Community Development Department
315 Kennel Ave/PO Box 248
Molalla, OR 97038
Phone 503.759.0205
www.cityofmolalla.com

AGENDA
Molalla Planning Commission
6:30 PM, June 7, 2023

Commission Chair Doug Eaglebear
Commissioner Jennifer Satter
Commissioner Rick Deaton
Commissioner David Potts

Commission Vice-Chair Connie Sharp
Commissioner Clint Ancell
Commissioner Martin Ornelas

In accordance with House Bill 2560, the City of Molalla adheres to the following practices: Live-streaming of the Molalla Planning Commission Meetings are available on Facebook at "Molalla Planning Commission Meetings – LIVE" and "Molalla Planning Commission Meetings" on YouTube. Citizens can submit Public Comment in the following ways: attend the meeting, email support staff @ communityplanner@cityofmolalla.com by 4:00pm on the day of the meeting, or drop it off at the Civic Center, 315 Kennel Avenue.

I. CALL TO ORDER AND FLAG SALUTE

II. ROLL CALL

III. CONSENT AGENDA
A. Planning Commission Meeting minutes – 5/3/23

IV. PRESENTATIONS, PROCLAMATIONS, CEREMONIES

V. PUBLIC COMMENT & WRITTEN COMMUNICATIONS
Citizens are allowed up to 3 minutes to present information relevant to the city but not listed as an item on the agenda. Prior to speaking, citizens shall complete a comment form and deliver it to the support staff. The Planning Commission does not generally engage in dialog with those making comments but may refer the issue to the Community Development Director. Complaints shall first be addressed at the department level prior to addressing the Planning Commission.

VI. PUBLIC HEARINGS
QUASI-JUDICIAL HEARING: SDR01-2023 & DDJ01-2023 105 S Ona Way

VII. GENERAL BUSINESS

VIII. STAFF COMMUNICATION

IX. COMMISSION COMMUNICATION

X. ADJOURN

Community Development Department
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Planning Commission Meeting
Minutes for
May 5th, 2023

The May 5th, 2023, meeting of the Molalla Planning Commission was called to order by Chairperson Doug Eaglebear at 6:32 pm.

COMMISSIONER ATTENDANCE:
Commissioner Clint Ancell - Present
Commissioner Rick Deaton – Present
Chairperson Doug Eaglebear – Present
Commissioner Martin Ornelas – Present
Commissioner Jennifer Satter – Present (late @ 6:36)
Commissioner Connie Sharp – Present

STAFF IN ATTENDANCE:
Mac Corthell, Planning Director - Present
Ronda Lee, Support Specialist - Present
Sam Miller, Senior Engineer - Present
Dan Zinder, Associate Planner – Present

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AGENDA:

I. CALL TO ORDER AND FLAG SALUTE

II. ROLL CALL

III. CONSENT AGENDA

A. Planning Commission Meeting minutes – 4/5/2023
M-RD, 2nd-CA Vote: Passed 5-0-0 (Satter late)

IV. PRESENTATIONS, PROCLAMATIONS, CEREMONIES

Commissioner Greg Hillhouse resigned prior to the meeting (moved out of city).

V. PUBLIC COMMENT & WRITTEN COMMUNICATIONS

Citizens are allowed up to 3 minutes to present information relevant to the city but not listed as an item on the agenda. Prior to speaking, citizens shall complete a comment form and deliver it to the support staff. The Planning Commission does not generally engage in

dialog with those making comments but may refer the issue to the Community Development Director. Complaints shall first be addressed at the department level prior to addressing the Planning Commission.

VI. PUBLIC HEARINGS

None

VII. GENERAL BUSINESS

VIII. STAFF COMMUNICATION

Discussion on Rezone Publicly Owned and Operated Properties to PSP Base Zone.
Recommend to City Council – M-CS, 2nd-JS Vote: Passed 6-0-0

IX. COMMISSION COMMUNICATION

X. ADJOURN

A. M-JS, 2ND-CA Vote: Passed 6-0-0 @ 7:15 pm

PLANNING COMMISSION MEETING CAN BE VIEWED IN ITS ENTIRIETY HERE:

https://www.youtube.com/watch?v=7L5noLDC3as

_____ _____
Chairperson Doug Eaglebear Date

Attested by: _____ _____
MCD Director, Mac Corthell Date

Planning & Land Use

City of Molalla
315 Kennel Avenue
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Molalla, Oregon 97038
Phone: (503) 759-0205
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CITY OF MOLALLA STAFF REPORT
SDR01-2023 and ADJ01-2023; Main ST Apartments Phase II

Date: May 31, 2023 for the June 7, 2023 Planning Commission Meeting

File No.: SDR01-2023, ADJ01-2023, and ADJ03-2023

Proposal: Site design review for a new 40-unit apartment complex.

Addresses: 105 S Ona WY

Tax Lots: Lot 01600 of Taxmap 52E08C

Owner/Applicant: Green Light – Home First, LLC
3050 SE Division Street #270
Portland, OR 97202

Applicable Standards: Molalla Municipal Code, Title 17, Development Code

Division II, Zoning Regulations
Section 17-2.2.030 Allowed Uses
Section 17-2.2.040 Lot and Development Standards
Section 17-2.3.080 Multifamily Development
Section 17-2.4.030 Water Resources Overlay

Division III, Community Design Standards
Section 17-3.2.030 Residential Buildings
Chapter 17-3.3 Access and Circulation
Chapter 17-3.4 Landscaping, Fences and Walls, Outdoor Lighting
Chapter 17-3.5 Parking and Loading
Chapter 17-3.6 Public Facilities

Division IV, Application Review Procedures and Approval Criteria

Section 17-4.1.040 Type III Procedure (Quasi-Judicial Review – Public Hearing)
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EXHIBIT F: MOLALLA FIRE DEPARTMENT COMMENTS
EXHIBIT G: ODOT COMMENTS

I. EXECUTIVE SUMMARY

Proposal:

The Applicants seek approval for a site design review for a new 40-unit apartment complex on a 2-acre parcel in Molalla. Current zoning of the subject parcel is Medium-High Density Residential (R-3) and no change to the zoning designation is proposed. The applicant proposes a single access to the parcel from S Ona WY as well as joint access connection to Phase 1 of the project from the parcel addressed as 1000 W Main ST. The Applicant proposes frontage improvements along OR-211 and S Ona WY, which are being planned in conjunction with the frontage improvements for the first phase of the project along OR-211. City will be The Applicant has also proposed two adjustment applications concurrently with this site design review:

- ADJ01-2023 to adjust parking stall dimensions to allow 16' stalls with curbing and a 2' sidewalk extension instead of wheel stops.
- ADJ03-2023 to adjust minimum lot size to permit 1,982 SF per unit.

Site Description:

The site previously had a one-story ranch house on it with three accessory buildings and an access from near the intersection of S Ona WY and OR-211. All buildings onsite have recently been demolished by the Applicant. The property slopes slightly to the southwest towards Bear Creek, which crosses the southeast corner of the property. Drainage from the property flows to Bear Creek. Several small to medium size trees remain on the property.

Surrounding Zoning and Land Uses:

The property is surrounded by R-3 Medium-High Density Residential zoned land to the north, south, and east. The properties across S Ona WY to the west are zoned as M-2. Adjacent land uses include the approved Phase 1 development, currently under construction, vacant property to the south and west, and a single-family home to the north.

Public Agency Responses:

Staff circulated notice of the project to the City's Public Works Department, Fire Marshal, and ODOT on March 8, 2023. The City has included responses from ODOT, Molalla Fire District, and Molalla Public Works as Exhibits D, E, and F respectively, and integrated their comments into the findings and conditions of this staff report.

Public Notice and Comments:

Per MMC 17-4.1.040, notice of the public hearing was sent to all property owners within 300 feet of the subject properties and to a group of interested parties on April 25, 2023. Notice was published in the Molalla Pioneer on May 03, 2023. Signage containing public notice information was posted on the property on April 28, 2023. As of May 31, 2023 Staff had received no public comment on the application.

II. Recommendation

Based on the application materials and findings demonstrating present or conditioned compliance with the applicable criteria, staff recommends APPROVAL of Site Design Review SDR01-2023, subject to the conditions of approval to follow. This approval is based on the Applicant's written narrative, site plans, and supplemental application materials. Staff also recommends denial of ADJ01-2023 and approval of ADJ03-2023. A denial for ADJ01-2023 does not affect the viability of SDR01-2023 for approval. Any modifications to the approved plans other than those required by the conditions of this decision will require a new land use application and approval.

III. Conditions of Approval

1. Conditions Requiring Resolution Prior To Building Permit Approval by the Molalla Planning Department

a. S Ona Way is under City jurisdiction and a City issued access permit will be required to authorize that access. Additionally, the Applicant proposes a joint access agreement between the first phase of the project (SDR07-2021) at 1000 W Main ST. The Oregon Department of Transportation (ODOT) recommends that the Applicant update the access permit for Phase 1 to accommodate all 100 units proposed over the two phases.

b. Applicant shall design and provide screening elements between Building G and the OR-211 frontage to bolster the side façade appearance.

c. Per MMC 17-3.3.030 C, 6, prior to building permit and civil review submissions, the applicant shall;

- Double check turning radius. 24/48 is required for a 20-foot-wide access road and larger. 44/56 for anything less than a 20-foot access
- Submit striping plan for no parking areas for approval from the Molalla Fire Department
- Please indicate Turn-a-round area on plans for fire apparatus and how it will be striped

d. Applicant has sufficient room to design and construct the required 18' stall depth and shall provide either curbing or wheel stops in stalls of at least 18'. Alternately providing an anticipated overhang area of 1' with a 17' stall would be acceptable as it is comparable to an 18' stall with wheel stops.

e. Applicant shall specify bike rack style meeting the standards of MMC 17-3.5.040 with their building permit submissions.

f. An ODOT Miscellaneous Permit must be obtained for all work in the highway right of way. When the total value of improvements within the ODOT right of way is estimated to be $100,000 or more, an agreement with ODOT is required to address the transfer of ownership of the improvement to ODOT. An Intergovernmental Agreement (IGA) is required for agreements involving local governments and a Cooperative Improvement Agreement (CIA) is required for private sector agreements. The agreement shall address the work standards that must be followed, maintenance responsibilities, and compliance with ORS 276.071.

g. No building permit may be issued until all required public facility improvements are in place and approved by the City Engineer, or otherwise bonded, in conformance with the provision of the Code and the Public Works Design Standards in accordance with MMC 17-3.6 Public Facilities. All public improvements shall be completed and accepted by the Public Works Department prior to issuance of any occupancy.

   From the materials submitted, it appears that the storm drain, domestic water, and sanitary sewer facilities will be obtained from main line connections and/or extensions. Separate engineering drawings reflecting the installation of these public utilities will be required. No construction of, or connection to, any existing or proposed public utility/improvements will be permitted until all plans are approved by Staff, all fees have been paid, all necessary permits, bonding, right-of-way, and easements have been obtained and approved by staff, and Staff is notified a minimum of 24 hours in advance. All public utility/improvement plans submitted for review shall be based upon a 22"x 34" format and shall be prepared in accordance with the City of Molalla Public Work's Standards.

   Applicant will be required to submit a Public Works Permit and assurances in accordance with Section 1 of the Molalla Standard Specifications for Public Works Construction prior to any construction of public facilities.

   i. OR-211: Applicant will be required to meet all requirements of the Transportation Systems Plan (TSP) and access requirements as determined by ODOT. Development will be required to construct improvements along OR-211, including road widening for a center turn lane, buffered bicycle lanes, curb, and sidewalk consistent with the TSP, ODOT, and ADA standards. Applicant shall extend frontage improvement planter strip design consistent with SDR07-2021. If

required during design review, additional striping and pavement tapers may be required as necessary. Curb, sidewalk, buffered bike lane and road widening for a center turn lane shall be constructed as necessary to be consistent with Molalla Transportation System Plan, ODOT and ADA standards. The TSP adopted cross section for arterial roads includes a 14ft Center/turn lane, 12ft travel lane, 2ft bike buffer, 5ft bike lane, 6 1/2ft sidewalk, 1 1/2ft back of sidewalk buffer.

ii. S Ona WY: Applicant shall construct ¾ street improvements and right-of-way donations to local street standards in accordance with the City of Molalla's current Transportation System Plan along the entire frontage of S Ona Way. Developer shall install all associated signage including, but not necessarily limited to, 25 mph speed signs and crosswalks signs. Additionally, Developer is required to install a left-hand turn lane at the intersection of S Ona Way and OR-211 that is located on S Ona Way northbound and sends traffic to OR-211 eastbound.

iii. The applicant shall reconstruct the intersection of Ona Way/Main St (OR 211) to include adding the new public street connection on the north leg consistent with the Molalla Transportation System Plan and ODOT/ADA standards.

iv. Applicant will be required to dedicate a 10-foot-wide public utility easement fronting the public right-of-way if one does not exist. Applicant shall provide proof of existing dedication.

v. Roadway lighting is required on all new developments. Applicant shall be required to install roadway lighting. Location and number shall be determined during civil plan review.

vi. All sanitary sewers shall be designed and constructed to conform to the requirements of the Oregon state plumbing laws and rules of the Oregon DEQ and to City Standards. Prior to extension and/or connection to the Public Sewer System. Applicant Shall be required to submit a Sewer Capacity Analysis Request Form to the departmental of DEQ for approval per OAR Rule 340-52. The City recommends Certificate of Capacity to be submitted prior to their land use or permit application. Applicant shall be required to meet all requirements for extension of the sewer main in accordance with the Wastewater Master Plan and CIP for design.

vii. Public sanitary, storm sewer, and water lines on private property shall be centered in a permanent easement granted to the City. The minimum width of a public pipeline easement shall be 15 feet and no permanent structures shall be allowed within an easement area.

viii. Should Fire Department regulations require additional fire flow that results in looping the water line through the site, then applicants engineer shall coordinate

with Public Works for the extension of public waterline, and dedication of easements.

ix. Bear Creek drainage is water of the state and proposed discharge shall be reviewed and permitted by DEQ. Onsite private storm system shall comply with plumbing code requirements. The detention and flow control facilities shall be reviewed, permitted, and inspected by Public Works. The onsite storm conveyance system shall be reviewed and inspected by Clackamas County Building under a plumbing permit in Accordance with MMC 13.13 Surface Water Management.

x. In recognition of impacts from storm events greater than the mitigated 25-year event, the City offers an alternative to culvert reconstruction at Ona Way. This proposal potentially reduces the developer's time and costs verses the full culvert reconstruction that would otherwise be required by Code, and involves (1) a cleaning and inspection of the creek bed and culvert, and (2) a Hydraulic Survey / Hydraulic Analysis sufficient to understand the historic flooding conditions at Ona way and how these conditions are expected to be impacted by the development.

Specifically, the developer shall carry out necessary cleaning of Bear Creek, up to 50ft upstream and 100ft downstream of the culvert, focusing on vegetation below the high-water mark, or invasive species. The cleaning scope should be limited to avoid triggering regulatory approval requirements, such as an Army Corps permit. To this end, the developer shall avoid cut-and-fill activities within the creek. The purpose of the cleaning shall be to facilitate the CCTV inspection, and to allow a Professional Engineer to perform proper measurements, such as slope of the riverbed, roughness of its surface, and depth of the water, which are general inputs to a Hydraulic Survey and Hydraulic Analysis.

Post cleaning, the developer is required to conduct a CCTV inspection of the culvert and commission a Hydraulic Survey and Analysis from a Professional Engineer registered in Oregon. This survey will determine the culvert's true capacity (CFS vs. gauge height) and the corresponding storm event it can handle without flooding.

If the survey concludes that the culvert cannot support a 25-year storm, the developer is invited to propose and implement additional mitigation measures. These could include upgrading the culvert or enhancing onsite stormwater management practices.

xi. All utilities for the project shall be served by underground services. No overhead crossings of public right of way shall be approved by the City.

xii. A Performance Bond must be in place prior to issuance of permit and before any public construction begins. The sum of the Performance Bond will be based on Engineering Cost Estimates provide at time of application submittal.

xiii. The Applicant shall perform the public improvements as required and in accordance with the City of Molalla's public works standards. In the event Applicant fails to perform within the period of time that the land use decision from which the requirement flows remains valid, the City will call on the financial assurance to complete said improvements.

xiv. System Development Charges shall be paid prior to release of Building Permit Authorization from the City of Molalla.

xv. Refer to section 17-3.6.090 for requirements pertaining to Facility Installation.

2. Conditions Requiring Resolution Prior To Construction

a. S Ona Way is under City jurisdiction and a City issued access permit will be required to authorize that access. Additionally, the Applicant proposes a joint access agreement between the first phase of the project (SDR07-2021) at 1000 W Main ST. The Oregon Department of Transportation (ODOT) recommends that the Applicant update the access permit for Phase 1 to accommodate all 100 units proposed over the two phases.

3. Conditions to be Met Prior To Occupancy:

a. All improvements required by this site design review shall be installed and approved by the Planning Official prior to occupancy.

b. The Applicant shall record an agreement allowing for joint use of common areas between the two properties.

c. The pedestrian walkway across the driveway apron shall be constructed of concrete and shall be designed consistent with the Americans with Disabilities requirements. All walkways and sidewalks shall be constructed in consistency with ADA requirements (MMC 17-3.3.040 B, 2).

d. Applicant shall record an agreement between Phase 1 and 2 ensuring that parking may be used interchangeably between the two phases in perpetuity. A copy of the recorded agreement shall be provided to the City of Molalla Planning Department prior to occupancy.

e. Applicant to dedicate ROW to meet TSP cross section, ODOT, and ADA standards for arterial roads along OR-211 and for local streets along S Ona WY. For right-of-way dedication fronts streets under the jurisdiction of the City of Molalla, Applicant shall submit dedication on formats approved by the Public Works Department. On ODOT rights of way, Applicant shall donate sufficient right-of-way along variable width improvements and construct sidewalk widening to ODOT standards. ODOT requires donations of right-of-way to follow the requirements of Chapter 5.322. Developer Mitigation Donation in the ODOT Right-of-Way Manual. Applicant is advised that donation must be completed and recorded prior to occupancy. Applicant will be required to dedicate a 10-foot-wide public utility easement fronting the public right-of-way if one does not exist. Applicant shall provide proof of existing dedication. Applicant right-of-way dedication shall account for the addition of planter strip.

4. Ongoing Conditions:

a. No visual obstructions shall be placed in vision clearance areas (MMC 17-3.3.030 G).

b. All landscaping shall be maintained in good condition, or otherwise replaced by the property owner (MMC 17-3.4.030 G).

c. Connections to City utilities for each parcel shall be in conformance with applicable Molalla Public Works Design Standards at the time of site design review.

d. All outdoor lighting shall be maintained in good condition, or otherwise replaced by the property owner (MMC 17-3.4.050 C).

e. Parking shall be provided consistent with ADA requirements (MMC17-3.5.030 H).

f. All proposed parking spaces shall be reserved for tenants, employees, or guests of the proposed multi-family use, except for shared parking pursuant to Section 17-3.5.030.D

g. Any maintenance of vegetation within the Bear Creek Corridor shall be done in accordance with MMC 17-2.4.040 G 4.

Exhibit A:

City Staff's Findings of Fact for SDR01-2023

A. The application is complete, in accordance with Section 17-4.2.040;

Findings: The City received the Applicant's proposal on January 19, 2023 and deemed it incomplete on February 14, 2023. The Applicant resubmitted on February 28, 2023 and the application was deemed complete in accordance with Section 17-4.2.040 on March 3, 2023.

B. The application complies with all of the applicable provisions of the underlying Zoning District (Division II), including, but not limited to, building and yard setbacks, lot area and dimensions, density and floor area, lot coverage, building height, building orientation, architecture, and other applicable standards;

17-2.2.030 Allowed Uses

Findings: The Applicant's submitted application is for a 40-unit apartment complex. Per MMC Table 17-2.2.030 Multifamily Dwellings are a permitted use in the R-3 zone per special use standards of 17-2.3.080 Multifamily Development. This standard is met.

17-2.2.040 Lot and Development Standards

Findings: The property resides in an R-3 Medium-High density residential zone and is therefore subject to *Table 17-2.2.040.D Lot and Development Standards for Residential Zones.* The proposal complies with these standards as follows:

Residential Density – Development in an R-3 zone is has a minimum density of eight (8) dwelling units and maximum of twenty-four (24) dwelling units per buildable acre. The Applicant proposes 40 dwelling units on a 1.96 acre parcel from which 0.14 acres will be dedicated as right-of-way. The proposed density is thus 40(units)/1.82 acres or twenty-two (22) dwelling units per acre. This standard is met.

Minimum Lot Area – R-3 zoning standards require 2,000 SF per dwelling unit for multi-family development. The Applicant's proposal provides 1982 SF per dwelling unit. The Applicant has submitted an adjustment application concurrently with this site design review application that would permit the smaller lot size per unit. Allowance of the smaller lot size as proposed would still meet compliance with density standards, per above. Compliance with this standard is evaluated further in Staff responses to ADJ03-2023.

Minimum Lot Width – R-3 zoning standards require 80 lot width for multi-family development. The subject property is 196.5 ft wide. This standard is met.

Minimum Lot Depth – R-3 zoning standards do not specify a minimum lot depth. This standard does not apply.

Building and Structure Height – Maximum building height in the R-3 zone is 45ft. The height of the proposed structures is less than 45ft. This standard is met.

Fences and non-building walls – The Applicant does not propose any fences or non-building walls. This standard is met.

Lot Coverage. Maximum Lot Coverage (foundation plane area as % of site area) - Maximum foundation plane coverage in the R-3 zone is 80%. The Applicant proposes covering 17,548 SF of the total 79,276 SF site, or 22.1% of the site. This standard is met.

Minimum Landscape Area % (includes required parking lot, landscaping, and required screening) Minimum landscaped area in the R-3 zone is 20%. The Applicant proposes landscaping 28,653 SF or 36% of the total site area. This standard is met.

Minimum Setbacks -

Front Setback Requirement: 10 ft – The Applicant's submitted site plan shows at least 10 ft between the proposed building and property lines abutting the Right-of-Way. This standard is met.

Side Setback Requirement (for structures over 24ft high): 10 ft total between two sides – The Applicant's submitted site plan shows at least 5 ft between the proposed buildings and interior side property lines. The property is a corner lot so one side lot can be up to 3ft from the interior side. This standard is met.

Rear Setback Requirement: 15 ft (for structures over 24ft high) – The Applicant's submitted site plan shows at least 15 ft between the rear property line and buildings.

Garage Setback Requirement: 20 ft – No garages are proposed. This standard does not apply.

Build to Line: 20 ft – The Applicant's submitted site plan shows that the proposed buildings abutting OR-211 are situated within 20 ft of the right-of-way and shows pedestrian amenities between the primary building entrance and street. This standard is met.

17-2.3.080 Multifamily Development

A. **Purpose.** The following standards are intended to ensure that multifamily developments are planned with adequate open space and are designed to prevent conflicts between residential uses, on-site recreation, and vehicle circulation and parking areas. The standards supplement the design standards of Division III.

B. **Applicability.** This section applies to new multifamily developments.

Findings: This application involves Site Design Review for multifamily dwellings. Therefore, these standards are applicable.

C. **Standards.**

1. **Common Open Space and Landscaping.** A minimum of 15 percent of the site area in in a multifamily development shall be designated and permanently reserved as common area or open space, in accordance with all of the following criteria:

a. "Site area" for the purposes of this section is defined as the subject lot or lots after subtracting any required dedication of street right-of-way.

Findings: The Applicant's submitted landscaping plan shows that 12,715 SF of the total 79,276 SF of the site is designated as common/open space meeting the 20x20 dimensional reqirements, or 16% of the total site area. This exceeds the required 15% minimum required for this site. This standard is met.

b. The common area or open space shall contain one or more of the following: outdoor recreation area, tree grove (e.g., existing mature trees), turf play fields or playgrounds, sports courts, swim pool, walking fitness course, natural area with picnic benches, or similar open space amenities as appropriate for the intended residents.

Findings: This standard is met subject to a condition of approval. The Applicant has 's submitted landscaping plan shows a picnic table within the proposed common open space area. Phase 1 of this project on 1000 W Main ST has open space that includes pedestrian amenities, outdoor seating areas, a playground, a basketball court, a gazebo, picnic areas, and natural landscaped areas. As a condition of approval, the Applicant shall record an agreement allowing for joint use of common areas between the two properties.

c. In order to be counted as eligible toward the minimum open space area, such areas shall have dimensions of not less than 20 feet.

Findings: The Applicant has only included areas with dimensions of 20 feet or greater in their common open space calculations. This standard is met.

d. Open space and common areas not containing recreational facilities shall be landscaped.

Findings: The Applicant's submitted landscaping plan shows that all open space areas not containing recreational facilities are landscaped. This standard is met.

e. Buildings located in the C-1 zone are exempt from this section.

Findings: The property is not located within the C-1 zone. Therefore, this exemption is not applicable.

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2. **Private Open Space.** Private open space areas shall be required for dwelling units based on the following criteria:
   a. A minimum of 40 percent of all ground-floor dwelling units shall have front or rear patios or decks containing at least 48 square feet of usable area. Ground floor housing means the housing unit entrance (front or rear) is within five feet of the finished ground elevation (i.e., after grading and landscaping). This section does not apply to buildings within the C-1 zone.

Findings: The Applicant's submitted architectural plans show concrete patios greater than 48 square feet provided to each ground-floor dwelling. This standard is met.

b. A minimum of 40 percent of all upper-floor housing units shall have balconies or porches containing at least 48 square feet of usable area. Upper-floor housing means housing units with a first floor elevation that is more than five feet above the finished grade.

Findings: The Applicant's submitted architectural plans show that balconies greater than 48 square feet are provided to each upper-floor housing unit. This standard is met.

3. **Building Orientation and Design, Access and Circulation, Landscaping and Screening, Parking and Loading, and Public Facilities.** The standards of Chapters 17-3.2 through 17-3.6 shall be met.

Findings: Staff discusses the Applicant's degree of compliance with Chapter 17, Division III standards under Section D of this staff report.

4. **Trash Storage.** Trash receptacles, recycling, and storage facilities shall be oriented away from building entrances, set back at least 10 feet from any public right-of-way and adjacent residences, and shall be screened with an evergreen hedge or solid

fence or wall of not less than six feet in height. Receptacles must be accessible to trash pick-up trucks. (Ord. 2017-08 §1)

Findings: The Applicant's submitted site plans show a trash enclosure that is substantially further than 10 ft from OR-211 and S Ona WY and is enclosed with a 6 ft high screening fence. The enclosure is across the parking lot from the buildings/courtyard and is accessible to trash collection trucks. This standard is met.

Section 17-2.4.030: Water Resources (WR) Overlay

A. ***Purpose.*** *The Water Resources (WR) Overlay District is intended to protect and enhance significant wetlands, stream corridors and floodplains identified on the Molalla Natural Features Inventory by:*

1. *Conserving significant riparian corridors, undeveloped floodplains and locally significant wetlands in keeping with the requirements of State Planning Goal 5 (Natural Resources) and applicable state statutes and administrative rules, and the Molalla Comprehensive Plan;*
2. *Protecting and enhancing water quality;*
3. *Preventing property damage during floods and storms;*
4. *Limiting development activity in designated riparian corridors;*
5. *Protecting native plant species;*
6. *Maintaining and enhancing fish and wildlife habitats; and*
7. *Conserving associated scenic and recreational values.*

B. ***Boundaries and Setbacks.*** *The general location of the WR Overlay District is shown on the Molalla Comprehensive Plan Map (for areas within the UGB) and the Molalla Zoning Map (for areas within the City limits) and includes:*
   1. *Locally significant wetlands identified on the Molalla Local Wetlands Inventory or the Natural Features Inventory.*
   2. *The riparian corridor extending upland 50 feet from the tops-of-bank of Bear Creek, Creamery Creek, and the Molalla River tributary as shown on the Natural Features Map.*
      a. *Where a significant wetland is located fully or partially within the riparian corridor, the riparian corridor shall extend 50 feet from the upland edge of the wetland;*
      b. *The riparian buffer for isolated wetlands shall extend 25 feet from the edge of the wetland.*
   3. *The 100-year floodplain on properties identified as vacant or partly vacant on the 2007 Molalla Buildable Lands Inventory.*

Findings: Bear Creek flows through the southwestern corner of the site. A 50ft riparian buffer is applied to the Bear Creek Stream Corridor. This buffered area comprises the corridor to which these standards apply. Per the City's 2001 Local Wetlands Inventory, no additional wetlands exist on the property.

C. ***The Department of State Lands Notification.*** *The Oregon Department of State Lands (DSL) shall be notified in writing of all applications to the City of Molalla for development activities, including applications for plan authorizations, development permits, or building permits, and of development proposals within the Molalla UGB, that may affect any wetlands, creeks or waterways identified in the Local Wetlands Inventory or Natural Features Inventory.*

Findings: The Applicant does not propose any development activities within the Bear Creek Corridor so no contact with DSL is required. Criteria D-F do not apply.

G. ***Development Regulations.*** *In addition to the requirements of the underlying zone, the following restrictions and exceptions shall apply within the WR Overlay District:*

1. ***Removal of Native Vegetation.*** *The removal of vegetation from the WR Overlay District is prohibited except for the following:*
   a. *Perimeter mowing of a wetland for fire protection purposes;*
   b. *Removal of non-native vegetation and replacement with native plan species;*
   c. *For the development of water-related or water-dependent uses, provided they are designed and constructed to minimize impact on the existing riparian vegetation;*
   d. *Removal of emergent in-channel vegetation that has the potential to cause flooding; and*
   e. *Hazardous Tree Removal. Hazardous trees are those that pose an imminent health, safety, or welfare threat to persons or property.*

2. ***Building, Paving, Grading, and Fill.*** *Within the WR Overlay District, the placement of structures or impervious surfaces, including grading and the placement of fill is prohibited except for the following:*
   a. *Replacement of existing structures with structures located on the original building footprint that do not disturb additional wetland or riparian corridor surface area;*
   b. *Streets, roads and paths that are included in the Molalla Transportation System Plan;*
   c. *Water-related and water-dependent uses, including drainage facilities, water and sewer facilities, flood control projects, drainage pumps, public paths, access ways, trails, picnic areas or interpretive and educational displays and overlooks, including benches and outdoor furniture;*
   d. *Routine maintenance or replacement of existing public facilities projects and public emergencies, including emergency repairs to public facilities; and*

e. In-channel erosion or flood control measures that have been approved by the Oregon Division of State Lands (DSL), the U.S. Army Corps of Engineers or another state or federal regulatory agency, that utilize bio-engineering methods (rather than rip rap).

3. The following uses and activities are prohibited within the WR Overlay District:
   a. New residential, commercial, industrial, or public/semi-public construction;
   b. Expansion of existing buildings or structures;
   c. Expansion of areas of pre-existing non-native ornamental landscaping such as lawn and gardens; and
   d. Dumping, piling, or disposal of refuse, yard debris, or other material.

4. Site Maintenance. Any use, sign or structure, and the maintenance thereof, lawfully existing on the date of adoption of this ordinance, is permitted within the WR Overlay District.
   a. Such use, sign or structure may continue at a similar level and manner as existed on the date of the adoption of this ordinance.
   b. The maintenance and alteration of pre-existing ornamental landscaping is permitted within the WR Overlay District as long as no additional native vegetation is disturbed.
   c. Maintenance of lawns, planted vegetation and landscaping shall be kept to a minimum and not include the spraying of pesticides or herbicides.
   d. Vegetation that is removed or diseased shall be replanted with native species.
   e. Maintenance trimming of existing trees shall be kept at a minimum and under no circumstances can the trimming maintenance be so severe as to compromise the tree's health, longevity, and resource functions.
   f. Vegetation within utility easements shall be kept in a natural state and replanted when necessary with native plant species. (Ord. 2017-08 §1)

Findings: These standards are met subject to a condition of approval. The Applicant does not propose any development activities within the Bear Creek Corridor. Standards G 1-3 do not apply. As a condition of approval any maintenance of vegetation within the Bear Creek Corridor shall be done in accordance with MMC 17-2.4.030 G 4.

C. The proposal includes required upgrades, if any, to existing development that does not comply with the applicable zoning district standards, pursuant to Chapter 17-1.4 Nonconforming Situations;

Findings: The Applicant's proposes to remove all existing development from the property and build from vacant ground in compliance with applicable development standards. The Applicant

has already been issued a demo permit to remove existing structures and utilities. This standard does not apply.

D. The proposal complies with all the Development and Design Standards of Division III, as applicable:

Findings: Applicable Criteria under Division III. Community Design Standards for this project include:

Section 17-3.2.030 Residential Buildings
Chapter 17-3.3 Access and Circulation
Chapter 17-3.4 Landscaping, Fences and Walls, Outdoor Lighting
Chapter 17-3.5 Parking and Loading
Chapter 17-3.6 Public Facilities

17-3.2.030 Residential Buildings

A. **Purpose.** The following requirements are intended to create and maintain a built environment that is conducive to walking; reduces dependency on the automobile for short trips; provides natural surveillance of public spaces; addresses the orientation and design of garages; and creates a human-scale design, e.g., with buildings placed close to public ways and large building walls divided into smaller planes with detailing.

B. **Building Orientation.** Residential buildings that are subject to the provisions of this chapter, pursuant to Section 17-3.2.020, shall conform to all of the following standards in subsections B.1 through 3, below, as generally illustrated in Figure 17-3.2-1. Figure 17-3.2-2 provides examples of non-compliance.

1. **Building Orientation to Street.** Except as provided below, dwelling units shall orient toward a street, have a primary entrance opening toward the street, and be connected to the right-of-way with an approved walkway or residential front yard.
    a. A dwelling may have its primary entrance oriented to a yard other than the front or street yard where the only permitted access to the property is from a shared driveway or flag lot drive and orienting the dwelling entrance to the street is not practical due to the layout of the lot and driveway.
    b. Where there is no adjacent street to which a dwelling may be oriented, or it is not practical to orient a dwelling to an adjacent street due to lot layout, topographic, or other characteristics of the site, the dwelling may orient to a walkway, courtyard, open space, common area, lobby, or breezeway (i.e., for multifamily buildings).
    c. Where a flag lot is permitted, building orientation shall conform to the provisions for flag lots under Chapter 17-4.3.

Findings: The Applicant's submitted site plans show that the proposed buildings are oriented around the exterior of the site and adjacent to OR-211 and S Ona WY. Buildings H, J, and K orient directly to the street. Building G orients to the east and directly connects to the proposed public sidewalk via a walkway. All buildings are designed to provide easy pedestrian access to the public sidewalks. This standard is met.

2. **Limitation on Parking Between Primary Entrance and Street.** Off-street parking is not allowed between a primary building entrance and the street to which it is oriented, except that assisted living facilities, group care facilities, and similar institutional-residential uses serving clients with disabilities may have one driveway located between the primary building entrance and an adjacent street as required to serve as a drop-off or loading zone, provided the primary building entrance shall connect to an adjacent street by a pedestrian walkway that conforms to the standards of Section 17-3.3.040. The intent of this exception is to provide for one drop-off or loading zone while maintaining a direct, convenient, and safe pedestrian access to a primary building entrance.

Findings: The Applicant's submitted site plans show no off-street parking proposed between primary entrances of buildings and either OR-211 or S Ona WY. This standard is met.

3. **Build-To Line.** Where a new building is proposed in a zone that requires a build-to line per Section 17-2.2.040, the building shall comply with the build-to line standard and the development shall meet the standards for pedestrian access under Section 17-3.3.040.

Findings: The Applicant's submitted site plan shows that the proposed buildings abutting OR-211 are situated within 20 ft of the right-of-way and shows pedestrian amenities between the primary building entrance and street. This standard is met.

C. **Garages.** The following standards apply to all types of vehicle storage, including, but not limited to, buildings, carports, canopies, and other permanent and temporary structures. The standards are intended to balance residents' desire for a convenient, safe, and private vehicle access to their homes with the public interest in maintaining safe and aesthetically pleasing streetscapes. The standards therefore promote pedestrian safety and visibility of public ways, while addressing aesthetic concerns associated with street-facing garages.
   1. **Alleys and Shared Drives.** Where a dwelling abuts a rear or side alley, or a shared driveway, including flag lot drives, the garage or carport opening(s) for that dwelling shall orient to the alley or shared drive, as applicable, and not a street.
   2. **Setback for Garage Opening Facing Street.** No garage or carport opening shall be placed closer than 16 feet to a street right-of-way. On corner lots, garages facing a

side street (i.e., not the same street as the front entrance) may be located closer than 16 feet to a street right-of-way.

3. **Width of Garage Openings Facing Street.** Where one or more garage openings face a street, the total width of all garage openings on that building elevation shall not exceed 50 percent of the width of that elevation; except this standard does not apply where the garage opening is recessed behind the front elevation of the dwelling by not less than four feet for its entire width, or where all garage openings are placed behind the primary entrance to the dwelling. An arbor, portico, or similar architectural feature extending the entire width of the garage may be used as the basis of measuring the garage recess. A garage opening is considered to be facing a street where the opening is parallel to, or within 45 degrees of, the street right-of-way line.
4. **Three-Car and Wider Garages.** Where three or more contiguous garage parking bays are proposed facing the same street, the garage opening closest to a side property line shall be recessed at least two feet behind the adjacent opening(s) to break up the street-facing elevation and diminish the appearance of the garage from the street. Side-loaded garages, on interior lots, i.e., where the garage openings are turned away from the street, are exempt from this requirement.
5. **Garages for Duplex Dwellings.** Duplex design shall conform to Section 17-2.3.060.

Findings: The applicant's submitted application does not include garages or other vehicle storage structures. These standards do not apply.

D. **Architecture.** The following standards require variation in architectural plans to avoid monotony in new developments. The standards support the creation of architecturally varied neighborhoods, whether a neighborhood develops all at once or one lot at a time, avoiding homogeneous street frontages that detract from the community's appearance. The standards are applied through the Site Design Review process for new townhome dwellings and new multifamily dwellings, and through the Zoning Checklist (Type I) review process prior to issuance of building permits for new single-family dwellings and new duplex dwellings. In addition to the following requirements, duplexes, townhomes, and multifamily projects shall conform to the special use standards of Chapter 17-2.3.

1. **Detailed Design.** Dwelling designs shall incorporate not fewer than four architectural features per dwelling unit from subdivisions a through k, as generally illustrated in this chapter. Applicants are encouraged to use those elements that best suit the proposed building style and design.
    a. Covered front porch: not less than six feet in depth and not less than 30 percent of the width of dwelling, excluding the landing for dwelling entrance.
    b. Dormers: minimum of two required for each single-family dwelling and two each for other dwellings; must be a functional part of the structure, for example, providing light into a living space.

c. Recessed entrance: not less than four feet deep.
d. Windows: not less than 30 percent of surface area of all street-facing elevation(s).
e. Window trim: minimum four-inch width (all elevations).
f. Eaves: overhang of not less than 12 inches.
g. Offset: offset in façade and/or roof (see subsection 2, "Articulation"); counts twice if both façade and roof offsets are provided.
h. Bay window: projects from front elevation by 12 inches.
i. Balcony: one per dwelling unit facing street.
j. Decorative top: e.g., cornice or pediment with flat roof or brackets with pitched roof.
k. Other: feature not listed but providing visual relief or contextually appropriate design similar to subdivisions a through j, as approved by the Planning Official through a Type I procedure.

Findings: The Applicant's submitted architectural plans show that the proposed apartment structures include balconies which face the street and common open space areas. The proposed structures also contain minimum 12-in. eaves, facades with off-sets, and recessed entries (see Exhibit 4). These standards are met.

2. **Articulation.** Plans for residential buildings shall incorporate design features such as varying rooflines, offsets, balconies, projections (e.g., overhangs, porches, or similar features), recessed or covered entrances, window reveals, or similar elements that break up otherwise long, uninterrupted elevations. Such elements shall occur at a minimum interval of 40 feet, and each floor shall contain at least two elements from the following options, as generally illustrated in this Section 17-3.2.030.
   a. Recess (e.g., porch, courtyard, entrance balcony, or similar feature) that has a minimum depth of four feet;
   b. Extension (e.g., floor area, porch, entrance, balcony, overhang, or similar feature) that projects a minimum of two feet and runs horizontally for a minimum length of four feet; or
   c. Offsets or breaks in roof elevation of two feet or greater in height.

Findings: The Applicant's submitted architectural plans show that the proposed apartment structures include upper story balconies which meet dimensions, offset roof lines on buildings H and K, and recessed entries. These standards are met.

3. **House Plan Variety.** This subsection applies to land divisions and new developments with five or more residential buildings. No two directly adjacent or opposite dwelling units in a single-family development, or buildings in a multifamily development, may possess the same front or street-facing elevation. This standard is met when front or street-facing elevations differ from one another by no fewer than three of the

elements listed in subdivisions a through g. Where façades repeat on the same block face, they must have at least three intervening lots between them that meet the above standard. Land division approvals will be conditioned to assure compliance with this subsection.

a. Materials. The plans specify different exterior cladding materials, a different combination of materials, or different dimensions, spacing, or arrangement of the same materials. This criterion does not require or prohibit any combination of materials; it only requires that plans not repeat or mirror one another. Materials used on the front façade must turn the corner and extend at least two feet deep onto the side elevations.
b. Articulation. The plans have different offsets, recesses, or projections; or the front building elevations break in different places. For example, a plan that has a stoop entry (recess) varies from one that has an entry under a front porch (projection). For this criterion to apply, a recess must have a minimum depth of four feet and a projection or offset must be at least four feet in depth.
c. Variation in Roof Elevation. The plans have different roof forms (e.g., gable versus gambrel or hip), different roof height (by at least 10 percent), different orientation (e.g., front-facing versus side-facing gable), or different roof projections (e.g., with and without dormer or shed, or different type of dormer or shed).
d. Entry or Porch. The plans have different configuration or detailing of the front porch or covered entrance.
e. Fenestration. The plans have different placement, shape, or orientation of windows or different placement of doors.
f. Height. The elevation of the primary roofline (along the axis of the longest roofline) changes by not less than four feet from building to building, or from dwelling unit to dwelling unit (e.g., townhome units), as applicable. Changes in grade of eight feet or more from one lot to the adjacent lot are counted toward change in height for purposes of evaluating façade variation.
g. Color Palette. Variation in color palette. (Ord. 2017-08 §1)

Findings: The proposed buildings are considered in conjunction with the first phase of this project (SDR07-2021) on 1000 W Main ST. As a total of ten (10) buildings are proposed between the two phases these standards apply. The Applicant's submitted architectural plans show variety in articulation, roof elevation, entry configuration, fenestration, and height. These standards are met.

17-3.3.030 Vehicular Access and Circulation

A. **Purpose and Intent.** Section 17-3.3.030 implements the street access policies of the City of Molalla Transportation System Plan. It is intended to promote safe vehicle access and egress to properties, while maintaining traffic operations in conformance with adopted standards. "Safety," for the purposes of this chapter, extends to all modes of transportation.

B. **Permit Required.** Vehicular access to a public street (e.g., a new or modified driveway connection to a street or highway) requires an approach permit approved by the applicable roadway authority.

Findings: The Applicant proposes a new access from S Ona Way with this application. S Ona Way is under City jurisdiction and a City issued access permit will be required to authorize that access. Additionally, the Applicant proposes a joint access agreement between the first phase of the project (SDR07-2021) at 1000 W Main ST. The Oregon Department of Transportation (ODOT) recommends that the Applicant update the access permit for Phase 1 to accommodate all 100 units proposed over the two phases.

C. **Traffic Study Requirements.** The City, in reviewing a development proposal or other action requiring an approach permit, may require a traffic impact analysis, pursuant to Section 17-3.6.020, to determine compliance with this Code.

Findings: Criteria for requiring a full traffic impact analysis were met. The Applicant submitted a Traffic Impact Study prepared by a Registered Engineer as part of their submitted application package. This standard is met.

D. **Approach and Driveway Development Standards.** Approaches and driveways shall conform to all of the following development standards:

1. The number of approaches on higher classification streets (e.g., collector and arterial streets) shall be minimized; where practicable, access shall be taken first from a lower classification street.

Findings: The Applicant proposes a new access from S Ona Way with this application. S Ona Way is classified as a local street in the Molalla Transportation Systems Plan (TSP). Additionally, the Applicant proposes a joint access agreement between this project and the first phase (SDR07-2021) for that project's access from OR-211. The new access is proposed from the lower classification street. This standard is met.

2. Approaches shall conform to the spacing standards of subsections E and F, below, and shall conform to minimum sight distance and channelization standards of the roadway authority.

Findings: Per the Molalla Transportation Systems Plan (TSP), S Ona Way is classified as a local street. The nearest cross street is OR-211, which is classified as an arterial road. Access spacing for private drives from arterial roads is 150 ft. The Applicant's proposed access is over 200 ft from OR-211. The applicant's proposal meets local standards. The Applicant also proposes to utilize an existing, approved shared access from OR-211. Standard is met subject to ODOT approval for expanded use of the existing access.

3. Driveways shall be paved and meet applicable construction standards. Where permeable paving surfaces are allowed or required, such surfaces shall conform to applicable Public Works Design Standards.

Findings: The Applicant's submitted site plan shows that all driveway surfaces are paved. This standard is met.

4. The City Engineer may limit the number or location of connections to a street, or limit directional travel at an approach to one-way, right-turn only, or other restrictions, where the roadway authority requires mitigation to alleviate safety or traffic operations concerns.

Findings: Staff finds that the proposed number, locations, and directional travels of proposed access points are appropriate for the proposed site. This standard is met.

5. Where the spacing standards of the roadway authority limit the number or location of connections to a street or highway, the City Engineer may require a driveway extend to one or more edges of a parcel and be designed to allow for future extension and inter-parcel circulation as adjacent properties develop. The City Engineer may also require the owner(s) of the subject site to record an access easement for future joint use of the approach and driveway as the adjacent property(ies) develop(s).

Findings: Staff finds that driveway spacing complies with City of Molalla spacing standards from arterial streets. The Applicant has proposed a joint access from Phase 1 of the project (SDR07-2021) which would also provide access to OR-211.

6. Where applicable codes require emergency vehicle access, approaches and driveways shall be designed and constructed to accommodate emergency vehicle apparatus and shall conform to applicable fire protection requirements. The City Engineer may restrict

parking, require signage, or require other public safety improvements pursuant to the recommendations of an emergency service provider.

Findings: This standard is met subject to conditions of approval. Prior to building permit and civil review submissions, the applicant shall;

- Double check turning radius. 24/48 is required for a 20-foot-wide access road and larger. 44/56 for anything less than a 20-foot access
- Submit striping plan for no parking areas for approval from the Molalla Fire Department
- Please indicate Turn-a-round area on plans for fire apparatus and how it will be striped

7. As applicable, approaches and driveways shall be designed and constructed to accommodate truck/trailer-turning movements.

Findings: The Applicant's submitted fire access plan (C3.2) shows access and circulation patterns between the two phases that allow fire access to all portions of the property. Access and circulation points are designed to accommodate fire apparatus, waste collection vehicles, and delivery trucks. This standard is met subject to civil review.

8. Except where the City Engineer and roadway authority, as applicable, permit an open access with perpendicular or angled parking, driveways shall accommodate all projected vehicular traffic on-site without vehicles stacking or backing up onto a street.

Findings: All proposed vehicular parking and circulation areas are internal to the site. No vehicle stacking is anticipated for a multi-family development. This standard is met.

9. Driveways shall be designed so that vehicle areas, including, but not limited to, drive-up and drive-through facilities and vehicle storage and service areas, do not obstruct any public right-of-way.

Findings: The Applicant's submitted site plan shows that the proposed driveways do not cause any obstructions to the public right of way. Vehicle parking/storage is internal to the site. This standard is met.

10. Approaches and driveways shall not be wider than necessary to safely accommodate projected peak hour trips and turning movements and shall be designed to minimize crossing distances for pedestrians.

Findings: The Applicant's submitted site plan shows a 28' access drive. Per the Molalla TSP Table 11, standards for multi-family access width are between 24' and 30'. This standard is met.

11. As it deems necessary for pedestrian safety, the City Engineer, in consultation with the roadway authority, as applicable, may require that traffic-calming features, textured driveway surfaces (e.g., pavers or similar devices), curb extensions, signage or traffic control devices, or other features, be installed on or in the vicinity of a site as a condition of development approval.

Findings: Staff will not be requiring additional pedestrian safety features. This standard is met.

12. Construction of approaches along acceleration or deceleration lanes, and along tapered (reduced width) portions of a roadway, shall be avoided; except where no reasonable alternative exists and the approach does not create safety or traffic operations concern.

Findings: This application does not include approaches along acceleration or deceleration lanes or reduced width portions of roadway. This standard does not apply.

13. Approaches and driveways shall be located and designed to allow for safe maneuvering in and around loading areas, while avoiding conflicts with pedestrians, parking, landscaping, and buildings.

Findings: This application does not include loading areas. This standard does not apply.

14. Where sidewalks or walkways occur adjacent to a roadway, driveway aprons constructed of concrete shall be installed between the driveway and roadway edge. The roadway authority may require the driveway apron be installed outside the required sidewalk or walkway surface, consistent with Americans with Disabilities Act (ADA) requirements, and to manage surface water runoff and protect the roadway surface.

15. Where an accessible route is required pursuant to ADA, approaches and driveways shall meet accessibility requirements where they coincide with an accessible route.

Findings: These standards are met subject to a condition of approval. This application includes a sidewalk adjacent to the site along OR-211 that crosses the driveway apron but does not specify materials. As a condition of approval, the pedestrian walkway across the driveway apron shall be constructed of concrete and shall be designed consistent with the Americans with Disabilities requirements.

16. The City Engineer may require changes to the proposed configuration and design of an approach, including the number of drive aisles or lanes, surfacing, traffic-calming features, allowable turning movements, and other changes or mitigation, to ensure traffic safety and operations.

Findings: Staff does not have additional configuration and design requirements for the approach.

17. Where a new approach onto a state highway or a change of use adjacent to a state highway requires ODOT approval, the applicant is responsible for obtaining ODOT approval. The City Engineer may approve a development conditionally, requiring the applicant first obtain required ODOT permit(s) before commencing development, in which case the City will work cooperatively with the applicant and ODOT to avoid unnecessary delays.

Findings: This standard is met subject to conditions of approval. The Applicant proposes a new access from S Ona Way with this application. S Ona Way is under City jurisdiction and a City issued access permit will be required to authorize that access. Additionally, the Applicant proposes a joint access agreement between the first phase of the project (SDR07-2021) at 1000 W Main ST. The Oregon Department of Transportation (ODOT) recommends that the Applicant update the access permit for Phase 1 to accommodate all 100 units proposed over the two phases. Completion of ODOT permitting is required prior to construction.

18. Where an approach or driveway crosses a drainage ditch, canal, railroad, or other feature that is under the jurisdiction of another agency, the applicant is responsible for obtaining all required approvals and permits from that agency prior to commencing development.

Findings: The approach of the proposed development does not cross any feature that is under the jurisdiction of another agency. This standard does not apply.

19. Where a proposed driveway crosses a culvert or drainage ditch, the City Engineer may require the developer to install a culvert extending under and beyond the edges of the driveway on both sides of it, pursuant to applicable Public Works Design Standards.

Findings: The approach of the proposed development does not cross any culvert or drainage ditch. This standard does not apply.

20. Except as otherwise required by the applicable roadway authority or waived by the City Engineer temporary driveways providing access to a construction site or staging area shall be paved or graveled to prevent tracking of mud onto adjacent paved streets.

Findings: The Applicant's submitted application states that this standard will be met during construction.

21. Development that increases impervious surface area shall conform to the storm drainage and surface water management requirements of Section 17-3.6.050.

Findings: The Applicant has submitted a preliminary stormwater report with their application along with planned improvements for surface water management. This standard is met for the purposes of this review and will be evaluated further during engineering plan review.

E. **Approach Separation from Street Intersections.** Except as provided by subsection H, minimum distances shall be maintained between approaches and street intersections consistent with the current version of the Public Works Design Standards and Transportation System Plan.

F. **Approach Spacing.** Except as provided by subsection H or as required to maintain street operations and safety, the following minimum distances shall be maintained between approaches consistent with the current version of the Public Works Design Standards and Transportation System Plan.

Findings: Per the Molalla Transportation Systems Plan (TSP), S Ona Way is classified as a local street. The nearest cross street is OR-211, which is classified as an arterial road. Access spacing for private drives from arterial roads is 150 ft. The Applicant's proposed access is over 200 ft from OR-211. The applicant's proposal meets local standards. The Applicant also proposes to utilize an existing, approved shared access from OR-211. Standard is met subject to ODOT approval.

G. **Vision Clearance.** No visual obstruction (e.g., sign, structure, solid fence, or shrub vegetation) greater than 2.5 feet in height shall be placed in "vision clearance areas" at street intersections.. The minimum vision clearance area may be modified by the Planning Official through a Type I procedure, upon finding that more or less sight distance is required (i.e., due to traffic speeds, roadway alignment, etc.). Placement of light poles, utility poles, and tree trunks should be avoided within vision clearance areas.

Findings: The Applicant's submitted site plan shows no visual obstructions in the vision clearance area. As an ongoing condition of approval, no visual obstructions shall be placed in vision clearance areas.

H. **Exceptions and Adjustments.** The City Engineer may approve adjustments to the spacing standards of subsections E and F, above, where an existing connection to a City street does not meet the standards of the roadway authority and the proposed development moves in the direction of code compliance. The Planning Official through a Type II procedure may also approve a deviation to the spacing standards on City streets where it finds that mitigation measures, such as consolidated access (removal of one access), joint use driveways (more than one property uses same access), directional limitations (e.g., one-way), turning

restrictions (e.g., right-in/ right-out only), or other mitigation alleviate all traffic operations and safety concerns.

Findings: The Applicant has not applied for an exception or adjustment to access or approach spacing. This standard does not apply.

I. **Joint Use Access Easement and Maintenance Agreement.** Where the City approves a joint use driveway, the property owners shall record an easement with the deed allowing joint use of and cross access between adjacent properties. The owners of the properties agreeing to joint use of the driveway shall record a joint maintenance agreement with the deed, defining maintenance responsibilities of property owners. The applicant shall provide a fully executed copy of the agreement to the City for its records, but the City is not responsible for maintaining the driveway or resolving any dispute between property owners.

Findings: This standard is met subject to a condition of approval.

The Applicant proposes a joint access easement from Phase 1 of the project. This proposed easement is shown on sheet A100 of the Applicant's submitted application. As a condition of approval, the Applicant shall record a joint access easement between project Phase 1 and Phase 2 prior to occupancy and provide a copy of the easement to the City of Molalla Planning Department.

17-3.3.040 Pedestrian Access and Circulation

B. **Standards.** Developments shall conform to all of the following standards for pedestrian access and circulation as generally illustrated in Figure 17-3.3-3:

1. **Continuous Walkway System.** A pedestrian walkway system shall extend throughout the development site and connect to adjacent sidewalks, if any, and to all future phases of the development, as applicable.

Findings: The Applicant's submitted site plan shows a continuous sidewalk that connects all buildings with adjacent public sidewalks and with other buildings in the development. This standard is met.

2. **Safe, Direct, and Convenient.** Walkways within developments shall provide safe, reasonably direct, and convenient connections between primary building entrances and all adjacent parking areas, recreational areas, playgrounds, and public rights-of-way conforming to the following standards:

a. The walkway is reasonably direct when it follows a route that does not deviate unnecessarily from a straight line or it does not involve a significant amount of out-of-direction travel.

b. The walkway is designed primarily for pedestrian safety and convenience, meaning it is reasonably free from hazards and provides a reasonably smooth and consistent surface and direct route of travel between destinations. The Planning Official may require landscape buffering between walkways and adjacent parking lots or driveways to mitigate safety concerns.

c. The walkway network connects to all primary building entrances, consistent with the building design standards of Chapter 17-3.2 and, where required, Americans with Disabilities Act (ADA) requirements.

Findings: These standards are met subject to a condition of approval. The Applicant's submitted site plans show a walkway that provides a safe, continuous, and direct pedestrian route throughout the site and that directly connects to the proposed pedestrian sidewalks along OR-211 and S Ona WY. As a condition of approval, all walkways and sidewalks shall be designed and constructed in consistency with ADA requirements.

3. **Vehicle/Walkway Separation.** Except as required for crosswalks, per subsection 4, below, where a walkway abuts a driveway or street it shall be raised six inches and curbed along the edge of the driveway or street. Alternatively, the Planning Official may approve a walkway abutting a driveway at the same grade as the driveway if the walkway is physically separated from all vehicle-maneuvering areas. An example of such separation is a row of bollards (designed for use in parking areas) with adequate minimum spacing between them to prevent vehicles from entering the walkway.

Findings: The Applicant's submitted site plans show curbing planned for walkways where they abut driveways or streets. This standard is met.

4. **Crosswalks.** Where a walkway crosses a parking area or driveway ("crosswalk"), it shall be clearly marked with contrasting paving materials (e.g., pavers, light-color concrete inlay between asphalt, or similar contrasting material). The crosswalk may be part of a speed table to improve driver-visibility of pedestrians. Painted or thermo-plastic striping and similar types of non-permanent applications are discouraged, but may be approved for lesser used crosswalks not exceeding 24 feet in length.

Findings: The Applicant's submitted site plans show five instances where the pedestrian walkway/sidewalk crosses drive aisles. The Applicant's submitted application states that shown crossings shall be marked as required by this code. This standard is met.

5. **Walkway Width and Surface.** Walkways, including access ways required for subdivisions pursuant to Chapter 17-4.3, shall be constructed of concrete, asphalt, brick or masonry pavers, or other durable surface, as approved by the City Engineer, and not less than six feet wide. Multi-use paths (i.e., designed for shared use by bicyclists and pedestrians) shall be concrete or asphalt and shall conform to the current version of the Public Works Design Standards and Transportation System Plan.

6. **Walkway Construction (Private).** Walkway surfaces may be concrete, asphalt, brick or masonry pavers, or other City-approved durable surface meeting ADA requirements. Walkways shall be not less than six feet in width in commercial and mixed use developments and where access ways are required for subdivisions under Division IV.

Findings: The Applicant's submitted site plan shows walkways throughout the site are constructed of concrete and are at least 6 ft in width. These standards are met.

7. **Multi-Use Pathways.** Multi-use pathways, where approved, shall be a minimum width and constructed of materials consistent with the current version of the Public Works Design Standards and Transportation System Plan.

Findings: This application does not include multiuse pathways. This standard does not apply.

Chapter 17-3.4 Landscaping, Fences and Walls, Outdoor Lighting

17-3.4.030 Landscaping and Screening

A. **General Landscape Standard.** All portions of a lot not otherwise developed with buildings, accessory structures, vehicle maneuvering areas, or parking shall be landscaped.

B. **Minimum Landscape Area.** All lots shall conform to the minimum landscape area standards of the applicable zoning district, as contained in Tables 17-2.2.040.D and 17-2.2.040.E. The Planning Official, consistent with the purposes in Section 17-3.4.010, may allow credit toward the minimum landscape area for existing vegetation that is retained in the development.

Findings: The Applicant's submitted site plans show that the Applicant proposes landscaping 28,653 SF or 36% of the total site area. Requirements for total landscaping and common open space are 20% and 15% respectively. These standards are met.

C. Plant Selection. A combination of deciduous and evergreen trees, shrubs, and ground covers shall be used for all planted areas, the selection of which shall be based on local climate, exposure, water availability, and drainage conditions, among other factors. When new vegetation is planted, soils shall be amended and irrigation shall be provided, as necessary, to allow for healthy plant growth. The selection of plants shall be based on all of the following standards and guidelines:

1. Use plants that are appropriate to the local climate, exposure, and water availability. The presence of utilities and drainage conditions shall also be considered.
2. Plant species that do not require irrigation once established (naturalized) are preferred over species that require irrigation.
3. Trees shall be not less than two-inch caliper for street trees and one and one-half-inch caliper for other trees at the time of planting. Trees to be planted under or near power lines shall be selected so as to not conflict with power lines at maturity.
4. Shrubs shall be planted from five-gallon containers, minimum, where they are for required screens or buffers, and two-gallon containers minimum elsewhere.
5. Shrubs shall be spaced in order to provide the intended screen or canopy cover within two years of planting.
6. All landscape areas, whether required or not, that are not planted with trees and shrubs or covered with allowable non-plant material, shall have ground cover plants that are sized and spaced to achieve plant coverage of not less than 75 percent at maturity.
7. Bark dust, chips, aggregate, or other non-plant ground covers may be used, but shall cover not more than 35 percent of any landscape area. Non-plant ground covers cannot be a substitute for required ground cover plants.
8. Where stormwater retention or detention, or water quality treatment facilities are proposed, they shall meet the requirements of the current version of the Public Works Design Standards.
9. Existing mature trees that can thrive in a developed area and that do not conflict with other provisions of this Code shall be retained where specimens are in good health, have desirable aesthetic characteristics, and do not present a hazard.
10. Landscape plans shall avoid conflicts between plants and buildings, streets, walkways, utilities, and other features of the built environment.
11. Evergreen plants shall be used where a sight-obscuring landscape screen is required.

12. Deciduous trees should be used where summer shade and winter sunlight is desirable.
13. Landscape plans should provide focal points within a development, for example, by preserving large or unique trees or groves or by using flowering plants or trees with fall color.
14. Landscape plans should use a combination of plants for seasonal variation in color and yearlong interest.
15. Where plants are used to screen outdoor storage or mechanical equipment, the selected plants shall have growth characteristics that are compatible with such features.
16. Landscape plans shall provide for both temporary and permanent erosion control measures, which shall include plantings where cuts or fills, including berms, swales, stormwater detention facilities, and similar grading, is proposed.
17. When new vegetation is planted, soils shall be amended and irrigation provided, as necessary, until the plants are naturalized and able to grow on their own.

Findings: The Applicant's submitted landscaping plans and narrative demonstrate that proposed plantings, coverage, tree retention, species composition, screening, visual impact, and soil amendments meet the above guidelines. Above ground stormwater detention facilities are not proposed. These standards are met.

D. **Central Commercial C-1 District Streetscape Standard.** Developers of projects within the Central Commercial C-1 zoning district can meet the landscape area requirement of subsection B, in part, by installing street trees in front of their projects. The Planning Official shall grant credit toward the landscape area requirement using a ratio of 1:1, where one square foot of planted area (e.g., tree well or planter surface area) receives one square foot of credit. The Planning Official may grant additional landscape area credit by the same ratio where the developer widens the sidewalk or creates a plaza or other civic space pursuant to Section 17-3.2.050.

Findings: The subject properties are located in the R-3 zone. This standard does not apply.

E. **Parking Lot Landscaping.** All of the following standards shall be met for parking lots. If a development contains multiple parking lots, then the standards shall be evaluated separately for each parking lot.

1. A minimum of 10 percent of the total surface area of all parking areas, as measured around the perimeter of all parking spaces and maneuvering areas, shall be landscaped. Such landscaping shall consist of shade trees distributed throughout the parking area. A combination of deciduous and evergreen trees, shrubs, and ground cover plants is required. The trees shall be planned so that

they provide a partial canopy cover over the parking lot within five years. At a minimum, one tree per 12 parking spaces on average shall be planted over and around the parking area.

Findings: The Applicant's submitted landscaping plan shows that the proposed landscaped surfaces within the parking lot total 4,737 SF of the tot 23,611 SF is landscaped, or 20% of the parking lot area. This exceeds the required 10%. The submitted landscaping plan shows 10 trees to be planted in the parking area for 82 proposed spaces. This provides one (1) tree for every 8.2 spaces. This standard is met.

2. All parking areas with more than 20 spaces shall provide landscape islands with trees that break up the parking area into rows of not more than 10 contiguous parking spaces. Landscape islands and planters shall have dimensions of not less than 48 square feet of area and no dimension of less than six feet, to ensure adequate soil, water, and space for healthy plant growth.

Findings: The Applicants submitted site plans show 82 total parking spaces so this standard applies. There are no proposed rows with more than 10 contiguous parking spaces without a treed landscape island of at least 48 SF breaking it up. This standard is met.

3. All required parking lot landscape areas not otherwise planted with trees must contain a combination of shrubs and groundcover plants so that, within two years of planting, not less than 50 percent of that area is covered with living plants.

Findings: The Applicants submitted site plans show two proposed parking lot landscaping islands that do not include trees. The submitted landscaping plan shows that these islands are otherwise covered by shrubs and groundcover that will grow to cover over 50% of the island. This standard is met.

4. Wheel stops, curbs, bollards, or other physical barriers are required along the edges of all vehicle-maneuvering areas to protect landscaping from being damaged by vehicles. Trees shall be planted not less than two feet from any such barrier.

Findings: The Applicant's submitted site plans show that all landscaped areas will be protected by six (6) inch curbing. This standard is met.

5. Trees planted in tree wells within sidewalks or other paved areas shall be installed with root barriers, consistent with applicable nursery standards.

Findings: The Applicant's submitted application states that root barriers will be provided. This standard is met.

F. **Screening Requirements.** Screening is required for outdoor storage areas, unenclosed uses, and parking lots, and may be required in other situations as determined by the Planning Official. Landscaping shall be provided pursuant to the standards of subsections F.1 through 3. (See also Figure 17-3.4-4.)

1. Outdoor Storage and Unenclosed Uses. All areas of a site containing or proposed to contain outdoor storage of goods, materials, equipment, and vehicles (other than required parking lots and service and delivery areas, per Site Design Review), and areas containing junk, salvage materials, or similar contents, shall be screened from view from adjacent rights-of-way and residential uses by a sight-obscuring fence, wall, landscape screen, or combination of screening methods. See also Section 17-3.4.040 for related fence and wall standards.

Findings: The Applicant's submitted site plans that the proposed trash receptacle is screened by a 6ft chain link fence. Landscape screening is thus not required. This standard is met.

2. **Parking Lots.** The edges of parking lots shall be screened to minimize vehicle headlights shining into adjacent rights-of-way and residential yards. Parking lots abutting a sidewalk or walkway shall be screened using a low-growing hedge or low garden wall to a height of between three feet and four feet.

Findings: The Applicant's submitted site plans show that all parking spaces directed toward adjacent lots are screened by low growing hedges. This includes a vegetative buffer between Phases 1 and 2. This standard is met.

3. **Other Uses Requiring Screening.** The Planning Official may require screening in other situations as authorized by this Code, including, but not limited to, outdoor storage areas, blank walls, Special Uses pursuant to Chapter 17-2.3, flag lots, and as mitigation where an applicant has requested an adjustment pursuant to Chapter 17-4.7.

Findings: This criterion can be met with a condition of approval. The Applicant's building placement has the side façade of Building G facing OR-211. This orientation bolsters the layout and internal circulation and mitigates noise from OR-211 for Building G but leaves a side façade of Building G facing OR-211. As a condition of approval, the Applicant shall design and provide screening elements between Building G and the OR-211 frontage to bolster the side façade appearance. To be submitted with building plans.

G. **Maintenance.** All landscaping shall be maintained in good condition, or otherwise replaced by the property owner.

Findings: This criterion can be met with a condition of approval. As an ongoing condition of approval all landscaping shall be maintained in good condition, or otherwise replaced by the property owner.

17-3.4.040 Fences and Walls

Findings: There is no existing fencing onsite and Applicant does not propose new fencing. These standards do not apply.

17-3.4.050 Outdoor Lighting

C. **Standards.**

1. Light poles, except as required by a roadway authority or public safety agency, shall not exceed a height of 20 feet; pedestal- or bollard-style lighting shall be used to illuminate walkways. Flag poles, utility poles, and streetlights are exempt from this requirement.

Findings: The Applicant's submitted lighting plan shows outdoor lighting poles that will not exceed 20 ft in height and otherwise meets standards. This standard is met.

2. Where a light standard is placed over a sidewalk or walkway, a minimum vertical clearance of eight feet shall be maintained.

Findings: The Applicant's submitted lighting plan does not include overhead lighting that leaves less than 8ft of clearance. This standard is met.

3. Outdoor lighting levels shall be subject to review and approval through Site Design Review. As a guideline, lighting levels shall be no greater than necessary to provide for pedestrian safety, property or business identification, and crime prevention.

Findings: The Applicant's submitted lighting plan shows that planned lighting levels are not greater than necessary to provide safety. Lighting is focused on building entrance, walkway, and parking areas. This standard is met.

4. Except as provided for up-lighting of flags and permitted building-mounted signs, all outdoor light fixtures shall be directed downward, and have full cutoff and full

shielding to preserve views of the night sky and to minimize excessive light spillover onto adjacent properties.

Findings: The Applicant's submitted lighting plan shows planned outdoor light fixtures that are downward-facing lights with cutoffs to minimize light intrusion onto adjacent properties. This standard is met.

5. Lighting shall be installed where it will not obstruct public ways, driveways, or walkways.

Findings: The Applicant's submitted lighting plan shows no lighting obstructing public ways, driveways, or walkways. This standard is met.

6. Walkway lighting in private areas shall have a minimum average illumination of not less than 0.2 foot-candles. Lighting along public walkways shall meet the current version of the Public Works Design Standards and AASHTO lighting requirements.

Findings: The Applicant's submitted lighting plan shows that lighting over walkways averages over 0.2 foot candles. This standard is met.

7. Active building entrances shall have a minimum average illumination of not less than two foot-candles.

Findings: The Applicant's submitted lighting plan shows that lighting above all active entrances exceeds two foot candles. This standard is met.

8. Surfaces of signs shall have an illumination level of not more than two foot candles.

Findings: The Applicant's submitted application does not include signs. This standard is met.

9. Parking lots and outdoor services areas, including quick vehicle service areas, shall have a minimum illumination of not less than 0.2 foot-candles, average illumination of approximately 0.8 foot-candles, and a uniformity ratio (maximum-to-minimum ratio) of not more than 20:1.

Findings: This standard is met subject to a condition of approval. The Applicant's submitted lighting plan shows that the planned lighting in the parking area has a minimum illumination of 0.4 foot-candles, average illumination of 1.7 foot-candles, and a uniformity ratio of 12.8:1. These standards are met.

10. Where illumination grid lighting plans cannot be reviewed or if fixtures do not provide photometrics and bulbs are under 2,000 lumens, use the following guidelines:
    a. Poles should be no greater in height than four times the distance to the property line.
    b. Maximum lumen levels should be based on fixture height.
    c. Private illumination shall not be used to light adjoining public rightof-way.

Findings: The Applicant's submitted lighting plan shows that these standards are met.

11. Where a light standard is placed within a walkway, an unobstructed pedestrian through zone not less than 48 inches wide shall be maintained.

Findings: The Applicant's submitted lighting plan shows that planned lighting located near walkways have unobstructed pedestrian through zones not less than 48 inches wide. This standard is met.

12. Lighting subject to this section shall consist of materials approved for outdoor use and shall be installed according to the manufacturer's specifications.

Findings: The Applicant's submitted lighting plan proposes lighting that is designed for outdoor use. This standard is met.

Chapter 17-3.5 Parking and Loading

Section 17-3.5.020: Applicability and General Regulations

A. **Where the Regulations Apply.** The regulations of this chapter apply to all parking areas in all zones, at all times, whether parking is required by this Code or put in for the convenience of property owners or users.

Findings: These standards apply to parking proposed within the Applicant's submitted application.

B. **Occupancy.** All required parking areas must be developed in accordance with the requirements of this Code prior to occupancy of any structure on the subject site. Where landscaping, screening, or other improvements are required pursuant to this Code, all such improvements must be installed and approved by the Planning Official prior to occupancy.

Findings: This standard is met subject to a condition of approval. As a condition of approval all improvements required by this site design review shall be installed and approved by the Planning Official prior to occupancy.

C. Calculations of Amounts of Required and Allowed Parking.

1. When computing parking spaces based on floor area, parking structures and non-leasable floor spaces, such as storage closets, mechanical equipment rooms, and similar spaces, are not counted.
2. The number of parking spaces is computed based on the primary uses on the site except as stated in subsection C.3. When there are two or more separate primary uses on a site, the minimum and maximum parking for the site is the sum of the required or allowed parking for the individual primary uses. For shared parking, see Section 17-3.5.030.D.
3. When more than 50 percent of the floor area on a site is in an accessory use, the required or allowed parking is calculated separately for the accessory use. An example would be a 10,000 square foot building with a 7,000 square foot warehouse and a 3,000 square foot accessory retail area. The minimum and maximum parking would be computed separately for the retail and warehouse uses.
4. Required parking spaces periodically used for the storage of equipment or goods may be counted toward meeting minimum parking standards, provided that such storage is an allowed use under Section 17-2.2.030, and is permitted as a Temporary Use under Section 17-2.3.160.

Findings: Staff reviewed the Applicant's submitted application considering these standards. Accessory uses do not account for over 50% of the Applicant's proposal so the primary use of multifamily residential applies for all applicable floor area of the proposed development. No proposed parking spaces are reserved for the storage of equipment or goods.

D. Use of Required Parking Spaces. Except as otherwise provided by this section, required parking spaces must be available for residents, customers, or employees of the use. Fees may be charged for the use of required parking spaces. Required parking spaces may not be assigned in any way to a use on another site, except for shared parking pursuant to Section 17-3.5.030.D.

Findings: This standard is met subject to a condition of approval. As a condition of approval, all proposed parking spaces shall be reserved for tenants, employees, or guests of the proposed multi-family use, except for shared parking pursuant to Section 17-3.5.030.D.

E. Proximity of Parking to Use. Required parking spaces for residential uses must be located on the site of the use or on a parcel or tract owned in common by all the owners of the properties that will use the parking area. Required parking spaces for nonresidential uses

must be located on the site of the use or in a parking area that has its closest pedestrian access point within 800 feet of the site.

Findings: The proposed use is residential. All proposed parking is located onsite. This standard is met.

F. Improvement of Parking Areas. Motorized vehicle parking is allowed only on streets with an improved shoulder of sufficient width; within garages, carports, and other approved structures; and on driveways or parking lots that have been developed in conformance with this Code. For applicable design standards, see Chapter 17-3.2 Building Orientation and Design; Chapter 17-3.3 Access and Circulation; Chapter 17-3.4 Landscaping, Fences and Walls, Outdoor Lighting and Chapter 17-3.6 Public Facilities. (Ord. 2017-08 §1)

Findings: S Ona WY is a local street per the Molalla Transportation Systems Plan (TSP). TSP cross section includes parking lanes. Applicant will be required to build 3/4 street cross section for S Ona WY to TSP standards from the eastern edge of the right-of-way. Public parking will be provided in accordance with TSP standards on the east side of S Ona WY to the extent practicable. Private parking will be provided within onsite parking lots meeting applicable standards. This standard is met.

Section 17-3.5.030: Automobile Parking

A. **Minimum Number of Off-Street Automobile Parking Spaces.** Except as provided by this subsection A, or as required for Americans with Disabilities Act compliance under subsection G, off-street parking shall be provided pursuant to one of the following three standards:
    1. The standards in Table 17-3.5.030.A;
    2. A standard from Table 17-3.5.030.A for a use that the Planning Official determines is similar to the proposed use; or
    3. Subsection C Exceptions, which includes a Parking Demand Analysis option.

Findings: The Applicant's submitted application proposes 82 parking spaces, including four designated ADA parking spaces. The proposed use contains 10 2-bedroom apartments, and 30 3-bedroom apartments. Multi-family dwellings require a minimum of 2 parking spaces for two bedroom units and 2.5 parking spaces for three bedroom units. Therefore, a minimum of 95 parking spaces are required for the proposed use. The Applicant's proposed parking is thus below the minimum standard for this development. Per MMC Section 17-4.7.030 C,2 the Applicant has requested an adjustment to the minimum, which is addressed in the response to that section.

B. Carpool and Vanpool Parking Requirements.

1. Carpool and vanpool parking spaces shall be identified for the following uses:
    a. New commercial and industrial developments with 50 or more parking spaces;
    b. New institutional or public assembly uses; and
    c. Transit park-and-ride facilities with 50 or more parking spaces.

Findings: The Applicant's submitted application is for multi-family development. These standards do not apply.

C. Exceptions and Reductions to Off-Street Parking.

Findings: The Applicant has requested an adjustment to the minimum parking standards subject to subsection C,2.

2. The applicant may propose a parking standard that is different than the standard under subsections A.1 and 2, for review and action by the Planning Official through a Type I or II procedure. The applicant's proposal shall consist of a written request and a parking analysis prepared by a qualified professional. The parking analysis, at a minimum, shall assess the average parking demand and available supply for existing and proposed uses on the subject site; opportunities for shared parking with other uses in the vicinity; existing public parking in the vicinity; transportation options existing or planned near the site, such as frequent bus service, carpools, or private shuttles; and other relevant factors. This parking analysis applies to a request in the reduction or an increase in parking ratios.

Findings: The Applicant has requested an adjustment to the minimum parking standards subject to this section. Applicant provided a parking generation analysis as part of its Transportation Impact Analysis. The analysis considered Phase 1 and 2 holistically since the Applicant would be providing a shared parking agreement between the two phases. Thus parking demand figures are provided for the 100 total units and 260 total bedrooms that will be provided between the two phases. Using the 5th Edition ITE Parking Generation Manual the Applicant determined a parking demand rate of 140 spaces vs. the 200 spaces provided.

Staff recommends approval of this parking standards adjustment subject to a condition of approval. Applicant shall record an agreement between Phase 1 and 2 ensuring that parking may be used interchangeably between the two phases in perpetuity. A copy of the recorded agreement shall be provided to the City of Molalla Planning Department prior to occupancy.

D. **Maximum Number of Off-Street Automobile Parking Spaces.** The maximum number of off-street automobile parking spaces allowed per site equals the minimum number of required spaces for the use pursuant to Table 17-3.5.030.A, times a factor of:
    1. 1.2 spaces for uses fronting a street with adjacent on-street parking spaces; or
    2. 1.5 spaces, for uses fronting no street with adjacent on-street parking; or
    3. A factor based on applicant's projected parking demand, subject to City approval.

Findings: The Applicant's submitted application proposes 200 parking spaces between Phases 1 and 2. The proposed use contains 10 2-bedroom apartments and 30 3-bedroom apartments. The Applicant has requested an adjustment to the minimum number of parking spaces to allow for a lower minimum. Additional spaces will be provided on the east side of S Ona WY as Applicant builds street to local street standard. As Applicant is below minimum threshold per this code, Applicant is also clearly below maximum. Should Applicant expand its onsite parking supply, compliance with maximum standards will be considered at that time. This standard is met.

E. **Shared Parking.** Required parking facilities for two or more uses, structures, or parcels of land may be satisfied by the same parking facilities used jointly, to the extent that the owners or operators show that the need for parking facilities does not materially overlap (e.g., uses primarily of a daytime versus nighttime nature; weekday uses versus weekend uses), and provided that the right of joint use is evidenced by a recorded deed, lease, contract, or similar written instrument establishing the joint use. Shared parking requests shall be subject to review and approval through a Type I Review.

Findings: Applicant has not requested any shared parking arrangements for other uses. This standard does not apply.

F. **Parking Stall Design and Minimum Dimensions.** Where a new off-street parking area is proposed, or an existing off-street parking area is proposed for expansion, the entire parking area shall be improved in conformance with this Code. At a minimum the parking spaces and drive aisles shall be paved with asphalt, concrete, or other City-approved materials, provided the Americans with Disabilities Act requirements are met, and shall conform to the minimum dimensions in Table 17-3.5.030.F and the figures below. All off-street parking areas shall contain wheel stops, perimeter curbing, bollards, or other edging as required to prevent vehicles from damaging buildings or encroaching into walkways, sidewalks, landscapes, or the public right-of-way. Parking areas shall also provide for surface water management, pursuant to Section 17-3.6.050.

Findings: Proposed parking stalls are all 90 degree angled parking stalls. Table 17-3.5.030 F requires that 90 degree angled spaces, as proposed, require:

18' stall depth.

8.5’ stall curb width
23’ drive aisle (2 way).

The Applicant’s submitted application shows 16’ stall lengths, 9’ stall widths, and 23’ drive aisles The Applicant’s proposed stall depth does not meet standard. The Applicant has requested an adjustment to parking area dimensions per below.

G. **Adjustments to Parking Area Dimensions.** The dimensions in subsection E are minimum standards. The Planning Official, through a Type II procedure, may adjust the dimensions based on evidence that a particular use will require more or less maneuvering area. For example, the Planning Official may approve an adjustment where an attendant will be present to move vehicles, as with valet parking. In such cases, a form of guarantee must be filed with the City ensuring that an attendant will always be present when the lot is in operation.

Findings: The Applicant has submitted an adjustment application (ADJ01-2023) to parking lot standards as part of this application. The Applicant proposes an alternate arrangement where 16’ stalls are provided and walkways and landscaping areas are extended by two-feet to allow vehicle overhang into the walkway area.

Staff recommends denial of this adjustment application. Larger vehicles do not consistently have two feet of overhang on the front of the vehicle. This adjustment also assumes that vehicles would park all the way up to the curbing which isn’t consistent with observed parking patterns. Ultimately, providing the additional walkway for overhang effectively reduces the depth of stall and increases the potential that larger vehicles extend into the 23’ drive aisle. Denial of this adjustment does not otherwise impact approval of the site design review application. Applicant has sufficient room to design and construct the required 18’ stall depth and shall provide either curbing or wheel stops in stalls of at least 18’. Alternately providing an anticipated overhang area of 1’ with a 17’ stall would be acceptable as it is comparable to an 18’ stall with wheel stops.

H. **Americans with Disabilities Act (ADA).** Parking shall be provided consistent with ADA requirements, including, but not limited to, the minimum number of spaces for automobiles, van-accessible spaces, location of spaces relative to building entrances, accessible routes between parking areas and building entrances, identification signs, lighting, and other design and construction requirements.

Findings: The Applicant’s submitted site plan shows 4 proposed ADA spaces. This standard is met.

I. **Electric Charging Stations.** Charging stations for electric vehicles are allowed as an accessory use to parking areas developed in conformance with this Code, provided the

charging station complies with applicable building codes and any applicable state or federal requirements.

Findings: No electric charging stations are proposed. This criterion does not apply.

17-3.5.040 Bicycle Parking

A. ***Standards.*** *Bicycle parking spaces shall be provided with new development and, where a change of use occurs, at a minimum, shall follow the standards in Table 17-3.5.040.A. Where an application is subject to Conditional Use Permit approval or the applicant has requested a reduction to an automobile-parking standard, pursuant to Section 17-3.5.030.C, the Planning Official may require bicycle parking spaces in addition to those in Table 17-3.5.040.A.*

Findings: Per Table 17-3.5.040.A two bicycle parking spaces are required for every 4 dwelling units. The Applicant's submitted application is for 60 dwelling units and 22 bike parking stalls are provided, exceeding the standard by two stalls. This standard is met.

B. ***Design.*** *Bicycle parking shall consist of staple-design steel racks or other City-approved racks, lockers, or storage lids providing a safe and secure means of storing a bicycle, consistent with the Public Works Design Standards.*

Findings: This standard is met subject to a condition of approval. Staff finds that the Applicant's submitted application shows proposed bike rack locations but does not specify rack style. As a condition of approval, the Applicant shall specify bike rack style meeting the standards of MMC 17-3.5.040 with their building permit submissions.

C. ***Exemptions.*** *This section does not apply to single-family and duplex housing, home occupations, and agricultural uses.*

Findings: These standards do apply to the submitted application for multi-family development.

D. ***Hazards.*** *Bicycle parking shall not impede or create a hazard to pedestrians or vehicles and shall be located to not conflict with the vision clearance standards of Section 17-3.3.030.G.*

Findings: The Applicant's submitted site plans show that proposed bicycle parking is separated from the pedestrian walkway and is not anticipated to cause a hazard. Standard is met.

17-3.5.040 Loading Areas

Findings: Loading areas are not included with this application nor are they required for residential uses. These standards do not apply.

Chapter 17-3.6 Public Facilities

17-3.6.010 Purpose and Applicability:

A. ***Purpose.*** *The standards of Chapter 17-3.6 implement the public facility policies of the City of Molalla Comprehensive Plan and adopted City plans.*

B. ***Applicability.*** *Chapter 17-3.6 applies to all new development, including projects subject to Land Division (Subdivision or Partition) approval and developments subject to Site Design Review where public facility improvements are required. All public facility improvements within the city shall occur in accordance with the standards and procedures of this chapter. When a question arises as to the intent or application of any standard, the City Engineer shall interpret the Code pursuant to Chapter 17-1.5.*

C. ***Public Works Design Standards.*** *All public facility improvements, including, but not limited to, sanitary sewer, water, transportation, surface water and storm drainage and parks projects, whether required as a condition of development or provided voluntarily, shall conform to the City of Molalla Public Works Design Standards. Where a conflict occurs between this Code and the Public Works Design Standards, the provisions of the Public Works Design Standards shall govern.*

D. ***Public Improvement Requirement.*** *No building permit may be issued until all required public facility improvements are in place and approved by the City Engineer, or otherwise bonded, in conformance with the provisions of this Code and the Public Works Design Standards. Improvements required as a condition of development approval, when not voluntarily provided by the applicant, shall be roughly proportional to the impact of the development on public facilities. Findings in the development approval shall indicate how the required improvements directly relate to and are roughly proportional to the impact of development.*

Findings: The proposed development qualifies as new development and standards of this chapter apply. No building permit may be issued until all required public facility improvements are in place and approved by the City Engineer, or otherwise bonded, in conformance with the provisions of this Code and the Public Works Design Standards.

17-3.6.020 Transportation Standards:

1. ***General Requirements***

   17-3.6.020. A.2 *- All street improvements, including the extension or widening of existing streets and public access ways, shall conform to Section 17-3.6.020, and shall be constructed consistent*

with the City of Molalla Public Works Design Standards.

Findings:

OR-211: OR 211 (W Main Street):
OR-211: OR-211 (W Main Street) is an arterial street under Oregon Department of Transportation (ODOT) jurisdiction. Applicant will be required to meet all requirements of the Transportation Systems Plan (TSP) and access requirements as determined by ODOT. Development will be required to construct improvements along OR-211, including road widening for a center turn lane, buffered bicycle lanes, curb, and sidewalk consistent with the TSP, ODOT, and ADA standards. Applicant shall extend frontage improvement planter strip design consistent with SDR07-2021. If required during design review, additional striping and pavement tapers may be required as necessary. The TSP adopted cross section for arterial roads includes a 14ft Center/turn lane, 12ft travel lane, 2ft bike buffer, 5ft bike lane, 6 1/2ft sidewalk, 1 1/2ft back of sidewalk buffer.

Right of way donated to ODOT as necessary to accommodate the planned cross section shall be provided. The deed must be to the State of Oregon, Oregon Department of Transportation. The ODOT District contact will assist in coordinating the transfer. ODOT should provide verification to the local jurisdiction that this requirement has been fulfilled. The property owner must be the signatory for the deed and will be responsible. Applicant right-of-way dedication shall account for the addition of planter strip.

S Ona Way:
S Ona Way is a Local Street under City of Molalla jurisdiction. Applicant shall be required to construct street improvements and right-of-way donations to local street standards consistent with the TSP. This includes a 12ft turn lane at intersection of HWY211 & Ona Way, 10ft travel lanes, 8' Parking lanes, curb and gutter, 6 1/2ft sidewalk, and 1/2ft back of sidewalk buffer. Developer shall be responsible for installing all associated signing for crosswalks and 25 mph speed signs per City requirements. Dedications on S Ona WY shall be to the City of Molalla.

Roadway lighting
Per Public Works Standards, Roadway lighting is required on all new developments. Applicant shall be required to install roadway lighting. Location and number shall be determined during civil plan review.

Transportation SDC's – In accordance with MMC 13.14 this design review does increase the impacts to the public improvement facility and is therefore not exempt from transportation SDC charges. SDC's shall be calculated in accordance with the SDC methodology.

17-3.6.020. A.4 - A Transportation Impact Analysis (TIA) is required for developments that are expected to have an impact on the transportation system. The analysis shall be based upon the latest edition of the ITE Trip Generation Manual or an agreed-upon alternative methodology where credible data is available to support the alternative methodology.

Findings: Per MMC 17-3.6.020. A.4. The proposed development meets thresholds for Traffic Impact Analysis (TIA) due to exceeding the peak hour trip count of 25. Applicant submitted a TIA evaluating both trip generation and onsite parking requirements using the latest ITE Trip Generation and Parking manuals. Intersection analysis was provided for S Ona WY and the access from OR-211. Because only marginal impacts to the Leroy/OR-211 intersection were determined from Phase I, no additional analysis was required for Phase II for that intersection. Per findings from the submitted TIA ODOT provided the following recommendations for OR-211, which concur with Staff interpretations for TSP compliance:

1. Curb, sidewalk, buffered bike lane and road widening for a center turn lane shall be constructed as necessary to be consistent with Molalla Transportation System Plan, ODOT and ADA standards.

2. The applicant shall reconstruct the intersection of Ona Way/Main St (OR 211) to include adding the new public street connection on the north leg consistent with the Molalla Transportation System Plan and ODOT/ADA standards.

3. Right of way donated to ODOT as necessary to accommodate the planned cross section shall be provided. The deed must be to the State of Oregon, Oregon Department of Transportation. The ODOT District contact will assist in coordinating the transfer. ODOT should provide verification to the local jurisdiction that this requirement has been fulfilled. The property owner must be the signatory for the deed and will be responsible for a certified environmental assessment of the site prior to transfer of property to the Department.

On S Ona WY, in addition to buildout on the east side in compliance with the local street TSP cross section, a left turn lane will be required at the intersection of S Ona WY and OR-211.

2. Street Location, Alignment, Extension, and Grades

> *17-3.6.20. B.2. Specific street locations and alignments shall be determined in relation to existing and planned streets, topographic, conditions, public convenience, and safety, and in appropriate relation to the proposed use of the land to be served by such street.*

Findings: The subject property abuts OR-211 and S Ona WY. Applicant also proposes building out radius for N Ona WY within existing right-of-way dedicated to that street. Construction of N Ona WY facilities, to the extent practicable, shall connect to the existing street network and allow for the continuation of an interconnected street network, consistent with adopted public facility plans and pursuant to subsection D Transportation Connectivity and Future Street Plans.

> *17-3.6.20. B.5 - Where the locations of planned streets are shown on a local street network plan, the development shall implement the street(s) shown on the plan.*

Findings: The Molalla TSP shows Ona Way extending to the north from the north side of OR-211. City anticipates collaborating with Developer on the north side of the intersection at OR-211 and Ona Way for future extension of N Ona Way to Bear Creek Subdivision.

3. Rights-of-Way and Street Section Widths.

> *17-3.6.20. C.1 - Street rights-of-way and section widths shall comply with the current version of the Public Works Design Standards and Transportation System Plan. The standards are intended: to provide for streets of suitable location, width, and design to accommodate expected vehicle, pedestrian, and bicycle traffic; to afford satisfactory access to law enforcement, fire protection, sanitation, and road maintenance equipment; and to provide a convenient and accessible network of streets, avoiding undue hardships to adjoining properties.*

Findings: As discussed in response to subsection 17-3.6.020. A.2 Applicant to dedicate ROW to meet TSP cross section, ODOT, and ADA standards for arterial roads along OR-211 and for local streets along S Ona WY. For right-of-way dedication fronts streets under the jurisdiction of the City of Molalla, Applicant shall submit dedication on formats approved by the Public Works Department. On ODOT rights of way, Applicant shall donate sufficient right-of-way along variable width improvements and construct sidewalk widening to ODOT standards. ODOT requires donations of right-of-way to follow the requirements of Chapter 5.322. Developer Mitigation Donation in the ODOT Right-of-Way Manual. Applicant is advised that donation must be completed and recorded prior to occupancy. Applicant will be required to dedicate a 10-foot-wide public utility easement fronting the public right-of-way if one does not exist. Applicant shall provide proof of existing dedication.

> *17-3.6.20.C.2 - All streets shall be improved in accordance with the construction standards and specifications of the applicable roadway authority, including requirements for pavement, curbs, drainage, striping, and traffic control devices. Where a planter strip is provided it shall consist of a minimum five-foot-wide strip between the sidewalk and the curb or roadway. Where a swale is provided, it shall either be placed between the roadway and sidewalk or behind the sidewalk on private property, subject to City Engineer approval and recording of required public drainage way and drainage way maintenance easements. Streets with parking on one side only should be avoided. When used, they must be posted NO PARKING.*

Findings: OR-211 is an arterial street per the Molalla TSP and is under the jurisdiction of ODOT. S Ona WY is a local street per the Molalla TSP and is under the jurisdiction of the City of Molalla. Applicant has proposed a 5’ planter strip between the sidewalk and roadway. Applicant proposes buildout of S Ona WY to include street parking on the east side. West side parking to be built when that property redevelops or that side of the street is built to standard.

Streets shall be designed to carry the recommended traffic volumes identified for each street classification. Classification of existing and proposed roads is established by the City of Molalla’s TSP. Streets shall be designed to meet or exceed minimum guidelines. These guidelines are set forth in the "AASHTO Policy on Geometric Design of Highways and Streets" (latest edition). Traffic Control Devices

shall conform to the "Manual on Uniform Traffic Control Devices for Streets and Highways," Federal Highway Administration, with Oregon Supplements, Oregon Dept. of Transportation's (latest edition) and in accordance with Molalla Standards Specifications for Public Works Construction Section 2 – Street Improvements Design & Construction Standards.

4. Transportation Connectivity and Future Street Plans.

> *17-3.6.20 – D.1 Intersections. Streets shall be located and designed to intersect as nearly as possible to a right angle. Street intersections shall meet the current requirements of the Public Works Design Standards and Transportation System Plan.*

Findings: Applicant proposes to build out the radius of the existing Ona WY right of way at the north side of the street and build the existing S Ona WY/OR-211 intersection to standard on the south side of the street. These streets intersect at a right angle. This standard is met.

17-3.6.030 Public Use Areas:

A. Dedication of Public Use Areas.

1. Where a proposed park, playground, or other public use shown in a plan adopted by the City is located in whole or in part in a subdivision, the City may require the dedication or reservation of this area on the final plat for the subdivision, provided that the impact of the development on the City park system is roughly proportionate to the dedication or reservation being made.

Findings: Not applicable, no proposed park, playground or other public use is shown in a plan adopted by the City.

2. The City may purchase or accept voluntary dedication or reservation of areas within the subdivision that are suitable for the development of parks and other public uses; however, the City is under no obligation to accept such areas offered for dedication or sale.

Findings: Not applicable, applicant is not proposing any voluntary dedication or reservation of areas within the development.

C. System Development Charge Credit. Dedication of land to the City for public use areas, voluntary or otherwise, may be eligible as a credit toward any required system development charge for parks. (Ord. 2017-08 §1)

Findings: development does not propose any dedication of land to the City. Parks SDC's – In accordance with MMC 13.70.110 this Multi-Family Residential development is not exempt from parks SDC charges. SDC's shall be calculated in accordance with the SDC methodology.

17-3.6.040 Sanitary Sewer and Water Service Improvements:

A. ***Sewers and Water Mains Required.*** *All new development is required to connect to City water and sanitary sewer systems. Sanitary sewer and water system improvements shall be installed to serve each new development and to connect developments to existing mains in accordance with the adopted facility master plans and applicable Public Works Design Standards. Where streets are required to be stubbed to the edge of the subdivision, sewer and water system improvements and other utilities shall also be stubbed with the streets, except as may be waived by the City Engineer where alternate alignment(s) are provided.*

Findings:

Sewer- Applicant will be required to extend Public Sewer System to serve the development from Hwy-211 (W Main Street) south along S Ona Way to the southernmost portion of their Development in accordance with the adopted facility master plans. The site will be served from the sewer main extension by gravity system. All sanitary sewers shall be designed and constructed to conform to the requirements of the Oregon state plumbing laws and rules of the Oregon DEQ and to City Standards. Prior to extension and/or connection to the Public Sewer System. Applicant Shall be required to submit a Sewer Capacity Analysis Request Form to the departmental of DEQ for approval per OAR Rule 340-52. The City recommends Certificate of Capacity to be submitted prior to their land use or permit application.

Water – A 8-inch water main exists within S Ona Way and will serve this development. Extensions for fire protection may be required and all public water lines shall be within a public easement on formats approved by the Public Works Department. Should Fire Department regulations require additional fire flow that results in looping the water line through the site, then applicants engineer shall coordinate with Public Works for the extension of public waterline, and dedication of easements.

Sewer & Water SDC's – In accordance with MMC 13.14 this design review does increase the impact to the public improvement facility and is therefore not exempt from Sewer & Water SDC charges. SDC's shall be calculated in accordance with the SDC methodology.

B. ***Sewer and Water Plan Approval.*** *Development permits for sewer and water improvements shall not be issued until the City Engineer has approved all sanitary sewer and water plans in conformance with City standards.*

Findings: Applicant will be required to submit a Public Works Permit and assurances in accordance with Section 1 of the Molalla Standard Specifications for Public Works Construction prior to any construction of public facilities.

C. ***Over-Sizing.*** *The City may require as a condition of development approval that sewer and water lines serving new development be sized to accommodate future development within the area as projected by the applicable facility master plans, and the City may authorize other cost-recovery or cost-sharing methods as provided under state law.*

Findings: Applicant shall be required to meet all requirements for extension of the sewer main in accordance with the Wastewater Master Plan and CIP for design.

D. ***Inadequate Facilities.*** *Development permits may be restricted or rationed by the Planning Commission where a deficiency exists in the existing water or sewer system that cannot be rectified by the development and which, if not rectified, will result in a threat to public health or safety, surcharging of existing mains, or violations of state or federal standards pertaining to operation of domestic water and sewerage treatment systems. The City Engineer may require water booster pumps, sanitary sewer lift stations, and other critical facilities be installed with backup power. (Ord. 2017-08 §1)*

Findings: There are no identified existing deficiency within Cities Master Plan that indicates Inadequate Facilities within the limits of the proposed development for sewer and water. This standard does not apply.

17-3.6.050 Storm Drainage and Surface Water Management Facilities:

A. ***General Provisions.*** *The City shall issue a development permit only where adequate provisions for stormwater runoff have been made in conformance with the requirements of the current version of the Public Works Design Standards and Stormwater Master Plan.*

Findings: Applicant will be required to submit design and construction requirements for stormwater and surface water management at the time of Public Works Permit application. Design shall be in accordance with Section 3 of the Molalla Standard Specifications for Public Works Construction and Stormwater Master Plan.

1. Applicant proposes to collect and detain all stormwater onsite and discharge to a proposed new storm system located in S Ona Way that flows southward and discharges into Bear Creek. Extension of the storm system in S Ona Way is part of the requirements for this development frontage improvements. Bear Creek drainage is water of the state and proposed discharge shall be reviewed and permitted by DEQ. Onsite private storm system shall comply with plumbing code requirements. The detention and flow control facilities shall be reviewed, permitted, and inspected by Public Works. The onsite storm conveyance system shall be reviewed and inspected by Clackamas County Building under a plumbing permit in Accordance with MMC 13.13 Surface Water Management.

2. Stormwater SDC's – In accordance with MMC 13.14 this design review does increase the impacts to the public improvement facility and is therefore not exempt from stormwater SDC charges. SDC's shall be calculated in accordance with the SDC methodology.

B. ***Accommodation of Upstream Drainage.*** *Culverts and other drainage facilities shall be large enough to accommodate existing and potential future runoff from the entire upstream drainage area, whether*

inside or outside the development. Such facilities shall be subject to review and approval by the City Engineer.

C. ***Effect on Downstream Drainage.*** *Where it is anticipated by the City Engineer that the additional runoff resulting from the development will overload an existing drainage facility, the City shall withhold approval of the development until provisions have been made for improvement of the potential condition or until provisions have been made for storage of additional runoff caused by the development in accordance with City standards.*

Findings: The existing culvert for Bear Creek that crosses S Ona WY just south of the proposed development identified in the City's Stormwater Master Plan as a source of flooding issues. The development increases the impervious surface area by more than 5,000 square feet triggering stormwater detention as proposed by the Applicant.

In recognition of impacts from storm events greater than the mitigated 25-year event, the City offers an alternative to culvert reconstruction at Ona Way. This proposal potentially reduces the developer's time and costs verses the full culvert reconstruction that would otherwise be required by Code, and involves (1) a cleaning and inspection of the creek bed and culvert, and (2) a Hydraulic Survey / Hydraulic Analysis sufficient to understand the historic flooding conditions at Ona way and how these conditions are expected to be impacted by the development.

Specifically, the developer shall carry out necessary cleaning of Bear Creek, up to 50ft upstream and 100ft downstream of the culvert, focusing on vegetation below the high-water mark, or invasive species. The cleaning scope should be limited to avoid triggering regulatory approval requirements, such as an Army Corps permit. To this end, the developer shall avoid cut-and-fill activities within the creek. The purpose of the cleaning shall be to facilitate the CCTV inspection, and to allow a Professional Engineer to perform proper measurements, such as slope of the riverbed, roughness of its surface, and depth of the water, which are general inputs to a Hydraulic Survey and Hydraulic Analysis.

Post cleaning, the developer is required to conduct a CCTV inspection of the culvert and commission a Hydraulic Survey and Analysis from a Professional Engineer registered in Oregon. This survey will determine the culvert's true capacity (CFS vs. gauge height) and the corresponding storm event it can handle without flooding.

If the survey concludes that the culvert cannot support a 25-year storm, the developer is invited to propose and implement additional mitigation measures. These could include upgrading the culvert or enhancing onsite stormwater management practices.

D. ***Over-Sizing.*** *The City may require as a condition of development approval that sewer, water, or storm drainage systems serving new development be sized to accommodate future development within the area as projected by the applicable facility master plan, provided that the City may grant the developer credit toward any required system development charge for the same pursuant to the System Development Charge.*

Findings: See findings under 17-3.6.050 "A" & "B."

E. ***Existing Watercourse.*** *Where a proposed development is traversed by a watercourse, drainage way, channel, or stream, the City may require a stormwater easement or drainage right-of-way conforming substantially with the lines of such watercourse and such further width as will be adequate for conveyance and maintenance to protect the public health and safety. (Ord. 2017-08 §1)*

Findings: Bear Creek runs along the southernmost portion of the proposed development. Applicant shall comply with the regulatory requirements of the Oregon Department of State Lands, ODFW, U.S. Fish and Wildlife Department, U.S. Army Corps of Engineers, National Marine Fisheries Service, and any other state and federal agencies having jurisdiction.

17-3.6.060 Utilities:

B. ***Underground Utilities.***

1. ***General Requirement.*** *The requirements of the utility service provider shall be met. All utility lines in new subdivisions, including, but not limited to, those required for electric, communication, and lighting, and related facilities, shall be placed underground, except where the City Engineer determines that placing utilities underground would adversely impact adjacent land uses. The Planning Official may require screening and buffering of above ground facilities to protect the public health, safety, or welfare.*

Findings: All utilities for the project shall be served by underground services. No overhead crossings of public right of way shall be approved by the City.

17-3.6.070 Easements:

A. ***Provision.*** *The developer shall make arrangements with the City and applicable utility providers for each utility franchise for the provision and dedication of utility easements necessary to provide full services to the development.*

Findings: Applicant will be required to dedicate a 10-foot-wide public utility easement fronting the public right-of-way if one does not exist. Applicant shall provide proof of existing dedication.

D. ***Recordation.*** All easements for sewers, storm drainage and water quality facilities, water mains, electric lines, or other utilities shall be recorded and referenced on a survey or final plat, as applicable. See Chapter 17-4.2 Site Design Review, and Chapter 17-4.3 Land Divisions and Property Line Adjustments.

Findings: Public sanitary, storm sewer, and water lines on private property shall be centered in a permanent easement granted to the City. The minimum width of a public pipeline easement shall be 15

feet and no permanent structures shall be allowed within an easement area.

17-3.6.080 Construction Plan Approval:

No development, including sanitary sewers, water, streets, parking areas, buildings, or other development, shall commence without plans having been approved by the City of Molalla Public Works Department and permits issued. Permit fees are required to defray the cost and expenses incurred by the City for construction and other services in connection with the improvement. Permit fees are as set by City Council resolution.

Findings: Applicant shall apply for a Public Works Permit in accordance with Section 1.15 DEVELOPMENTS PROCESS REQUIREMENTS of Molalla Standards. No work will be performed, not materials stored, nor encroachment made on or within a right-of-way, public easement, or public utility easement until all requirements have been meet and permit has been issued.

17-3.6.090 Facility Installation:

DESIGN REQUIREMENTS & POLICIES

A. ***Conformance Required.*** *Improvements installed by the developer, either as a requirement of these regulations or at the developer's option, shall conform to the requirements of this chapter, approved construction plans, and to improvement standards and specifications adopted by the City.*

B. ***Adopted Installation Standards.*** *The City of Molalla has adopted Public Works Design Standards for public improvements and private utility installation within the public right-of-way.*

C. ***Commencement.*** *Work in a public right-of-way shall not begin until all applicable agency permits have been approved and issued.*

D. ***Resumption.*** *If work is discontinued for more than six months, it shall not be resumed until the Public Works Director is notified in writing and grants approval of an extension.*

E. ***City Inspection.*** *Improvements shall be constructed under the inspection of the City Engineer. The City Engineer may approve minor changes in typical sections and details if unusual conditions arising during construction warrant such changes in the public interest, except that substantive changes to the approved design shall be subject to review under Chapter 17-4.5 Modifications to Approved Plans and Conditions of Approval. Any survey monuments that are disturbed before all improvements are completed by the developer or subdivider shall be replaced at the developer or subdivider's expense prior to final acceptance of the improvements.*

F. ***Engineer's Certification and As-Built Plans.*** *In accordance with the current version of the Public Works Design Standards, a registered civil engineer shall provide written certification in a form required by the City that all improvements, workmanship, and materials meet current and standard engineering and*

construction practices, conform to approved plans and conditions of approval, and are of high grade, prior to City's acceptance of the public improvements, or any portion thereof, for operation and maintenance. The developer's engineer shall also provide two sets of "as-built" plans, one paper set and one electronic set for permanent filing with the City. If required by the City, the developer or subdivider shall provide a warranty bond pursuant to Section 17-3.6.100. (Ord. 2017-08 §1

G. ***Residential Development Projects**, No building permit may be issued until all required public facility improvements are in place and approved by the City Engineer, or otherwise bonded, in conformance with the provision of the Code and the Public Works Design Standards in accordance with MMC 17-3.6 Public Facilities. All public facilities shall be completed and accepted by the Public Works Department prior to issuance of final occupancy.*

H. ***Materials Submitted,** it appears that the storm drain, domestic water and sanitary sewer facilities will be obtained from main line connections and/or extensions. Separate engineering drawings reflecting the installation of these public utilities will be required.*

I. ***Construction and/or Connection,** No construction of, or connection to, any existing or proposed public utility/improvements will be permitted until all plans are approved by Staff, all fees have been paid, all necessary permits, bonding, right-of-way and easements have been obtained and approved by staff, and Staff is notified a minimum of 24 hours in advance.*

J. ***Revisions/Modifications,** Staff reserves the right to require revisions/modifications to the public improvement construction plans and completed street improvements, if additional modifications or expansion of the sight distance onto adjacent streets is required.*

K. ***Civil Review,** All public utility/improvement plans submitted for review shall be based upon a 22"x 34" format and shall be prepared in accordance with the City of Molalla Public Work's Standards* as described in Section 1 of the Molalla Standard Specifications for Public Works Construction.

L. ***Monuments,** All survey monuments on the subject site or that may be subject to disturbance within the construction area, or the construction of any off-site improvements shall be adequately referenced and protected prior to commencement of any construction activity. If the survey monuments are disturbed, moved, relocated or destroyed as a result of any construction, the project shall, at its cost, retain the services of a registered professional land surveyor in the State of Oregon to restore the monument to its original condition and file the necessary surveys as required by Oregon State law. A copy of any recorded survey shall be submitted to Staff.*

M. ***Existing Wells,** The applicant shall contact the Oregon Water Resources Department and inform them of any existing wells located on the subject site. Any existing well shall be limited to irrigation purposes only. Proper separation, in conformance with applicable State standards, shall be maintained between irrigation systems, public water systems, and public sanitary systems. Should the project abandon any existing wells, they shall be properly abandoned in conformance with State standards and supply the City with a copy of the final document.*

N. ***Sanitary Sewer,*** *designs require review by Oregon Department of Environmental Quality. Applicant shall be responsible for submission of plans to state agency and all associated fees. Applicant's Engineer will be required to submit final report to DEQ and provide a copy of the report to the City.*

O. ***Utilities****, All utilities will be stubbed out to the far end of each street for future extension. The project shall utilize existing water, sewer, and storm water 'stub-outs' wherever possible. Water for domestic and fire protection shall be looped through the proposed site. Any 'stub-outs' determined to be not needed for the proposed development or any future development of the subject property shall be abandoned in accordance with the Molalla Standard Specifications for Public Works Construction.*

P. ***Public Improvements,*** *All public improvement designs shall meet the requirements of the Molalla Standard Specifications for Public Works Construction as amended by the Public Works Director.*

Q. ***General Easements*** *– A 10-foot-wide public utility easement shall be dedicated to the City adjacent to all public right-of-way and no structures are allowed to encroach into the easement. Applicant shall be required to submit a legal description and exhibit map for review and sign City easements. Once completed, applicant will be required to record easements with the County Recorder's Office and return the original document to the City prior to final occupancy.*

R. ***General Wetland Requirements*** *– The applicant will be required to provide Public Works with a letter of concurrence from the Department of State Lands regarding any wetlands on the subject property.*

S. ***General Erosion Control*** *– The applicant shall install, operate, and maintain adequate erosion control measures in conformance with the standards adopted by the City of Molalla and DEQ during the construction of any public/private utility and building improvements until such time as approved permanent vegetative materials have been installed. Applicant or Applicant's Contractor shall be responsible for all erosion control requirements under the 1200-C permit and shall coordinate directly with DEQ for questions related to 1200-C permit compliance.*

17-3.6.100 Performance Guarantee and Warranty:

A. ***Performance Guarantee Required.*** *The City at its discretion may approve a final plat or building permit when it determines that all of the public improvements required for the site development or land division, or phase thereof, are complete and the applicant has an acceptable assurance for the balance of said improvements. The applicant shall provide a performance and payment bond in accordance with the current version of the Public Works Design Standards.*

B. ***Determination of Sum.*** *The assurance of performance shall be for a sum determined by the City Engineer as required to cover the cost of the improvements and repairs, including related engineering and incidental expenses, plus reasonable inflationary costs. The assurance shall not be less than 150 percent of the estimated improvement costs.*

Findings: A Performance Bond must be in place prior to issuance of permit and before any public construction begins. The sum of the Performance Bond will be based on Engineering Cost Estimates provide at time of application submittal.

C. ***Itemized Improvement Estimate.*** *The applicant shall furnish to the City an itemized improvement estimate, certified by a registered civil engineer, to assist the City in calculating the amount of the performance assurance.*

Findings: See findings under 17-3.6.100 "A" & "B"

D. ***Agreement.*** *A written agreement between the City and applicant shall be signed and recorded. The agreement may include a provision for the construction of the improvements in stages and for the extension of time under specific conditions. The agreement shall contain all of the following:*

1. *The period within which all required improvements and repairs shall be completed.*
2. *A provision that if work is not completed within the period specified, the City may complete the work and recover the full cost and expenses from the applicant.*
3. *The required improvement fees and deposits.*

Findings: Applicant shall not be granted a building permit or final plat approval (as applicable), until all required improvements are completed and accepted by the City, or an agreement and financial assurance acceptable to the City for all outstanding public improvements is recorded against the property.

E. ***When Applicant Fails to Perform.*** *In the event the applicant fails to carry out all provisions of the agreement and the City has un-reimbursed costs or expenses resulting from such failure, the City shall call on the bond, cash deposit, or letter of credit for reimbursement.*

Findings: The Applicant shall perform the public improvements as required and in accordance with the City of Molalla's public works standards. In the event Applicant fails to perform within the period of time that the land use decision from which the requirement flows remains valid, the City will call on the financial assurance to complete said improvements.

F. ***Termination of Performance Guarantee.*** *The applicant shall not cause termination, nor allow expiration, of the guarantee without first securing written authorization from the City.*

Findings: At completion of the project and acceptance of Warranty Bond, the City will release the Performance Bond. If the applicant allows the financial assurance to expire, or terminate without written authorization from the City, a stop work order will be placed on the project and no occupancy will be granted. Additionally, the city will seek all available remedies under the law.

G. ***Warranty Bond.*** *A warranty bond good for two years is required on all public improvements and landscaping when installed in the public right-of-way. The warranty bond shall equal 120 percent of the total cost of improvements and begin upon acceptance of said improvements by the City. (Ord. 2017-08 §1)*

Findings: Warranty Bond shall be in place prior to final completion and acceptance of the project and meeting the requirements in subsection 1.15.9 of the Molalla Standards and subject to all easements and legal documents have been recorded with the County.

E. For non-residential uses, all adverse impacts to adjacent properties, such as light, glare, noise, odor, vibration, smoke, dust, or visual impact, are avoided; or where impacts cannot be avoided, they are minimized; and

Findings: This project is for a residential use. This standard does not apply.

F. The proposal meets all existing conditions of approval for the site or use, as required by prior land use decision(s), as applicable. Note: Compliance with other City codes and requirements, though not applicable land use criteria, may be required prior to issuance of building permits. (Ord. 2017-08 §1)

Findings: Staff did not find any prior, unmet land use decisions for the property. The subject proposal shall be developed in compliance with Molalla Municipal Code.

Exhibit B:

Findings of Fact For ADJ01-2023

Summary of proposal:
The Applicant has submitted an adjustment application (ADJ01-2023) to adjust parking lot standards for that site design review. MMC 17-3.5.030 requires that vehicular parking stalls angled at 90 degrees require 18' parking stall length and 23' drive aisle width. The Applicant proposes an alternate arrangement where 16' stalls are provided and walkways and landscaping areas are extended by two-feet to allow vehicle overhang. The application was evaluated to the following standards:

17-4.7.030 Adjustments

A. **Applicability.** The Planning Official or Planning Commission, through a Type II procedure, may adjust the following standards:

1. **Setbacks.** Up to a 20 percent reduction to a minimum setback.
2. **Lot Coverage.** Up to a 20 percent increase to the maximum lot coverage.
3. **Lot Dimensions.** Up to a 20 percent decrease to a minimum lot dimension.
4. **Lot Area.** Up to a 20 percent decrease in minimum lot area.
5. **Other Dimensional Standards.** Up to a 20 percent increase or decrease in a quantitative (numerical) standard not listed above. This option is limited to standards in Division II (Tables 17-2.2.040.D and 17-2.2.040.E, and Chapter 17-2.3 Special Use Standards) and Division III; it does not include building code requirements, engineering design standards, public safety standards, or standards implementing state or federal requirements, as determined by the Planning Official.

Findings: The Applicant submitted an application for an adjustment to a Division III standard; Table 17-3.5.030.F Parking Area Minimum Dimensions. The proposal would adjust stall depth for a 90 degree angled parking stall to 16' from 18'. This falls within the 20% threshold and this is thus an applicable proposal.

B. Approval Criteria.
The City may grant an Adjustment only upon finding that all of the following criteria are met. The burden is on the applicant to demonstrate compliance with the criteria.

1. The Adjustment allows for a building plan that is more compatible with adjacent land uses, or it does not create a conflict with adjacent uses;

Findings: The proposed adjustment has no impact on adjacent uses. It applies to onsite access and circulation and overall site layout is not impacted by the proposal.

2. The Adjustment is necessary to allow for normal interior building functions, such as mechanical equipment/utility closets, heating and ventilation systems, restrooms, stockrooms, shelving, and similar interior building functions;

Findings: The proposed adjustment does not apply to interior functions.

3. Approval of the Adjustment does not create: (a) violation(s) of any other adopted ordinance or code standard, and (b) does not create the need for a Variance;

Findings: Larger vehicles do not consistently have two feet of overhang on the front side of the vehicle. This proposal also assumes that vehicles would park all the way up to the curbing which isn't consistent with observed parking patterns. Ultimately, providing the additional walkway for overhang effectively reduces the depth of stall and increases the potential that larger vehicles extend into the 23' drive aisle, creating a conflict of that standard.

This standard is not met and staff recommends denial of this application. Denial of this adjustment does not otherwise impact approval of SDR01-2023. Applicant has sufficient room to design and construct the required 18' stall depth and shall provide either curbing or wheel stops in stalls of at least 18'. Alternatively, providing an anticipated overhang area of 1' with a 17' stall would be acceptable as it is comparable to an 18' stall with wheel stops as vehicles do consistently have greater than 1' of overhang.

4. An application for an Adjustment is limited to one lot per application;

Findings: The proposed adjustment is for one lot. This standard is met.

5. Requests for more than one Adjustment on the same lot shall be consolidated on one application and reviewed concurrently by the City;

Findings: The Applicant submitted two adjustments to be considered in conjunction with SDR01-2023. This standard is met.

6. Not more than three Adjustments may be approved for one lot or parcel in a continuous 12-month period; and

Findings: The Applicant submitted two adjustments to be considered in conjunction with SDR01-2023 and no other adjustments have been submitted within the 12 month period. This standard is met.

7. All applicable building code requirements and engineering design standards shall be met. (Ord. 2017-08 §1)

Findings: The Applicant's proposal would not impact engineering standards nor building code requirements. This standard is met.

Exhibit C:

Findings of Fact For ADJ03-2023

Summary of proposal:
The Applicant has submitted an adjustment application (ADJ03-2023) to minimum lot size for that site design review. Table 17-2.2040.D of Section 17-2.2.040(D) of the Molalla Municipal Code requires a minimum lot size of 2,000 SF/unit in the R-3 zone. Per the attached Site Plan, the apartment complex area is 79,276 sq. ft. after right-of-way dedication, which provides 1,982 sq. ft./unit for the 40 unit complex. The application was evaluated to the following standards:

17-4.7.030 Adjustments

A. **Applicability.** The Planning Official or Planning Commission, through a Type II procedure, may adjust the following standards:

1. **Setbacks.** Up to a 20 percent reduction to a minimum setback
2. **Lot Coverage.** Up to a 20 percent increase to the maximum lot coverage.
3. **Lot Dimensions.** Up to a 20 percent decrease to a minimum lot dimension.
4. **Lot Area.** Up to a 20 percent decrease in minimum lot area.
5. **Other Dimensional Standards.** Up to a 20 percent increase or decrease in a quantitative (numerical) standard not listed above. This option is limited to standards in Division II (Tables 17-2.2.040.D and 17-2.2.040.E, and Chapter 17-2.3 Special Use Standards) and Division III; it does not include building code requirements, engineering design standards, public safety standards, or standards implementing state or federal requirements, as determined by the Planning Official.

Findings: The Applicant submitted an application for an adjustment to a Division II standard; Table 17-2.2040.D of Section 17-2.2.040(D) of the Molalla Municipal Code. The proposal would adjust minimum lot area per dwelling unit from 2,000 SF to 1,982 SF. This falls within the 20% threshold and this is thus an applicable proposal.

B. Approval Criteria.
The City may grant an Adjustment only upon finding that all of the following criteria are met. The burden is on the applicant to demonstrate compliance with the criteria.

1. The Adjustment allows for a building plan that is more compatible with adjacent land uses, or it does not create a conflict with adjacent uses;

Findings: The proposed adjustment does not create a conflict with adjacent uses. .

2. The Adjustment is necessary to allow for normal interior building functions, such as mechanical equipment/utility closets, heating and ventilation systems, restrooms, stockrooms, shelving, and similar interior building functions;

Findings: The proposed adjustment does not apply to interior functions.

3. Approval of the Adjustment does not create: (a) violation(s) of any other adopted ordinance or code standard, and (b) does not create the need for a Variance;

Findings: Lot and development standard and Division III standards are not impacted by the adjustment. Most importantly, the adjustment does not put the project over the density threshold as the maximum density is 24 units per acre and the proposed forty (40) units on a 1.82 acre buildable lot projects to 22 units per acre. This standard is met.

4. An application for an Adjustment is limited to one lot per application;

Findings: The proposed adjustment is for one lot. This standard is met.

5. Requests for more than one Adjustment on the same lot shall be consolidated on one application and reviewed concurrently by the City;

Findings: The Applicant submitted two adjustments to be considered in conjunction with SDR01-2023. This standard is met.

6. Not more than three Adjustments may be approved for one lot or parcel in a continuous 12-month period; and

Findings: The Applicant submitted two adjustments to be considered in conjunction with SDR01-2023 and no other adjustments have been submitted within the 12 month period. This standard is met.

7. All applicable building code requirements and engineering design standards shall be met. (Ord. 2017-08 §1)

Findings: The Applicant's proposal would not impact engineering standards nor building code requirements. This standard is met.

Exhibit D:

Consolidated Application Package For SDR01-2023, ADJ01-2023, and ADJ03-2023

Cascadia Planning + Development Services
P.O. Box 1920
Silverton, OR 97381
(503) 804-1089
steve@cascadiapd.com

MEMO

DATE: February 28, 2023

TO: Dan Zinder
Senior Planner
City of Molalla

FROM: Steve Kay
Cascadia Planning + Development Services

RE: Incomplete Letter for Main Street Apartments Phase II
File No. SDR01-023
105 Ona Way

The following narrative summarizes the applicant's response to your February 14, 2023 letter requesting additional items for the processing of the submitted Type III Design Review application:

ITEM	APPLICANT'S RESPONSE
MMC 17-4.2.040.B.1 **Site Analysis Map**	The attached civil engineering plan set has been updated to label the paved width and right-of-way width of adjacent streets on Sheet C2.0. Street names have also been labeled throughout the plan set, and the 50' buffer along Bear Creek has been labeled on Sheet C2.0.
MMC 17-4.2.040.B.2 **Proposed Site Plan**	The attached architectural and landscape plans have been updated to label the adjacent streets. Sheet L1.1 now includes the north side of Hwy 211, and Sheet A101 labels the final right-of-way widths. The proposed cross

	access easement has been added to Sheet A100. The public sidewalks have also been added to Sheets L1.1, A100, and A101.
MMC 17-4.2.040.B.3 Architectural Drawings	Attached is a color palette for the proposed structures which includes building materials, colors, and type.
General Comment 1.	To modify the parking stall design standards of Section 1703.5.030.F, the applicant has submitted an Adjustment Application and a revised Narrative addressing the Adjustment approval criteria.
General Comment 2.	Sheets L.1, A100, and A101 have been revised so that landscaped areas and public sidewalk locations are consistent with the civil engineering plan set.
General Comment 3.	The attached landscape plans have been revised to show a covered picnic area away from the trash area. A larger paved area, benches, and trees have also been added to the recreation area.

Three (3) copies of the revised materials described above have been submitted to the City. Please let me know if any additional information is required for your review.

Cascadia
Planning + Development Services

PO Box 1920, Silverton, OR 97381
www.cascadiapd.com / 503-804-1089

CITY OF MOLALLA
APPLICATION FOR LAND USE REVIEW

MAIN STREET APARTMENTS - PH II

Location: 105 S Ona Way
Tax Lot 1600, Tax Map 52E08C
Clackamas County, Oregon

Prepared by: Steve Kay, AICP
Mason McGonagall, Ph.D.

Prepared for: Green Light – Home First, LLC
3050 SE Division Street #270
Portland, OR 97202

February 28, 2023

APPLICANT'S STATEMENT

PROJECT NAME:	Main Street Apartments – Phase II
REQUEST:	Approval of a Type III Site Design Review Application for a 40-Unit Apartment Complex with an Adjustment to the Parking Stall Design Standards of Section 17-3.5.030.F
ASSESSOR'S DESCRIPTION:	Tax Lot 1600 of Tax Map 52E08C Clackamas County, Oregon
APPLICANT'S REPRESENTATIVE:	Steve Kay, AICP Cascadia Planning + Development Services P.O. Box 1920 Silverton, OR 97381 503-804-1089 steve@cascadiapd.com
APPLICANT/OWNER:	Green Light -- Home First, LLC 3050 SE Division Street #270 Portland, OR 97202
PROPERTY SIZE:	1.96 acres +/-
PROPERTY ADDRESS:	105 S Ona Way Molalla, OR 97038

I. APPLICABLE REGULATIONS

A. Molalla Comprehensive Plan

B. Molalla Development Code: Title 17

Chapter 17-2: Zoning Regulations

- **Section 17-2.2.030: Allowed Uses**
- **Section 17-2.2.040: Lot and Development Standards**
- **Section 17-2.3.080: Multifamily Development**
- **Section 17-2.4.030: Water Resources (WR) Overlay**

Chapter 17-3: Community Design Standards

- **Section 17-3.2.030: Residential Buildings**
- **Section 17-3.3: Access and Circulation**
- **Section 17-3.4: Landscaping, Fences and Walls, Outdoor Lighting**
- **Section 17-3.5: Parking and Loading**
- **Section 17-3.6: Public Facilities**

Chapter 17-4: Application Review Procedures and Approval Criteria

- **Section 17-4.1.040: Type III Procedure (Quasi-Judicial Review – Public Hearing)**
- **Section 17-4.2.040: Site Design Review Submission Requirements**
- **Section 17-4.2.050: Site Design Review**
- **Section 17-4.7: Adjustments and Variances**

II. AFFECTED JURISDICTIONS

Domestic Water:	**City of Molalla**
Fire Protection:	**Molalla Rural Fire Protection District #73**
Electric:	**Portland General Electric**
Police Protection:	**City of Molalla**
Schools:	**Molalla River School District**
Sewer:	**City of Molalla**
Streets:	**City of Molalla**

III. BACKGROUND:

The applicant/owner, Green Light -- Home First LLC is requesting approval of a Type III Site Design Review application for an apartment complex that will provide 40 affordable housing units. A concurrent Adjustment application has also been submitted to modify the parking stall design standards of Section 1703.5.030.F. The subject property is located at 105 S Ona Way, which contains approximately 1.96 acres, and is identified by the Clackamas County Assessor as Tax Lot 1600 of Tax Map 52E08C. As indicated by the attached Preliminary Development Plans, the applicant will remove an existing single-family dwelling and several accessory structures with the proposed development (see Exhibit 4).

The subject property is located within the R-3 (Medium High Density Residential) zone at the southeast corner of the W Main Street and S Ona Way intersection. To the east of the site is the Phase I of the Main Street Apartments project, which is also zoned R-3 and was recently approved through Casefile SDR07-2021. Across West Main Street, to the north of the site, are several R-1 (Low Density Residential) zoned parcels that are developed with single-family dwellings. To the west of the site, beyond S Ona Way, is a vacant M-2 Heavy Industrial) zoned parcel. To the south of the site is another vacant parcel which includes Bear Creek and is zoned R-3.

The site gently slopes down from east to west with increased grades towards the southwest corner of the property. The attached Architectural Site Plan illustrates that a 50-ft. wide riparian buffer is provided from the top of bank of Bear Creek. The applicant's Preliminary Grading Plan demonstrates that no disturbance to the creek or to riparian vegetation will occur with the proposed development. Grading is limited to the development of the proposed structures, parking lot, utilities, and street frontage improvements.

Per the City's Transportation System Plan, W Main Street/Highway 211, is under ODOT jurisdiction and is classified as an Arterial Street and a Transit Route. The subject site also fronts S Ona Way, which is classified as a Local Street and is under City of Molalla jurisdiction. The attached Overall Site Plan indicates that access to W Main Street/Highway 211 will be shared with the previously approved Phase I driveway connection (see Exhibit 4). A second access point will be provided from Ona Way along the west boundary of the site. To meet right-of-way width standards along the W Main Street/Hwy 211 frontage, half-street improvements include a 14-ft. center turn lane and 12-ft. travel lane, a 2-ft. bike buffer, 5-ft. bike lane, 6-in. curb, and a 6-ft. sidewalk with 1-1/2-ft. back of sidewalk buffer. In addition, the applicant is proposing three-quarter street improvements along S Ona Way, a Local Street under City jurisdiction. Proposed improvements for S Ona Way include 10-ft. vehicle drive lanes, and an 8-ft. on-street parking lane, 6-in. curb, and 6-ft. sidewalk along the site's frontage.

The attached Preliminary Development Plans demonstrate that the proposed 40-unit apartment complex meets the density standards of the R-3 zoning district (see Exhibit 4). After dedicating area for additional right-of-way along the site's Main Street/Highway 211 and S Ona Way frontage, the site's net buildable area is 76,703 sq. ft., or 1.76 acres. Multi-family residential use of the property requires the development of a minimum of 14 dwelling units (8 du./ac. x 1.76 ac. = 14.08, or 14 units). A maximum of 42 dwelling units may be developed on the property (24 du./ac. x 1.76 ac.= 42.24, or 42 units).

The submitted Architectural Site Plan indicates that 95 spaces are typically required for the 10 proposed two-bedroom units and 30 three-bedroom units. The attached Transportation Impact Study includes a parking analysis which calculates that the maximum parking demand is 140 parking spaces for the approved 60 multi-family units in Phase I and the 40 proposed units in Phase II (see Exhibit 6). The Overall Site Plan indicates that a total of 201 parking spaces will be developed for both phases of the apartment complex (see Exhibit 4).

As indicated by the attached Overall Utility Plan, the applicant is proposing to extend public utilities with S Ona Way improvements, including an 8-in. sanitary sewer main, 8-in. water main, and 12-in. storm main. The plan indicates that an 8-in. water main will be extended through the proposed parking lot from S Ona Way and connect to the water main within the Phase I development. The proposed improvements include a new water meter and lateral lines to provide domestic and fire service for the Phase II development (see Exhibit 4). The applicant is proposing to extend sanitary sewer to the Phase II development from the new main line within the S Ona Way right-of-way. Stormwater will be managed using subsurface detention pipes and a water quality vault before drainage is discharged at the pre-development rate into an existing Bear Creek culvert within in S Ona Way.

A copy of the signed Application Form, Property Deed, Pre-Application Conference Notes, Preliminary Development Plans, Geotechnical Report, Transportation Impact Study, and Public Facilities and Services Impact Study are included with this application packet. The applicant's exhibits and narrative demonstrate that the proposed land use request meets the criteria of approval as outlined by the Molalla Development Code.

IV. FINDINGS

A. MOLALLA COMPREHENSIVE PLAN

COMMENT:

Except where required by the Molalla Development Code, this application is not required to address the City's goals and policies related to the development of land, since the Molalla Comprehensive Plan is implemented by the Code.

B. MOLALLA DEVELOPMENT CODE

TITLE 17: DEVELOPMENT CODE – DIVISION II: ZONING REGULATIONS

CHAPTER 17-2.2: ZONING DISTRICT REGULATIONS

Section 17-2.2.030: Allowed Uses

Table 17-2.2.030 identifies the land uses that are allowed in the Residential Districts. Multifamily Dwelling Use is Permitted with

Special Use Standards in the R-3 zone. Uses listed as "Permitted Subject to Special Use Standards (S)" are allowed provided they conform to the Chapter 17-2.3 Special Use Standards and Section 17-2.2.040 Lot and Development Standards.

COMMENT:

The attached Building Elevations illustrate that the applicant is proposing to develop three-story multifamily structures which meet maximum height requirements on the subject property (see Exhibit 4). The submitted Architectural Site Plan indicates that the proposed buildings will contain a total of 40 apartment units. Per Table 17-2.2.030, multi-family dwellings are permitted subject to special use standards in the R-3 zone.

Section 17-2.2.040: Lot and Development Standards for Residential Zones

Table 17-2.2.040.D identifies the residential density, lot dimensions, lot coverage, landscaping, and setbacks that are required in Residential Districts.

R-3 Zone:

A. Minimum 8 DU (Dwelling Units) and a Max 24 DU per net buildable acre

COMMENT:

Per Table 17-2.2.040D, the R-3 zone's minimum density standard is 8 units/net acre, and the maximum density standard is 24 units/net acre. After dedicating area for additional right-of-way along the site's Main Street/Highway 211 and S Ona Way frontage, the site's net buildable area is 1.76 acres. Multi-family residential use of the property requires the development of a minimum of 14 dwelling units (8 du./ac. x 1.76 ac. = 14.08, or 14 units. A maximum of 42 dwelling units may be developed on the property (24 du./ac. x 1.76 ac.= 42.24, or 42 units). Therefore, the proposed 40-unit apartment complex meets the density standards.

B. Minimum Lot Area – Multifamily: 2,000 sf per unit

COMMENT:

The subject site contains a total of 85,165 square feet. The proposed 40-unit apartment complex requires a minimum site area of 80,000 sq. ft., therefore this standard has been met.

C. Minimum Lot Width – Multifamily: 80 ft

COMMENT:

The attached Preliminary Site Plan demonstrates that the site exceeds the 80-ft. minimum lot width standard (see Exhibit 4).

D. Building or Structure Height – 45 ft

Fences and Non-Building Walls – Max. Heights:

- **Front Yard: 4 ft**
- **Interior Side: 6 ft**
- **Rear Yard: 6 ft**
- **Street Side or Reverse Frontage: 6 ft**

COMMENT:

The attached Building Elevations illustrate that the proposed structures do not exceed the 45-ft. maximum height limit standard (see Exhibit 4). The submitted Architectural Site Plan demonstrates that no fences or non-building walls are proposed.

E. Lot Coverage. Maximum Lot Coverage (foundation plane area as % of site area – Multifamily or Cottage Cluster: 80%

COMMENT:

The submitted Architectural Site Plan indicates the building coverage is 17,548 sq. ft., which is 23% of the 76,703 sq. ft. net site area. Therefore, this standard is met.

F. Minimum Landscape Area (% lot area) – 20%

COMMENT:

The attached Planting Plan indicates that the total landscape area, is 28,653 sq. ft., which is 37% of the net site area. Therefore, this standard has been met.

G. Minimum Setbacks:

- **Front and Street-Side Setback Yards – Standard: 10 ft**

Interior Side Setback Yards:

- **Structures <12 to >24' height: 10 ft**
- **Common Walls or Zero Lot Line Developments: 0 ft one side; 6 ft other side**

Rear Setback Yard:

- **Structure >24' height: 15 ft**
- **Structure 12'-24' height: 10 ft**
- **Structure <12' height: 5 ft**
- **Common Walls or Zero Lot Line: 3 ft**

H. Build to Line Maximum – 20 ft; At least one primary building entrance shall be built no farther from the street right-of-way than the build-to line; except that where a greater setback is

required for a Planned Street Improvement, the build-to line increases proportionately.

COMMENT:

The proposed development, as shown on the Preliminary Site Plan, will maintain a minimum 10-ft. front and street yard setback, 10-ft. interior side yard, and 15-ft. rear yard setback (see Exhibit 4). Due to the presence of Bear Creek to the south of the site, a 50-ft. riparian buffer setback is also provided from the waterway's top of bank (see Exhibit 4).

CHAPTER 17-2.3: SPECIAL USE STANDARDS

Section 17-2.3.080: Multifamily Development

C. Standards.

1. Common Open Space and Landscaping. A minimum of 15 percent of the site area in in a multifamily development shall be designated and permanently reserved as common area or open space, in accordance with all of the following criteria:

a. "Site area" for the purposes of this section is defined as the subject lot or lots after subtracting any required dedication of street right-of-way.

b. The common area or open space shall contain one or more of the following: outdoor recreation area, tree grove (e.g., existing mature trees), turf play fields or playgrounds, sports courts, swim pool, walking fitness course, natural area with picnic benches, or similar open space amenities as appropriate for the intended residents.

c. In order to be counted as eligible toward the minimum open space area, such areas shall have dimensions of not less than 20 feet.

d. Open space and common areas not containing recreational facilities shall be landscaped.

COMMENT:

The attached Planting Plan indicates that the common open space area for the Phase II apartment complex totals 12,715 sq. ft., or 17% of the 76,703 sq. ft. net site area (see Exhibit 4). Therefore, the 15% minimum common area standard has been met. The Architectural Site Plan demonstrates that the proposed common open space areas exceed 20-ft. in all dimensions, and the Planting Plan identifies the proposed recreational amenities including benches, lawn areas, pathways, and a covered picnic area.

2. Private Open Space. Private open space areas shall be required for dwelling units based on the following criteria:

a. A minimum of 40 percent of all ground-floor dwelling units shall have front or rear patios or decks containing at least 48 square feet of usable area. Ground floor housing means the housing unit entrance (front or rear) is within five feet of the finished ground elevation (i.e., after grading and landscaping).

b. A minimum of 40 percent of all upper-floor housing units shall have balconies or porches containing at least 48 square feet of usable area. Upper-floor housing means housing units with a first floor elevation that is more than five feet above the finished grade.

COMMENT:

The attached Building Floor Plans and Building Elevations indicate that the proposed private at-grade patios and balconies provide at least 48 sq. ft. of open space for all dwelling units (see Exhibit 4).

3. Building Orientation and Design, Access and Circulation, Landscaping and Screening, Parking and Loading, and Public Facilities. The standards of Chapters 17-3.2 through 17-3.6 shall be met.

COMMENT:

Building orientation, design, access, landscaping, and parking standards for multifamily residential development are addressed in the narrative provided below.

4. Trash Storage. Trash receptacles, recycling, and storage facilities shall be oriented away from building entrances, set back at least 10 feet from any public right-of-way and adjacent residences, and shall be screened with an evergreen hedge or solid fence or wall of not less than six feet in height. Receptacles must be accessible to trash pick-up trucks.

COMMENT:

The submitted Architectural Site Plan indicates that a waste and recycling storage enclosure is provided within the proposed parking area (see Exhibit 4). As required, the enclosure will include 6-ft. high screening and maintains a minimum 10-ft. setback from rights-of-way and adjacent residences.

Section 17-2.4.030: Water Resources (WR) Overlay

B. Boundaries and Setbacks. The general location of the WR Overlay District is shown on the Molalla Comprehensive Plan Map (for areas within the UGB) and the Molalla Zoning Map (for areas within the City limits) and includes:

1. Locally significant wetlands identified on the Molalla Local Wetlands Inventory or the Natural Features Inventory.

2. The riparian corridor extending upland 50 feet from the tops-of-bank of Bear Creek, Creamery Creek, and the Molalla River tributary as shown on the Natural Features Map.

a. Where a significant wetland is located fully or partially within the riparian corridor, the riparian corridor shall extend 50 feet from the upland edge of the wetland;

b. The riparian buffer for isolated wetlands shall extend 25 feet from the edge of the wetland.

COMMENT:

The attached Architectural Site Plan illustrates that a 50-ft. wide riparian corridor along Bear Creek is located in the southwest corner of the site. There are no wetlands located on the subject property.

C. The Department of State Lands Notification. The Oregon Department of State Lands (DSL) shall be notified in writing of all applications to the City of Molalla for development activities, including applications for plan authorizations, development permits, or building permits, and of development proposals within the Molalla UGB, that may affect any wetlands, creeks or waterways identified in the Local Wetlands Inventory or Natural Features Inventory.

COMMENT:

As discussed above, no wetlands have been delineated on the site. In addition, the submitted Existing Conditions Plan demonstrates that Bear Creek is located approximately 25-ft. to the south of the subject property. Since the Architectural Site Plan indicates that no development is proposed within the 50-ft. riparian buffer along the creek, no impacts to waterways or wetlands are proposed.

D. Site Plan Required. When a use or activity that requires the issuance of a building permit or approval of a land use application is proposed on a parcel within, or partially within the WR Overlay District, the property owner shall submit a scaled site plan to the City that that shows the precise location of:

1. Topography;

2. The stream top-of-bank;

3. The 100-year flood elevation;

4. The delineated wetland boundary with documentation of concurrence by the Oregon Division of State Lands;

5. The required riparian setback;

6. Existing vegetative cover and type; and

7. Existing and proposed site improvements.

COMMENT:

The attached Existing Conditions Plan, Architectural Site Plan, and Preliminary Grading Plan identify existing and proposed site improvements, proposed grading, and other applicable plan information listed above (see Exhibit 4).

F. Permitted Uses. The following uses are permitted within the WR Overlay District:

1. Trails.

2. Passive recreation uses and activities.

3. Maintenance of existing structures, lawns and gardens.

4. Normal maintenance and expansion of existing public facilities.

5. Construction of public facilities projects identified in

adopted public facilities master plans.

6. Construction of transportation facilities identified in the adopted Transportation System Plan.

COMMENT:

The applicant proposes normal maintenance and passive recreational uses and activities along the identified Bear Creek riparian corridor. The submitted Grading Plan indicates that some minor grading is proposing adjacent to Building K in the southwest corner of the site, however no structures are proposed within the 50-ft. riparian corridor along Bear Creek. As required by the Transportation System Plan, the applicant will install street improvements to S Ona Way, a portion of which is located within the 50-ft. buffer area (see Exhibit 4).

G. Development Regulations. In addition to the requirements of the underlying zone, the following restrictions and exceptions shall apply within the WR Overlay District:

1. Removal of Native Vegetation. The removal of vegetation from the WR Overlay District is prohibited except for the following:

a. Perimeter mowing of a wetland for fire protection purposes;

b. Removal of non-native vegetation and replacement with native plan species;

c. For the development of water-related or water-dependent uses, provided they are designed and constructed to minimize impact on the existing riparian vegetation;

d. Removal of emergent in-channel vegetation that has the potential to cause flooding; and

e. Hazardous Tree Removal. Hazardous trees are those that pose an imminent health, safety, or welfare threat to persons or property.

COMMENT:

The applicant does not propose the removal of native vegetation within the WR Overlay District.

2. Building, Paving, Grading, and Fill. Within the WR Overlay District, the placement of structures or impervious surfaces, including grading and the placement of fill is prohibited except for the following:

a. Replacement of existing structures with structures located on the original building footprint that do not disturb additional wetland or riparian corridor surface area;

b. Streets, roads and paths that are included in the Molalla Transportation System Plan;

c. Water-related and water-dependent uses, including drainage facilities, water and sewer facilities, flood control projects, drainage pumps, public paths, access ways, trails, picnic areas or interpretive and educational displays and overlooks, including benches and outdoor furniture;

d. Routine maintenance or replacement of existing public facilities projects and public emergencies, including emergency repairs to public facilities; and

e. In-channel erosion or flood control measures that have been approved by the Oregon Division of State Lands (DSL), the U.S. Army Corps of Engineers or another state or federal regulatory agency, that utilize bio-engineering methods (rather than rip rap).

COMMENT:

The attached Grading Plan indicates that the applicant is proposing a small amount of grading activity adjacent to Building K in the southwest corner of the site (see Exhibit 4). As mentioned above, the applicant is also installing street improvements along the S Ona Way frontage, a portion of which is located within the 50-ft. riparian buffer along Bear Creek.

3. The following uses and activities are prohibited within the WR Overlay District:

a. New residential, commercial, industrial, or public/semi-public construction;

b. Expansion of existing buildings or structures;

c. Expansion of areas of pre-existing non-native ornamental landscaping such as lawn and gardens; and

d. Dumping, piling, or disposal of refuse, yard debris, or other material.

COMMENT:

The applicant is not proposing any of the activities listed above within the WR Overlay District.

4. Site Maintenance. Any use, sign or structure, and the maintenance thereof, lawfully existing on the date of adoption of this ordinance, is permitted within the WR Overlay District.

a. Such use, sign or structure may continue at a similar level and manner as existed on the date of the adoption of this ordinance.

b. The maintenance and alteration of pre-existing ornamental landscaping is permitted within the WR Overlay District as long as no additional native vegetation is disturbed.

c. Maintenance of lawns, planted vegetation and landscaping shall be kept to a minimum and not include the spraying of pesticides or herbicides.

d. Vegetation that is removed or diseased shall be replanted with native species.

e. Maintenance trimming of existing trees shall be kept at a minimum and under no circumstances can the trimming maintenance be so severe as to compromise the tree's health, longevity, and resource functions.

f. Vegetation within utility easements shall be kept in a natural state and replanted when necessary with native plant species.

COMMENT:

As required, any future maintenance of vegetation within the WR Overlay District will be completed in accordance with the above standards.

CHAPTER 17-3.2: BUILDING ORIENTATION AND DESIGN

Section 17-3.2.030: Residential Buildings

B. Building Orientation. Residential buildings that are subject to

the provisions of this chapter, pursuant to Section 17-3.2.020, shall conform to all of the following standards in subsections B.1 through 3, below, as generally illustrated in Figure 17-3.2-1. Figure 17-3.2-2 provides examples of non-compliance.

1. Building Orientation to Street. Except as provided below, dwelling units shall orient toward a street, have a primary entrance opening toward the street, and be connected to the right-of-way with an approved walkway or residential front yard.

a. A dwelling may have its primary entrance oriented to a yard other than the front or street yard where the only permitted access to the property is from a shared driveway or flag lot drive and orienting the dwelling entrance to the street is not practical due to the layout of the lot and driveway.

b. Where there is no adjacent street to which a dwelling may be oriented, or it is not practical to orient a dwelling to an adjacent street due to lot layout, topographic, or other characteristics of the site, the dwelling may orient to a walkway, courtyard, open space, common area, lobby, or breezeway (i.e., for multifamily buildings).

COMMENT:

The attached Architectural Site Plan illustrates that the primary entrance for each apartment building is oriented toward the main common open space area, located in the central eastern portion of the site (see Exhibit 4).

C. Garages. The following standards apply to all types of vehicle storage, including, but not limited to, buildings, carports, canopies, and other permanent and temporary structures. The standards are intended to balance residents' desire for a convenient, safe, and private vehicle access to their homes with the public interest in maintaining safe and aesthetically pleasing streetscapes. The standards therefore promote pedestrian safety and visibility of public ways, while addressing aesthetic concerns associated with street-facing garages.

COMMENT:

The applicant is not proposing to construct a garage with the apartment complex development, therefore these standards do not apply.

D. Architecture. The following standards require variation in architectural plans to avoid monotony in new developments. The standards support the creation of architecturally varied neighborhoods, whether a neighborhood develops all at once or one lot at a time, avoiding homogeneous street frontages that detract from the community's appearance. The standards are applied through the Site Design Review process for new townhome dwellings and new multifamily dwellings, and through the Zoning Checklist (Type I) review process prior to issuance of building permits for new single-family dwellings and new duplex dwellings. In addition to the following requirements, duplexes, townhomes, and multifamily projects shall conform to the special use standards of Chapter 17-2.3.

1. Detailed Design. Dwelling designs shall incorporate not fewer than four architectural features per dwelling unit from subdivisions a through k, as generally illustrated in this chapter. Applicants are encouraged to use those elements that best suit the proposed building style and design.

a. Covered front porch: not less than six feet in depth and not less than 30 percent of the width of dwelling, excluding the landing for dwelling entrance.

b. Dormers: minimum of two required for each single-family dwelling and two each for other dwellings; must be a functional part of the structure, for example, providing light into a living space.

c. Recessed entrance: not less than four feet deep.

d. Windows: not less than 30 percent of surface area of all street-facing elevation(s).

e. Window trim: minimum four-inch width (all elevations).

f. Eaves: overhang of not less than 12 inches.

g. Offset: offset in façade and/or roof (see subsection 2, "Articulation"); counts twice if both façade and roof offsets are provided.

h. Bay window: projects from front elevation by

12 inches.

i. Balcony: one per dwelling unit facing street.

j. Decorative top: e.g., cornice or pediment with flat roof or brackets with pitched roof.

k. Other: feature not listed but providing visual relief or contextually appropriate design similar to subdivisions a through j, as approved by the Planning Official through a Type I procedure.

COMMENT:

The submitted Building Floor Plans and Elevations indicate that the proposed apartment structures include balconies which face the street and common open space areas. The proposed multi-family structures also contain minimum 12-in. eaves, facades with off-sets, and recessed entries (see Exhibit 4). Therefore, the above standards are met.

2. Articulation. Plans for residential buildings shall incorporate design features such as varying rooflines, offsets, balconies, projections (e.g., overhangs, porches, or similar features), recessed or covered entrances, window reveals, or similar elements that break up otherwise long, uninterrupted elevations. Such elements shall occur at a minimum interval of 40 feet, and each floor shall contain at least two elements from the following options, as generally illustrated in this Section 17-3.2.030.

a. Recess (e.g., porch, courtyard, entrance balcony, or similar feature) that has a minimum depth of four feet;

b. Extension (e.g., floor area, porch, entrance, balcony, overhang, or similar feature) that projects a minimum of two feet and runs horizontally for a minimum length of four feet; or

c. Offsets or breaks in roof elevation of two feet or greater in height.

COMMENT:

As illustrated on the attached Building Plans and Elevations, balconies are provided on the 2nd and 3rd floors of the structures. In addition, recessed entries are provided in accordance with the above standards (see Exhibit 4).

3. House Plan Variety. This subsection applies to land divisions and new developments with five or more residential buildings. No two directly adjacent or opposite dwelling units in a single-family development, or buildings in a multifamily development, may possess the same front or street-facing elevation. This standard is met when front or street-facing elevations differ from one another by no fewer than three of the elements listed in subdivisions a through g. Where façades repeat on the same block face, they must have at least three intervening lots between them that meet the above standard. Land division approvals will be conditioned to assure compliance with this subsection.

a. Materials. The plans specify different exterior cladding materials, a different combination of materials, or different dimensions, spacing, or arrangement of the same materials. This criterion does not require or prohibit any combination of materials; it only requires that plans not repeat or mirror one another. Materials used on the front façade must turn the corner and extend at least two feet deep onto the side elevations.

b. Articulation. The plans have different offsets, recesses, or projections; or the front building elevations break in different places. For example, a plan that has a stoop entry (recess) varies from one that has an entry under a front porch (projection). For this criterion to apply, a recess must have a minimum depth of four feet and a projection or offset must be at least four feet in depth.

c. Variation in Roof Elevation. The plans have different roof forms (e.g., gable versus gambrel or hip), different roof height (by at least 10 percent), different orientation (e.g., front-facing versus side-facing gable), or different roof projections (e.g., with and without dormer or shed, or different type of dormer or shed).

d. Entry or Porch. The plans have different configuration or detailing of the front porch or covered entrance.

e. Fenestration. The plans have different placement, shape, or orientation of windows or different placement of doors.

f. Height. The elevation of the primary roofline (along the axis of the longest roofline) changes by not less than four feet from building to building, or from dwelling unit to dwelling unit (e.g., townhome units), as applicable. Changes in grade of eight feet or more from one lot to the adjacent lot are counted toward change in height for purposes of evaluating façade variation.

g. Color Palette. Variation in color palette.

COMMENT:

In the attached Pre-Conference Application Notes, the City states that house plan variety for Phase II will be considered in conjunction with Phase I (see Exhibit 3). The attached Overall Site Plan demonstrates that a total of 5 buildings are included in Phases I and II have frontage on W Main Street/Highway 211. In addition, 2 multi-family structures have S Ona Way frontage. To meet the above standards, the attached Building Plans and Elevations demonstrate that the buildings along the W Main Street/Highway 211 frontage differ in articulation, roof elevation, entry configuration, fenestration, and height (see Exhibit 4). The submitted elevations also demonstrate that these variations for the 2 buildings which front S Ona Way (see Exhibit 4).

CHAPTER 17-3.3: ACCESS AND CIRCULATION

Section 17-3.3.030: Vehicular Access and Circulation

B. Permit Required. Vehicular access to a public street (e.g., a new or modified driveway connection to a street or highway) requires an approach permit approved by the applicable roadway authority.

COMMENT:

Per the City's Transportation System Plan, W Main Street/Highway 211, is under State (ODOT) jurisdiction and is classified as an Arterial Street and a Transit Route. A single access approach from W Main Street/Highway 211 was proposed for Phase I of the Main Street Apartments. In the attached ODOT Review Letter, pursuant to OAR 734.51.3020, ODOT recommended that the Access Permit for the Main Street Apartments accommodate the combined 100-units of Phases I and II (see Exhibit 6). In compliance with the ODOT Letter, the Preliminary Site Plan demonstrates a joint easement facilitating one shared access at W Main Street/Highway 211 between the two phases of the Main Street Apartments (see Exhibit 4). As shown on the Preliminary Site Plan, secondary access is proposed along the west side of the parking area S. Ona Way, a local street under City jurisdiction. As required, access permits will be obtained prior to construction.

C. Traffic Study Requirements. The City, in reviewing a development proposal or other action requiring an approach permit, may require a traffic impact analysis, pursuant to Section 17-3.6.020, to determine compliance with this Code.

COMMENT:

In compliance with this section, the applicant has prepared and submitted a Transportation Impact Study for the proposed development (see Exhibit 6). The study was scoped with input from both City of Molalla and ODOT staff. Per the attached report, adequate site distance can be provided at the W Main Street and S Ona Way intersection upon removal of vegetation.

D. Approach and Driveway Development Standards. Approaches and driveways shall conform to all of the following development standards:

1. The number of approaches on higher classification streets (e.g., collector and arterial streets) shall be minimized; where practicable, access shall be taken first from a lower classification street.

COMMENT:

The attached Pre-Application Conference Notes indicate that ODOT recommends and supports the City's requirement for a joint access easement between Tax Lots 1500 and 1600 to facilitate the development of a shared parking area with access to W Main Street (see Exhibit 3). The Phase II development also proposes secondary access from S. Ona Way, a Local Street, as shown on the Preliminary Site Plan (see Exhibit 4).

2. Approaches shall conform to the spacing standards of subsections E and F, below, and shall conform to minimum sight distance and channelization standards of the roadway authority.

COMMENT:

As discussed in the attached Transportation Impact Study, sight distance at the location of the access points is adequate (see Exhibit 6). The attached Preliminary Site Plan also demonstrates that ODOT channelization standards have been met (see Exhibit 4).

3. Driveways shall be paved and meet applicable construction standards. Where permeable paving surfaces are allowed or required, such surfaces shall conform to applicable Public Works Design Standards.

COMMENT:

The Architectural Site Plan indicates that the proposed parking surfaces will be paved with an asphalt surface and will meet applicable construction standards (see Exhibit 4). No permeable paving surfaces are proposed.

4. The City Engineer may limit the number or location of connections to a street, or limit directional travel at an approach to one-way, right-turn only, or other restrictions, where the roadway authority requires mitigation to alleviate safety or traffic operations concerns.

COMMENT:

The submitted Transportation Impact Study and Civil Site Plan indicate that the shared Phases I and II access along W Main Street/Highway 211 includes a center left turn lane along the site frontage (see Exhibit 4). An additional driveway on the west side of the Phase II Parking area is proposed along S. Ona Way. With the proposed improvements, no turning restrictions will be required when entering or exiting the site.

5. Where the spacing standards of the roadway authority limit the number or location of connections to a street or highway, the City Engineer may require a driveway extend to one or more edges of a parcel and be designed to allow for future extension and inter-parcel circulation as adjacent properties develop. The City Engineer may also require the owner(s) of the subject site to record an access easement for future joint use of the approach and driveway as the adjacent property(ies) develop(s).

COMMENT:

As demonstrated on the attached Site Plan, the proposed access points along W Main Street/Highway 211 and S. Ona Way provide joint use and inter-parcel circulation for Phases I and II of the Main Street Apartments complex (see Exhibit 4).

6. **Where applicable codes require emergency vehicle access, approaches and driveways shall be designed and constructed to accommodate emergency vehicle apparatus and shall conform to applicable fire protection requirements. The City Engineer may restrict parking, require signage, or require other public safety improvements pursuant to the recommendations of an emergency service provider.**

COMMENT:

The submitted Architectural Site Plan demonstrates that the proposed parking lot configuration meets Fire Code access standards (see Exhibit 4).

7. **As applicable, approaches and driveways shall be designed and constructed to accommodate truck/trailer-turning movements.**

COMMENT:

As demonstrated by the Fire Access Plan, the proposed parking lot can accommodate fire apparatus, waste collection vehicles, and delivery trucks and vans (see Exhibit 4).

8. **Except where the City Engineer and roadway authority, as applicable, permit an open access with perpendicular or angled parking, driveways shall accommodate all projected vehicular traffic on-site without vehicles stacking or backing up onto a street.**

COMMENT:

As shown on the Architectural Site Plan, the proposed parking area is open access with perpendicular parking stalls (see Exhibit 4). The submitted plan demonstrates that vehicles can turn around on-site so that they can exit in a forward manner.

9. **Driveways shall be designed so that vehicle areas, including, but not limited to, drive-up and drive-through facilities and vehicle storage and service areas, do not obstruct any public right-of-way.**

10. **Approaches and driveways shall not be wider than necessary to safely accommodate projected peak hour trips and turning movements, and shall be designed to minimize crossing distances for pedestrians.**

COMMENT:

Drive up and/or drive-through services are not proposed. The proposed aisles and stall dimensions meet City standards. The proposed driveway approach is 23-ft. wide, which is appropriate for the proposed multi-family use and provides a safe crossing width for pedestrians.

11. As it deems necessary for pedestrian safety, the City Engineer, in consultation with the roadway authority, as applicable, may require that traffic-calming features, textured driveway surfaces (e.g., pavers or similar devices), curb extensions, signage or traffic control devices, or other features, be installed on or in the vicinity of a site as a condition of development approval.

COMMENT:

Due to the limited size of the parking area, the applicant is not proposing to install traffic calming features within the development.

12. Construction of approaches along acceleration or deceleration lanes, and along tapered (reduced width) portions of a roadway, shall be avoided; except where no reasonable alternative exists and the approach does not create safety or traffic operations concern.

COMMENT:

The driveway approaches for the proposed development are not within acceleration or deceleration lanes or tapered portions. Therefore, this standard does not apply.

13. Approaches and driveways shall be located and designed to allow for safe maneuvering in and around loading areas, while avoiding conflicts with pedestrians, parking, landscaping, and buildings.

COMMENT:

The submitted Architectural Site Plan illustrates the proposed driveway approaches and a parking area can accommodate standard vehicles, waste collection vehicles, fire apparatus, and delivery vehicles in a safe manner (see Exhibit 4).

14. Where sidewalks or walkways occur adjacent to a roadway, driveway aprons constructed of concrete shall be installed between the driveway and roadway edge. The roadway authority may require the driveway apron be installed outside the required

sidewalk or walkway surface, consistent with Americans with Disabilities Act (ADA) requirements, and to manage surface water runoff and protect the roadway surface.

15. Where an accessible route is required pursuant to ADA, approaches and driveways shall meet accessibility requirements where they coincide with an accessible route.

COMMENT:

The submitted Site Plan indicates that a curb-separated 6-ft. sidewalk will be installed along the site's W Main Street/Highway 211 frontage (see Exhibit 4). As required, the proposed driveway approach is located between the ADA compliant sidewalk and the curb. Similarly, as shown on the Site Plan, among the S Ona Way improvements, an ADA compliant 6-ft. curb-separated sidewalk is proposed.

16. The City Engineer may require changes to the proposed configuration and design of an approach, including the number of drive aisles or lanes, surfacing, traffic-calming features, allowable turning movements, and other changes or mitigation, to ensure traffic safety and operations.

COMMENT:

The applicant is not proposing a modified driveway approach design with this application.

17. Where a new approach onto a state highway or a change of use adjacent to a state highway requires ODOT approval, the applicant is responsible for obtaining ODOT approval. The City Engineer may approve a development conditionally, requiring the applicant first obtain required ODOT permit(s) before commencing development, in which case the City will work cooperatively with the applicant and ODOT to avoid unnecessary delays.

COMMENT:

As previously addressed, West Main Street/Highway 211, is under State (ODOT) jurisdiction and is classified as an Arterial Street and Transit Route. Therefore, the applicant will request an access permit from ODOT for shared access through the Phase I parking lot.

18. Where an approach or driveway crosses a drainage ditch, canal, railroad, or other feature that is under the jurisdiction of another agency, the applicant is responsible for obtaining all required approvals and permits from that agency prior to commencing

development.

19. Where a proposed driveway crosses a culvert or drainage ditch, the City Engineer may require the developer to install a culvert extending under and beyond the edges of the driveway on both sides of it, pursuant to applicable Public Works Design Standards.

COMMENT:

The proposed driveways will not cross a culvert, drainage ditch, or other features. Therefore, this standard does not apply.

20. Except as otherwise required by the applicable roadway authority or waived by the City Engineer temporary driveways providing access to a construction site or staging area shall be paved or graveled to prevent tracking of mud onto adjacent paved streets.

COMMENT:

As required, the construction entrance to the site will be graveled in accordance with the above standards.

21. Development that increases impervious surface area shall conform to the storm drainage and surface water management requirements of Section 17-3.6.050.

COMMENT:

As shown on the Drainage Plan, stormwater from all on-site impervious surfaces will be managed in accordance with Section 17-3.6.050 (see Exhibit 4).

E. Approach Separation from Street Intersections. Except as provided by subsection H, minimum distances shall be maintained between approaches and street intersections consistent with the current version of the Public Works Design Standards and Transportation System Plan.

COMMENT:

As required, the submitted Site Plan demonstrates that minimum spacing standards between the proposed driveway approaches and the W Main Street/S Ona Way intersection have been met (see Exhibit 4).

F. Approach Spacing. Except as provided by subsection H or as required to maintain street operations and safety, the following minimum distances shall be maintained between

approaches consistent with the current version of the Public Works Design Standards and Transportation System Plan.

G. Vision Clearance. No visual obstruction (e.g., sign, structure, solid fence, or shrub vegetation) greater than 2.5 feet in height shall be placed in "vision clearance areas" at street intersections. The minimum vision clearance area may be modified by the Planning Official through a Type I procedure, upon finding that more or less sight distance is required (i.e., due to traffic speeds, roadway alignment, etc.). Placement of light poles, utility poles, and tree trunks should be avoided within vision clearance areas.

COMMENT:

As required, the W Main Street and S Ona Way driveways meet the above approach spacing standards. The attached Transportation Impact Study indicates that minimum vision clearance standards will be met (see Exhibit 6).

H. Exceptions and Adjustments. The City Engineer may approve adjustments to the spacing standards of subsections E and F, above, where an existing connection to a City street does not meet the standards of the roadway authority and the proposed development moves in the direction of code compliance. The Planning Official through a Type II procedure may also approve a deviation to the spacing standards on City streets where it finds that mitigation measures, such as consolidated access (removal of one access), joint use driveways (more than one property uses same access), directional limitations (e.g., one-way), turning restrictions (e.g., right-in/right-out only), or other mitigation alleviate all traffic operations and safety concerns.

COMMENT:

The applicant is not proposing an exception or adjustment to the spacing requirements of this section. Therefore, the above standards do not apply.

Section 17-3.3.040: Pedestrian Access and Circulation

B. Standards. Developments shall conform to all of the following standards for pedestrian access and circulation as generally illustrated in Figure 17-3.3-3:

1. Continuous Walkway System. A pedestrian walkway system shall extend throughout the development site and connect to adjacent sidewalks, if any, and to all future phases of the development, as applicable.

COMMENT:

As shown on the Architectural Site Plan and Planting Plan, the applicant is proposing to install 5-ft. wide paved pedestrian pathways from the apartment buildings to the parking lot, common open space amenities, and to the proposed sidewalks along W Main Street and S Ona Way(see Exhibit 4). Where adjacent to parking stalls, the walkway width is increased to 7-feet.

2. Safe, Direct, and Convenient. Walkways within developments shall provide safe, reasonably direct, and convenient connections between primary building entrances and all adjacent parking areas, recreational areas, playgrounds, and public rights-of-way conforming to the following standards:

a. The walkway is reasonably direct when it follows a route that does not deviate unnecessarily from a straight line or it does not involve a significant amount of out-of-direction travel.

COMMENT:

A continuous pedestrian walkway system within the development has been illustrated on the Site Plan. The walkways provide direct connections without unnecessary deviations to the right-of-way, parking area, all apartment buildings, the clubhouse, playground, and common open space areas within Phase I and Phase II of the apartment complex (see Exhibit 4).

b. The walkway is designed primarily for pedestrian safety and convenience, meaning it is reasonably free from hazards and provides a reasonably smooth and consistent surface and direct route of travel between destinations. The Planning Official may require landscape buffering between walkways and adjacent parking lots or driveways to mitigate safety concerns.

COMMENT:

Convenience and safety are provided by paved pedestrian walkways which offers a smooth and nonhazardous surface for tenants, employees, and visitors. The walkways connect the parking areas to all complex buildings and amenity spaces.

c. The walkway network connects to all primary building entrances, consistent with the building design standards of Chapter 17-3.2 and, where required, Americans with Disabilities Act (ADA) requirements.

COMMENT:

The continuous walkway system provides ADA routes between the public sidewalks, parking lot, and primary entrances of all buildings on the site (see Exhibit 4).

3. Vehicle/Walkway Separation. Except as required for crosswalks, per subsection 4, below, where a walkway abuts a driveway or street it shall be raised six inches and curbed along the edge of the driveway or street. Alternatively, the Planning Official may approve a walkway abutting a driveway at the same grade as the driveway if the walkway is physically separated from all vehicle-maneuvering areas. An example of such separation is a row of bollards (designed for use in parking areas) with adequate minimum spacing between them to prevent vehicles from entering the walkway.

COMMENT:

To separate the vehicle areas from the walkways, 6-in. high curbs are proposed.

4. Crosswalks. Where a walkway crosses a parking area or driveway ("crosswalk"), it shall be clearly marked with contrasting paving materials (e.g., pavers, light-color concrete inlay between asphalt, or similar contrasting material). The crosswalk may be part of a speed table to improve driver-visibility of pedestrians. Painted or thermo-plastic striping and similar types of non-permanent applications are discouraged, but may be approved for lesser used crosswalks not exceeding 24 feet in length.

COMMENT:

Where pedestrian routes cross vehicle routes through the parking area, the Architectural Site Plan demonstrates that crosswalks meeting the required length standards, will be clearly marked (see Exhibit 4). As required, permanent applications of contrasting materials will delineate crosswalk areas from other paved surfaces.

5. Walkway Width and Surface. Walkways, including access ways required for subdivisions pursuant to Chapter 17-4.3, shall be constructed of concrete, asphalt, brick or masonry pavers, or other durable surface, as approved by the City Engineer, and not less than six feet wide. Multi-use paths (i.e., designed for shared use by bicyclists and pedestrians) shall be concrete or asphalt and shall conform to the current version of the Public Works Design Standards and

Transportation System Plan.

COMMENT:

The attached Civil Site Plan indicates that the proposed concrete sidewalks are 6-ft. wide, complying with the above standards (see Exhibit 4).

6. Walkway Construction (Private). Walkway surfaces may be concrete, asphalt, brick or masonry pavers, or other City-approved durable surface meeting ADA requirements. Walkways shall be not less than six feet in width in commercial and mixed use developments and where access ways are required for subdivisions under Division IV.

COMMENT:

The submitted Architectural Site Plan demonstrates that the proposed internal concrete walkways are in compliance with this section (see Exhibit 4).

7. Multi-Use Pathways. Multi-use pathways, where approved, shall be a minimum width and constructed of materials consistent with the current version of the Public Works Design Standards and Transportation System Plan.

COMMENT:

Multi-use pathways are not proposed or required for this development. Therefore, this standard does not apply.

CHAPTER 17-3.4: LANDSCAPING, FENCES AND WALLS, OUTDOOR LIGHTING

Section 17-3.4.030: Landscaping and Screening

A. General Landscape Standard. All portions of a lot not otherwise developed with buildings, accessory structures, vehicle maneuvering areas, or parking shall be landscaped.

COMMENT:

As shown on the attached Planting Plan, landscaping is proposed for all required areas of the site which are not developed with apartment buildings, and parking areas (see Exhibit 4).

B. Minimum Landscape Area. All lots shall conform to the minimum landscape area standards of the applicable zoning district, as contained in Tables 17-2.2.040.D and 17-2.2.040.E. The Planning Official, consistent with the purposes in Section

17-3.4.010, may allow credit toward the minimum landscape area for existing vegetation that is retained in the development.

COMMENT:

Per Table 17-2.2040(D), 20% of the site is required to be landscaped in the R-3 zone. The applicant is proposing 28,653 sq. ft. of landscaped area for the 76,703 sq. ft. net site, providing 37% landscape coverage for the proposed development.

C. Plant Selection. A combination of deciduous and evergreen trees, shrubs, and ground covers shall be used for all planted areas, the selection of which shall be based on local climate, exposure, water availability, and drainage conditions, among other factors. When new vegetation is planted, soils shall be amended and irrigation shall be provided, as necessary, to allow for healthy plant growth. The selection of plants shall be based on all of the following standards and guidelines:

1. Use plants that are appropriate to the local climate, exposure, and water availability. The presence of utilities and drainage conditions shall also be considered.

COMMENT:

The submitted Planting Plan demonstrates that proposed landscaping accounts for area drainage conditions, climate, exposure, and water availability on site (see Exhibit 4).

2. Plant species that do not require irrigation once established (naturalized) are preferred over species that require irrigation.

3. Trees shall be not less than two-inch caliper for street trees and one and one-half-inch caliper for other trees at the time of planting. Trees to be planted under or near power lines shall be selected so as to not conflict with power lines at maturity.

COMMENT:

The proposed landscaping incorporates drought tolerant plant and tree species where feasible. As required, the proposed street trees meet the above standards and do not present a hazard to power lines (see Exhibit 4).

4. Shrubs shall be planted from five-gallon containers, minimum, where they are for required screens or buffers, and two-gallon containers minimum elsewhere.

5. Shrubs shall be spaced in order to provide the intended screen or canopy cover within two years of planting.

COMMENT:

As demonstrated by the attached Planting Plan, the proposed shrubs will provide screening within two years of planting.

6. All landscape areas, whether required or not, that are not planted with trees and shrubs or covered with allowable non-plant material, shall have ground cover plants that are sized and spaced to achieve plant coverage of not less than 75 percent at maturity.

COMMENT:

As illustrated on the attached Planting Plan, landscaping is provided in all required areas and will achieve the maturity requirements of this section.

7. Bark dust, chips, aggregate, or other non-plant ground covers may be used, but shall cover not more than 35 percent of any landscape area. Non-plant ground covers cannot be a substitute for required ground cover plants.

COMMENT:

As required, the proposed non-plant ground covers are limited to 35% of the landscaped area.

8. Where stormwater retention or detention, or water quality treatment facilities are proposed, they shall meet the requirements of the current version of the Public Works Design Standards.

COMMENT:

The attached Preliminary Stormwater Report and Storm Plan demonstrate that all City Public Works and ODOT standards are met (see Exhibits 4 and 8).

9. Existing mature trees that can thrive in a developed area and that do not conflict with other provisions of this Code shall be retained where specimens are in good health, have desirable aesthetic characteristics, and do not present a hazard.

COMMENT:

The Existing Conditions Plan identifies which trees are proposed for removal to accommodate Phase II of the apartment complex (see Exhibit 4). Where feasible, the applicant will retain existing trees on the subject site. Trees located within the 50-ft. Bear Creek riparian corridor will not be removed or otherwise impacted.

10. Landscape plans shall avoid conflicts between plants and buildings, streets, walkways, utilities, and other features of the built environment.

COMMENT:

As required, the submitted Planting Plan illustrates that plants are located where they will not impact buildings, walkways, parking, utilities, and other features on the site (see Exhibit 4).

11. Evergreen plants shall be used where a sight-obscuring landscape screen is required.

COMMENT:

The attached Planting Plan illustrates that screening meeting the above standards is provided between the proposed parking lot and adjacent uses.

12. Deciduous trees should be used where summer shade and winter sunlight is desirable.

COMMENT:

To fulfill this standard where summer shade and winter light are needed for the apartment complex, deciduous trees are proposed on the attached Planting Plan (see Exhibit 4).

13. Landscape plans should provide focal points within a development, for example, by preserving large or unique trees or groves or by using flowering plants or trees with fall color.

COMMENT:

The attached Planting Plan demonstrates that flowering plants and trees with fall color are incorporated into the landscape design.

14. Landscape plans should use a combination of plants for seasonal variation in color and yearlong interest.

COMMENT:

As required, a variety of plants and trees which provide seasonal variation are utilized throughout the apartment complex (see Exhibit 4).

15. Where plants are used to screen outdoor storage or mechanical equipment, the selected plants shall have growth characteristics that are compatible with such features.

COMMENT:

The applicant does not propose to use plants for outdoor storage or mechanical equipment screening with this development, therefore this standard does not apply.

16. Landscape plans shall provide for both temporary and permanent erosion control measures, which shall include plantings where cuts or fills, including berms, swales, stormwater detention facilities, and similar grading, is proposed.

COMMENT:

The submitted Grading Plan demonstrates that swales and steep slopes are not proposed. Temporary erosion control measures are illustrated on the attached Erosion Control Plan (see Exhibit 4).

17. When new vegetation is planted, soils shall be amended and irrigation provided, as necessary, until the plants are naturalized and able to grow on their own.

COMMENT:

As required, new vegetation will be planted in amended soils with irrigation which complies with the standards of this section.

E. Parking Lot Landscaping. All of the following standards shall be met for parking lots. If a development contains multiple parking lots, then the standards shall be evaluated separately for each parking lot.

1. A minimum of 10 percent of the total surface area of all parking areas, as measured around the perimeter of all parking spaces and maneuvering areas, shall be landscaped. Such landscaping shall consist of shade trees distributed throughout the parking area. A combination of deciduous and evergreen trees, shrubs, and ground cover plants is required. The trees shall be planned so that they provide a partial canopy cover over the parking lot within five years. At a minimum, one tree per 12 parking spaces on average shall be planted over and around the parking area.

COMMENT:

Total parking for the site occupies 23,611 sq. ft., therefore a minimum of 2,361 sq. ft. of landscape area within and around the parking lot is needed to meet the 10% requirement. The proposed landscaped surfaces within the parking lot total 4,737 sq. ft., or 20% of the parking lot area. The attached Planting Plan utilizes a combination of deciduous and evergreen trees with a variety of shrubs and ground cover plants to provide parking area tree canopy and seasonal color in accordance with the above standards (see Exhibit 4).

2. All parking areas with more than 20 spaces shall provide landscape islands with trees that break up the parking area into rows of not more than 10 contiguous parking spaces. Landscape islands and planters shall have dimensions of not less than 48 square feet of area and no dimension of less than six feet, to ensure adequate soil, water, and space for healthy plant growth.

COMMENT:

To meet this requirement for the Phase II parking lot, the Landscape Plan illustrates that landscape islands are spaced a minimum of every 10 parking spaces throughout the parking area. Each of these planters meets the dimensional and planting requirements of this section.

3. All required parking lot landscape areas not otherwise planted with trees must contain a combination of shrubs and groundcover plants so that, within two years of planting, not less than 50 percent of that area is covered with living plants.

COMMENT:

As required, a variety of plants and trees providing seasonal variation are utilized throughout the parking lot area to provide 50% minimum coverage with two-year maturity, as shown on the Planting Plan (see Exhibit 4).

4. Wheel stops, curbs, bollards, or other physical barriers are required along the edges of all vehicle-maneuvering areas to protect landscaping from being damaged by vehicles. Trees shall be planted not less than two feet from any such barrier.

5. Trees planted in tree wells within sidewalks or other paved areas shall be installed with root barriers, consistent with applicable nursery standards.

COMMENT:

The submitted Site Plan demonstrates that curbs are provided along all parking perimeters and surround landscaped beds within the parking area. Root barriers will be provided where needed to prevent walkway lift and parking area impacts.

F. Screening Requirements. Screening is required for outdoor storage areas, unenclosed uses, and parking lots, and may be required in other situations as determined by the Planning Official. Landscaping shall be provided pursuant to the standards of subsections F.1 through 3.

1. Outdoor Storage and Unenclosed Uses. All areas of a site containing or proposed to contain outdoor storage of goods, materials, equipment, and vehicles (other than required parking lots and service and delivery areas, per Site Design Review), and areas containing junk, salvage materials, or similar contents, shall be screened from view from adjacent rights-of-way and residential uses by a sight-obscuring fence, wall, landscape screen, or combination of screening methods. See also Section 17-3.4.040 for related fence and wall standards.

COMMENT:

The waste storage area will be screened by a 6-ft. high chain-link fence with slats. Therefore, landscape screening is not required for the storage area.

2. Parking Lots. The edges of parking lots shall be screened to minimize vehicle headlights shining into adjacent rights-of-way and residential yards. Parking lots abutting a sidewalk or walkway shall be screened using a low-growing hedge or low garden wall to a height of between three feet and four feet.

COMMENT:

Where parking spaces are adjacent to residential yards and rights-of-way, low growing hedges will provide screening as illustrated on the attached Planting Plan (see Exhibit 4).

3. Other Uses Requiring Screening. The Planning Official may require screening in other situations as authorized by this Code, including, but not limited to, outdoor storage areas, blank walls, Special Uses pursuant to Chapter 17-2.3, flag lots, and as mitigation where an applicant has requested an adjustment pursuant to Chapter 17-4.7.

COMMENT:

If required by the Planning Official, landscape screening will be provided where additional mitigation is required.

G. Maintenance. All landscaping shall be maintained in good condition, or otherwise replaced by the property owner.

COMMENT:

As required, landscape maintenance will be provided by the property owner in compliance with this section.

Section 17-3.4.040: Fences and Walls

C. Height

1. Residential Zones. Fences and freestanding walls (i.e., exclusive of building walls) for residential uses shall not exceed the following heights above grade, where grade is measured from the base of the subject fence or wall.

a. Within Front or Street-Facing Side Yard Setback. Four feet; except the following additional height is allowed:

(1) A fence may be constructed to a maximum height of six feet where it is located on a street-facing side yard.

(2) A fence may be constructed to a maximum height of six feet where the fence is of open chain link or other "see-through" composition that allows 90 percent light transmission.

(3) One incidental garden structure (e.g., arbor or gate) not exceeding eight feet in height and six feet in width is allowed within a front or street-facing yard provided it does not encroach into a required vision clearance area.

COMMENT:

Street-facing fencing is not proposed with this development. Therefore, this section is not applicable.

b. Within an Interior Side or Rear Yard

Setback. Six feet; except the fence or wall height, as applicable, shall not exceed the distance from the fence or wall line to the nearest primary structure on an adjacent property.

3. All Zones. Fences and walls shall comply with the vision clearance standards of Section 17-3.3.030.G. Other provisions of this Code, or the requirements of the roadway authority, may limit allowable height of a fence or wall below the height limits of this section.

D. Materials. Prohibited fence and wall materials include straw bales, tarps, barbed or razor wire (except in the M-2 Heavy Industrial zone); scrap lumber, untreated wood (except cedar or redwood), corrugated metal, sheet metal, scrap materials; dead, diseased, or dying plants; and materials similar to those listed herein.

E. Permitting. A Type I approval is required to install a fence of six feet or less in height, or a wall that is four feet or less in height. All other walls and fences require review and approval by the Planning Official through a Type II procedure. The Planning Official may require installation of walls or fences as a condition of approval for development, as provided by other Code sections. A building permit may be required for some fences and walls, pursuant to applicable building codes. Walls greater than four feet in height shall be designed by a Professional Engineer licensed in the State of Oregon.

F. Maintenance. Fences and walls shall be maintained in good condition, or otherwise replaced by the property owner.

COMMENT:

There is no existing fencing along the boundaries or within the Phase II development. The applicant does not propose to install fencing along the site perimeters. Therefore, these standards do not apply.

Section 17-3.4.050: Outdoor Lighting

C. Standards.

1. Light poles, except as required by a roadway authority or public safety agency, shall not exceed a height of 20 feet; pedestal- or bollard-style lighting shall be used to illuminate walkways. Flag poles, utility poles, and streetlights are exempt from this requirement.

2. Where a light standard is placed over a sidewalk or

walkway, a minimum vertical clearance of eight feet shall be maintained.

3. **Outdoor lighting levels shall be subject to review and approval through Site Design Review. As a guideline, lighting levels shall be no greater than necessary to provide for pedestrian safety, property or business identification, and crime prevention.**

4. **Except as provided for up-lighting of flags and permitted building-mounted signs, all outdoor light fixtures shall be directed downward, and have full cutoff and full shielding to preserve views of the night sky and to minimize excessive light spillover onto adjacent properties.**

5. **Lighting shall be installed where it will not obstruct public ways, driveways, or walkways.**

6. **Walkway lighting in private areas shall have a minimum average illumination of not less than 0.2 foot-candles. Lighting along public walkways shall meet the current version of the Public Works Design Standards and AASHTO lighting requirements.**

7. **Active building entrances shall have a minimum average illumination of not less than two foot-candles.**

8. **Surfaces of signs shall have an illumination level of not more than two foot-candles.**

9. **Parking lots and outdoor services areas, including quick vehicle service areas, shall have a minimum illumination of not less than 0.2 foot-candles, average illumination of approximately 0.8 foot-candles, and a uniformity ratio (maximum-to-minimum ratio) of not more than 20:1.**

10. **Where illumination grid lighting plans cannot be reviewed or if fixtures do not provide photometrics and bulbs are under 2,000 lumens, use the following guidelines:**

    a. **Poles should be no greater in height than four times the distance to the property line.**

    b. **Maximum lumen levels should be based on fixture height.**

c. Private illumination shall not be used to light adjoining public right-of-way.

11. Where a light standard is placed within a walkway, an unobstructed pedestrian through zone not less than 48 inches wide shall be maintained.

12. Lighting subject to this section shall consist of materials approved for outdoor use and shall be installed according to the manufacturer's specifications.

D. Permitting. A Type I approval is required to install or replace outdoor lighting. The Planning Official may require lighting as a condition of approval for some projects, pursuant to other Code requirements.

E. Maintenance. For public health and safety, outdoor lighting shall be maintained in good condition, or otherwise replaced by the property owner.

COMMENT:

The attached Site Lighting Plan demonstrates that all of the above lighting standards have been met (see Exhibit 4).

CHAPTER 17-3.5: PARKING AND LOADING

Section 17-3.5.020: Applicability and General Regulations

C. Calculations of Amounts of Required and Allowed Parking.

2. The number of parking spaces is computed based on the primary uses on the site except as stated in subsection C.3. When there are two or more separate primary uses on a site, the minimum and maximum parking for the site is the sum of the required or allowed parking for the individual primary uses. For shared parking, see Section 17-3.5.030.D.

Section 17-3.5.030: Automobile Parking

A. Minimum Number of Off-Street Automobile Parking Spaces. Except as provided by this subsection A, or as required for Americans with Disabilities Act compliance under subsection G, off-street parking shall be provided pursuant to one of the following three standards:

1. The standards in Table 17-3.5.030.A;

2. A standard from Table 17-3.5.030.A for a use that the Planning Official determines is similar to the proposed use; or

3. Subsection B Exceptions, which includes a Parking Demand Analysis option.

Table 17-3.5.030.A identifies Automobile Parking Space Minimum Requirements by Use. The minimum number of parking spaces for Multifamily Use is 2 spaces per 2-bedroom unit and 2.5 spaces per unit with 3 bedrooms or more.

COMMENT:

The attached Transportation Impact Study includes a parking demand analysis which determined that the minimum number of required off-street parking spaces is met for Phase I and Phase II of the development (see Exhibit 6). The submitted Architectural Site Plan indicates that the applicant is proposing to construct 10 two-bedroom and 30 three-bedroom units with the Phase II development (see Exhibit 4). Per Table 17-3.5.030.A, multi-family dwellings require a minimum of 2 parking spaces for two-bedroom units and 2.5 parking spaces for three-bedroom units. Therefore, a minimum of 90 parking spaces are typically required for the proposed use. The applicant is proposing to provide 82 parking stalls for Phase II development, and 201 parking spaces will be provided for the entire parking development. To permit a reduction to the off-street parking standards, the applicant has addressed Section 17-3.5.030(c)(2) in the narrative provided below.

C. Exceptions and Reductions to Off-Street Parking.

2. The applicant may propose a parking standard that is different than the standard under subsections A.1 and 2, for review and action by the Planning Official through a Type I or II procedure. The applicant's proposal shall consist of a written request and a parking analysis prepared by a qualified professional. The parking analysis, at a minimum, shall assess the average parking demand and available supply for existing and proposed uses on the subject site; opportunities for shared parking with other uses in the vicinity; existing public parking in the vicinity; transportation options existing or planned near the site, such as frequent bus service, carpools, or private shuttles; and other relevant factors. This parking analysis applies to a request in the reduction or an increase in parking ratios.

COMMENT:

The attached Transportation Impact Study indicates that the proposed number of parking spaces exceeds the number of spaces required for the Phase I and Phase II development (see Exhibit 6). The analysis finds that the parking demand for a total of 100 dwelling units with a total of 260 bedrooms in a low-income multi-family housing complex is 140 parking spaces. An additional parking demand of 1 space is generated by the office use in Phase I. Since the applicant is proposing to construct a total of 201 parking stalls for both phases of the development, the proposed number of parking spaces exceeds the calculated parking demand. As such, the requested reduction to off-street parking standards meets the standards of this section.

D. Maximum Number of Off-Street Automobile Parking Spaces. The maximum number of off-street automobile parking spaces allowed per site equals the minimum number of required spaces for the use pursuant to Table 17-3.5.030.A, times a factor of:

1. 1.2 spaces for uses fronting a street with adjacent on-street parking spaces; or

2. 1.5 spaces, for uses fronting no street with adjacent on-street parking; or

3. A factor based on applicant's projected parking demand, subject to City approval.

COMMENT:

The applicant is not proposing to exceed parking space maximums set forth in this section.

F. Parking Stall Design and Minimum Dimensions. Where a new off-street parking area is proposed, or an existing off-street parking area is proposed for expansion, the entire parking area shall be improved in conformance with this Code. At a minimum the parking spaces and drive aisles shall be paved with asphalt, concrete, or other City-approved materials, provided the Americans with Disabilities Act requirements are met, and shall conform to the minimum dimensions in Table 17-3.5.030.F and the figures below. All off-street parking areas shall contain wheel stops, perimeter curbing, bollards, or other edging as required to prevent vehicles from damaging buildings or encroaching into walkways, sidewalks, landscapes, or the public right-of-way. Parking areas shall also provide for surface water management, pursuant to Section 17-3.6.050.

COMMENT:

The attached Architectural Site Plan illustrates that the proposed drive aisles are designed to conform with all standards and dimensions set forth in this section. As required, parking area surface water management complies with the Molalla Development Code Storm Drainage and Surface Water Management Facilities as discussed under Section 17-3.6.050.

Per the above standards, City standards require the provision of 18-ft. deep parking stalls and perimeter curbing or wheel stops to prevent vehicles from extending into required walkways and landscape areas. The submitted Architectural Site Plan indicates that the applicant is proposing to meet the parking stall depth standard by installing perimeter curbing within the parking lot which permits vehicle wheels to pull 16-ft. into the parking stall. This alternate design includes the provision of either 2-ft. of additional walkway width or 2-ft. of additional perimeter landscaping around the parking lot so that vehicles can overhang into those adjacent areas and the full 18-ft. stall depth standard is provided (see Exhibit 4). As required, the applicant has addressed how the proposed parking stall design meets Adjustment application approval criteria in the narrative provided below.

H. Americans with Disabilities Act (ADA). Parking shall be provided consistent with ADA requirements, including, but not limited to, the minimum number of spaces for automobiles, van-accessible spaces, location of spaces relative to building entrances, accessible routes between parking areas and building entrances, identification signs, lighting, and other design and construction requirements.

COMMENT:

As required, the attached Site Plan indicates that 4 ADA stalls meeting the above standards are included in the proposed Phase II parking lot (see Exhibit 4).

Section 17-3.5.040: Bicycle Parking

A. Standards. Bicycle parking spaces shall be provided with new development and, where a change of use occurs, at a minimum, shall follow the standards in Table 17-3.5.040.A. Where an application is subject to Conditional Use Permit approval or the applicant has requested a reduction to an automobile-parking standard, pursuant to Section 17-3.5.030.C, the Planning Official may require bicycle parking spaces in addition to those in Table 17-3.5.040.A.

Table 17-3.5.040.A identifies Bicycle Parking Space Minimum Requirements by Use. The minimum number of bicycle parking spaces for Multifamily Use is 2 spaces per 4 dwelling units.

B. Design. Bicycle parking shall consist of staple-design steel racks or other City-approved racks, lockers, or storage lids providing a safe and secure means of storing a bicycle, consistent with the Public Works Design Standards.

D. Hazards. Bicycle parking shall not impede or create a hazard to pedestrians or vehicles, and shall be located so as to not conflict with the vision clearance standards of Section 17-3.3.030.G.

COMMENT:

Per Table 17-3.5.040.A, 20 bicycle parking spaces are required for the proposed 40 unit Phase II development. As demonstrated on the Site Plan, the applicant is proposing to provide a total of 22 covered bicycle parking spaces adjacent to the proposed multi-family buildings, therefore this standard is met (see Exhibit 4).

Section 17-3.5.050: Loading Areas

A. Purpose. The purpose of Section 17-3.5.050 is to provide adequate loading areas for commercial and industrial uses that do not interfere with the operation of adjacent streets.

COMMENT:

The applicant is not proposing a commercial or industrial use for the site, therefore these standards do not apply.

CHAPTER 17-3.6: PUBLIC FACILITIES

Section 17-3.6.040: Sanitary Sewer and Water Service Improvements

A. Sewers and Water Mains Required. All new development is required to connect to City water and sanitary sewer systems. Sanitary sewer and water system improvements shall be installed to serve each new development and to connect developments to existing mains in accordance with the adopted facility master plans and applicable Public Works Design Standards. Where streets are required to be stubbed to the edge of the subdivision, sewer and water system improvements and other utilities shall also be stubbed with the streets, except as may be waived by the City Engineer where alternate alignment(s) are provided.

B. Sewer and Water Plan Approval. Development permits for sewer and water improvements shall not be issued until the City Engineer has approved all sanitary sewer and water plans in conformance with City standards.

COMMENT:

As indicated by the attached Overall Utility Plan, the applicant is proposing to extend public utilities with S Ona Way improvements, including an 8-in. sanitary sewer main and an 8-in. water main. The plan indicates that an 8-in. water main will be extended through the proposed parking lot from S Ona Way and connect to the water main within the Phase I development. The proposed improvements include a new water meter and lateral lines to provide domestic and fire service for the Phase II development (see Exhibit 4). The applicant is proposing to extend sanitary sewer to the Phase II development from the new main line within the S Ona Way right-of-way.

Section 17-3.6.050: Storm Drainage and Surface Water Management Facilities

A. General Provisions. The City shall issue a development permit only where adequate provisions for stormwater runoff have been made in conformance with the requirements of the current version of the Public Works Design Standards and Stormwater Master Plan.

B. Accommodation of Upstream Drainage. Culverts and other drainage facilities shall be large enough to accommodate existing and potential future runoff from the entire upstream drainage area, whether inside or outside the development. Such facilities shall be subject to review and approval by the City Engineer.

C. Effect on Downstream Drainage. Where it is anticipated by the City Engineer that the additional runoff resulting from the development will overload an existing drainage facility, the City shall withhold approval of the development until provisions have been made for improvement of the potential condition or until provisions have been made for storage of additional runoff caused by the development in accordance with City standards.

E. Existing Watercourse. Where a proposed development is traversed by a watercourse, drainage way, channel, or stream, the City may require a stormwater easement or drainage right-of-way conforming substantially with the lines of such watercourse and such further width as will be adequate for conveyance and maintenance to protect the public health and safety.

COMMENT:

The applicant's Overall Utility Plan indicates that Stormwater will be managed using subsurface detention pipes and a water quality vault before drainage is discharged at the pre-development rate into an existing Bear Creek culvert within in S Ona Way. As required, the storm facilities have been designed to accommodate upstream drainage and will not create a negative impact on downstream drainage.

Section 17-3.6.060: Utilities

B. Underground Utilities.

1. General Requirement. The requirements of the utility service provider shall be met. All utility lines in new subdivisions, including, but not limited to, those required for electric, communication, and lighting, and related facilities, shall be placed underground, except where the City Engineer determines that placing utilities underground would adversely impact adjacent land uses. The Planning Official may require screening and buffering of above ground facilities to protect the public health, safety, or welfare.

COMMENT:

As required, all utilities will be placed underground in accordance with the standards of this section.

CHAPTER 17-4.1: GENERAL REVIEW PROCEDURES

Section 17-4.1.040: Type III Procedure (Quasi-Judicial Review – Public Hearing)

Type III decisions are made by the Planning Commission after a public hearing, with an opportunity for appeal to the City Council.

A. Application Forms. Applications requiring Quasi-Judicial Review shall be made on forms provided by the Planning Official.

1. Application Forms. Applications requiring Quasi-Judicial Review shall be made on forms provided by the Planning Official.

2. Submittal Information. The Planning Official shall advise the applicant on application submittal requirements. At a minimum, the application shall include all of the following information:

a. The information requested on the application form;

b. Plans and exhibits required for the specific approval(s) being sought;

c. A written statement or letter explaining how the application satisfies each and all of the

relevant criteria and standards in sufficient detail;

d. Information demonstrating compliance with prior decision(s) and conditions of approval for the subject site, as applicable; and

e. The required fee.

f. Comments, if obtained from neighborhood contact per Section 17-4.1.070.

COMMENT:

The attached Transportation Impact Statement indicates that the proposed development will generate more than 100 average daily trips, therefore the Type III procedure is appropriate to this application. All Type III Procedure review materials listed above have been included with this application.

CHAPTER 17-4.2: SITE DESIGN REVIEW

Section 17-4.2.040: Application Submission Requirements

A. General Submission Requirements.

1. Information required for Type II or Type III review, as applicable (see Chapter 17-4.1).

2. Public Facilities and Services Impact Study. The impact study shall quantify and assess the effect of the development on public facilities and services. The City shall advise as to the scope of the study. The study shall address, at a minimum, the transportation system, including required improvements for vehicles and pedestrians; the drainage system; the parks system; water system; and sewer system. For each system and type of impact, the study shall propose improvements necessary to meet City requirements. The City may require a Traffic Impact Analysis pursuant to Section 17-3.6.020.A(4).

B. Site Design Review Information. In addition to the general submission requirements, an applicant for Site Design Review shall provide the following information, as deemed applicable by the Planning Official. The Planning Official may request any information that he or she needs to review the proposal and prepare a complete staff report and recommendation to the approval body.

1. **Site Analysis Map.**

2. **Proposed Site Plan.**

3. **Architectural Drawings.**

4. **Preliminary Grading Plan.**

5. **Landscape Plan.**

6. **Deed Restrictions.**

7. **Narrative.**

8. **Traffic Impact Analysis, when required by Section 17-3.6.020.A(4).**

9. **Other information determined by the Planning Official. The City may require studies or exhibits prepared by qualified professionals to address specific site features or project impacts (e.g., traffic, noise, environmental features, natural hazards, etc.), as necessary to determine a proposal's conformance with this Code.**

COMMENT:

All of the Site Design Review materials listed above have been included with this application, including the Public Facilities and Services Impact Study (see Exhibit 7). The attached Transportation Impact Statement indicates that the proposed development will generate more than 100 average daily trips, therefore this application will be reviewed through a Type III procedure (see Exhibit 6).

Chapter 17-4.7: ADJUSTMENTS AND VARIANCES

Section 17-4.7.030: Adjustments

Adjustments are minor modifications to code standards that are intended to provide reasonable flexibility for planned land uses and development. Adjustments are subject to the following standards and procedures. Permitted uses, as provided in Division II, shall not be adjusted.

A. Applicability. The Planning Official or Planning Commission, through a Type II procedure, may adjust the following standards:

5. Other Dimensional Standards. Up to a 20 percent increase or decrease in a quantitative (numerical) standard not listed above. This option is limited to

standards in Division II (Tables 17-2.2.040.D and 17-2.2.040.E, and Chapter 17-2.3 Special Use Standards) and Division III; it does not include building code requirements, engineering design standards, public safety standards, or standards implementing state or federal requirements, as determined by the Planning Official.

COMMENT:

Division III, Section 1703.5.030.F standards require the provision of 18-ft. deep parking stalls and perimeter curbing or wheel stops to prevent vehicles from extending into required walkways and landscape areas. The applicant is proposing to install perimeter curbing within the parking lot which permits vehicle wheels to pull 16-ft. into the parking stall. An additional 2-ft. of vehicle overhang depth is provided beyond the wheel stop/curb with the provision of 2-ft. of additional walkway or landscaping width around the parking lot. The proposed modification to the parking stall design standard is a 11% reduction to the dimensional standard, therefore the modification may be granted through the approval of an Adjustment application.

B. Approval Criteria. The City may grant an Adjustment only upon finding that all of the following criteria are met. The burden is on the applicant to demonstrate compliance with the criteria.

1. The Adjustment allows for a building plan that is more compatible with adjacent land uses, or it does not create a conflict with adjacent uses;

COMMENT:

The attached Architectural Site Plan demonstrates that the proposed Adjustment does not reduce perimeter setbacks or landscape areas between the proposed parking lot and adjacent uses. Since an additional 2-ft. of walkway or landscape area is provided for the vehicle overhang area, the Adjustment does not create a conflict with adjacent uses.

2. The Adjustment is necessary to allow for normal interior building functions, such as mechanical equipment/utility closets, heating and ventilation systems, restrooms, stockrooms, shelving, and similar interior building functions;

COMMENT:

The applicant is not requesting an adjustment to the multi-family development standards of Section 17-2.3.080 or to the residential building standards of Section 17-3.2.030. Therefore, the above criterion does not apply.

3. Approval of the Adjustment does not create: (a) violation(s) of any other adopted ordinance or code standard, and (b) does not create the need for a

Variance;

COMMENT:

The requested Adjustment is limited to the parking stall design standards of Section 1703.5.030.F to provide an alternate design with 16-ft. of paved depth for the proposed parking stalls. Since the applicant is increasing the width of the adjacent landscape areas or walkways by 2-ft., a total of 18-ft. of stall depth is provided, and the proposed 2-ft. vehicle overhang into those areas will not result in a Code violation or need for a Variance.

4. An application for an Adjustment is limited to one lot per application;

COMMENT:

The subject site consists of only one tax lot, therefore this criterion is met.

5. Requests for more than one Adjustment on the same lot shall be consolidated on one application and reviewed concurrently by the City;

COMMENT:

The applicant is only requesting one Adjustment on the subject site, therefore this criterion does not apply.

6. Not more than three Adjustments may be approved for one lot or parcel in a continuous 12-month period; and

COMMENT:

No other Adjustment requests have been approved for the subject site during the previous 12-month period, therefore the above criterion does not apply.

7. All applicable building code requirements and engineering design standards shall be met. (Ord. 2017-08 §1)

COMMENT:

Parking stall design standards are regulated by Division III, Section 1703.5.030.F of the Molalla Development Code. The submitted Architectural Site Plan demonstrates that the proposed Adjustment to the parking stall design standard does not impact the development's ability to meet engineering design standards or building code requirements (see Exhibit 4).

V. SUMMARY AND CONCLUSIONS

Based upon the findings of this Applicant's Statement and the submitted exhibits, the applicant has demonstrated compliance with relevant sections of the Molalla Development Code. Therefore, the applicant requests that the submitted application be approved.

VI. EXHIBITS

1. **Application Form**

2. **Property Deed**

3. **City Pre-Application Conference Notes**

4. **Preliminary Development Plans**

    a. **Civil Plans**
    b. **Landscape Plans**
    c. **Architectural Plans**

5. **Geotechnical Report**

6. **Transportation Impact Study**

7. **Public Facilities and Services Impact Study**

APPLICATION FORM

EXHIBIT 1

Community Development Department
315 Kennel Ave/PO Box 248
Molalla, OR 97038
Phone 503.759.0205
www.cityofmolalla.com

LAND USE ACTION APPLICATION

Type of land use action requested (more than one may apply)

Annexation:	☐	Conditional Use:	☐
Zone Change:	☐	Partition:	☐
Comp Plan Amendment:	☐	Site Design Review:	☑
Master Plan Development:	☐	Variance:	☐
Subdivision:	☐	Other:	

Applicant information

Name: Green Light - Home First LLC, Attn. Tim Lawler Phone: 503-528-6129

Mailing Address: 3050 SE Division Street #270

City: Portland State: OR Zip: 97202

Email: tim@gl-dev.com

Owner Information

Name: Green Light - Home First LLC, Attn. Tim Lawler Phone: 971-222-8282

Mailing Address: 3050 SE Division Street #270

City: Portland State: OR Zip: 97202

Email: rob@hfdpartners.com

Property Information

Site address: 105 S. Ona Way

Zoning district: R-3 Overlay: _____ Tax lot #1600

Tax Account Number(s): 01092285 T: 5S R: 2E S: 08C

Property dimensions: 205' x 426' Property acreage: 1.96 acres

Surrounding property uses; North: R.O.W. South: Resid. East: Resid.

West: R.O.W. Topography: Generally Flat

Project Information

Description of Proposal: Proposed 40-unit apartment complex that will connect to approved apartment complex to the east of the site, and will have access to S. Ona Way to the west of the site.

Describe all existing buildings or structures on property: Subject site currently contains a single-family dwelling that will be removed with the proposed development.

Prior Use: Single-Family Residential

Current Use: Single-Family Residential

Proposed Use: Multiple-Family Residential

City Utilities Impacted: **Water:** ☑ **Sewer:** ☑ **Stormwater:** ☑ **None:** ☐

Site Plan(s) and Documents Required

1. Ownership documents if different than Clackamas County CMAP property information.
2. Provide All Easements, Covenants, Conditions, Restrictions, and Encumbrances on the property – Attach to this form.
3. Provide Elevation profiles meeting architectural standards of MCC 17-3.2.030 (D)
4. If your project is subservient to a prior project(s) please provide:
   - Planning File Number(s): _____
   - Subdivision name/date approved: _____
   - Special Planning Permits (attach): Conditional Use/Variance/Other: _____
   - Planning Conditions of Approval (attach)
5. Site/Plot Plan

   Plot Plan Requirements
   - Applicant's name and address.
   - Legal description of the property (Township, Range, Section and Tax Lot).
   - SITE PLAN MUST INCLUDE DIMENSIONS OF ALL EXISTING AND PROPOSED STRUCTURES, PROPERTY LINES, SETBACKS, AND DRIVEWAYS.
   - Direction of North.
   - Driveway location and location of adjacent streets.
   - Proposed and existing structures.
   - Location of any existing wells on the property.
   - Walkways, patios, patio slabs, and mechanical units (e.g. air conditioning unit)
   - Location of existing and proposed utility connections.
   - Approximate ground slope and direction of the slope.
   - Property Lines.
   - Position of all creeks, streams, ponds, springs, or other drainageways.
   - Relative elevations (1) At lot corners or construction area, and (2) At building site.
   - Existing and proposed easements.
   - All streets abutting the property.
   - All existing and proposed site features must be included and labeled as such.
   - You must also indicate what is proposed to remain and what is proposed to be removed.

Owner Signature(s): _____ Date: 11-28-22

Staff Use Only

File #: _____ Initial Fee Amount Paid: _____ Receipt #: _____

Date Fee & Application Received: _____ Person doing intake: _____

PROPERTY DEED

EXHIBIT 2

WFG Title 22-354911 Comm

Clackamas County Official Records
Sherry Hall, County Clerk
2022-056902
10/27/2022 10:24:02 AM
D-D Cnt=1 Stn=73 LESLIE
$20.00 $16.00 $10.00 $62.00
$108.00

File No.: 22-354911

Grantor
Katie R. Holmes C/O Hope Animal Hospital (Personal & Confidential) 319 N Molalla Ave Molalla, OR 97038
Grantee
Green Light - Home First , LLC, an Oregon limited liability company 3050 SE Division Street, Ste 270 Portland, OR 97202
After recording return to
Green Light - Home First , LLC, an Oregon limited liability company 3050 SE Division Street, Ste 270 Portland, OR 97202
Until requested, all tax statements shall be sent to
Green Light - Home First , LLC, an Oregon limited liability company 3050 SE Division Street, Ste 270 Portland, OR 97202 Tax Acct No(s): 52E08C 01600, 01092285

Reserved for Recorder's Use

STATUTORY WARRANTY DEED

Katie R. Holmes, Grantor(s) convey and warrant to Green Light - Home First , LLC, an Oregon limited liability company, Grantee(s), the real property described in the attached Exhibit A, subject only to those liens and encumbrances set forth on the attached Exhibit B.

The true consideration for this conveyance is **$1,300,000.00**. (Here comply with requirements of ORS 93.030)

BEFORE SIGNING OR ACCEPTING THIS INSTRUMENT, THE PERSON TRANSFERRING FEE TITLE SHOULD INQUIRE ABOUT THE PERSON'S RIGHTS, IF ANY, UNDER ORS 195.300, 195.301 AND 195.305 TO 195.336 AND SECTIONS 5 TO 11, CHAPTER 424, OREGON LAWS 2007, SECTIONS 2 TO 9 AND 17, CHAPTER 855, OREGON LAWS 2009, AND SECTIONS 2 TO 7, CHAPTER 8, OREGON LAWS 2010. THIS INSTRUMENT DOES NOT ALLOW USE OF THE PROPERTY DESCRIBED IN THIS INSTRUMENT IN VIOLATION OF APPLICABLE LAND USE LAWS AND REGULATIONS. BEFORE SIGNING OR ACCEPTING THIS INSTRUMENT, THE PERSON ACQUIRING FEE TITLE TO THE PROPERTY SHOULD CHECK WITH THE APPROPRIATE CITY OR COUNTY PLANNING DEPARTMENT TO VERIFY THAT THE UNIT OF LAND BEING TRANSFERRED IS A LAWFULLY ESTABLISHED LOT OR PARCEL, AS DEFINED IN ORS 92.010 OR 215.010, TO VERIFY THE APPROVED USES OF THE LOT OR PARCEL, TO DETERMINE ANY LIMITS ON LAWSUITS AGAINST FARMING OR FOREST PRACTICES, AS DEFINED IN ORS 30.930, AND TO INQUIRE ABOUT THE RIGHTS OF NEIGHBORING PROPERTY OWNERS, IF ANY, UNDER ORS 195.300, 195.301 AND 195.305 TO 195.336 AND SECTIONS 5 TO 11, CHAPTER 424, OREGON LAWS 2007, SECTIONS 2 TO 9 AND 17, CHAPTER 855, OREGON LAWS 2009 AND SECTIONS 2 TO 7, CHAPTER 8, OREGON LAWS 2010.

Executed this 25th day of October, 2022

_____ Date: 10/25/2022
Katie R. Holmes

STATE OF OREGON
COUNTY OF CLACKAMAS

This instrument was acknowledged before me this 25th day of October, 2022 by Katie R. Holmes.

_____
Notary Public for Oregon
My Commission Expires: 8/9/2024

OFFICIAL STAMP
LANA RENEE WILSON
NOTARY PUBLIC - OREGON
COMMISSION NO. 1002699
MY COMMISSION EXPIRES AUGUST 09, 2024

EXHIBIT "A"
LEGAL DESCRIPTION

The following described real property in the Rachel Lerkin Donation Land Claim No. 43 in Section 8, Township 5 South, Range 2 East of the Willamette Meridian, in the City of Molalla, County of Clackamas and State of Oregon, described as follows:

BEGINNING at the intersection of the Southerly line of Market Road No. 32 with the Easterly line of One Way Road No.1303; thence Easterly along the Southerly line of said Market Road 205 feet; thence Southerly, parallel with the Easterly line of said One Way Road, 425 feet; thence Westerly, parallel with the Southerly line of the aforesaid Market Road, 205 feet to the Easterly line of aforesaid One Way Road; thence Northerly along the Easterly line of Ona Way Road 425 feet to the point of beginning.

EXHIBIT "B"
Exceptions

1. Rights of the public in and to any portion of the herein described premises lying within the boundaries of streets, roads or highways.

2. Matters as disclosed by Survey by Richard H. Kennedy dated October 13, 2022, Job No. 22019:
   As follows : 3 foot Wood fence 0 inches to 3.1 inches North into Hwy 211 Right-of-way for plus 108 feet.

CITY PRE-APPLICATION CONFERENCE NOTES

EXHIBIT 3

Planning Department
117 N Molalla Avenue
PO Box 248
Molalla, Oregon 97038
Phone: (503) 759-0205
communityplanner@cityofmolalla.com

Planning Process Summary: PRE02-2022

Applicant:	Green Light - Home First LLC
Site Address (or TLNO):	105 S Ona WY
Site Zoning:	Medium-High Density Residential (R-3)
Proposed Use:	New 40 Unit Apartment Complex
Pre-App Conference Date:	March 31, 2022

Site Design Review

Process

- Per Molalla Municipal Code (MMC) Section 17-4.2.020 site design review is required.
- Per Molalla Municipal Code Section 17-4.2.030 the project meets thresholds for Type III Review: Quasi-Judicial Review with a Public.
- Type III Review processes are explained in Molalla Municipal Code Section 17-4.1.040.

Timeline

- Upon application submittal, the City has ***30 days*** for "Completeness Review" to determine whether the project meets submission requirements of 17-4.2.040 Application Submission Requirements
- If the project is deemed complete the City has ***120 days*** from that Completeness determination to bring the project to hearing and render a decision
- If the submission is not complete the Applicant has ***180 days*** from the incompleteness determination to resubmit a complete application
- If the project is not appealed, the Decision becomes final 10 days after issuance of a notice of decision
- If *approved*, the Applicant may submit plans for Public Works Civil Review and building permit authorization, integrating all conditions of approval, upon the decision becoming final. Applicant may concurrently apply for building permits with Clackamas County through their Development Direct Portal. Be advised that any changes to the site plan required by.

Applicable Approval Criteria (Section 17-4.2.050 Approval Criteria)

Staff has determined that narrative responses to each criterion from the sections below are required:

Submission Requirements:

Section 17-4.1.040 A Type III Procedure Submittal Information
Section 17-4.2.040 (Site Design Review) Submission Requirements

Approval Criteria (Narrative Response Required)

Chapter 17, Division 4
Section 17-4.2.050 (Site Design Review)

Applicable Design Standards Narrative Criteria

Chapter 17, Division 2
Section 17-2.2.030 Allowed Uses
Section 17-2.2.040 Lot and Development Standards
Section 17-2.3.080 Multifamily Development
Section17-2.4.030 Water Resources (WR) Overlay*****

Chapter 17, Division 3
Section 17-3.2.030 Residential Buildings
Chapter 17-3.3 Access and Circulation
Chapter 17-3.4 Landscaping, Fences and Walls, Outdoor Lighting,
Chapter 17-3.5 Parking and Loading
Chapter 17-3.6 Public Facilities

*****Confirm extent of riparian zone around Bear Creek

Molalla Planning Department Fees

- Type III Site Design Review: $3000
- Multifamily Building Permit Authorization: $575 + $75 per unit up to 20 units; $15 per additional unit over 20 units
- Contact Clackamas County Building Dept for building permit fees

Questions From Applicant

1. Has there been any other Land Use action for the Property? If so, can you provide the Staff Report?

   Staff Response: The City is not aware of any.

2. Are there any deferred assessments or fees associated with developing the property?

   Staff Response: The City is not aware of any.

3. Can you provide as-built drawings for the public sewer, water and storm drain facilities adjacent to the site?

   Staff Response: To the extent we have them. To the extent that we don't we can provide GIS mapping. Water and sewer are available in OR-211.

4. Does the sewer have adequate capacity to serve the site?

   Staff Response: The City is currently doing a study to determine reserve capacity. This will be completed in the coming month. Incoming development can then determine capacity based on projected impact. You have the option of doing one capacity study to accommodate both phases.

5. Does the water have adequate capacity for domestic and fire service?

   Staff Response: Yes. Loop Phase 1 to Ona Way. Pressure is high citywide.

6. Do you have a fire flow test on a FH in the area?

   Staff Response: Underway. We will provide that information to you.

7. What is the static pressure of the water system in the area?

   Staff Response: Between 80-90 psi. Residual around 75 psi.

8. Is there adequate storm drain facilities to serve the property?

Staff Response: ODOT can respond to 211 connection for storm. City does not have adequate connection for storm on Ona Way. City recommends connecting to existing storm with lot consolidation.

9. Will the City release a Civil Sitework Permit ahead of the Building Permit?

   Staff Response: Yes. Note that civil site plans will need to match submitted design plans for building permits and authorization.

10. Land Development code changes that you are aware of in the near future?

    Staff Response: Nothing on the current docket that would affect this proposal. Staff does intend to update the development code to meet Comp Plan requirements for park dedications and fee in lieu of. A timeline for this process has not been set.

11. Is a traffic study required to be submitted with the Land Use application?

    Staff Response: Yes. Refer to MMC 17-3.6.020 Transportation Standards 4.a to determine whether a TAL or TIS is required. Can update existing traffic study for Phase I.

12. Any other traffic impacts/requirements known that need to be mitigated?

    Staff Response: Contact Tom Strader with SCTA Tom Strader (tstrader@sctd.org) to discuss the bus stop. The City welcomes improvements that can be made to the stop. It could be a real asset to the apartments and community.

    Otherwise, as determined by the traffic analysis. Defer to ODOT on OR-211. Yes.

13. Street improvements on ONA Way?

    Staff Response: Yes. Three-quarter street, improvement in accordance with the Molalla Transportation Systems Plan (TSP). Ona Way is classified as a local street in our Transportation System plan. Use Table 20, Local Street Cross Section

14. Public sewer lines along property line from walkway of adjacent property to the NW of our lot.

    Staff Response: 8" Sewer main stubbed into ONA Way will need to be extended to the high point on the road.

15. Can you provide an SDC Estimate? Any SDC Changes / increases coming?

Staff Response: Provide Sam Miller with meter size's / Total site area with impervious and pervious area / Total EDU (40) and we can provide an estimate. Proposed SDC increase in July. Council may revoke that increase.

16. Can you confirm Height and Setback requirements

Staff Response: Refer to table MMC Table 17-2.2.040.D. Note that the riparian zone from Bear Creek may impact the southwest corner of the property.

Design Feedback From Staff

General: Feedback in this document is based on the Applicant's stated intention to keep the two phases as separate lots. If this arrangement changes, we can discuss those parameters.

Open Space – 15% requirement with amenities for common open space with 20x20 dimensions counting. Not sure this orientation meets MMC 17-2.3.080. If combining open space with the adjacent property then a deed provision will be required guaranteeing perpetual joint use and narrative/plans should show how total landscaping will meet the requirement.

Building Orientation and Design – Ensure primary entrances to buildings from ROW to meet orientation standards. Can connect through a breezeway. House plan variety provisions did not meet standards of 17-3.2.030 D, 3 in the first phase. This project will be considered in conjunction with Phase 1 so adjacent/opposite buildings must have varying elements.

Access – Check distance from HWY 211 for spacing standards. Staff recommends moving the access to the southernmost portion of Ona Way. This could open up the center portion between the two properties for a larger, more usable green space. Joint access easement requirement between the two properties will be required for both properties. Ensure pedestrian routes make direct connections between buildings and to the roadway. The addition of an access from Ona Way, as proposed, is required.

Landscaping – Not much to comment on from submitted plans. 20% total requirement for R-3 zones, which includes the common open space for multi-family. Continue streetscape plan from Phase 1.

Parking – Assuming the buildings are split into 20 2-bedroom and 20 3-bedroom units 90 spaces will be required. Refer to parking standards of MMC 17-3.5.030 and 040 for bicycles. Ensure rows of 10 spaces are broken up by landscape islands.

PRELIMINARY DEVELOPMENT PLANS

EXHIBIT 4

DRAWINGS FOR:

MOLALLA APARTMENTS PHASE II

31600 S ONA WAY
MOLALLA, OR 97038

FOR:

HOME FIRST DEVELOPMENT PARTNERS
866 N. COLUMBIA BLVD, SUITE A-25
PORTLAND, OR 97217

PROJECT MANAGER: ROB JUSTUS
360-530-9914

DRAWING INDEX

DWG	TITLE
C1.0	COVER SHEET, VICINITY & LOCATION MAPS, DRAWING INDEX
C1.1	CONSTRUCTION NOTES
C1.2	CONSTRUCTION NOTES
C1.3	CITY OF MOLALLA CONSTRUCTION NOTES
C2.0	EXISTING CONDITIONS, EROSION CONTROL, & DEMOLITION PLAN
C2.1	EROSION CONTROL PLAN - STREETS & UTILITIES
C2.2	EROSION CONTROL PLAN - VERTICAL CONSTRUCTION
C2.3	EROSION CONTROL PLAN - FINAL LANDSCAPE & STABILIZATION
C2.4	EROSION CONTROL NOTES & DETAILS
C2.5	EROSION CONTROL NOTES & DETAILS
C2.6	EROSION CONTROL NOTES & DETAILS
C3.0	GRADING & DRAINAGE PLAN
C3.1	SURFACING PLAN
C3.2	FIRE ACCESS PLAN
C4.0	OVERALL UTILITY PLAN
*C5.0	ONA WAY IMPROVEMENTS PLAN-PROFILE STA 9+60 to STA 15+00
*C5.1	ONA WAY GRADING BLOW UP PLAN
*C5.2	ONA WAY CROSS SECTIONS
*C5.3	ONA WAY SEWER & WATERLINE
*C5.4	SITE PUBLIC WATERLINE PLAN-PROFILE
*C6.0	PRIVATE CIVIL DETAILS
*C6.1	PRIVATE CIVIL DETAILS
*C6.2	PRIVATE CIVIL DETAILS
*C6.3	CITY OF MOLALLA CIVIL DETAILS
*C6.4	CITY OF MOLALLA CIVIL DETAILS

* PUBLIC IMPROVEMENT SHEETS

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

CIVIL ENGINEER:

WESTECH ENGINEERING, INC.
3841 Fairview Industrial Dr SE, Suite 100
Salem, Oregon 97302

Steve Ward, PE
Phone: (503) 585-2474
Email: sward@westech-eng.com

SURVEYOR:

ASC SURVEYING, LLC.
8427 SW Dakota Dr
Tualatin, Oregon 97062

Richard H. Kennedy, PLS
Phone: (971) 224-5471
Email: rich@ascsurveying.com

DEVELOPER:

HOME FIRST DEVELOPMENT PARTNERS
866 N. Columbia Blvd, Suite A-25
Portland, Oregon 97217

Rob Justus, Owner
Phone: (971) 222-8282
rob@hfdpartners.com

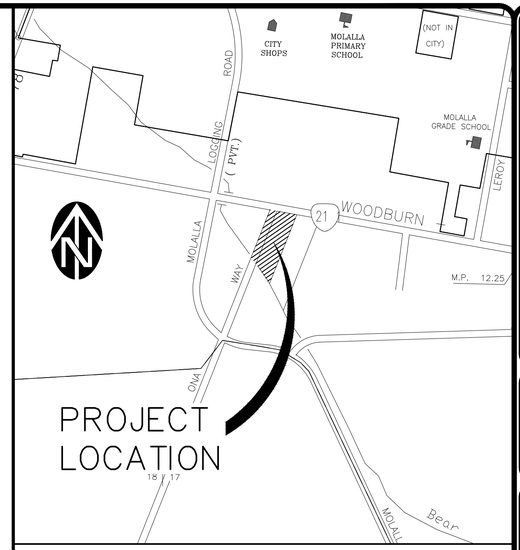
ODOT DISTRICT 2C CONTACT:

2225 NW Campus Dr
Estacada, Oregon 97023

Loretta Kieffer, District 2C Access Coordinator
Phone: (503) 667-7441
Cel: (503) 314-5702
Loretta.l.kieffer@odot.oregon.gov

FRANCHISE UTILITY CONTACTS:

PORTLAND GENERAL ELECTRIC	(503) 228-6322
NW NATURAL GAS	(503) 226-4211
MOLALLA COMMUNICATIONS	(503) 829-1100
WAVE BROADBAND	(503) 982-4085
CITY OF MOLALLA	(503) 759-0217



VICINITY MAP

GENERAL LEGEND

FOUND MONUMENT	SUBJECT PROPERTY
GUY WIRE	FENCELINE
LIGHT POLE	FENCELINE
UTILITY POLE	FENCELINE
WATER METER	EXISTING CONTOUR MAJOR
WATER VALVE	EXISTING CONTOUR MINOR
TELEPHONE RISER	GAS LINE
SANITARY SEWER CLEANOUT	WATER LINE
SANITARY SEWER MANHOLE	OVERHEAD POWER LINE
SIGN POST	UNDERGROUND POWER
STORMWATER CATCH BASIN	SANITARY SEWER LINE
STORMWATER MANHOLE	STORM LINE
GUY ANCHOR POLE	TELEPHONE LINE
UTILITY VAULT	BUILDING
MAILBOX	CONCRETE SURFACE
CONIFEROUS TREE WITH SIZE	PAVEMENT SURFACE
DECIDUOUS TREE WITH SIZE	
ELEVATION SPOTGRADE	
BENCHMARK	
DIMENSION POINT NOTHING SET OR FOUND	

ELEVATIONS SHOWN HEREON ARE BASED ON A 3-1/4" BRASS DISK IN MONUMENT WELL AT THE INTERSECTION OF STATE HIGHWAY 211 & SOUTH ONA WAY SHOWN AS A CLACKAMAS BENCHMARK ON THE IMPROVEMENT PLANS FOR "CASCADE CENTER."

ELEV: 340.16 (NAVD 88)

BY	DESCRIPTION	NO.	DATE
	REVISIONS	1	

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

DSN. SAW
DRN. AR
CKD. SAW
DATE: DEC 2021

REGISTERED PROFESSIONAL ENGINEER
OREGON JULY 16, 1982
STEVEN A. WARD
REVIEW
RENEWS: 6/30/2024

WESTECH ENGINEERING, INC.
CONSULTING ENGINEERS AND PLANNERS
3841 Fairview Industrial Dr. S.E., Suite 100, Salem, OR 97302
Phone: (503) 585-2474 Fax: (503) 585-3986
E-mail: westech@westech-eng.com

MOLALLA APARTMENTS PHASE II
HOME FIRST DEVELOPMENT PARTNERS

COVER SHEET,
VICINITY & LOCATION MAPS,
& DRAWING INDEX

DRAWING
C1.0

JOB NUMBER
3312.1000.0

2/24/2023 4:00:16 PM
R:\Dwg\Home First Development Partners\Molalla Apartments Phase 2\Civil\Plots\C1.0 Cover.dwg, (Layout1 tab)

GENERAL NOTES

1. Contractor shall procure and conform to all construction permits required by the City of Molalla and ODOT.

2. Owner to pay all project permit costs, including but not limited to utility tapping, TV, and chlorination costs. The Contractor shall coordinate with the Approving Agency to determine appropriate fees and provide the Owner with 48 hours notice prior to the required payment of fees or costs. Contractor to apply for and pay all Private Plumbing and Electrical Permits

3. Oregon law requires the Contractor to follow rules adopted by the Oregon Utility Notification Center. Those rules are set forth in OAR 952–001–0010 through OAR 952–001–0090. Obtain copies of the rules by calling the center. (Note: the telephone number for the Oregon Utility Notification Center is 503–232–1987).

4. Contractor to notify City, ODOT, and all utility companies a minimum of 48 business hours (2 business days) prior to start of construction, and comply with all other notification requirements of the Approving Agency with jurisdiction over the work.

5. Contractor shall provide all bonds and insurance required by public and/or private agencies having jurisdiction. Where required by public and/or private agencies having jurisdiction, the Contractor shall submit a suitable maintenance bond prior to final payment.

6. All materials and workmanship for facilities in street right–of–way or easements shall conform to Approving Agencies' construction specifications wherein each has jurisdiction, including but not limited to the City, Oregon Health Division (OHD), and the Oregon Department of Environmental Quality (DEQ).

7. Unless otherwise approved by the Public Works Director, construction of all public facilities shall be done between 7:00 a.m. and 6:00 p.m., Monday through Saturday.

8. The Contractor shall perform all work necessary to complete the project in accordance with the approved construction drawings including such incidentals as may be necessary to meet the Approving Agencies' requirements and provide a completed project.

9. Any inspection by the City, ODOT, or other Approving Agency shall not, in any way, relieve the Contractor from any obligation to perform the work in strict compliance with the contract documents, applicable codes, and Approving Agency requirements.

10. Contractor shall maintain one complete set of approved drawings on the construction site at all times whereon he will record all approved deviations in construction from the approved drawings, as well as the station locations and depths of all existing utilities encountered. These field record drawings shall be kept up to date at all times and shall be available for inspection by the Approving Agency or Owner's Representative upon request. Failure to conform to this requirement may result in delay in payment and/or final acceptance of the project.

11. Upon completion of construction of all new facilities, Contractor shall submit a clean set of field record drawings containing all as–built information to the Engineer. All information shown on the Contractor's field record drawings shall be subject to verification. If significant errors or deviations are noted, an as–built survey prepared and stamped by a registered professional Land Surveyor shall be completed at the Contractor's expense.

12. Contractor shall procure and conform to DEQ stormwater permit No. 1200C for construction activities where 1 acre or more are disturbed.

13. The contractor shall retain and pay for the services of a registered Civil Engineer and/or Land Surveyor licensed in the State of Oregon to establish construction control and perform initial construction surveys to establish the lines and grades of improvements as indicated on the drawings. Staking for buildings, structures, curbs, gravity drainage pipes/structures and other critical improvements shall be completed using equipment accurate to 0.04 feet horizontally and 0.02 feet vertically, or better. Use of GPS equipment for final construction staking of these critical improvements is prohibited. The registered professional surveyor shall provide the design engineer with copies of all grade sheets for construction staking performed for the project.

14. See architectural drawings for site lighting, site dimensioning, and continuation of all utilities.

TRAFFIC CONTROL:

15. Contractor shall erect and maintain barricades, warning signs, traffic cones (and all other traffic control devices required) per City and ODOT requirements in accordance with the current MUTCD (including Oregon amendments). Access to driveways shall be maintained at all times. All traffic control measures shall be approved and in place prior to any construction activity. Prior to any work in the existing public right–of–way, Contractor shall submit final traffic control plan to the Approving Agency for review and issuance of a Lane Closure or Work in Right–of–Way Permit. The Traffic Control Plan shall include provisions to route pedestrians around and through the work area in accordance with ODOT Standards.

TESTING AND INSPECTION:

16. For public and private improvements, the Contractor shall be responsible to ensure that all required or necessary inspections are completed by authorized inspectors prior to proceeding with subsequent work which covers or that is dependent on the work to be inspected. Failure to obtain necessary inspection(s) and approval(s) shall result in the Contractor being fully responsible for all problems and/or corrective measures arising from uninspected work.

17. Unless otherwise specified, the attached "Required Testing and Frequency" table outlines the minimum testing schedule for private improvements on the project. This testing schedule is not complete, and does not relieve the Contractor of the responsibility of obtaining all necessary inspections or observations for all work performed, regardless of who is responsible for payment. Cost for retesting shall be borne by the Contractor.

EXISTING UTILITIES & FACILITIES:

18. The location and descriptions of existing utilities shown on the drawings are compiled from available records and/or field surveys. The Engineer or utility companies do not guarantee the accuracy or the completeness of such records. Contractor shall field verify locations and sizes of all existing utilities prior to construction.

19. Contractor shall field verify location and depth of all existing utilities where new facilities cross. All utility crossings marked or shown on the drawings shall be potholed using hand tools or other non–invasive methods prior to excavating or boring. Contractor shall be responsible for exposing potential utility conflicts far enough ahead of construction to make necessary grade or alignment modifications without delaying the work. If grade or alignment modification is necessary, Contractor shall notify the Design Engineer, and the Design Engineer or the Owner's Representative shall obtain approval from the Approving Agency prior to construction.

20. The Contractor shall be responsible for locating and marking all existing survey monuments of record (including but not limited to property and street monuments) prior to construction. If any survey monuments are removed, disturbed or destroyed during construction of the project, the Contractor shall retain and pay for the services of a Registered Professional Surveyor licensed in the State of Oregon to reference and replace all such monuments prior to final payment. The monuments shall be replaced within a maximum of 90 days, and the County Surveyor shall be notified in writing as required by per ORS 209.150.

21. All facilities shall be maintained in–place by the Contractor unless otherwise shown or directed. Contractor shall take all precautions necessary to support, maintain, or otherwise protect existing utilities and other facilities at all times during construction. Contractor to leave existing facilities in an equal or better–than–original condition and to the satisfaction of the Approving Agency and Owner's Representative.

22. Utilities or interfering portions of utilities that are abandoned in place shall be removed by the Contractor to the extent necessary to accomplish the work. The Contractor shall plug the remaining exposed ends of abandoned utilities after appropriate verification procedures have taken place.

23. Contractor shall remove all existing signs, mailboxes, fences, landscaping, etc., as required to avoid damage during construction and replace them to existing or better condition.

24. The Contractor shall be responsible for managing construction activities to ensure that public streets and right–of–ways are kept clean of mud, dust or debris. Dust abatement shall be maintained by adequate watering of the site by the Contractor.

25. Any septic tanks encountered during construction shall be pumped out. Contractor shall break bottom of tank out and backfill with pea gravel unless otherwise required by public agencies having jurisdiction. Septic tank removal to be in accordance with County Sanitarian requirements.

26. Any wells encountered shall be abandoned per State of Oregon Water Resources Department requirements.

GRADING, PAVING & DRAINAGE:

27. Unless otherwise noted, all grading, rocking and paving to conform to Oregon Standard Specifications for Construction (OSSC/ODOT/APWA), 2021 edition.

28. Clear and grub within work limits all surface vegetation, trees, stumps, brush, roots, etc. Do not damage or remove trees except as approved by the Owner's Representative or as shown on the drawings. Protect all roots two inches in diameter or larger.

29. Strip work limits, removing all organic matter, which cannot be compacted into a stable mass. All trees, brush, and debris associated with clearing, stripping or grading shall be removed and disposed of off–site.

30. For public and private improvements, except as otherwise allowed by the specifications, drawing details or notes, immediately following stripping and grading operations, compact subgrade to 92% of the maximum dry density per AASHTO T–180 test method (Modified Proctor). Subgrade must be inspected and approved by the Owner's authorized representative before placing, engineered fills or fine grading for base rock.

31. Engineered fills shall be constructed and compacted in 6" lifts over approved subgrade. All fills shall be engineered and comply with the Oregon Structural Specialty Code, with each lift compacted to 92% of the maximum dry density per AASHTO T–180 test method (Modified Proctor).

32. Granular baserock shall conform to the requirements of OSSC (ODOT/APWA) 02630.10 (Dense Graded Base Aggregate), with no more than 10% passing the #40 sieve and no more than 5% passing the #200 sieve.

33. Compact granular baserock to 92% of the maximum dry density per AASHTO T–180 test method (Modified Proctor). Written baserock compaction test results from an independent testing laboratory must be received by the Owner's authorized representative before placing AC pavement, and a finished rock grade proof–roll (witnessed by the Owners authorized representative) must be performed.

34. A.C. pavement shall conform to OSSC (ODOT/APWA) 00745 (Hot Mixed Asphalt Concrete Pavement) for standard duty mix. Unless otherwise specified or shown on the drawings, base lifts shall be 3/4" dense graded mix, while wearing courses shall be 1/2" dense graded mix. Unless otherwise specified or shown on the drawings, A.C. pavement for parking lots and streets shall be Level 2 mix (50 blow Marshall) per OSSC (ODOT/APWA) 00744.13. A.C. Pavement shall be compacted to a minimum of 91% of maximum density as determined by the Rice standard method. Written AC pavement compaction test results from an independent testing laboratory must be received by the Owner's authorized representative before final payment.

35. Pavement surface shall be a smooth, well–sealed, tight mat without depressions or bird baths. Bony or open graded pavement surfaces shall be repaired to the satisfaction of the Owner's authorized representative, prior to final acceptance of the work.

36. HMAC mixtures shall be placed only when the surface is dry and weather conditions are such that proper handling, finishing and compaction can be accomplished. In no case shall bituminous mixtures be placed when the surface temperature is below the minimum established under 2018 OSSC (ODOT/APWA) 00744.40 (AC – Season and Temperature Limitations) or the project specifications, whichever is more stringent.

37. Contractor shall protect new pavement against traffic as required, until it has cooled sufficiently to avoid tracking.

38. For parking lots or private access drives, the final lift of AC pavement shall not be placed until after the building is fully enclosed and weatherproof, unless otherwise approved by the Owner's authorized representative.

39. Unless otherwise shown on the drawings or details, straight grades shall be run between all finish grade elevations and/or finish contour lines shown (exception: where grades are shown across sidewalks, slopes shall be adjusted to ensure that maximum allowable sidewalk cross slopes are not exceeded).

40. Finish pavement grades at transition to existing pavement shall match existing pavement grades or be feathered past joints with existing pavement as required to provide a smooth, free draining surface.

41. All existing or constructed manholes, cleanouts, monument boxes, gas valves, water valves and similar structures shall be adjusted to match finish grade of the pavement, sidewalk, landscaped area or median strip wherein they lie. Verify that all valve boxes and risers are clean and centered over the operating nut.

42. Unless otherwise shown on the drawings, no cut or fill slopes shall be constructed steeper than 2H:1V.

43. Unless otherwise shown on the landscape plans, all planter areas shall be backfilled with approved topsoil minimum 8" thick. Stripping materials shall not be used for planter backfill.

44. Contractor shall seed and mulch (uniformly by hand or hydroseed) all exposed slopes and disturbed areas which are not scheduled to be landscaped, including trench restoration areas. If the Contractor fails to apply seed and mulch in a timely manner during periods favorable for germination, or if the seeded areas fail to germinate, the Owner's Representative may (at his discretion) require the Contractor to install sod to cover such disturbed areas.

CURBS & SIDEWALKS:

45. Unless otherwise shown or indicated on the drawings, 6–inches nominal curb exposure used for design of all parking lot and street grades.

46. Where new curbing connects to existing curbing or is installed along existing streets or pavement, the gutter grade shall match the existing street grades so as to allow drainage from the street to the gutter and through any transitions. The Contractor shall notify the Owner's Representative in writing of any grade discrepancies or problems prior to curb placement.

47. Contractor shall construct all handicap access ramps in accordance with current ADA requirements.

48. Sidewalks shall be a minimum of 4–inches thick and standard residential driveways shall be a minimum of 6–inches thick. Commercial use driveways and alley approaches shall be minimum 8–inches thick. All curbs, sidewalks and driveways shall be constructed using 3300–psi concrete, and shall be cured with Type 1 or Type 1D clear curing compound. All sidewalks shall be ADA compliant.

49. Curb & sidewalk concrete shall be placed only during periods when it will not be damaged by rain (protect unhardened concrete from precipitation). Concrete shall not be placed on frozen baserock. Do not begin concrete placement until temperature in the shade is a minimum of 35°F and rising, and stop placement if air temperature falls below 35°F. Protect concrete from freezing for a minimum of 5 days after placement per OSSC (ODOT/APWA) 00440.40.d & 00756.40 or the project specifications, whichever is more stringent.

50. Contraction joints shall be installed directly over any pipes that cross under the sidewalk, to control cracking. In general, cracks in new curbs or sidewalks (at locations other than contraction joints) are not acceptable, and cracked panels shall be removed & replaced unless otherwise approved by the Approving Agency and the design engineer.

51. All sidewalks shall be ADA compliant. Direction of sidewalk cross slope shall conform with the slope direction shown on the grading plan. Sidewalk cross slopes shall not exceed 1:67 (1.5%) nor be less than 1%. Longitudinal slope shall not exceed 1:20 (5%).

52. Where trench excavation requires removal of PCC curbs and/or sidewalks, the curbs and/or sidewalks shall be sawcut and removed at a tooled joint unless otherwise authorized in writing by the Approving Agency. The sawcut lines shown on the drawings are schematic and not intended to show the exact alignment of such cuts.

53. Unless otherwise shown on the drawings, areas along curbs and sidewalks shall be backfilled with approved topsoil, as well as being seeded and mulched (or hydroseeded).

PIPED UTILITIES:

54. All tapping of existing sanitary sewer, storm drain mains, and manholes must be done by Contractor forces.

55. The Contractor shall have appropriate equipment on site to produce a firm, smooth, undisturbed subgrade at the trench bottom, true to grade. The bottom of the trench excavation shall be smooth, free of loose materials or tooth grooves for the entire width of the trench prior to placing the granular bedding material.

56. All pipes shall be bedded with minimum 6–inches of 3/4"–0 crushed rock bedding and backfilled with compacted 3/4"–0 crushed rock in the pipe zone (crushed rock shall extend a minimum of 12–inches over the top of the pipe in all cases). Unless CDF or other backfill is shown or noted on the drawings, crushed rock trench backfill shall be used under all improved areas, including pavement, sidewalks, foundation slabs, buildings, etc.

57. Granular trench bedding and backfill shall conform to the requirements of OSSC (ODOT/APWA) 02630.10 (Dense Graded Base Aggregate), 3/4"–0. Unless otherwise shown on the drawings, compact granular backfill to 92% of the maximum dry density per AASHTO T–180 test method (Modified Proctor).

58. Contractor shall arrange to abandon existing sewer and water services not scheduled to remain in service in accordance with approving agency requirements.

59. All piped utilities abandoned in place shall have all openings closed with concrete plugs with a minimum length equal to 2 times the diameter of the abandoned pipe.

60. The end of all utility service lines shall be marked with a 2–x–4 painted white and wired to pipe stub. The pipe depth shall be written on the post in 2" block letters and red lined on the drawings for preparation of As–Built Drawings.

61. All non–metallic water, sanitary and storm sewer piping shall have an electrically conductive insulated 12 gauge solid core copper tracer wire the full length of the installed pipe using blue wire for water and green wire for storm and sanitary piping. Tracer wire shall be extended up into all valve boxes, catch basins, manholes and lateral cleanout boxes. Tracer wire penetrations into manholes shall be within 18 inches of the rim elevation and adjacent to manhole steps. The tracer wire shall be tied to the top manhole step or otherwise supported to allow retrieval from the outside of the manhole. All tracer wire splices shall be made with waterproof splices or waterproof/corrosion resistant wire nuts.

62. No trenches in sidewalks, roads, or driveways shall be left in an open condition overnight. All such trenches shall be closed before the end of each workday and normal traffic and pedestrian flows restored.

63. Before mandrel testing, TV inspection or final acceptance of gravity pipelines, all trench compaction shall be completed and all sewers and storm drains flushed & cleaned to remove all mud, debris & foreign material from the pipelines, manholes and/or catch basins.

64. Where future extensions are shown upstream of new manholes (sewer or storm), catch basins or junction boxes, pipe stubs (with gasketed caps) shall be installed at design grades to a point 2' minimum outside of the structure.

WATER SYSTEM:

65. City forces to operate all valves, including fire hydrants, on existing public mains.

66. All Public water mains to conform to City Standards and Specifications.

67. All Private water mains shall be Class 52 ductile iron or C–900 PVC (DR 18).

68. All fittings 4–inches through 24–inches in diameter shall be ductile iron fittings in conformance with AWWA C–153 or AWWA C–110. The minimum working pressure for all MJ cast iron or ductile iron fittings 4–inches through 24–inch in diameter shall be 350 psi for MJ fittings and 250 psi for flanged fittings.

69. All water mains to be installed with a minimum 36 inch cover to finish grade unless otherwise noted or directed. Water service lines shall be installed with a minimum 30–inch cover. Deeper depths may be required as shown on the drawings or to avoid obstructions.

70. Unless otherwise shown or approved by the Engineer, all valves shall be flange connected to adjacent tees or crosses.

71. Thrust restraint shall be provided on all bends, tees and other direction changes per Approving Agency requirements and as specified or shown on the drawings.

72. Unless otherwise noted, water service pipe 3–inch and smaller on the private side of the meter shall be Schedule 40 PVC. Unless otherwise specified, private water service piping shall be hydrostatically pressure tested to a minimum of 150% of the maximum static pressure at the site. All materials and workmanship for all private water lines, including water lines located within any building envelope, shall be installed in conformance with Uniform Plumbing Code requirements. All water service pipe on the private side of the meter shall be installed by a licensed plumber in accordance with Uniform Plumbing Code requirements.

73. Domestic and fire backflow prevention devices and vaults shall conform to requirements of public and/or private agencies having jurisdiction. The Contractor shall be responsible for having backflow devices tested and certified prior to final acceptance of the work.

74. Contractor shall provide all necessary equipment and materials (including plugs, blowoffs, valves, service taps, etc.) required to flush, test and disinfect waterlines per the Approving Agency requirements.

75. The work shall be performed in a manner designated to maintain water service to buildings supplied from the existing waterlines. In no case shall service to any main line or building be interrupted for more than four (4) hours in any one–day. Contractor shall notify the Approving Agency and all affected residents and businesses a minimum of 24 business hours (1 business day) before any interruption of service.

76. Where new waterlines cross below or within 18–inches vertical separation above a sewer main or sewer service lateral, center one full length of waterline pipe at point of crossing the sewer line or sewer lateral. In addition (unless otherwise approved in writing by the Approving Agency, existing sewer mains and/or service laterals within this zone shall be replaced with a full length of Class 50 Ductile Iron or C–900 PVC pipe (DR 18) centered at the crossing in accordance with OAR 333–061 and Approving Agency requirements. Connect to existing sewer lines with approved rubber couplings. Example: For an 8–inch waterline with 36–inches cover, 4–inch service lateral inverts within 5.67–feet (68–inches) of finish grade must be DI or C–900 PVC at the crossing.

77. All waterlines, services and appurtenances shall be pressure tested for leakage. All testing shall conform to requirements as outlined in the specifications, Approving Agency standards and/or testing forms. The hydrostatic test shall be performed with all service line corporation stops open and meter stops closed, and with all hydrant line valves open. Prior to the start of each pressure test, the position of all mainline valves, hydrant line valves and service line corporation stops in the test segment shall be verified.

78. After the pressure test and prior to disinfecting, the water lines shall be thoroughly flushed through hydrants, blow offs or by other approved means.

79. Disinfection & Bacteriological Testing. All water mains and service lines shall be chlorine disinfected per Approving Agency requirements, AWWA C–651 or OAR 333–061 (25 mg/L minimum chlorine solution, 24 hours contact time), whichever is more stringent. Unless otherwise approved by the Approving Agency, a Representative from the Approving Agency shall witness the application of the chlorine solution and the chlorine testing at the end of the 24 hour contact period. After the 24 hour chlorine contact period, the free chlorine concentration shall be checked, and if it is found to be 10 mg/L or more, the chlorine solution shall be drained (otherwise the line shall be rechlorinated), the waterline flushed with potable water, and a minimum of two consecutive samples taken at least 24 hours apart shall be collected from the waterline for microbiological analysis (ie. one sample immediately after flushing, and another sample 24 hours later). Contractor to pay for laboratory analysis of water samples taken under the supervision of the Approving Agency. If the results of both analyses indicate that the water is free of coliform organisms, the waterline may be placed in service. Should the initial treatment prove ineffective, the chlorination shall be repeated until confirmed tests show acceptable results.

80. Disinfection of Connections. For connections which cannot be disinfected with the waterline mainlines as noted above, all fittings, valves and appurtenances, including tool surfaces which will come in contact with potable water, shall be thoroughly cleaned by washing with potable water and then swabbed or sprayed with a one percent (1%) hypochlorite solution (10,000 mg/L) in accordance with the requirements of AWWA C–651 and OAR 333–061.

SEWER & STORM MANHOLES:

81. All precast manholes shall be provided with integral rubber boots. Where manholes without integral rubber boots are approved by the Owner's Representative and Approving Agency, a pipe joint shall be provided on all mainlines within 1.5 feet of the outside face of the manhole. Where required by Public Works, watertight lockdown lids required on all manholes outside of public right–of–way.

82. Openings for connections to existing manholes shall be made by core–drilling the existing manhole structure, and installing a rubber boot. Connections shall be watertight and shall provide a smooth flow into and through the manhole with no ponding. Small chipping hammers or similar light tools which will not damage or crack the manhole base may be used to shape channels, but may be used to enlarge existing openings only if authorized in writing by the Owner's Representative. Use of pneumatic jackhammers shall be prohibited.

83. Manhole channels depths (sewer & storm) shall be to the heights shown on the drawings, but in no case shall the channel depth be less than 2/3 of the pipe diameter. Channels, as well as shelves between the channels and the manhole walls, shall be sloped to drain per plan details.

84. Manholes constructed over existing sanitary sewers shall conform to the requirements of OSSC (ODOT/APWA) 490.41, Manholes over Existing Sewers. The existing pipe shall not be broken out until after the completion of the manhole test.

SANITARY SEWER SYSTEM:

85. Unless otherwise specified, sanitary sewer pipe shall be solid wall PVC in conformance with ASTM D3034, SDR 35 (≤15") or ATSM F–679, PS 46 (≥18"). Minimum stiffness shall be 46 psi per ASTM D–2412 and joint type shall be elastomeric gasket conforming to ASTM D–3212. All other appurtenances and installation to conform to the Approving Agency's specifications. All materials and workmanship for all private sanitary sewers, including sewers located within any building envelope, shall be installed in conformance with Uniform Plumbing Code requirements.

86. Unless otherwise specifically noted on the drawings, manufactured fittings (tee or wye per Approving Agency) shall be used for all lateral connections to new sewer mainlines.

87. Contractor shall provide all necessary materials, equipment and facilities to test sanitary sewer pipe and appurtenances for leakage in accordance with testing schedule herein or the Approving Agency's construction standards, whichever are more stringent. Sanitary sewer pipe and appurtenances shall be tested for leakage. Leakage tests shall include an air test of all sewer mains and laterals and vacuum testing of the manholes. Manhole testing shall be performed after completion of AC pavement and final surface restoration.

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		REVISIONS	

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DSN. SAW
DRN. AR
CKD. SAW
DATE: DEC 2021

REGISTERED PROFESSIONAL ENGINEER
OREGON JULY 16, 1996 STEVEN A. WEGENER
REVIEW
RENEWS: 6/30/2024

WESTECH ENGINEERING, INC.
CONSULTING ENGINEERS AND PLANNERS
3841 Fairview Industrial Dr. S.E., Suite 100, Salem, OR 97302
Phone: (503) 585–2474 Fax: (503) 585–3986
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MOLALLA APARTMENTS PHASE II
HOME FIRST DEVELOPMENT PARTNERS

CONSTRUCTION NOTES

DRAWING
C1.1

JOB NUMBER
3312.1000.0

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88. After manhole channeling and prior to mandrel testing and/or TV inspection, flush and clean all sewers, and remove all foreign material from the mainlines and manholes. Failure to clean all dirt, rock and debris from pipelines prior to TV inspection will result in the need to re-clean and re-TV the sewer lines.

89. Contractor shall conduct deflection test of flexible sanitary sewer pipes by pulling an approved mandrel through the completed pipeline following trench compaction. The diameter of the mandrel shall be 95% of the initial pipe diameter. Test shall be conducted not less than 30 days after the trench backfilling and compaction has been completed, unless otherwise approved by the Approving Agency.

90. Upon completion of all sanitary sewer construction, testing and repair, the Contractor shall conduct a color TV acceptance inspection of all mainlines in accordance with OSSC (ODOT/APWA) 445.74 to determine compliance with grade requirements of OSSC (ODOT/APWA) 445.40.b. The TV inspection shall be conducted by an approved technical service which is equipped to make audio-visual recordings of the TV inspections on DVD or flash drive. Unless otherwise required by the Approving Agency, a standard 1-inch diameter ball shall be suspended in front of the camera during the inspection to determine the depth of any standing water. Sufficient water to reveal low areas or reverse grades shall be discharged into the pipe immediately prior to initiation of the TV inspection. The DVD and written report shall be delivered to the Approving Agency.

STORM DRAIN SYSTEM:

91. Storm sewer pipe materials shall conform to the construction drawings and Approving Agency's requirements. Unless otherwise noted or shown on the drawings, storm sewer pipe materials with watertight joints shall conform to the attached "Storm Pipe Table". Contractor shall use uniform pipe material on each pipe run between structures unless otherwise directed or approved. Jointed HDPE pipe shall not be used for slopes exceeding ten percent (10%). All materials and workmanship for all private storm drains, including storm drains located within any building envelope, shall be installed in conformance with Uniform Plumbing Code requirements.

92. Contractor shall designate the pipe material actually installed on the field record drawings and provide this information for inclusion on the as-built drawings.

93. Catch basins and junction boxes shall be set square with buildings or with the edge of the parking lot or street wherein they lie. Storm drain inlet structures and paving shall be adjusted so water flows into the structure without ponding water.

94. Unless otherwise approved by the Engineer, all storm drain connections shall be by manufactured tees or saddles.

95. Unless otherwise shown on the drawings, all storm pipe inlets & outfalls shall be beveled flush to match the slope wherein they lie.

96. Sweep (deflect) storm sewer pipe into catch basins and manholes as required. Maximum joint deflection shall not exceed 5 degrees or manufacturers recommendations, whichever is less.

97. Unless otherwise shown or directed, install storm sewer pipe in accordance with manufacturer installation guidelines.

98. After manhole channeling and prior to mandrel testing or final acceptance, flush and clean all sewers, and remove all foreign material from the mainlines, manholes and catch basins.

99. Mandrel Testing. Contractor shall conduct deflection test of flexible storm sewer pipes by pulling an approved mandrel through the completed pipeline following trench compaction. The diameter of the mandrel shall be 95% of the initial pipe diameter. Test shall be conducted not more than 30 days after the trench backfilling and compaction has been completed.

100. TV Inspection. Upon completion of all storm sewer construction, testing and repair, the Contractor shall conduct a color TV acceptance inspection of all mainlines in accordance with OSSC (ODOT/APWA) 445.74 to determine compliance with grade requirements of OSSC (ODOT/APWA) 445.40.b. The TV inspection shall be conducted by an approved technical service which is equipped to make audio-visual recordings of the TV inspections on DVD (VHS video tape acceptable only upon prior written approval by Public Works). Unless otherwise required by the agency with jurisdiction, a standard 1-inch diameter ball shall be suspended in front of the camera during the inspection to determine the depth of any standing water. Sufficient water to reveal low areas or reverse grades shall be discharged into the pipe immediately prior to initiation of the TV inspection. The DVD and written report shall be delivered to the Approving Agency.

101. Prior to acceptance, the Owner's Representative may lamp storm lines upstream & downstream of structures to verify that the pipes are clean and there is no grout or concrete in the mainlines, and that there are no observable bellies in the line. When necessary, sufficient water to reveal low areas shall be discharged into the pipe by the Contractor prior to any such inspection by the Owner's Representative or the Approving Agency.

FRANCHISE & PRIVATE UTILITIES:

102. Unless otherwise shown on the drawings or approved by jurisdiction having authority, all new franchise and private utilities (power, cable TV, telephone, gas, data, communication, control, alarms, etc.) shall be installed underground. Installation of such utilities or associated conduits in a common trench with public water, sanitary sewer, or storm sewer is prohibited.

103. Contractor shall coordinate with gas, power, telephone, and cable TV Company for location of conduits in common trenches, as well as location or relocation of vaults, pedestals, etc. The Contractor shall be responsible for providing franchise utility companies adequate written notice of availability of the open trench (typically 10 days minimum), and reasonable access to the open trench. Unless otherwise approved in writing by the Approving Agency, all above-grade facilities shall be located in PUEs (where PUEs exist or will be granted by the development), and otherwise shall be placed in a location outside the proposed sidewalk location.

104. Unless otherwise approved by the Approving Agency, installation of private utiiities (including either franchise utilities or private water, sewer or storm services) in a common trench with or within 3 feet horizontally of and paralleling public water, sanitary sewer or storm drains is prohibited.

105. Power, telephone and TV trenching and conduits shall be installed per utility company requirements with pull wire. Contractor shall verify with utility company for size, location and type of conduit before construction, and shall ensure that trenches are adequately prepared for installation per utility company requirements. All changes in direction of utility conduit runs shall have long radius steel bends.

106. Contractor shall notify and coordinate with franchise utilities for removal or relocation of power poles, vaults, pedestals, manholes, etc. to avoid conflict with Public utility structures, fire hydrants, meters, sewer or storm laterals, etc.

REQUIRED TESTING AND FREQUENCY TABLE		Party Responsible for payment		
			Contractor	Others (see note 1)
Streets, Fire Lanes, Common Driveways, Parking Lots, Pads, Fills, etc.				
Subgrade	1 Test/4000 S.F./Lift (4 min), locations acceptable to approving agency (typically alternate sides of road or access aisles)	✓	See note 2 & note 3	
Engineered Fills	1 Test/4000 S.F./Lift (4 min), locations acceptable to approving agency	✓	See note 2 & note 5	
Baserock	1 Test/4000 S.F./Lift (4 min), locations acceptable to approving agency (typically alternate sides of road or access aisles)	✓	See note 2 & note 3	
Asphalt	1 Test/6000 S.F./Lift (4 min), locations acceptable to AA (typ. alternate as above)	✓	See note 2	
Piped Utilities, All				
Trench Backfill	1 Test/200 Foot Trench/Lift (4 min)	✓	See note 2	
Trench AC Restoration	1 Test/300 Foot Trench (4 min)	✓	See note 2	
Water				
Pressure Test	(to be witnessed by Owner's Representative or approving agency)	✓	See note 4	
Bacterial Water Test	Per Oregon Health Division	✓	See note 2	
Chlorine Residual Test	Per City Requirements	✓		
Sanitary Sewer				
Air Test	Per City or APWA Requirements, whichever is more stringent	✓	See note 4	
Mandrel	95% of actual inside diameter	✓	See note 4	
TV Inspection	All. Lines must be cleaned prior to TV work	✓		
Manhole	(1) Vacuum test per manhole, witnessed by Owner's Representative or approving agency	✓	See note 2	
Storm				
Mandrel	95% of actual inside diameter	✓	See note 4	
TV Inspection	All. Lines must be cleaned prior to TV work	✓		
Concrete, Block, etc.				
Slump, Air & Cylinders for structural & reinforced concrete, equipment slabs, curbs, sidewalks & PCC pavements. Unless otherwise specified, one set of cylinders per 100 cubic yards (or portion thereof) of each class of concrete placed per day. Slump & air tests required on same load as cylinders.		✓	See note 2	
Building permit inspection & Special Inspection for structural concrete, reinforced masonry, epoxy anchors, etc. as required by applicable State Building Codes.		✓	See note 6	
Retaining Walls				
Building permit inspection and Special Inspection, as well as compaction testing on backfill, all in conformance with applicable State Building Code requirements		✓	See note 5 & note 6	

Note 1: "Others" refers to Owner's authorized Representative or Approving Agency as applicable. Contractor responsible for scheduling testing. All testing must be completed prior to performing subsequent work.

Note 2: Testing must be performed by an approved independent testing laboratory.

Note 3: In addition to in-place density testing, the subgrade and base rock shall be proof-rolled with a loaded 10 yard dump truck provided by the Contractor. Baserock proofroll shall take place immediately prior to (within 24 hours of) paving, and shall be witnessed by the Owner's authorized Representative or approving agency. Location and pattern of testing and proofroll to be as approved or directed by said Owner's authorized Representative or approving agency.

Note 4: To be witnessed by the Owner's Representative or approving agency. The Contractor shall perform pretests prior to scheduling witnessed waterline or sanitary sewer pressure tests, or pipeline mandrel test.

Note 5: The approved independent laboratory retained by the Contractor shall provide a certification (stamped by an engineer licensed in the State of Oregon) that the subgrade was prepared and all engineered fills were placed in accordance with the provisions of the construction drawings and the contract documents.

Note 6: Regardless of who is responsible for payment, the Contractor is responsible for scheduling and coordinating any and all required inspections and Special Inspections as required by applicable building codes or jurisdictions having authority.

STORM PIPE TABLE	
Cover Depth	6" – 18" Diameter
Less than 2' Cover	Class 50 ductile iron pipe with bell and spigot joints and rubber gasket.
2' to 2-1/2' Cover	Pipe specified for lesser cover depths –or– Class 3, ASTM C-14 non-reinforced concrete pipe with bell and spigot joints & rubber gaskets, ASTM 150 Type II cement. –or– PVC pipe conforming to AWWA C900 DR 18 (6"-12") or AWWA C-905 (14"-18") with bell and spigot joints and rubber gasket
2-1/2' to 15' Cover	Pipe specified for lesser cover depths –or– PVC pipe conforming to ASTM D-3034 PVC SDR 35 (6"-15") or ASTM F-679 PVC solid wall SDR 35 (18") with bell and spigot joints and rubber gasket. –or– HDPE (high density polyethlene) pipe conforming to AASHTO M-252, (8"-10") or AASHTO M-294 (12"-18"). For slopes less than 6% the pipe shall be ADS N-12 IB ST, Hancor Sure-Lok F477, or approved equal. For slopes greater than 6% the pipe shall be ADS N-12 IB WT, Hancor Blue Seal, or approved equal with watertight pressure testable fittings, –except– jointed HDPE (high density polyethylene) pipe referenced above not permitted for depth to invert greater than 12 feet.
More than 15' Cover	See construction drawings.

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DSN. SAW
DRN. AR
CKD. SAW
DATE: DEC 2021

REGISTERED PROFESSIONAL ENGINEER
OREGON
JULY 16, 1982
STEVEN A. WEST
RENEWS: 6/30/2024

REVIEW

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MOLALLA APARTMENTS PHASE II
HOME FIRST DEVELOPMENT PARTNERS

CONSTRUCTION NOTES

DRAWING
C1.2

JOB NUMBER
3312.1000.0

City of Molalla – Standard Construction Notes for Plans

Approved February 2020

The following general notes will be included on all public works improvement plans approved by the City. Sections not included in the work may be omitted with approval from the Public Works Director or their authorized representative.

General Notes:

1. All work and materials shall conform to the current edition of the Oregon Standard Specifications for Construction as amended by the City of Molalla Public Works Standards and construction requirements per the Public Works Director. All work within the public right–of–way or public easements requires a public works permit.
2. The Contractor is responsible for the procurement of all applicable permits, licenses and certificates relative to the trades to complete the project and for the use of such work when completed. Compliance shall be at all levels, federal, state, county, and local, relating to the performance of work.
3. It shall be the responsibility of the Contractor to verify all utility locations prior to construction and arrange for the relocation of any in conflict with the proposed construction. The locations, depth, and description of existing utilities shown were compiled from available records and–or field surveys. The engineer or utility companies do not guarantee the accuracy of the completeness of such records. Additional utilities may exist within the work area.
4. Oregon Law requires the Contractor to follow rules adopted by the Oregon Utility Notification Center. Those rules are set forth in OAR 052–001–0010 through OAR 952–001–0090. The contractor may obtain copies of the rules from the center by calling toll free to (877)668–4001 or by accessing the internet at www.callbeforeyoudig.org. The contractor must notify the center at least two (2) business days, but not more than ten (10) business days, before commencing an excavation. Call toll free to (800)332–2344.
5. The contractor shall make provisions to keep all existing utilities (including non–locatable) in service and protect them during construction. Contractor shall be responsible for the immediate notification of damage to utilities and the repair or replacement of damaged utilities using materials and methods approved by the utility owner. No service interruptions shall be permitted without prior written agreement with the utility owner/provider.
6. The contractor shall notify project engineer and City of Molalla public works inspector forty–eight (48) hours in advance of starting construction and twenty–four (24) hours before resuming work after shut downs, except for normal resumption of work following Saturdays, Sundays or holidays.
7. The contractor shall remove and dispose of all trees, stumps, roots, topsoil, and other material and where indicated on the plans. Materials shall be disposed of in such a manner as to meet all applicable regulations. No burning is allowed within City limits.
8. All construction vehicles shall park on the construction site or at a location(s) indicated on the approved plan. Hours of construction for public improvements shall be 7:00 Am to 8:00 PM, Monday through Friday. No work on public improvements is allowed on Saturday, Sundays or government holidays. Construction activities include all field maintenance of equipment, refueling, and pick–up or delivery of equipment as well as the actual construction activity.
9. The contractor shall keep an approved set of plans on the project site at all times.
10. The contractor shall perform all work necessary to complete this project in accordance with the plans and specifications including such incidentals as may be necessary to meet the intent of the project contract documents and applicable agency requirements.
11. The contractor shall maintain and coordinate access satisfactory with the needs of emergency service agencies and all affected properties.
12. If ground water springs or tiled drainage systems are encountered during construction, the contractor shall immediately contact the project engineer. The project engineer shall direct the contractor to take measures to ensure that the water is not conveyed through utility trenches and the natural flow path of the spring is altered as little as practicable. The project engineer shall submit a report summarizing the findings to the city. Impacts and mitigation shall be addressed for city approval.
13. The contractor shall pothole and verify location and depth of all existing utilities prior to the start of construction. The contractor shall take all necessary field measurements and otherwise verify all dimensions and existing construction conditions indicated and or shown on the plans. Should any error or inconsistency exist, the contractor shall not proceed with the work affected until reported to the project engineer for clarification or correction.
14. Any inspection by the city, county, state, federal agency, or project engineer shall not, in any way relieve the contractor from any obligation to perform the work in compliance with the applicable codes and regulations, city standards, and project documents.
15. The contractor shall verify centerline and top of curb elevations prior to construction to insure compliance with the construction drawings and report any discrepancies immediately to the project engineer.
16. The contractor shall submit a traffic control plan for approval prior to the start of the construction in accordance with the specifications, city standards, and the current edition of the Manual of Uniform Traffic Control Devices. All flaggers shall be certified by the state of Oregon.
17. The contractor shall provide the city and project engineer a twenty–four (24) hour contact person and number.
18. The contractor shall verify temporary construction easements prior to construction.
19. The contractor shall record all changes to the construction plans. Changes shall include reference measurements, materials type, and utilities not previously shown on the plans. Information shall be submitted to the project engineer for the completion of record drawings.
20. All survey monuments on the project's site or that may be subject to disturbance within the construction area, or the construction of any off–site improvements shall be adequately referenced and protected prior to commencement of any construction activity. If the survey monuments are disturbed, moved, relocated, or destroyed as a result of any construction, the contractor shall, at their cost, retain the services of a registered professional land surveyor in the state of Oregon to restore the monument to its original condition and file the necessary surveys as required by Oregon State Law. A copy of any recorded survey shall be submitted to the City Public Works Director or authorized representative.
21. The contractor is required to meter construction water through a city bulk water meter. Contact Molalla Utility Billing at 503–829–6855 to set up an account.
22. Any roots encountered over 2 inches shall be cut with saw perpendicular to trench.

Erosion and Sediment Control Notes:

1. The contractor shall provide effective erosion control protection to include, but not limited to, grading, ditching, hay bales, silt fencing, and sediment barriers to minimize erosion and impact to adjacent property.
2. Approval of the erosion and sediment control plan does not constitute an approval of permanent road or drainage design (e.g. Size and location of roads, pipes, structures, channels, detention facilities, utilities, etc.)
3. The erosion and sediment control measures must be constructed in conjunction with all clearing and grading activities, and in such a manner as to insure that sediment and sediment laden water does not enter the storm drainage system, streets, or violate applicable water standards.
4. The contractor shall call for initial and final erosion and sediment control inspection. Erosion and sediment control inspection shall be approved prior to the start of construction activities. Contractor shall remove trash and sediment deposits prior to final project inspection.
5. The erosion and sediment control measures shall be inspected and maintained daily by the applicant/contractor. Inactive sites shall be inspected and maintained a minimum of once a month or within 24 hours following a storm event.
6. Gravel construction entrances shall be installed at the beginning of construction and maintained for the duration of the project. Additional measures, such as a wheel wash, may be required to insure that all paved areas are kept clean for the duration of the project. Wheel wash basins shall be periodically (or as directed by city inspectors) drained, cleaned of sediment, and refilled with clean water. At no time shall vehicles exit the site without using wheel wash station, including during maintenance of wheel wash basin.
7. Storm drain inlets, basins, and area drains shall be protected until the completion of the project. Silt sack inserts with bio–bags along curb inlets and catch basins is the preferred measure for inlet protection where applicable. Contractor shall provide and maintain silt sack protection at the nearest catch basin inlet(s) downstream of the projects site. Install inlet protection to new inlets as installed.
8. At no time shall sediment be allowed to accumulate within a trapped catch basin. All silt sacks shall be inspected daily and cleaned or replaced as necessary. All catch basins and conveyance lines shall be cleaned prior to paving. The cleaning operation shall not flush sediment laden water into the downstream storm system.
9. The contractor shall install, operate and maintain adequate erosion control measures in conformance with the standards adopted by the City of Molalla during the construction of any public utilities and buildings improvements until such time as approved permanent vegetative materials have been installed.
10. At the completion of construction, all exposed soils must be hydroseeded and/or covered with straw and tacifier. If ground cover is not established by October 15, the open areas shall be protected through the winter with mulch, erosion blankets, or other method(s) approved by the city. Seeding shall be performed no later than September 31 for each phase of construction.
11. Stockpiles of soil or other erosion prone materials for extended periods must be covered with temporary erosion control measures and protected with silt fencing.
12. During all phases of work the contractor shall take precautions to abate any dust nuisance. Dust shall be minimized to the extent practicable and prevention measures shall be continuous until final inspection by the city.
13. No person shall create physical erosion by dragging, dropping, tracking, or otherwise placing or depositing, or permitting to be deposited, mud, dirt, rock, or other debris on a public street, or into any part of the public storm water system and surface water system, or into any part of a private storm water or surface water system that drains or connects to the public storm water and surface water system. Any such deposited material shall be immediately removed by hand labor or mechanical means. No material shall be washed or flushed into any part of the storm water or surface water system until all mechanical means to remove the debris are exhausted and preventative sediment filtration is in place.
14. All sediment fence shall be installed per manufacturers recommendations and comply with the recent edition of the Oregon Standard Specifications for Construction as amended by the City of Molalla Public Works Standards and construction requirements per the Public Works Director.

Street Notes:

1. The contractor shall submit a traffic control plan for approval prior to the start of construction in accordance with the specifications, city standards, and the current edition of the Manual on Uniform Traffic Control Devices. Approval of plan required prior to any work performed in existing public right–of–way. All flaggers shall be certified by the State of Oregon.
2. Contractor to provide state certified independent testing agency for all testing of sub–grade, base rock, concrete curb and driveway, asphalt pavement, and concrete pavement. City reserves the right to direct testing agency on frequency of testing. Testing agency shall submit one copy of all testing reports to city's authorized representative.
3. No fills are to be placed prior to city approval of striping. Sub–grade shall be compacted to 95% of the maximum dry density. As determined by AASHTO T–180. Along with testing using a nuclear density gauge, a proof–roll shall be conducted by the contractor and accepted by city. Prior to placement of base rock. All soft areas shall be over–excavated to a depth satisfactory to the geotechnical engineer and city representative, backfilled with crushed ¾"–0 and compacted to 95% of the maximum dry density, as determined by AASHTO T–180.
4. Base rock shall be from an approved source. City must receive and approve a copy of State mix design at least seven (7) days prior to the placement of base rock. Base rock shall conform to the recent edition of the Oregon Standard Specifications for Construction as amended by the City of Molalla Public Works Standards.
5. Base rock shall be compacted to 95% of the maximum dry density. As determined by AASHTO T–180. Along with testing using a nuclear density gauge, a proof roll shall be conducted by the contractor and accepted by the city prior to paving.
6. No paving shall take place until all testing of underground utilities (including tone testing by city), sub–grade, and base rock is completed and approved by the city.
7. Asphalt pavement shall be from an approved source. City must receive and approve a copy of a State mix design at least seven (7) days prior to the placement of pavement. Pavement shall conform to the recent edition of the Oregon Standard Specifications for Construction as amended by the City of Molalla Public Works Standards and construction requirements per the Public Works Director.
8. Asphalt pavement shall be compacted to a minimum of 92% of relative density based on rice gravity.
9. Utility cuts across existing streets shall be T–cut, conforming to city detail.
10. All construction staking of public streets shall be performed by or under the direction of a professional land surveyor registered in the State of Oregon. Stakes shall, at a minimum, locate all horizontal points of curvature (beginning, midpoint, and ending), vertical points of curvature (beginning, low/high point, and ending), curb returns (beginning, midpoint, and ending), and centerline for offset crowns. Maximum spacing for reference stakes is fifty (50) feet. Construction shall not be allowed before staking is performed.
11. Newly constructed curbs shall be stamped with the capital letter "D" for storm, "S" for sanitary, and "W" for water at the location of each underground service crossing. Letters shall be three (3) inches in height and embossed a minimum of one–quarter (1/4) inch deep. All weep holes shall be installed during initial curb and gutter pour. Installation of weep holes after initial pour shall be core drilled only. Use of saw cut and knock out by hammer is prohibited.
12. All driveway aprons and curb and gutter shall have cylinder samples taken by a State certified independent testing agency. Report of a break result shall be provided to the City's authorized representative.
13. All street signage, striping, and reflectors shall be installed by applicant/contractor prior to project correction list walk–through. All crosswalk striping and roadway emblems shall be thermoplastic. All signage and striping shall comply with City standards, and the current edition of the Manual on Uniform Traffic Control Devices.
14. See notes for street lighting, dry utilities, street trees, landscaping, and irrigation.

Storm Notes:

23. All storm manhole lids shall be sixteen (16) hole type. Manholes in planter areas shall be a minimum of six (6) inches above finished grade.

1. All connections to existing manholes shall be core drilled. Use of cut–off saw and knock out by hammer is prohibited. Revisions to design will not constitute a variance to core drill requirement and may, at City discretion, require manufacture and installation of new manhole matching design revision.
2. Storm laterals shall be a minimum of six (6) inches diameter and have locating wire (solid 12–gauge white insulation) installed beside the pipe and plastic caution tape installed 1–foot above the pipe crown. Surface locating wire at right–of–way cleanouts; tape shall be tied off to the 2X4 marker painted white. Tone testing by City to pass prior to paving.
3. Newly constructed curbs or replaced curbs shall be stamped with the capitol letter "D" at the location of each underground storm lateral crossing. Letters shall be three (3) inches in height and embossed a minimum of one–quarter (1/4) inch deep.
4. All weep holes shall be installed during initial curb and gutter pour. Installation of weep holes after initial pour shall be core drilled only. Use of saw cut and knock out by hammer is prohibited.
5. All storm lines shall be flushed and cleaned prior to testing. All storm lines shall be video inspected. In addition, storm lines constructed of flexible pipe shall be mandrel tested at five–percent (5%). Contractor to furnish all necessary test equipment and perform the tests in a manner satisfactory to the City. City inspector shall be present during testing (24–hour notification required).
6. Storm water facilities shall not be activated and/or connected to public storm systems or waterways unless facility has been tested and approved by City staff.
7. Contractor to provide independent testing agency for all testing of trench backfill. Testing of backfill lifts shall not exceed three (3) feet in depth and tests of lifts shall be staggered along trench line. City reserves the right to direct testing agency on frequency of testing. Testing agency shall submit one (1) copy of all testing reports to City's authorized representative.
8. All construction taking of public storm lines shall be performed by or under the direction of a professional land surveyor registered in the State of Oregon. Stakes shall, at a minimum, locate all tees, cleanouts, manholes, catch basins, ditch inlets, and outfalls. Maximum spacing for reference stakes is fifty (50) feet. Construction shall not be allowed before staking is performed.

Sewer Notes:

1. All sanitary manhole lids shall be two (2) hole type unless otherwise specified. Manholes in planter areas shall be a minimum of six (6) inches above finished grade.
2. All connections to existing manholes shall be core drilled. Use of cut–off saw and knock out by hammer is prohibited. Revisions to design will not constitute a variance to core drill requirement and may, at City discretion, require manufacture and installations of new manhole matching design revision.
3. Sanitary laterals shall be a minimum of four (4) inches in diameter, unless multi–family/commercial/industrial zoning, and have locating wire (solid 12–gauge green insulation) installed beside the pipe and plastic caution tape installed 1–foot above the pipe crown. Surface locating wire at right–of–way cleanouts; tape shall be tied off to the 2X4 marker painted green. Tone testing by City to pass prior to paving.
4. Newly constructed curbs or replaced curbs shall be stamped with the capitol letter "S" at the location each sanitary lateral crossing. Letters shall be three (3) inches in height and embossed a minimum of one–quarter (1/4) inch deep.
5. All public sewer lines shall be flushed and cleaned prior to testing. All public sewer lines shall be pressure tested and video inspected. In addition, sewers constructed of flexible pipe shall be mandrel tested to five percent (5%). Contractor to furnish all necessary test equipment and perform the tests in a manner satisfactory to the City. City inspector shall be present during testing (24–hour notification required).
6. Public sanitary sewer manholes shall be vacuum tested after the street paving is completed. Contractor to furnish all necessary test equipment and perform the tests in a manner satisfactory to the City. City inspector shall be present during testing (24–hour notification required).
7. For all public sanitary manholes, the contractor shall supply the City with manhole cover inserts. For public manholes located in natural or landscaped areas or in residential streets, the contractor shall supply manhole cover inserts made of durable plastic. For public manholes located in arterial and collector streets, the contractor shall supply manhole cover inserts made of stainless steel.
8. Contractor to provide independent testing agency for all testing of trench backfill. Testing of backfill lifts shall not exceed three (3) feet in depth and tests of lifts shall be staggered along trench line. City reserves the right to direct testing agency on frequency of testing. Testing agency shall submit one copy of all testing reports to City's authorized representative.
9. All construction staking of public sanitary lines shall be performed by or under the direction of a professional land surveyor registered in the State of Oregon. Stakes shall, at a minimum, locate all tees, clean–outs, manholes, water line crossings, and pump stations. Maximum spacing for reference stakes is fifty (50) feet. Construction shall not be allowed before staking is performed.

Water Notes:

1. City will operate all existing valves to isolate waterlines for work required and for all flushing and filling activities. Contact the public works maintenance division at 503–829–5409 a minimum of twenty–four (24) hours in advance.
2. City will provide notification to affected water users for planned service disruptions. Contact the public works maintenance division at 503–829–5409 a minimum of seventy–two (72) hours in advance.
3. Public water lines shall conform to materials and installation requirements as may be required by the City of Molalla and American Water Works Association.
4. All water line crossings shall be in conformance with OAR Chapter 333. The City may require more stringent standards.
5. All water lines shall be C–900 or C–905. All fittings shall be push–on gasketed unless otherwise specified. Tees and crosses shall be flanged except tees to fire hydrants which will be MJ by flanged. All valves joined to tees and crosses shall be flanged by mechanical joint.
6. All public water lines shall be installed with locating wire (solid 12–gauge blue insulation) installed beside the pipe and plastic caution tape installed 1–foot about the pipe crown. Wire shall be brought to the surface at all service meter stops, fire hydrants, valve boxes, air reliefs, and blow–offs. Tone testing by City to pass prior to paving.
7. All public water lines shall have a minimum of 30 inches of cover.
8. See City of Molalla details for thrust blocks and fire hydrant assemblies.
9. All water valves and boxes shall be designed and constructed a minimum of eighteen (18) inches from face of curb unless otherwise approved by City's authorized representative.
10. Contractor to provide independent testing agency for all testing of trench backfill. Testing of backfill lifts shall not exceed three (3) feet in depth and tests of lifts shall be staggered along trench line. City reserves the right to direct testing agency on frequency of testing. Testing agency shall submit one copy of all testing reports to City's authorized representative.
11. All construction staking of public water lines shall be performed by or under the direction of a professional land surveyor registered in the State of Oregon. Stakes shall, at a minimum, locate all bends, tees, crosses, fire hydrants, blow–offs, isolation valves, vaults, and booster pump stations. Maximum spacing for reference stakes is 50 feet. Construction shall not be allowed before staking is performed.
12. After water valve cans are adjusted to finish grade for all new and existing valves, where the depth of the operation nut is greater than three (3) feet, operating extensions shall be provided to bring the operating nut to a point fourteen (14) inches below the surface of the ground or pavement.
13. Hydrostatic tests: the test shall conform with AWWA C–605, Section 4 with the following modifications. The test pressure shall be 150 PSI at the highest point of elevation in any section. The duration shall be 120 minutes and shall be monitored by the City of Molalla Public Works Department.
14. Disinfection: Pipelines shall be flushed and disinfected before placing into service. Disinfection shall conform to AWWA C651. Discharging of the highly chlorinated water used for disinfection shall not be discharged into surface waters. Applicable federal, state, and local regulations concerning discharge shall be followed. Oregon State Health Division bacteriological tests shall be taken by an outside testing facility and results of the test shall be reported to the City prior to hydrostatic tests.

Street Lighting and Dry Utility Notes:

1. All light poles, conduit, and junction boxes shall conform to the requirements of Portland General Electric and the City of Molalla. Pole shrouds and junction boxes shall be set to finished grade. All junction boxes and lids shall be H–20 loading.
2. All lighting shall be energized and approved by Portland General Electric prior to project correction list walk through.
3. All franchise utility conduits shall run along a common trench within the public utility easement. All public right–of–way crossings shall be at right angles to street centerline and be located in common trench at intersections or mid–block locations.
4. All public right–of–way crossings or sleeves shall be installed and approved prior to proof roll of street base rock.
5. The contractor shall grade public utility easements so that all franchise utility pedestals and vaults can be set to finished grade as measured from back of public sidewalk. Finished grades within public right–of–way shall be at two (2) percent and outside of public right–of–way shall not exceed 2H:1V unless approved by City's authorized representative.
6. All existing overhead utilities shall be relocated underground at applicant/contractors' expense prior to proof roll of street base rock.

Street trees, Landscaping, and Irrigation:

1. All street trees and landscaping shall not conflict with sight distance requirements. Street trees shall maintain the following clearance distances: a. Minimum of five (5) feet from all sanitary, storm, and water service crossings
   a. Minimum of ten (10) feet of clearance from all fire hydrants
   b. Minimum of twenty (20) feet of clearance from all catch basins/gutter inlets and street lights
   c. Minimum of forty (40) feet of clearance from near curb line of intersecting street
2. All landscape plantings shall maintain three (3) feet of clearance from fire hydrants as measured from center nut to edge of mature growth.
3. All irrigation systems shall have backflow protection as required by plumbing code and the City of Molalla.

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VERIFY SCALE
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0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

DSN. SAW
DRN. AR
CKD. SAW
DATE: DEC 2021

REGISTERED PROFESSIONAL ENGINEER
OREGON
JULY 16, 1982
STEVEN A. WEST
RENEWS: 6/30/2024

WESTECH ENGINEERING, INC.
CONSULTING ENGINEERS AND PLANNERS
3841 Fairview Industrial Dr. S.E., Suite 100, Salem, OR 97302
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MOLALLA APARTMENTS PHASE II
HOME FIRST DEVELOPMENT PARTNERS

CITY OF MOLALLA
CONSTRUCTION NOTES

DRAWING
C1.3

JOB NUMBER
3312.1000.0

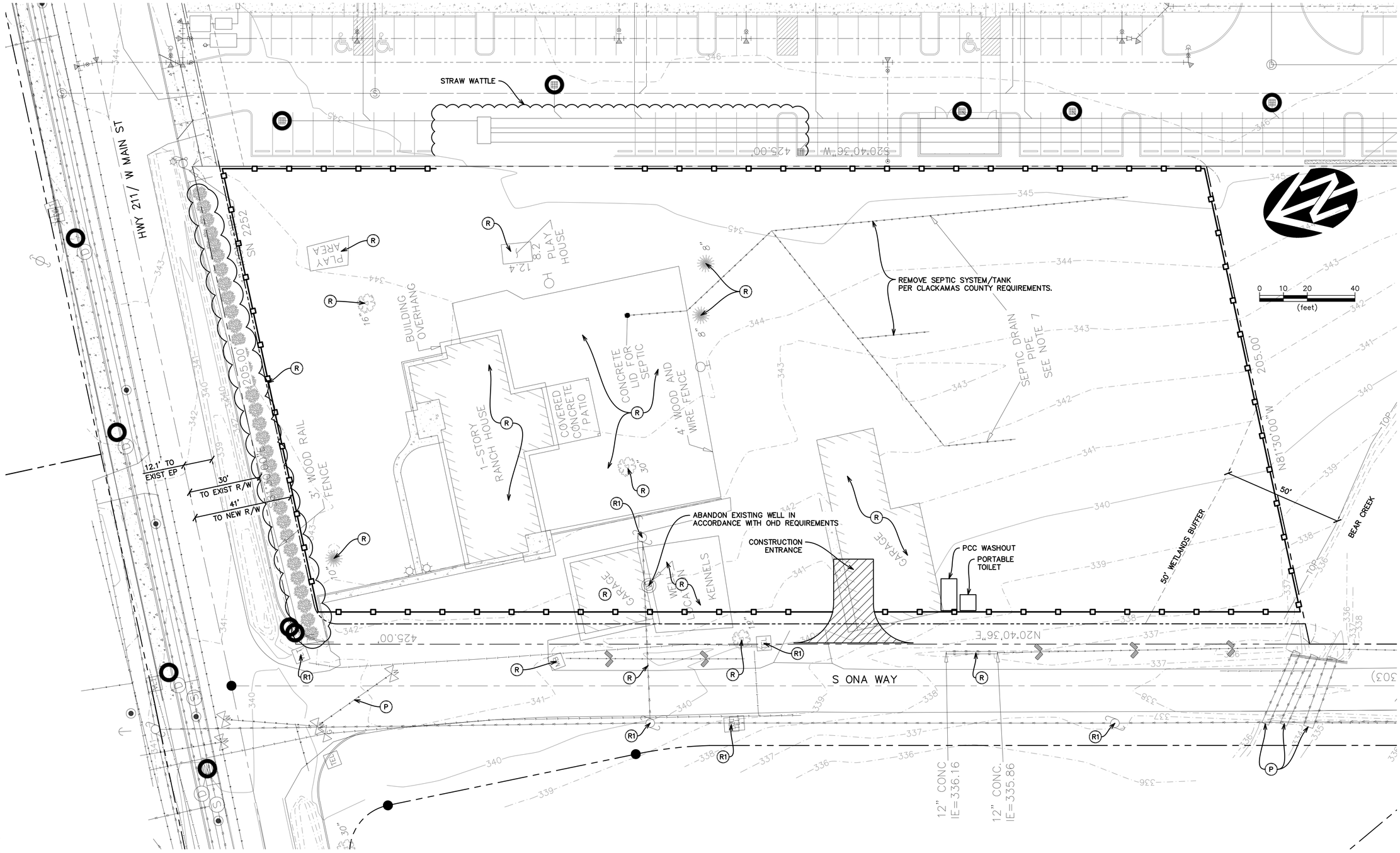
EROSION CONTROL LEGEND

- SILT FENCE SEE DTL
- SILT SACK INLET PROTECTION USE BIO BAGS ON CURB INLET CATCH BASINS. USE SILT SACKS ON STANDARD CATCH BASINS.
- BIO BAGS/CHECK DAM

DEMOLITION LEGEND

- (P) CONTRACTOR TO SAVE & PROTECT AT ALL TIMES.
- (R) CONTRACTOR TO REMOVE & DISPOSE OFF SITE.
- (R1) COORDINATE W/ UTILITY COMPANY TO REMOVE/RELOCATE
- (S) SAWCUT
- (A) ADJUST

NOTES:
1. NO STOCKPILING ALLOWED ON SITE.
2. NO ACCESS ALLOWED THROUGH PHASE I.
3. NO ACCESS TO THE SITE ALLOWED VIA PHASE I



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DSN. SAW
DRN. AR
CKD. SAW
DATE: DEC 2021

REVIEW
REGISTERED PROFESSIONAL ENGINEER
OREGON JULY 16, 1982 STEVEN A. WEBER
RENEWS: 6/30/2024

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MOLALLA APARTMENTS PHASE II
HOME FIRST DEVELOPMENT PARTNERS

EXISTING CONDITIONS, EROSION CONTROL, & DEMOLITION PLAN

DRAWING
C2.0

JOB NUMBER
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LEGEND

- BIO BAGS/CHECK DAM
- SILT SACK INLET PROTECTION USE BIO BAGS ON CURB INLET CATCH BASINS. USE SILT SACKS ON STANDARD CATCH BASINS.
- SILT FENCE SEE DTL

NOTES:

1. NO STOCKPILING ALLOWED ON SITE.

HWY 211/ W MAIN ST

S ONA WAY

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FF=343.5

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CONSTRUCTION ENTRANCE

PCC WASHOUT

PORTABLE TOILET

9+60 10+00 11+00 12+00 13+00 14+00

0 10 20 40 (feet)

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REGISTERED PROFESSIONAL ENGINEER
OREGON
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STEVEN A. WESTECH
RENEWS: 6/30/2024

REVIEW

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MOLALLA APARTMENTS PHASE II
HOME FIRST DEVELOPMENT PARTNERS

EROSION CONTROL PLAN– STREETS & UTILITIES

DRAWING
C2.1

JOB NUMBER
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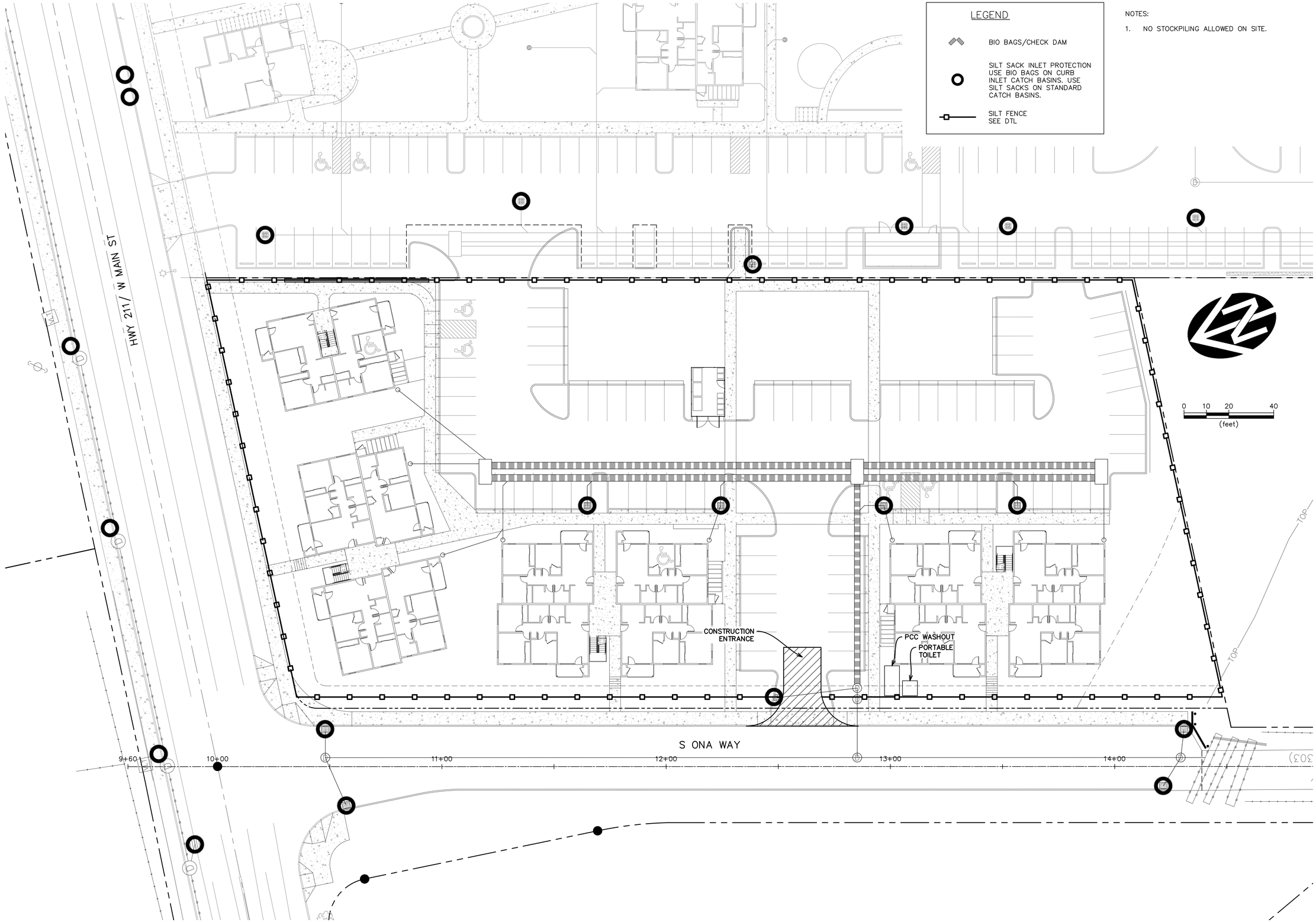

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DRN. AR
CKD. SAW
DATE: DEC 2021

REGISTERED PROFESSIONAL ENGINEER
STEVEN A. WRAY
16, 1982
OREGON
REVIEW
RENEWS: 6/30/2024

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MOLALLA APARTMENTS PHASE II
HOME FIRST DEVELOPMENT PARTNERS

EROSION CONTROL PLAN– VERTICAL CONSTRUCTION

DRAWING
C2.2

JOB NUMBER
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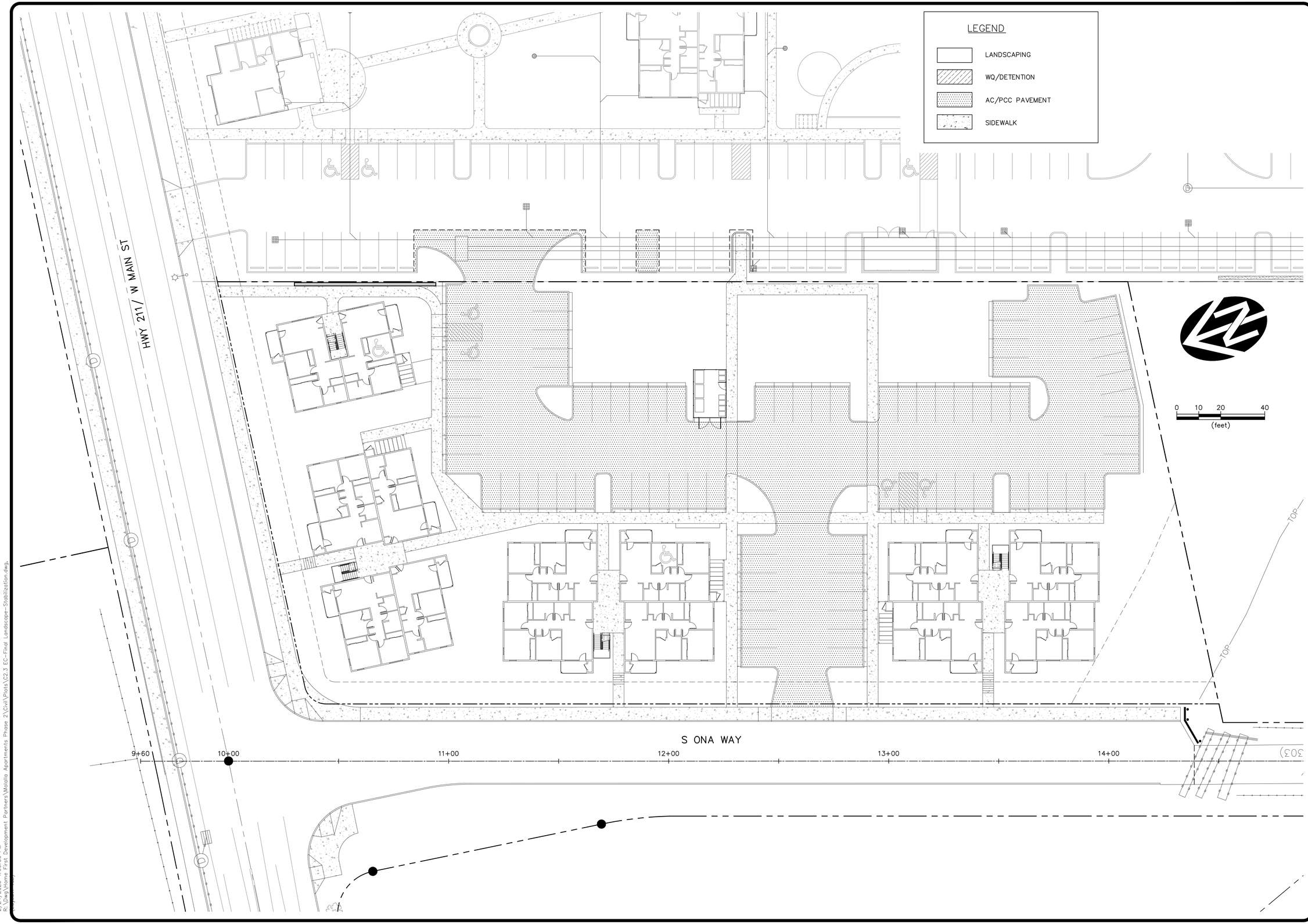

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DSN. SAW
DRN. AR
CKD. SAW
DATE: DEC 2021

REGISTERED PROFESSIONAL ENGINEER
STEVEN A. WARD
EXPIRES: 6/30/2024
REVIEW

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MOLALLA APARTMENTS PHASE II
HOME FIRST DEVELOPMENT PARTNERS

EROSION CONTROL PLAN– FINAL LANDSCAPE & STABILIZATION

DRAWING
C2.3

JOB NUMBER
3312.1000.0

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DEQ EROSION CONTROL STANDARD NOTES:

1. Include a list of all personnel (by name and position) that are responsible for the design, installation and maintenance of stormwater control measures (e.g. ESCP developer, BMP installer (see Section 4.10), as well as their individual responsibilities. (Section 4.4.c.ii)
2. Visual monitoring inspection reports must be made in accordance with DEQ 1200–C permit requirements. (Section 6.5)
3. Inspection logs must be kept in accordance with DEQ's 1200–C permit requirements. (Section 6.5.q)
4. Retain a copy of the ESCP and all revisions on site and make it available on request to DEQ, Agent, or the local municipality. (Section 4.7)
5. The permit registrant must implement the ESCP. Failure to implement any of the control measures or practices described in the ESCP is a violation of the permit. (Sections 4 and 4.11)
6. The ESCP must be accurate and reflect site conditions. (Section 4.8)
7. Submission of all ESCP revisions is not required. Submittal of the ESCP revisions is only under specific conditions. Submit all necessary revision to DEQ or Agent within 10 days. (Section 4.9)
8. Sequence clearing and grading to the maximum extent practical to prevent exposed inactive areas from becoming a source of erosion. (Section 2.2.2)
9. Create smooth surfaces between soil surface and erosion and sediment controls to prevent stormwater from bypassing controls and ponding. (section 2.2.3)
10. Identify, mark, and protect (by construction fencing or other means) critical riparian areas and vegetation including important trees and associated rooting zones, and vegetation areas to be preserved. Identify vegetative buffer zones between the site and sensitive areas (e.g., wetlands), and other areas to be preserved, especially in perimeter areas. (Section 2.2.1)
11. Preserve existing vegetation when practical and re–vegetate open areas. Re–vegetate open areas when practicable before and after grading or construction. Identify the type of vegetative seed mix used. (Section 2.2.5)
12. Maintain and delineate any existing natural buffer within the 50–feet of waters of the state. (Section 2.2.4)
13. Install perimeter sediment control, including storm drain inlet protection as well as all sediment basins, traps, and barriers prior to land disturbance. (Sections 2.1.3)
14. Control both peak flow rates and total stormwater volume, to minimize erosion at outlets and downstream channels and streambanks. (Sections 2.1.1. and 2.2.16)
15. Control sediment as needed along the site perimeter and at all operational internal storm drain inlets at all times during construction, both internally and at the site boundary. (Sections 2.2.6 and 2.2.13)
16. Establish concrete truck and other concrete equipment washout areas before beginning concrete work. (Section 2.2.14)
17. Apply temporary and/or permanent soil stabilization measures immediately on all disturbed areas as grading progresses. Temporary or permanent stabilizations measures are not required for areas that are intended to be left unvegetated, such as dirt access roads or utility pole pads. (Sections 2.2.20 and 2.2.21)
18. Establish material and waste storage areas, and other non–stormwater controls. (Section 2.3.7)
19. Keep waste container lids closed when not in use and close lids at the end of the business day for those containers that are actively used throughout the day. For waste containers that do not have lids, provide either (1) cover (e.g., a tarp, plastic sheeting, temporary roof) to prevent exposure of wastes to precipitation, or (2) a similarly effective means designed to prevent the discharge of pollutants (e.g., secondary containment). (Section 2.3.7)
20. Prevent tracking of sediment onto public or private roads using BMPs such as: construction entrance, graveled (or paved) exits and parking areas, gravel all unpaved roads located onsite, or use an exit tire wash. These BMPs must be in place prior to land–disturbing activities. (Section 2.2.7)
21. When trucking saturated soils from the site, either use water–tight trucks or drain loads on site. (Section 2.2.7.f)
22. Control prohibited discharges from leaving the construction site, i.e., concrete wash–out, wastewater from cleanout of stucco, paint and curing compounds. (Sections 1.5 and 2.3.9)
23. Ensure that steep slope areas where construction activities are not occurring are not disturbed. (Section 2.2.10)
24. Prevent soil compaction in areas where post–construction infiltration facilities are to be installed. (Section 2.2.12)
25. Use BMPs to prevent or minimize stormwater exposure to pollutants from spills; vehicle and equipment fueling, maintenance, and storage; other cleaning and maintenance activities; and waste handling activities. These pollutants include fuel, hydraulic fluid, and other oils from vehicles and machinery, as well as debris, fertilizer, pesticides and herbicides, paints, solvents, curing compounds and adhesives from construction operations.(Sections 2.2.15 and 2.3)
26. Provide plans for sedimentation basins that have been designed per Section 2.2.17 and stamped by an Oregon Professional Engineer. (See Section 2.2.17.a)
27. If engineered soils are used on site, a sedimentation basin/impoundment must be installed. (See Sections 2.2.17 and 2.2.18)
28. Provide a dewatering plan for accumulated water from precipitation and uncontaminated groundwater seepage due to shallow excavation activities. (See Section 2.4)
29. Implement the following BMPs when applicable: written spill prevention and response procedures, employee training on spill prevention and proper disposal procedures, spill kits in all vehicles, regular maintenance schedule for vehicles and machinery, material delivery and storage controls, training and signage, and covered storage areas for waste and supplies. (Section 2.3)
30. Use water, soil–binding agent or other dust control technique as needed to avoid wind–blown soil. (Section 2.2.9)
31. The application rate of fertilizers used to reestablish vegetation must follow manufacturer's recommendations to minimize nutrient releases to surface waters. Exercise caution when using time–release fertilizers within any waterway riparian zone. (Section 2.3.5)
32. If an active treatment system (for example, electro–coagulation, flocculation, filtration, etc.) for sediment or other pollutant removal is employed, submit an operation and maintenance plan (including system schematic, location of system, location of inlet, location of discharge, discharge dispersion device design, and a sampling plan and frequency) before operating the treatment system. Obtain Environmental Management Plan approval from DEQ before operating the treatment system. Operate and maintain the treatment system according to manufacturer's specifications. (Section 1.2.9)
33. Temporarily stabilize soils at the end of the shift before holidays and weekends, if needed. The registrant is responsible for ensuring that soils are stable during rain events at all times of the year. (Section 2.2)
34. As needed based on weather conditions, at the end of each workday soil stockpiles must be stabilized or covered, or other BMPs must be implemented to prevent discharges to surface waters or conveyance systems leading to surface waters. (Section 2.2.8)
35. Sediment fence: remove trapped sediment before it reaches one third of the above ground fence height and before fence removal. (Section 2.1.5.b)
36. Other sediment barriers (such as biobags): remove sediment before it reaches two inches depth above ground height and before BMP removal. (Section 2.1.5.c)
37. Catch basins: clean before retention capacity has been reduced by fifty percent. Sediment basins and sediment traps: remove trapped sediments before design capacity has been reduced by fifty percent and at completion of project. (Section 2.1.5.d)
38. Within 24 hours, significant sediment that has left the construction site, must be remediated. Investigate the cause of the sediment release and implement steps to prevent a recurrence of the discharge within the same 24 hours. Any in–stream clean–up of sediment shall be performed according to the Oregon Department of State Lands required timeframe. (Section 2.2.19.a)
39. The intentional washing of sediment into storm sewers or drainage ways must not occur. Vacuuming or dry sweeping and material pickup must be used to cleanup released sediments. (Section 2.2.19)
40. Document any portion(s) of the site where land disturbing activities have permanently ceased or will be temporarily inactive for 14 or more calendar days. (Section 6.5.f.)
41. Provide temporary stabilization for that portion of the site where construction activities cease for 14 days or more with a covering of blown straw and a tackifier, loose straw, or an adequate covering of compost mulch until work resumes on that portion of the site. (Section 2.2.20)
42. Do not remove temporary sediment control practices until permanent vegetation or other cover of exposed areas is established. Once construction is complete and the site is stabilized, all temporary erosion controls and retained soils must be removed and disposed of properly, unless needed for long term use following termination of permit coverage. (Section 2.2.21)

Rev. 12/15/20
By: Blair Edwards

YEAR: / MONTH:	'23 06	'23 07	'23 08	'23 09	'23 10	'23 11	'23 12	'24 01	'24 02	'24 03	'24 04	'24 05
CLEARING	X	X										
EXCAVATION		X	X	X								
GRADING		X	X	X	X	X	X	X	X			
CONSTRUCTION		X	X	X	X	X	X	X	X			
SEDIMENT CONTROLS:												
Silt Fencing		X	X	X	X	X	X	X	X			
Sediment Traps		X	X	X	X	X	X	X	X			
Sediment Basins												
Storm Inlet Protection												
Drainage Swales												
Check Dams												
Contour Furrows												
Terracing												
Pipe Slope Drains												
Rock Outlet Protection												
Gravel Construction Entrance	X	X	X	X	X	X	X	X	X			
Grass–lined Channel (Turf Reinforcement Mats)												
Protection of trees with construction fences												
Temporary Seeding and Planting												
Permanent Seeding and Planting												
Other:												

CONTROL MEASURE	PHASE 1	PHASE 2	PHASE 3	PHASE 4	PHASE 5
Silt Fencing	X	X	X	X	
Construction Entrance	X	X			
Sediment Traps			X	X	
Storm Inlet Protection			X	X	
Concrete Washout			X	X	
Rock Outlet Protection			X	X	X
Permanent Seeding and Planting					X

Phase 1: Prior to Ground Disturbance
Phase 2: After Completion of Rough Grading
Phase 3: After Installation of Storm Facilities
Phase 4: After Paving & Construction
Phase 5: After Project Completion and Cleanup

BMP Rationale

A comprehensive list of available Best Management Practices (BMP) options based on DEQ's 1200–C Permit Application and ESCP Guidance Document has been reviewed to complete this Erosion and Sediment Control Plan. Some of the above listed BMPs were not chosen because they were determined to not effectively manage erosion prevention and sediment control for this project based on specific site conditions, including soil conditions, topographic constraints, accessibility to the site, and other related conditions. As the project progresses and there is a need to revise the ESCP, an Action Plan will be submitted.

SOIL TYPE(S): PER CLACKAMAS COUNTY CO. SOIL SURVEY THE SITE SOILS INCLUDE, "DAYTON SILT LOAM & WAPATO SILTY CLAY LOAM"

EROSION HAZARD: PER CLACKAMAS CO. SOIL SURVEY EROSION HAZARD IS NOT RATED

SITE AREA: 2.37 Ac

DISTURBANCE AREA: 2.37 Ac

LOCAL RAIN GAGE: Canby 0.2S, OR US
Lat/Long: 45.2008, –122.6375

INSPECTION FREQUENCY FOR BMP

Site Condition	Minimum Frequency
1. Active period	On initial date that land disturbance activities commence. Within 24 hours of any storm event, including runoff from snow melt, that results in discharge from the site. At least once every 14 days, regardless of whether stormwater runoff is occurring.
2. Inactive periods greater than fourteen (14) consecutive calendar days	The Inspector may reduce the frequency of inspections in any area of the site where the stabilization steps in Section 2.2.20 have been completed to twice per month for the first month, no less than 14 calendar days apart, then once per month.
3. Periods during which the site is inaccessible due to inclement weather	If safe, accessible and practical, inspections must occur daily at a relevant discharge point or downstream location of the receiving waterbody.
4. Periods during which construction activities are suspended and runoff is unlikely due to frozen conditions.	Visual monitoring inspections may be temporarily suspended. Immediately resume monitoring upon thawing, or when weather conditions make discharges likely.
5. Periods during which construction activities are conducted and runoff is unlikely during frozen conditions.	Visual monitoring inspections may be reduced to once a month. Immediately resume monitoring upon thawing, or when weather conditions make discharges likely.

Spill Prevention Procedures and Response

- Spill prevention is an important factor in the successful operation of a storm water injection management system. All contractor employees will be trained on this plan so that they are certain of the location of materials, who to notify in case of a spill, and how to initially contain the spill of hazardous materials. Contractor employees shall never dispose waste materials into the storm water collection/treatment system. Contractor employees will be observant of other potential contamination occurrences. All contractor employees will review this plan especially with regards to the detailed spill response steps.
- This data will be posted in an accessible area at the site.

What to do in case of a spill

1. Spill kit to be located near the job trailer or another conspicuous location and clearly marked.
2. Get the spill kit.
   a. If possible, determine visually what types of fluids have been spilled.
   b. Put on gloves and glasses or any other necessary Personal Protective Equipment (PPE).
   c. Get the absorbent material provided in the kit and the drain block cover.
   d. Place the absorbent materials in the path of the spill.
   e. Remove any debris from the vicinity of the inlet where the spill is draining.
   f. Unroll the drain block cover and place it snugly over the inlet.
   g. Verify that the cover has full contact with the rim of the inlet.
   h. Use snakes, pillow or pigs to completely contain the area.
3. Notify the following personnel immediately:
   a. 1200–C Permit Registrant's Representative
   b. When a spill includes any of the below, notify the Oregon Emergency Response System as soon as the Owner's Representative has knowledge of the release. Oregon Emergency Response System Phone: 1–800–452–0311
      i. Any amount of oil to waters of the state;
      ii. Oil spills on land in excess of 42 gallons;
      iii. Hazardous materials that are equal to, or greater than, the quantity listed in the Code of Federal Regulations, 40 CFR Part 302 (List of Hazardous Substances and Reportable Quantities), and amendments adopted before July 1, 2002

NOTE: Only dry cleanup methods will be employed to clean up spills (i.e., no use of water to wash spilled materials from pavement will be conducted). All spill cleanups shall be conducted in accordance with applicable regulations.

Responsible Personnel

In case of spill contact the General Contractor and 1200–C Permit Registrant's Representative immediately. The Permit Registrant's Representative will be responsible for either managing the spill clean up for minor spills or contacting/retaining a company for the cleanup of major spills.

Waste Management Procedures

Activities performed onsite shall implement the following to eliminate the discharge of waste:

1. Locate activities that include waste products away from waters of the state and stormwater inlets or conveyances so that stormwater coming into contact with these activities cannot reach waters of the state;
2. Ensure adequate supplies are available at all times to handle spills, leaks, and disposal of liquids, and provide secondary containment (e.g. spill berms, decks, spill containment pallets);
3. Have a spill kit available on site and ensure personnel are available to respond expeditiously in the event of a leak or spill;
4. Clean up spills or contaminated surfaces immediately using dry clean up measures (do not clean contaminated surfaces by hosing the area down), and eliminate the source of the spill to prevent a discharge or a continuation of an ongoing discharge; and
5. Store materials in a covered area (e.g., plastic sheeting, temporary roofs), or in secondary containment to prevent the exposure of these containers to precipitation or stormwater runoff, or a similarly effective means designed to prevent the discharge of pollutants from these areas.
6. Building Materials & Building Products: Minimize material exposure in cases where the exposure to precipitation or to stormwater will result in a discharge of pollutants (e.g. elevate materials from soil to prevent leaching of pollutants).

Fertilizers, pesticides, herbicides, & insecticides

Comply with all application and disposal requirements included on the registered pesticide, herbicide, insecticide, and fertilizer label. When applying fertilizers, registrants must:

1. Apply at a rate and in amounts consistent with manufacturer's specifications;
2. Apply at the appropriate time of year for the location, and preferably timed to coincide as closely as possible to the period of maximum vegetation uptake and growth;
3. Avoid applying before heavy rains that could cause excess nutrients to be discharged;
4. Never apply to frozen ground;
5. Never apply to stormwater conveyance channels; and
6. Follow all other federal, state, and local requirements regarding fertilizer application.

Authorized non–stormwater discharges anticipated for the proposed project:

1. Landscape irrigation
2. Dust control water
3. Water line flushing (potable)

Potential pollutant–generating activities anticipated for the proposed project including an inventory of pollutants for each activity:

1. Mass Grading, Street & Utility Construction
   a. Sediment
   b. Vehicle and machinery related pollutants (Fuels, hydraulic fluid, oils)
2. Vertical Construction
   a. Paints, caulks, sealants, solvents
   b. Fluorescent light ballasts
   c. Sediment
   d. Vehicle and machinery related pollutants (Fuels, hydraulic fluid, oils)
3. Landscaping & Irrigation
   a. Fertilizers
   b. Pesticides, Herbicides, Insecticides

EROSION CONTROL INSPECTION RESPONSIBILITIES:

1. PRIOR TO CONTRACT AWARD, INSPECTOR TO BE DANIEL THOMPSON AT WESTECH ENGINEERING, INC. (503–585–2474), EXPIRES MAY 24, 2023.
2. AFTER CONTRACT AWARD AND PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL ACQUIRE THE SERVICES OF A CERTIFIED EROSION CONTROL INSPECTOR MEETING DEQ REQUIREMENTS UNDER THE 1200–C PERMIT AND NOTIFY DEQ OF THE CERTIFIED EROSION CONTROL INSPECTOR.

NO.	DATE	DESCRIPTION	BY
		REVISIONS	

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IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY
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DSN. SAW
DRN. AR
CKD. SAW
DATE: DEC 2021

REGISTERED PROFESSIONAL ENGINEER
OREGON JULY 16, 1982 STEVEN A. WARD
REVIEW
RENEWS: 6/30/2024

WESTECH ENGINEERING, INC.
CONSULTING ENGINEERS AND PLANNERS
3841 Fairview Industrial Dr. S.E., Suite 100, Salem, OR 97302
Phone: (503) 585–2474 Fax: (503) 585–3986
E–mail: westech@westech–eng.com

MOLALLA APARTMENTS PHASE II
HOME FIRST DEVELOPMENT PARTNERS

EROSION CONTROL NOTES & DETIALS

DRAWING
C2.4

JOB NUMBER
3312.1000.0

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SUPPLEMENTAL WESTECH NOTES:

1. Erosion control measures shall be maintained in such a manner as to ensure that sediment and sediment–laden water does not enter the drainge system, roadways, or violate applicable water quality standards.

2. The erosion control construction, maintenance, replacement and upgrading of the erosion control facilities is the responsibility of the 1200–C Permit Registrant until all construction is completed and approved, and permanent erosion control (i.e. vegetation/landscaping) is established on all disturbed areas.

3. All recommended erosion control procedures are dependent on construction methods, staging, site conditions, weather and scheduling. During the construction period, erosion control facilities shall be upgraded as necessary due to unexpected storm events and to ensure that sediment and sediment laden water does not leave the site.

4. The 1200–C Permit Registrant is responsible for control of sediment transport within project limits. If an installed erosion control system does not adequately contain sediment on site, then the erosion control measures shall be adjusted or supplemented by the 1200–C Permit Registrant as necessary to ensure that sediment laden water does not leave the site. Additional measures shall be provided as required to ensure that all paved areas are kept clean for the duration of the project. Additional interim measures will include, at a minimum, installation of silt fences in accordance with the details shown on the drawings. These measures shall be installed along all exposed embankments and cut slopes to prevent sediment transport.

5. All existing and newly constructed storm inlets and drains shall be protected until pavement surfaces are completed and/or vegetation is established.

6. Erosion control facilities and sediment fences on active sites shall be inspected by the 1200–C Permit Registrant at least daily during any period with measurable precipitation. Any required repairs or maintenance shall be completed immediately. The erosion control facilities on inactive sites shall be inspected and maintained by the 1200–C Permit Registrant a minimum of once a month or within 24 hours following the start of a storm event.

7. All catch basins and conveyance lines shall be cleaned prior to paving. The cleaning operation shall not flush sediment–laden water into the downstream system. The 1200–C Permit Registrant shall remove all accumulated sediment from all impacted catch basins and storm pipes prior to acceptance by the Owner.

8. The 1200–C Permit Registrant is solely responsible for protection of all adjacent property and downstream facilities from erosion and siltation during project construction. Any damage resulting from such erosion and siltation shall be corrected at the sole expense of the 1200–C Permit Registrant.

9. Locate any portable toilets away from waters of the state and stormwater inlets or conveyances. Position portable toilets so they are secure and will not be tipped or knocked over.

10. The 1200–C Permit Registrant shall provide site watering as necessary to prevent wind erosion of fine–grained soils.

11. Unless otherwise indicated on the drawings, all temporary erosion control facilities, including sediment fences, silt sacks, bio–bags, etc. shall be removed within 30 days after permanent landscaping/vegetation is established.

12. Sediment fences shall be constructed of continuous filter fabric to avoid use of joints. When joints are necessary, filter cloth shall be spliced together only at a support post, with a minimum 6–inch overlap, and both ends securely fastened to a post.

13. Sediment fence shall be installed per drawing details. Sediment fences shall have adequate support to contain all silt and sediment captured.

14. The standard strength filter fabric shall be fastened securely to stitched loops installed on the upslope side of the posts, and 6 inches of the fabric shall be extended into the trench. The fabric shall not extend more than 30 inches above the original ground surface. Filter fabric shall not be stapled to existing trees.

15. Bio–filter bags shall be clean 100 percent wood product waste. Bags shall be 18–inch x 18–inch x 30–inch, weigh approximately 45 lbs., and be contained in a bag made of 1/2–inch plastic mesh.

16. Sediment barriers shall be maintained until the up–slope area has been permanently stabilized. At no time shall more than 10–inches of sediment be allowed to accumulate behind sediment fences. No more than 2 inches of sediment shall be allowed to accumulate behind bio–filter bags. Sediment shall be removed prior to reaching the above stated depths. New sediment barriers shall be installed uphill as required to control sediment transport.

17. Stabilized construction entrances shall be installed at the beginning of construction and maintained for the duration of the project. Additional measures may be required to ensure that all paved areas are kept clean for the duration of the project.

18. The 1200–C Permit Registrant shall verify that all trucks are well sealed when transporting saturated soils from the site. Water drippage from trucks transporting saturated soils must be reduced to less than 1 gallon per hour prior to leaving the site.

19. The entrance shall be maintained in a condition that will prevent tracking or flow of mud onto the public right–of–way or approved access point. The entrance may require periodic top dressing as conditions demand, and repair and/or cleanout of any structures used to trap sediment.

20. All materials spilled, dropped, washed, or tracked from vehicles onto roadways or into storm drains must be removed immediately, and protection provided for downstream inlets and catch basins to ensure sediment laden water does not enter the storm drain system.

21. Temporary grass cover measures must be fully established by October 15th, or other cover measures (ie. erosion control blankets with anchors, 3–inches minimum of straw mulch, 6 mil HDPE plastic sheet, etc.) shall be in place over all disturbed soil areas until April 30th. To establish an adequate grass stand for controlling erosion by October 15th, it is recommended that seeding and mulching occur by September 1st. Straw mulch, if used, shall not leave any bare ground visible through the straw.

22. Minimum slope protection. For slopes steeper than 3H:1V but less than 2H:1V, use Tensar/North American Green Type S150 erosion control blanket. For slopes 2H:1V or steeper, use Tensar/North American Green Type SC150 erosion control blanket. Use a minimum of 2–inches straw mulch or Tensar/North American Green Type S150 for slopes flatter than 3H:1V. Slope protection shall be placed on all disturbed areas immediately after completion of each section of construction activity, until the erosion control seeding has been established. As an option during temporary or seasonal work stoppages, a 6–mil HDPE plastic sheet may be placed on exposed slopes. The plastic sheet shall be provided with an anchor trench at the top and bottom of the slope, and shall be sandbagged on the slopes as required to prevent damage or displacement by wind.

23. Permanent erosion control vegetation on all embankments and disturbed areas shall be re–established as soon as construction is completed.

24. Soil preparation. Topsoil should be prepared according to landscape plans, if available, or recommendations of grass seed supplier. It is recommended that slopes be textured before seeding by rack walking (ie. driving a crawling tractor up and down the slopes to leave a pattern of cleat imprints parallel to slope contours) or other method to provide stable areas for seeds to rest.

25. When used, hydromulch shall be applied with grass seed at a rate of 2000 lbs. per acre between April 30 and June 10, or between September 1 and October 1. On slopes steeper than 10 percent, hydroseed and mulch shall be applied with a bonding agent (tackifier). Application rate and methodology to be in accordance with seed supplier recommendations.

26. When used in lieu of hydromulch, dry, loose, weed free straw used as mulch shall be applied at a rate of 4000 lbs. per acre (double the hydromulch application requirement). Anchor straw by working in by hand or with equipment (rollers, cleat trackers, etc.). Mulch shall be spread uniformly immediately following seeding.

27. When conditions are not favorable to germination and establishment of the grass seed, the seeded and mulched areas shall be irrigated as required to establish the grass cover.

28. Seeding. Recommended erosion control grass seed mix is as follows. Dwarf grass mix (low height, low maintenance) consisting of dwarf perennial ryegrass (80 % by weight), creeping red fescue (20 % by weight). Application rate shall be 100 lbs. per acre minimum.

29. Grass seed shall be fertilized at a rate of 10 lbs. per 1000 S.F with 16– 16–16 slow release type fertilizer. Development areas within 50 feet of water bodies and wetlands must use a non–phosphorous fertilizer.

30. Prior to starting construction the 1200–C Permit Registrant shall acquire the services of a DEQ Certified Erosion and Sediment Control Inspector and shall submit an "Action Plan" to DEQ identifying their names, contact information, training and experience as required in Schedule A.6.b.i–ii of the 1200–C Permit

31. The 1200–C Permit Registrant shall submit "Notice of Termination" to DEQ to end the 1200–C permit coverage once all soil disturbance activities have been completed and final stabilization of exposed soils has occurred.

32. If there is any conflict, discrepancy, or inconsistency between the DEQ Erosion Control Standard Notes and the Supplemental Westech Notes, the DEQ Notes will control.

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DATE: DEC 2021		REVISIONS	

DESCRIPTION BY

REGISTERED PROFESSIONAL ENGINEER
STEVEN A. WEGENER
OREGON
16, 2012
EXPIRES
REVIEW
RENEWS: 6/30/2024

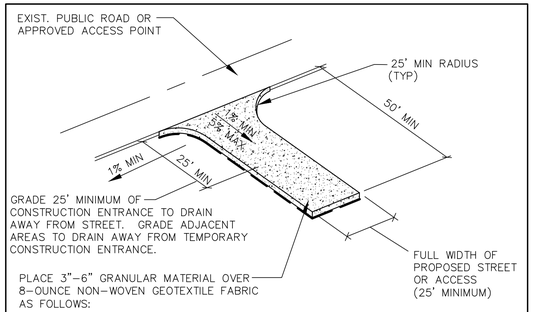
WESTECH ENGINEERING, INC.
CONSULTING ENGINEERS AND PLANNERS
3841 Fairview Industrial Dr. S.E., Suite 100, Salem, OR 97302
Phone: (503) 585–2474 Fax: (503) 585–3986
E–mail: westech@westech–eng.com

MOLALLA APARTMENTS PHASE II
HOME FIRST DEVELOPMENT PARTNERS

EROSION CONTROL NOTES & DETAILS

DRAWING
C2.5

JOB NUMBER
3312.1000.0



DRY WEATHER ACCESS
14–INCH MIN. DEPTH OVER COMPACTED SUBGRADE & FABRIC

WET WEATHER ACCESS
24–INCH MIN. DEPTH OVER UNDISTURBED SUBGRADE & FABRIC

CONSTRUCTION NOTES:

1. THE AREA OF THE CONSTRUCTION ENTRANCE SHALL BE STRIPPED OF ALL TOPSOIL, VEGETATION, ROOTS, AND OTHER NON–COMPACTABLE MATERIAL.
2. SUBGRADE SHALL BE COMPACTED AND PROOFROLLED PRIOR TO PLACEMENT OF GRANULAR MATERIAL. FAILURE TO PASS PROOFROLL WILL REQUIRE USE OF WET WEATHER SECTION.
3. FAILURE OR PUMPING OF THE DRY WEATHER SECTION WILL REQUIRE REMOVAL OF THE GRANULAR MATERIAL AND INSTALLATION OF THE WET WEATHER SECTION.

MAINTENANCE NOTES:

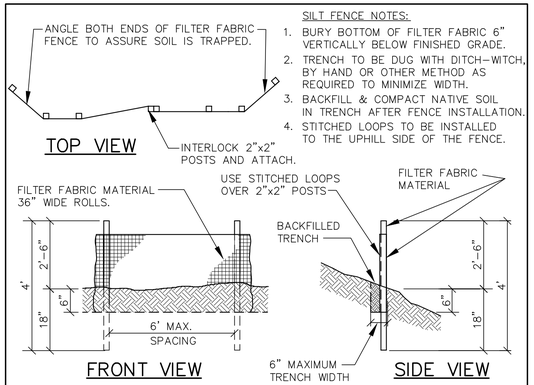
1. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOW OF SEDIMENT ONTO PUBLIC RIGHT–OF–WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH 3"–6" INCH STONE AS CONDITIONS DEMAND, AND REPAIR AND/OR CLEAN–OUT OF STRUCTURES USED TO TRAP SEDIMENT.
2. ALL MATERIALS SPILLED, DROPPED, WASHED OR TRACKED FROM VEHICLES ONTO ROADWAYS OR INTO STORM DRAINS MUST BE REMOVED IMMEDIATELY.
3. ALL TRUCKS TRANSPORTING SATURATED SOILS SHALL BE WELL SEALED. WATER DRIPPAGE FROM TRUCKS MUST BE REDUCED TO 1 GALLON PER HOUR PRIOR TO LEAVING THE SITE.

LAST REVISION DATE:	JO #
MAY 2013	STANDARD

TEMPORARY CONSTRUCTION ENTRANCE

(NTS)

WESTECH ENG.	DETAIL NO.
	6100



SILT FENCE NOTES:

1. BURY BOTTOM OF FILTER FABRIC 6" VERTICALLY BELOW FINISHED GRADE.
2. TRENCH TO BE DUG WITH DITCH–WITCH, BY HAND OR OTHER METHOD AS REQUIRED TO MINIMIZE WIDTH.
3. BACKFILL & COMPACT NATIVE SOIL IN TRENCH AFTER FENCE INSTALLATION.
4. STITCHED LOOPS TO BE INSTALLED TO THE UPHILL SIDE OF THE FENCE.

MAINTENANCE NOTES:

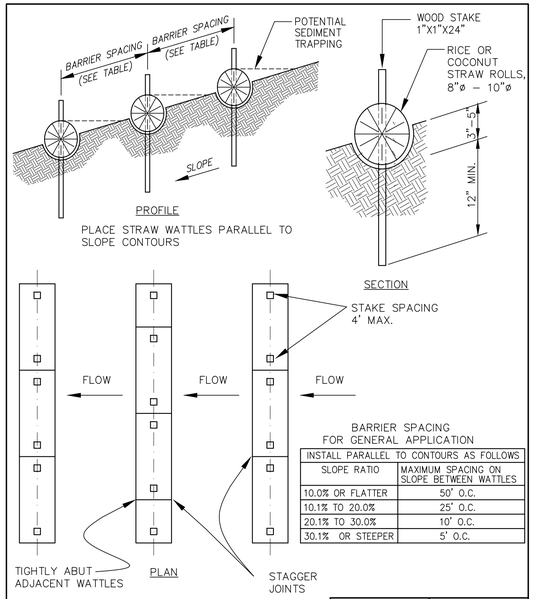
1. SEDIMENT BARRIERS SHALL BE MAINTAINED UNTIL UP–SLOPE AREA IS PERMANENTLY STABILIZED.
2. AT NO TIME SHALL MORE THAN ONE FOOT OF SEDIMENT BE ALLOWED TO ACCUMULATE BEHIND SEDIMENT FENCES OR BIOFILTER BAGS.
3. NEW SEDIMENT BARRIERS SHALL BE INSTALLED UPHILL AS REQUIRED TO CONTROL SEDIMENT TRANSPORT.

LAST REVISION DATE:	JO #
APRIL 2014	STANDARD

SEDIMENT BARRIERS

(NTS)

WESTECH ENG.	DETAIL NO.
	6110



BARRIER SPACING FOR GENERAL APPLICATION

INSTALL PARALLEL TO CONTOURS AS FOLLOWS	
SLOPE RATIO	MAXIMUM SPACING ON SLOPE BETWEEN WATTLES
10.0% OR FLATTER	50' O.C.
10.1% TO 20.0%	25' O.C.
20.1% TO 30.0%	10' O.C.
30.1% OR STEEPER	5' O.C.

NOTES:

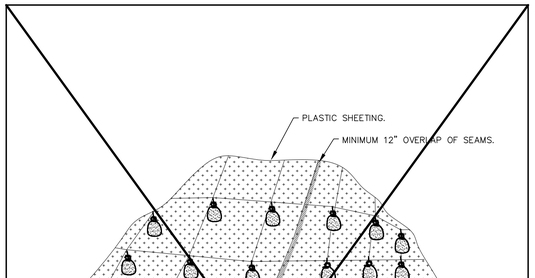
1. ALL MATERIAL SHALL CONFORM TO OSHD STANDARD SPECIFICATIONS, 1996 EDITION.
2. SEDIMENT BARRIERS SHALL BE MAINTAINED UNTIL UP–SLOPE AREA IS PERMANENTLY STABILIZED.
3. AT NO TIME SHALL SEDIMENT BE ALLOWED TO ACCUMULATE ABOVE THE TOP OF THE STRAW WATTLE.
4. NEW SEDIMENT BARRIERS SHALL BE INSTALLED UPHILL AS REQUIRED TO CONTROL SEDIMENT TRANSPORT.

LAST REVISION DATE:	JO #
DEC. 2000	STANDARD

STRAW WATTLE SEDIMENT BARRIER

(NTS)

WESTECH ENG.	DETAIL NO.
	6120



STOCKPILE DETAIL

NOTES:

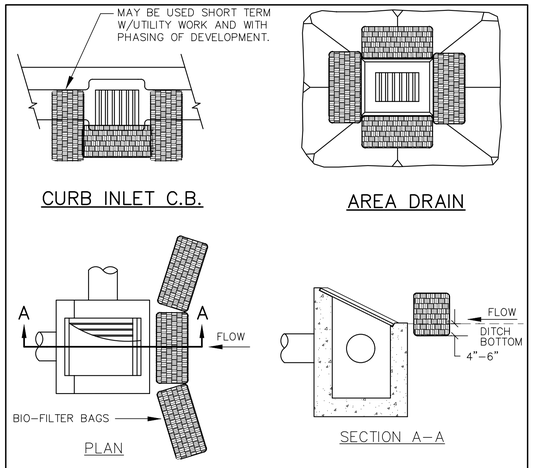
1. MINIMUM 12" OVERLAP OF ALL SEAMS REQUIRED.
2. SEDIMENT BARRIER REQUIRED @ TOE OF STOCK PILE.
3. COVERING MAINTAINED TIGHTLY IN PLACE BY USING SANDBAGS OR TIRES ON ROPES WITH A MAXIMUM 10' GRID SPACING IN ALL DIRECTIONS.
4. PLASTIC SHEETING TO EXTEND A MINIMUM OF 12" PAST THE BOTTOM OF THE PILE ONTO SURROUNDING GRADE ON ALL SIDES.

LAST REVISION DATE:	JO #
JAN 2019	STANDARD

STOCKPILE DETAIL

(NTS)

WESTECH ENG.	DETAIL NO.
	6170



MAINTENANCE NOTES:

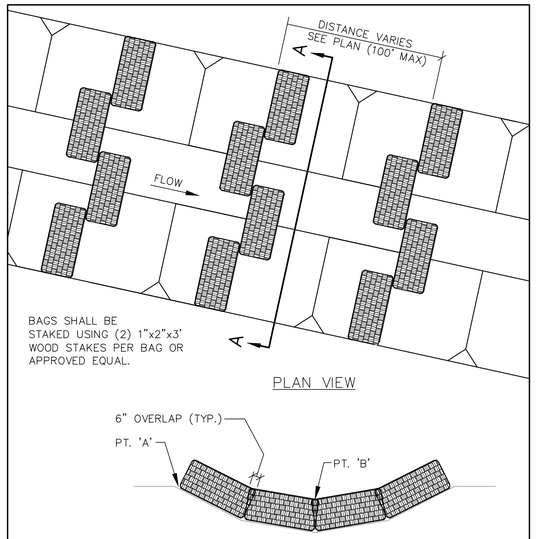
1. SEDIMENT BARRIERS SHALL BE MAINTAINED UNTIL UP–SLOPE AREA IS PERMANENTLY STABILIZED.
2. AT NO TIME SHALL MORE THAN ONE FOOT OF SEDIMENT BE ALLOWED TO ACCUMULATE BEHIND SEDIMENT FENCES OR BIOFILTER BAGS.
3. NEW SEDIMENT BARRIERS SHALL BE INSTALLED UPHILL AS REQUIRED TO CONTROL SEDIMENT TRANSPORT.

LAST REVISION DATE:	JO #
APRIL 2014	STANDARD

INLET SEDIMENT CONTROL

(NTS)

WESTECH ENG.	DETAIL NO.
	6130



MAINTENANCE NOTES:

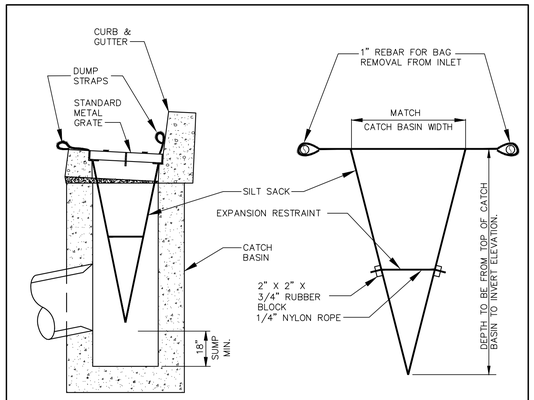
1. SEDIMENT BARRIERS SHALL BE MAINTAINED UNTIL UP–SLOPE AREA IS PERMANENTLY STABILIZED.
2. AT NO TIME SHALL MORE THAN ONE FOOT OF SEDIMENT BE ALLOWED TO ACCUMULATE BEHIND BIOFILTER BAGS.
3. NEW SEDIMENT BARRIERS SHALL BE INSTALLED UPHILL AS REQUIRED TO CONTROL SEDIMENT TRANSPORT.
4. PT. 'A' SHALL BE 6" MIN. HIGHER THAN PT. 'B'.

LAST REVISION DATE:	JO #
APRIL 2014	STANDARD

DITCH AND SWALE EROSION PROTECTION

(NTS)

WESTECH ENG.	DETAIL NO.
	6140



NOTES:

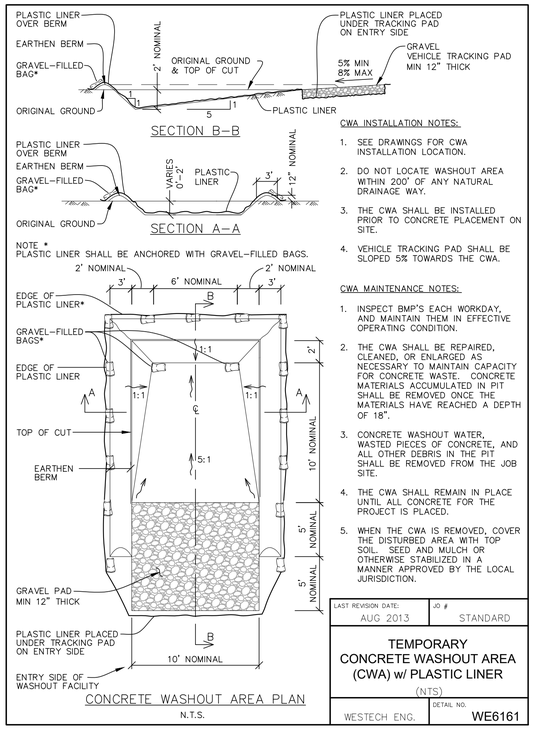
1. EMPTY SILT SACK AS NECESSARY.
2. SILTSACK SEDIMENT CONTROL DEVICE AS MANUFACTURED BY ACF ENVIRONMENTAL AND SUPPLIED BY ACF WEST (503) 771–5115 OR APPROVED EQUAL.

LAST REVISION DATE:	JO #
OCT 2002	STANDARD

SILTSACK INLET DETAIL

(NTS)

WESTECH ENG.	DETAIL NO.
	6150



CWA INSTALLATION NOTES:

1. SEE DRAWINGS FOR CWA INSTALLATION LOCATION.
2. DO NOT LOCATE WASHOUT AREA WITHIN 200' OF ANY NATURAL DRAINAGE WAY.
3. THE CWA SHALL BE INSTALLED PRIOR TO CONCRETE PLACEMENT ON SITE.
4. VEHICLE TRACKING PAD SHALL BE SLOPED 5% TOWARDS THE CWA.

CWA MAINTENANCE NOTES:

1. INSPECT BMP'S EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION.
2. THE CWA SHALL BE REPAIRED, CLEANED, OR ENLARGED AS NECESSARY TO MAINTAIN CAPACITY FOR CONCRETE WASTE. CONCRETE MATERIALS ACCUMULATED IN PIT SHALL BE REMOVED ONCE THE MATERIALS HAVE REACHED A DEPTH OF 18".
3. CONCRETE WASHOUT WATER, WASTED PIECES OF CONCRETE, AND ALL OTHER DEBRIS IN THE PIT SHALL BE REMOVED FROM THE JOB SITE.
4. THE CWA SHALL REMAIN IN PLACE UNTIL ALL CONCRETE FOR THE PROJECT IS PLACED.
5. WHEN THE CWA IS REMOVED, COVER THE DISTURBED AREA WITH TOP SOIL. SEED AND MULCH OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE LOCAL JURISDICTION.

LAST REVISION DATE:	JO #
AUG 2013	STANDARD

TEMPORARY CONCRETE WASHOUT AREA (CWA) w/ PLASTIC LINER

(NTS)

WESTECH ENG.	DETAIL NO.
	WE6161

NO.	DATE	DESCRIPTION	BY
		REVISIONS	

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

DSN. SAW
DRN. AR
CKD. SAW
DATE: DEC 2021

REGISTERED PROFESSIONAL ENGINEER — OREGON — JULY 16, 1982 — STEVEN A. WARD — RENEWS: 6/30/2024

REVIEW

WESTECH ENGINEERING, INC.
CONSULTING ENGINEERS AND PLANNERS
3841 Fairview Industrial Dr. S.E., Suite 100, Salem, OR 97302
Phone: (503) 585–2474 Fax: (503) 585–3986
E–mail: westech@westech–eng.com

MOLALLA APARTMENTS PHASE II
HOME FIRST DEVELOPMENT PARTNERS

EROSION CONTROL NOTES & DETAILS

DRAWING
C2.6

JOB NUMBER
3312.1000.0

2/24/2023 4:00:57 PM
R:\Dwg\Home First Development Partners\Molalla Apartments Phase 2\Civil\Plots\C2.4–6 EC Notes & Details.dwg, (C2.6 tab)

HWY 211/ W MAIN ST

11' R/W DEDICATION

FF=345.84

FF=347.34

FF=349.34

PROTECT CURB

SAWCUT

TW=345.33
BW=344.00

TC=FG=346.64

TC=345.1
FG=344.6

FG=345.5

TC=346.2
FG=345.7

FF=346.5

FG=345.4

TC=345.7
FG=345.2

FG=343.7

TC=345.0
FG=344.5

TC=343.5
FG=343.0

TC=344.7
FG=344.2

TWIN 36"
DETENTION PIPES
L=166'
S=0.10%
V=2,360 CF

5106-WQ UTILITY VAULT W/
5106-3-T-42C ROUND ACCESS
RIM=343.6
INV=336.60

5106-WQ UTILITY VAULT W/
5106-3-T-42C ROUND ACCESS
RIM=342.25
INV=336.50

TC=345.4
FG=344.9

FF=345.51

5106-WQ UTILITY VAULT W/
5106-3-T-42C ROUND ACCESS
RIM=344.4
INV=336.60

FG=345.0

5 RISERS
@ 7.1" EA

FF=345.5

CB RIM
RIM=343.0
INV=341.50

CB RIM
RIM=341.75
INV=339.25

CB RIM
RIM=341.8
INV=338.80

TWIN 36"
DETENTION PIPE
L=111'
S=0.10%
V=1,554 CF

CB RIM
RIM=342.75
INV=340.00

FF=344.5

FF=344.5

FF=343.5

FF=343.5

FG=344.0

FG=343.0

30" SD L=191'
S=0.10% V=446 CF

8" SD
L=38'
S=0.50%

CB RIM=339.3
INV=336.50

FCMH
RIM=340.0
INV=336.40

WQ MH
RIM=340.0
INV IN=336.35
INV OUT=335.55

8" SD
L=26'
S=0.50%

6 RISERS
@ 7" EA

8 RISERS
@ 6.75" EA

S ONA WAY

9+60

10+00

11+00

12+00

13+00

14+00

0 10 20 40
(feet)

NOTES:
1. SD LATERALS FROM CBS TO BE 8" @ 1% MIN GRADE.
2. RD LATERALS TO BE 6" @ 1% GMIN GRADE.
3. NO ACCESS TO THE SITE ALLOWED VIA PHASE I.

NO.	DATE	DESCRIPTION	BY
		REVISIONS	

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

DSN. SAW
DRN. AR
CKD. SAW
DATE: DEC 2021

REGISTERED PROFESSIONAL ENGINEER
OREGON JULY 16, 1982
STEVEN A. WESTECH
RENEWS: 6/30/2024

REVIEW

WESTECH ENGINEERING, INC.
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E-mail: westech@westech-eng.com

MOLALLA APARTMENTS PHASE II
HOME FIRST DEVELOPMENT PARTNERS

GRADING & DRAINAGE PLAN

DRAWING
C3.0

JOB NUMBER
3312.1000.0

2/24/2023 4:01:05 PM
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SURFACING LEGEND

LIGHT DUTY AC PAVEMENT
3½" AC PAVEMENT (2 LIFTS)
OVER 7" CR BASE

HEAVY DUTY AC PAVEMENT
3½" AC PAVEMENT (2 LIFTS)
OVER 11" CR BASE

HEAVY DUTY PCC
7" 3300 PSI PCC OVER 6" CR BASE
OVER COMPACTED SUBGRADE

PCC PEDESTRIAN SIDEWALK
4" 3300 PSI PCC OVER 2" CR BASE
OVER COMPACTED SUBGRADE

- (C) TYPE 'C' CURB
- (M) MATCH
- (E) END CURB
- (T) TRUNCATED DOMES
- (W) RETAINING WALL
- (S) SAWCUT
- RED STRIPE W/ 8" ROUND YELLOW TRAFFIC DELINEATOR

HWY 211/ W MAIN ST

S ONA WAY

SEE HIGHWAY DWGS FOR DETAILS

STANDARD BARRICADE

SEE DWG C5.0–C5.2 FOR ONA WAY IMPROVEMENTS

9+60 10+00 11+00 12+00 13+00 14+00

0 10 20 40
(feet)

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

DSN. SAW
DRN. AR
CKD. SAW
DATE: DEC 2021

NO.	DATE	DESCRIPTION	BY
1		REVISIONS	

REVIEW
REGISTERED PROFESSIONAL ENGINEER
STEVEN A. WARD
RENEWS: 6/30/2024

WESTECH ENGINEERING, INC.
CONSULTING ENGINEERS AND PLANNERS
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MOLALLA APARTMENTS PHASE II
HOME FIRST DEVELOPMENT PARTNERS

SURFACING PLAN

DRAWING
C3.1

JOB NUMBER
3312.1000.0

2/24/2023 4:01:11 PM
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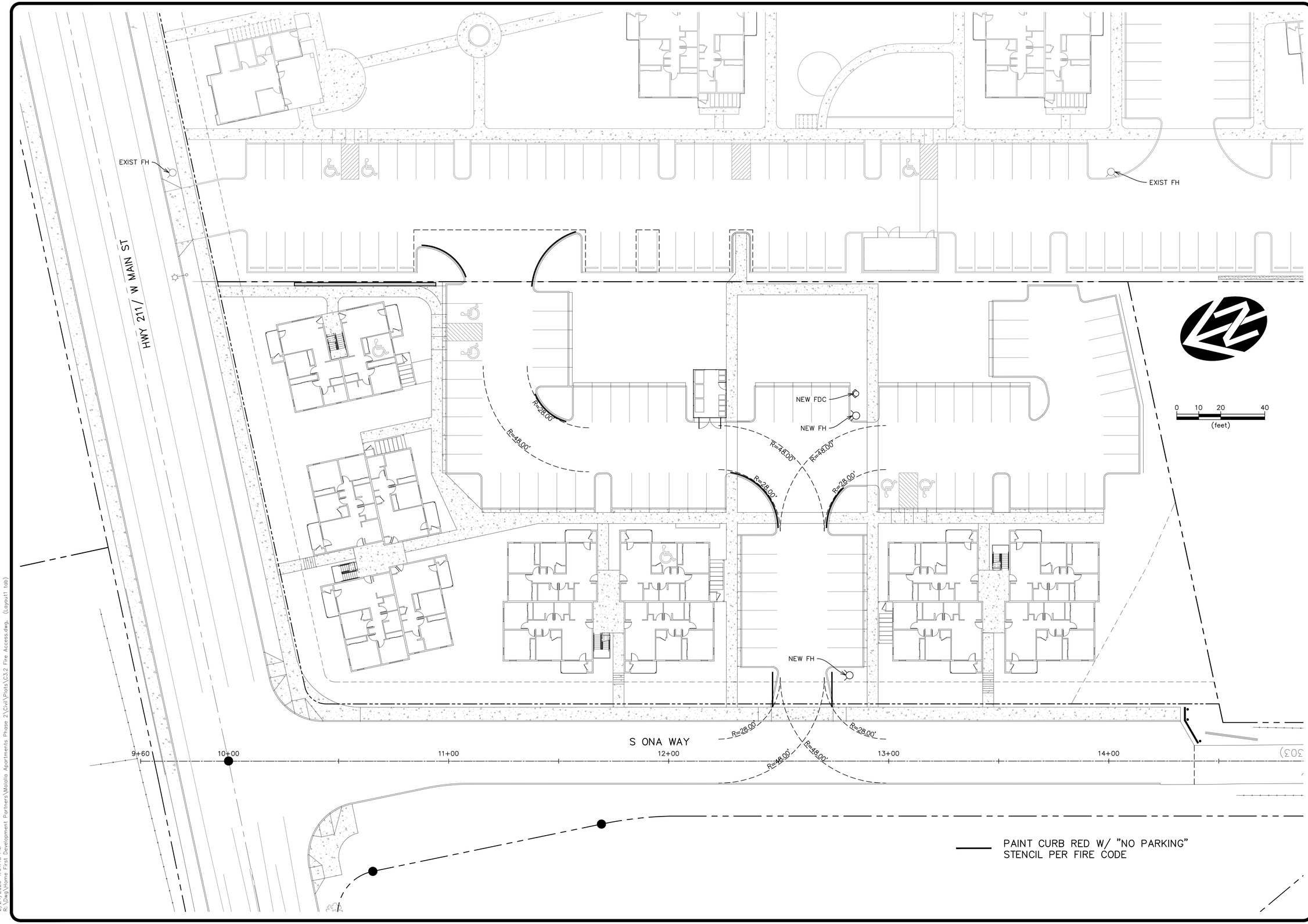

NO.	DATE	DESCRIPTION	BY
		REVISIONS	

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH, ADJUST THIS SHEET, ADJUST SCALES ACCORDINGLY

DSN. SAW
DRN. AR
CKD. SAW
DATE: DEC 2021

REVIEW
REGISTERED PROFESSIONAL ENGINEER
OREGON
JULY 16, 1982
STEVEN A. WEBER
RENEWS: 6/30/2024

WESTECH ENGINEERING, INC.
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MOLALLA APARTMENTS PHASE II
HOME FIRST DEVELOPMENT PARTNERS

FIRE ACCESS PLAN

DRAWING
C3.2

JOB NUMBER
3312.1000.0

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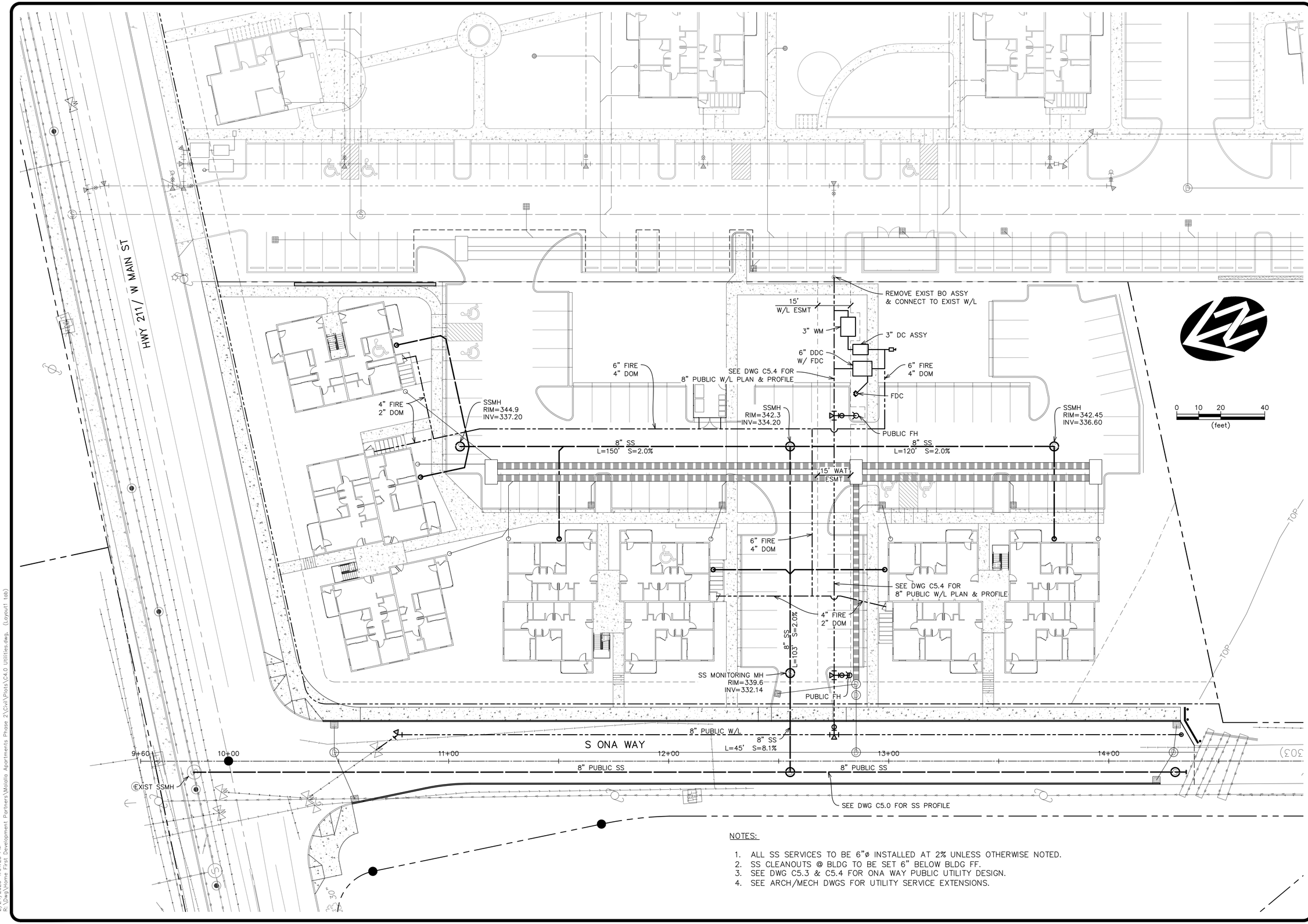

NOTES:

1. ALL SS SERVICES TO BE 6"ø INSTALLED AT 2% UNLESS OTHERWISE NOTED.
2. SS CLEANOUTS @ BLDG TO BE SET 6" BELOW BLDG FF.
3. SEE DWG C5.3 & C5.4 FOR ONA WAY PUBLIC UTILITY DESIGN.
4. SEE ARCH/MECH DWGS FOR UTILITY SERVICE EXTENSIONS.

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
0 IF NOT ONE INCH, ADJUST THIS SHEET, ADJUST SCALES ACCORDINGLY

1" | DSN. SAW | DRN. AR | CKD. SAW | DATE: DEC 2021

NO.	DATE	DESCRIPTION	BY
1		REVISIONS	

REGISTERED PROFESSIONAL ENGINEER
STEVEN A. WESTECH
16, 1978
OREGON

REVIEW

RENEWS: 6/30/2024

WESTECH ENGINEERING, INC.
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MOLALLA APARTMENTS PHASE II
HOME FIRST DEVELOPMENT PARTNERS

OVERALL UTILITY PLAN

DRAWING
C4.0

JOB NUMBER
3312.1000.0

2/24/2023 4:01:25 PM
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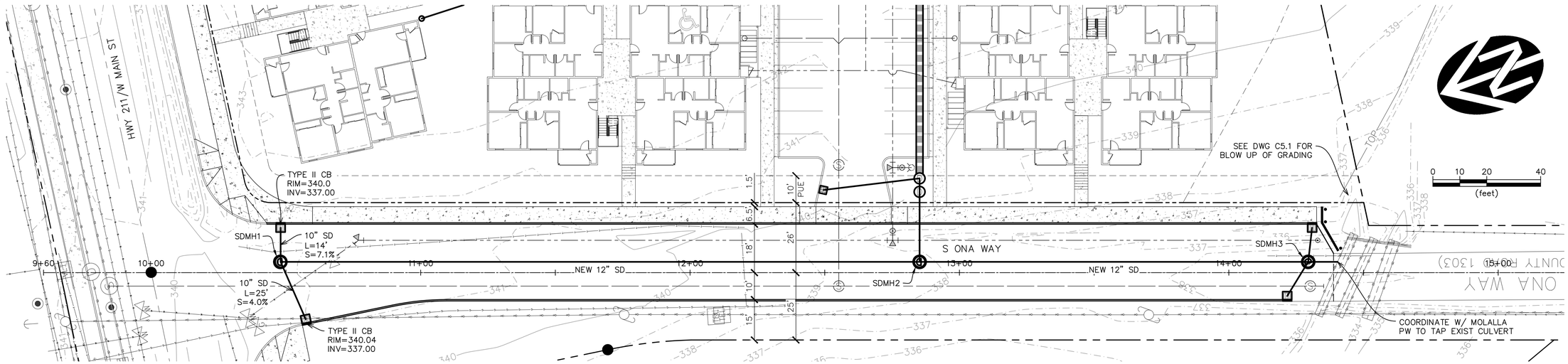

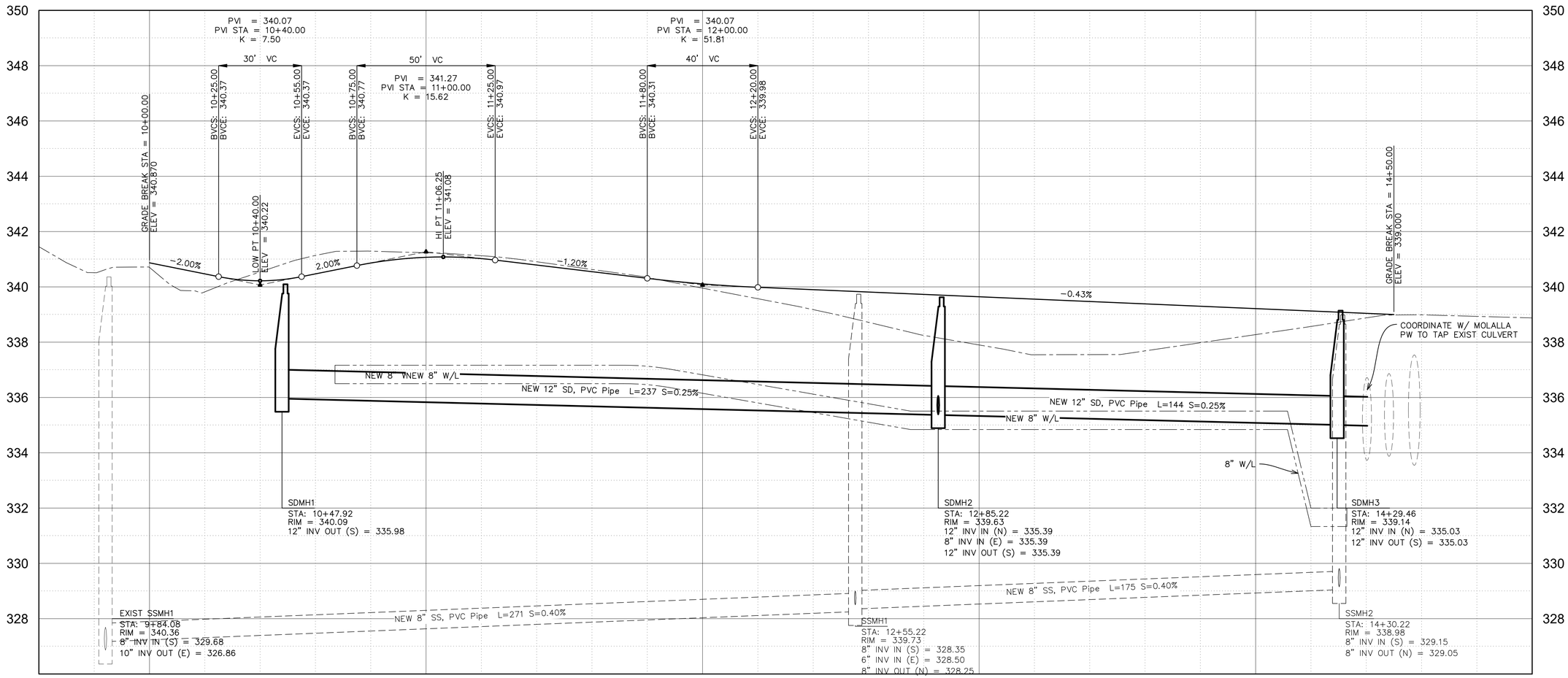

ONA WAY PROFILE

1" = 20' H, 1" = 2' V

2/24/2023 4:01:33 PM
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NO.	DATE	DESCRIPTION	BY
1		REVISIONS	

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
0 IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY
1"

DSN. SAW
DRN. AR
CKD. SAW
DATE: DEC 2021

REGISTERED PROFESSIONAL ENGINEER
OREGON
JULY 16, 1999
STEVEN A. WEBER

REVIEW
RENEWS: 6/30/2024

WESTECH ENGINEERING, INC.
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MOLALLA APARTMENTS PHASE II
HOME FIRST DEVELOPMENT PARTNERS
ONA WAY IMPROVEMENTS
PLAN–PROFILE
STA 9+60 to STA 15+00

DRAWING
C5.0

JOB NUMBER
3312.1000.0

339
343
341
339
TOP
336
336
337
338
338
337
335
1.5'
6.5'
26'
18'
10'
25'
15'
STA 14+35
END CURB
TC=339.21
NEW 8" W/L
STANDARD BARRICADE
EXIST EP
S ONA WAY
NEW 12" SD
14+00
NEW 8" SS
COORDINATE W/ MOLALLA
PW TO TAP EXIST CULVERT
PROTECT EXISTING CULVERTS
SAWCUT & MATCH EXIST PVMT
EXIST EP
STA 14+35
END CURB
TC=339.41
PVMT TRANSITION
336
334
335
336
0 5 10
(feet)

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
0 IF NOT ONE INCH, OT THIS SHEET, ADJUST SCALES ACCORDINGLY

DSN.	SAW
DRN.	AR
CKD.	SAW
DATE:	DEC 2021

NO.	DATE	DESCRIPTION	BY
1		REVISIONS	

REGISTERED PROFESSIONAL ENGINEER
OREGON
JULY 16, 1982
STEVEN A. WESTECH
REVIEW
RENEWS: 6/30/2024

WESTECH ENGINEERING, INC.
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MOLALLA APARTMENTS PHASE II
HOME FIRST DEVELOPMENT PARTNERS

ONA WAY GRADING BLOWUP

DRAWING
C5.1

JOB NUMBER
3312.1000.0

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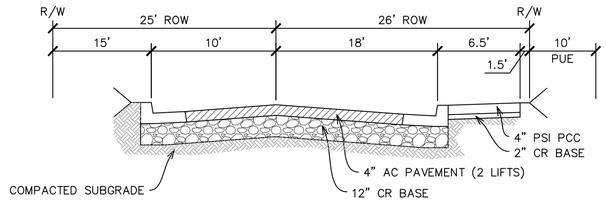
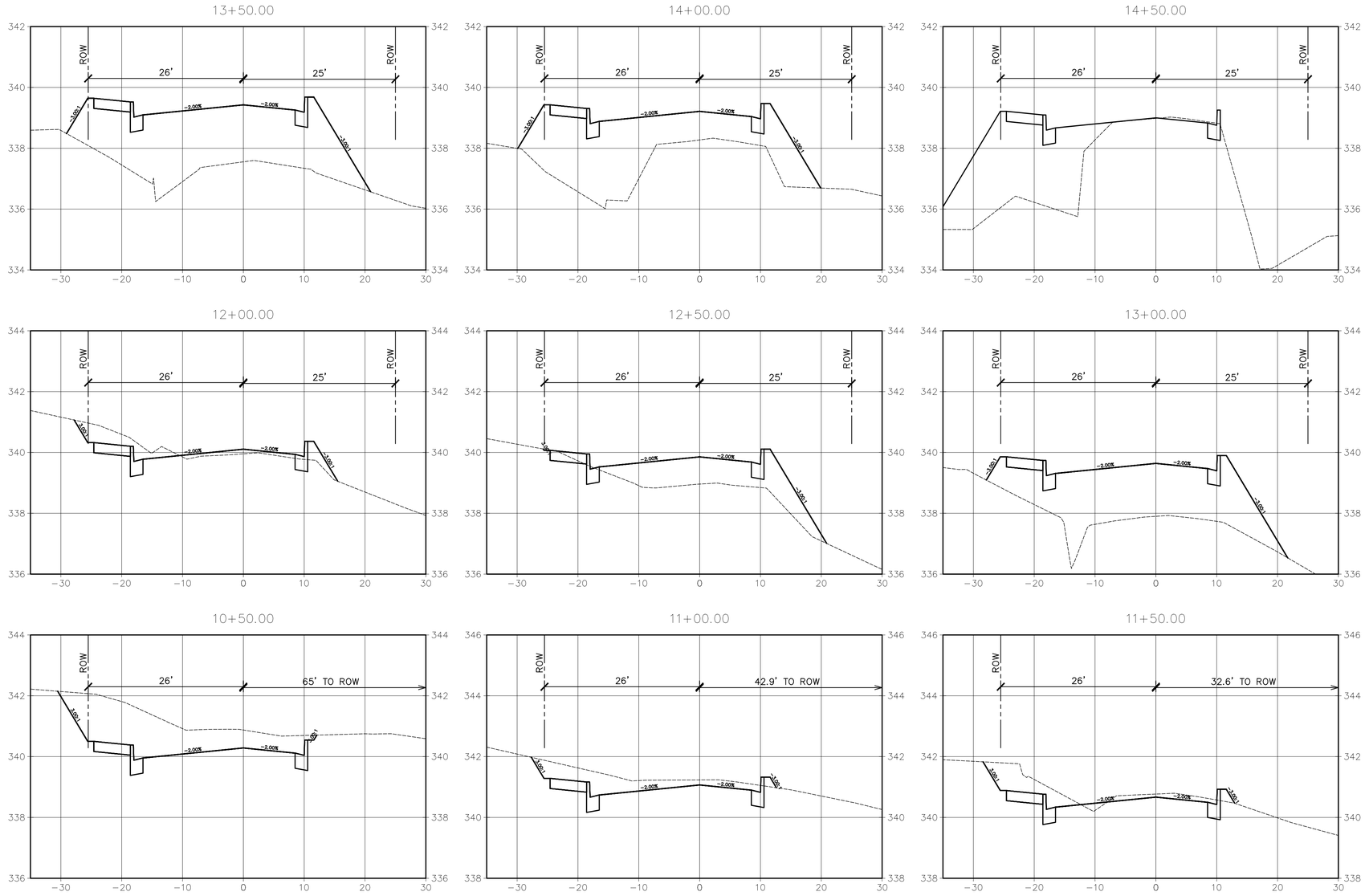


ONA WAY TYPICAL SECTION

NTS



CROSS SECTIONS

1" = 10' H, 1" = 2' V

NO.	DATE	DESCRIPTION	BY
1		REVISIONS	

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH, ADJUST THIS SHEET, ADJUST SCALES ACCORDINGLY

DSN. SAW
DRN. AR
CKD. SAW
DATE: DEC 2021

REGISTERED PROFESSIONAL ENGINEER
STEVEN A. WEST
EXPIRES: 6/30/2024
REVIEW
RENEWS: 6/30/2024

WESTECH ENGINEERING, INC.
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MOLALLA APARTMENTS PHASE II
HOME FIRST DEVELOPMENT PARTNERS

ONA WAY
CROSS SECTIONS

DRAWING
C5.2

JOB NUMBER
3312.1000.0

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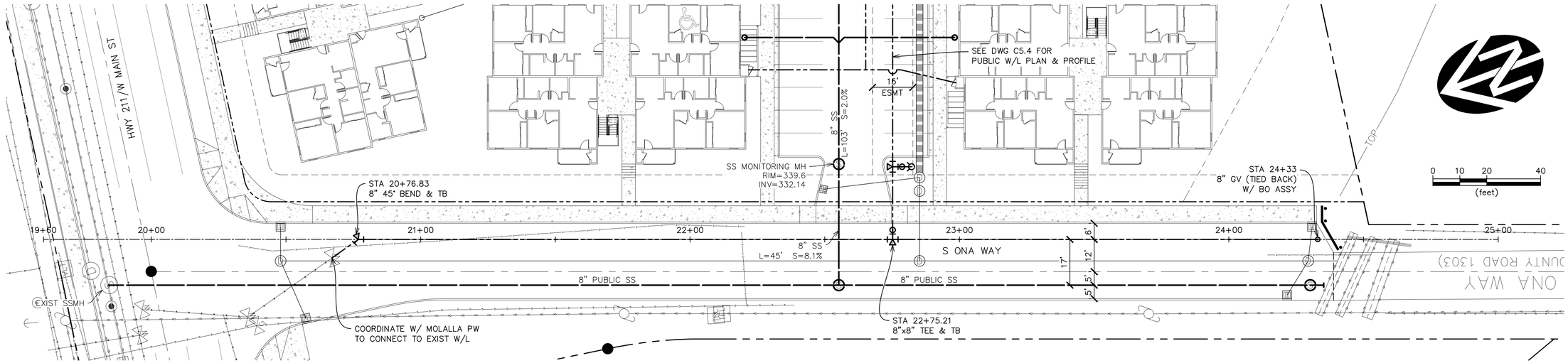

ONA WAY PROFILE

1" = 20' H, 1" = 2' V

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH, ADJUST SCALES ACCORDINGLY

NO.	DATE	DESCRIPTION	BY
1		REVISIONS	

DSN. SAW
DRN. AR
CKD. SAW
DATE: DEC 2021

REVIEW

REGISTERED PROFESSIONAL ENGINEER
OREGON
JULY 16, 2014
STEVEN A. WARD

RENEWS: 6/30/2024

WESTECH ENGINEERING, INC.
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MOLALLA APARTMENTS PHASE II
HOME FIRST DEVELOPMENT PARTNERS
ONA WAY SS & WATER
PLAN–PROFILE
STA 19+60 to STA 25+00

DRAWING
C5.3

JOB NUMBER
3312.1000.0

2/24/2023 4:01:54 PM
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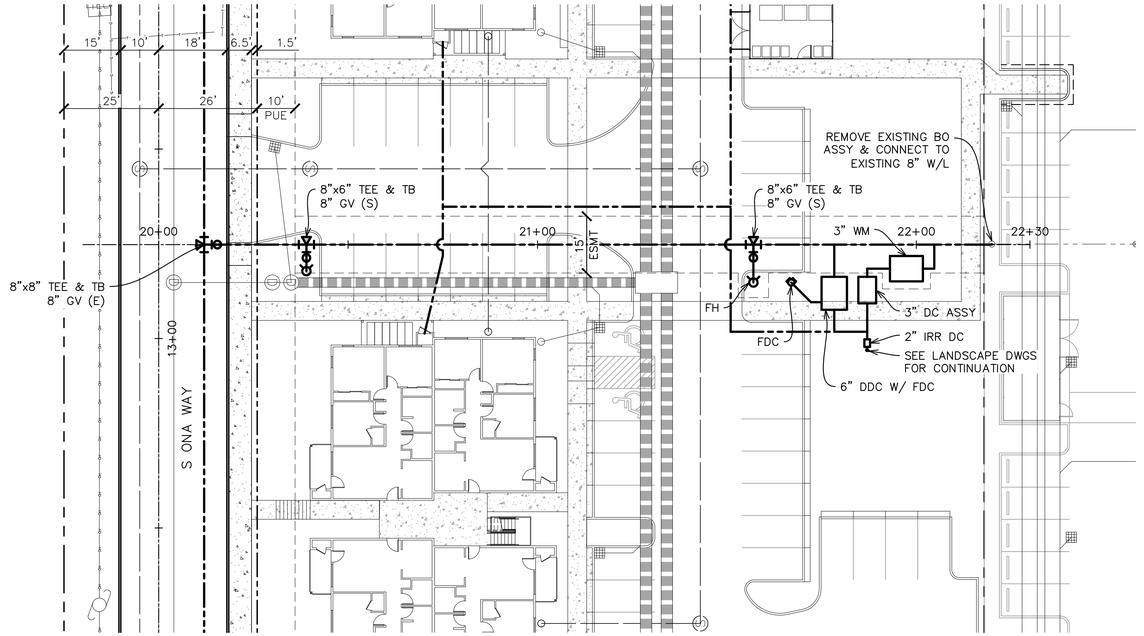
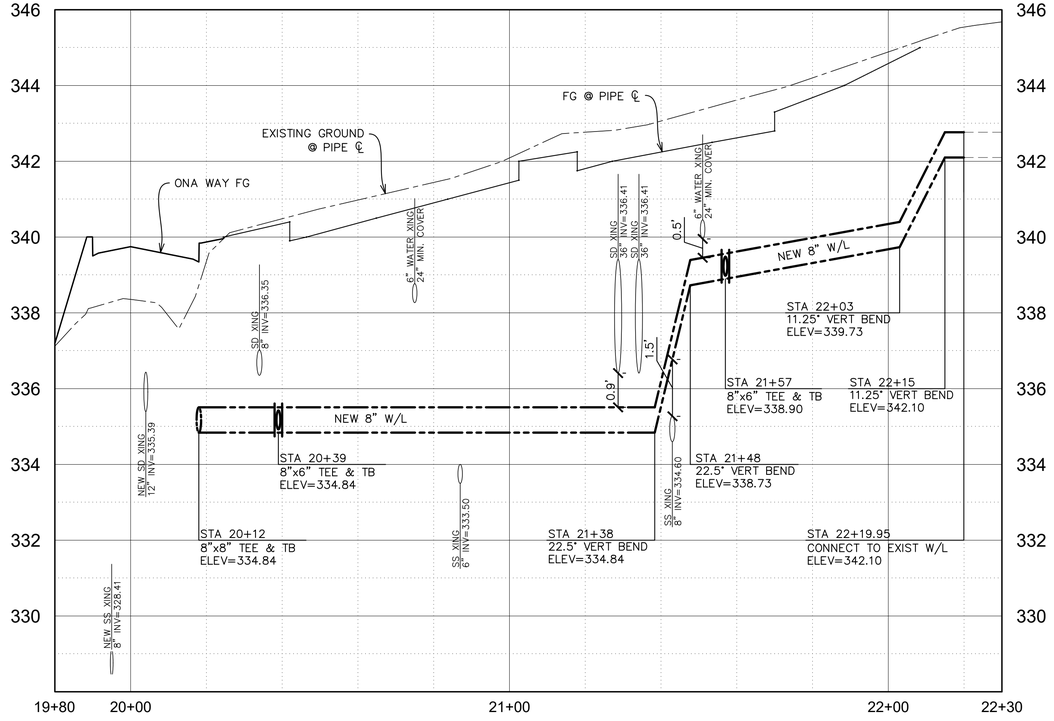


0 10 20 40
(feet)



ONA WAY PROFILE

1" = 20' H, 1" = 2' V

BY	DESCRIPTION	NO.	DATE
	REVISIONS	1	

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

DSN. SAW
DRN. AR
CKD. SAW
DATE: DEC 2021

REGISTERED PROFESSIONAL ENGINEER
STEVEN A. WARD
16, 1982
OREGON

REVIEW

RENEWS: 6/30/2024

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MOLALLA APARTMENTS PHASE II
HOME FIRST DEVELOPMENT PARTNERS

SITE PUBLIC WATERLINE PLAN-PROFILE

DRAWING
C5.4

JOB NUMBER
3312.1000.0

2/24/2023 4:02:02 PM
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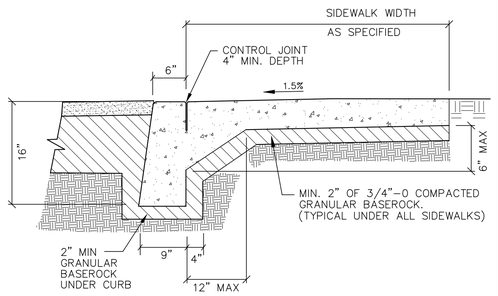


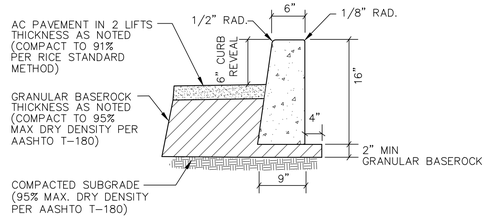
TYPICAL SECTION

NTS

NOTES:

1. CONCRETE DEPTH FOR STANDARD SIDEWALKS SHALL BE 4" MIN.
2. CONCRETE SHALL BE 3300 PSI @ 28 DAYS.
3. INSTALL TOOLED CONTRACTION JOINTS AT 5' INTERVALS. SIDEWALKS 10' & WIDER SHALL HAVE A LONGITUDINAL CONTRACTION JOINT AT 5' ON CENTER.

LAST REVISION DATE:	JO #
NOV 2013	STANDARD
MONOLITHIC CURB AND SIDEWALK	
(NTS)	
WESTECH ENG.	DETAIL NO. 2112



PAVEMENT/TYPE "C" CURB DETAIL

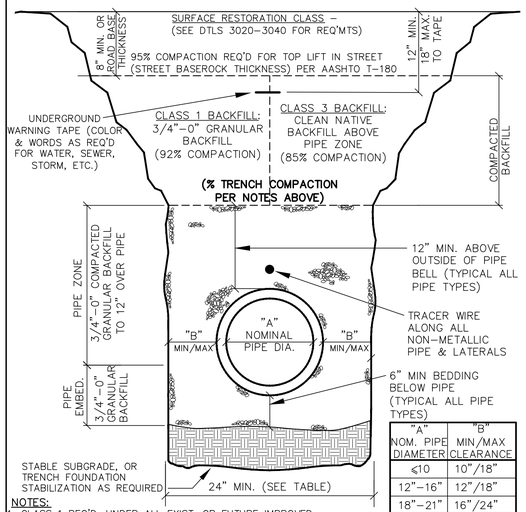
NTS

NOTES:

1. SEE GRADING PLAN FOR LOCATION OF LIGHT AND HEAVY DUTY PAVEMENT.
2. DESIGN SUBGRADES SHALL BE COMPACTED AND PROOF-ROLLED PRIOR TO PLACEMENT OF BASEROCK. IF SUBGRADE PASSES PROOF-ROLL BUT FAILS DENSITY TESTING, MIN. 4.5 OZ NON-WOVEN GEOTEXTILE FABRIC SHALL BE PLACED ON SUBGRADE PRIOR TO PLACEMENT OF BASEROCK. FAILURE OF PROOF-ROLL WILL REQUIRE OVEREXCAVATION.
3. IF SUBGRADE FAILS THE PROOF-ROLL, SUBGRADE SHALL BE OVEREXCAVATED TO UNDISTURBED SOIL AND BACKFILLED WITH BASEROCK OVER MIN. 8.0-OZ. NON-WOVEN FABRIC AS REQUIRED TO ALLOW COMPACTION OF UPPER (DESIGN) BASEROCK SECTION AND TO MAINTAIN STRUCTURAL INTEGRITY OF NATIVE SUBGRADE SOILS. TYPICAL MIN. OVEREXCAVATION REQUIRED IS 12-INCHES. NO RUBBER TIRED EQUIPMENT ALLOWED ON SUBGRADE FOLLOWING OVEREXCAVATION.
4. SUBGRADE TO BE PROOFROLLED IMMEDIATELY PRIOR TO PLACING BASEROCK. BASEROCK TO BE PROOFROLLED IMMEDIATELY PRIOR TO PAVING.
5. CONTRACTION JOINTS SHALL BE PLACED AT 15' MIN. INTERVALS AND SHALL EXTEND AT LEAST 50% THROUGH THE CURB SECTION.
6. ALL CONCRETE SHALL BE 3300 PSI @ 28 DAYS.
7. CURBS TO CURE A MINIMUM OF 7 DAYS PRIOR TO PLACING FINAL BASEROCK AND PAVING. USE TYPE 1 OR 1-D CLEAR CURING COMPOUND.

LAST REVISION DATE:	JO #
DEC 1999	X
PAVEMENT AND TYPE 'C' CURB DETAIL	
(NTS)	
WESTECH ENG.	DETAIL NO. 2390

TRENCH COMPACTION: CLASS 1 GRANULAR BACKFILL - 92% OPTIMUM PER AASHTO T-180 (MODIFIED PROCTOR)
CLASS 3 NATIVE BACKFILL - 85% OPTIMUM PER AASHTO T-180



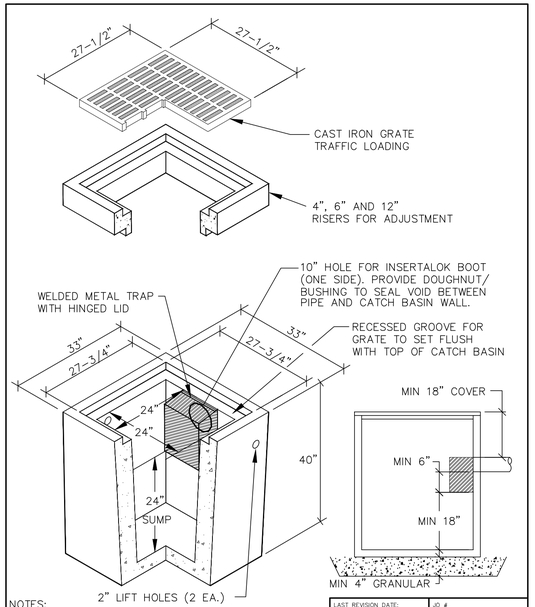
"A" NOM. PIPE DIAMETER	"B" MIN/MAX CLEARANCE
≤10	10"/18"
12"-16"	12"/18"
18"-21"	16"/24"
24"-30"	18"/30"
>30"	24"/36"

(SEE NOTE 4)

NOTES:

1. CLASS 1 REQ'D. UNDER ALL EXIST. OR FUTURE IMPROVED AREAS INCLUDING SIDEWALKS.
2. WHERE NEW PIPING IS IN SAME ALIGNMENT AS EXISTING PIPING, THE PIPE EMBEDMENT SHALL EXTEND TO A MIN. OF 6" BELOW THE NEW PIPING OR 6" BELOW EXISTING PIPING, WHICHEVER IS DEEPER.
3. FOR FLEXIBLE PIPE, BOTTOM OF TRENCH SHORING SHALL BE ABOVE PIPE SPRINGLINE PRIOR TO COMPACTING BACKFILL BELOW THE PIPE SPRINGLINE AND UNDER THE PIPE HAUNCHES.
4. MINIMUM CLEARANCES SHOWN ("B") ASSUMES STANDARD 6" WALL TRENCH BOXES SET ON TRENCH BOTTOM, AND REPRESENTS WIDTH REQUIRED TO CONSOLIDATE GRANULAR MATERIAL UNDER PIPE HAUNCHES (TO AVOID LOSS OF SIDE SUPPORT WHEN TRENCH BOX IS MOVED OR PULLED FORWARD). TRENCH WIDTH REDUCTION REQUIRES PRIOR APPROVAL BASED ON ACTUAL TRENCH SHORING PROPOSED.

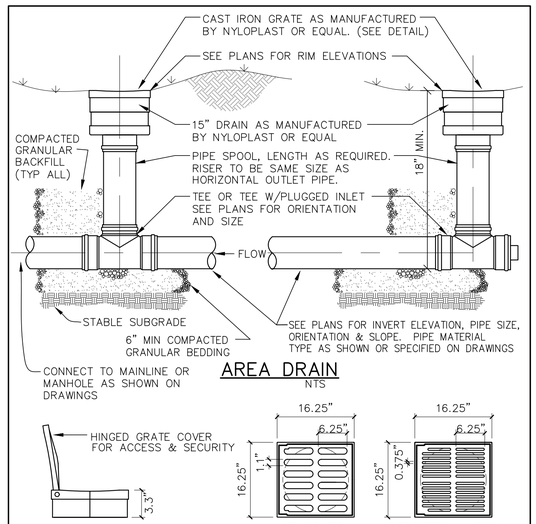
LAST REVISION DATE:	
JAN 2016	STANDARD
TRENCH BACKFILL, BEDDING, AND PIPE ZONE	
(NTS)	
WESTECH ENG.	DETAIL NO. 3010



NOTES:

1. SEE CONSTRUCTION DRAWINGS FOR PIPE SIZE, LOCATION AND INVERT ELEVATION.
2. CONCRETE SHALL BE 4000 PSI @ 28 DAYS.
3. REBAR SHALL CONFORM TO ASTM A615 GRADE 60.
4. REBAR SHALL BE MIN. #4 BARS @ 6" C.C.
5. SET CB SQUARE WITH BUILDINGS OR WITH EDGE OF PARKING LOT OR DRIVEWAY WHEREIN IT LIES.
6. ADJUST PAVING SO WATER FLOWS TO CB WITH NO PONDING

LAST REVISION DATE:	JO #
JULY 2012	STANDARD
PARKING LOT CATCH BASIN (PRECAST CONCRETE)	
(NTS)	
WESTECH ENG.	DETAIL NO. 3150



AREA DRAIN

NTS

15" CAST IRON GRATE DETAIL

NTS

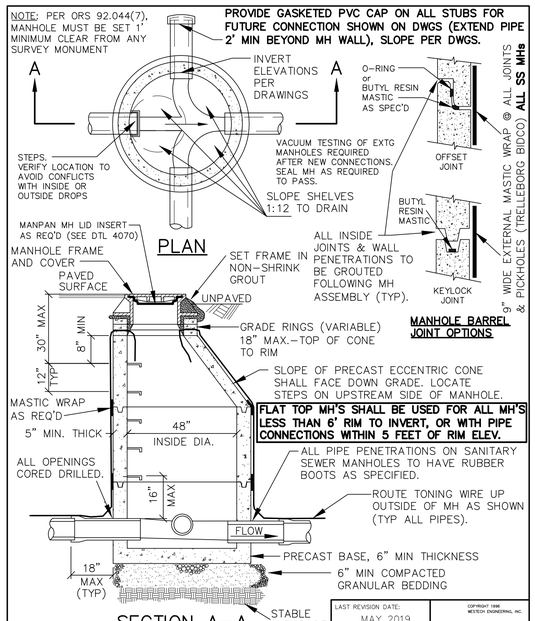
NOTES:

1. AREA DRAIN NOT FOR USE IN AREAS SUBJECT TO VEHICLE TRAFFIC.
2. USE WATERTIGHT GASKETED FITTINGS AND ADAPTORS FOR ALL PIPE CONNECTIONS.
3. ALL GRATES IN PEDESTRIAN AREAS SHALL CONFORM WITH ADA REQUIREMENTS, INCLUDING GRATE OPENING SIZE.

LAST REVISION DATE:	JO #
SEP 2005	STANDARD
AREA DRAIN, LANDSCAPE AND PEDESTRIAN AREAS (NON-TRAFFIC)	
(NTS)	
WESTECH ENG.	DETAIL NO. 3550

NOTE: PER ORS 92.044(7), MANHOLE MUST BE SET 1' MINIMUM CLEAR FROM ANY SURVEY MONUMENT

PROVIDE GASKETED PVC CAP ON ALL STUBS FOR FUTURE CONNECTION SHOWN ON DWGS (EXTEND PIPE 2' MIN BEYOND MH WALL), SLOPE PER DWGS.



SECTION A-A

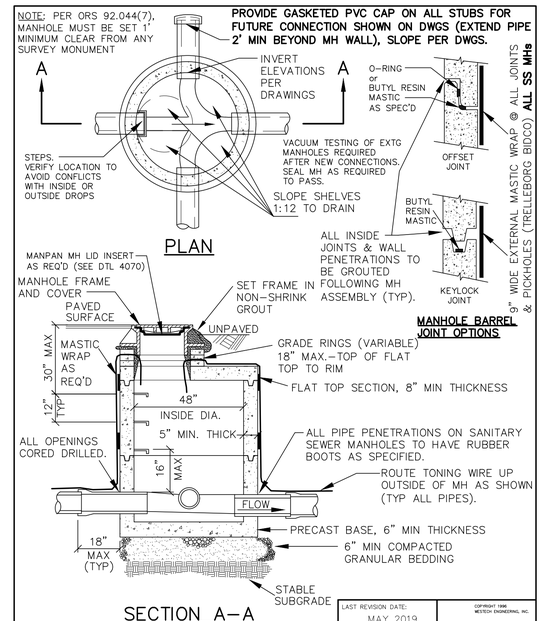
NOTES:

1. PRECAST SECTIONS SHALL MEET OR EXCEED ASTM C-478.
2. WATERTIGHT O-RING OR MASTIC KEYLOCK JOINTS REQUIRED, EXTERNAL SEAL AT JOINTS & PICKHOLES.
3. STEPS TO BE POLYPROPYLENE PLASTIC WITH GRADE 60 REINFORCING ROD. ADD STEPS TO EXTG CONNECTION MH IF EXTG STEPS ARE ABSENT.

LAST REVISION DATE:	COPYRIGHT 1996 WESTECH ENGINEERING, INC.
MAY 2019	
STANDARD MANHOLE FOR 21" PIPE AND SMALLER (SEWER & STORM)	
(NTS)	
WESTECH ENG.	DETAIL NO. 4010

NOTE: PER ORS 92.044(7), MANHOLE MUST BE SET 1' MINIMUM CLEAR FROM ANY SURVEY MONUMENT

PROVIDE GASKETED PVC CAP ON ALL STUBS FOR FUTURE CONNECTION SHOWN ON DWGS (EXTEND PIPE 2' MIN BEYOND MH WALL), SLOPE PER DWGS.

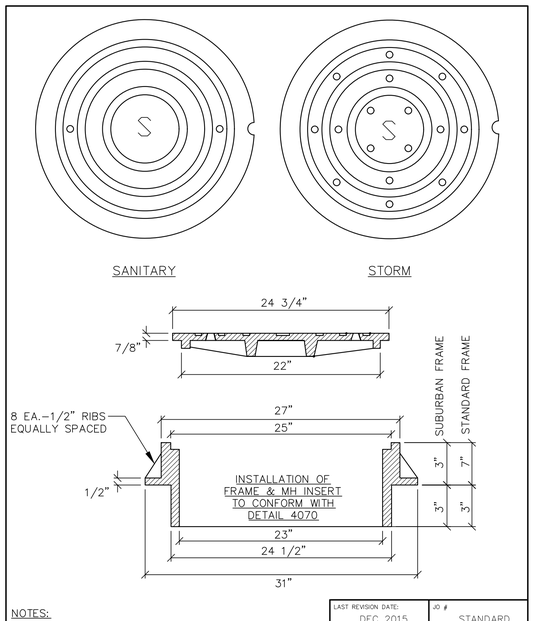


SECTION A-A

NOTES:

1. PRECAST SECTIONS SHALL MEET OR EXCEED ASTM C-478.
2. WATERTIGHT O-RING OR MASTIC KEYLOCK JOINTS REQUIRED, EXTERNAL SEAL AT JOINTS & PICKHOLES.
3. STEPS TO BE POLYPROPYLENE PLASTIC WITH GRADE 60 REINFORCING ROD. ADD STEPS TO EXTG CONNECTION MH IF EXTG STEPS ARE ABSENT.

LAST REVISION DATE:	COPYRIGHT 1996 WESTECH ENGINEERING, INC.
MAY 2019	
FLAT TOP MANHOLE FOR 21" PIPE AND SMALLER (SEWER & STORM)	
(NTS)	
WESTECH ENG.	DETAIL NO. 4020



NOTES:

1. COVER AND FRAME SHALL BE GRAY CAST IRON ASTM A-48, CLASS 30.
2. COVER AND FRAME TO BE MACHINED TO A TRUE BEARING ALL AROUND.
3. NOTCH LID FOR LIFTING HOOK.

LAST REVISION DATE:	JO #
DEC 2015	STANDARD
MANHOLE FRAME AND COVER (STANDARD AND SUBURBAN)	
(NTS)	
WESTECH ENG.	DETAIL NO. 4050

NO.	DATE	DESCRIPTION	BY
		REVISIONS	

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

DSN. SAW
DRN. AR 1
CKD. SAW
DATE: DEC 2021

REGISTERED PROFESSIONAL ENGINEER
OREGON
JULY 16, 1982
STEVEN A. WEBB
RENEWS: 6/30/2024
REVIEW

WESTECH ENGINEERING, INC.
CONSULTING ENGINEERS AND PLANNERS
3841 Fairview Industrial Dr. S.E., Suite 100, Salem, OR 97302
Phone: (503) 585-2474 Fax: (503) 585-3986
E-mail: westech@westech-eng.com

MOLALLA APARTMENTS PHASE II
HOME FIRST DEVELOPMENT PARTNERS

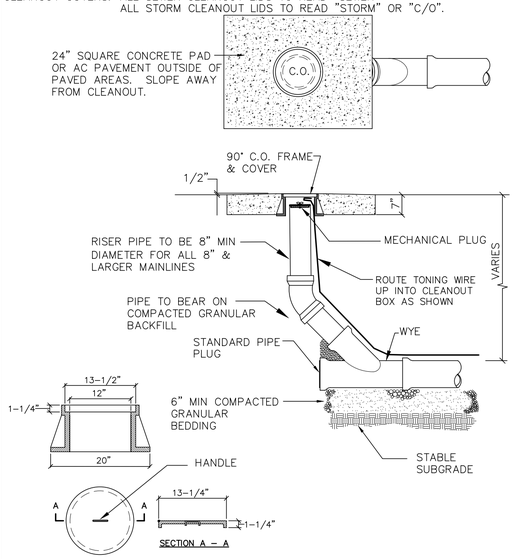
PRIVATE CIVIL DETAILS

DRAWING
C6.0

JOB NUMBER
3312.1000.0

2/24/2023 4:02:10 PM
R:\Dwg\Home First Development Partners\Molalla Apartments Phase 2\Civil\Plots\C6.0-9 Details.dwg, (C6.0 tab)

CLEANOUT COVERS: ALL SEWER CLEANOUT LIDS TO READ "SEWER"
ALL STORM CLEANOUT LIDS TO READ "STORM" OR "C/O".

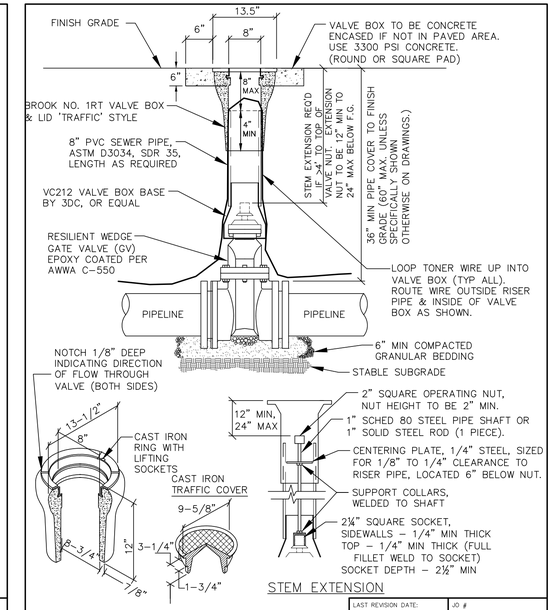


CLEANOUT FRAME & COVER

NOTES:

1. USE INLAND FOUNDRY MODEL 240 FRAME & COVER IN ALL AREAS.
2. COVER AND FRAME SHALL BE GRAY CAST IRON ASTM A-48, CLASS 30.
3. COVER AND FRAME TO BE MACHINED TO A TRUE BEARING ALL AROUND.

LAST REVISION DATE:	COPYRIGHT 1996 WESTECH ENGINEERING, INC.
JULY 2015	
MAINLINE CLEANOUT	
(NTS)	
WESTECH ENG.	DETAIL NO. 4110



BROOKS NO. 1RT VALVE BOX

NOTES:

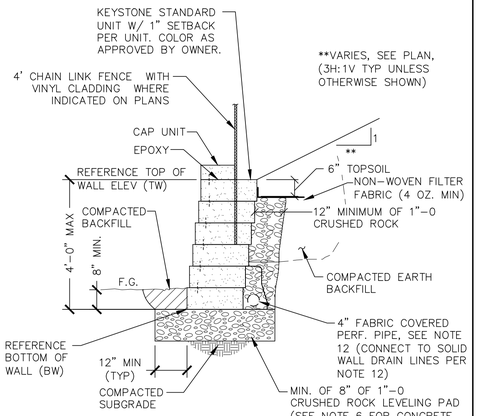
1. GV SHALL CONFORM TO AWWA C-509.
2. VALVE BOXES SHALL BE PLUMB AND CENTERED DIRECTLY OVER THE VALVE NUT.
3. VALVE BOX TOP SHALL BE ADJUSTED TO FINISHED GRADE.
4. PVC SHALL BE ONE CONTINUOUS PIECE, NO BELLS OR COUPLERS.

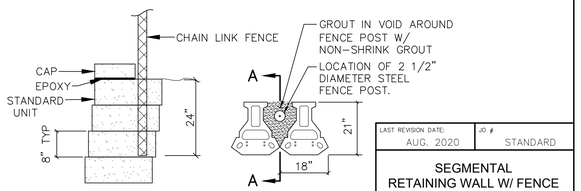
STEM EXTENSION

LAST REVISION DATE:	JO #
JULY 2017	STANDARD
GATE VALVE AND VALVE BOX DETAIL	
(NTS)	
WESTECH ENG.	DETAIL NO. 5011

RETAINING WALL NOTES:

1. Segmental Retaining Wall (SRW) concrete units shall be the standard color, rough face finish and conform to the requirements of ASTM C-90, ASTM C-140 and ASTM C-145. Owner to select color from samples submitted by Contractor.
2. Segmental concrete block units shall conform to the Keystone TM, Retaining Wall system, manufactured by Keystone TM, Pacific Northwest Inc., or an approved alternate and conform to the requirements of ASTM C-90. The wall design is based upon **Keystone Standard units (8"H x 18"W x 21.5"; 105 lbs.)**.
3. The Keystone retaining wall, or approved equal, shall be constructed per manufacturer specifications and approved construction drawings, unless modified herein.
4. This SRW design is based upon the blocks specified above. The Contractor, may, at no additional cost to the owner, submit SRW design and shop drawings for an alternate SRW system for approval by the Owner's representative. The shop drawings shall include design calculations stamped by a professional engineer registered in the State of Oregon. Special inspection requirements, as specified herein, still apply to the substitute design. If the alternate wall system is approved, the Contractor shall be responsible for revising the block layout as necessary to address any differences in the SRW block dimensions.
5. The Contractor shall protect from damage, store and handle all materials in accordance with manufacturers recommendations and in a manner to prevent deterioration or damage due to moisture, temperature changes, Ultraviolet (UV) degradation, contaminants, corrosion, breaking, chipping or other causes. Damaged material shall not be incorporated into the segmental retaining wall.
6. Crushed rock leveling pad shall be placed on top of compacted subgrade. Leveling pad shall be placed and compacted to a minimum of 92% of maximum dry density per AASHTO T-180 (Modified Proctor). Leveling pad thickness shall be a minimum of 8 inches as measured in place. An acceptable alternative is a 5" concrete (3300 psi) base pad on compacted subgrade.
7. Maximum particle size for wall backfill shall not exceed 2 inches in diameter.
8. The plasticity index (PI) for the backfill material used in the reinforced wall backfill shall not exceed 30 and the liquid limit shall not exceed 40, as per ASTM D-4318. The owner does not guarantee that all site soils meet these criteria.
9. Backfill shall be placed and compacted in lifts not to exceed a loose depth thickness of 8 inches for hand operated vibratory equipment and 12 inches for walk behind, self-propelled vibratory equipment. Backfill shall be compacted to 92% of AASHTO T-180 compaction standard.
10. Drainage backfill behind wall and in voids of SRW units shall consist of 1"-0 crushed rock containing no more than 5% passing No. 200 sieve. Provide 4 oz minimum drainage fabric over drain rock (12" minimum lap at any joints).
11. Wall drainpipe shall be fabric covered (3 oz min) HDPE slotted pipe conforming to ASTM F-405 (ADS Sock or approved equivalent). Wall drain pipe shall be connected to solid-wall drain pipe(s) draining to daylight or to an approved storm drain system.
12. The overall tolerance for the constructed face of wall relative to the vertical wall design or batter shall not exceed ± 1.25 inches maximum over a 10 foot distance; 3 inches maximum.
13. The wall drainage system specified is intended to serve the Segmental Retaining Wall (SRW) in its final constructed condition in conjunction with the final site improvements in their final constructed condition. During construction, the Contractor shall manage site drainage and divert stormwater away from the wall structure as necessary to prevent overloading of wall drainage reinforced systems.
14. At the end of the each day's operation, the Contractor shall slope the last level of backfill away from the wall face to direct runoff of rainwater away from the wall face. In addition, the Contractor shall not allow surface runoff from adjacent areas to enter the wall construction site.
15. Inspection is required for construction of this segmental block retaining wall (SRW).
16. Contractor shall insure all inspections are performed prior to proceeding with the next phase of work. At a minimum inspections shall include the following items: Observation that the wall subgrade bearing capacity meets the specified soil bearing capacity, or a minimum of 2,000 psf, whichever is greater. Observations of the compacted crushed rock leveling pads and wall drainage system. Observation of the wall batter. Soil testing results for plasticity index and liquid limit values for wall backfill material. Compaction results for the wall backfill.

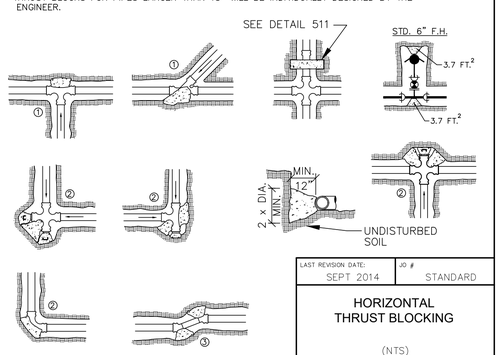




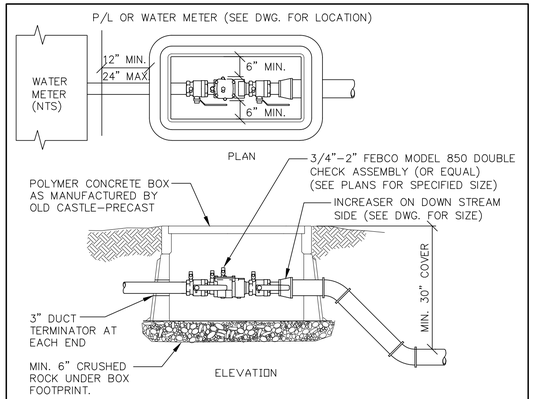
LAST REVISION DATE:	JO #
AUG. 2020	STANDARD
SEGMENTAL RETAINING WALL W/ FENCE (NON-REINFORCED)	
(NTS)	
WESTECH ENG.	DETAIL NO. 8310A

FITTING SIZE (Inches)	TEE, WYE, & ① HYDRANTS	90° BEND ② PLUGGED CROSS TEE PLUGGED-RUNS	45° BEND ③	22 1/2° BEND ③	11 1/4° BEND ③
2	*	*	*	*	*
4	1.7	2.4	1.3	*	*
6	3.7	5.3	2.9	1.5	*
8	6.7	9.5	5.1	2.7	1.3
10	10.5	14.8	8	4.1	2
12	15.1	21.3	11.6	5.9	2.9
16	26.8	37.9	20.5	10.4	5.2
18	33.9	47.9	25.9	12.8	6.7
LARGER	* *	* *	* *	* *	* *
	BEARING AREA OF THRUST BLOCKS (sq. ft.)				

1. ALL VALUES ARE BASED ON THE FOLLOWING ASSUMPTIONS:
   AVG. PRESSURE = 100 PSI x 2 (safety factor); 1500 PSF SOIL BEARING CAPACITY;
   NORMAL DISTRIBUTION SYSTEM DESIGN VELOCITY NOT TO EXCEED 5 FPS.
2. **ALL FITTINGS SHALL BE WRAPPED IN PLASTIC PRIOR TO PLACEMENT OF CONCRETE.**
3. BEARING SURFACE OF THRUST BLOCKING SHALL BE AGAINST UNDISTURBED SOIL.
4. TRUCK-MIXED CONCRETE MIX SHALL HAVE A MIN. 28 DAY STRENGTH OF 3300 PSI (5" MAX SLUMP). USE OF HAND-MIXED SACK-CRETE TYPE CONCRETE REQUIRES WRITTEN CITY APPROVAL PRIOR TO USE, AND SHALL BE 4000 PSI MIX, MIXED WITH MIN AMOUNT OF WATER NECESSARY FOR WORKABILITY (5" MAX SLUMP). USE OF DRY SACK-CRETE MIX (BAGS OR LOOSE MIX) IS PROHIBITED FOR PERMANENT THRUST RESTRAINT.
5. ALL PIPE ZONES SHALL BE BACKFILLED WITH GRANULAR BACKFILL AND COMPACTED.
6. THRUST BLOCKS FOR PLUGGED CROSS AND PLUGGED TEE SHALL HAVE #4 REBAR LIFTING LOOPS INSTALLED AS SHOWN.
7. VERTICAL THRUST DETAILS-SEE DWG. 512.
8. STRADDLE BLOCK DETAILS-SEE DWG. 511.
   * BLOCK TO UNDISTURBED TRENCH WALLS
   * * THRUST BLOCKS FOR PIPES LARGER THAN 18" WILL BE INDIVIDUALLY DESIGNED BY THE ENGINEER.



LAST REVISION DATE:	JO #
SEPT 2014	STANDARD
HORIZONTAL THRUST BLOCKING	
(NTS)	
WESTECH ENG.	DETAIL NO. 5100

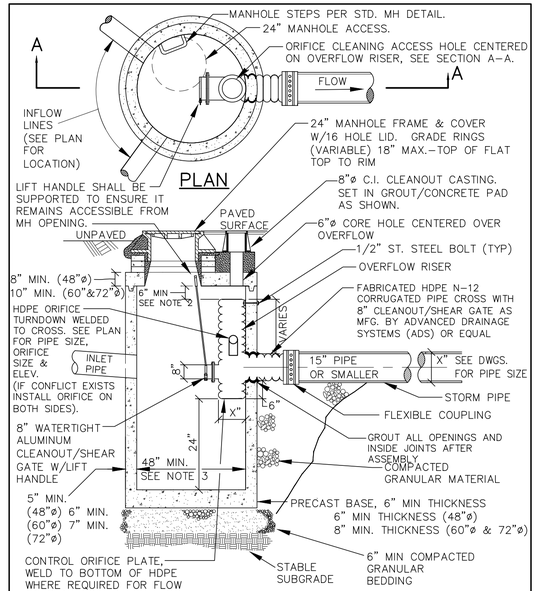


NOTES:

1. DCA- DOUBLE CHECK ASSEMBLY
2. DCA SHALL CONFORM TO REQUIREMENTS OF PUBLIC/PRIVATE AGENCIES HAVING JURISDICTION.
3. DCA & VAULT INSTALLATION SHALL MEET STATE OF OREGON, DEPARTMENT OF HUMAN RESOURCES, AND HEALTH DIVISION REQUIREMENTS.
4. CONTRACTOR SHALL HAVE DCA TESTED AND CERTIFIED PRIOR TO ACCEPTANCE BY OWNER.
5. VERIFY ADEQUATE CLEARANCES FOR TESTING AND REPAIR.
6. BRASS PLUGS SHALL BE INSTALLED IN TEST COCKS.
7. LOCK DOWN COVER WITH HEX HEAD BOLTS. COVER SHALL READ "WATER"
8. DCA SHALL NOT BE INSTALLED IN AREAS SUBJECT TO VEHICLE TRAFFIC AND PEDESTRIAN SIDEWALK AREAS.

DCA DIA.	BOX MODEL NO.	BOX NOMINAL DIMENSIONS AT TOP
3/4"	S1324B26AA	13" X 24" (26"D)
1"	S1324B26AA	13" X 24" (26"D)
1 1/2"	S1730B26AA	17" X 30" (26"D)
2"	S1730B26AA	17" X 30" (26"D)

LAST REVISION DATE:	JO #
DEC 2004	STANDARD
2" AND SMALLER DOUBLE CHECK ASSEMBLY	
(NTS)	
WESTECH ENG.	DETAIL NO. 5310



NOTES:

1. PRECAST SECTIONS SHALL CONFORM TO ASTM C-478.
2. DISTANCE FROM TOP OF OVERFLOW TO MH RIM SHALL BE BASED ON OVERFLOW CAPACITY CALC'S BY DESIGN ENGINEER (ASSUME ORIFICE CONTROL).
3. 60" MINIMUM DIA. MANHOLE REQUIRED FOR OUTLET PIPE LARGER THAN 15" OR INLET > 21".
4. ORIFICE CLEANING ACCESS TO BE 6" CORE HOLE THROUGH FLAT-TOP (CENTERED ON OVERFLOW) WITH CI CLEANOUT BOX GROUTED TO SLAB.

LAST REVISION DATE:	JO #
MAR 2010	STANDARD
POLLUTION/FLOW CONTROL MANHOLE W/OVERFLOW	
(NTS)	
WESTECH ENG.	DETAIL NO. U3201

BY	DESCRIPTION	NO.	DATE
	REVISIONS	1	

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

DSN. SAW
DRN. AR
CKD. SAW
DATE: DEC 2021

REGISTERED PROFESSIONAL ENGINEER
OREGON
JULY 16, 1982
STEVEN A. WARD
RENEWS: 6/30/2024

REVIEW

WESTECH ENGINEERING, INC.
CONSULTING ENGINEERS AND PLANNERS
3841 Fairview Industrial Dr. S.E., Suite 100, Salem, OR 97302
Phone: (503) 585-2474 Fax: (503) 585-3986
E-mail: westech@westech-eng.com

MOLALLA APARTMENTS PHASE II
HOME FIRST DEVELOPMENT PARTNERS

PRIVATE CIVIL DETAILS

DRAWING
C6.1

JOB NUMBER
3312.1000.0

2/24/2023 4:02:12 PM
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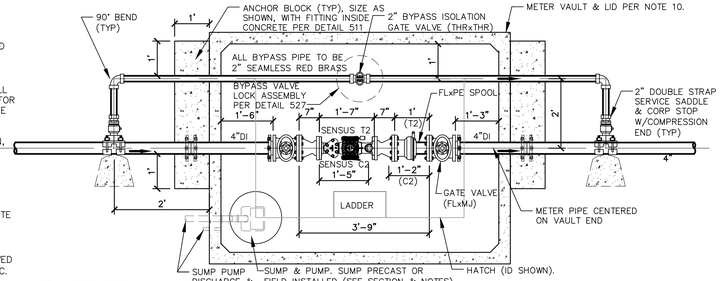
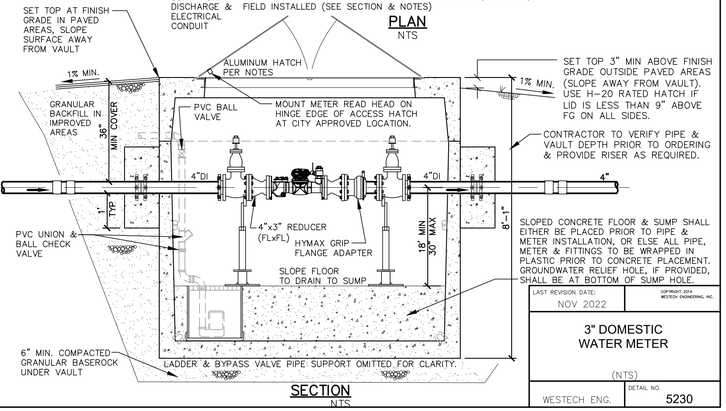
NOTES:
1. METER VAULT & PIPING SHALL CONFORM TO REQUIREMENTS OF ALL PUBLIC/PRIVATE AGENCIES HAVING JURISDICTION.
2. METER VAULT SHALL BE PLACED WITHIN RIGHT-OF-WAY UNLESS OTHERWISE APPROVED (RECORDED EASEMENT TO THE CITY REQUIRED FOR ANY METER ON PRIVATE PROPERTY).
3. ALL MATERIALS (EXCEPT THE METER) SHALL BE FURNISHED & INSTALLED BY THE CONTRACTOR. THE CONTRACTOR SHALL INSTALL A TEMPORARY SPACER SPOOL BETWEEN METER ISOLATION VALVES FOR TESTING. THE TEMPORARY SPOOL SHALL MATCH THE LENGTH OF THE ACTUAL METER TO BE PROVIDED BY THE CITY.
4. PIPING INSIDE VAULT & THROUGH WALLS TO BE CL 52 DUCTILE IRON, EXCEPT AS OTHERWISE SHOWN.
5. METER WILL BE SUPPLIED BY THE CITY, BUT SHALL BE INSTALLED (AFTER PRESSURE & OTHER TESTING OF METER VAULT PIPING) BY THE CONTRACTOR UNDER CITY INSPECTION AND APPROVAL.
6. ISOLATION VALVES IN METER VAULT SHALL BE NON-RISING STEM GATE VALVE (EPOXY COATED) WITH 2-INCH SQUARE OPERATING NUT.
7. ALL MJ CONNECTIONS (INCLUDING BYPASS LINE FITTINGS) SHALL BE ASSEMBLED WITH RETAINER GLANDS (EBBA MEGA-LUGS OR APPROVED EQUAL). ROMAC ALPHA FC ALLOWED AS EQUAL FOR HYMAX GRIP FC.
8. ALL PIPE OPENINGS SHALL BE CORE DRILLED (REGARDLESS OF PRESENCE OF 'KNOCKOUTS'), AND SEALED WATERTIGHT WITH NON-SHRINK GROUT.
9. PIPE SUPPORTS SHALL BE GALVANIZED STANDON S89 OR APPROVED EQUAL AT EACH ISOLATION VALVE AND AT BYPASS VALVE.
10. METER VAULT TO BE UTILITY VAULT 687-WA OR APPROVED EQUAL, CONFORMING WITH ASTM C-857. PROVIDE ALUMINUM ANGLE FRAME HATCH (48"x 72" MIN) BY USF FABRICATION OR APPROVED EQUAL (HATCH COVER TOP TO BE SAND BLASTED NON-SLIP).
    (1) TO BE 300 PSF PEDESTRIAN RATED WHERE LID IS SET MIN. OF 9" ABOVE GRADE.
    (2) TO BE H-20 RATED IF LID IS LESS THAN 9" ABOVE GRADE, OR IF LOCATED IN TRAFFIC AREA.
11. METER VAULT SHALL BE PROVIDED WITH AN OSHA APPROVED GALVANIZED STEEL LADDER AND ALUMINUM LADDER SAFETY EXTENSION. ATTACH TO VAULT WITH STAINLESS STEEL BOLTS.
12. CONTRACTOR TO INSTALL SUMP PUMP (5 GPM MIN) WITH 120V POWER SUPPLY, ALONG WITH PRIVATE POWER SOURCE (RESPONSIBILITY OF CONTRACTOR INSTALLING VAULT). SCHED 40 CONDUIT, WIRE, ETC. FOR SUMP PUMP POWER SHALL CONFORM WITH NEC REQUIREMENTS.
13. SUMP PUMP DISCHARGE PIPE SHALL BE 1½-INCH SCHEDULE 40 PVC, PROVIDED WITH UNION (FOR PUMP REMOVAL), CHECK VALVE AND ISOLATION BALL VALVE. CONNECT DISCHARGE TO GRAVITY STORM DRAIN OR CURB WEEP HOLE (AT LOCATION APPROVED BY PUBLIC WORKS).
14. SUMP TO BE 18" ROUND CONCRETE PIPE OR EQUAL. PROVIDE FRP GRATE (OR SLOTTED MH LID) WITH COPED CUTOUT FOR DISCHARGE PIPING (IE. LID TO BE REMOVABLE WITHOUT DISASSEMBLING DISCHARGE PIPING). SUMP TO BE LARGE ENOUGH & DEEP ENOUGH TO HOUSE PUMP & FLOAT, AND KEEP WATER LEVEL BELOW SLOPED FLOOR.



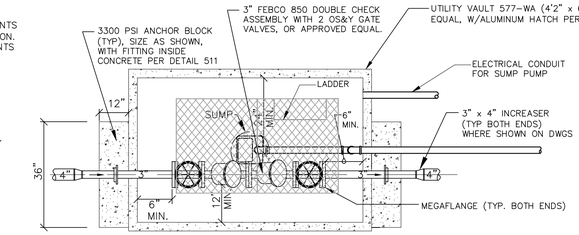
PLAN
NTS



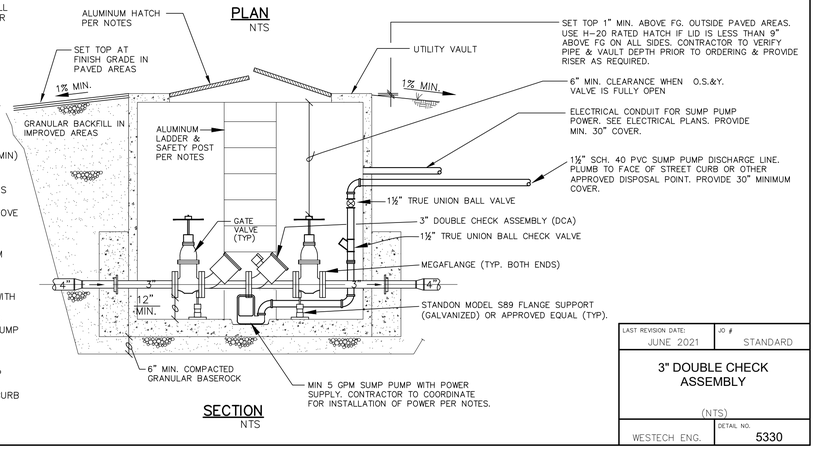
SECTION
NTS

LAST REVISION DATE: NOV 2022	COPYRIGHT 2014 WESTECH ENGINEERING, INC.
3" DOMESTIC WATER METER (NTS)	
WESTECH ENG.	DETAIL NO. 5230

NOTES:
1. DCA – DOUBLE CHECK VALVE ASSEMBLY.
2. DCA, VAULT & PIPING SHALL CONFORM TO REQUIREMENTS OF ALL PUBLIC/PRIVATE AGENCIES HAVING JURISDICTION. DCA & VAULT INSTALLATION SHALL MEET REQUIREMENTS OF OREGON HEALTH AUTHORITY, DRINKING WATER SERVICES (DWS).
3. DCA VAULT SHALL BE PLACED ON OUTSIDE OF RIGHT-OF-WAY UNLESS OTHERWISE APPROVED (RECORDED ACCESS EASEMENT TO THE CITY MAY BE REQUIRED FOR DCA VAULT ON PRIVATE PROPERTY).
4. ALL MATERIALS SHALL BE FURNISHED & INSTALLED BY THE CONTRACTOR. CONTRACTOR SHALL HAVE DCA TESTED AND CERTIFIED PRIOR TO ACCEPTANCE BY OWNER.
5. PIPING INSIDE VAULT & THROUGH WALLS TO BE AS NOTED ON DRAWINGS. BENDS, CROSSES AND TEES SHALL NOT BE INSTALLED WITHIN 5 FEET OF THE OUTSIDE VAULT WALL.
6. ALL VAULTS SHALL MEET OR EXCEED ASTM C-857. ALL VAULT CONCRETE TO BE 4500 PSI @ 28 DAYS. REBAR TO BE ASTM A-615 GRADE 60.
7. ALL PIPE OPENINGS SHALL BE CORE DRILLED (REGARDLESS OF PRESENCE OF 'KNOCKOUTS'), AND SEALED WATERTIGHT WITH NON-SHRINK GROUT.
8. ISOLATION VALVES IN METER VAULT SHALL BE RISING STEM GATE VALVE (EPOXY COATED) WITH HANDWHEEL OPERATOR.
9. METER VAULT TO BE UTILITY VAULT 687-WA OR APPROVED EQUAL, CONFORMING WITH ASTM C-857. PROVIDE ALUMINUM ANGLE FRAME HATCH (36"x 60" MIN) BY USF FABRICATION OR APPROVED EQUAL (HATCH COVER TOP TO BE SAND BLASTED NON-SLIP).
    (1) TO BE 300 PSF PEDESTRIAN RATED WHERE LID IS SET MIN. OF 9" ABOVE GRADE.
    (2) TO BE H-20 RATED IF LID IS LESS THAN 9" ABOVE GRADE, OR IF LOCATED IN TRAFFIC AREA.
10. DCA VAULT SHALL BE PROVIDED WITH AN OSHA APPROVED GALVANIZED STEEL LADDER AND ALUMINUM LADDER SAFETY EXTENSION. ATTACH TO VAULT WITH STAINLESS STEEL BOLTS.
11. CONTRACTOR TO INSTALL SUMP PUMP (5 GPM MIN) WITH 120V POWER SUPPLY, ALONG WITH PRIVATE POWER SOURCE (RESPONSIBILITY OF CONTRACTOR INSTALLING VAULT). SCHED 40 CONDUIT, WIRE, ETC. FOR SUMP PUMP POWER SHALL CONFORM WITH NEC REQUIREMENTS.
13. SUMP PUMP DISCHARGE PIPE SHALL BE 1½-INCH SCHEDULE 40 PVC, PROVIDED WITH UNION (FOR PUMP REMOVAL) CHECK VALVE AND ISOLATION BALL VALVE. CONNECT DISCHARGE TO GRAVITY STORM DRAIN OR CURB WEEP HOLE (AT LOCATION APPROVED BY PUBLIC WORKS).



PLAN
NTS

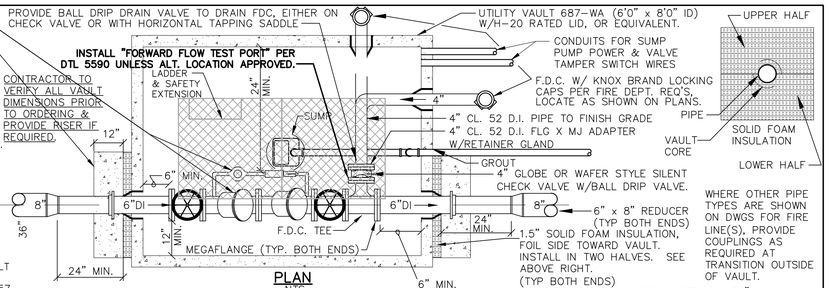


SECTION
NTS

LAST REVISION DATE: JUNE 2021	JO # STANDARD
3" DOUBLE CHECK ASSEMBLY (NTS)	
WESTECH ENG.	DETAIL NO. 5330

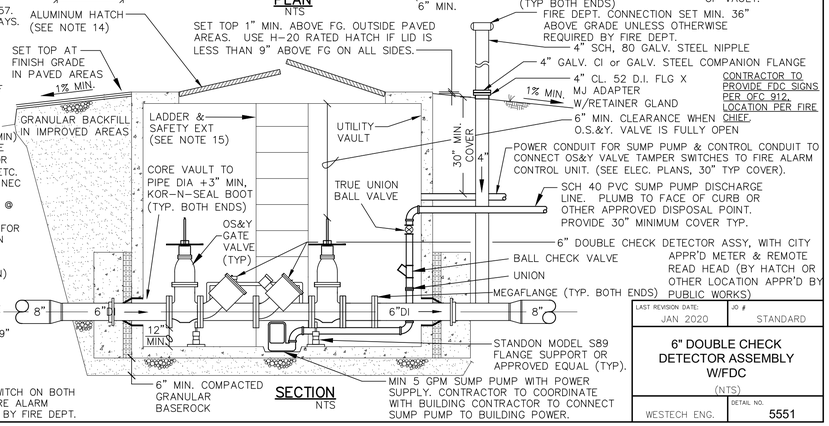
6" FEBCO 856 DOUBLE CHECK DETECTOR ASSEMBLY WITH 2 OS&Y GATE VALVES, OR APPROVED EQUAL.
36" WIDE CAST-IN-PLACE CONCRETE THRUST COLLAR WITH RETAINER GLAND CENTERED IN CONCRETE (TYPICAL BOTH ENDS)

NOTES:
1. DCDA- DOUBLE CHECK DETECTOR ASSEMBLY FDC-FIRE DEPARTMENT CONNECTION.
2. DCDA SHALL CONFORM TO REQUIREMENTS OF PUBLIC/PRIVATE AGENCIES HAVING JURISDICTION.
3. DCDA & VAULT INSTALLATION SHALL MEET REQUIREMENTS OF OREGON HEALTH AUTHORITY, DRINKING WATER SERVICES (DWS).
4. CONTRACTOR SHALL HAVE DCDA TESTED AND CERTIFIED PRIOR TO ACCEPTANCE BY OWNER.
5. FDC SHALL NOT EXIT THROUGH THE TOP OF THE VAULT.
6. ALL PIPE OPENINGS SHALL BE SEALED WITH NON-SHRINK WATERTIGHT GROUT.
7. BENDS, CROSSES AND TEES SHALL NOT BE INSTALLED WITHIN 5 FEET OF THE OUTSIDE VAULT WALL.
8. ALL VAULTS SHALL MEET OR EXCEED ASTM C-857. ALL VAULT CONCRETE TO BE 4500 PSI @ 28 DAYS. REBAR TO BE ASTM A-615 GRADE 60.
9. SUMP PUMP WITH POWER SUPPLY SHALL BE INSTALLED UNLESS OTHERWISE APPROVED BY PUBLIC WORKS.
10. SUMP PUMP DISCHARGE PIPE TO BE 1½-INCH SCHED 40 PVC SHALL BE PLUMBED TO FACE OF STREET CURB OR OTHER DISPOSAL POINT APPROVED BY LOCAL JURISDICTION (SEE OAR 333-061-0071.3.f).
11. CONTRACTOR TO INSTALL SUMP PUMP (5 GPM MIN) WITH 120V POWER SUPPLY, ALONG WITH PRIVATE POWER SOURCE (RESPONSIBILITY OF CONTRACTOR INSTALLING VAULT). SCHED 40 CONDUIT, WIRE, ETC. FOR SUMP PUMP POWER SHALL CONFORM WITH NEC REQUIREMENTS.
12. THRUST COLLAR CONCRETE SHALL BE 3300 PSI @ 28 DAYS.
13. PROVIDE REMOTE READER (TOUCH READ HEAD) FOR DETECTOR LOOP METER PER LOCAL JURISDICTION REQUIREMENTS, MOUNTED ON HINGE EDGE OF HATCH.
14. ALUMINUM ANGLE FRAME HATCH (3'0"x 5'6" MIN) SHALL BE BY USF FABRICATION OR APPROVED EQUAL (SAND BLASTED NON-SLIP).
    (1) TO BE 300 PSF PEDESTRIAN RATED WHERE LID IS SET MIN. OF 9" ABOVE GRADE.
    (2) TO BE H-20 RATED IF LID IS LESS THAN 9" ABOVE GRADE, OR IF LOCATED IN TRAFFIC AREA.
15. OSHA APPROVED GALVANIZED STEEL LADDER & ALUMINUM LADDER SAFETY EXTENSION.
16. PER OFC 903.4, INSTALL APPROVED TAMPER SWITCH ON BOTH OS&Y VALVES IN VAULT, WIRED TO A LISTED FIRE ALARM CONTROL UNIT, UNLESS EXEMPTION IS GRANTED BY FIRE DEPT.



PLAN
NTS

WHERE OTHER PIPE TYPES ARE SHOWN ON DWGS FOR FIRE LINE(S), PROVIDE COUPLINGS AS REQUIRED AT TRANSITION OUTSIDE OF VAULT.



SECTION
NTS

LAST REVISION DATE: JAN 2020	JO # STANDARD
6" DOUBLE CHECK DETECTOR ASSEMBLY W/FDC (NTS)	
WESTECH ENG.	DETAIL NO. 5551

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

NO.	DATE	DESCRIPTION	BY
1		REVISIONS	

DSN. SAW
DRN. AR
CKD. SAW
DATE: DEC 2021

REGISTERED PROFESSIONAL ENGINEER — OREGON — JULY 16, 1982 — STEVEN A. WEST
REVIEW
RENEWS: 6/30/2024

WESTECH ENGINEERING, INC.
CONSULTING ENGINEERS AND PLANNERS
3841 Fairview Industrial Dr. S.E., Suite 100, Salem, OR 97302
Phone: (503) 585-2474 Fax: (503) 585-3986
E-mail: westech@westech-eng.com

MOLALLA APARTMENTS PHASE II
HOME FIRST DEVELOPMENT PARTNERS

CIVIL DETAILS

DRAWING
C6.2

JOB NUMBER
3312.1000.0

2/24/2023 4:02:13 PM
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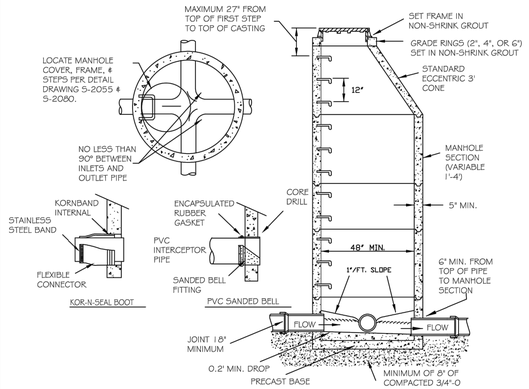


NOTES:
1. SEWER MANHOLE TO BE PREFORMED RUBBER O-RING GASKET DESIGN ONLY. ALL MANHOLES SHALL CONFORM WITH ASTM C-478.
2. PREFORMED RUBBER O-RING GASKETS SHALL CONFORM WITH AASHTO M 315 AND ASTM C-443.
3. MANHOLE FRAME AND COVER AS PER DETAIL DRAWING S-2055.
4. ALL PIPES ENTERING OR EXITING SHALL BE WATER TIGHT.
5. CHANNELS SHALL BE 3/4 VERTICAL HEIGHT OF PIPE WITH A SMOOTH FINISH.
6. 1.6' MAXIMUM DROP BETWEEN INVERTS AND MIN. 0.20' FALL BETWEEN INLETS AND OUTLET.
7. 8" MINIMUM BETWEEN PIPE ACCESS HOLES INTO MANHOLE. DISTANCE MEASURED AT INSIDE OF MANHOLE OR PER MANUFACTURER'S RECOMMENDATIONS.
8. PIPE ACCESSES INTO MANHOLES SHALL BE PREFORMED OR CORE DRILLED. HOLES SIZE TO EQUAL PIPE O.D. PLUS MANHOLE WALL THICKNESS. NO SAWING OR BREAKING OF MANHOLE SECTIONS IS ALLOWED.
9. MINIMUM HEIGHT OF STANDARD MANHOLE TO BE 5'.
10. ALL INTERIOR JOINTS AND CONNECTIONS SHALL BE WATERTIGHT AND GROUTED WITH NON-SHRINK GROUT. SANITARY MANHOLES SHALL BE VACUUM TESTED.
11. GRADE RINGS AND CONE SECTION SHALL BE DESIGNED TO WITHSTAND AASHTO H-20 LOADS.
12. SEE MANHOLE STEP DETAIL DRAWING S-2080.
13. STANDARD MANHOLE TO BE USED OVER EXISTING MAINS AND FOR PIPE 24" OR LESS IN DIAMETER.
14. RAINSTOPPER MANHOLE INSERT, OR APPROVED EQUAL, REQUIRED ON ALL SANITARY SEWER MANHOLES. SHALL BE MADE OF DURABLE PLASTIC. USE 25" MODEL G FOR 6" X 24" MH P4C.
15. INSTALL TRACER WIRE THRU CONE OR TOP BARREL SECTION PICK HOLES. RUN WIRE UP OUTSIDE WALL FROM TOP OF PIPE TO PICK HOLES AND LEAVE A 24" LONG LOOP ACCESSIBLE FROM SURFACE AND NOT CREATING AN TANGLE HAZARD. SECURING TO MANHOLE STEP NEXT TO INSIDE WALL IS PREFERRED.

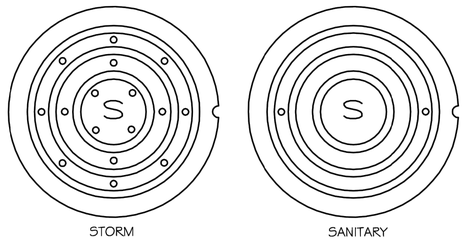
Detail Drawing may not be altered or changed in any manner except by the Public Works Director. It is the responsibility of the user to acquire the most current version.

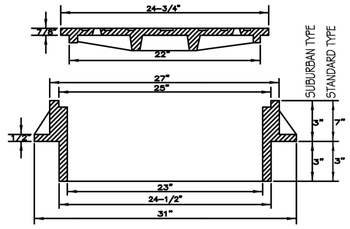
CITY OF MOLALLA
DEPARTMENT OF PUBLIC WORKS

STANDARD MANHOLE DETAIL
SANITARY AND STORM

DRAWN BY	GF	01/2020
CHECKED BY	GF	01/2020

S-2005





NOTES:
1. SUBURBAN TYPE NOT FOR USE IN PCC STREETS.
2. COVER AND FRAME SHALL BE GRAY CAST IRON ASTM A-48 CLASS 30.
3. COVER AND FRAME TO BE MACHINED TO A TRUE BEARING ALL AROUND.
4. NOTCH LID FOR LIFTING HOOK.

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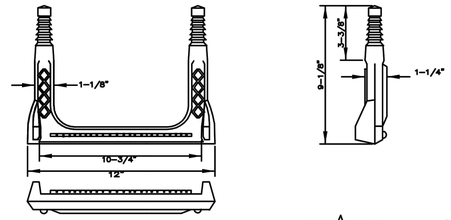
CITY OF MOLALLA
DEPARTMENT OF PUBLIC WORKS

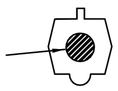
MANHOLE FRAME & COVER DETAIL

DRAWN BY	PDG	01/2016
CHECKED BY	JC	01/2016

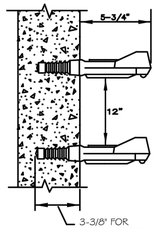
S-2055



COPOLYMER POLYPROPYLENE PLASTIC



1/2" GRADE 60 REINFORCEMENT



NOTE:
STEPS IN PREFABRICATED MANHOLE SECTIONS MUST BE TIGHT AND FIRMLY EMBEDDED. THEY MUST ALSO MEET THE ASTM TEST FOR WITHSTANDING PULL-OUT. TOP STEP SHALL BE NO GREATER THAN 27" FROM TOP OF CASTING.

MATERIALS:

PLASTIC:

MUST CONFORM WITH ASTM C-478. STEEL REINFORCING BAR MINIMUM 1/2" GRADE 60. MEETING REQUIREMENTS OF ASTM A615 ENCAPSULATED WITH INJECTION MOLDED COPOLYMER POLYPROPYLENE WITH SERRATED SURFACES.

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CITY OF MOLALLA
DEPARTMENT OF PUBLIC WORKS

MANHOLE STEP DETAIL

DRAWN BY	PDG	01/2016
CHECKED BY	JC	01/2016

S-2080

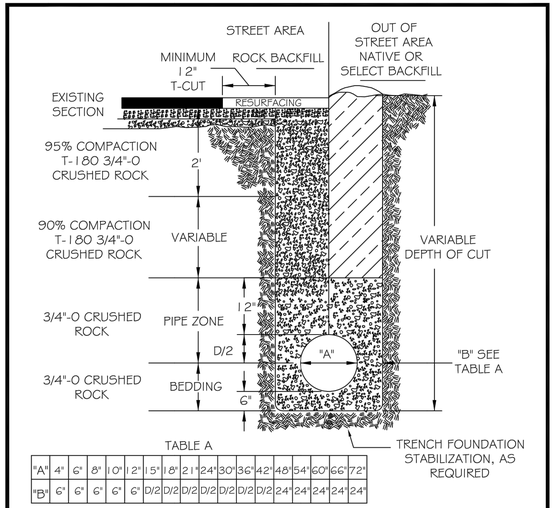

TABLE A

"A"	4"	6"	8"	10"	12"	15"	18"	21"	24"	30"	36"	42"	48"	54"	60"	66"	72"
"B"	6"	6"	6"	6"	6"	D/2	D/2	D/2	D/2	D/2	D/2	D/2	24"	24"	24"	24"	24"

BACKFILL IN STREET AREAS
1. FILL ROCK TO BACK OF SW.
2. FILL ROCK 2' FROM FINISHED GRADE IN PLANTER AREAS.
3. ASPHALT SPECIFICATIONS AND DEPTH PER PUBLIC WORKS STANDARDS AND STREET CLASSIFICATION.
4. CONCRETE PANEL REPLACEMENT PER DESIGN AND DOWELED TO SURROUNDING PANELS OR CURB.
5. BACKFILL IN ODOT ROADWAYS PER ODOT STANDARDS.
6. WHEN PIPE COVER IS 2 FEET OR LESS, BACKFILL WITH CLSM PER PROJECT SPECIFICATIONS OR PER ODOT STANDARD SPECIFICATION 00442 WHEN PROJECT IS SILENT ON REQUIREMENTS.

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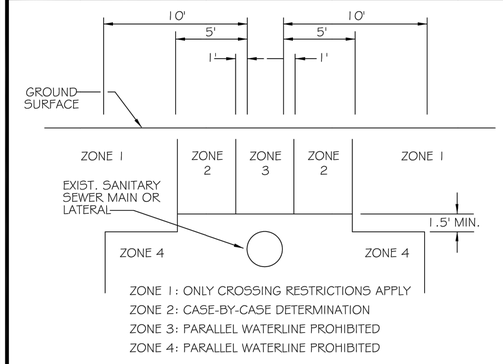
CITY OF MOLALLA
DEPARTMENT OF PUBLIC WORKS

STANDARD TRENCH DETAIL

DRAWN BY	PW	01/2020
CHECKED BY	GF	01/2020

S-2140



ZONE 1: ONLY CROSSING RESTRICTIONS APPLY
ZONE 2: CASE-BY-CASE DETERMINATION
ZONE 3: PARALLEL WATERLINE PROHIBITED
ZONE 4: PARALLEL WATERLINE PROHIBITED

NOTES:
1. WHERE THE PROPOSED WATERLINE WILL BE INSTALLED PARALLEL TO AN EXISTING GRAVITY SANITARY SEWER MAIN OR LATERAL LINE, THE SEPARATION BETWEEN THE TWO SHALL BE AS INDICATED ABOVE.

2. CROSSINGS:
   a.) WHEREVER POSSIBLE, THE BOTTOM OF THE WATERLINE SHALL BE 1.5 FEET ABOVE THE TOP OF THE SEWER LINE, AND ONE FULL LENGTH OF WATERLINE SHALL BE CENTERED AT THE CROSSING.

   b.) WHERE IT IS NOT POSSIBLE FOR THE WATER LINE TO BE 1.5 FEET ABOVE THE SEWER LINE, OR THE WATERLINE PASSES UNDER THE SEWER LINE, THE EXISTING SEWER LINE SHALL BE EXPOSED FOR A DISTANCE OF 10 FEET ON EACH SIDE OF THE CROSSING, AND SHALL BE REPLACED WITH C-900 PVC OR CLASS 50 DUCTILE IRON PIPE AS APPROVED BY THE ENGINEER, AND A LENGTH OF WATER PIPE SHALL BE CENTERED AT THE CROSSING, OR AS APPROVED BY THE ENGINEER.

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CITY OF MOLALLA
DEPARTMENT OF PUBLIC WORKS

SANITARY SEWER CROSSING

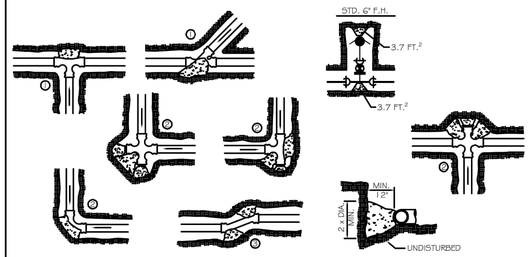
DRAWN BY	GF	11/2019
CHECKED BY	GF	11/2019

S-2150

FITTING SIZE (Inches)	TEE, WYE, & HYDRANTS ①	90° BEND PLUGGED CROSS TEE PLUGGED-RUNS ②	45° BEND ②	22 1/2° BEND ②	11 1/4° BEND ②
2	*	*	*	*	*
4	1.7	2.4	1.3	*	*
6	3.7	5.3	2.9	1.5	*
8	6.7	9.5	5.1	2.7	1.3
10	10.5	14.8	8	4.1	2
12	15.1	21.3	11.6	5.9	2.9
18	33.9	47.9	25.9	12.8	6.7
LARGER	* *	* *	* *	* *	* *
BEARING AREA OF THRUST BLOCKS (SQ. FT.)					

1. THRUST BLOCKS SHALL BE PROVIDED AT FIRE HYDRANTS, WET TAPS, AND ALL UN-RESTRAINED WATER SYSTEM APPURTENANCES ONLY, UNLESS OTHERWISE DIRECTED BY THE CITY'S AUTHORIZED REPRESENTATIVE.
2. ALL VALUES ARE BASED ON THE FOLLOWING ASSUMPTIONS:
   - AVG. PRESSURE = 100 PSI X 2 (SAFETY FACTOR)
   - 1500 PSF SOIL BEARING CAPACITY
3. ALL FITTINGS SHALL BE WRAPPED IN PLASTIC (8 MIL. MINIMUM) PRIOR TO PLACEMENT OF CONCRETE.
4. BEARING SURFACE OF THRUST BLOCKING SHALL BE AGAINST UNDISTURBED SOIL.
5. CONCRETE SHALL BE COMMERCIAL MIX, MIN. COMPRESSIVE STRENGTH OF 3000 PSI AT 28 DAYS.
6. ALL PIPE ZONES SHALL BE GRAVEL FILLED AND COMPACTED.
7. THRUST BLOCKS FOR PLUGGED CROSS AND PLUGGED TEE SHALL HAVE #4 REBAR LIFTING LOOPS INSTALLED AS SHOWN.

* BLOCK TO UNDISTURBED TRENCH WALLS
** THRUST BLOCKS WILL BE INDIVIDUALLY DESIGNED AND STAMPED BY THE ENGINEER.



Detail Drawing may not be altered or changed in any manner except by the Public Works Director. It is the responsibility of the user to acquire the most current version.

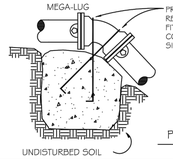
CITY OF MOLALLA
DEPARTMENT OF PUBLIC WORKS

HORIZONTAL THRUST BLOCK DETAIL

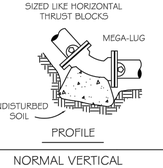
DRAWN BY	PDG	01/2016
CHECKED BY	JC	01/2016

W-3000

NOTES:
1. GRAVITY VERTICAL THRUST BLOCKS SHALL BE DESIGNED BY THE ENGINEER.
2. KEEP CONCRETE CLEAR OF JOINT AND JOINT ACCESSORIES. FITTINGS SHALL BE WRAPPED IN PLASTIC (8 MIL. MINIMUM) PRIOR TO PLACEMENT OF CONCRETE.
3. CONCRETE THRUST BLOCKING SHALL BE POURED AGAINST UNDISTURBED EARTH.
4. CONCRETE MIX SHALL BE COMMERCIALLY MIXED HAVE A MIN. 28 DAY STRENGTH OF 3000 PSI.
5. THRUST BLOCK VOLUMES FOR VERTICAL BENDS HAVING UPWARD RESULTANT THRUSTS ARE BASED ON TEST PRESSURE OF 150 PSIG. AND THE WEIGHT OF CONCRETE = 4050 LBS./CU.YD.
6. VERTICAL BENDS THAT REQUIRE A THRUST BLOCK VOLUME EXCEEDING 5 CUBIC YARDS REQUIRE SPECIAL BLOCKING DETAILS. SEE PLANS FOR VOLUMES SHOWN INSIDE HEAVY LINE IN TABLE.
7. ALL REBAR SHALL BE PREFORMED EPOXY COATED IN ACCORDANCE WITH AASHTO M-284. REBAR SHALL BE PREFORMED, AND LAST 4" OF BAR SHALL BE BENT 90° WITH A 1/2" RADIUS BEND. REBAR SHALL BE TIGHTLY FIT TO RESTRAINED FITTING.
8. FOR HORIZONTAL THRUST BLOCK DETAILS SEE DRAWING NO. W-3000.



GRAVITY VERTICAL THRUST BLOCK



NORMAL VERTICAL THRUST BLOCK

VOLUME OF THRUST BLOCK IN CUBIC YARDS (VERTICAL BENDS)			
FITTING SIZE	BEND ANGLE		
	45°	22 1/2°	11 1/4°
4	1.1	0.4	0.2
6	2.7	1.0	0.4
8	4.0	1.5	0.6
10	6.0	2.3	0.9
12	8.5	3.2	1.3
14	11.5	4.3	1.8
16	14.8	5.6	2.3

FITTING SIZE	ROD SIZE	EMBED-MENT
12" AND LESS	#6	30"
18" OR LARGER	*	*

* THRUST BLOCKS FOR PIPES 18" OR LARGER WILL BE INDIVIDUALLY DESIGNED BY THE ENGINEER.

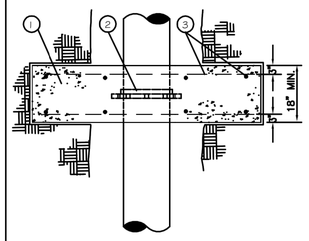
Detail Drawing may not be altered or changed in any manner except by the Public Works Director. It is the responsibility of the user to acquire the most current version.

CITY OF MOLALLA
DEPARTMENT OF PUBLIC WORKS

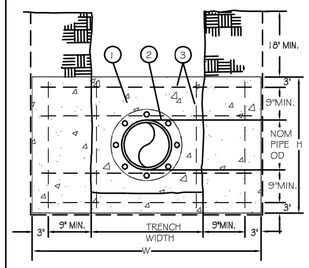
VERTICAL THRUST BLOCK

DRAWN BY	PDG	04/2016
CHECKED BY	JC	04/2016

W-3005



TOP VIEW



FRONT VIEW

MATERIALS:

1. CONCRETE STRADDLE BLOCK.
2. MEGA LUG OR APPROVED EQUAL
3. #4 REBAR EACH WAY, 12" O/C.

STRADDLE BLOCK	
PIPE SIZE (IN.)	BEARING AREA (S.F.)
4	2.1
6	4.9
8	8.7
10	13.6
12	19.6
18	44

NOTES:
1. STRADDLE BLOCKS FOR PIPE LARGER THAN 18" SHALL BE DESIGNED INDIVIDUALLY BY THE ENGINEER AND SHALL BE BASED ON THE FOLLOWING:
   A.) 200 PSI. WATER PRESSURE
   B.) SOIL BEARING CAPACITY, STEEL SIZE AND SPACING BY THE ENGINEER.
2. BEARING AREA OF BLOCK SHALL BE AGAINST UNDISTURBED SOIL.
3. STRADDLE BLOCK SHALL HAVE A MINIMUM OF 18" COVER.
4. CONCRETE SHALL BE COMMERCIAL MIX, MIN. COMPRESSIVE STRENGTH OF 3000 PSI AT 28 DAYS.
5. STRADDLE BLOCK HEIGHT (H) & WIDTH (W) SHALL BE DESIGNED AND STAMPED BY THE ENGINEER.

Detail Drawing may not be altered or changed in any manner except by the Public Works Director. It is the responsibility of the user to acquire the most current version.

CITY OF MOLALLA
DEPARTMENT OF PUBLIC WORKS

STRADDLE BLOCK DETAIL
DEAD ENDS AND BLOW-OFFS

DRAWN BY	PDG	01/2016
CHECKED BY	JC	01/2016

W-3010

				BY
				DESCRIPTION
			1	NO.
				DATE
				REVISIONS

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

DSN. SAW
DRN. AR
CKD. SAW
DATE: DEC 2021

REVIEW
REGISTERED PROFESSIONAL ENGINEER
OREGON
JULY 16, 1999
STEVEN A. WARD
RENEWS: 6/30/2024

WESTECH ENGINEERING, INC.
CONSULTING ENGINEERS AND PLANNERS
3841 Fairview Industrial Dr. S.E., Suite 100, Salem, OR 97302
Phone: (503) 585-2474 Fax: (503) 585-3986
E-mail: westech@westech-eng.com

MOLALLA APARTMENTS PHASE II
HOME FIRST DEVELOPMENT PARTNERS

CITY OF MOLALLA DETAILS

DRAWING
C6.3

JOB NUMBER
3312.1000.0

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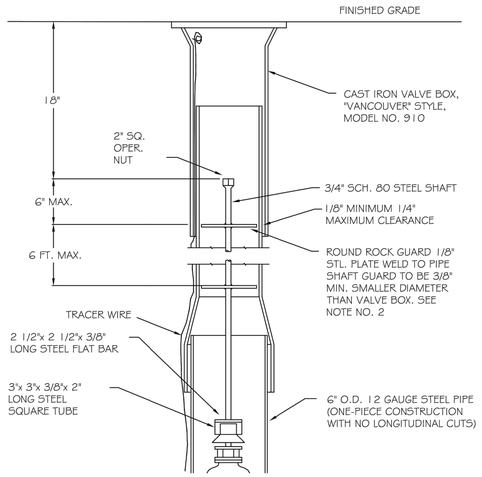


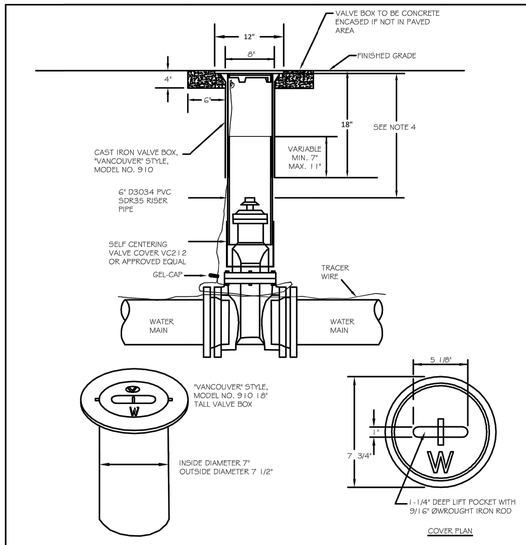
NOTES:
1. EXTEND 2" NUT TO WITHIN 18" OF FINISH GRADE WHEN VALVE NUT IS DEEPER THAN 3 FEET FROM FINISHED GRADE.
2. WHERE DEPTH IS OVER 6 FEET, A SECOND PLATE WILL BE INSTALLED EQUIDISTANT BETWEEN FIRST ROCK GUARD AND 2" VALVE NUT.
3. WATERLINE DEEPER THAN 4 FEET SHALL BE APPROVED BY CITY'S AUTHORIZED REPRESENTATIVE.
4. SEE DETAIL W-3020 WATER VALVE BOX & LID FOR ADDITIONAL STANDARD REQUIREMENTS.

Detail Drawing may not be altered or changed in any manner except by the Public Works Director. It is the responsibility of the user to acquire the most current version.

CITY OF MOLALLA
DEPARTMENT OF PUBLIC WORKS

VALVE OPERATOR EXTENSION

DRAWN BY	PDG	04/2016	W-3015
CHECKED BY	JC	04/2016	



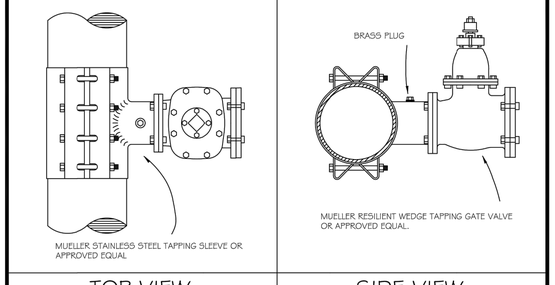
NOTES:
1. VALVE BOXES SHALL BE CENTERED DIRECTLY OVER THE VALVE NUT IN A VERTICAL POSITION.
2. VALVE BOX TOP SHALL BE ADJUSTED TO MEET FINISHED GRADE.
3. PVC RISER SHALL BE ONE CONTINUOUS PIECE - NO BELLS OR COUPLERS.
4. WHERE DEPTH OF OPERATING NUT IS GREATER THAN 3 FEET PROVIDE OPERATING EXTENSION TO A POINT 18" BELOW FINISH GRADE.
5. VALVE BOXES SHALL BE MANUFACTURED USING DOMESTIC CAST IRON ONLY.

Detail Drawing may not be altered or changed in any manner except by the Public Works Director. It is the responsibility of the user to acquire the most current version.

CITY OF MOLALLA
DEPARTMENT OF PUBLIC WORKS

WATER VALVE BOX & LID DETAIL

DRAWN BY	PDG	01/2016	W-3020
CHECKED BY	JC	01/2016	



TOP VIEW | SIDE VIEW

NOTES:
1. ALL BOLTS, WASHERS, AND NUTS SHALL BE A-304 STAINLESS STEEL.
2. WATER MAIN SHALL BE CLEANED BEFORE ATTACHING SLEEVE.
3. SLEEVE AND VALVE SHALL BE PRESSURE TESTED BEFORE MAKING TAP.
4. PRESSURE TEST AND TAP SHALL BE MADE IN THE PRESENCE OF A CITY'S AUTHORIZED REPRESENTATIVE.
5. PROPER TAPPING MACHINE SHALL BE USED TO MAKE TAP.
6. 3/4"-0 CRUSHED AGGREGATE SHALL BE PLACED AND COMPACTED TO 95% OF MAXIMUM DENSITY AS DETERMINED BY AASHTO T-180.
7. THRUST BLOCKING REQUIREMENTS SHALL BE DETERMINED BY THE ENGINEER AND SHALL NOT BE LESS THAN THE REQUIREMENTS AS SHOWN IN STANDARD DETAIL DRAWING W-3000 .
8. TAP SHALL BE MADE NO CLOSER THAN 18 INCHES FROM THE OUTSIDE EDGE OF THE SLEEVE TO THE BEGINNING OF THE BELL FLARE OR END OF THE MJ FITTING.
9. SLEEVE AND VALVE SHALL BE WRAPPED WITH PLASTIC (8 MIL. MINIMUM) PRIOR TO INSTALLATION OF THRUST BLOCK AND BACKFILL.

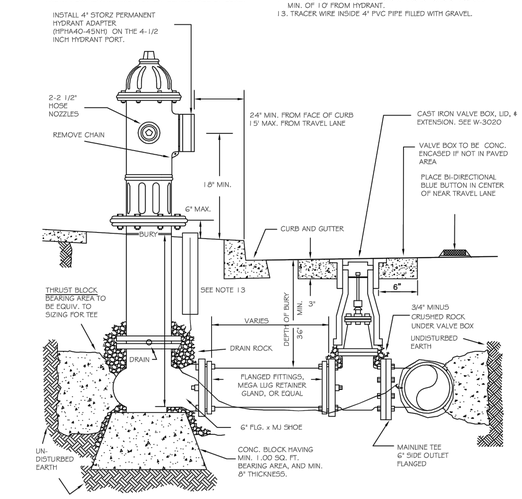
Detail Drawing may not be altered or changed in any manner except by the Public Works Director. It is the responsibility of the user to acquire the most current version.

CITY OF MOLALLA
DEPARTMENT OF PUBLIC WORKS

WATERLINE HOT TAP

DRAWN BY	PW	11/2019	W-3025
CHECKED BY	GF	11/2019	

NOTES:
1. APPROVED FIRE HYDRANTS: MUELLER SUPER CENTURION 250
2. HYDRANT COLOR TO BE MILLER PAINT, SAFETY YELLOW ENAMEL, NO. 2523.
3. ALL FITTINGS IN CONTACT WITH CONCRETE SHALL BE WRAPPED IN PLASTIC (8 MIL. MINIMUM). HYDRANT DRAIN HOLES TO REMAIN OPEN TO DRAIN ROCK AND OPERATIONAL.
4. MIN. 4 CU. FT. OF 1 1/2"-3/4" CLEAN DRAIN ROCK SHALL BE PLACED AROUND SHOE UP TO A MIN. OF 6" ABOVE DRAIN OUTLETS.
5. WHERE PLANTER STRIP EXISTS, HYDRANT SHALL BE PLACED SO FRONT PORT IS A MINIMUM OF 24" BEHIND FACE OF CURB.
6. WHERE INTEGRAL SW 4 CURB EXISTS, HYD. SHALL BE PLACED 18" BACK OF SIDEWALK OR AS DIRECTED BY ENGINEER.
7. BURY OF HYDRANT SHALL BE MEASURED FROM FINISHED GRADE TO BOTTOM OF CONNECTING PIPE.
8. THRUST BLOCK AT FIRE HYDRANT TEE SHALL HAVE A MIN. 3.7 SQ. FT. BEARING AREA.
9. HYDRANT VALVE SHALL BE MUELLER RESILIENT WEDGE GATE VALVE #A-2360-16 ONLY.
10. PROTECTIVE POST IS TO BE PROVIDED AND INSTALLED, PER UFC STANDARDS, IF HYDRANT IS SUBJECT TO VEHICULAR DAMAGE.
11. NO OBSTRUCTION ARE ALLOWED WITHIN 3' OF HYDRANT.
12. PARALLEL PARKING STALLS OR INTERSECTIONS SHALL BE A MIN. OF 10' FROM HYDRANT.
13. TRACER WIRE INSIDE 4" PVC PIPE FILLED WITH GRAVEL.



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CITY OF MOLALLA
DEPARTMENT OF PUBLIC WORKS

FIRE HYDRANT DETAIL

DRAWN BY	PDG	01/2016	W-3040
CHECKED BY	JC	01/2016	

FIGURE 1
TWO LANE STREET SECTION

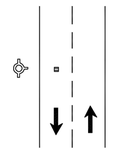


FIGURE 2
TWO LANE STREET SECTION AT INTERSECTION

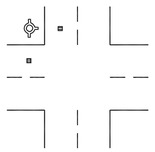


FIGURE 3
THREE LANE STREET SECTION

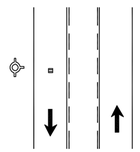
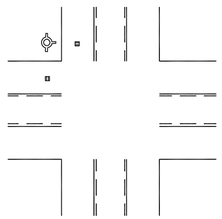


FIGURE 4
THREE LANE STREET SECTION AT INTERSECTION



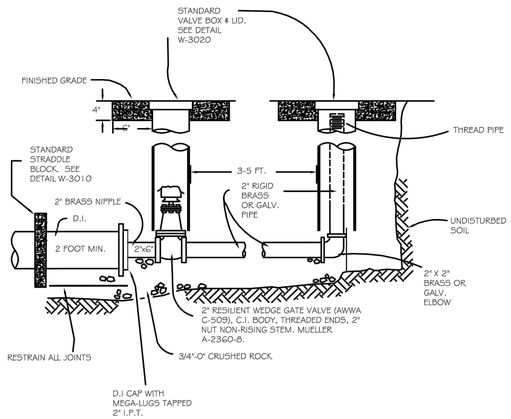
1. IF HYDRANT IS LOCATED WITHIN THE RADIUS OF AN INTERSECTION, PLACE A MARKER ON EACH ROADWAY IN THE LANES CLOSEST TO THE HYDRANT.
2. MARKER IS PLACED PERPENDICULAR (90 DEGREES) TO THE HYDRANT.
3. CONTRACTOR SHALL SUPPLY AND INSTALL ALL BLUE REFLECTORS AND MELT DOWN THERMOPLASTIC PADS.

Detail Drawing may not be altered or changed in any manner except by the Public Works Director. It is the responsibility of the user to acquire the most current version.

CITY OF MOLALLA
DEPARTMENT OF PUBLIC WORKS

FIRE HYDRANT MARKER LOCATIONS

DRAWN BY	AP	02/2019	W-3042
CHECKED BY	GF	02/2019	



NOTES:
1. VALVE BOX TO BE CONCRETE ENCASED AS SHOWN, IF NOT IN PAVED AREA.
2. BLOW-OFF UNIT SHALL BE BACKFILLED WITH 3/4"-0 CRUSHED ROCK AND COMPACTED TO 95% OF MAX. DENSITY DETERMINED BY AASHTO T-180.
3. BLOW-OFF NOT TO BE LOCATED IN GUTTER OR DITCH.
4. 2" BLOW-OFF FOR USE ON PIPE SIZES UP TO 12 INCHES IN DIAMETER INCLUDING TEMPORARY DEAD ENDS OR PLANNED FUTURE EXTENSIONS OF MAIN.
5. FOR PERMANENT DEAD ENDS USE 2" BLOW-OFF ON 8 INCH WATER MAIN.

Detail Drawing may not be altered or changed in any manner except by the Public Works Director. It is the responsibility of the user to acquire the most current version.

CITY OF MOLALLA
DEPARTMENT OF PUBLIC WORKS

2" BLOW-OFF DETAIL
12" & SMALLER WATERLINE

DRAWN BY	PW	01/2020	W-3075
CHECKED BY	GF	01/2020	

NO.	DATE	DESCRIPTION	BY
		REVISIONS	

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
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DSN. SAW
DRN. AR
CKD. SAW
DATE: DEC 2021

REGISTERED PROFESSIONAL ENGINEER
OREGON JULY 16, 1982
STEVEN A. WEBER
RENEWS: 6/30/2024
REVIEW

WESTECH ENGINEERING, INC.
CONSULTING ENGINEERS AND PLANNERS
3841 Fairview Industrial Dr. S.E., Suite 100, Salem, OR 97302
Phone: (503) 585-2474 Fax: (503) 585-3986
E-mail: westech@westech-eng.com

MOLALLA APARTMENTS PHASE II
HOME FIRST DEVELOPMENT PARTNERS

CITY OF MOLALLA DETAILS

DRAWING
C6.4

JOB NUMBER
3312.1000.0

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MAIN STREET APARTMENTS: PHASE 2

1000 WEST MAIN STREET
MOLALLA, OREGON

CLIENT / OWNER:

HOME FIRST DEVELOPMENT PARTNERS
CONTACT: ROB JUSTUS AND ALEX REFF
866 N. COLUMBIA BLVD., SUITE A-25
PORTLAND, OREGON 97217

LANDSCAPE ARCHITECT:

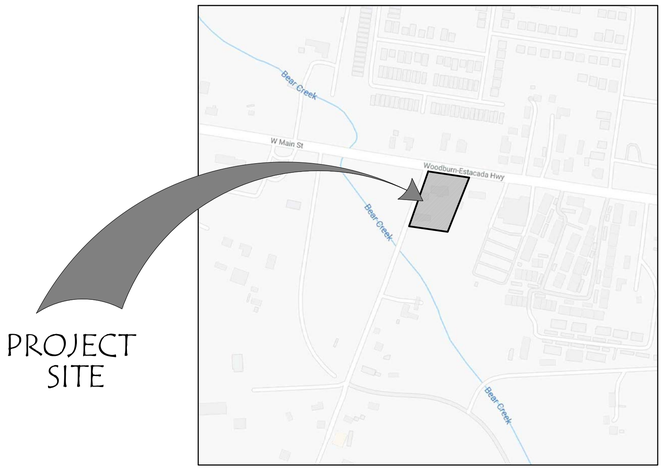
LAURUS DESIGNS, LLC
LAURA ANTONSON, RLA, ASLA
1012 PINE STREET
SILVERTON, OREGON 97381
503 . 784 . 6494
LAURA@LAURUSDESIGNS.COM

SHEET INDEX:

L0.0 COVER SHEET

L1.1 PRELIMINARY PLANTING PLAN

VICINITY MAP:



MAP COURTESY OF GOOGLE

CALL BEFORE YOU DIG:
1.800.332.2344
www.callbeforeyoudig.org

Laurus Designs, LLC

1012 Pine Street
Silverton, Oregon
503.784.6494

Main Street Apartments
Phase 2
for
Home First Development
1000 West Main Street
Molalla, Oregon

REGISTERED
643
PRELIMINARY
LAURA A. ANTONSON
OREGON
11/16/2007
LANDSCAPE ARCHITECT

COVER SHEET

February 24th, 2023

REVISIONS

#	DATE	NOTES	INITIALS

L0.0

PROJECT #: 1481R

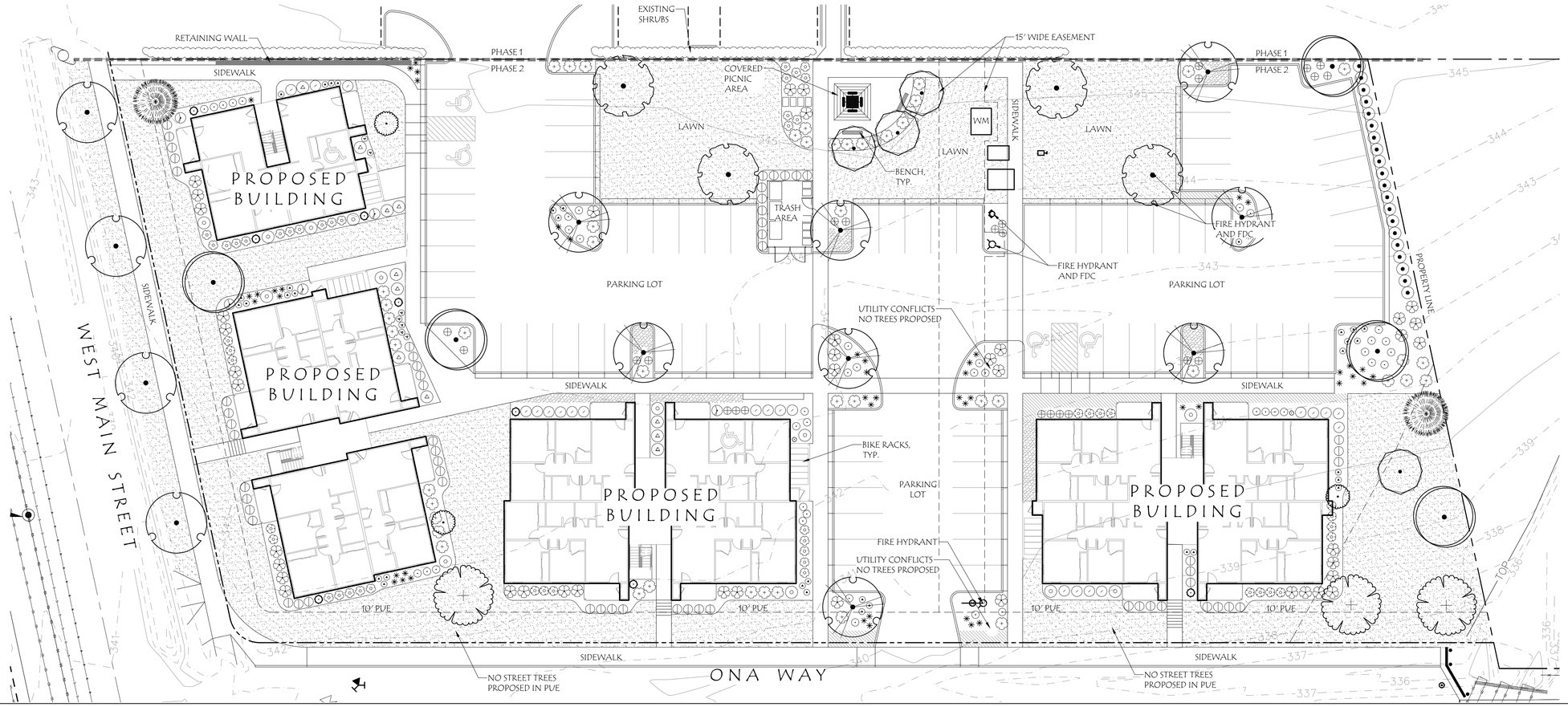
Preliminary Plant Schedule

TREES	QTY	BOTANICAL / COMMON NAME	SIZE
	2	Calocedrus decurrens / Incense Cedar	4-6` Ht., B&B
	1	Cercis canadensis `Forest Pansy` / Forest Pansy Eastern Redbud	1 1/2" Cal., B&B
	4	Fraxinus oxycarpa 'Flame' / Flame Ash	2" Cal., B&B Street Tree
	8	Juniperus scopulorum `Skyrocket` / Skyrocket Juniper	4-6` Ht., B&B
	5	Liriodendron tulipifera / Tulip Tree	1 1/2" Cal., B&B
	8	Nyssa sylvatica `Wildfire` / Black Gum	1 1/2" Cal., B&B
	3	Prunus serrulata 'Amanogawa' / Japanese Flowering Cherry	1 1/2" Cal., B&B
	5	Tilia tomentosa 'Sterling' / Sterling Silver Linden	1 1/2" Cal., B&B
	3	Zelkova serrata `Green Vase` / Sawleaf Zelkova	2" Cal., B&B Street Tree

GROUND COVERS	QTY	BOTANICAL / COMMON NAME	SIZE	SPACING
	102	Arctostaphylos uva-ursi `Massachusetts` / Massachusetts Kinnikinnick	1 Gal.	30" o.c.
	39	Rubus pentalobus `Emerald Carpet` / Emerald Carpet Creeping Raspberry	1 Gal.	48" o.c.
	22,317 sf	ProTime 301 Water Smarter Fescue	Seed	

SHRUBS	QTY	BOTANICAL / COMMON NAME	SIZE
	45	Abelia x grandiflora `Kaleidoscope` / Kaleidoscope Abelia	2 Gal.
	22	Abelia x grandiflora `Sherwoodii` / Sherwood Glossy Abelia	2 Gal.
	20	Euonymus japonicus / Japanese Spindle	5 Gal.
	2	Ilex crenata `Sky Pencil` / Sky Pencil Japanese Holly	24"-30" Ht.
	59	Ilex crenata 'Soft Touch' / Soft Touch Japanese Holly	2 Gal.
	24	Nandina domestica `Gulf Stream` TM / Gulf Stream Heavenly Bamboo	2 Gal.
	38	Prunus laurocerasus `Mount Vernon` / Mount Vernon Laurel	2 Gal.
	37	Rhaphiolepis indica 'Ballerina' / Ballerina Indian Hawthorn	2 Gal.
	13	Rhaphiolepis umbellata `Minor` / Yedda Hawthorn	2 Gal.
	21	Rosa x 'KO Double' / Pink Double Knockout Rose	2 Gal.
	20	Sarcococca confusa / Sweetbox	2 Gal.
	5	Spiraea japonica 'Goldflame' / Goldflame Japanese Spirea	2 Gal.
	13	Weigela florida `Alexandra` TM / Wine and Rose Weigela	3 Gal.

GRASSES / PERENNIALS	QTY	BOTANICAL / COMMON NAME	SIZE
	48	Helictotrichon sempervirens / Blue Oat Grass	1 Gal.
	41	Hemerocallis x 'Ruby Stella' / Ruby Stella Daylily	1 Gal.



General Notes:

1. PLANTING PLAN FOR PRELIMINARY USE ONLY, NOT FOR BIDDING OR CONSTRUCTION.
2. SEE ARCHITECTURAL DRAWINGS FOR SITE PLAN.
3. SEE CIVIL DRAWINGS FOR GRADING AND UTILITIES.
4. STREET TREES TO BE A MINIMUM OF 2" CALIPER. NO STREET TREES PROPOSED ON ONA WAY DUE TO 10' PUE.
5. PLANT SCHEDULE SEE THIS SHEET.
6. SITE FURNISHINGS TO BE DETERMINED.
7. IRRIGATION TO BE AN AUTOMATIC UNDERGROUND SYSTEM DESIGNED BY THE LANDSCAPE ARCHITECT.

Landscape Requirements & Calculations

SITE SQUARE FOOTAGE (SF):	76,703 SF (1.76 ACRES)
TOTAL LANDSCAPE SF:	28,653 SF
LANDSCAPE PERCENTAGE:	37%
TOTAL USEABLE OPEN SPACE (MIN. 20' WIDTH DIMENSION):	12,715 SF
PARKING LOT SF:	23,611 SF
LANDSCAPE PARKING LOT SF:	4,737 SF
LANDSCAPE PERCENTAGE (MIN. 10 %): ,	20%

Laurus Designs, LLC

1012 Pine Street
Silverton, Oregon
503.784.6494

Main Street Apartments Phase 2
for
Home First Development
1000 West Main Street
Molalla, Oregon

REGISTERED 643 PRELIMINARY LAURA A. ANTONSON OREGON 11/16/2007 LANDSCAPE ARCHITECT

PRELIMINARY PLANTING PLAN

SCALE: 1"=20'-0"
0' 10' 20' 40'
SCALE

February 24th, 2023

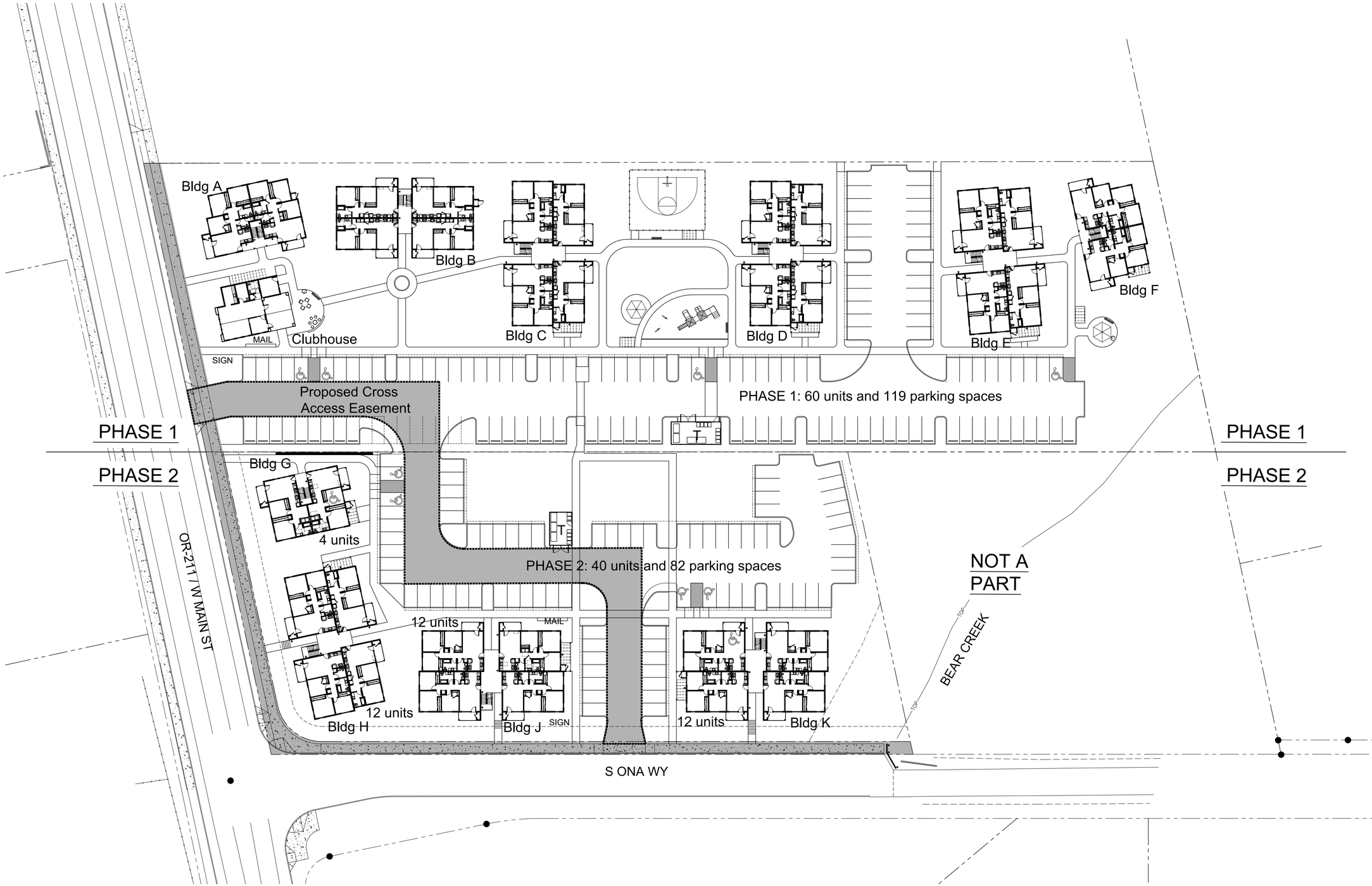
REVISIONS

#	DATE	NOTES	INITIALS

L1.1

SHEET 2 OF 2

PROJECT #: 1481R



1 A100 OVERALL SITE PLAN
1"=30'-0"

N

REGISTERED ARCHITECT
DOUG C. CIRCOSTA
PORTLAND, OREGON
STATE OF OREGON

© 2022
Doug Circosta, Architect
503-730-6908
14670 SW Forest Drive
Beaverton, OR 97007

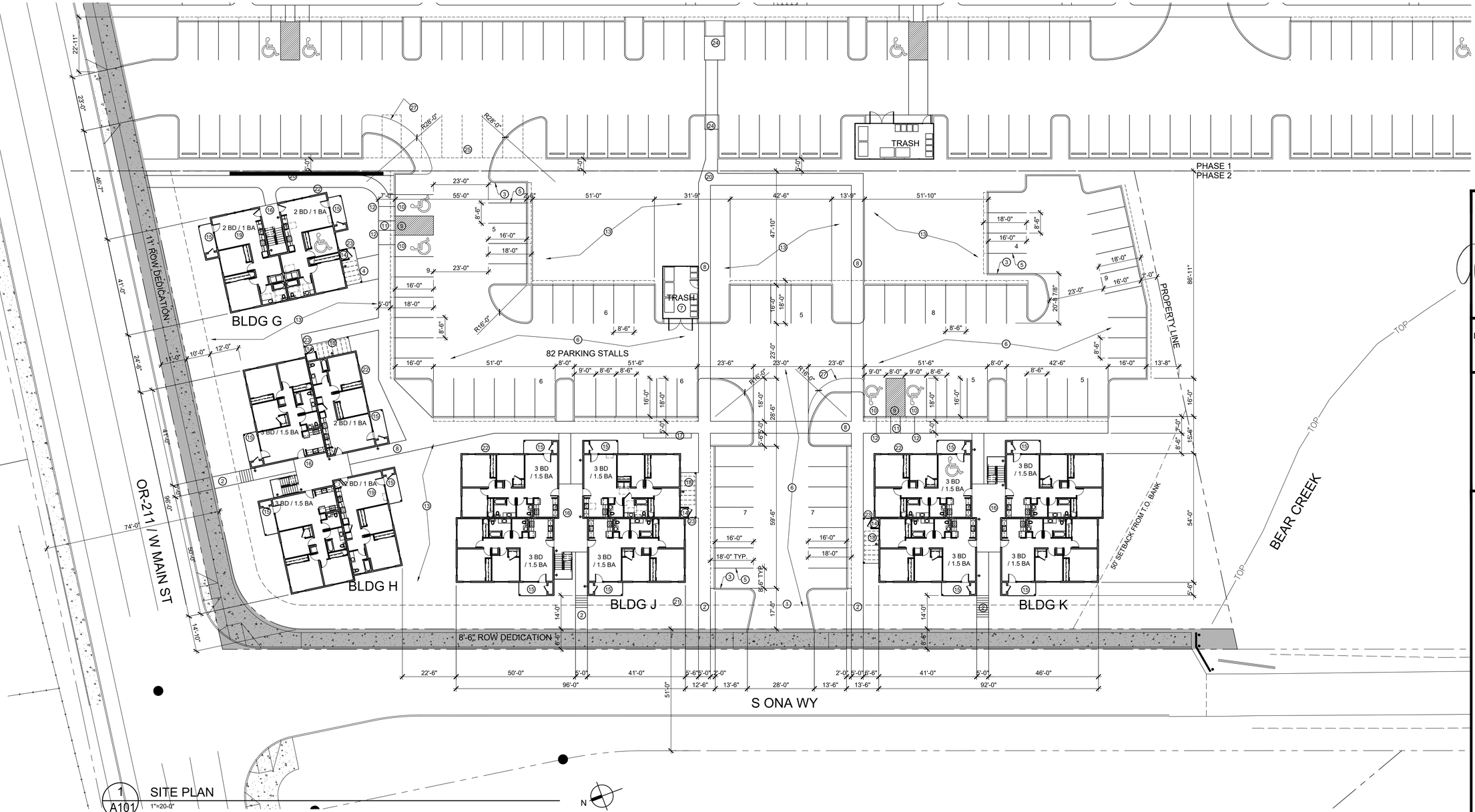
MOLALLA APARTMENTS
PHASE 2

1000 WEST MAIN STREET
MOLALLA, OR 97038

job no.: 2206
date: 02-24-2023

OVERALL
SITE PLAN

A100



1 A101 SITE PLAN
1"=20-0"

KEY NOTES

1. VEHICLE SITE ENTRY
2. PEDESTRIAN SITE ENTRY
3. 6" CAST IN PLACE CONCRETE CURB AROUND ENTIRE PARKING AREA
4. COVERED BIKE PARKING FOR 4 BIKES
5. PAINTED PARKING SPACE STRIPING AT EACH PARKING SPACE
6. ASPHALT PAVED PARKING SPACES AND DRIVEWAY
7. TRASH ENCLOSURE - 6' HIGH BLACK CHAIN LINK FENCING WITH MATCHING BLACK INFILL SLATS, MATCHING PAIR OF 5' X 6' METAL GATES AND ONE 42" X 6' MAN-GATE WITH ACCESSIBLE HARDWARE
8. 5' WIDE CONCRETE PEDESTRIAN SIDEWALK
9. STRIPED ACCESS AISLE
10. ACCESSIBLE PARKING SPACE
11. ACCESSIBLE CURB RAMP
12. ACCESSIBLE PARKING SIGNAGE
13. LANDSCAPE AREA - SEE LANDSCAPE PLAN
14. BUILDING FIRE SPRINKLER RISER CLOSET WITH "FIRE RISER" SIGNAGE
15. COVERED PATIO
16. COVERED BREEZEWAY
17. PROPOSED MAILBOX LOCATION
18. COVERED BIKE PARKING FOR 6 BIKES
19. VISUAL AND HEARING IMPAIRED UNIT
20. CONTINUE SIDEWALK TO ADJACENT SITE
21. PROJECT MONUMENT SIGN WITH PROJECT NAME AND ADDRESS
22. BUILDING MOUNTED ADDRESS SIGN - EXACT PLACEMENT TO TO BE COORDINATED WITH MOLALLA FIRE
23. FIRE DEPARTMENT KNOX BOX LOCATION AT FIRE RISER MOUNT NO MORE THAN 80" FROM GRADE TO TOP OF BOX
24. NEW PEDESTRIAN CONNECTION TO PHASE 1 ONE PARKING SPACE REMOVED
25. NEW VEHICLE CONNECTION TO PHASE 1 SEVEN PARKING SPACES REMOVED
26. NEW 5' WIDE CONCRETE PEDESTRIAN SIDEWALK ON PHASE 1
27. TRAFFIC DELINEATORS EMBEDDED IN PAVING

GENERAL NOTES

1. REFER TO CIVIL DRAWINGS FOR:
   - 1.1. FINISHED GRADES - ON SITE AND OFF SITE
   - 1.2. BUILDING PAD ELEVATIONS
   - 1.3. ALL WORK IN THE PUBLIC RIGHT-OF-WAY
   - 1.4. ROADWORK AND PAVING - ON SITE AND OFF SITE
   - 1.5. STORM DRAINAGE - ON SITE AND OFF SITE
   - 1.6. UTILITIES - ON SITE AND OFF SITE
2. ALL SITE WORK TO CONFORM TO THE ACCESSIBILITY REQUIREMENTS OF CHAPTER 11 OF THE 2019 OREGON STRUCTURAL SPECIALTY CODE AND ICC/ANSI A117.1-2009.
3. ALL SIDEWALKS SHOWN TO NOT EXCEED 1:20 SLOPE VERTICAL AND 1:50 CROSS SLOPE
4. REFER TO LANDSCAPE PLAN FOR PLANTING AND AMENITIES IN ALL LANDSCAPE AREAS.
5. PARKING AREA TO BE ASPHALT PAVING WITH 6" CAST IN PLACE CONCRETE CURBS AROUND ENTIRE PARKING AREA. VERIFY ALL REQUIREMENTS WITH CIVIL DRAWINGS.
6. ALL SIDEWALKS ADJACENT TO PARKING SPACES TO BE 2 FEET WIDER THAN REQUIRED TO ACCOMMODATE VEHICLE OVERHANG.

TABULATIONS

6 2 BR / 1 BA UNITS AT 861 SF = 5,166 SF
4 2 BR / 1 BA UNITS AT 944 SF = 3,776 SF
30 3 BR / 1.5 BA UNITS AT 1,107 SF = 33,210 SF

40 UNITS TOTAL = 42,152 SF (AREA DOES NOT INCLUDE DECKS, PATIOS, BREEZEWAYS, OR EXTERIOR STORAGE)

SITE AREA:

BEFORE DEDICATION: 85,165 SF
DEDICATION: 5,889 SF

AFTER DEDICATION: 79,276 SF

BUILDING COVERAGE: 17,548 SF = 22.1%

PARKING

REQUIRED:
10 2 BR UNITS X 2.0 SPACES PER UNIT = 20 SPACES
30 3 BR UNITS X 2.5 SPACES PER UNIT = 75 SPACES

82 ON SITE PARKING SPACES PROVIDED

20% OF THE ON-SITE PARKING SPACES ARE TO BE CONSTRUCTED AS "EV READY". 82 x .20 = 17 SPACES

REGISTERED ARCHITECT
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PORTLAND, OREGON
STATE OF OREGON

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Beaverton, OR 97007

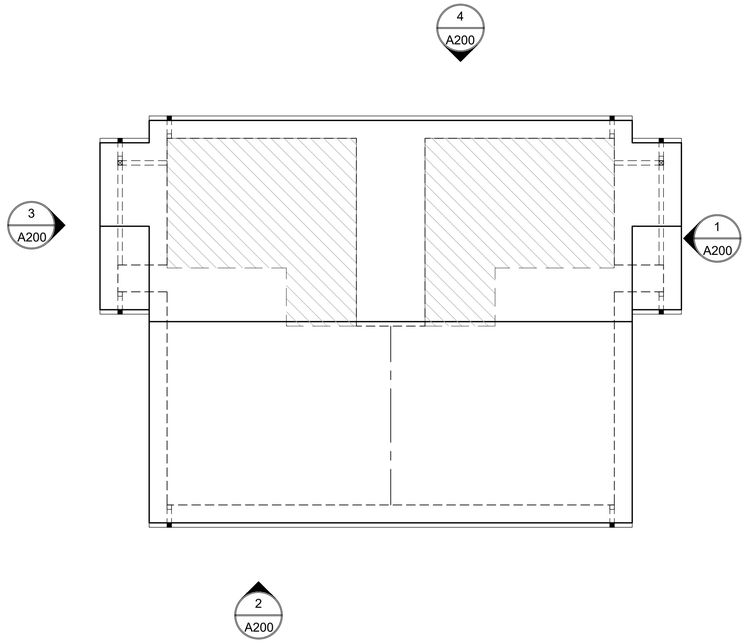
MOLALLA APARTMENTS
PHASE 2

1000 WEST MAIN STREET
MOLALLA, OR 97038

job no.: 2206
date: 02-24-2023

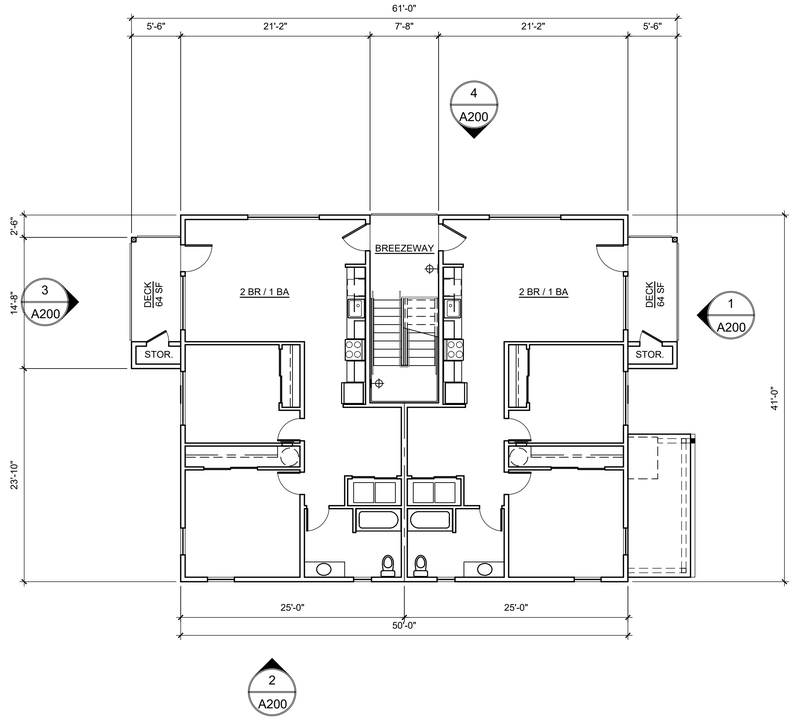
SITE PLAN

A101



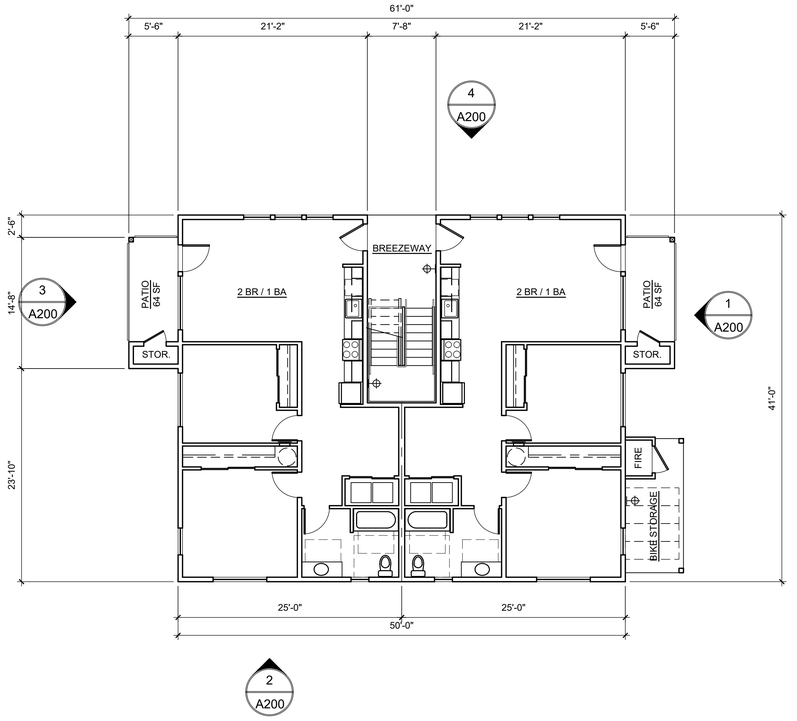
3 A111 BUILDING PLANS - ROOF PLAN
1/8" = 1'-0"

N



2 A111 BUILDING PLANS - SECOND FLOOR PLAN
1/8" = 1'-0"

N



1 A111 BUILDING PLANS - FIRST FLOOR PLAN
1/8" = 1'-0"

N

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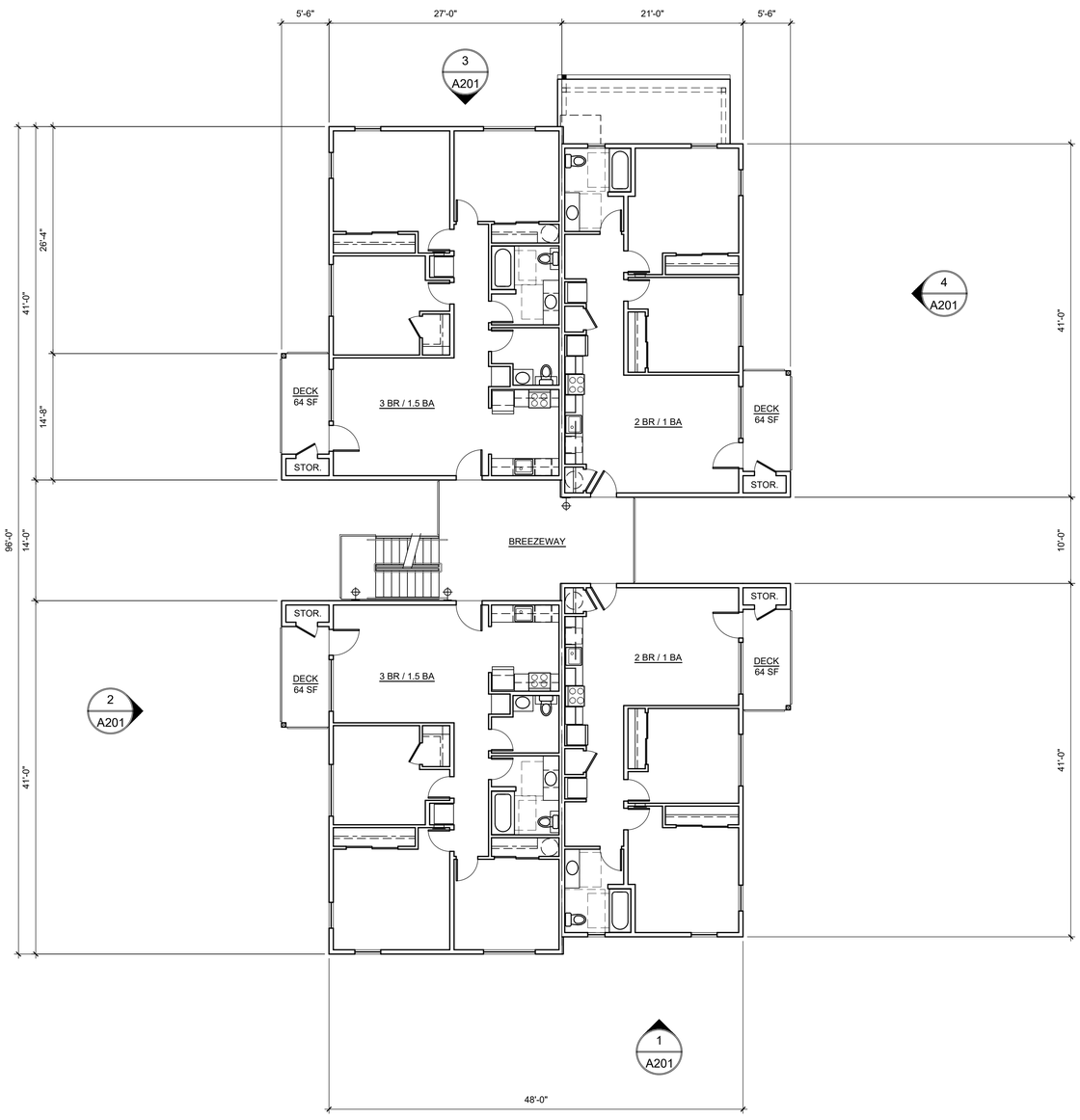
MOLALLA APARTMENTS
PHASE 2

1000 WEST MAIN STREET
MOLALLA, OR 97038

job no.: 2206
date: 12-20-2022

BLDG G
BUILDING
PLANS

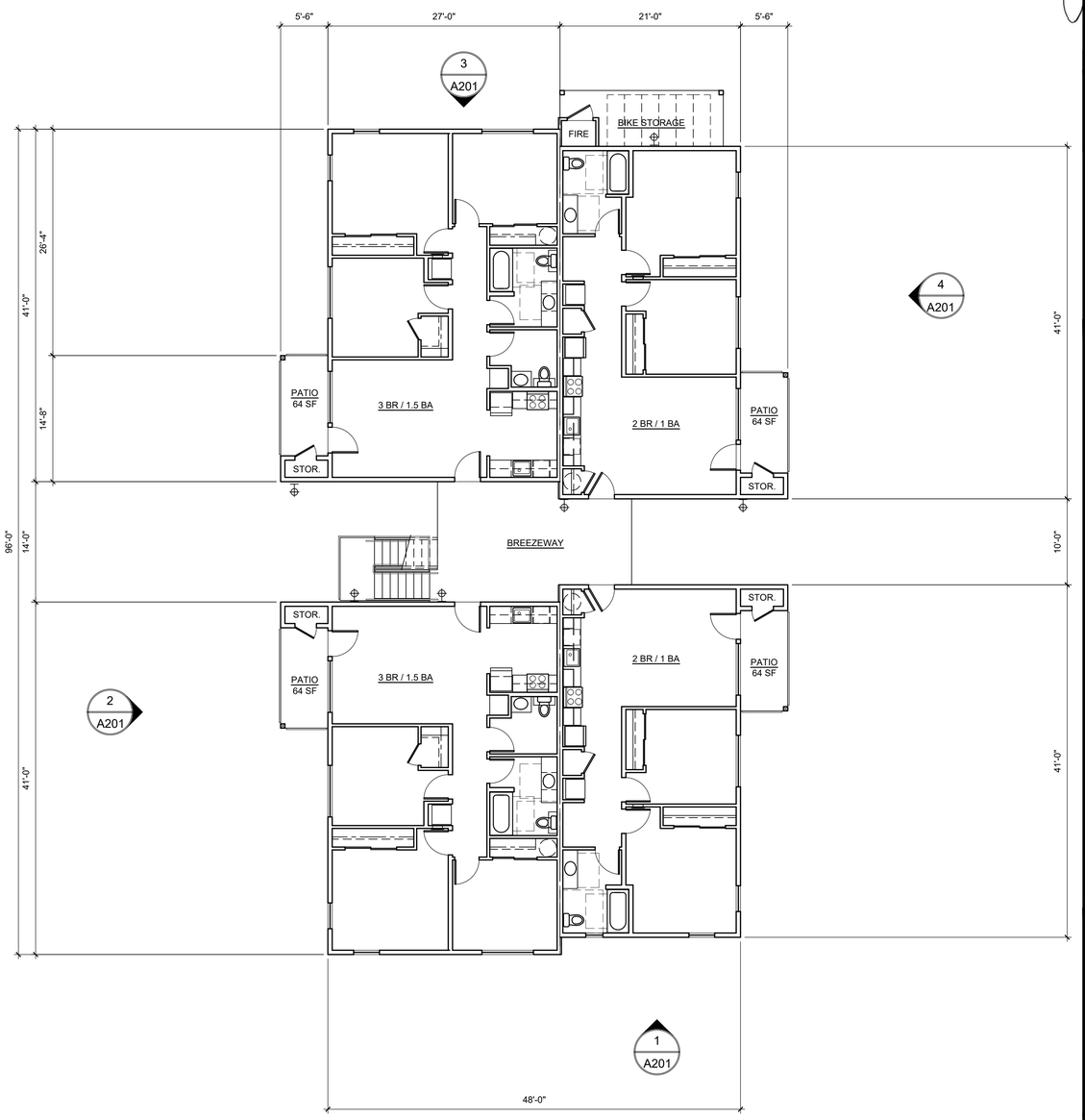
A111



2 A113 BUILDING PLANS - SECOND FLOOR PLAN

1/8" = 1'-0"

N



1 A113 BUILDING PLANS - FIRST FLOOR PLAN

1/8" = 1'-0"

N

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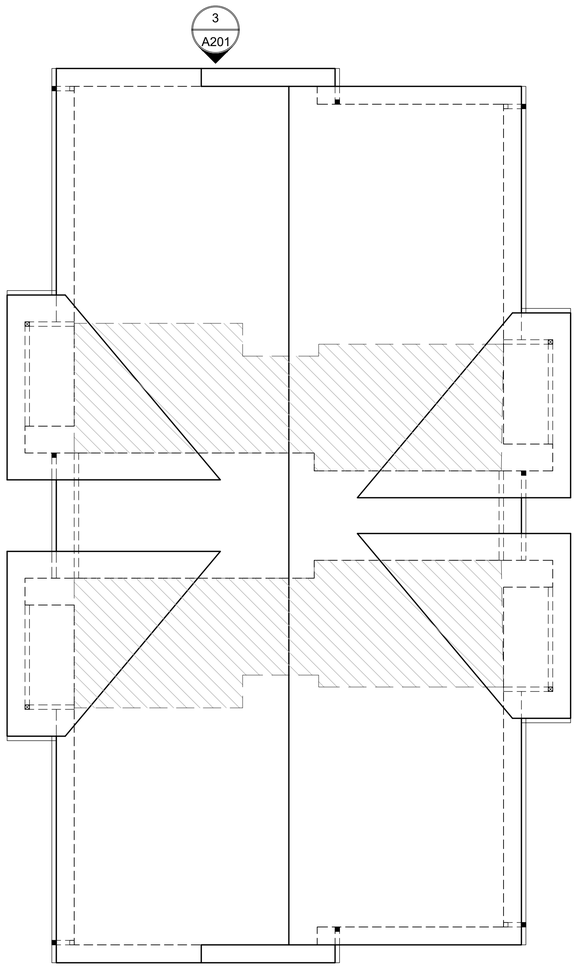
MOLALLA APARTMENTS
PHASE 2

1000 WEST MAIN STREET
MOLALLA, OR 97038

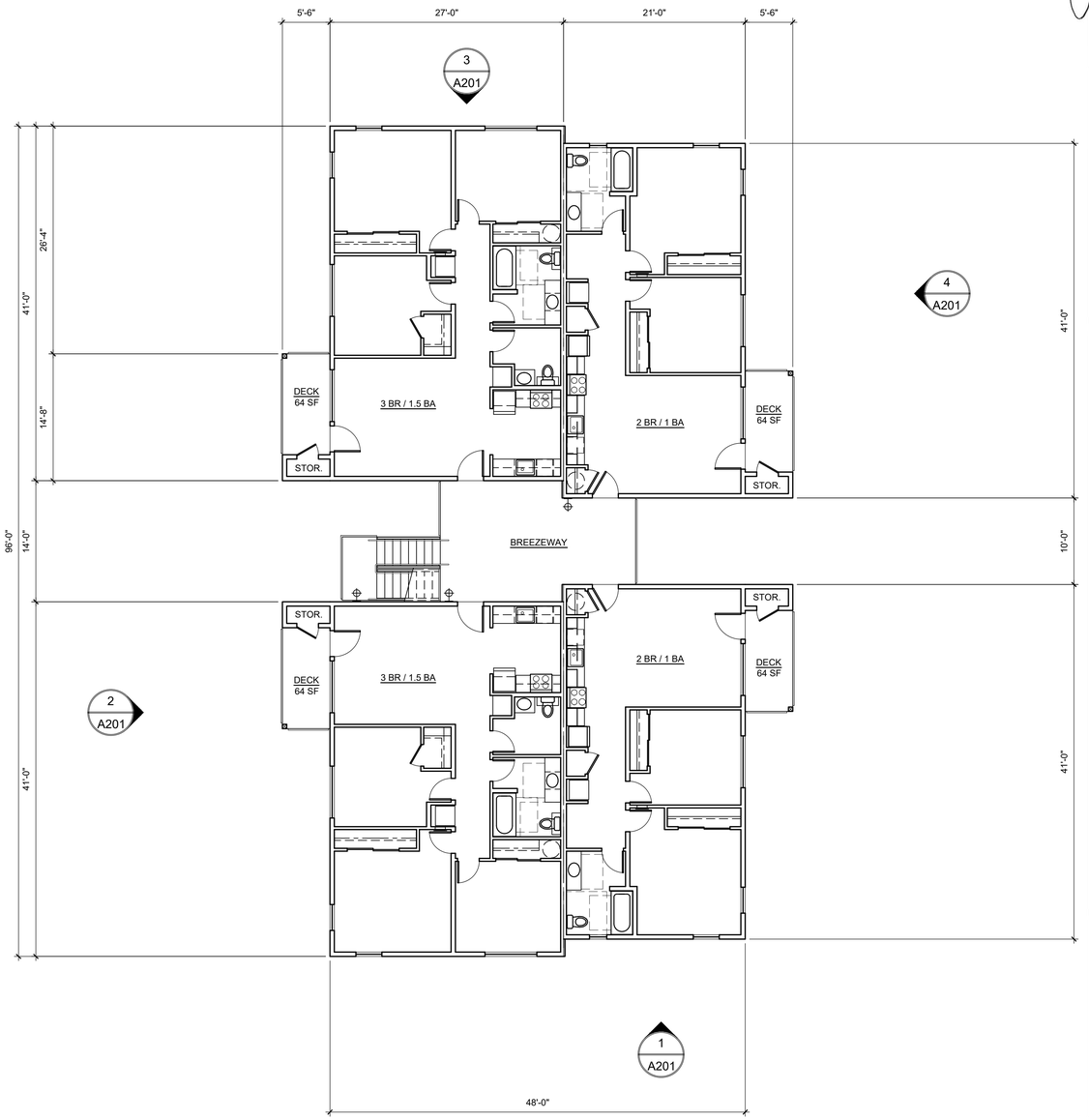
job no.: 2206
date: 12-20-2022

BLDG H
BUILDING
PLANS

A113



2 A114 BUILDING PLANS - ROOF PLAN
1/8" = 1'-0"



1 A114 BUILDING PLANS - THIRD FLOOR PLAN
1/8" = 1'-0"

N

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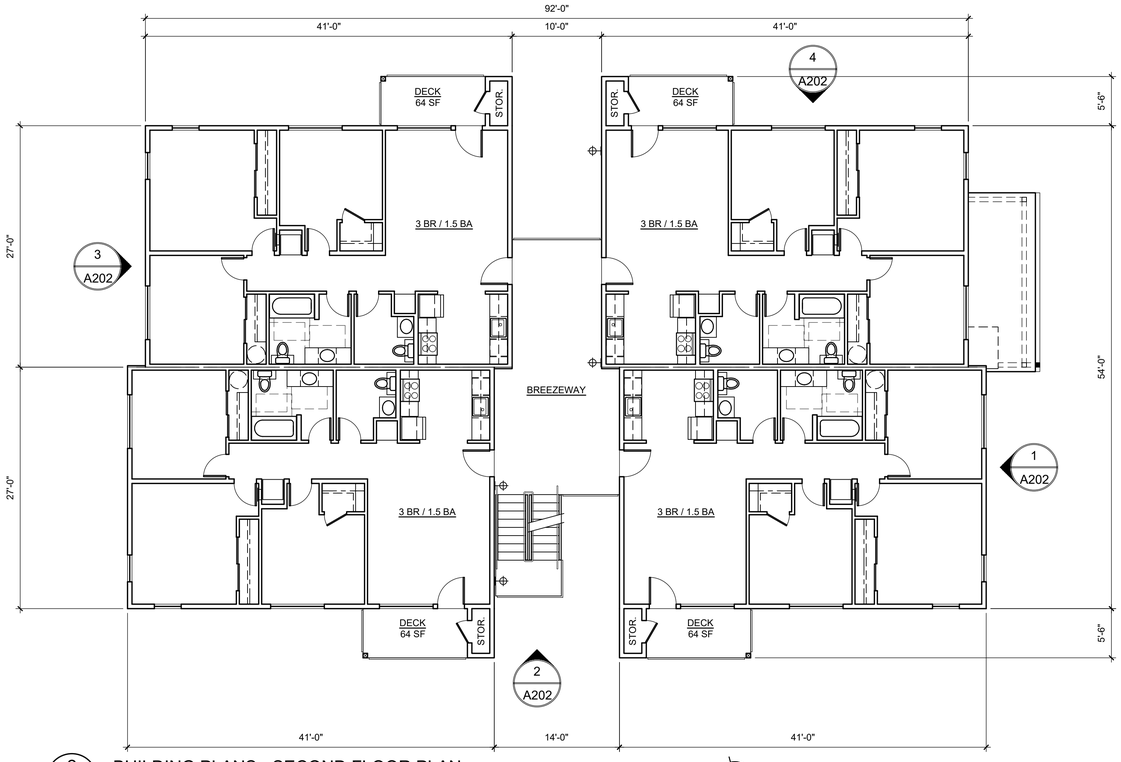
MOLALLA APARTMENTS
PHASE 2

1000 WEST MAIN STREET
MOLALLA, OR 97038

job no.: 2206
date: 12-20-2022

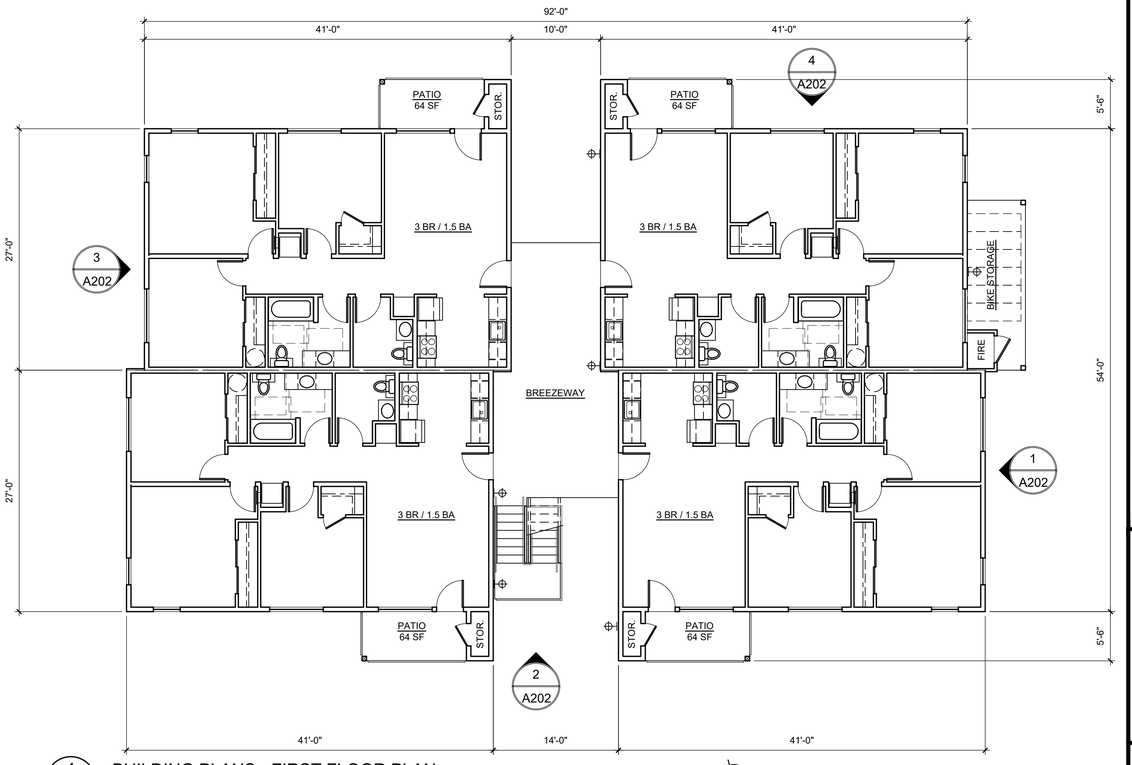
BLDG H
BUILDING
PLANS

A114



2 / A116 BUILDING PLANS - SECOND FLOOR PLAN

1/8" = 1'-0"



1 / A116 BUILDING PLANS - FIRST FLOOR PLAN

1/8" = 1'-0"

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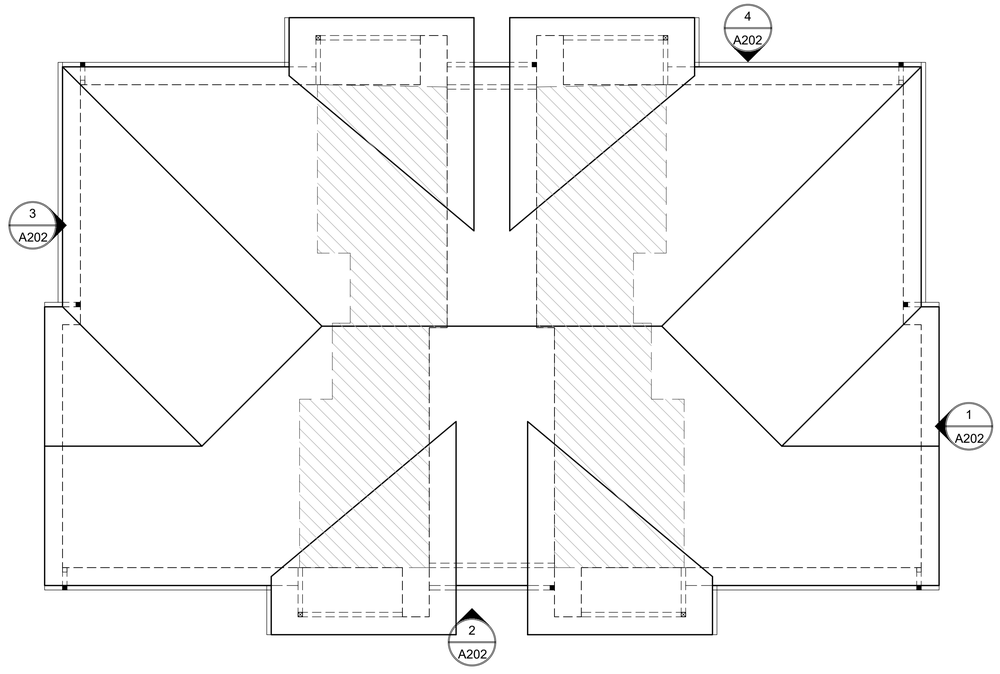
MOLALLA APARTMENTS
PHASE 2

1000 WEST MAIN STREET
MOLALLA, OR 97038

job no.: 2206
date: 12-20-2022

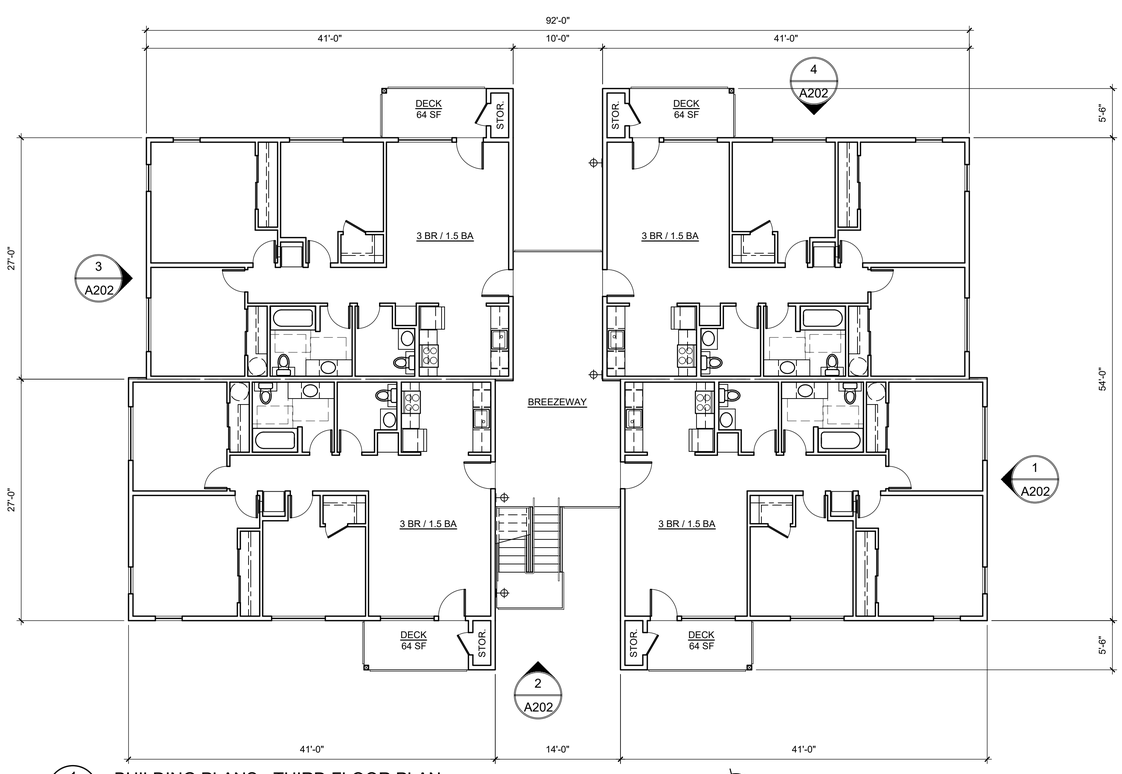
BLDG J
BUILDING
PLANS

A116



2 A117 BUILDING PLANS - ROOF PLAN
1/8" = 1'-0"

N



1 A117 BUILDING PLANS - THIRD FLOOR PLAN
1/8" = 1'-0"

N

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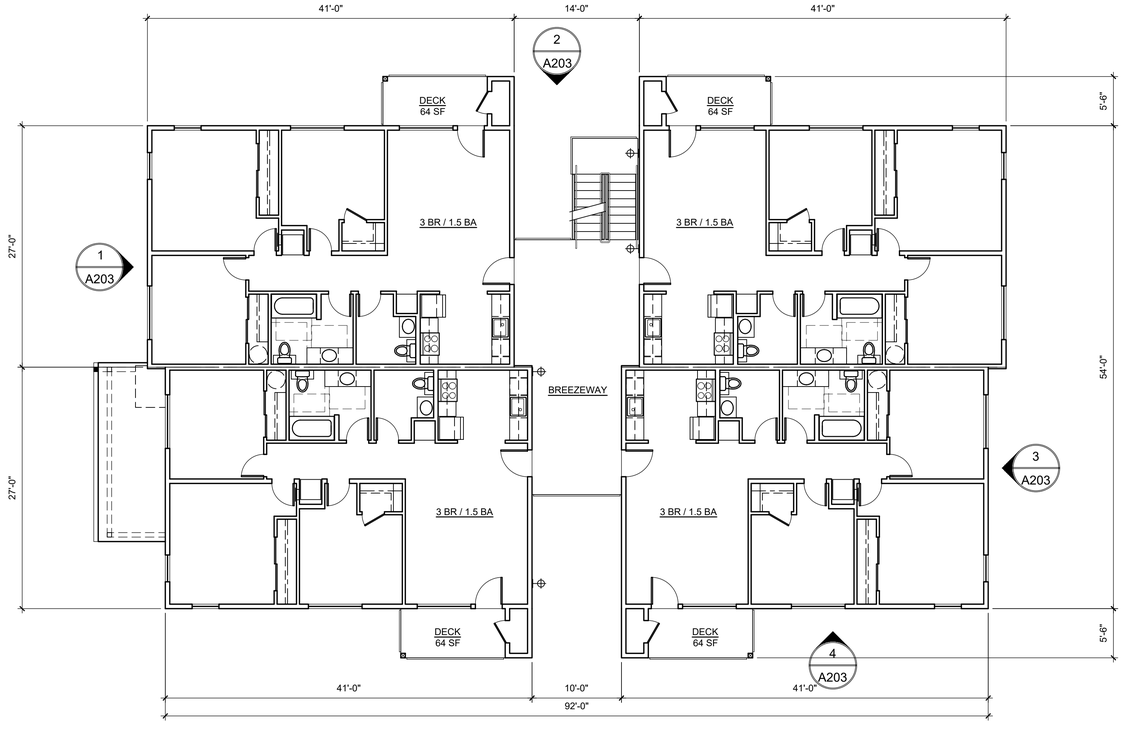
MOLALLA APARTMENTS
PHASE 2

1000 WEST MAIN STREET
MOLALLA, OR 97038

job no.: 2206
date: 12-20-2022

BLDG J
BUILDING
PLANS

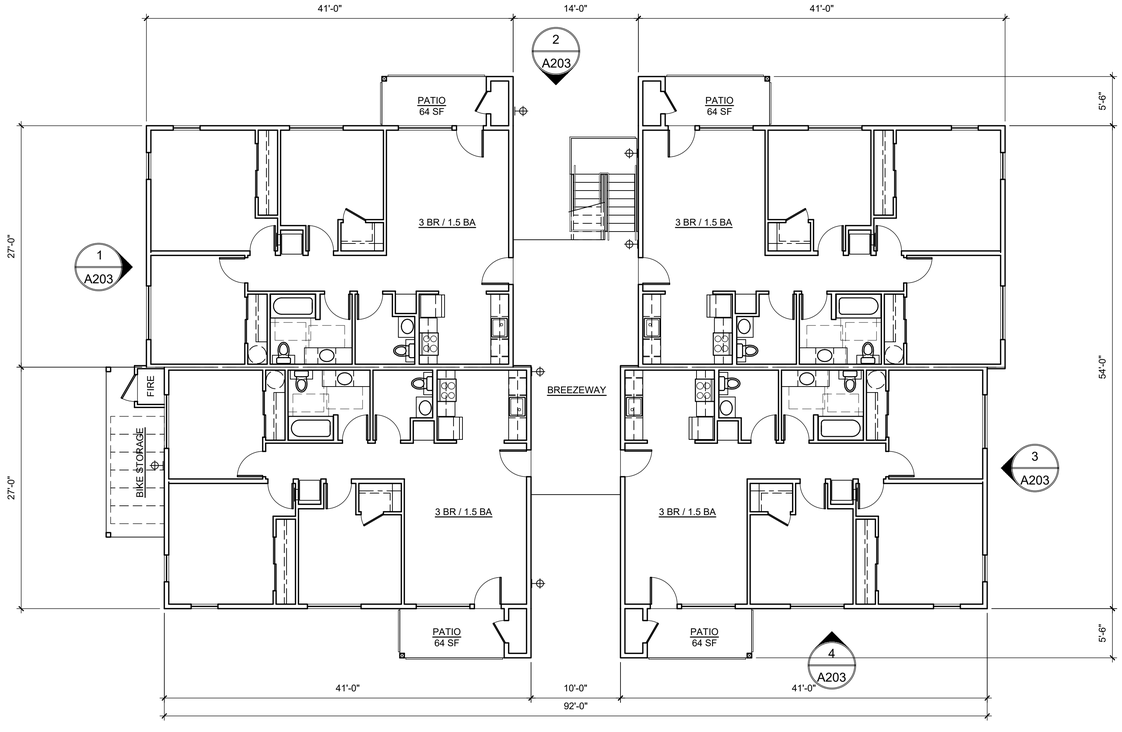
A117



2 A119 BUILDING PLANS - SECOND FLOOR PLAN

1/8" = 1'-0"

N



1 A119 BUILDING PLANS - FIRST FLOOR PLAN

1/8" = 1'-0"

N

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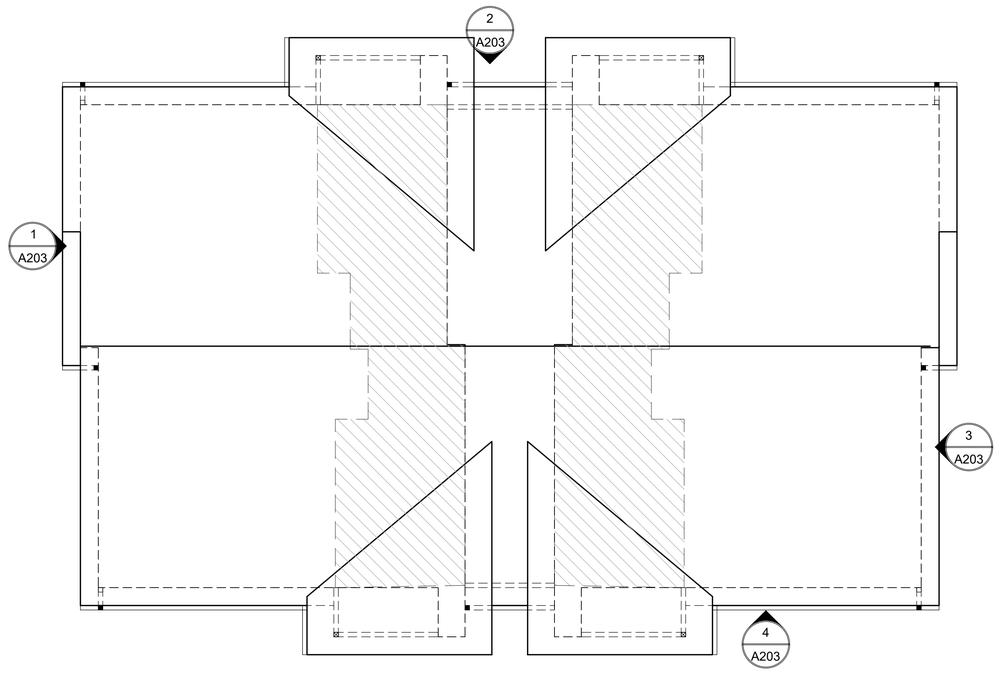
MOLALLA APARTMENTS
PHASE 2

1000 WEST MAIN STREET
MOLALLA, OR 97038

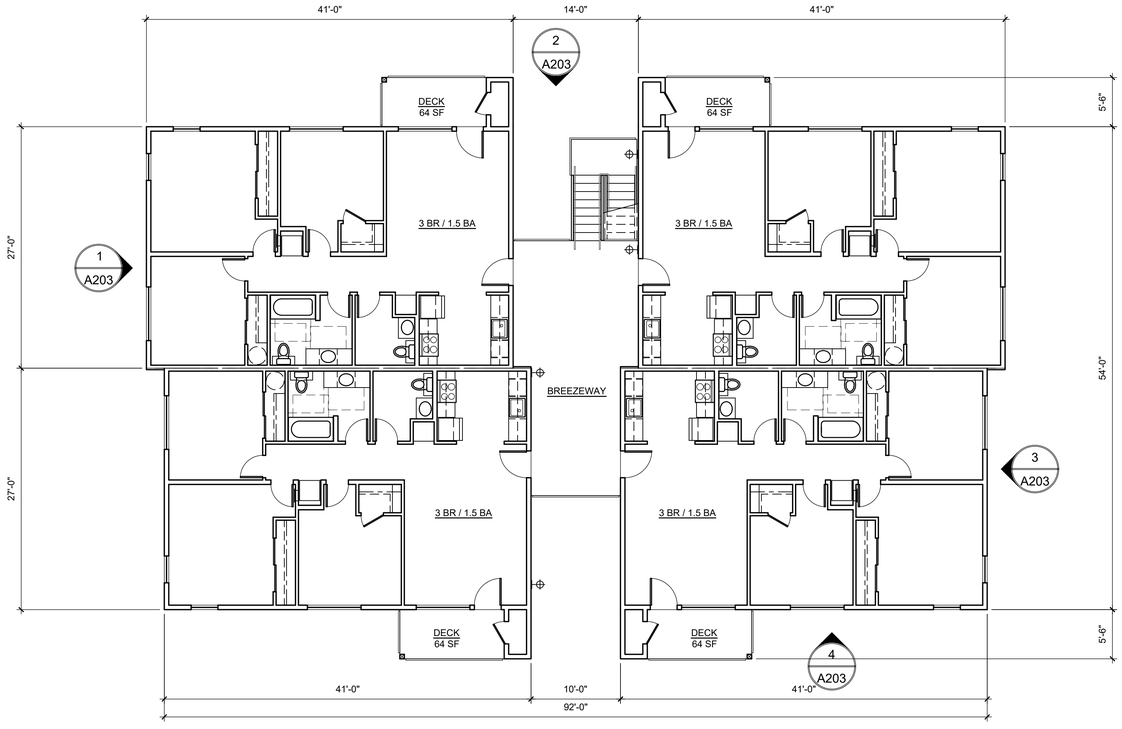
job no.: 2206
date: 12-20-2022

BLDG K
BUILDING
PLANS

A119



2 A120 BUILDING PLANS - ROOF PLAN
1/8" = 1'-0"



1 A120 BUILDING PLANS - THIRD FLOOR PLAN
1/8" = 1'-0"

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MOLALLA APARTMENTS
PHASE 2

1000 WEST MAIN STREET
MOLALLA, OR 97038

job no.: 2206
date: 12-20-2022

BLDG K
BUILDING
PLANS

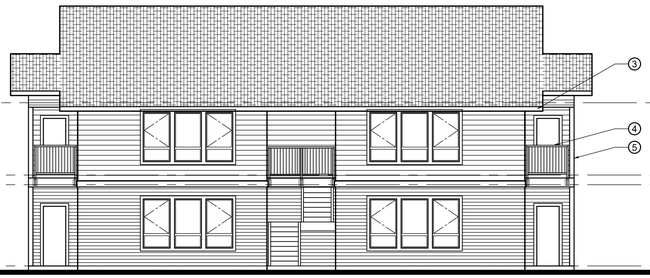
A120

KEYNOTE LEGEND

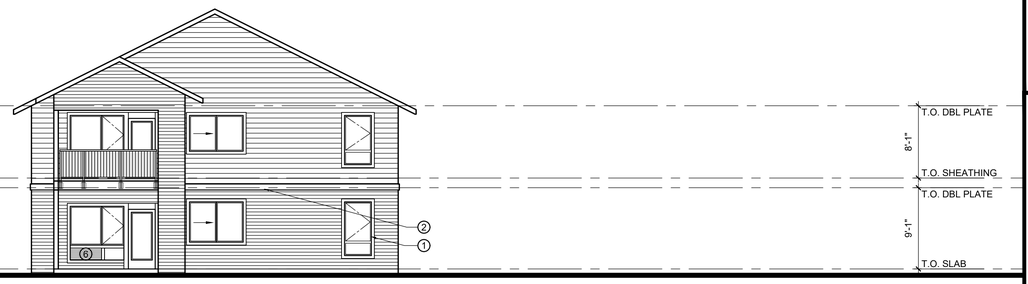
1. 5/4 X 4 PAINTED TRIM AROUND ALL WINDOWS AND DOORS
2. 5/4 X 8 PAINTED TRIM BAND
3. 2 X 8 PAINTED FASCIA BOARD AT ALL ROOF RAKE AND EAVE LOCATIONS
4. METAL RAILING WITH BLACK FINISH
5. PAINTED WOOD POST AND AND DECK FASCIA
6. TYPICAL PTAC HVAC UNIT ON GROUND FLOOR UNIT, BEHIND RAILING ON UPPER LEVELS - INSURE CODE COMPLIANT CLEARANCES BETWEEN PTAC UNIT AND ALL OTHER UNIT EXHAUST VENTS.

MATERIAL LEGEND

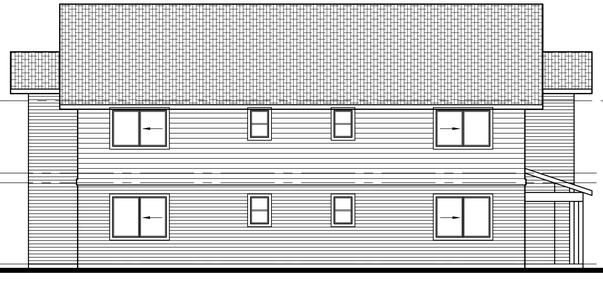
- ASPHALT SHINGLE ROOFING SYSTEM
- PAINTED FIBER CEMENT LAP SIDING WITH 7" EXPOSURE SEE SHEET A601 FOR INSTALLATION DETAILS
- PAINTED FIBER CEMENT LAP SIDING WITH 4" EXPOSURE SEE SHEET A601 FOR INSTALLATION DETAILS



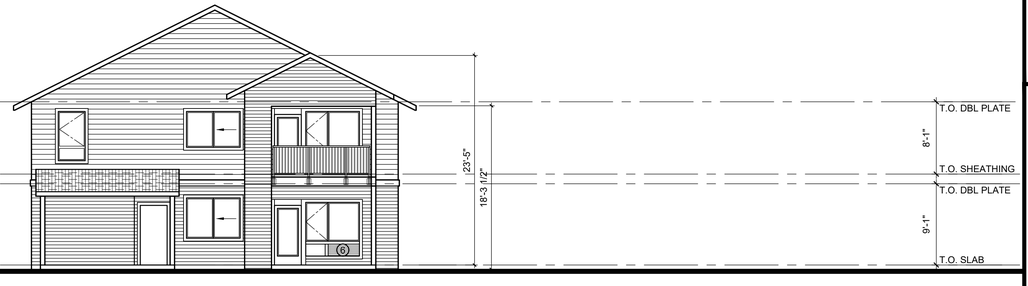
4 A200 BUILDING ELEVATION - EAST
1/8" = 1'-0"



3 A200 BUILDING ELEVATION - NORTH
1/8" = 1'-0"



2 A200 BUILDING ELEVATION - WEST
1/8" = 1'-0"



1 A200 BUILDING ELEVATION - SOUTH
1/8" = 1'-0"

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PORTLAND, OREGON
STATE OF OREGON

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14670 SW Forest Drive
Beaverton, OR 97007

MOLALLA APARTMENTS
PHASE 2

1000 WEST MAIN STREET
MOLALLA, OR 97038

job no.: 2206
date: 12-20-2022

BLDG G
BUILDING
ELEVATIONS

A200

KEYNOTE LEGEND

1. 5/4 X 4 PAINTED TRIM AROUND ALL WINDOWS AND DOORS
2. 5/4 X 8 PAINTED TRIM BAND
3. 2 X 8 PAINTED FASCIA BOARD AT ALL ROOF RAKE AND EAVE LOCATIONS
4. METAL RAILING WITH BLACK FINISH
5. PAINTED WOOD POST AND AND DECK FASCIA
6. TYPICAL PTAC HVAC UNIT ON GROUND FLOOR UNIT, BEHIND RAILING ON UPPER LEVELS - INSURE CODE COMPLIANT CLEARANCES BETWEEN PTAC UNIT AND ALL OTHER UNIT EXHAUST VENTS.

MATERIAL LEGEND

- ASPHALT SHINGLE ROOFING SYSTEM
- PAINTED FIBER CEMENT LAP SIDING WITH 7" EXPOSURE SEE SHEET A601 FOR INSTALLATION DETAILS
- PAINTED FIBER CEMENT LAP SIDING WITH 4" EXPOSURE SEE SHEET A601 FOR INSTALLATION DETAILS

4 A201 BUILDING ELEVATION - SOUTH
1/8" = 1'-0"

3 A201 BUILDING ELEVATION - EAST
1/8" = 1'-0"

2 A201 BUILDING ELEVATION - NORTH
1/8" = 1'-0"

1 A201 BUILDING ELEVATION - WEST
1/8" = 1'-0"

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PORTLAND, OREGON
STATE OF OREGON

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MOLALLA APARTMENTS
PHASE 2

1000 WEST MAIN STREET
MOLALLA, OR 97038

job no.: 2206
date: 11-29-2022

BLDG H
BUILDING
ELEVATIONS

A201

KEYNOTE LEGEND

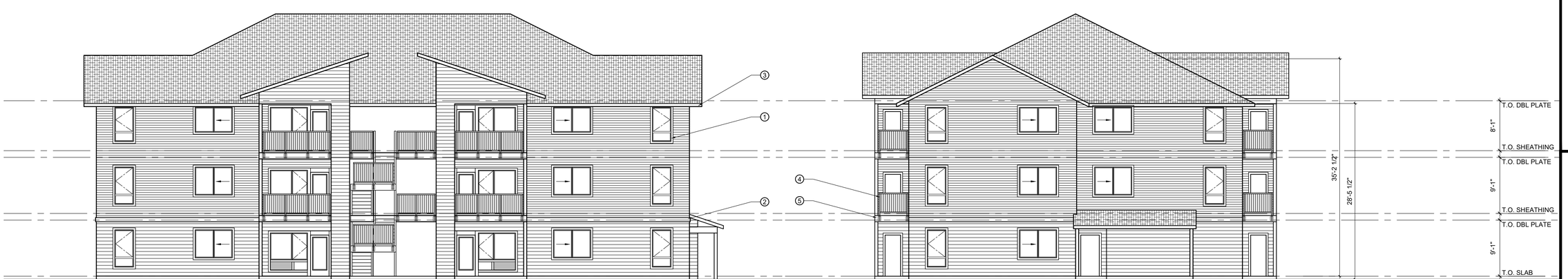
1. 5/4 X 4 PAINTED TRIM AROUND ALL WINDOWS AND DOORS
2. 5/4 X 8 PAINTED TRIM BAND
3. 2 X 8 PAINTED FASCIA BOARD AT ALL ROOF RAKE AND EAVE LOCATIONS
4. METAL RAILING WITH BLACK FINISH
5. PAINTED WOOD POST AND AND DECK FASCIA
6. TYPICAL PTAC HVAC UNIT ON GROUND FLOOR UNIT, BEHIND RAILING ON UPPER LEVELS - INSURE CODE COMPLIANT CLEARANCES BETWEEN PTAC UNIT AND ALL OTHER UNIT EXHAUST VENTS.

MATERIAL LEGEND

- ASPHALT SHINGLE ROOFING SYSTEM
- PAINTED FIBER CEMENT LAP SIDING WITH 7" EXPOSURE SEE SHEET A601 FOR INSTALLATION DETAILS
- PAINTED FIBER CEMENT LAP SIDING WITH 4" EXPOSURE SEE SHEET A601 FOR INSTALLATION DETAILS

4 A202 BUILDING ELEVATION - EAST
1/8" = 1'-0"

3 A202 BUILDING ELEVATION - NORTH
1/8" = 1'-0"



2 A202 BUILDING ELEVATION - WEST
1/8" = 1'-0"

1 A202 BUILDING ELEVATION - SOUTH
1/8" = 1'-0"

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STATE OF OREGON

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MOLALLA APARTMENTS
PHASE 2

1000 WEST MAIN STREET
MOLALLA, OR 97038

job no.: 2206
date: 11-29-2022

BLDG J
BUILDING
ELEVATIONS

A202

KEYNOTE LEGEND

1. 5/4 X 4 PAINTED TRIM AROUND ALL WINDOWS AND DOORS
2. 5/4 X 8 PAINTED TRIM BAND
3. 2 X 8 PAINTED FASCIA BOARD AT ALL ROOF RAKE AND EAVE LOCATIONS
4. METAL RAILING WITH BLACK FINISH
5. PAINTED WOOD POST AND AND DECK FASCIA
6. TYPICAL PTAC HVAC UNIT ON GROUND FLOOR UNIT, BEHIND RAILING ON UPPER LEVELS - INSURE CODE COMPLIANT CLEARANCES BETWEEN PTAC UNIT AND ALL OTHER UNIT EXHAUST VENTS.

MATERIAL LEGEND

- ASPHALT SHINGLE ROOFING SYSTEM
- PAINTED FIBER CEMENT LAP SIDING WITH 7" EXPOSURE SEE SHEET A601 FOR INSTALLATION DETAILS
- PAINTED FIBER CEMENT LAP SIDING WITH 4" EXPOSURE SEE SHEET A601 FOR INSTALLATION DETAILS

4 A203 BUILDING ELEVATION - WEST
1/8" = 1'-0"

3 A203 BUILDING ELEVATION - SOUTH
1/8" = 1'-0"

2 A203 BUILDING ELEVATION - EAST
1/8" = 1'-0"

1 A203 BUILDING ELEVATION - NORTH
1/8" = 1'-0"

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STATE OF OREGON

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Beaverton, OR 97007

MOLALLA APARTMENTS
PHASE 2

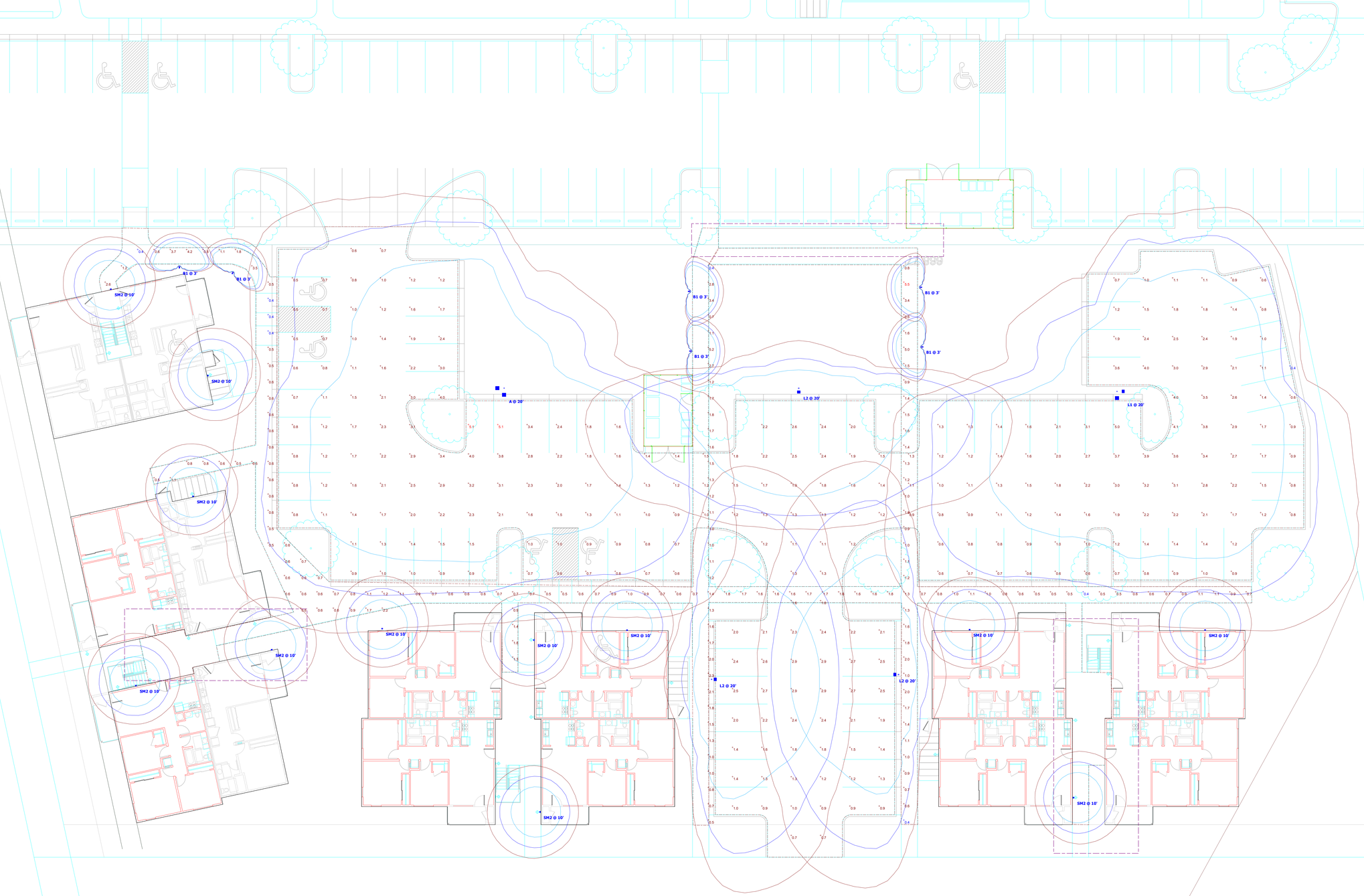
1000 WEST MAIN STREET
MOLALLA, OR 97038

job no.: 2206
date: 12-20-2022

BLDG K
BUILDING
ELEVATIONS

A203

1. SW 6195 Rock Garden
All siding except Towers
and trim
2. SW 7636 Origami White
Siding on Towers and Trim
All Metal Stairs and Rails
3. SW 6341 Red Cent
Unit Entry Doors
Roofing - Dual Black
PROJECT COLORS



Schedule

Symbol	Label	Manufacturer	Catalog Number	Description	Wattage
	B1	BEGA Converted by LUMCat V 17.11.2016 / H.R.		99 857 K3	19.8
	SM1	Lithonia Lighting	WDGE1 LED P2 30K 80CRI VW	WDGE1 LED WITH P2 - PERFORMANCE PACKAGE, 3000K, 80CRI, VISUAL COMFORT WIDE OPTIC	15.0178
	SM2			3419_REG	8.35
	B2	BEGA Converted by LUMCat V 10.11.2015 / H.R.		99865	34
		Lithonia Lighting	DSX1 LED P3 30K TFTM MVOLT HS	DSX1 LED P3 30K TFTM MVOLT with houseside shield	102
		Lithonia Lighting	DSX1 LED P3 30K 70CRI T4M	D-Series Size 1 Area Luminaire P3 Performance Package 3000K CCT 70 CRI Type 4 Medium	102.17
	L2	Lithonia Lighting	DSX1 LED P2 30K T2M MVOLT HS	DSX1 LED P2 30K T2M MVOLT with houseside shield	70
	L3	Lithonia Lighting	DSX1 LED P1 30K T4M MVOLT	DSX1 LED P1 30K T4M MVOLT	54
	L4	Lithonia Lighting	DSX0 LED P2 30K TFTM MVOLT	DSX0 LED P2 30K TFTM MVOLT	49
	A	Lithonia Lighting	[...]	[...]	204.3427
		Lithonia Lighting	DSX1 LED P3 30K 70CRI T4M	D-Series Size 1 Area Luminaire P3 Performance Package 3000K CCT 70 CRI Type 4 Medium	102.17
		Lithonia Lighting	DSX1 LED P3 30K 70CRI TFTM HS	D-Series Size 1 Area Luminaire P3 Performance Package 3000K CCT 70 CRI Forward Throw Houseside Shield	102.1727

Statistics

Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
Phase 2 Parking Lot	+	1.7 fc	5.1 fc	0.4 fc	12.8:1	4.3:1
Phase 2- Ped Path	+	1.2 fc	5.5 fc	0.4 fc	13.8:1	3.0:1

HL STEARNS

Designer

Date
10/22/2021
Scale
Not to Scale
Drawing No.

Summary

DRAWINGS FOR:

HIGHWAY 211 (W MAIN ST) IMPROVEMENTS

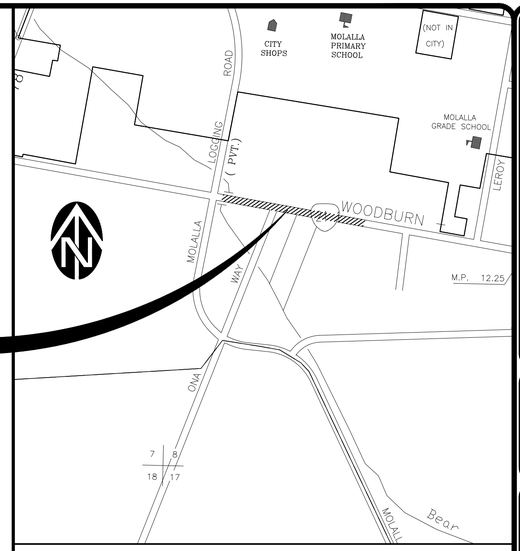
AT 1000 W. MAIN STREET
MOLALLA, OR 97038

FOR:

HOME FIRST DEVELOPMENT PARTNERS
866 N. COLUMBIA BLVD, SUITE A-25
PORTLAND, OR 97217

PROJECT MANAGER: ROB JUSTUS
360-530-9914

PROJECT LOCATION



VICINITY MAP

DRAWING INDEX

DWG	TITLE
C1.0	COVER SHEET, VICINITY & LOCATION MAPS, DRAWING INDEX
C1.1	CONSTRUCTION NOTES
C1.2	CONSTRUCTION NOTES
C1.3	ROW MAP
C1.4	TEMPORARY TRAFFIC CONTROL PLAN
C2.0	EXISTING CONDITIONS, EROSION CONTROL, & DEMOLITION PLAN
C2.1	EROSION CONTROL NOTES & DETAILS
C2.2	EROSION CONTROL NOTES & DETAILS
C2.3	EROSION CONTROL NOTES & DETAILS
C2.4	EROSION CONTROL NOTES & DETAILS
C3.0	TYPICAL SECTIONS
C3.1.0	MOLALLA HIGHWAY NORTH PLAN-PROFILE, STA 7+00 to STA 9+00
C3.1.1	MOLALLA HIGHWAY NORTH PLAN-PROFILE, STA 9+00 to STA 13+80
C3.1.2	MOLALLA HIGHWAY NORTH PLAN-PROFILE, STA 13+80 to 18+40
C3.2.0	MOLALLA HIGHWAY SOUTH PLAN-PROFILE, STA 7+00 to STA 9+00
C3.2.1	MOLALLA HIGHWAY SOUTH PLAN-PROFILE, STA 9+00 to STA 13+80
C3.2.2	MOLALLA HIGHWAY SOUTH PLAN-PROFILE, STA 13+80 to 18+40
C3.3	CROSS SECTIONS
C3.3.1	CROSS SECTIONS
C3.4	ADA RAMP PLAN

DRAWING INDEX

DWG	TITLE
C4.0	SURFACING PLAN
C5.0	SIGNING & STRIPING PLAN
C5.1	SIGNING & STRIPING PLAN
C5.2	STREET LIGHTING PLAN
C5.3	TRUCK TURNING PLAN
C6.0	ODOT DETAILS
C6.1	ODOT DETAILS
C6.2	ODOT DETAILS
C6.3	ODOT DETAILS
C6.4	ODOT DETAILS
C6.5	ODOT DETAILS
C6.6	ODOT DETAILS
C6.7	ODOT DETAILS
C6.8	ODOT DETAILS
C6.9	STORMFILTER CATCHBASIN DETAIL

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

SURVEY MAPS USED IN DETERMINATION OF HIGHWAY RIGHT OF WAY CENTERLINE WERE SN2020-233, SN2008-324, & PP2020-023 RECORDED WITH THE CLACKAMAS COUNTY SURVEY & PLAT RECORDS.

GENERAL LEGEND

ITEM	PROPOSED	EXISTING
SANITARY SEWER		SS
STORM DRAIN		SD
WATER		W
GAS		G
TELEPHONE		T
POWER		P
FENCE	X X	X X
BARRICADE		
TELEPHONE MANHOLE		T
TELEPHONE PEDESTAL		TEL
SANITARY SEWER MANHOLE	S	S
STORM DRAIN MANHOLE	D	D
CATCH BASIN		
FIRE HYDRANT AND VALVE		
WATER METER		
WATER VALVE		
POWER POLE		
POWER POLE W/ANCHOR		
POLE W/LUMINARE		
LIGHT POLE		
SIGN POST		
MAILBOX		
HEDGE OR BRUSH		
TREES		
STREET OR ALLEY RIGHT OF WAY	R/W	
PLATTED LOT LINE		
OWNERSHIP LINE		
EASEMENT OR TEMPORARY RIGHT OF WAY		
PROJECT CENTERLINE AND	2 3 4 5	

NO.	DATE	DESCRIPTION	BY
2	01/09/23	ODOT REVISIONS	AR
2	01/09/23	EXTENDED LEFT TURN LANE TO OWA	AR
1	11/21/22	PER ODOT REVISIONS	AR

REVISIONS

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

DSN. SAW
DRN. AR
CKD. SAW
DATE: SEP 2021

REGISTERED PROFESSIONAL ENGINEER
OREGON
JULY 16, 1982
STEVEN A. WARD
11843
RENEWS: 6/30/2024

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HIGHWAY 211 IMPROVEMENTS
HOME FIRST DEVELOPMENT PARTNERS

COVER SHEET, VICINITY & LOCATION MAPS, & DRAWING INDEX

DRAWING
C1.0

JOB NUMBER
3312.0000.0

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GENERAL NOTES

1. Contractor shall procure and conform to all construction permits required by the City of Molalla and ODOT.

2. Owner to pay all project permit costs, including but not limited to utility tapping, TV, and chlorination costs. The Contractor shall coordinate with the Approving Agency to determine appropriate fees and provide the Owner with 48 hours notice prior to the required payment of fees or costs. Contractor to apply for and pay all Private Plumbing and Electrical Permits

3. Oregon law requires the Contractor to follow rules adopted by the Oregon Utility Notification Center. Those rules are set forth in OAR 952–001–0010 through OAR 952–001–0090. Obtain copies of the rules by calling the center. (Note: the telephone number for the Oregon Utility Notification Center is 503–232–1987).

4. Contractor to notify City, ODOT, and all utility companies a minimum of 48 business hours (2 business days) prior to start of construction, and comply with all other notification requirements of the Approving Agency with jurisdiction over the work.

5. Contractor shall provide all bonds and insurance required by public and/or private agencies having jurisdiction. Where required by public and/or private agencies having jurisdiction, the Contractor shall submit a suitable maintenance bond prior to final payment.

6. All materials and workmanship for facilities in street right–of–way or easements shall conform to Approving Agencies' construction specifications wherein each has jurisdiction, including but not limited to the City, Oregon Health Division (OHD), and the Oregon Department of Environmental Quality (DEQ).

7. Unless otherwise approved by the Public Works Director, construction of all public facilities shall be done between 7:00 a.m. and 6:00 p.m., Monday through Saturday.

8. The Contractor shall perform all work necessary to complete the project in accordance with the approved construction drawings including such incidentals as may be necessary to meet the Approving Agencies' requirements and provide a completed project.

9. Any inspection by the City, ODOT, or other Approving Agency shall not, in any way, relieve the Contractor from any obligation to perform the work in strict compliance with the contract documents, applicable codes, and Approving Agency requirements.

10. Contractor shall maintain one complete set of approved drawings on the construction site at all times whereon he will record all approved deviations in construction from the approved drawings, as well as the station locations and depths of all existing utilities encountered. These field record drawings shall be kept up to date at all times and shall be available for inspection by the Approving Agency or Owner's Representative upon request. Failure to conform to this requirement may result in delay in payment and/or final acceptance of the project.

11. Upon completion of construction of all new facilities, Contractor shall submit a clean set of field record drawings containing all as–built information to the Engineer. All information shown on the Contractor's field record drawings shall be subject to verification. If significant errors or deviations are noted, an as–built survey prepared and stamped by a registered professional Land Surveyor shall be completed at the Contractor's expense.

12. Contractor shall procure and conform to DEQ stormwater permit No. 1200C for construction activities where 1 acre or more are disturbed.

13. The contractor shall retain and pay for the services of a registered Civil Engineer and/or Land Surveyor licensed in the State of Oregon to establish construction control and perform initial construction surveys to establish the lines and grades of improvements as indicated on the drawings. Staking for buildings, structures, curbs, gravity drainage pipes/structures and other critical improvements shall be completed using equipment accurate to 0.04 feet horizontally and 0.02 feet vertically, or better. Use of GPS equipment for final construction staking of these critical improvements is prohibited. The registered professional surveyor shall provide the design engineer with copies of all grade sheets for construction staking performed for the project.

14. See architectural drawings for site lighting, site dimensioning, and continuation of all utilities.

TRAFFIC CONTROL:

15. Contractor shall erect and maintain barricades, warning signs, traffic cones (and all other traffic control devices required) per City and ODOT requirements in accordance with the current MUTCD (including Oregon amendments). Access to driveways shall be maintained at all times. All traffic control measures shall be approved and in place prior to any construction activity. Prior to any work in the existing public right–of–way, Contractor shall submit final traffic control plan to the Approving Agency for review and issuance of a Lane Closure or Work in Right–of–Way Permit. The Traffic Control Plan shall include provisions to route pedestrians around and through the work area in accordance with ODOT Standards.

TESTING AND INSPECTION:

16. For public and private improvements, the Contractor shall be responsible to ensure that all required or necessary inspections are completed by authorized inspectors prior to proceeding with subsequent work which covers or that is dependent on the work to be inspected. Failure to obtain necessary inspection(s) and approval(s) shall result in the Contractor being fully responsible for all problems and/or corrective measures arising from uninspected work.

17. Unless otherwise specified, the attached "Required Testing and Frequency" table outlines the minimum testing schedule for private improvements on the project. This testing schedule is not complete, and does not relieve the Contractor of the responsibility of obtaining all necessary inspections or observations for all work performed, regardless of who is responsible for payment. Cost for retesting shall be borne by the Contractor.

EXISTING UTILITIES & FACILITIES:

18. The location and descriptions of existing utilities shown on the drawings are compiled from available records and/or field surveys. The Engineer or utility companies do not guarantee the accuracy or the completeness of such records. Contractor shall field verify locations and sizes of all existing utilities prior to construction.

19. Contractor shall field verify location and depth of all existing utilities where new facilities cross. All utility crossings marked or shown on the drawings shall be potholed using hand tools or other non–invasive methods prior to excavating or boring. Contractor shall be responsible for exposing potential utility conflicts far enough ahead of construction to make necessary grade or alignment modifications without delaying the work. If grade or alignment modification is necessary, Contractor shall notify the Design Engineer, and the Design Engineer or the Owner's Representative shall obtain approval from the Approving Agency prior to construction.

20. The Contractor shall be responsible for locating and marking all existing survey monuments of record (including but not limited to property and street monuments) prior to construction. If any survey monuments are removed, disturbed or destroyed during construction of the project, the Contractor shall retain and pay for the services of a Registered Professional Surveyor licensed in the State of Oregon to reference and replace all such monuments prior to final payment. The monuments shall be replaced within a maximum of 90 days, and the County Surveyor shall be notified in writing as required by per ORS 209.150.

21. All facilities shall be maintained in–place by the Contractor unless otherwise shown or directed. Contractor shall take all precautions necessary to support, maintain, or otherwise protect existing utilities and other facilities at all times during construction. Contractor to leave existing facilities in an equal or better–than–original condition and to the satisfaction of the Approving Agency and Owner's Representative.

22. Utilities or interfering portions of utilities that are abandoned in place shall be removed by the Contractor to the extent necessary to accomplish the work. The Contractor shall plug the remaining exposed ends of abandoned utilities after appropriate verification procedures have taken place.

23. Contractor shall remove all existing signs, mailboxes, fences, landscaping, etc., as required to avoid damage during construction and replace them to existing or better condition.

24. The Contractor shall be responsible for managing construction activities to ensure that public streets and right–of–ways are kept clean of mud, dust or debris. Dust abatement shall be maintained by adequate watering of the site by the Contractor.

GRADING, PAVING & DRAINAGE:

25. Unless otherwise noted, all grading, rocking and paving to conform to Oregon Standard Specifications for Construction (OSSC/ODOT/APWA), 2021 edition.

26. Clear and grub within work limits all surface vegetation, trees, stumps, brush, roots, etc. Do not damage or remove trees except as approved by the Owner's Representative or as shown on the drawings. Protect all roots two inches in diameter or larger.

27. Strip work limits, removing all organic matter, which cannot be compacted into a stable mass. All trees, brush, and debris associated with clearing, stripping or grading shall be removed and disposed of off–site.

28. For public and private improvements, except as otherwise allowed by the specifications, drawing details or notes, immediately following stripping and grading operations, compact subgrade to 92% of the maximum dry density per AASHTO T–180 test method (Modified Proctor). Subgrade must be inspected and approved by the Owner's authorized representative before placing, engineered fills or fine grading for base rock.

29. Engineered fills shall be constructed and compacted in 6" lifts over approved subgrade. All fills shall be engineered and comply with the Oregon Structural Specialty Code, with each lift compacted to 92% of the maximum dry density per AASHTO T–180 test method (Modified Proctor).

30. Granular baserock shall conform to the requirements of OSSC (ODOT/APWA) 02630.10 (Dense Graded Base Aggregate), with no more than 10% passing the #40 sieve and no more than 5% passing the #200 sieve.

31. Compact granular baserock to 92% of the maximum dry density per AASHTO T–180 test method (Modified Proctor). Written baserock compaction test results from an independent testing laboratory must be received by the Owner's authorized representative before placing AC pavement, and a finished rock grade proof–roll (witnessed by the Owners authorized representative) must be performed.

32. A.C. pavement shall conform to OSSC (ODOT/APWA) 00745 (Hot Mixed Asphalt Concrete Pavement) for standard duty mix. Unless otherwise specified or shown on the drawings, base lifts shall be 3/4" dense graded mix, while wearing courses shall be 1/2" dense graded mix. Unless otherwise specified or shown on the drawings, A.C. pavement for parking lots and streets shall be Level 2 mix (50 blow Marshall) per OSSC (ODOT/APWA) 00744.13. A.C. Pavement shall be compacted to a minimum of 91% of maximum density as determined by the Rice standard method. Written AC pavement compaction test results from an independent testing laboratory must be received by the Owner's authorized representative before final payment.

33. Pavement surface shall be a smooth, well–sealed, tight mat without depressions or bird baths. Bony or open graded pavement surfaces shall be repaired to the satisfaction of the Owner's authorized representative, prior to final acceptance of the work.

34. HMAC mixtures shall be placed only when the surface is dry and weather conditions are such that proper handling, finishing and compaction can be accomplished. In no case shall bituminous mixtures be placed when the surface temperature is below the minimum established under 2018 OSSC (ODOT/APWA) 00744.40 (AC – Season and Temperature Limitations) or the project specifications, whichever is more stringent.

35. Contractor shall protect new pavement against traffic as required, until it has cooled sufficiently to avoid tracking.

36. For parking lots or private access drives, the final lift of AC pavement shall not be placed until after the building is fully enclosed and weatherproof, unless otherwise approved by the Owner's authorized representative.

37. Unless otherwise shown on the drawings or details, straight grades shall be run between all finish grade elevations and/or finish contour lines shown (exception: where grades are shown across sidewalks, slopes shall be adjusted to ensure that maximum allowable sidewalk cross slopes are not exceeded).

38. Finish pavement grades at transition to existing pavement shall match existing pavement grades or be feathered past joints with existing pavement as required to provide a smooth, free draining surface.

39. All existing or constructed manholes, cleanouts, monument boxes, gas valves, water valves and similar structures shall be adjusted to match finish grade of the pavement, sidewalk, landscaped area or median strip wherein they lie. Verify that all valve boxes and risers are clean and centered over the operating nut.

40. Unless otherwise shown on the drawings, no cut or fill slopes shall be constructed steeper than 2H:1V.

41. Unless otherwise shown on the landscape plans, all planter areas shall be backfilled with approved topsoil minimum 8" thick. Stripping materials shall not be used for planter backfill.

42. Contractor shall seed and mulch (uniformly by hand or hydroseed) all exposed slopes and disturbed areas which are not scheduled to be landscaped, including trench restoration areas. If the Contractor fails to apply seed and mulch in a timely manner during periods favorable for germination, or if the seeded areas fail to germinate, the Owner's Representative may (at his discretion) require the Contractor to install sod to cover such disturbed areas.

CURBS & SIDEWALKS:

43. Unless otherwise shown or indicated on the drawings, 6–inches nominal curb exposure used for design of all parking lot and street grades.

44. Where new curbing connects to existing curbing or is installed along existing streets or pavement, the gutter grade shall match the existing street grades so as to allow drainage from the street to the gutter and through any transitions. The Contractor shall notify the Owner's Representative in writing of any grade discrepancies or problems prior to curb placement.

45. Contractor shall construct all handicap access ramps in accordance with current ADA requirements.

46. Sidewalks shall be a minimum of 4–inches thick and standard residential driveways shall be a minimum of 6–inches thick. Commercial use driveways and alley approaches shall be minimum 8–inches thick. All curbs, sidewalks and driveways shall be constructed using 3300–psi concrete, and shall be cured with Type 1 or Type 1D clear curing compound. All sidewalks shall be ADA compliant.

47. Curb & sidewalk concrete shall be placed only during periods when it will not be damaged by rain (protect unhardened concrete from precipitation). Concrete shall not be placed on frozen baserock. Do not begin concrete placement until temperature in the shade is a minimum of 35°F and rising, and stop placement if air temperature falls below 35°F. Protect concrete from freezing for a minimum of 5 days after placement per OSSC (ODOT/APWA) 00440.40.d & 00756.40 or the project specifications, whichever is more stringent.

48. Contraction joints shall be installed directly over any pipes that cross under the sidewalk, to control cracking. In general, cracks in new curbs or sidewalks (at locations other than contraction joints) are not acceptable, and cracked panels shall be removed & replaced unless otherwise approved by the Approving Agency and the design engineer.

49. All sidewalks shall be ADA compliant. Direction of sidewalk cross slope shall conform with the slope direction shown on the grading plan. Sidewalk cross slopes shall not exceed 1:67 (1.5%) nor be less than 1%. Longitudinal slope shall not exceed 1:20 (5%).

50. Where trench excavation requires removal of PCC curbs and/or sidewalks, the curbs and/or sidewalks shall be sawcut and removed at a tooled joint unless otherwise authorized in writing by the Approving Agency. The sawcut lines shown on the drawings are schematic and not intended to show the exact alignment of such cuts.

51. Unless otherwise shown on the drawings, areas along curbs and sidewalks shall be backfilled with approved topsoil, as well as being seeded and mulched (or hydroseeded).

PIPED UTILITIES:

52. All tapping of existing sanitary sewer, storm drain mains, and manholes must be done by Contractor forces.

53. The Contractor shall have appropriate equipment on site to produce a firm, smooth, undisturbed subgrade at the trench bottom, true to grade. The bottom of the trench excavation shall be smooth, free of loose materials or tooth grooves for the entire width of the trench prior to placing the granular bedding material.

54. All pipes shall be bedded with minimum 6–inches of 3/4"–0 crushed rock bedding and backfilled with compacted 3/4"–0 crushed rock in the pipe zone (crushed rock shall extend a minimum of 12–inches over the top of the pipe in all cases). Unless CDF or other backfill is shown or noted on the drawings, crushed rock trench backfill shall be used under all improved areas, including pavement, sidewalks, foundation slabs, buildings, etc.

55. Granular trench bedding and backfill shall conform to the requirements of OSSC (ODOT/APWA) 02630.10 (Dense Graded Base Aggregate), 3/4"–0. Unless otherwise shown on the drawings, compact granular backfill to 92% of the maximum dry density per AASHTO T–180 test method (Modified Proctor).

56. Contractor shall arrange to abandon existing sewer and water services not scheduled to remain in service in accordance with approving agency requirements.

57. All piped utilities abandoned in place shall have all openings closed with concrete plugs with a minimum length equal to 2 times the diameter of the abandoned pipe.

58. The end of all utility service lines shall be marked with a 2–x–4 painted white and wired to pipe stub. The pipe depth shall be written on the post in 2" block letters and red lined on the drawings for preparation of As–Built Drawings.

59. All non–metallic water, sanitary and storm sewer piping shall have an electrically conductive insulated 12 gauge solid core copper tracer wire the full length of the installed pipe using blue wire for water and green wire for storm and sanitary piping. Tracer wire shall be extended up into all valve boxes, catch basins, manholes and lateral cleanout boxes. Tracer wire penetrations into manholes shall be within 18 inches of the rim elevation and adjacent to manhole steps. The tracer wire shall be tied to the top manhole step or otherwise supported to allow retrieval from the outside of the manhole. All tracer wire splices shall be made with waterproof splices or waterproof/corrosion resistant wire nuts.

60. No trenches in sidewalks, roads, or driveways shall be left in an open condition overnight. All such trenches shall be closed before the end of each workday and normal traffic and pedestrian flows restored.

61. Before mandrel testing, TV inspection or final acceptance of gravity pipelines, all trench compaction shall be completed and all sewers and storm drains flushed & cleaned to remove all mud, debris & foreign material from the pipelines, manholes and/or catch basins.

62. Where future extensions are shown upstream of new manholes (sewer or storm), catch basins or junction boxes, pipe stubs (with gasketed caps) shall be installed at design grades to a point 2' minimum outside of the structure.

STORM MANHOLES:

63. All precast manholes shall be provided with integral rubber boots. Where manholes without integral rubber boots are approved by the Owner's Representative and Approving Agency, a pipe joint shall be provided on all mainlines within 1.5 feet of the outside face of the manhole. Where required by Public Works, watertight lockdown lids required on all manholes outside of public right–of–way.

64. Openings for connections to existing manholes shall be made by core–drilling the existing manhole structure, and installing a rubber boot. Connections shall be watertight and shall provide a smooth flow into and through the manhole with no ponding. Small chipping hammers or similar light tools which will not damage or crack the manhole base may be used to shape channels, but may be used to enlarge existing openings only if authorized in writing by the Owner's Representative. Use of pneumatic jackhammers shall be prohibited.

65. Manhole channels depths (sewer & storm) shall be to the heights shown on the drawings, but in no case shall the channel depth be less than 2/3 of the pipe diameter. Channels, as well as shelves between the channels and the manhole walls, shall be sloped to drain per plan details.

66. Manholes constructed over existing sanitary sewers shall conform to the requirements of OSSC (ODOT/APWA) 490.41, Manholes over Existing Sewers. The existing pipe shall not be broken out until after the completion of the manhole test.

STORM DRAIN SYSTEM:

67. Storm sewer pipe materials shall conform to the construction drawings and Approving Agency's requirements. Unless otherwise noted or shown on the drawings, storm sewer pipe materials with watertight joints shall conform to the attached "Storm Pipe Table". Contractor shall use uniform pipe material on each pipe run between structures unless otherwise directed or approved. Jointed HDPE pipe shall not be used for slopes exceeding ten percent (10%). All materials and workmanship for all private storm drains, including storm drains located within any building envelope, shall be installed in conformance with Uniform Plumbing Code requirements.

68. Contractor shall designate the pipe material actually installed on the field record drawings and provide this information for inclusion on the as–built drawings.

69. Catch basins and junction boxes shall be set square with buildings or with the edge of the parking lot or street wherein they lie. Storm drain inlet structures and paving shall be adjusted so water flows into the structure without ponding water.

70. Unless otherwise approved by the Engineer, all storm drain connections shall be by manufactured tees or saddles.

71. Unless otherwise shown on the drawings, all storm pipe inlets & outfalls shall be beveled flush to match the slope wherein they lie.

72. Sweep (deflect) storm sewer pipe into catch basins and manholes as required. Maximum joint deflection shall not exceed 5 degrees or manufacturers recommendations, whichever is less.

73. Unless otherwise shown or directed, install storm sewer pipe in accordance with manufacturer installation guidelines.

74. After manhole channeling and prior to mandrel testing or final acceptance, flush and clean all sewers, and remove all foreign material from the mainlines, manholes and catch basins.

75. Mandrel Testing. Contractor shall conduct deflection test of flexible storm sewer pipes by pulling an approved mandrel through the completed pipeline following trench compaction. The diameter of the mandrel shall be 95% of the initial pipe diameter. Test shall be conducted not more than 30 days after the trench backfilling and compaction has been completed.

76. TV Inspection. Upon completion of all storm sewer construction, testing and repair, the Contractor shall conduct a color TV acceptance inspection of all mainlines in accordance with OSSC (ODOT/APWA) 445.74 to determine compliance with grade requirements of OSSC (ODOT/APWA) 445.40.b. The TV inspection shall be conducted by an approved technical service which is equipped to make audio–visual recordings of the TV inspections on DVD (VHS video tape acceptable only upon prior written approval by Public Works). Unless otherwise required by the agency with jurisdiction, a standard 1–inch diameter ball shall be suspended in front of the camera during the inspection to determine the depth of any standing water. Sufficient water to reveal low areas or reverse grades shall be discharged into the pipe immediately prior to initiation of the TV inspection. The DVD and written report shall be delivered to the Approving Agency.

77. Prior to acceptance, the Owner's Representative may lamp storm lines upstream & downstream of structures to verify that the pipes are clean and there is no grout or concrete in the mainlines, and that there are no observable bellies in the line. When necessary, sufficient water to reveal low areas shall be discharged into the pipe by the Contractor prior to any such inspection by the Owner's Representative or the Approving Agency.

FRANCHISE & PRIVATE UTILITIES:

78. Contractor shall notify and coordinate with franchise utilities for removal or relocation of power poles, vaults, pedestals, manholes, etc. to avoid conflict with Public utility structures, fire hydrants, meters, sewer or storm laterals, etc.

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VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

DSN.	SAW	1	DATE	DESCRIPTION
DRN.	AR	NO.		REVISIONS
CKD.	SAW			BY
DATE:	SEP 2021			

REGISTERED PROFESSIONAL ENGINEER
11843

OREGON JULY 16, 1976 STEVEN A. WEBER

RENEWS: 6/30/2024

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HIGHWAY 211 IMPROVEMENTS
HOME FIRST DEVELOPMENT PARTNERS

CONSTRUCTION NOTES

DRAWING
C1.1

JOB NUMBER
3312.0000.0

REQUIRED TESTING AND FREQUENCY TABLE		Party Responsible for payment		
		Contractor		Others (see note 1)
Streets, Fire Lanes, Common Driveways, Parking Lots, Pads, Fills, etc.				
Subgrade	1 Test/4000 S.F./Lift (4 min), locations acceptable to approving agency (typically alternate sides of road or access aisles)	✓	See note 2 & note 3	
Engineered Fills	1 Test/4000 S.F./Lift (4 min), locations acceptable to approving agency	✓	See note 2 & note 5	
Baserock	1 Test/4000 S.F./Lift (4 min), locations acceptable to approving agency (typically alternate sides of road or access aisles)	✓	See note 2 & note 3	
Asphalt	1 Test/6000 S.F./Lift (4 min), locations acceptable to AA (typ. alternate as above)	✓	See note 2	
Piped Utilities, All				
Trench Backfill	1 Test/200 Foot Trench/Lift (4 min)	✓	See note 2	
Trench AC Restoration	1 Test/300 Foot Trench (4 min)	✓	See note 2	
Water				
Pressure Test	(to be witnessed by Owner's Representative or approving agency)	✓	See note 4	
Bacterial Water Test	Per Oregon Health Division	✓	See note 2	
Chlorine Residual Test	Per City Requirements	✓		
Sanitary Sewer				
Air Test	Per City or APWA Requirements, whichever is more stringent	✓	See note 4	
Mandrel	95% of actual inside diameter	✓	See note 4	
TV Inspection	All. Lines must be cleaned prior to TV work	✓		
Manhole	(1) Vacuum test per manhole, witnessed by Owner's Representative or approving agency	✓	See note 2	
Storm				
Mandrel	95% of actual inside diameter	✓	See note 4	
TV Inspection	All. Lines must be cleaned prior to TV work	✓		
Concrete, Block, etc.				
Slump, Air & Cylinders for structural & reinforced concrete, equipment slabs, curbs, sidewalks & PCC pavements. Unless otherwise specified, one set of cylinders per 100 cubic yards (or portion thereof) of each class of concrete placed per day. Slump & air tests required on same load as cylinders.		✓	See note 2	
Building permit inspection & Special Inspection for structural concrete, reinforced masonry, epoxy anchors, etc. as required by applicable State Building Codes.		✓	See note 6	
Retaining Walls				
Building permit inspection and Special Inspection, as well as compaction testing on backfill, all in conformance with applicable State Building Code requirements		✓	See note 5 & note 6	

Note 1: "Others" refers to Owner's authorized Representative or Approving Agency as applicable. Contractor responsible for scheduling testing. All testing must be completed prior to performing subsequent work.

Note 2: Testing must be performed by an approved independent testing laboratory.

Note 3: In addition to in-place density testing, the subgrade and base rock shall be proof-rolled with a loaded 10 yard dump truck provided by the Contractor. Baserock proofroll shall take place immediately prior to (within 24 hours of) paving, and shall be witnessed by the Owner's authorized Representative or approving agency. Location and pattern of testing and proofroll to be as approved or directed by said Owner's authorized Representative or approving agency.

Note 4: To be witnessed by the Owner's Representative or approving agency. The Contractor shall perform pretests prior to scheduling witnessed waterline or sanitary sewer pressure tests, or pipeline mandrel test.

Note 5: The approved independent laboratory retained by the Contractor shall provide a certification (stamped by an engineer licensed in the State of Oregon) that the subgrade was prepared and all engineered fills were placed in accordance with the provisions of the construction drawings and the contract documents.

Note 6: Regardless of who is responsible for payment, the Contractor is responsible for scheduling and coordinating any and all required inspections and Special Inspections as required by applicable building codes or jurisdictions having authority.

STORM PIPE TABLE	
Cover Depth	6" – 18" Diameter
Less than 2' Cover	Class 50 ductile iron pipe with bell and spigot joints and rubber gasket.
2' to 2-1/2' Cover	Pipe specified for lesser cover depths –or– reinforced concrete Pipe conforming to ASTM C-76 with bell and spigot joints & rubber gaskets, ASTM 150 Type III/IV cement –or– PVC pipe conforming to AWWA C900 DR 18 (6"–12") or AWWA C-905 (14"–18") with bell and spigot joints and rubber gasket
2-1/2' to 15' Cover	Pipe specified for lesser cover depths –or– PVC pipe conforming to ASTM D-3034 PVC SDR 35 (6"–15") or ASTM F-679 PVC solid wall SDR 35 (18") with bell and spigot joints and rubber gasket. –or– HDPE (high density polyethlene) pipe conforming to AASHTO M-252, (8"–10") or AASHTO M-294 (12"–18"). For slopes less than 6% the pipe shall be ADS N-12 IB ST, Hancor Sure-Lok F477, or approved equal. For slopes greater than 6% the pipe shall be ADS N-12 IB WT, Hancor Blue Seal, or approved equal with watertight pressure testable fittings, –except– jointed HDPE (high density polyethylene) pipe referenced above not permitted for depth to invert greater than 12 feet.
More than 15' Cover	See construction drawings.

VERIFY SCALE
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NO.	DATE	DESCRIPTION	BY
		REVISIONS	
1			

DSN. SAW
DRN. AR
CKD. SAW
DATE: SEP 2021

REGISTERED PROFESSIONAL ENGINEER 11843
OREGON JULY 16, 1997 STEVEN A. WARD
RENEWS: 6/30/2024

WESTECH ENGINEERING, INC.
CONSULTING ENGINEERS AND PLANNERS
3841 Fairview Industrial Dr. S.E., Suite 100, Salem, OR 97302
Phone: (503) 585-2474 Fax: (503) 585-3986
E-mail: westech@westech-eng.com

HIGHWAY 211 IMPROVEMENTS
HOME FIRST DEVELOPMENT PARTNERS

CONSTRUCTION NOTES

DRAWING
C1.2

JOB NUMBER
3312.0000.0

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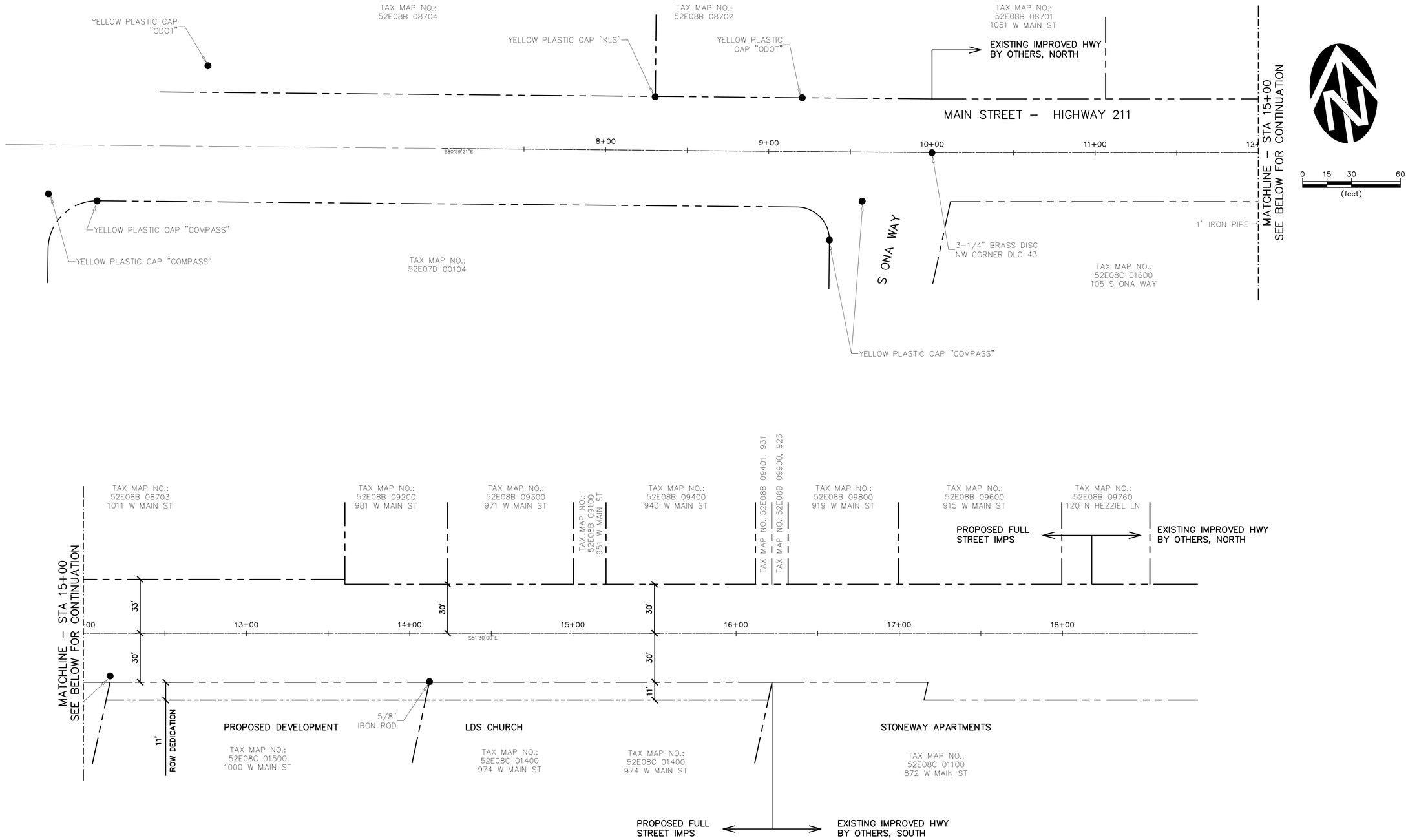

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DSN. SAW
DRN. AR
CKD. SAW
DATE: SEP 2021

REGISTERED PROFESSIONAL ENGINEER
OREGON
JULY 16, 1987
STEVEN A. WEBER
11843
RENEWS: 6/30/2024

WESTECH ENGINEERING, INC.
CONSULTING ENGINEERS AND PLANNERS
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HIGHWAY 211 IMPROVEMENTS
HOME FIRST DEVELOPMENT PARTNERS

ROW MAP

DRAWING
C1.3

JOB NUMBER
3312.0000.0

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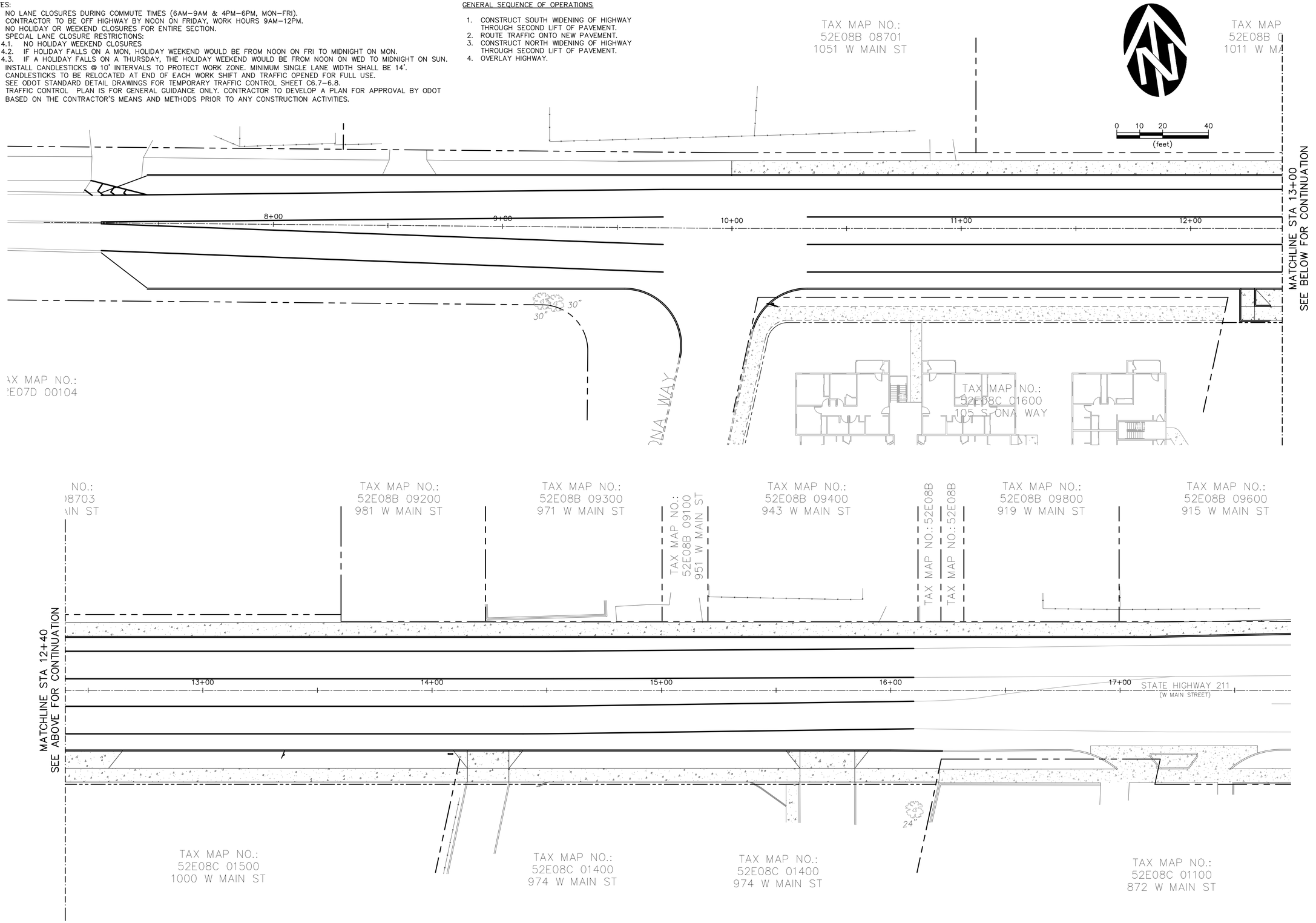
NOTES:

1. NO LANE CLOSURES DURING COMMUTE TIMES (6AM–9AM & 4PM–6PM, MON–FRI).
2. CONTRACTOR TO BE OFF HIGHWAY BY NOON ON FRIDAY, WORK HOURS 9AM–12PM.
3. NO HOLIDAY OR WEEKEND CLOSURES FOR ENTIRE SECTION.
4. SPECIAL LANE CLOSURE RESTRICTIONS:
   - 4.1. NO HOLIDAY WEEKEND CLOSURES
   - 4.2. IF HOLIDAY FALLS ON A MON, HOLIDAY WEEKEND WOULD BE FROM NOON ON FRI TO MIDNIGHT ON MON.
   - 4.3. IF A HOLIDAY FALLS ON A THURSDAY, THE HOLIDAY WEEKEND WOULD BE FROM NOON ON WED TO MIDNIGHT ON SUN.
5. INSTALL CANDLESTICKS @ 10' INTERVALS TO PROTECT WORK ZONE. MINIMUM SINGLE LANE WIDTH SHALL BE 14'. CANDLESTICKS TO BE RELOCATED AT END OF EACH WORK SHIFT AND TRAFFIC OPENED FOR FULL USE.
6. SEE ODOT STANDARD DETAIL DRAWINGS FOR TEMPORARY TRAFFIC CONTROL SHEET C6.7–6.8.
7. TRAFFIC CONTROL PLAN IS FOR GENERAL GUIDANCE ONLY. CONTRACTOR TO DEVELOP A PLAN FOR APPROVAL BY ODOT BASED ON THE CONTRACTOR'S MEANS AND METHODS PRIOR TO ANY CONSTRUCTION ACTIVITIES.

GENERAL SEQUENCE OF OPERATIONS

1. CONSTRUCT SOUTH WIDENING OF HIGHWAY THROUGH SECOND LIFT OF PAVEMENT.
2. ROUTE TRAFFIC ONTO NEW PAVEMENT.
3. CONSTRUCT NORTH WIDENING OF HIGHWAY THROUGH SECOND LIFT OF PAVEMENT.
4. OVERLAY HIGHWAY.



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DSN. SAW
DRN. AR
CKD. SAW
DATE: SEP 2021

REGISTERED PROFESSIONAL ENGINEER
OREGON JULY 16, 1982 STEVEN A. WAGNER
11843
RENEWS: 6/30/2024

WESTECH ENGINEERING, INC.
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HIGHWAY 211 IMPROVEMENTS
HOME FIRST DEVELOPMENT PARTNERS

TEMPORARY TRAFFIC CONTROL PLAN

DRAWING
C1.4

JOB NUMBER
3312.0000.0

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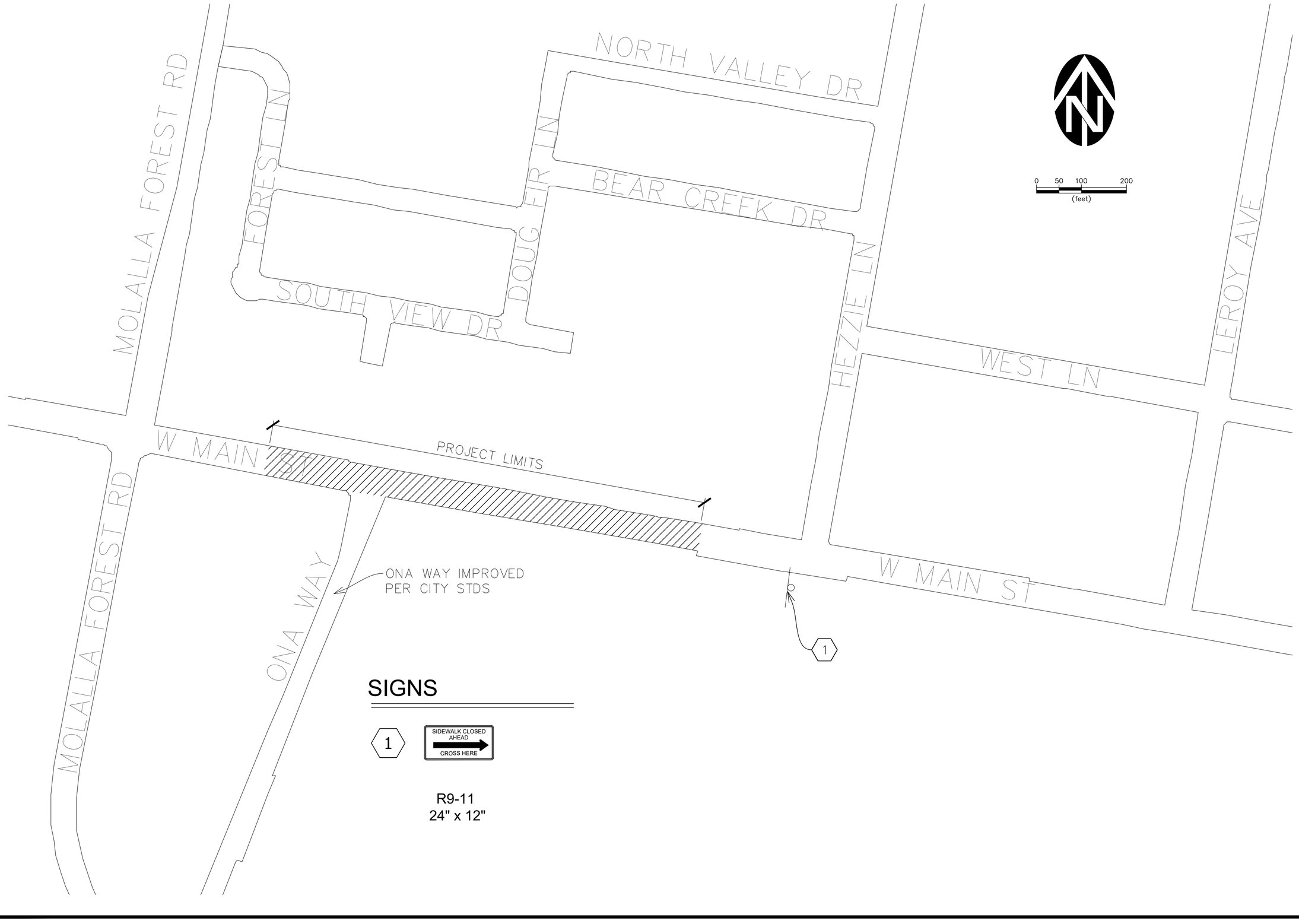

SIGNS

1

R9-11
24" x 12"

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DSN. SAW
DRN. AR
CKD. SAW
DATE: SEP 2021

REGISTERED PROFESSIONAL ENGINEER
11843

OREGON JULY 16, 1982
STEVEN A. WARD

RENEWS: 6/30/2024

WESTECH ENGINEERING, INC.
CONSULTING ENGINEERS AND PLANNERS
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HIGHWAY 211 IMPROVEMENTS
HOME FIRST DEVELOPMENT PARTNERS

TEMPORARY PEDESTRIAN ACCESS ROUTE

DRAWING
C1.5

JOB NUMBER
3312.0000.0

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EROSION CONTROL LEGEND

- SILT FENCE SEE DTL
- SILT SACK INLET PROTECTION USE BIO BAGS ON CURB INLET CATCH BASINS. USE SILT SACKS ON STANDARD CATCH BASINS.
- BIOBAG

DEMOLITION LEGEND

- (P) CONTRACTOR TO SAVE & PROTECT AT ALL TIMES.
- (R) REMOVE OR RELOCATED BY THE CONTRACTOR
- (R1) REMOVE OR RELOCATED BY OTHERS – CONTRACTOR TO COORDINATE
- (S) SAWCUT
- (A) ADJUST

0 10 20 40 (feet)

TAX MAP NO.: 52E08B 08702

TAX MAP NO.: 52E08B 08701 1051 W MAIN ST

TAX MAP NO.: 52E08B 08703 1011 W MAIN ST

GASLINE MARKER POST

8+00 9+00 10+00 11+00 12+00 13+

MATCHLINE STA 13+20 SEE BELOW FOR CONTINUATION

TAX MAP NO.: 52E08C 01600 105 S ONA WAY

TAX 52E 1000

ONA WAY

TAX MAP NO.: 52E08B 09200 981 W MAIN ST

TAX MAP NO.: 52E08B 09300 971 W MAIN ST

TAX MAP NO.: 52E08B 09100 951 W MAIN ST

TAX MAP NO.: 52E08B 09400 943 W MAIN ST

TAX MAP NO.: 52E08B

TAX MAP NO.: 52E08B

TAX MAP NO.: 52E08B 09800 919 W MAIN ST

TAX MAP NO.: 52E08B 09600 915 W MAIN ST

TAX MAP NO.: 52E08B 09760 120 N HEZZIEL LN

MATCHLINE STA 13+20 SEE ABOVE FOR CONTINUATION

14+00 15+00 16+00 17+00 18+00

STATE HIGHWAY 211 (W MAIN STREET)

COORDINATE W/ POST OFFICE TO MAINTAIN POSTAL SERVICE DURING CONSTRUCTION.

COORDINATE W/ UTILITY COMPANIES FOR GUY POLE & PEDESTAL RELOCATION. RELOCATE OUTSIDE NEW DRIVEWAY & SIDEWALK

CURB & LANDSCAPING

MAP NO.: 8C 0150C W MAIN S

SEE MOLALLA APARTMENTS PHASE FOR ONSITE IMPROVEMENTS

TAX MAP NO.: 52E08C 01400 974 W MAIN ST

TAX MAP NO.: 52E08C 01400 974 W MAIN ST

TAX MAP NO.: 52E08C 01100 872 W MAIN ST

BY	DESCRIPTION	NO.	DATE
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DSN. SAW
DRN. AR
CKD. SAW
DATE: SEP 2021

REGISTERED PROFESSIONAL ENGINEER 11843

OREGON JULY 16, 2002 STEVEN A. WARD

RENEWS: 6/30/2024

WESTECH ENGINEERING, INC.
CONSULTING ENGINEERS AND PLANNERS
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HIGHWAY 211 IMPROVEMENTS
HOME FIRST DEVELOPMENT PARTNERS

EXISTING CONDITIONS, EROSION CONTROL, & DEMOLITION PLAN

DRAWING C2.0

JOB NUMBER 3312.0000.0

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DEQ EROSION CONTROL STANDARD NOTES:

1. Include a list of all personnel (by name and position) that are responsible for the design, installation and maintenance of stormwater control measures (e.g. ESCP developer, BMP installer (see Section 4.10), as well as their individual responsibilities. (Section 4.4.c.ii)
2. Visual monitoring inspection reports must be made in accordance with DEQ 1200–C permit requirements. (Section 6.5)
3. Inspection logs must be kept in accordance with DEQ's 1200–C permit requirements. (Section 6.5.q)
4. Retain a copy of the ESCP and all revisions on site and make it available on request to DEQ, Agent, or the local municipality. (Section 4.7)
5. The permit registrant must implement the ESCP. Failure to implement any of the control measures or practices described in the ESCP is a violation of the permit. (Sections 4 and 4.11)
6. The ESCP must be accurate and reflect site conditions. (Section 4.8)
7. Submission of all ESCP revisions is not required. Submittal of the ESCP revisions is only under specific conditions. Submit all necessary revision to DEQ or Agent within 10 days. (Section 4.9)
8. Sequence clearing and grading to the maximum extent practical to prevent exposed inactive areas from becoming a source of erosion. (Section 2.2.2)
9. Create smooth surfaces between soil surface and erosion and sediment controls to prevent stormwater from bypassing controls and ponding. (section 2.2.3)
10. Identify, mark, and protect (by construction fencing or other means) critical riparian areas and vegetation including important trees and associated rooting zones, and vegetation areas to be preserved. Identify vegetative buffer zones between the site and sensitive areas (e.g., wetlands), and other areas to be preserved, especially in perimeter areas. (Section 2.2.1)
11. Preserve existing vegetation when practical and re–vegetate open areas. Re–vegetate open areas when practicable before and after grading or construction. Identify the type of vegetative seed mix used. (Section 2.2.5)
12. Maintain and delineate any existing natural buffer within the 50–feet of waters of the state. (Section 2.2.4)
13. Install perimeter sediment control, including storm drain inlet protection as well as all sediment basins, traps, and barriers prior to land disturbance. (Sections 2.1.3)
14. Control both peak flow rates and total stormwater volume, to minimize erosion at outlets and downstream channels and streambanks. (Sections 2.1.1. and 2.2.16)
15. Control sediment as needed along the site perimeter and at all operational internal storm drain inlets at all times during construction, both internally and at the site boundary. (Sections 2.2.6 and 2.2.13)
16. Establish concrete truck and other concrete equipment washout areas before beginning concrete work. (Section 2.2.14)
17. Apply temporary and/or permanent soil stabilization measures immediately on all disturbed areas as grading progresses. Temporary or permanent stabilizations measures are not required for areas that are intended to be left unvegetated, such as dirt access roads or utility pole pads. (Sections 2.2.20 and 2.2.21)
18. Establish material and waste storage areas, and other non–stormwater controls. (Section 2.3.7)
19. Keep waste container lids closed when not in use and close lids at the end of the business day for those containers that are actively used throughout the day. For waste containers that do not have lids, provide either (1) cover (e.g., a tarp, plastic sheeting, temporary roof) to prevent exposure of wastes to precipitation, or (2) a similarly effective means designed to prevent the discharge of pollutants (e.g., secondary containment). (Section 2.3.7)
20. Prevent tracking of sediment onto public or private roads using BMPs such as: construction entrance, graveled (or paved) exits and parking areas, gravel all unpaved roads located onsite, or use an exit tire wash. These BMPs must be in place prior to land–disturbing activities. (Section 2.2.7)
21. When trucking saturated soils from the site, either use water–tight trucks or drain loads on site. (Section 2.2.7.f)
22. Control prohibited discharges from leaving the construction site, i.e., concrete wash–out, wastewater from cleanout of stucco, paint and curing compounds. (Sections 1.5 and 2.3.9)
23. Ensure that steep slope areas where construction activities are not occurring are not disturbed. (Section 2.2.10)
24. Prevent soil compaction in areas where post–construction infiltration facilities are to be installed. (Section 2.2.12)
25. Use BMPs to prevent or minimize stormwater exposure to pollutants from spills; vehicle and equipment fueling, maintenance, and storage; other cleaning and maintenance activities; and waste handling activities. These pollutants include fuel, hydraulic fluid, and other oils from vehicles and machinery, as well as debris, fertilizer, pesticides and herbicides, paints, solvents, curing compounds and adhesives from construction operations.(Sections 2.2.15 and 2.3)
26. Provide plans for sedimentation basins that have been designed per Section 2.2.17 and stamped by an Oregon Professional Engineer. (See Section 2.2.17.a)
27. If engineered soils are used on site, a sedimentation basin/impoundment must be installed. (See Sections 2.2.17 and 2.2.18)
28. Provide a dewatering plan for accumulated water from precipitation and uncontaminated groundwater seepage due to shallow excavation activities. (See Section 2.4)
29. Implement the following BMPs when applicable: written spill prevention and response procedures, employee training on spill prevention and proper disposal procedures, spill kits in all vehicles, regular maintenance schedule for vehicles and machinery, material delivery and storage controls, training and signage, and covered storage areas for waste and supplies. (Section 2.3)
30. Use water, soil–binding agent or other dust control technique as needed to avoid wind–blown soil. (Section 2.2.9)
31. The application rate of fertilizers used to reestablish vegetation must follow manufacturer's recommendations to minimize nutrient releases to surface waters. Exercise caution when using time–release fertilizers within any waterway riparian zone. (Section 2.3.5)
32. If an active treatment system (for example, electro–coagulation, flocculation, filtration, etc.) for sediment or other pollutant removal is employed, submit an operation and maintenance plan (including system schematic, location of system, location of inlet, location of discharge, discharge dispersion device design, and a sampling plan and frequency) before operating the treatment system. Obtain Environmental Management Plan approval from DEQ before operating the treatment system. Operate and maintain the treatment system according to manufacturer's specifications. (Section 1.2.9)
33. Temporarily stabilize soils at the end of the shift before holidays and weekends, if needed. The registrant is responsible for ensuring that soils are stable during rain events at all times of the year. (Section 2.2)
34. As needed based on weather conditions, at the end of each workday soil stockpiles must be stabilized or covered, or other BMPs must be implemented to prevent discharges to surface waters or conveyance systems leading to surface waters. (Section 2.2.8)
35. Sediment fence: remove trapped sediment before it reaches one third of the above ground fence height and before fence removal. (Section 2.1.5.b)
36. Other sediment barriers (such as biobags): remove sediment before it reaches two inches depth above ground height and before BMP removal. (Section 2.1.5.c)
37. Catch basins: clean before retention capacity has been reduced by fifty percent. Sediment basins and sediment traps: remove trapped sediments before design capacity has been reduced by fifty percent and at completion of project. (Section 2.1.5.d)
38. Within 24 hours, significant sediment that has left the construction site, must be remediated. Investigate the cause of the sediment release and implement steps to prevent a recurrence of the discharge within the same 24 hours. Any in–stream clean–up of sediment shall be performed according to the Oregon Department of State Lands required timeframe. (Section 2.2.19.a)
39. The intentional washing of sediment into storm sewers or drainage ways must not occur. Vacuuming or dry sweeping and material pickup must be used to cleanup released sediments. (Section 2.2.19)
40. Document any portion(s) of the site where land disturbing activities have permanently ceased or will be temporarily inactive for 14 or more calendar days. (Section 6.5.f.)
41. Provide temporary stabilization for that portion of the site where construction activities cease for 14 days or more with a covering of blown straw and a tackifier, loose straw, or an adequate covering of compost mulch until work resumes on that portion of the site. (Section 2.2.20)
42. Do not remove temporary sediment control practices until permanent vegetation or other cover of exposed areas is established. Once construction is complete and the site is stabilized, all temporary erosion controls and retained soils must be removed and disposed of properly, unless needed for long term use following termination of permit coverage. (Section 2.2.21)

Rev. 12/15/20
By: Blair Edwards

YEAR: / MONTH:	'23 03	'23 04	'23 05	'23 06	'23 07	'23 08	'23 09	'23 10	'23 11	'23 12	'24 01	'24 02
CLEARING	X	X										
EXCAVATION		X	X	X								
GRADING		X	X	X	X	X						
CONSTRUCTION		X	X	X	X	X						
SEDIMENT CONTROLS:												
Silt Fencing		X	X	X	X	X						
Sediment Traps		X	X	X	X	X						
Sediment Basins												
Storm Inlet Protection												
Drainage Swales												
Check Dams												
Contour Furrows												
Terracing												
Pipe Slope Drains												
Rock Outlet Protection												
Gravel Construction Entrance	X	X	X	X	X	X						
Grass–lined Channel (Turf Reinforcement Mats)												
Protection of trees with construction fences												
Temporary Seeding and Planting												
Permanent Seeding and Planting												
Other:												

CONTROL MEASURE	PHASE 1	PHASE 2	PHASE 3	PHASE 4	PHASE 5
Silt Fencing	X	X	X	X	
Construction Entrance	X	X			
Sediment Traps			X	X	
Storm Inlet Protection			X	X	
Concrete Washout			X	X	
Rock Outlet Protection			X	X	X
Permanent Seeding and Planting					X

Phase 1: Prior to Ground Disturbance
Phase 2: After Completion of Rough Grading
Phase 3: After Installation of Storm Facilities
Phase 4: After Paving & Construction
Phase 5: After Project Completion and Cleanup

BMP Rationale

A comprehensive list of available Best Management Practices (BMP) options based on DEQ's 1200–C Permit Application and ESCP Guidance Document has been reviewed to complete this Erosion and Sediment Control Plan. Some of the above listed BMPs were not chosen because they were determined to not effectively manage erosion prevention and sediment control for this project based on specific site conditions, including soil conditions, topographic constraints, accessibility to the site, and other related conditions. As the project progresses and there is a need to revise the ESCP, an Action Plan will be submitted.

SOIL TYPE(S): PER CLACKAMAS COUNTY CO. SOIL SURVEY THE SITE SOILS INCLUDE, "DAYTON SILT LOAM"

EROSION HAZARD: PER CLACKAMAS CO. SOIL SURVEY EROSION HAZARD IS NOT RATED

SITE AREA: 1.2 Ac

DISTURBANCE AREA: 1.2 Ac

INSPECTION FREQUENCY FOR BMP

Site Condition	Minimum Frequency
1. Active period	On initial date that land disturbance activities commence. Within 24 hours of any storm event, including runoff from snow melt, that results in discharge from the site. At least once every 14 days, regardless of whether stormwater runoff is occurring.
2. Inactive periods greater than fourteen (14) consecutive calendar days	The Inspector may reduce the frequency of inspections in any area of the site where the stabilization steps in Section 2.2.20 have been completed to twice per month for the first month, no less than 14 calendar days apart, then once per month.
3. Periods during which the site is inaccessible due to inclement weather	If safe, accessible and practical, inspections must occur daily at a relevant discharge point or downstream location of the receiving waterbody.
4. Periods during which construction activities are suspended and runoff is unlikely due to frozen conditions.	Visual monitoring inspections may be temporarily suspended. Immediately resume monitoring upon thawing, or when weather conditions make discharges likely.
5. Periods during which construction activities are conducted and runoff is unlikely during frozen conditions.	Visual monitoring inspections may be reduced to once a month. Immediately resume monitoring upon thawing, or when weather conditions make discharges likely.

Spill Prevention Procedures and Response

- Spill prevention is an important factor in the successful operation of a storm water injection management system. All contractor employees will be trained on this plan so that they are certain of the location of materials, who to notify in case of a spill, and how to initially contain the spill of hazardous materials. Contractor employees shall never dispose waste materials into the storm water collection/treatment system. Contractor employees will be observant of other potential contamination occurrences. All contractor employees will review this plan especially with regards to the detailed spill response steps.
- This data will be posted in an accessible area at the site.

What to do in case of a spill

1. Spill kit to be located near the job trailer or another conspicuous location and clearly marked.
2. Get the spill kit.
   a. If possible, determine visually what types of fluids have been spilled.
   b. Put on gloves and glasses or any other necessary Personal Protective Equipment (PPE).
   c. Get the absorbent material provided in the kit and the drain block cover.
   d. Place the absorbent materials in the path of the spill.
   e. Remove any debris from the vicinity of the inlet where the spill is draining.
   f. Unroll the drain block cover and place it snugly over the inlet.
   g. Verify that the cover has full contact with the rim of the inlet.
   h. Use snakes, pillow or pigs to completely contain the area.
3. Notify the following personnel immediately:
   a. Owner's Representative: Troy Croft, Phone: 503–375–7168.
   b. When a spill includes any of the below, notify the Oregon Emergency Response System as soon as the Owner's Representative has knowledge of the release. Oregon Emergency Response System Phone: 1–800–452–0311
      i. Any amount of oil to waters of the state;
      ii. Oil spills on land in excess of 42 gallons;
      iii. Hazardous materials that are equal to, or greater than, the quantity listed in the Code of Federal Regulations, 40 CFR Part 302 (List of Hazardous Substances and Reportable Quantities), and amendments adopted before July 1, 2002

NOTE: Only dry cleanup methods will be employed to clean up spills (i.e., no use of water to wash spilled materials from pavement will be conducted). All spill cleanups shall be conducted in accordance with applicable regulations.

Responsible Personnel

In case of spill contact the General Contractor and Owner's Representative immediately. The General Contractor will be responsible for either managing the spill clean up for minor spills or contacting/retaining a company for the cleanup of major spills.

Waste Management Procedures

Activities performed onsite shall implement the following to eliminate the discharge of waste:

1. Locate activities that include waste products away from waters of the state and stormwater inlets or conveyances so that stormwater coming into contact with these activities cannot reach waters of the state;
2. Ensure adequate supplies are available at all times to handle spills, leaks, and disposal of liquids, and provide secondary containment (e.g. spill berms, decks, spill containment pallets);
3. Have a spill kit available on site and ensure personnel are available to respond expeditiously in the event of a leak or spill;
4. Clean up spills or contaminated surfaces immediately using dry clean up measures (do not clean contaminated surfaces by hosing the area down), and eliminate the source of the spill to prevent a discharge or a continuation of an ongoing discharge; and
5. Store materials in a covered area (e.g., plastic sheeting, temporary roofs), or in secondary containment to prevent the exposure of these containers to precipitation or stormwater runoff, or a similarly effective means designed to prevent the discharge of pollutants from these areas.
6. Building Materials & Building Products: Minimize material exposure in cases where the exposure to precipitation or to stormwater will result in a discharge of pollutants (e.g. elevate materials from soil to prevent leaching of pollutants).

Fertilizers, pesticides, herbicides, & insecticides

Comply with all application and disposal requirements included on the registered pesticide, herbicide, insecticide, and fertilizer label. When applying fertilizers, registrants must:

1. Apply at a rate and in amounts consistent with manufacturer's specifications;
2. Apply at the appropriate time of year for the location, and preferably timed to coincide as closely as possible to the period of maximum vegetation uptake and growth;
3. Avoid applying before heavy rains that could cause excess nutrients to be discharged;
4. Never apply to frozen ground;
5. Never apply to stormwater conveyance channels; and
6. Follow all other federal, state, and local requirements regarding fertilizer application.

Authorized non–stormwater discharges anticipated for the proposed project:

1. Landscape irrigation
2. Dust control water
3. Water line flushing (potable)

Potential pollutant–generating activities anticipated for the proposed project including an inventory of pollutants for each activity:

1. Mass Grading, Street & Utility Construction
   a. Sediment
   b. Vehicle and machinery related pollutants (Fuels, hydraulic fluid, oils)
2. Vertical Construction
   a. Paints, caulks, sealants, solvents
   b. Fluorescent light ballasts
   c. Sediment
   d. Vehicle and machinery related pollutants (Fuels, hydraulic fluid, oils)
3. Landscaping & Irrigation
   a. Fertilizers
   b. Pesticides, Herbicides, Insecticides

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
0 IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY 1"

NO.	DATE	DESCRIPTION	BY
		REVISIONS	

DSN. SAW
DRN. AR
CKD. SAW
DATE: SEP 2021

REGISTERED PROFESSIONAL ENGINEER
OREGON JULY 16, 1982 STEVEN A. WARD
11843
RENEWS: 6/30/2024

WESTECH ENGINEERING, INC.
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HIGHWAY 211 IMPROVEMENTS
HOME FIRST DEVELOPMENT PARTNERS

EROSION CONTROL NOTES & DETIALS

DRAWING
C2.1

JOB NUMBER
3312.0000.0

1/10/2023 4:59:04 PM
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SUPPLEMENTAL WESTECH NOTES:

1. Erosion control measures shall be maintained in such a manner as to ensure that sediment and sediment–laden water does not enter the drainge system, roadways, or violate applicable water quality standards.

2. The erosion control construction, maintenance, replacement and upgrading of the erosion control facilities is the responsibility of the Contractor until all construction is completed and approved, and permanent erosion control (i.e. vegetation/landscaping) is estabilished on all disturbed areas.

3. All recommended erosion control procedures are dependent on construction methods, staging, site conditions, weather and scheduling. During the construction period, erosion control facilities shall be upgraded as necessary due to unexpected storm events and to ensure that sediment and sediment laden water does not leave the site.

4. The Contractor is responsible for control of sediment transport within project limits. If an installed erosion control system does not adequately contain sediment on site, then the erosion control measures shall be adjusted or supplemented by the Contractor as necessary to ensure that sediment laden water does not leave the site. Additional measures shall be provided as required to ensure that all paved areas are kept clean for the duration of the project. Additional interim measures will include, at a minimum, installation of silt fences in accordance with the details shown on the drawings. These measures shall be installed along all exposed embankments and cut slopes to prevent sediment transport.

5. All existing and newly constructed storm inlets and drains shall be protected until pavement surfaces are completed and/or vegetation is established.

6. Erosion control facilities and sediment fences on active sites shall be inspected by the Contractor at least daily during any period with measurable precipitation. Any required repairs or maintenance shall be completed immediately. The erosion control facilities on inactive sites shall be inspected and maintained by the Contractor a minimum of once a month or within 24 hours following the start of a storm event.

7. All catch basins and conveyance lines shall be cleaned prior to paving. The cleaning operation shall not flush sediment–laden water into the downstream system. The Contractor shall remove all accumulated sediment from all impacted catch basins and storm pipes prior to acceptance by the Owner.

8. The Contractor is solely responsible for protection of all adjacent property and downstream facilities from erosion and siltation during project construction. Any damage resulting from such erosion and siltation shall be corrected at the sole expense of the Contractor.

9. The Contractor shall provide site watering as necessary to prevent wind erosion of fine–grained soils.

10. Unless otherwise indicated on the drawings, all temporary erosion control facilities, including sediment fences, silt sacks, bio–bags, etc. shall be removed by the Contractor within 30 days after permanent landscaping/vegetation is established.

11. Sediment fences shall be constructed of continuous filter fabric to avoid use of joints. When joints are necessary, filter cloth shall be spliced together only at a support post, with a minimum 6–inch overlap, and both ends securely fastened to a post.

12. Sediment fence shall be installed per drawing details. Sediment fences shall have adequate support to contain all silt and sediment captured.

13. The standard strength filter fabric shall be fastened securely to stitched loops installed on the upslope side of the posts, and 6 inches of the fabric shall be extended into the trench. The fabric shall not extend more than 30 inches above the original ground surface. Filter fabric shall not be stapled to existing trees.

14. Bio–filter bags shall be clean 100 percent wood product waste. Bags shall be 18–inch x 18–inch x 30–inch, weigh approximately 45 lbs., and be contained in a bag made of 1/2–inch plastic mesh.

15. Sediment barriers shall be maintained until the up–slope area has been permanently stabilized. At no time shall more than 10–inches of sediment be allowed to accumulate behind sediment fences. No more than 2 inches of sediment shall be allowed to accumulate behind bio–filter bags. Sediment shall be removed prior to reaching the above stated depths. New sediment barriers shall be installed uphill as required to control sediment transport.

16. Stabilized construction entrances shall be installed at the beginning of construction and maintained for the duration of the project. Additional measures may be required to ensure that all paved areas are kept clean for the duration of the project.

17. The Contractor shall verify that all trucks are well sealed when transporting saturated soils from the site. Water drippage from trucks transporting saturated soils must be reduced to less than 1 gallon per hour prior to leaving the site.

18. The entrance shall be maintained in a condition that will prevent tracking or flow of mud onto the public right–of–way or approved access point. The entrance may require periodic top dressing as conditions demand, and repair and/or cleanout of any structures used to trap sediment.

19. All materials spilled, dropped, washed, or tracked from vehicles onto roadways or into storm drains must be removed immediately, and the Contractor shall provide protection of downstream inlets and catch basins to ensure sediment laden water does not enter the storm drain system.

20. Temporary grass cover measures must be fully established by October 15th, or other cover measures (ie. erosion control blankets with anchors, 3–inches minimum of straw mulch, 6 mil HDPE plastic sheet, etc.) shall be in place over all disturbed soil areas until April 30th. To establish an adequate grass stand for controlling erosion by October 15th, it is recommended that seeding and mulching occur by September 1st. Straw mulch, if used, shall not leave any bare ground visible through the straw.

21. Minimum wet weather slope protection. For slopes steeper than 3H:1V but less than 2H:1V, use Tensar/North American Green Type S150 erosion control blanket. For slopes 2H:1V or steeper, use Tensar/North American Green Type SC150 erosion control blanket. Use a minimum of 2–inches straw mulch or Tensar/North American Green Type S150 for slopes flatter than 3H:1V. Slope protection shall be placed on all disturbed areas immediately after completion of each section of construction activity, until the erosion control seeding has been established. As an option during temporary or seasonal work stoppages, a 6–mil HDPE plastic sheet may be placed on exposed slopes. The plastic sheet shall be provided with an anchor trench at the top and bottom of the slope, and shall be sandbagged on the slopes as required to prevent damage or displacement by wind.

22. Permanent erosion control vegetation on all embankments and disturbed areas shall be re–established as soon as construction is completed.

23. Soil preparation. Topsoil should be prepared according to landscape plans, if available, or recommendations of grass seed supplier. It is recommended that slopes be textured before seeding by rack walking (ie. driving a crawling tractor up and down the slopes to leave a pattern of cleat imprints parallel to slope contours) or other method to provide stable areas for seeds to rest.

24. When used, hydromulch shall be applied with grass seed at a rate of 2000 lbs. per acre between April 30 and June 10, or between September 1 and October 1. On slopes steeper than 10 percent, hydroseed and mulch shall be applied with a bonding agent (tackifier). Application rate and methodology to be in accordance with seed supplier recommendations.

25. When used in lieu of hydromulch, dry, loose, weed free straw used as mulch shall be applied at a rate of 4000 lbs. per acre (double the hydromulch application requirement). Anchor straw by working in by hand or with equipment (rollers, cleat trackers, etc.). Mulch shall be spread uniformly immediately following seeding.

26. When conditions are not favorable to germination and establishment of the grass seed, the Contractor shall irrigate the seeded and mulched areas as required to establish the grass cover.

27. Seeding. Recommended erosion control grass seed mix is as follows. Dwarf grass mix (low height, low maintenance) consisting of dwarf perennial ryegrass (80 % by weight), creeping red fescue (20 % by weight). Application rate shall be 100 lbs. per acre minimum.

28. Grass seed shall be fertilized at a rate of 10 lbs. per 1000 S.F with 16– 16–16 slow release type fertilizer. Development areas within 50 feet of water bodies and wetlands must use a non–phosphorous fertilizer.

29. Prior to starting construction contractor shall acquire the services of a DEQ Certified Erosion and Sediment Control Inspector and shall submit an "Action Plan" to DEQ indentifying their names, contact information, training and experience as required in Schedule A.6.b.i–ii of the 1200–C Permit

30. Contractor shall submit "Notice of Termination" to DEQ to end the 1200–C permit coverage once all soil disturbance activities have been completed and final stabilization of exposed soils has occured.

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0 1"
IF NOT ONE INCH, ADJUST THIS SHEET, ADJUST SCALES ACCORDINGLY

NO.	DATE	DESCRIPTION	BY
		REVISIONS	

DSN. SAW
DRN. AR
CKD. SAW
DATE: SEP 2021

REGISTERED PROFESSIONAL ENGINEER
OREGON JULY 16, 1982 STEVEN A. WRAY
11843
RENEWS: 6/30/2024

WESTECH ENGINEERING, INC.
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HIGHWAY 211 IMPROVEMENTS
HOME FIRST DEVELOPMENT PARTNERS

EROSION CONTROL NOTES & DETAILS

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C2.2

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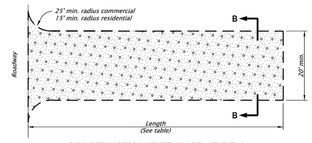

CONSTRUCTION ENTRANCE - TYPE 1
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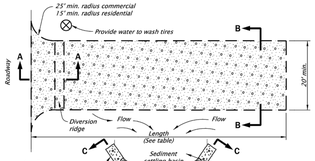

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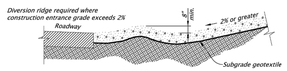
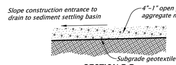


SECTION A-A
NOT TO SCALE



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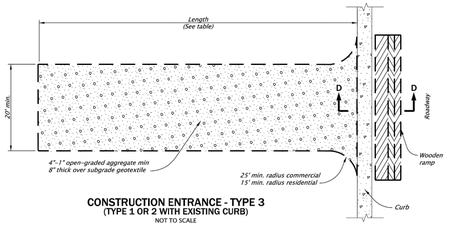
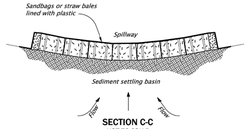


CONSTRUCTION ENTRANCE - TYPE 3
(TYPE 1 OR 2 WITH EXISTING CURB)
NOT TO SCALE



SECTION C-C
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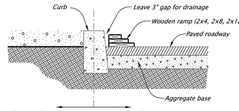

WOODEN CURB RAMP SECTION D-D
NOT TO SCALE

NOTES:
1. The Type 1 entrance is a simple entrance without a diversion ridge or settling basin.
2. The wooden ramp may be used on either Type 1 or Type 2 entrances in situations where there is curb and the curb is not removed for the construction entrance.

CONSTRUCTION ENTRANCE TABLE MINIMUM LENGTH	
Length (FT)	*Area Of Exposed Soil (Acre)*
20	0.25
50	0.25 < A < 1.0
100	A > 1.0

CALC. BOOK NO. N/A

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SDR DATE January, 2021

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

OREGON STANDARD DRAWINGS

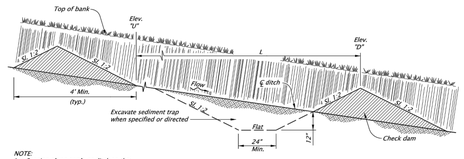
CONSTRUCTION ENTRANCES

2021

DATE	REVISION DESCRIPTION
Jan 2021	Removed Calc book numbers

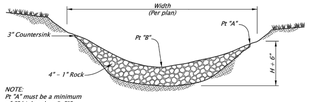
RD1000

Effective Date: June 1, 2022 - November 30, 2022 RD1000



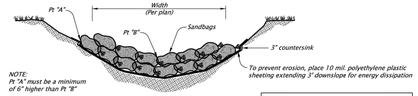
NOTE:
L = Spacing along swale or ditch so that Elevation "U" equals Elevation "D".

TYPICAL PROFILE SECTION CHECK DAMS
(SHOWN WITH AGGREGATE)
NOT TO SCALE



NOTE:
Pt "A" must be a minimum of 6" higher than Pt "B"

AGGREGATE CHECK DAM - TYPE 1
NOT TO SCALE



NOTE:
Pt "A" must be a minimum of 6" higher than Pt "B"

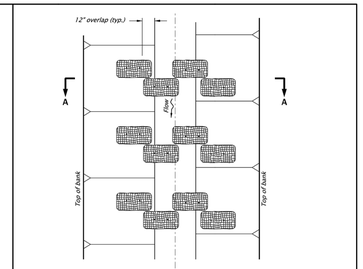
To prevent erosion, place 10 mil. polyethylene plastic sheeting extending 3' downslope for energy dissipation

SANDBAG CHECK DAM - TYPE 4
NOT TO SCALE

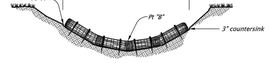
NOTES:
1. Type 3 - stake biofilter bags with two 2"x2"x18" (minimum) wood stakes per bag. Drive stakes a minimum of 6" into the ground and flush with the top of the bags. Omit stakes if placed over paved surfaces. Overlap bags 12" minimum at each joint.
2. Type 4 - Tightly abut or overlap ends of sandbags at each joint.
3. Spacing between check dams for all check dam types shall comply with the typical profile section shown above.

MAXIMUM CHECK DAM SPACING "L"				
Ditch Grade	*H=8"*	*H=12"*	*H=18"*	*H=24"*
10%	* *	* *	15'	20'
9%	* *	* *	16'	23'
8%	* *	* *	18'	25'
7%	* *	* *	21'	28'
6%	* *	16'	25'	33'
5%	* *	20'	30'	40'
4%	16'	25'	37'	50'
3%	22'	33'	50'	66'
2%	33'	50'	75'	100'

* * Not allowed H = Min. dam height



PLAN



SECTION A-A

BIOFILTER BAG CHECK DAM - TYPE 3
NOT TO SCALE

CALC. BOOK NO. N/A

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SDR DATE January, 2021

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OREGON STANDARD DRAWINGS

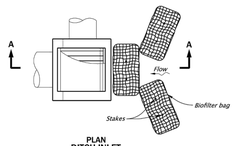
CHECK DAMS
TYPE 1, 3 AND 4

2021

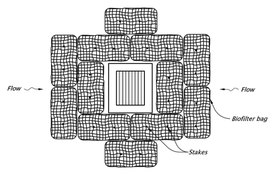
DATE	REVISION DESCRIPTION
Jan 2021	Removed Calc book numbers

RD1005

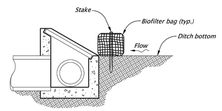
Effective Date: June 1, 2022 - November 30, 2022 RD1005



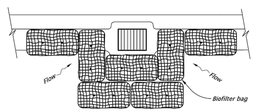
PLAN
DITCH INLET



PLAN
AREA DRAIN



SECTION A-A
DITCH INLET



PLAN
CATCH BASIN

BIOFILTER BAGS - TYPE 4
NOT TO SCALE

NOTES:
1. Stake biofilter bags with 2"x2"x36" wood stakes, and use a minimum 2 stakes per bag. Drive stakes a minimum of 6" into the ground and flush with the top of the bags.
2. Omit stakes when bags are placed on pavement surface.
3. Overlap all bag joints 6".
4. Biofilter bags used on active roadways are easily displaced and made ineffective if struck by vehicles. If struck by a cyclist, falls with injury could result. On active roadways alternative inlet protection should be considered.

CALC. BOOK NO. N/A

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SDR DATE January, 2021

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OREGON STANDARD DRAWINGS

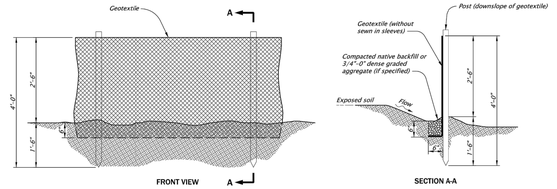
INLET PROTECTION
TYPE 4

2021

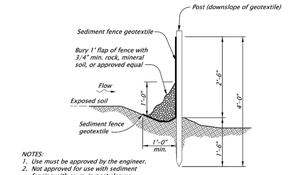
DATE	REVISION DESCRIPTION
Jan 2021	Removed Calc book numbers

RD1015

Effective Date: June 1, 2022 - November 30, 2022 RD1015

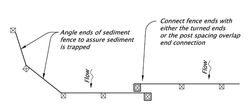


SEDIMENT FENCE AND GEOTEXTILE BURY DETAIL - TYPE 1
NOT TO SCALE

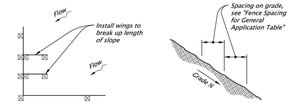


NOTES:
1. Use must be approved by the engineer.
2. Not approved for use with sediment fencing with sewn-in post sleeves.

ALTERNATE SEDIMENT FENCE
WITHOUT TRENCHING - TYPE 2
NOT TO SCALE



PLAN VIEW

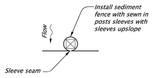


TERMINATION AT CORNER OR PROPERTY LINE

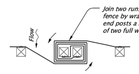
GENERAL NOTES:
1. Use 2"x2" wood fence posts.
2. Posts to be installed on downhill side of sediment fence geotextile. Position posts to prevent separation from geotextile.
3. Compact filter fabric trench backfill and soil on uphill side of fence.
4. Locate fence no closer than three feet to the toe of a slope.
5. Wing spacing shall comply with "Fence Spacing for General Application Table".

FENCE SPACING FOR GENERAL APPLICATION TABLE	
INSTALL PARALLEL ALONG CONTOURS AS FOLLOWS	
GRADE	*MAXIMUM SPACING ON GRADE*
Grade < 10%	300'
10% ≤ Grade < 15%	150'
15% ≤ Grade < 20%	100'
20% ≤ Grade < 30%	50'
30% ≤ Grade	25'

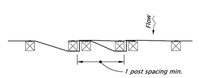
POST SPACING TABLE	
6'	Sediment Fence with Geotextile elongation less than 50%
4'	Sediment Fence with Geotextile elongation 50% or more



GEOTEXTILE WITH POST SLEEVES



TURNED ENDS CONNECTION



POST SPACING OVERLAP CONNECTION

GEOTEXTILE END CONNECTIONS
NOT TO SCALE

CALC. BOOK NO. N/A

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SDR DATE January, 2021

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OREGON STANDARD DRAWINGS

SEDIMENT FENCE

2021

DATE	REVISION DESCRIPTION
Jan 2021	Removed Calc book numbers

RD1040

Effective Date: June 1, 2022 - November 30, 2022 RD1040

BY	DESCRIPTION	NO.	DATE
	REVISIONS		

VERIFY SCALE
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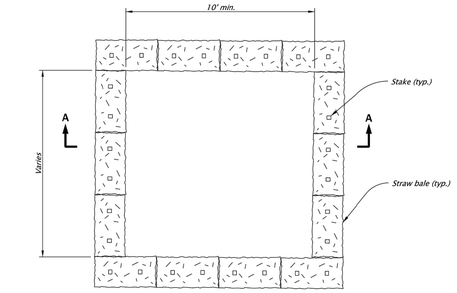
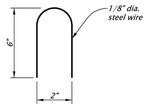
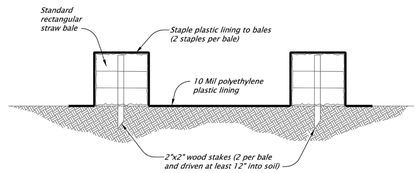


PLAN



STAPLE DETAIL
NOT TO SCALE



SECTION A-A

CONCRETE TRUCK WASH OUT FACILITY
NOT TO SCALE

CALC. BOOK NO. N/A

SDR DATE January, 2021

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

OREGON STANDARD DRAWINGS

CONCRETE TRUCK WASH OUT

2021

DATE	REVISION DESCRIPTION

Effective Date: June 1, 2022 - November 30, 2022

RD1070

rd1070.dgn 01-20-2021

RD1070

REVISIONS			
DESCRIPTION	DATE	NO.	BY

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH, ADJUST THIS SHEET, ADJUST SCALES ACCORDINGLY

DSN. SAW
DRN. AR
CKD. SAW
DATE: SEP 2021

REGISTERED PROFESSIONAL ENGINEER
OREGON JULY 16, 1982 STEVEN A. WRAY
11843
RENEWS: 6/30/2024

WESTECH ENGINEERING, INC.
CONSULTING ENGINEERS AND PLANNERS
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E-mail: westech@westech-eng.com

HIGHWAY 211 IMPROVEMENTS
HOME FIRST DEVELOPMENT PARTNERS

EROSION CONTROL
NOTES & DETAILS

DRAWING
C2.4

JOB NUMBER
3312.0000.0

1/10/2023 4:59:10 PM
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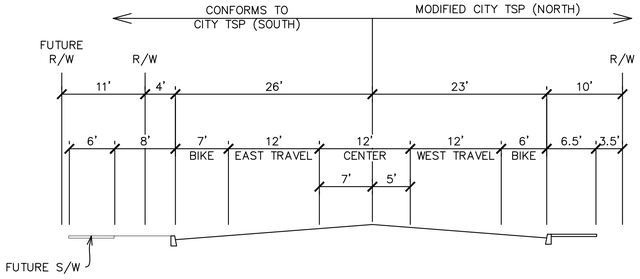
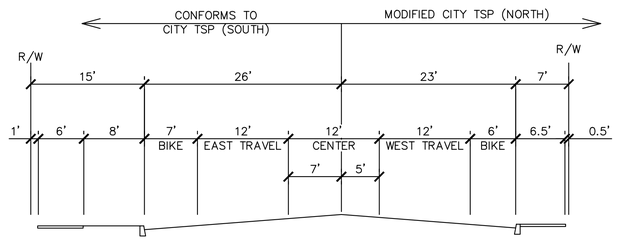


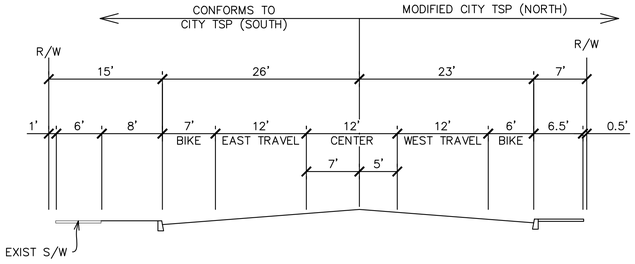
TYPICAL STRIPING SECTION STA 10+25 to STA 12+20

NTS



TYPICAL STRIPING SECTION STA 12+20 to STA 16+20

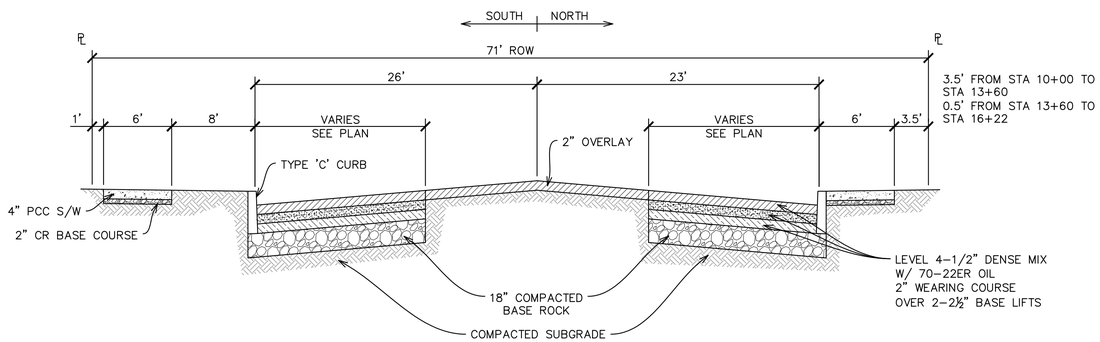
NTS



TYPICAL STRIPING SECTION STA 16+20 TO STA 18+20

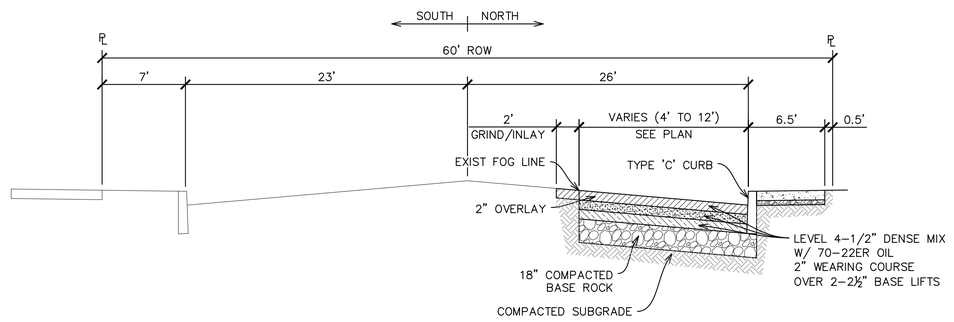
NTS

NOTE: TYPICAL STRIPING SECTION SHOW ULTIMATE STRIPE LOCATIONS. CURB IS IN ITS FINAL PROPOSED LOCATION. SEE DWG C5.0 FOR STRIPING TRANSITIONS AT EAST & WEST ENDS OF THE PROJECT.



TYPICAL SECTION STA 10+25 to STA 16+22

NTS



TYPICAL SECTION STA 16+22 to STA 18+20

NTS

NO.	DATE	DESCRIPTION	BY
1		REVISIONS	

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
IF NOT ONE INCH, ADJUST SCALES ACCORDINGLY
0 1"

DSN. SAW
DRN. AR
CKD. SAW
DATE: SEP 2021

REGISTERED PROFESSIONAL ENGINEER
OREGON JULY 16, 1987 STEVEN A. WARD
11843
RENEWS: 6/30/2024

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HIGHWAY 211 IMPROVEMENTS
HOME FIRST DEVELOPMENT PARTNERS

TYPICAL STREET SECTIONS

DRAWING
C3.0

JOB NUMBER
3312.0000.0

1/10/2023 4:59:20 PM
R:\Dwg\Home First Development Partners\Wallalla Highway - Main Street\Civil\Plots\C3.0 Typical Sections.dwg, (C3.0 tab)

(S) SAWCUT

(R) REMOVE/RELOCATED BY CONTRACTOR

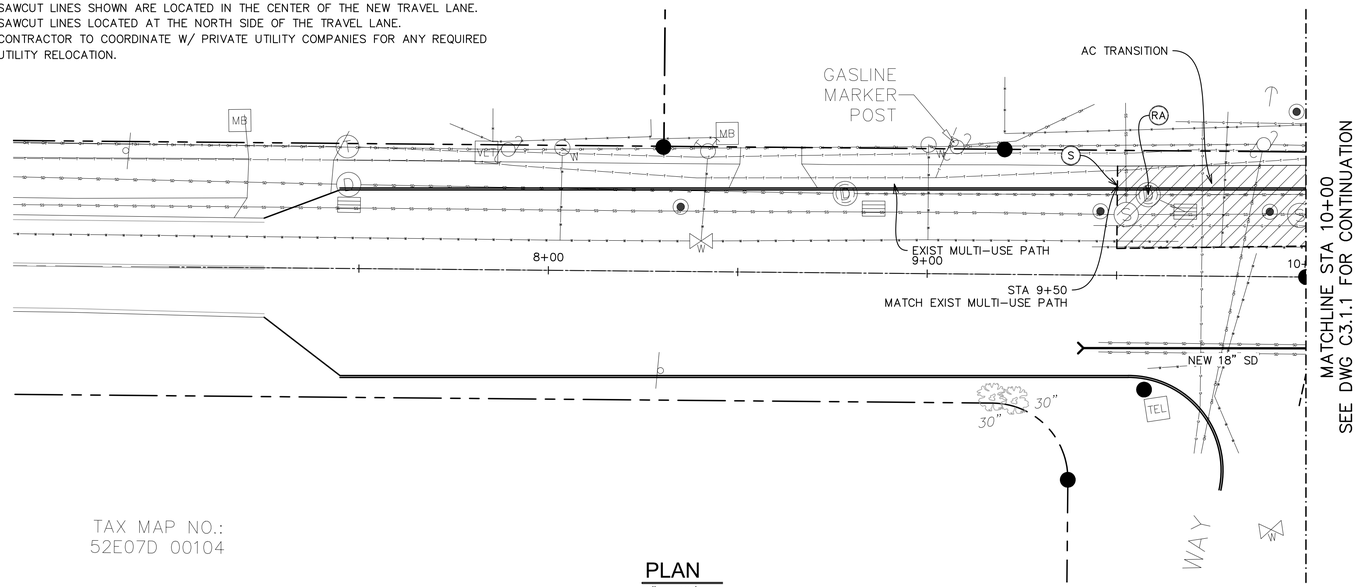
(R1) REMOVE/RELOCATED BY OTHERS – CONTRACTOR TO COORDINATE

(P) PROTECT

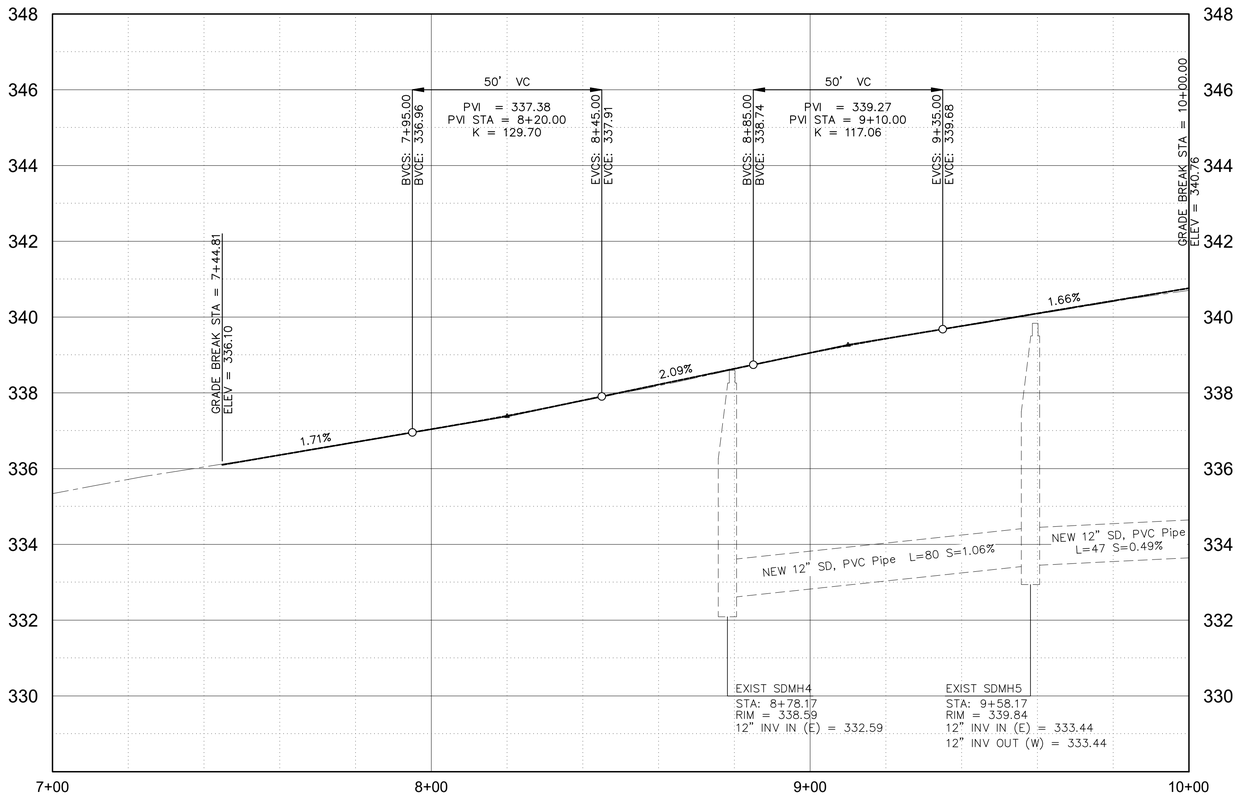
(RA) ROTATE/RECONSTRUCT MANHOLE'S AS REQUIRED TO AVOID NEW CURB & MATCH NEW FG

NOTES:

1. SEE DWG C3.2.0 FOR SOUTH CURB DESIGN.
2. SAWCUT LINES SHOWN ARE LOCATED IN THE CENTER OF THE NEW TRAVEL LANE.
3. SAWCUT LINES LOCATED AT THE NORTH SIDE OF THE TRAVEL LANE.
4. CONTRACTOR TO COORDINATE W/ PRIVATE UTILITY COMPANIES FOR ANY REQUIRED UTILITY RELOCATION.



PLAN
1" = 20'



NORTH CURB PROFILE
1" = 20' H, 1" = 2' V

0 10 20 40
(feet)

NO.	DATE	DESCRIPTION	BY
		REVISIONS	
1			

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

DSN. SAW
DRN. AR
CKD. SAW
DATE: SEP 2021

REGISTERED PROFESSIONAL ENGINEER
OREGON JULY 16, 1982 STEVEN A. WARD
11843
RENEWS: 6/30/2024

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HIGHWAY 211 IMPROVEMENTS
HOME FIRST DEVELOPMENT PARTNERS

MOLALLA HIGHWAY
NORTH PLAN–PROFILE
STA 7+00 to STA 10+00

DRAWING
C3.1.0

JOB NUMBER
3312.0000.0

1/10/2023 4:59:31 PM
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(S) SAWCUT

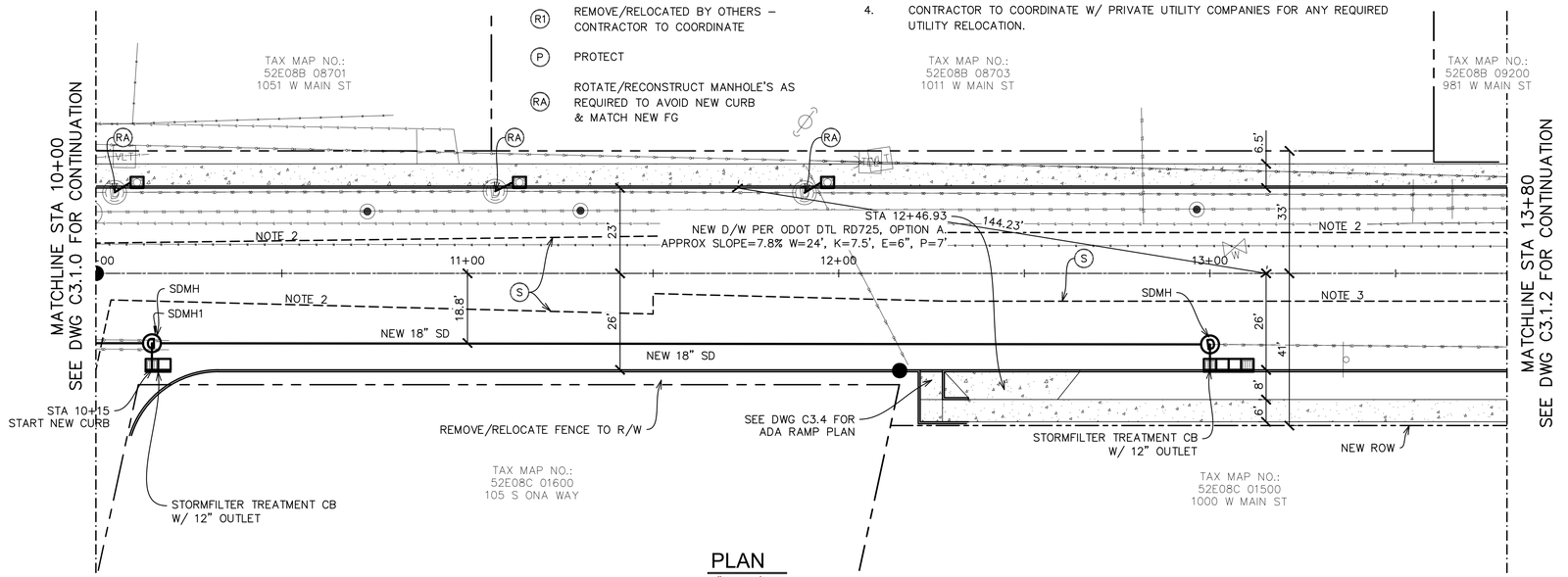
(R) REMOVE/RELOCATED BY CONTRACTOR

(R1) REMOVE/RELOCATED BY OTHERS – CONTRACTOR TO COORDINATE

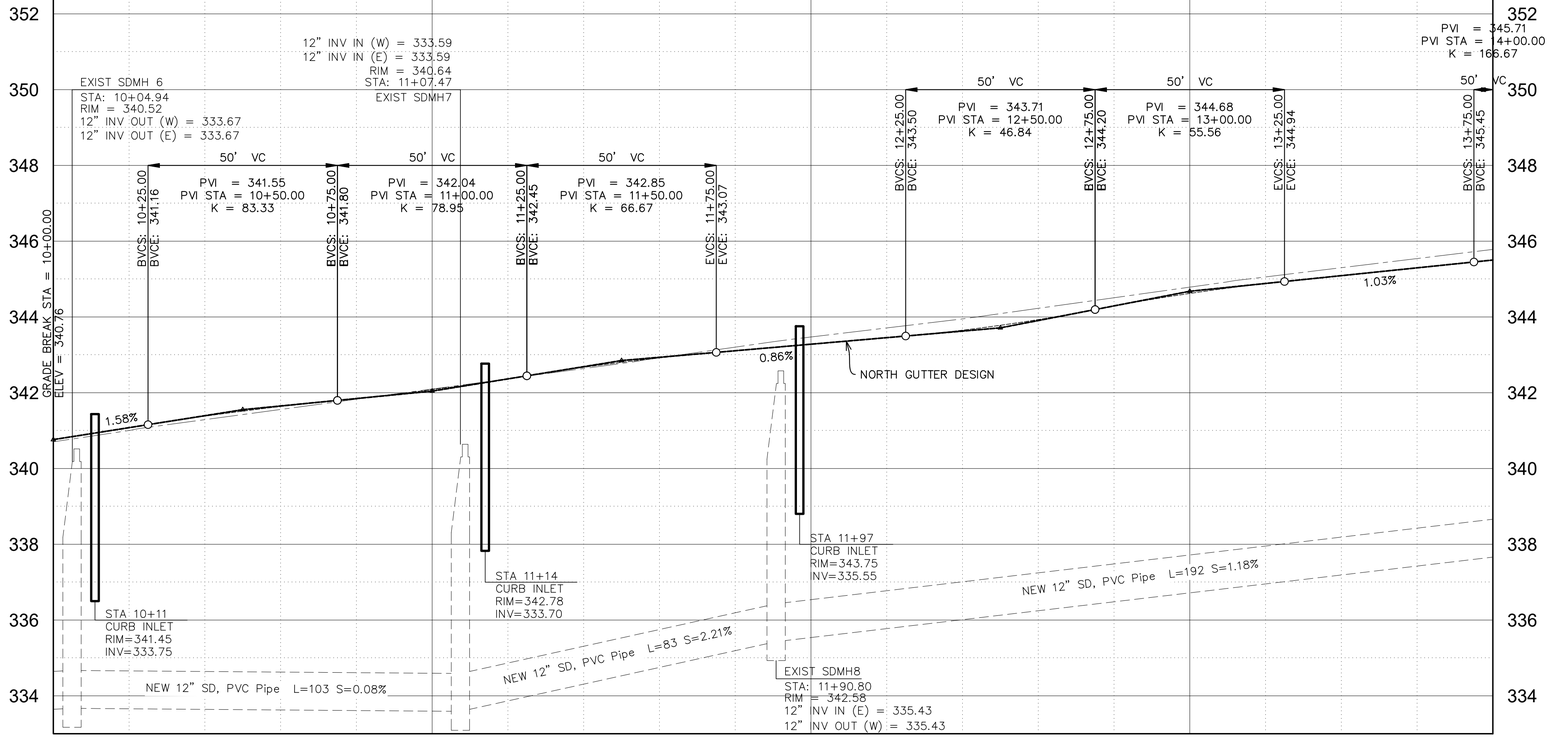
(P) PROTECT

(RA) ROTATE/RECONSTRUCT MANHOLE'S AS REQUIRED TO AVOID NEW CURB & MATCH NEW FG

NOTES:
1. SEE DWG C3.2.0 FOR SOUTH CURB DESIGN.
2. SAWCUT LINES SHOWN ARE LOCATED IN THE CENTER OF THE NEW TRAVEL LANE.
3. SAWCUT LINES LOCATED AT THE NORTH SIDE OF THE TRAVEL LANE.
4. CONTRACTOR TO COORDINATE W/ PRIVATE UTILITY COMPANIES FOR ANY REQUIRED UTILITY RELOCATION.



PLAN
1" = 20'



NORTH CURB PROFILE
1" = 20' H, 1" = 2' V

0 10 20 40
(feet)

NO.	DATE	DESCRIPTION	BY
		REVISIONS	
1			

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING 1"
IF NOT ONE INCH, ADJUST SCALES ACCORDINGLY

DSN. SAW
DRN. AR
CKD. SAW
DATE: SEP 2021

REGISTERED PROFESSIONAL ENGINEER
OREGON JULY 16, 1982 STEVEN A. WARD
11843
RENEWS: 6/30/2024

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HIGHWAY 211 IMPROVEMENTS
HOME FIRST DEVELOPMENT PARTNERS

MOLALLA HIGHWAY
NORTH PLAN–PROFILE
STA 10+00 to STA 13+80

DRAWING
C3.1.1

JOB NUMBER
3312.0000.0

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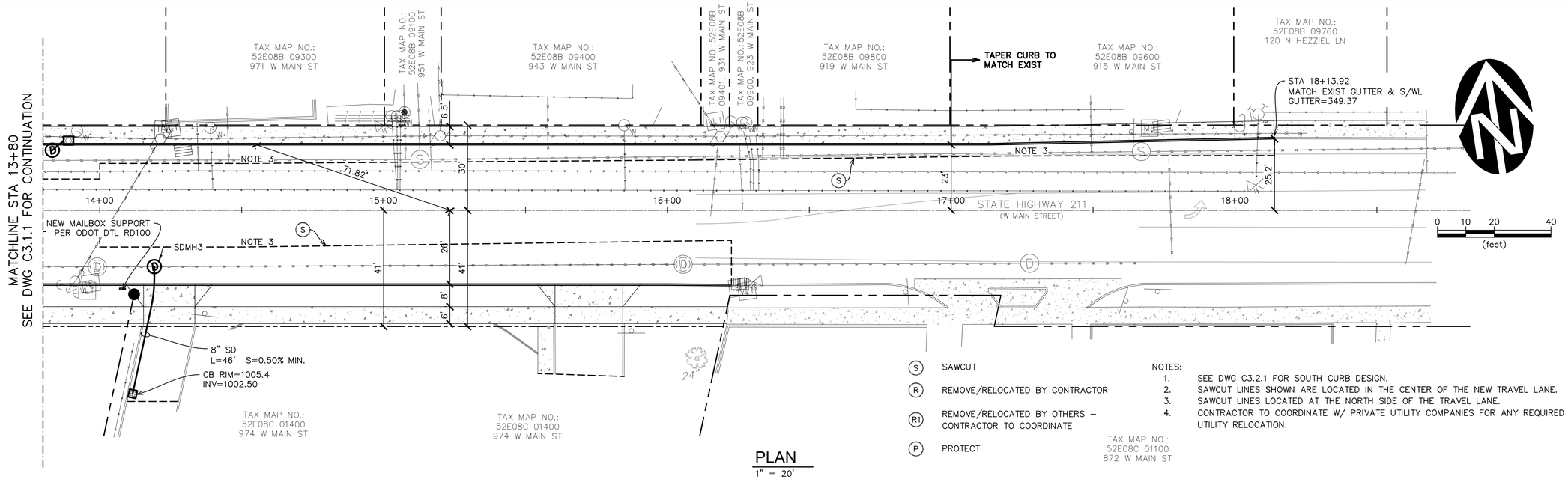


PLAN
1" = 20'

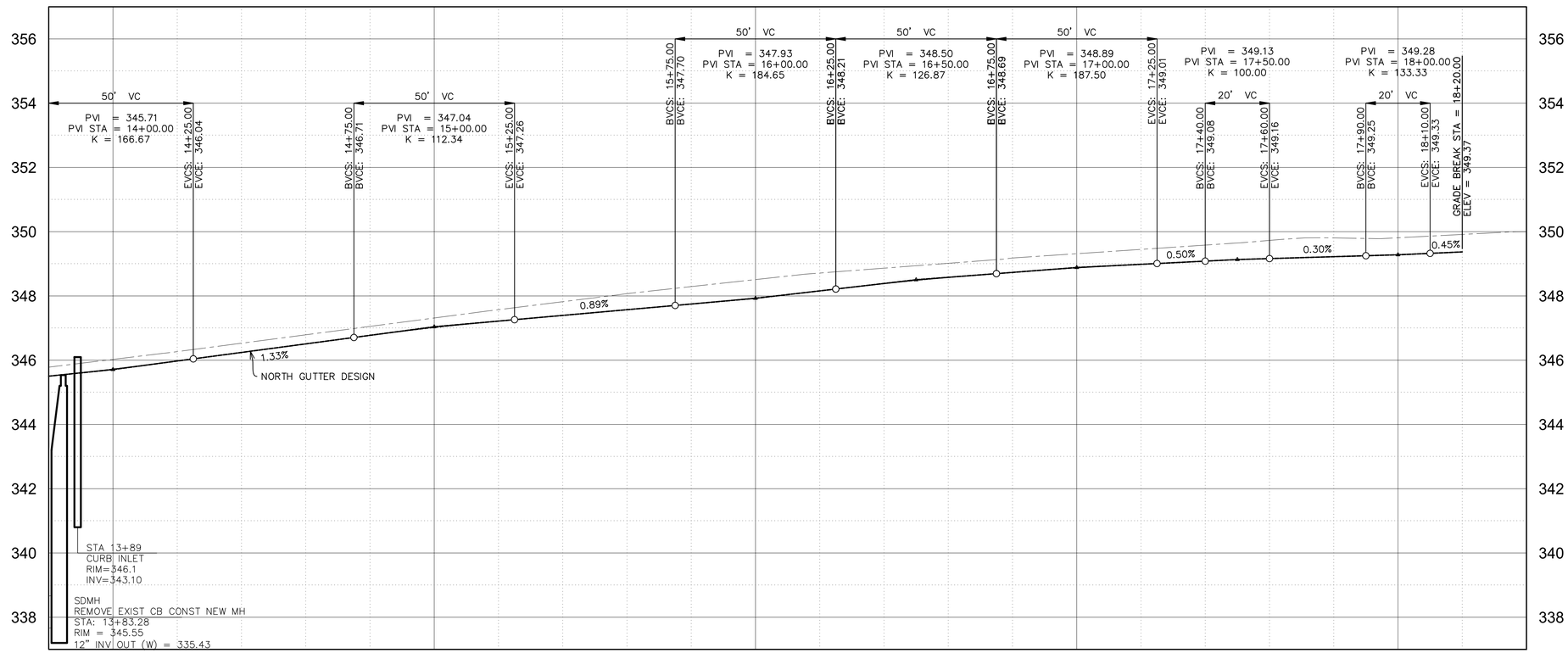
(S) SAWCUT

(R) REMOVE/RELOCATED BY CONTRACTOR

(R1) REMOVE/RELOCATED BY OTHERS – CONTRACTOR TO COORDINATE

(P) PROTECT

NOTES:
1. SEE DWG C3.2.1 FOR SOUTH CURB DESIGN.
2. SAWCUT LINES SHOWN ARE LOCATED IN THE CENTER OF THE NEW TRAVEL LANE.
3. SAWCUT LINES LOCATED AT THE NORTH SIDE OF THE TRAVEL LANE.
4. CONTRACTOR TO COORDINATE W/ PRIVATE UTILITY COMPANIES FOR ANY REQUIRED UTILITY RELOCATION.



NORTH CURB PROFILE
1" = 20' H, 1" = 2' V

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NO.	DATE	DESCRIPTION	BY
1		REVISIONS	

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

DSN. SAW
DRN. AR
CKD. SAW
DATE: SEP 2021

REGISTERED PROFESSIONAL ENGINEER
OREGON JULY 16, 1982 STEVEN A. WARD
11843
RENEWS: 6/30/2024

WESTECH ENGINEERING, INC.
CONSULTING ENGINEERS AND PLANNERS
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HIGHWAY 211 IMPROVEMENTS
HOME FIRST DEVELOPMENT PARTNERS

MOLALLA HIGHWAY
NORTH PLAN–PROFILE
STA 14+00 to 18+40

DRAWING
C3.1.2

JOB NUMBER
3312.0000.0

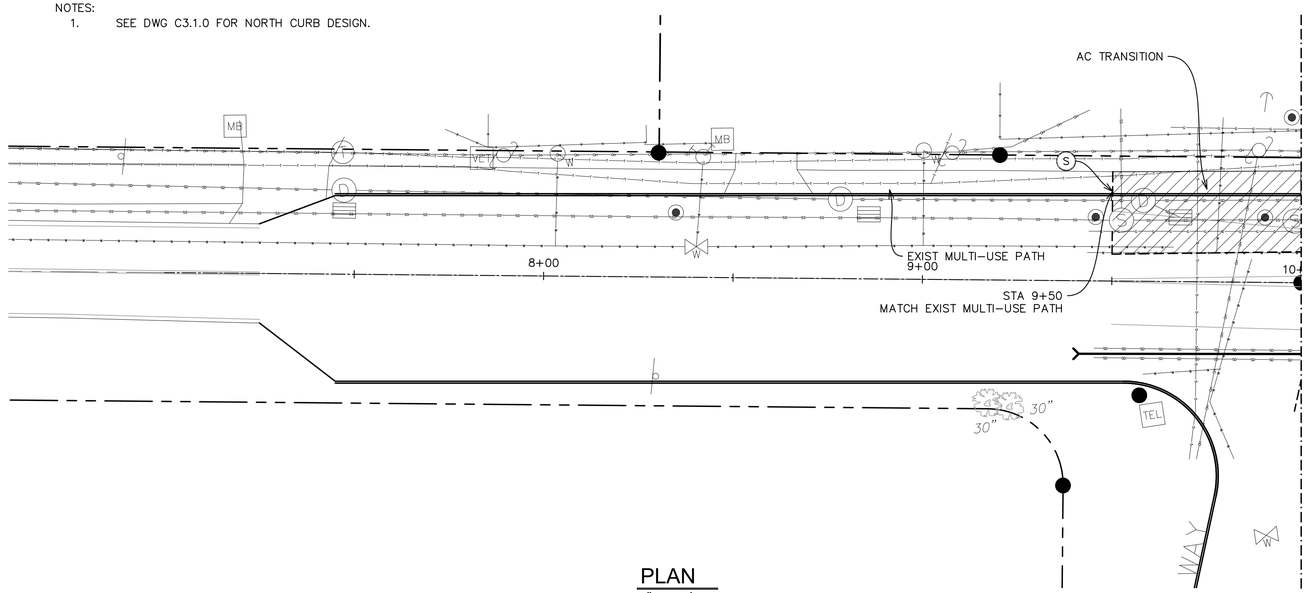
(S) SAWCUT

(R) REMOVE/RELOCATED BY CONTRACTOR

(R1) REMOVE/RELOCATED BY OTHERS – CONTRACTOR TO COORDINATE

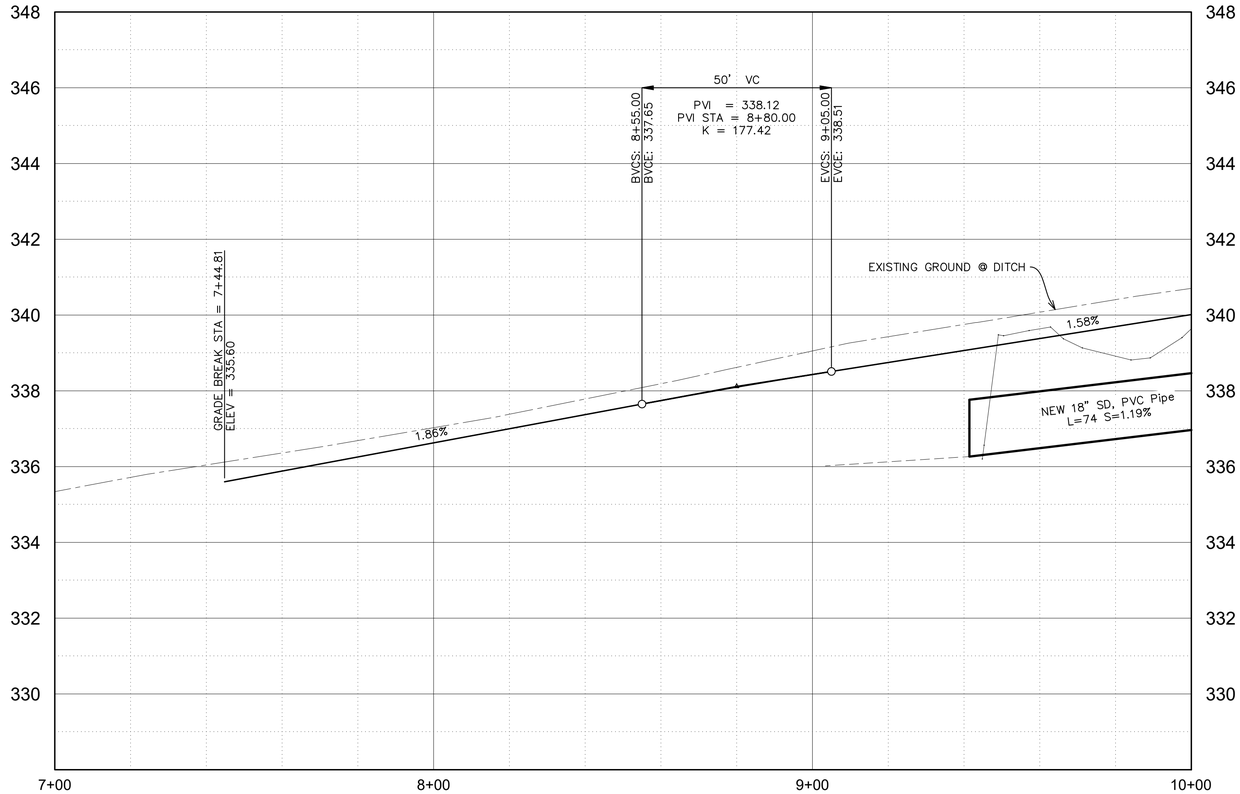
(P) PROTECT

NOTES:
1. SEE DWG C3.1.0 FOR NORTH CURB DESIGN.



MATCHLINE STA 10+00
SEE DWG C3.2.1 FOR CONTINUATION

PLAN
1" = 20'



SOUTH CURB PROFILE
1" = 20' H, 1" = 2' V

0 10 20 40
(feet)

NO.	DATE	DESCRIPTION	BY
		REVISIONS	
1			

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
IF NOT ONE INCH, ADJUST SCALES ACCORDINGLY

DSN. SAW
DRN. AR
CKD. SAW
DATE: SEP 2021

REGISTERED PROFESSIONAL ENGINEER
OREGON JULY 16, 1987 STEVEN A. WARD
RENEWS: 6/30/2024

WESTECH ENGINEERING, INC.
CONSULTING ENGINEERS AND PLANNERS
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HIGHWAY 211 IMPROVEMENTS
HOME FIRST DEVELOPMENT PARTNERS

MOLLALLA HIGHWAY
SOUTH PLAN–PROFILE
STA 7+00 to STA 10+00

DRAWING
C3.2.0

JOB NUMBER
3312.0000.0

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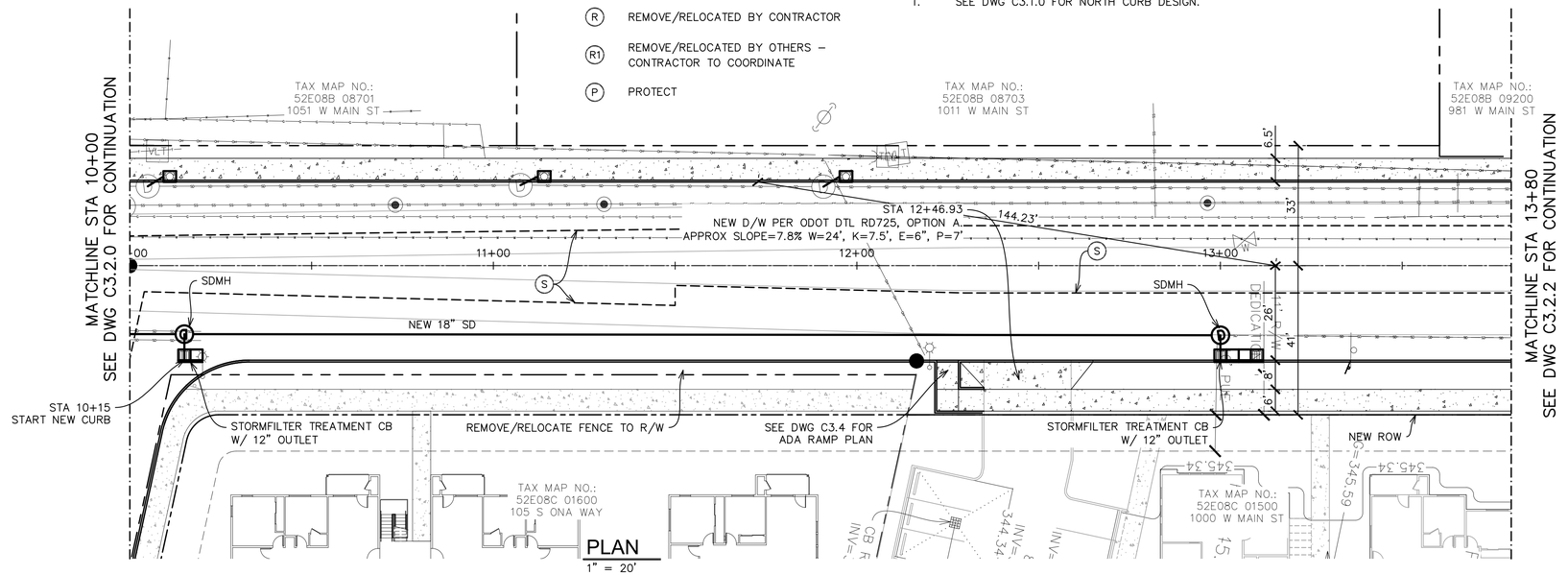
(S) SAWCUT

(R) REMOVE/RELOCATED BY CONTRACTOR

(R1) REMOVE/RELOCATED BY OTHERS – CONTRACTOR TO COORDINATE

(P) PROTECT

NOTES:
1. SEE DWG C3.1.0 FOR NORTH CURB DESIGN.



PLAN
1" = 20'

SOUTH CURB PROFILE
1" = 20' H, 1" = 2' V

0 10 20 40
(feet)

NO.	DATE	DESCRIPTION	BY
1		REVISIONS	

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

DSN. SAW
DRN. AR
CKD. SAW
DATE: SEP 2021

REGISTERED PROFESSIONAL ENGINEER 11843
OREGON JULY 16, 1982 STEVEN A. WARD
RENEWS: 6/30/2024

WESTECH ENGINEERING, INC.
CONSULTING ENGINEERS AND PLANNERS
3841 Fairview Industrial Dr. S.E., Suite 100, Salem, OR 97302
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HIGHWAY 211 IMPROVEMENTS
HOME FIRST DEVELOPMENT PARTNERS

MOLLALLA HIGHWAY
SOUTH PLAN–PROFILE
STA 10+00 to STA 13+80

DRAWING
C3.2.1

JOB NUMBER
3312.0000.0

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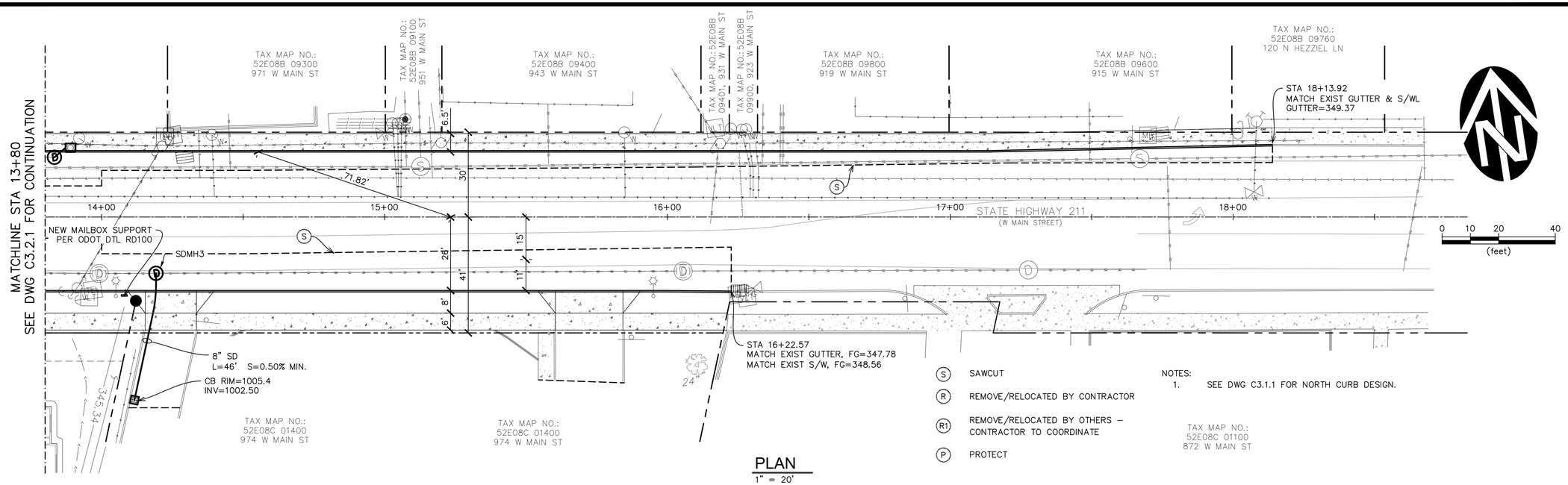
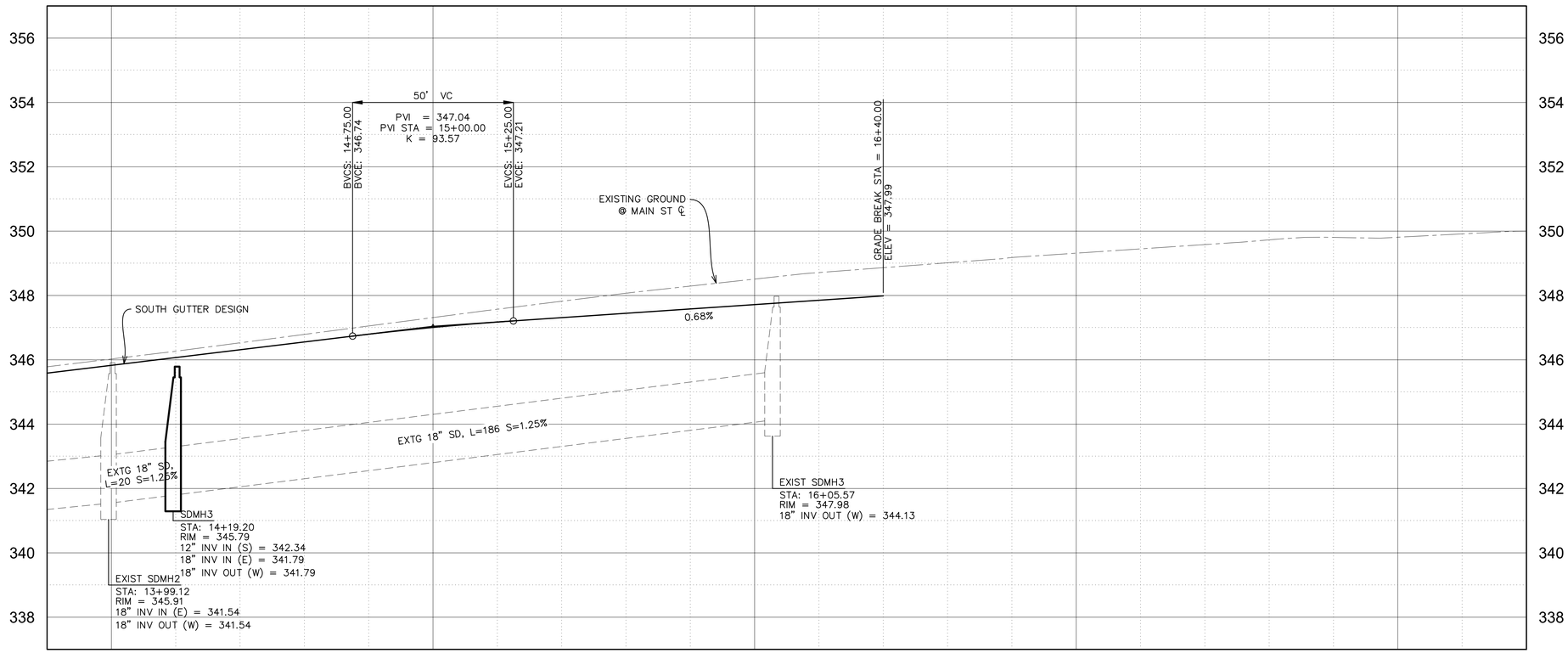


PLAN
1" = 20'



SOUTH CURB PROFILE
1" = 20' H, 1" = 2' V

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING 1"
IF NOT ONE INCH, ADJUST THIS SHEET, ADJUST SCALES ACCORDINGLY

NO.	DATE	DESCRIPTION	BY
1		REVISIONS	

DSN. SAW
DRN. AR
CKD. SAW
DATE: SEP 2021

REGISTERED PROFESSIONAL ENGINEER
OREGON JULY 16, 1987 STEVEN A. WARD
RENEWS: 6/30/2024

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HIGHWAY 211 IMPROVEMENTS
HOME FIRST DEVELOPMENT PARTNERS

MOLLALLA HIGHWAY
RIGHT PLAN–PROFILE
STA 14+00 to 18+40

DRAWING
C3.2.2

JOB NUMBER
3312.0000.0

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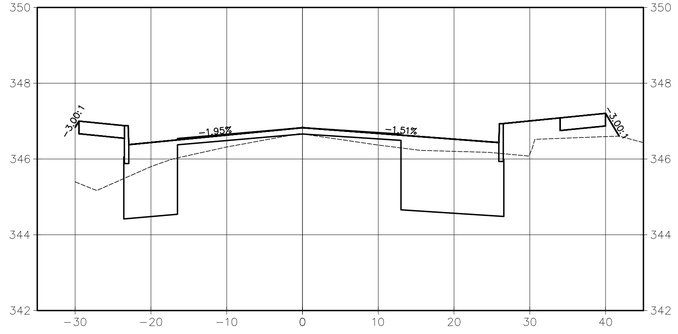
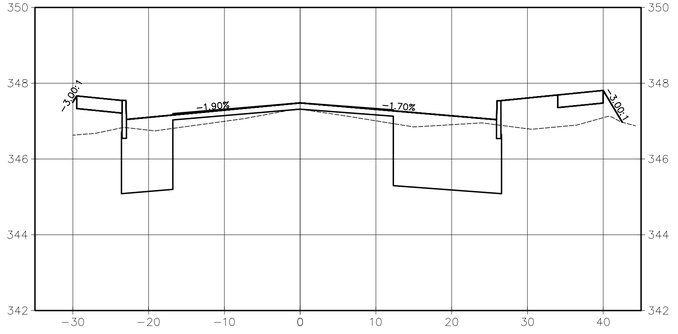
14+50.00



15+00.00



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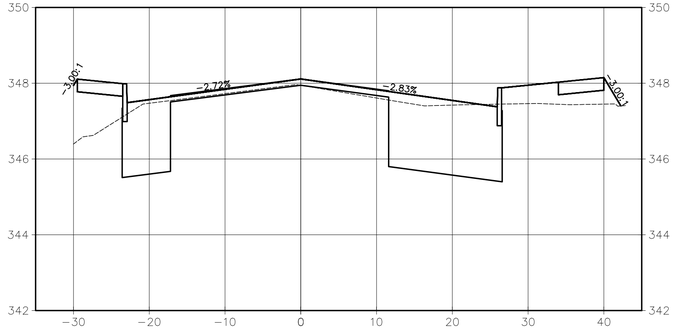
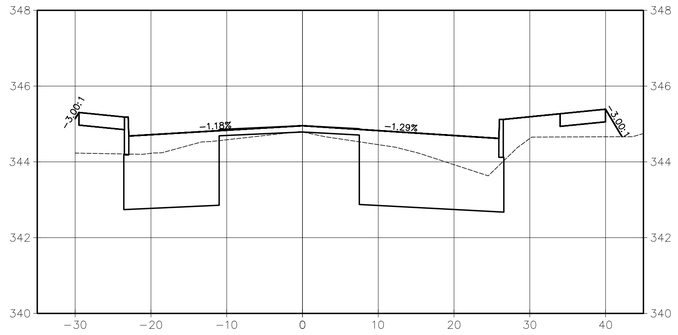


13+00.00



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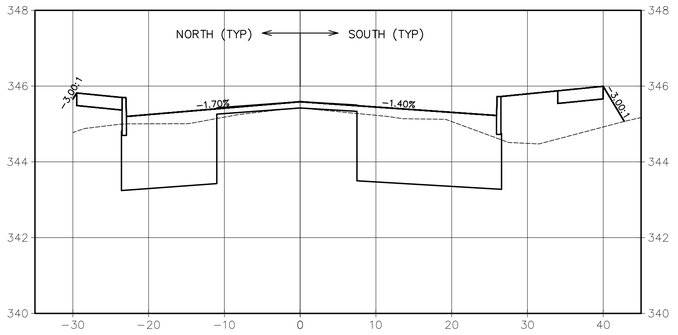
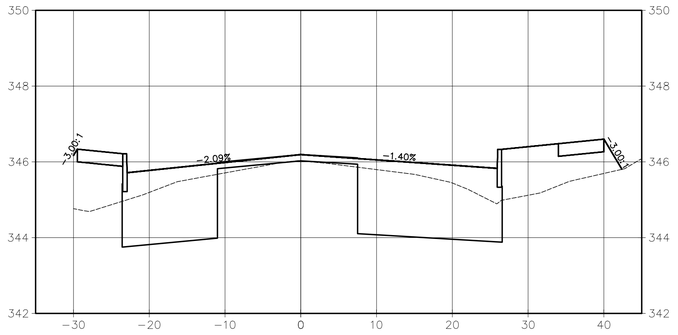


14+00.00



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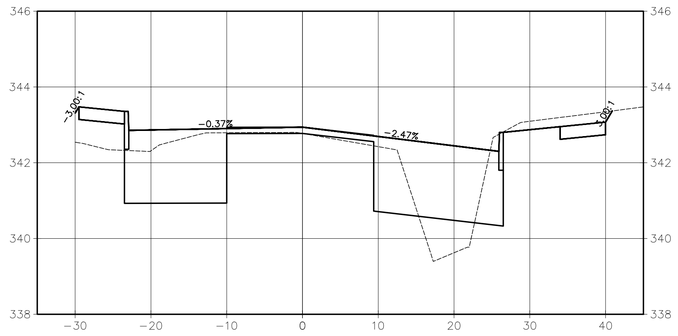
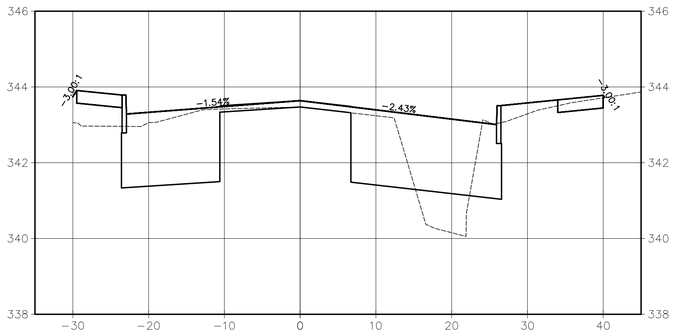


12+00.00



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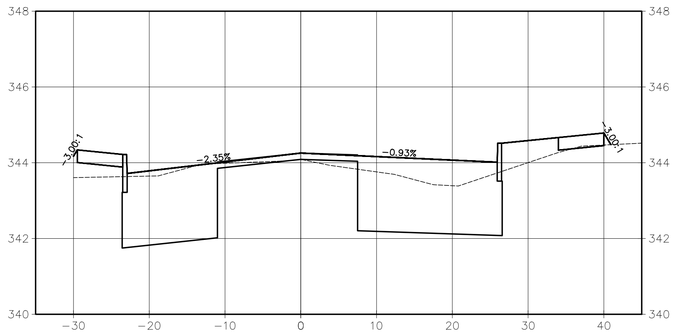

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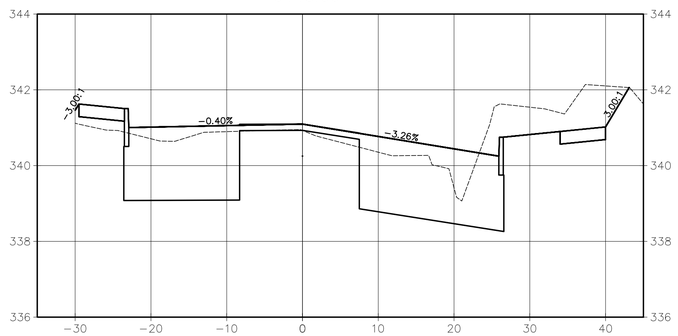

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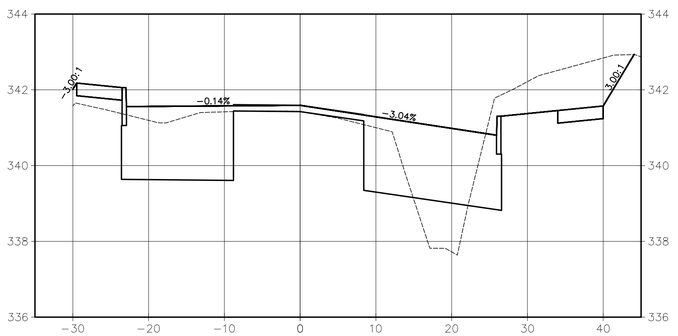

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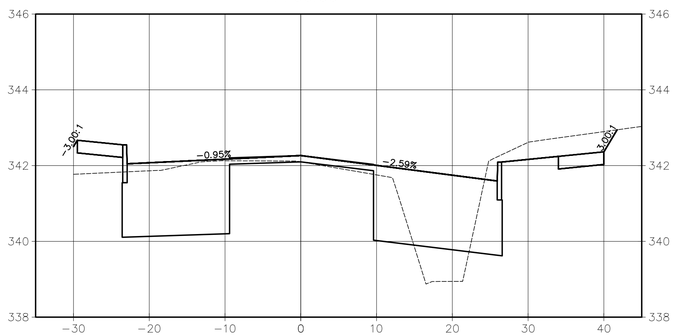

CROSS SECTIONS

1" = 10' H, 1" = 2' V

NO.	DATE	DESCRIPTION	BY
1		REVISIONS	

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
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DSN. SAW
DRN. AR
CKD. SAW
DATE: SEP 2021

REGISTERED PROFESSIONAL ENGINEER
OREGON JULY 16, 1982 STEVEN A. WARD
11843
RENEWS: 6/30/2024

WESTECH ENGINEERING, INC.
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HIGHWAY 211 IMPROVEMENTS
HOME FIRST DEVELOPMENT PARTNERS

CROSS SECTIONS

DRAWING
C3.3

JOB NUMBER
3312.0000.0

1/10/2023 5:00:04 PM
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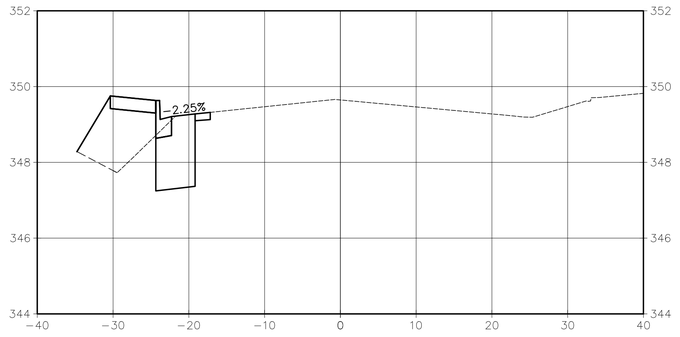

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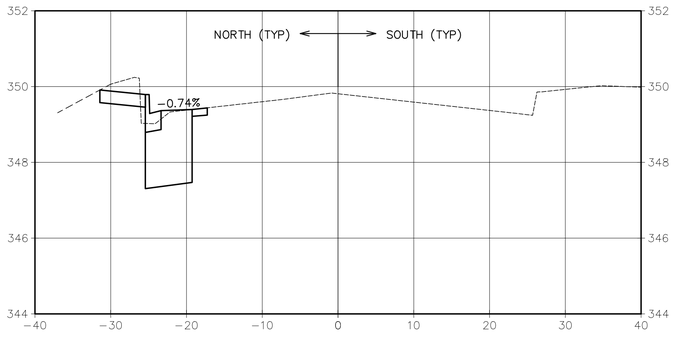

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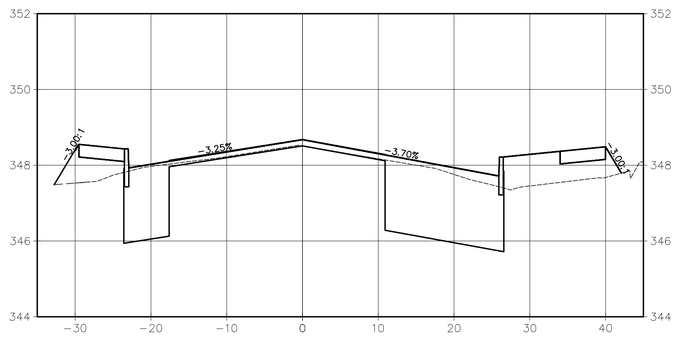

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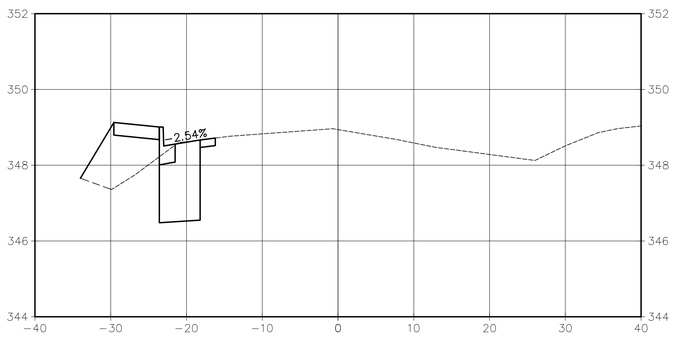

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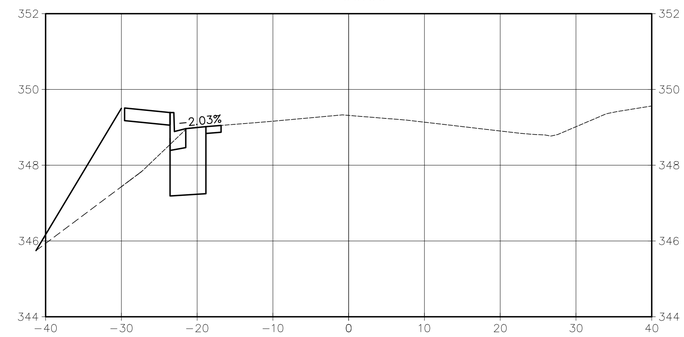

CROSS SECTIONS

1" = 10' H, 1" = 2' V

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DRN.	AR	1		
CKD.	SAW	NO.	DATE	DESCRIPTION
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REGISTERED PROFESSIONAL ENGINEER
OREGON JULY 16, 1982 STEVEN A. WARD
11843
RENEWS: 6/30/2024

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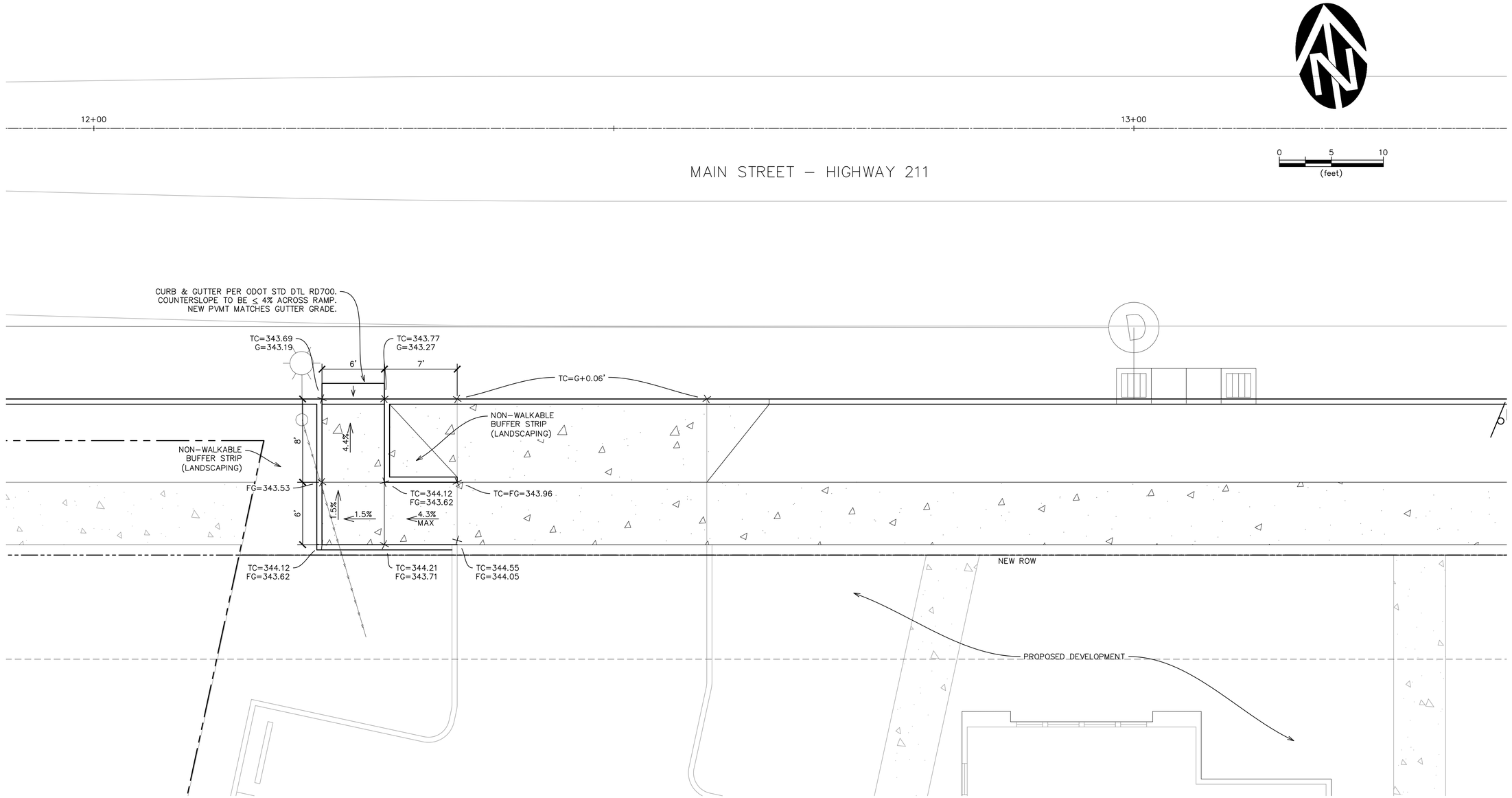
HIGHWAY 211 IMPROVEMENTS
HOME FIRST DEVELOPMENT PARTNERS

CROSS SECTIONS

DRAWING
C3.3.1

JOB NUMBER
3312.0000.0



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NO.	DATE	DESCRIPTION	BY
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DSN. SAW
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CKD. SAW
DATE: SEP 2021

REGISTERED PROFESSIONAL ENGINEER
OREGON
JULY 16, 1987
STEVEN A. WAY
11843
RENEWS: 6/30/2024

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HIGHWAY 211 IMPROVEMENTS
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ADA RAMP PLAN

DRAWING
C3.4

JOB NUMBER
3312.0000.0

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SURFACING

OVERLAY
2" AC OVERLAY

AC GRIND & OVERLAY

A.C. PAVEMENT
7" AC (3 LIFTS) OVER
18" CR BASE OVER COMPACTED SUBGRADE

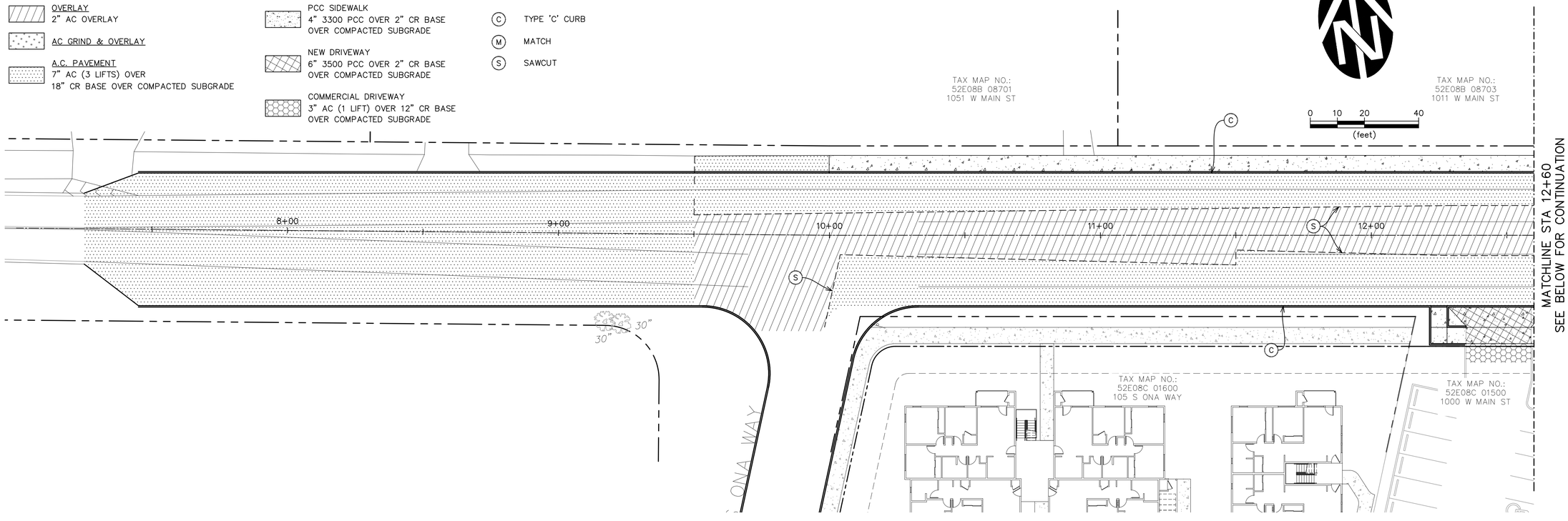
SURFACING

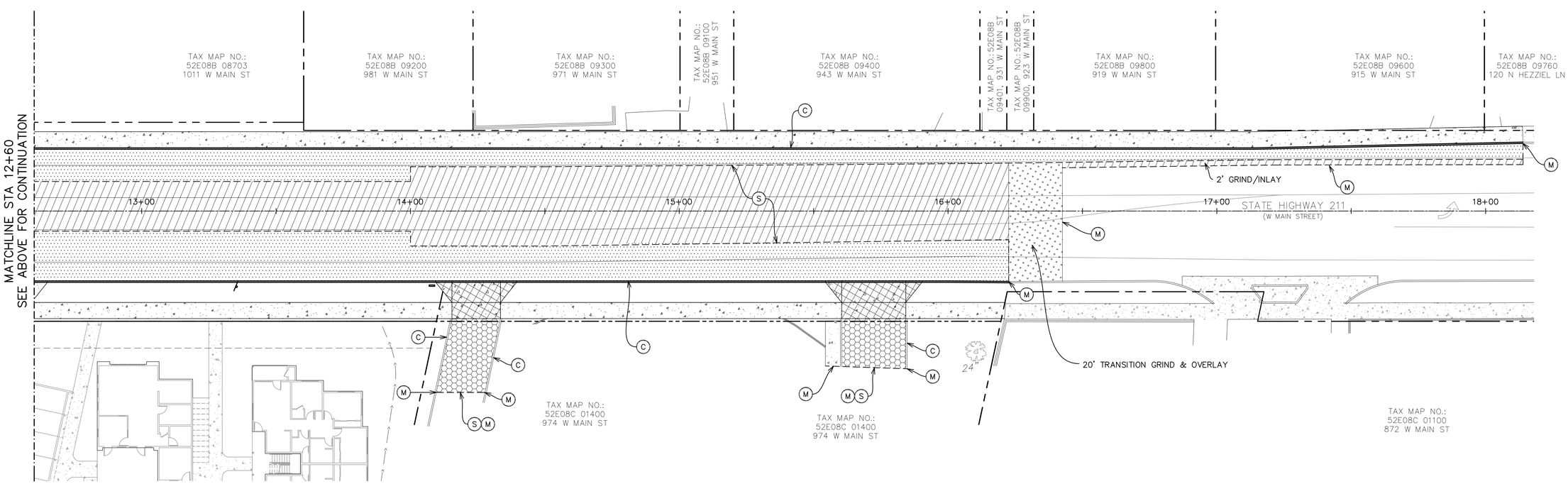
PCC SIDEWALK
4" 3300 PCC OVER 2" CR BASE
OVER COMPACTED SUBGRADE

NEW DRIVEWAY
6" 3500 PCC OVER 2" CR BASE
OVER COMPACTED SUBGRADE

COMMERCIAL DRIVEWAY
3" AC (1 LIFT) OVER 12" CR BASE
OVER COMPACTED SUBGRADE

(C) TYPE 'C' CURB
(M) MATCH
(S) SAWCUT





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11843
OREGON
JULY 16, 1987
STEVEN A. WEST
RENEWS: 6/30/2024

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HIGHWAY 211 IMPROVEMENTS
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SURFACING PLAN

DRAWING
C4.0

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3312.0000.0

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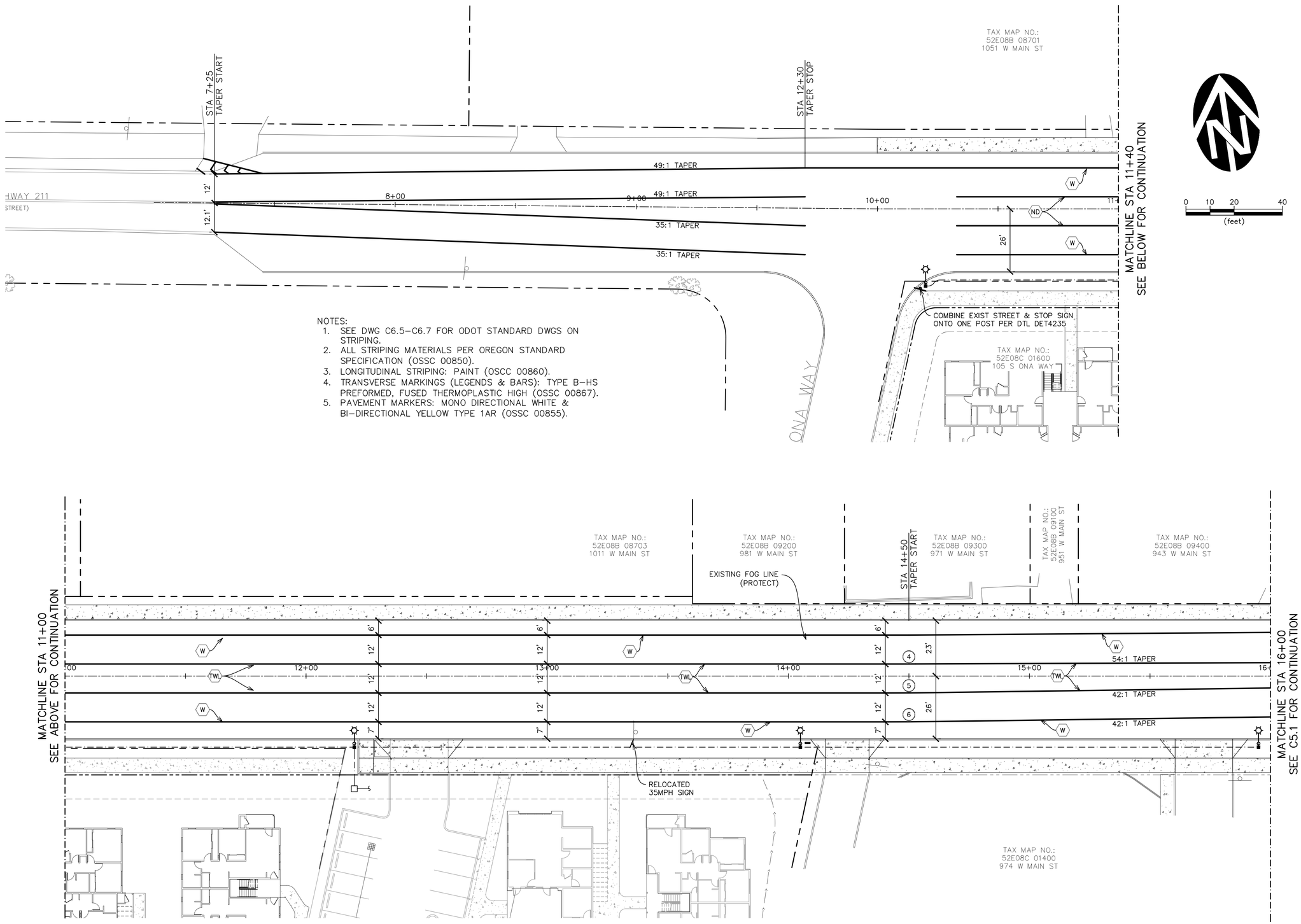

NOTES:

1. SEE DWG C6.5–C6.7 FOR ODOT STANDARD DWGS ON STRIPING.
2. ALL STRIPING MATERIALS PER OREGON STANDARD SPECIFICATION (OSSC 00850).
3. LONGITUDINAL STRIPING: PAINT (OSCC 00860).
4. TRANSVERSE MARKINGS (LEGENDS & BARS): TYPE B–HS PREFORMED, FUSED THERMOPLASTIC HIGH (OSSC 00867).
5. PAVEMENT MARKERS: MONO DIRECTIONAL WHITE & BI–DIRECTIONAL YELLOW TYPE 1AR (OSSC 00855).

NO.	DATE	DESCRIPTION	BY
1		REVISIONS	

VERIFY SCALE
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0 IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY 1"

DSN. SAW
DRN. AR
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DATE: SEP 2021

REGISTERED PROFESSIONAL ENGINEER
11843
OREGON
JULY 16, 1981
STEVEN A. WARD
RENEWS: 6/30/2024

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HIGHWAY 211 IMPROVEMENTS
HOME FIRST DEVELOPMENT PARTNERS

SIGNING & STRIPING PLAN

DRAWING
C5.0

JOB NUMBER
3312.0000.0

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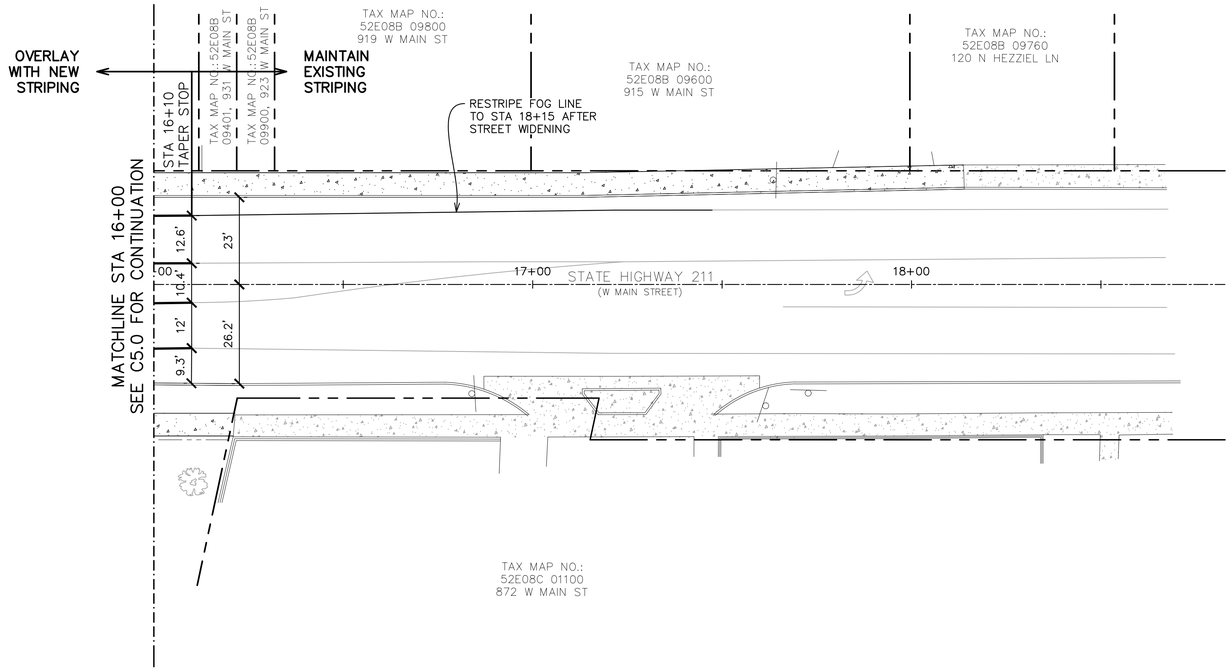

0 10 20 40
(feet)

NOTES:

1. SEE DWG C6.5–C6.7 FOR ODOT STANDARD DWGS ON STRIPING.
2. ALL STRIPING MATERIALS PER OREGON STANDARD SPECIFICATION (OSSC 00850).
3. LONGITUDINAL STRIPING: PAINT (OSCC 00860).
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5. PAVEMENT MARKERS: MONO DIRECTIONAL WHITE & BI–DIRECTIONAL YELLOW TYPE 1AR (OSSC 00855).

NO.	DATE	DESCRIPTION	BY
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DATE: SEP 2021

REGISTERED PROFESSIONAL ENGINEER
OREGON JULY 16, 1987 STEVEN A. WARD
11843
RENEWS: 6/30/2024

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HIGHWAY 211 IMPROVEMENTS
HOME FIRST DEVELOPMENT PARTNERS

SIGNING & STRIPING PLAN

DRAWING
C5.1

JOB NUMBER
3312.0000.0

1/10/2023 5:00:41 PM
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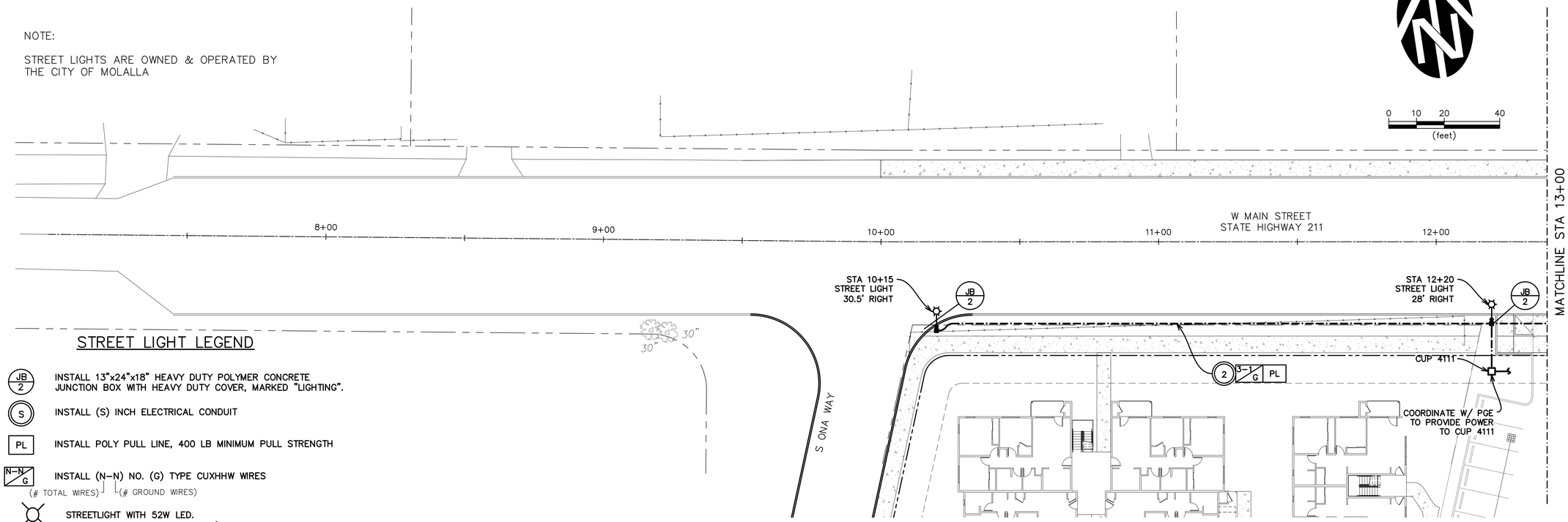
NOTE:

STREET LIGHTS ARE OWNED & OPERATED BY
THE CITY OF MOLALLA



STREET LIGHT LEGEND

- JB 2 — INSTALL 13"x24"x18" HEAVY DUTY POLYMER CONCRETE JUNCTION BOX WITH HEAVY DUTY COVER, MARKED "LIGHTING".
- S — INSTALL (S) INCH ELECTRICAL CONDUIT
- PL — INSTALL POLY PULL LINE, 400 LB MINIMUM PULL STRENGTH
- N-N / G — INSTALL (N-N) NO. (G) TYPE CUXHHW WIRES
  (# TOTAL WIRES) (# GROUND WIRES)
- STREETLIGHT WITH 52W LED.
  GRAY FIBERGLASS POLE WITH 30'
  MOUNTING HEIGHT & 6' MAST ARM.

JUNCTION BOX: FOR UNDERGROUND CONDUCTORS AND CONNECTIONS:

JUNCTION BOX DESCRIPTION: JUNCTION BOX, CONCRETE POLYMER, NO FLOOR, WITH SKID RESISTANT COVER ATTACHED BY TWO CAPTIVE PENTA-HEAD BOLTS, GRAY COLOR, AASTHTO H-10 LOADING RATING.LID LABELED "STREETLIGHTS". MANUFACTURERS NAME PERMANENTLY IDENTIFIED ON UNDERSIDE OF LID AND INSIDE WALL OF BOX.

CIRCUIT RUNS WILL USE 2" NON-METALLIC CONDUIT WITH MINIMUM #10 AWG XHHW WIRE, 2 CONDUCTORS AND 1 GROUND, 240 VOLT CIRCUIT. LOCATE WIRE WILL BE A #16 AWG ORANGE WITH BLUE TRACER WIRE ORIGINATING AT THE SERVICE CABINET RUNNING THROUGH ALL JUNCTION BOXES IN A CIRCUIT UP TO 2500' OF WIRE LENGTH TERMINATING IN A JUNCTION BOX. SPLICES IF REQUIRED MUST COMPLY WITH OREGON STANDARD DRAWING TM475 – LOOP WIRE TO LOOP FEEDER SPLICES. ALL SPLICES TO BE LOCATED IN A JUNCTION BOX.

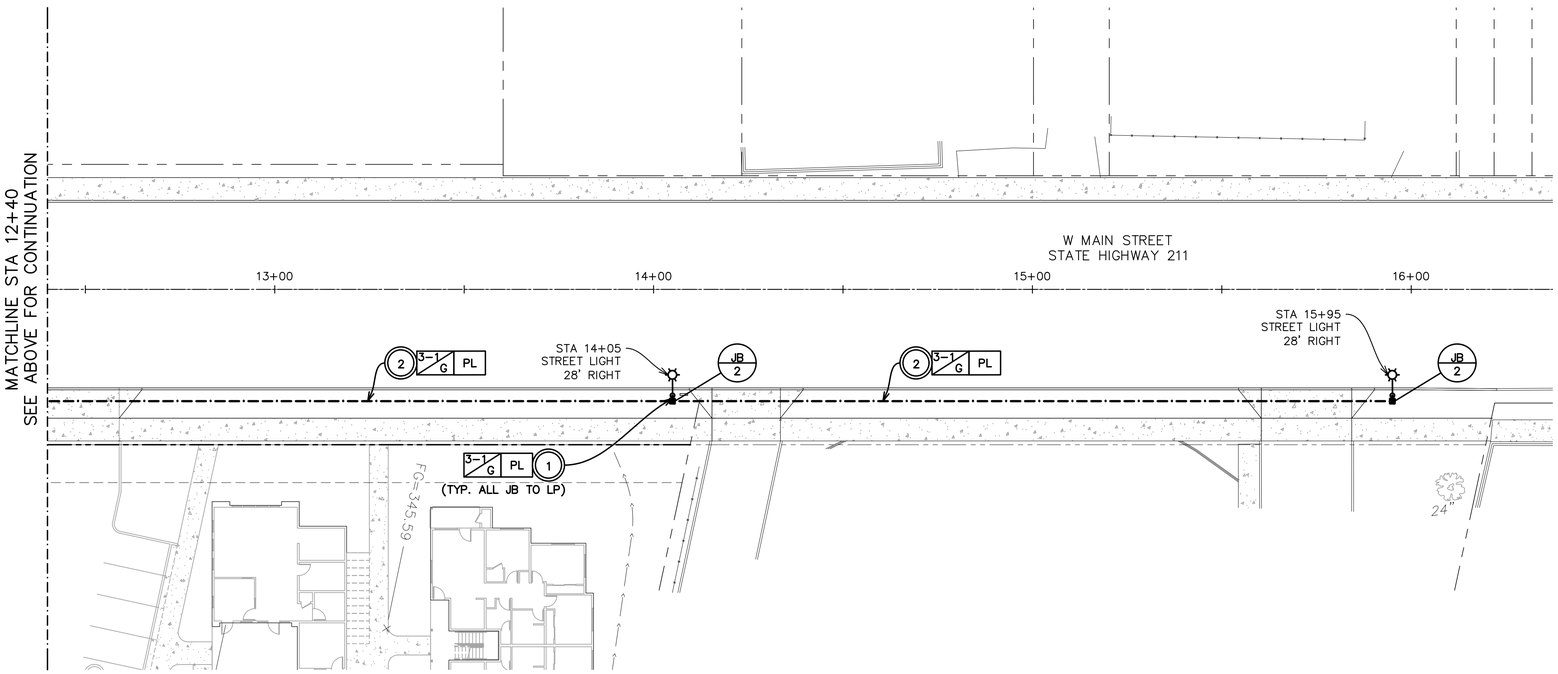
LIGHTING REQUIREMENTS:
LEOTEK 86-90W LIGHT FIXTURE MOUNTED ON 35' (30' MOUNTING HT.) DIRECT BURY FIBERGLASS POLE WITH 6' MAST ARM PER PGE REQUIREMENTS.

EACH LIGHT REQUIRED TO HAVE A PHOTOELECTRIC SENSOR SHALL BE FITTED WITH A SHORTING CAP WHERE NEEDED TO MAINTAIN THE CIRCUIT. WATTAGE AND TYPE OF LED LUMINAIRE TO PROVIDE THE REQUIRED LIGHT PATTERN MEETING CITY STANDARDS.

CITY INTERSECTION PROJECT WILL INSTALL A LONG LIFE PHOTOCELL ELECTRONIC RELAY WHICH WILL BE MOUNTED ON FIRST LIGHT OF EACH CIRCUIT. CONNECTION WILL UTILIZE A MINIMUM OF 3 #12 WIRES BACK TO SERVICE CABINET. THE LONG LIFE PHOTO CELL PGE IS USING IS A SELC EXTENDED LIFE PHOTO CONTROL, TWIST-LOCK, 105-305V (PGE P/N 90002719, CATALOG 8483).

EACH LIGHT WILL HAVE A 20" X 15" X 12" PRECAST JUNCTION BOX PLACED IN THE SIDEWALK OR WITH A 12" CONCRETE APRON IF LOCATED IN LANDSCAPING. THE LIGHT WILL CONNECT USING A 1" CONDUIT USING #10 AWG WIRES, AND FITTED WITH A 2 POLE FUSE SYSTEM SIMILAR TO A LITTLEFUSE LEY SERIES USING REUSABLE CONNECTORS AND LOCATED IN THE JUNCTION BOX.

CITY INTERSECTION PROJECT WILL INSTALL A STANDARD SERVICE CABINET, WHICH WILL BE A COOPER B-LINE CUP-4111 STREET LIGHT CONTROLLER CABINET ON AN MB1515 MOUNTING PAD INCLUDING GROUND RODS PER CODE (OR APPROVED EQUAL). 100 AMP 2 POLE MAIN BREAKER, 20 AMP 2 POLE BRANCH BREAKERS (1 PER CIRCUIT), 30 AMP 2 POLE FUSE SYSTEM CONTACTOR (1 PER CIRCUIT), AND 1 – 15 AMP TEST SWITCH WHICH WILL ACTIVATE ALL LIGHTS. CABINET WILL BE SECURED WITH A TRAFFIC SECTION PROVIDED PADLOCK.



NO.	DATE	DESCRIPTION	BY
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VERIFY SCALE
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0 1"
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DSN. SAW
DRN. AR
CKD. SAW
DATE: SEP 2021

REGISTERED PROFESSIONAL ENGINEER
OREGON
JULY 16, 1982
STEVEN A. WARD
11843
RENEWS: 6/30/2024

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HIGHWAY 211 IMPROVEMENTS
HOME FIRST DEVELOPMENT PARTNERS

STREET LIGHTING PLAN

DRAWING
C5.2

JOB NUMBER
3312.0000.0

1/10/2023 5:00:53 PM
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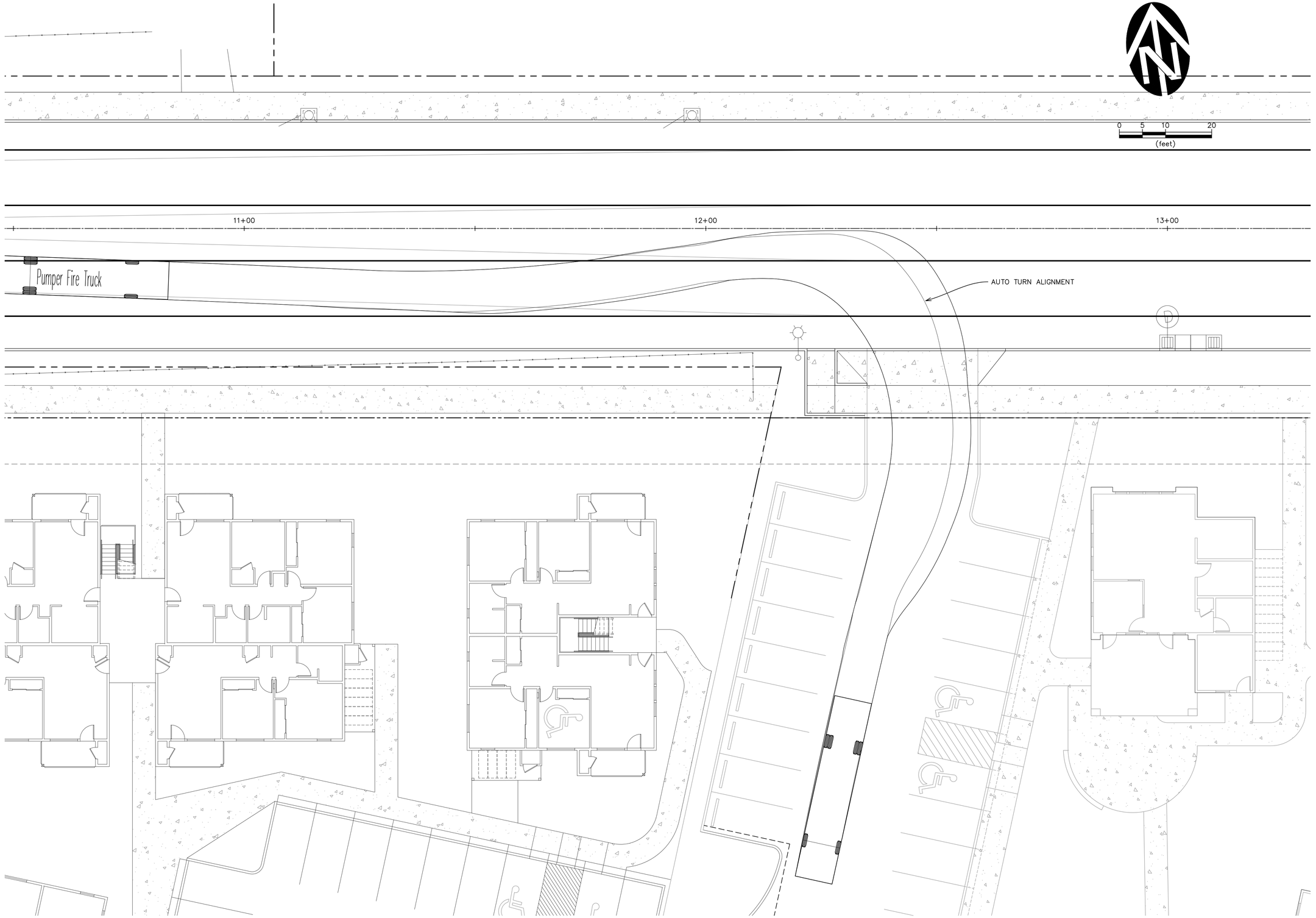

REVISIONS			
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DSN. SAW
DRN. AR
CKD. SAW
DATE: SEP 2021

REGISTERED PROFESSIONAL ENGINEER
11843
OREGON
JULY 16, 1981
STEVEN A. WARD
RENEWS: 6/30/2024

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HIGHWAY 211 IMPROVEMENTS
HOME FIRST DEVELOPMENT PARTNERS

TRUCK TURNING PLAN

DRAWING
C5.3

JOB NUMBER
3312.0000.0

1/10/2023 5:01:04 PM
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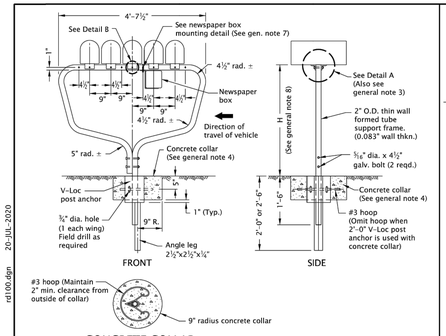
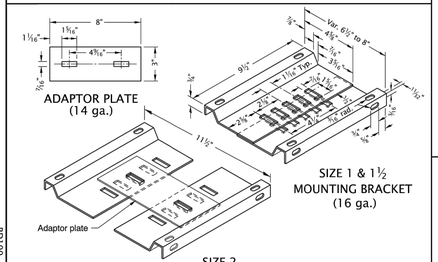


CONCRETE COLLAR
(See general note 4)

MULTIPLE SUPPORT
(Supports 5 standard (Sizes 1 & 1½) mailboxes or 4 large (Size 2) mailboxes)



SIZE 2
MOUNTING BRACKET (16 ga.)
WITH ADAPTOR PLATE (14 ga.)

RD100

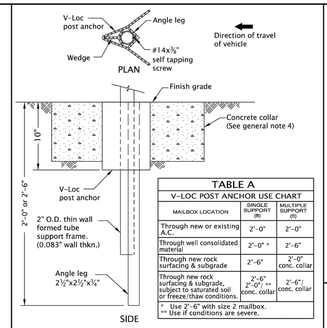
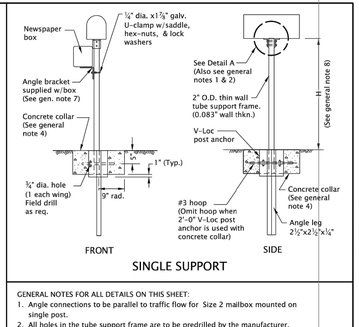


TABLE A
V-LOC POST ANCHOR USE CHART

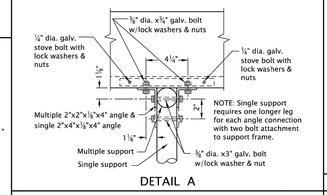
MAILBOX LOCATION	SINGLE SUPPORT (S)	MULTIPLE SUPPORT (S)
Through new or existing A.C.	2'-0"	2'-0"
Through well consolidated material	2'-0" *	2'-6"
Through new rock surfacing & subgrade	2'-6"	2'-0" conc. collar
Through new rock surfacing & subgrade, subject to saturated soil or freeze/thaw conditions.	2'-6" 2'-0"; ** conc. collar	2'-6"/ conc. collar

* Use 2'-6" with size 2 mailbox.
** Use if conditions are severe.

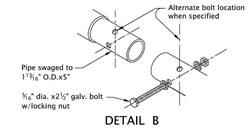
POST MOUNTING SOCKET



SINGLE SUPPORT



DETAIL A



DETAIL B

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. Angle connections to be parallel to traffic flow for Size 2 mailbox mounted on single post.
2. All holes in the tube support frame are to be predrilled by the manufacturer.
3. Size 2 mailbox mounted on a multiple support requires 2 each ⅜" dia. x¾" galv. bolts with lock washers and nuts to attach the adaptor plate to the mounting bracket. The unit will then require 4 angle connections to attach to the formed tube support frame. See Detail A.
4. Provide concrete collar when any of the following conditions exist:
   a) when required in Table A
   b) when required by project plans
   c) as directed by the Engineer
   Concrete collar, when required, to be poured in place after V-Loc post anchor has been installed, level and plumb. Do not excavate below bottom of V-Loc post anchor. Care shall be taken that no concrete is placed within anchor.
5. Other proprietary products available as listed in ODOT's QPL.
6. For mailbox installation locations, see Std. Dwg. RD101 and project plans.
7. For Newspaper Box Mounting Detail, see Std. Dwg. RD101.
8. Mounting height (H) shall be 42" nominal, measured from vehicle driving surface.
9. See project plans for detail not shown.

CALC. BOOK NO. N/A
SDR DATE 25-JUL-2017
NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

OREGON STANDARD DRAWINGS

MAILBOX SUPPORT

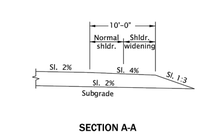
2021

DATE	REVISION DESCRIPTION

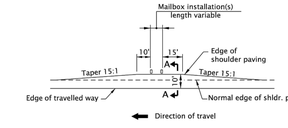
RD101

Effective Date: December 1, 2021 - May 31, 2022

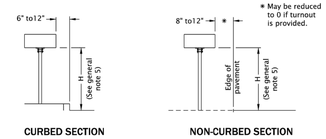
RD100



SECTION A-A



MAILBOX SERVICE TURNOUT

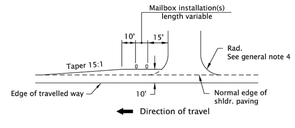


* May be reduced to 0 if turnout is provided.

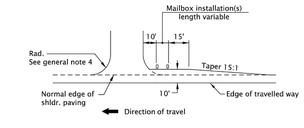
CURBED SECTION

NON-CURBED SECTION

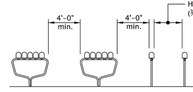
PLACEMENT



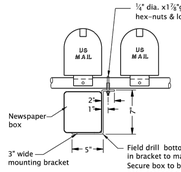
MAILBOX SERVICE TURNOUT AFTER APPROACH



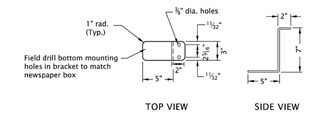
MAILBOX SERVICE TURNOUT BEFORE APPROACH



SUPPORT SPACING



NEWSPAPER BOX
MOUNTING DETAIL



TOP VIEW

SIDE VIEW

NEWSPAPER BOX
MOUNTING BRACKET DETAIL
(14 ga.)

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. All holes in the tube support frame are to be predrilled by the manufacturer.
2. Other proprietary products available as listed in ODOT's QPL.
3. For mailbox support details, see Std. Dwg. RD100.
4. For approach details, see Std. Dwg. RD715.
5. Mounting height (H) shall be 42" nominal, measured from vehicle driving surface.
6. See project plans for details not shown.

CALC. BOOK NO. N/A
SDR DATE 25-JUL-2017
NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

OREGON STANDARD DRAWINGS

MAILBOX INSTALLATION

2021

DATE	REVISION DESCRIPTION

RD101

Effective Date: December 1, 2021 - May 31, 2022

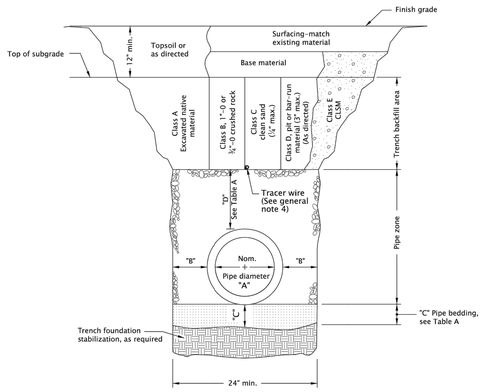
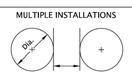


TABLE A

"A" (in)	"B" (in)	"C" (in)	"D" (in)
4	10	4	8
6	10	4	8
8	10	6	10
10	10	6	10
12	12	6	10
15	12	6	10
18	16	6	12
21	16	6	12
24	18	6	12
30	18	6	12
36	24	6	14
42	24	6	14
48	24	6	14
54	24	6	14
60	24	6	14
66	24	6	14
72	24	6	14

For pipes over 72" diameter, see general note 3.

MULTIPLE INSTALLATIONS



DIAMETER	MIN. SPACE BETWEEN PIPES
Up to 48"	24"
48" to 72"	One half (½) dia. of pipe

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. Surfacing of paved areas shall comply with street cut Std. Dwg. RD302.
2. For pipe installation in embankment areas where the trench method will not be used and the pipe is ≥ 36" diameter, increase dimension "B" to nominal pipe diameter.
3. Pipes over 72" diameter are structures, and are not applicable to this drawing.
4. See Std. Dwg. RD336 for tracer wire details (When required).

CALC. BOOK NO. N/A
SDR DATE 14-JUL-2014
NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

OREGON STANDARD DRAWINGS

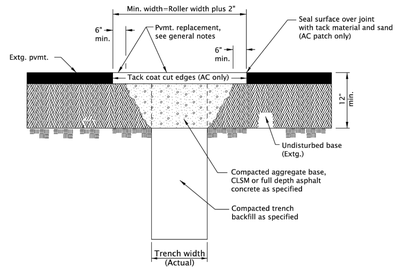
TRENCH BACKFILL, BEDDING, PIPE ZONE AND MULTIPLE INSTALLATIONS

2021

DATE	REVISION DESCRIPTION

RD300

Effective Date: December 1, 2021 - May 31, 2022



GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. All existing AC or PCC pavement shall be sawcut prior to repaving.
2. Concrete pavement shall be replaced with concrete to a minimum thickness of 8" or to the thickness of removed pavement, whichever is greater.
3. For joining new concrete to existing concrete, see contract plans for sepecific details.
4. Place AC mix minimum thkn. of 6" or the thkn. of the removed pavement, whichever is greater. Compact as specified.

CALC. BOOK NO. N/A
SDR DATE 20-JUL-2020
NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

OREGON STANDARD DRAWINGS

STREET CUT

2021

DATE	REVISION DESCRIPTION

RD302

Effective Date: December 1, 2021 - May 31, 2022

NO.	DATE	DESCRIPTION	BY
1		REVISIONS	

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

DSN. SAW
DRN. AR
CKD. SAW
DATE: SEP 2021

REGISTERED PROFESSIONAL ENGINEER
OREGON JULY 19, 2002
STEVEN A. WARD
RENEWS: 6/30/2024

WESTECH ENGINEERING, INC.
CONSULTING ENGINEERS AND PLANNERS
3841 Fairview Industrial Dr. S.E., Suite 100, Salem, OR 97302
Phone: (503) 585-2474 Fax: (503) 585-3986
E-mail: westech@westech-eng.com

HIGHWAY 211 IMPROVEMENTS
HOME FIRST DEVELOPMENT PARTNERS

ODOT DETAILS

DRAWING
C6.0

JOB NUMBER
3312.0000.0

rd100.dgn 20-JUL-2020
rd101.dgn 20-JUL-2020
rd300.dgn 20-JUL-2020
rd302.dgn 26-JUL-2020

1/10/2023 5:01:23 PM
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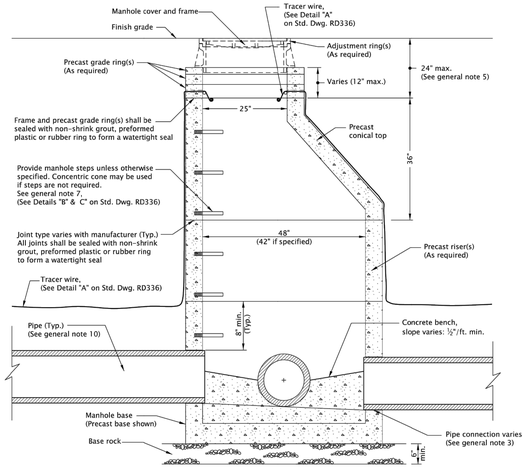
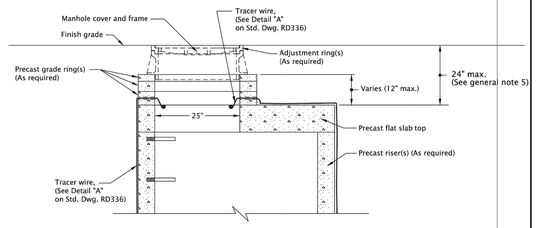


MANHOLE WITH PRECAST CONICAL TOP



MANHOLE WITH PRECAST FLAT SLAB TOP

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. All precast products shall conform to requirements of ASTM C478.
2. Standard precast manhole section diameter shall be 48". Use 42" if specified by the Engineer.
3. See Std. Dwg. RD345 for pipe to manhole connections.
4. See Std. Dwg. RD344 for manhole base section.
5. Adjust 24" maximum.
6. All connecting pipes shall have a tracer wire, or approved alternate.
7. See Std. Dwg. RD336 for manhole steps.
8. See Std. Dwg. RD336 for details not shown.
9. See Std. Dwg. RD356 for manhole covers and frames, manhole adjustment rings, etc.
10. Max. pipe diameter varies with pipe material.
11. See Std. Dwg. RD342 for shallow manholes.
12. Location, elevation, diameter, slope, and number of pipe(s) varies, see project plans.

CALC. BOOK NO. N/A

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

SDR DATE 21-JUN-2019

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

OREGON STANDARD DRAWINGS

STANDARD STORM SEWER MANHOLE

2021

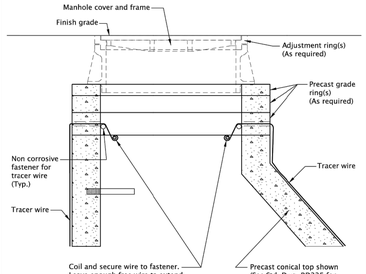
DATE	REVISION DESCRIPTION

RD335

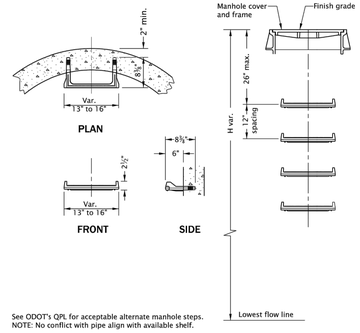
Effective Date: December 1, 2021 - May 31, 2022

RD335

rd335.dgn 20-JUL-2020

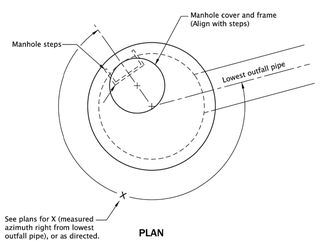


DETAIL "A"
TRACER WIRE
(See general note 6)



See ODOT's QPL for acceptable alternate manhole steps.
NOTE: No conflict with pipe align with available shelf.

DETAIL "B"
MANHOLE STEPS
(See general note 7)



DETAIL "C"
PRECAST CONICAL TOP
OR
PRECAST FLAT SLAB TOP
AND MANHOLE STEPS ORIENTATION
(See general note 7)

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. All precast products shall conform to requirements of ASTM C478.
2. Standard precast manhole section diameter shall be 48". Use 42" if specified by the Engineer.
3. See Std. Dwg. RD345 for pipe to manhole connections.
4. See Std. Dwg. RD344 for manhole base section.
5. Adjust 24" maximum.
6. All connecting pipes shall have a tracer wire, or approved alternate. Place tracer wire directly over pipe centerline and on top of the pipe zone material.
7. Steps shall conform to requirements of ASTM C478. When H=42" or less omit steps. See Detail "C" for alignment of steps, and manhole cover and frame.
8. See Std. Dwg. RD335 for details not shown.
9. See Std. Dwg. RD356 for manhole covers and frames, manhole adjustment rings, etc.
10. Max. pipe diameter varies with pipe material.
11. See Std. Dwg. RD342 for shallow manholes.
12. See project plans for details not shown.

CALC. BOOK NO. N/A

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

SDR DATE 16-JAN-2019

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

OREGON STANDARD DRAWINGS

STANDARD MANHOLE DETAILS

2021

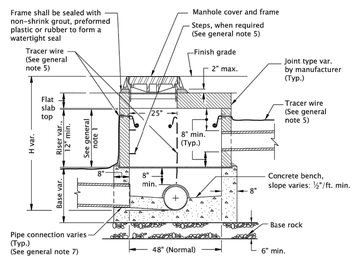
DATE	REVISION DESCRIPTION

RD336

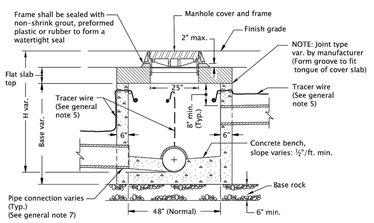
Effective Date: December 1, 2021 - May 31, 2022

RD336

rd336.dgn 20-JUL-2020



SECTION A-A
(Base, Riser & Flat Slab Top)



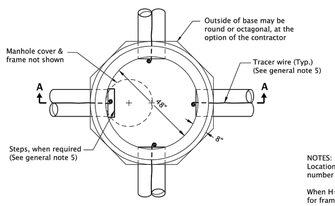
SECTION B-B
(Base, Riser & Flat Slab Top)

LEGEND
(See general note 3)

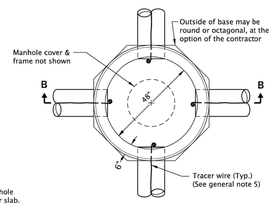
- Cast-in-Place concrete
- Precast concrete
- 1: 2 cement mortar
- Sewer pipe

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. Minimum length if laterals or connections are inserted: outside diameter of pipe + 17".
2. Use Section B-B when length of riser becomes less than minimum shown.
3. Base may be precast or cast-in-place.
4. All precast products shall conform to the requirements of ASTM C478.
5. See Std. Dwg. RD336 for details not shown.
6. See Std. Dwg. RD344 for manhole base section.
7. See Std. Dwg. RD345 for pipe to manhole connections.
8. See Std. Dwg. RD356 for manhole covers and frames.
9. All concrete shall be commercial grade concrete.
10. Max. pipe diameter varies with pipe material.
11. Location, elevation, diameter, slope, and number of pipe(s) varies, see project plans.



TOP VIEW
(Base, Riser & Flat Slab Top)



TOP VIEW
(Base & Flat Slab Top)

NOTES:
Location, elevation, and number of pipe(s) varies.

When H=42" or less make hole for frame in center of cover slab.

When H=42" or less omit steps.

CALC. BOOK NO. N/A

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

SDR DATE 21-JUL-2015

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

OREGON STANDARD DRAWINGS

SHALLOW MANHOLES

2021

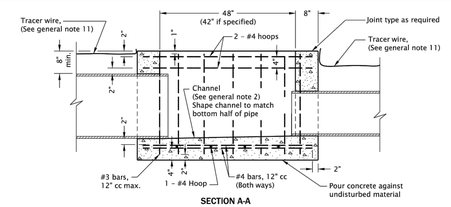
DATE	REVISION DESCRIPTION

RD342

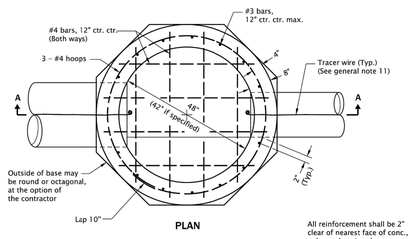
Effective Date: December 1, 2021 - May 31, 2022

RD342

rd342.dgn 20-JUL-2020



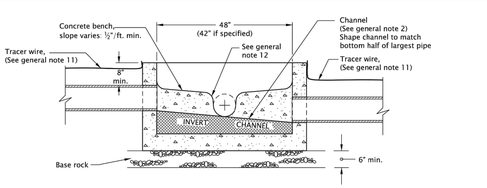
SECTION A-A



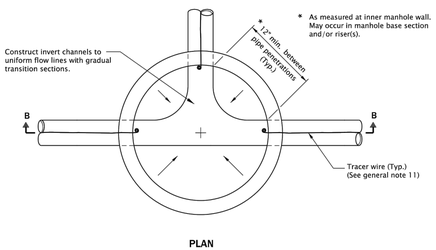
PLAN

All reinforcement shall be 2" clear of nearest face of conc., unless otherwise shown.

CAST IN PLACE MANHOLE BASE
(For invert channel details, see precast option at right)



SECTION B-B



* As measured at inner manhole wall. May occur in manhole base section and/or riser(s).

PLAN

PRECAST MANHOLE BASE

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. All concrete shall be commercial grade concrete.
2. Channels shall be constructed to provide smooth slopes and radii to outlet pipe.
3. Bases may be precast or cast in place.
4. Max. pipe diameter varies with pipe material.
5. Use on 42" and 48" diameter manhole.
6. Extend pipe into manhole and grout smooth. Pipe(s) may extend 2" max. beyond the interior manhole wall.
7. Location, elevation, diameter, slope, and number of pipe(s) varies, see project plans.
8. All precast products shall conform to the requirements of ASTM C478.
9. See Std. Dwg. RD345 for pipe to manhole connections.
10. See Std. Dwg. RD336 for manhole steps details.
11. See Std. Dwg. RD336 for tracer wire details.
12. At spring line of pipe, extend channel up to crown line on 12:1 batter.

CALC. BOOK NO. N/A

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

SDR DATE 14-JUL-2014

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

OREGON STANDARD DRAWINGS

STANDARD MANHOLE BASE SECTION

2021

DATE	REVISION DESCRIPTION

RD344

Effective Date: December 1, 2021 - May 31, 2022

RD344

rd344.dgn 20-JUL-2020

BY	DESCRIPTION	NO.	DATE
	REVISIONS	1	

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY
0 1"

DSN. SAW
DRN. AR
CKD. SAW
DATE: SEP 2021

REGISTERED PROFESSIONAL ENGINEER
OREGON JULY 16, 1982 STEVEN A. WEHRLY
RENEWS: 6/30/2024

WESTECH ENGINEERING, INC.
CONSULTING ENGINEERS AND PLANNERS
3841 Fairview Industrial Dr. S.E., Suite 100, Salem, OR 97302
Phone: (503) 585-2474 Fax: (503) 585-3986
E-mail: westech@westech-eng.com

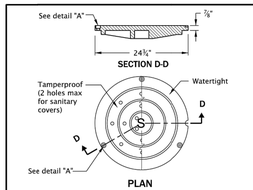
HIGHWAY 211 IMPROVEMENTS
HOME FIRST DEVELOPMENT PARTNERS

ODOT DETAILS

DRAWING
C6.1

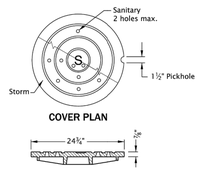
JOB NUMBER
3312.0000.0

1/10/2023 5:01:27 PM
R:\Dwg\Home First Development Partners\Molalla Highway - Main Street\Civil\Plots\C6.0-8 Details.dwg, (C6.1 tab)



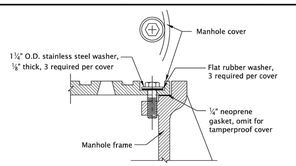
CAST IRON TAMPERPROOF & WATERTIGHT COVER

(Frames available in standard or suburban pattern)



CAST IRON SUBURBAN MANHOLE COVER & FRAME

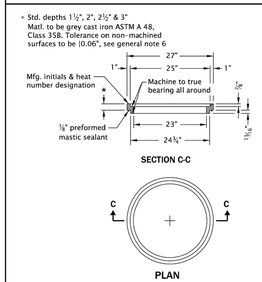
For use on local streets only, as specified



NOTE:
3 required, equally spaced, ½"x1½" pentagonal or hexagonal head, bronze or stainless steel. Install frame so that one bolt boss is located over the manhole steps (See general note 8).

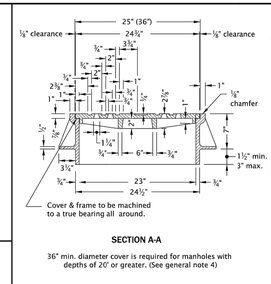
BOLT-DOWN (FOR TAMPERPROOF AND WATERTIGHT)

DETAIL "A"

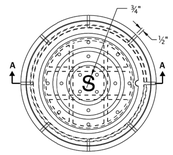


MANHOLE ADJUSTMENT RING

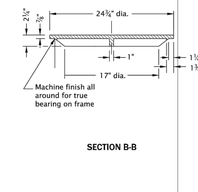
For use with Standard Manhole Frame



36" min. diameter cover is required for manholes with depths of 20' or greater. (See general note 4)



STANDARD MANHOLE COVER & FRAME



STANDARD MANHOLE GRATE

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. Tamperproof covers required on sanitary or storm drain manhole where located in pedestrian ways or easement areas. Covers for sanitary manholes shall have 2 holes maximum.
2. Watertight covers required if located where cover may be submerged (no holes).
3. Covers and frames shall be stamped with manufacturer's initials, heat number and point of origin.
4. See Std. Dwg. RD336 for manhole steps.
5. See Std. Dwg. RD360 for manhole frame adjustment.
6. See ODOT's QPL for alternate manhole adjustment rings.
7. Manhole grate allowed only in locations not subject to bicycle or pedestrian use.
8. See ODOT's QPL for alternate bolt-down products.

CALC. BOOK NO. N/A

SDR DATE 21-JUN-2019

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

OREGON STANDARD DRAWINGS

MANHOLE COVERS AND FRAMES

2021

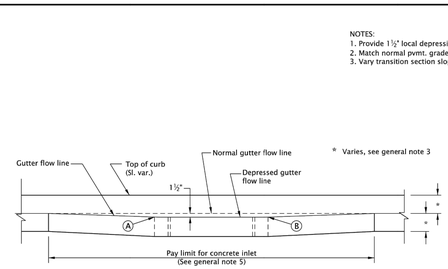
DATE	REVISION DESCRIPTION

RD356

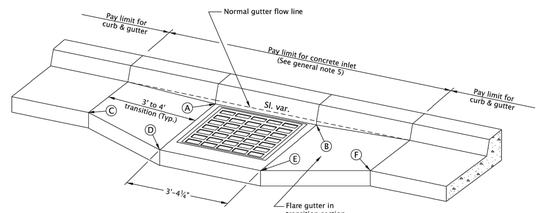
rd356.dgn 20-JUL-2020

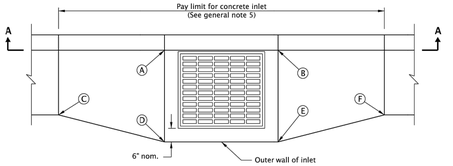
Effective Date: December 1, 2021 - May 31, 2022

RD356



NOTES:
1. Provide 1½" local depression at points A & B.
2. Match normal pvmt. grade at points C, D, E & F.
3. Vary transition section slopes to match above points.





GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. For inlet details, see appropriate inlet standard drawing(s).
2. For frame and grate details, see Std. Dwg. RD365.
3. For curb details, see Std. Dwgs. RD700 & RD701.
4. All concrete shall be commercial grade concrete.
5. Pay limit for inlet is expanded when curb and gutter are monolithic.

CALC. BOOK NO. N/A

SDR DATE 21-JUL-2015

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

OREGON STANDARD DRAWINGS

GUTTER TRANSITION AT INLET

2021

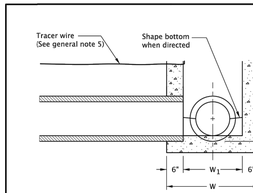
DATE	REVISION DESCRIPTION

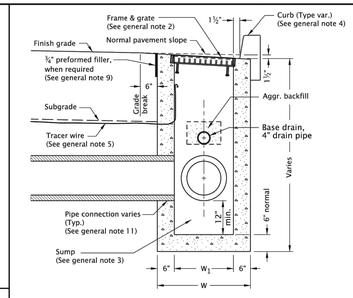
RD363

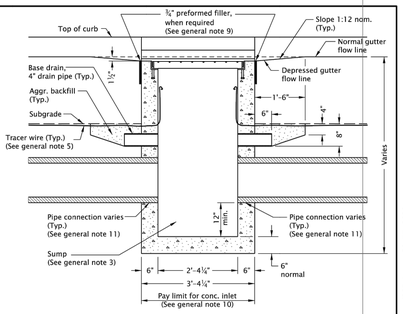
rd363.dgn 20-JUL-2020

Effective Date: December 1, 2021 - May 31, 2022

RD363







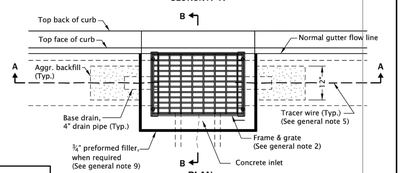
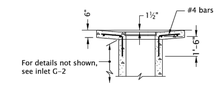
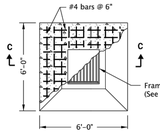


TABLE A		
INLET TYPE	W	W1
G-1	2'-8⅞"	1'-8⅞"
G-2, G-2M, G-2MA	3'-3⅞"	2'-3⅞"



NOTE:
All reinforcement to be placed 2" clear of nearest face of concrete unless shown or noted otherwise



GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. Where precast inlets are used as an alternate to cast-in-place inlets, a 4" compacted leveling bed of sand or ½"-0 crushed aggregate shall be provided. All precast inlets shall conform to requirements of ASTM C913.
2. Graphics show G-1 inlet with Type 2 grate. See Table A for inlet dimensions.
   Type 1 grate allowed only in locations not subject to bicycle or pedestrian use.
   For frame and grate details, see Std. Dwg. RD365.
3. Provide sump only where shown on plans, and allowed by jurisdiction. See Detail A for inlet without sump.
4. For curb details, see Std. Dwgs. RD700 & RD701.
5. See Std. Dwg. RD336 for tracer wire details, or approved alternate.
6. Max. pipe diameter varies with pipe material.
7. Location, elevation, diameter, slope, and number of pipe(s) varies, see project plans.
8. All concrete shall be commercial grade concrete.
9. ¾" preformed filler (in concrete pavement or gutter only) to extend through thickness of concrete.
10. See Std. Dwg. RD363 for gutter transition section, when curb and gutter are required.
11. See Std. Dwg. RD339 for pipe to structure connections.

CALC. BOOK NO. N/A

SDR DATE

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

OREGON STANDARD DRAWINGS

CONCRETE INLETS
TYPE G-1, G-2, G-2M, & G-2MA

2021

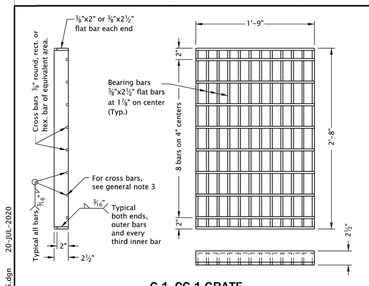
DATE	REVISION DESCRIPTION

RD364

rd364.dgn 20-JUL-2020

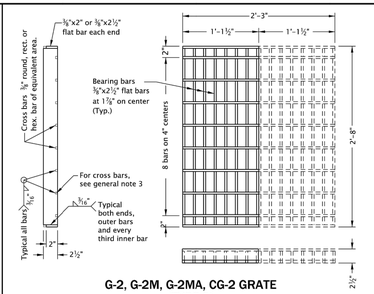
Effective Date: December 1, 2021 - May 31, 2022

RD364



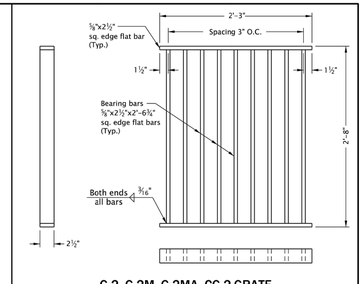
G-1, CG-1 GRATE (TYPE 2)

(Bicycle-safe)



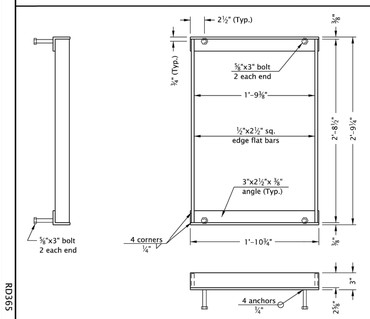
G-2, G-2M, G-2MA, CG-2 GRATE (TYPE 2)

(Bicycle-safe)
(2 grates required per inlet, as shown)

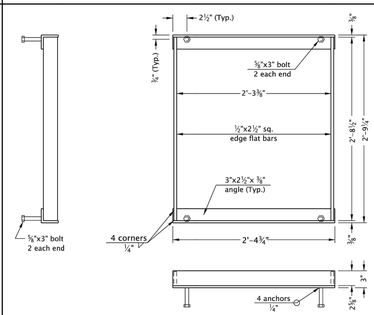


G-2, G-2M, G-2MA, CG-2 GRATE (TYPE 1)

(See general note 2)



G-1, CG-1 FRAME



G-2, G-2M, G-2MA, CG-2 FRAME

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. For inlet details, see appropriate inlet standard drawing(s).
2. Type 1 grate allowed only in locations not subject to bicycle or pedestrian use.
3. ⅜" cross bars shall be flush with the top of grate surface and may be fillet welded, resistance welded or electroforged to bearing bars.
4. Hot dip galvanize after fabrication.
5. Cast iron grate and frame are acceptable alternates. See ODOT's QPL.

CALC. BOOK NO. N/A

SDR DATE 14-JUL-2014

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

OREGON STANDARD DRAWINGS

FRAMES & GRATES FOR CONCRETE INLETS

2021

DATE	REVISION DESCRIPTION

RD365

rd365.dgn 20-JUL-2020

Effective Date: December 1, 2021 - May 31, 2022

RD365

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
IF NOT ONE INCH, ADJUST SCALES ACCORDINGLY
0 1"

NO.	DATE	REVISIONS DESCRIPTION	BY
1			

DSN. SAW
DRN. AR
CKD. SAW
DATE: SEP 2021

REGISTERED PROFESSIONAL ENGINEER
OREGON JULY 19, 1983 STEVEN A. WARD
11843
RENEWS: 6/30/2024

WESTECH ENGINEERING, INC.
CONSULTING ENGINEERS AND PLANNERS
3841 Fairview Industrial Dr. S.E., Suite 100, Salem, OR 97302
Phone: (503) 585-2474 Fax: (503) 585-3986
E-mail: westech@westech-eng.com

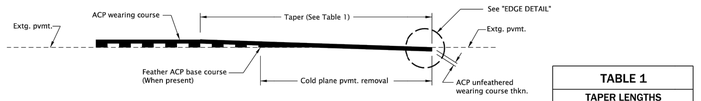
HIGHWAY 211 IMPROVEMENTS
HOME FIRST DEVELOPMENT PARTNERS

ODOT DETAILS

DRAWING
C6.2

JOB NUMBER
3312.0000.0

1/10/2023 5:01:30 PM
R:\Dwg\Home First Development Partners\Molalla Highway - Main Street\Civil\Plots\C6.0-8 Details.dwg, (C6.2 tab)



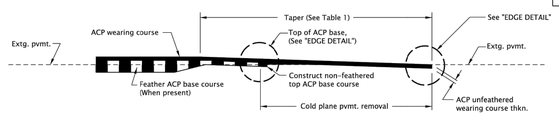
METHOD A *

* See project plans for method.

TABLE 1

TAPER LENGTHS

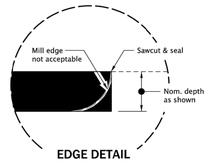
Posted Speed	Taper Length
< 45 mph	1" per 50'
≥ 45 mph	1" per 100'



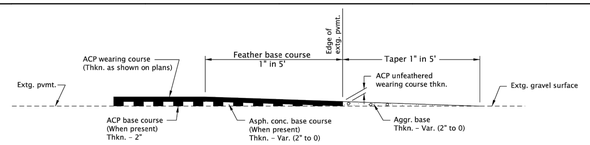
METHOD B *

ACP PAVEMENT MATCH AT PROJECT ENDS OR BRIDGE ENDS WHEN NOT OVERLAYING THE BRIDGE

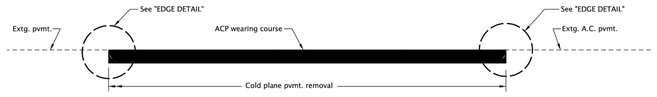
rd610.dgn 20-JUL-2020



EDGE DETAIL



METHOD OF FEATHERING ACP PAVEMENT AT GRAVEL APPROACHES



METHOD OF MATCHING EXTG. ACP INLAY SURFACING
(Inlay to extg. asphalt conc. pvmt.)

RD610

CALC. BOOK NO. N/A

SDR DATE 25-JUL-2017

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

OREGON STANDARD DRAWINGS

ASPHALT CONCRETE PAVEMENT (ACP) DETAILS

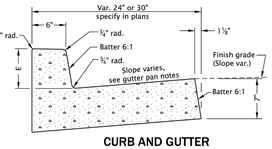
2021

DATE	REVISION DESCRIPTION

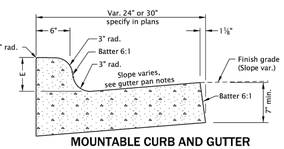
Effective Date: December 1, 2021 - May 31, 2022

RD610

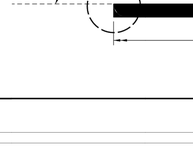
rd700.dgn 20-JUL-2020



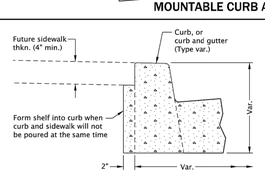
CURB AND GUTTER



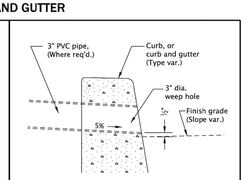
MOUNTABLE CURB AND GUTTER



LOW PROFILE MOUNTABLE CURB
(See general note 11)



MODIFICATION FOR KEYWAY
(Where shown on plans)



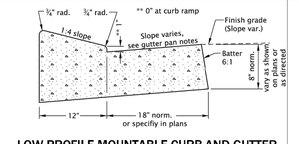
WEEP HOLE DETAIL
(Where shown on plans, and allowed by jurisdiction)

GUTTER PAN NOTES:

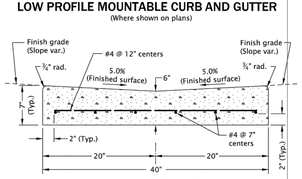
Slope 5.0% normal.

Slope 4.0% max. at curb ramps.

Vary slope as reqd. for drainage. Vary where shown on plans, and allowed by jurisdiction.



LOW PROFILE MOUNTABLE CURB AND GUTTER
(Where shown on plans)

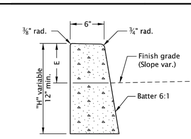


VALLEY GUTTER

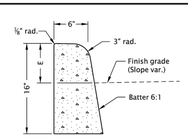
GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. Curb exposure "E" = 6" to 9", as measured vertically from flowline to highest point on curb. Vary as shown on plans or as directed. O.D.O.T standard "E"=7".
2. Const. curb expansion joints at 200' maximum spacing, and at points of tangency, and at ends of each driveways.
3. Const. curb contraction joints at 15' maximum spacing, and at ends of each inlet and curb ramp.
4. Transitions shall be used to connect curbs of different exposures "E". ("E" is the total vertical dimension of those curb surfaces having a slope of 1:1 or steeper). Minimum desirable transition length shall be 20' for each 1" difference in "E".
5. Tops of all curbs shall slope toward the roadway at 1.5% max. (Max. 2.0% finished surface slope), unless otherwise shown, or as directed.
6. Dimensions are nominal, vary to conform with curb machine approved by the engineer.
7. Dimensions adjacent to radii are measured to the point of intersection of curb surfaces.
8. For sidewalk details, and monolithic curb & sidewalk, see Std. Dwgs. RD720 & RD721.
9. For drainage curbs, see Std. Dwg. RD701.
10. For curb ramp details, see Std. Dwgs. RD900 series.
11. On or along state highways, curb and gutter is required at curb ramp.

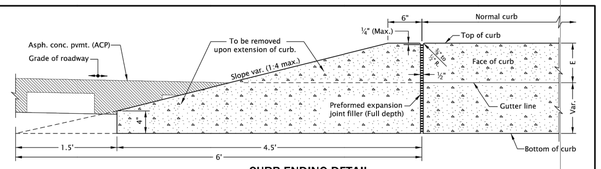
RD700



O.D.O.T. & City of Portland Standard "H"=16"
STANDARD CURB
(See general note 11)



MOUNTABLE CURB
(See general note 11)



CURB ENDING DETAIL

CALC. BOOK NO. N/A

SDR DATE 20-JUL-2020

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

OREGON STANDARD DRAWINGS

CURBS

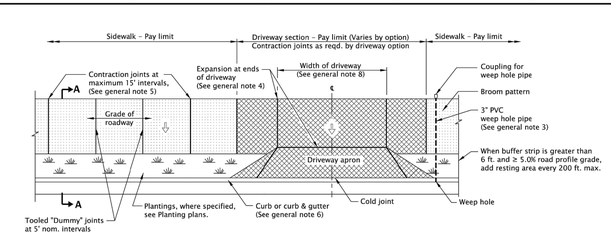
2021

DATE	REVISION DESCRIPTION

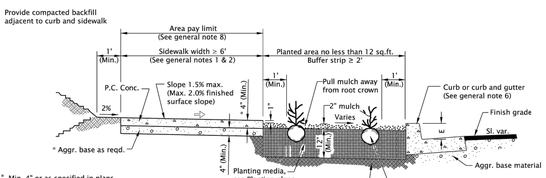
Effective Date: December 1, 2021 - May 31, 2022

RD700

rd721.dgn 20-JUL-2020



TYPICAL PLAN VIEW - SEPARATED SIDEWALK



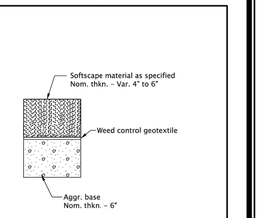
* Min. 4" or as specified in plans. Min. 6" when mountable curb is used, or when sidewalk is within driveway pay limits.

SECTION A-A

TYPICAL SETBACK SIDEWALK CROSS SECTION
E = curb exposure, see general note 6

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. Include additional paved or unpaved 2' shy distance to vertical faces higher than 5' such as retaining walls, sound walls, fences and buildings.
2. Curb type and sidewalk width as shown on plans or as directed. On sidewalks 8' and wider, provide a longitudinal joint at the midpoint.
3. Install 3" pvc weep hole pipes in sidewalks where shown on plans, and allowed by jurisdiction. Place contraction joint over top of pipe. See Std. Dwg. RD700 for weep hole details.
4. Provide expansion joints around poles, posts, boxes, at ends of each driveway, and other fixtures which protrude through or against the structures. For sidewalk, monolithic curb & sidewalk, const. expansion joints at 45' maximum spacing. See Std. Dwg. RD722 for expansion joint details.
5. Const. contraction joints at 15' maximum spacing, and at ends of each curb ramp. See Std. Dwg. RD722 for contraction joint details.
6. Curb and gutter shown; see project plans for the curb design specified. For curb details, see Std. Dwgs. RD700 & RD701. ODOT standard E=7".
7. Sidewalk details are based on ODOT applicable standards.
8. Driveway encroaches into sidewalk shown; see project plans for the driveway design specified. For driveway details not shown, see Std. Dwgs. RD725, RD730, RD735, RD740, RD745 & RD750.
9. See project plans for details not shown.
10. Provide plantings in areas 12 SF or greater, as shown or directed. Treat areas less than 12 SF with mulch surfacing.



NON-PLANTED SOFTSCAPE CROSS SECTION

NOTES:
1. Use softscape materials allowed by jurisdiction.
2. Approved softscape materials:
   a) Loose, durable round rock 2"-4"in diameter
   b) Lava rock 2"-4"diameter
   c) Wood chips/bark mulch
   d) Sand
3. No crushed aggregate or pea gravel allowed.
4. Install softscape material flush with the top of sidewalk.

LEGEND

Sidewalk pay limit.

Driveway pay limit, varies by option, (See general note 8).

Cross slope 1.5% max. (Max. 2.0% finished surface slope) (Normal sidewalk cross slope)

CALC. BOOK NO. N/A

SDR DATE 20-JUL-2020

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

OREGON STANDARD DRAWINGS

SEPARATED SIDEWALKS

2021

DATE	REVISION DESCRIPTION

Effective Date: December 1, 2021 - May 31, 2022

RD721

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

NO.	DATE	DESCRIPTION	BY
1		REVISIONS	

DSN. SAW
DRN. AR
CKD. SAW
DATE: SEP 2021

REGISTERED PROFESSIONAL ENGINEER
OREGON JULY 16, 1982 STEVEN A. WARD
RENEWS: 6/30/2024

WESTECH ENGINEERING, INC.
CONSULTING ENGINEERS AND PLANNERS
3841 Fairview Industrial Dr. S.E., Suite 100, Salem, OR 97302
Phone: (503) 585-2474 Fax: (503) 585-3986
E-mail: westech@westech-eng.com

HIGHWAY 211 IMPROVEMENTS
HOME FIRST DEVELOPMENT PARTNERS

ODOT DETAILS

DRAWING
C6.3

JOB NUMBER
3312.0000.0

1/10/2023 5:01:32 PM
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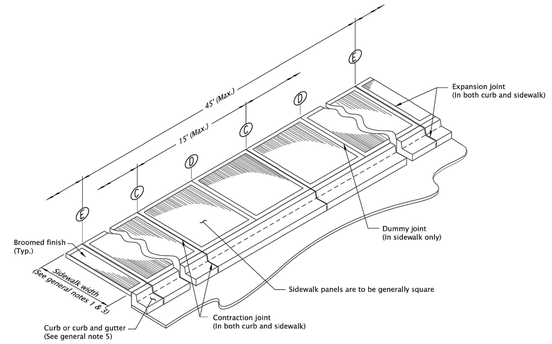
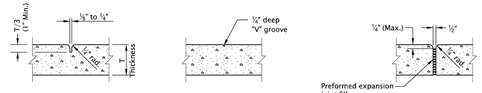
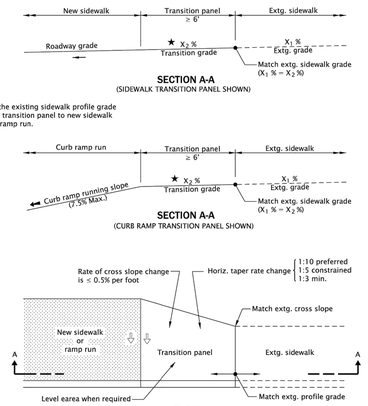


JOINT DETAIL
(Curb line sidewalk with curb and gutter shown)



Ⓒ CONTRACTION JOINT (See general note 6)
Ⓓ DUMMY JOINT
Ⓔ EXPANSION JOINT (See general notes 2 & 5)



SECTION A-A
(SIDEWALK TRANSITION PANEL SHOWN)

SECTION A-A
(CURB RAMP TRANSITION PANEL SHOWN)

PLAN

SIDEWALK AND CURB RAMP TRANSITION PANELS

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. See Std. Dwgs. RD720 & RD721 for concrete sidewalk details. See project plans for sidewalk width, placement and design specified.
2. Provide expansion joints around poles, boxes, at ends of each driveway and other fixtures which protrude through or against the structures. For sidewalk, monolithic curb and sidewalk, construction expansion joints at 45' max. spacing.
3. On sidewalks 8' and wider, provide a longitudinal joint at the midpoint of sidewalk panel.
4. See Std. Dwgs. RD700 & RD701 for concrete curb details. See project plans for the curb design specified.
5. For curb ramps, do not place expansion joints within the limits of curb ramps and between separate concrete pours.
6. Const. contraction joints at 15' max. spacing, and at each curb ramp, driveway, sidewalk and curb.

LEGEND:

- New sidewalk or ramp run
- Slope 1.5% max. (Max. 2.0% finished surface slope) (Normal sidewalk cross slope)
- Slope 7.5% max. (Max. 8.3% finished surface slope)
- Zero exposure

CALC. BOOK NO.: N/A
SDR DATE: 20-JUL-2020

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

OREGON STANDARD DRAWINGS

SIDEWALK JOINTS AND TRANSITION PANELS

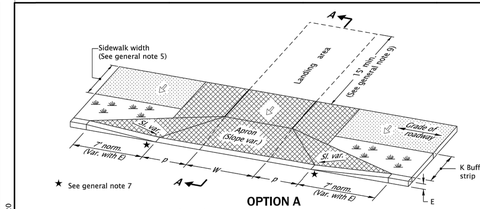
2021

DATE	REVISION DESCRIPTION

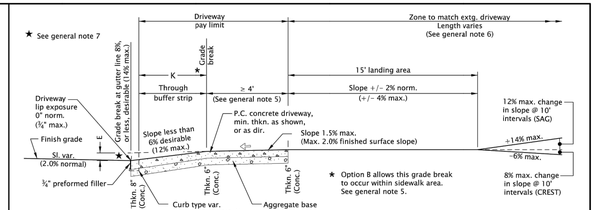
RD722

Effective Date: December 1, 2021 - May 31, 2022

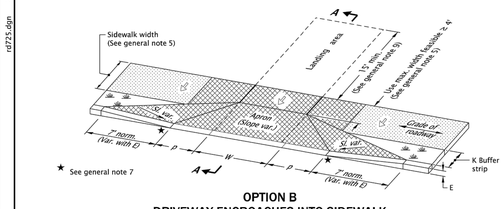
RD722.dgn 20-JUL-2020



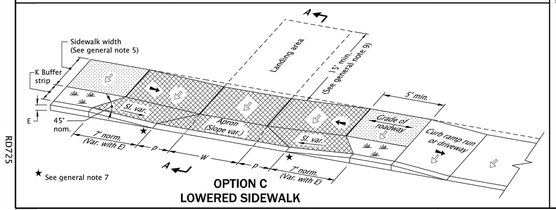
OPTION A
TYPICAL SEPARATED SIDEWALK DRIVEWAY
(Use one of the options below if slope requirements shown in Section A-A cannot be met)



SECTION A-A



OPTION B
DRIVEWAY ENCROACHES INTO SIDEWALK



OPTION C
LOWERED SIDEWALK

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. Details are based on applicable ODOT Standards.
2. Only use details allowed by jurisdiction.
3. The following dimensions are as shown on plans, or as directed: driveway width, driveway slope, sidewalk width, buffer strip width, curb exposure, driveway lip exposure, landing area length and width. See project plans for details not shown.
4. Curb, gutter, and sidewalk types varies, see plans.
   See Std. Dwgs. RD700 & RD701 for curb details.
   See Std. Dwg. RD721 for sidewalk details.
   See Std. Dwg. RD722 for joint details.
5. A greater than or equal to 4' unobstructed clear passage with cross slope 1.5% max. (Max. 2.0% finished surface slope) is required behind driveway apron. Sidewalk profile grade of the pedestrian accessible route shall not exceed the adjacent roadway profile grade.
6. Where existing driveway is in good condition, and meets slope requirements, construct only as much landing area as required for satisfactory connection with new work.
7. Check the gutter flow depth at driveway locations to assure that the design flood does not overtop the back of sidewalk at driveway. If overtopping occurs place an inlet at upstream side of driveway or perform other approved design mitigation.
8. Construct a full depth expansion joints with ½" (In) preformed joint filler at ends of each driveway. Tooled joints are required at all driveway slope break lines.
9. 15' min. of the driveway behind the sidewalk should be surfaced to prevent tracking of gravel onto the sidewalk.

LEGEND:

- Sidewalk
- Driveway pay limit (See project plans for details not shown)
- Cross slope 1.5% max. (Max. 2.0% finished surface slope) (Normal sidewalk cross slope)
- Running slope 7.5% max. (Max. 8.3% finished surface slope)
- W — Width of driveway
- K — Buffer strip width (5' normal, 3' min.)
- E — Curb exposure
- p — 7.0' in commercial land use types; 3.5' in residential land use types

CALC. BOOK NO.: N/A
SDR DATE: 20-JUL-2020

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

OREGON STANDARD DRAWINGS

SEPARATED SIDEWALK DRIVEWAYS OR ALLEYS (OPTIONS A, B & C) ODOT HIGHWAYS

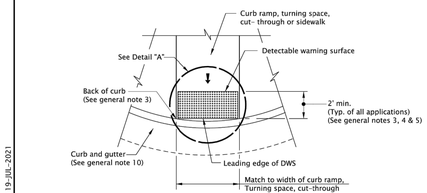
2021

DATE	REVISION DESCRIPTION

RD725

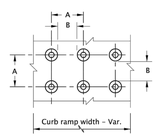
Effective Date: December 1, 2021 - May 31, 2022

RD725.dgn 20-JUL-2020

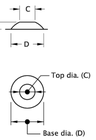


DETECTABLE WARNING SURFACE DETAIL

	A	B	C	D	E
MIN.	1.60"	0.65"	0.45"	0.90"	0.20"
MAX.	2.40"	—	0.91"	1.40"	0.20"

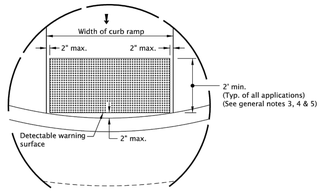


TRUNCATED DOME SPACING



TRUNCATED DOME

TRUNCATED DOME DETAILS



DETAIL "A"

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. Detectable warning surface details & locations are based on applicable ODOT Standards.
2. See project plans for details not shown.
   See Std. Dwgs. RD700 & RD701 for curbs.
3. The detectable warning surface shall extend the full width of the curb ramp opening, shared use path, blended transition, turning space, or other roadway entrance as applicable. A gap of up to 2 inches on each side of the detectable warning surface is permitted (measured at the leading edge of the detectable warning surface panel as shown in Detail "A").
4. Detectable warning surface shall be placed at the back of curb for a minimum depth of 2 ft. in the direction of pedestrian travel at curb ramps that are adjacent to traffic. Detectable warning surface may be radial or rectangular, but must comply with the truncated dome size and spacing standards. Detectable warning surface may be cut to meet necessary shape as shown in plans. Detectable warning surface across a grade break is prohibited. Place abutting panels within¼ inch of each other and install anchors, as specified by manufacturers, along cut edge.
5. Color to be safety yellow if no color specified in construction note. Alternative colors require a design exception on or along state highways.
6. Detectable warning surface shall be used in the following locations:
   a) Curb ramps at street crossings.
   b) Crossing islands (Accessible Route Islands).
   c) Rail crossings.
7. Where public transportation stations (rail, bus, etc.) use platform boarding, detectable warning surface shall be placed along the full edge length of the station, when not protected by platform screens or guards, (see Std. Dwg. RD908).
8. Detectable warning surface shall not be used on the following locations:
   a) End of sidewalk transitions that are not at a crosswalk, (see Std. Dwgs. RD950, RD952 and RD960).
   b) Driveways, unless constructed with curb return or are signalized.
   c) Parking lots, access aisles and passenger loading zones where curb ramp does not lead to vehicular way.
9. Where no curb is present, the detectable warning surface shall be placed at the edge of the roadway.
10. On or along state highways, curb and gutter is required at curb ramps.

LEGEND:

- Detectable warning surface
- Cross slope 1.5% max. (Max. 2.0% finished surface slope) (Normal sidewalk cross slope)
- Running slope 7.5% max. (Max. 8.3% finished surface slope)

CALC. BOOK NO.: N/A
SDR DATE: 19-JUL-2021

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

OREGON STANDARD DRAWINGS

DETECTABLE WARNING SURFACE DETAILS

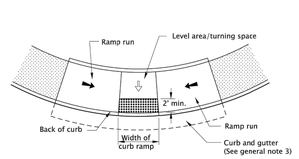
2021

DATE	REVISION DESCRIPTION
07-2020	DRAWING CREATED
07-2021	REVISED DETAIL AND NOTES

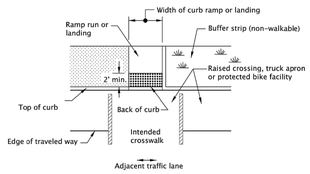
RD902

Effective Date: December 1, 2021 - May 31, 2022

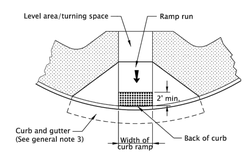
RD902.dgn 19-JUL-2021



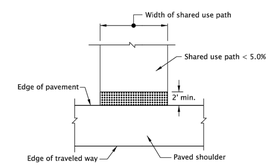
PARALLEL CURB RAMP



RAISED CROSSING, TRUCK APRON OR PROTECTED BIKE FACILITY



PERPENDICULAR CURB RAMP
GRADE BREAK IN FRONT OF CURB



SHARED-USE PATH CONNECTION

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. Detectable warning surface details & locations are based on applicable ODOT Standards.
2. See project plans for details not shown.
   See Std. Dwgs. RD700 & RD701 for curbs.
   See Std. Dwg. RD902 for detectable warning surface installation details.
3. On or along state highways, curb and gutter is required at curb ramps.
4. Detectable warning surface placement for perpendicular ramps vary as shown.

LEGEND:

- Marked or intended crossing location
- Sidewalk
- Detectable warning surface
- Cross slope 1.5% max. (Max. 2.0% finished surface slope) (Normal sidewalk cross slope)
- Running slope 7.5% max. (Max. 8.3% finished surface slope)

CALC. BOOK NO.: N/A
SDR DATE: 20-JULY-2020

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

OREGON STANDARD DRAWINGS

DETECTABLE WARNING SURFACE PLACEMENT FOR CURB RAMPS

2021

DATE	REVISION DESCRIPTION
07-2020	DRAWING CREATED

RD904

Effective Date: December 1, 2021 - May 31, 2022

RD904.dgn 20-JUL-2020

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

NO.	DATE	DESCRIPTION	BY
1		REVISIONS	

DSN. SAW
DRN. AR
CKD. SAW
DATE: SEP 2021

REGISTERED PROFESSIONAL ENGINEER
OREGON JULY 19, 2005
STEVEN A. WARD
RENEWS: 6/30/2024

WESTECH ENGINEERING, INC.
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3841 Fairview Industrial Dr. S.E., Suite 100, Salem, OR 97302
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HIGHWAY 211 IMPROVEMENTS
HOME FIRST DEVELOPMENT PARTNERS

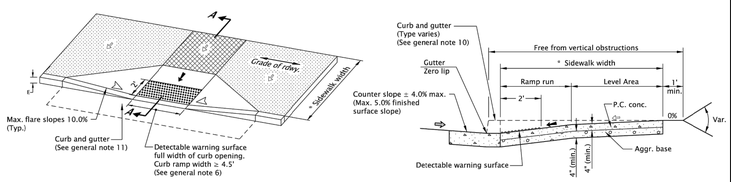
ODOT DETAILS

DRAWING
C6.4

JOB NUMBER
3312.0000.0

1/10/2023 5:01:36 PM
R:\Dwg\Home First Development Partners\Molalla Highway - Main Street\Civil\Plots\C6.0-8 Details.dwg, (C6.4 tab)

rd910.dgn 20-JUL-2020

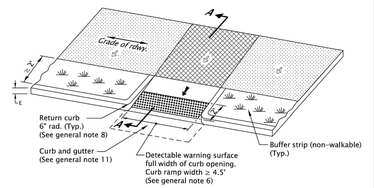


PERPENDICULAR CURB RAMP DETAIL

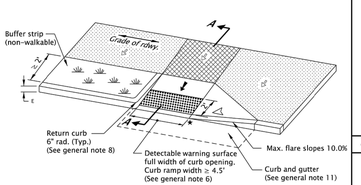
(Use "Parallel Curb Ramp Detail" or "Combination Curb Ramp Detail" when reqd. turning space cannot be obtained)

SECTION A-A

* NOTE: Minimum width of 14.25 feet sidewalk for E=7"



THROUGH BUFFER STRIP



WITH SINGLE FLARE

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. Curb ramp details are based on applicable ODOT Standards.
2. See Std. Dwgs. RD700 & RD701 for curbs.
   See Std. Dwgs. RD720 & RD721 for sidewalks.
   See Std. Dwgs. RD902 through RD908 for detectable warning surface installation details.
   See Std. Dwgs. RD912 through RD916 for curb ramp placement options.
3. Site conditions normally require a project specific design. See project plans for details not shown.
4. Tooled dummy joints are required at all curb ramp grade break lines, (see Std. Dwg. RD722).
5. Curb ramp slopes shown are relative to the true level horizon (zero bubble).
6. Place detectable warning surface at the back of curb for a minimum depth of 2' in the direction of pedestrian travel full width of curb ramp opening that is adjacent to traffic.
7. Grade breaks at the top and bottom of curb ramp runs shall be perpendicular to the direction of the ramp run. Grade breaks shall not be permitted on the surface of ramp runs and turning spaces. Surface slopes that meet at grade breaks shall be flush.
8. Return curb may be provided in lieu of flared slope only if protected from traverse travel by landscaping, see Std. Dwg. RD721. Return curb shall not reduce width of approaching sidewalk.
9. Curb ramps for shared use paths intersecting a roadway shall be full width of path, excluding flares. When a curb ramp is used to provide bicycle access from a roadway to a sidewalk, the curb ramp opening will be ≥ 8' wide.
10. Place an inlet at upstream side of curb ramp or perform other approved design mitigation. Check the gutter flow depth at curb ramp locations to assure that the design flood does not overtop the back of sidewalk.
11. On or along state highways, curb and gutter is required at curb ramps.

LEGEND:

- Sidewalk
- Detectable warning surface
- Level area (Turning space/landing) Unobstructed 4.5' x 4.5' With obstruction 4.5' x 5.5' (Longer dimension in direction of pedestrian street crossing). For the purposes of this application, a max. 2.0% finished surface slope (for drainage) measured perpendicular in two directions is considered level.
- Cross slope 1.5% max. (Max. 2.0% finished surface slope) (Normal sidewalk cross slope)
- Running slope 7.5% max. (Max. 8.3% finished surface slope)
- Counter slope 4.0% max. ascending or descending, (Max. 5.0% finished surface slope) Slope as required for drainage
- Flare slope (Max. 10% finished surface slope)

CALC. BOOK NO. N/A | SDR DATE 20-JULY-2020

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

OREGON STANDARD DRAWINGS

PERPENDICULAR CURB RAMP

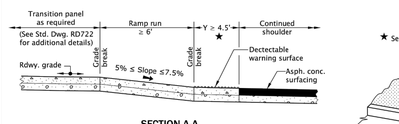
2021

DATE	REVISION DESCRIPTION
07-2020	DRAWING CREATED

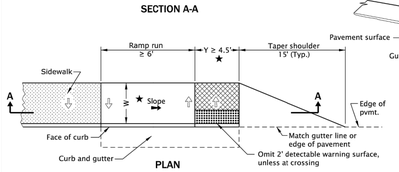
RD910

Effective Date: December 1, 2021 - May 31, 2022

rd950.dgn 20-JUL-2020

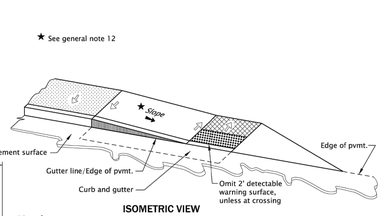


SECTION A-A

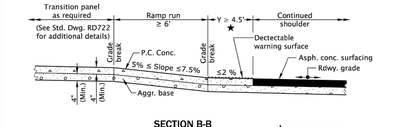


PLAN

TAPER OPTION "EW-1"

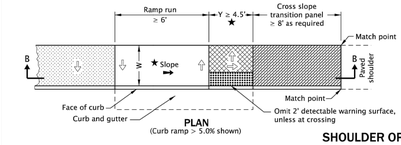


ISOMETRIC VIEW



SECTION B-B

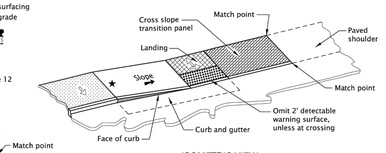
See general note 12



(Curb ramp > 5.0% shown)

PLAN

SHOULDER OPTION "EW-2"



ISOMETRIC VIEW

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. Curb ramp details are based on applicable ODOT Standards.
2. See project plans for details not shown.
   See Std. Dwgs. RD700 & RD701 for curbs.
   See Std. Dwgs. RD720 & RD721 for sidewalks.
   See Std. Dwgs. RD722 for transition panel details.
   See Std. Dwgs. RD902 through RD908 for detectable warning surface installation details.
3. Site conditions normally require a project special design. See project plans for details not shown.
4. Tooled dummy joints are required at all curb ramp grade break lines, (see Std. Dwg. RD722).
5. Curb ramp slopes shown are relative to the true level horizon (zero bubble).
6. Place detectable warning surface at the back of curb for a minimum depth of 2' at curb ramp that is adjacent to traffic.
7. Place an inlet at upstream side of curb ramp or perform other approved design mitigation. Check the gutter flow depth at curb ramp locations to assure that the design flood does not overtop the back of sidewalk.
8. When a shared use path terminates, the curb ramp shall be the full width of the path, the turning space Y-dimension should be minimum 8' wide to enable bicycles to ride from ramp to shoulder.
9. Grade breaks at the top and bottom of curb ramp runs shall be perpendicular to the direction of the ramp run. Grade breaks shall not be permitted on the surface of ramp runs and turning spaces. Surface slopes that meet at grade breaks shall be flush.
10. On or along state highways, curb and gutter is required at curb ramps.
11. All end of sidewalk options can be used for curved or tangent roadway sections. Superelated roadways require site specific details.
12. When the slope of the ramp run is greater than 5.0%, a min. landing space of 4.5' x 4.5' with a 1.5% max. slope (2.0% finished surface) is required at the bottom of the curb ramp. See section A-A & section B-B.

LEGEND:

- Sidewalk
- Transition panel
- Detectable warning surface
- Level area (Turning space/landing) Unobstructed 4.5' x 4.5' With obstruction 4.5' x 5.5' (Longer dimension in direction of pedestrian street crossing). For the purposes of this application, a max. 2.0% finished surface slope (for drainage) measured perpendicular in two directions is considered level.
- Cross slope 1.5% max. (Max. 2.0% finished surface slope) (Normal sidewalk cross slope)
- Running slope 7.5% max. (Max. 8.3% finished surface slope)
- W New construction sidewalk width. See contract plans for dimension.

CALC. BOOK NO. N/A | SDR DATE 20-JULY-2020

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

OREGON STANDARD DRAWINGS

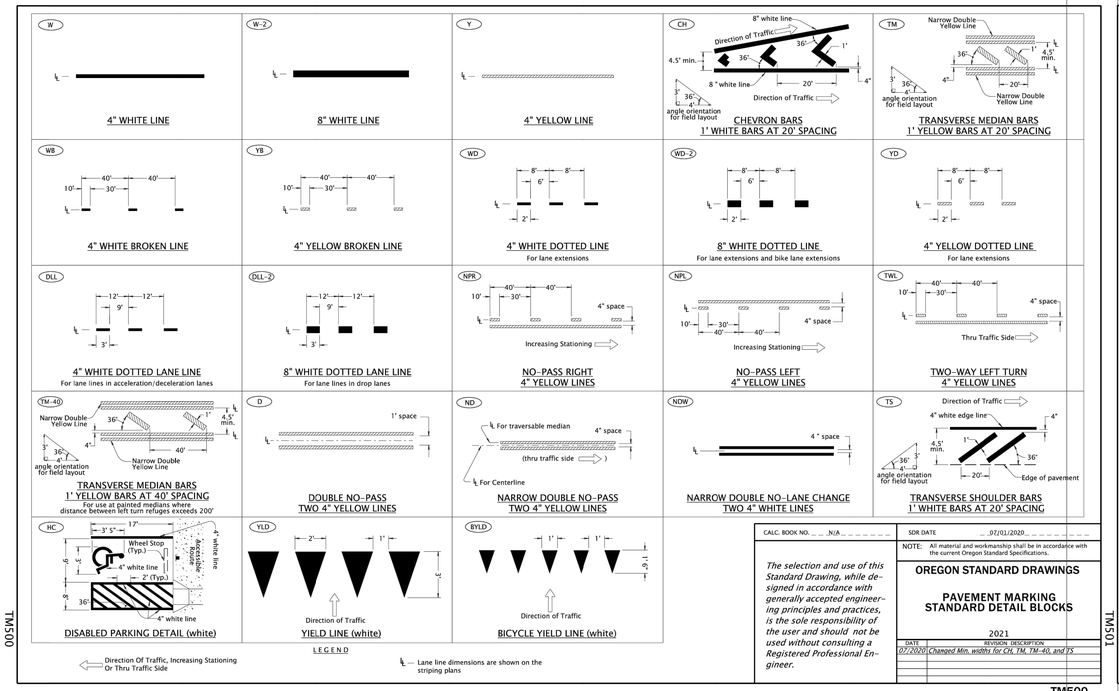
END OF WALK CURB RAMP

2021

DATE	REVISION DESCRIPTION
07-2020	DRAWING CREATED

RD950

Effective Date: December 1, 2021 - May 31, 2022



LEGEND

Direction Of Traffic, Increasing Stationing Or Thru Traffic Side

Lane line dimensions are shown on the striping plans

TM500

CALC. BOOK NO. N/A | SDR DATE 07/01/2020

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications.

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

OREGON STANDARD DRAWINGS

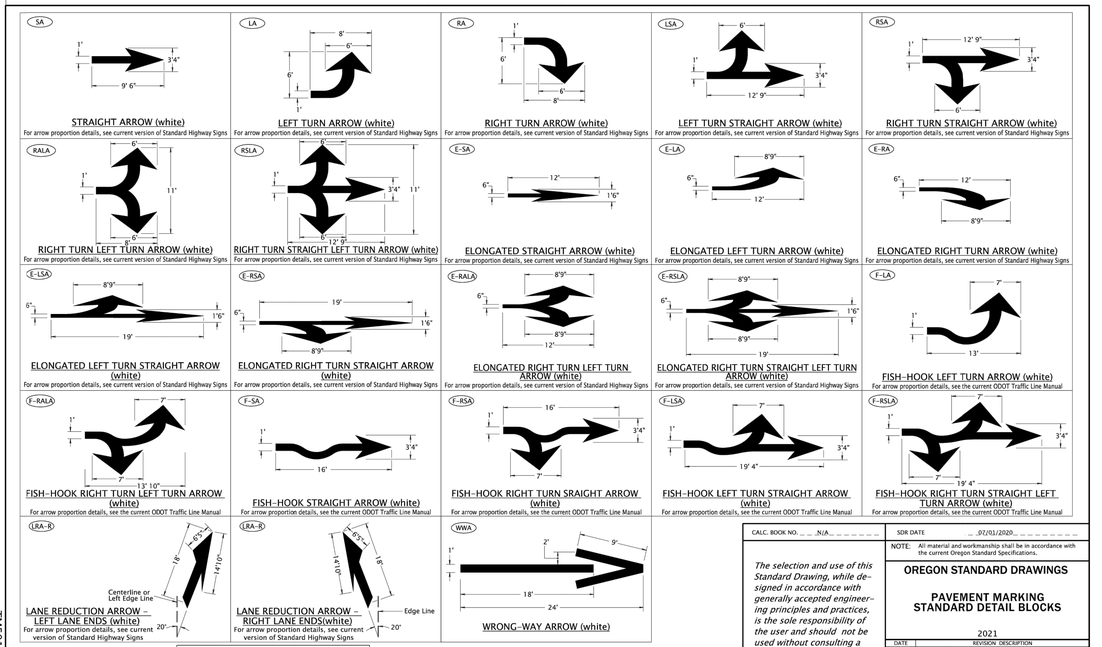
PAVEMENT MARKING STANDARD DETAIL BLOCKS

2021

DATE	REVISION DESCRIPTION
07/2020	Changed Min. widths for CH, TM, TM-40, and TS

Effective Date: December 01, 2021 - May 31, 2022

TM500



General Note:

1. Center pavement markings within the lane width.
2. Arrow and letter dimensions nominal, excluding WWA.

CALC. BOOK NO. N/A | SDR DATE 07/01/2020

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications.

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

OREGON STANDARD DRAWINGS

PAVEMENT MARKING STANDARD DETAIL BLOCKS

2021

DATE	REVISION DESCRIPTION
07/2020	Some Detail Blocks moved to new Std. Drawing TM504 Fish-hook Arrows added, LRA split into LRA-L and LRA-R

Effective Date: December 01, 2021 - May 31, 2022

TM501

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
IF NOT ONE INCH, ADJUST SCALES ACCORDINGLY
0 1"

DSN.	SAW
DRN.	AR
CKD.	SAW
DATE:	SEP 2021

NO.	DATE	DESCRIPTION	BY
1		REVISIONS	

REGISTERED PROFESSIONAL ENGINEER 11843

OREGON JULY 19, 1982 STEVEN A. WARD

RENEWS: 6/30/2024

WESTECH ENGINEERING, INC.
CONSULTING ENGINEERS AND PLANNERS
3841 Fairview Industrial Dr. S.E., Suite 100, Salem, OR 97302
Phone: (503) 585-2474 Fax: (503) 585-3986
E-mail: westech@westech-eng.com

HIGHWAY 211 IMPROVEMENTS
HOME FIRST DEVELOPMENT PARTNERS

ODOT DETAILS

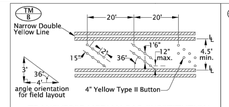
DRAWING
C6.5

JOB NUMBER
3312.0000.0

1/10/2023 5:01:40 PM
R:\Dwg\Home First Development Partners\Molalla Highway - Main Street\Civil\Plots\C6.0-8 Details.dwg, (C6.5 tab)

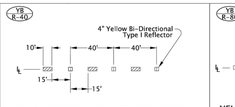
TM502

TM 8



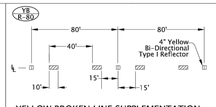
TRANSVERSE MEDIAN BAR SUBSTITUTION BUTTON

YB 8-40



YELLOW BROKEN LINE SUPPLEMENTATION
REFLECTORS WITH 4" YELLOW BROKEN LINE

YB 8-80



YELLOW BROKEN LINE SUPPLEMENTATION
REFLECTORS WITH 4" YELLOW BROKEN LINE

WB 8-40

WHITE BROKEN LINE SUPPLEMENTATION
REFLECTORS WITH 4" WHITE BROKEN LINE

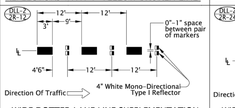
WB 8-80

WHITE BROKEN LINE SUPPLEMENTATION
REFLECTORS WITH 4" WHITE BROKEN LINE

DWL 2-12

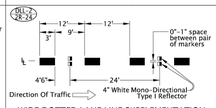
WHITE DOTTED LANE LINE SUPPLEMENTATION
REFLECTORS WITH 4" WHITE DOTTED LANE LINE

DWL 2-12



WIDE DOTTED LANE LINE SUPPLEMENTATION
REFLECTORS WITH 8" WHITE DOTTED LANE LINE

DWL 2-24

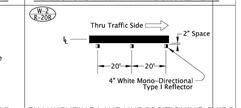


WIDE DOTTED LANE LINE SUPPLEMENTATION
REFLECTORS WITH 8" WHITE DOTTED LANE LINE

WL 2-208

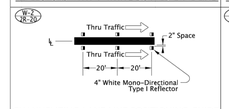
CHANNELIZING LINE POSITIONING GUIDE
REFLECTORS WITH 8" WHITE LINE

WL 2-208



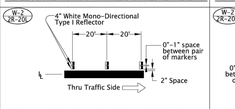
CHANNELIZING LANE LINE POSITIONING GUIDE
REFLECTORS WITH 8" WHITE LINE

WL 2-208



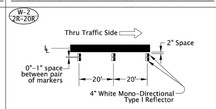
CHANNELIZING LANE LINE POSITIONING GUIDE
REFLECTORS WITH 8" WHITE LINE

WL 2-208



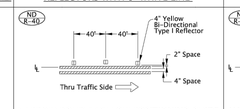
CHANNELIZING LINE SUPPLEMENTATION
REFLECTORS WITH 8" WHITE LINE

WL 2-208



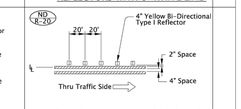
CHANNELIZING LINE SUPPLEMENTATION
REFLECTORS WITH 8" WHITE LINE

NO 8-40



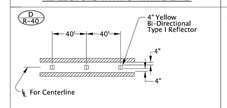
NARROW DOUBLE YELLOW POSITIONING GUIDE
REFLECTORS WITH TWO 4" YELLOW LINES

NO 8-20



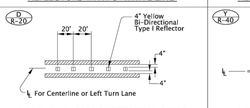
NARROW DOUBLE YELLOW POSITIONING GUIDE
REFLECTORS WITH TWO 4" YELLOW LINES

D 8-40



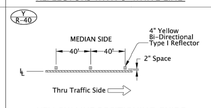
DOUBLE NO-PASS POSITIONING GUIDE
REFLECTORS WITH TWO 4" YELLOW LINES

D 8-20



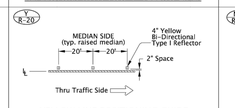
DOUBLE NO-PASS POSITIONING GUIDE
REFLECTORS WITH TWO 4" YELLOW LINES

Y 8-40



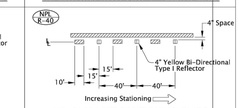
YELLOW LINE POSITIONING GUIDE
REFLECTORS WITH 4" YELLOW LINE

Y 8-20



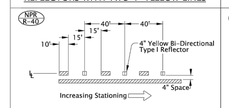
YELLOW LINE POSITIONING GUIDE
REFLECTORS WITH 4" YELLOW LINE

NP 8-40



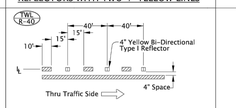
NO-PASS LEFT POSITIONING GUIDE
REFLECTORS WITH 4" YELLOW LINES

NPR 8-40



NO-PASS RIGHT POSITIONING GUIDE
REFLECTORS WITH 4" YELLOW LINES

TWL 8-40



TWO WAY LEFT TURN POSITIONING GUIDE
REFLECTORS WITH 4" YELLOW LINES

General note:
1) Surface mount Raised Pavement Markers (RPMs) unless otherwise specified.

LEGEND

Direction Of Travel, Increasing Stationing or Thru Traffic Side

Lane line dimensions are shown on the striping plans

Mono-directional crystal white marker reflects white to the left in this symbol

Bi-directional yellow marker reflects yellow both left and right in this symbol

CALC. BOOK NO. _ _ _N/A_ _ _ _ _ _ _

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

SDR DATE _ _07/01/2020_ _ _ _ _ _ _ _

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

PAVEMENT MARKING STANDARD DETAIL BLOCKS

2021

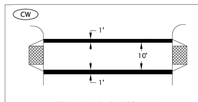
DATE	REVISION DESCRIPTION
07/2020	Changed min. width of TM/8 from 6" to 4.5'

Effective Date: December 01, 2021 - May 31, 2022

TM502

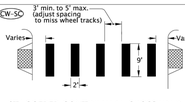
TM503

CW



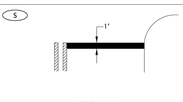
STANDARD CROSSWALK
TWO 1' WHITE BARS
Install per Standard Drawing TM530

CW-SC



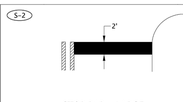
STAGGERED CONTINENTAL CROSSWALK
2' WHITE BARS
Install per Standard Drawing TM530

S



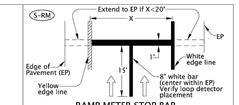
STOP BAR
1' WHITE BAR
Install per Standard Drawing TM530

S-2



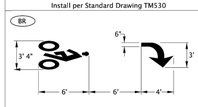
STOP BAR – LARGE
2' WHITE BAR
Install per Standard Drawing TM530

S-RM



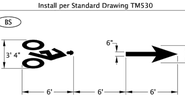
RAMP METER STOP BAR
1' & 8" WHITE BARS
For multi-lane ramp meter applications

BR



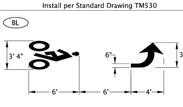
BIKE RIGHT TURN STENCIL (white)
Center marking within lane width
For proportion details, see current version of Standard Highway Signs

BS



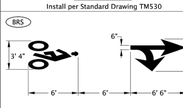
BIKE LANE STANDARD STENCIL (white)
Center marking within lane width
For proportion details, see current version of Standard Highway Signs

BL



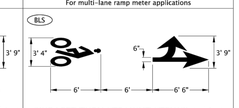
BIKE LEFT TURN STENCIL (white)
Center marking within lane width
For proportion details, see current version of Standard Highway Signs

BRS



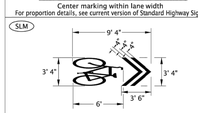
BIKE RIGHT TURN STRAIGHT STENCIL (white)
Center marking within lane width
For proportion details, see current version of Standard Highway Signs

BLS



BIKE LEFT TURN STRAIGHT STENCIL (white)
Center marking within lane width
For proportion details, see current version of Standard Highway Signs

SLM

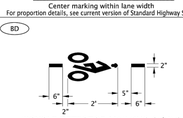


SHARED LANE MARKING (white)
Center marking within lane width or as shown
For proportion details, see current version of Standard Highway Signs

B

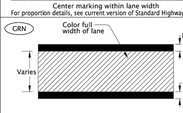
BIKE STENCIL (white)
Used for Intersection Bicycle Box applications
Place marking within bicycle box, centered with motor vehicle lane width

BD



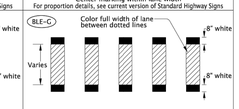
BICYCLE DETECTOR MARKING (white)
Place Bicycle Detector Pavement Marking in optimum loction where bicycle acuates the traffic signal

GRN



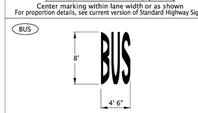
GREEN SUPPLEMENTAL BICYCLE LANE
SOLID LINE (green)

BLE-G



GREEN SUPPLEMENTAL BICYCLE LANE
DOTTED LINE EXTENSION (green)

BUS



BUS (white)
Center marking within lane width
For letter proportion details, see current version of Standard Highway Signs

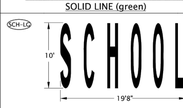
ON

ONLY (white)
Center marking within lane width
For letter proportion details, see current version of Standard Highway Signs

SCH

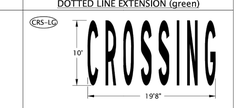
SCHOOL (white)
Center marking within lane width
For letter proportion details, see current version of Standard Highway Signs

SCH-LG



SCHOOL – LARGE (white)
Center marking within lane width of two lanes
For letter proportion details, see current version of Standard Highway Signs

CRS-LG

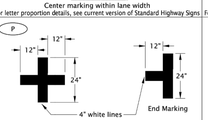


CROSSING – LARGE (white)
Center marking within width of two lanes
For letter proportion details, see current version of Standard Highway Signs

XNG

X-ING (white)
Center marking within lane width
For letter proportion details, see current version of Standard Highway Signs

P



ON-STREET PARKING DETAIL (white)

General Note:
1. Arrow, letter, and bike symbol dimensions nominal.

LEGEND

Direction of Travel

CALC. BOOK NO. _ _ _N/A_ _ _ _ _ _ _

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

SDR DATE _ _01/01/2020_ _ _ _ _ _ _ _

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

PAVEMENT MARKING STANDARD DETAIL BLOCKS

2021

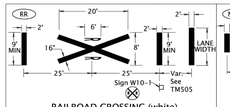
DATE	REVISION DESCRIPTION

Effective Date: December 01, 2021 - May 31, 2022

TM503

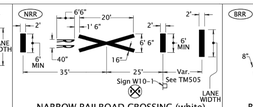
TM504

RR



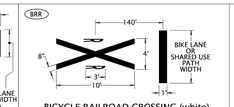
RAILROAD CROSSING (white)
Install per ODOT Rail Crossing Order or as shown.
For letter proportion details, see current version of Standard Highway Signs

NRR



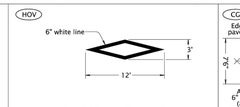
NARROW RAILROAD CROSSING (white)
Install per ODOT Rail Crossing Order or as shown.
For letter proportion details, see current version of Standard Highway Signs

BRR



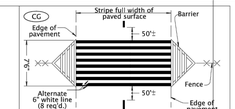
BICYCLE RAILROAD CROSSING (white)
Install per ODOT Rail Crossing Order or as shown.
For letter proportion details, see current version of Standard Highway Signs

HOV



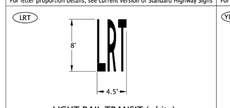
HIGH-OCCUPANCY VEHICLE
DIAMOND DETAIL (white)

CG



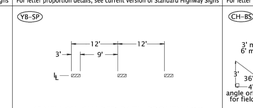
CATTLE GUARD (white)
For barrier and fence details, see Std. Dwg. RD110

LRT



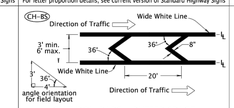
LIGHT RAIL TRANSIT (white)
Center marking within lane width
For letter proportion details, see current version of Standard Highway Signs

YB-SP



4" YELLOW SHARED PATH BROKEN LINE

CH-BS



CHEVRON BARS – BUFFER SPACE
8" WHITE BARS AT 20' SPACING

General Note:
1. Center pavement markings within the lane width.
2. Arrow and letter dimensions nominal, excluding WWA.

Direction Of Traffic, Increasing Stationing Or Thru Traffic Side

CALC. BOOK NO. _ _ _N/A_ _ _ _ _ _ _

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

SDR DATE _ _07/01/2020_ _ _ _ _ _ _ _

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

PAVEMENT MARKING STANDARD DETAIL BLOCKS

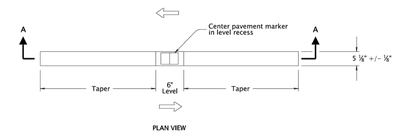
2021

DATE	REVISION DESCRIPTION
07/2020	New drawing for additional Detail Blocks

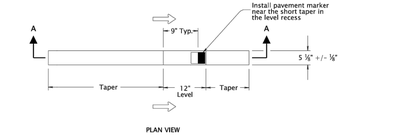
Effective Date: December 01, 2021 - May 31, 2022

TM504

TM517



BI-DIRECTIONAL RECESSED PAVEMENT MARKER DETAIL



MONO-DIRECTIONAL RECESSED PAVEMENT MARKER DETAIL

To be accompanied by Standard Dwg. Nos. TM502 and TM515

LEGEND

Direction of Travel

Bi-directional yellow marker reflects yellow both left and right in this symbol

Mono-directional crystal white marker reflects white to the left in this symbol

CALC. BOOK NO. _ _ _N/A_ _ _ _ _ _ _

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

SDR DATE _ _07/06/2021_ _ _ _ _ _ _ _

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

RECESSED PAVEMENT MARKERS

2021

DATE	REVISION DESCRIPTION
07/2021	Updated to better fit ODOT drafting standards

Effective Date: December 01, 2021 - May 31, 2022

TM517

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH, ADJUST THIS SHEET, ADJUST SCALES ACCORDINGLY

NO.	DATE	DESCRIPTION	BY
1		REVISIONS	

DSN. SAW
DRN. AR
CKD. SAW
DATE: SEP 2021

REGISTERED PROFESSIONAL ENGINEER
OREGON JULY 16, 1982
STEVEN A. WARD
RENEWS: 6/30/2024

WESTECH ENGINEERING, INC.
CONSULTING ENGINEERS AND PLANNERS
3841 Fairview Industrial Dr. S.E., Suite 100, Salem, OR 97302
Phone: (503) 585-2474 Fax: (503) 585-3986
E-mail: westech@westech-eng.com

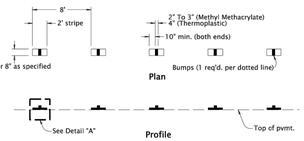
HIGHWAY 211 IMPROVEMENTS
HOME FIRST DEVELOPMENT PARTNERS

ODOT DETAILS

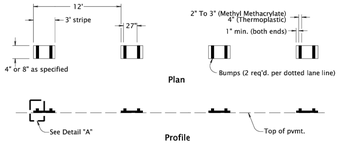
DRAWING
C6.6

JOB NUMBER
3312.0000.0

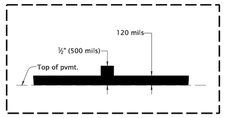
1/10/2023 5:01:43 PM
R:\Dwg\Home First Development Partners\Molalla Highway - Main Street\Civil\Plots\C6.0-8 Details.dwg, (C6.6 tab)



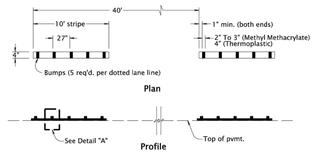
DOTTED LINE



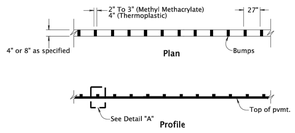
DOTTED LANE LINE



DETAIL "A"



BROKEN LINE



SOLID LINE

TM520

CALC. BOOK NO. _ _ _N/A_ _ _ _ _ _ _ _

SDR DATE _07/05/2013_ _ _ _ _ _ _ _

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NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

DURABLE PAVEMENT MARKINGS METHOD 'A' & METHOD 'D' SURFACE INSTALLED PROFILED

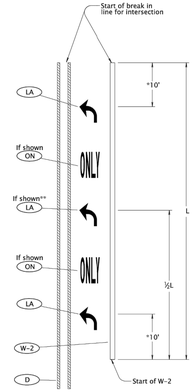
2021

DATE	REVISION DESCRIPTION

TM531

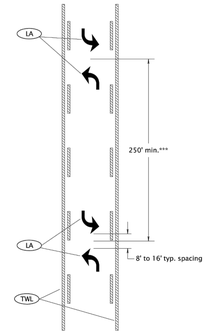
Effective Date: December 01, 2021 - May 31, 2022

TM520



LANE USE ARROW PLACEMENT FOR TURN LANE

DETAIL "A"



TWO-WAY LEFT TURN LANE ARROW PLACEMENT

DETAIL "B"

General Notes:

1) Center pavement marking legends within the lane.

2) Placement of lane use arrows with respect to the 8" wide white line (W-2) channelization shown in Detail "A" applies to both left and right turn lanes.

3) Center "ONLY" markings between lane use arrows.

* 15' when installing elongated arrows.

** When L is greater than 400', install 3rd lane use arrow at ½ L as shown in Detail "A".

*** Double arrows to be placed at even intervals, proportioned within block or as shown.

To be accompanied by Standard Dwg. Nos. TM500 thru TM504

CALC. BOOK NO. _ _ _N/A_ _ _ _ _ _ _ _

SDR DATE _07/01/2020_ _ _ _ _ _ _ _

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NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

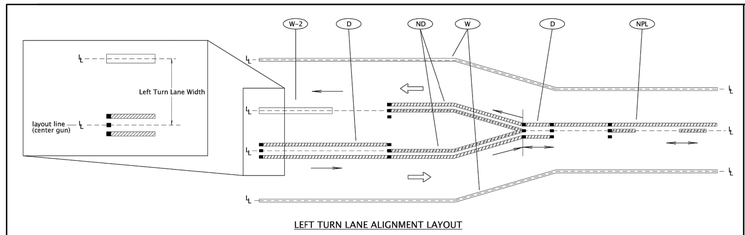
TURN ARROW MARKING DETAILS

2021

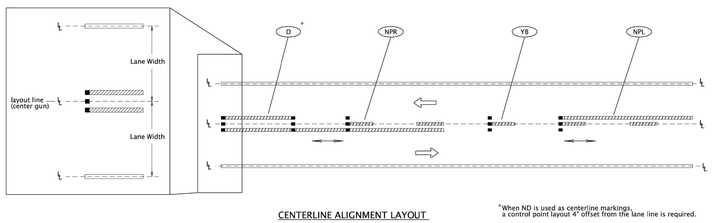
DATE	REVISION DESCRIPTION
07/2020	*Extended accompanied by drawings to include TM504*

TM531

Effective Date: December 01, 2021 - May 31, 2022

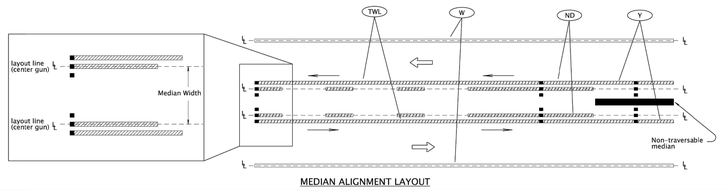


LEFT TURN LANE ALIGNMENT LAYOUT



CENTERLINE ALIGNMENT LAYOUT

*When ND is used as centerline markings, a control point layout 4" offset from the lane line is required.



MEDIAN ALIGNMENT LAYOUT

General note:

1) Install control points for pavement marking alignment layout along the center gun location.

2) Increasing stationing from left to right

LEGEND

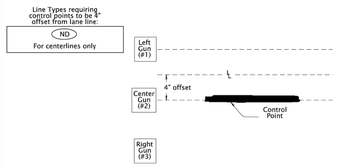
Direction Of Travel and Thru Traffic Side.

Lane line dimensions are shown on the striping plans.

Direction of striping truck (may go either direction)

Direction of striping truck (may go one direction only)

Three gun installation system (center dot represents center gun)



4" Offset of Lane Line and Center Gun

TM561

To be accompanied by Standard Dwg. Nos. TM500 thru TM504

CALC. BOOK NO. _ _ _N/A_ _ _ _ _ _ _ _

SDR DATE _07/01/2020_ _ _ _ _ _ _ _

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NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

ALIGNMENT LAYOUT: LEFT TURN LANE, CENTERLINE & MEDIANS

2021

DATE	REVISION DESCRIPTION
07/2020	*Extended accompanied by drawings to include TM504*

TM561

Effective Date: December 01, 2021 - May 31, 2022

NO.	DATE	DESCRIPTION	BY
1			

REVISIONS

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
0" 1"
IF NOT ONE INCH, ADJUST THIS SHEET, ADJUST SCALES ACCORDINGLY

DSN. SAW
DRN. AR
CKD. SAW
DATE: SEP 2021

REGISTERED PROFESSIONAL ENGINEER
11843
OREGON JULY 31, 1981 STEVEN A. WARD
RENEWS: 6/30/2024

WESTECH ENGINEERING, INC.
CONSULTING ENGINEERS AND PLANNERS
3841 Fairview Industrial Dr. S.E., Suite 100, Salem, OR 97302
Phone: (503) 585-2474 Fax: (503) 585-3986
E-mail: westech@westech-eng.com

HIGHWAY 211 IMPROVEMENTS
HOME FIRST DEVELOPMENT PARTNERS

ODOT DETAILS

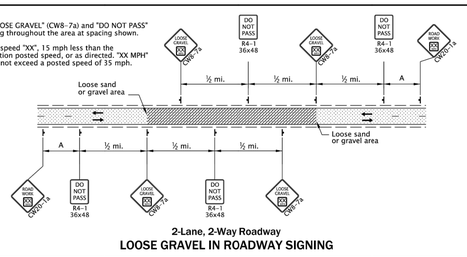
DRAWING
C6.7

JOB NUMBER
3312.0000.0

1/10/2023 5:01:45 PM
R:\Dwg\Home First Development Partners\Molalla Highway - Main Street\Civil\Plots\C6.0-8 Details.dwg, (C6.7 tab)

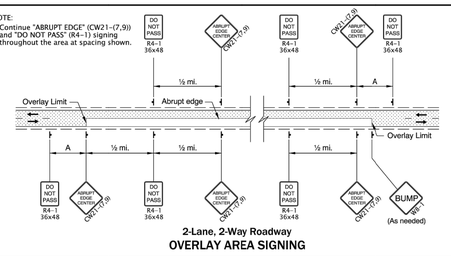
tm850.dgn 01-JUL-2020

NOTE:
- Continue "LOOSE GRAVEL" (CW8-7a) and "DO NOT PASS" (R4-1) signing throughout the area at spacing shown.
- Use advisory speed "XX", 15 mph less than the pre-construction posted speed, or as directed. "XX MPH" placard shall not exceed a posted speed of 35 mph.



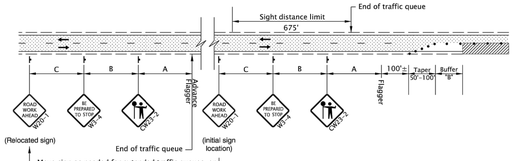
2-Lane, 2-Way Roadway
LOOSE GRAVEL IN ROADWAY SIGNING

NOTE:
- Continue "ABRUPT EDGE" (CW21-(7,9)) and "DO NOT PASS" (R4-1) signing throughout the area at spacing shown.



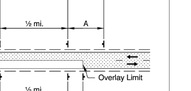
2-Lane, 2-Way Roadway
OVERLAY AREA SIGNING

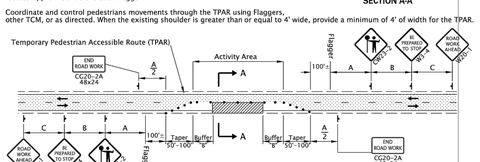
NOTES:
- Place Advance Flagger and additional signing when traffic queues extend beyond initial warning signing OR when sight distance is restricted.
- Relocate initial "ROAD WORK AHEAD" (W20-1) sign in advance of additional "BE PREPARED TO STOP" (W3-4) and Flagger Ahead (CW23-2) signs, as shown.
- Place additional Tubular Markers for Flagger and Advance Flagger Stations according to FLAGGER STATION DELINEATION detail.



ADVANCE FLAGGER FOR EXTENDED TRAFFIC QUEUES

NOTE:
- When using pilot cars with flaggers to control traffic during paving operations, the Tubular Marker spacing along centerline may be increased to 200' within the Activity Area, as shown or as directed.
- Include "WAIT FOR FLAGGER" (CR4-2) signs mounted on Type II Barricade located approx. 50' before each Flagger.
- Coordinate and control pedestrians movements through the TPAR using Flaggers, other TCM, or as directed. When the existing shoulder is greater than or equal to 4' wide, provide a minimum of 4' of width for the TPAR.

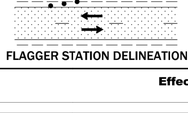




2-Lane, 2-Way Roadway
ONE LANE CLOSURE

GENERAL NOTES FOR ALL DETAILS:
- The "FLAGGER" (CW23-2) symbol sign shall be used only in conjunction with the "BE PREPARED TO STOP" (W3-4) sign.
- Cover existing passing zone signing, as directed.
- Install temporary striping as required.
- To determine Taper Length ("L") and Buffer Length ("B"), use the "MINIMUM LENGTHS TABLE" shown on Dwg. No. TM800.
- To determine sign spacing A, B, and C, use "TRAFFIC CONTROL DEVICES (TCD) SPACING TABLE" on Dwg. No. TM800.
- Install a "BICYCLES ON ROADWAY" (CW11-1) sign in advance of the closure when a bike lane is closed, or when the shoulder is closed and bikes are expected.
- At night, flagger stations shall be illuminated according to the FLAGGER STATION LIGHTING DELINEATION detail on Dwg No. TM800.
- To be accompanied by Dwg. Nos. TM820 & TM821.
- • • • 28" Tubular Markers on 20' max. spacing for flagger tapers and stations
- • • 28" Tubular Markers See TCD Spacing Table on TM800 for max. spacing.
- UNDER TRAFFIC
- UNDER CONSTRUCTION
- CONSTRUCTION UNDER TRAFFIC

NOTE:
- Use a minimum of 3 tubular markers in shoulder taper on 10' spacing for flagger station delineation.



FLAGGER STATION DELINEATION

CALC. BOOK NO. _____ N/A. _____

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

SDR DATE _____ 01-JUL-2020 _____

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

OREGON STANDARD DRAWINGS

2-LANE, 2-WAY ROADWAYS

2021

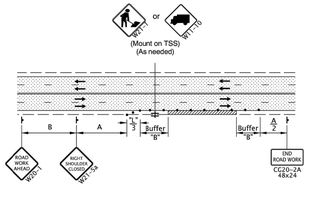
DATE	REVISION DESCRIPTION

TM850

Effective Date: December 1, 2021 – May 31, 2022

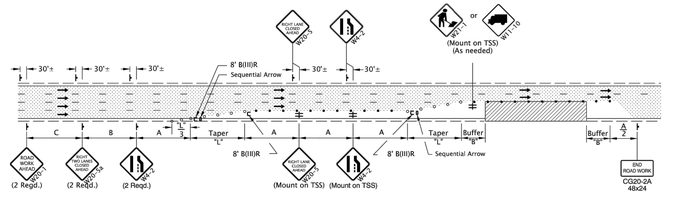
tm851.dgn 01-JUL-2020

NOTE:
- For left shoulder work, place TCD to close the left shoulder. Use "LEFT SHOULDER CLOSED" (W21-5a) sign.

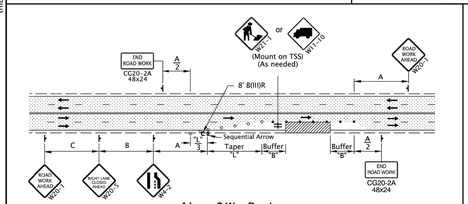


4-Lane, 2-Way Roadway
SHOULDER CLOSURE

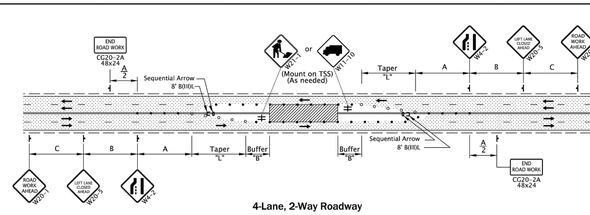
NOTE:
- For left lane work, place TCD to close the left lane. Use "LEFT TWO LANES CLOSED AHEAD" (W20-5a), "LEFT LANE CLOSED AHEAD" (W20-5) and "LEFT LANE ENDS" (W4-2) symbol signs.



4-Lane, 1-Way Roadway
TWO LANE CLOSURE



4-Lane, 2-Way Roadway
EXTERIOR LANE CLOSURE



4-Lane, 2-Way Roadway
INTERIOR LANE CLOSURE

GENERAL NOTES FOR ALL DETAILS:
- Install temporary striping as directed.
- Signing and other TCD shown to be installed in conjunction with the work areas, shall move with the work areas.
- To determine Taper Length ("L") and Buffer Length ("B"), use the "MINIMUM LENGTHS TABLE" on Dwg. No. TM800.
- To determine sign spacing A, B, and C, use "TRAFFIC CONTROL DEVICES (TCD) SPACING TABLE" on Dwg. No. TM800.
- Channelization devices may be placed at 10' spacing around the Work Area for emphasis or if the area is exposed to traffic on both sides simultaneously.
- Install a "BICYCLES ON ROADWAY" (CW11-1) sign in advance of the closure when a bike clane is closed, or when the shoulder is closed and bikes are expected.
- To be accompanied by Dwg. Nos. TM820 & TM821.
- • • 28" Tubular Markers See TCD Spacing Table on TM800 for max. spacing.
- ◦ ◦ ◦ Temp. Plastic Drums See TCD Spacing Table on TM800 for max. spacing.
- UNDER TRAFFIC
- UNDER CONSTRUCTION

CALC. BOOK NO. _____ N/A. _____

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

SDR DATE _____ 01-JUL-2020 _____

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

OREGON STANDARD DRAWINGS

NON-FREEWAY MULTI-LANE SECTIONS

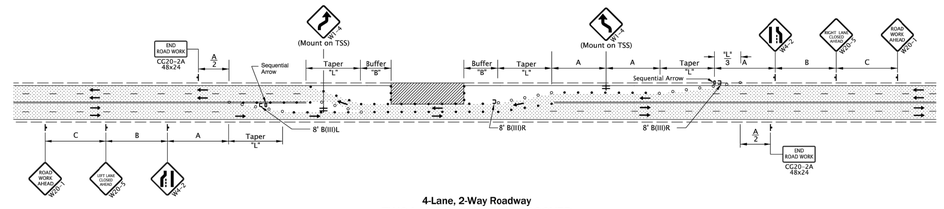
2021

DATE	REVISION DESCRIPTION

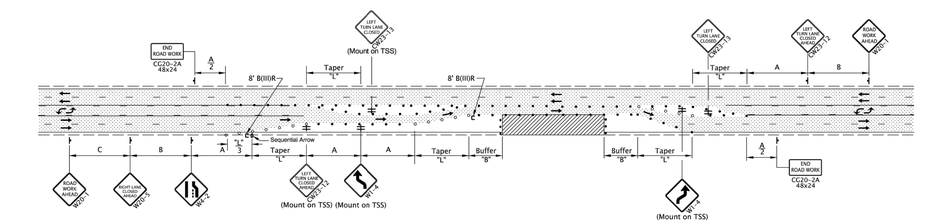
TM851

Effective Date: December 1, 2021 – May 31, 2022

tm852.dgn 01-JUN-2020



4-Lane, 2-Way Roadway
TWO LANE CLOSURE, CROSSOVER



4-Lane, 2-Way Roadway With (TWLTL)
TWO LANE AND MEDIAN CLOSURE

GENERAL NOTES FOR ALL DETAILS:
- Install temporary striping as directed.
- Signing and other TCD shown to be installed in conjunction with the work areas, shall move with the work areas.
- To determine Taper Length ("L") and Buffer Length ("B"), use the "MINIMUM LENGTHS TABLE" shown on Dwg. No. TM800.
- When the length of the area under construction is less than 600 ft. use a DOUBLE REVERSE CURVE (W24-1) sign in place of the first REVERSE CURVE (W1-4) sign in each direction.
- Install a "BICYCLES ON ROADWAY" (CW11-1) sign in advance of the closure when a bike lane is closed, or when the shoulder is closed and bikes are expected.
- To determine sign spacing A, B, and C, use "TRAFFIC CONTROL DEVICES (TCD) SPACING TABLE" on Dwg. No. TM800.
- Shifting tapers of length "L" recommended for high-speed (>40 mph) roadways; however taper lengths of "L"/2 may be used for low-speed roadways (≤40 mph) or where space is limited.
- Channelization devices may be placed at 10' spacing around the Work Area for emphasis.
- To be accompanied by Dwg. Nos. TM820 & TM821.
- • • • 28" Tubular Markers See TCD Spacing Table on TM800 for max. spacing.
- ◦ ◦ ◦ Temp. Plastic Drums See TCD Spacing Table on TM800 for max. spacing.
- UNDER TRAFFIC
- UNDER CONSTRUCTION

CALC. BOOK NO. _____ N/A. _____

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

SDR DATE _____ 01-JUL-2020 _____

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

OREGON STANDARD DRAWINGS

NON-FREEWAY MULTI-LANE SECTIONS

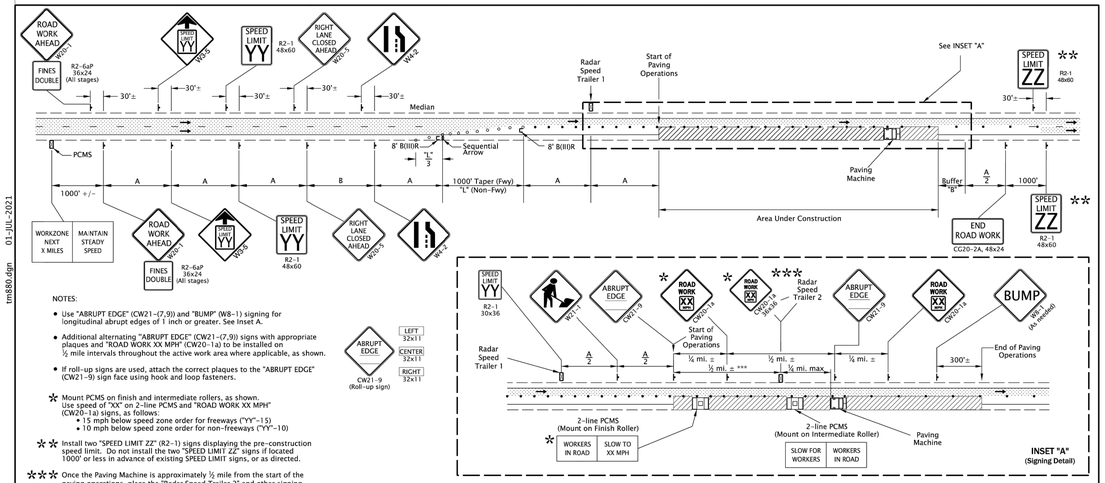
2021

DATE	REVISION DESCRIPTION

TM852

Effective Date: December 1, 2021 – May 31, 2022

tm880.dgn 01-JUL-2021



NOTES:
- Use "ABRUPT EDGE" (CW21-(7,9)) and "BUMP" (W8-1) signing for longitudinal abrupt edges of 1 inch or greater. See Inset A.
- Additional alternating "ABRUPT EDGE" (CW21-(7,9)) signs with appropriate plaques and "ROAD WORK XX MPH" (CW20-1a) to be installed on ½ mile intervals throughout the active work area where applicable, as shown.
- If roll-up signs are used, attach the correct plaques to the "ABRUPT EDGE" (CW21-9) sign face using hook and loop fasteners.

✲ Mount PCMS on finish and intermediate rollers, as shown. Use speed of "XX" on 2-line PCMS and "ROAD WORK XX MPH" (CW20-1a) signs, as follows:
- 15 mph below speed zone order for freeways ("YY"-15)
- 10 mph below speed zone order for non-freeways ("YY"-10)

✲✲ Install two "SPEED LIMIT ZZ" (R2-1) signs displaying the pre-construction speed limit. Do not install the two "SPEED LIMIT ZZ" signs if located 1000' or less in advance of existing SPEED LIMIT signs, or as directed.

✲✲✲ Once the Paving Machine is approximately ½ mile from the start of the paving operations, place the "Radar Speed Trailer 2" and other signing and TCD, as shown. Move "Radar Speed Trailer 2" as work progresses. Maintain "Radar Speed Trailer 2" within a ¼ mile of the paving machine.

Freeway or Divided Highway
ONE LANE CLOSURE WITH SPEED REDUCTION (PAVING OPERATIONS)
(Must be accompanied by an approved Speed Zone Order)

GENERAL NOTES FOR ALL DETAILS:
- Drawing intended for continuous or intermittantly moving paving or pavement preservation activities on freeways or high-speed divided highways.
- Flaggers are not permitted to stop or hold freeway traffic.
- If the inside shoulder in either direction is less than 4' use 36x36 signs, as shown on Dwg. Nos. TM821 and TM822.
- Unless otherwise shown, use the "MINIMUM LENGTHS TABLE" on Dwg. No. TM800 to determine Taper Length "L" and Buffer Length "B".
- Place a Type III barricade in closed lane on ¼ mile spacing, as shown, after rollers have completed compaction.
- Decrease Tubular Marker spacing to 40 ft. behind the paving machine as work progresses.
- To determine sign spacing A, B, and C, use "TRAFFIC CONTROL DEVICES (TCD) SPACING TABLE" on Dwg. TM800.
- For work in the left lane, place TCD to close the left lane. Use "LEFT LANE CLOSED AHEAD" (W20-5) signs and the appropriate "LEFT LANE ENDS" (W4-2) signs.

  Speed Limit of "YY" shown on signs to be determined by an approved Speed Zone Order from the State Traffic Engineer.
- Do not delineate Radar Speed Trailers. Locate trailer as shown, or as directed.
- To be accompanied by Dwg. Nos. TM820 & TM821.
- • • 28" Tubular Markers @ 80 ft. max spacing.
- • • 28" Tubular Markers See TCD Spacing Table on TM800 for max. spacing.
- ◦ ◦ ◦ Temp. Plastic Drums See TCD Spacing Table on TM800 for max. spacing.
- UNDER TRAFFIC
- UNDER CONSTRUCTION

CALC. BOOK NO. _____ N/A. _____

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

SDR DATE _____ 01-JUL-2021 _____

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

OREGON STANDARD DRAWINGS

FREEWAY or DIVIDED HIGHWAY SPEED REDUCTION (PAVING OPERATIONS)

2021

DATE	REVISION DESCRIPTION
07/01/21	Revised sign sequence and PCMS message

TM880

Effective Date: December 1, 2021 – May 31, 2022

NO.	DATE	DESCRIPTION	BY
1		REVISIONS	

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY
1"

DSN. SAW
DRN. AR
CKD. SAW
DATE: SEP 2021

REGISTERED PROFESSIONAL ENGINEER 11843

OREGON JULY 19, 1983 STEVEN A. WARD

RENEWS: 6/30/2024

WESTECH ENGINEERING, INC.
CONSULTING ENGINEERS AND PLANNERS
3841 Fairview Industrial Dr. S.E., Suite 100, Salem, OR 97302
Phone: (503) 585-2474 Fax: (503) 585-3986
E-mail: westech@westech-eng.com

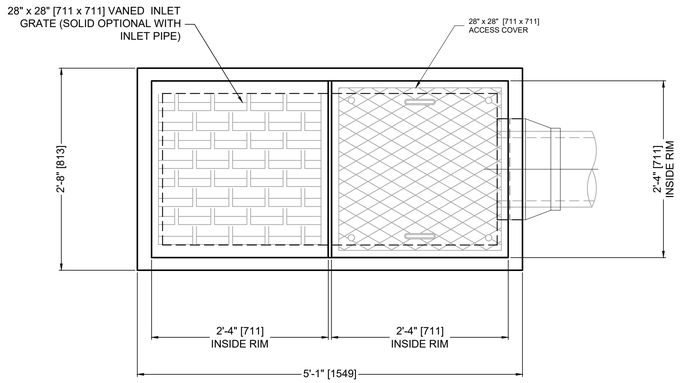
HIGHWAY 211 IMPROVEMENTS
HOME FIRST DEVELOPMENT PARTNERS

ODOT DETAILS

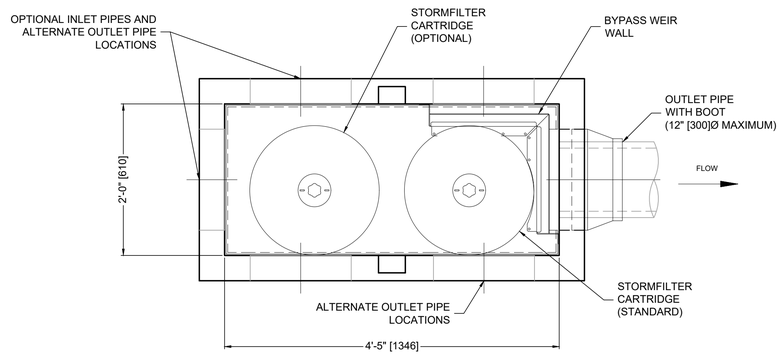
DRAWING
C6.8

JOB NUMBER
3312.0000.0

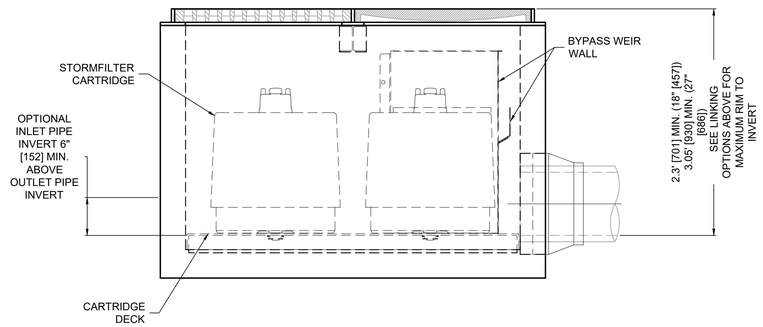
1/10/2023 5:01:50 PM
R:\Dwg\Home First Development Partners\Molalla Highway - Main Street\Civil\Plots\C6.0-8 Details.dwg, (C6.8 tab)



PLAN VIEW



PLAN VIEW
CASTINGS NOT SHOWN



ELEVATION VIEW

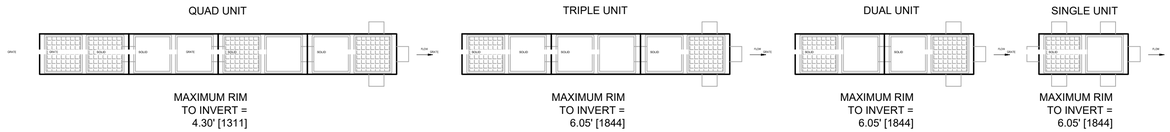
STORMFILTER DESIGN NOTES

- 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]		
ACTIVATION HEAD (ft. [mm])	3.05 [930]			2.3 [701]		
SPECIFIC FLOW RATE (gpm/sf [L/s/m^2])	2 [1.36]			2 [1.36]		
CARTRIDGE FLOW RATE (gpm [L/s])	22.5 [1.4]			15 [0.95]		

* 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. MAXIMUM HEIGHT FOR LINKED UNITS VARIES. CONTACT YOUR CONTECH REPRESENTATIVE FOR MORE INFORMATION



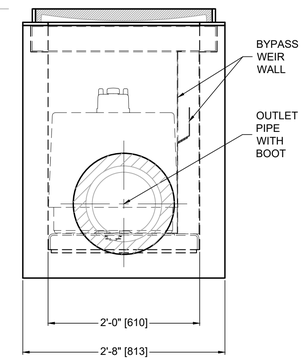
GENERAL NOTES

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.

FINISHED GRADE



RIGHT SIDE VIEW

SITE SPECIFIC DATA REQUIREMENTS

STRUCTURE ID	STA 10+15	STA 13+00
WATER QUALITY FLOW RATE (cfs [L/s])	0.05	0.08
PEAK FLOW RATE (cfs [L/s])	0.15	0.25
RETURN PERIOD OF PEAK FLOW (yrs)	10	10
CARTRIDGE SIZE (27, 18)	18	18
CARTRIDGE FLOW RATE	15 GPM	15 GPM
MEDIA TYPE (PERLITE, ZPG, PSORB)	ZPG	ZPG
NUMBER OF CARTRIDGES REQUIRED	2	3
RIM ELEVATION	SEE PLANS	SEE PLANS

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

NOTES/SPECIAL REQUIREMENTS:

NO.	DATE	DESCRIPTION	BY
		REVISIONS	
1			AR

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY
0 1"

DSN. SAW
DRN. AR
CKD. SAW
DATE: SEP 2021

REGISTERED PROFESSIONAL ENGINEER 11843
OREGON JULY 16, 1982 STEVEN A. WARD
RENEWS: 6/30/2024

WESTECH ENGINEERING, INC.
CONSULTING ENGINEERS AND PLANNERS
3841 Fairview Industrial Dr. S.E., Suite 100, Salem, OR 97302
Phone: (503) 585-2474 Fax: (503) 585-3986
E-mail: westech@westech-eng.com

HIGHWAY 211 IMPROVEMENTS
HOME FIRST DEVELOPMENT PARTNERS

STORMFILTER CB DETAIL

DRAWING
C6.9

JOB NUMBER
3312.0000.0

1/10/2023 5:01:56 PM
R:\Dwg\Home First Development Partners\Wallala Highway - Main Street\Civil\Plots\C6.9 StormFilter CB Detail.dwg, (C6.9 tab)

GEOTECHNICAL REPORT

EXHIBIT 5

Geotechnical Engineering Report

Molalla Development
Molalla, Oregon

for
Home First Development, LLC

December 5, 2022

GeoEngineers
Earth Science + Technology

Geotechnical Engineering Report

Molalla Development
Molalla, Oregon

for
Home First Development, LLC

December 5, 2022

GeoEngineers

333 High Street NE, Suite 102
Salem, Oregon 97301
503.624.9274

Geotechnical Engineering Report

Molalla Development
Molalla, Oregon

File No. 23645-002-00

December 5, 2022

Prepared for:

Home First Development, LLC
866 North Columbia Boulevard, Suite A-25
Portland, Oregon 97217

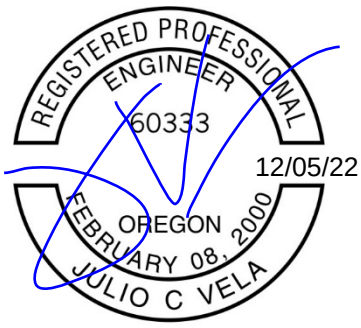
Attention: Rob Justus, Owner

Prepared by:

GeoEngineers, Inc.
333 High Street NE, Suite 102
Salem, Oregon 97301
503.624.9274

Blayne C. Sandau, EIT
Staff Geotechnical II

Julio C. Vela, PhD, PE, GE
Principal



EXPIRES: 06/30/24

BCS:JCV:cdb

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1.0 INTRODUCTION

This geotechnical report summarizes GeoEngineers, Inc.'s (GeoEngineers) geotechnical engineering services for the proposed Home First Development, LLC (HFD) S Ona Way development located at 105 S Ona Way in Molalla, Oregon (the site). The project site is generally developed with a single residence and an associated garage in the north portion of the site, an equipment storage outbuilding in the central portion of the site, and an open grass-covered area on the southern portion of the site. We understand that overall site development includes 10 apartment unit buildings and a clubhouse/office building constructed in two phases. This report was prepared for Phase 2 of the project only. Refer to Appendix B for report limitations and guidelines for use.

A preliminary site development drawing for the proposed project was provided to us by HFD titled "Molalla II Apartments Site Plan." The preliminary Site Plan indicates that the phase of the project included in this report will consist of constructing four two- to three-story apartment buildings associated underground utilities and outdoor amenity areas along the north and west portions of the site with drive lanes and parking areas in the central portion of the site.

At the time this report was prepared, building and pavement traffic loads were not provided. Our recommendations for structural development on the site are based on typical structural loads consistent with development of two- and three-story wood framed apartment structures. We have assumed that maximum column and wall loads will be on the order of 30 kips per column and 2 to 3 kips per linear foot (klf) respectively, and that floor loads for slabs on grade will be 100 pounds per square foot (psf) or less.

2.0 SCOPE OF SERVICES

Our specific scope of services is detailed in our October 18, 2022, proposal to you. Our services were authorized on October 27, 2022. In general, our scope of services included: reviewing selected geotechnical information about the site; performing a geologic reconnaissance; exploring subsurface soil and groundwater conditions; collecting representative soil samples; completing relevant laboratory testing and geotechnical analyses; and providing this geotechnical report with our conclusions, findings, and design recommendations. As discussed with the project team, on site subsurface explorations were modified from the original scope to only include borings for phase 2 of the project site.

3.0 SITE CONDITIONS

3.1. Site Geology

Available geologic mapping of the Molalla area is cursory and at a very large scale. The current geologic map of the site and vicinity is the *Origin, Extent, and Thickness of Quaternary Geologic Units in the Willamette Valley, Oregon* (O'Connor et al. 2001). Based on this mapping, the site is generally underlain by the Troutdale Formation comprising sand, gravel, sandstone, conglomerate, siltstone, and mudstone.

Our explorations suggest that the mapped geology is locally inconsistent with the observed conditions in the upper 5- to 6½-ft of the site that was generally observed to consist of silt. This is likely due to the large

scale of the referenced geologic map. However, subsurface conditions beneath the silt were generally consistent with the mapped geologic units.

3.2. Surface Conditions

The project site is located at 105 S Ona Way and generally consists of developed land comprising a single developed residence with garage and an equipment storage structure, with an undeveloped open grassy area on the southern portion of the site. The site is bounded by W Main Street (Highway 211) on the north, Phase 1 of the Molalla development project to the east, S Ona Way to the west, and mixed use commercial and residential property to the south. Site vegetation generally consists of open grass and bushes, and several semi-mature to mature coniferous and deciduous trees along the eastern and southern edges of the site. Site grades are generally flat.

3.3. Subsurface Conditions

Subsurface conditions at the site were explored by drilling six geotechnical borings (B-1 through B-6). The approximate locations of the explorations completed at the site are presented in Figure 2. The logs of GeoEngineers' explorations completed for this study are presented in Appendix A.

Soil samples obtained during excavation were taken to GeoEngineers laboratory for further evaluation. Selected samples were tested for determination of moisture content. A description of the laboratory testing and the test results are presented in Appendix A.

3.3.1. Soil Conditions

In general, subsurface conditions at the site consist of brown stiff to very stiff silt with varying sand, gravel, and cobble content observed to extend up to 5 feet below ground surface (bgs), underlain by very dense sand and gravel with varying silt and cobble content observed to extend to the maximum depths of our explorations, 6½-ft bgs where we encountered refusal to drilling equipment advance.

3.3.2. Groundwater

Groundwater was not observed in any of our explorations. Groundwater may be present at shallower depths in a perched condition on harder underlying layers as it moves downslope during wet times of the year or during extended periods of wet weather. Groundwater conditions at the site are expected to vary seasonally due to rainfall events and other factors not observed in our explorations.

4.0 CONCLUSIONS

4.1. General

Based on our explorations, testing, and analyses, it is our opinion that the site is suitable for the proposed project from a geotechnical standpoint, provided the recommendations in this report are incorporated into the project design and implemented during construction. We offer the following conclusions regarding geotechnical engineering design and construction at the site.

- Existing site structures and structural features designated for removal should be demolished and completely removed from the site.

- Existing utilities below proposed structural areas, including proposed buildings and roads, should be relocated or abandoned and grouted full if left in place.
- Slabs on grade for proposed structure can be satisfactorily supported on a minimum thickness of compacted crushed rock base founded on firm upper native soils mantling the site. We recommend that slabs-on-grade be provided with proper moisture control by constructing the aggregate base as a capillary break and providing a vapor barrier for moisture-sensitive applications.
- Surface conditions at the site consist primarily of vegetated areas covered with grasses, shrubs and trees; therefore, clearing, stripping and grubbing will be required. We anticipate a stripping depth of approximately 6 inches bgs to remove the topsoil layer. Grubbing and deeper excavations up to several feet will be required to remove the root zones of shrubs and trees. Portions of the site are heavily vegetated and previously buried roots are also expected, even in the current grassy areas of the site. Cleared, stripped and grubbed materials should be hauled off-site and properly disposed unless otherwise allowed by the project specifications for other uses such as landscaping, stockpiling or on-site burning.
- Soils at the site below the topsoil zone are suitable to use as structural fill provided they are properly moisture conditioned and compacted.
- Because the upper site soils are fine-grained, they are very moisture sensitive. As such, they will become significantly disturbed from construction traffic if over optimum moisture content, particularly during wet weather or when the surface is wet or when standing water is present. Wet weather construction practices will be required over exposed native soils and to protect exposed subgrades, except during the dry summer months.
- Groundwater was not observed explorations, but based on our experience and our observations, perched groundwater may be present at lesser depths during periods of persistent rainfall.
- Proposed structures can be satisfactorily supported on continuous and isolated shallow foundations supported on the firm native soils or on structural fill that extends to the firm native soils.
- Based on the assumed design loads described in the “Introduction” section of this report, we estimate total static settlements will be less than 1 inch for foundations constructed as recommended. If larger structural loads are anticipated, we should review and reassess the estimated settlement.
- Standard pavement sections as summarized in this report, consisting of AC over Aggregate Base and/or Aggregate Subbase, over properly prepared subgrade, can be used to support the estimated traffic loads provided the pavement sections are designed and constructed as recommended in this report.

5.0 EARTHWORK RECOMMENDATIONS

5.1. Site Preparation

In general, initial site preparation and primary earthwork operations will include demolition of existing structures, stripping and grubbing of upper organics, light logging and subsequent grubbing of tree roots and areas of concentrated organics, minor grading to create level working surfaces, and relocating live utilities.

All existing utilities in the proposed earthwork construction areas should be identified prior to excavation. Live utility lines beneath proposed structures should be completely removed or filled with grout to reduce

potential settlement of new structures. Soft or loose soil encountered in utility line excavations should be removed and replaced with structural fill where it is located within structural areas.

Debris material generated during demolition of existing improvements or relocation of utilities should be transported off site for disposal. Existing voids and new depressions created during site preparation, and resulting from removal of existing utilities, or other subsurface elements, should be cleaned of loose soil or debris down to firm soil and backfilled with compacted structural fill. Disturbance to a greater depth should be expected if site preparation and earthwork are conducted during period of wet weather.

5.1.1. Demolition

All structures and belowground structures to be demolished should be completely removed from proposed structural areas and for a margin of at least 3 feet around proposed structural areas. Proposed structural areas are areas where new structures will be built, including building pads and roadways. Existing utilities that will be abandoned on site should be identified prior to construction. Abandoned utility lines should be completely removed or filled with grout if abandoned and left in place to reduce potential settlement or caving in the future. Materials generated during demolition should be transported off site and properly disposed.

5.1.2. Stripping

Areas to receive fill, locations of structures, and pavement areas should be cleared of vegetation and stripped of topsoil. Based on our observations at the site, we estimate that the depth of stripping will generally be on the order of 6 to 12 inches. We anticipate the majority of the open grass-covered areas will require stripping depths of 6 inches, but areas of thicker vegetation or areas used for animal pens will require up to 12 inches with localized increased depths in areas of thicker vegetation. Tree-covered areas are discussed below.

As noted above, greater stripping depths may be required to remove localized zones of loose or organic soil. The actual stripping depth should be based on field observations at the time of construction. Stripped material should be transported off site for disposal unless otherwise allowed by project specifications for other uses such as landscaping. Clearing and grubbing recommendations provided below should be used in areas where moderate to heavy vegetation are present, or where surface disturbance from prior use has occurred.

5.1.3. Clearing and Grubbing

Where thicker vegetation is present, more extensive site clearing will be required to remove site vegetation, including thick grass, shrubs and trees that are designated for removal. Following clearing, grubbing and excavations up to several feet will be required to remove the root zones of thick shrubs and trees. Deeper excavations, up to 5 or 6 feet may be required to remove the root zones of large trees. In general, roots larger than ½ inch in diameter should be removed. Excavations to remove root zones should be done with a smooth-bucket to minimize subgrade disturbance. Portions of the site are heavily vegetated and previously buried roots may be present, even in the current grassy areas of the site. Grubbed materials should be hauled off site and properly disposed unless otherwise allowed by the project specifications for other uses such as landscaping, stockpiling or on-site burning.

Existing voids and new depressions created during demolition, clearing, grubbing or other site preparation activities, should be excavated to firm soil and backfilled with Imported Select Structural Fill. Greater depths of disturbance should be expected if site preparation and earthwork are conducted during periods of wet weather.

5.2. Subgrade Preparation and Evaluation

Upon completion of site preparation activities, exposed subgrades should be proof-rolled with a fully loaded dump truck or similar heavy rubber-tired construction equipment where space allows to identify soft, loose or unsuitable areas. Probing may be used for evaluating smaller areas or where proof-rolling is not practical. Proof-rolling and probing should be conducted prior to placing fill and should be performed by a representative of GeoEngineers who will evaluate the suitability of the subgrade and identify areas of yielding that are indicative of soft or loose soil. If soft or loose zones are identified during proof-rolling or probing, these areas should be excavated to the extent indicated by our representative and replaced with structural fill.

As discussed in Section 3.3 of this report, the native fine-grained, silty soil can be highly sensitive to small changes in moisture content and will be difficult, if not impossible, to compact adequately during wet weather. While tilling and compacting the subgrade is the economical method for subgrade improvement, it will likely only be possible during extended dry periods and following moisture conditioning of the soil. As discussed further in this report, cement amendment is an option for conditioning the soil for use as structural fill when drying the soil is not feasible.

During wet weather, or when the exposed subgrade is wet or unsuitable for proof-rolling, the prepared subgrade should be evaluated by observing excavation activity and probing with a steel foundation probe. Observations, probing and compaction testing should be performed by a member of our staff. Wet soil that has been disturbed due to site preparation activities or soft or loose zones identified during probing should be removed and replaced with compacted structural fill.

5.3. Subgrade Protection and Wet Weather Considerations

The soils at the site are highly susceptible to moisture. Wet weather construction practices will be necessary if work is performed during periods of wet weather. If site grading will occur during wet weather conditions, it will be necessary to use track-mounted equipment, load removed material into trucks supported on gravel haul roads, use gravel working pads and employ other methods to reduce ground disturbance. The contractor should be responsible to protect the subgrade during construction.

Earthwork planning should include considerations for minimizing subgrade disturbance. We provide the following recommendations if wet weather construction is considered:

- The ground surface in and around the work area should be sloped so that surface water is directed to a sump or discharge location. The ground surface should be graded such that areas of ponded water do not develop. Measures should be taken by the contractor to prevent surface water from collecting in excavations and trenches. Measures should be implemented to remove surface water from the work areas.
- Earthwork activities should not take place during periods of heavy precipitation.
- Slopes with exposed soils should be covered with plastic sheeting or similar means.

- The site soils should not be left in a disturbed or uncompacted state and exposed to moisture. Sealing the surficial soils by rolling with a smooth-drum roller prior to periods of precipitation may reduce the extent to which these soils become wet or unstable.
- Construction activities should be scheduled so that the length of time that soils are left exposed to moisture is reduced to the extent practicable.
- Construction traffic should be restricted to specific areas of the site, preferably areas that are not susceptible to wet weather disturbance such as haul roads and areas that are adequately surfaced with working pad materials.
- When on-site soils are wet of optimum, they are easily disturbed and will not provide adequate support for construction traffic nor for the proposed development. The use of granular haul roads and staging areas will be necessary to support heavy construction traffic. Generally, a 12- to 16-inch-thick mat of Imported Select Structural Fill should be sufficient for light staging areas for the building pad and light staging activities but is not expected to be adequate to support repeated heavy equipment or truck traffic. The thickness of the Imported Select Structural Fill for haul roads and areas with repeated heavy construction traffic should be increased to between 18 and 24 inches. The actual thickness of haul roads and staging areas should be determined at the time of construction and based on the contractor's approach to site development and the amount and type of construction traffic.
- The base rock (Aggregate Base and Aggregate Subbase) thicknesses described in the "Pavement Recommendations" sections of this report are intended to support post-construction design traffic loads. The design base rock thicknesses will likely not support repeated heavy construction traffic during site construction or during pavement construction. A thicker base rock section as described above for haul roads will likely be required to support construction traffic.
- During periods of wet weather, concrete should be placed as soon as practical after preparing foundation excavations. Foundation bearing surfaces should not be exposed to standing water. Should water infiltrate and pool in the excavation, the water should be removed, and the foundation subgrade should be re-evaluated before placing reinforcing steel or concrete. Foundation subgrade protection, such as a 3- to 4-inch thickness of Aggregate Base/Aggregate Subbase or lean concrete, may be necessary if footing excavations are exposed to extended wet weather conditions.

During wet weather, or when the exposed subgrade is wet or unsuitable for proof-rolling, the prepared subgrade should be evaluated by observing excavation activity and probing with a steel foundation probe. Observations and probing should be performed by a member of our staff. Wet soil that has been disturbed due to site preparation activities, or soft or loose zones identified during probing, should be removed and replaced with Imported Select Structural Fill.

5.4. Soil Amendment with Cement

Although site areas may be too small for practical general implementation, as an alternative to the using Imported Select Structural Fill material for wet weather structural fill, an experienced contractor may be able to amend the on-site soil with portland cement concrete (PCC) to obtain suitable support properties. It is often less costly to amend on-site soils than to remove and replace soft soils with imported granular materials. Single pass tilling depths for cement amendment equipment is typically 18 inches or less. However, multiple tilling passes may be required to adequately blend in the cement with the soils and to sufficiently process the soils. It may also be necessary to place the recommended cement quantities in multiple passes between tilling passes, which requires intermediate compaction.

The contractor should be responsible for selecting the means and methods to construct the amended soil without disturbing exposed subgrades. We recommend low ground-pressure (such as balloon-tired) cement spreading equipment be required. We have observed other methods used for spreading that have resulted in significant site disturbance and high remedial costs. For example, we have observed amendment efforts using a spreader truck equipped with road tires pulled by track-mounted equipment that resulted in significant disturbance to the work area and required re-working large areas of cement-amended product at additional expense.

Areas of standing water, or areas where traffic patterns are concentrated and disturbing the subgrade, will also create a need for higher amounts of cement to be applied and additional tilling for better mixing and cement hydration prior to final compaction.

Successful use of soil amendment depends on the use of correct mixing techniques, the soil moisture content at the time of amendment and amendment quantities. Specific recommendations, based on exposed site conditions for soil amending, can be provided if necessary. However, for preliminary planning purposes, it may be assumed that a minimum of 5 percent cement (by dry weight, assuming a unit weight of 100 pounds per cubic foot (pcf)) will be sufficient for improving on-site soils. Treatment depths of 12 to 16 inches are typical (assuming a seven-day unconfined compressive strength of at least 80 pounds per square inch (psi)), although they may be adjusted in the field depending on site conditions. Soil amending should be conducted in accordance with the specifications provided in Oregon Structural Specialty Code (OSSC) 00344 (Treated Subgrade).

We recommend a target strength for cement-amended soils of 80 psi. The amount of cement used to achieve this target generally varies with moisture content and soil type. It is difficult to predict field performance of soil-to-cement amendment due to variability in soil response and we recommend laboratory testing to confirm expectations. However, for preliminary design purposes, 4 to 5 percent cement by weight of dry soil can generally be used when the soil moisture content does not exceed approximately 20 percent. If the soil moisture content is in the range of 20 to 35 percent, 5 to 7 percent by weight of dry soil is recommended. The amount of cement added to the soil should be adjusted based on field observations and performance.

PCC-amended soil is hard and has low permeability; therefore, this soil does not drain well nor is it suitable for planting. Future landscape areas should not be cement amended, if practical, or accommodations should be planned for drainage and planting. Cement amendment should not be used if runoff during construction cannot be directed away from adjacent low-lying wet areas and active waterways and drainage paths.

When used for constructing pavement, staging, or haul road subgrades, the amended surface should be protected from abrasion by placing a minimum 4-inch thickness of base rock material (Aggregate Base/Aggregate Subbase). To prevent strength loss during curing, cement-amended soil should be allowed to cure for a minimum of four days prior to placing the base rock. The base rock typically becomes contaminated with soil during construction. Contaminated base rock should be removed and replaced with clean base rock in pavement areas to meet the required thickness(es) in the “Pavement Recommendations” section to this report.

It is not possible to amend soil during heavy or continuous rainfall. Work should be completed during suitable weather conditions.

5.5. Excavation

Based on the materials encountered in our subsurface exploration, it is our opinion that conventional earthmoving equipment in proper working condition should be capable of making necessary general excavations.

The earthwork contractor should be responsible for reviewing this report, including the boring logs, providing their own assessments, and providing equipment and methods needed to excavate the site soils while protecting subgrades.

5.6. Dewatering

As discussed in the "Groundwater" section of this report, groundwater was not observed at the time of our explorations, and we do not expect groundwater to be a major factor during shallow excavations and earthwork. Excavations that extend into saturated/wet soils, or excavations that extend into perched groundwater, should be dewatered. Sump pumps are expected to adequately address groundwater encountered in shallow excavations. In addition to groundwater seepage, surface water inflow to the excavations during the wet season can be problematic. Provisions for surface water control during earthwork and excavations should be included in the project plans and should be installed prior to commencing earthwork.

5.7. Permanent Slopes

Permanent cut and fill slopes, where incorporated into the grading plan, should not exceed 2H:1V. The slopes should be planted with appropriate vegetation to provide protection against erosion as soon as possible after grading. Buildings, access roads and pavements should be located at least 10 feet from the top of new fill slopes or existing slopes. Placement of fill near the top of the existing slope should be limited to 2 feet or less in thickness. If the grading plan requires additional fill, we should be contacted to evaluate the impact of the additional loading on the slope. Surface water runoff should be collected and directed away from slopes to prevent water from running down the face of the slope.

5.8. Trench Shoring

All trench excavations should be made in accordance with applicable Occupational Safety and Health Administration (OSHA) and state regulations. In our opinion, native fine grained soils are generally OSHA Type B and native gravel soils are Type C. Excavations deeper than 4 feet should be shored or laid back at an inclination of 1H:1V for type B soils and 1.5H:1V for type C soils, or flatter if workers are required to enter. Excavations made to construct footings or other structural elements should be laid back or shored at the surface as necessary to prevent soil from falling into excavations.

Shoring for trenches less than 6 feet deep that are above the effects of groundwater should be possible with a conventional box system. Moderate sloughing should be expected outside the box. Shoring deeper than 6 feet or below the groundwater table should be designed by a registered engineer before installation. Further, the shoring design engineer should be provided with a copy of this report.

The site earthwork contractor should expect that unsupported cut slopes will likely experience some sloughing and raveling if exposed to water. Plastic sheeting, placed over the exposed slope and directing water away from the slope, will reduce the potential for sloughing and erosion of cut slopes during wet weather.

In our opinion, the contractor will be in the best position to observe subsurface conditions continuously throughout the construction process and to respond to the soil and groundwater conditions. Construction site safety is generally the sole responsibility of the contractor, who also is solely responsible for the means, methods and sequencing of the construction operations and choices regarding excavations and shoring. Under no circumstances should the information provided by GeoEngineers be interpreted to mean that GeoEngineers is assuming responsibility for construction site safety or the contractor's activities; such responsibility is not being implied and should not be inferred.

5.9. Structural Fill and Backfill

5.9.1. General

Materials used to support structure foundations, hardscape, pavements, and any other areas intended to support structures or within the influence zone of structures are classified as structural fill for the purposes of this report.

All structural fill soils should be free of debris, clay balls, roots, organic matter, frozen soil, man-made contaminants, particles with greatest dimension exceeding 4 inches and other deleterious materials. The suitability of soil for use as structural fill will depend on the gradation and moisture content of the soil. As the amount of fines in the soil matrix increases, the soil becomes increasingly more sensitive to small changes in moisture content and achieving the required degree of compaction becomes more difficult or impossible. Recommendations for suitable fill material are provided in the following sections.

5.9.2. Use of On-Site Soils

On-site near surface soil consists of native yellowish-brown silt with varying sand content or sand with varying silt content. On-site soils can be used as structural fill, provided the material meets the above requirements, although due to moisture sensitivity, this material will likely be unsuitable as structural fill during most of the year. If the soil is too wet to achieve satisfactory compaction, moisture conditioning by drying back the material will be required. If the material cannot be properly moisture conditioned, we recommend using imported material for structural fill.

An experienced geotechnical engineer from GeoEngineers should determine the suitability of on-site soil encountered during earthwork activities for reuse as structural fill.

5.9.3. Imported Select Structural Fill

Select imported granular material may be used as structural fill. The imported material should consist of pit or quarry run rock, crushed rock, or crushed gravel and sand that is fairly well-graded between coarse and fine sizes (approximately 25 to 65 percent passing the U.S. No. 4 sieve). It should have less than 5 percent passing the U.S. No. 200 sieve. During dry weather, the fines content can be increased to a maximum of 12 percent.

5.9.4. Aggregate Base

Aggregate base material located under floor slabs and pavements and crushed rock used in footing overexcavations should consist of imported clean, durable, crushed angular rock. Such rock should be well-graded, have a maximum particle size of 1 inch and have less than 5 percent passing the U.S. No. 200 sieve (3 percent for retaining walls). In addition, aggregate base shall have a minimum of

75 percent fractured particles according to American Association of State Highway and Transportation Officials (AASHTO) TP-61 and a sand equivalent of not less than 30 percent based on AASHTO T-176.

5.9.5. Aggregate Subbase

Aggregate Subbase material should consist of imported, clean, durable, crushed angular rock. Such rock should be well-graded, have a maximum particle size of 1½ inches, have less than 5 percent passing the U.S. No. 200 sieve and meet the gradation requirements in Oregon Department of Transportation (ODOT) Standard Section 00331. In addition, aggregate base shall have a minimum of 75 percent fractured particles according to AASHTO TP-61 and a sand equivalent of not less than 30 percent based on AASHTO T-176.

5.9.6. Trench Backfill

Backfill for pipe bedding and in the pipe zone should consist of well-graded granular material with a maximum particle size of ¾ inch and less than 5 percent passing the U.S. No. 200 sieve. The material should be free of organic matter and other deleterious materials. Further, the backfill should meet the pipe manufacturer's recommendations. Above the pipe zone backfill, Imported Select Structural Fill may be used as described above.

5.9.7. Fill Placement and Compaction

Structural fill should be compacted at moisture contents that are within 3 percent of the optimum moisture content as determined by ASTM Test Method D 1557 (Modified Proctor). The optimum moisture content varies with gradation and should be evaluated during construction. Fill material that is not near the optimum moisture content should be moisture conditioned prior to compaction.

Fill and backfill material should be placed in uniform, horizontal lifts and compacted with appropriate equipment. The appropriate lift thickness will vary depending on the material and compaction equipment used. Fill material should be compacted in accordance with Table 1 below. It is the contractor's responsibility to select appropriate compaction equipment and place the material in lifts that are thin enough to meet these criteria. However, in no case should the loose lift thickness exceed 18 inches.

TABLE 1. COMPACTION CRITERIA

Fill Type	Compaction Requirements		
	Percent Maximum Dry Density Determined by ASTM Test Method D 1557 at ± 3% of Optimum Moisture		
	0 to 2 Feet Below Subgrade	> 2 Feet Below Subgrade	Pipe Zone
On-site fine-grained soils	92	92	-----
Imported Granular, maximum particle size < 1¼ inch	95	95	-----
Imported Granular, maximum particle size 1¼ inch to 4 inches	n/a (proof-roll)	n/a (proof-roll)	-----
Retaining Wall Backfill*	92	92	------
Nonstructural Zones	90	90	90
Trench Backfill	95	90	90

Note:

*Measures should be taken to prevent overcompaction of the backfill behind retaining walls. We recommend placing the zone of backfill located within 5 feet of the wall in lifts not exceeding about 6 inches in loose thickness and compacting this zone with hand-operated equipment such as a vibrating plate compactor and a jumping jack.

A representative from GeoEngineers should evaluate compaction of each lift of fill. Compaction should be evaluated by compaction testing unless other methods are proposed for oversized materials and are approved by GeoEngineers prior to fill placement. These other methods typically involve procedural placement and compaction specifications together with verifying requirements such as proof-rolling or probing.

6.0 STRUCTURAL DESIGN RECOMMENDATIONS

6.1. Foundation Support Recommendations

The proposed structure can be satisfactorily founded on continuous wall or isolated column footings supported on firm native soils or on structural fill placed over firm native soils. Exterior footings should be established at least 18 inches below the lowest adjacent grade. The recommended minimum footing depth is greater than the anticipated frost depth. Interior footings can be founded a minimum of 12 inches below the top of the first-floor slab. Isolated column and continuous wall footings should have minimum widths of 24 and 18 inches, respectively. We have assumed that the column loads will be 30 kips or less, wall loads will be 3 klf or less, and floor loads for slabs on grade will be 100 psf or less for the proposed buildings. If design loads exceed these values, our recommendations may need to be revised.

6.1.1. Foundation Subgrade Preparation

The subgrades beneath proposed structural elements should be prepared as described below and in the "Earthwork Recommendations" section of this report. We recommend loose or disturbed soils resulting from foundation excavation be removed before placing reinforcing steel and concrete. Foundation bearing surfaces should not be exposed to standing water. If water infiltrates and pools in the excavation, the water, along with any disturbed soil, should be removed before placing reinforcing steel and concrete. A thin gravel

layer consisting of Aggregate Base or Aggregate Subbase material can be placed at the base of foundation excavations to help protect the subgrade from weather and light foot traffic. The layer thickness for the gravel layer should be determined at the time of construction but is typically 3 to 4 inches. The gravel layer should be compacted as described in the "Fill Placement and Compaction" section.

We recommend GeoEngineers observe all foundation subgrades before placing concrete forms and reinforcing steel to determine that bearing surfaces have been adequately prepared and the soil conditions are consistent with those observed during our explorations.

6.1.2. Isolated Spread Footings

We recommend conventional footings be proportioned using a maximum allowable bearing pressure of 2,500 psf if supported on firm native soils or on structural fill placed over firm native soils. This bearing pressure applies to the total of dead and long-term live loads and may be increased by one-third when considering earthquake or wind loads. This is a net bearing pressure. The weight of the footing and overlying backfill can be ignored in calculating footing sizes.

6.1.3. Lateral Load Resistance

Lateral loads can be resisted by a combination of friction between the footing and the supporting soil, and by the passive lateral resistance of the soil surrounding the embedded portions of the footings. A coefficient of friction between the concrete and soil of 0.35 and a passive lateral resistance corresponding to an equivalent fluid density of 250 pcf may be used for design. These values are appropriate for foundation elements that are poured directly against the native soils or surrounded by compacted structural fill.

The passive earth pressure and friction components may be combined, provided the passive component does not exceed two-thirds of the total.

The passive earth pressure value is based on the assumptions that the adjacent grade is level and static groundwater remains below the base of the footing throughout the year. The top 1 foot of soil should be neglected when calculating passive lateral earth pressures unless the adjacent area is covered with pavement. The lateral resistance values do not include safety factors.

6.1.4. Foundation Settlement

Foundations designed and constructed as recommended are expected to experience static settlements of less than 1 inch. Differential settlements of up to one half of the total settlement magnitude can be expected between adjacent footings supporting comparable loads, and across mat foundations.

6.2. Drainage

We recommend the ground surface be sloped away from the building at least 5 percent for a minimum distance of 10 feet measured perpendicular to the face of the wall in accordance with section 1804.4 of the 2018 IBC. All downspouts should be tightlined away from the building foundation areas and should also be discharged into a stormwater disposal system. Downspouts should not be connected to footing drains.

Although not required based on groundwater depths observed in our explorations, if perimeter footing drains are used for below-grade structural elements or crawlspaces, they should be installed at the base of the exterior footings. The perimeter footing drains should be provided with cleanouts and should consist

of at least 4-inch-diameter perforated pipe placed on a 3-inch bed of and surrounded by 6 inches of drainage material enclosed in a non-woven geotextile such as Mirafi 140N (or approved equivalent) to prevent fine soil from migrating into the drain material. We recommend against using flexible tubing for footing drainpipes. The perimeter drains should be sloped to drain by gravity to a suitable discharge point, preferably a storm drain. We recommend that the cleanouts be covered and placed in flush-mounted utility boxes. Water collected in roof downspout lines must not be routed to the footing drain lines.

6.3. Slab-on-Grade Floors

Satisfactory subgrade support for floor slabs on grade supporting the planned 125 psf floor loads can be obtained provided the floor slab subgrade is described in the "Earthwork Recommendations" section of this report. Slabs should be reinforced according to their proposed use and per the structural engineer's recommendations. Subgrade support for concrete slabs can be obtained from the firm native soils underlying the tilled zone or on structural fill placed over firm native soils.

We recommend that on-grade slabs be underlain by a minimum 6-inch-thickness of Aggregate Base acting as a capillary break material to reduce the potential for moisture migration into the slab. The capillary break material should be placed as recommended in the "Fill Placement and Compaction" section of this report.

If dry on-grade slabs are required, for example at interior spaces where adhesives are used to anchor carpet or tile to the slab, a waterproof liner may be placed as a vapor barrier below the slab. The vapor barrier should be selected by the structural engineer and should be accounted for in the design floor section and mix design selection for the concrete, to accommodate the effect of the vapor barrier on concrete slab curing. Load-bearing concrete slabs should be designed assuming a modulus of subgrade reaction (k) of 150 psi per inch. We estimate that concrete slabs constructed as recommended will settle less than ½ inch. Floor slab subgrades should be evaluated according to the "Subgrade Evaluation" section of this report.

6.4. Seismic Design

Parameters provided on Table 2 are based on the conditions encountered during our subsurface exploration program and the procedure and requirements outlined in the 2018 International Building Code (IBC) and the 2019 State of Oregon Structural Specialty Code (OSSC) Chapters 1 and 18. Per ASCE 7-16 Section 11.4.8, a site specific response analysis is required for site class F sites, and a ground motion hazard analysis or site-specific response analysis is required to determine the design ground motions for structures on Site Class D and E sites with S_1 greater than or equal to 0.2g.

For this project, the site is classified as site class D; therefore, the provisions of 11.4.8 are applicable. Alternatively, the parameters in Table 2 below may be used to determine the design ground motions if Exception 2 of Section 11.4.8 of ASCE 7-16 is used. Using this exception, the seismic response coefficient (C_s) is determined by Equation (Eq.) (12.8-2) for values of $T \leq 1.5T_S$, and taken as equal to 1.5 times the value computed in accordance with either Eq. (12.8-3) for $T_L \geq T > 1.5T_s$ or Eq. (12.8-4) for $T > T_L$, where T represents the fundamental period of the structure and T_S=0.758 sec. If requested, we can complete a site-specific seismic response analysis which might provide somewhat reduced seismic demands from the parameters in Table 2 and the requirements for using Exception 2 of Section 11.4.8 in ASCE 7-16. The reduced values will likely not be significant enough to warrant the additional cost of further evaluation if designing to the 2018 IBC.

TABLE 2. SEISMIC DESIGN PARAMETERS

Parameter	Recommended Value[1,2]
Site Class	D
Mapped Spectral Response Acceleration at Short Period (S_S)	0.730 g
Mapped Spectral Response Acceleration at 1 Second Period (S_1)	0.344 g
Site Modified Peak Ground Acceleration (PGA_M)	0.420 g
Site Amplification Factor at 0.2 second period (F_a)	1.216
Site Amplification Factor at 1.0 second period (F_v)	1.956
Design Spectral Acceleration at 0.2 second period (S_{DS})	0.592 g
Design Spectral Acceleration at 1.0 second period (S_{D1})	0.449 g

Note:

[1] Parameters developed based on Latitude 45.148885° and Longitude -122.59595° using the ATC Hazards online tool.

[2] These values are only valid if the structural engineer utilizes Exception 2 of Section 11.4.8 (ASCE 7-16).

6.4.1. Liquefaction Potential

Liquefaction is a phenomenon caused by a rapid increase in pore water pressure that reduces the effective stress between soil particles to near zero. The excessive buildup of pore water pressure results in the sudden loss of shear strength in a soil. Granular soil, which relies on interparticle friction for strength, is susceptible to liquefaction until the excess pore pressures can dissipate. Sand boils and flows observed at the ground surface after an earthquake are the result of excess pore pressures dissipating upwards, carrying soil particles with the draining water. In general, loose, saturated sand soil with low silt and clay contents is the most susceptible to liquefaction. Low plasticity, silty sand may be moderately susceptible to liquefaction under relatively higher levels of ground shaking.

As discussed in Section 3.3.2 of this report, groundwater was not observed in our explorations. The site soils below the groundwater table are expected to include sand and gravel with varying amounts of silt that we consider to be at low risk of liquefaction during the design earthquake event. Therefore, we consider the risk of liquefaction induced lateral spread at the project site to be very low.

6.5. Retaining Walls

6.5.1. Concrete Retaining Walls

Retaining structures free to rotate slightly around the base should be designed for active earth pressures using an equivalent fluid unit weight (efp) of 36 pcf when the ground surface extends level behind the wall equal to a distance of at least twice the height of the wall, and 60 pcf for an inclined slope of 2H:1V above the wall. For lesser slopes between flat and 2H:1V, the efp can be linearly interpolated between the recommended values. The efp value is based on the following assumptions.

- The walls will not be restrained against rotation when the backfill is placed.
- Walls are 8 feet or less in total wall support height.
- The backfill within 2 feet of the wall consists of free-draining granular materials.
- Grades above the top of the walls are no steeper than a 2H:1V slope.

- Total wall heights are determined based on a level front slope from the base of the wall.
- Hydrostatic pressures do not develop, and drainage will be provided behind the wall.

Seismically induced lateral forces on permanent below-grade building walls can be calculated using a dynamic force equal to 9H psf, where H is the wall height. This seismic force should be applied with the centroid located at 0.6H from the wall base. These values assume that the wall is vertical and unrestrained and the backfill behind the wall is horizontal.

For site retaining walls, seismic lateral earth pressures should be computed as a part of retaining wall design using the Mononobe-Okabe equation or another method appropriate to the selected wall system.

Retaining walls, including foundation walls that are restrained against rotation during backfilling, should be designed for an at-rest equivalent fluid unit weight of 60 pcf when the ground surface extends level behind the wall equal to a distance of at least twice the height of the wall, and 85 pcf for an inclined slope of 2H:1V above the wall. For lesser slopes between flat and 2H:1V, the efp can be linearly interpolated between the recommended values.

Surcharge loads applied closer than one-half of the wall height should be considered as uniformly distributed horizontal pressures equal to one-third of the distributed vertical surcharge pressure. Footings for retaining walls should be designed as recommended for shallow foundations. Backfill should be placed and compacted as recommended for structural fill.

Re-evaluation of our recommendations will be required if the retaining wall design criteria for the project vary from these assumptions.

We recommend that GeoEngineers be retained to review the retaining wall design to confirm that it meets the requirements in our report. The retaining wall designer should perform global stability analysis of the proposed wall.

6.5.2. Drainage

Positive drainage is imperative behind retaining structures. This can be accomplished by providing a drainage zone behind the wall consisting of free-draining material and perforated pipes to collect and dispose the water. The drainage material should consist of Aggregate Base having less than 3 percent passing the U.S. No. 200 sieve. The wall drainage zone should extend horizontally at least 18 inches from the back of the wall.

A perforated smooth-walled rigid drainpipe, having a minimum diameter of 4 inches, should be placed at the bottom of the drainage zone along the entire length of the wall, with the pipe invert at or below the base of the wall footing. The drainpipes should discharge to a tightline leading to an appropriate collection and disposal system. An adequate number of cleanouts should be incorporated into the design of the drains to provide access for regular maintenance. Roof downspouts, perimeter drains or other types of drainage systems should not be connected to retaining wall drain systems.

7.0 PAVEMENT RECOMMENDATIONS

Our pavement recommendations are based on the results of our field testing and analysis. The recommended pavement sections assume that final improvements surrounding the pavement will be designed and constructed such that stormwater or excess irrigation water from landscape areas does not infiltrate below the pavement section into the base rock materials.

7.1. Dynamic Cone Penetrometer (DCP) Field Testing and Resilient Modulus (MR)

We conducted three DCP tests onsite near the proposed locations of the new parking areas and drive aisles. The tests were conducted in general accordance with ASTM D 6951 to estimate the subgrade support value, M_R. At each test location, we recorded penetration depths of the cone versus hammer blow counts. The DCP tests were terminated at depths between 3 and 5 feet bgs. The resilient modulus was estimated in general accordance with the ODOT Pavement Design Guide using a conversion coefficient, C_f, of 0.35.

Table 3 lists the estimated subgrade resilient modulus at each test location based on data obtained in the upper 18 inches below the proposed pavement section. Field DCP data are summarized in Figures A-21 through A-28.

TABLE 3. ESTIMATED SUBGRADE RESILIENT MODULI BASED ON DCP TESTING

Boring Number	Estimated Resilient Modulus (psi)
DCP-1	5,700
DCP-2	4,500
DCP-3	5,400

7.2. Asphalt Concrete (AC) Pavement Sections

Pavement subgrades should be prepared in accordance with Section 5.2 of this report. Our pavement recommendations assume that traffic at the site will consist of occasional truck traffic and passenger cars. We do not have specific information on the frequency and type of vehicles that will use the area; however, we have based our design analysis on traffic consisting of two heavy trucks per day to account for delivery- and service-type vehicles and passenger car traffic for the heavy-duty pavement sections, and passenger car traffic only for the light-duty pavement sections.

Our pavement recommendations are based on the following assumptions:

- The on-site soil subgrade below proposed fill placed to raise site grades or below aggregate base sections has been prepared as described in Section 6.1 of this report, and observations indicate that subgrade is in a firm and unyielding condition.
- A resilient modulus of 20,000 psi was estimated for base rock prepared and compacted as recommended.
- A resilient modulus of 5,200 psi was estimated for firm in-place soils or structural fill placed on firm native soils for the proposed parking lot.
- Initial and terminal serviceability indices of 4.2 and 2.0, respectively.

- Reliability and standard deviations of 75 percent and 0.45, respectively.
- Structural coefficients of 0.41 and 0.10 for the asphalt and base rock, respectively.
- A 20-year design life.

If any of the noted assumptions vary from project design use, our office should be contacted with the appropriate information so that the pavement designs can be revised or confirmed adequate. The recommended minimum pavement sections are provided in Table 4 below.

TABLE 4. MINIMUM AC PAVEMENT SECTIONS FOR LOCAL RESIDENTIAL ROADS

Section	Minimum Asphalt Thickness (inches)	Minimum Aggregate Base Thickness (inches)	Minimum Aggregate Sub-Base Thickness (inches)
Light Duty (general automobile parking areas)	3.0	6.0	-
Heavy Duty (drive aisles and heavy delivery areas)	3.5	7.0	-
Light Duty (general automobile parking areas)	3.0	4.0	8.0
Heavy Duty (drive aisles and heavy delivery areas)	3.5	4.0	8.0

The aggregate base course should conform to the "Aggregate Base" section of this report and be compacted to at least 95 percent of the maximum dry density (MDD) determined in accordance with AASHTO T-180/ASTM Test Method D 1557. The AC pavement should conform to Section 00745 of the most current edition of the ODOT Standard Specifications for Highway Construction. The Job Mix Formula should meet the requirements for a ½-inch Dense Graded Level 2 Mix. The AC should be PG 64-22 grade meeting the ODOT Standard Specifications for Asphalt Materials. AC pavement should be compacted to 92.0 percent at Maximum Theoretical Unit Weight (Rice Gravity) of AASHTO T-209.

TABLE 5. PAVEMENT SECTION RECOMMENDATIONS WITH CEMENT AMENDED SUB-BASE

Minimum Asphalt Thickness (inches)	Minimum Aggregate Base Thickness (inches)	Minimum Cement Amended Subgrade Thickness (inches)
3.5	4.0	12

Cement amendment may be used during site development, as described above, or to reduce the pavement section thickness. The exact design of the amount of cement to be used should be determined based on the condition of the subgrade at the time of construction and the prevailing weather conditions but should likely be between 3 and 6 percent. We recommend the minimum thickness of amendment be 12 inches. GeoEngineers can provide additional information regarding cement volumes at the time of construction. The minimum pavement sections, with a 12-inch-thick cement amended soil section, are provided in Table 5 above.

8.0 DESIGN REVIEW AND CONSTRUCTION SERVICES

Recommendations provided in this report are based on the assumptions and preliminary design information stated herein. We welcome the opportunity to review and discuss construction plans and specifications for this project as they are being developed. In addition, GeoEngineers should be retained to review the geotechnical-related portions of the plans and specifications to evaluate whether they are in conformance with the recommendations provided in this report.

Satisfactory foundation and earthwork performance depends to a large degree on quality of construction. Sufficient monitoring of the contractor's activities is a key part of determining that the work is completed in accordance with the construction drawings and specifications. Subsurface conditions observed during construction should be compared with those encountered during the subsurface explorations. Recognition of changed conditions often requires experience; therefore, qualified personnel should visit the site with sufficient frequency to detect whether subsurface conditions change significantly from those anticipated.

We recommend that GeoEngineers be retained to observe construction at the site to confirm that subsurface conditions are consistent with the site explorations, and to confirm that the intent of project plans and specifications relating to earthwork, pavement and foundation construction are being met.

9.0 LIMITATIONS

We have prepared this report for the exclusive use of Home First Development, LLC and their authorized agents and/or regulatory agencies for the proposed Molalla Development – Phase 2 project located at 105 S Ona Way, in Molalla, Oregon.

This report is not intended for use by others and the information contained herein is not applicable to other sites. No other party may rely on the product of our services unless we agree in advance and in writing to such reliance.

Within the limitations of scope, schedule, and budget, our services have been executed in accordance with generally accepted practices in the area at the time this report was prepared. No warranty or other conditions, express or implied, should be understood.

Please refer to Appendix B titled "Report Limitations and Guidelines for Use" for additional information pertaining to use of this report.

10.0 REFERENCES

International Code Council. 2018. 2018 International Building Code.

American Association of State Highway and Transportation Officials (AASHTO). 1993. Guide for Design of Pavement Structures.

Occupational Safety and Health Administration (OSHA) Technical Manual Section V: Chapter 2, Excavations: Hazard Recognition in Trenching and Shoring: http://www.osha.gov/dts/osta/otm/otm_v/otm_v_2.html.

O'Connor, J.E., A. Sarna-Wojcick, K.C. Woznikak, D.J. Polette and R.J. Fleck. 2001. Orgin, Extent, and Thickness of Quaternary Geologic Units in the Willamette Valley, Oregon. U.S. Geological Survey, Professional Paper 1620, p. 51, 1 plate, 1:250,000 scale.

Oregon Department of Transportation (ODOT). 2018. Standard Specifications for Highway Construction. Salem, Oregon.

Oregon Department of Transportation (ODOT). 2019. ODOT Pavement Design Guide. Salem, Oregon.

FIGURES

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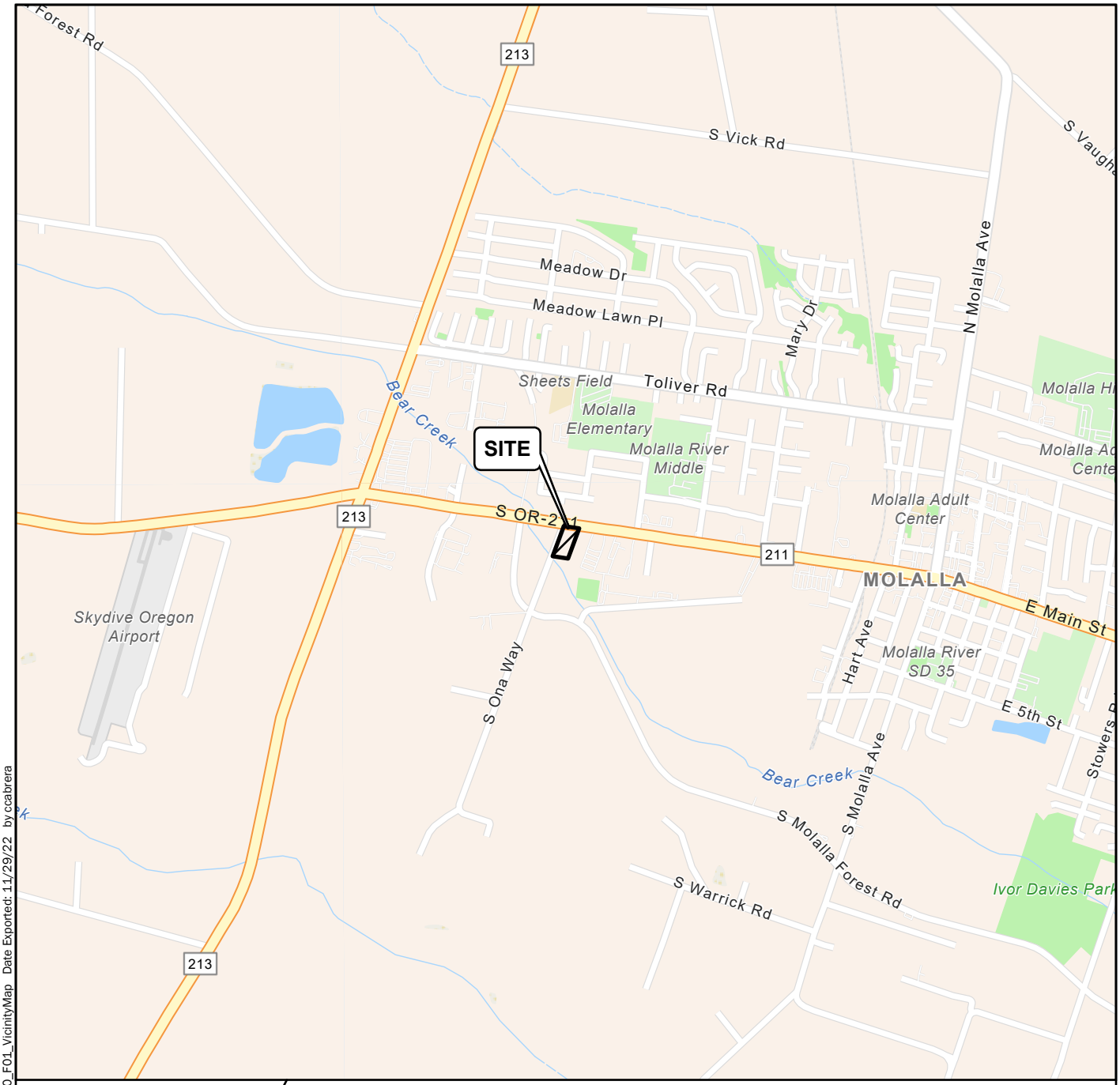

Source(s):
- ESRI

Coordinate System: NAD 1983 UTM Zone 10N

Disclaimer: This figure was created for a specific purpose and project. Any use of this figure for any other project or purpose shall be at the user's sole risk and without liability to GeoEngineers. The locations of features shown may be approximate. GeoEngineers makes no warranty or representation as to the accuracy, completeness, or suitability of the figure, or data contained therein. The file containing this figure is a copy of a master document, the original of which is retained by GeoEngineers and is the official document of record.

Vicinity Map

Molalla Development Project
Molalla, Oregon

GeoEngineers

Figure 1

P:\23\23645002\GIS\23645002_Project\23645002_Project.aprx\2364500200_F01_VicinityMap Date Exported: 11/29/22 by ccabrera

P:\23\23645002\GIS\23645002_Project\23645002_Project.aprx\23645002_Project Date Exported: 11/29/22 by ccabrera

Legend

Boring Number and Approximate Loca on

Approximate Project Area

N

0 50

Feet

Source(s):
- ESRI
- Metro RLIS

Coordinate System: NAD 1983 HARN StatePlane Oregon North FIPS 3601 Feet Intl

Disclaimer: This figure was created for a specific purpose and project. Any use of this figure for any other project or purpose shall be at the user's sole risk and without liability to GeoEngineers. The locations of features shown may be approximate. GeoEngineers makes no warranty or representation as to the accuracy, completeness, or suitability of the figure, or data contained therein. The file containing this figure is a copy of a master document, the original of which is retained by GeoEngineers and is the official document of record.

Site Plan

Molalla Development Project
Molalla, Oregon

GeoEngineers

Figure 2

APPENDICES

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APPENDIX A
Field Explorations and Laboratory Testing

APPENDIX A
FIELD EXPLORATIONS AND LABORATORY TESTING

Field Explorations

Soil and groundwater conditions at the proposed phase 2 Molalla Development site were explored on November 9, 2022 by completing six borings (B-1 through B-6) and 3 DCP soundings. Boring depths extended up to 6½ feet bgs and DCP soundings were extended to approximately 3 feet bgs at the approximate locations shown in Figure 2.

The borings were advanced with a solid-stem auger using a trailer-mounted drill rig owned and operated by Western States Drilling. The drilling was continuously monitored by qualified geotechnical personnel from our office who maintained a detailed log of subsurface explorations, visually classified the soil encountered and obtained representative soil samples from the borings. Representative soil samples were obtained from each boring at approximate 2½- to 5-foot-depth intervals using a standard split spoon sampler. The samplers were driven into the soil using an automatic 140-pound hammer, free-falling 30 inches on each blow. The number of blows required to drive the sampler each of three, 6-inch increments of penetration were recorded in the field. The sum of the blow counts for the last two, 6-inch increments of penetration is reported on the boring logs as the ASTM D 1556 Standard Penetration Test (SPT) N-value.

DCP soundings were performed by a qualified geotechnical staff member from our office who recorded blow count versus cumulative penetration depth. This penetration resistance data was compared to the nearby borings where a detailed log of subsurface explorations was maintained, the soils encountered were visually classified and representative soil samples from the borings were obtained. The results of the DCP soundings are presented in Figures A-3 through A-10.

Recovered soil samples from exploratory borings were visually classified in the field in general accordance with ASTM D 2488 and the classification chart listed in Key to Exploration Logs, Figure A-1. Logs of the borings are presented in Figures A-2 through A-7. The logs are based on interpretation of the field and laboratory data and indicate the depth at which subsurface materials or their characteristics change, although these changes might actually be gradual.

Laboratory Testing

Soil samples obtained from the explorations were visually classified in the field and in our laboratory using the USCS and ASTM classification methods. ASTM Test Method D 2488 was used to visually classify the soil samples, while ASTM D 2487 was used to classify the soils based on laboratory tests results. Moisture content tests were performed in general accordance with ASTM D 2216-05. Results of the moisture contents testing are presented in the appropriate exploration logs at the respective sample depths.

SOIL CLASSIFICATION CHART

MAJOR DIVISIONS			SYMBOLS GRAPH	SYMBOLS LETTER	TYPICAL DESCRIPTIONS
COARSE GRAINED SOILS	GRAVEL AND GRAVELLY SOILS	CLEAN GRAVELS (LITTLE OR NO FINES)		GW	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES
				GP	POORLY-GRADED GRAVELS, GRAVEL - SAND MIXTURES
	MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GM	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
				GC	CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES
MORE THAN 50% RETAINED ON NO. 200 SIEVE	SAND AND SANDY SOILS	CLEAN SANDS (LITTLE OR NO FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS
				SP	POORLY-GRADED SANDS, GRAVELLY SAND
	MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND - SILT MIXTURES
				SC	CLAYEY SANDS, SAND - CLAY MIXTURES
FINE GRAINED SOILS	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS, ROCK FLOUR, CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
MORE THAN 50% PASSING NO. 200 SIEVE	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY
				OH	ORGANIC CLAYS AND SILTS OF MEDIUM TO HIGH PLASTICITY
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

NOTE: Multiple symbols are used to indicate borderline or dual soil classifications

ADDITIONAL MATERIAL SYMBOLS

SYMBOLS GRAPH	SYMBOLS LETTER	TYPICAL DESCRIPTIONS
	AC	Asphalt Concrete
	CC	Cement Concrete
	CR	Crushed Rock/ Quarry Spalls
	SOD	Sod/Forest Duff
	TS	Topsoil

Groundwater Contact

Measured groundwater level in exploration, well, or piezometer

Measured free product in well or piezometer

Graphic Log Contact

Distinct contact between soil strata

Approximate contact between soil strata

Material Description Contact

Contact between geologic units

Contact between soil of the same geologic unit

Sampler Symbol Descriptions

2.4-inch I.D. split barrel / Dames & Moore (D&M)

Standard Penetration Test (SPT)

Shelby tube

Piston

Direct-Push

Bulk or grab

Continuous Coring

Blowcount is recorded for driven samplers as the number of blows required to advance sampler 12 inches (or distance noted). See exploration log for hammer weight and drop.

"P" indicates sampler pushed using the weight of the drill rig.

"WOH" indicates sampler pushed using the weight of the hammer.

Laboratory / Field Tests

%F	Percent fines
%G	Percent gravel
AL	Atterberg limits
CA	Chemical analysis
CP	Laboratory compaction test
CS	Consolidation test
DD	Dry density
DS	Direct shear
HA	Hydrometer analysis
MC	Moisture content
MD	Moisture content and dry density
Mohs	Mohs hardness scale
OC	Organic content
PM	Permeability or hydraulic conductivity
PI	Plasticity index
PL	Point lead test
PP	Pocket penetrometer
SA	Sieve analysis
TX	Triaxial compression
UC	Unconfined compression
UU	Unconsolidated undrained triaxial compression
VS	Vane shear

Sheen Classification

NS	No Visible Sheen
SS	Slight Sheen
MS	Moderate Sheen
HS	Heavy Sheen

NOTE: The reader must refer to the discussion in the report text and the logs of explorations for a proper understanding of subsurface conditions. Descriptions on the logs apply only at the specific exploration locations and at the time the explorations were made; they are not warranted to be representative of subsurface conditions at other locations or times.

Key to Exploration Logs

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Figure A-1

Drilled Start 11/9/2022 End 11/9/2022	Total Depth (ft) 6.5	Logged By / Checked By	Driller Western States Drilling	Drilling Method Solid-stem Rotery	
Surface Elevation (ft) / Vertical Datum Undetermined	Hammer Data Rope & cathead 140 (lbs) / 30 (in) Drop	Drilling Equipment Simco Trailer Rig			
Easting (X) / Northing (Y)	System Datum	Groundwater not observed at time of exploration			
Notes:					

Elevation (feet)	Depth (feet)	FIELD DATA: Interval Recovered (in)	FIELD DATA: Blows/foot	FIELD DATA: Collected Sample / Sample Name Testing	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Moisture Content (%)	Fines Content (%)	REMARKS
	0	16	19	1 MC		CL	Brown silty clay with sand (very stiff, moist)	23.7		
	5		69	2		GP	Sandy gravel with occasional silt (very hard, moist)			

Note: See Figure A-1 for explanation of symbols.
Coordinates Data Source: Horizontal approximated based on . Vertical approximated based on .

Log of Boring B-1

GeoEngineers

Project: Molalla Development Project
Project Location: Molalla, Oregon
Project Number: 23645-002-00

Figure A-2
Sheet 1 of 1

Date:11/29/22 Path:\\GEOENGINEERS.COM\WAN\PROJECTS\23\23645002\GINT\23645002.GPJ DBLibrary/Library:GEOENGINEERS_DF_STD_US_JUNE_2017.GLB/GEIS_GEOTECH_STANDARD_%F_NO_GW

Drilled Start 11/9/2022 End 11/9/2022	Total Depth (ft) 6.5	Logged By / Checked By	Driller Western States Drilling	Drilling Method Solid-stem Rotery	
Surface Elevation (ft) / Vertical Datum Undetermined	Hammer Data Rope & cathead 140 (lbs) / 30 (in) Drop	Drilling Equipment Simco Trailer Rig			
Easting (X) / Northing (Y)	System Datum	Groundwater not observed at time of exploration			
Notes:					

Elevation (feet)	Depth (feet)	FIELD DATA: Interval Recovered (in)	Blows/foot	Collected Sample / Sample Name Testing	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Moisture Content (%)	Fines Content (%)	REMARKS
	0	9	12	1		CL	Yellowish-brown silty clay with trace sand and organic matter (stiff, moist)			
	5	8.5	57	2		SM	Brown sand with silt and gravel (very dense, moist)			

Note: See Figure A-1 for explanation of symbols.
Coordinates Data Source: Horizontal approximated based on . Vertical approximated based on .

Log of Boring B-2

GeoEngineers

Project: Molalla Development Project
Project Location: Molalla, Oregon
Project Number: 23645-002-00

Figure A-3
Sheet 1 of 1

Date:11/29/22 Path:\\GEOENGINEERS.COM\WAN\PROJECTS\23\23645002\GINT\23645002GPJ DBLibrary/Library:GEOENGINEERS_DF_STD_US_JUNE_2017.GLB/GEIB_GEOTECH_STANDARD_%F_NO_GW

Drilled Start 11/9/2022 End 11/9/2022	Total Depth (ft) 5	Logged By / Checked By	Driller Western States Drilling	Drilling Method Solid-stem Rotery	
Surface Elevation (ft) / Vertical Datum Undetermined	Hammer Data Rope & cathead 140 (lbs) / 30 (in) Drop	Drilling Equipment Simco Trailer Rig			
Easting (X) / Northing (Y)	System Datum	Groundwater not observed at time of exploration			
Notes:					

Elevation (feet)	Depth (feet)	FIELD DATA: Interval Recovered (in)	Blows/foot	Collected Sample	Sample Name / Testing	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Moisture Content (%)	Fines Content (%)	REMARKS
	0						CL	Brown silty clay with trace sand and gravel (very stiff, dry)			
		2	16		1						
			29		2						
	5										

Note: See Figure A-1 for explanation of symbols.
Coordinates Data Source: Horizontal approximated based on . Vertical approximated based on .

Log of Boring B-3

GeoEngineers

Project: Molalla Development Project
Project Location: Molalla, Oregon
Project Number: 23645-002-00

Figure A-4
Sheet 1 of 1

Date:11/29/22 Path:\\GEOENGINEERS.COM\WAN\PROJECTS\23\23645002\GINT\23645002GPJ DBLibrary/Library:GEOENGINEERS_DF_STD_US_JUNE_2017.GLB/GEIB_GEOTECH_STANDARD_%F_NO_GW

Drilled Start 11/9/2022 End 11/9/2022	Total Depth (ft) 4.5	Logged By / Checked By	Driller Western States Drilling	Drilling Method Solid-stem Rotery	
Surface Elevation (ft) / Vertical Datum Undetermined	Hammer Data Rope & cathead 140 (lbs) / 30 (in) Drop	Drilling Equipment Simco Trailer Rig			
Easting (X) / Northing (Y)	System Datum	Groundwater not observed at time of exploration			
Notes:					

Elevation (feet)	Depth (feet)	FIELD DATA: Interval Recovered (in)	Blows/foot	Collected Sample	Sample Name / Testing	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Moisture Content (%)	Fines Content (%)	REMARKS
	0						CL	Brown silty clay with trace sand and organic matter (stiff, moist)			
		4	10		1						
			43		2 / MC			With occasional gravel and cobbles, wet	27.4		

Note: See Figure A-1 for explanation of symbols.
Coordinates Data Source: Horizontal approximated based on . Vertical approximated based on .

Log of Boring B-4

GeoEngineers

Project: Molalla Development Project
Project Location: Molalla, Oregon
Project Number: 23645-002-00

Figure A-5
Sheet 1 of 1

Date:11/29/22 Path:\\GEOENGINEERS.COM\WAN\PROJECTS\23\23645002\GINT\23645002GPJ DBLibrary/Library:GEOENGINEERS_DF_STD_US_JUNE_2017.GLB/GEIB_GEOTECH_STANDARD_%F_NO_GW

Drilled Start 11/9/2022 End 11/9/2022	Total Depth (ft) 3.5	Logged By / Checked By	Driller Western States Drilling	Drilling Method Solid-stem Rotery	
Surface Elevation (ft) / Vertical Datum Undetermined	Hammer Data Rope & cathead 140 (lbs) / 30 (in) Drop	Drilling Equipment Simco Trailer Rig			
Easting (X) / Northing (Y)	System Datum	Groundwater not observed at time of exploration			
Notes:					

Elevation (feet)	Depth (feet)	FIELD DATA: Interval Recovered (in)	Blows/foot	Collected Sample / Sample Name Testing	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Moisture Content (%)	Fines Content (%)	REMARKS
	0					CL	Brown silty clay with sand and gravel (stiff, moist)			
		11	42	1 MC			With cobbles	12.5		

Note: See Figure A-1 for explanation of symbols.
Coordinates Data Source: Horizontal approximated based on . Vertical approximated based on .

Log of Boring B-5

GeoEngineers

Project: Molalla Development Project
Project Location: Molalla, Oregon
Project Number: 23645-002-00

Figure A-6
Sheet 1 of 1

Date:11/29/22 Path:\\GEOENGINEERS.COM\WAN\PROJECTS\23\23645002\GINT\23645002GPJ DBLibrary/Library:GEOENGINEERS_DF_STD_US_JUNE_2017.GLB/GEIB_GEOTECH_STANDARD_%F_NO_GW

Drilled Start 11/9/2022 End 11/9/2022	Total Depth (ft) 6.5	Logged By / Checked By	Driller Western States Drilling	Drilling Method Solid-stem Rotery	
Surface Elevation (ft) / Vertical Datum Undetermined		Hammer Data Rope & cathead 140 (lbs) / 30 (in) Drop		Drilling Equipment Simco Trailer Rig	
Easting (X) / Northing (Y)		System Datum		Groundwater not observed at time of exploration	

Notes:

Elevation (feet)	Depth (feet)	FIELD DATA: Interval Recovered (in)	Blows/foot	Collected Sample	Sample Name / Testing	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Moisture Content (%)	Fines Content (%)	REMARKS
	0						CL	Brown silty clay with sand and occasional gravel (very stiff, moist)			
		14	29		1 MC				22.9		
	5	11	50		2			With cobbles			

Note: See Figure A-1 for explanation of symbols.
Coordinates Data Source: Horizontal approximated based on . Vertical approximated based on .

Log of Boring B-6

GeoEngineers

Project: Molalla Development Project
Project Location: Molalla, Oregon
Project Number: 23645-002-00

Figure A-7
Sheet 1 of 1

Date:11/29/22 Path:\\GEOENGINEERS.COM\WAN\PROJECTS\23\23645002\GINT\23645002.GPJ DBLibrary/Library:GEOENGINEERS_DF_STD_US_JUNE_2017.GLB/GEIB_GEOTECH_STANDARD_%F_NO_GW

Location: Molalla
Depth to bottom: 0 to end of Test
Tester's Name: Walter Schoen
Tester's Company: GeoEngineers, Inc.

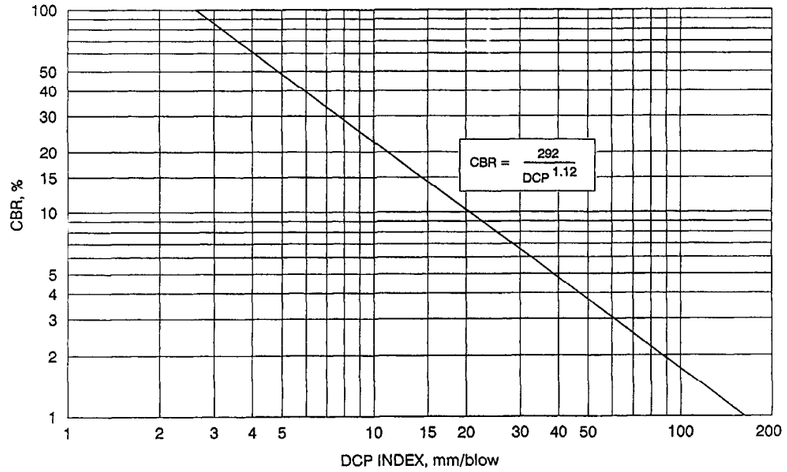
Date: 11/9/2022
starting depth (in) 0

Tester's Contact No: 971-340-5031

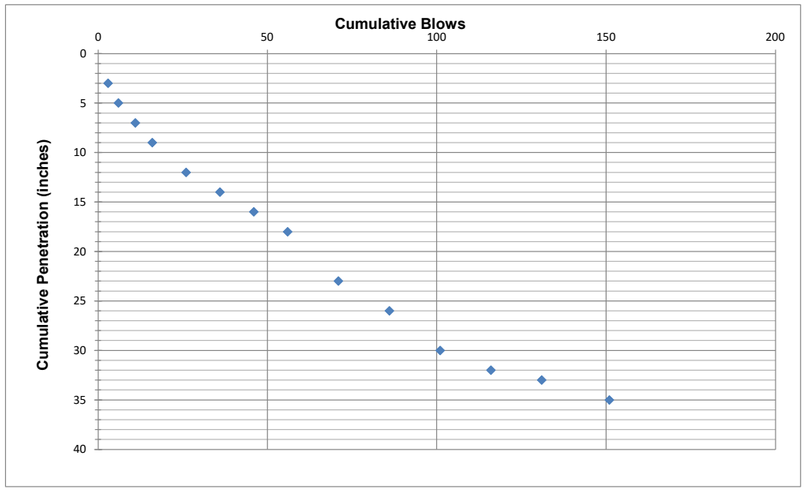
Test Hole Number: B-2/DCP-1
Test Method: Dynamic Cone Penetration
GeoEngineers Job: 23645-002-00

Depth, feet	**3'**	**Soil Texture**	Silt

Test increment	Number of blows	Cumulative blows	Depth below ground surface	Penetration per increment	Cumulative penetration	Cummulative Penetration	Penetration per blow set	Penetration per blow	Hammer blow factor	DCP Index	DCP Index	CBR	M_R
#	#	#	(in)	(mm)	(mm)	(in)	(in)	(in)	1 for 8-kg 2 for 4.6-kg hammer	in/blow	mm/blow	%	psi
1	3	3	3.0	76.2	76.2	3.0	3.0	1.00	1	1.00	25.40	8	4859
2	3	6	5.0	50.8	127.0	5.0	2.0	0.67	1	0.67	16.93	12	5692
3	5	11	7.0	50.8	177.8	7.0	2.0	0.40	1	0.40	10.16	22	6947
4	5	16	9.0	50.8	228.6	9.0	2.0	0.40	1	0.40	10.16	22	6947
5	10	26	12.0	76.2	304.8	12.0	3.0	0.30	1	0.30	7.62	30	7772
6	10	36	14.0	50.8	355.6	14.0	2.0	0.20	1	0.20	5.08	47	9103
7	10	46	16.0	50.8	406.4	16.0	2.0	0.20	1	0.20	5.08	47	9103
8	10	56	18.0	50.8	457.2	18.0	2.0	0.20	1	0.20	5.08	47	9103
9	15	71	23.0	127.0	584.2	23.0	5.0	0.33	1	0.33	8.47	27	7459
10	15	86	26.0	76.2	660.4	26.0	3.0	0.20	1	0.20	5.08	47	9103
11	15	101	30.0	101.6	762.0	30.0	4.0	0.27	1	0.27	6.77	34	8137
12	15	116	32.0	50.8	812.8	32.0	2.0	0.13	1	0.13	3.39	74	10662
13	15	131	33.0	25.4	838.2	33.0	1.0	0.07	1	0.07	1.69	162	13972
14	20	151	35.0	50.8	889.0	35.0	2.0	0.10	1	0.10	2.54	103	11928



(after Webster et al., 1992)
Webster, S. L., Grau, R. H., and Williams, T. P. (1992). Description and application of dual mass dynamic cone penetrometer. Department of the Army Waterways Equipment Station, No. GL-92-3.



Location: Molalla
Depth to bottom: 0 to end of Test
Tester's Name: Walter Schoen
Tester's Company: GeoEngineers, Inc.

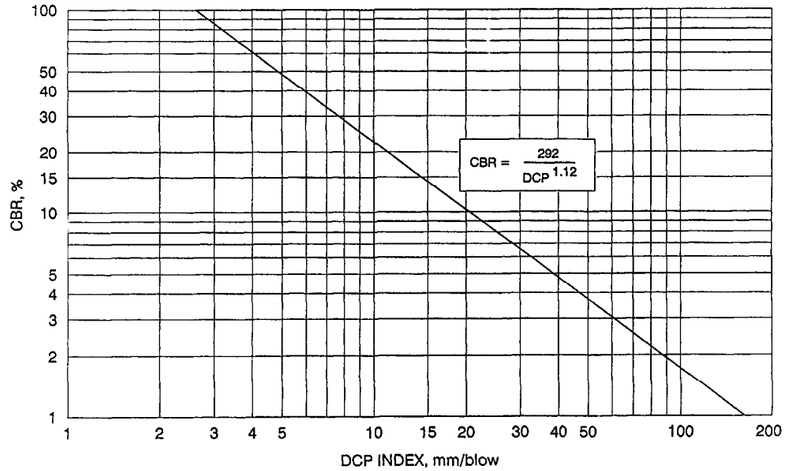
Date: 11/9/2022
starting depth (in) 0

Tester's Contact No: 971-340-5031

Test Hole Number: B-5/DCP-2
Test Method: Dynamic Cone Penetration
GeoEngineers Job: 23645-002-00

Depth, feet	3'	Soil Texture	Silt

Test increment	Number of blows	Cumulative blows	Depth below ground surface	Penetration per increment	Cumulative penetration	Cummulative Penetration	Penetration per blow set	Penetration per blow	Hammer blow factor	DCP Index	DCP Index	CBR	M_R
#	#	#	(in)	(mm)	(mm)	(in)	(in)	(in)	1 for 8-kg 2 for 4.6-kg hammer	in/blow	mm/blow	%	psi
1	3	3	3.0	76.2	76.2	3.0	3.0	1.00	1	1.00	25.40	8	4859
2	3	6	6.0	76.2	152.4	6.0	3.0	1.00	1	1.00	25.40	8	4859
3	3	9	9.0	76.2	228.6	9.0	3.0	1.00	1	1.00	25.40	8	4859
4	3	12	13.5	114.3	342.9	13.5	4.5	1.50	1	1.50	38.10	5	4149
5	3	15	17.0	88.9	431.8	17.0	3.5	1.17	1	1.17	29.63	7	4576
6	3	18	19.0	50.8	482.6	19.0	2.0	0.67	1	0.67	16.93	12	5692
7	5	23	23.5	114.3	596.9	23.5	4.5	0.90	1	0.90	22.86	9	5063
8	5	28	25.0	38.1	635.0	25.0	1.5	0.30	1	0.30	7.62	30	7772
9	10	38	27.5	63.5	698.5	27.5	2.5	0.25	1	0.25	6.35	37	8344
10	10	48	30.0	63.5	762.0	30.0	2.5	0.25	1	0.25	6.35	37	8344
11	10	58	31.5	38.1	800.1	31.5	1.5	0.15	1	0.15	3.81	65	10184
12	15	73	32.5	25.4	825.5	32.5	1.0	0.07	1	0.07	1.69	162	13972
13	15	88	34.0	38.1	863.6	34.0	1.5	0.10	1	0.10	2.54	103	11928
14	20	108	35.0	25.4	889.0	35.0	1.0	0.05	1	0.05	1.27	223	15631
15	20	128	36.0	25.4	914.4	36.0	1.0	0.05	1	0.05	1.27	223	15631



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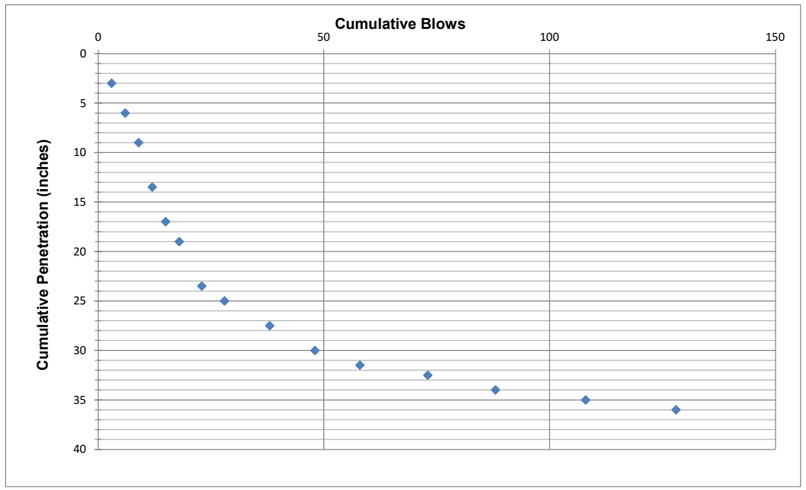


Location: Molalla
Depth to bottom: 0 to end of Test
Tester's Name: Walter Schoen
Tester's Company: GeoEngineers, Inc.

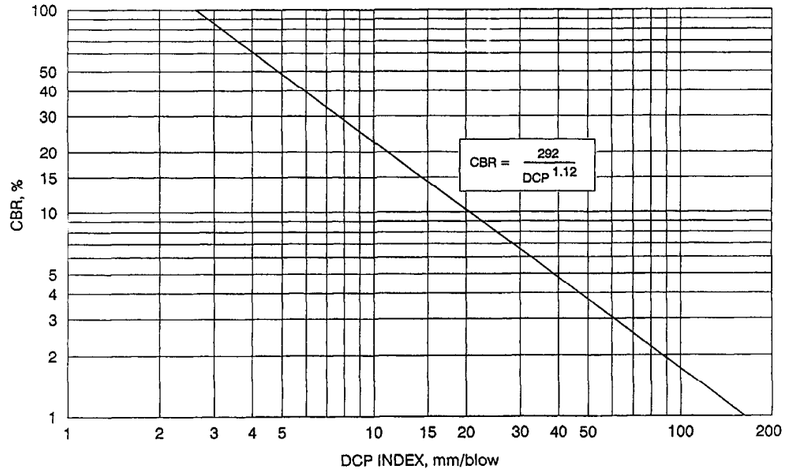
Date: 11/9/2022
starting depth (in) 0

Tester's Contact No: 971-340-5031

Test Hole Number: B-4/DCP-3
Test Method: Dynamic Cone Penetration
GeoEngineers Job: 23645-002-00

Depth, feet	3'	Soil Texture	Silt

Test increment	Number of blows	Cumulative blows	Depth below ground surface	Penetration per increment	Cumulative penetration	Cummulative Penetration	Penetration per blow set	Penetration per blow	Hammer blow factor	DCP Index	DCP Index	CBR	M_R
#	#	#	(in)	(mm)	(mm)	(in)	(in)	(in)	1 for 8-kg 2 for 4.6-kg hammer	in/blow	mm/blow	%	psi
1	3	3	2.5	63.5	63.5	2.5	2.5	0.83	1	0.83	21.17	10	5218
2	3	6	4.5	50.8	114.3	4.5	2.0	0.67	1	0.67	16.93	12	5692
3	3	9	6.5	50.8	165.1	6.5	2.0	0.67	1	0.67	16.93	12	5692
4	3	12	9.5	76.2	241.3	9.5	3.0	1.00	1	1.00	25.40	8	4859
5	3	15	10.0	12.7	254.0	10.0	0.5	0.17	1	0.17	4.23	58	9774
6	5	20	14.0	101.6	355.6	14.0	4.0	0.80	1	0.80	20.32	10	5301
7	3	23	17.0	76.2	431.8	17.0	3.0	1.00	1	1.00	25.40	8	4859
8	3	26	21.0	101.6	533.4	21.0	4.0	1.33	1	1.33	33.87	6	4344
9	3	29	25.0	101.6	635.0	25.0	4.0	1.33	1	1.33	33.87	6	4344
10	3	32	28.0	76.2	711.2	28.0	3.0	1.00	1	1.00	25.40	8	4859
11	3	35	30.0	50.8	762.0	30.0	2.0	0.67	1	0.67	16.93	12	5692
12	3	38	32.5	63.5	825.5	32.5	2.5	0.83	1	0.83	21.17	10	5218
13	5	43	34.0	38.1	863.6	34.0	1.5	0.30	1	0.30	7.62	30	7772
14	5	48	35.0	25.4	889.0	35.0	1.0	0.20	1	0.20	5.08	47	9103
15	10	58	36.5	38.1	927.1	36.5	1.5	0.15	1	0.15	3.81	65	10184



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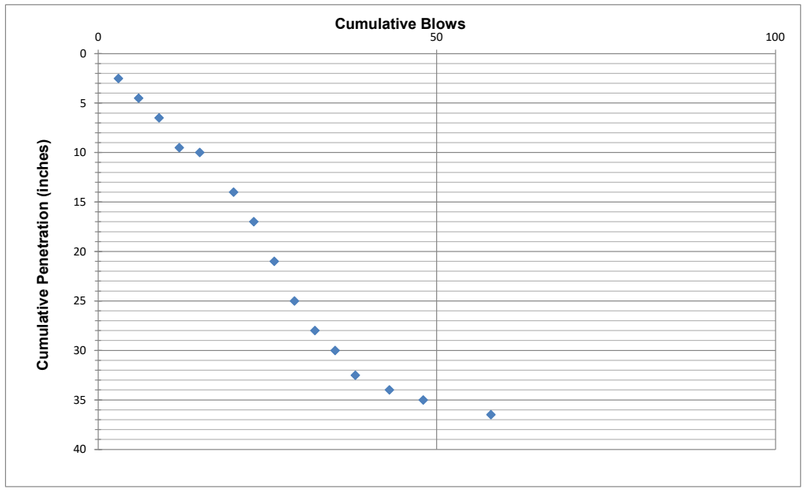

APPENDIX B
Report Limitations and Guidelines for Use

APPENDIX B
REPORT LIMITATIONS AND GUIDELINES FOR USE[1]

This appendix provides information to help you manage your risks with respect to the use of this report.

Read These Provisions Closely

It is important to recognize that the geoscience practices (geotechnical engineering, geology and environmental science) rely on professional judgment and opinion to a greater extent than other engineering and natural science disciplines, where more precise and/or readily observable data may exist. To help clients better understand how this difference pertains to our services, GeoEngineers includes the following explanatory "limitations" provisions in its reports. Please confer with GeoEngineers if you need to know more how these "Report Limitations and Guidelines for Use" apply to your project or site.

Geotechnical Services Are Performed for Specific Purposes, Persons and Projects

This report has been prepared for Home First Development, LLC and their authorized agents and/or regulatory agencies for Phase 2 of the project specifically identified in the report. The information contained herein is not applicable to other sites or projects.

GeoEngineers structures its services to meet the specific needs of its clients. No party other than the party to whom this report is addressed may rely on the product of our services unless we agree to such reliance in advance and in writing. Within the limitations of the agreed scope of services for the Project, and its schedule and budget, our services have been executed in accordance with our Agreement with IEC of Oregon dated October 27, 2022 and generally accepted geotechnical practices in this area at the time this report was prepared. We do not authorize, and will not be responsible for, the use of this report for any purposes or projects other than those identified in the report.

A Geotechnical Engineering or Geologic Report is Based on a Unique Set of Project-Specific Factors

This report has been prepared for Phase 2 of the Molalla Development Project Located at 105 S Ona Way in Molalla, Oregon. GeoEngineers considered a number of unique, project-specific factors when establishing the scope of services for this project and report. Unless GeoEngineers specifically indicates otherwise, it is important not to rely on this report if it was:

- Not prepared for you,
- Not prepared for your project,
- Not prepared for the specific site explored, or
- Completed before important project changes were made.

For example, changes that can affect the applicability of this report include those that affect:

- The function of the proposed structure.

[1] Developed based on material provided by ASFE, Professional Firms Practicing in the Geosciences; www.asfe.org.

- Elevation, configuration, location, orientation or weight of the proposed structure;
- Composition of the design team; or
- Project ownership.

If changes occur after the date of this report, GeoEngineers cannot be responsible for any consequences of such changes in relation to this report unless we have been given the opportunity to review our interpretations and recommendations. Based on that review, we can provide written modifications or confirmation, as appropriate.

Environmental Concerns Are Not Covered

Unless environmental services were specifically included in our scope of services, this report does not provide any environmental findings, conclusions, or recommendations, including but not limited to, the likelihood of encountering underground storage tanks or regulated contaminants.

Subsurface Conditions Can Change

This geotechnical or geologic report is based on conditions that existed at the time the study was performed. The findings and conclusions of this report may be affected by the passage of time, by man-made events such as construction on or adjacent to the site, new information or technology that becomes available subsequent to the report date, or by natural events such as floods, earthquakes, slope instability or groundwater fluctuations. If more than a few months have passed since issuance of our report or work product, or if any of the described events may have occurred, please contact GeoEngineers before applying this report for its intended purpose so that we may evaluate whether changed conditions affect the continued reliability or applicability of our conclusions and recommendations.

Geotechnical and Geologic Findings Are Professional Opinions

Our interpretations of subsurface conditions are based on field observations from widely spaced sampling locations at the site. Site exploration identifies the specific subsurface conditions only at those points where subsurface tests are conducted or samples are taken. GeoEngineers reviewed field and laboratory data and then applied its professional judgment to render an informed opinion about subsurface conditions at other locations. Actual subsurface conditions may differ, sometimes significantly, from the opinions presented in this report. Our report, conclusions and interpretations are not a warranty of the actual subsurface conditions.

Geotechnical Engineering Report Recommendations Are Not Final

We have developed the following recommendations based on data gathered from subsurface investigation(s). These investigations sample just a small percentage of a site to create a snapshot of the subsurface conditions elsewhere on the site. Such sampling on its own cannot provide a complete and accurate view of subsurface conditions for the entire site. Therefore, the recommendations included in this report are preliminary and should not be considered final. GeoEngineers' recommendations can be finalized only by observing actual subsurface conditions revealed during construction. GeoEngineers cannot assume responsibility or liability for the recommendations in this report if we do not perform construction observation.

We recommend that you allow sufficient monitoring, testing and consultation during construction by GeoEngineers to confirm that the conditions encountered are consistent with those indicated by the

explorations, to provide recommendations for design changes if the conditions revealed during the work differ from those anticipated, and to evaluate whether earthwork activities are completed in accordance with our recommendations. Retaining GeoEngineers for construction observation for this project is the most effective means of managing the risks associated with unanticipated conditions. If another party performs field observation and confirms our expectations, the other party must take full responsibility for both the observations and recommendations. Please note, however, that another party would lack our project-specific knowledge and resources.

A Geotechnical Engineering or Geologic Report Could Be Subject to Misinterpretation

Misinterpretation of this report by members of the design team or by contractors can result in costly problems. GeoEngineers can help reduce the risks of misinterpretation by conferring with appropriate members of the design team after submitting the report, reviewing pertinent elements of the design team's plans and specifications, participating in pre-bid and preconstruction conferences, and providing construction observation.

Do Not Redraw the Exploration Logs

Geotechnical engineers and geologists prepare final boring and testing logs based upon their interpretation of field logs and laboratory data. The logs included in a geotechnical engineering or geologic report should never be redrawn for inclusion in architectural or other design drawings. Photographic or electronic reproduction is acceptable but separating logs from the report can create a risk of misinterpretation.

Give Contractors a Complete Report and Guidance

To help reduce the risk of problems associated with unanticipated subsurface conditions, GeoEngineers recommends giving contractors the complete geotechnical engineering or geologic report, including these "Report Limitations and Guidelines for Use." When providing the report, you should preface it with a clearly written letter of transmittal that:

- Advises contractors that the report was not prepared for purposes of bid development and that its accuracy is limited; and
- Encourages contractors to confer with GeoEngineers and/or to conduct additional study to obtain the specific types of information they need or prefer.

Contractors Are Responsible for Site Safety on Their Own Construction Projects

Our geotechnical recommendations are not intended to direct the contractor's procedures, methods, schedule or management of the work site. The contractor is solely responsible for job site safety and for managing construction operations to minimize risks to on-site personnel and adjacent properties.

Biological Pollutants

GeoEngineers' Scope of Work specifically excludes the investigation, detection, prevention or assessment of the presence of Biological Pollutants. Accordingly, this report does not include any interpretations, recommendations, findings or conclusions regarding the detecting, assessing, preventing or abating of Biological Pollutants, and no conclusions or inferences should be drawn regarding Biological Pollutants as they may relate to this project. The term "Biological Pollutants" includes, but is not limited to, molds, fungi, spores, bacteria and viruses, and/or any of their byproducts.

A Client that desires these specialized services is advised to obtain them from a consultant who offers services in this specialized field.

GeoEngineers

TRANSPORTATION IMPACT STUDY

EXHIBIT 6

lancaster mobley

Home First Molalla Phase II Update

Transportation Impact Study

Molalla Oregon

Date:
December 14, 2022

Prepared for:
Green Light – Home First, LLC

Prepared by:
Jennifer Danziger, PE

RENEWS: 12/31/2023

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Executive Summary

1. A second phase is proposed for the Home First affordable housing complex located at 1000 W Main Street in Molalla, Oregon. Phase II of the project will redevelop an existing single-family residential property (105 S Ona Way) with an additional 40 affordable housing units for a total of 100 units. The proposed Phase II project will add a second driveway serving the housing complex on S Ona Way.
2. The trip generation calculations show that the combined Phase I and Phase II development is projected to generate a net increase of 37 morning peak hour trips, 50 evening peak hour trips, and of 494 average weekday trips.
3. The proposed parking supply of 200 spaces will adequately serve the anticipated maximum parking demand of 140 spaces for the development.
4. Based on a review of the most recent five years of available crash data, no significant trends or crash patterns were identified at any of the study intersections. No safety mitigation is recommended per the crash data analysis.
5. At both the future north site access and west site access, existing foliage and structures currently obstruct sight lines. Upon the planned removal of the onsite foliage as part of the proposed redevelopment project, sufficient sight distance meeting the minimum intersection sight distance can be achieved.
6. Preliminary traffic signal warrants are not projected to be met at the intersection of OR 211 & S Ona Way; therefore, no signalization of the stop-controlled study intersection is necessary or recommended.
7. The proposed development is not expected to add any new traffic to Leroy Avenue. Since only new development south of OR 211 with access to the south approach could increase the trip generation on the south leg and trigger the signal, the proposed project will not trigger the signal warrants at this intersection.
8. Left-turn lane warrants were met for the westbound approach at the intersection of OR 211 at S Ona Way during both the morning and evening peak hours. Half-street improvements from the project site to the eastern leg of the S Ona Way intersection will be completed by the project applicant to provide a two-way left-turn-lane thereby allowing for a westbound left-turn lane to be installed, as it is warranted.
9. All study intersections are projected to operate within ODOT standards under all analysis scenarios including buildout of Phases I and II of the proposed development.
10. Queuing analysis results show the 95th percentile queues on the public street are anticipated to provide adequate vehicle storage space under the buildout condition with Phases I and II of the proposed development.
11. Queues at the site accesses will occasionally extend into the striped parking area of the development but most of the time, parking will not be blocked by queued vehicles.

Project Description

Introduction

A second phase is proposed for the Home First affordable housing complex located at 1000 W Main Street in Molalla, Oregon. Phase II of the project will redevelop an existing single-family residential property (105 S Ona Way) with an additional 40 affordable housing units for a total of 100 units. The proposed Phase II project will add a second driveway serving the housing complex on S Ona Way.

Although Phase I of the project has been approved, Molalla's city staff requested a limited Transportation Impact Study (TIS) update to account for both phases of the project. This update examines the combined impact on a study area limited to the site accesses on W Main Street (OR 211) and S Ona Way as well as the intersection of these two roadways.

Location Description

Phase II of the project intends to develop the 1.96-acre site on Map No. 52E08C Tax Lot 1600 with 40 units of multifamily affordable housing. Phase I is located immediately to the east on a 3.00-acre site on Map No. 52E08C Tax Lot 1500 and is currently planned for 60 units of multifamily affordable housing. Figure 1 displays a vicinity map of the project site. The approved Phase I of the development is shown in blue and the proposed Phase II of the development is shown in red. A site plan depicting both phases of the project is included in Appendix A.

Figure 1: Vicinity Map (© Clackamas County Maps)

Vicinity Streets

The study area for the TIS Update includes two roadways. Table 1 provides a description of each of the vicinity roadways. A vicinity map showing the project site, vicinity streets, and intersection configurations is shown in Figure 2.

Table 1: Roadway Characteristics

Street Name	Jurisdiction	Functional Classification	Travel Lanes	Speed	Curbs & Sidewalks	On-Street Parking	Bicycle Facilities
OR 211	ODOT	Arterial & District Hwy	2-3	35 mph	Partial both sides	None	Partial both sides
S Ona Way	City of Molalla	Minor / Local	2	25 mph	None	None	None

Notes: Functional Classification based on the Molalla Transportation System Plan

Phase I of the proposed project will provide frontage improvements along OR 211 including widening to add left-turn lanes at the north site access and S Ona Way.

Study Intersections

Through coordination with the City of Molalla and ODOT, three (3) study intersections were identified for evaluation. The existing characteristics of these intersections are summarized in Table 2 and illustrated in Figure 2.

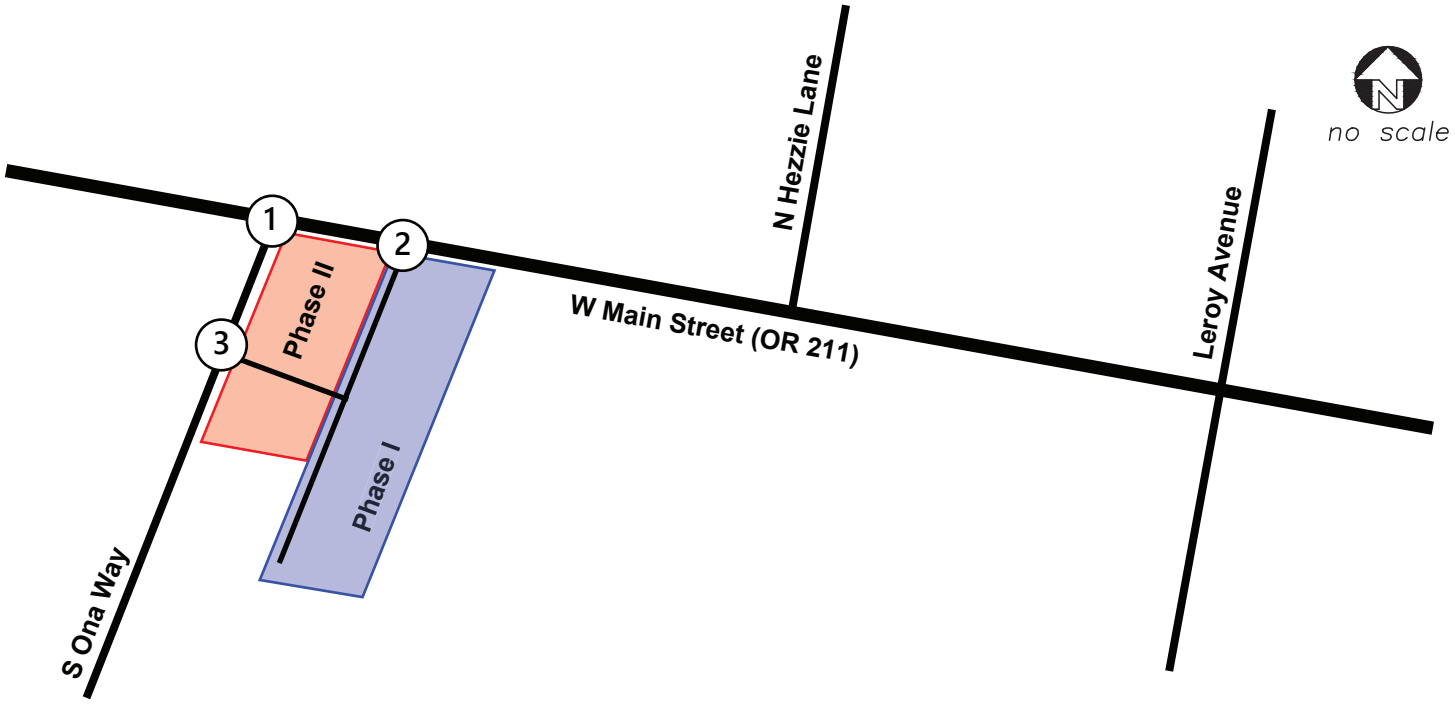
Table 2: Study Intersection Descriptions

Intersection		Geometry	Traffic Control	Phasing/Stopped Approaches
1	OR 211 & S Ona Way	3-Leg	Stop Controlled	NB Stop Controlled
2	OR 211 & North Site Access	3-Leg	Stop Controlled	NB Stop Controlled
3	S Ona Way & West Site Access	3-Leg	Stop Controlled	WB Stop Controlled

Bicycle and Pedestrian Facilities

Since the original TIS was completed, ODOT has added a shared use path on the north side of W Main Street (OR 211) from Industrial Way to the existing facility west of Hezzie Lane.

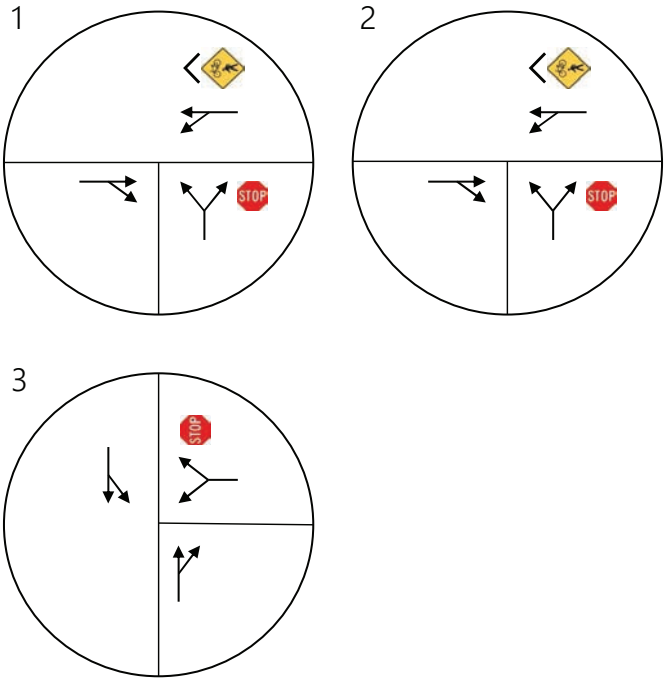
The proposed project will provide frontage improvements that includes sidewalks on both S Ona Way and OR 211 and bike lanes on the south side of OR 211.



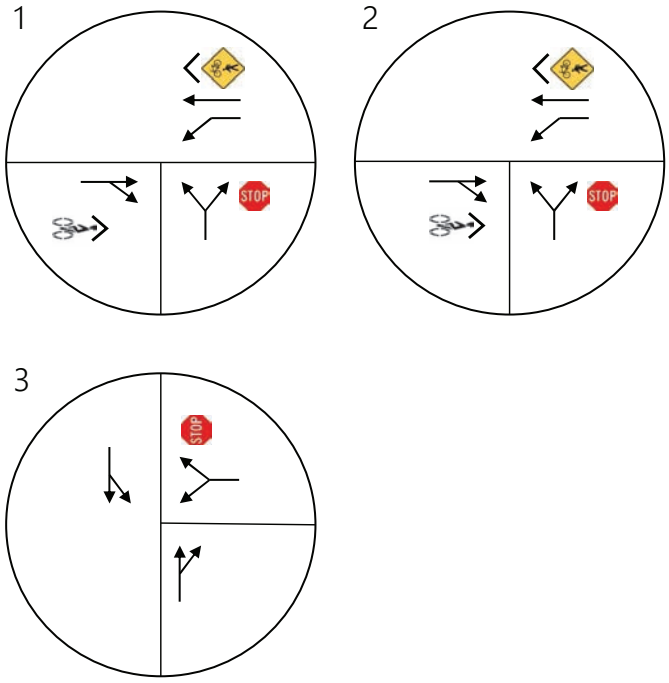
LEGEND

- Lane Geometry
- Bike Lane
- Shared Path
- Stop Control

EXISTING LANE CONFIGURATION



BUILDOUT LANE CONFIGURATION



lancaster mobley

LANE CONFIGURATION & TRAFFIC CONTROL

Figure 2

Home First Molalla Phase II Update

12/13/2022

Transit

South Clackamas Transit District has three routes that serve the City of Molalla. Two of the routes have a bus stop on the north side of OR 211 (W Main Street) at the Safeway Shopping Center just over 1/2-mile walking/biking distance from the project site:

- The Molalla City route loops throughout the City in a largely clockwise direction. The bus runs from 7:30 AM to 5:35 PM, Monday through Friday, 9:30 AM to 3:45 PM, Saturday, and has no service on Sunday. Headways are roughly one hour.
- The Molalla to Canby route loops Clackamas County with two stops in Molalla. The bus runs from 6:30 AM to 6:15 PM, Monday through Friday, and has no weekend service.

Site Trips and Parking

Trip Generation

To estimate the number of trips that are projected to be generated by the development, trip rates from the *Trip Generation Manual*[1] were used. Specifically, rates from the land use code 210, Single-Family Detached Housing are used to estimate the existing site's trip generation based on the number of dwelling units (DU). Equations for land use code 223, Affordable Housing (Income Limits)[2] are used to estimate the proposed development's trip generation based on the total number of units for Phases I and II. The trip generation estimates are summarized in Table 3 and detailed calculations are included in Appendix A.

Table 3: Trip Generation Summary

ITE Code	Intensity		Morning Peak Hour			Evening Peak Hour			Daily Trips
			In	Out	Total	In	Out	Total	
Existing Site									
210 - Single-Family Detached Housing	2	DU	0	1	1	1	1	2	18
Proposed Use									
223 - Affordable Housing	100	DU	11	27	38	31	21	52	512
Prior Approval*	60	DU	6	16	22	16	10	26	326
Current Proposal	40	DU	5	11	16	15	11	26	186
Net Increase in Trips									
Net Increase in Trips			11	26	37	30	20	50	494

** Phase 1 TIS was based on LUC 221 - Multifamily (Mid-Rise) from the 10th Edition of the ITE Trip Generation Manual, which was the latest version available at the time of preparation. Data for LUC 223 - Affordable Housing was very limited in the 10th Edition.*

The trip generation calculations show that the combined Phase I and Phase II development is projected to generate a net increase of 37 morning peak hour trips, 50 evening peak hour trips, and of 494 average weekday trips.

Trip Distribution

The directional distribution of site trips to and from the proposed development was estimated based on locations of likely trip destinations, locations of major transportation facilities in the site vicinity, and existing travel patterns at the study area intersections.

[1] Institute of Transportation Engineers (ITE), *Trip Generation Manual*, 11th Edition, 2021.

[2] The trip generation for Phase I of the affordable housing development assumed Land Use Code 221, Multi-Family (Mid-Rise) development and was based on rates from the 10th Edition of the *Trip Generation Manual* because limited data for affordable housing was available. The 11th Edition has more survey data for Land Use Code 223, Affordable Housing (Income Limits) and the trip rates are very similar to the rates used in the Phase I study.

The following trip distribution was estimated and used for analysis:

- Approximately 35 percent of trips will travel to/from the east along OR 211
- Approximately 65 percent of trips will travel to/from the west along OR 211

The trip distribution and assignment for the total site trips generated during the morning and evening peak hours are shown in Figure 3.

Parking Generation

To estimate the parking demand that could be generated by the proposed development, parking generation rates from the *ITE Parking Generation Manual*[3] were used. Data from the land use code 223, Affordable Housing (Income Limits), is used to estimate the proposed site's parking generation. Two scenarios are presented, one based on the number of dwelling units and the other scenario based on the number of bedrooms in the proposed development. The manual also provides data about parking supply rates. Most sites include ancillary leasing and resident services offices which are included in the parking demand calculations; therefore, no separate office calculation is included. Parking demand estimates are reported in Table 4.

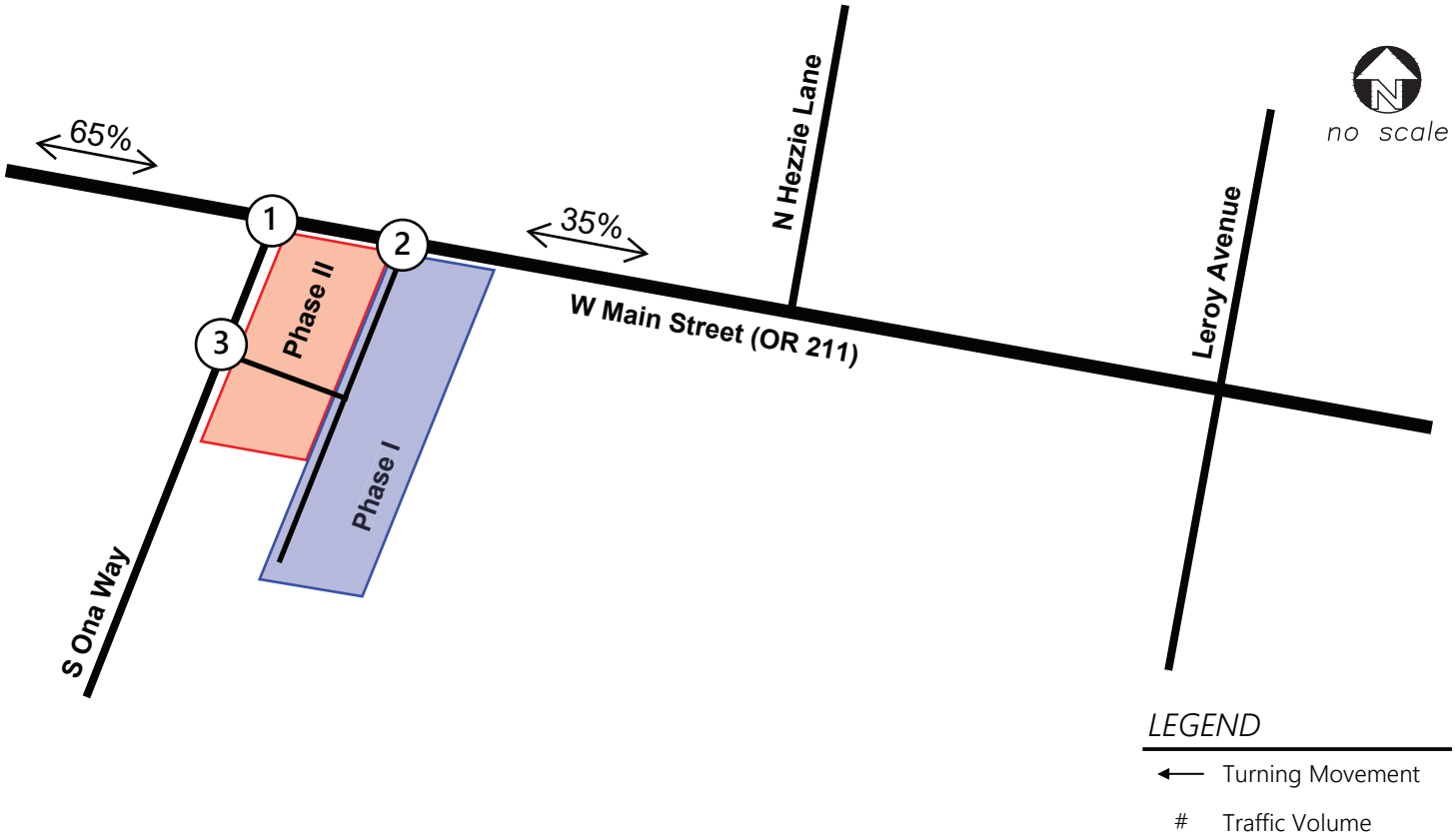
Table 4: Parking Generation for Affordable Housing (Income Limits)

Intensity	Demand Rate	Number of Spaces		
		Demand/Supply	Site Supply	Comparison
Average Parking Demand Rate				
100 Dwelling Units	0.99	99	200	+101
260 Bedrooms	0.54	140		+60
Parking Demand Equation				
100 Dwelling Units	1.13(X)-21.94	91	200	+109
260 Bedrooms	0.47(X)+6.17	128		+72
Average Parking Supply				
100 Dwelling Units	1.3	130	200	+70
260 Bedrooms	0.7	182		+18

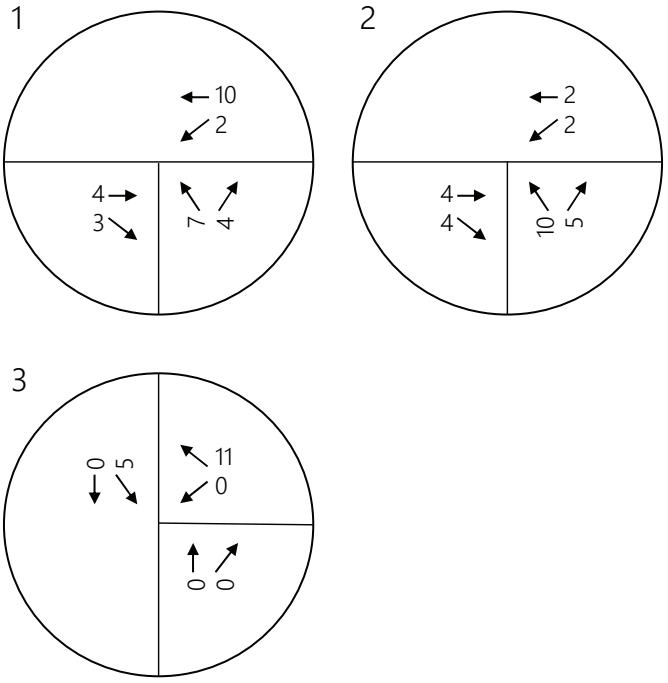
As shown in Table 4, the average parking demand for the site is estimated to be well below the proposed parking supply of 200 spaces whether it is estimated using average rates or the fitted curve equations and whether the calculation is based on the number of units or bedrooms. Maximum demand is estimated at 140 spaces. Table 4 also shows that the proposed parking also exceeds the estimated supply based on the average supply rate.

Based on these calculations, the proposed parking supply of 200 spaces will adequately serve the anticipated maximum parking demand of 140 spaces for the development.

[3] Institute of Transportation Engineers (ITE), Parking Generation Manual, 5th Edition,



AM PEAK HOUR



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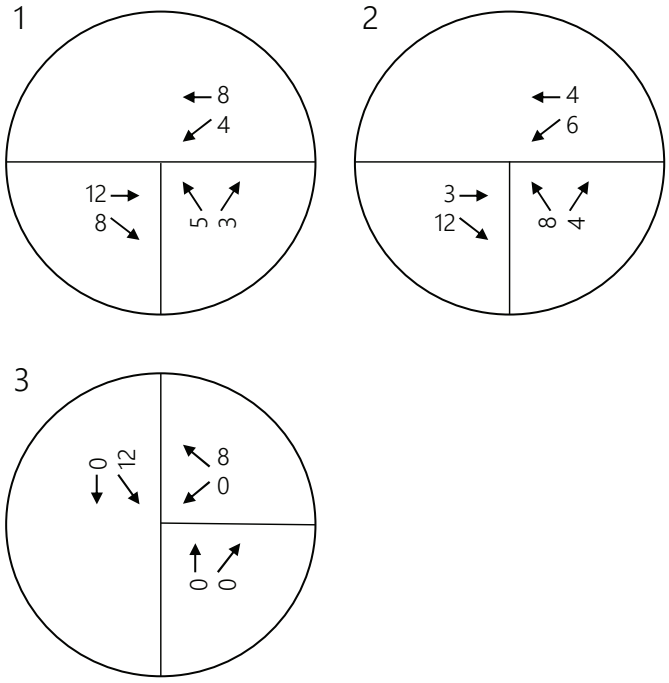

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SITE TRIP DISTRIBUTION & ASSIGNMENT

Figure 3

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Traffic Volumes

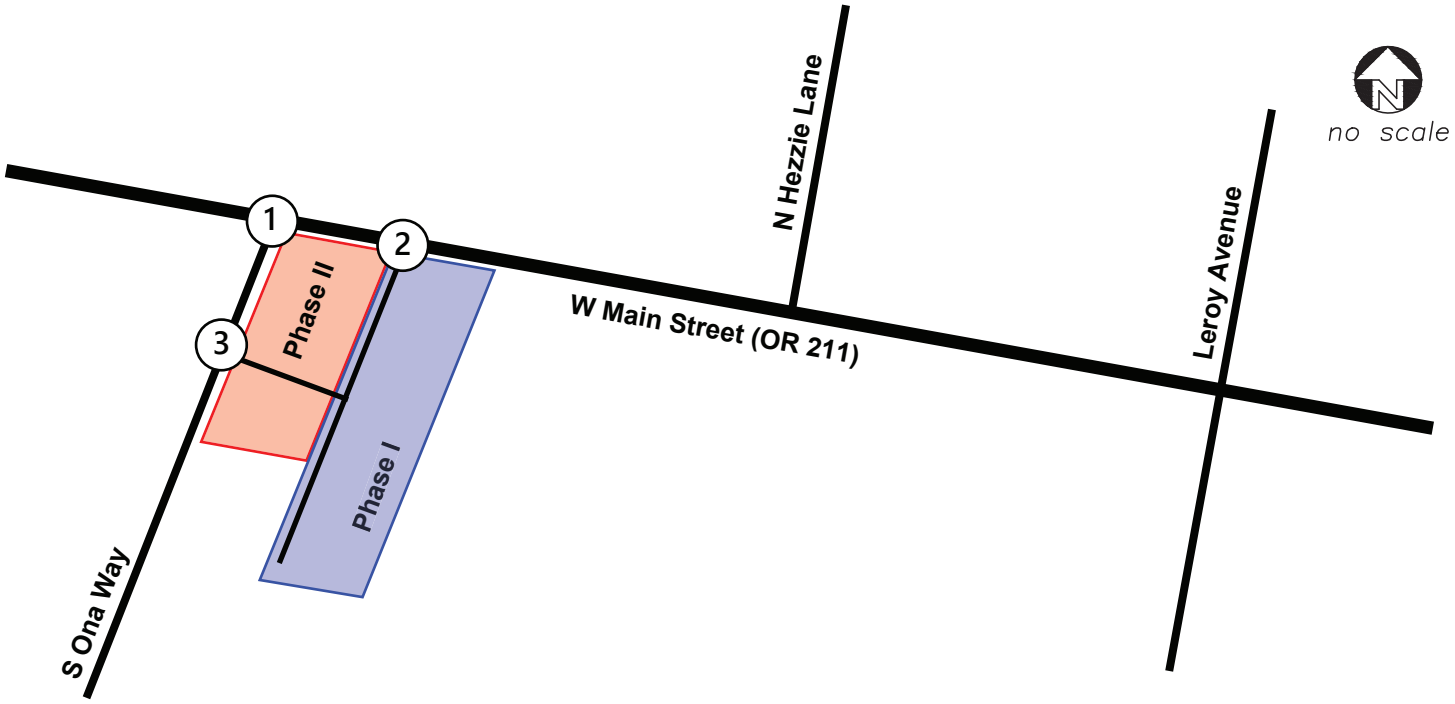
Existing Conditions

The existing traffic volumes in this Phase II TIS are based on an update of the data and methodologies used for the Phase I TIS. For that study, new traffic counts were collected in September of 2021 and adjusted to account for seasonality and the ongoing effects of the pandemic. The existing counts have been updated to represent year 2022 traffic volumes following the same methodology with updated factors as described below:

- Turning movement counts were collected on Tuesday, September 21, 2021, in the study area.
- Historical turning movement counts from Tuesday, October 15, 2019, were obtained at the intersection of OR 211 & OR 213.
- A growth rate for the study area traffic was derived using ODOT's 2041 Future Volume Table, in accordance with ODOT's *Analysis Procedures Manual*. Averaging data corresponding to mileposts 11.26 through 12.14 of ODOT highway number 161 (OR 211) resulted in a linear growth factor of 1.07 percent per year. This factor was applied to all 2019 turning movements to account for two years of growth for comparison with the 2021 counts.
- Traffic volumes on the highways were also seasonally adjusted to reflect the 30th highest hour of traffic, per procedures described in ODOT's *Analysis Procedures Manual*. Using the ODOT Seasonal Trend Table[4], a seasonal adjustment factor of 1.0336 and 1.0429 was calculated based on the Commuter seasonal trend, for the September 2021 and October 2019 counts, respectively.
- The seasonally adjusted and growth adjusted 2019 counts were compared to the seasonally adjusted 2021 counts to establish a COVID-19 adjustment factor of 1.151 and 1.108 for the morning and evening peak hours, respectively.
- The 2021 counts were then increased by the COVID-19 adjustment factor, seasonally adjusted, and grown by one year to estimate the year 2022 existing traffic volumes.

Figure 4 shows the year 2022 existing condition traffic volumes at the study intersections during the morning and evening peak hours. Traffic counts are included in Appendix B.

[4] ODOT Seasonal Trend Table (Updated 11/10/2022)



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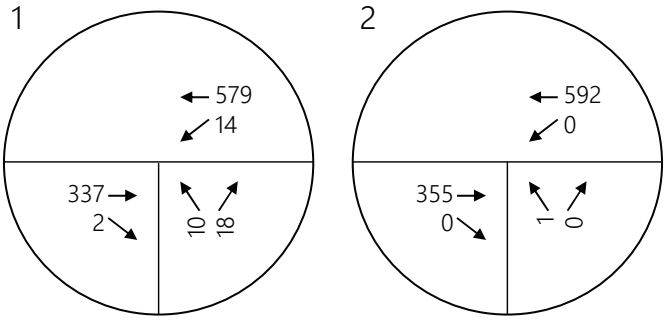

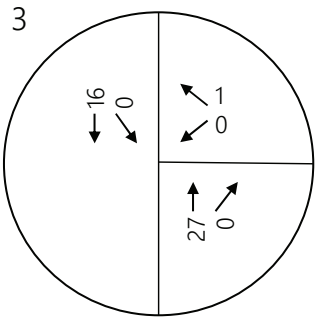

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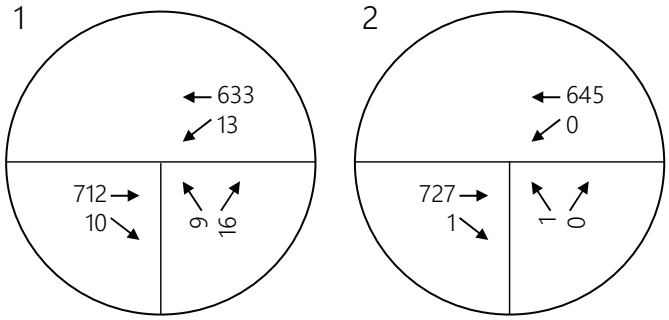

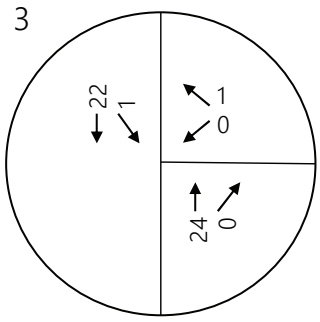

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2022 EXISTING CONDTION TRAFFIC VOLUMES

Figure 4

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Background Conditions

To provide analysis of the impact of the proposed development on the nearby transportation facilities, an estimate of future traffic volumes is required. Two components were included in the background traffic estimates: 1) general growth and 2) growth associated with planned developments. An analysis year of 2024 was evaluated to provide a conservative estimate of traffic conditions.

For the general background growth, the annual growth rate of 1.07 percent per year was applied to the adjusted year 2022 existing traffic volumes. This growth rate was derived from ODOT's 2041 Future Volume Table, as described above.

In addition to the general growth, six nearby developments that are approved but were not yet constructed at the time of the traffic counts will be included as in-process traffic:

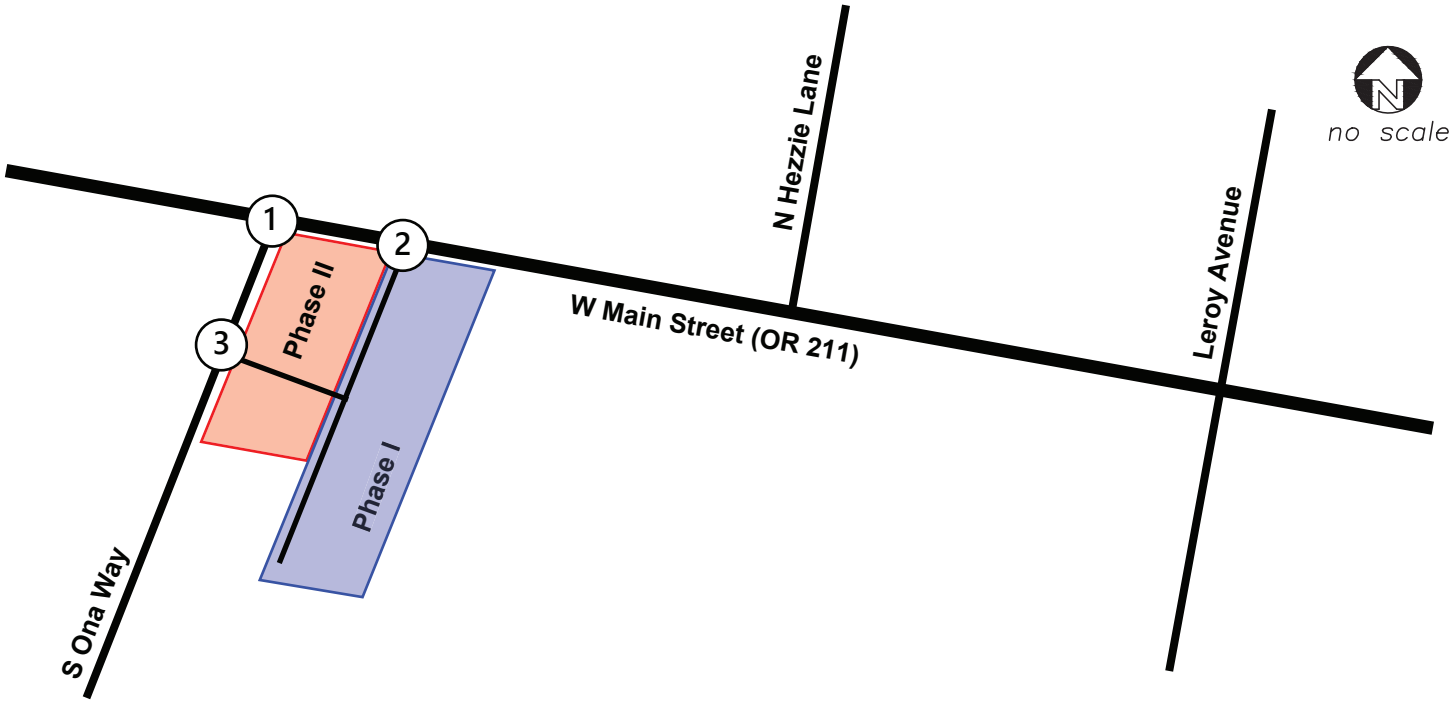
1. Cascade Center
2. Cascade Place Multifamily
3. Colima Apartments – Phase 1
4. Colima Apartments – Phase 2
5. Molalla Retail Center at 31330 Highway 213
6. Molalla Petroleum – 710 W Main Street

Figure 5 shows the resulting year 2024 background traffic volumes.

Buildout Conditions

Peak hour trips calculated to be generated by the proposed development, as described earlier within the *Site Trips* section, were added to the year 2024 background volumes to obtain the expected Year 2024 buildout conditions. Figure 6 shows the resulting year 2024 buildout traffic volumes at the study intersections during the morning and evening peak hours.

As discussed at the outset of the project, the City of Molalla and ODOT have determined that half-street improvements fronting the project site up to S Ona Way would be required to upgrade the existing OR 211 cross-section from two lanes to three lanes with a two-way left-turn-lane. This improvement will extend to the S Ona Way intersection, allowing for a new westbound left-turn lane at both the intersection and the site access. The Buildout Year 2024 Conditions analysis includes these improvements as directed by ODOT staff.



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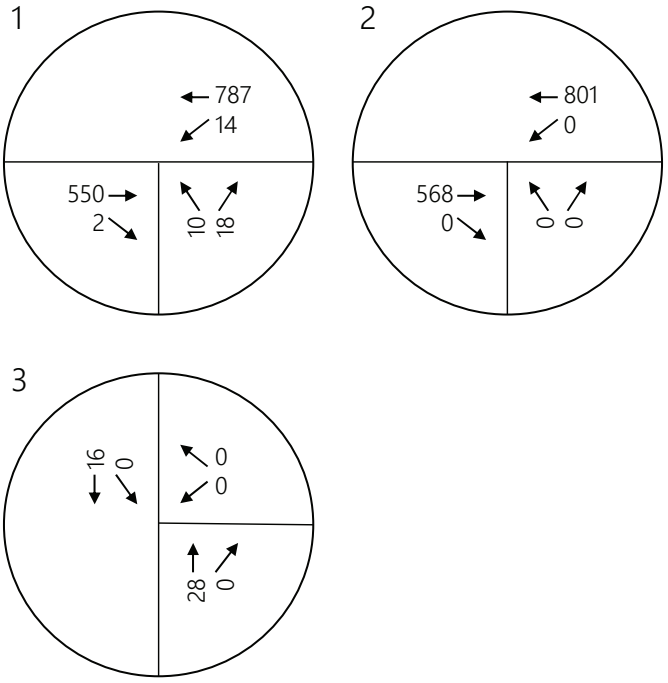

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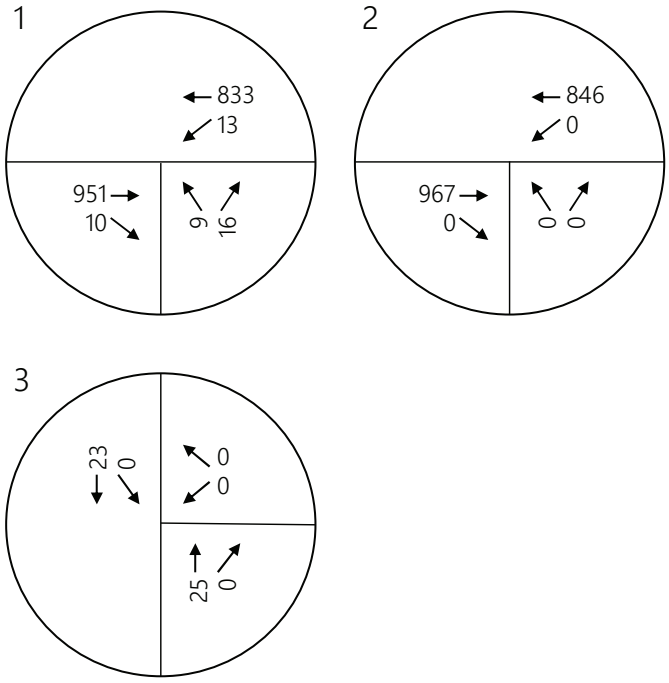

2024 BACKGROUND CONDTION TRAFFIC VOLUMES

Figure 5

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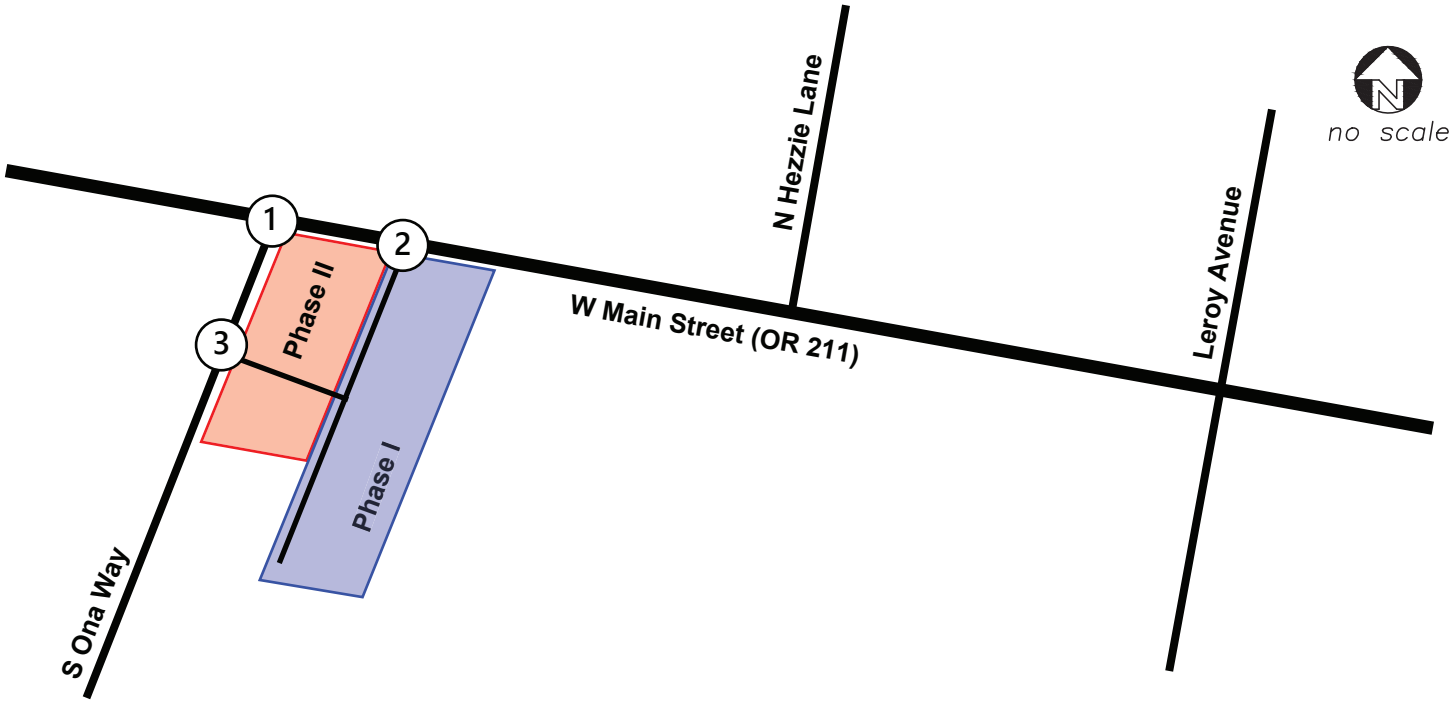
12/13/2022



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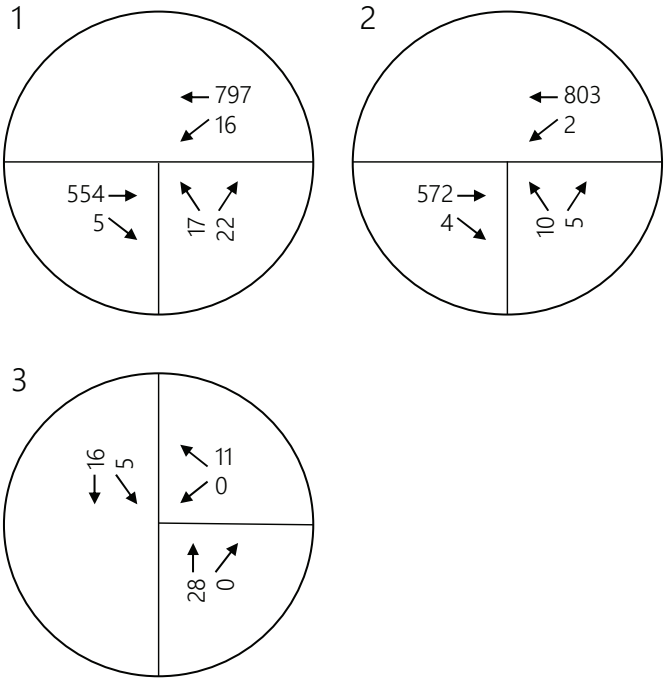

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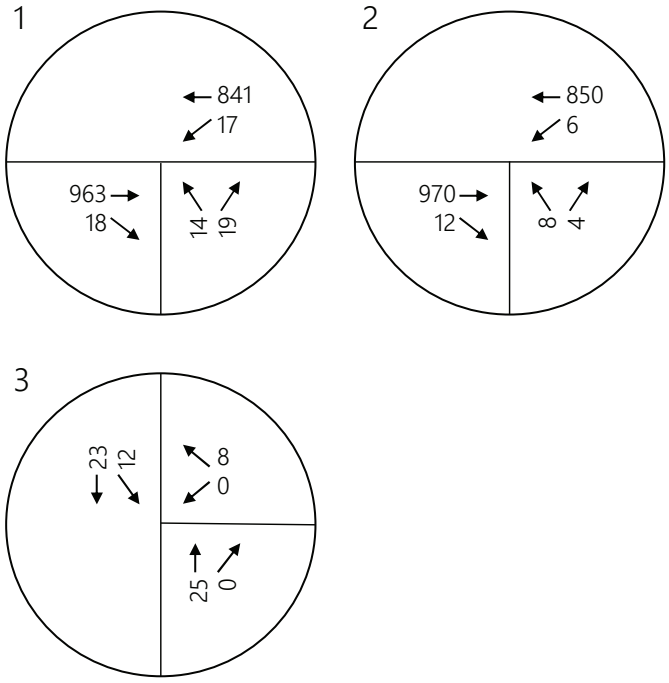

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2024 BUILDOUT CONDTION TRAFFIC VOLUMES

Figure 6

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Safety Analysis

Crash History Review

Using data obtained from ODOT's Crash Data System, a review of five years of the most recent available crash history (January 2016 through December 2020) was performed at the study intersections. The crash data was evaluated based on the number of crashes, the type of collisions, and the severity of the collisions. Crash severity is based on injuries sustained by people involved in the crash, and includes five categories:

- Property Damage Only (PDO)
- Possible Injury (Injury C)
- Non-Incapacitating Injury (Injury B)
- Incapacitating Injury (Injury A)
- Fatality or Fatal Injury

Crash rates provide the ability to compare safety risks at different intersections by accounting for both the number of crashes that have occurred during the study period and the number of vehicles that typically travel through the intersection. Crash rates were calculated using the common assumption that traffic counted during the evening peak hour represents approximately 10 percent of the average daily traffic (ADT) at the intersection.

Table 5 provides a summary of crash types while Table 6 summarizes crash severities and rates for each of the study intersections. Detailed crash data is provided in Appendix C.

The study intersections adhere to the crash analysis methodologies within ODOT's Analysis Procedures Manual (APM). According to *Exhibit 4-1: Intersection Crash Rates per MEV by Land Type and Traffic Control* of the APM, intersections which experience crash rates in excess of their respective 90th percentile crash rates should be "flagged for further analysis". Crash rates in excess of 90th percentile crashes per million entering vehicles (CMEV) may be indicative of design deficiencies and therefore require a need for further investigation and possible mitigation.

Table 5: Crash Type Summary

Intersection		Crash Type				Total Crashes
		Turn	Rear End	Ped	Bike	
1	OR 211 & S Ona Way	1	6	0	0	7

Table 6: Crash Severity and Rate Summary

Intersection		Severity					Total Crashes	PHEV	Crash Rate	90th % Rate
		PDO	C	B	A	Fatal				
1	OR 211 at Ona Way	2	5	0	0	0	7	1,333	0.288	0.293

PHEV = Peak Hour Entering Volume

ODOT 90th Percentile Crash Rates

Intersection crash rates were calculated for the one existing study area intersection, which had a rate below the respective ODOT 90th percentile crash rates.

The planned widening of OR 211 by the proposed project is anticipated to reduce collisions at the intersection. The planned widening will provide a two-way left-turn lane, allowing for westbound left-turning traffic to make a left turn without stopping in the through lane, thereby reducing the incidence of rear-end collisions. These collision types accounted for 86 percent of the total reported crashes and all 6 of the rear-end collisions were between vehicles traveling westbound. Reducing these collision types is anticipated to significantly reduce the crash rate at this intersection.

Conclusion

Based on a review of the most recent five years of available crash data, no significant trends or crash patterns were identified at any of the study intersections. No safety mitigation is recommended per the crash data analysis.

Sight Distance Evaluation

A sight distance analysis was conducted at the two site access driveways. To evaluate the sight distance available at these intersections, intersection sight distance was measured in accordance with the current AASHTO manual[5]. According to AASHTO, the driver's eye is assumed to be 14.5 feet from the near edge of the nearest travel lane of the intersecting street and at a height of 3.5 feet above the minor-street approach pavement. The vehicle driver's eye-height along the major-street approach is assumed to be 3.5 feet above the cross-street pavement.

OR 211 has a posted speed limit of 35 mph in both directions and will be widened to a three-lane cross-section, thus the minimum intersection sight distance required is 415 feet in both directions. The required stopping sight distance is 250 feet.

S Ona Way has no posted speed and is assumed to have a statutory speed of 25 mph for residential streets. The minimum intersection sight distance required is 280 feet in both directions and the required stopping sight distance is 155 feet.

At both the future north site access and west site access, existing foliage and structures currently obstruct sight lines. Upon the planned removal of the onsite foliage as part of the proposed redevelopment project, sufficient sight distance meeting the minimum intersection sight distance can be achieved.

Signal Warrant Analysis

OR 211 & S Ona Way

Preliminary traffic signal warrants were examined for the unsignalized intersection of OR 211 & S Ona Way to determine whether the installation of a new traffic signal will be warranted at the intersections by the project

[5] American Association of State Highway and Transportation Officials (AASHTO), *A Policy on Geometric Design of Highways and Streets,* 7th Edition, 2018.

buildout year 2024. Based on the preliminary analysis, traffic signal warrants are not projected to be met for this intersection. Accordingly, no signalization of the stop-controlled intersection is necessary or recommended.

OR 211 & Leroy Avenue

A future traffic signal is planned for installation at the intersection of OR 211 at Leroy Avenue. The Cascade Center project has constructed the south leg of the intersection, but signalizing the intersection is not a requirement of Cascade Center.

The need for a traffic signal is driven primarily by traffic volumes entering an intersection. Traffic signal warrants require minimum thresholds to be met for both the major street (OR 211) *and* the minor street (Leroy Avenue). Through traffic on OR 211 is high enough to meet the thresholds, but neither the northbound traffic from the new approach to constructed with Cascade Center nor the southbound approach of Leroy Avenue will meet the thresholds.

Site-generated traffic is expected to travel east-west through the Leroy Avenue/OR 211 intersection without turning. However, even if a vehicle is traveling between the site and the planned Cascade Center, it would not be a new trip on the south leg since trips to/from Cascade Center have already been included in the calculations for that development. Only new development south of OR 211 with access to the south approach could increase the trip generation on the south leg and trigger the signal. Therefore, this project will not trigger the signal warrants at this intersection.

Left-turn Lane Warrants

Left-turn lane warrants were examined for westbound traffic at the intersection of OR 211 and S Ona Way and at the intersection of OR 211 and the north site access. A left-turn refuge is primarily a safety consideration for the major street, removing left-turning vehicles from the through traffic stream. The warrants examined implement the design curves developed by the Texas Transportation Institute (TTI), as adopted by ODOT in its *Analysis Procedures Manual*. These warrants are evaluated based on the number of left-turning vehicles, the number of advancing and opposing vehicles, the number of lanes, and the roadway travel speed.

S Ona Way

Left-turn lane warrants were met for the westbound approach of this intersection during both the morning and evening peak hours. Half-street improvements from the project site to the eastern leg of the S Ona Way intersection will be completed by the Project applicant to provide a two-way left-turn-lane thereby allowing for a westbound left-turn lane to be installed, as it is warranted.

North Site Access

The westbound left-turn movement is estimated at fewer than 10 under year 2024 buildout conditions, which does not meet the minimum threshold for consideration of a left-turn lane. Left-turning volumes during other hours of the day are generally expected to be below the 10-vehicle threshold. However, the site is required to improve OR 211 to ultimately include a two-way left-turn-lane at the north site access. This improvement will benefit safety and operations at the site access.

Operational Analysis

An operational analysis was conducted for each of the study intersections per the signalized and unsignalized intersection analysis methodologies in the *Highway Capacity Manual* (HCM)[6]. Intersections are generally evaluated based on the average control delay experienced by vehicles and are assigned a grade according to their operation. The level of service (LOS) of an intersection can range from LOS A, which indicates very little, or no delay experienced by vehicles, to LOS F, which indicates a high degree of congestion and delay. The volume-to-capacity (v/c) ratio is a measure that compares the traffic volumes (demand) against the available capacity of an intersection. The analysis was performed using Synchro 11 which applies the HCM6 methodologies.

Performance Targets

Since the study intersections are under ODOT jurisdiction, the applicable performance targets for these facilities are established under the Oregon Highway Plan (OHP) and are based on the v/c ratio of the intersection. Since OR 211 is a District Highway located in the City's Urban Growth Boundary with a speed limit of 35 mph, the target maximum allowable v/c ratio is 0.90.[7]

Delay & Capacity Analysis

Results of the analysis are shown in Table 7. Detailed reports are provided in Appendix D.

Table 7: Capacity Analysis Summary

Intersection & Scenario	Morning Peak Hour			Evening Peak Hour		
	LOS	Delay (s)	V/C	LOS	Delay (s)	V/C
1. OR 211 & S Ona Way						
2022 Existing Condition	C	16	0.09	D	26	0.15
2024 Background Condition	D	27	0.17	F	52	0.28
2024 Buildout Condition	C	18	0.15	D	27	0.19
2. OR 211 & North Site Access						
2024 Buildout Condition	C	19	0.07	D	25	0.07
3. S Ona Way & West Site Access						
2024 Buildout Condition	A	9	0.01	A	9	0.01

BOLDED results indicate operation above acceptable jurisdictional standards.

As shown, all study intersections are projected to operate within ODOT standards under all analysis scenarios including buildout of Phases I and II of the proposed development.

[6] Transportation Research Board, *Highway Capacity Manual 6th Edition*, 2016.
[7] Oregon Department of Transportation, 1999 Oregon Highway Plan, Including amendments November 1999 through May 2015, 1999.

Queuing Analysis

An analysis of projected queuing was conducted for the study intersections. The 95th percentile queue lengths were estimated based on the same Synchro/SimTraffic simulations used for the delay calculations. The 95th percentile queue is a statistical measurement which indicates there is a 5 percent chance that the queue may exceed this length during the analysis period; however, given this is a probability, the 95th percentile queue length may theoretically never be met or observed in the field.

The 95th percentile queue lengths reported in the simulation are presented for the buildout condition in Table 8 for the morning and evening peak hours. All queues more than 5 feet longer than a multiple of 25 were rounded up. Those that were 5 feet or less were rounded down since 5 feet is equivalent to the space between queued vehicles. Detailed queuing analysis reports are included in Appendix D.

Table 8: 95th Percentile Queuing Analysis Summary

Intersection/Movement	Available Storage (ft)	2023 Buildout Queue (ft)	
		AM	PM
1. OR 211 & Ona Way			
NB Approach	30*	50	75
WB Left-Turn Lane	100	25	50
2. OR 211 & North Site Access			
NB Approach	50	50	50
WB Left-Turn Lane	100	25	25
3. S Ona Way & West Site Access			
WB Approach	25*	50	25

** The available storage for the site access reflects the distance to the first parking space.*
BOLDED text indicates queue extends beyond available lane storage.

Queuing analysis results show the 95th percentile queues on the public street are anticipated to provide adequate vehicle storage space under the buildout condition with Phases I and II of the proposed development.

Queues at the site accesses will occasionally extend into the striped parking area of the development but most of the time, parking will not be blocked by queued vehicles.

Conclusions

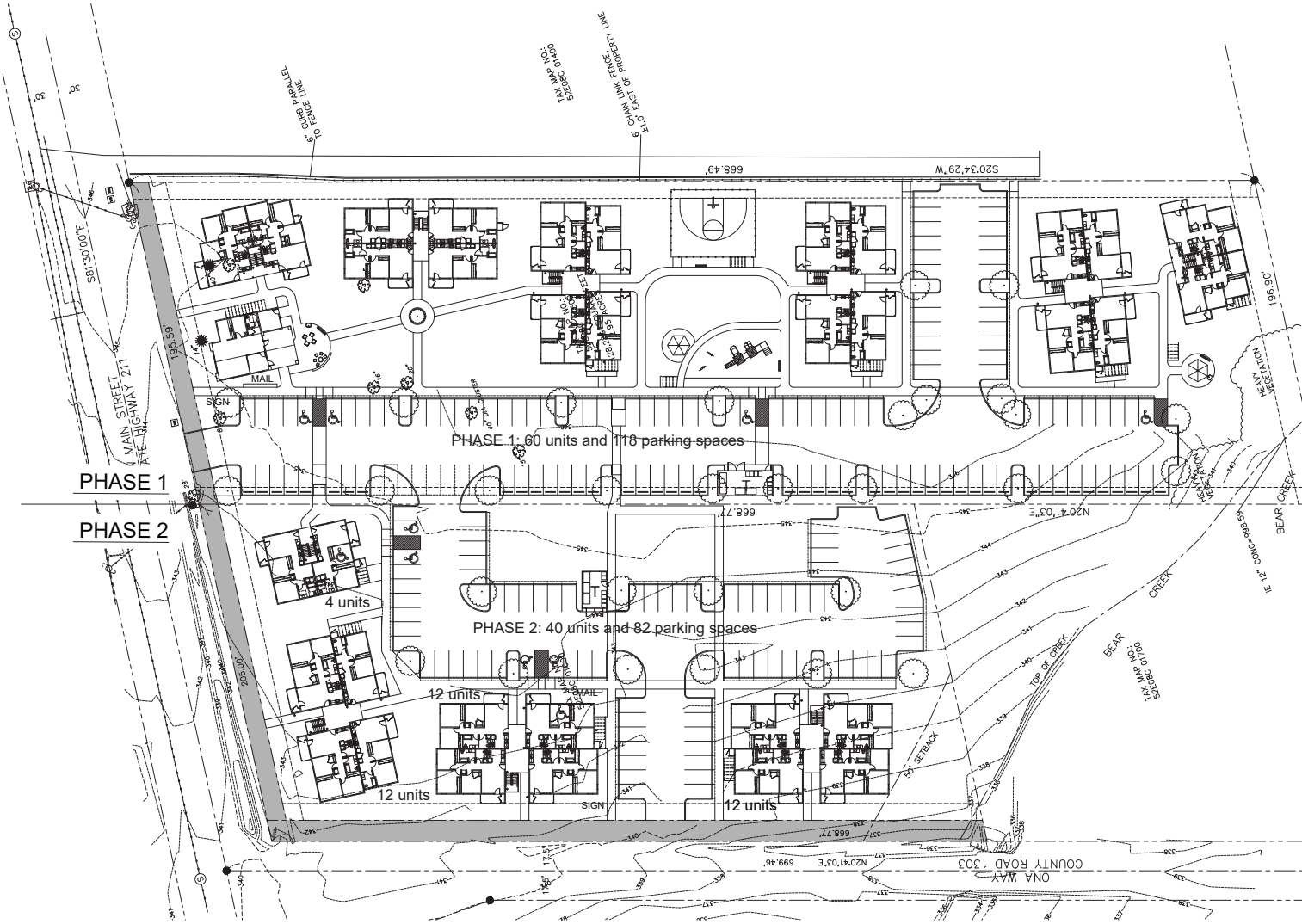
Key findings of this study include:

- The trip generation calculations show that the combined Phase I and Phase II development is projected to generate a net increase of 37 morning peak hour trips, 50 evening peak hour trips, and of 494 average weekday trips.
- The proposed parking supply of 200 spaces will adequately serve the anticipated maximum parking demand of 140 spaces for the development.
- Based on a review of the most recent five years of available crash data, no significant trends or crash patterns were identified at any of the study intersections. No safety mitigation is recommended per the crash data analysis.
- At both the future north site access and west site access, existing foliage and structures currently obstruct sight lines. Upon the planned removal of the onsite foliage as part of the proposed redevelopment project, sufficient sight distance meeting the minimum intersection sight distance can be achieved.
- Preliminary traffic signal warrants are not projected to be met at the intersection of OR 211 & S Ona Way; therefore, no signalization of the stop-controlled study intersection is necessary or recommended.
- The proposed development is not expected to add any new traffic to Leroy Avenue. Since only new development south of OR 211 with access to the south approach could increase the trip generation on the south leg and trigger the signal, the proposed project will not trigger the signal warrants at this intersection.
- Left-turn lane warrants were met for the westbound approach at the intersection of OR 211 at S Ona Way during both the morning and evening peak hours. Half-street improvements from the project site to the eastern leg of the S Ona Way intersection will be completed by the project applicant to provide a two-way left-turn-lane thereby allowing for a westbound left-turn lane to be installed, as it is warranted.
- All study intersections are projected to operate within ODOT standards under all analysis scenarios including buildout of Phases I and II of the proposed development.
- Queuing analysis results show the 95th percentile queues on the public street are anticipated to provide adequate vehicle storage space under the buildout condition with Phases I and II of the proposed development.
- Queues at the site accesses will occasionally extend into the striped parking area of the development but most of the time, parking will not be blocked by queued vehicles.

Appendix A – Site Information

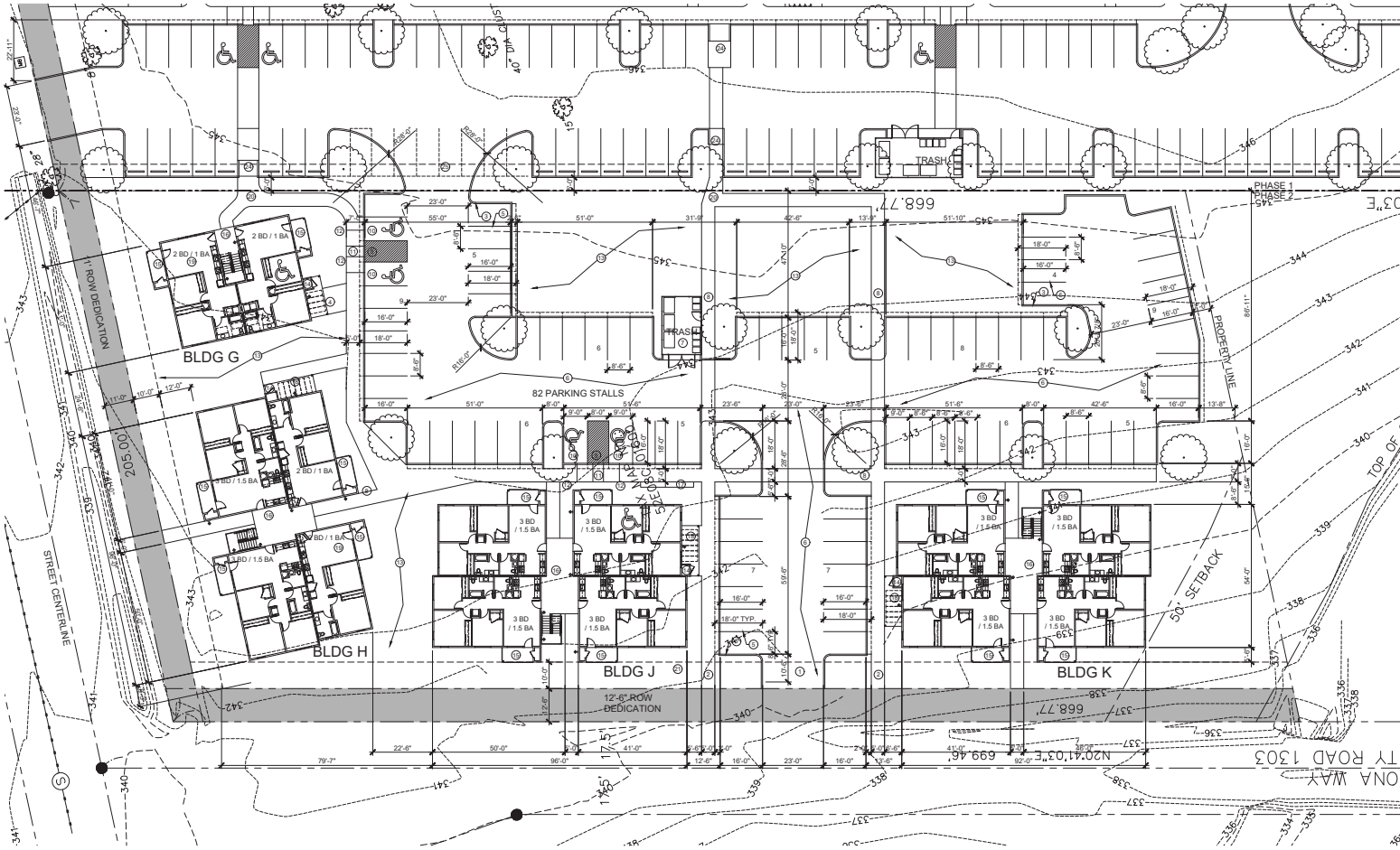
Site Plan

Trip Generation Calculations



1 / A100 OVERALL SITE PLAN

1"=30'-0"



1 A101 SITE PLAN

1"=20-0"

N

KEY NOTES

1. VEHICLE SITE ENTRY
2. PEDESTRIAN SITE ENTRY
3. 6" CAST IN PLACE CONCRETE CURB AROUND ENTIRE PARKING AREA
4. COVERED BIKE PARKING FOR 4 BIKES
5. PAINTED PARKING SPACE STRIPING AT EACH PARKING SPACE
6. ASPHALT PAVED PARKING SPACES AND DRIVEWAY
7. TRASH ENCLOSURE - 6' HIGH BLACK CHAIN LINK FENCING WITH MATCHING BLACK INFILL SLATS, MATCHING PAIR OF 5' X 6' METAL GATES AND ONE 42" X 6' MAN-GATE WITH ACCESSIBLE HARDWARE
8. 5' WIDE CONCRETE PEDESTRIAN SIDEWALK
9. STRIPED ACCESS AISLE
10. ACCESSIBLE PARKING SPACE
11. ACCESSIBLE CURB RAMP
12. ACCESSIBLE PARKING SIGNAGE
13. LANDSCAPE AREA - SEE LANDSCAPE PLAN
14. BUILDING FIRE SPRINKLER RISER CLOSET WITH "FIRE RISER" SIGNAGE
15. COVERED PORCH / PATIO
16. COVERED BREEZEWAY
17. PROPOSED MAILBOX LOCATION
18. COVERED BIKE PARKING FOR 6 BIKES
19. VISUAL AND HEARING IMPAIRED UNIT
20. CONTINUE SIDEWALK TO ADJACENT SITE
21. PROJECT MONUMENT SIGN WITH PROJECT NAME AND ADDRESS
22. BUILDING MOUNTED ADDRESS SIGN - EXACT PLACEMENT TO TO BE COORDINATED WITH MOLALLA FIRE
23. FIRE DEPARTMENT KNOX BOX LOCATION AT FIRE RISER MOUNT NO MORE THAN 80" FROM GRADE TO TOP OF BOX
24. NEW PEDESTRIAN CONNECTION TO PHASE 1 ONE PARKING SPACE REMOVED
25. NEW VEHICLE CONNECTION TO PHASE 1 SEVEN PARKING SPACES REMOVED
26. NEW 5' WIDE CONCRETE PEDESTRIAN SIDEWALK ON PHASE 1

GENERAL NOTES

1. REFER TO CIVIL DRAWINGS FOR:
   - 1.1. FINISHED GRADES - ON SITE AND OFF SITE
   - 1.2. BUILDING PAD ELEVATIONS
   - 1.3. ALL WORK IN THE PUBLIC RIGHT-OF-WAY
   - 1.4. ROADWORK AND PAVING - ON SITE AND OFF SITE
   - 1.5. STORM DRAINAGE - ON SITE AND OFF SITE
   - 1.6. UTILITIES - ON SITE AND OFF SITE
2. ALL SITE WORK TO CONFORM TO THE ACCESSIBILITY REQUIREMENTS OF CHAPTER 11 OF THE 2019 OREGON STRUCTURAL SPECIALTY CODE AND ICC/ANSI A117.1-2009.
3. ALL SIDEWALKS SHOWN TO NOT EXCEED 1:20 SLOPE VERTICAL AND 1:50 CROSS SLOPE
4. REFER TO LANDSCAPE PLAN FOR PLANTING AND AMENITIES IN ALL LANDSCAPE AREAS.
5. PARKING AREA TO BE ASPHALT PAVING WITH 6" CAST IN PLACE CONCRETE CURBS AROUND ENTIRE PARKING AREA. VERIFY ALL REQUIREMENTS WITH CIVIL DRAWINGS.
6. ALL SIDEWALKS ADJACENT TO PARKING SPACES TO BE 2 FEET WIDER THAN REQUIRED TO ACCOMMODATE VEHICLE OVERHANG.

TABULATIONS

6 2 BR / 1 BA UNITS AT 861 SF = 5,166 SF
4 2 BR / 1 BA UNITS AT 944 SF = 3,776 SF
30 3 BR / 1.5 BA UNITS AT 1,107 SF = 33,210 SF

40 UNITS TOTAL = 42,152 SF (AREA DOES NOT INCLUDE DECKS, PATIOS, BREEZEWAYS, OR EXTERIOR STORAGE)

SITE AREA:

BEFORE DEDICATION: 85,165 SF
DEDICATION: 8,462 SF

AFTER DEDICATION: 76,703 SF

BUILDING COVERAGE: 17,548 SF = 23%

PARKING

REQUIRED:
10 2 BR UNITS X 2.0 SPACES PER UNIT = 20 SPACES
30 3 BR UNITS X 2.5 SPACES PER UNIT = 75 SPACES

82 ON SITE PARKING SPACES PROVIDED

20% OF THE ON-SITE PARKING SPACES ARE TO BE CONSTRUCTED AS "EV READY". 82 x .20 = 17 SPACES

TRIP GENERATION CALCULATIONS
Source: Trip Generation Manual, 11th Edition

Land Use:	Affordable Housing
Land Use Code:	223
Land Use Subcategory:	Income Limits
Setting/Location	General Urban/Suburban
Variable:	Dwelling Units
Trip Type:	Vehicle
Formula Type:	Equation
Variable Quantity:	100

AM PEAK HOUR

Trip Rate: =0.21*($X12)+17.21

	Enter	Exit	Total
Directional Split	29%	71%	
Trip Ends	11	27	38

PM PEAK HOUR

Trip Rate: =EXP(0.72*LN($X12)+0.64)

	Enter	Exit	Total
Directional Split	59%	41%	
Trip Ends	31	21	52

WEEKDAY

Trip Rate: =3.73*($X12)+139.35

	Enter	Exit	Total
Directional Split	50%	50%	
Trip Ends	256	256	512

SATURDAY

Trip Rate: #N/A

	Enter	Exit	Total
Directional Split	50%	50%	
Trip Ends	#N/A	#N/A	#N/A

Caution: Small Sample Size

TRIP GENERATION CALCULATIONS
Source: Trip Generation Manual, 11th Edition

Land Use:	Single-Family Detached Housing
Land Use Code:	210
Land Use Subcategory:	All Sites
Setting/Location	General Urban/Suburban
Variable:	Dwelling Units
Trip Type:	Vehicle
Formula Type:	Rate
Variable Quantity:	2

WARNING: Variable Quantity is less than Minimum Survey Size for Peak Hours

AM PEAK HOUR

Trip Rate: 0.7

	Enter	Exit	Total
Directional Split	26%	74%	
Trip Ends	0	1	1

PM PEAK HOUR

Trip Rate: 0.94

	Enter	Exit	Total
Directional Split	63%	37%	
Trip Ends	1	1	2

WEEKDAY

Trip Rate: 9.43

	Enter	Exit	Total
Directional Split	50%	50%	
Trip Ends	9	9	18

SATURDAY

Trip Rate: 9.48

	Enter	Exit	Total
Directional Split	50%	50%	
Trip Ends	9	9	18

From Phase I TIS

TRIP GENERATION CALCULATIONS

Land Use: Multifamily Housing (Mid-Rise)
Land Use Code: 221
Setting/Location General Urban/Suburban
Variable: Dwelling Units
Variable Value: 60

AM PEAK HOUR

Trip Rate: 0.36

	Enter	Exit	Total
Directional Distribution	26%	74%	
Trip Ends	6	16	22

PM PEAK HOUR

Trip Rate: 0.44

	Enter	Exit	Total
Directional Distribution	61%	39%	
Trip Ends	16	10	26

WEEKDAY

Trip Rate: 5.44

	Enter	Exit	Total
Directional Distribution	50%	50%	
Trip Ends	163	163	326

SATURDAY

Trip Rate: 4.91

	Enter	Exit	Total
Directional Distribution	50%	50%	
Trip Ends	147	147	294

Source: TRIP GENERATION, Tenth Edition

Land Use: 223 Affordable Housing

Description

Affordable housing includes all multifamily housing that is rented at below market rate to households that include at least one employed member. Eligibility to live in affordable housing can be a function of limited household income and resident age. Multifamily housing (low-rise) (Land Use 220), multifamily housing (mid-rise) (Land Use 221), and multifamily housing (high-rise) (Land Use 222) are related land uses.

Additional Data

For the majority of study sites in this land use code, 100 percent of the dwelling units are considered affordable. For residential study sites that provide a mix of market value and affordable units, the study sites with at least 75 percent of the dwelling units designated as affordable are also included in this land use database.

Separate data plots and statistics are presented for subsets of the affordable housing database: sites with income limitations for its tenants, sites with minimum age thresholds for its tenants (i.e., senior housing), and sites comprised entirely of single-room-only units.

The average parking supply ratios for the study sites with parking supply information are as follows:

- In a general urban/suburban setting, 1.3 spaces per dwelling unit (28 sites) and 0.7 spaces per bedroom (9 sites)
- In a dense multi-use urban setting, 0.6 spaces per dwelling unit (28 sites) and 0.3 spaces per bedroom (26 sites)
- In a center city core setting, 0.3 spaces per dwelling unit (6 sites) and 0.3 spaces per bedroom (6 sites)

The sites were surveyed in the 1990s and the 2010s in California, Connecticut, District of Columbia, Maryland, Massachusetts, New Jersey, and Oregon.

It is expected that the number of bedrooms and number of residents are likely correlated to the parking demand generated by a residential site. Parking studies of multifamily housing should attempt to obtain information on occupancy rate and on the mix of residential unit sizes (i.e., number of units by number of bedrooms at the site complex). Future parking studies should also indicate the number of levels contained in the residential building.

Source Numbers

314, 514, 533, 535, 536, 537, 539, 541, 579, 582, 585, 586

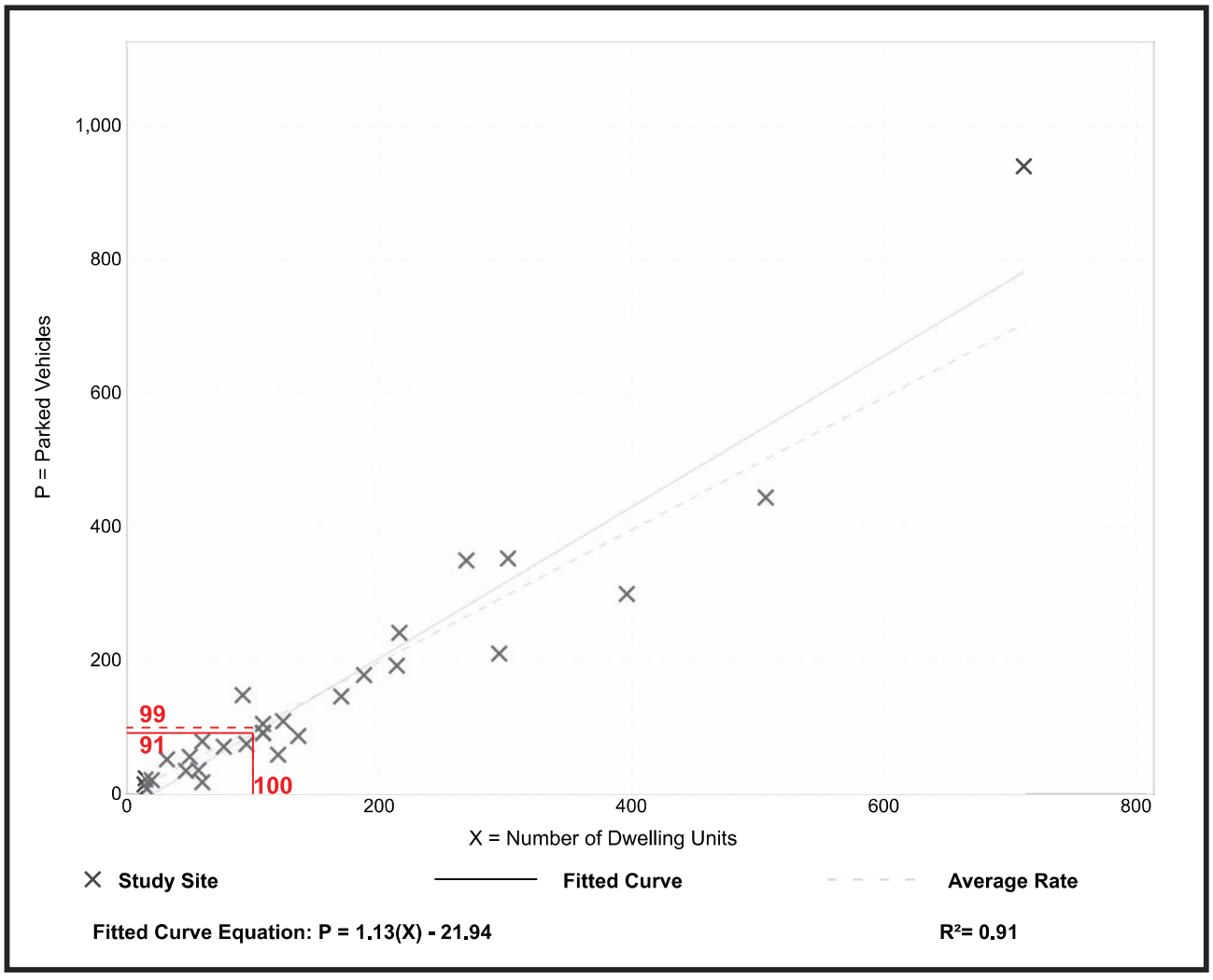
Affordable Housing - Income Limits
(223)

Peak Period Parking Demand vs: **Dwelling Units**
On a: **Weekday (Monday - Friday)**
Setting/Location: **General Urban/Suburban**
Peak Period of Parking Demand: **10:00 p.m. - 5:00 a.m.**
Number of Studies: 29
Avg. Num. of Dwelling Units: 159

Peak Period Parking Demand per Dwelling Unit

Average Rate	Range of Rates	33rd / 85th Percentile	95% Confidence Interval	Standard Deviation (Coeff. of Variation)
0.99	0.32 - 1.66	0.85 / 1.33	0.89 - 1.09	0.27 (27%)

Data Plot and Equation



Parking Generation Manual, 5th Edition ● Institute of Transportation Engineers

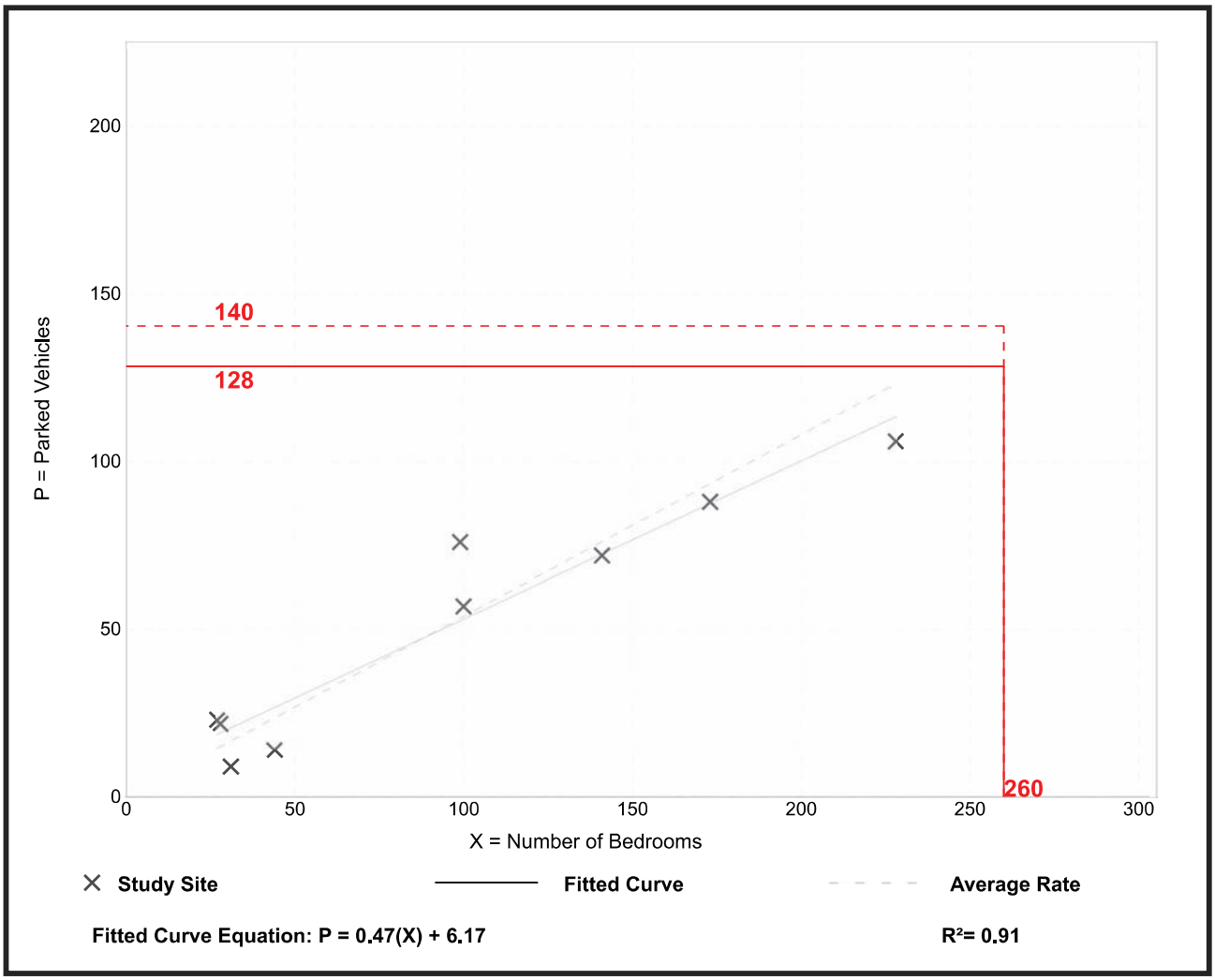
Affordable Housing - Income Limits
(223)

Peak Period Parking Demand vs: **Bedrooms**
On a: **Weekday (Monday - Friday)**
Setting/Location: **General Urban/Suburban**
Peak Period of Parking Demand: **10:00 p.m. - 5:00 a.m.**
Number of Studies: 9
Avg. Num. of Bedrooms: 97

Peak Period Parking Demand per Bedroom

Average Rate	Range of Rates	33rd / 85th Percentile	95% Confidence Interval	Standard Deviation (Coeff. of Variation)
0.54	0.29 - 0.85	0.48 / 0.82	***	0.14 (26%)

Data Plot and Equation



Parking Generation Manual, 5th Edition ● Institute of Transportation Engineers

Appendix B – Volumes

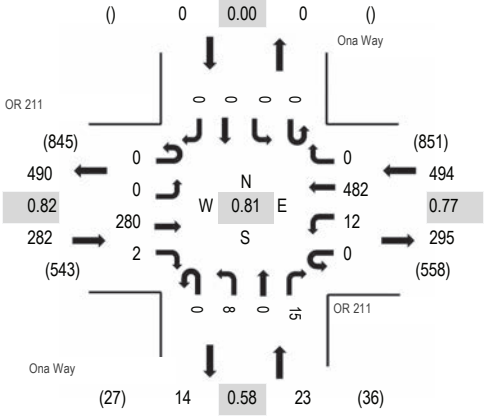
Traffic Counts

ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

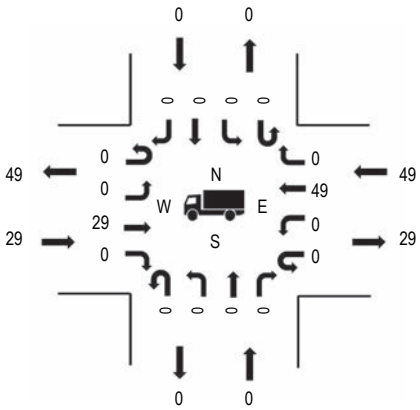
Location: 4 Ona Way & OR 211 AM
Date: Tuesday, September 21, 2021
Peak Hour: 07:00 AM - 08:00 AM
Peak 15-Minutes: 07:20 AM - 07:35 AM

Peak Hour

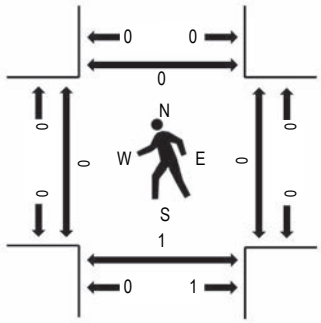
Motorized Vehicles



Heavy Vehicles



Pedestrians



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	10.3%	0.82
WB	9.9%	0.77
NB	0.0%	0.58
SB	0.0%	0.00
All	9.8%	0.81

Traffic Counts - Motorized Vehicles

Interval Start Time	OR 211 Eastbound				OR 211 Westbound				Ona Way Northbound				Ona Way Southbound					Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total	
7:00 AM	0	0	20	0	0	1	39	0	0	2	0	0	0	0	0	0	62	799
7:05 AM	0	0	32	0	0	0	35	0	0	0	0	2	0	0	0	0	69	792
7:10 AM	0	0	31	0	0	0	42	0	0	1	0	0	0	0	0	0	74	779
7:15 AM	0	0	26	0	0	0	39	0	0	1	0	1	0	0	0	0	67	747
7:20 AM	0	0	20	0	0	1	48	0	0	1	0	1	0	0	0	0	71	736
7:25 AM	0	0	30	0	0	2	58	0	0	1	0	3	0	0	0	0	94	721
7:30 AM	0	0	25	0	0	1	51	0	0	1	0	3	0	0	0	0	81	678
7:35 AM	0	0	20	0	0	0	31	0	0	1	0	0	0	0	0	0	52	650
7:40 AM	0	0	9	0	0	2	36	0	0	0	0	1	0	0	0	0	48	647
7:45 AM	0	0	28	1	0	1	43	0	0	0	0	2	0	0	0	0	75	656
7:50 AM	0	0	22	0	0	1	29	0	0	0	0	2	0	0	0	0	54	623
7:55 AM	0	0	17	1	0	3	31	0	0	0	0	0	0	0	0	0	52	629
8:00 AM	0	0	30	0	0	2	22	0	0	1	0	0	0	0	0	0	55	631
8:05 AM	0	0	26	0	0	1	29	0	0	0	0	0	0	0	0	0	56	
8:10 AM	0	0	9	0	0	1	31	0	0	0	0	1	0	0	0	0	42	
8:15 AM	0	0	26	0	0	1	29	0	0	0	0	0	0	0	0	0	56	
8:20 AM	0	0	24	1	0	1	28	0	0	0	0	2	0	0	0	0	56	
8:25 AM	0	0	15	1	0	1	33	0	0	1	0	0	0	0	0	0	51	
8:30 AM	0	0	21	0	0	1	31	0	0	0	0	0	0	0	0	0	53	
8:35 AM	0	0	25	1	0	0	20	0	0	2	0	1	0	0	0	0	49	
8:40 AM	0	0	13	0	0	0	41	0	0	2	0	1	0	0	0	0	57	
8:45 AM	0	0	13	1	0	0	28	0	0	0	0	0	0	0	0	0	42	
8:50 AM	0	0	26	1	0	0	32	0	0	0	0	1	0	0	0	0	60	
8:55 AM	0	0	28	0	0	0	25	0	0	0	0	1	0	0	0	0	54	
Count Total	0	0	536	7	0	20	831	0	0	14	0	22	0	0	0	0	1,430	
Peak Hour	0	0	280	2	0	12	482	0	0	8	0	15	0	0	0	0	799	

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles on Crosswalk

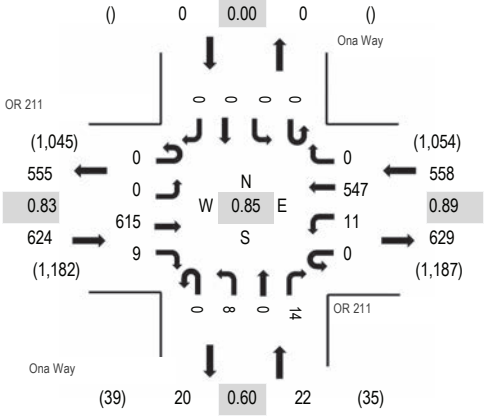
Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
7:00 AM	0	0	2	0	2	7:00 AM	0	0	0	0	0	7:00 AM	0	0	0	0	0
7:05 AM	2	0	3	0	5	7:05 AM	0	0	0	0	0	7:05 AM	0	0	0	0	0
7:10 AM	2	0	3	0	5	7:10 AM	0	0	0	0	0	7:10 AM	0	0	0	0	0
7:15 AM	0	0	5	0	5	7:15 AM	0	0	0	0	0	7:15 AM	0	0	0	0	0
7:20 AM	1	0	6	0	7	7:20 AM	0	0	0	0	0	7:20 AM	0	1	0	0	1
7:25 AM	10	0	6	0	16	7:25 AM	0	0	0	0	0	7:25 AM	0	0	0	0	0
7:30 AM	2	0	3	0	5	7:30 AM	0	0	0	0	0	7:30 AM	0	0	0	0	0
7:35 AM	3	0	3	0	6	7:35 AM	1	0	0	0	1	7:35 AM	0	0	0	0	0
7:40 AM	1	0	4	0	5	7:40 AM	0	0	0	0	0	7:40 AM	0	0	0	0	0
7:45 AM	4	0	4	0	8	7:45 AM	0	0	0	0	0	7:45 AM	0	0	0	0	0
7:50 AM	3	0	6	0	9	7:50 AM	0	0	0	0	0	7:50 AM	0	0	0	0	0
7:55 AM	1	0	4	0	5	7:55 AM	0	0	0	0	0	7:55 AM	0	0	0	0	0
8:00 AM	9	0	4	0	13	8:00 AM	0	0	0	0	0	8:00 AM	0	0	0	0	0
8:05 AM	2	0	4	0	6	8:05 AM	0	0	0	0	0	8:05 AM	0	0	0	0	0
8:10 AM	3	0	3	0	6	8:10 AM	0	0	0	0	0	8:10 AM	0	0	0	0	0
8:15 AM	6	0	0	0	6	8:15 AM	0	0	0	0	0	8:15 AM	0	0	0	0	0
8:20 AM	3	0	4	0	7	8:20 AM	0	0	0	0	0	8:20 AM	0	0	0	0	0
8:25 AM	4	0	6	0	10	8:25 AM	0	0	0	0	0	8:25 AM	0	0	0	0	0
8:30 AM	2	0	3	0	5	8:30 AM	0	0	0	0	0	8:30 AM	0	0	0	0	0
8:35 AM	4	0	3	0	7	8:35 AM	0	0	0	0	0	8:35 AM	0	0	0	0	0
8:40 AM	3	0	7	0	10	8:40 AM	0	0	0	0	0	8:40 AM	0	0	0	0	0
8:45 AM	5	0	5	0	10	8:45 AM	1	0	0	0	1	8:45 AM	0	0	0	1	1
8:50 AM	2	0	4	0	6	8:50 AM	0	0	0	0	0	8:50 AM	0	0	0	0	0
8:55 AM	2	0	1	0	3	8:55 AM	0	0	0	0	0	8:55 AM	0	0	0	3	3
Count Total	74	0	93	0	167	Count Total	2	0	0	0	2	Count Total	0	1	0	4	5
Peak Hour	29	0	49	0	78	Peak Hour	1	0	0	0	1	Peak Hour	0	1	0	0	1

ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

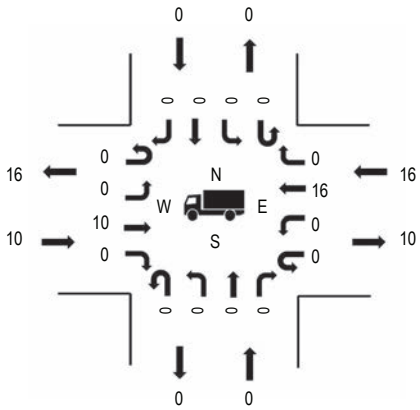
Location: 4 Ona Way & OR 211 PM
Date: Tuesday, September 21, 2021
Peak Hour: 04:55 PM - 05:55 PM
Peak 15-Minutes: 05:10 PM - 05:25 PM

Peak Hour

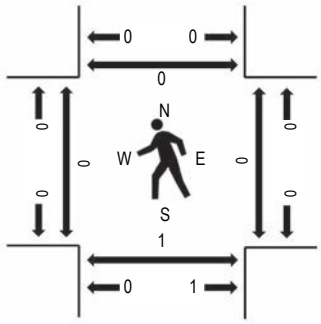
Motorized Vehicles



Heavy Vehicles



Pedestrians



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	1.6%	0.83
WB	2.9%	0.89
NB	0.0%	0.60
SB	0.0%	0.00
All	2.2%	0.85

Traffic Counts - Motorized Vehicles

Interval Start Time	OR 211 Eastbound				OR 211 Westbound				Ona Way Northbound				Ona Way Southbound					Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total	
4:00 PM	0	0	42	0	0	0	44	0	0	0	0	0	0	0	0	0	86	1,074
4:05 PM	0	0	52	1	0	0	34	0	0	1	0	0	0	0	0	0	88	1,093
4:10 PM	0	0	51	0	0	1	36	0	0	0	0	1	0	0	0	0	89	1,083
4:15 PM	0	0	33	0	0	3	56	0	0	0	0	1	0	0	0	0	93	1,116
4:20 PM	0	0	49	2	0	1	34	0	0	0	0	0	0	0	0	0	86	1,138
4:25 PM	0	0	43	2	0	0	30	0	0	1	0	2	0	0	0	0	78	1,171
4:30 PM	0	0	45	2	0	1	46	0	0	1	0	0	0	0	0	0	95	1,197
4:35 PM	0	0	50	0	0	0	49	0	0	1	0	3	0	0	0	0	103	1,185
4:40 PM	0	0	50	1	0	0	42	0	0	0	0	0	0	0	0	0	93	1,178
4:45 PM	0	0	39	1	0	1	35	0	0	0	0	1	0	0	0	0	77	1,184
4:50 PM	0	0	39	0	0	0	43	0	0	0	0	1	0	0	0	0	83	1,192
4:55 PM	0	0	51	0	0	0	52	0	0	0	0	0	0	0	0	0	103	1,204
5:00 PM	0	0	53	0	0	1	49	0	0	1	0	1	0	0	0	0	105	1,197
5:05 PM	0	0	43	0	0	1	32	0	0	0	0	2	0	0	0	0	78	
5:10 PM	0	0	58	0	0	0	60	0	0	2	0	2	0	0	0	0	122	
5:15 PM	0	0	57	1	0	2	52	0	0	0	0	3	0	0	0	0	115	
5:20 PM	0	0	70	3	0	0	43	0	0	0	0	3	0	0	0	0	119	
5:25 PM	0	0	49	0	0	0	52	0	0	2	0	1	0	0	0	0	104	
5:30 PM	0	0	50	2	0	3	28	0	0	0	0	0	0	0	0	0	83	
5:35 PM	0	0	42	1	0	2	49	0	0	1	0	1	0	0	0	0	96	
5:40 PM	0	0	52	0	0	1	45	0	0	1	0	0	0	0	0	0	99	
5:45 PM	0	0	42	0	0	0	42	0	0	1	0	0	0	0	0	0	85	
5:50 PM	0	0	48	2	0	1	43	0	0	0	0	1	0	0	0	0	95	
5:55 PM	0	0	56	0	0	3	37	0	0	0	0	0	0	0	0	0	96	
Count Total	0	0	1,164	18	0	21	1,033	0	0	12	0	23	0	0	0	0	2,271	
Peak Hour	0	0	615	9	0	11	547	0	0	8	0	14	0	0	0	0	1,204	

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles on Crosswalk

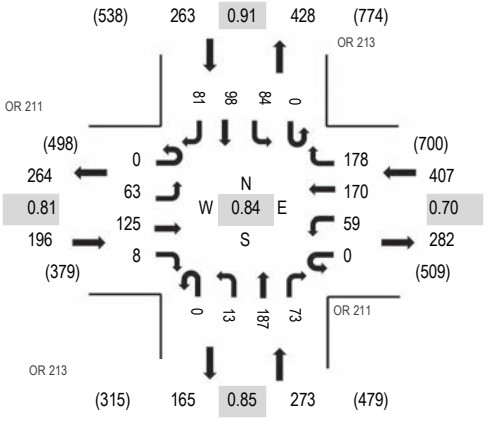
Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
4:00 PM	1	0	4	0	5	4:00 PM	0	0	0	0	0	4:00 PM	0	0	0	0	0
4:05 PM	3	1	1	0	5	4:05 PM	0	0	0	0	0	4:05 PM	0	0	0	0	0
4:10 PM	3	0	2	0	5	4:10 PM	0	0	0	0	0	4:10 PM	0	0	0	1	1
4:15 PM	1	0	5	0	6	4:15 PM	0	0	0	0	0	4:15 PM	0	0	0	0	0
4:20 PM	1	0	2	0	3	4:20 PM	0	0	0	0	0	4:20 PM	0	0	0	0	0
4:25 PM	1	0	5	0	6	4:25 PM	0	0	0	0	0	4:25 PM	0	0	0	0	0
4:30 PM	1	0	1	0	2	4:30 PM	0	0	0	0	0	4:30 PM	0	0	0	0	0
4:35 PM	4	0	2	0	6	4:35 PM	0	0	0	0	0	4:35 PM	0	0	0	0	0
4:40 PM	5	0	2	0	7	4:40 PM	0	0	0	0	0	4:40 PM	0	0	0	0	0
4:45 PM	2	0	3	0	5	4:45 PM	0	0	0	0	0	4:45 PM	0	0	0	0	0
4:50 PM	2	0	1	0	3	4:50 PM	0	0	0	0	0	4:50 PM	0	1	0	0	1
4:55 PM	2	0	2	0	4	4:55 PM	0	0	0	0	0	4:55 PM	0	0	0	0	0
5:00 PM	1	0	4	0	5	5:00 PM	0	0	0	0	0	5:00 PM	0	0	0	0	0
5:05 PM	2	0	0	0	2	5:05 PM	0	0	0	0	0	5:05 PM	0	0	0	0	0
5:10 PM	1	0	2	0	3	5:10 PM	0	0	0	0	0	5:10 PM	0	0	0	0	0
5:15 PM	1	0	2	0	3	5:15 PM	0	0	0	0	0	5:15 PM	0	1	0	0	1
5:20 PM	1	0	0	0	1	5:20 PM	0	0	0	0	0	5:20 PM	0	0	0	0	0
5:25 PM	0	0	3	0	3	5:25 PM	0	0	0	0	0	5:25 PM	0	0	0	0	0
5:30 PM	1	0	1	0	2	5:30 PM	0	0	0	0	0	5:30 PM	0	0	0	0	0
5:35 PM	0	0	1	0	1	5:35 PM	0	0	0	0	0	5:35 PM	0	0	0	0	0
5:40 PM	0	0	0	0	0	5:40 PM	0	0	0	0	0	5:40 PM	0	0	0	0	0
5:45 PM	1	0	1	0	2	5:45 PM	0	0	0	0	0	5:45 PM	0	0	0	0	0
5:50 PM	0	0	0	0	0	5:50 PM	0	0	0	0	0	5:50 PM	0	0	0	0	0
5:55 PM	2	0	1	0	3	5:55 PM	0	0	0	0	0	5:55 PM	0	0	0	0	0
Count Total	36	1	45	0	82	Count Total	0	0	0	0	0	Count Total	0	2	0	1	3
Peak Hour	10	0	16	0	26	Peak Hour	0	0	0	0	0	Peak Hour	0	1	0	0	1

ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

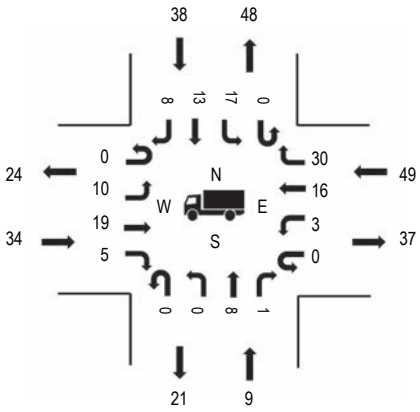
Location: 1 OR 213 & OR 211 AM
Date: Tuesday, September 21, 2021
Peak Hour: 07:00 AM - 08:00 AM
Peak 15-Minutes: 07:20 AM - 07:35 AM

Peak Hour

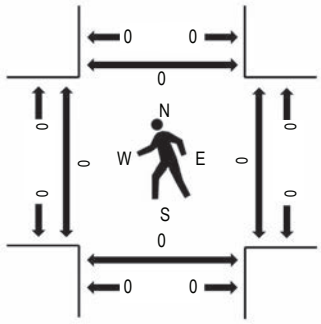
Motorized Vehicles



Heavy Vehicles



Pedestrians



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	17.3%	0.81
WB	12.0%	0.70
NB	3.3%	0.85
SB	14.4%	0.91
All	11.4%	0.84

Traffic Counts - Motorized Vehicles

Interval Start Time	OR 211 Eastbound				OR 211 Westbound				OR 213 Northbound				OR 213 Southbound					Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total	
7:00 AM	0	5	14	2	0	4	15	14	0	1	14	4	0	6	1	2	82	1,139
7:05 AM	0	5	11	0	0	1	17	11	0	2	14	8	0	10	5	7	91	1,138
7:10 AM	0	5	9	0	0	4	15	24	0	2	15	15	0	9	9	9	116	1,127
7:15 AM	0	6	8	0	0	0	13	15	0	0	20	5	0	2	6	7	82	1,080
7:20 AM	0	6	10	1	0	7	15	27	0	4	15	4	0	5	5	4	103	1,081
7:25 AM	0	8	19	2	0	6	19	23	0	0	19	7	0	5	12	5	125	1,047
7:30 AM	0	4	12	0	0	12	13	23	0	1	17	9	0	5	9	7	112	1,015
7:35 AM	0	5	7	0	0	7	11	6	0	0	9	2	0	10	14	10	81	975
7:40 AM	0	8	11	0	0	3	15	16	0	0	20	9	0	10	9	7	108	961
7:45 AM	0	4	8	0	0	10	12	2	0	2	18	3	0	4	9	6	78	944
7:50 AM	0	0	9	1	0	2	12	6	0	1	16	3	0	6	11	10	77	940
7:55 AM	0	7	7	2	0	3	13	11	0	0	10	4	0	12	8	7	84	962
8:00 AM	0	7	7	1	0	2	6	11	0	1	17	5	0	3	16	5	81	957
8:05 AM	0	11	8	0	0	4	8	13	0	0	13	3	0	4	5	11	80	
8:10 AM	0	7	14	0	0	3	5	7	0	1	9	2	0	5	8	8	69	
8:15 AM	0	8	5	1	0	4	13	12	0	2	9	9	0	7	8	5	83	
8:20 AM	0	1	5	0	0	4	9	15	0	0	10	5	0	7	9	4	69	
8:25 AM	0	8	5	0	0	2	13	16	0	4	7	4	0	13	16	5	93	
8:30 AM	0	6	3	0	0	1	9	6	0	0	14	4	0	11	8	10	72	
8:35 AM	0	5	10	0	0	3	7	12	0	3	9	4	0	4	5	5	67	
8:40 AM	0	7	6	0	0	2	24	13	0	1	9	5	0	5	7	12	91	
8:45 AM	0	5	5	0	0	2	11	7	0	1	17	5	0	5	9	7	74	
8:50 AM	0	10	9	0	0	10	15	10	0	3	9	3	0	5	10	15	99	
8:55 AM	0	8	21	0	0	2	7	5	0	0	13	5	0	6	8	4	79	
Count Total	0	146	223	10	0	98	297	305	0	29	323	127	0	159	207	172	2,096	
Peak Hour	0	63	125	8	0	59	170	178	0	13	187	73	0	84	98	81	1,139	

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles on Crosswalk

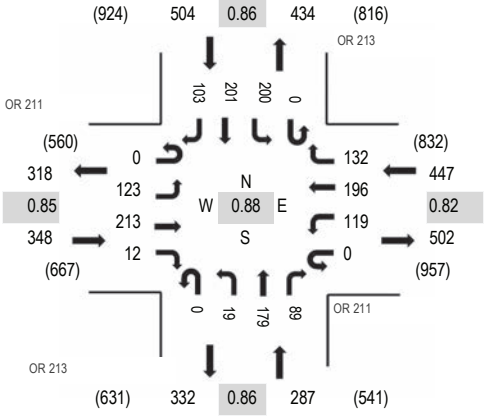
Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
7:00 AM	3	2	2	0	7	7:00 AM	0	0	0	0	0	7:00 AM	0	0	0	0	0
7:05 AM	1	0	4	2	7	7:05 AM	0	0	0	0	0	7:05 AM	0	0	0	0	0
7:10 AM	1	1	4	3	9	7:10 AM	0	0	0	0	0	7:10 AM	0	0	0	0	0
7:15 AM	0	1	6	0	7	7:15 AM	0	0	0	0	0	7:15 AM	0	0	0	0	0
7:20 AM	6	1	6	3	16	7:20 AM	0	0	0	0	0	7:20 AM	0	0	0	0	0
7:25 AM	8	1	6	4	19	7:25 AM	0	0	0	0	0	7:25 AM	0	0	0	0	0
7:30 AM	1	0	3	4	8	7:30 AM	0	0	0	0	0	7:30 AM	0	0	0	0	0
7:35 AM	3	0	2	5	10	7:35 AM	0	0	0	0	0	7:35 AM	0	0	0	0	0
7:40 AM	3	1	4	1	9	7:40 AM	0	0	0	0	0	7:40 AM	0	0	0	0	0
7:45 AM	3	1	4	4	12	7:45 AM	0	0	0	0	0	7:45 AM	0	0	0	0	0
7:50 AM	1	1	4	3	9	7:50 AM	0	0	0	0	0	7:50 AM	0	0	0	0	0
7:55 AM	4	0	4	9	17	7:55 AM	0	0	0	0	0	7:55 AM	0	0	0	0	0
8:00 AM	3	0	2	5	10	8:00 AM	0	0	0	0	0	8:00 AM	0	0	0	0	0
8:05 AM	3	1	4	4	12	8:05 AM	0	0	0	0	0	8:05 AM	0	0	0	0	0
8:10 AM	3	2	1	4	10	8:10 AM	0	0	0	0	0	8:10 AM	0	0	0	0	0
8:15 AM	1	1	2	6	10	8:15 AM	0	0	0	0	0	8:15 AM	0	0	0	0	0
8:20 AM	1	1	5	6	13	8:20 AM	0	0	0	0	0	8:20 AM	0	0	0	0	0
8:25 AM	1	1	5	2	9	8:25 AM	0	0	0	0	0	8:25 AM	0	0	0	0	0
8:30 AM	0	0	2	4	6	8:30 AM	0	0	0	0	0	8:30 AM	0	0	0	0	0
8:35 AM	3	0	2	6	11	8:35 AM	0	0	0	0	0	8:35 AM	0	0	0	0	0
8:40 AM	2	2	4	3	11	8:40 AM	0	0	0	0	0	8:40 AM	0	0	0	0	0
8:45 AM	0	4	4	3	11	8:45 AM	0	0	0	0	0	8:45 AM	0	0	0	0	0
8:50 AM	1	2	7	2	12	8:50 AM	0	0	0	0	0	8:50 AM	0	0	0	0	0
8:55 AM	4	1	2	5	12	8:55 AM	0	0	0	0	0	8:55 AM	0	0	0	0	0
Count Total	56	24	89	88	257	Count Total	0	0	0	0	0	Count Total	0	0	0	0	0
Peak Hour	34	9	49	38	130	Peak Hour	0	0	0	0	0	Peak Hour	0	0	0	0	0

ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

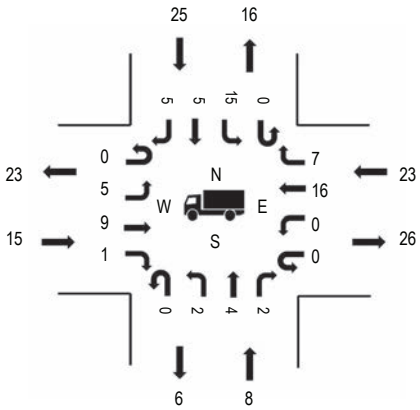
Location: 1 OR 213 & OR 211 PM
Date: Tuesday, September 21, 2021
Peak Hour: 04:30 PM - 05:30 PM
Peak 15-Minutes: 05:10 PM - 05:25 PM

Peak Hour

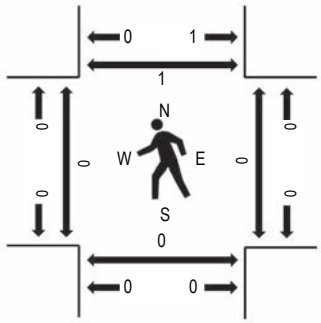
Motorized Vehicles



Heavy Vehicles



Pedestrians



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	4.3%	0.85
WB	5.1%	0.82
NB	2.8%	0.86
SB	5.0%	0.86
All	4.5%	0.88

Traffic Counts - Motorized Vehicles

Interval Start Time	OR 211 Eastbound				OR 211 Westbound				OR 213 Northbound				OR 213 Southbound					Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total	
4:00 PM	0	7	22	1	0	5	20	15	0	1	13	6	0	13	17	9	129	1,450
4:05 PM	0	12	18	0	0	12	12	8	0	0	17	11	0	12	12	3	117	1,455
4:10 PM	0	10	14	2	0	6	14	6	0	1	10	5	0	16	18	4	106	1,457
4:15 PM	0	4	11	1	0	8	21	12	0	0	22	8	0	11	17	10	125	1,512
4:20 PM	0	9	23	2	0	10	13	11	0	0	18	5	0	11	21	5	128	1,534
4:25 PM	0	9	20	1	0	5	12	12	0	0	6	4	0	15	10	9	103	1,550
4:30 PM	0	8	17	1	0	8	21	12	0	1	17	7	0	13	21	5	131	1,586
4:35 PM	0	9	21	0	0	14	9	17	0	0	13	2	0	17	10	12	124	1,559
4:40 PM	0	8	12	1	0	5	18	9	0	4	12	10	0	9	16	7	111	1,532
4:45 PM	0	10	21	1	0	2	13	11	0	0	11	5	0	19	17	6	116	1,544
4:50 PM	0	14	12	1	0	9	16	8	0	2	21	13	0	11	14	9	130	1,535
4:55 PM	0	6	20	3	0	9	14	8	0	0	17	8	0	17	17	11	130	1,524
5:00 PM	0	16	16	0	0	8	23	11	0	2	12	8	0	16	12	10	134	1,514
5:05 PM	0	8	15	1	0	5	10	10	0	3	18	6	0	14	22	7	119	
5:10 PM	0	19	20	1	0	25	16	12	0	1	9	12	0	14	22	10	161	
5:15 PM	0	7	24	3	0	11	30	11	0	2	11	5	0	21	15	7	147	
5:20 PM	0	10	22	0	0	12	8	11	0	3	19	9	0	30	14	6	144	
5:25 PM	0	8	13	0	0	11	18	12	0	1	19	4	0	19	21	13	139	
5:30 PM	0	10	15	1	0	9	8	6	0	1	12	10	0	16	13	3	104	
5:35 PM	0	6	16	1	0	13	9	10	0	1	9	2	0	13	11	6	97	
5:40 PM	0	10	16	1	0	11	16	11	0	2	10	9	0	10	21	6	123	
5:45 PM	0	8	12	0	0	4	9	13	0	3	13	8	0	13	20	4	107	
5:50 PM	0	10	21	1	0	9	19	3	0	2	16	13	0	13	11	1	119	
5:55 PM	0	7	18	0	0	8	8	17	0	0	10	6	0	19	17	10	120	
Count Total	0	225	419	23	0	219	357	256	0	30	335	176	0	362	389	173	2,964	
Peak Hour	0	123	213	12	0	119	196	132	0	19	179	89	0	200	201	103	1,586	

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles on Crosswalk

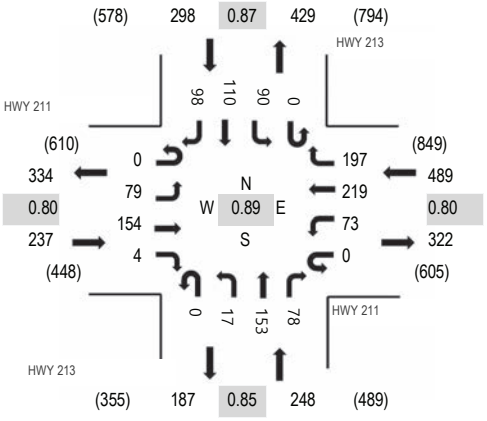
Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
4:00 PM	4	3	4	1	12	4:00 PM	0	0	0	0	0	4:00 PM	0	0	0	0	0
4:05 PM	2	0	1	2	5	4:05 PM	0	0	0	0	0	4:05 PM	0	0	0	0	0
4:10 PM	2	1	1	3	7	4:10 PM	0	0	0	0	0	4:10 PM	0	0	0	0	0
4:15 PM	1	2	5	3	11	4:15 PM	0	0	0	0	0	4:15 PM	0	0	0	0	0
4:20 PM	1	0	2	2	5	4:20 PM	0	0	0	0	0	4:20 PM	0	0	0	0	0
4:25 PM	0	0	3	0	3	4:25 PM	0	0	0	0	0	4:25 PM	0	0	0	0	0
4:30 PM	4	1	1	1	7	4:30 PM	0	0	0	0	0	4:30 PM	0	0	0	0	0
4:35 PM	3	1	2	5	11	4:35 PM	0	0	0	0	0	4:35 PM	0	0	0	0	0
4:40 PM	0	2	3	1	6	4:40 PM	0	0	0	0	0	4:40 PM	0	0	0	0	0
4:45 PM	2	0	1	2	5	4:45 PM	0	0	0	0	0	4:45 PM	0	0	0	1	1
4:50 PM	1	1	1	3	6	4:50 PM	0	0	0	0	0	4:50 PM	0	0	0	0	0
4:55 PM	1	0	0	1	2	4:55 PM	0	0	0	0	0	4:55 PM	0	0	0	0	0
5:00 PM	1	3	4	2	10	5:00 PM	0	0	0	0	0	5:00 PM	0	0	0	0	0
5:05 PM	0	0	0	5	5	5:05 PM	0	0	0	0	0	5:05 PM	0	0	0	0	0
5:10 PM	1	0	3	0	4	5:10 PM	0	0	0	0	0	5:10 PM	0	0	0	0	0
5:15 PM	1	0	4	3	8	5:15 PM	0	0	0	0	0	5:15 PM	0	0	0	0	0
5:20 PM	0	0	0	1	1	5:20 PM	0	0	0	0	0	5:20 PM	0	0	0	0	0
5:25 PM	1	0	4	1	6	5:25 PM	0	0	0	0	0	5:25 PM	0	0	0	0	0
5:30 PM	0	1	1	0	2	5:30 PM	0	0	0	0	0	5:30 PM	0	0	0	0	0
5:35 PM	0	0	2	0	2	5:35 PM	0	0	0	0	0	5:35 PM	0	0	1	0	1
5:40 PM	1	0	0	0	1	5:40 PM	0	0	0	0	0	5:40 PM	0	0	0	0	0
5:45 PM	0	0	0	4	4	5:45 PM	0	0	0	0	0	5:45 PM	0	0	0	0	0
5:50 PM	1	0	0	0	1	5:50 PM	0	0	0	0	0	5:50 PM	0	0	0	0	0
5:55 PM	2	1	1	1	5	5:55 PM	0	0	0	0	0	5:55 PM	0	0	0	0	0
Count Total	29	16	43	41	129	Count Total	0	0	0	0	0	Count Total	0	0	1	1	2
Peak Hour	15	8	23	25	71	Peak Hour	0	0	0	0	0	Peak Hour	0	0	0	1	1

All Traffic Data Services Inc.
(303) 216-2439
www.alltrafficdata.net

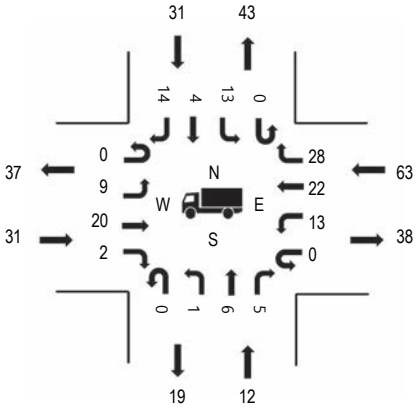
Location: HWY 213 & HWY 211 AM
Date: Tuesday, October 15, 2019
Peak Hour: 07:05 AM - 08:05 AM
Peak 15-Minutes: 07:25 AM - 07:40 AM

Peak Hour

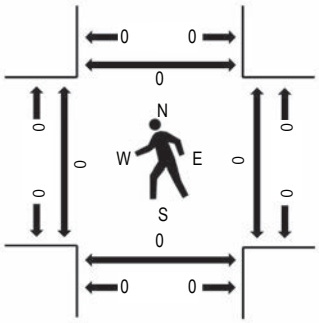
All Vehicles



Heavy Vehicles



Pedestrians



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	13.1%	0.80
WB	12.9%	0.80
NB	4.8%	0.85
SB	10.4%	0.87
All	10.8%	0.89

Traffic Counts - All Vehicles

Interval Start Time	HWY 211 Eastbound				HWY 211 Westbound				HWY 213 Northbound				HWY 213 Southbound					Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total	
7:00 AM	0	5	7	0	0	9	8	18	0	1	15	7	0	5	5	3	83	1,269
7:05 AM	0	7	15	0	0	6	18	17	0	2	14	5	0	7	15	11	117	1,272
7:10 AM	0	8	14	0	0	5	17	17	0	0	18	9	0	5	8	4	105	1,230
7:15 AM	0	8	18	0	0	3	24	24	0	1	8	5	0	7	7	8	113	1,215
7:20 AM	0	12	14	0	0	9	17	24	0	3	15	7	0	4	9	4	118	1,190
7:25 AM	0	4	10	0	0	8	20	26	0	3	11	5	0	11	15	5	118	1,167
7:30 AM	0	7	12	1	0	7	23	14	0	1	19	4	0	10	1	11	110	1,131
7:35 AM	0	4	17	0	0	8	29	17	0	4	10	9	0	9	12	11	130	1,104
7:40 AM	0	6	9	1	0	11	20	9	0	0	19	8	0	12	9	11	115	1,076
7:45 AM	0	6	14	0	0	1	12	18	0	1	7	8	0	6	9	10	92	1,074
7:50 AM	0	6	10	0	0	5	14	11	0	2	9	9	0	7	7	9	89	1,076
7:55 AM	0	6	11	1	0	7	15	6	0	0	9	1	0	6	9	8	79	1,077
8:00 AM	0	5	10	1	0	3	10	14	0	0	14	8	0	6	9	6	86	1,095
8:05 AM	0	4	10	0	0	6	11	15	0	1	11	6	0	4	6	1	75	
8:10 AM	0	3	7	0	0	5	13	9	0	0	9	7	0	13	13	11	90	
8:15 AM	0	2	8	0	0	5	7	8	0	1	22	10	0	5	14	6	88	
8:20 AM	0	8	14	2	0	3	13	11	0	0	13	5	0	11	5	10	95	
8:25 AM	0	5	6	0	0	6	15	13	0	2	14	5	0	7	5	4	82	
8:30 AM	0	6	8	1	0	4	18	6	0	4	9	4	0	6	8	9	83	
8:35 AM	0	11	13	1	0	3	17	16	0	0	10	2	0	4	9	16	102	
8:40 AM	0	2	13	1	0	4	23	12	0	4	20	7	0	8	6	13	113	
8:45 AM	0	6	15	0	0	1	17	9	0	1	13	4	0	10	8	10	94	
8:50 AM	0	3	12	3	0	4	14	7	0	1	14	8	0	6	9	9	90	
8:55 AM	0	16	18	1	0	9	10	11	0	1	9	1	0	7	12	2	97	
Count Total	0	150	285	13	0	132	385	332	0	33	312	144	0	176	210	192	2,364	
Peak Hour	0	79	154	4	0	73	219	197	0	17	153	78	0	90	110	98	1,272	

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles on Crosswalk

Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
7:00 AM	3	1	1	4	9	7:00 AM	0	0	0	0	0	7:00 AM	0	0	0	0	0
7:05 AM	1	1	7	1	10	7:05 AM	0	0	0	0	0	7:05 AM	0	0	0	0	0
7:10 AM	3	0	2	2	7	7:10 AM	0	0	0	0	0	7:10 AM	0	0	0	0	0
7:15 AM	2	1	7	2	12	7:15 AM	0	0	0	0	0	7:15 AM	0	0	0	0	0
7:20 AM	1	2	5	5	13	7:20 AM	0	0	0	0	0	7:20 AM	0	0	0	0	0
7:25 AM	5	1	4	2	12	7:25 AM	0	0	0	0	0	7:25 AM	0	0	0	0	0
7:30 AM	3	1	6	4	14	7:30 AM	0	0	0	0	0	7:30 AM	0	0	0	0	0
7:35 AM	4	3	5	2	14	7:35 AM	0	0	0	0	0	7:35 AM	0	0	0	0	0
7:40 AM	2	1	8	4	15	7:40 AM	0	0	0	0	0	7:40 AM	0	0	0	0	0
7:45 AM	4	0	5	2	11	7:45 AM	0	0	0	0	0	7:45 AM	0	0	0	0	0
7:50 AM	2	0	9	3	14	7:50 AM	0	0	0	0	0	7:50 AM	0	0	0	0	0
7:55 AM	2	0	3	2	7	7:55 AM	0	0	0	0	0	7:55 AM	0	0	0	0	0
8:00 AM	2	2	2	2	8	8:00 AM	0	0	0	0	0	8:00 AM	0	0	0	0	0
8:05 AM	0	2	3	1	6	8:05 AM	0	0	0	0	0	8:05 AM	0	0	0	0	0
8:10 AM	0	1	4	3	8	8:10 AM	0	0	0	0	0	8:10 AM	0	0	0	0	0
8:15 AM	3	5	1	2	11	8:15 AM	0	0	0	0	0	8:15 AM	0	0	0	0	0
8:20 AM	9	1	3	4	17	8:20 AM	0	0	0	0	0	8:20 AM	0	0	0	0	0
8:25 AM	3	0	4	2	9	8:25 AM	0	0	0	0	0	8:25 AM	0	0	0	0	0
8:30 AM	3	4	8	3	18	8:30 AM	0	0	0	0	0	8:30 AM	0	0	0	0	0
8:35 AM	4	0	4	1	9	8:35 AM	0	0	0	0	0	8:35 AM	0	0	0	0	0
8:40 AM	3	6	2	5	16	8:40 AM	0	0	0	0	0	8:40 AM	0	0	0	0	0
8:45 AM	5	2	2	4	13	8:45 AM	0	0	0	0	0	8:45 AM	0	0	0	0	0
8:50 AM	4	2	2	3	11	8:50 AM	0	0	0	0	0	8:50 AM	0	0	0	0	0
8:55 AM	5	0	4	0	9	8:55 AM	0	0	0	0	0	8:55 AM	0	0	0	0	0
Count Total	73	36	101	63	273	Count Total	0	0	0	0	0	Count Total	0	0	0	0	0
Peak Hour	31	12	63	31	137	Peak Hour	0	0	0	0	0	Peak Hour	0	0	0	0	0

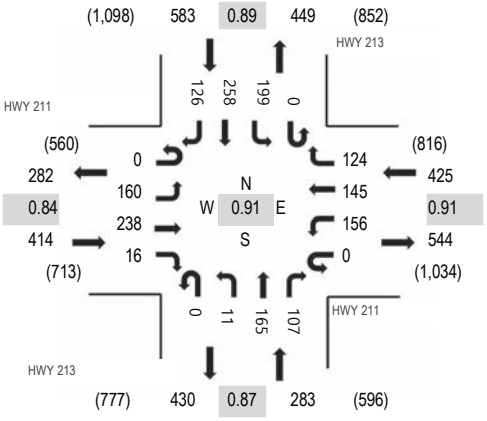
All Traffic Data Services Inc.

(303) 216-2439
www.alltrafficdata.net

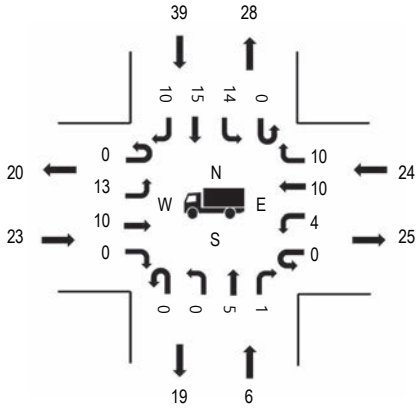
Location: HWY 213 & HWY 211 PM
Date: Tuesday, October 15, 2019
Peak Hour: 04:40 PM - 05:40 PM
Peak 15-Minutes: 04:50 PM - 05:05 PM

Peak Hour

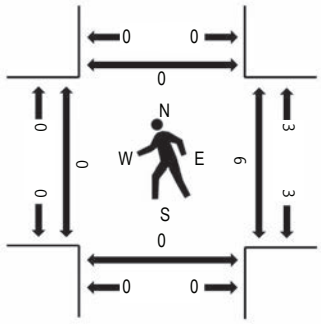
All Vehicles



Heavy Vehicles



Pedestrians



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	5.6%	0.84
WB	5.6%	0.91
NB	2.1%	0.87
SB	6.7%	0.89
All	5.4%	0.91

Traffic Counts - All Vehicles

Interval Start Time	HWY 211 Eastbound				HWY 211 Westbound				HWY 213 Northbound				HWY 213 Southbound					Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total	
4:00 PM	0	0	0	0	0	19	8	11	0	0	17	10	0	20	11	7	103	1,584
4:05 PM	0	0	9	1	0	9	12	15	0	2	10	10	0	19	17	7	111	1,623
4:10 PM	0	10	25	1	0	16	16	8	0	1	13	11	0	14	7	5	127	1,680
4:15 PM	0	21	49	2	0	9	14	6	0	8	18	10	0	18	17	12	184	1,687
4:20 PM	0	13	21	2	0	14	19	4	0	2	15	8	0	11	12	5	126	1,643
4:25 PM	0	3	10	2	0	7	15	6	0	0	13	5	0	24	23	13	121	1,651
4:30 PM	0	9	15	2	0	8	12	14	0	1	13	5	0	22	14	15	130	1,659
4:35 PM	0	0	1	0	0	13	9	11	0	3	18	7	0	15	22	11	110	1,670
4:40 PM	0	0	4	0	0	17	15	4	0	0	14	6	0	18	26	17	121	1,705
4:45 PM	0	10	23	0	0	13	17	11	0	0	10	11	0	11	12	9	127	1,680
4:50 PM	0	26	36	2	0	13	11	6	0	4	15	14	0	19	15	12	173	1,680
4:55 PM	0	11	17	2	0	10	14	13	0	1	14	10	0	18	32	9	151	1,670
5:00 PM	0	15	15	4	0	20	20	9	0	1	10	7	0	16	16	9	142	1,639
5:05 PM	0	15	22	2	0	10	5	17	0	0	19	11	0	22	32	13	168	
5:10 PM	0	11	23	1	0	9	10	15	0	0	10	3	0	17	22	13	134	
5:15 PM	0	13	25	1	0	14	9	11	0	3	15	10	0	14	18	7	140	
5:20 PM	0	10	27	1	0	16	10	10	0	1	12	7	0	11	18	11	134	
5:25 PM	0	21	12	1	0	11	11	12	0	0	11	6	0	16	21	7	129	
5:30 PM	0	9	24	2	0	8	13	7	0	0	21	7	0	18	22	10	141	
5:35 PM	0	19	10	0	0	15	10	9	0	1	14	15	0	19	24	9	145	
5:40 PM	0	11	9	0	0	11	11	11	0	1	13	6	0	14	7	2	96	
5:45 PM	0	15	14	3	0	5	8	11	0	2	12	8	0	16	24	9	127	
5:50 PM	0	10	20	0	0	9	16	14	0	0	30	12	0	15	20	17	163	
5:55 PM	0	7	13	1	0	10	6	4	0	3	17	9	0	15	29	6	120	
Count Total	0	259	424	30	0	286	291	239	0	34	354	208	0	402	461	235	3,223	
Peak Hour	0	160	238	16	0	156	145	124	0	11	165	107	0	199	258	126	1,705	

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles on Crosswalk

Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
4:00 PM	0	3	2	2	7	4:00 PM	0	0	0	0	0	4:00 PM	0	0	0	0	0
4:05 PM	1	2	4	4	11	4:05 PM	0	0	0	0	0	4:05 PM	0	0	0	0	0
4:10 PM	3	0	3	0	6	4:10 PM	0	0	0	0	0	4:10 PM	0	0	0	0	0
4:15 PM	2	5	4	3	14	4:15 PM	0	0	0	0	0	4:15 PM	0	0	0	0	0
4:20 PM	6	2	2	0	10	4:20 PM	0	0	0	0	0	4:20 PM	0	0	0	0	0
4:25 PM	2	0	2	2	6	4:25 PM	0	0	0	0	0	4:25 PM	0	0	0	0	0
4:30 PM	3	2	2	3	10	4:30 PM	0	0	0	0	0	4:30 PM	0	0	0	0	0
4:35 PM	0	2	0	0	2	4:35 PM	0	0	0	0	0	4:35 PM	0	0	0	0	0
4:40 PM	0	1	4	4	9	4:40 PM	0	0	0	0	0	4:40 PM	0	0	0	0	0
4:45 PM	3	2	3	2	10	4:45 PM	0	0	0	0	0	4:45 PM	0	0	2	0	2
4:50 PM	4	0	0	7	11	4:50 PM	0	0	0	0	0	4:50 PM	0	0	0	0	0
4:55 PM	0	0	3	2	5	4:55 PM	0	0	0	0	0	4:55 PM	0	0	2	0	2
5:00 PM	3	0	5	1	9	5:00 PM	0	0	0	0	0	5:00 PM	0	0	0	0	0
5:05 PM	3	0	1	1	5	5:05 PM	0	0	0	0	0	5:05 PM	0	0	0	0	0
5:10 PM	2	1	1	5	9	5:10 PM	0	0	0	0	0	5:10 PM	0	0	0	0	0
5:15 PM	0	0	1	1	2	5:15 PM	0	0	0	0	0	5:15 PM	0	0	0	0	0
5:20 PM	5	0	2	3	10	5:20 PM	0	0	0	0	0	5:20 PM	0	0	0	0	0
5:25 PM	1	2	2	4	9	5:25 PM	0	0	0	0	0	5:25 PM	0	0	0	0	0
5:30 PM	0	0	1	6	7	5:30 PM	0	0	0	0	0	5:30 PM	0	0	1	0	1
5:35 PM	2	0	1	3	6	5:35 PM	0	0	0	0	0	5:35 PM	0	0	1	0	1
5:40 PM	3	1	2	2	8	5:40 PM	0	0	0	0	0	5:40 PM	0	0	0	0	0
5:45 PM	2	1	0	3	6	5:45 PM	0	0	0	0	0	5:45 PM	0	0	0	0	0
5:50 PM	1	1	2	2	6	5:50 PM	0	0	0	0	0	5:50 PM	0	0	0	0	0
5:55 PM	0	1	1	6	8	5:55 PM	0	0	0	0	0	5:55 PM	0	0	0	0	0
Count Total	46	26	48	66	186	Count Total	0	0	0	0	0	Count Total	0	0	6	0	6
Peak Hour	23	6	24	39	92	Peak Hour	0	0	0	0	0	Peak Hour	0	0	6	0	6

Appendix C - Safety

Crash History Data

Preliminary Signal Warrant Analysis

Left-Turn Lane Warrant Analysis

CDS380
12/08/2022

OREGON.. DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANAYLYSIS AND REPORTING UNIT
URBAN NON-SYSTEM CRASH LISTING

CITY OF MOLALLA, CLACKAMAS COUNTY

MAIN ST and ONA WAY, City of Molalla, Clackamas County, 01/01/2016 to 12/31/2020

1 - 2 of 13 Crash records shown.

SER# / INVEST RD / UNLOC?	S P E D	D E C	M A L C	R U G S	J N V	S I H L	C O R K	W O	DATE / DAY / TIME / LAT	CLASS / DIST FROM / LONG	CITY STREET / 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	PED LOC
01943	N	N	N		# Error				06/07/2018	16	MAIN ST	INTER	3-LEG	N	N	CLD	S-1STOP	01	NONE 0	STRGHT							
																				Westbound, Rear							
CITY									TH		ONA WAY	E		UNKNOWN	N	DRY	REAR		PRVTE	SE-NW							
N									6P			06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	INJC	30	F	OR-Y	
N									45 8 58.4	-122 35 45.96	016100100S00															OR<25	
					# Error													02	NONE 0	STOP							
																			PRVTE	SE-NW							
																			PSNGR CAR		01	DRVR	NONE	28	M	OR-Y	
																										OR<25	
					# Error													03	NONE 0	STOP							
																			PRVTE	SE-NW							
																			PSNGR CAR		01	DRVR	NONE	45	M	OR-Y	
																										OR>25	
					# Error													04	NONE 0	STOP							
																			PRVTE	SE-NW							
																			PSNGR CAR		01	DRVR	NONE	43	F	OR-Y	
																										OR<25	
01560	N	N	N		# Error	N	Y		06/15/2020	16	MAIN ST	INTER	3-LEG	N	N	RAIN	S-1STOP	01	NONE 0	STRGHT							
																				Westbound, Rear							
CITY									MO		ONA WAY	E		NONE	N	WET	REAR		UNKN	E -W							
N									12P			06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	00	M	UNK	
N									45 8 58.4	-122 35 45.97	016100100S00															UNK	
					# Error													02	NONE 0	STOP							
																			PRVTE	E -W							
																			PSNGR CAR		01	DRVR	INJC	32	M	OR-Y	
																										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 d 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 re damage only crashes being eligible for inclusion in the Statewide Crash Data File.

SER# / INVEST RD DPT UNLOC?	S P E D	A L C	D R U G S	M J I N V	S C H L	W O R K	DATE / DAY / TIME / LAT	CLASS / DIST FROM / LONG	CITY STREET / 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	AGE	SEX	LICNS RES	PED LOC
02b12	N	N	N	# Error			07/24/2019	16	MAIN ST	INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 1	STRGHT							
CITY							WE		ONA WAY	SE		NONE	N	DRY	REAR		PRVTE	SE-NW							
N							12P			06	0		N	DAY	INJ		SEMI TOW		01	DRVR	NONE	60	M	OR-Y	
N							45 8 58.4	-122 35 45.95	016100100S00															OR>25	
				# Error												02	NONE 0	STOP							
																	PRVTE PSNGR CAR	SE-NW	01	DRVR	INJC	33	F	OR-Y OR<25	
00306	N	N	N	# Error			01/25/2019	16	MAIN ST	INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 9	STRGHT							
NONE							FR		ONA WAY	CN		NONE	N	DRY	REAR		N/A	SE-NW							
N							9A			02	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK	
N							45 8 58.41	-122 35 45.94	016100100S00															UNK	
				# Error												02	NONE 9	STOP							
																	N/A PSNGR CAR	SE-NW	01	DRVR	NONE	00	Unk	UNK UNK	
02677	N	N	N	# Error	N	N	08/06/2019	16	MAIN ST	INTER	3-LEG	N	N	CLR	S-1TURN	01	NONE 9	STRGHT							
COUNTY							TU		ONA WAY	CN		NONE	N	DRY	TURN		N/A	W -E							
N							10A			02	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK	
N							45 8 58.44	-122 35 46.01	016100100S00															UNK	

Westbound, Rear

Westbound, Rear

Eastbound Thru, Northbound Left.

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SER# / INVEST RD DPT UNLOC?	S P E D	A L C	D R U G S	M J I N V	S C O H L	W O R K	DATE / DAY / TIME / LAT	CLASS / DIST FROM / LONG	CITY STREET / 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	PED LOC
				#Error												02	NONE 9 N/A PSNGR CAR	U-TURN W -W	01	DRVR	NONE	00	Unk	UNK UNK	
02216	N	N	N	#Error			05/16/2016 3P 45 8 58.31	16 -122 35 45.24	MAIN ST ONA WAY 016100100S00	STRGHT SE 04	(NONE) (02)	N UNKNOWN	N N	CLD DRY DAY	S-1STOP REAR INJ	01	NONE 0 PRVTE PSNGR CAR	STRGHT SE-NW	01	DRVR	NONE	17	M	OR-Y OR<25	
				#Error												02	NONE 0 PRVTE PSNGR CAR	STOP SE-NW	01	DRVR	INJC	63	F	OR-Y OR>25	
04487	N	N	N	#Error			10/27/2017 5P 45 8 58.31	16 -122 35 45.24	MAIN ST ONA WAY 016100100S00	STRGHT SE 04	(NONE) (02)	N UNKNOWN	N N	CLR DRY DUSK	S-1STOP REAR INJ	01	NONE 0 PRVTE PSNGR CAR	STRGHT SE-NW	01	DRVR	NONE	18	M	OR-Y OR<25	
				#Error												02	NONE 0 PRVTE PSNGR CAR	STOP SE-NW	01	DRVR	INJC	69	F	OR-Y OR<25	
				#Error												02	NONE 0 PRVTE PSNGR CAR	STOP SE-NW	02	PSNG	INJC	46	F		

Westbound, Rear

Westbound, Rear

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SER# / INVEST RD DPT UNLOC?	S P E D	A L C	D R U G S	M J I N V	S C H L	W O R K	DATE / DAY / TIME / LAT	CLASS / DIST FROM / LONG	CITY STREET / 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	PED LOC
00869	N	N	N	# Error	N	N	03/05/2017	16	MAIN ST	STRGHT		N	N	CLD	S-STRGHT	01	NONE 9	STRGHT							
				Not Intersection Related																					
CITY							SU		ONA WAY	SE	(NONE)	NONE	N	WET	REAR		N/A	NW-SE							
N							1A			03			N	DARK	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK	
N							45 8 58.05	-122 35 43.12	016100100S00		(02)													UNK	
				# Error												02	NONE 9	STRGHT							
																	N/A	NW-SE							
																	PSNGR CAR		01	DRVR	NONE	00	Unk	UNK	
																								UNK	
01518	N	N	N	# Error	N	N	04/21/2017	16	MAIN ST	STRGHT		N	N	CLR	O-STRGHT	01	NONE 9	STRGHT							
				Not Intersection Related																					
CITY							FR		ONA WAY	SE	(NONE)	NONE	N	DRY	SS-M		N/A	SE-NW							
Y							10A			03			N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK	
N							45 8 58.22	-122 35 44.54	016100100S00		(02)													UNK	
				# Error												02	NONE 9	STRGHT							
																	N/A	NW-SE							
																	PSNGR CAR		01	DRVR	NONE	00	Unk	UNK	
																								UNK	
02624	N	N	N	# Error	N	N	08/01/2019	16	MAIN ST	STRGHT		N	N	CLR	S-1STOP	01	NONE 9	STRGHT							
				Not Intersection Related																					
CITY							TH		ONA WAY	SE	(NONE)	NONE	N	DRY	REAR		N/A	SE-NW							
N							7A			04			N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK	
N							45 8 57.6	-122 35 38.9	016100100S00		(02)													UNK	

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SER# / INVEST RD DPT UNLOC?	S P E D	A L C	D R U G S	M J I C H V	S C O L	W O R K	DATE / DAY / TIME / LAT	CLASS / DIST FROM / SECOND STREET / LONG	CITY STREET / FIRST STREET / DIRECT / LRS	RD CHAR / 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	PED LOC
				#Error												02	NONE 9	STOP							
																	N/A	SE-NW							
																	PSNGR CAR		01	DRVR	NONE	00	Unk	UNK	
																								UNK	
03702	N	N	N	#Error			10/22/2019	16	MAIN ST	STRGHT		N	Y	CLD	FIX OBJ	01	NONE 9	STRGHT							
				Not Intersection Related																					
CITY							TU		ONA WAY	SE	(NONE)	NONE	N	DRY	FIX		N/A	W -E							
Y							7P			01			N	DARK	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK	
N							45 8 58.31	-122 35 45.25	016100100S00		(02)													UNK	
04335	N	N	N	#Error			12/03/2019	16	MAIN ST	STRGHT		N	N	RAIN	S-1STOP	01	NONE 9	STRGHT							
				Driveway Related - 1000 W Main																					
NONE							TU		ONA WAY	SE	(NONE)	NONE	N	WET	REAR		N/A	E -W							
N							5P			04			N	DARK	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK	
N							45 8 58.05	-122 35 43.09	016100100S00		(02)													UNK	
				#Error												02	NONE 9	STOP							
																	N/A	E -W							
																	PSNGR CAR		01	DRVR	NONE	00	Unk	UNK	
																								UNK	
00032	Y	N	N	#Error	N	N	01/03/2016	16	MAIN ST	STRGHT		N	N	CLD	O-STRGHT	01	NONE 0	STRGHT							
				Not Intersection Related																					
CITY							SU		ONA WAY	NW	(NONE)	NONE	N	ICE	SS-M		PRVTE	SE-NW							
Y							9A			03			N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	28	M	OR-Y	
N							45 8 58.49	-122 35 46.7	016100100S00		(02)													OR<25	

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SER# / INVEST / RD DPT / UNLOC?	S P / E D	A	U / L / G / C	D R / J / I / N / V	S / C / H / L	W / O / R / K	DATE / DAY / TIME / LAT	CLASS / DIST / FROM / LONG	CITY STREET / 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	PED LOC
# Error																	02	NONE 0 / PRVTE PSNGR CAR	STRGHT / NW-SE	01	DRVR	INJC	32 M		OR-Y OR<25	
# Error																	02	NONE 0 / PRVTE PSNGR CAR	STRGHT / NW-SE	02	PSNG	INJC	59 F			
# Error																	02	NONE 0 / PRVTE PSNGR CAR	STRGHT / NW-SE	03	PSNG	INJC	52 M			

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Preliminary Traffic Signal Warrant Analysis

Project: 22210 - Home First Molalla - Phase II Update
Date: 12/14/2022
Scenario: 2024 Buildout - AM

Major Street:	OR 211		Minor Street:	S Ona Way	
Number of Lanes:	1		Number of Lanes:	1	
AM Peak Hour Volumes:	1372		AM Peak Hour Volumes:	39 22 50%	Total Rights RT Discount

Warrant Used:

X — 100 percent of standard warrants used

_____ — 70 percent of standard warrants used due to 85th percentile speed in excess of 40 mph or isolated community with population less than 10,000.

Number of Lanes for Moving Traffic on Each Approach:		ADT on Major St. (total of both approaches)		ADT on Minor St. (higher-volume approach)	
WARRANT 1, CONDITION A		100%	70%	100%	70%
Major St.	Minor St.	Warrants	Warrants	Warrants	Warrant
1	1	8,850	6,200	2,650	1,850
2 or more	1	10,600	7,400	2,650	1,850
2 or more	2 or more	10,600	7,400	3,550	2,500
1	2 or more	8,850	6,200	3,550	2,500
WARRANT 1, CONDITION B					
1	1	13,300	9,300	1,350	950
2 or more	1	15,900	11,100	1,350	950
2 or more	2 or more	15,900	11,100	1,750	1,250
1	2 or more	13,300	9,300	1,750	1,250

Note: ADT volumes assume 8th highest hour is 5.6% of the daily volume

	Approach Volumes	Minimum Volumes	Is Signal Warrant Met?
Warrant 1			
Condition A: Minimum Vehicular Volume			
Major Street	13,720	8,850	
Minor Street*	280	2,650	**No**
Condition B: Interruption of Continuous Traffic			
Major Street	13,720	13,300	
Minor Street*	280	1,350	**No**
Combination Warrant			
Major Street	13,720	10,640	

Preliminary Traffic Signal Warrant Analysis

Project: 22210 - Home First Molalla - Phase II Update
Date: 12/14/2022
Scenario: 2024 Buildout - PM

Major Street:	OR 211		Minor Street:	S Ona Way	
Number of Lanes:	1		Number of Lanes:	1	
PM Peak Hour Volumes:	1839		PM Peak Hour Volumes:	33 19 50%	Total Rights RT Discount

Warrant Used:

X — 100 percent of standard warrants used

_____ — 70 percent of standard warrants used due to 85th percentile speed in excess of 40 mph or isolated community with population less than 10,000.

Number of Lanes for Moving Traffic on Each Approach:		ADT on Major St. (total of both approaches)		ADT on Minor St. (higher-volume approach)	
WARRANT 1, CONDITION A		100%	70%	100%	70%
Major St.	Minor St.	Warrants	Warrants	Warrants	Warrant
1	1	8,850	6,200	2,650	1,850
2 or more	1	10,600	7,400	2,650	1,850
2 or more	2 or more	10,600	7,400	3,550	2,500
1	2 or more	8,850	6,200	3,550	2,500
WARRANT 1, CONDITION B					
1	1	13,300	9,300	1,350	950
2 or more	1	15,900	11,100	1,350	950
2 or more	2 or more	15,900	11,100	1,750	1,250
1	2 or more	13,300	9,300	1,750	1,250

Note: ADT volumes assume 8th highest hour is 5.6% of the daily volume

	Approach Volumes	Minimum Volumes	Is Signal Warrant Met?
Warrant 1			
Condition A: Minimum Vehicular Volume			
Major Street	18,390	8,850	
Minor Street*	240	2,650	No
Condition B: Interruption of Continuous Traffic			
Major Street	18,390	13,300	
Minor Street*	240	1,350	No
Combination Warrant			
Major Street	18,390	10,640	

Turn Lane Evaluation (E-W Hwy Orientation)

Evaluation:	OR 211 & S Ona Way
Highway:	
MP:	
Posted Speed:	
Analyst:	
Count Date:	2024 Buildout

		SBR
		-
EBL	-	
EBT	554	
EBR	5	
		17
		NBL

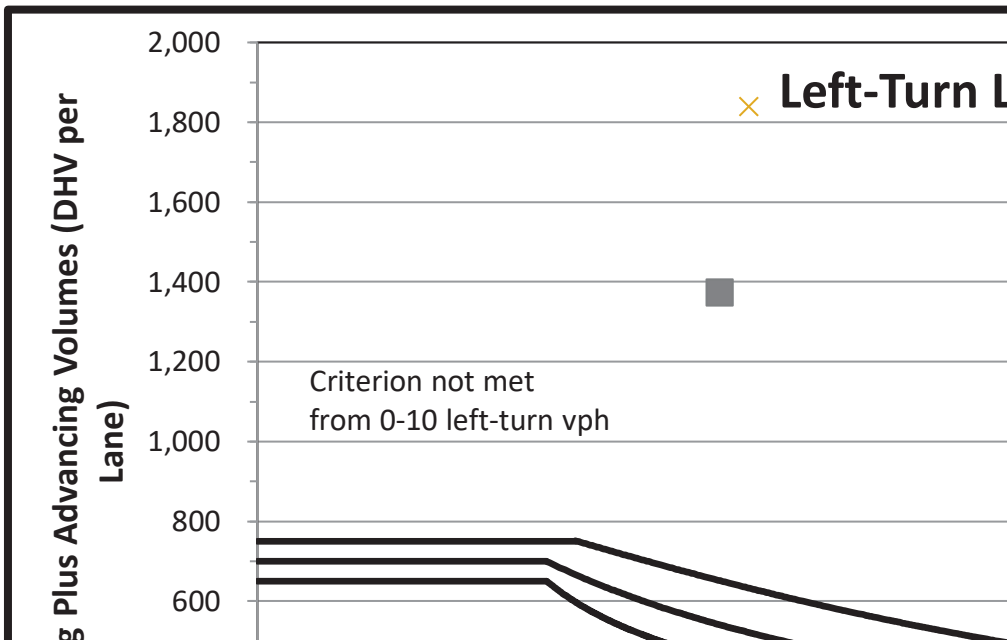
Hwy Volumes from TVT

Count Yr AADT:	-
Count Year:	0
Annual Growth:	0.0%
Analysis Year:	0
Analysis Yr AADT =	-

	AM	PM
Design Hour Factor:	0.0%	0.0%
DHV =	-	-
EB Directional Factor:	0%	0%
WB Directional Factor =	100%	100%
EB DHV =	-	-
WB DHV =	-	-

Left-Turn Evaluation

	AM	PM
EB DHV Lefts =	-	-
WB DHV Lefts =	16	17
EB DHV (Opposing + Advancing) =	-	-
WB DHV (Opposing + Advancing) =	1,372	1,839



Turn Lane Evaluation (E-W Hwy Orientation)

Evaluation:	OR 211 & North Site Access
Highway:	
MP:	
Posted Speed:	
Analyst:	
Count Date:	2024 Buildout

	SBR
	-
EBL	-
EBT	572
EBR	4
	10
	NBL

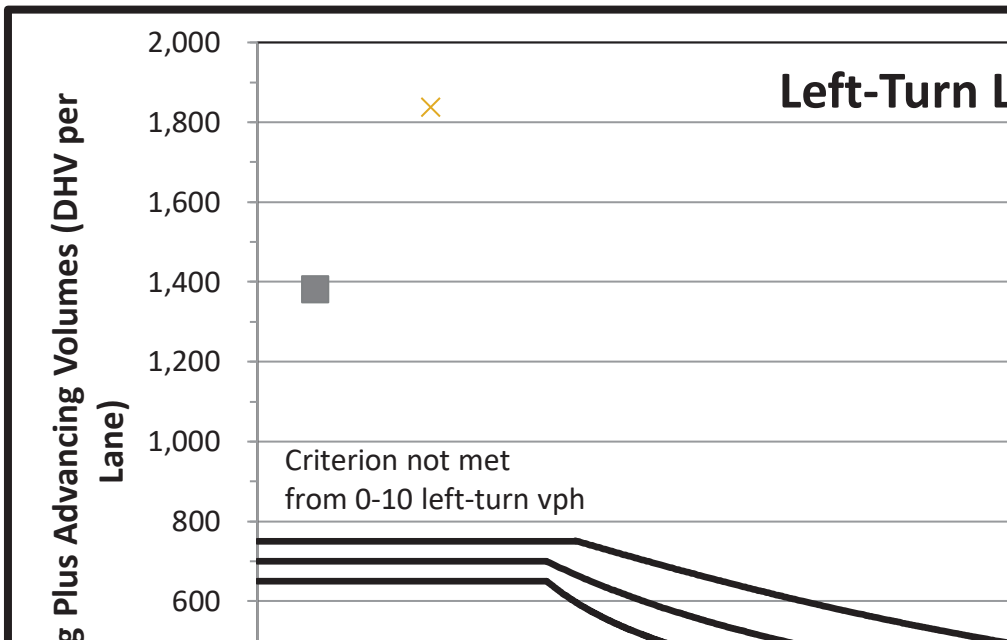
Hwy Volumes from TVT

Count Yr AADT:	-
Count Year:	0
Annual Growth:	0.0%
Analysis Year:	0
Analysis Yr AADT =	-

	AM	PM
Design Hour Factor:	0.0%	0.0%
DHV =	-	-
EB Directional Factor:	0%	0%
WB Directional Factor =	100%	100%
EB DHV =	-	-
WB DHV =	-	-

Left-Turn Evaluation

	AM	PM
EB DHV Lefts =	-	-
WB DHV Lefts =	2	6
EB DHV (Opposing + Advancing) =	-	-
WB DHV (Opposing + Advancing) =	1,381	1,838



Appendix D - Operations

Definitions

Synchro Reports

Queuing Reports

Level of Service Definitions

Level of service is used to describe the quality of traffic flow. Levels of service A to C are considered good, and rural roads are usually designed for level of service C. Urban streets and signalized intersections are typically designed for level of service D. Level of service E is considered to be the limit of acceptable delay. For unsignalized intersections, level of service E is generally considered acceptable. Here is a more complete description of levels of service:

- *Level of service A:* Very low delay at intersections, with all traffic signal cycles clearing and no vehicles waiting through more than one signal cycle. On highways, low volume and high speeds, with speeds not restricted by other vehicles.
- *Level of service B:* Operating speeds beginning to be affected by other traffic; short traffic delays at intersections. Higher average intersection delay than for level of service A resulting from more vehicles stopping.
- *Level of service C:* Operating speeds and maneuverability closely controlled by other traffic; higher delays at intersections than for level of service B due to a significant number of vehicles stopping. Not all signal cycles clear the waiting vehicles. This is the recommended design standard for rural highways.
- *Level of service D:* Tolerable operating speeds; long traffic delays occur at intersections. The influence of congestion is noticeable. At traffic signals many vehicles stop, and the proportion of vehicles not stopping declines. The number of signal cycle failures, for which vehicles must wait through more than one signal cycle, are noticeable. This is typically the design level for urban signalized intersections.
- *Level of service E:* Restricted speeds, very long traffic delays at traffic signals, and traffic volumes near capacity. Flow is unstable so that any interruption, no matter how minor, will cause queues to form and service to deteriorate to level of service F. Traffic signal cycle failures are frequent occurrences. For unsignalized intersections, level of service E or better is generally considered acceptable.
- *Level of service F:* Extreme delays, resulting in long queues which may interfere with other traffic movements. There may be stoppages of long duration, and speeds may drop to zero. There may be frequent signal cycle failures. Level of service F will typically result when vehicle arrival rates are greater than capacity. It is considered unacceptable by most drivers.

Level of Service Criteria
For Signalized Intersections

Level of Service (LOS)	Control Delay per Vehicle (Seconds)
A	<10
B	10-20
C	20-35
D	35-55
E	55-80
F	>80

Level of Service Criteria
For Unsignalized Intersections

Level of Service (LOS)	Control Delay per Vehicle (Seconds)
A	<10
B	10-15
C	15-25
D	25-35
E	35-50
F	>50

Intersection	
Int Delay, s/veh	0.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	337	2	14	579	10	18
Future Vol, veh/h	337	2	14	579	10	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	81	81	81	81	81	81
Heavy Vehicles, %	10	10	10	10	0	0
Mvmt Flow	416	2	17	715	12	22

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	418	0	1166	417
Stage 1	-	-	-	-	417	-
Stage 2	-	-	-	-	749	-
Critical Hdwy	-	-	4.2	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.29	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1099	-	216	640
Stage 1	-	-	-	-	669	-
Stage 2	-	-	-	-	471	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1099	-	210	640
Mov Cap-2 Maneuver	-	-	-	-	210	-
Stage 1	-	-	-	-	669	-
Stage 2	-	-	-	-	459	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	15.7
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	370	-	-	1099	-
HCM Lane V/C Ratio	0.093	-	-	0.016	-
HCM Control Delay (s)	15.7	-	-	8.3	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	712	10	13	633	9	16
Future Vol, veh/h	712	10	13	633	9	16
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	3	3	0	0
Mvmt Flow	838	12	15	745	11	19

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	850	0	1619	844
Stage 1	-	-	-	-	844	-
Stage 2	-	-	-	-	775	-
Critical Hdwy	-	-	4.13	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.227	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	784	-	115	366
Stage 1	-	-	-	-	425	-
Stage 2	-	-	-	-	458	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	784	-	111	366
Mov Cap-2 Maneuver	-	-	-	-	111	-
Stage 1	-	-	-	-	425	-
Stage 2	-	-	-	-	443	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	26.1
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	200	-	-	784	-
HCM Lane V/C Ratio	0.147	-	-	0.02	-
HCM Control Delay (s)	26.1	-	-	9.7	0
HCM Lane LOS	D	-	-	A	A
HCM 95th %tile Q(veh)	0.5	-	-	0.1	-

Intersection	
Int Delay, s/veh	0.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	550	2	14	787	10	18
Future Vol, veh/h	550	2	14	787	10	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	81	81	81	81	81	81
Heavy Vehicles, %	10	10	10	10	0	0
Mvmt Flow	679	2	17	972	12	22

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	681	0	1686	680
Stage 1	-	-	-	-	680	-
Stage 2	-	-	-	-	1006	-
Critical Hdwy	-	-	4.2	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.29	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	875	-	104	454
Stage 1	-	-	-	-	507	-
Stage 2	-	-	-	-	357	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	875	-	100	454
Mov Cap-2 Maneuver	-	-	-	-	100	-
Stage 1	-	-	-	-	507	-
Stage 2	-	-	-	-	342	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	26.6
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	201	-	-	875	-
HCM Lane V/C Ratio	0.172	-	-	0.02	-
HCM Control Delay (s)	26.6	-	-	9.2	0
HCM Lane LOS	D	-	-	A	A
HCM 95th %tile Q(veh)	0.6	-	-	0.1	-

Intersection	
Int Delay, s/veh	0.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	951	10	13	833	9	16
Future Vol, veh/h	951	10	13	833	9	16
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	3	3	0	0
Mvmt Flow	1119	12	15	980	11	19

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1131	0	2135	1125
Stage 1	-	-	-	-	1125	-
Stage 2	-	-	-	-	1010	-
Critical Hdwy	-	-	4.13	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.227	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	614	-	55	252
Stage 1	-	-	-	-	313	-
Stage 2	-	-	-	-	355	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	614	-	52	252
Mov Cap-2 Maneuver	-	-	-	-	52	-
Stage 1	-	-	-	-	313	-
Stage 2	-	-	-	-	336	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	51.5
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	106	-	-	614	-
HCM Lane V/C Ratio	0.277	-	-	0.025	-
HCM Control Delay (s)	51.5	-	-	11	0
HCM Lane LOS	F	-	-	B	A
HCM 95th %tile Q(veh)	1	-	-	0.1	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	554	5	16	797	17	22
Future Vol, veh/h	554	5	16	797	17	22
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	75	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	81	81	81	81	81	81
Heavy Vehicles, %	10	10	10	10	0	0
Mvmt Flow	684	6	20	984	21	27

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	690	0	1711	687
Stage 1	-	-	-	-	687	-
Stage 2	-	-	-	-	1024	-
Critical Hdwy	-	-	4.2	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.29	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	868	-	101	450
Stage 1	-	-	-	-	503	-
Stage 2	-	-	-	-	350	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	868	-	99	450
Mov Cap-2 Maneuver	-	-	-	-	229	-
Stage 1	-	-	-	-	503	-
Stage 2	-	-	-	-	342	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	18.4
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	317	-	-	868	-
HCM Lane V/C Ratio	0.152	-	-	0.023	-
HCM Control Delay (s)	18.4	-	-	9.2	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	0.5	-	-	0.1	-

Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	572	4	2	803	10	5
Future Vol, veh/h	572	4	2	803	10	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	81	81	81	81	81	81
Heavy Vehicles, %	10	10	10	10	0	0
Mvmt Flow	706	5	2	991	12	6

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	711	0	1704	709
Stage 1	-	-	-	-	709	-
Stage 2	-	-	-	-	995	-
Critical Hdwy	-	-	4.2	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.29	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	853	-	102	438
Stage 1	-	-	-	-	491	-
Stage 2	-	-	-	-	361	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	853	-	102	438
Mov Cap-2 Maneuver	-	-	-	-	235	-
Stage 1	-	-	-	-	491	-
Stage 2	-	-	-	-	360	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	18.9
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	278	-	-	853	-
HCM Lane V/C Ratio	0.067	-	-	0.003	-
HCM Control Delay (s)	18.9	-	-	9.2	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Intersection	
Int Delay, s/veh	2.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	11	28	0	5	16
Future Vol, veh/h	0	11	28	0	5	16
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	81	81	81	81	81	81
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	14	35	0	6	20

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	67	35	0	0	35	0
Stage 1	35	-	-	-	-	-
Stage 2	32	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	943	1044	-	-	1589	-
Stage 1	993	-	-	-	-	-
Stage 2	996	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	939	1044	-	-	1589	-
Mov Cap-2 Maneuver	939	-	-	-	-	-
Stage 1	993	-	-	-	-	-
Stage 2	992	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.5	0	1.7
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1044	1589	-
HCM Lane V/C Ratio	-	-	0.013	0.004	-
HCM Control Delay (s)	-	-	8.5	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	963	18	17	841	14	19
Future Vol, veh/h	963	18	17	841	14	19
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	75	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	3	3	0	0
Mvmt Flow	1133	21	20	989	16	22

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1154	0	2173	1144
Stage 1	-	-	-	-	1144	-
Stage 2	-	-	-	-	1029	-
Critical Hdwy	-	-	4.13	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.227	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	602	-	52	246
Stage 1	-	-	-	-	306	-
Stage 2	-	-	-	-	348	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	602	-	50	246
Mov Cap-2 Maneuver	-	-	-	-	169	-
Stage 1	-	-	-	-	306	-
Stage 2	-	-	-	-	337	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	26.5
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	206	-	-	602	-
HCM Lane V/C Ratio	0.188	-	-	0.033	-
HCM Control Delay (s)	26.5	-	-	11.2	-
HCM Lane LOS	D	-	-	B	-
HCM 95th %tile Q(veh)	0.7	-	-	0.1	-

Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	970	12	6	850	8	4
Future Vol, veh/h	970	12	6	850	8	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	3	3	0	0
Mvmt Flow	1141	14	7	1000	9	5

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1155	0	2162	1148
Stage 1	-	-	-	-	1148	-
Stage 2	-	-	-	-	1014	-
Critical Hdwy	-	-	4.13	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.227	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	601	-	53	244
Stage 1	-	-	-	-	305	-
Stage 2	-	-	-	-	353	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	601	-	52	244
Mov Cap-2 Maneuver	-	-	-	-	172	-
Stage 1	-	-	-	-	305	-
Stage 2	-	-	-	-	349	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	25.3
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	191	-	-	601	-
HCM Lane V/C Ratio	0.074	-	-	0.012	-
HCM Control Delay (s)	25.3	-	-	11.1	-
HCM Lane LOS	D	-	-	B	-
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Intersection	
Int Delay, s/veh	2.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	8	25	0	12	23
Future Vol, veh/h	0	8	25	0	12	23
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	9	29	0	14	27

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	84	29	0	0	29	0
Stage 1	29	-	-	-	-	-
Stage 2	55	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	923	1052	-	-	1597	-
Stage 1	999	-	-	-	-	-
Stage 2	973	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	915	1052	-	-	1597	-
Mov Cap-2 Maneuver	915	-	-	-	-	-
Stage 1	999	-	-	-	-	-
Stage 2	964	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.5	0	2.5
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1052	1597	-
HCM Lane V/C Ratio	-	-	0.009	0.009	-
HCM Control Delay (s)	-	-	8.5	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection: 1: S Ona Way & OR 211

Movement	WB	NB
Directions Served	L	LR
Maximum Queue (ft)	40	60
Average Queue (ft)	8	21
95th Queue (ft)	30	49
Link Distance (ft)		168
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	75	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 2: North Access & OR 211

Movement	WB	NB
Directions Served	L	LR
Maximum Queue (ft)	12	42
Average Queue (ft)	0	11
95th Queue (ft)	6	34
Link Distance (ft)		226
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	100	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 3: S Ona Way & West Access

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	30	6
Average Queue (ft)	10	0
95th Queue (ft)	32	4
Link Distance (ft)	122	168
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 0

Intersection: 1: S Ona Way & OR 211

Movement	WB	NB
Directions Served	L	LR
Maximum Queue (ft)	41	73
Average Queue (ft)	11	23
95th Queue (ft)	37	57
Link Distance (ft)		168
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	75	
Storage Blk Time (%)	0	
Queuing Penalty (veh)	4	

Intersection: 2: North Access & OR 211

Movement	WB	NB
Directions Served	L	LR
Maximum Queue (ft)	35	43
Average Queue (ft)	5	10
95th Queue (ft)	23	33
Link Distance (ft)		226
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	100	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 3: S Ona Way & West Access

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	34	6
Average Queue (ft)	8	0
95th Queue (ft)	29	6
Link Distance (ft)	122	168
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 4

PUBLIC FACILITIES AND SERVICES IMPACT STUDY

EXHIBIT 7

Cascadia Planning + Development Services
P.O. Box 1920
Silverton, OR 97381
(503) 804-1089
steve@cascadiapd.com

PUBLIC FACILITIES AND SERVICES IMPACT STUDY

DATE: January 13, 2023

TO: City of Molalla

FROM: Steve Kay
Cascadia Planning + Development Services

RE: Public Facilities and Services Impact Study
Main Street Apartments Phase II Project

Public Streets: W Main Street/Hwy. 211

- To meet Arterial Street standards, the proposed Main Street/Hwy. 211 frontage improvements will provide a center turn lane, and a travel lane along the south side of the roadway.
- Shared access for Phases I and II of the apartment complex is provided from a single driveway connection to Main Street/Hwy. 211.
- Per the attached Transportation Impact Study, the 40-unit apartment complex will generate 186 average weekday trips. Due to the low trip generation, the project will not trigger a signal warrant at the OR 211/Leroy Avenue intersection.
- With the planned removal of vegetation, sufficient sight distance is provided at the proposed access point at the Main Street/Hwy. 211 driveway connection.
- Left-turn lane warrants are met for the westbound approach at the intersection of Main Street/Hwy. 211 and S Ona Way during both the morning and evening peak hours. Proposed half-street improvements from the project site to the eastern leg of the S Ona Way intersection will provide a two-way left-turn-lane, permitting westbound left-turns at the intersection.

Public Streets: S Ona Way

- To meet Local Street standards, the applicant will install three-quarter frontage improvements on S Ona Way including two 10-ft. travel lanes, an 8-ft. parking lane, and 6-in. curb along the east side of the roadway.
- With the planned removal of vegetation, sufficient sight distance is provided at the proposed driveway connection to S Ona Way.

Pedestrian/Bicycle Facilities: W Main Street/Hwy. 211

- A 6-ft. sidewalk will be installed along the W Main Street/Hwy. 211 frontage.
- A 6-ft. bicycle lane will be installed along the Main Street/Hwy. 211 frontage.

Pedestrian/Bicycle Facilities: S Ona Way

- A 5-ft. sidewalk will be installed along the S Ona Way frontage.
- Shared bicycle and vehicle lanes will be installed along the S Ona Way frontage.

Public Sanitary Sewer: W Main Street/Hwy. 211

- The existing 10-in. sanitary sewer main line within W Main Street/Hwy. 211 has the capacity to serve the proposed development.
- The proposed development will connect to an existing manhole in W Main Street/Hwy. 211 and extend an 8-in. sanitary sewer main line with the S Ona Way improvements.

Public Sanitary Sewer: S Ona Way

- The proposed 8-in. sanitary sewer main line will have the capacity to serve the proposed development.
- The proposed development will be served by an 8-in. lateral that connects to new 8-in. main line within S. Ona Way.

Public Storm: W Main Street/Hwy. 211

- The proposed private subsurface storm facility will be sized to detain stormwater in accordance with City standards. Detained stormwater will not connect to existing public storm facilities within W Main Street/Hwy. 211 right-of-way.

Public Storm: S Ona Way

- The proposed private subsurface storm facility will be sized to detain stormwater in accordance with City standards. Detained stormwater will be directed to a water quality vault before it is released into an existing culvert for Bear Creek within the S Ona Way right-of-way.
- The proposed storm system will not negatively impact the public system.

Public Water: W Main Street/Hwy. 211

- The existing water main line within W Main Street/Hwy. 211 has the capacity to serve the proposed development.
- The proposed development will connect to an existing water valve and extend an 8-in. water main line with the S Ona Way improvements.

Public Water: S Ona Way

- The proposed 8-in. water main line within S Ona Way has the capacity to serve the proposed development.

- A water main will be extended from S Ona Way and connect to main line within the Phase I development so that it loops back to W Main Street/Hwy. 211.
- The apartment complex will be served with both domestic and fire water service.
- A new fire hydrant will be installed at the driveway and S Ona Way intersection.

Fire Protection: Molalla Fire District

- Fire District service is currently available to the site.
- The proposed access drive and turnaround within the parking lot meet Fire Code standards.

Parks: City of Molalla

- Service is available for the proposed use.
- The applicant is proposing to pay a fee in-lieu of park land dedication.
- Phase II of the apartment complex will include lawn areas for active and passive recreation for use, benches, and a covered picnic area. Residents will also have access to Phase I recreational amenities including a half basketball court, play structure, and several gazebos.

Schools: Molalla River School District

- School District service is available for the proposed use.
- The proposed development is within close walking distance of Molalla River Middle School and Molalla Elementary School.

Exhibit E:

Molalla Public Works Comments

Public Works Department
117 N Molalla Avenue
PO Box 248
Molalla, Oregon 97038
Phone: (503) 829-6855
Fax: (503) 829-3676

Apirl ?, 2023

TO: Mac Corthell, Community Development Director
Dan Zinder, Planning Director
Julie Larson, Planning Specialist

FROM: Sam Miller, Sr. Engineer Tech.

RE: 105 Ona Way – Main Street Apartments Phase II (SDR01-2023 & ADJ01-2023)

Based on a review of the materials submitted, Staff has prepared the following comments. These comments are applicable to the subject application; any subsequent modifications may require amendments and/or additions. These conditions do not include requirements already set forth in the municipal code.

PUBLIC WORKS CONDITIONS & FINDINGS

Chapter 17-3.6 Public Facilities

17-3.6.010 Purpose and Applicability:

A. Purpose. The standards of Chapter 17-3.6 implement the public facility policies of the City of Molalla Comprehensive Plan and adopted City plans.

B. Applicability. Chapter 17-3.6 applies to all new development, including projects subject to Land Division (Subdivision or Partition) approval and developments subject to Site Design Review where public facility improvements are required. All public facility improvements within the city shall occur in accordance with the standards and procedures of this chapter. When a question arises as to the intent or application of any standard, the City Engineer shall interpret the Code pursuant to Chapter 17-1.5.

C. Public Works Design Standards. All public facility improvements, including, but not limited to, sanitary sewer, water, transportation, surface water and storm drainage and parks projects, whether required as a condition of development or provided voluntarily, shall conform to the City of Molalla Public Works Design Standards. Where a conflict occurs between this Code and the Public Works Design Standards, the provisions of the Public Works Design Standards shall govern.

D. Public Improvement Requirement. No building permit may be issued until all required public facility improvements are in place and approved by the City Engineer, or otherwise bonded, in conformance with the provisions of this Code and the Public Works Design Standards. Improvements required as a condition of development approval, when not voluntarily provided by the applicant, shall be roughly proportional to the impact of the development on public facilities. Findings in the development approval shall indicate how the required improvements directly relate to and are roughly proportional to the impact of development.

Findings: *Applicant will be required to connect to services by main line or main line extension. Utility connections cannot be made until acquired permitting has been issued and all SDC & connection fees have been made. The Applicant will also be required to submit information necessary to calculate system development charges at time of building plan submittal. Start of building construction activities are subject to compliance with Molalla Apartments Phase II (105 Ona Way) requirements for Planning and Public Works as well as requirements tied to TCO and CO. No TCO or CO's can be issued until public improvements are completed and accepted under both City PW and ODOT permits.*

17-3.6.020 Transportation Standards:

A. General Requirements

1. *17-3.6.020. A.2 - All street improvements, including the extension or widening of existing streets and public access ways, shall conform to Section 17-3.6.020, and shall be constructed consistent with the City of Molalla Public Works Design Standards.*

   Findings*: OR 211: OR 211 (W Main Street) is an arterial street under Oregon Department of Transportation (ODOT) jurisdiction. Applicant will be required to meet all requirements of the Transportation System Master Plan and access requirements as determined by ODOT. Development will be required to construct significant improvements along OR 211, including adding a center turn lane, bicycle lanes and sidewalk and include frontage improvements consistent with SDR07-2021. If required during design review, additional striping and pavement tapers may be required as necessary. Applicant will be required to construct street improvements and right of way donation as necessary to be consistent with the Transportation System Plan adopted cross section which includes a 14ft Center/turn lane, 12ft travel lane, 2ft bike buffer, 5ft bike lane, 6 1/2ft sidewalk, 1 1/2ft back of sidewalk buffer. Planter strips along frontages is desired by the City in consistency with neighboring development. Dedication of right-of-way would need to account for the addition of planter strip.*

   Findings*: Ona Way: Ona Way (South) is a Local Street under City of Molalla jurisdiction. Applicant shall be required to construct street improvements to City standards and right-of-way donations necessary to be consistent with the Transportation System Plan adopted cross section which includes a 12ft turn lane at intersection of HWY211 & Ona Way, 10ft travel lanes, 8' Parking lanes, curb and gutter, 6 1/2ft sidewalk, and 1/2ft back of sidewalk buffer. Developer shall be responsible for installing all associated signing for crosswalks and 25 mph speed signs per City requirements.*

2. *17-3.6.020. A.4 - A Transportation Impact Analysis (TIA) is required for developments that are expected to have an impact on the transportation system. The analysis shall be based upon the latest edition of the ITE Trip Generation Manual or an agreed-upon alternative methodology where credible data is available to support the alternative methodology.*

   Findings: *Per MMC 17-3.6.020. A.4. The proposed development meets thresholds for Traffic Impact Analysis (TIA) due to exceeding the peak hour trip count of 25. For projects abutting OR-211, the City requires signal warrant analysis for all nine warrants regarding the OR-211 and Leroy Ave intersection to determine when the traffic signal designated in the Molalla Transportation Systems Plan is required. TIA content information shall be included in the TIA submitted to the City. Additional information specified by the City in the scoping summary or through the pre-application meeting shall also be included per section 17-3.6.020.4. c.*

B. Street Location, Alignment, Extension, and Grades

1. *17-3.6.20. B.2. Specific street locations and alignments shall be determined in relation to existing and*

planned streets, topographic, conditions, public convenience, and safety, and in appropriate relation to the proposed use of the land to be served by such street.

***Findings:** All streets, to the extent practicable, shall connect to the existing street network and allow for the continuation of an interconnected street network, consistent with adopted public facility plans and pursuant to subsection D Transportation Connectivity and Future Street Plans.*

2. *17-3.6.20. B.5 - Where the locations of planned streets are shown on a local street network plan, the development shall implement the street(s) shown on the plan.*

   ***Findings**: Transportation Mater Plan show the extension of Ona Way to the north. The developer shall be responsible for constructing the north side of the intersection at HWY-211 (W Mian Street) & Ona Way for future extension of north Ona Way connection to Bear Creek Subdivision.*

C. *Rights-of-Way and Street Section Widths.*

1. *17-3.6.20. C.1 - Street rights-of-way and section widths shall comply with the current version of the Public Works Design Standards and Transportation System Plan. The standards are intended: to provide for streets of suitable location, width, and design to accommodate expected vehicle, pedestrian, and bicycle traffic; to afford satisfactory access to law enforcement, fire protection, sanitation, and road maintenance equipment; and to provide a convenient and accessible network of streets, avoiding undue hardships to adjoining properties.*

   ***Findings**: Dedications/Donations: If right of way dedication fronts streets under the jurisdiction of the City of Molalla, Applicant shall submit dedication on formats approved by the Public Works Department. On ODOT rights of way, applicant shall be required to donate sufficient right-of-way along variable width improvements and construct sidewalk widening to ODOT standards. ODOT requires donations of right-of-way to follow the requirements of Chapter 5.322. Developer Mitigation Donation in the ODOT Right-of-Way Manual. Applicant is advised that donation must be completed and recorded prior to submission of final plat or final partition plat in order for Public Works to process plat documents. Applicant will be required to dedicate a 10-foot-wide public utility easement fronting the public right-of-way if one does not exist. Applicant shall provide proof of existing dedication.*

2. *17-3.6.20.C.2 - All streets shall be improved in accordance with the construction standards and specifications of the applicable roadway authority, including requirements for pavement, curbs, drainage, striping, and traffic control devices. Where a planter strip is provided it shall consist of a minimum five-foot-wide strip between the sidewalk and the curb or roadway. Where a swale is provided, it shall either be placed between the roadway and sidewalk or behind the sidewalk on private property, subject to City Engineer approval and recording of required public drainage way and drainage way maintenance easements. Streets with parking on one side only should be avoided. When used, they must be posted NO PARKING.*

   Findings: *All street designs shall provide for safe and efficient travel to the motoring public. Streets shall be designed to carry the recommended traffic volumes identified for each street classification. Classification of existing and proposed roads is established by the City of Molalla's TSP. Streets shall be designed to meet or exceed minimum guidelines. These guidelines are set forth in the "AASHTO Policy on Geometric Design of Highways and Streets" (latest edition). Traffic Control Devices shall conform to the "Manual on Uniform Traffic Control Devices for Streets and Highways," Federal Highway Administration, with Oregon Supplements, Oregon Dept. of Transportation's (latest edition) and in accordance with Molalla Standards Specifications for Public Works Construction Section 2 –*

Street Improvements Design & Construction Standards.

D. Transportation Connectivity and Future Street Plans.

1. *17-3.6.20 – D.1 Intersections. Streets shall be located and designed to intersect as nearly as possible to a right angle. Street intersections shall meet the current requirements of the Public Works Design Standards and Transportation System Plan.*

   Findings: *The interior angle at intersecting streets shall be kept as near 90 degrees as possible, unless existing development or topography make it impracticable. Where intersecting streets cannot be kept at right angles, the interior angle shall in no case be less than 75 degrees. Connecting street intersections shall be located to provide for traffic flow, safety and turning movements, as conditions warrant. Curb Radii shall meet the street function classification minimum turning radius and dedication of right-of-way sufficient to facilitate construction of the Radius.*

2. *17-3.6.20 – D.2 Access Ways. The Planning Commission, in approving a land use application with conditions shall require a developer to provide an access way where the creation of a cul-de-sac or dead-end street is unavoidable and the access way connects or may in the future connect, the end of the street to another street, a park, or a public access way, except where the City Engineer and City Planner determine the access way is not feasible. Where an access way is required, it shall be not less than 10 feet wide and shall contain a minimum eight-foot-wide concrete surface or other all-weather surface approved by the City Engineer. Access ways shall be contained within a public right-of-way or public access easement, as required by the City.*

   Findings: *Double frontage lots and corner lots on these streets may be limited to access from a single street, usually the lower classification street. If additional driveways on a frontage are approved by the City's authorized representative, a finding shall be made that no eminent traffic hazard would result and impacts on through traffic would be minimal. Restrictions may be imposed on additional driveways, such as limited turn movements, shared access between uses, closure of existing driveways, or other access management actions. Access spacing shall conform to the Transportation Systems Plan. The proposed width of access shall meet the Molalla Standard Specifications for Public Works Construction. Access for commercial developments driveway access on local street classification shall be a minimum of 150 feet from the nearest intersection (as measured from Centerline of driveway to near face of curb at intersection).*

   Roadway lighting *is required on all new developments. Applicant shall be required to install roadway lighting. Location and number shall be determined during design review (MMC 17-3.6.020)*

   Transportation SDC's *– In accordance with MMC 13.14 this design review does increase the impacts to the public improvement facility and is therefore not exempt from transportation SDC charges. SDC's shall be calculated in accordance with the SDC methodology.*

17-3.6.030 Public Use Areas:

A. Dedication of Public Use Areas.

1. *Where a proposed park, playground, or other public use shown in a plan adopted by the City is located in whole or in part in a subdivision, the City may require the dedication or reservation of this area on the final*

plat for the subdivision, provided that the impact of the development on the City park system is roughly proportionate to the dedication or reservation being made.

Findings: *Not applicable, no proposed park, playground or other public use is shown in a plan adopted by the City.*

1. *The City may purchase or accept voluntary dedication or reservation of areas within the subdivision that are suitable for the development of parks and other public uses; however, the City is under no obligation to accept such areas offered for dedication or sale.*

Findings: *Not applicable, applicant is not proposing any voluntary dedication or reservation of areas within the development.*

B. System Development Charge Credit. Dedication of land to the City for public use areas, voluntary or otherwise, may be eligible as a credit toward any required system development charge for parks. (Ord. 2017-08 §1)

Findings: *development does not propose any dedication of land to the City. Parks SDC's – In accordance with MMC 13.70.110 this Multi-Family Residential development is not exempt from parks SDC charges. SDC's shall be calculated in accordance with the SDC methodology.*

17-3.6.040 Sanitary Sewer and Water Service Improvements:

A. ***Sewers and Water Mains Required.*** *All new development is required to connect to City water and sanitary sewer systems. Sanitary sewer and water system improvements shall be installed to serve each new development and to connect developments to existing mains in accordance with the adopted facility master plans and applicable Public Works Design Standards. Where streets are required to be stubbed to the edge of the subdivision, sewer and water system improvements and other utilities shall also be stubbed with the streets, except as may be waived by the City Engineer where alternate alignment(s) are provided.*

Findings: *Sewer- Applicant will be required to extend Public Sewer System to serve the development from Hwy-211 (W Main Street) south along S Ona Way to most south portion of their Development in accordance with the adopted facility master plans. The site will be served from the extension of sewer main by gravity system. All sanitary sewers shall be designed and constructed so as to conform to the requirements of the Oregon state plumbing laws and rules of the Oregon DEQ and to City Standards. Prior to extension and/or connection to the Public Sewer System. Applicant Shall be required to submit a Sewer Capacity Analysis Request Form to the departmental of DEQ for approval per OAR Rule 340-52. The City recommends Certificate of Capacity to be submitted prior to their land use or permit application.*

Findings: *Water – A 8-inch water main exist within S Ona Way and will serve this development. Extensions for fire protection may be required and all public water lines shall be within a public easement on formats approved by the Public Works Department. Should Fire Department regulations require additional fire flow that results in looping the water line through the site, then applicants engineer shall coordinate with Public Works for the extension of public waterline, and dedication of easements.*

Sewer & Water SDC's *– In accordance with MMC 13.14 this design review does increase the impact to the public improvement facility and is therefore not exempt from Sewer & Water SDC charges. SDC's shall be calculated in accordance with the SDC methodology.*

B. ***Sewer and Water Plan Approval.*** *Development permits for sewer and water improvements shall not be issued until the City Engineer has approved all sanitary sewer and water plans in conformance with City standards.*

Findings: *Applicant will be required to submit a Public Works Permit and assurances in accordance with Section 1 of the Molalla Standard Specifications for Public Works Construction prior to any public construction begins.*

C. ***Over-Sizing.*** *The City may require as a condition of development approval that sewer and water lines serving new development be sized to accommodate future development within the area as projected by the applicable facility master plans, and the City may authorize other cost-recovery or cost-sharing methods as provided under state law.*

Findings: *Applicant shall be required to meet all requirements for extension of the sewer main in accordance with the Wastewater Master Plan and CIP for design.*

D. ***Inadequate Facilities.*** *Development permits may be restricted or rationed by the Planning Commission where a deficiency exists in the existing water or sewer system that cannot be rectified by the development and which, if not rectified, will result in a threat to public health or safety, surcharging of existing mains, or violations of state or federal standards pertaining to operation of domestic water and sewerage treatment systems. The City Engineer may require water booster pumps, sanitary sewer lift stations, and other critical facilities be installed with backup power. (Ord. 2017-08 §1)*

Findings: *There are no identified existing deficiency within Cities Master Plan that indicates Inadequate Facilities within the limits of the proposed development for sewer and water.*

17-3.6.050 Storm Drainage and Surface Water Management Facilities:

A. ***General Provisions.*** *The City shall issue a development permit only where adequate provisions for stormwater runoff have been made in conformance with the requirements of the current version of the Public Works Design Standards and Stormwater Master Plan.*

Findings: Applicant will be required to submit design and construction requirements for stormwater and surface water management at the time of Public Works Permit application. Design shall be in accordance with Section 3 of the Molalla Standard Specifications for Public Works Construction and Stormwater Master Plan.

1. *Applicant proposes to collect and detain all stormwater onsite and discharge to the new storm system located in S Ona Way. Extension of the storm system in S Ona Way is part of the requirements for this development frontage improvements. The new storm system located in Ona Way will discharge to bear creek drainage. Bear Creek drainage is water of the state and shall be reviewed and permitted by DEQ including water quality requirements. Onsite private storm system shall comply with plumbing code requirements. The detention and flow control facilities shall be reviewed, permitted, and inspected by Public Works. The onsite storm conveyance system shall be reviewed and inspected by Clackamas County Building under a plumbing permit. in Accordance with MMC 13.13 Surface Water Management.*

2. *Stormwater SDC's – In accordance with MMC 13.14 this design review does increase the impacts to the public improvement facility and is therefore not exempt from stormwater SDC charges. SDC's shall be calculated in accordance with the SDC methodology.*

B. *Accommodation of Upstream Drainage.* *Culverts and other drainage facilities shall be large enough to accommodate existing and potential future runoff from the entire upstream drainage area, whether inside or outside the development. Such facilities shall be subject to review and approval by the City Engineer.*

Findings: *The Culvert located at the southwest portion of the proposed development on Ona Way has been subject to flooding and is identified in City Stormwater Master Plan for such known issues. Site development shall provide hydrologic analysis for the 25-, 50- and 100-year storm event to determine flow capacity of the culvert and determine if replacement of the culvert is warranted at this time. Applicant shall address all on-site and off-site drainage concerns for both upstream and downstream of the project and provide Strom water calculations in accordance with Molalla Standards for Public Works Section 3 - STORMWATER DESIGN & CONSTRUCITON STRANDARDS.*

C. ***Effect on Downstream Drainage.*** *Where it is anticipated by the City Engineer that the additional runoff resulting from the development will overload an existing drainage facility, the City shall withhold approval of the development until provisions have been made for improvement of the potential condition or until provisions have been made for storage of additional runoff caused by the development in accordance with City standards.*

Findings: The development increases the impervious surface area by more than 5,000 square feet. Applicants design engineer shall submit documentation for review and approval of the downstream capacity of any existing storm facilities impacted by the proposed development. The analysis shall extend downstream to a point in the drainage system where the additional flow from the proposed development site constitutes 10% or less of the total tributary drainage flow.

D. ***Over-Sizing.*** *The City may require as a condition of development approval that sewer, water, or storm drainage systems serving new development be sized to accommodate future development within the area as projected by the applicable facility master plan, provided that the City may grant the developer credit toward any required system development charge for the same pursuant to the System Development Charge.*

Findings: *See findings under 17-3.6.050 "A" & "B"*

E. ***Existing Watercourse.*** *Where a proposed development is traversed by a watercourse, drainage way, channel, or stream, the City may require a stormwater easement or drainage right-of-way conforming substantially with the lines of such watercourse and such further width as will be adequate for conveyance and maintenance to protect the public health and safety. (Ord. 2017-08 §1)*

Findings: Bear Creek runs along the southernmost portion of the proposed development. Applicant shall comply with the regulatory requirements of the Oregon Department of State Lands, ODFW, U.S. Fish and Wildlife Department, U.S. Army Corps of Engineers, National Marine Fisheries Service, and any other state and federal agencies having jurisdiction.

17-3.6.060 Utilities:

B. *Underground Utilities.*

1. *General Requirement.* *The requirements of the utility service provider shall be met. All utility lines in new subdivisions, including, but not limited to, those required for electric, communication, and lighting, and related facilities, shall be placed underground, except where the City Engineer determines that placing utilities*

underground would adversely impact adjacent land uses. The Planning Official may require screening and buffering of above ground facilities to protect the public health, safety, or welfare.

***Findings:** All utilities for the project shall be served by underground services. No overhead crossings of public right of way shall be approved by the City.*

17-3.6.070 Easements:

A. ***Provision.*** *The developer shall make arrangements with the City and applicable utility providers for each utility franchise for the provision and dedication of utility easements necessary to provide full services to the development.*

***Findings:** Applicant will be required to dedicate a 10-foot-wide public utility easement fronting the public right-of-way if one does not exist. Applicant shall provide proof of existing dedication.*

C. ***Recordation.*** All easements for sewers, storm drainage and water quality facilities, water mains, electric lines, or other utilities shall be recorded and referenced on a survey or final plat, as applicable. See Chapter 17-4.2 Site Design Review, and Chapter 17-4.3 Land Divisions and Property Line Adjustments.

Findings: Public sanitary, storm sewer, and water lines on private property shall be centered in a permanent easement granted to the City. The minimum width of a public pipeline easement shall be 15 feet and no permanent structures shall be allowed within an easement area.

17-3.6.080 Construction Plan Approval:

No development, including sanitary sewers, water, streets, parking areas, buildings, or other development, shall commence without plans having been approved by the City of Molalla Public Works Department and permits issued. Permit fees are required to defray the cost and expenses incurred by the City for construction and other services in connection with the improvement. Permit fees are as set by City Council resolution.

***Findings:** Applicant shall apply for a Public Works Permit in accordance with Section 1.15 DEVELOPMETNS PROCESS REQUIREMENTS of Molalla Standards. No work will be performed, not materials stored, nor encroachment made on or within right-of-way, Public easement, or Public utility easement until all requirements have been meet and permit has been issued.*

17-3.6.100 Performance Guarantee and Warranty:

A. ***Performance Guarantee Required.*** *The City at its discretion may approve a final plat or building permit when it determines that all of the public improvements required for the site development or land division, or phase thereof, are complete and the applicant has an acceptable assurance for the balance of said improvements. The applicant shall provide a performance and payment bond in accordance with the current version of the Public Works Design Standards.*

***Findings:** A Performance Bond must be in place prior to issuance of permit and before any public construction begins.*

B. ***Determination of Sum.*** *The assurance of performance shall be for a sum determined by the City Engineer as required to cover the cost of the improvements and repairs, including related engineering and incidental*

expenses, plus reasonable inflationary costs. The assurance shall not be less than 150 percent of the estimated improvement costs.

Findings: *The sum of the Performance Bond will be based on Engineering Cost Estimates provide at time of application submittal*

C. ***Itemized Improvement Estimate.*** *The applicant shall furnish to the City an itemized improvement estimate, certified by a registered civil engineer, to assist the City in calculating the amount of the performance assurance.*

Findings: *See findings under 17-3.6.100 "A" & "B"*

D. ***Agreement.*** *A written agreement between the City and applicant shall be signed and recorded. The agreement may include a provision for the construction of the improvements in stages and for the extension of time under specific conditions. The agreement shall contain all of the following:*

1. *The period within which all required improvements and repairs shall be completed.*

2. *A provision that if work is not completed within the period specified, the City may complete the work and recover the full cost and expenses from the applicant.*

3. *The required improvement fees and deposits.*

Findings: *Applicant shall not be granted a building permit or final plat approval (as applicable), until all required improvements are completed and accepted by the City, or an agreement and financial assurance acceptable to the City for all outstanding public improvements is recorded against the property.*

E. ***When Applicant Fails to Perform.*** *In the event the applicant fails to carry out all provisions of the agreement and the City has un-reimbursed costs or expenses resulting from such failure, the City shall call on the bond, cash deposit, or letter of credit for reimbursement.*

Findings: *The applicant shall perform the public improvements as required and in accordance with the City of Molalla's public works standards. In the event applicant fails to perform within the period of time that the land use decision from which the requirement flows remains valid, the City will call on the financial assurance to complete said improvements.*

F. ***Termination of Performance Guarantee.*** *The applicant shall not cause termination, nor allow expiration, of the guarantee without first securing written authorization from the City.*

Findings: *At completion of the project and acceptance of Warranty Bond, the City will release the Performance Bond. If the applicant allows the financial assurance to expire, or terminate without written authorization from the City, a stop work order will be placed on the project and no occupancy will be granted. Additionally, the city will seek all available remedies under the law.*

G. ***Warranty Bond.*** *A warranty bond good for two years is required on all public improvements and landscaping when installed in the public right-of-way. The warranty bond shall equal 120 percent of the total cost of improvements and begin upon acceptance of said improvements by the City. (Ord. 2017-08 §1)*

Findings: *Warranty Bond shall be in place prior to final completion and acceptance of the project and meeting the requirements in subsection 1.15.9 of the Molalla Standards and subject to all easements and legal documents have been recorded with the County.*

17-3.6.090 Facility Installation:

DESIGN REQUIREMENTS & POLICIES

A. ***Conformance Required.*** *Improvements installed by the developer, either as a requirement of these regulations or at the developer's option, shall conform to the requirements of this chapter, approved construction plans, and to improvement standards and specifications adopted by the City.*

B. ***Adopted Installation Standards.*** *The City of Molalla has adopted Public Works Design Standards for public improvements and private utility installation within the public right-of-way.*

C. ***Commencement.*** *Work in a public right-of-way shall not begin until all applicable agency permits have been approved and issued.*

E. ***Resumption.*** *If work is discontinued for more than six months, it shall not be resumed until the Public Works Director is notified in writing and grants approval of an extension.*

F. ***City Inspection.*** *Improvements shall be constructed under the inspection of the City Engineer. The City Engineer may approve minor changes in typical sections and details if unusual conditions arising during construction warrant such changes in the public interest, except that substantive changes to the approved design shall be subject to review under Chapter 17-4.5 Modifications to Approved Plans and Conditions of Approval. Any survey monuments that are disturbed before all improvements are completed by the developer or subdivider shall be replaced at the developer or subdivider's expense prior to final acceptance of the improvements.*

G. ***Engineer's Certification and As-Built Plans.*** *In accordance with the current version of the Public Works Design Standards, a registered civil engineer shall provide written certification in a form required by the City that all improvements, workmanship, and materials meet current and standard engineering and construction practices, conform to approved plans and conditions of approval, and are of high grade, prior to City's acceptance of the public improvements, or any portion thereof, for operation and maintenance. The developer's engineer shall also provide two sets of "as-built" plans, one paper set and one electronic set for permanent filing with the City. If required by the City, the developer or subdivider shall provide a warranty bond pursuant to Section 17-3.6.100. (Ord. 2017-08 §1*

H. ***Residential Development Projects****, No building permit may be issued until all required public facility improvements are in place and approved by the City Engineer, or otherwise bonded, in conformance with the provision of the Code and the Public Works Design Standards in accordance with MMC 17-3.6 Public Facilities. All public facilities shall be completed and accepted by the Public Works Department prior to issuance of final occupancy.*

I. ***Materials Submitted,*** *it appears that the storm drain, domestic water and sanitary sewer facilities will be obtained from main line connections and/or extensions. Separate engineering drawings reflecting the installation of these public utilities will be required.*

J. ***Construction and/or Connection,*** *No construction of, or connection to, any existing or proposed public utility/improvements will be permitted until all plans are approved by Staff, all fees have been paid, all necessary permits, bonding, right-of-way and easements have been obtained and approved by staff, and Staff is notified a minimum of 24 hours in advance.*

K. ***Revisions/Modifications,*** *Staff reserves the right to require revisions/modifications to the public improvement construction plans and completed street improvements, if additional modifications or expansion of the sight distance onto adjacent streets is required.*

L. ***Civil Review,*** *All public utility/improvement plans submitted for review shall be based upon a 22"x 34" format and shall be prepared in accordance with the City of Molalla Public Work's Standards* as described in Section 1 of the Molalla Standard Specifications for Public Works Construction.

M. ***Monuments,*** *All survey monuments on the subject site or that may be subject to disturbance within the construction area, or the construction of any off-site improvements shall be adequately referenced and protected prior to commencement of any construction activity. If the survey monuments are disturbed, moved, relocated or destroyed as a result of any construction, the project shall, at its cost, retain the services of a registered professional land surveyor in the State of Oregon to restore the monument to its original condition and file the necessary surveys as required by Oregon State law. A copy of any recorded survey shall be submitted to Staff.*

N. ***Existing Wells,*** *The applicant shall contact the Oregon Water Resources Department and inform them of any existing wells located on the subject site. Any existing well shall be limited to irrigation purposes only. Proper separation, in conformance with applicable State standards, shall be maintained between irrigation systems, public water systems, and public sanitary systems. Should the project abandon any existing wells, they shall be properly abandoned in conformance with State standards and supply the City with a copy of the final document.*

O. ***Sanitary Sewer,*** *designs require review by Oregon Department of Environmental Quality. Applicant shall be responsible for submission of plans to state agency and all associated fees. Applicant's Engineer will be required to submit final report to DEQ and provide a copy of the report to the City.*

P. ***Utilities****, All utilities will be stubbed out to the far end of each street for future extension. The project shall utilize existing water, sewer, and storm water 'stub-outs' wherever possible. Water for domestic and fire protection shall be looped through the proposed site. Any 'stub-outs' determined to be not needed for the proposed development or any future development of the subject property shall be abandoned in accordance with the Molalla Standard Specifications for Public Works Construction.*

Q. ***Public Improvements,*** *All public improvement designs shall meet the requirements of the Molalla Standard Specifications for Public Works Construction as amended by the Public Works Director.*

R. ***General Easements*** *– A 10-foot-wide public utility easement shall be dedicated to the City adjacent to all public right-of-way and no structures are allowed to encroach into the easement. Applicant shall be required to submit a legal description and exhibit map for review and sign City easements. Once completed, applicant will be required to record easements with the County Recorder's Office and return the original document to the City prior to final occupancy.*

S. ***General Wetland Requirements*** *– The applicant will be required to provide Public Works with a letter of concurrence from the Department of State Lands regarding any wetlands on the subject property.*

T. ***General Erosion Control*** *– The applicant shall install, operate, and maintain adequate erosion control measures in conformance with the standards adopted by the City of Molalla and DEQ during the construction of any public/private utility and building improvements until such time as approved permanent vegetative*

materials have been installed. Applicant or Applicant's Contractor shall be responsible for all erosion control requirements under the 1200-C permit and shall coordinate directly with DEQ for questions related to 1200-C permit compliance.

Exhibit F:

Molalla Fire Department Comments

Molalla Rural Fire Protection District #73

P.O. Box 655 • Molalla, OR 97038
320 N Molalla Ave. Molalla, OR 97038

Telephone: 503-829-2200
Fax: 503-829-5794

Comments and Questions for 105 Ona Way March 9th 2023.

Hydrants shall have a 4 inch quick connect. I didn't see a drawing detail with the submitted plans. There shall be no landscaping within 3 feet of any hydrant. Four feet for electrical. Hydrants shall be in and functional prior to any combustible framing.

I have moved the FDC and hydrant in the center of the complex so that things are more functional. See Drawing Detail C3.2. on page 82

I have marked a few parking spaces to be for compact vehicles only as the turning radius shown on the plans gets in to the parking stalls slightly.

Will there be car ports? If so, please show on the plans along with access road widths.

Address signs shall be visible from the access road and shall be as other apartment complexes in Molalla. See 872 W main for examples.

Knox boxes shall be provided at each riser room and at the club house. The height of the Knox box shall not exceed 80 inches from grade to the top of the box.

If the sidewall eve intersection height is greater than 30 feet, please see OFC D105 for access road requirements.

The above comments are based solely on the site plan provided to Molalla Fire. Molalla Fire reserves the right to review and comment on the plans that are to be submitted for full review or revisions to plans that have already been reviewed.

Review of submitted plans is not an approval of omissions, oversights or authorization of non-compliance with any regulations of this agency or of the regulations of any other agency. Comments on these plans should not be considered a precedent setting, as we will review each project on a case-by-case basis.

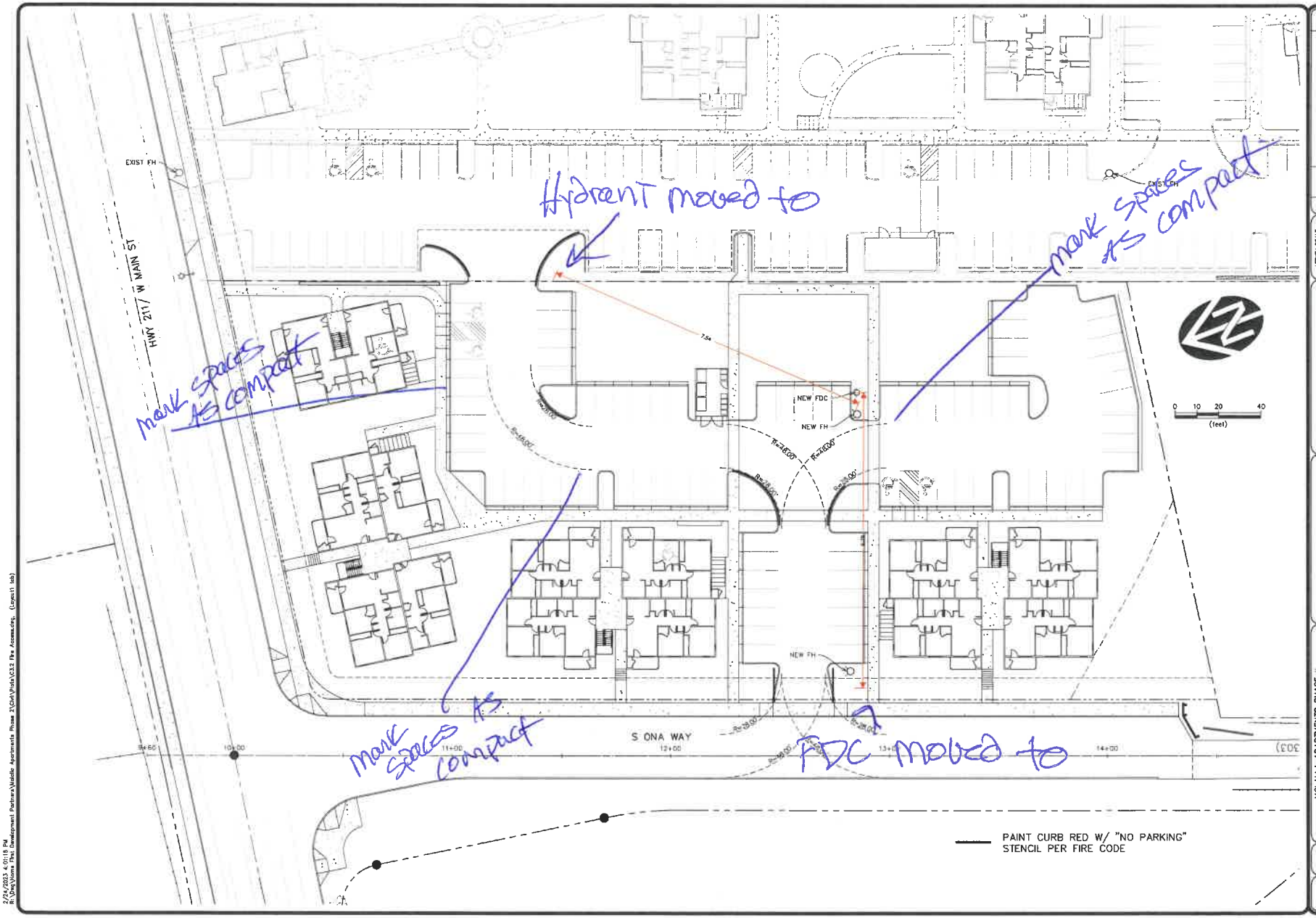
Michael C. Penunuri

Molalla Rural Fire Protection District #73

P.O. Box 655 • Molalla, OR 97038
320 N Molalla Ave. Molalla, OR 97038

Telephone: 503-829-2200
Fax: 503-829-5794

Michael C. Penunuri
Lieutenant/Paramedic



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VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
IF NOT ONE INCH ON THIS SHEET ADJUST SCALE ACCORDINGLY

DSN	SAW
DRN	AR
CKD	SAW
DATE	DEC 2021

NO.	DATE	DESCRIPTION	BY
		REVISIONS	

REVIEW
OREGON PROFESSIONAL ENGINEER
STEVEN A. WARD
RENEWS: 6/30/2024

WESTECH ENGINEERING, INC.
CONSULTING ENGINEERS AND PLANNERS
3841 Fairview Industrial Dr. S.E., Suite 100, Salem, OR 97302
Phone: (503) 585-2474 Fax: (503) 585-3986
E-mail: mail@westech-eng.com

MOLALLA APARTMENTS PHASE II
HOME FIRST DEVELOPMENT PARTNERS

FIRE ACCESS PLAN

DRAWING
C3.2

JOB NUMBER
3312.1000.0

Exhibit G:

ODOT Comments

Oregon
Tina Kotek, Governor

Department of Transportation
Transportation Region 1
123 NW Flanders St.
Portland, OR 97209-4012
(503) 731-8200
Fax: (503) 731-8259

3/31/23 ODOT #12528

ODOT Response

Project Name: Green Light Home First Apartments	**Applicant:** Green Light Home First LLC
Jurisdiction: City of Molalla	**State Highway:** Main St (OR 211)
Site Address: Phase 2: 105 S Ona Way **(Phase 1:**1000 W Main St, Molalla, OR)	**Legal Description:** 05S 02E 08C **Tax Lot(s):** 01600

The site of this proposed land use action is adjacent to W Main St (OR 211). ODOT has permitting authority for this facility and an interest in ensuring that this proposed land use is compatible with its safe and efficient operation. **Please direct the applicant to the District Contact indicated below to determine permit requirements and obtain application information.**

COMMENTS/FINDINGS

The applicant proposes a new 40-unit affordable housing development at 105 S Ona Way. This is Phase 2 of a two-phase housing development by the applicant Green Light First. Phase 1 of the development is located on the adjacent parcel with highway frontage at 1000 W Main St. ODOT previously responded on February 9, 2022 to Phase 1. Both developments will share access to the highway and the developer will be constructing the highway improvements required for both phases as a single project. ODOT is currently working with the developer on a State Highway Approach Road Permit application that will cover both phases of the development. Therefore, ODOT is not recommending an access permit be required for this land use application.

Right of way donation is necessary from the property at 105 S Ona Way to complete the improvements consistent with the city's Transportation System Plan (TSP). It is our understanding that the city is requiring the intersection improvements at Ona Way include construction of the north leg of the intersection consistent with the TSP. Therefore, ODOT recommends that the land use decision for Phase 2 include a condition of approval for this requirement as well as the right of way donation.

According to the Molalla Planning Commission Decision for 1000 W Main St sidewalk, right of way donation, center turn lane, and other conditions shown on Page 7 were required to be met prior to occupancy. The Building Permit should not be issued until ODOT permits and right of way donation recording have been issued.

The improvements and donation necessary to be consistent with the TSP adopted cross section which includes a 14ft turn lane, 12ft travel lane, 2ft bike buffer, 5ft bike lane, 6-1/2ft sidewalk (inclusive of 1/2ft curb), and 1-1/2ft back of sidewalk buffer.

The cross section is included below:

enter Turn Lane (68-foot ROW, 52-foot Paved Width)

ODOT has previously reviewed the Lancaster/Mobley Signal Warrant Analysis for the OR 211/Leroy St intersection and concurs with the recommendation not to install a signal at this time.

All alterations within the State highway right of way are subject to the ODOT Highway Design Manual (HDM) standards. Alterations along the State highway but outside of ODOT right-of-way may also be subject to ODOT review pending its potential impact to safe operation of the highway. If proposed alterations deviate from ODOT standards a Design Exception Request must be prepared by a licensed engineer for review by ODOT Technical Services. Preparation of a Design Exception request does not guarantee its ultimate approval. Until more detailed plans have been reviewed, ODOT cannot make a determination whether design elements will require a Design Exception.

Note: Design Exception Requests may take up to 3 months to process.

All ODOT permits and approvals must reach 100% plans before the District Contact will sign-off on a local jurisdiction Building Permit, or other necessary requirement prior to construction. The City should not issue the Occupancy Permit until all improvements in the State highway have been completed and accepted by ODOT.

ODOT RECOMMENDED LOCAL CONDITIONS OF APPROVAL

Frontage Improvements and Right of Way

☒ Curb, sidewalk, buffered bike lane and road widening for a center turn lane shall be constructed as necessary to be consistent with Molalla Transportation System Plan, ODOT and ADA standards.

☒ The applicant shall reconstruct the intersection of Ona Way/Main St (OR 211) to include adding the new public street connection on the north leg consistent with the Molalla Transportation System Plan and ODOT/ADA standards.

☒ Right of way donated to ODOT as necessary to accommodate the planned cross section shall be provided. The deed must be to the State of Oregon, Oregon Department of Transportation. The ODOT District contact will assist in coordinating the transfer. ODOT should provide verification to the local jurisdiction that this requirement has been fulfilled. The property owner must be the signatory for the deed and will be responsible

for a certified environmental assessment of the site prior to transfer of property to the Department.

Note: It may take up to **3 months** to transfer ownership of property to ODOT.

Access to the State Highway

☒ The applicant shall record cross-over access easements to the adjacent properties with state highway frontage with the County Assessor to facilitate future shared access. Shared access will improve highway safety by reducing potential conflicts between vehicles and between vehicles and pedestrians and bicyclists at closely spaced driveways and will implement ODOT Access Management Program goals.

Permits and Agreements to Work in State Right of Way

☒ An ODOT Miscellaneous Permit must be obtained for all work in the highway right of way. When the total value of improvements within the ODOT right of way is estimated to be $100,000 or more, an agreement with ODOT is required to address the transfer of ownership of the improvement to ODOT. An Intergovernmental Agreement (IGA) is required for agreements involving local governments and a Cooperative Improvement Agreement (CIA) is required for private sector agreements. The agreement shall address the work standards that must be followed, maintenance responsibilities, and compliance with ORS 276.071, which includes State of Oregon prevailing wage requirements.

Note: If a CIA is required, it may take up to **6 months** to process.

☒ An ODOT Miscellaneous Permit is required for connection to state highway drainage facilities. Connection will only be considered if the site's drainage naturally enters ODOT right of way. The applicant must provide ODOT District with a preliminary drainage plan showing impacts to the highway right of way.

A drainage study prepared by an Oregon Registered Professional Engineer is usually required by ODOT if:

1. Total peak runoff entering the highway right of way is greater than 1.77 cubic feet per second; or
2. The improvements create an increase of the impervious surface area greater than 10,758 square feet.

Please send a copy of the Land Use Notice including conditions of approval to:

ODOT_R1_DevRev@odot.oregon.gov

Development Review Planner: Marah Danielson	marah.b.danielson@odot.oregon.gov
2C District Contact: Robby Cox	d2cap@odot.oregon.gov