 min calculated for 3,418 cf (99% of inflow)
Center-of-Mass det. time= 66.5 min (736.6 - 670.0)

Volume	Invert	Avail.Storage	Storage Description
#1	100.00'	280 cf	**7.00'D x 18.00'H Vertical Cone/Cylinder**x 2 1,385 cf Overall - 452 cf Embedded = 933 cf x 30.0% Voids
#2	100.00'	75 cf	**4.00'D x 3.00'H Vertical Cone/Cylinder**x 2 Inside #1
#3	103.00'	377 cf	**4.00'D x 15.00'H Vertical Cone/Cylinder**x 2 Inside #1
#4	118.00'	176 cf	**4.00'D x 7.00'H Vertical Cone/Cylinder**x 2 -Impervious
		908 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Discarded	100.01'	**10.000 in/hr Exfiltration over Wetted area above 100.01'** Excluded Wetted area = 77 sf

Discarded OutFlow Max=0.13 cfs @ 8.37 hrs HW=112.33' (Free Discharge)
1=Exfiltration (Exfiltration Controls 0.13 cfs)

Pond 3P: 25' Drywells



ROW WATER QUALITY SIZING

WES Stormfilter Sizing - ROW-N (2S)

SBUH 1" in 24hr Type 1A

Q = 0.205 cfs

StormFilter (1 gpm/sf)	27"
# of Carts Per 1 acre	8.174
sf treated by one cart	5329
Impervious Area	**8774**
# of Carts Required	1.646463
# of Carts	**2**

WES Stormfilter Sizing - ROW-S (3S)

SBUH 1" in 24hr Type 1A

Q = 0.205 cfs

StormFilter (1 gpm/sf)	27"
# of Carts Per 1 acre	8.174
sf treated by one cart	5329
Impervious Area	**13905**
# of Carts Required	2.609308
# of Carts	**3**

Appendix C – Conveyance Calculations

Site Conveyance Calculations
Site Conveyance Diagram

STORMWATER CONVEYANCE CALCULATIONS

* This spreadsheet is based on SBUH method.

Design Storm: 25 YR
Storm Duration: 24 HRS
Precipitation: 4 IN
Manning's "n" 0.013 (FOR PVC STORM PIPE)

LINE		INC. AREA (AC)	INC. % IMP.	CUM. AREA TOTAL (AC)	CUM. AREA PERV. (AC)	CN PER.	CUM. AREA IMP. (AC)	CN IMP.	TIME (MIN)	Q (CFS)	PIPE Dia. (IN)	SLOPE (FT/FT)	Qf (CFS)	Q/Qf (%)	Depth (in)	Depth/ Dia.	V (fps)	LENGTH (FT)	INC. TIME (MIN)
Parking Lot	P1	0.700	75.00	0.7000	0.1750	69	0.5250	98	5.00	0.59	8	0.0100	1.21	0.49	3.95	0.49	3.44	48.0	0.23
	P2	0.213	75.00	0.9130	0.2283	69	0.6848	98	5.23	0.76	8	0.0100	1.21	0.63	4.61	0.58	3.66	126.0	0.57
	P3	0.234	75.00	1.1470	0.2868	69	0.8603	98	5.81	0.94	8	0.0100	1.21	0.77	5.30	0.66	3.83	10.0	0.04
Building 2 West	B21	0.142	75.00	0.1420	0.0355	69	0.1065	98	5.00	0.12	6	0.0200	0.80	0.15	1.58	0.26	2.91	25.0	0.14
	B22	0.122	75.00	0.2640	0.0660	69	0.1980	98	5.14	0.22	6	0.0324	1.01	0.22	1.91	0.32	4.12	149.0	0.60
Building 2 East	B23	0.142	75.00	0.1420	0.0355	69	0.1065	98	5.00	0.12	6	0.0200	0.80	0.15	1.58	0.26	2.91	141.0	0.81
North Site Total	N1	0.000	75.00	1.5530	1.4465	69	0.1065	98	6.61	0.46	8	0.0200	1.71	0.27	2.83	0.35	4.15	40.0	0.16
Building 1 West	B11	0.140	75.00	0.1400	0.0350	69	0.1050	98	5.00	0.12	6	0.0129	0.64	0.19	1.75	0.29	2.48	76.0	0.51
	B12	0.130	75.00	0.2700	0.0675	69	0.2025	98	5.51	0.22	6	0.0124	0.63	0.36	2.48	0.41	2.92	265.0	1.51
	B13	0.400	75.00	0.6700	0.1675	69	0.5025	98	7.02	0.53	8	0.0124	1.35	0.39	3.48	0.43	3.62	10.0	0.05
Building 1 East	B14	0.150	75.00	0.1500	0.0375	69	0.1125	98	5.00	0.13	6	0.0271	0.93	0.14	1.50	0.25	3.30	87.0	0.44
	B15	0.100	75.00	0.2500	0.0625	69	0.1875	98	5.44	0.21	6	0.0140	0.67	0.31	2.30	0.38	2.99	25.0	0.14
	B16	0.150	75.00	0.4000	0.1000	69	0.3000	98	5.58	0.33	6	0.0140	0.67	0.50	2.99	0.50	3.38	165.0	0.81
	B17	0.000	75.00	0.4000	0.1000	69	0.3000	98	6.39	0.32	8	0.0200	1.71	0.19	2.34	0.29	3.75	29.0	0.13
South Site Total	N2	0.110	75.00	1.1800	0.7975	69	0.3825	98	7.15	0.56	10	0.0200	3.11	0.18	2.89	0.29	4.32	20.0	0.08
Total	S1	0.000	75.00	2.7330	0.6833	69	2.0498	98	7.23	2.15	12	0.0200	5.05	0.43	5.47	0.46	6.16	20.0	0.05

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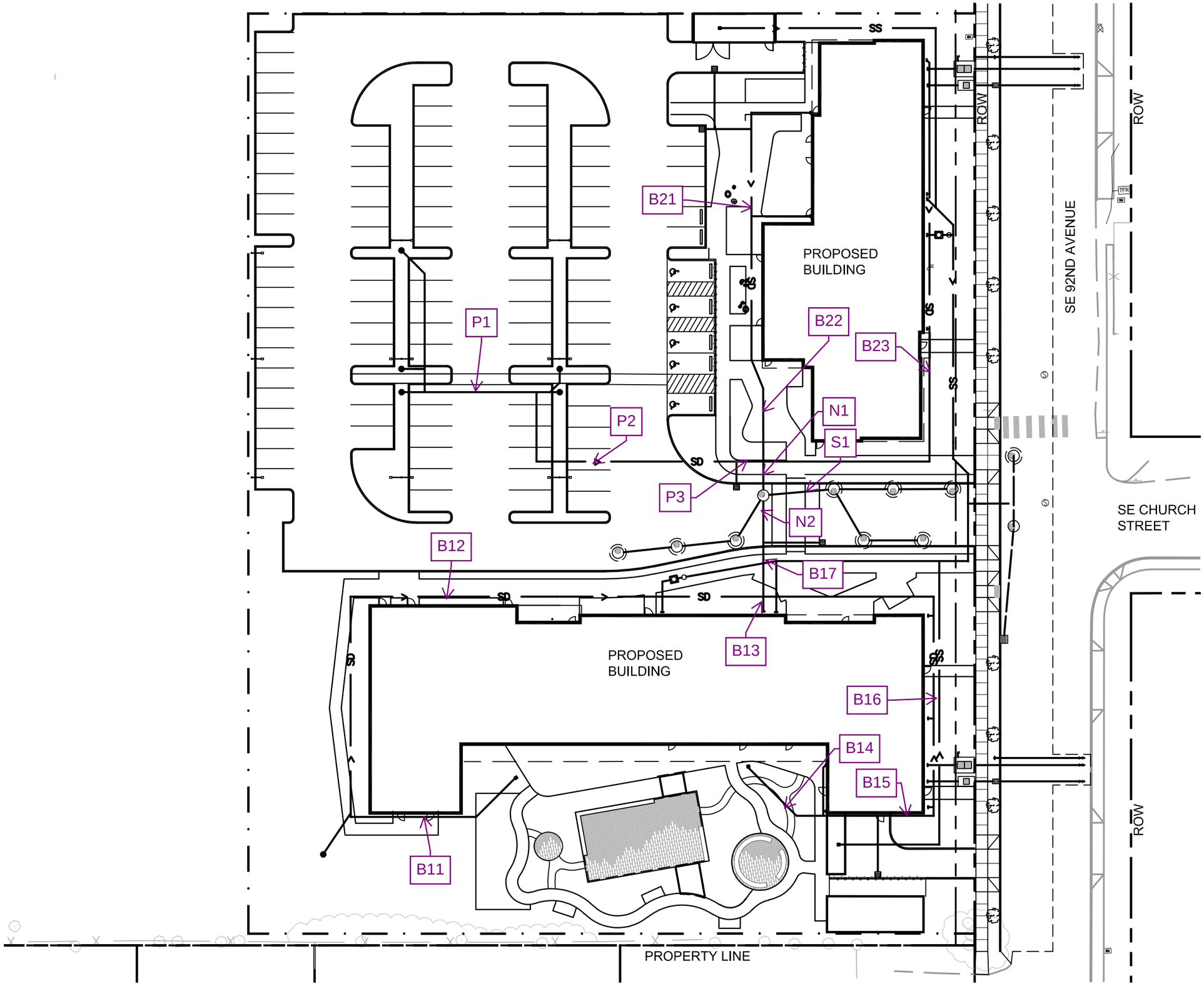
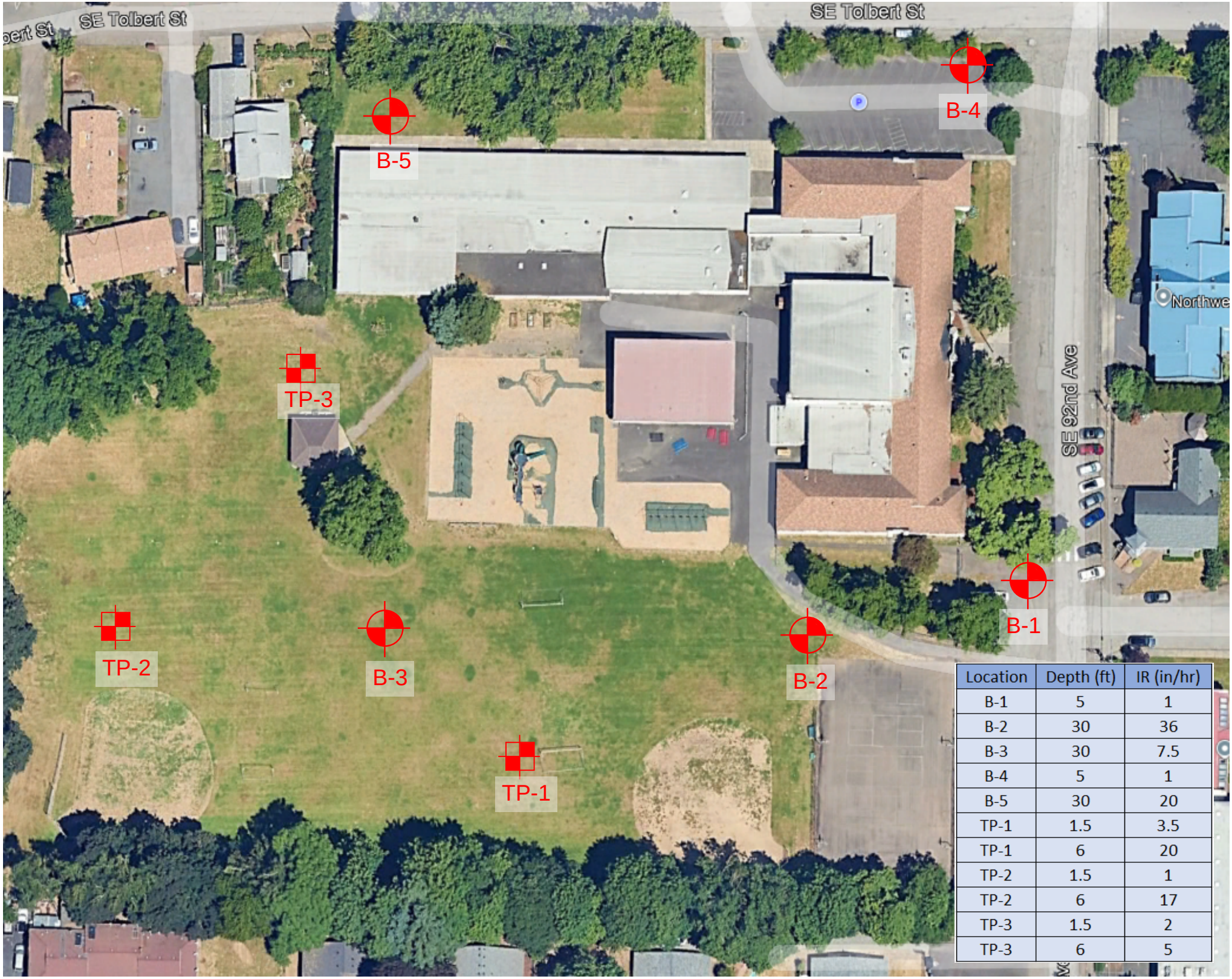


EXHIBIT C.2 - CONVEYANCE PIPING

Appendix D – Associated Reports

Infiltration Test Summary
Geotechnical Report by Columbia West, dated August 13, 2025



Location	Depth (ft)	IR (in/hr)
B-1	5	1
B-2	30	36
B-3	30	7.5
B-4	5	1
B-5	30	20
TP-1	1.5	3.5
TP-1	6	20
TP-2	1.5	1
TP-2	6	17
TP-3	1.5	2
TP-3	6	5

Report of Geotechnical Engineering Services

Clackamas County Recovery Center

Clackamas, Oregon

August 13, 2025

Geotechnical ■ Environmental ■ Special Inspections

Columbia West

Engineering, Inc



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August 13, 2025

Fora Health
10230 Cherry Blossom Drive
Portland, OR 97216

Attn: Devarshi Bajpai

Re: Report of Geotechnical Engineering Services
Clackamas County Recovery Center
15301 SE 92nd Avenue
Clackamas, Oregon
CWE Project: EdlenCo-7-01-1

Columbia West Engineering, Inc. (Columbia West) is pleased to present this report of geotechnical engineering services for the Clackamas County Recovery Center located at 15301 SE 92nd Avenue in Clackamas, Oregon. Our services were conducted in accordance with our proposal dated May 30, 2025.

We appreciate the opportunity to work on the project. Please contact us if you have any questions regarding this report.

Sincerely,

Jason F. Merritt, PE
Senior Project Engineer

Brett A. Shipton, PE, GE
Principal Engineer

REGISTERED PROFESSIONAL ENGINEER
56207
OREGON
July 11, 2000
BRETT A. SHIPTON
EXPIRES: 6/30/26

cc: Jill Sherman, Edlen & Co.

JFM:BAS:kat
Attachments
Document ID: EdlenCo-7-01-1-081325-geor.docx

EXECUTIVE SUMMARY

This section provides a summary of the geotechnical considerations associated with the proposed Clackamas County Recover Center project in Clackamas, Oregon. This summary is an overview, and the report should be referenced for a thorough discussion of subsurface conditions and geotechnical recommendations for the project.

- Approximately 3 feet of undocumented fill was observed in test pit TP-3. Additional undocumented fill could be encountered underneath existing site features following demolition. Foundations should not be supported on undocumented fill material. If encountered, these materials should be removed and replaced with structural fill.

- Our subsurface exploration program did not encounter soil that is susceptible to liquefaction or lateral spreading under design levels of ground shaking.

- Cobbles and boulders were encountered in the explorations at the site at depths below approximately 3to 9.5 feet BGS. The test pits were terminated at depths between 7 and 12 feet BGS due to practical refusal on cobbles and boulders. Excavations in cobbles and boulders can become difficult, if not impossible, with conventional equipment. Excavation volumes for utility trenches may be greater than anticipated due to sloughing and the need to remove oversized material. We recommend that project bid documents include a contingency for boulder removal, as well as the associated increased trench volumes for backfilling.

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ABBREVIATIONS AND ACRONYMS

AC	asphalt concrete
ASCE	American Society of Civil Engineers
ASTM	ASTM International
BGS	below ground surface
CSZ	Cascadia subduction zone
g	gravitational acceleration (32.2 feet/second^2)
H:V	horizontal to vertical
IBC	International Building Code
in/hr	inch(es) per hour
km	kilometer(s)
MCE	maximum considered earthquake
M_W	moment magnitude
OSHA	Occupational Safety and Health Administration
OSSC	2024 Oregon Standard Specifications for Construction
PCC	portland cement concrete
pcf	pounds per cubic foot
pci	pounds per cubic inch
psf	pounds per square foot
psi	pounds per square inch
QA/QC	quality assurance/quality control
SOSSC	State of Oregon Structural Specialty Code
SPT	standard penetration test
USGS	U.S. Geological Survey

REPORT OF GEOTECHNICAL ENGINEERING SERVICES
CLACKAMAS COUNTY RECOVERY CENTER
CLACKAMAS, OREGON

1.0 INTRODUCTION

Columbia West is pleased to submit this report of geotechnical engineering services for the proposed Clackamas County Recovery Center project located at 15301 SE 92nd Avenue in Clackamas, Oregon. The site is shown relative to surrounding physical features on Figure 1. Existing conditions and exploration locations are shown on Figure 2. Abbreviations and acronyms used herein are defined immediately following the Table of Contents.

2.0 PROJECT UNDERSTANDING

The 6.5-acre site is currently occupied by the Cascade Heights Public Charter School and associated AC-paved and aggregate-surfaced parking areas and drive aisles, athletic fields, and landscaping. The existing school facilities are to be demolished. The east half of the site will be developed with two single-story buildings, AC-paved drive aisles and parking areas, landscaping, and other associated infrastructure (Phase 1). The west half of the site will be reserved for future development (Phase 2). Preliminary development plans prepared by Holst Architecture are presented in Appendix A.

We are informed that maximum column and wall loads for Phase 1 will be 150 kips and 6 kips per lineal foot, respectively. We have assumed floor loads will not exceed 100 psf. The site is relatively flat; therefore, cuts and fills are expected to be minimal. Details of the proposed Phase 2 development are unknown; however, we have assumed foundation loads will be similar to that of Phase 1. We should be contacted to revise our recommendations if the assumptions stated above are incorrect.

3.0 PURPOSE AND SCOPE

The purpose of our services was to provide geotechnical engineering recommendations for use in design and construction of the proposed development. Specifically, we completed the following tasks:

- Reviewed geological and geotechnical information available in Columbia West's files for the site vicinity.
- Coordinated and managed the field exploration program, which included locating utilities, coordinating site access, and scheduling subcontractors and Columbia West field staff.
- Conducted a subsurface exploration program that included the following:
  - Drilled three borings to a depth of 31.5 feet BGS.
  - Drilled two borings to a depth of 6.5 feet BGS.
  - Excavated three test pits to depths between 7 and 12 feet BGS.
  - Conducted infiltration testing in each boring at depths of either 5 or 30 feet BGS.
  - Conducted infiltration testing in each test pit at depths of 1.5 and 6 feet BGS.
- Maintained continuous logs of the explorations and collected soil samples at representative intervals for laboratory testing.

- Performed a laboratory testing program using select soil samples collected from the explorations that consisted of the following tests:
  - Five moisture content determinations in general accordance with ASTM D2216
  - Seven particle-size analyses in general accordance with ASTM D1140
  - Two Atterberg limits tests in general accordance with ASTM D4318
- Prepared this geotechnical report that summarizes our explorations, laboratory testing, and analyses and provides geotechnical design criteria and construction recommendations for the proposed development, including the following:
  - Summary of soil and groundwater conditions at the site
  - Laboratory testing results
  - Assessment of seismic hazards, including liquefaction, strain softening, and lateral spreading
  - Recommendations for shallow spread footings, including foundation dimensions and embedment and estimates of total and differential settlement
  - Recommendations for floor slab subgrade preparation
  - Recommendations for retaining walls, including lateral earth pressures, backfill, compaction, and drainage
  - Recommendations for site preparation, including grading and drainage, stripping depths, fill type for imported material, compaction criteria, trench excavation and backfill, use of on-site soil, and wet/dry weather earthwork
  - Infiltration testing results and recommendations for infiltration facilities
  - Recommendations for managing identified groundwater conditions that may affect the performance of structures and site improvements
  - Assess the native soil for expansion potential
  - Recommendations for AC and PCC pavement sections for on-site access drives and parking areas
  - Seismic design parameters in accordance with the 2022 SOSSC and ASCE 7-16

4.0 SITE CONDITIONS

4.1 GEOLOGY

The site is located near the southeastern margin of the Portland Basin physiographic province. The Portland Basin is a fault-bounded structure bordered by the Tualatin Mountains to the west and south and the Cascade Range to the east and north. The near-surface geologic unit is mapped as Clackamas River terrace surfaces. The unit consists of unconsolidated sand, gravel, and cobbles that are locally mantled with up to 5 feet of catastrophic flood deposits consisting of fine sand, silt, and clay (Madin 1990, Schlicker and Finlayson 1979). The thickness of the terrace deposits in the site vicinity is approximately 5 to 15 feet.

The terrace deposits are underlain by the Pliocene- to Pleistocene-aged (5 million to 1.5 million years before present) Troutdale Formation, which consists of poorly to moderately consolidated, subrounded to rounded sand and gravel. This unit is exposed at the surface along the banks of the Clackamas River located south of the site vicinity (Madin 1990, Schlicker and Finlayson 1979). The thickness of the unit in the site vicinity is approximately 100 feet (Schlicker and Finlayson 1979, Gannett and Caldwell 1998).

The Troutdale Formation is underlain by the Sandy River Mudstone, which represents a fluvial and lacustrine basin fill unit that consists of laminated silty clay, micaceous sand, siltstone, and claystone. The thickness of the unit in the site vicinity is approximately 700 feet (Schlicker and Finlayson 1979, Gannett and Caldwell 1998).

The Sandy River Mudstone is underlain by the Miocene-aged (20 million to 10 million years before present) Columbia River Basalt Group, which is a series of basalt flows that originated from southeastern Washington and northeastern Oregon. The Columbia River Basalt Group is several hundred feet thick and is considered to be the geologic basement unit for this report.

4.2 SURFACE CONDITIONS

The site is bordered by SE Tolbert Street to the north, SE 92nd Avenue to the east, and residential development to the south and west. The site is currently occupied by the Cascade Heights Public Charter School and associated AC-paved and aggregate-surfaced parking areas and drive aisles, athletic fields, and landscaping. The school structure and parking areas are located in the northeast corner of the site. The remainder of the site is occupied by recreational areas, including grass fields, a playground, and a tennis court. The site is relatively flat with grades generally less than 5 percent. Vegetation at the site primarily consists of landscaping and trees lining the perimeter of the site.

4.3 SUBSURFACE CONDITIONS

4.3.1 General

We explored subsurface conditions at the site by drilling two borings (B-1 and B-4) to depths of 6.5 feet BGS, three borings (B-2, B-3, and B-5) to depths of 31.5 feet BGS, and excavating three test pits (TP-1 through TP-3) to depths between 7 and 12 feet BGS. The exploration locations are shown on Figure 2. A description of our field exploration program and the exploration logs are presented in Appendix B. A description of our laboratory testing program and the test results are presented in Appendix C.

4.3.2 Soil Conditions

4.3.2.1 Topsoil

Borings B-2, B-3, and B-5 and test pits TP-1 through TP-3 were conducted through 6 inches of topsoil that includes a 3- to 4-inch-thick root zone. The topsoil consists of brown sandy silt and appeared medium stiff and dry to moist at the time of exploration.

4.3.2.2 Pavement Section

Boring B-1 was drilled through an aggregate-surfaced pavement consisting of approximately 10 inches crushed aggregate. Boring B-4 was drilled through an AC pavement section consisting of 3 inches of AC underlain by 8 inches of aggregate base.

4.3.2.3 Undocumented Fill

Undocumented fill was observed in test pit TP-3 underlying the topsoil to a depth of approximately 3 feet BGS. The fill consists of approximately 2 inches of crushed aggregate underlain by silt with sand. The silt is stiff and dry to moist based on visual classification at the time of exploration. A laboratory tested sample of the silt had a moisture content of 21 percent.

4.3.2.4 Native Alluvial Clay

Native alluvial deposits consisting of sandy clay with varying proportions of gravel, cobbles, and boulders was observed underlying the topsoil, pavement sections, and undocumented fill in all explorations to depths between 4 and 9.5 feet BGS. The clay is moist and medium stiff to very stiff based on SPT blow counts. Laboratory tested samples had a moisture content of 21 percent and fines contents of 57 to 69 percent (passing the U.S. Standard No. 200 sieve). Atterberg limits testing indicates the tested samples have liquid limits between 29 and 35 and plasticity indices between 9 and 13.

4.3.2.5 Native Alluvial Silty Sand

Native alluvial silty sand with varying proportions of gravel, cobbles, and boulders was observed underlying the clay in all of the explorations with the exception of boring B-1 which was completed at 6.5 feet BGS. The sand is moist and loose to very dense based on SPT blow counts. Laboratory tested samples had moisture contents of 10 to 28 percent and a fines content of 40 percent (passing the U.S. Standard No. 200 sieve). Boulders generally appeared to have a diameter of approximately 12 inches.

4.3.2.6 Native Alluvial Gravel

Native alluvial gravel with varying proportions of silt, sand, and cobbles was observed underlying the silty sand in borings B-2, B-3, and B-5 to the maximum explored depth of 31.5 feet BGS. Although not directly observed in the borings, boulders are likely present in the gravel layer. The gravel is moist to wet and medium dense to very dense based on SPT blow counts. Laboratory tested samples had fines contents of 9 to 16 percent (passing the U.S. Standard No. 200 sieve).

4.3.3 Groundwater

Groundwater was not encountered to the maximum explored depth of 31.5 feet BGS. The depth to groundwater will fluctuate in response to seasonal changes and other factors not observed in this study.

4.4 INFILTRATION TESTING

Infiltration testing was performed in all test pits and borings at depths between 1.5 and 30 feet BGS to assist in the evaluation of stormwater infiltration facilities for the project. The infiltration testing was conducted in general accordance with the recommendations for the encased falling head method included in the *2020 City of Portland Stormwater Management Manual* (City of Portland 2020). Table 1 summarizes our infiltration testing results and fines content determinations. The exploration logs and laboratory testing results are presented in Appendices B and C, respectively.

Table 1. Infiltration Testing Results

Location	Depth (feet BGS)	Fines Content[1] (percent)	Measured Infiltration Rate (in/hr)
B-1	5	64	1
B-2	30	9	36
B-3	30	14	7.5
B-4	5	40	1
B-5	30	16	20
TP-1	1.5	--	3.5
	6	--	20
TP-2	1.5	57	1
	6	69	17[2]
TP-3	1.5	--	2
	6	--	5

1. Fines content: percent passing U.S. Standard No. 200 sieve
2. Soil has a high fines content; a design infiltration rate of 1 to 2 inches per hour is appropriate

Recommendations for design of infiltration systems are provided in Section 5.5 (Drainage).

4.5 SEISMIC HAZARDS

4.5.1 Seismic Setting

4.5.1.1 Earthquake Sources

Three scenario earthquakes were considered for this study consistent with the local seismic setting. Two of the possible earthquake sources are associated with the CSZ, and the third event is a shallow, local crustal earthquake that could occur in the North American Plate. The three earthquake scenarios are discussed below.

4.5.1.2 Regional Events

The CSZ is the region where the Juan de Fuca Plate is being subducted beneath the North American Plate. This subduction is occurring in the coastal region between Vancouver Island and northern California. Evidence has accumulated suggesting that this subduction zone has generated eight great earthquakes in the last 4,000 years, with the most recent event occurring approximately 300 years ago (Weaver and Shedlock 1991). The fault trace is mapped approximately 50 to 120 km off the Oregon Coast.

Two types of subduction zone earthquakes are possible and considered in this study:

1. An interface event earthquake on the seismogenic part of the interface between the Juan de Fuca Plate and the North American Plate on the CSZ. This source is capable of generating earthquakes with a M_W of 9.0+.
2. A deep intraplate earthquake on the seismogenic part of the subducting Juan de Fuca Plate. These events typically occur at depths of between 30 and 60 km. This source is capable of generating an event with a M_W of up to 8.0.

4.5.1.3 Local Events

A significant earthquake could occur on a local fault near the site within the design life of the development. Such an event would cause ground shaking at the site that could be more intense than the CSZ events, although the duration would be shorter. Table 2 provides information on local faults close to the site.

Table 2. Nearest Mapped Crustal Faults

Source	Closest Mapped Distance[1] (km)	Mapped Length[1] (km)
Damascus – Tickle Creek fault zone	1.3	16
Portland Hills fault	1.7	49
Oatfield fault	2.7	29

1. Based on mapping by USGS (2025)

4.5.2 Seismic Settlement

Liquefaction is caused by a rapid increase in pore water pressure that reduces the effective stress between soil particles. Granular soil, which relies on interparticle friction for strength, undergoes a loss of strength until the excess pore pressures dissipate. In general, loose, saturated sand soil with low silt and clay content is the most susceptible to liquefaction. Silty soil with low plasticity can be susceptible to strain softening under relatively higher levels of ground shaking. Our subsurface exploration program did not encounter soil that is susceptible to liquefaction under design levels of ground shaking.

4.5.3 Lateral Spreading

Lateral spreading is a liquefaction-related seismic hazard and occurs on gently sloping or flat sites underlain by liquefiable sediment adjacent to an open face, such as a riverbank. Liquefied soil adjacent to an open face can flow toward the open face, resulting in lateral ground displacement. Since liquefaction is not considered a hazard at the site, lateral spreading is not considered a geotechnical design consideration.

4.5.4 Fault Rupture

Based on USGS interactive fault mapping, the nearest mapped fault to the site is the Damascus – Tickle Creek fault zone, which is located approximately 1.3 km east of the site (USGS 2025). Consequently, we conclude that the probability of fault surface rupture beneath the site is low.

4.6 SHRINK-SWELL POTENTIAL

Laboratory testing conducted on near-surface soil indicates the soil has low to medium plasticity. In our opinion, shrink-swell potential of in-situ, near-surface soil is low.

5.0 DESIGN

Based on our subsurface explorations, laboratory testing, and analysis, the proposed development is generally compatible with the surface and subsurface soil, provided the recommendations presented in this report are incorporated into design and implemented during construction.

5.1 SHALLOW FOUNDATION SUPPORT

Based on the foundation loads in Section 2.0 (Project Understanding), the buildings can be supported by conventional spread footings bearing on firm, native soil or structural fill underlain by firm, native soil.

Foundations should not be supported on undocumented fill. If encountered, these materials should be removed and replaced with structural fill. Structural fill placed beneath footings should extend 6 inches horizontally from the footing perimeter for every 12 inches in depth. If footings are constructed over silty subgrade during wet weather or when the footing subgrade soil is above its optimum moisture, we recommend placing 2 to 4 inches of compacted crushed aggregate over the exposed subgrade soil to protect it from foot traffic.

Groundwater was not encountered in the explorations; therefore, we do not anticipate perimeter foundation drains will be required for the proposed structures.

5.1.1 Bearing Capacity

Continuous perimeter wall and isolated spread footings should have minimum widths of 18 inches and 24 inches, respectively. The bases of exterior footings should bear at least 18 inches below the lowest adjacent exterior grade. The bases of interior footings should bear at least 12 inches below the base of the floor slab.

Footings bearing on subgrade prepared as recommended above should be sized based on an allowable bearing pressure of 3,000 psf. As the allowable bearing pressure is a net bearing pressure, the weight of the footing and associated backfill may be ignored when calculating footing sizes. The recommended allowable bearing pressure applies to the total of dead plus long-term live loads and may be increased by 50 percent for transient lateral forces such as seismic or wind.

5.1.2 Static Settlement

Provided the subgrade soil is prepared as described in Section 6.1 (Site Preparation), we estimate total static post-construction foundation settlement will be less than approximately 1 inch. Differential settlement between adjacent comparably loaded footing elements is not expected to exceed approximately 0.5 inch.

5.1.3 Resistance to Sliding

Lateral foundation loads can be resisted by passive earth pressure on the sides of footings and by friction at the bases of footings. The recommended passive earth pressure for footings confined by native soil or engineered structural fill is 350 pcf. The upper 12 inches of soil should be neglected when calculating passive pressure resistance. The recommended passive pressure resistance assumes that a minimum horizontal clearance of 10 feet is maintained between the footing face and adjacent down-gradient slopes and that groundwater remains below the bases of the footings.

The estimated unfactored coefficient of friction between in-situ native soil or engineered structural fill and in-place poured concrete is 0.35. The estimated unfactored coefficient of friction between compacted crushed aggregate and in-place poured concrete is 0.45.

5.1.4 Subgrade Observation

Footing and floor subgrade soil should be evaluated by Columbia West prior to placing forms or reinforcing bar to verify subgrade support conditions are as anticipated in this report. Subgrade observation should confirm that all disturbed material, organic material, unsuitable fill, remnant topsoil zones, and softened subgrade (if present) have been removed. Over excavation of footing subgrade soil may be required to remove deleterious material, particularly if footings are constructed during wet weather conditions. Footing excavations should be backfilled with compacted crushed aggregate.

5.1.5 Floor Slabs

Floor slabs can be supported on firm, competent, undisturbed, native soil or engineered structural fill underlain by firm, native soil prepared as described in this report. Disturbed soil and unsuitable fill in proposed slab locations, if encountered, should be removed and replaced with structural fill. To minimize long-term risk of adverse impacts to hardscapes, existing undocumented fill should be completely removed from below slabs on grade. If existing fill is left in place, slabs may experience a reduction in long-term serviceability due to premature slab distress, which could include cracking, localized grade depressions, and inadequate drainage.

Floor slabs should be underlain by at least 6 inches of compacted crushed aggregate, which will aid as a capillary break. Geotextile may be used below the crushed aggregate layer to increase subgrade support. Recommendations for floor slab aggregate base and subgrade geotextile are discussed in Section 6.5 (Materials).

Concrete floor slabs with maximum loads of 100 psf may be designed assuming a modulus of subgrade reaction, k, of 100 pci for slabs on grade constructed on subgrade prepared as recommended in this report.

Flooring manufacturers often require vapor barriers to protect flooring and flooring adhesives. Many flooring manufacturers will warrant their product only if a vapor barrier is installed according to their recommendations. Selection and design of an appropriate vapor barrier, if needed, should be based on discussions among members of the design team.

All slab subgrade should be evaluated by appropriate personnel to confirm suitable bearing conditions. Observations should also confirm that loose or soft material, organic material, unsuitable fill, prior topsoil zones, and softened subgrade (if present) have been removed.

5.2 SEISMIC DESIGN CRITERIA

Seismic design for the proposed structures is governed by the 2022 SOSSC, which refers to ASCE 7-16. Based on our investigation, the site meets the criteria for Site Class D. Seismic design parameters for Site Class D are presented in Table 3.

Table 3. ASCE 7-16 Seismic Design Parameters

Parameter	Short Period (T_s)	1-Second Period (T_1)
MCE spectral response acceleration, S	S_s = 0.854 g	S_1 = 0.376 g
Site class	D	
Site coefficient, F	F_a = 1.158	F_v = 1.924
Adjusted spectral response acceleration, S_M	S_{MS} = 0.989 g	S_{M1} = 0.723 g
Design spectral response acceleration, S_D	S_{DS} = 0.660 g	S_{D1} = 0.482 g

For Site Class D sites with a mapped MCE spectral response acceleration parameter S_1 greater than 0.2 g, a site-specific seismic hazard analysis may be required according to ASCE 7-16 Section 11.4.8, unless the seismic response coefficient, C_s, is calculated in accordance with ASCE 7-16 Section 11.4.8 Exception 2. However, if an alternative method is used to determine the seismic response coefficient, the structures are seismically isolated, or structural damping systems are proposed, ASCE 7-16 requires a site-specific seismic hazard analysis be conducted. Columbia West recommends that the project structural engineer evaluate these requirements and exceptions to determine if a site-specific seismic hazard analysis will be required for the proposed structures.

5.3 RETAINING STRUCTURES

5.3.1 General

Lateral earth pressures should be considered in design of retaining walls and below-grade structures. Hydrostatic pressure and additional surcharge loading should also be considered. Retaining wall foundation construction and bearing capacity should adhere to the specifications in Section 5.1 (Shallow Foundation Support).

Permanent retaining walls that are not restrained from rotation should be designed for active earth pressures using an equivalent fluid pressure of 35 pcf. Walls that are restrained from rotation should be designed for an at-rest equivalent fluid pressure of 55 pcf. The recommended earth pressures assume a maximum wall height of 10 feet with well-drained, level backfill. These values also assume that adequate drainage is provided behind retaining walls to prevent hydrostatic pressures from developing. Lateral earth pressures induced by surcharge loads may be estimated using the criteria presented on Figure 3.

Seismic forces may be calculated by superimposing a uniform lateral force of $7H^2$ pounds per lineal foot of wall, where H is the total wall height in feet. The force should be applied as a uniformly distributed load with the resultant located at 0.5H from the base of the wall.

5.3.2 Wall Drainage and Backfill

A minimum 4-inch-diameter, perforated collector pipe should be placed at the bases of retaining walls. The pipe should be embedded in a minimum 2-foot-wide zone of angular drain rock that is wrapped in a drainage geotextile fabric and extends up the back of the wall to within 1 foot of finished grade. The drain rock and geotextile drainage fabric should meet the specifications provided in Section 6.5 (Materials). The perforated collector pipes should discharge at an appropriate location away from the base of the wall and any slopes. The discharge pipes should not be tied directly into stormwater drainage systems, unless measures are taken to prevent backflow into the drainage system of the wall.

Backfill placed behind the walls and extending a horizontal distance of ½H, where H is the height of the retaining wall, should consist of select granular material placed and compacted as described in Section 6.5.1 (Structural Fill).

Settlement of up to 1 percent of the wall height commonly occurs directly adjacent to the wall as the wall rotates and develops active lateral earth pressures. Consequently, we recommend that construction of flatwork adjacent to retaining walls be delayed until survey data indicates that settlement is complete.

5.4 PAVEMENT

5.4.1 Design Parameters

Pavement should be installed on firm, competent, native subgrade soil or engineered structural fill prepared as described in this report. Our pavement recommendations are based on the following design parameters and assumptions:

- Pavement subgrade is prepared in accordance with Section 6.1 (Site Preparation).
- Resilient moduli for subgrade soil and aggregate base materials were assumed to be 4,500 psi and 20,000 psi, respectively.
- Pavement design life of 20 years with no expected traffic growth.
- Initial and terminal serviceability indices of 4.2 and 2.5, respectively.
- Reliability of 85 percent and standard deviation of 0.4.

If any of these assumptions are incorrect, our office should be contacted with the appropriate information so that the pavement designs can be revised.

5.4.2 Traffic Loading Assumptions

We anticipate traffic in AC-paved parking areas and drive aisles will consist of passenger vehicles and occasional trucks (i.e., garbage trucks). AC-paved drive aisles may be subjected to a fire truck on an infrequent basis. PCC pavement is anticipated in areas that will experience primarily heavy truck traffic (i.e., loading docks and trash pads).

5.4.3 AC Pavement Design Sections

AC pavement design recommendations are presented in Table 4. Material properties and compaction recommendations for AC and aggregate base layers are presented in Section 6.5 (Materials).

Table 4. Recommended AC Pavement Sections Constructed over Native Soil or Engineered Fill

Traffic	AC[1] (inches)	Aggregate Base[1] (inches)
Passenger vehicle parking	2.5	8
Passenger vehicle-only drive aisles with occasional trucks (i.e., garbage trucks)	3	10

1. All thicknesses are intended to be the minimum acceptable.

If the subgrade is cement amended to the thicknesses indicated below and the amended soil achieves a seven-day unconfined compressive strength of at least 100 psi, the pavement can be constructed as recommended in Table 5 for a 20-year design life.

Table 5. 20-Year AC Pavement Sections with Cement Amendment

Traffic	AC[1] (inches)	Aggregate Base[1] (inches)	Cement Amendment[1,2] (inches)
Passenger vehicle parking	2.5	4	12
Passenger vehicle-only drive aisles with occasional trucks (i.e., garbage trucks)	3	4	12

1. All thicknesses are intended to be the minimum acceptable.
2. Assumes a minimum seven-day unconfined compressive strength of 100 psi.

5.4.4 PCC Pavement Design Sections

PCC pavement design recommendations are presented in Table 6. Material properties and recommendations for PCC and aggregate base layers are presented in Section 6.5 (Materials).

Table 6. Recommended PCC Pavement Sections Constructed over Native Soil or Engineered Fill

Traffic	PCC[1] (inches)	Aggregate Base[1] (inches)
Heavy Truck Traffic	6.5	6

1. All thicknesses are intended to be the minimum acceptable.

If the subgrade is cement amended to the thicknesses indicated below and the amended soil achieves a seven-day unconfined compressive strength of at least 100 psi, the pavement can be constructed as recommended in Table 7 for a 20-year design life.

Table 7. 20-YearPCC Pavement Sections with Cement Amendment

Traffic	PCC[1] (inches)	Aggregate Base[1] (inches)	Cement Amendment[1,2] (inches)
Heavy Truck Traffic	6.5	4	12

1. All thicknesses are intended to be the minimum acceptable.
2. Assumes a minimum seven-day unconfined compressive strength of 100 psi.

The PCC should have a minimum 28-day flexural and compressive strengths of 650 psi and 4,000 psi, respectively. Transverse construction joints should be made with 18-inch-long #8 bars spaced on 12-inch centers. Longitudinal construction joints should be made using 30-inch-long #4 bars spaced on 18-inch centers.

The preceding recommended pavement sections assume that construction will be completed during a period of extended dry weather. Wet weather construction will likely require an increased aggregate base thickness.

5.4.5 General Pavement Recommendations

Recommended pavement section thicknesses are intended to be minimum acceptable values and do not include construction traffic loading. The recommendations assume that pavement construction will be completed during an extended period of warm, dry weather. Wet weather construction may require an increased thickness of aggregate base as discussed in Section 6.2 (Construction Traffic and Staging).

Construction traffic should be limited to dedicated haul roads or non-structural, unpaved portions of the site. Construction traffic should not be permitted on new pavement, unless accounted for in the pavement design section. Aggregate base supporting pavement is also not intended for construction traffic. Haul roads and staging areas supporting construction traffic are discussed in Section 6.2 (Construction Traffic and Staging).

5.5 DRAINAGE

5.5.1 Temporary

During work at the site, the contractor should be made responsible for temporary drainage of surface water as necessary to prevent standing water and/or erosion at the working surface. During rough and finished grading of the site, the contractor should keep all pads and subgrade free of ponding water.

5.5.2 Surface

The ground surface at finished pads should be sloped away from their edges at a minimum 2 percent gradient for a distance of at least 5 feet. Roof drainage from buildings should be directed into solid, smooth-walled drainage pipes that carry the collected water to the storm drain system.

5.5.3 Subsurface

Since groundwater was not observed in the explorations and provided finish floor grades are at or above existing grades, perimeter foundation drains are not required for the planned structures. If requested by the owner or if finish floor elevations are lower, foundation drains may be required. Foundation drains should consist of a filter fabric-wrapped, drain rock-filled trench that extends at least 12 inches below the lowest adjacent grade (i.e., slab subgrade elevation). A perforated pipe should be placed at the base to collect water that gathers in the drain rock. The drain rock and filter fabric should meet specifications in Section 6.5 (Materials). Discharge for footing drains should not be tied directly into the stormwater drainage system, unless mechanisms are installed to prevent backflow.

5.5.4 Stormwater Infiltration Systems

The infiltration rates shown in Table 1 are short-term field rates and factors of safety have not been applied. Correction factors should be applied to the measured infiltration rate by the civil engineer to account for soil variations and the potential for long-term clogging due to siltation and buildup of organic material, depending on the proposed length, location, and type of infiltration facility. The *2020 City of Portland Stormwater Management Manual* recommends a minimum allowable factor of safety of 2 be used for the encased falling head test method (City of Portland 2020).

We recommend the installation of the infiltration facilities be observed by a qualified geotechnical engineer or representative under their supervision to evaluate if soil conditions are consistent with subsurface conditions encountered during our explorations. If the dry wells for the stormwater system will not have redundant overflow systems, we also recommend confirmation testing for the dry wells.

6.0 CONSTRUCTION

6.1 SITE PREPARATION

6.1.1 General

Site grading should be performed in accordance with the requirements specified in the 2021 IBC, Chapter 18 and Appendix J, with exceptions noted in this report. Site preparation should be observed and documented by Columbia West.

6.1.2 Stripping and Grubbing

Where encountered, existing root zones should be stripped and removed from all areas to receive new structural improvements. Increased stripping depths may be anticipated in areas with thicker vegetation and shrubs. The actual stripping depth should be based on field observations at the time of construction. Stripped material should be transported offsite for disposal or used in landscaped areas.

6.1.3 Undocumented Fill

Undocumented fill was observed in test pit TP-3 to a depth of approximately 3 feet BGS. Additional undocumented fill will likely be encountered underlying existing site features following demolition. Undocumented fill is not suitable for supporting foundations and should be removed completely and replaced with structural fill.

To minimize long-term risk of adverse impacts to hardscapes, existing fill should be completely removed from below slabs on grade. If existing fill is left in place, slabs may experience a reduction in long-term serviceability due to premature slab distress, which could include cracking, localized grade depressions, and inadequate drainage.

Partial mitigation of premature slab distress risk may be accomplished by scarifying and compacting in place, limited removal and replacement with structural fill, or cement amending the subgrade. If the cement amendment option is selected, we recommend improving a minimum of the upper 12 inches of undocumented fill.

6.1.4 Demolition

Where required, demolition includes removal of structural features that may be at the site. Abandoned foundations and utilities, if present, will need to be removed and the resulting excavations backfilled. Utility lines should be completely removed or, with prior approval, grouted full if left in place. Excavations left from demolition and removal of existing structures should be backfilled with compacted structural fill in accordance with the recommendations in Section 6.5.1 (Structural Fill).

6.1.5 Test Pit Locations

The test pits were likely backfilled using the relatively minimal compactive effort of the excavator bucket. Soft spots can be expected at these locations. We recommend this relatively uncompacted soil be removed from the test pits to a depth of 3 feet below finished subgrade. If a test pit is located within 10 feet of a footing, we recommend full-depth removal of the uncompacted soil. The resulting excavation should be brought back to grade with structural fill.

6.1.6 Subgrade Evaluation

Upon completion of stripping and demolition and prior to the placement of structural fill or pavement improvements, exposed subgrade soil should be evaluated by proof rolling with a fully loaded dump truck or similar heavy, rubber-tired construction equipment. When the subgrade is too wet for proof rolling or access with a truck is not possible, a foundation probe may be used to identify areas of soft, loose, or unsuitable soil. Columbia West should perform subgrade evaluation. If soft or yielding subgrade areas are identified during evaluation, we recommend the subgrade be over excavated and backfilled with compacted imported granular fill.

6.2 CONSTRUCTION TRAFFIC AND STAGING

Near-surface soil may be disturbed during construction. If not carefully executed, site preparation, utility trench work, and roadway excavation can create extensive soft areas and significant repair costs can result. Earthwork planning, regardless of the time of year, should include considerations for minimizing subgrade disturbance.

If construction occurs during or extends into the wet season or if the moisture content of the surficial soil is more than a couple percentage points above optimum, site stripping and cutting may need to be accomplished using track-mounted equipment. Likewise, the use of granular haul roads and staging areas will be necessary for support of construction traffic during the rainy season or when the moisture content of the surficial soil is more than a few percentage points above optimum.

The aggregate base thickness for pavement areas is intended to support post-construction design traffic loads and is not designed to support construction traffic. Moreover, if construction is planned for periods when the subgrade soil is wet, staging and haul roads with increased thicknesses of aggregate base will be required. The amount of staging and haul road areas, as well as the required thickness of granular material, will vary with the contractor's sequencing of a project and type/frequency of construction equipment and should, therefore, be the responsibility of the contractor. Based on our experience and the soil at the site, between 12 and 18 inches of imported granular material is generally required in staging areas and between 18 and 24 inches in haul road areas. The contractor should also be responsible for selecting the type of material for construction of haul roads and staging areas. A geotextile fabric can be placed as a barrier between the subgrade and imported granular material in areas of repeated construction traffic to help prevent silt migration into the aggregate base. The imported granular material, stabilization material, and geotextile fabric should meet the specifications in Section 6.5 (Materials).

Project stakeholders should understand that wet weather construction is risky and costly. Proper construction methods and techniques are critical to overall project integrity and should be observed and documented by Columbia West.

6.3 EXCAVATION

Excavation in the on-site soil should generally be possible with conventional earthwork equipment in the near-surface clay. However, the test pits were terminated between 7 and 12 feet BGS due to practical refusal on cobbles and boulders. Refer to Section 6.3.1 (Cobbles and Boulders) for additional discussion. Excavation in sand and gravel will be prone to raveling and caving. If difficult excavation is encountered, trenches may also be wider than anticipated, increasing the amount of backfill material required. The earthwork contractor should be prepared to use open-excavation techniques or approved temporary shoring when excavating onsite.

Open-cut excavation techniques may be used to excavate trenches, provided the walls of the excavation are cut at a slope of 1.5H:1V in the on-site soil and groundwater seepage is not present. If caving or seepage occurs, trench slopes may need to be flattened. In lieu of large and open cuts, approved temporary shoring may be used for excavation support. A wide variety of shoring and dewatering systems are available. Consequently, we recommend that the contractor be responsible for selecting the appropriate shoring systems

If box shoring is used, it should be understood that box shoring is a safety feature used to protect workers and does not prevent caving. If the excavations are left open for extended periods of time, caving of the sidewalls may occur. The presence of caved material will limit the ability to

properly backfill and compact the trenches. The contractor should be prepared to fill voids between the box shoring and the sidewalls of the trenches with sand or gravel before caving occurs.

The contractor should be held responsible for site safety, sloping, and shoring. All excavation activity should be conducted in accordance with applicable OSHA requirements. Columbia West is not responsible for contractor activities and in no case should excavation be conducted in excess of applicable local, state, and federal laws.

6.3.1 Cobbles and Boulders

Cobbles and boulders were encountered in the explorations at the site. Construction considerations associated with cobbles and boulders include the following:

- Excavations can become difficult, if not impossible, with conventional equipment.
- Excavation volumes for utility trenches may be greater than anticipated due to sloughing and the need to remove oversized material.
- We recommend that project bid documents include a contingency for boulder removal, as well as the associated increased trench volumes for backfilling.

6.4 CONSTRUCTION DEWATERING

The contractor should be responsible for temporary drainage of surface water, perched water, and groundwater. Dewatering should be performed to the extent necessary to prevent standing water and/or erosion of exposed site soil. During rough and finished grading of building pad areas, the contractor should keep all footing excavations and slab subgrade soil free of standing water.

The contractor's proposed dewatering plan should be capable of maintaining groundwater levels at least 2 feet below the base of proposed trench excavations. Without adequate trench dewatering, running soil, caving, and sloughing will increase backfill volumes and may result in damage to adjacent structures or utilities. Depending on excavation depths and the groundwater depth during construction, significant pumping and dewatering may be required to temporarily reduce the groundwater elevation. Dewatering via a sump within excavation zones may be insufficient to control groundwater and provide excavation side slope stability. Dewatering may be more feasibly conducted by installing a system of temporary well points and pumps around proposed excavation areas or utility trenches. Depending on proposed utility depths, a site-specific dewatering plan may be necessary.

If groundwater is present at the base of a utility excavation, we recommend placing 12 inches of stabilization material at the base of the excavation. Subgrade geotextile placed directly over trench subgrade soil may reduce the required thickness of stabilization material. The actual thickness of stabilization material should be determined at the time of construction based on observed field conditions. Trench stabilization material should be placed in one lift and compacted until well keyed. Stabilization material and geotextile fabric should meet the requirements in Section 6.5 (Materials).

6.5 MATERIALS

6.5.1 Structural Fill

6.5.1.1 General

Areas proposed for fill placement should be appropriately prepared as described in Section 6.1 (Site Preparation). Engineered fill placement should be observed by Columbia West. Compaction of engineered structural fill should be verified by proof rolling or nuclear gauge field compaction testing performed in accordance with ASTM D6938. Field compaction testing should be performed for each vertical foot of engineered fill placed.

Various materials may be acceptable for use as structural fill. Structural fill should be free of organic material or other unsuitable material and meet the specifications provided in the following sections. Representative samples of proposed engineered structural fill should be submitted for laboratory testing and approval by Columbia West prior to placement. All structural fill should be free of organic material and have a particle size of less than 6 inches.

6.5.1.2 On-Site Soil

The on-site soil is suitable for use as structural fill, provided it is properly moisture conditioned and any debris, organic material, oversize material, or other deleterious material is removed. Considerable soil processing, including moisture conditioning and the removal of deleterious and organic material, will be required to use on-site material as structural fill. Based on laboratory testing, we anticipate that the moisture content of the on-site soil will generally be above the optimum moisture content required to meet compaction requirements and drying of the soil will be necessary. Accordingly, extended dry weather will be required to adequately condition and place the soil as structural fill. It will be difficult, if not impossible, to adequately compact on-site soil during the rainy season or during prolonged periods of rainfall.

On-site soil used as structural fill should be placed in loose lifts not exceeding 8 inches thick and compacted using standard conventional compaction equipment. The soil moisture content should be within a few percentage points of optimum conditions. Particles exceeding 8 inches in diameter should be removed prior to placement as structural fill. Particles exceeding 4 inches in diameter should be removed from fill placed for the upper 12 inches of finish subgrade. The soil should be compacted to at least 95 percent of maximum dry density as determined by ASTM D1557.

The on-site soil will likely expand during excavation and transport and consolidate during compaction. Development of site-specific expansion and consolidation factors is beyond the scope of this study. We can provide site-specific factors upon request.

6.5.1.3 Imported Granular Material

Imported granular material should consist of pit- or quarry-run rock, crushed rock, or crushed gravel and sand. Imported granular material should be placed in loose lifts not exceeding 12 inches in thickness and compacted to at least 95 percent of maximum dry density as determined by ASTM D1557. During wet weather conditions or where wet subgrade conditions are present, the initial loose lift of granular fill should be approximately 18 inches thick and should be compacted with a smooth-drum roller operating in static mode.

6.5.1.4 Stabilization Material

Stabilization material should consist of durable, 4- or 6-inch-minus pit- or quarry-run rock, crushed rock, or crushed gravel and sand that is free of organic material and other deleterious material. The material should have a maximum particle size of 6 inches with less than 5 percent fines by dry weight. The material should have at least two mechanically fractured faces.

Stabilization material should be placed in loose lifts between 12 and 24 inches thick and compacted to a firm, unyielding condition. Equipment with vibratory action should not be used when compacting stabilization material over wet, fine-grained soil. If stabilization material is used to stabilize soft subgrade below pavement or construction haul roads, a subgrade geotextile should be placed as a separation barrier between the soil subgrade and the stabilization material.

6.5.1.5 Trench Backfill

Trench backfill placed beneath, adjacent to, and for at least 12 inches above utility lines (i.e., the pipe zone) should consist of durable, well-graded granular material with a maximum particle size of 1½ inches, should have less than 7 percent fines by dry weight, and should have at least two mechanically fractured faces. The pipe zone backfill should be compacted to at least 90 percent of maximum dry density as determined by ASTM D1557 or as required by the pipe manufacturer or local building department.

Within roadway alignments, the remainder of the trench backfill up to the subgrade elevation should consist of durable, well-graded granular material with a maximum particle size of 2½ inches, should have less than 7 percent fines by dry weight, and should have at least two mechanically fractured faces. This material should be compacted to at least 92 percent of maximum dry density as determined by ASTM D1557 or as required by the pipe manufacturer or local building department. The upper 3 feet of the trench backfill should be compacted to at least 95 percent of maximum dry density as determined by ASTM D1557.

Outside of structural areas, trench backfill placed above the pipe zone should be compacted to at least 90 percent of maximum dry density as determined by ASTM D1557 or as required by the local jurisdictional agency or pipe manufacturer.

6.5.1.6 Retaining Wall Backfill

Backfill material placed behind retaining walls and extending a horizontal distance of ½H, where H is the height of the retaining wall, should consist of imported granular material as described above and should have less than 7 percent fines by dry weight. We recommend the wall backfill be separated from general fill, native soil, and/or topsoil using a geotextile fabric that meets the specifications provided below for drainage geotextile.

The wall backfill should be compacted to a minimum of 95 percent of maximum dry density as determined by ASTM D1557. However, backfill located within a horizontal distance of 3 feet from a retaining wall should only be compacted to approximately 90 percent of maximum dry density as determined by ASTM D1557. Backfill placed within 3 feet of the wall should be compacted in lifts less than 6 inches thick using hand-operated tamping equipment (such as a jumping jack or

vibratory plate compactor). If flatwork (sidewalks or pavement) will be placed atop the wall backfill, we recommend that the upper 2 feet of material be compacted to 95 percent of maximum dry density as determined by ASTM D1557.

6.5.1.7 Retaining Wall Leveling Pad

Crushed aggregate used as a leveling pad for retaining wall footings should consist of ¾- or 1¼-inch-minus crushed rock and should have less than 7 percent fines by dry weight. The leveling pad material should be compacted to at least 95 percent of maximum dry density as determined by ASTM D1557.

6.5.1.8 Floor Slab Aggregate Base

Imported granular material used as base rock for building floor slabs should consist of ¾- or 1½-inch-minus material (depending on the application). In addition, the aggregate should have less than 5 percent fines by dry weight and at least two mechanically fractured faces. The aggregate base should be compacted to not less than 95 percent of maximum dry density as determined by ASTM D1557.

6.5.1.9 Drain Rock

Drain rock should consist of angular, granular material with a maximum particle size of 2 inches. The material should be free of roots, organic material, and other unsuitable material; should have less than 2 percent fines by dry weight; and should have at least two mechanically fractured faces. Drain rock should be compacted to a well-keyed, firm condition.

6.5.2 Geotextile Fabric

6.5.2.1 Subgrade Geotextile

Subgrade geotextile should conform to OSSC Table 02320-4 and OSSC 00350 (Geosynthetic Installation). A minimum initial aggregate base lift of 6 inches is required over geotextiles. All drainage aggregate and stabilization material should be underlain by a subgrade geotextile.

6.5.2.2 Drainage Geotextile

Drainage geotextile should conform to Type 2 material of OSSC Table 02320-1 and OSSC 00350 (Geosynthetic Installation). A minimum initial aggregate base lift of 6 inches is required over geotextiles.

6.5.3 Soil Amendment with Cement

The on-site soil can be amended with portland cement to obtain suitable properties for use as wet weather structural fill or pavement subbase. Processing may be required to remove oversize material from the soil for cement amendment. The effectiveness of soil amendment is highly dependent on proper mixing techniques, soil moisture conditioning, and the quantity of cement. The quantity of cement applied during amendment should be based on an assumed dry unit weight of 100 pcf for site soil.

6.5.3.1 Subbase Stabilization

Specific recommendations for soil amendment should be based on exposed site conditions at the time of construction. For preliminary design purposes, we recommend cement-amended subgrade for building pads and pavement subbase (below the aggregate base layer) achieve a

target strength of 100 psi. The quantity of cement required to achieve the target strength will vary with moisture content and soil type. Laboratory testing of cement-amended soil should be used to confirm design expectations.

Based on our experience, the near-surface fine-grained soil will require approximately 5 to 6 percent cement by weight to achieve the target strength of 100 psi. This cement percentage assumes that the soil moisture content does not exceed 25 percent at the time of amendment. If the soil moisture content is in the range of 25 to 35 percent, 7 to 8 percent cement by weight may be required to achieve the target strength. The amount of cement added to the soil at the time of construction should be based on observed field conditions and subgrade performance. During extended periods of dry weather, water may need to be applied during the amendment and tilling process to achieve the optimum moisture content required for compaction.

Cement amendment equipment should have balloon tires to minimize softening, rutting, and disturbance of fine-grained site soil. A sheepsfoot or segmented pad roller with a minimum static weight of 40,000 pounds should be used for initial compaction. Rollers with vibratory action should not be used to compact fine-grained, cement-amended soil. Final compaction should be conducted with a smooth-drum roller with a minimum applied linear force of 700 pounds per inch. The amended soil should be compacted to at least 95 percent of maximum dry density as determined by ASTM D558.

Following cement amendment, a minimum curing time of four days is required prior to exposure to construction traffic. Construction traffic should not be allowed on unprotected, cement-amended subgrade. To protect cement-amended areas from damage, the finished surface should be covered with 4 to 6 inches of imported granular material. The protective layer of crushed rock often becomes contaminated with soil during construction, particularly in staging and haul road areas. Contaminated aggregate, where present, should be removed and replaced with clean crushed aggregate prior to construction of pavement or other permanent site improvements supported by aggregate base.

Cement amendment should not be attempted during moderate to heavy precipitation or when the ambient air temperature is below 40 degrees Fahrenheit. Cement should not be placed in areas of standing water or where saturated subgrade conditions exist.

6.5.3.2 Cement-Amended Structural Fill

If adequate compaction is not achievable with on-site fine-grained soil due to moisture or weather conditions, the soil may be cement amended and placed as general structural fill. Prior to placement of cement-amended fill, subgrade soil should be prepared as described in Section 6.1 (Site Preparation). Where multiple lifts of cement-amended fill are necessary to meet finished grade, consecutive lifts may be placed immediately following amendment and compaction of the underlying lift. However, where the final lift of cement-amended fill will serve as building pad or pavement subbase material, the four-day cure period as discussed above is recommended.

6.5.3.3 QA/QC Testing and Inspection

Cement amendment of the site soil should be observed and tested by Columbia West to document conformance with design recommendations. Cement spread rate should be verified by

measuring the spread area relative to the weight of cement used or with a pan sample test conducted at one random location per lift per 20,000 square feet of cement-amended fill. Amendment depth should be verified through excavation of a small test pit and measurement at one random location per lift of cement-amended fill. Adequate compaction and moisture content should be verified by conducting nuclear gauge density testing at a frequency of approximately one test per 5,000 square feet of cement-amended fill in accordance with ASTM D6938. At least one representative sample should be collected per day of cement amendment, cured for seven days, and tested for unconfined compressive strength in accordance with ASTM D1633. The tested samples should have a minimum seven-day unconfined compressive strength of 100 psi.

6.5.3.4 Drainage Considerations

Cement-amended soil will be drain poorly and will not be suitable for planting areas. The material may also be difficult to excavate with light-duty landscaping equipment. Proposed landscape areas should not be cement amended, unless accommodations are made for drainage and planting.

Cement amendment within building pad areas should consider the potential for trapped water below the floor slab. Columbia West should be consulted to provide appropriate recommendations if cement amendment is proposed within building pad areas.

6.6 EROSION CONTROL

Soil at this site is susceptible to erosion by wind and water; therefore, erosion control measures should be carefully planned and installed before construction begins. Surface water runoff should be collected and directed away from sloped areas to prevent water from running down the slope face. Measures that can be employed to reduce erosion include the use of silt fences, hay bales, buffer zones of natural growth, sedimentation ponds, and granular haul roads. All erosion control methods should be in accordance with local jurisdiction standards.

7.0 OBSERVATION OF CONSTRUCTION

Satisfactory pavement, earthwork, and foundation performance depends to a large degree on the quality of construction. Sufficient observation of the contractor's activities is a key part of determining that the work is completed in accordance with the construction drawings and specifications. Columbia West should be retained to observe subgrade preparation, fill placement, foundation excavations, drainage system installation, and pavement placement and to review laboratory compaction and field moisture-density information.

Subsurface conditions observed during construction should be compared with those encountered during the subsurface explorations. Recognition of changed conditions requires experience; therefore, qualified personnel should visit the site with sufficient frequency to detect whether subsurface conditions change significantly from those anticipated.

8.0 LIMITATIONS

We have prepared this report for use by the addressee and members of the design and construction team for the proposed project. This report is subject to the limitations expressed in Appendix D.

We appreciate the opportunity to be of service to you. Please call if you have questions concerning this report or if we can provide additional services.

Sincerely,



Jason F. Merritt, PE
Senior Project Engineer



Brett A. Shipton, PE, GE
Principal Engineer

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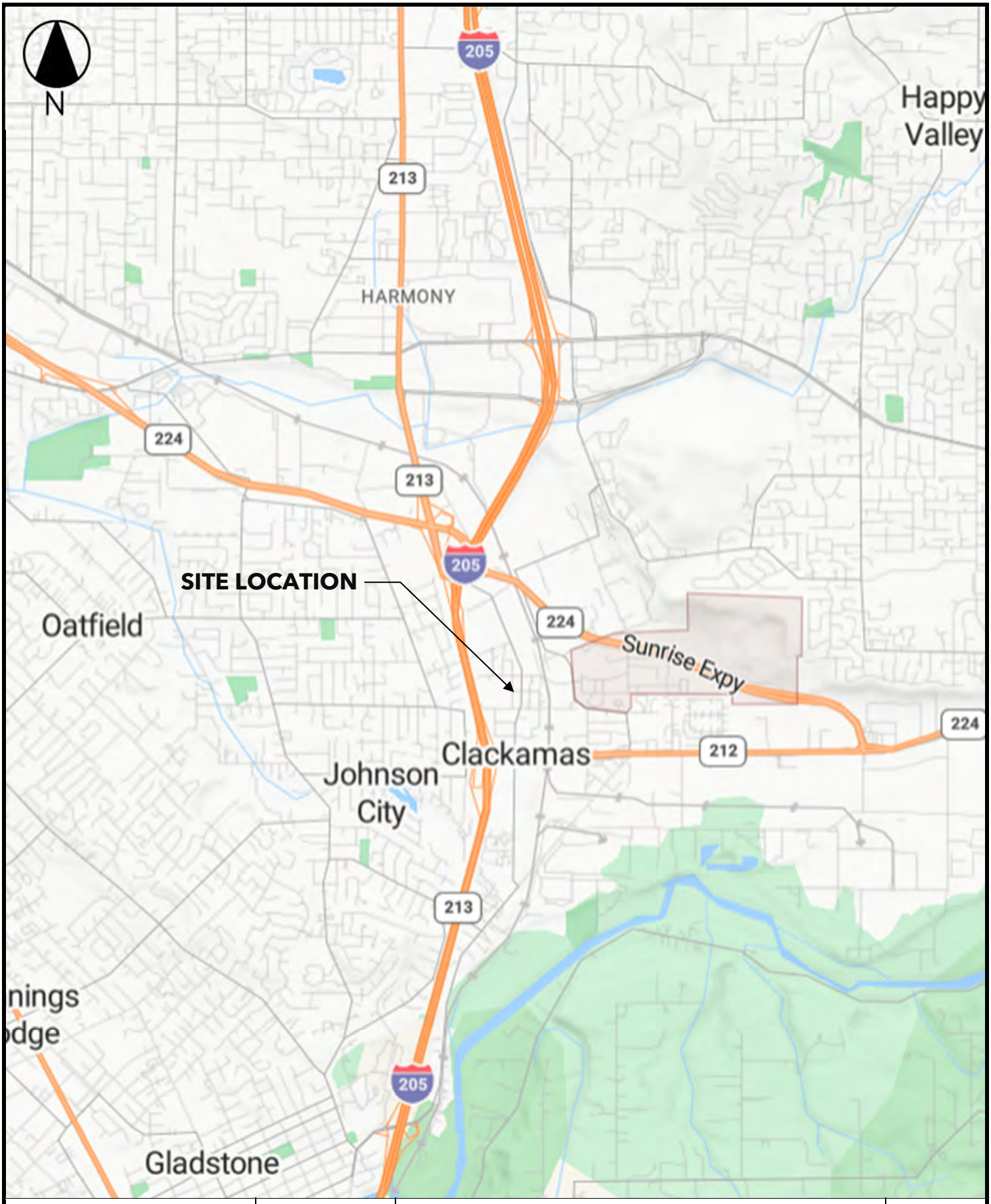
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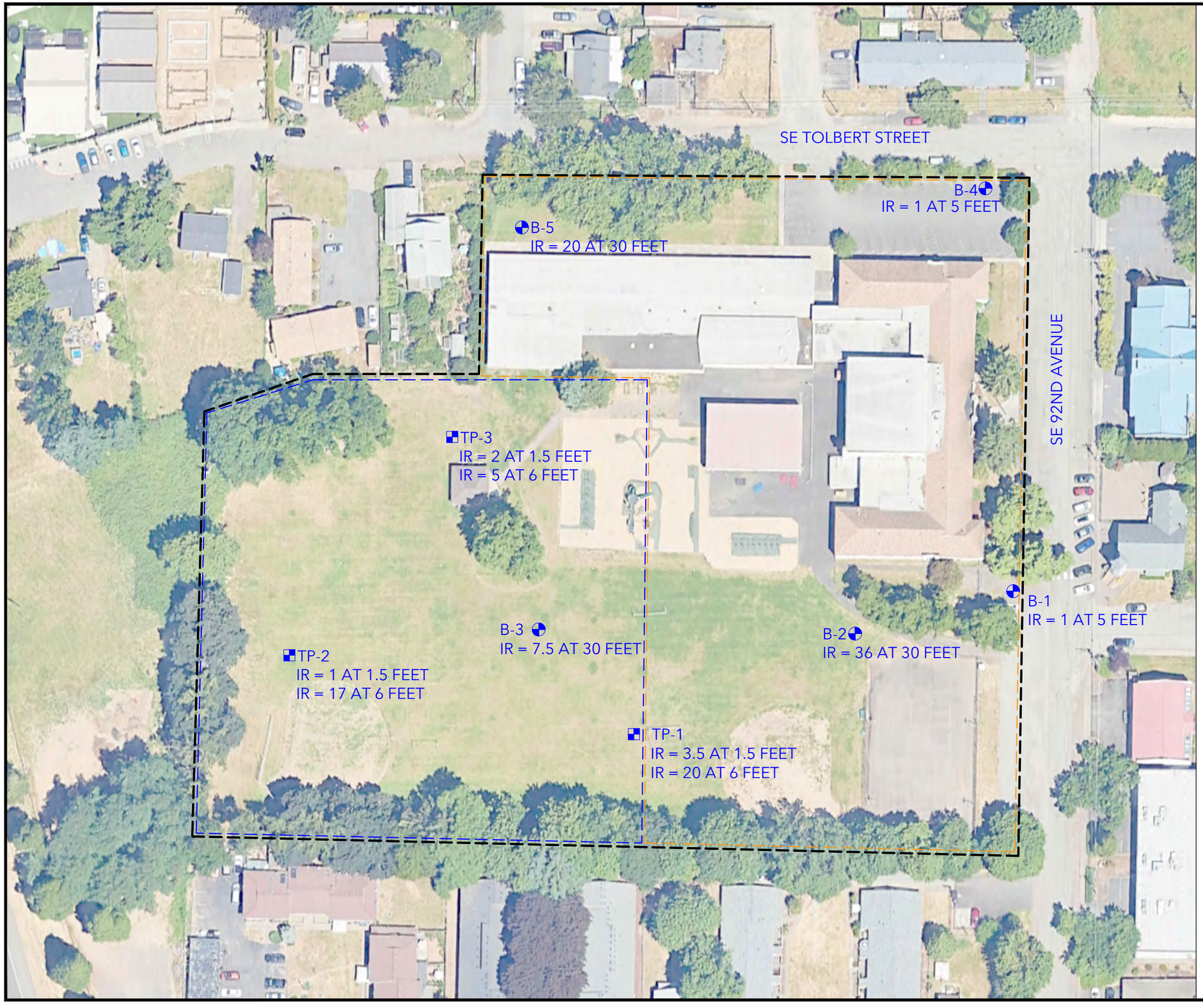
USGS 2025. Quaternary Fault and Fold Database for the United States. https://www.usgs.gov/natural-hazards/earthquake-hazards/faults. Accessed July 2025.

Weaver, C.S., and K.M. Shedlock 1991. Program for earthquake hazards assessment in the Pacific Northwest: U.S. Geological Survey Circular 1067, 29 pgs.

FIGURES



Geotechnical ▪ Environmental ▪ Special Inspections Columbia West Engineering, Inc	PROJECT NO.: EDLENCO-7-01-1 AUGUST 2025	VICINITY MAP CLACKAMAS COUNTY RECOVERY CAMPUS CLACKAMAS, OREGON	FIGURE 1



LEGEND

- SITE BOUNDARY
- PHASE 1
- PHASE 2
- BORING
- TEST PIT
- IR — UNFACTORED INFILTRATION RATE (IN/HR)

N

0 20 40 60 80 100 200

NOTES:
1. AERIAL PHOTO SOURCED FROM GOOGLE EARTH.
2. EXPLORATION LOCATIONS ARE APPROXIMATE AND NOT SURVEYED.
3. REFER TO REPORT TEXT FOR EXPLORATION DESCRIPTIONS.

Geotechnical ■ Environmental ■ Special Inspections
Columbia West Engineering, Inc

CLACKAMAS COUNTY
RECOVERY CENTER
CLACKAMAS, OREGON
15301 SE 92ND AVENUE

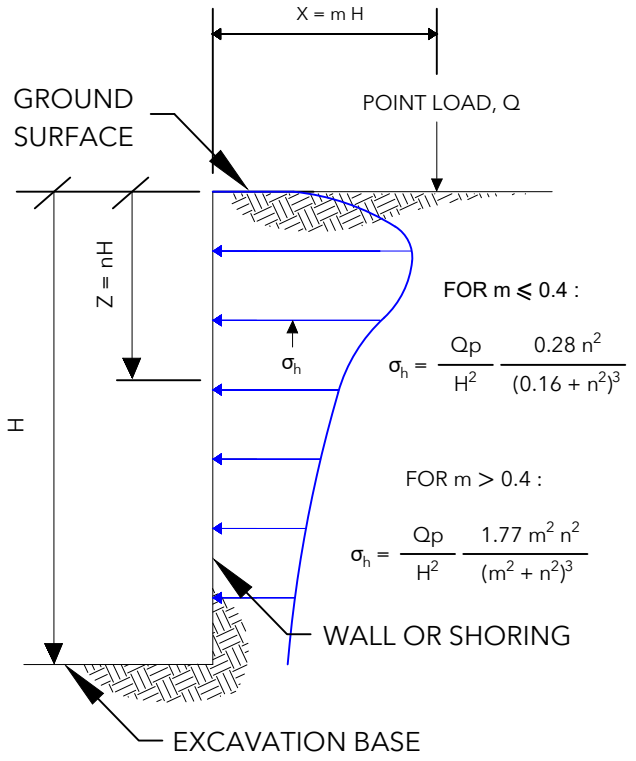
SITE PLAN

PROJECT NO.:
EDLENCO-7-01-1

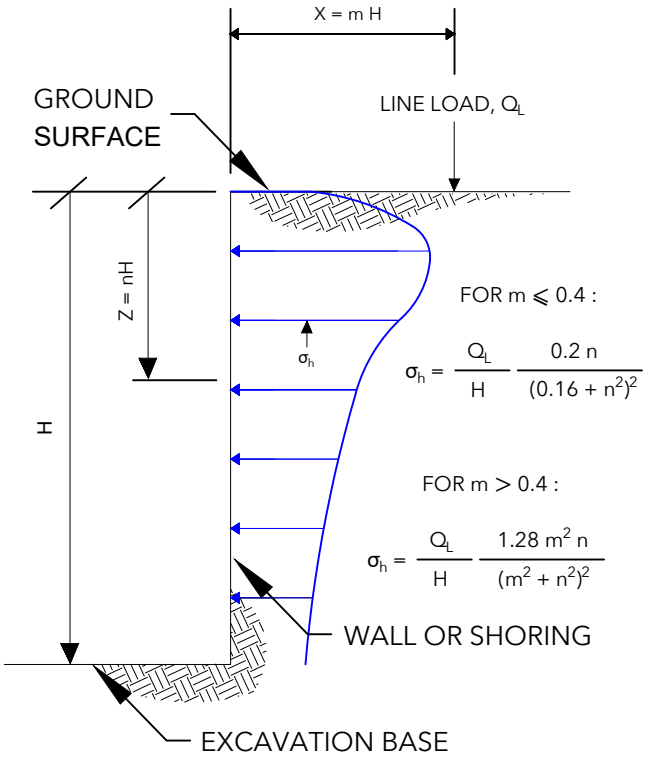
AUGUST 2025

FIGURE
2

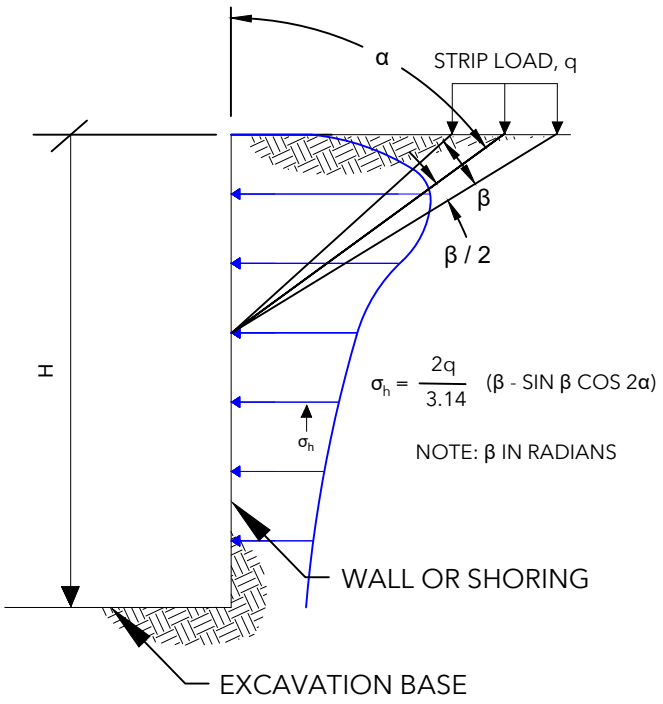
VERTICAL POINT LOAD



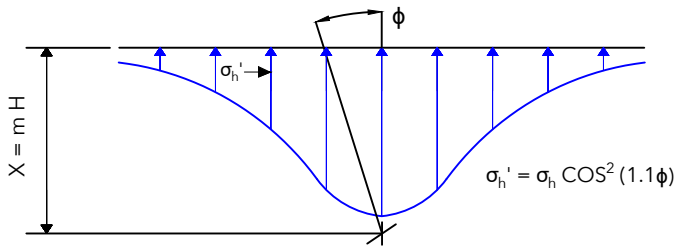
LINE LOAD PARALLEL TO WALL



STRIP LOAD PARALLEL TO WALL



VERTICAL POINT LOAD
HORIZONTAL PRESSURE DISTRIBUTION



NOTES:
1. FIGURE SHOULD BE USED JOINTLY WITH RECOMMENDATIONS PRESENTED IN THE REPORT TEXT.
2. LATERAL EARTH PRESSURES ASSUME RIGID WALLS WITH BACKFILL MATERIALS HAVING A POISSON'S RATIO OF 0.5.
3. TOTAL LATERAL EARTH PRESSURES RESULTING FROM COMBINED LOADS MAY BE CALCULATED USING SUPERPOSITION.
4. DRAWING IS NOT TO SCALE.

APPENDIX A

APPENDIX A
PRELIMINARY DEVELOPMENT PLANS

Preliminary development plans prepared by Holst Architecture are presented in this appendix.

HOLST

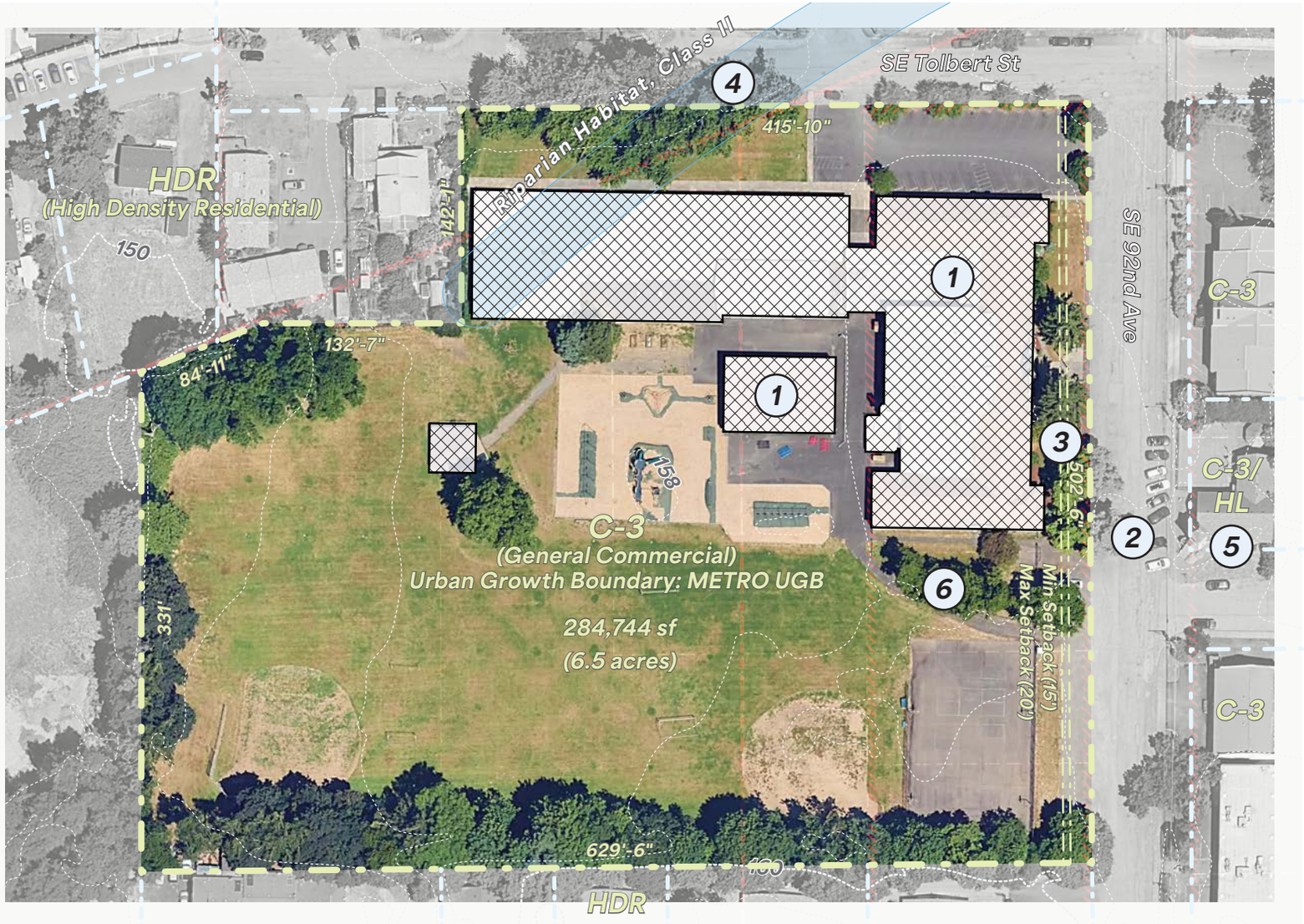
Clackamas County Recovery Campus

County Updates

23 April 2025

Project Site
With Zoning Overlay

1. Existing school building (to be demolished)
2. Primary street address
3. Building setbacks per C-3 zoning
4. St. Kevork Church, designated historic landmark
5. Tree assessment will be conducted



Project Site

Site Development Concept

1 Future Development
3 acres

2 Open Park Space
1 acre

3 Future ROW/Drive

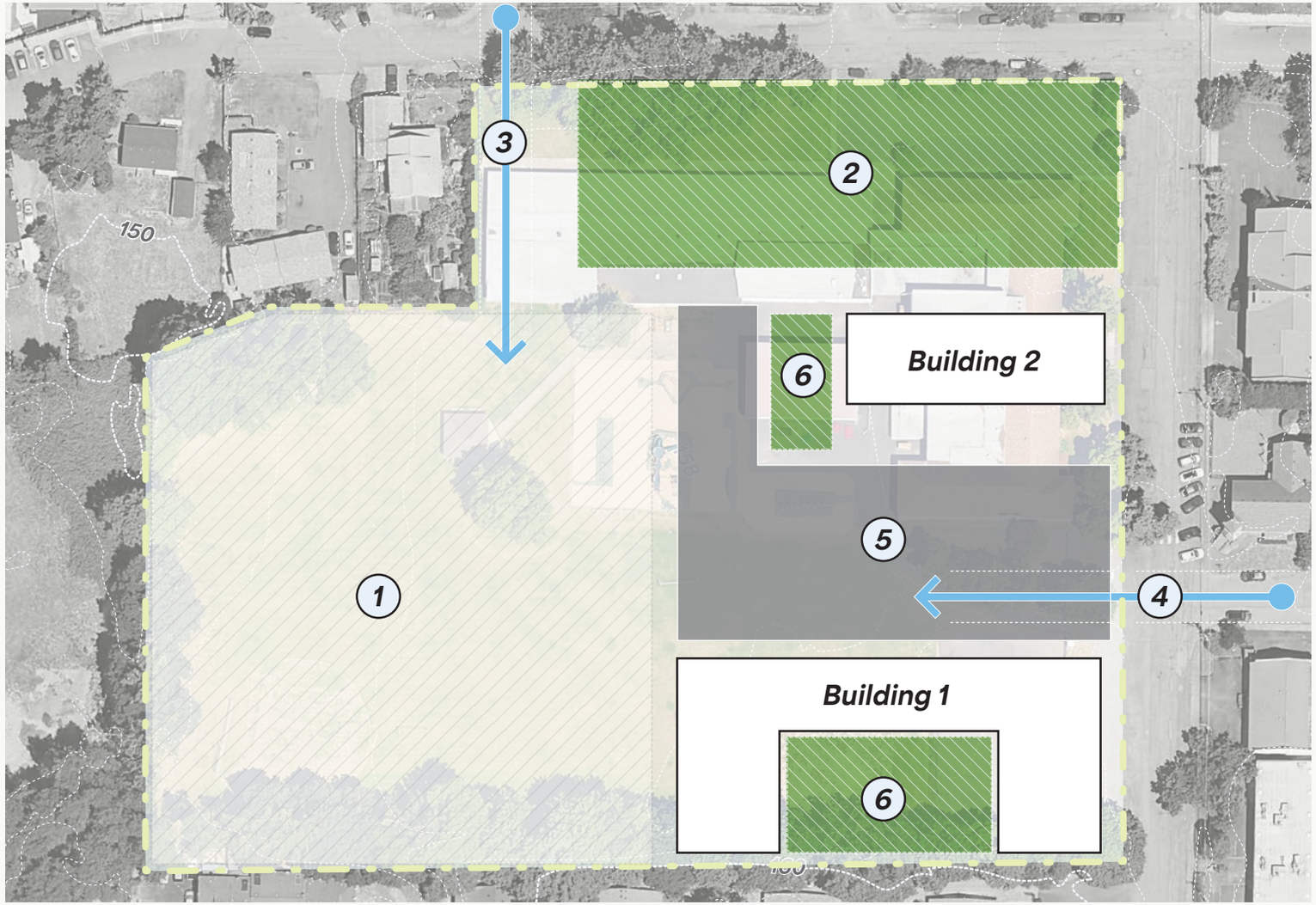
4 Primary Site Access Point

5 Parking lot, shared
~120 stalls

6 Private open space

Building 1:
Withdrawal Mgmt &
Residential Treatment

Building 2:
Transitional Housing &
Outpatient Services



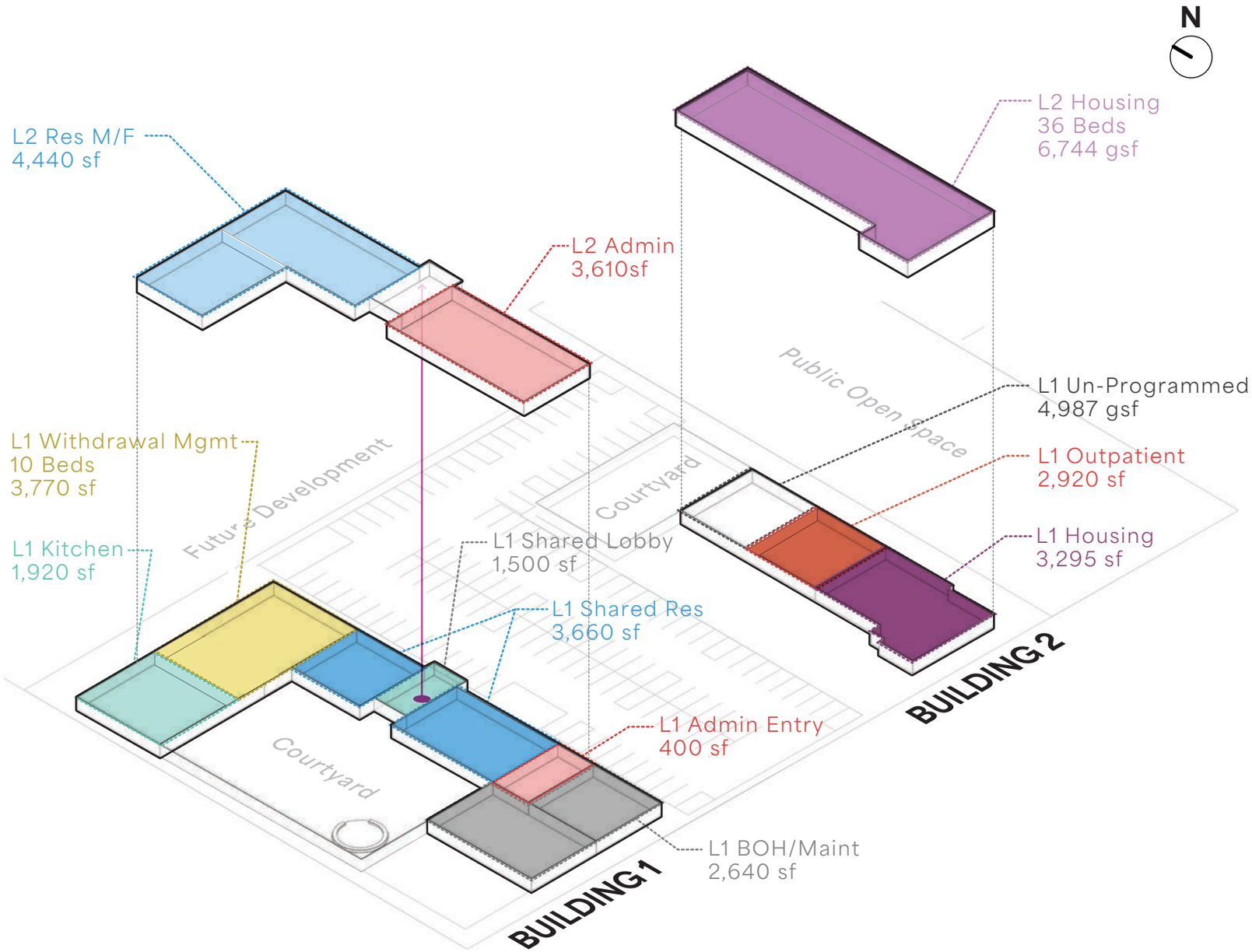
Program Review
Overall

Overall Program (per NOFO)

- Building 1: 26,000 sf
- Building 2: 19,500 sf

Notes

- Building 1 and 2 designed concurrently
- Building 1: 10 Withdrawal Mgmt Beds, 24 Residential Treatment Beds
- Building 2: 36 Transitional Housing Beds, Outpatient clinic (capacity 250 patients)
- Minimum Parking Stalls required: 85 (Zoning definitions will be addressed at pre-applicaiton meeting)
- Private dedicated exterior courtyard spaces



HOLST

Thank you!

APPENDIX B

APPENDIX B
FIELD EXPLORATIONS

GENERAL

Subsurface conditions at the site were explored by drilling five borings (B-1 through B-5) to depths between 6.5 and 31.5 feet BGS and excavating three test pits (TP-1 through TP-3) to depths between 7 and 12 feet BGS. Drilling services were provided by Western States Soil Conservation, Inc. (WSSC) of Hubbard, Oregon, on July 17 and 18, 2025, using a truck-mounted drill rig and hollow-stem auger drilling methods. Excavation services were provided by WSSC on July 16, 2025, using a backhoe. The explorations were conducted under the supervision of Columbia West personnel. The exploration logs are presented in this appendix.

The exploration locations are shown on Figure 2. The exploration locations were determined in the field by pacing or measuring from existing site features. This information should be considered accurate only to the degree implied by the methods used.

SOIL SAMPLING

Soil samples were collected from the borings using split-barrel SPT samplers in general accordance with ASTM D1586. The samplers were driven a total distance of 18 inches with a 140-pound, automatic-trip hammer free falling 30 inches. The number of blows required to drive the samplers the final 12 inches, or as otherwise indicated, into the soil is shown adjacent to the sample symbols on the boring logs. Disturbed samples were collected from the samplers for subsequent classification and index testing. The average efficiency of the automatic SPT hammer used by WSSC was 76.4 percent. The calibration testing results are presented at the end of this appendix. Sampling methods and intervals are shown on the exploration logs.

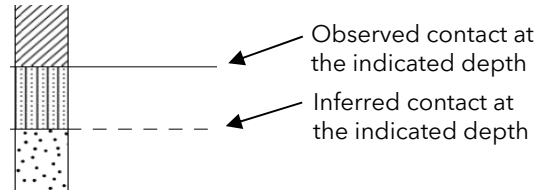
Representative disturbed samples of soil observed in the test pit explorations were collected from the test pit walls and bases using the excavator bucket. Sampling methods and intervals are shown on the exploration logs.

SOIL CLASSIFICATION

The soil samples were classified in the field in accordance with the "Exploration Legend" and "Soil Classification System," which are presented in this appendix. The exploration logs indicate the depths at which the soil characteristics change, although the change could be gradual. If the change occurred between sample locations, the depth was interpreted. Classifications are shown on the exploration logs.

EXPLORATION LEGEND

SAMPLER TYPE	DESCRIPTION
SPT	Sample collected from the indicated depth in general accordance with ASTM D1586, *Standard Test Method Standard Penetration Test (SPT) and Split-Barrel Sampling of Soils,* using an SPT sampler and 140-pound hammer
SH	Sample collected from the indicated depth in general accordance with ASTM D1587, *Standard Practice for Thin-Walled Tube Sampling of Fine-Grained Soils for Geotechnical Purposes,* using a thin-walled Shelby tube, or in general accordance with ASTM D6519, *Standard Practice for Sampling of Soil Using the Hydraulically Operated Stationary Piston Sampler,* using a thin-walled tube
D&M	Sample collected from the indicated depth in general accordance with ASTM D3550, *Standard Practice for Thick Wall, Ring-Lined, Split Barrel, Drive Sampling of Soils,* using a Dames & Moore sampler and 140-pound hammer or pushed
CSS	Sample collected from the indicated depth in general accordance with ASTM D3550, *Standard Practice for Thick Wall, Ring-Lined, Split Barrel, Drive Sampling of Soils,* using a 3-inch-outside diameter California split-spoon sampler and 140-pound hammer
DP	Sample collected from the indicated depth in general accordance with ASTM D6282, *Standard Guide for Direct Push Soil Sampling for Environmental Site Characterizations,* using a direct-push soil sampler
GRAB	Grab sample collected from the indicated depth
CORE	Pavement or rock core interval at the indicated depth



GEOTECHNICAL ABBREVIATIONS			
ATT	Atterberg limits	PP	Pocket penetrometer
CBR	California bearing ratio	P200	Percent passing No. 200 sieve
CON	Consolidation test	RES	Resilient modulus
DD	Dry density	SIEV	Sieve analysis
DS	Direct shear	TS	Torvane shear
HYD	Hydrometer	tsf	Tons per square foot
MC	Moisture content	UC	Unconfined compressive strength
MD	Moisture-density relationship	UU	Unconsolidated undrained triaxial test
NP	Non-plastic	VS	Vane shear
OC	Organic content	WD	Wet density

ENVIRONMENTAL ABBREVIATIONS			
CA	Sample submitted for chemical analysis	ND	Not detected
		NS	No sheen
PID	Photoionization detector headspace analysis	SS	Slight sheen
		MS	Moderate sheen
ppm	Parts per million	HS	Heavy sheen

SOIL CLASSIFICATION SYSTEM

PARTICLE-SIZE CLASSIFICATION

COMPONENT	ASTM / USCS		AASHTO	
	Size Range	Sieve Size Range	Size Range	Sieve Size Range
Boulders	Greater than 300 mm	Greater than 12 inches	--	--
Cobbles	75 mm to 300 mm	3 inches to 12 inches	Greater than 75 mm	Greater than 3 inches
Gravel	75 mm to 4.75 mm	3 inches to No. 4 sieve	75 mm to 2.00 mm	3 inches to No. 10 sieve
Coarse	75 mm to 19.0 mm	3 inches to 3/4-inch sieve	--	--
Fine	19.0 mm to 4.75 mm	3/4-inch to No. 4 sieve	--	--
Sand	4.75 mm to 0.075 mm	No. 4 to No. 200 sieve	2.00 mm to 0.075 mm	No. 10 to No. 200 sieve
Coarse	4.75 mm to 2.00 mm	No. 4 to No. 10 sieve	2.00 mm to 0.425 mm	No. 10 to No. 40 sieve
Medium	2.00 mm to 0.425 mm	No. 10 to No. 40 sieve	--	--
Fine	0.425 mm to 0.075 mm	No. 40 to No. 200 sieve	0.425 mm to 0.075 mm	No. 40 to No. 200 sieve
Fines (Silt and Clay)	Less than 0.075 mm	Passing No. 200 sieve	Less than 0.075 mm	Passing No. 200 sieve

CONSISTENCY FOR FINE-GRAINED SOIL

CONSISTENCY	SPT N-VALUE (blows per foot)	D&M N-VALUE (blows per foot)	POCKET PENETROMETER (unconfined compressive strength [tsf])
Very soft	0 to 2	0 to 3	Less than 0.25
Soft	2 to 4	3 to 6	0.25 to 0.5
Medium stiff	4 to 8	6 to 12	0.5 to 1.0
Stiff	8 to 15	12 to 25	1.0 to 2.0
Very stiff	15 to 30	25 to 65	2.0 to 4.0
Hard	Greater than 30	Greater than 30	Greater than 4.0

RELATIVE DENSITY FOR COARSE-GRAINED SOIL

RELATIVE DENSITY	SPT N-VALUE (blows per foot)	D&M N-VALUE (blows per foot)
Very loose	0 to 4	0 to 11
Loose	4 to 10	11 to 26
Medium dense	10 to 30	26 to 74
Dense	30 to 50	74 to 120
Very dense	Greater than 50	Greater than 120

MOISTURE DESIGNATIONS

TERM	FIELD IDENTIFICATION
Dry	Very low moisture, dry to touch
Moist	Damp, color appears darkened, without visible moisture, cohesive soil will clump, sand will bulk
Wet	Visible free water, usually saturated

ADDITIONAL CONSTITUENTS

PERCENT	SILT AND CLAY IN		PERCENT	SAND AND GRAVEL IN		PERCENT	SECONDARY MATERIAL
	Fine-Grained Soil	Coarse-Grained Soil		Fine-Grained Soil	Coarse-Grained Soil		Organics and Man-Made Debris
< 5	trace	trace	< 5	trace	trace	< 4	trace
5 – 12	minor	with	5 – 15	minor	minor	4 – 12	some
> 12	some	silty/clayey	15 – 30	with	with		
			> 30	sandy/gravelly	with		

Geotechnical ■ Environmental ■ Special Inspections
Columbia West Engineering, Inc

Boring Number: B-1

PROJECT NAME Clackamas County Recovery Campus
CLIENT Fora Health
PROJECT NUMBER EdlenCo-7-01-1
PROJECT CITY, STATE Clackamas, Oregon
DRILLING CONTRACTOR Western States Soil Conservation, Inc.
DATE STARTED 07/17/2025
DRILLING METHOD Hollow-Stem Auger
TIME STARTED 8:43 AM
EQUIPMENT CME-75, Rig 4
DATE COMPLETED 07/17/2025
BORING DIAMETER 6 inches
TIME COMPLETED 1:00 PM
HAMMER EFFICIENCY 76.4%
LOGGED BY C. Brickert

DEPTH (ft)	USCS	GRAPHIC LOG	MATERIAL DESCRIPTION AND NOTES	SAMPLE TYPE	RECOVERY (in)	SAMPLE ID	BLOW COUNTS	MOISTURE CONTENT (%)
			Crushed Rock (10 inches) - **FILL**. 0.8					
	CL		Stiff, brown sandy CLAY, moist, low to medium plasticity.	SPT	10	B1.1	6-7-6 (13)	
5			Very stiff at 5 feet. Infiltration test at 5 feet. 6.5	SPT	16	B1.2	4-7-10 (17)	

Exploration completed at 6.5 feet.

□ Percent Fines ▲ Raw N-Value Blows
+ Plastic Limit × Liquid Limit ● Moisture Content
20 40 60 80
▲ ▲ □64

Water Levels

▽ Not observed

▼ -

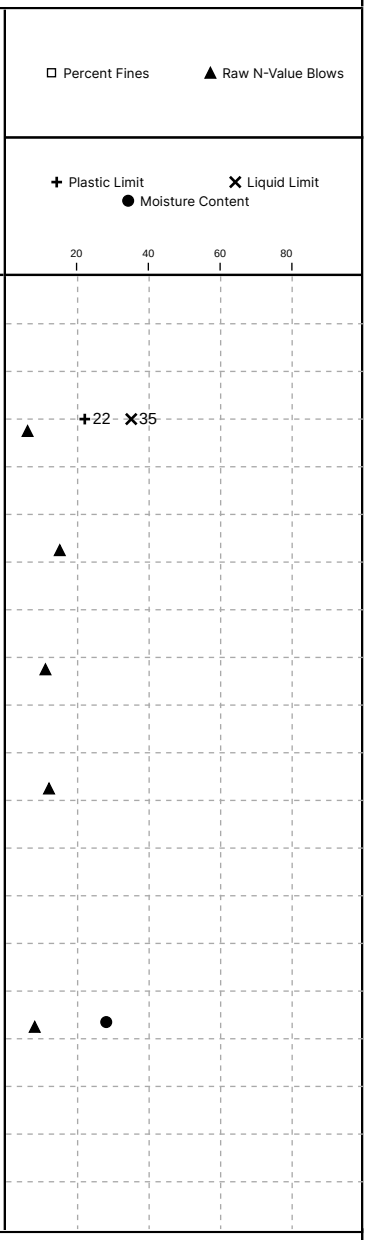
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Geotechnical ■ Environmental ■ Special Inspections
Columbia West Engineering, Inc

Boring Number: B-2

PROJECT NAME Clackamas County Recovery Campus
CLIENT Fora Health
PROJECT NUMBER EdlenCo-7-01-1
PROJECT CITY, STATE Clackamas, Oregon
DRILLING CONTRACTOR Western States Soil Conservation, Inc.
DATE STARTED 07/17/2025
DRILLING METHOD Hollow-Stem Auger
TIME STARTED 9:19 AM
EQUIPMENT CME-75, Rig 4
DATE COMPLETED 07/17/2025
BORING DIAMETER 6 inches
TIME COMPLETED 2:15 PM
HAMMER EFFICIENCY 76.4%
LOGGED BY C. Brickert

DEPTH (ft)	USCS	MATERIAL DESCRIPTION AND NOTES	SAMPLE TYPE	RECOVERY (in)	SAMPLE ID	BLOW COUNTS	MOISTURE CONTENT (%)
		Medium stiff, brown sandy SILT, moist, medium plasticity (6 inches of topsoil, 3- to 4-inch-thick root zone). 0.5					
	CL	Medium stiff, brown sandy CLAY, moist, low to medium plasticity.	SPT	12	B2.1	3-2-4 (6)	
5		Stiff to very stiff at 5 feet. 6.5	SPT	14	B2.2	4-4-11 (15)	
	SM	Medium dense, brown silty SAND with gravel and cobbles, moist, sand is coarse.	SPT	14	B2.3	7-6-5 (11)	
10		Sand is fine to coarse at 10 feet.	SPT	14	B2.4	4-6-6 (12)	
15		Loose, sand is fine at 15 feet.	SPT	15	B2.5	4-5-3 (8)	28



Water Levels

▽ Not observed

▼ -

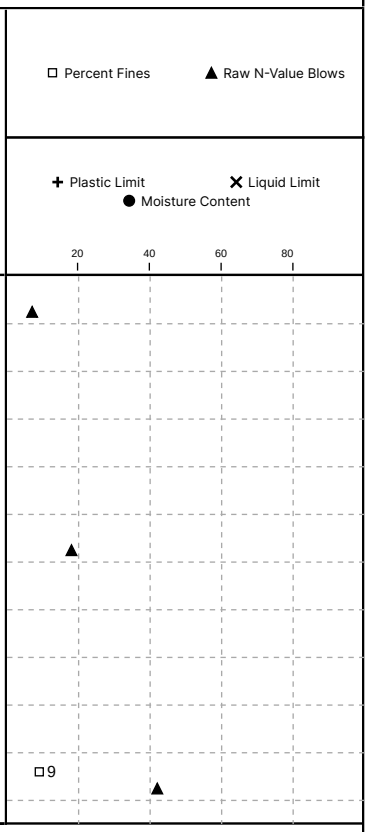
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Geotechnical ■ Environmental ■ Special Inspections
Columbia West Engineering, Inc

Boring Number: B-2

PROJECT NAME Clackamas County Recovery Campus
CLIENT Fora Health
PROJECT NUMBER EdlenCo-7-01-1
PROJECT CITY, STATE Clackamas, Oregon
DRILLING CONTRACTOR Western States Soil Conservation, Inc.
DATE STARTED 07/17/2025
DRILLING METHOD Hollow-Stem Auger
TIME STARTED 9:19 AM
EQUIPMENT CME-75, Rig 4
DATE COMPLETED 07/17/2025
BORING DIAMETER 6 inches
TIME COMPLETED 2:15 PM
HAMMER EFFICIENCY 76.4%
LOGGED BY C. Brickert

DEPTH (ft)	USCS	GRAPHIC LOG	MATERIAL DESCRIPTION AND NOTES	SAMPLE TYPE	RECOVERY (in)	SAMPLE ID	BLOW COUNTS	MOISTURE CONTENT (%)
			(continued from previous page)	SPT	16	B2.6	4-4-3 (7)	
			Rig chatter at 23.5 feet.					
25	SM		Medium dense, gray at 25 feet.	SPT	6	B2.7	8-8-10 (18)	
			28.5					
30	GP-GM		Dense, gray-orange GRAVEL with silt, sand, and cobbles, moist. Infiltration test at 30 feet.	SPT	10	B2.8	13-20-22 (42)	
			31.5					
			Exploration completed at 31.5 feet.					



Water Levels

▽ Not observed

▼ -

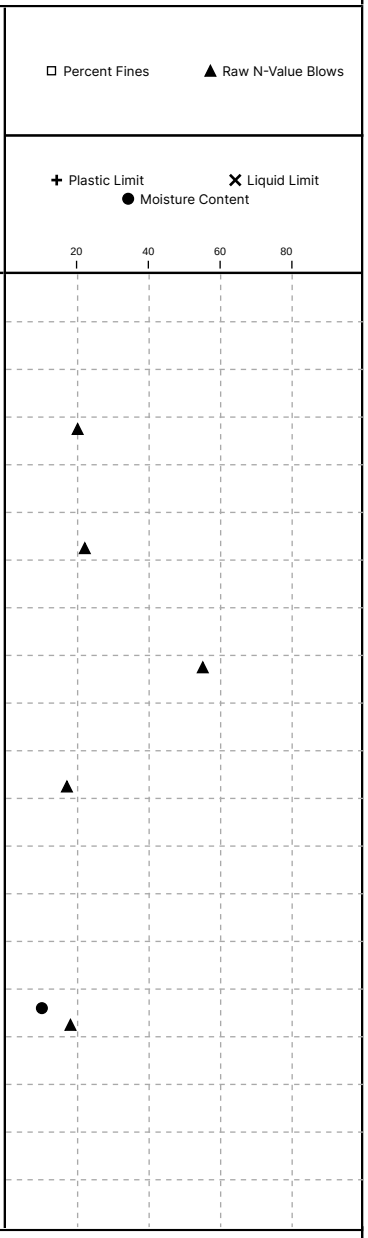
BoreDM Template: Boring Template

Geotechnical ■ Environmental ■ Special Inspections
Columbia West Engineering, Inc

Boring Number: B-3

PROJECT NAME Clackamas County Recovery Campus
CLIENT Fora Health
PROJECT NUMBER EdlenCo-7-01-1
PROJECT CITY, STATE Clackamas, Oregon
DRILLING CONTRACTOR Western States Soil Conservation, Inc.
DATE STARTED 07/17/2025
DRILLING METHOD Hollow-Stem Auger
TIME STARTED 1:10 PM
EQUIPMENT CME-75, Rig 4
DATE COMPLETED 07/18/2025
BORING DIAMETER 6 inches
TIME COMPLETED 9:50 AM
HAMMER EFFICIENCY 76.4%
LOGGED BY C. Brickert

DEPTH (ft)	USCS	MATERIAL DESCRIPTION AND NOTES	SAMPLE TYPE	RECOVERY (in)	SAMPLE ID	BLOW COUNTS	MOISTURE CONTENT (%)
		Medium stiff, brown sandy SILT, dry (6 inches of topsoil, 3- to 4-inch-thick root zone)					
		0.5					
	CL	Stiff, gray sandy CLAY, trace gravel, moist, low to medium plasticity.	SPT	12	B3.1	6-6-14 (20)	
		5.0					
5	SM	Medium dense, brown and gray silty SAND with gravel, moist, sand is coarse. Rig chatter at 6 feet.	SPT	15	B3.2	11-12-10 (22)	
		Very dense at 7.5 feet.	SPT	16	B3.3	9-33-22 (55)	
10		Medium dense at 10 feet.	SPT	9	B3.4	6-9-8 (17)	
15			SPT	9	B3.5	11-10-8 (18)	10



Water Levels

▽ Not observed

▼ -

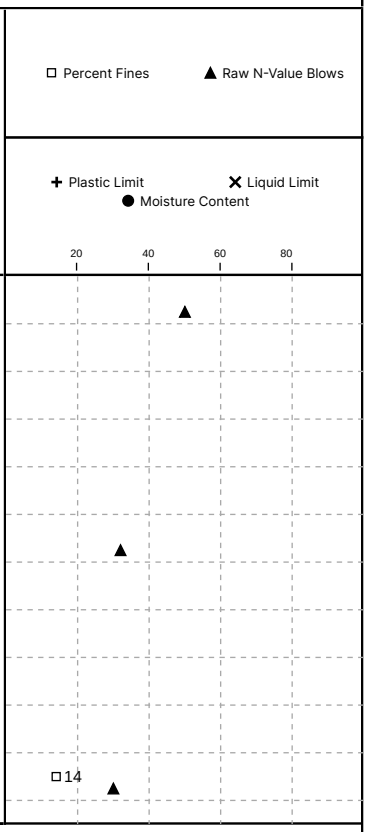
BoreDM Template: Boring Template

Geotechnical ■ Environmental ■ Special Inspections
Columbia West Engineering, Inc

Boring Number: B-3

PROJECT NAME Clackamas County Recovery Campus
CLIENT Fora Health
PROJECT NUMBER EdlenCo-7-01-1
PROJECT CITY, STATE Clackamas, Oregon
DRILLING CONTRACTOR Western States Soil Conservation, Inc.
DATE STARTED 07/17/2025
DRILLING METHOD Hollow-Stem Auger
TIME STARTED 1:10 PM
EQUIPMENT CME-75, Rig 4
DATE COMPLETED 07/18/2025
BORING DIAMETER 6 inches
TIME COMPLETED 9:50 AM
HAMMER EFFICIENCY 76.4%
LOGGED BY C. Brickert

DEPTH (ft)	USCS	GRAPHIC LOG	MATERIAL DESCRIPTION AND NOTES	SAMPLE TYPE	RECOVERY (in)	SAMPLE ID	BLOW COUNTS	MOISTURE CONTENT (%)
	GM		Dense, brown silty GRAVEL with sand and cobbles, moist.	SPT	7	B3.6	8-15-35 (50)	
25			Wet at 25 feet.	SPT	6	B3.7	15-17-15 (32)	
30			Infiltration test at 30 feet.	SPT	12	B3.8	10-15-15 (30)	
			31.5					
			Exploration completed at 31.5 feet.					



Water Levels

Not observed

-

BoreDM Template: Boring Template

Geotechnical ■ Environmental ■ Special Inspections
Columbia West Engineering, Inc

Boring Number: B-4

PROJECT NAME Clackamas County Recovery Campus
CLIENT Fora Health
PROJECT NUMBER EdlenCo-7-01-1
PROJECT CITY, STATE Clackamas, Oregon
DRILLING CONTRACTOR Western States Soil Conservation, Inc.
DATE STARTED 07/18/2025
DRILLING METHOD Hollow-Stem Auger
TIME STARTED 8:43 AM
EQUIPMENT CME-75, Rig 4
DATE COMPLETED 07/18/2025
BORING DIAMETER 6 inches
TIME COMPLETED 1:40 PM
HAMMER EFFICIENCY 76.4%
LOGGED BY C. Brickert

DEPTH (ft)	USCS	GRAPHIC LOG	MATERIAL DESCRIPTION AND NOTES	SAMPLE TYPE	RECOVERY (in)	SAMPLE ID	BLOW COUNTS	MOISTURE CONTENT (%)
			Asphalt Concrete (3 inches). 0.3					
			Aggregate Base (8 inches). 1.0					
	CL		Stiff, brown sandy CLAY with gravel, moist, low to medium plasticity.	SPT	0	B4.1	4-5-8 (13)	
5			5.0					
	SM		Medium dense, brown silty SAND with gravel, moist, sand is fine.	SPT	11	B4.2	7-7-10 (17)	
			Infiltration test at 5 feet. 6.5					
			Exploration completed at 6.5 feet.					

□ Percent Fines ▲ Raw N-Value Blows
+ Plastic Limit × Liquid Limit ● Moisture Content
20 40 60 80

Water Levels

▽ Not observed

▼ -

BoreDM Template: Boring Template

Geotechnical ■ Environmental ■ Special Inspections
Columbia West Engineering, Inc

Boring Number: B-5

PROJECT NAME Clackamas County Recovery Campus
CLIENT Fora Health
PROJECT NUMBER EdlenCo-7-01-1
PROJECT CITY, STATE Clackamas, Oregon
DRILLING CONTRACTOR Western States Soil Conservation, Inc.
DATE STARTED 07/18/2025
DRILLING METHOD Hollow-Stem Auger
TIME STARTED 10:47 AM
EQUIPMENT CME-75, Rig 4
DATE COMPLETED 07/18/2025
BORING DIAMETER 6 inches
TIME COMPLETED 2:12 PM
HAMMER EFFICIENCY 76.4%
LOGGED BY C. Brickert

DEPTH (ft)	USCS	MATERIAL DESCRIPTION AND NOTES	SAMPLE TYPE	RECOVERY (in)	SAMPLE ID	BLOW COUNTS	MOISTURE CONTENT (%)
0		Medium stiff, brown sandy SILT with gravel, moist (6 inches of topsoil, 3- to 4-inch-thick root zone).					
0.5	CL	Stiff, brown sandy CLAY with gravel, moist, low to medium plasticity.	SPT	13	B5.1	5-6-4 (10)	
			SPT	15.5	B5.2	4-4-8 (12)	
7.5	SM	Dense, brown silty SAND with gravel and cobbles, moist, sand is fine to coarse. Rig chatter at 9 feet. Medium dense at 10 feet.	SPT	16	B5.3	7-8-28 (36)	
			SPT	15	B5.4	11-8-5 (13)	
16.5	GM	Medium dense, brown with orange and gray mottled silty GRAVEL with sand and cobbles, moist.	SPT	12	B5.5	7-8-11 (19)	10

□ Percent Fines ▲ Raw N-Value Blows
+ Plastic Limit × Liquid Limit ● Moisture Content
20 40 60 80

Water Levels

▽ Not observed

▼ -

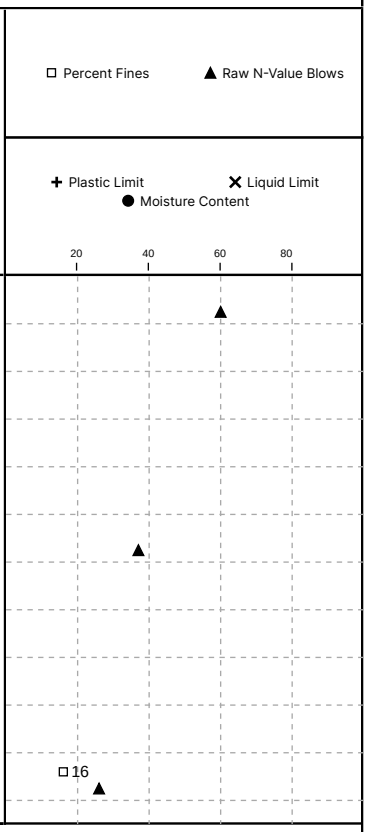
BoreDM Template: Boring Template

Geotechnical ■ Environmental ■ Special Inspections
Columbia West Engineering, Inc

Boring Number: B-5

PROJECT NAME Clackamas County Recovery Campus
CLIENT Fora Health
PROJECT NUMBER EdlenCo-7-01-1
PROJECT CITY, STATE Clackamas, Oregon
DRILLING CONTRACTOR Western States Soil Conservation, Inc.
DATE STARTED 07/18/2025
DRILLING METHOD Hollow-Stem Auger
TIME STARTED 10:47 AM
EQUIPMENT CME-75, Rig 4
DATE COMPLETED 07/18/2025
BORING DIAMETER 6 inches
TIME COMPLETED 2:12 PM
HAMMER EFFICIENCY 76.4%
LOGGED BY C. Brickert

DEPTH (ft)	USCS	GRAPHIC LOG	MATERIAL DESCRIPTION AND NOTES	SAMPLE TYPE	RECOVERY (in)	SAMPLE ID	BLOW COUNTS	MOISTURE CONTENT (%)
			Very dense at 20 feet.	SPT	5	B5.6	5-49-11 (60)	
25	GM		Dense at 25 feet.	SPT	0	B5.7	12-21-16 (37)	
30			Medium dense at 30 feet.	SPT	9	B5.8	13-14-12 (26)	
			Infiltration test at 30 feet. 31.5					
			Exploration completed at 31.5 feet.					



Water Levels

▽ Not observed

▼ -

BoreDM Template: Boring Template

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Columbia West Engineering, Inc

TEST PIT NUMBER: TP-1

PROJECT NAME Clackamas County Recovery Campus
CLIENT Fora Health
PROJECT NO. EdlenCo-7-01-1
PROJECT CITY, STATE Clackamas, Oregon
CONTRACTOR Western States Soil Conservation, Inc.
DATE COMPLETED 07/16/2025
EQUIPMENT John Deere 50G, 2-foot toothed
TIME STARTED 8:07 AM
LOGGED BY C. Brickert
TIME COMPLETED 10:48 AM

DEPTH (ft)	SAMPLE TYPE	SAMPLE ID	USCS	GRAPHIC LOG	MATERIAL DESCRIPTION	POCKET PEN (tsf)	MOISTURE CONTENT (%)	REMARKS
					Medium stiff, brown sandy SILT, dry (6 inches of topsoil, 3- to 4-inch-thick root zone). 0.5			
	Grab	TP1.1	CL		Stiff, brown sandy CLAY, moist, low to medium plasticity.			
	Grab	TP1.4						Infiltration test at 1.5 feet.
	Grab	TP1.2					21	
					With cobbles and boulders, trace gravel, boulders are 12 inches in diameter at 3 feet. 4.0			
5	Grab	TP1.3	SM		Dense, brown silty SAND with cobbles and boulders, minor gravel, moist, sand is fine.			
	Grab	TP1.5			Very dense, with gravel, boulders are 12 inches in diameter at 5 feet.			Infiltration test at 6 feet.
					7.0			
					Exploration terminated at 7 feet due to practical refusal on cobbles and boulders.			
10								
15								

GROUNDWATER: Not observed

CAVING: Minor at 5 feet

BoreDM Template: Test Pit Template - New

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Columbia West Engineering, Inc

TEST PIT NUMBER: TP-2

PROJECT NAME Clackamas County Recovery Campus
CLIENT Fora Health
PROJECT NO. EdlenCo-7-01-1
PROJECT CITY, STATE Clackamas, Oregon
CONTRACTOR Western States Soil Conservation, Inc.
DATE COMPLETED 07/16/2025
EQUIPMENT John Deere 50G, 2-foot toothed
TIME STARTED 10:38 AM
LOGGED BY C. Brickert
TIME COMPLETED 1:20 PM

DEPTH (ft)	SAMPLE TYPE	SAMPLE ID	USCS	GRAPHIC LOG	MATERIAL DESCRIPTION	POCKET PEN (tsf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS (LL-PL-PI)	FINES (%)	REMARKS
					Medium stiff, brown sandy SILT, dry (6 inches of topsoil, 3- to 4-inch-thick root zone). 0.5					
	Grab	TP2.1			Medium stiff, sandy CLAY, moist, low to medium plasticity.				57	Infiltration test at 1.5 feet.
	Grab	TP2.5								
	Grab	TP2.2						29-20-9		
5			CL							
	Grab	TP2.6							69	Infiltration test at 6 feet.
	Grab	TP2.3								
					9.5					
10			SM		Dense, brown silty SAND with cobbles, minor gravel, moist, sand is fine.					
	Grab	TP2.4			Very dense, with gravel at 11 feet.					
					12.0					
					Exploration terminated at 12 feet due to practical refusal on cobbles.					
15										

GROUNDWATER: Not observed

CAVING: Moderate at 9.5 feet

BoreDM Template: Test Pit Template - New

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Columbia West Engineering, Inc

TEST PIT NUMBER: TP-3

PROJECT NAME Clackamas County Recovery Campus
CLIENT Fora Health
PROJECT NO. EdlenCo-7-01-1
PROJECT CITY, STATE Clackamas, Oregon
CONTRACTOR Western States Soil Conservation, Inc.
DATE COMPLETED 07/16/2025
EQUIPMENT John Deere 50G, 2-foot toothed
TIME STARTED 12:09 PM
LOGGED BY C. Brickert
TIME COMPLETED 2:48 PM

DEPTH (ft)	SAMPLE TYPE	SAMPLE ID	USCS	GRAPHIC LOG	MATERIAL DESCRIPTION	POCKET PEN (tsf)	MOISTURE CONTENT (%)	REMARKS
					Medium stiff, brown sandy SILT, dry (6 inches of topsoil, 3- to 4-inch-thick root zone). 0.5			
	Grab	TP3.1			Crushed Rock (2 inches) - **FILL**. 0.7			
	Grab	TP3.4			Stiff, brown SILT with sand, dry - **FILL**.			Infiltration test at 1.5 feet.
	Grab	TP3.2			Moist at 2.5 feet. 3.0		21	
5			CL		Stiff, brown sandy CLAY, moist, low to medium plasticity.			
	Grab	TP3.5						Infiltration test at 6 feet.
					7.5			
	Grab	TP3.3	SM		Dense, gray silty SAND with gravel and cobbles, moist, sand is fine.			
10					Very dense, with boulders, boulders are 12 inches in diameter at 9 feet. 10.0			
					Exploration terminated at 10 feet due to practical refusal on cobbles and boulders.			
15								

GROUNDWATER: Not observed

CAVING: Not observed

BoreDM Template: Test Pit Template - New

Shannon & Wilson
SPT Analyzer Results

PDA-S Ver. 2022.35.2 - Printed: 1/9/2025

Summary of SPT Test Results

Project: rig 4, Test Date: 12/31/2024

FMX: Maximum Force
VMX: Maximum Velocity
BPM: Blows/Minute
EFV: Maximum Energy
ETR: Energy Transfer Ratio - Rated

Instr. Length ft	Blows Applied /6"	**N Value**	**N60 Value**	Average FMX kips	Average VMX ft/s	Average BPM bpm	Average EFV ft-lb	Average ETR %
57.50	**6-9-14**	**23**	**29**	40	14.7	38.9	269	76.8
60.00	**8-11-17**	**28**	**35**	38	14.2	36.2	264	75.5
62.50	**8-7-6**	**13**	**16**	41	15.1	39.3	281	80.2
65.00	**9-8-9**	**17**	**21**	37	13.5	39.2	250	71.4
67.50	**6-19-17**	**36**	**45**	39	14.8	43.6	273	77.9
		Overall Average Values:		39	14.5	39.8	267	76.4
		Standard Deviation:		2	0.8	3.3	12	3.5
		Overall Maximum Value:		44	16.4	45.0	294	84.1
		Overall Minimum Value:		35	12.5	31.1	231	66.0

APPENDIX C

APPENDIX C
LABORATORY TESTING

GENERAL

Laboratory testing was conducted on select soil samples to confirm field classifications and determine the index engineering properties and strength characteristics. The laboratory classifications are shown on the exploration logs if those classifications differed from the field classifications. The locations of the tested samples are shown on the exploration logs. Descriptions of the tests are presented below and results of the testing are presented in this appendix.

PARTICLE-SIZE ANALYSIS

Particle-size analyses were completed on select soil samples in general accordance with ASTM D1140 (P200). This test is a quantitative determination of the percent passing the U.S. Standard No. 200 sieve expressed as a percentage of the dry weight of the soil.

MOISTURE CONTENT

The natural moisture content of select soil samples was determined in general accordance with ASTM D2216. The natural moisture content is a ratio of the weight of the water to dry soil in a test sample and is expressed as a percentage.

ATTERBERG LIMITS TESTING

Atterberg limits (plastic and liquid limits) testing was performed on soil samples in general accordance with ASTM D4318. The plastic limit is defined as the moisture content where the soil becomes brittle. The liquid limit is defined as the moisture content where the soil begins to behave as a liquid. The plasticity index is the difference between the liquid and plastic limits.

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MOISTURE CONTENT, PERCENT PASSING NO. 200 SIEVE BY WASHING

PROJECT	CLIENT	PROJECT NO.	
Clackamas County Recovery Center 15301 SE 92nd Avenue Clackamas, Oregon	Fora Health 10230 Cherry Blossom Drive Portland, OR 97216	EdlenCo-7-01-1	
		ISSUE DATE: 07/31/25	PAGE: 1 of 1
		DATE SAMPLED: 07/16/25 - 07/18/25	SAMPLED BY: C. Brickert

LABORATORY TEST DATA

TEST PROCEDURE
ASTM D2216 - Method A, ASTM D1140

LAB ID	CONTAINER MASS (g)	MOIST MASS + CONTAINER (g)	DRY MASS + CONTAINER (g)	AFTER WASH DRY MASS + CONTAINER (g)	FIELD ID	SAMPLE DEPTH (ft)	PERCENT MOISTURE CONTENT	PERCENT PASSING NO. 200 SIEVE
S25-1516	85.69	232.58	207.45	-	TP1.2	2.5	21%	-
S25-1518	530.51	-	841.49	663.82	TP2.5	1.5	-	57%
S25-1519	548.37	-	812.75	630.00	TP2.6	6	-	69%
S25-1520	87.79	248.76	221.35	-	TP3.2	2.5	21%	-
S25-1521	550.38	-	770.39	630.27	B1.2	5	-	64%
S25-1523	86.50	225.25	194.54	-	B2.5	15	28%	-
S25-1524	574.85	-	961.56	927.77	B2.8	30	-	9%
S25-1525	554.83	907.27	873.79	-	B3.5	15	10%	-
S25-1526	493.65	-	969.16	902.83	B3.8	30	-	14%
S25-1527	561.64	-	926.03	778.83	B4.2	5	-	40%
S25-1528	304.40	738.94	699.43	-	B5.5	15	10%	-
S25-1529	540.74	-	826.98	781.04	B5.8	30	-	16%

NOTES:
Sample weight received for Lab ID: S25-1524, 1526, 1527, and 1529 did not meet the minimum size requirements; entire sample used for analysis.

DATE TESTED: 07/25/25
TESTED BY: B. Taylor, L. Gunderson

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ATTERBERG LIMITS REPORT

PROJECT	CLIENT	PROJECT NO.	
Clackamas County Recovery Center 15301 SE 92nd Avenue Clackamas, Oregon	Fora Health 10230 Cherry Blossom Drive Portland, OR 97216	EdlenCo-7-01-1	
		ISSUE DATE: 07/31/25	PAGE: 1 of 1
		LAB ID: S25-1522	FIELD ID: B2.1
		DATE SAMPLED: 07/17/25	SAMPLED BY: C. Brickert

MATERIAL DATA

MATERIAL SAMPLED	MATERIAL SOURCE	USCS SOIL TYPE
Sandy CLAY	Boring B-2 depth = 2.5 feet	no data provided

LABORATORY TEST DATA

LABORATORY EQUIPMENT: Liquid Limit Machine, Hand Rolled

TEST PROCEDURE: ASTM D4318 - Method A

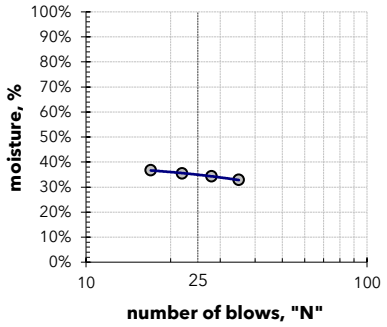
ATTERBERG LIMITS

liquid limit =	35
plastic limit =	22
plasticity index =	13

LIQUID LIMIT DETERMINATION

	❶	❷	❸	❹
wet soil + pan weight, g =	35.64	37.10	35.29	35.42
dry soil + pan weight, g =	31.94	32.93	31.46	31.48
pan weight, g =	20.67	20.77	20.66	20.76
N (blows) =	35	28	22	17
moisture, % =	32.8 %	34.3 %	35.5 %	36.8 %

LIQUID LIMIT



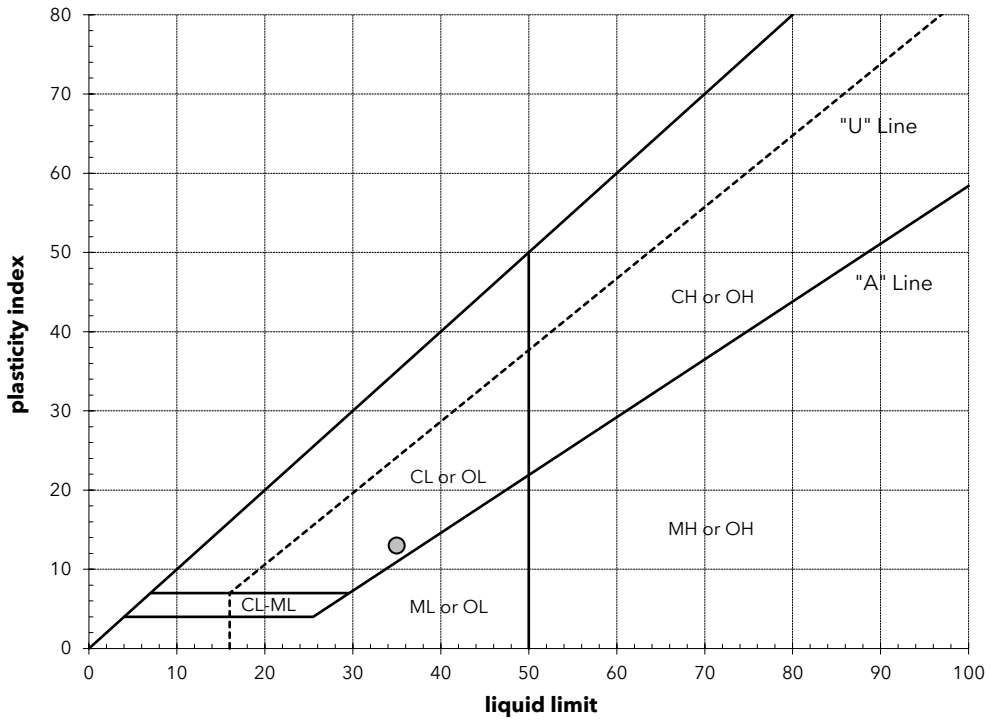
SHRINKAGE

shrinkage limit =	n/a
shrinkage ratio =	n/a

PLASTIC LIMIT DETERMINATION

	❶	❷	❸	❹
wet soil + pan weight, g =	27.96	27.30		
dry soil + pan weight, g =	26.64	26.15		
pan weight, g =	20.78	20.95		
moisture, % =	22.5 %	22.1 %		

PLASTICITY CHART



ADDITIONAL DATA

% gravel =	n/a
% sand =	n/a
% silt and clay =	n/a
% silt =	n/a
% clay =	n/a
moisture content =	n/a

DATE TESTED	TESTED BY
07/28/25	B.Taylor, L. Gunderson

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ATTERBERG LIMITS REPORT

PROJECT	CLIENT	PROJECT NO.	
Clackamas County Recovery Center 15301 SE 92nd Avenue Clackamas, Oregon	Fora Health 10230 Cherry Blossom Drive Portland, OR 97216	EdlenCo-7-01-1	
		ISSUE DATE: 07/31/25	PAGE: 1 of 1
		LAB ID: S25-1517	FIELD ID: TP2.2
		DATE SAMPLED: 07/16/25	SAMPLED BY: C. Brickert

MATERIAL DATA

MATERIAL SAMPLED	MATERIAL SOURCE	USCS SOIL TYPE
Sandy CLAY	Test Pit TP-2 depth = 3 feet	no data provided

LABORATORY TEST DATA

LABORATORY EQUIPMENT: Liquid Limit Machine, Hand Rolled

TEST PROCEDURE: ASTM D4318 - Method A

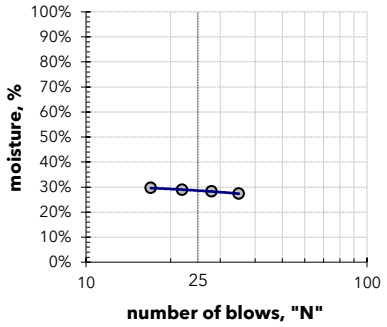
ATTERBERG LIMITS

liquid limit =	29
plastic limit =	20
plasticity index =	9

LIQUID LIMIT DETERMINATION

	❶	❷	❸	❹
wet soil + pan weight, g =	36.39	35.36	36.37	35.91
dry soil + pan weight, g =	32.96	32.07	32.82	32.49
pan weight, g =	20.43	20.42	20.56	20.95
N (blows) =	35	28	22	17
moisture, % =	27.4 %	28.2 %	29.0 %	29.6 %

LIQUID LIMIT



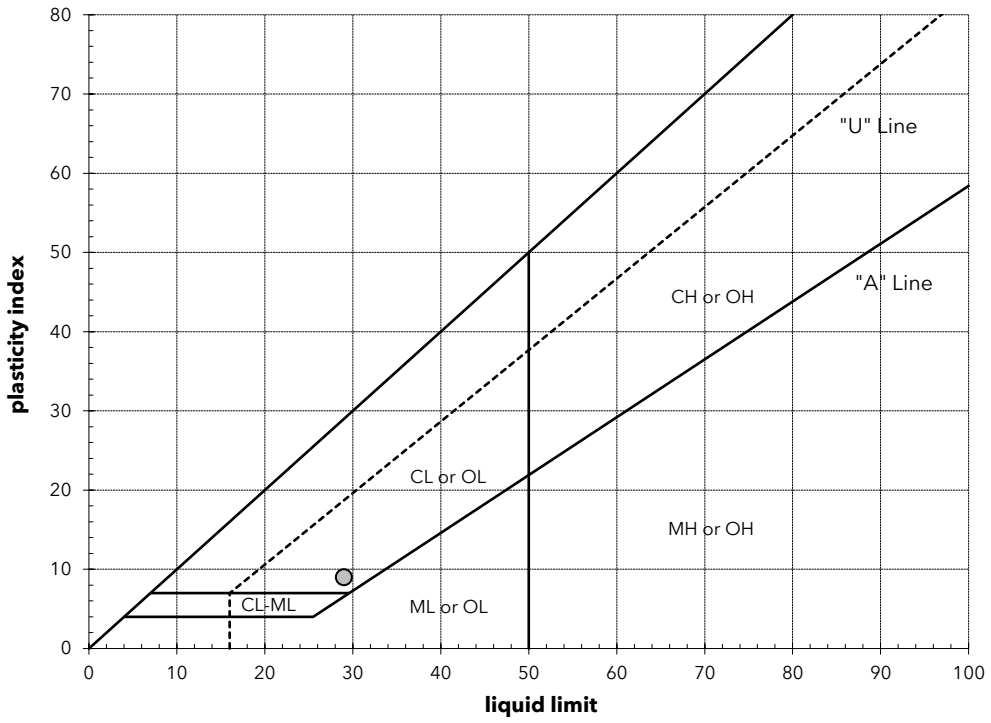
SHRINKAGE

shrinkage limit =	n/a
shrinkage ratio =	n/a

PLASTIC LIMIT DETERMINATION

	❶	❷	❸	❹
wet soil + pan weight, g =	27.53	27.47		
dry soil + pan weight, g =	26.42	26.29		
pan weight, g =	20.93	20.42		
moisture, % =	20.2 %	20.1 %		

PLASTICITY CHART



ADDITIONAL DATA

% gravel =	n/a
% sand =	n/a
% silt and clay =	n/a
% silt =	n/a
% clay =	n/a
moisture content =	n/a

DATE TESTED	TESTED BY
07/28/25	B. Taylor, L. Gunderson

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APPENDIX D

APPENDIX D
REPORT LIMITATIONS AND IMPORTANT INFORMATION

Report Purpose, Use, and Standard of Care

This report has been prepared in accordance with standard fundamental principles and practices of geotechnical engineering and/or environmental consulting, and in a manner consistent with the level of care and skill typical of currently practicing local engineers and consultants. This report has been prepared to meet the specific needs of specific individuals for the indicated site. It may not be adequate for use by other consultants, contractors, or engineers, or if change in project ownership has occurred. It should not be used for any other reason than its stated purpose without prior consultation with Columbia West Engineering, Inc. (Columbia West). It is a unique report and not applicable for any other site or project. If site conditions are altered, or if modifications to the project description or proposed plans are made after the date of this report, it may not be valid. Columbia West cannot accept responsibility for use of this report by other individuals for unauthorized purposes, or if problems occur resulting from changes in site conditions for which Columbia West was not aware or informed.

Report Conclusions and Preliminary Nature

This geotechnical or environmental report should be considered preliminary and summary in nature. The recommendations contained herein have been established by engineering interpretations of subsurface soils based upon conditions observed during site exploration. The exploration and associated laboratory analysis of collected representative samples identifies soil conditions at specific discreet locations. It is assumed that these conditions are indicative of actual conditions throughout the subject property. However, soil conditions may differ between tested locations at different seasonal times of the year, either by natural causes or human activity. Distinction between soil types may be more abrupt or gradual than indicated on the soil logs. This report is not intended to stand alone without understanding of concomitant instructions, correspondence, communication, or potential supplemental reports that may have been provided to the client.

Because this report is based upon observations obtained at the time of exploration, its adequacy may be compromised with time. This is particularly relevant in the case of natural disasters, earthquakes, floods, or other significant events. Report conclusions or interpretations may also be subject to revision if significant development or other manmade impacts occur within or in proximity to the subject property. Groundwater conditions, if presented in this report, reflect observed conditions at the time of investigation. These conditions may change annually, seasonally or as a result of adjacent development.

Additional Investigation and Construction Observation

Columbia West should be consulted prior to construction to assess whether additional investigation above and beyond that presented in this report is necessary. Even slight variations in soil or site conditions may produce impacts to the performance of structural facilities if not adequately addressed. This underscores the importance of diligent construction observation and testing to verify soil conditions do not differ materially or significantly from the interpreted conditions utilized for preparation of this report.

Therefore, this report contains several recommendations for field observation and testing by Columbia West personnel during construction activities. Actual subsurface conditions are more readily observed and discerned during the earthwork phase of construction when soils are exposed. Columbia West cannot accept responsibility for deviations from recommendations described in this report or future performance of structural facilities if another consultant is retained during the construction phase or Columbia West is not engaged to provide construction observation to the full extent recommended.

Collected Samples

Uncontaminated samples of soil or rock collected in connection with this report will be retained for thirty days. Retention of such samples beyond thirty days will occur only at client's request and in return for payment of storage charges incurred. All contaminated or environmentally impacted materials or samples are the sole property of the client. Client maintains responsibility for proper disposal.

Report Contents

This geotechnical or environmental report should not be copied or duplicated unless in full, and even then, only under prior written consent by Columbia West, as indicated in further detail in the following text section entitled Report Ownership. The recommendations, interpretations, and suggestions presented in this report are only understandable in context of reference to the whole report. Under no circumstances should the soil boring or test pit excavation logs, monitor well logs, or laboratory analytical reports be separated from the remainder of the report. The logs or reports should not be redrawn or summarized by other entities for inclusion in architectural or civil drawings or other relevant applications.

Report Limitations for Contractors

Geotechnical or environmental reports, unless otherwise specifically noted, are not prepared for the purpose of developing cost estimates or bids by contractors. The extent of exploration or investigation conducted as part of this report is usually less than that necessary for contractor's needs. Contractors should be advised of these report limitations, particularly as they relate to development of cost estimates. Contractors may gain valuable information from this report, but should rely upon their own interpretations as to how subsurface conditions may affect cost, feasibility, accessibility and other components of the project work. If believed necessary or relevant, contractors should conduct additional exploratory investigation to obtain satisfactory data for the purposes of developing adequate cost estimates. Clients or developers cannot insulate themselves from attendant liability by disclaiming accuracy for subsurface ground conditions without advising contractors appropriately and providing the best information possible to limit potential for cost overruns, construction problems, or misunderstandings.

Report Ownership

Columbia West retains the ownership and copyright property rights to this entire report and its contents, which may include, but may not be limited to, figures, text, logs, electronic media, drawings, laboratory reports, and appendices. This report was prepared solely for the client, and other relevant approved users or parties, and its distribution must be contingent upon prior express written consent by Columbia West. Furthermore, client or approved users may not use, lend, sell, copy, or distribute this document without express written consent by Columbia West.

Client does not own nor have rights to electronic media files that constitute this report, and under no circumstances should said electronic files be distributed or copied. Electronic media is susceptible to unauthorized manipulation or modification, and may not be reliable.

Consultant Responsibility

Geotechnical and environmental engineering and consulting is much less exact than other scientific or engineering disciplines, and relies heavily upon experience, judgment, interpretation, and opinion often based upon media (soils) that are variable, anisotropic, and non-homogenous. This often results in unrealistic expectations, unwarranted claims, and uninformed disputes against a geotechnical or environmental consultant. To reduce potential for these problems and assist relevant parties in better understanding of risk, liability, and responsibility, geotechnical and environmental reports often provide definitive statements or clauses defining and outlining consultant responsibility. The client is encouraged to read these statements carefully and request additional information from Columbia West if necessary.

From: TAYAR Abraham <Abraham.TAYAR@odot.oregon.gov>
Sent: Monday, November 24, 2025 1:30 PM
To: Sarah Vaz
Subject: RE: CCRC - ZPAC0090-25 - Roads and Circulation

Follow Up Flag: Follow up
Flag Status: Flagged

Hi Sarah,

I will reviewed the application and participate in the LU process once submitted. As per below, the proposed development is consistent with the trip cap set for the property; I can't think of anything needed until the application is submitted.

Thanks,

From: Sarah Vaz <svaz@holstarc.com>
Sent: Monday, November 24, 2025 10:26 AM
To: TAYAR Abraham <Abraham.TAYAR@odot.oregon.gov>
Cc: Connor Peirce <cpeirce@holstarc.com>; Sean Higgins <shiggins@holstarc.com>
Subject: RE: CCRC - ZPAC0090-25 - Roads and Circulation

You don't often get email from svaz@holstarc.com. Learn why this is important

This message was sent from outside the organization. Treat attachments, links and requests with caution. Be conscious of the information you share if you respond.

Hi Avi,

We have not yet submitted our LU application, but it will be consistent with the approved zone change. Is there anything you need from the design team in advance of submitting the LU application?

Thanks,

H O L S T

SARAH VAZ (she/her)
Senior Associate
P: 503.233.9856
C: 513.349.7614
holstarc.com

From: TAYAR Abraham <Abraham.TAYAR@odot.oregon.gov>
Sent: Monday, November 17, 2025 10:53 AM
To: Sarah Vaz <svaz@holstarc.com>
Cc: Connor Peirce <cpeirce@holstarc.com>; Sean Higgins <shiggins@holstarc.com>
Subject: RE: CCRC - ZPAC0090-25 - Roads and Circulation

Hi Sarah,

I believe the CZ was approved with a trip cap applied to the proposed use (limited trip generation), which is subject to County restriction the property the limited use as described by the TIA. I have not seen the LU application and the ZC restriction applied for County.

Thanks,

From: Sarah Vaz <svaz@holstarc.com>
Sent: Friday, November 14, 2025 5:05 PM
To: TAYAR Abraham <Abraham.TAYAR@odot.oregon.gov>
Cc: Connor Peirce <cpeirce@holstarc.com>; Sean Higgins <shiggins@holstarc.com>
Subject: CCRC - ZPAC0090-25 - Roads and Circulation

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This message was sent from outside the organization. Treat attachments, links and requests with caution. Be conscious of the information you share if you respond.

Hi Avi,

I'm working on Clackamas County Recovery Campus at 15301 SE 92nd Ave. We just got pre-application conference notes directing us to contact you about our project. The site recently went through a zone change process for which a traffic study was completed. We're now in the process of designing the project for which the zone change was conducted. Clackamas County Engineering believes the traffic study completed for the zone change will be sufficient for the proposed development. Here it is attached, please let me know if you have any questions or comments.

Thanks,

H O L S T

SARAH VAZ (she/her)
Senior Associate
P: 503.233.9856
C: 513.349.7614
holstarc.com

Planning and Zoning
Department of Transportation and Development

Development Services Building
150 Beavercreek Road | Oregon City, OR 97045

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

Instructions for
PRELIMINARY STATEMENTS OF FEASIBILITY

Instructions to Applicant:

The attached *Preliminary Statement of Feasibility* form is to be completed by the applicable sanitary sewer service provider, surface water management authority, and water service provider. Where there is no surface water management service district for the subject property, this form is to be provided to the Clackamas County Department of Transportation and Development, Transportation Engineering Division. *Preliminary Statements of Feasibility* are not required for onsite wastewater treatment facilities (e.g., septic tanks) or water service by private well.

Completed *Preliminary Statement of Feasibility* forms must be submitted with a land use application for design review, a partition, a subdivision, conditional use permit, or zone change.

It is the responsibility of the applicant for a land use application to provide a copy of this form to each service provider for the subject property. A service provider may require the submission of detailed plans and/or engineering data prior to determining whether a *Preliminary Statement of Feasibility* will be issued. Contact the service providers for details.

The forms must be dated no more than one year prior to submittal of a complete land use application.

Instructions to Reviewing Service Provider or Surface Water Management Authority:

A development is proposed within your service area. Please complete the attached *Preliminary Statement of Feasibility* to indicate whether adequate service can be provided to this development.

If adequate service can be provided only with the implementation of certain conditions of approval, you may attach such conditions to the completed form. Completion of the *Preliminary Statement of Feasibility* does not imply that additional requirements (e.g., plan submittals) may not be imposed by your agency once a land use application for the prospective development is filed.

Clackamas County Planning & Zoning will continue to provide notice to you of land use applications for property within your service area. This will allow you to determine whether the submitted development proposal differs from the plans reviewed by your agency in conjunction with the completion of this statement. This will also allow you to provide additional comments as necessary.

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 drenhard@clackamas.us.

503-742-4545: ¿Traducción e interpretación? | Требуется ли вам устный или письменный перевод? 翻译或口译？| Cần Biên dịch hoặc Phiên dịch? | 번역 또는 통역?

Planning and Zoning
Department of Transportation and Development

Development Services Building
150 Beavercreek Road | Oregon City, OR 97045

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

PRELIMINARY STATEMENT OF FEASIBILITY

TO BE COMPLETED BY APPLICANT		
Applicant name: Sarah Vaz	Applicant email: svaz@holstarc.com	Applicant phone: 502 233 9856
Project engineer: Martha Williamson	Project engineer email: martha@vegacivil.com	Project engineer phone: 503.662.1901
Site address: 15301 SE 92nd Ave, Clackamas, 97015		

Map and tax lot #:

Township: _____ *Range:* _____ *Section:* _____ *Tax Lot:* 22E09BD0

Township: _____ *Range:* _____ *Section:* _____ *Tax Lot:* _____

Township: _____ *Range:* _____ *Section:* _____ *Tax Lot:* _____

TO BE COMPLETED BY SERVICE PROVIDER / SURFACE WATER MANAGEMENT AUTHORITY	
Name of service provider / surface water management authority: Clackamas River Water	Name and title of authorized representative: Madeleine Netto, Associate Engineer
Representative email: mnetto@crwater.com	Representative phone: 503.793.8145

Check all that apply:

Water Service

- ☑ Water service, *including fire flows*, 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.
- ☐ Water service is adequate *with the exception of fire flows*. The applicant shall provide 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 sprinkler system, is acceptable.
- ☐ Adequate water service *cannot* be provided.

Sanitary Sewer Service

- ☐ 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 sanitary sewer service *cannot* be provided.

Surface Water Management, Treatment, and Conveyance

- ☐ Adequate surface water management, treatment, and conveyance is available to serve the development or can be made available through improvements completed by the developer or the system owner.
- ☐ Adequate surface water management, treatment, and conveyance *cannot* be provided.

Is this statement issued subject to any conditions of approval?

- ☑ YES, and those conditions are attached.
- ☐ NO

Signature of authorized representative:	Date of signature: 9/17/25

Clackamas River Water

Attachment

County Preliminary Statement of Feasibility

To:	Sarah Vaz
From:	Madeleine Netto (CRW)
Date:	September 17th, 2025
Re:	15301 SE 92nd Ave, Clackamas, OR 97015

● Comments:

A. "*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*"

B. Fire hydrant number and distribution shall be in accordance with the Oregon Fire Code C105.1

C. Placement of fire hydrant systems shall be in accordance with the Oregon Fire Code 507.5.1

D. 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.

E. 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.

F. 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.

G. Any substantial deviation from the approved construction plans must have prior approval of the Water District.

H. Easements for water facilities shall be provided along property lines and designated on the final plat, as deemed necessary by the Water District.

I. 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.

J. 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.

K. 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.

L. Upon plan review there may be additional requirements as set forth by the Water District.

16770 SE 82nd Drive
Clackamas, OR 97015-2539
503.722.9240
www.crwater.com

From: Joe Bugher <Joe.Bugher@forahealth.org>
Sent: Tuesday, November 25, 2025 12:25 PM
To: Tenille Beseda Fillwock; Sean Higgins; Sarah Vaz
Cc: Connor Peirce; Andrew Lahusen
Subject: RE: CCRC - ZPAC0090-25 - Solid Waste and Recycling

I think this is a great plan.

Thanks,

Joe

Joe Bugher | Sr. Director of Operations and Compliance
Fora Health
P: **503-535-1150 Ext. 1152**
10230 SE Cherry Blossom Dr | Portland, OR 97216
PO Box 16040 | Portland, OR 97292
www.ForaHealth.org



From: Tenille Beseda Fillwock <TBeseda@clackamas.us>
Sent: Tuesday, November 25, 2025 11:27 AM
To: 'Sean Higgins' <shiggins@holstarc.com>; Sarah Vaz <svaz@holstarc.com>
Cc: Connor Peirce <cpeirce@holstarc.com>; Andrew Lahusen <Andrew.Lahusen@forahealth.org>; Joe Bugher <Joe.Bugher@forahealth.org>
Subject: RE: CCRC - ZPAC0090-25 - Solid Waste and Recycling

Sean,

Thank you. This is great. I think we're all aligning. I am thinking we'll want to plan for two 3yd containers (one each for garbage and recycling) in each enclosure, along with a cart for glass and 1-2 for food scraps (at least in the enclosure that will be servicing the kitchen). I'd rather plan for more service than undersize the enclosure; if 2yd containers end up being used, there will be adequate space (as opposed for designing for 2yd and needing 3yd).

Let me know if you have any concerns with this plan.

Thanks,

Tenille Beseda Fillwock, Senior Sustainability Analyst
Pronouns: she/her/hers (Why pronouns matter)
Clackamas County Sustainability & Solid Waste
o 503.742.4451 **I** c 971.804.5462
www.clackamas.us/recycling
Se habla español. *Sostenibilidad, Basura y Reciclaje www.clackamas.us/reciclaje*

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From: Sean Higgins <shiggins@holstarc.com>
Sent: Monday, November 24, 2025 3:53 PM
To: Tenille Beseda Fillwock <TBeseda@clackamas.us>; Sarah Vaz <svaz@holstarc.com>
Cc: Connor Peirce <cpeirce@holstarc.com>; Andrew Lahusen <andrew.lahusen@forahealth.org>; Joe Bugher <joe.bugher@forahealth.org>
Subject: Re: CCRC - ZPAC0090-25 - Solid Waste and Recycling

Warning: External email. Be cautious opening attachments and links.

Thank you Tenille!

The contacts for Fora Health are Joe Bugher and Andrew Lahusen, cc'd here.

Fora currently utilizes four 4 yd containers for waste and recycling, they have estimated based on their expected census at this new location, they would need half the capacity of their existing location.

Andrew and Joe can provide additional information as needed.

Thanks!

H O L S T

SEAN HIGGINS (he/him)
Project Architect
P: 503.233.9856 ext: 192
holstarc.com

From: Tenille Beseda Fillwock <TBeseda@clackamas.us>
Sent: Monday, November 24, 2025 3:42 PM
To: Sean Higgins <shiggins@holstarc.com>; Sarah Vaz <svaz@holstarc.com>

Cc: Connor Peirce <cpeirce@holstarc.com>
Subject: RE: CCRC - ZPAC0090-25 - Solid Waste and Recycling

Sean,

Thanks for your email. You are correct in that a roof is NOT required. As for the essentials, ZDO 1021 requires an enclosure have walls, a pad, and gates that allow for safe and efficient access. Some finer details include adequate spacing, overhead clearance, a bumper curb/rail, restrainers to secure the gates in the open and closed positions, and no parking signage.

Please let me know if additional questions arise.

Thanks,

Tenille Beseda Fillwock, Senior Sustainability Analyst
Pronouns: she/her/hers (Why pronouns matter)
Clackamas County Sustainability & Solid Waste
o 503.742.4451 **I** c 971.804.5462
www.clackamas.us/recycling
Se habla español. *Sostenibilidad, Basura y Reciclaje www.clackamas.us/reciclaje*

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From: Sean Higgins <shiggins@holstarc.com>
Sent: Friday, November 21, 2025 3:50 PM
To: Tenille Beseda Fillwock <TBeseda@clackamas.us>; Sarah Vaz <svaz@holstarc.com>
Cc: Connor Peirce <cpeirce@holstarc.com>
Subject: Re: CCRC - ZPAC0090-25 - Solid Waste and Recycling

Warning: External email. Be cautious opening attachments and links.

Thank you Tenille!

We have reached out to our client group to get a contact for you, they will be able to more clearly define waste needs.

In the meantime, I read through ZDO section 1021. I did not see any requirements for a trash enclosure covering (canopy, lid, roof, etc.). Can you confirm the basics of the enclosure will only need:

- Wall/fence consistent with building cladding

- Gate access (with swing free of obstructions)

H O L S T

SEAN HIGGINS (he/him)
Project Architect
P: 503.233.9856 ext: 192
holstarc.com

From: Tenille Beseda Fillwock <TBeseda@clackamas.us>
Sent: Monday, November 17, 2025 10:31 AM
To: Sarah Vaz <svaz@holstarc.com>
Cc: Connor Peirce <cpeirce@holstarc.com>; Sean Higgins <shiggins@holstarc.com>
Subject: RE: CCRC - ZPAC0090-25 - Solid Waste and Recycling

Sarah,

Thank you for your email. During the design review phase, we're looking for more specifics on the trash enclosures: dimensions, building material, pad specs, footprints of proposed containers with adequate spacing, etc. You'll need containers for garbage and recycling and carts for food waste and glass bottles/jars. Clackamas Garbage is the garbage/recycling company. Receptacle dimensions are as follows:

- 3yd containers are approximately 84"W x 45"D
- 65gal food carts are approx. 27"W x 29"D
- 35gal glass carts are approx. 21"W x 24"D

I will need to work with my counterparts who work with businesses to help gauge the waste generation for your project. I imagine, at a *minimum*, you'll want the following in each enclosure:

- 3yd trash container
- 3yd recycling container
- 65gal food cart
- 35gal glass cart

This is a rough guess at this point and will need more info. If you/your client has experience with other such facilities, it would be helpful to know their size and how much trash/recycling they generate (aka what their trash/recycling service level is). If you can provide me a name/address of such a facility in the tri-county region, I can get the service level.

You won't need to have all this figured out before you submit for design review, but I'll need more details than submitted during PreApp (though I fully appreciate you indicated two trash/recycling enclosures at this stage – they often aren't included this early). I will continue to work with you to sort out the details.

Lastly, here are two resources you may find useful:

- ZDO 1021 – Garbage and Recycling Enclosures
- Enclosure Best Practices webpage: www.clackamas.us/recycling/enclosure

Thanks for reaching out, and I look forward to working with you/your team. Please don't hesitate to ask as questions arise.

Thanks again,

Tenille Beseda Fillwock, Senior Sustainability Analyst
Pronouns: she/her/hers (Why pronouns matter)
Clackamas County Sustainability & Solid Waste
o 503.742.4451 **I** c 971.804.5462
www.clackamas.us/recycling
Se habla español. *Sostenibilidad, Basura y Reciclaje www.clackamas.us/reciclaje*

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From: Sarah Vaz <svaz@holstarc.com>
Sent: Friday, November 14, 2025 4:51 PM
To: Tenille Beseda Fillwock <TBeseda@clackamas.us>
Cc: Connor Peirce <cpeirce@holstarc.com>; Sean Higgins <shiggins@holstarc.com>
Subject: CCRC - ZPAC0090-25 - Solid Waste and Recycling

Warning: External email. Be cautious opening attachments and links.

Hi Tenille,

I'm working on Clackamas County Recovery Campus at 15301 SE 92nd Ave. We just got pre-application conference notes directing us to contact you about our solid waste and recycling planning for "size/quantity of containers that are needed based on rooms, food service, office needs, etc." Attached is our site plan, we're proposing 2 buildings. Building 1 is a residential treatment facility with 40 beds. Building 2 is transitional housing with 36

beds and a 5,600 SF outpatient clinic. Each building will have it's own trash enclosure. What other information do we need to get you?

Thanks,

H O L S T

SARAH VAZ (she/her)
Senior Associate
P: 503.233.9856
C: 513.349.7614
holstarc.com

PRIVACY/CONFIDENTIALITY WARNING: This electronic message transmission, including any attachments, contains information from Fora Health which may be confidential or privileged. The disclosure of such information is governed by 42CFR, Part 2, the Health Insurance Portability and Accountability Act (HIPAA) and other applicable federal and state law. The information is intended to be for the use of the individual or entity named above. If you are not the intended recipient, be aware that any disclosure, copying, distribution or use of the contents of this information is STRICTLY PROHIBITED. If you have received this electronic transmission in error, please notify the sender immediately by a "reply to sender only" message and destroy all electronic and hard copies of the communication, including attachments.

KITTELSON & ASSOCIATES
851 SW 6th Avenue, Suite 600
Portland, OR 97204
P 503.228.5230

Transportation Study

April 16, 2025 Project# 30443

To: Christian Snuffin & Joe Marek, Clackamas County

From: Julia Kuhn, Chris Brehmer, & Sam Gordon

CC: Kalina Kunert

RE: Clackamas County Behavioral Health Recovery Center Rezone and Comprehensive Plan Amendment (Pre-App ZPAC00056-24)

Clackamas County Behavioral Health ("the Applicant") is proposing to rezone the properties located at 15301 SE 92nd Avenue to enable a variety of supportive housing and medical services to help people with substance abuse disorders. Today, the site is split zoned with 2.5 acres designated as High Density Residential (HDR) and 4.12 acres designated as Open Space Management District (OSM). As proposed, the site would be rezoned to include approximately 5.62 acres designated as General Commercial (C-3) and one acre as OSM.

The change in the Zoning and Comprehensive Plan designations require the preparation of a Transportation Planning Rule (TPR) analysis per Oregon Administrative Rule (OAR) 660-012-0060 as well as the preparation of a transportation study that addresses the requirements included in Clackamas County Zoning and Development (ZDO) Section 1202.03.C and in Section 295.6 of the County's Roadway Standards.

This memo addresses the County and TPR requirements and concludes that there are adequate facilities to accommodate the proposed changes, assuming a limitation is placed on the future use of the C-3 zoned lands. This limitation would equate to 314 recovery beds or the equivalent of a maximum of 816 daily and 75 weekday PM peak hour trips generated by site land uses. With this limitation on the type of future development allowable, the proposed Zone Change and Comprehensive Plan satisfies TPR requirements.

Future site plan review is anticipated under separate cover to address development review topics including but not limited to assessment of site frontage improvements, access spacing, intersection sight distance, etc.

Further details regarding our conclusions are summarized herein.

Description of the Proposed Site and Need for Zone Change

As shown in Figure 1, the site is located in the southwest corner of the SE Tolbert Street/SE 92nd Avenue intersection and currently houses the buildings previously associated with the Cascade Heights Public Charter School. As proposed by the Applicant, the site could be redeveloped to include up to 314 recovery beds (some of which will be in studio-type apartments that provide housing for people in longer term recovery, some of which will assist with withdrawal management and some will be used for temporary stays). Some of the patients/clients will be outpatient and travel to/from the site for appointments but not reside there. The existing HDR and OSM zoning designations do not permit the proposed uses.

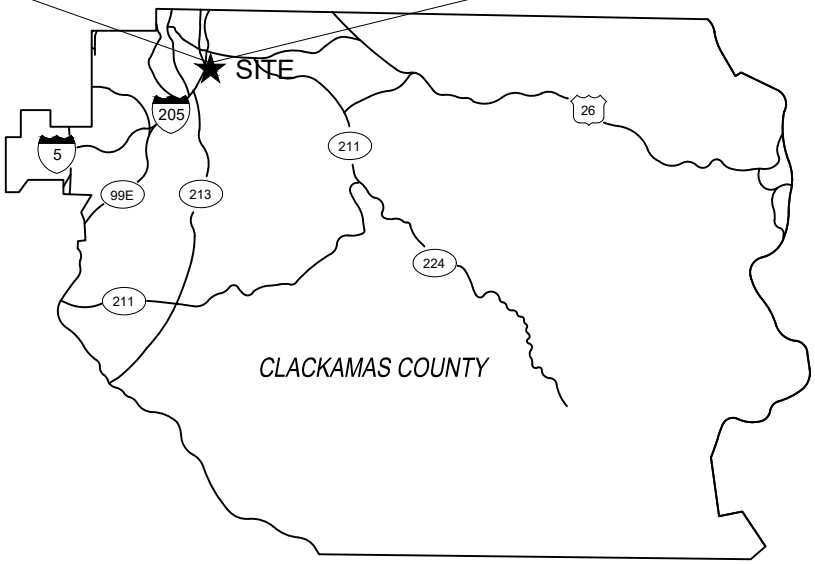
The Applicant proposes to rezone the property to include 5.62 acres of C-3 and one acre as OSM to enable the proposed recovery center uses. A review of the ZDO Section 510.05 provides the following guidance as to what could potentially be developed under the C-3 zoning designation:

- Per Table 510-1, the permitted uses associated with the C-3 zoning that have the highest potential for vehicular trip generation include: daycare facilities, financial institutions, fitness facilities, government uses, offices, retail and medical offices.
- Per Table 510-2, there is no maximum building height nor a minimum or maximum floor-area-ratio (FAR) that might constrain development.

If one were to posit that the 5.62 acres of C-3 would be reasonably developed with a maximum FAR of 1.0, this could enable approximately 244,807 square feet of building space. We further note that of the permitted uses, a medical office building would result in the maximum trip generating potential (accounting for retail pass-by that would reduce net new retail trips to less than medical office) and that this amount of medical office space could equate to 8,813 daily trips and 962 weekday PM peak hour trips[1]. This potential level of trip generation far exceeds what the Applicant is proposing for use of the site and would likely result in a significant effect on the transportation system. Accordingly, the Applicant is proposing to limit the future use of the site assuming the zone change is approved.

[1] Trip estimates derived using average trip rates for a medical office building (Land Use Code 720) as obtained from the *Trip Generation Manual, 11th Edition* (Institute of Transportation Engineers, 2021).





- Study Intersections

Site Location
Clackamas County, Oregon

Figure
1

H:\30\30443 - Clackamas County Recovery Center\report\figs\30443_reportfigs.dwg Apr 11, 2025 - 1:18pm - sgodon Layout Tab: Site Vicinity Map

KITTELSON & ASSOCIATES

Applicable County Criteria

Per the County's ZDO Section 12.02.03, the proposal to rezone the property must include an evaluation of the following transportation-related approval criteria:

C. The transportation system is adequate and will remain adequate with approval of the proposed zone change. For the purpose of this criterion:

> *1. Adequate means a maximum volume-to-capacity ratio (v/c), or a minimum level of service (LOS), as established by Comprehensive Plan Tables 5-2a, Motor Vehicle Capacity Evaluation Standards for the Urban Area, and 5-2b, Motor Vehicle Capacity Evaluation Standards for the Rural Area.*
>
> *2. The evaluation of transportation system adequacy shall be conducted pursuant to the Transportation Planning Rule (Oregon Administrative Rules 660-012-0060).*
>
> *3. It shall be assumed that the subject property is developed with the primary use, allowed in the proposed zoning district, with the highest motor vehicle trip generation rate.*
>
> *4. The methods of calculating v/c and LOS are established by the Clackamas County Roadway Standards.*
>
> *5. The adequacy standards shall apply to all roadways and intersections within the impact area of the proposed zone change. The impact area shall be identified pursuant to the Clackamas County Roadway Standards.*
>
> *6. A determination regarding whether submittal of a transportation impact study is required shall be made based on the Clackamas County Roadway Standards, which also establish the minimum standards to which a transportation impact study shall adhere.*
>
> *7. Notwithstanding Subsections 1202.03(C)(4) through (6), motor vehicle capacity calculation methodology, impact area identification, and transportation impact study requirements are established by the ODOT Transportation Analysis Procedures Manual for roadways and intersections under the jurisdiction of the State of Oregon.*

D. Safety of the transportation system is adequate to serve the level of development anticipated by the proposed zone change.

As noted in ZDO Section 12.02.03.C.3 as well as in the TPR, a zone change shall include an evaluation of the land use associated with the highest potential trip generation unless a limitation of uses associated with the zone change is proposed. As noted above, the Applicant proposes to limit the zone change to permit the anticipated uses and not the full range of what C-3 zoning may otherwise allow.

Applicable TPR Criteria

Two sections of Oregon's TPR apply to amendments to acknowledged land use designations. Per OAR 660-012-0060(1) and (2), the first step in assessing an amendment's potential transportation impact is to compare the vehicular trip generation of the site assuming a "reasonable worst-case" development scenario under the existing and proposed zoning. If the trip generation potential increases under the proposed zoning, additional analysis is required to assess whether the rezone will "significantly affect" the transportation system. Conversely, if the trip generation under the proposed zoning is equal to or less than that under the existing zoning, no additional quantitative analysis is necessary to conclude that the proposal does not "significantly affect" the transportation system.

We further note that Table 1, Policy 1F.5 of the Oregon Highway Plan establishes the following thresholds for determining significance:

- Any proposed amendment that does not increase the average daily trips by more than 400 is not considered significant.
- Any proposed amendment that increases the average daily trips by more than 400 but less than 1,000 for state facilities is not considered significant where:
    - The annual average daily traffic is less than 5,000 for a two-lane highway
    - The annual average daily traffic is less than 15,000 for a three-lane highway
    - The annual average daily traffic is less than 10,000 for a four-lane highway
    - The annual average daily traffic is less than 25,000 for a five-lane highway
- If the increase in traffic between the existing plan and the proposed amendment is more than 1,000 average daily trips, then it is not considered a small increase in traffic and the amendment causes further degradation of the facility and would be subject to existing processes for resolution.

Trip Generation Comparison

To test for a potential significant effect, we reviewed the change in trip generation potential of the permitted land uses associated with the existing versus the proposed zoning designations. Based on the ZDO, the following represents the "reasonable worse case" scenarios in trip making:

- Per Table 315-1 of the ZDO, multifamily housing represents the highest potential trip generator of the existing HDR zoning. Per Table 315-4, there is no maximum building height in the HDR zoning. However, per Table 315-4 of the ZDO, HDR is subject to 1,742 square feet per unit when calculating density. With 2.5 acres, this provides for 63 units (i.e., 2.5 acres x 43,560 sq ft/acre = 108,900 square feet / 1,742 square feet per unit). With the park dedication associated with the site, an additional 10 percent increase in the units is available per the ZDO. This translates to 69 units allowable under the existing HDR zoning.
- As noted above, per ZDO Section 510.05, a medical office building represents the highest potential trip generator associated with the proposed C-3 zoning. Assuming a 1.0 FAR, a maximum of 244,807 square feet of medical office building space could reasonably be developed on the 5.62 acres of C-3 zone land as the "worse case" scenario.

The type of housing and support facilities proposed by the County for those with substance abuse disorders are not directly proportional to the land use types included in the *Trip Generation Manual*. However, based on other projects we've worked on throughout the state that provide supportive housing for those in need, we identified potential land use categories within the *Trip Generation Manual* that could serve as a proxy to estimate the vehicle trips related to the proposed housing, on-site staff and medical services. These include:

- Land Use 223 – Affordable Housing: there are three categories within this land use, including income limits, senior housing and special needs. This land use is described as "multifamily housing rented at below market rate to households that include at least one *employed* member." We also note that the Special Needs category described as "sites designed for and occupied by residents with special needs, such as persons with physical and mental impairments, single mothers, recovering addicts and others living in a group setting;" however, the trip rates are only reflective of "dense" mixed use environments. We do note that the special needs sub-category suggests a rate of 0.79 daily trips and 0.05 trips per resident.
- Land Use 253 – Congregate Care: this land use is described as an "independent living development that provides centralized amenities such as dining, housing keeping, communal transportation, and organized social/recreational activities." Further, "limited medical services" may or may not be provided on-site. Based on this description, we conclude that this land use is not a reasonable proxy for estimating trips but we do note that the daily trip rate is 2.21 trips per unit and the weekday PM peak hour trip rate is 0.18 trips per unit.

- Land Use 254 – Assisted Living: this land use is one that "provides either routine general protective oversight or assistance with activities necessary for independent living to mentally or physically limited persons." Further, its "centralized services typically include dining, housekeeping, social and physical activities, medical administration and communal transportation." Given the centralized services, medical facilities and communal transportation, this description may be a reasonable proxy for the proposed recovery center as the trips may be primarily attributable to significant on-site staff needs. We note that the daily rate is 2.60 trips per bed and the weekday PM peak hour trip rate is 0.24 trips per bed.

- Land Use 255 – Continuing Care Retirement Community (CCRC): this land use is one that "provides multiple elements of senior adult living. A CCRC enables a resident to transition in place from independent living to increased care as the medical needs of the resident change." "The community may also contain special services such as medical, dining, recreational, communal transportation and some limited, supporting retail facilities." Given these characteristics, this land use could be a reasonable proxy as the trips may be attributed to significant on-site staffing needs as well as some off-site travel by residents. We note that the daily rate is 2.47 trips per bed and the weekday PM peak hour trip rate is 0.19 trips per bed.

- Land Use 620 – Nursing Home: this is a "facility whose primary function is to provide care for persons who are unable to care for themselves. Examples include rest homes, chronic care homes, and convalescent homes. Skilled nurses and nursing aides are present 24 hours per day at these sites. Residents often require treatment from a registered healthcare professional for ongoing medical issues. A nursing home resident is not capable of operating a vehicle. Traffic is entirely generated by employees, visitors, and deliveries." We find that this is not a reasonable proxy for estimating trips. For reference, the daily rate is 3.06 trips per bed and the weekday PM peak hour trip rate is 0.14 trips per bed based on eight data sites.

Although none of the available data sets summarized above are a direct comparison, we find that the Assisted Living rates could be as a proxy as these would result in the highest weekday PM peak hour trip generation of the available use data. We have applied the Assisted Living land use data as a proxy for other studies conducted throughout the state for supportive housing facilities for those in need. We also note that these types of land uses do have significant on-site staffing so we would posit that the use of these rates applies to both people on-site as well as those visiting the site but not staying.

Table 1 presents the estimated trip generation for the existing HDR zoning, the unlimited C-3 zoning and the 314-beds proposed using the Assisted Living rate. All trip estimates reflect the average rate for the three uses within the *Trip Generation Manual*.

Table 1. Trip Generation Comparison

Land Use	ITE Code	Size	Daily Trips	Weekday AM Peak Hour			Weekday PM Peak Hour		
				Total	In	Out	Total	In	Out
Existing Zoning – 2.5 acres HDR									
Multifamily Housing (Mid-Rise)	221	69 units	313	26	6	20	27	16	11
Proposed Zoning - C3 - 5.62 acres									
Medical Office Building	720	244,807 square feet	8,813	759	600	159	962	289	673
Proposed Zoning – C3 Limited - 6.3 acres									
Assisted Living	254	314 beds	816	57	34	23	75	29	46
Proposed Zoning – C3 Limited									
Net New Trips (Proposed C3 unlimited – Existing HDR)			**8,500**	**733**	**594**	**139**	**935**	**273**	**662**
Net New Trips (Proposed C3 limited – Existing HDR)			**503**	**31**	**28**	**3**	**48**	**13**	**35**

As shown, the rezone to C3 with no trip limitations has the potential to result in a significant impact per OHP Policy 1F.5. In reviewing Table 1, it is helpful to note that if the rezone is limited to 314 beds based on an Assisted Living rate, the daily trip increase would be less than 1,000 and more than 400 trips, thereby requiring a limited review of the adequacy of the facilities for County purposes but no further TPR analysis per Policy 1F.5 of the Oregon Highway Plan.

We also note that in reviewing the County Transportation System Plan (TSP) designations of the adjacent facilities, the transportation evaluation focuses on the SE Tolbert Street/SE 82nd Drive intersection assuming an increase of 48 weekday PM peak hour trips associated with the limited rezone. With the site-generated trips oriented both to the north and south, no other intersection of collector/arterial designation would be significantly affected by the limited change in zoning per both County's ZDO Section 12.02.03 and OHP policy.

Clackamas County Adequacy of Facilities Evaluation

To address the criteria in ZDO Section 12.02.03, this section of the study presents the following:

- Weekday PM peak hour operations at the SE 82nd Drive/SE Tolbert Street under the following scenarios
  - Existing Conditions
  - Year 2028 Conditions assuming the Behavioral Health Recovery Center is constructed and operational
  - Year 2045 Conditions assuming the existing zoning remains in-place
  - Year 2045 Conditions assuming the limitations on the proposed zoning are approved
- Crash data analysis for the five-year period from 2019-2023;
- Review of the County's TSP to inform potential changes to the transportation system near the site;
- Intersection and roadway needs considerations; and
- Conclusions and recommendations related to the adequacy of services criteria.

Analysis Methodology & Applicable Intersection Standards

All intersection operational analyses were conducted using the procedures outlined in the *Highway Capacity Manual*, 7th Edition, using the Vistro software. The SE 82nd Drive/SE Tolbert Street intersection and the site are in a "neighborhood" urban growth concept area per Map 4-8 of the County's Comprehensive Plan. As such, the intersection operations are subject to a 0.99 volume-to-capacity ratio per Table 5-2a of the Comprehensive Plan.

Transportation Facilities

Table 2 summarizes the characteristics of the existing transportation facilities in the study area. Existing lane configurations and traffic control devices at the study intersection is shown in Figure 1.

Table 2. Existing Transportation Facilities

Roadway	Functional Classification[1]	Number of Vehicular Lanes	Posted Speed (mph[2])	Sidewalks	Bicycle Lanes	On-Street Parking
SE 82nd Drive	Minor Arterial	2 - 3	35	Yes	Yes	No
SE Tolbert Street	Collector Street east of SE 82nd Drive/Local Street west	2 – 3	25	East of 82nd Drive[3]	East of 82nd Drive	West of 92nd Avenue
SE 92nd Avenue	Local Street	2	25	Yes	No	Yes

[1] Source: Clackamas County TSP, Map 5-4a
[2] mph = miles per hour
[3] Sidewalk also available on the north side of SE Tolbert Street between SE 82nd Avenue and SE 92nd Avenue

In addition to the information presented in Table 1, we note that TriMet provides service via the following:

- Bus Route 79 – Clackamas/Oregon City – this route connects people between the Clackamas Town Center and the Oregon City Transit Center. Stops are provided at the SE 82nd Avenue/SE Tolbert Street intersection. During the weekdays, service is provided every 20 – 60 minutes from approximately 6 AM to 10:30 PM. On weekends, service is provided every 40 minutes from approximately 8 AM to 10:30 PM.
- Clackamas Industrial Area Shuttle – this is a free, deviated fixed route shuttle that provides people with connections from the industrial employment sites to the Clackamas Town Center Transit Center. The shuttle operates between 4:50 AM and 11:23 AM daily and from 1:00–8:33 p.m. on weekdays. A shuttle stop is provided at the SE 82nd Avenue/SE Tolbert Street intersection but riders can also request to be picked up or dropped off within three-quarters mile from the route if arranged in advance.

TriMet's Forward Together Report[2] identifies potential future changes to Route 79 that would reroute it south of the site through Gladstone rather than using Washington Street to access the Oregon City Transit Center. This change is not funded at this time nor finalized.

Existing Operational Analysis

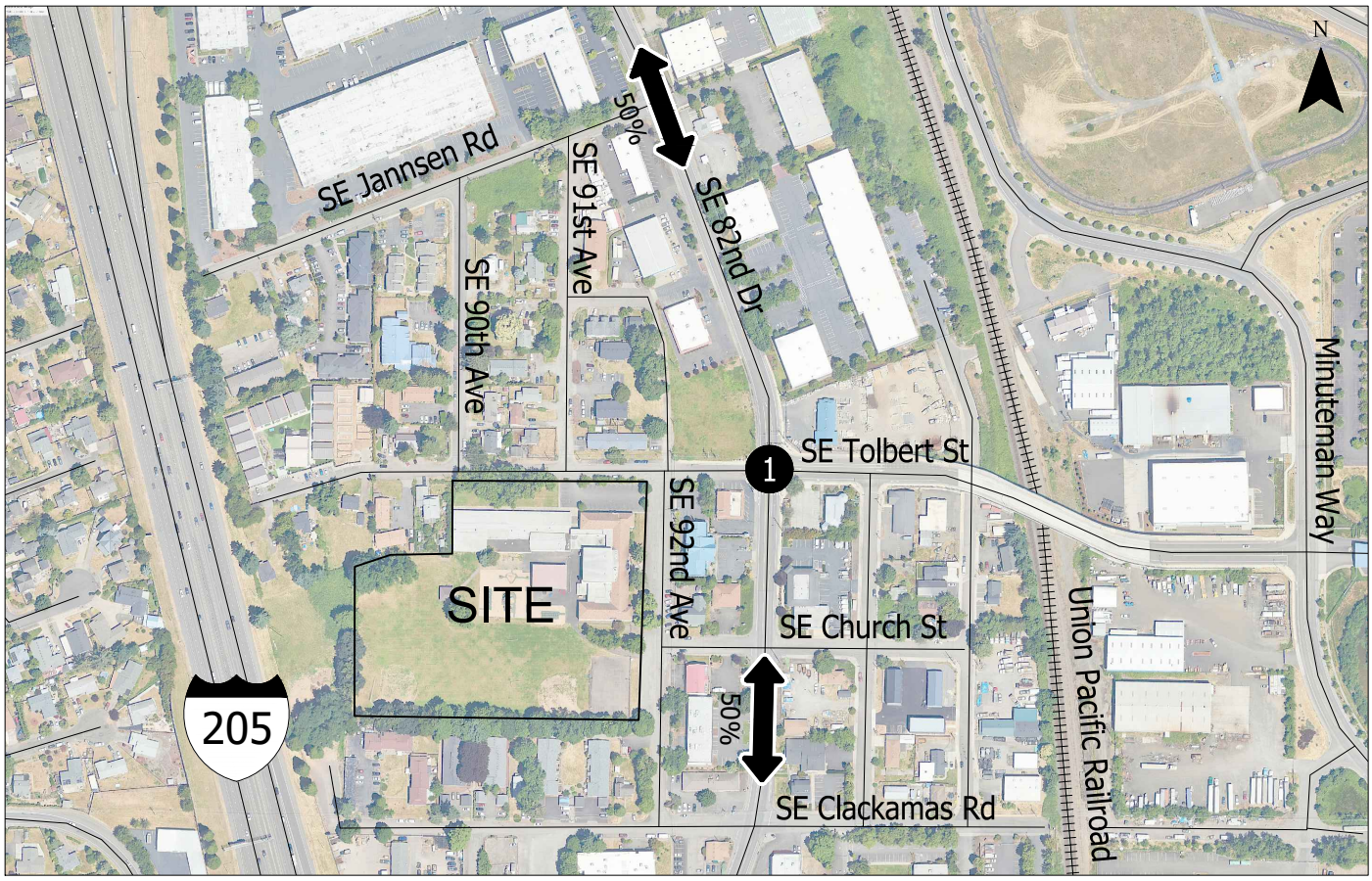
Weekday PM peak vehicle, pedestrian and bicycle traffic counts were collected at the study intersection in February 2025 when there were no inclement weather conditions that would result in atypical travel patterns. The traffic counts are provided in Appendix "A". Figure 2 summarizes the existing volumes and traffic operations during the weekday PM peak hour. As shown, the study intersection currently operates acceptably per the County's requirements. Appendix "B" contains the existing conditions intersection analysis worksheets.

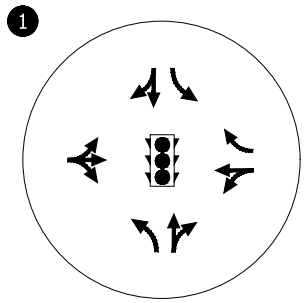
Year 2028 Operational Analysis

Year 2028 analysis of the intersection was performed assuming that the limited zone change is approved and the Recover Center is developed. As noted above, the site could be redeveloped to include up to 314 recovery beds (some of which will be in studio-type apartments that provide housing for people in longer term recovery, some of which will assist with withdrawal management and some will be used for temporary stays). Some of the patients/clients will be outpatient and travel to/from the site for appointments but not reside there. Per Table 1, the estimated trip generation of the site based on the proxy uses is 75 weekday PM peak hour trips.

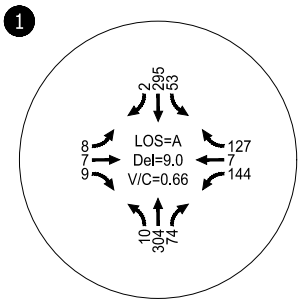
To estimate year 2028 volumes, we obtained travel demand model forecasts from Metro for the study intersection. Per the base year and year 2045 forecasts, the volumes at the intersection are anticipated to grow by 2.7 percent per year over the next twenty years. We used this growth rate also to increase the year 2025 volumes to reflect 2028 conditions and added the trips associated with the proposed Recovery Center (i.e., 29 in and 46 out). Figure 2 reflects the year 2028 volumes and associated intersection operations. As shown, the intersection is anticipated to continue to function acceptably with the development of the Recovery Center.

[2] FT Final Report Working REVISION 20230530.indd

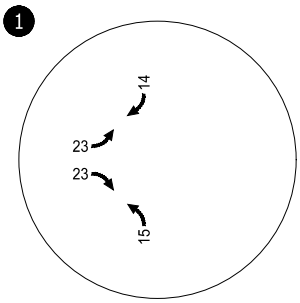




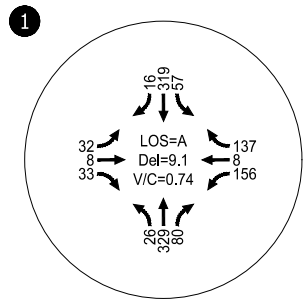
Existing Lane Configurations & Traffic Control



Existing Traffic Volumes & Operations



Site-Generated Trip Distribution & Assignment



2028 Traffic Volumes & Operations with Proposed Site Development

LOS = CRITICAL MOVEMENT LEVEL OF SERVICE
Del =CRITICAL MOVEMENT CONTROL DELAY
V/C = CRITICAL VOLUME-TO-CAPACITY RATIO

Year 2025 and Year 2028
Clackamas County, Oregon

Figure
2

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Year 2045 Existing Zoning Analysis

As noted above, the Metro model suggests that the intersection volumes will grow by 2.7 percent per year over the next twenty years. This accounts for growth in existing households and employment in the area assuming the existing zoning designations remain in-place. This growth was applied to the 2025 intersection volumes to estimate year 2045 conditions under the existing zoning. The resultant intersection volumes and intersection operations are shown in Figure 3. As shown, the intersection is anticipated to operate acceptably in the year 2045 assuming the existing zoning remains in-place.

Year 2045 Proposed Zoning Analysis with a Land Use Limitation

Figure 3 also shows the resultant intersection volumes and operational analyses assuming the proposed zoning is adopted with the land use limitations in-place. The volumes reflect the 2045 existing zoning plus the incremental increase in volumes shown in Table 1. As shown, the intersection is anticipated to continue to operate acceptably with the proposed zoning. As such, we conclude that the proposed zoning does not significantly affect the transportation system assuming a limitation on land uses is placed on the property.

Crash History Analysis

The Oregon Department of Transportation (ODOT) Crash Data System was queried to obtain crash records at the study intersection for the five-year period from January 1, 2019 to December 31, 2023. The crash type classifications were reviewed to assess whether crash patterns might be identifiable. Table 3 summarizes the reported crashes by type and severity. No fatal crashes were reported. Appendix "C" provides detailed crash data at the study intersection.

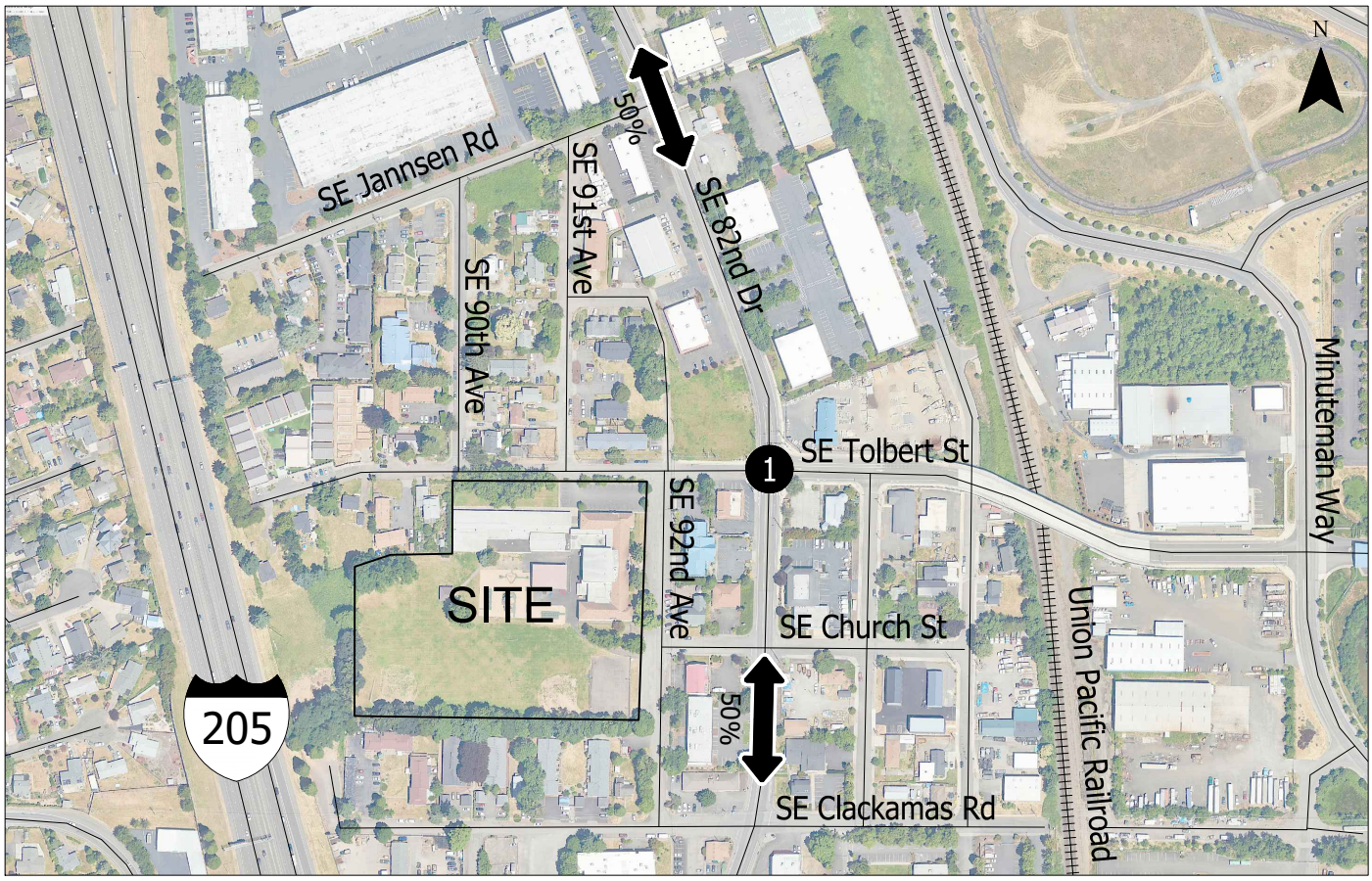
Table 3. Reported Crashes (January 1, 2019 – December 31, 2023)

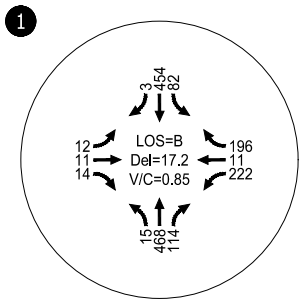
Intersection	Crash Type					Severity		
	Angle	Turning	Rear-End	Fixed Object	Ped	PDO[1]	INJA	INJ B/C
SE 82nd Drive/SE Tolbert Street	1	3	1	0	0	4	0	1

[1] PDO = property damage only

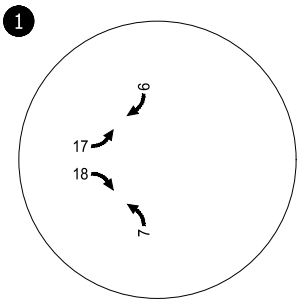
As shown, there were no serious injury (Injury A) nor fatal crashes reported at the intersection. There were also no crashes involving a pedestrian or bicyclists reported during the five-year period.

The critical crash rate for the intersection was calculated following the analysis methodology presented in the ODOT Analysis Procedures Manual (APM). APM Chapter 4 provides 90th percentile crash rates per million entering vehicles at a variety of intersection configurations based on number of approaches and traffic control types. The critical crash rate is calculated based on the average crash rate for each facility and serves as a threshold for further analysis. Per the APM, intersections with crash rates that exceed the 90th percentile values shown in APM Exhibit 4-1 or with a crash rate that exceeds its critical crash rate should be flagged for further analysis. Table 4 shows that the observed crash rate is much below the 90th percentile crash rate.

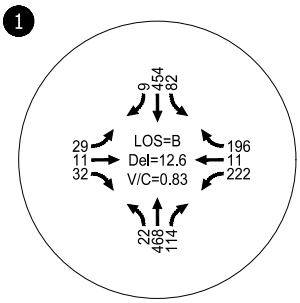




2045 Traffic Volumes & Operations with Existing Zoning



Additional Site Trip Generation & Assignment associated with Proposed Zoning



2045 Traffic Volumes & Operations with Proposed Zoning

LOS = CRITICAL MOVEMENT LEVEL OF SERVICE
Del =CRITICAL MOVEMENT CONTROL DELAY
V/C = CRITICAL VOLUME-TO-CAPACITY RATIO

Year 2045
Clackamas County, Oregon

Figure
3

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Table 4. Intersection Crash Rate Assessment (January 1, 2019 – December 31, 2023)

Intersection	Total Crashes	Observed Crash Rate	90th Percentile Crash Rate	Observed Crash Rate>Critical Crash Rate?
SE 82nd Drive/SE Tolbert Street	5	0.263	0.860	No

Finally, we note that Clackamas County's "*Drive to Zero Safety Action Plan*" (2019) does not identify any safety-based projects within the study area.

OTHER CONSIDERATIONS

Future site plan review is anticipated under separate cover to address development review topics including but not limited to assessment of site frontage improvements, access spacing, intersection sight distance, etc.

COMPLIANCE WITH THE APPLICABLE OREGON ADMINISTRATIVE RULE CRITERIA

OAR Section 660-12-0060 of the TPR sets forth the relative criteria for evaluating plan and land use regulation amendments. Table 5 summarizes the criteria in Section 660-012-0060 and the applicability to the proposed limited zone change.

Table 5. Summary of Criteria in OAR 660-012-0060

Section	Criteria	Applicable?
1	Describes how to determine if a proposed land use action results in a significant effect.	Yes
2	Describes measures for complying with Criteria #1 where a significant effect is determined.	Yes
3	Describes measures for complying with Criteria #1 and #2 without assuring that the allowed land uses are consistent with the function, capacity and performance standards of the facility.	Yes
4	Determinations under Criteria #1, #2, and #3 are coordinated with other local agencies.	Yes
5	Indicates that the presence of a transportation facility shall not be the basis for an exception to allow development on rural lands.	No
6	Indicates that local agencies should credit developments that provide a reduction in trips.	No
7	Outlines requirements for a local street plan, access management plan, or future street plan.	No
8	Defines a mixed-use, pedestrian-friendly neighborhood.	No
9	A significant effect may not occur if the rezone is identified on the Comprehensive Plan and assumed in the adopted Transportation System Plan.	No
10	Agencies may consider measures other than vehicular capacity if within an identified multimodal mixed-use area (MMA).	No
11	Allows agencies to override the finding of a significant effect if the application meets the balancing test.	No

As shown in Table 5, there are eleven criteria that apply to Plan and Land Use Regulation Amendments. Of these, four are applicable to the proposed land use action. These criteria are provided below in italics with our response shown in standard font.

> *OAR 660-12-0060(1) If an amendment to a functional plan, an acknowledged comprehensive plan, or a land use regulation (including a zoning map) would significantly affect an existing or planned transportation facility, then the local government must put in place measures as provided in section (2) of this rule, unless the amendment is allowed under section (3), (9) or (10) of this rule. A plan or land use regulation amendment significantly affects a transportation facility if it would:*
>
> > *(a) Change the functional classification of an existing or planned transportation facility (exclusive of correction of map errors in an adopted plan);*
> >
> > *(b) Change standards implementing a functional classification system; or*
> >
> > *(c) Result in any of the effects listed in paragraphs (A) through (C) of this subsection based on projected conditions measured at the end of the planning period identified in the adopted TSP. As part of evaluating projected conditions, the amount of traffic projected to be generated within the area of the amendment may be reduced if the amendment includes an enforceable, ongoing requirement that would demonstrably limit traffic generation, including, but not limited to, transportation demand management. This reduction may diminish or completely eliminate the significant effect of the amendment.*

(A) Types or levels of travel or access that are inconsistent with the functional classification of an existing or planned transportation facility;

(B) Degrade the performance of an existing or planned transportation facility such that it would not meet the performance standards identified in the TSP or comprehensive plan; or

(C) Degrade the performance of an existing or planned transportation facility that is otherwise projected to not meet the performance standards identified in the TSP or comprehensive plan.

Response: The proposed change in zoning designation could result in an increase in daily trip making although no changes to the County's functional street classification designations or standards are warranted by the change in designation and the adjacent facilities are appropriate for either the HDR or C-3 designations.

(2) If a local government determines that there would be a significant effect, then the local government must ensure that allowed land uses are consistent with the performance standards of the facility measured or projected at the end of the planning period identified in the adopted TSP through one or a combination of the remedies listed in subsections (a) through (c) below, unless the amendment meets the balancing test in subsection (c) or qualifies for partial mitigation in section (11) of this rule. A local government using subsection (c), section (3), section (10) or section (11) to approve an amendment recognizes that additional motor vehicle traffic congestion may result and that other facility providers would not be expected to provide additional capacity for motor vehicles in response to this congestion.

(3) Notwithstanding sections (1) and (2) of this rule, a local government may approve an amendment that would significantly affect an existing transportation facility without ensuring that the allowed land uses are consistent with the performance standards of the facility where:

(b) Development resulting from the amendment will, at a minimum, mitigate the impacts of the amendment in a manner that avoids further degradation to the performance of the facility by the time of the development through one or a combination of transportation improvements or measures;

Response: Clackamas County proposes a limitation of land uses to a 314 bed recovery center based on a trip cap using the Assisted Living trip generation rate. This would equate to a maximum of 503 new daily trips compared to what is possible under the existing zoning (i.e., 313 daily trips associated with the HDR zoning versus 816 daily trips associated with a 314 bed recovery center). With this limitation, there are no significant affects on the transportation system. The SE 82nd Drive/SE Tolbert Street intersection is anticipated to function acceptably through the year 2045 assuming the proposed zoning is adopted.

(4) Determinations under sections (1)-(3) of this rule shall be coordinated with affected transportation facility and service providers and other affected local governments.

Response: The Applicant is coordinating the proposed zone change with County staff.

CONCLUSIONS

As discussed herein, there are adequate facilities to accommodate the proposed change in zoning, assuming a limitation is placed on the future use of the C-3 zoned lands. As such, there are no significant affects on the transportation system as defined by the TPR and by the ZDO. The proposed limitation on the type of future development allowable would equate to 314 recovery beds or the equivalent of a maximum of 816 daily and 75 weekday PM peak hour trips generated by the proposed uses.

We note that future site plan review is anticipated under separate cover to address development review topics including but not limited to assessment of site frontage improvements, access spacing, intersection sight distance, etc.

Please let us know if you have any questions regarding our evaluation.

APPENDIX LIST

A. Traffic Count Data
B. Intersection Operations Analysis Worksheets
C. Crash Data

Appendix A
Traffic Count Data

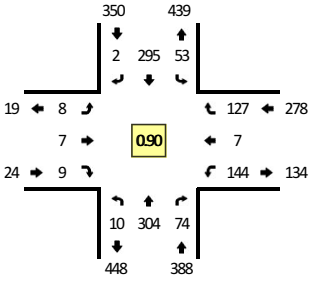
Type of peak hour being reported: Intersection Peak

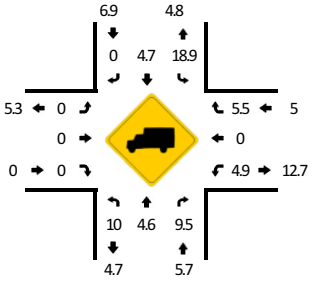
Method for determining peak hour: Total Entering Volume

LOCATION: SE 82nd Dr -- SE Tolbert St
CITY/STATE: Clackamas County, OR

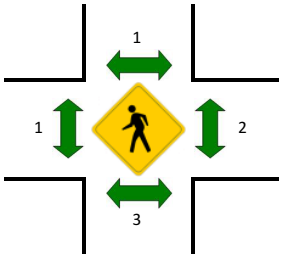
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DATE: Wed, Feb 19 2025

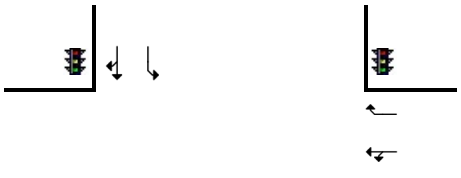
Peak-Hour: 3:10 PM -- 4:10 PM
Peak 15-Min: 3:30 PM -- 3:45 PM

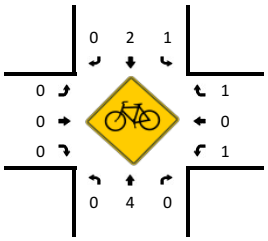


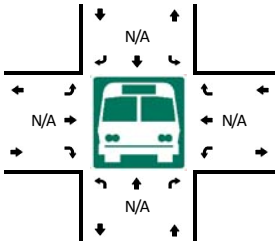


TRUE DATA TO IMPROVE MOBILITY

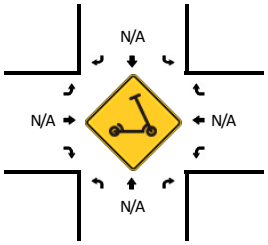












5-Min Count Period Beginning At	SE 82nd Dr (Northbound)				SE 82nd Dr (Southbound)				SE Tolbert St (Eastbound)				SE Tolbert St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:00 PM	3	30	5	0	4	25	0	0	1	2	0	0	9	0	7	0	86	
3:05 PM	0	28	5	0	6	20	0	0	0	3	1	0	5	0	6	0	74	
3:10 PM	0	20	9	0	3	32	1	0	0	1	1	0	8	0	3	0	78	
3:15 PM	1	30	2	0	3	27	0	0	1	1	1	0	10	0	10	0	86	
3:20 PM	0	25	9	0	4	27	0	0	1	0	0	0	8	0	10	0	84	
3:25 PM	1	30	5	0	5	18	0	0	0	0	0	0	12	1	5	0	77	
3:30 PM	2	25	5	0	2	38	0	0	2	1	3	0	12	2	10	0	102	
3:35 PM	0	25	6	0	5	32	0	0	0	1	1	0	15	1	17	0	103	
3:40 PM	1	31	6	0	5	17	0	0	0	1	0	0	12	0	11	0	84	
3:45 PM	4	23	4	0	5	20	1	0	0	0	1	0	9	0	10	0	77	
3:50 PM	0	24	4	0	3	18	0	0	2	1	0	0	14	1	16	0	83	
3:55 PM	1	18	6	0	7	18	0	0	0	0	1	0	14	0	9	0	74	1008
4:00 PM	0	34	6	0	8	26	0	0	0	0	1	0	12	0	15	0	102	1024
4:05 PM	0	19	12	0	3	22	0	0	2	1	0	0	18	2	11	0	90	1040
4:10 PM	0	20	5	0	6	15	0	0	0	0	1	0	13	1	11	0	72	1034
4:15 PM	1	16	9	0	5	12	0	0	1	1	0	0	16	0	1	0	62	1010
4:20 PM	0	12	4	0	5	19	2	0	1	0	0	0	12	1	7	0	63	989
4:25 PM	3	28	9	0	5	21	2	0	2	0	2	0	21	3	5	0	101	1013
4:30 PM	2	21	7	0	9	31	0	0	0	1	2	0	13	0	7	0	93	1004
4:35 PM	0	27	4	0	10	25	0	0	2	0	1	0	18	1	8	0	96	997
4:40 PM	0	17	10	0	9	23	1	0	1	3	0	0	22	1	9	0	96	1009
4:45 PM	0	24	10	0	6	26	0	0	0	1	1	0	7	0	11	0	86	1018
4:50 PM	0	29	7	0	6	14	0	0	1	0	0	0	12	1	7	0	77	1012
4:55 PM	2	28	7	0	5	25	0	0	1	1	0	0	9	1	10	0	89	1027
5:00 PM	0	21	6	0	6	25	1	0	0	0	0	0	13	0	11	0	83	1008
5:05 PM	2	18	7	0	8	25	0	0	1	0	0	0	10	0	5	0	76	994
5:10 PM	1	15	7	0	4	17	1	0	0	1	1	0	18	3	9	0	77	999
5:15 PM	0	23	6	0	3	22	1	0	2	1	0	0	8	0	6	0	72	1009
5:20 PM	1	24	6	0	4	18	1	0	4	2	0	0	14	0	12	0	86	1032
5:25 PM	2	16	5	0	7	17	0	0	1	0	0	0	7	0	6	0	61	992
5:30 PM	2	21	4	0	3	20	0	0	0	1	0	0	12	1	5	0	69	968
5:35 PM	2	12	5	0	2	20	0	0	0	0	0	0	6	0	4	0	51	923
5:40 PM	1	20	4	0	2	12	0	0	0	0	0	0	7	0	5	0	51	878
5:45 PM	1	12	7	0	0	15	0	0	0	1	1	0	6	0	6	0	49	841
5:50 PM	3	15	2	0	6	13	0	0	2	1	0	0	5	0	0	0	47	811
5:55 PM	0	13	3	0	2	12	1	0	0	0	2	0	6	2	1	0	42	764

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	12	324	68	0	48	348	0	0	8	12	16	0	156	12	152	0	1156
Heavy Trucks	0	12	4		16	20	0		0	0	0		8	0	8		68
Buses																	
Pedestrians		0				0				0				8			8
Bicycles	0	0	0		4	0	0		0	0	0		0	0	0		4
Scooters																	

Comments:

Report generated on 2/26/2025 4:41 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Appendix B
Intersection Operations Analysis Worksheets

Intersection Level Of Service Report
Intersection 1: SE 82nd Dr & SE Tolbert St

Control Type:	Signalized	Delay (sec / veh):	9.0
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.658

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	11.00	11.00	12.00	11.00	11.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	0	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	200.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			35.00			25.00			25.00		
Grade [%]	0.00			0.00			-0.02			0.02		
Curb Present	Yes			Yes			Yes			Yes		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	10	304	74	53	295	2	8	7	9	144	7	127
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	10.00	5.00	9.00	19.00	5.00	0.00	0.00	0.00	0.00	5.00	0.00	6.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	10	304	74	53	295	2	8	7	9	144	7	127
Peak Hour Factor	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	84	21	15	82	1	2	2	3	40	2	35
Total Analysis Volume [veh/h]	11	338	82	59	328	2	9	8	10	160	8	141
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	2			1			1			0		
v_di, Inbound Pedestrian Volume crossing m	1			0			2			1		
v_co, Outbound Pedestrian Volume crossing	1			0			1			1		
v_ci, Inbound Pedestrian Volume crossing mi	1			1			0			1		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	4			3			0			2		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Free Running (No Pattern)
Coordination Type	*Free Running*
Actuation Type	*Fully actuated*
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing (Basic)

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Overlap
Signal Group	1	6	0	5	2	0	0	8	0	0	4	4
Auxiliary Signal Groups												4,5
Maximum Green [s]	20	30	0	20	30	0	0	25	0	0	25	25
Amber [s]	3.5	4.0	0.0	3.5	4.0	0.0	0.0	4.0	0.0	0.0	4.0	4.0
All red [s]	0.5	0.5	0.0	0.5	0.5	0.0	0.0	0.5	0.0	0.0	0.5	0.5
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	7
Pedestrian Clearance [s]	0	16	0	0	8	0	0	11	0	0	15	15
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	2.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Free Running (No Pattern)

Split [s]	9	14	0	9	14	0	0	14	0	0	14	14
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	4	10	0	4	10	0	0	6	0	0	6	6
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	3.0
Minimum Recall	No	Yes		No	Yes			No			No	No
Maximum Recall	No	No		No	No			No			No	No
Pedestrian Recall	No	No		No	No			No			No	No

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	C	C	R
C, Cycle Length [s]	31	31	31	31	31	31	31
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	2.00	2.00	0.00
l2, Clearance Lost Time [s]	0.00	2.00	0.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	16	10	16	12	7	7	13
g / C, Green / Cycle	0.52	0.34	0.52	0.38	0.22	0.22	0.41
(v / s)_i Volume / Saturation Flow Rate	0.01	0.24	0.06	0.18	0.03	0.14	0.10
s, saturation flow rate [veh/h]	1083	1753	1001	1823	1016	1194	1448
c, Capacity [veh/h]	784	590	685	699	376	486	586
d1, Uniform Delay [s]	4.03	9.00	4.60	7.22	9.79	11.04	6.07
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.01	1.60	0.05	0.50	0.08	0.42	0.21
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.01	0.71	0.09	0.47	0.07	0.35	0.24
d, Delay for Lane Group [s/veh]	4.03	10.61	4.65	7.72	9.87	11.47	6.28
Lane Group LOS	A	B	A	A	A	B	A
Critical Lane Group	No	Yes	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.01	1.71	0.08	0.99	0.12	0.85	0.42
50th-Percentile Queue Length [ft/ln]	0.36	42.83	2.02	24.87	3.00	21.28	10.43
95th-Percentile Queue Length [veh/ln]	0.03	3.08	0.15	1.79	0.22	1.53	0.75
95th-Percentile Queue Length [ft/ln]	0.64	77.10	3.64	44.76	5.40	38.30	18.78

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	4.03	10.61	10.61	4.65	7.72	7.72	9.87	9.87	9.87	11.47	11.47	6.28
Movement LOS	A	B	B	A	A	A	A	A	A	B	B	A
d_A, Approach Delay [s/veh]	10.44			7.25			9.87			9.10		
Approach LOS	B			A			A			A		
d_I, Intersection Delay [s/veh]	8.99											
Intersection LOS	A											
Intersection V/C	0.658											

Emissions

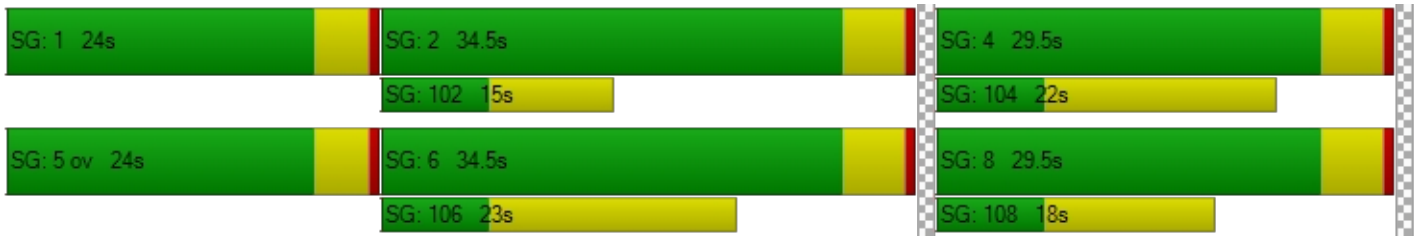
Vehicle Miles Traveled [mph]	0.48	18.48	2.19	12.24	0.64	9.90	8.31
Stops [stops/h]	1.66	198.55	9.37	115.27	13.90	98.64	48.37
Fuel consumption [US gal/h]	0.04	3.10	0.21	1.85	0.14	1.22	0.74
CO [g/h]	2.79	216.99	14.66	129.42	9.54	84.97	51.68
NOx [g/h]	0.54	42.22	2.85	25.18	1.86	16.53	10.05
VOC [g/h]	0.65	50.29	3.40	29.99	2.21	19.69	11.98

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	6.48	6.48	6.48	6.48
l_p,int, Pedestrian LOS Score for Intersectio	2.452	2.218	1.674	2.030
Crosswalk LOS	B	B	A	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1931	1931	1609	1609
d_b, Bicycle Delay [s]	0.02	0.02	0.59	0.59
l_b,int, Bicycle LOS Score for Intersection	2.271	2.201	1.604	2.069
Bicycle LOS	B	B	A	B

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 1: SE 82nd Dr & SE Tolbert St

Control Type:	Signalized	Delay (sec / veh):	9.1
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.742

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	11.00	11.00	12.00	11.00	11.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	0	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	200.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			35.00			25.00			25.00		
Grade [%]	0.00			0.00			-0.02			0.02		
Curb Present	Yes			Yes			Yes			Yes		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	26	329	80	57	319	16	32	8	33	156	8	137
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	10.00	5.00	9.00	19.00	5.00	0.00	0.00	0.00	0.00	5.00	0.00	6.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	26	329	80	57	319	16	32	8	33	156	8	137
Peak Hour Factor	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	91	22	16	89	4	9	2	9	43	2	38
Total Analysis Volume [veh/h]	29	366	89	63	354	18	36	9	37	173	9	152
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	2			1			1			0		
v_di, Inbound Pedestrian Volume crossing m	1			0			2			1		
v_co, Outbound Pedestrian Volume crossing	1			0			1			1		
v_ci, Inbound Pedestrian Volume crossing mi	1			1			0			1		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	4			3			0			2		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Free Running (No Pattern)
Coordination Type	*Free Running*
Actuation Type	*Fully actuated*
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing (Basic)

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Overlap
Signal Group	1	6	0	5	2	0	0	8	0	0	4	4
Auxiliary Signal Groups												4,5
Maximum Green [s]	20	30	0	20	30	0	0	25	0	0	25	25
Amber [s]	3.5	4.0	0.0	3.5	4.0	0.0	0.0	4.0	0.0	0.0	4.0	4.0
All red [s]	0.5	0.5	0.0	0.5	0.5	0.0	0.0	0.5	0.0	0.0	0.5	0.5
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	7
Pedestrian Clearance [s]	0	16	0	0	8	0	0	11	0	0	15	15
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	2.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Free Running (No Pattern)

Split [s]	9	14	0	9	14	0	0	14	0	0	14	14
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	4	10	0	4	10	0	0	6	0	0	6	6
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	3.0
Minimum Recall	No	Yes		No	Yes			No			No	No
Maximum Recall	No	No		No	No			No			No	No
Pedestrian Recall	No	No		No	No			No			No	No

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	C	C	R
C, Cycle Length [s]	30	30	30	30	30	30	30
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	2.00	0.00	2.00	2.00	0.00	0.00
g_i, Effective Green Time [s]	12	10	15	10	5	7	12
g / C, Green / Cycle	0.42	0.35	0.51	0.34	0.18	0.24	0.42
(v / s)_i Volume / Saturation Flow Rate	0.03	0.26	0.06	0.21	0.15	0.15	0.10
s, saturation flow rate [veh/h]	1112	1753	997	1807	529	1224	1448
c, Capacity [veh/h]	667	624	670	619	267	534	608
d1, Uniform Delay [s]	3.66	8.31	4.83	8.08	10.81	10.93	5.53
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.03	1.66	0.06	0.94	0.64	0.38	0.21
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.04	0.73	0.09	0.60	0.31	0.34	0.25
d, Delay for Lane Group [s/veh]	3.68	9.97	4.89	9.02	11.45	11.31	5.75
Lane Group LOS	A	A	A	A	B	B	A
Critical Lane Group	No	Yes	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.03	1.63	0.08	1.23	0.40	0.84	0.39
50th-Percentile Queue Length [ft/ln]	0.64	40.77	2.04	30.82	10.01	21.04	9.80
95th-Percentile Queue Length [veh/ln]	0.05	2.94	0.15	2.22	0.72	1.52	0.71
95th-Percentile Queue Length [ft/ln]	1.15	73.39	3.67	55.48	18.01	37.88	17.64

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	3.68	9.97	9.97	4.89	9.02	9.02	11.45	11.45	11.45	11.31	11.31	5.75
Movement LOS	A	A	A	A	A	A	B	B	B	B	B	A
d_A, Approach Delay [s/veh]	9.59			8.42			11.45			8.78		
Approach LOS	A			A			B			A		
d_I, Intersection Delay [s/veh]	9.12											
Intersection LOS	A											
Intersection V/C	0.742											

Emissions

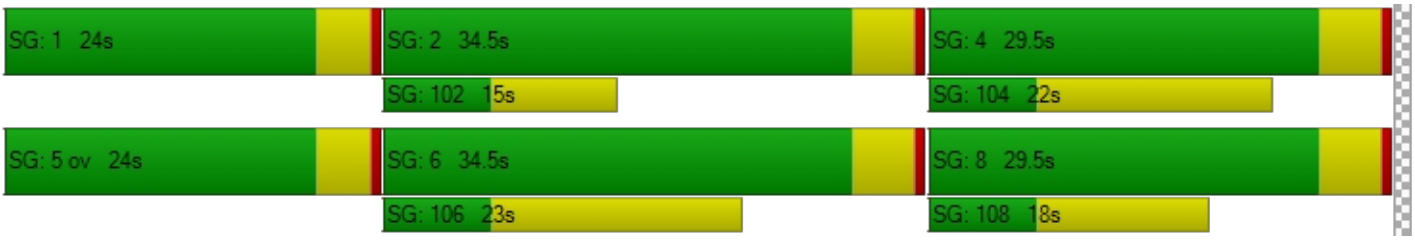
Vehicle Miles Traveled [mph]	1.28	20.02	2.34	13.79	1.95	10.72	8.96
Stops [stops/h]	3.11	198.75	9.94	150.25	48.77	102.58	47.78
Fuel consumption [US gal/h]	0.09	3.18	0.23	2.34	0.47	1.29	0.76
CO [g/h]	6.56	222.34	15.83	163.46	32.56	90.50	53.40
NOx [g/h]	1.28	43.26	3.08	31.80	6.34	17.61	10.39
VOC [g/h]	1.52	51.53	3.67	37.88	7.55	20.97	12.38

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	5.82	5.82	5.82	5.82
l_p,int, Pedestrian LOS Score for Intersectio	2.329	2.294	1.712	2.036
Crosswalk LOS	B	B	A	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	2031	2031	1693	1693
d_b, Bicycle Delay [s]	0.00	0.00	0.35	0.35
l_b,int, Bicycle LOS Score for Intersection	2.358	2.277	1.695	2.111
Bicycle LOS	B	B	A	B

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 1: SE 82nd Dr & SE Tolbert St

Control Type:	Signalized	Delay (sec / veh):	17.2
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.853

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	11.00	11.00	12.00	11.00	11.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	0	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	200.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			35.00			25.00			25.00		
Grade [%]	0.00			0.00			-0.02			0.02		
Curb Present	Yes			Yes			Yes			Yes		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	15	468	114	82	454	3	12	11	14	222	11	196
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	10.00	5.00	9.00	19.00	5.00	0.00	0.00	0.00	0.00	5.00	0.00	6.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	15	468	114	82	454	3	12	11	14	222	11	196
Peak Hour Factor	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	130	32	23	126	1	3	3	4	62	3	54
Total Analysis Volume [veh/h]	17	520	127	91	504	3	13	12	16	247	12	218
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	2			1			1			0		
v_di, Inbound Pedestrian Volume crossing m	1			0			2			1		
v_co, Outbound Pedestrian Volume crossing	1			0			1			1		
v_ci, Inbound Pedestrian Volume crossing mi	1			1			0			1		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	4			3			0			2		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Free Running (No Pattern)
Coordination Type	*Free Running*
Actuation Type	*Fully actuated*
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing (Basic)

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Overlap
Signal Group	1	6	0	5	2	0	0	8	0	0	4	4
Auxiliary Signal Groups												4,5
Maximum Green [s]	20	30	0	20	30	0	0	25	0	0	25	25
Amber [s]	3.5	4.0	0.0	3.5	4.0	0.0	0.0	4.0	0.0	0.0	4.0	4.0
All red [s]	0.5	0.5	0.0	0.5	0.5	0.0	0.0	0.5	0.0	0.0	0.5	0.5
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	7
Pedestrian Clearance [s]	0	16	0	0	8	0	0	11	0	0	15	15
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	2.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Free Running (No Pattern)

Split [s]	9	14	0	9	14	0	0	14	0	0	14	14
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	4	10	0	4	10	0	0	6	0	0	6	6
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	3.0
Minimum Recall	No	Yes		No	Yes			No			No	No
Maximum Recall	No	No		No	No			No			No	No
Pedestrian Recall	No	No		No	No			No			No	No

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	C	C	R
C, Cycle Length [s]	52	52	52	52	52	52	52
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	2.00	2.00	0.00
l2, Clearance Lost Time [s]	0.00	2.00	0.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	31	22	22	17	14	22	31
g / C, Green / Cycle	0.59	0.42	0.43	0.33	0.26	0.42	0.59
(v / s)_i Volume / Saturation Flow Rate	0.02	0.37	0.10	0.28	0.08	0.37	0.15
s, saturation flow rate [veh/h]	913	1753	939	1823	516	693	1446
c, Capacity [veh/h]	521	734	395	605	225	427	852
d1, Uniform Delay [s]	6.52	14.06	11.82	16.21	15.54	14.01	5.19
k, delay calibration	0.11	0.19	0.11	0.11	0.11	0.29	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.03	6.23	0.30	3.17	0.38	3.65	0.16
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.03	0.88	0.23	0.84	0.18	0.61	0.26
d, Delay for Lane Group [s/veh]	6.55	20.29	12.11	19.39	15.93	17.66	5.34
Lane Group LOS	A	C	B	B	B	B	A
Critical Lane Group	Yes	No	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.06	6.75	0.55	5.17	0.36	2.82	0.88
50th-Percentile Queue Length [ft/ln]	1.40	168.74	13.82	129.22	9.08	70.49	22.11
95th-Percentile Queue Length [veh/ln]	0.10	11.01	1.00	8.90	0.65	5.08	1.59
95th-Percentile Queue Length [ft/ln]	2.52	275.25	24.88	222.43	16.34	126.88	39.79

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	6.55	20.29	20.29	12.11	19.39	19.39	15.93	15.93	15.93	17.66	17.66	5.34
Movement LOS	A	C	C	B	B	B	B	B	B	B	B	A
d_A, Approach Delay [s/veh]	19.94			18.28			15.93			12.03		
Approach LOS	B			B			B			B		
d_I, Intersection Delay [s/veh]	17.17											
Intersection LOS	B											
Intersection V/C	0.853											

Emissions

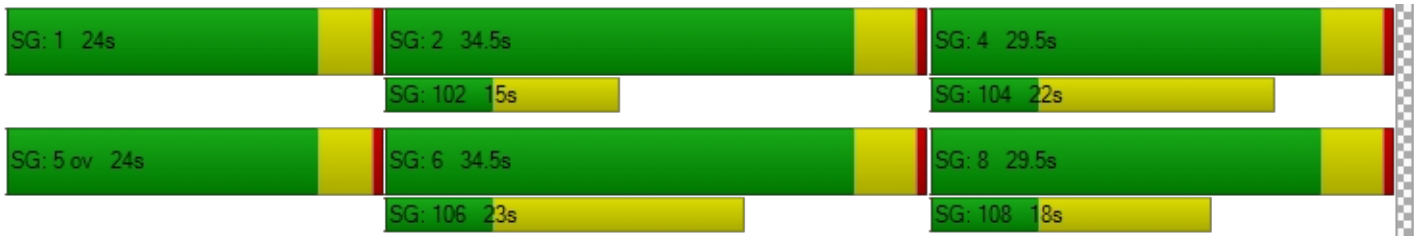
Vehicle Miles Traveled [mph]	0.75	28.46	3.37	18.80	0.97	15.26	12.85
Stops [stops/h]	3.85	464.41	38.04	355.64	24.98	194.01	60.84
Fuel consumption [US gal/h]	0.08	7.25	0.64	5.39	0.27	2.36	1.05
CO [g/h]	5.60	506.76	44.67	376.89	19.05	165.07	73.26
NOx [g/h]	1.09	98.60	8.69	73.33	3.71	32.12	14.25
VOC [g/h]	1.30	117.45	10.35	87.35	4.41	38.26	16.98

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	16.32	16.32	16.32	16.32
l_p,int, Pedestrian LOS Score for Intersectio	2.803	2.439	1.727	2.139
Crosswalk LOS	C	B	A	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1147	1147	956	956
d_b, Bicycle Delay [s]	4.77	4.77	7.13	7.14
l_b,int, Bicycle LOS Score for Intersection	2.655	2.546	1.627	2.347
Bicycle LOS	B	B	A	B

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 1: SE 82nd Dr & SE Tolbert St

Control Type:	Signalized	Delay (sec / veh):	12.6
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.832

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	11.00	11.00	12.00	11.00	11.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	0	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	200.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			35.00			25.00			25.00		
Grade [%]	0.00			0.00			-0.02			0.02		
Curb Present	Yes			Yes			Yes			Yes		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	22	468	114	82	454	9	29	11	32	222	11	196
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	10.00	5.00	9.00	19.00	5.00	0.00	0.00	0.00	0.00	5.00	0.00	6.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	22	468	114	82	454	9	29	11	32	222	11	196
Peak Hour Factor	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	130	32	23	126	3	8	3	9	62	3	54
Total Analysis Volume [veh/h]	24	520	127	91	504	10	32	12	36	247	12	218
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	2			1			1			0		
v_di, Inbound Pedestrian Volume crossing m	1			0			2			1		
v_co, Outbound Pedestrian Volume crossing	1			0			1			1		
v_ci, Inbound Pedestrian Volume crossing mi	1			1			0			1		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	4			3			0			2		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Free Running (No Pattern)
Coordination Type	*Free Running*
Actuation Type	*Fully actuated*
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing (Basic)

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Overlap
Signal Group	1	6	0	5	2	0	0	8	0	0	4	4
Auxiliary Signal Groups												4,5
Maximum Green [s]	20	30	0	20	30	0	0	25	0	0	25	25
Amber [s]	3.5	4.0	0.0	3.5	4.0	0.0	0.0	4.0	0.0	0.0	4.0	4.0
All red [s]	0.5	0.5	0.0	0.5	0.5	0.0	0.0	0.5	0.0	0.0	0.5	0.5
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	7
Pedestrian Clearance [s]	0	16	0	0	8	0	0	11	0	0	15	15
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	1.0	1.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	1.0	1.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Free Running (No Pattern)

Split [s]	9	14	0	9	14	0	0	14	0	0	14	14
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	4	10	0	4	10	0	0	6	0	0	6	6
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	3.0
Minimum Recall	No	Yes		No	Yes			No			No	No
Maximum Recall	No	No		No	No			No			No	No
Pedestrian Recall	No	No		No	No			No			No	No

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	C	C	R
C, Cycle Length [s]	42	42	42	42	42	42	42
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	2.00	3.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	2.00	1.00	0.00
l2, Clearance Lost Time [s]	0.00	2.00	0.00	2.00	2.00	1.00	0.00
g_i, Effective Green Time [s]	26	18	20	15	8	16	24
g / C, Green / Cycle	0.62	0.43	0.47	0.35	0.19	0.39	0.56
(v / s)_i Volume / Saturation Flow Rate	0.03	0.37	0.10	0.28	0.14	0.31	0.15
s, saturation flow rate [veh/h]	924	1754	941	1818	576	846	1447
c, Capacity [veh/h]	614	761	463	637	226	496	772
d1, Uniform Delay [s]	4.64	10.77	8.89	12.48	15.04	11.25	5.40
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.03	2.79	0.20	2.48	0.94	0.85	0.20
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.04	0.85	0.20	0.81	0.35	0.52	0.28
d, Delay for Lane Group [s/veh]	4.67	13.57	9.10	14.96	15.97	12.10	5.60
Lane Group LOS	A	B	A	B	B	B	A
Critical Lane Group	Yes	No	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.04	4.22	0.34	3.68	0.64	1.79	0.76
50th-Percentile Queue Length [ft/ln]	0.98	105.42	8.56	91.89	15.92	44.63	19.09
95th-Percentile Queue Length [veh/ln]	0.07	7.58	0.62	6.62	1.15	3.21	1.37
95th-Percentile Queue Length [ft/ln]	1.77	189.62	15.41	165.40	28.66	80.33	34.36

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	4.67	13.57	13.57	9.10	14.96	14.96	15.97	15.97	15.97	12.10	12.10	5.60
Movement LOS	A	B	B	A	B	B	B	B	B	B	B	A
d_A, Approach Delay [s/veh]	13.25			14.08			15.97			9.13		
Approach LOS	B			B			B			A		
d_I, Intersection Delay [s/veh]	12.57											
Intersection LOS	B											
Intersection V/C	0.832											

Emissions

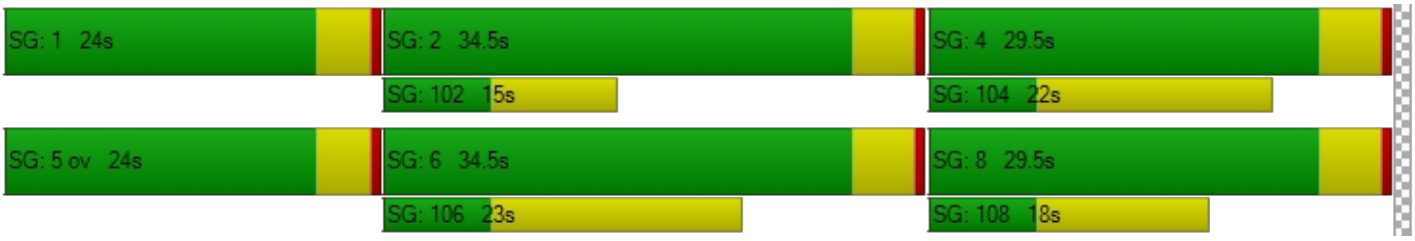
Vehicle Miles Traveled [mph]	1.06	28.46	3.37	19.06	1.90	15.26	12.85
Stops [stops/h]	3.35	359.31	29.18	313.17	54.26	152.09	65.05
Fuel consumption [US gal/h]	0.09	5.57	0.52	4.65	0.55	1.91	1.08
CO [g/h]	6.17	389.59	36.11	324.80	38.70	133.36	75.20
NOx [g/h]	1.20	75.80	7.03	63.19	7.53	25.95	14.63
VOC [g/h]	1.43	90.29	8.37	75.28	8.97	30.91	17.43

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	11.56	11.56	11.56	11.56
l_p,int, Pedestrian LOS Score for Intersectio	2.800	2.463	1.740	2.129
Crosswalk LOS	C	B	A	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1420	1420	1183	1183
d_b, Bicycle Delay [s]	1.78	1.78	3.52	3.53
l_b,int, Bicycle LOS Score for Intersection	2.667	2.558	1.692	2.347
Bicycle LOS	B	B	A	B

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Appendix C
Crash Data

OREGON.. DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANAYLYSIS AND REPORTING UNIT
COUNTY ROAD CRASH LISTING

CLACKAMAS COUNTY

SE 82ND DR, MP 0.42 to 0.46, ALL Crashes Severity, ALL Crashes Circumstance, 01/01/2019 to 12/31/2023

1 - 2 of 2 Crash records shown.

SER# / INVEST / RD DPT / UNLOC?	S P E D	A L C	D M R U G	J N V	S I H L	C O R K	W DAY / TIME / LAT	MILEPNT / DIST FROM / INTERSECT / LONG	COUNTY ROADS / FIRST STREET / SECOND STREET / LRS	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / TYPE / OWNER	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT	EVENT	CAUSE
00913	N	N	N	N			03/18/2019	0.44	SE 82ND DR	INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											27,29
NONE			MO							S		TRF SIGNAL	N	DRY	REAR		PRVTE	S -N									000		00
N			10A							06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	28	F	OR-Y		026	038		27,29
N			45 24 45.36					-122 34 5.52																OR<25					
																02	NONE 0	STOP											
																	PRVTE	S -N									011		00
																	PSNGR CAR		01	DRVR	INJC	28	F	OR-Y		000	000		00
																								OR<25					
01576	N	N	N	N	N	N	06/19/2020	0.44	SE 82ND DR	INTER	CROSS	N	N	CLR	O-1 L-TURN	01	NONE 0	STRGHT											02,08
COUNTY			FR							CN		TRF SIGNAL	N	DRY	TURN		PRVTE	N -S									000		00
N			3P							01	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	54	M	OTH-Y		000	000		00
N			45 24 45.41					-122 34 5.53																N-RES					
																02	NONE 0	TURN-L											
																	PRVTE	S -W									000		00
																	PSNGR CAR		01	DRVR	INJB	73	F	OR-Y		028,004	000		02,08
																								OR<25					

Disclaimer: The information contained in this report is compiled from individual driver and police crash reports submitted to the Oregon Department of Transportation as required in ORS 811.720. The Crash Analysis and Reporting Unit is committed to providing the highest quality crash data to customers. However, because submittal of crash report forms is the responsibility of the individual driver, the Crash Analysis and Reporting Unit can not guarantee that all qualifying crashes are represented nor can assurances be made that all details pertaining to a single crash are accurate. Note: Legislative changes to DMV's vehicle crash reporting requirement, effective 01/01/2004, may result in fewer property damage only crashes being eligible for inclusion in the Statewide Crash Data File.

CLACKAMAS COUNTY

SE TOLBERT ST, MP -.02 to .03, ALL Crashes Severity, ALL Crashes Circumstance, 01/01/2018 to 12/31/2023

1 - 3 of 3 Crash records shown.

SER# / INVEST / RD DPT / UNLOC?	S P E D	A L C	D M R U G	J N S	I H V	C O R L	S W O R K	DATE / DAY / TIME / LAT	MILEPNT / DIST FROM / INTERSECT / LONG	COUNTY ROADS / FIRST STREET / SECOND STREET / LRS	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / TYPE	MOVE / FROM / TO	P#	PRTC / TYPE	INJ / SVRTY	A G E	S E X	LICNS / RES / LOC	PED / ERROR	ACT EVENT	CAUSE
01053	N	N	N	N	N	N	N	04/06/2023	0.00	SE TOLBERT ST	INTER	CROSS	N	N	RAIN	ANGL-OTH	01	NONE 9	STRGHT									04,27
COUNTY			TH								CN		TRF SIGNAL	N	WET	ANGL		N/A	N -S								000	00
N			11A								01	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000	00
N			45 24 45.43		-122 34 5.48																				UNK				
																	02	NONE 9	STRGHT									
																		N/A	E -W								000	00
																		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK	000	000	00
																									UNK			
03767	N	N	N	N	N	N	N	11/02/2023	0.00	SE TOLBERT ST	INTER	CROSS	N	N	CLR	O-1 L-TURN	01	NONE 9	TURN-L									02
NO RPT			TH								CN		TRF SIGNAL	N	DRY	TURN		N/A	W -N								000	00
N			2P								02	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK	000	000	00
N			45 24 45.43		-122 34 5.48																				UNK			
																	02	NONE 9	STRGHT									
																		N/A	E -W								000	00
																		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK	000	000	00
																									UNK			
03639	N	N	N	N	N	N	N	11/12/2022	0.00	SE TOLBERT ST	INTER	CROSS	N	N	CLR	O-1 L-TURN	01	NONE 9	TURN-L									02
NONE			SA							SE 82ND DR	CN		TRF SIGNAL	N	DRY	TURN		N/A	E -S								000	00
N			4P								02	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK	000	000	00
N			45 24 45.43		-122 34 5.48																				UNK			
																	02	NONE 9	STRGHT									
																		N/A	W -E								000	00
																		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK	000	000	00
																									UNK			

Disclaimer: The information contained in this report is compiled from individual driver and police crash reports submitted to the Oregon Department of Transportation as required in ORS 811.720. The Crash Analysis and Reporting Unit is committed to providing the highest quality crash data to customers. However, because submittal of crash report forms is the responsibility of the individual driver, the Crash Analysis and Reporting Unit can not guarantee that all qualifying crashes are represented nor can assurances be made that all details pertaining to a single crash are accurate. Note: Legislative changes to DMV's vehicle crash reporting requirement, effective 01/01/2004, may result in fewer property damage only crashes being eligible for inclusion in the Statewide Crash Data File.

ACTION CODE TRANSLATION LIST

ACTION CODE	SHORT DESCRIPTION	LONG DESCRIPTION
000	NONE	NO ACTION OR NON-WARRANTED
001	SKIDDED	SKIDDED
002	ON/OFF V	GETTING ON OR OFF STOPPED OR PARKED VEHICLE
003	LOAD OVR	OVERHANGING LOAD STRUCK ANOTHER VEHICLE, ETC.
006	SLOW DN	SLOWED DOWN
007	AVOIDING	AVOIDING MANEUVER
008	PAR PARK	PARALLEL PARKING
009	ANG PARK	ANGLE PARKING
010	INTERFERE	PASSENGER INTERFERING WITH DRIVER
011	STOPPED	STOPPED IN TRAFFIC NOT WAITING TO MAKE A LEFT TURN
012	STP/L TRN	STOPPED BECAUSE OF LEFT TURN SIGNAL OR WAITING, ETC.
013	STP TURN	STOPPED WHILE EXECUTING A TURN
014	EMR V PKD	EMERGENCY VEHICLE LEGALLY PARKED IN THE ROADWAY
015	GO A/STOP	PROCEED AFTER STOPPING FOR A STOP SIGN/FLASHING RED.
016	TRN A/RED	TURNED ON RED AFTER STOPPING
017	LOSTCTRL	LOST CONTROL OF VEHICLE
018	EXIT DWY	ENTERING STREET OR HIGHWAY FROM ALLEY OR DRIVEWAY
019	ENTR DWY	ENTERING ALLEY OR DRIVEWAY FROM STREET OR HIGHWAY
020	STR ENTR	BEFORE ENTERING ROADWAY, STRUCK PEDESTRIAN, ETC. ON SIDEWALK OR SHOULDER
021	NO DRVR	CAR RAN AWAY - NO DRIVER
022	PREV COL	STRUCK, OR WAS STRUCK BY, VEHICLE OR PEDESTRIAN IN PRIOR COLLISION BEFORE ACC. STABILIZED
023	STALLED	VEHICLE STALLED OR DISABLED
024	DRVR DEAD	DEAD BY UNASSOCIATED CAUSE
025	FATIGUE	FATIGUED, SLEEPY, ASLEEP
026	SUN	DRIVER BLINDED BY SUN
027	HDLGHTS	DRIVER BLINDED BY HEADLIGHTS
028	ILLNESS	PHYSICALLY ILL
029	THRU MED	VEHICLE CROSSED, PLUNGED OVER, OR THROUGH MEDIAN BARRIER
030	PURSUIT	PURSUING OR ATTEMPTING TO STOP A VEHICLE
031	PASSING	PASSING SITUATION
032	PRKOFFRD	VEHICLE PARKED BEYOND CURB OR SHOULDER
033	CROS MED	VEHICLE CROSSED EARTH OR GRASS MEDIAN
034	X N/SGNL	CROSSING AT INTERSECTION - NO TRAFFIC SIGNAL PRESENT
035	X W/ SGNL	CROSSING AT INTERSECTION - TRAFFIC SIGNAL PRESENT
036	DIAGONAL	CROSSING AT INTERSECTION - DIAGONALLY
037	BTWN INT	CROSSING BETWEEN INTERSECTIONS
038	DISTRACT	DRIVER'S ATTENTION DISTRACTED
039	W/TRAF-S	WALKING, RUNNING, RIDING, ETC., ON SHOULDER WITH TRAFFIC
040	A/TRAF-S	WALKING, RUNNING, RIDING, ETC., ON SHOULDER FACING TRAFFIC
041	W/TRAF-P	WALKING, RUNNING, RIDING, ETC., ON PAVEMENT WITH TRAFFIC
042	A/TRAF-P	WALKING, RUNNING, RIDING, ETC., ON PAVEMENT FACING TRAFFIC
043	PLAYINRD	PLAYING IN STREET OR ROAD
044	PUSH MV	PUSHING OR WORKING ON VEHICLE IN ROAD OR ON SHOULDER
045	WORK ON	WORKING IN ROADWAY OR ALONG SHOULDER
046	W/ TRAFIC	NON-MOTORIST WALKING, RUNNING, RIDING, ETC. WITH TRAFFIC
047	A/ TRAFIC	NON-MOTORIST WALKING, RUNNING, RIDING, ETC. FACING TRAFFIC
050	LAY ON RD	STANDING OR LYING IN ROADWAY
051	ENT OFFRD	ENTERING / STARTING IN TRAFFIC LANE FROM OFF ROAD
052	MERGING	MERGING
055	SPRAY	BLINDED BY WATER SPRAY

ACTION CODE TRANSLATION LIST

ACTION CODE	SHORT DESCRIPTION	LONG DESCRIPTION
088	OTHER	OTHER ACTION
099	UNK	UNKNOWN ACTION

CAUSE CODE TRANSLATION LIST

CAUSE CODE	SHORT DESCRIPTION	LONG DESCRIPTION
00	NO CODE	NO CAUSE ASSOCIATED AT THIS LEVEL
01	TOO-FAST	TOO FAST FOR CONDITIONS (NOT EXCEED POSTED SPEED
02	NO-YIELD	DID NOT YIELD RIGHT-OF-WAY
03	PAS-STOP	PASSED STOP SIGN OR RED FLASHER
04	DIS SIG	DISREGARDED TRAFFIC SIGNAL
05	LEFT-CTR	DROVE LEFT OF CENTER ON TWO-WAY ROAD; STRADDLING
06	IMP-OVER	IMPROPER OVERTAKING
07	TOO-CLOS	FOLLOWED TOO CLOSELY
08	IMP-TURN	MADE IMPROPER TURN
09	DRINKING	ALCOHOL OR DRUG INVOLVED
10	OTHR-IMP	OTHER IMPROPER DRIVING
11	MECH-DEF	MECHANICAL DEFECT
12	OTHER	OTHER (NOT IMPROPER DRIVING)
13	IMP LN C	IMPROPER CHANGE OF TRAFFIC LANES
14	DIS TCD	DISREGARDED OTHER TRAFFIC CONTROL DEVICE
15	WRNG WAY	WRONG WAY ON ONE-WAY ROAD; WRONG SIDE DIVIDED RO
16	FATIGUE	DRIVER DROWSY/FATIGUED/SLEEPY
17	ILLNESS	PHYSICAL ILLNESS
18	IN RDWY	NON-MOTORIST ILLEGALLY IN ROADWAY
19	NT VISBL	NON-MOTORIST NOT VISIBLE; NON-REFLECTIVE CLOTHIN
20	IMP PKNG	VEHICLE IMPROPERLY PARKED
21	DEF STER	DEFECTIVE STEERING MECHANISM
22	DEF BRKE	INADEQUATE OR NO BRAKES
24	LOADSHFT	VEHICLE LOST LOAD OR LOAD SHIFTED
25	TIREFAIL	TIRE FAILURE
26	PHANTOM	PHANTOM / NON-CONTACT VEHICLE
27	INATTENT	INATTENTION
28	NM INATT	NON-MOTORIST INATTENTION
29	F AVOID	FAILED TO AVOID VEHICLE AHEAD
30	SPEED	DRIVING IN EXCESS OF POSTED SPEED
31	RACING	SPEED RACING (PER PAR)
32	CARELESS	CARELESS DRIVING (PER PAR)
33	RECKLESS	RECKLESS DRIVING (PER PAR)
34	AGGRESV	AGGRESSIVE DRIVING (PER PAR)
35	RD RAGE	ROAD RAGE (PER PAR)
40	VIEW OBS	VIEW OBSCURED
50	USED MDN	IMPROPER USE OF MEDIAN OR SHOULDER
51	FAIL LN	FAILED TO MAINTAIN LANE
52	OFF RD	RAN OFF ROAD

COLLISION TYPE CODE TRANSLATION LIST

COLL CODE	SHORT DESCRIPTION	LONG DESCRIPTION
&	OTH	MISCELLANEOUS
-	BACK	BACKING
0	PED	PEDESTRIAN
1	ANGL	ANGLE
2	HEAD	HEAD-ON
3	REAR	REAR-END
4	SS-M	SIDESWIPE - MEETING
5	SS-O	SIDESWIPE - OVERTAKING
6	TURN	TURNING MOVEMENT
7	PARK	PARKING MANEUVER
8	NCOL	NON-COLLISION
9	FIX	FIXED OBJECT OR OTHER OBJECT

CRASH TYPE CODE TRANSLATION LIST

CRASH TYPE	SHORT DESCRIPTION	LONG DESCRIPTION
&	OVERTURN	OVERTURNED
0	NON-COLL	OTHER NON-COLLISION
1	OTH RDWY	MOTOR VEHICLE ON OTHER ROADWAY
2	PRKD MV	PARKED MOTOR VEHICLE
3	PED	PEDESTRIAN
4	TRAIN	RAILWAY TRAIN
6	BIKE	PEDALCYCLIST
7	ANIMAL	ANIMAL
8	FIX OBJ	FIXED OBJECT
9	OTH OBJ	OTHER OBJECT
A	ANGL-STP	ENTERING AT ANGLE - ONE VEHICLE STOPPED
B	ANGL-OTH	ENTERING AT ANGLE - ALL OTHERS
C	S-STRGHT	FROM SAME DIRECTION - BOTH GOING STRAIGHT
D	S-1TURN	FROM SAME DIRECTION - ONE TURN, ONE STRAIGHT
E	S-1STOP	FROM SAME DIRECTION - ONE STOPPED
F	S-OTHER	FROM SAME DIRECTION-ALL OTHERS, INCLUDING PARKING
G	O-STRGHT	FROM OPPOSITE DIRECTION - BOTH GOING STRAIGHT
H	O-1 L-TURN	FROM OPPOSITE DIRECTION-ONE LEFT TURN,ONE STRAIGHT
I	O-1STOP	FROM OPPOSITE DIRECTION - ONE STOPPED
J	O-OTHER	FROM OPPOSITE DIRECTION-ALL OTHERS INCL. PARKING

DRIVER LICENSE CODE TRANSLATION LIST

LIC CODE	SHORT DESC	LONG DESCRIPTION
0	NONE	NOT LICENSED (HAD NEVER BEEN LICENSED)
1	OR-Y	VALID OREGON LICENSE
2	OTH-Y	VALID LICENSE, OTHER STATE OR COUNTRY
3	SUSP	SUSPENDED/REVOKED
4	EXP	EXPIRED
8	N-VAL	OTHER NON-VALID LICENSE
9	UNK	UNKNOWN IF DRIVER WAS LICENSED AT TIME OF CRASH

DRIVER RESIDENCE CODE TRANSLATION LIST

RES CODE	SHORT DESC	LONG DESCRIPTION
1	OR<25	OREGON RESIDENT WITHIN 25 MILE OF HOME
2	OR>25	OREGON RESIDENT 25 OR MORE MILES FROM HOME
3	OR-?	OREGON RESIDENT - UNKNOWN DISTANCE FROM HOME
4	N-RES	NON-RESIDENT
9	UNK	UNKNOWN IF OREGON RESIDENT

ERROR CODE TRANSLATION LIST

ERROR CODE	SHORT DESCRIPTION	FULL DESCRIPTION
000	NONE	NO ERROR
001	WIDE TRN	WIDE TURN
002	CUT CORN	CUT CORNER ON TURN
003	FAIL TRN	FAILED TO OBEY MANDATORY TRAFFIC TURN SIGNAL, SIGN OR LANE MARKINGS
004	L IN TRF	LEFT TURN IN FRONT OF ONCOMING TRAFFIC
005	L PROHIB	LEFT TURN WHERE PROHIBITED
006	FRM WRNG	TURNED FROM WRONG LANE
007	TO WRONG	TURNED INTO WRONG LANE
008	ILLEG U	U-TURNED ILLEGALLY
009	IMP STOP	IMPROPERLY STOPPED IN TRAFFIC LANE
010	IMP SIG	IMPROPER SIGNAL OR FAILURE TO SIGNAL
011	IMP BACK	BACKING IMPROPERLY (NOT PARKING)
012	IMP PARK	IMPROPERLY PARKED
013	UNPARK	IMPROPER START LEAVING PARKED POSITION
014	IMP STRT	IMPROPER START FROM STOPPED POSITION
015	IMP LGHT	IMPROPER OR NO LIGHTS (VEHICLE IN TRAFFIC)
016	INATTENT	INATTENTION (FAILURE TO DIM LIGHTS PRIOR TO 4/1/97)
017	UNSF VEH	DRIVING UNSAFE VEHICLE (NO OTHER ERROR APPARENT)
018	OTH PARK	ENTERING/EXITING PARKED POSITION W/ INSUFFICIENT CLEARANCE; OTHER IMPROPER PARKING MANEUVER
019	DIS DRIV	DISREGARDED OTHER DRIVER'S SIGNAL
020	DIS SGNL	DISREGARDED TRAFFIC SIGNAL
021	RAN STOP	DISREGARDED STOP SIGN OR FLASHING RED
022	DIS SIGN	DISREGARDED WARNING SIGN, FLARES OR FLASHING AMBER
023	DIS OFCR	DISREGARDED POLICE OFFICER OR FLAGMAN
024	DIS EMER	DISREGARDED SIREN OR WARNING OF EMERGENCY VEHICLE
025	DIS RR	DISREGARDED RR SIGNAL, RR SIGN, OR RR FLAGMAN
026	REAR-END	FAILED TO AVOID STOPPED OR PARKED VEHICLE AHEAD OTHER THAN SCHOOL BUS
027	BIKE ROW	DID NOT HAVE RIGHT-OF-WAY OVER PEDALCYCLIST
028	NO ROW	DID NOT HAVE RIGHT-OF-WAY
029	PED ROW	FAILED TO YIELD RIGHT-OF-WAY TO PEDESTRIAN
030	PAS CURV	PASSING ON A CURVE
031	PAS WRNG	PASSING ON THE WRONG SIDE
032	PAS TANG	PASSING ON STRAIGHT ROAD UNDER UNSAFE CONDITIONS
033	PAS X-WK	PASSED VEHICLE STOPPED AT CROSSWALK FOR PEDESTRIAN
034	PAS INTR	PASSING AT INTERSECTION
035	PAS HILL	PASSING ON CREST OF HILL
036	N/PAS ZN	PASSING IN "NO PASSING" ZONE
037	PAS TRAF	PASSING IN FRONT OF ONCOMING TRAFFIC
038	CUT-IN	CUTTING IN (TWO LANES - TWO WAY ONLY)
039	WRNGSIDE	DRIVING ON WRONG SIDE OF THE ROAD (2-WAY UNDIVIDED ROADWAYS)
040	THRU MED	DRIVING THROUGH SAFETY ZONE OR OVER ISLAND
041	F/ST BUS	FAILED TO STOP FOR SCHOOL BUS

ERROR CODE TRANSLATION LIST

ERROR CODE	SHORT DESCRIPTION	FULL DESCRIPTION
042	F/SLO MV	FAILED TO DECREASE SPEED FOR SLOWER MOVING VEHICLE
043	TOO CLOSE	FOLLOWING TOO CLOSELY (MUST BE ON OFFICER'S REPORT)
044	STRDL LN	STRADDLING OR DRIVING ON WRONG LANES
045	IMP CHG	IMPROPER CHANGE OF TRAFFIC LANES
046	WRNG WAY	WRONG WAY ON ONE-WAY ROADWAY; WRONG SIDE DIVIDED ROAD
047	BASCRULE	DRIVING TOO FAST FOR CONDITIONS (NOT EXCEEDING POSTED SPEED)
048	OPN DOOR	OPENED DOOR INTO ADJACENT TRAFFIC LANE
049	IMPEDING	IMPEDING TRAFFIC
050	SPEED	DRIVING IN EXCESS OF POSTED SPEED
051	RECKLESS	RECKLESS DRIVING (PER PAR)
052	CARELESS	CARELESS DRIVING (PER PAR)
053	RACING	SPEED RACING (PER PAR)
054	X N/SGNL	CROSSING AT INTERSECTION, NO TRAFFIC SIGNAL PRESENT
055	X W/SGNL	CROSSING AT INTERSECTION, TRAFFIC SIGNAL PRESENT
056	DIAGONAL	CROSSING AT INTERSECTION - DIAGONALLY
057	BTWN INT	CROSSING BETWEEN INTERSECTIONS
059	W/TRAF-S	WALKING, RUNNING, RIDING, ETC., ON SHOULDER WITH TRAFFIC
060	A/TRAF-S	WALKING, RUNNING, RIDING, ETC., ON SHOULDER FACING TRAFFIC
061	W/TRAF-P	WALKING, RUNNING, RIDING, ETC., ON PAVEMENT WITH TRAFFIC
062	A/TRAF-P	WALKING, RUNNING, RIDING, ETC., ON PAVEMENT FACING TRAFFIC
063	PLAYINRD	PLAYING IN STREET OR ROAD
064	PUSH MV	PUSHING OR WORKING ON VEHICLE IN ROAD OR ON SHOULDER
065	WORK IN RD	WORKING IN ROADWAY OR ALONG SHOULDER
070	LAY ON RD	STANDING OR LYING IN ROADWAY
071	NM IMP USE	IMPROPER USE OF TRAFFIC LANE BY NON-MOTORIST
073	ELUDING	ELUDING / ATTEMPT TO ELUDE
079	F NEG CURV	FAILED TO NEGOTIATE A CURVE
080	FAIL LN	FAILED TO MAINTAIN LANE
081	OFF RD	RAN OFF ROAD
082	NO CLEAR	DRIVER MISJUDGED CLEARANCE
083	OVRSTEER	OVER-CORRECTING
084	NOT USED	CODE NOT IN USE
085	OVRLOAD	OVERLOADING OR IMPROPER LOADING OF VEHICLE WITH CARGO OR PASSENGERS
097	UNA DIS TC	UNABLE TO DETERMINE WHICH DRIVER DISREGARDED TRAFFIC CONTROL DEVICE

EVENT CODE TRANSLATION LIST

EVENT CODE	SHORT DESCRIPTION	LONG DESCRIPTION
001	FEL/JUMP	OCCUPANT FELL, JUMPED OR WAS EJECTED FROM MOVING VEHICLE
002	INTERFER	PASSENGER INTERFERED WITH DRIVER
003	BUG INTF	ANIMAL OR INSECT IN VEHICLE INTERFERED WITH DRIVER
004	INDRCT PED	PEDESTRIAN INDIRECTLY INVOLVED (NOT STRUCK)
005	SUB-PED	"SUB-PED": PEDESTRIAN INJURED SUBSEQUENT TO COLLISION, ETC.
006	INDRCT BIK	PEDALCYCLIST INDIRECTLY INVOLVED (NOT STRUCK)
007	HITCHIKR	HITCHHIKER (SOLICITING A RIDE)
008	PSNGR TOW	PASSENGER OR NON-MOTORIST BEING TOWED OR PUSHED ON CONVEYANCE
009	ON/OFF V	GETTING ON/OFF STOPPED/PARKED VEHICLE (OCCUPANTS ONLY; MUST HAVE PHYSICAL CONTACT W/ VEHIC
010	SUB OTRN	OVERTURNED AFTER FIRST HARMFUL EVENT
011	MV PUSHD	VEHICLE BEING PUSHED
012	MV TOWED	VEHICLE TOWED OR HAD BEEN TOWING ANOTHER VEHICLE
013	FORCED	VEHICLE FORCED BY IMPACT INTO ANOTHER VEHICLE, PEDALCYCLIST OR PEDESTRIAN
014	SET MOTN	VEHICLE SET IN MOTION BY NON-DRIVER (CHILD RELEASED BRAKES, ETC.)
015	RR ROW	AT OR ON RAILROAD RIGHT-OF-WAY (NOT LIGHT RAIL)
016	LT RL ROW	AT OR ON LIGHT-RAIL RIGHT-OF-WAY
017	RR HIT V	TRAIN STRUCK VEHICLE
018	V HIT RR	VEHICLE STRUCK TRAIN
019	HIT RR CAR	VEHICLE STRUCK RAILROAD CAR ON ROADWAY
020	JACKNIFE	JACKKNIFE; TRAILER OR TOWED VEHICLE STRUCK TOWING VEHICLE
021	TRL OTRN	TRAILER OR TOWED VEHICLE OVERTURNED
022	CN BROKE	TRAILER CONNECTION BROKE
023	DETACH TRL	DETACHED TRAILING OBJECT STRUCK OTHER VEHICLE, NON-MOTORIST, OR OBJECT
024	V DOOR OPN	VEHICLE DOOR OPENED INTO ADJACENT TRAFFIC LANE
025	WHEELOFF	WHEEL CAME OFF
026	HOOD UP	HOOD FLEW UP
028	LOAD SHIFT	LOST LOAD, LOAD MOVED OR SHIFTED
029	TIREFAIL	TIRE FAILURE
030	PET	PET: CAT, DOG AND SIMILAR
031	LVSTOCK	STOCK: COW, CALF, BULL, STEER, SHEEP, ETC.
032	HORSE	HORSE, MULE, OR DONKEY
033	HRSE&RID	HORSE AND RIDER
034	GAME	WILD ANIMAL, GAME (INCLUDES BIRDS; NOT DEER OR ELK)
035	DEER ELK	DEER OR ELK, WAPITI
036	ANML VEH	ANIMAL-DRAWN VEHICLE
037	CULVERT	CULVERT, OPEN LOW OR HIGH MANHOLE
038	ATENUATN	IMPACT ATTENUATOR
039	PK METER	PARKING METER
040	CURB	CURB (ALSO NARROW SIDEWALKS ON BRIDGES)
041	JIGGLE	JIGGLE BAR OR TRAFFIC SNAKE FOR CHANNELIZATION
042	GDRL END	LEADING EDGE OF GUARDRAIL
043	GARDRAIL	GUARD RAIL (NOT METAL MEDIAN BARRIER)
044	BARRIER	MEDIAN BARRIER (RAISED OR METAL)
045	WALL	RETAINING WALL OR TUNNEL WALL
046	BR RAIL	BRIDGE RAILING OR PARAPET (ON BRIDGE OR APPROACH)
047	BR ABUTMNT	BRIDGE ABUTMENT (INCLUDED "APPROACH END" THRU 2013)
048	BR COLMN	BRIDGE PILLAR OR COLUMN
049	BR GIRDR	BRIDGE GIRDER (HORIZONTAL BRIDGE STRUCTURE OVERHEAD)
050	ISLAND	TRAFFIC RAISED ISLAND
051	GORE	GORE
052	POLE UNK	POLE - TYPE UNKNOWN
053	POLE UTL	POLE - POWER OR TELEPHONE
054	ST LIGHT	POLE - STREET LIGHT ONLY
055	TRF SGNL	POLE - TRAFFIC SIGNAL AND PED SIGNAL ONLY
056	SGN BRDG	POLE - SIGN BRIDGE
057	STOPSIGN	STOP OR YIELD SIGN
058	OTH SIGN	OTHER SIGN, INCLUDING STREET SIGNS
059	HYDRANT	HYDRANT

EVENT CODE TRANSLATION LIST

EVENT CODE	SHORT DESCRIPTION	LONG DESCRIPTION
060	MARKER	DELINEATOR OR MARKER (REFLECTOR POSTS)
061	MAILBOX	MAILBOX
062	TREE	TREE, STUMP OR SHRUBS
063	VEG OHED	TREE BRANCH OR OTHER VEGETATION OVERHEAD, ETC.
064	WIRE/CBL	WIRE OR CABLE ACROSS OR OVER THE ROAD
065	TEMP SGN	TEMPORARY SIGN OR BARRICADE IN ROAD, ETC.
066	PERM SGN	PERMANENT SIGN OR BARRICADE IN/OFF ROAD
067	SLIDE	SLIDES, FALLEN OR FALLING ROCKS
068	FRGN OBJ	FOREIGN OBSTRUCTION/DEBRIS IN ROAD (NOT GRAVEL)
069	EQP WORK	EQUIPMENT WORKING IN/OFF ROAD
070	OTH EQP	OTHER EQUIPMENT IN OR OFF ROAD (INCLUDES PARKED TRAILER, BOAT)
071	MAIN EQP	WRECKER, STREET SWEEPER, SNOW PLOW OR SANDING EQUIPMENT
072	OTHER WALL	ROCK, BRICK OR OTHER SOLID WALL
073	IRRGL PVMT	OTHER BUMP (NOT SPEED BUMP), POTHOLE OR PAVEMENT IRREGULARITY (PER PAR)
074	OVERHD OBJ	OTHER OVERHEAD OBJECT (HIGHWAY SIGN, SIGNAL HEAD, ETC.); NOT BRIDGE
075	CAVE IN	BRIDGE OR ROAD CAVE IN
076	HI WATER	HIGH WATER
077	SNO BANK	SNOW BANK
078	LO-HI EDGE	LOW OR HIGH SHOULDER AT PAVEMENT EDGE
079	DITCH	CUT SLOPE OR DITCH EMBANKMENT
080	OBJ FRM MV	STRUCK BY ROCK OR OTHER OBJECT SET IN MOTION BY OTHER VEHICLE (INCL. LOST LOADS)
081	FLY-OBJ	STRUCK BY ROCK OR OTHER MOVING OR FLYING OBJECT (NOT SET IN MOTION BY VEHICLE)
082	VEH HID	VEHICLE OBSCURED VIEW
083	VEG HID	VEGETATION OBSCURED VIEW
084	BLDG HID	VIEW OBSCURED BY FENCE, SIGN, PHONE BOOTH, ETC.
085	WIND GUST	WIND GUST
086	IMMERSED	VEHICLE IMMERSED IN BODY OF WATER
087	FIRE/EXP	FIRE OR EXPLOSION
088	FENC/BLD	FENCE OR BUILDING, ETC.
089	OTHR CRASH	CRASH RELATED TO ANOTHER SEPARATE CRASH
090	TO 1 SIDE	TWO-WAY TRAFFIC ON DIVIDED ROADWAY ALL ROUTED TO ONE SIDE
091	BUILDING	BUILDING OR OTHER STRUCTURE
092	PHANTOM	OTHER (PHANTOM) NON-CONTACT VEHICLE
093	CELL PHONE	CELL PHONE (ON PAR OR DRIVER IN USE)
094	VIOL GDL	TEENAGE DRIVER IN VIOLATION OF GRADUATED LICENSE PGM
095	GUY WIRE	GUY WIRE
096	BERM	BERM (EARTHEN OR GRAVEL MOUND)
097	GRAVEL	GRAVEL IN ROADWAY
098	ABR EDGE	ABRUPT EDGE
099	CELL WTNSD	CELL PHONE USE WITNESSED BY OTHER PARTICIPANT
100	UNK FIXD	FIXED OBJECT, UNKNOWN TYPE.
101	OTHER OBJ	NON-FIXED OBJECT, OTHER OR UNKNOWN TYPE
102	TEXTING	TEXTING
103	WZ WORKER	WORK ZONE WORKER
104	ON VEHICLE	PASSENGER RIDING ON VEHICLE EXTERIOR
105	PEDAL PSGR	PASSENGER RIDING ON PEDALCYCLE
106	MAN WHLCHR	PEDESTRIAN IN NON-MOTORIZED WHEELCHAIR
107	MTR WHLCHR	PEDESTRIAN IN MOTORIZED WHEELCHAIR
108	OFFICER	LAW ENFORCEMENT / POLICE OFFICER
109	SUB-BIKE	"SUB-BIKE": PEDALCYCLIST INJURED SUBSEQUENT TO COLLISION, ETC.
110	N-MTR	NON-MOTORIST STRUCK VEHICLE
111	S CAR VS V	STREET CAR/TROLLEY (ON RAILS OR OVERHEAD WIRE SYSTEM) STRUCK VEHICLE
112	V VS S CAR	VEHICLE STRUCK STREET CAR/TROLLEY (ON RAILS OR OVERHEAD WIRE SYSTEM)
113	S CAR ROW	AT OR ON STREET CAR OR TROLLEY RIGHT-OF-WAY
114	RR EQUIP	VEHICLE STRUCK RAILROAD EQUIPMENT (NOT TRAIN) ON TRACKS
115	DSTRCT GPS	DISTRACTED BY NAVIGATION SYSTEM OR GPS DEVICE
116	DSTRCT OTH	DISTRACTED BY OTHER ELECTRONIC DEVICE
117	RR GATE	RAIL CROSSING DROP-ARM GATE

EVENT CODE TRANSLATION LIST

EVENT CODE	SHORT DESCRIPTION	LONG DESCRIPTION
118	EXPNSN JNT	EXPANSION JOINT
119	JERSEY BAR	JERSEY BARRIER
120	WIRE BAR	WIRE OR CABLE MEDIAN BARRIER
121	FENCE	FENCE
123	OBJ IN VEH	LOOSE OBJECT IN VEHICLE STRUCK OCCUPANT
124	SLIPPERY	SLIDING OR SWERVING DUE TO WET, ICY, SLIPPERY OR LOOSE SURFACE (NOT GRAVEL)
125	SHLDR	SHOULDER GAVE WAY
126	BOULDER	ROCK(S), BOULDER (NOT GRAVEL; NOT ROCK SLIDE)
127	LAND SLIDE	ROCK SLIDE OR LAND SLIDE
128	CURVE INV	CURVE PRESENT AT CRASH LOCATION
129	HILL INV	VERTICAL GRADE / HILL PRESENT AT CRASH LOCATION
130	CURVE HID	VIEW OBSCURED BY CURVE
131	HILL HID	VIEW OBSCURED BY VERTICAL GRADE / HILL
132	WINDOW HID	VIEW OBSCURED BY VEHICLE WINDOW CONDITIONS
133	SPRAY HID	VIEW OBSCURED BY WATER SPRAY
134	TORRENTIAL	TORRENTIAL RAIN (EXCEPTIONALLY HEAVY RAIN)

FUNCTIONAL CLASSIFICATION TRANSLATION LIST

FUNC CLASS	DESCRIPTION
01	RURAL PRINCIPAL ARTERIAL - INTERSTATE
02	RURAL PRINCIPAL ARTERIAL - OTHER
06	RURAL MINOR ARTERIAL
07	RURAL MAJOR COLLECTOR
08	RURAL MINOR COLLECTOR
09	RURAL LOCAL
11	URBAN PRINCIPAL ARTERIAL - INTERSTATE
12	URBAN PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXP
14	URBAN PRINCIPAL ARTERIAL - OTHER
16	URBAN MINOR ARTERIAL
17	URBAN MAJOR COLLECTOR
18	URBAN MINOR COLLECTOR
19	URBAN LOCAL
78	UNKNOWN RURAL SYSTEM
79	UNKNOWN RURAL NON-SYSTEM
98	UNKNOWN URBAN SYSTEM
99	UNKNOWN URBAN NON-SYSTEM

HIGHWAY COMPONENT TRANSLATION LIST

CODE	DESCRIPTION
0	MAINLINE STATE HIGHWAY
1	COUPLET
3	FRONTAGE ROAD
6	CONNECTION
8	HIGHWAY - OTHER

INJURY SEVERITY CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
1	KILL	FATAL INJURY
2	INJA	INCAPACITATING INJURY - BLEEDING, BROKEN BONES
3	INJB	NON-INCAPACITATING INJURY
4	INJC	POSSIBLE INJURY - COMPLAINT OF PAIN
5	PRI	DIED PRIOR TO CRASH
7	NO<5	NO INJURY - 0 TO 4 YEARS OF AGE
9	NONE	PARTICIPANT UNINJURED, OVER THE AGE OF 4

LIGHT CONDITION CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
0	UNK	UNKNOWN
1	DAY	DAYLIGHT
2	DLIT	DARKNESS - WITH STREET LIGHTS
3	DARK	DARKNESS - NO STREET LIGHTS
4	DAWN	DAWN (TWILIGHT)
5	DUSK	DUSK (TWILIGHT)

MEDIAN TYPE CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
0	NONE	NO MEDIAN
1	RSDMD	SOLID MEDIAN BARRIER
2	DIVMD	EARTH, GRASS OR PAVED MEDIAN

MILEAGE TYPE CODE TRANSLATION LIST

CODE	LONG DESCRIPTION
0	REGULAR MILEAGE
T	TEMPORARY
Y	SPUR
Z	OVERLAPPING

MOVEMENT TYPE CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
0	UNK	UNKNOWN
1	STRGHT	STRAIGHT AHEAD
2	TURN-R	TURNING RIGHT
3	TURN-L	TURNING LEFT
4	U-TURN	MAKING A U-TURN
5	BACK	BACKING
6	STOP	STOPPED IN TRAFFIC
7	PRKD-P	PARKED - PROPERLY
8	PRKD-I	PARKED - IMPROPERLY
9	PARKNG	PARKING MANEUVER

NON-MOTORIST LOCATION CODE TRANSLATION LIST

CODE	LONG DESCRIPTION
00	AT INTERSECTION - NOT IN ROADWAY
01	AT INTERSECTION - INSIDE CROSSWALK
02	AT INTERSECTION - IN ROADWAY, OUTSIDE CROSSWALK
03	AT INTERSECTION - IN ROADWAY, XWALK AVAIL UNKNWN
04	NOT AT INTERSECTION - IN ROADWAY
05	NOT AT INTERSECTION - ON SHOULDER
06	NOT AT INTERSECTION - ON MEDIAN
07	NOT AT INTERSECTION - WITHIN TRAFFIC RIGHT-OF-WAY
08	NOT AT INTERSECTION - IN BIKE PATH OR PARKING LANE
09	NOT-AT INTERSECTION - ON SIDEWALK
10	OUTSIDE TRAFFICWAY BOUNDARIES
13	AT INTERSECTION - IN BIKE LANE
14	NOT AT INTERSECTION - IN BIKE LANE
15	NOT AT INTERSECTION - INSIDE MID-BLOCK CROSSWALK
16	NOT AT INTERSECTION - IN PARKING LANE
18	OTHER, NOT IN ROADWAY
99	UNKNOWN LOCATION

ROAD CHARACTER CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
0	UNK	UNKNOWN
1	INTER	INTERSECTION
2	ALLEY	DRIVEWAY OR ALLEY
3	STRGHT	STRAIGHT ROADWAY
4	TRANS	TRANSITION
5	CURVE	CURVE (HORIZONTAL CURVE)
6	OPENAC	OPEN ACCESS OR TURNOUT
7	GRADE	GRADE (VERTICAL CURVE)
8	BRIDGE	BRIDGE STRUCTURE
9	TUNNEL	TUNNEL

PARTICIPANT TYPE CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
0	OCC	UNKNOWN OCCUPANT TYPE
1	DRVR	DRIVER
2	PSNG	PASSENGER
3	PED	PEDESTRIAN
4	CONV	PEDESTRIAN USING A PEDESTRIAN CONVEYA
5	PTOW	PEDESTRIAN TOWING OR TRAILERING AN OB
6	BIKE	PEDALCYCLIST
7	BTOW	PEDALCYCLIST TOWING OR TRAILERING AN
8	PRKD	OCCUPANT OF A PARKED MOTOR VEHICLE
9	UNK	UNKNOWN TYPE OF NON-MOTORIST

TRAFFIC CONTROL DEVICE CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
000	NONE	NO CONTROL
001	TRF SIGNAL	TRAFFIC SIGNALS
002	FLASHBCN-R	FLASHING BEACON - RED (STOP)
003	FLASHBCN-A	FLASHING BEACON - AMBER (SLOW)
004	STOP SIGN	STOP SIGN
005	SLOW SIGN	SLOW SIGN
006	REG-SIGN	REGULATORY SIGN
007	YIELD	YIELD SIGN
008	WARNING	WARNING SIGN
009	CURVE	CURVE SIGN
010	SCHL X-ING	SCHOOL CROSSING SIGN OR SPECIAL SIGNAL
011	OFCR/FLAG	POLICE OFFICER, FLAGMAN - SCHOOL PATROL
012	BRDG-GATE	BRIDGE GATE - BARRIER
013	TEMP-BARR	TEMPORARY BARRIER
014	NO-PASS-ZN	NO PASSING ZONE
015	ONE-WAY	ONE-WAY STREET
016	CHANNEL	CHANNELIZATION
017	MEDIAN BAR	MEDIAN BARRIER
018	PILOT CAR	PILOT CAR
019	SP PED SIG	SPECIAL PEDESTRIAN SIGNAL
020	X-BUCK	CROSSBUCK
021	THR-GN-SIG	THROUGH GREEN ARROW OR SIGNAL
022	L-GRN-SIG	LEFT TURN GREEN ARROW, LANE MARKINGS, OR SIGNAL
023	R-GRN-SIG	RIGHT TURN GREEN ARROW, LANE MARKINGS, OR SIGNAL
024	WIGWAG	WIGWAG OR FLASHING LIGHTS W/O DROP-ARM GATE
025	X-BUCK WRN	CROSSBUCK AND ADVANCE WARNING
026	WW W/ GATE	FLASHING LIGHTS WITH DROP-ARM GATES
027	OVRHD SGNL	SUPPLEMENTAL OVERHEAD SIGNAL (RR XING ONLY)
028	SP RR STOP	SPECIAL RR STOP SIGN
029	ILUM GRD X	ILLUMINATED GRADE CROSSING
037	RAMP METER	METERED RAMPS
038	RUMBLE STR	RUMBLE STRIP
090	L-TURN REF	LEFT TURN REFUGE (WHEN REFUGE IS INVOLVED)
091	R-TURN ALL	RIGHT TURN AT ALL TIMES SIGN, ETC.
092	EMR SGN/FL	EMERGENCY SIGNS OR FLARES
093	ACCEL LANE	ACCELERATION OR DECELERATION LANES
094	R-TURN PRO	RIGHT TURN PROHIBITED ON RED AFTER STOPPING
095	BUS STPSGN	BUS STOP SIGN AND RED LIGHTS
099	UNKNOWN	UNKNOWN OR NOT DEFINITE

VEHICLE TYPE CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
00	PDO	NOT COLLECTED FOR PDO CRASHES
01	PSNGR CAR	PASSENGER CAR, PICKUP, LIGHT DELIVERY, ETC.
02	BOBTAIL	TRUCK TRACTOR WITH NO TRAILERS (BOBTAIL)
03	FARM TRCTR	FARM TRACTOR OR SELF-PROPELLED FARM EQUIPMENT
04	SEMI TOW	TRUCK TRACTOR WITH TRAILER/MOBILE HOME IN TOW
05	TRUCK	TRUCK WITH NON-DETACHABLE BED, PANEL, ETC.
06	MOPED	MOPED, MINIBIKE, SEATED MOTOR SCOOTER, MOTOR BIKE
07	SCHL BUS	SCHOOL BUS (INCLUDES VAN)
08	OTH BUS	OTHER BUS
09	MTRCYCLE	MOTORCYCLE, DIRT BIKE
10	OTHER	OTHER: FORKLIFT, BACKHOE, ETC.
11	MOTRHOME	MOTORHOME
12	TROLLEY	MOTORIZED STREET CAR/TROLLEY (NO RAILS/WIRES)
13	ATV	ATV
14	MTRSCTR	MOTORIZED SCOOTER (STANDING)
15	SNOWMOBILE	SNOWMOBILE
99	UNKNOWN	UNKNOWN VEHICLE TYPE

WEATHER CONDITION CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
0	UNK	UNKNOWN
1	CLR	CLEAR
2	CLD	CLOUDY
3	RAIN	RAIN
4	SLT	SLEET
5	FOG	FOG
6	SNOW	SNOW
7	DUST	DUST
8	SMOK	SMOKE
9	ASH	ASH

CLACKAMAS WATER ENVIRONMENT SERVICES

WES SERVICE PROVIDER LETTER

TO BE COMPLETED BY APPLICANT:

Project Name:	Clackamas County Recovery Campus		
Site Address:	15301 SE 92nd Avenue		
Applicant Name:	Sarah Vaz		
Email:	svaz@holstarch.com	Phone:	503-233-9856
Project Engineer:	Martha Williamson		
Email:	martha@vegacivil.com	Phone:	503-662-1901

Development Activity:

☐ *Land Division*
Zoning:
Max Allowed Lot Coverage: %

☑ *Design Review or Other*

Impervious Surface Area Determination:

List the new or modified impervious surface area, including gravel

Onsite =	88,316	SQ FT.
Offsite Road Improvements =	23,991	SQ FT
TOTAL =	112,307	SQ FT

TO BE COMPLETED BY WES STAFF:

Attention Local Planning Authority: In accordance with Appendix A of the WES Design Standards, the applicant must obtain a Service Provider Letter from WES prior to submitting the land-use application to the Local Planning Authority. Based on the materials the applicant submitted, the development has demonstrated the following:

Sanitary Sewer Services

☑ The sanitary sewer preliminary design has demonstrated the proposed development is feasible, conditioned upon meeting all applicable WES Rules, Regulations and Standards prior to final plan approval. See additional WES comments below.

☐ The sanitary sewer preliminary design is not feasible as proposed, or the applicant has not provided sufficient information to determine if the development is feasible. See additional WES comments below.

Stormwater Management Services

☑ The stormwater management preliminary design has demonstrated the proposed development is feasible, conditioned upon meeting all applicable WES Rules, Regulations and Standards prior to final plan approval. See additional WES comments below.

☐ The stormwater management proposal is not feasible as proposed, or the applicant has not provided sufficient information to determine if the project is feasible. See additional WES comments below.

WES Representative:

Name:	Erik Bertram Digitally signed by Erik Bertram Date: 2025.10.16 14:35:59 -07'00'	Email:	WES-PermitServices@clackamas.us
Title:		Phone:	503-742-4567
Date:		WES Log#	

WES Comments:

Prior to final plan approval by WES, the following will need to be addressed:
1) Provide UIC approval from DEQ for all drywells, including water quality treatment.
2) Clearly show ROW areas that will offset the runoff areas not managed for water quantity. List sq ft for both areas.
3) 35-foot deep drywells likely not acceptable for WES or DEQ; verification needed.

CLACKAMAS
WATER
ENVIRONMENT
SERVICES

WES SERVICE PROVIDER LETTER - SUBMITTAL CHECKLIST	
n/a	Preliminary Plat (if land division)
X	Site Assessment, including existing conditions, contour maps, drainage area basins, and locations of water quality resources
Preliminary Sanitary Sewer Improvements:	
n/a	Public sanitary sewer plans, including proposed extensions to public system and plan to provide service to upstream parcels
X	Point(s) of connection to the public sanitary sewer system, including service connection locations for each lot
X	All necessary plans and profiles to demonstrate compliance with minimum slope and depth design standards
n/a	Identify any lots below the available gravity Sanitary Sewer Mainline that will require private pumping facilities
Preliminary Stormwater Management Plan and Drainage Report	
X	Public and private storm drainage and conveyance system design
X	Stormwater management facilities that demonstrate compliance with flow control and water quality performance standards
X	Point of discharge
X	Emergency overflow pathways
n/a	Plan to provide a point of discharge for upstream parcels and/or bypass system to address upstream drainage
X	Geotechnical report and analysis (Section 1.5.2)
X	Infiltration testing results (Section 2.4)
n/a	Drainage System Analysis (upstream and downstream, Section 2.3)
X	Sizing and conveyance calculations (Section 6.1)
n/a	BMP Sizing Tool calculations (for facilities that cannot fully infiltrate 10-year, 24-hour design storm)
n/a	WQRA Boundary Verification (including mitigation plan for any encroachments into WQRA buffers)
n/a	Preliminary Approval for Off-Site Easements, if applicable
n/a	Offsite Mitigation Measures for Downstream Conveyance, if applicable

Note to the Applicant: The intent of the Service Provider Letter is to ensure that the applicant is able to demonstrate the proposed development is capable of satisfying applicable WES Rules and WES Standards prior to applying for Land Use/Design Review. WES will only issue the Service Provider Letter once the applicant has provided WES with sufficient plans, reports, studies, and other agency approvals needed for preliminary review.

Based on the preliminary review of the applicant's submittals, WES may require additional information prior to issuance of the letter, or as part of the forthcoming land use application, or make a determination that the proposed development is feasible by issuing the Service Provider Letter. WES may withhold comments on any forthcoming Land Use/Design Review application, until the applicant obtains a signed WES Service Provider Letter. The Service Provider Letter will only be issued once WES has reviewed and approved the preliminary submittals identified in the Submittal Checklist on Page 2.

Issuance of the Service Provider Letter does not imply the proposed development has fully demonstrated that the development can satisfy all applicable WES Rules, Regulations, and Standards, or any other applicable local and state regulations, nor does the letter include any conclusions by WES regarding the delineation of water quality resource areas or acceptability of undisturbed buffer areas. WES recommends the applicant consult the local planning authority in those situations where water quality resource area requirements may affect a development's proposed site layout.