



Planning & Community Dev.
315 Kennel Avenue
PO Box 248
Molalla, Oregon 97038
Phone: (503) 759-0205
communityplanner@cityofmolalla.com

AGENDA
Molalla Planning Commission
6:30 PM, February 2, 2022

Meeting Location: Molalla Civic Center
315 Kennel Avenue.
Molalla, OR 97038

The Planning Commission Meeting will begin at 6:30pm. The Planning Commission has adopted Public Participation Rules. Copies of these rules and public comment cards are available at the entry desk. Public comment cards must be turned in prior to the start of the Commission meeting. The City will endeavor to provide a qualified bilingual interpreter, at no cost, if requested at least 48 hours prior to the meeting. To obtain services call the City Recorder at (503) 829-6855.

I. CALL TO ORDER

II. FLAG SALUTE AND ROLL CALL

III. WELCOME

- Planning Commissioner Clint Ancell

IV. PUBLIC COMMENT – Limited to 3 minutes per person

V. MINUTES:

- December 1, 2021, Planning Commission Meeting
- January 5, 2022, Planning Commission Meeting

VI. QUASI-JUDICIAL HEARING:

- SDR08-2021 – 31330 S HWY 213 (Starbucks Retail Drive Thru)

VI. REPORTS AND ANNOUNCEMENTS

- Planners Report
- Directors Report

VII. ADJOURNMENT



**Molalla Planning Commission
MINUTES Molalla Adult
Center
315 Kennel Ave., Molalla, OR
97038
December 1, 2021**

The December 1, 2021, meeting of the Molalla Planning Commission was called to order by Chair Rae Botsford at 6:32pm.

COMMISSIONER ATTENDANCE:

Chair Rae Lynn Botsford – Present
Commissioner Rick Deaton – Present
Commissioner Doug Eaglebear – Present
Commissioner Jennifer Satter – Absent
Commissioner Jacob Giberson – Present
Commissioner Connie Farrens – Absent

STAFF IN ATTENDANCE:

Mac Corthell, Director of Community Development – Present
Dan Zinder, Senior Planner – Present
Julie Larson, Planning Specialist – Absent
Christine DeSantis City Recorder – Present
Sam Miller, PW Sr. Engineer – Present

AGENDA:

- I. CALL TO ORDER**
- II. FLAG SALUTE AND ROLL CALL**
- III. PUBLIC COMMENT** – Limited to 3 minutes per person
No Public Comment
- IV. MINUTES:**
 - October 6, 2021, Planning Commission Meeting
 - Planning Commission approves minutes 4-0
- V. QUASI-JUDICIAL HEARING:**
 - SDR04-2021 – 200/201 S Leroy Ave (Cascade Place Apartments)

Begins at 0:04:15 of meeting video (link posted below)

Senior Planner, Dan Zinder, presented the staff report and materials for planning file SDR04-2021 which seeks for a site design review approval for a new 151-unit apartment complex located at 200/201 S Leroy Avenue (Cascade Place Apartments).

After discussion, Commissioner Eaglebear made a motion to approve SDR04-2021. Commissioner Deaton made a second motion. Motion passes 4-0

VI. REPORTS AND ANNOUNCEMENTS

- Planners Report
- Directors Report

Begins at 1:16:48 of meeting video (link posted below)

VII. ADJOURNMENT

Meeting adjourned at 7:34pm

PLANNING COMMISSION MEETING CAN BE VIEWED IN IT'S ENTIRIETY HERE:

[December 1, 2021 Planning Commission Meeting Video](#)

Chair, Rae Lynn Botsford

Date

ATTEST: _____
Mac Corthell, Planning Director



**Molalla Planning Commission
MINUTES Molalla Adult
Center
315 Kennel Ave., Molalla, OR
97038
January 5, 2022**

The January 5, 2022, meeting of the Molalla Planning Commission was called to order by Chair Rae Botsford at 6:33pm.

COMMISSIONER ATTENDANCE:

Chair Rae Lynn Botsford – Present
Commissioner Rick Deaton – Present
Commissioner Doug Eaglebear – Present
Commissioner Jennifer Satter – Absent
Commissioner Jacob Giberson – Absent
Commissioner Connie Sharp – Present

STAFF IN ATTENDANCE:

Mac Corthell, Director of Community Development – Absent
Dan Zinder, Senior Planner – Present
Julie Larson, Planning Specialist – Present

AGENDA:

I. CALL TO ORDER

II. FLAG SALUTE AND ROLL CALL

III. PUBLIC COMMENT – Limited to 3 minutes per person

No Public Comment

IV. MINUTES:

- ~~December 1, 2021, Planning Commission Meeting~~ – due to staff illness, minutes for the December 1, 2021 meeting have not yet been prepared for approval and will be submitted at the February 2, 2022 meeting.

V. DISCUSSION:

- DCA14-2021 – Annexation of S Lowe Properties, 13350, 13434, and 13500 S Lowe RD.

Begins at 0:01:27 of meeting video (link posted below)

Senior Planner, Dan Zinder, presented the staff report and materials for planning file DCA14-2021 which seeks for Annexation and Zone Change of three properties on the southern frontage of S Lowe RD in Molalla, east of S Molalla Forest RD and Ona WY. The properties are addressed at 13350 S Lowe RD (parcel 52E08C 03500), 13434 S Lowe RD (parcel 52E08C 03600), and 13500 S Lowe RD (parcel 52E08C 03700), and together comprise 16.50 acres.

After discussion, Commissioner Sharp made a motion to approve DCA14-2021. Commissioner Deaton made a second motion. Motion passes 4-0

VI. REPORTS AND ANNOUNCEMENTS

- Planners Report
- Directors Report

Begins at 0:10:13 of meeting video (link posted below)

VII. ADJOURNMENT

Meeting adjourned at 6:55pm

PLANNING COMMISSION MEETING CAN BE VIEWED IN IT'S ENTIRIETY HERE:

[January 5, 2022 Planning Commission Meeting Video](#)

Chair, Rae Lynn Botsford

Date

ATTEST: _____
Mac Corthell, Planning Director



Planning & Community Dev.
117 N Molalla Avenue
PO Box 248
Molalla, Oregon 97038
Phone: (503) 759-0205
communityplanner@cityofmolalla.com

CITY OF MOLALLA STAFF REPORT

Consolidated Review for SDR08-2021, CUP02-2021 and MP02-2021; 31330 S HWY 213 – New Commercial Building and Property Partition

Date: January 26, 2022 for the February 2, 2022 Planning Commission Meeting

File No.: Consolidated Review for SDR08-2021, CUP02-2021 and MP02-2021

Proposal: Construction of a new coffee shop building/drive-through and a partition of the property.

Address: 31330 S HWY 213

Tax Lot: Lot 2400 of Clackamas County Taxmap 52E07A

Applicant: Jennifer Rinkus – Baysinger Partners
2410 N. Lombard St
Portland, OR 97217

Property Owners: John Reinholt
2150 Alpine Dr
West Linn, OR 97068

Applicable Standards: **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

Division III, Community Design Standards

Section 17-3.2.040 Non-Residential Buildings

Section 17-3.2.050 Civic Space and Pedestrian Amenities

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 Standards

*Section 17-4.1.040 Type III Procedure (Quasi-Judicial Review –
Public Hearing)*

Section 17-4.2.050 Approval Standards (Site Design Review)

Section 17-4.3.070 Preliminary Plat Approval Standards

Section 17-4.4.040 Criteria, Standards, and Conditions of Approval

TABLE OF CONTENTS:

- I. Executive Summary
- II. Recommendations
- III. Conditions of Approval

EXHIBITS:

EXHIBIT A: Findings of Fact for MP01-2021

EXHIBIT B: Findings of Fact for SDR08-2021

EXHIBIT C: Findings of Fact for CUP02-2021

EXHIBIT D: Consolidated Application Package For MP01-2021,
SDR08-2021, AND CUP02-2021

EXHIBIT E: Molalla Public Works Comments

EXHIBIT F: Molalla Fire Department Comments

EXHIBIT G Oregon Department of Transportation Comments

I. EXECUTIVE SUMMARY

Proposal:

The Applicants seek land use approval for the construction of a 2,140 SF new coffee shop building/drive-through and a partition of the 1.01 acre subject property. The Applicant's proposed partition separates the proposed 0.57 acre development site (Parcel 1) adjacent to OR-213 from a 0.39 acre portion of undeveloped property to the east to be developed at a later time (Parcel 2). An additional 582 SF is dedicated for public right-of-way. The applicant proposes vehicle access to the site from a new private drive from OR-213 that extend to the eastern end of the partitioned property to serve the newly created lot to the east. Additionally, the Applicant proposes required pedestrian frontage improvements adjacent to the property along OR-213. Because the proposed use includes a drive-through facility a Conditional Use Permit is required in conjunction with the Site Design Review per MMC 17-2.2.030 H.

Site Description:

The subject site is located on a 1.01 acre parcel of general commercially zoned (C-2) land on the east side of OR-213 between Toliver RD and OR-211. The parcel is directly north of the Molalla Market Center/Safeway parcel and across from Les Schwab Tires. The property slopes slightly from southwest to northeast. There is an existing shop building on the parcel, with an existing access leading to the shop, and several mature deciduous trees on the perimeter of the property.

For the purposes of the Site Design Review SDR08-2021 and CUP02-2021 for the new coffee shop and drive through uses, the site refers to Parcel 1.

Surrounding Zoning and Land Uses:

The properties are surrounded by central commercially zoned (C-1) land to the south, east, and southwest and light industrially zoned land (M-1) to the north and northwest. Surrounding uses include the retail complex "Molalla Market Center" to the south and east, a commercial vehicle repair facility to the southwest, a tire services facility to the northwest, and a pre-existing, non-conforming home to the north. No change to the existing C-2 zoning designation is proposed as part of these applications.

Public Agency Responses:

Staff circulated notice of the project to the City's Public Works Director, Fire Marshal, and Oregon Department of Transportation on December 30, 2021. The City has included responses from these agencies as Exhibits E, F, and G respectively, and/or integrated their comments into the proposed findings and conditions of this decision.

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

January 6, 2022. Notice was published in the Molalla Pioneer on January 12, 2022. Signage containing public notice information was posted on the property on January 14, 2022. As of January 26, 2021 Staff had received no written public comment on the application.

I. Recommendation

Based on the application materials and findings demonstrating present or conditioned compliance with the applicable standards, staff recommends approval of Site Design Review SDR08-2021, Conditional Use Permit CUP02-2021, and Partition MP01-2021, subject to the conditions of approval that follow this recommendation. This approval is based on the Applicant's written narrative, site plans, preliminary partition plat, and supplemental application materials. 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.

II. Conditions of Approval

1. Building Permits, Engineering Plan Approvals, and Certificate of Occupancy Required:

- a. Per Molalla Municipal Code (hereinafter MMC) 17-4.2.070 and the State of Oregon Structural Specialty Code, upon approval of this Site Design Review, the applicant must submit for building permit authorization from Molalla Planning Staff and Engineering Plan Review from Molalla Public Works. Per MMC 17-4.2.070, this site design review has an approval period of 1-year from the date of approval. As a condition of approval, the Applicant/owner shall submit for both Building Permit Authorization for all proposed improvements through the City of Molalla Planning Department and Civil Plan Review through the City of Molalla Public Works Department within the 1-year approval period. Extension requests for the 1-year period are subject to the Code provisions of MMC 17-4.2.070, B.
- b. Per MMC 17-4.9.020 and the State of Oregon Structural Specialty Code, upon approval of this Site Design Review (change of use), the applicant must obtain a Certificate of Occupancy from the Clackamas County Building Official. As a condition of approval, the Applicant/owner shall obtain a Certificate of Occupancy through the Clackamas County Building Official for all onsite occupants prior to operation of the new, proposed use/occupancy.

Note: City approval is required for all Certificates of Occupancy.

2. Conditions Requiring Resolution Prior To Final Plat Approval

- a. Final Plat approval by the City of Molalla (MMC 17-4.3.090) will be required prior to filing and recording with Clackamas County (MMC 17-4.3.100).

- b. The Applicant shall submit for final plat approval within two years of preliminary plat approval or otherwise receive an extension in accordance with MMC 17-4.3.030 to prevent a lapse of the decision herein.
- c. The Applicant shall confirm a unique name for the proposed replat with the Clackamas County Surveyors office to ensure compliance with ORS Chapter 92.
- d. The applicant shall record crossover easement along the access drive for the benefit of Parcel 2 prior to final plat submission.
- e. The Applicant shall confirm an appropriate onsite fire hydrant location with the Molalla Fire Department. The Applicant shall record a public water easement for the fire line, extending to Parcel 2 as necessary. 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 a public water line, and dedication of easements.
- f. 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.
- g. 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.

3. Conditions Requiring Resolution Prior To Submitting Building Permit Applications to the Molalla Planning Department:

- a. The Applicant shall submit a utilities plan showing all public and franchise utilities extended to the eastern end of the proposed Parcel 1, as applicable (MMC 17-4.3.020(D)).

- b. The Applicant shall confirm that the turning radius for the new parking area can accommodate fire apparatus in their engineering plan submittals (MMC 17-4.3.040 D).
- c. All approaches and driveways shall meet ADA accessibility requirements where they coincide with an accessible route (MMC 17-3.3.030 D 15).
- d. A State Highway Approach Road Permit from ODOT for access to the state highway is legal for the proposed use is required. Truck turning templates shall be provided as needed to ensure vehicles can enter and exit the approach safely. Site access to the state highway is regulated by OAR 734.51 (ODOT Recommendations).
- e. 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 (ODOT Recommendations).
- f. 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 (ODOT Recommendations).
- g. The Applicant shall submit a plan with civil review plans showing truck turning radii for the largest proposed vehicle to enter the site to ensure the proposed approaches can accommodate that vehicle (MMC 17-3.3.030 D 7).
- h. All driveway approaches shall be designed and constructed consistent with the current version of the Public Works Design Standards and Transportation Systems Plan and ODOT standards (MMC 17-3.3.030 F).
- i. The Applicant shall provide striping between the northernmost row of parking and the main pedestrian east-west artery through the site (MMC 17-3.3.040 B 2).
- j. All walkways connecting to primary building entrances shall be designed consistent

with ADA requirements (MMC 17-3.3.040 B 2).

- k. The Applicant shall submit a lighting plan showing proposed lumen levels throughout the site and showing compliance with MMC 17-3.4.050 C and Dark Skies standards of MMC 21.80.
- l. No private fixture shall illuminate the adjoining public right-of-way. If the proposed western-most light fixture labeled S02 does model to illuminate the right-of-way, the Applicant may move the position of that fixture to a nearby location where it only illuminates private property (MMC 17-3.4.050 C 10).
- m. Due to safety concerns raised by the Oregon Department of Transportation regarding the two western-most parking spaces abutting the proposed building and closest to OR-213, the Applicant has elected to remove those spaces, leaving 21 proposed parking spaces. Staff finds that this standard is met. The Applicant shall either replace the removed spaces with landscaping areas or provide additional outdoor dining and pedestrian space (MMC 17-3.5.030 A).
- n. Per Molalla Fire comments, if CO2 will be used at this location, Applicant shall identify location of vessel and fill location.
- o. Separate engineering drawings reflecting the installation of public utilities will be required. All public improvements shall be completed and accepted by the Public Works Department prior to issuance of any occupancy (MMC 17-3.6.080).
 - I. 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 (MMC 17-3.6.080).
 - II. Plans submitted for review shall meet the requirements described in Section 1 of the Molalla Standard Specifications for Public Works Construction (MMC 17-3.6.080).
 - III. All public improvement designs shall meet the requirements of the Molalla Standard Specifications for Public Works Construction as amended by the Public Works Director (MMC 17-3.6.080).
 - IV. Curb, sidewalk, and bike lanes shall be constructed as necessary to be consistent with Molalla Transportation System Plan, ODOT and ADA standards (MMC 17-3.6.020).

- V. Access to public streets shall be limited to the location identified on the application materials or as required by ODOT. All accesses shall be constructed in such a manner as to eliminate turning conflicts. The proposed width for access shall meet ODOT requirements (MMC 17-3.6.020).
- VI. Roadway lighting is required on all new development. Applicant shall be required to install roadway lighting. Location and number shall be determined during design review (MMC 17-3.6.020).
- VII. Applicant proposes to connect to privately owned 6" sanitary sewer line within Molalla Market Center. Sewer line runs east/west parallel to the property within Molalla Market Center and could be extended to serve the subject parcel with owner permission. Legal agreement signed by both parties shall be provided for City records. If Application is not able to obtain agreement, Applicant will be required to extend 8" sewer main from the west side of OR-213 to their property in accordance with MMC 13.08 Sanitary Sewer (MMC 17-3.6.040).
- VIII. All utilities to the project shall be served underground services. No overhead crossings of public right of way shall be approved by the city (MMC 17-3.6.060).
- IX. 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 (MMC 17-3.6.080).
- X. 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 (MMC 17-3.6.080).

- XI. 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 (MMC 17-3.6.080).
- XII. 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 (MMC 17-3.6.080).
- XIII. For commercial and industrial 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 (MMC 17-3.6.080).
- XIV. 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 (MMC 17-3.6.080).

4. Conditions to be Met Prior To Occupancy:

- a. 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 (MMC 17-3.3.030 D 20).
- b. All landscaping, parking, lighting, and other improvements shall be installed and approved by the Planning Official prior to occupancy (MMC 17-3.5.020 B).

5. Ongoing Conditions:

- a. All contractors and subcontractors performing work on this property shall obtain and maintain a valid, current business license with the City of Molalla.
- b. All primary building entrances shall open to the sidewalk and shall conform to Americans with Disabilities Act (ADA) requirements, as applicable (MMC 17-3.2.040 D)
- c. No visual obstructions shall be placed in vision clearance areas (MMC 17-3.3.030 G).
- d. No proposed fencing shall be made of prohibited materials, as detailed in MMC 17-3.4
- e. All landscaping shall be maintained in good condition, or otherwise replaced by the property owner (MMC 17-3.4.030 G).
- f. Fences and walls shall be maintained in good condition, or otherwise replaced by the property owner (MMC 17-3.4.040 F).
- g. For the undeveloped parcel of the proposed partition, the applicant shall make appropriate improvements conforming with Division III Community Design Standards at the time of development.
- h. 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.
- i. As an ongoing condition of approval, all outdoor lighting shall be maintained in good condition, or otherwise replaced by the property owner (MMC 17-3.4.050 C).
- j. As a condition of approval, parking shall be provided consistent with ADA requirements (MMC17-3.5.030 H).
- k. Should mechanical equipment become necessary for the project, the applicant shall obtain a modification for this site design review and installation shall be consistent with the requirements of MMC 17-3.2.040 G.

- l. In the event that the total net leasable square footage on Parcel 1 and Parcel 2 becomes greater than 10,000 SF, the applicant shall provide onsite civic space pursuant to Section 17-3.2.050.

- m. The Applicant shall utilize at least three (3) trees as landscaping elements for the development of Parcel 2 (MMC 17-3.4.030 D).

Exhibit A:

City Staff's Findings of Fact for MP01-2021

Per MMC 17-4.3.070, The Planning Commission may approve, approve with conditions, or deny a preliminary plat. The Planning Commission decision shall be based on findings of compliance with all of the following approval criteria:

A. **Approval Standards.** The Planning Commission may approve, approve with conditions, or deny a preliminary plat. The Planning Commission decision shall be based on findings of compliance with all of the following approval standards:

1. The land division application shall conform to the requirements of Chapter 17-4.3;

17-4.3.020 General Requirements

17-4.3.020(A) Subdivision and Partition Approval Through Two-Step Process. Applications for subdivision or partition approval shall be processed by means of a preliminary plat evaluation and a final plat evaluation, according to the following two steps:

1. The preliminary plat must be approved before the final plat can be submitted for approval consideration; and
2. The final plat must demonstrate compliance with all conditions of approval of the preliminary plat.

FINDINGS: The Applicant's submitted application is for a preliminary plat approval. Final Plat approval by the City of Molalla (MMC 17-4.3.090) will be required prior to filing and recording with Clackamas County (MMC 17-4.3.100).

17-4.3.020(B) Compliance with ORS Chapter 92. All subdivision and partition proposals shall conform to state regulations in ORS Chapter 92 Subdivisions and Partitions.

FINDINGS: This proposal conforms to the regulations in ORS Chapter 92. The proposal meets this standard.

17-4.3.020(C) Future Re-Division Plan. When subdividing or partitioning tracts into large lots (i.e., greater than three times or 300 percent the minimum lot size allowed by the underlying land use district), the lots shall be of such size, shape, and orientation as to facilitate future re-division and extension of streets and utilities. The applicant shall submit a future re-division plan, or shadow plan, indicating how re-division of oversized lots and extension of

planned public facilities to adjacent parcels can occur in the future. (See also Section 17-4.3.040 Pre-Planning for Large Sites.)

FINDINGS: The subject parcels are located in a C-2 zone. There are no minimum lot standards within the C-2 zone, the street networks in this section of town have already been platted, and the Molalla Transportation System Plan does not identify this block for future street extensions. Staff finds that this standard does not apply.

17-4.3.020(D) Adequate Utilities. All lots created through land division shall have adequate public utilities and facilities such as streets, water, sewer, gas, and electrical systems, pursuant to Chapter 17-3.6. These systems shall be located and constructed underground where feasible.

FINDINGS: This standard is met subject to a condition of approval. The subject parcel is adjacent to OR-213 and public and franchise utilities within that right-of-way are available to serve the proposed development. Additionally, a privately owned sanitary sewer line runs east/west parallel to the property within Molalla Market Center and could be extended to serve the subject parcel with owner permission, as shown in the Applicant's submitted site plan.

As a condition of approval, the Applicant shall submit a plan showing all public and franchise utilities extended to the eastern end of the proposed Parcel 1, as applicable.

17-4.3.020(E) Adequate Drainage. *All subdivision and partition proposals shall have adequate surface water drainage facilities that reduce exposure to flood damage and improve water quality. Water quality or quantity control improvements may be required, pursuant to Chapter 17-3.6.*

FINDINGS: Existing stormwater facilities are available within the OR-213 right-of-way adjacent to the property. Stormwater management will be required of all development on the subject properties meeting all Oregon Department of Transportation (ODOT) and City of Molalla standards, as applicable. The proposal meets this standard.

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.

17-4.3.020(F) Adequate Access. All lots created or reconfigured shall have adequate vehicle access and parking, as may be required, pursuant to Chapter 17-3.3. (Ord. 2017-08 §1)

FINDINGS: This section is met subject to a condition of approval. The subject site is abutted OR-213 on its western border, which is a road under jurisdiction of ODOT. Due to existing development and the dimensions of the Applicant's property, the Applicant cannot meet ODOT spacing standards but has determined that the proposed approach location to the best the best feasible location onsite. The Applicant As part of SDR08-2021, the Applicant has proposed extending a private drive to the end of Parcel 1 to serve Parcel 2, as required. Per ODOT comments on this application (see Exhibit G for full comments), access is only being granted for Parcel 1 at this time due to potential queuing concerns for a potential drive-through on Parcel 2. Access for Parcel 2 will be evaluated at the time of development of that parcel. As a condition of approval, the applicant shall record crossover easement along the access drive for the benefit of Parcel 2 prior to final plat submission.

17-4.3.030 Preliminary Plat Approvals Process

- A. **Review of Preliminary Plat.** Preliminary plats for partitions shall be processed using the Type II procedure under Section 17-4.1.030. Subdivisions shall be processed using the Type III procedure under Section 17-4.1.040. All preliminary plats, including partitions and subdivisions, are subject to the approval standards in Section 17-4.3.070.

FINDINGS: The Applicant's submitted proposal is for a partition of one lot into two lots. It was also submitted in concurrence with a Site Design Review and Conditional Use Permit that trigger the Type III approvals process. Due to the concurrent applications, this application was processed as a Type III approval.

- B. **Preliminary Plat Approval Period.** Preliminary plat approval shall be effective for a period of two years from the date of approval. The preliminary plat shall lapse if a final plat has not been submitted or other assurance provided, pursuant to Section 17-4.3.090, within the two-year period. The Planning Commission may approve phased subdivisions, pursuant to subsection D, with an overall time frame of more than two years between preliminary and final plat approvals.

FINDINGS: This standard is met subject to a condition of approval. As a condition of approval, the Applicant shall submit for final plat approval within two years of preliminary plat approval or otherwise receive an extension in accordance with MMC 17-4.3.030 to prevent a lapse of the decision herein.

Standards C and D do not apply to this application.

17-4.3.040 Lot Size Averaging, Flag Lots, and Infill Development

- A. **Lot Size Averaging.** To allow flexibility in subdivision design and to address physical constraints, such as topography, existing development, significant trees, and other natural and built features, the approval body may grant a 20 percent modification to the

lot area and/or lot dimension (width/depth) standards in Chapter 17-2.2, provided that the overall density of the subdivision does not exceed the allowable density of the district and the approval body finds that all of the following are met:

1. Granting the modification is necessary to achieve planned housing densities, as allowed by the underlying zone, or to improve development compatibility with natural features or adjacent land uses;
2. The Planning Official may require screening, buffering, or other transitions in site design where substandard lots are proposed to abut standard- or larger-sized lots.

FINDINGS: All proposed lots meet minimum lot area and dimensions. This standard does not apply.

- B. **Flag Lots.** Flag lots may be created only when a through street cannot be extended to serve abutting uses or future development. A flag lot driveway (“flag pole”) shall serve not more than two dwelling units, including accessory dwellings and dwellings on individual lots. The City Engineer may approve additional units. The layout of flag lots, the placement of buildings on such lots, and the alignment of shared drives shall be designed so that future street connections can be made as adjacent properties develop, to the extent practicable, and in accordance with the standards of Section 17-3.6.020.D.

FINDINGS: The Applicant’s submitted application does not include flag lots. This standard does not apply.

- C. **Infill Development and Mid-Block Lanes.** Where consecutive flag lot developments or other infill development could have the effect of precluding local street extensions through a long block, the Planning Official and City Engineer may require the improvement of mid-block lanes through the block. Mid-block lanes are private drives serving more than two dwelling units with reciprocal access easements; such lanes are an alternative to requiring public right-of-way street improvements where physical site constraints preclude the development of a standard street. Mid-block lanes, at a minimum, shall be paved, have adequate storm drainage (surface retention, where feasible, is preferred), meet the construction standards for alleys, and conform to the standards of subsections D and E.

FINDINGS: No mid-block lanes are proposed nor are any practical for this development. This standard does not apply.

- D. **Emergency Vehicle Access.** A drive serving more than one lot shall have a reciprocal access and maintenance easement recorded for all lots it serves. No fence, structure, or other obstacle shall be placed within the drive area. Where required, emergency vehicle apparatus lanes, including any required turn-around, shall conform to applicable building and fire code requirements. Fire sprinklers may also be required for buildings that cannot

be fully served by fire hydrants (i.e., due to distance from hydrant or insufficient fire flow).

FINDINGS: This standard is met subject to a condition of approval. As a condition of approval, the Applicant shall confirm that the turning radius for the new parking area can accommodate fire apparatus in their engineering plan submittals.

E. **Maximum Drive Lane Length.** The maximum length of a drive serving more than one dwelling is subject to requirements of the Uniform Fire Code. (Ord. 2017-08 §1)

FINDINGS: This standard does not apply to a commercial development.

2. All proposed lots, blocks, and proposed land uses shall conform to the applicable provisions of Division II Zoning Regulations, except as modified by the provisions of Chapter 17-4.3 (e.g., lot size averaging);

17-2.2.030 Allowed Uses

Findings: The proposed use on Parcel 1 for retail coffee sales meets the “Commercial Retail Sales and Services” and is an allowed use in the C-2 General Commercial zone. Because the proposed use on Parcel 1 includes a drive-through facility a Conditional Use Permit is required in conjunction with the Site Design Review per MMC 17-2.2.030 H. The Applicant submitted a Conditional Use Permit in concurrence with this application. The Standard is met.

Use compatibility for proposed uses on Parcel 2 will be evaluated at the time of site design review.

17-2.2.040 Lot and Development Standards

Findings:

Minimum Lot Area – There is no minimum lot size in commercial zones. The proposed lots are of adequate size to accommodate commercial development. This standard is met.

Minimum Lot Width and Depth – There is no minimum lot width or depth in commercial zones. The proposed lots are of adequate size to accommodate commercial development. This standard is met.

Building and Structure Height – Maximum building height in the C-2 zone is 55ft. The height of the proposed structure is between 20ft. This standard is met.

Maximum Lot Coverage - Maximum foundation plane coverage in the C-2 zone is 100%. The existing and proposed uses cover 8.6% of Parcel 1. This standard is met.

Minimum Landscape Area % (includes required parking lot, landscaping, and required screening)

Minimum landscaped area in the C-2 zone is 5%. The proposed site plan provides a total 2,450 square feet accounting for 9.8% of Parcel 1. This standard is met.

Minimum Setbacks - 6

Front Setback Requirement: 0ft – This standard is met.

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

Alley: 3ft - This property does not abut an alley. This standard does not apply.

Adjacent to R Districts: 10ft – This proposal is not adjacent to any residential districts. This standard does not apply.

Build to Line: 0ft – The site abuts the Cascade Highway right-of-way; however, the right-of-way is not perpendicular to the south lot line. This results in the right-of-way being angled across the site. The proposed building is placed at a 90-degree angle to the south property line which results in the building being at an angle to the right-of-way. The new building is between 17.5 feet and approximately 30 feet from the new property line (after dedication) to allow for the required 10-foot utility easement. The majority of the area between the building and the street includes an outdoor dining/pedestrian area. So, while the building exceeds the 0-foot build to line it has an entrance facing the street and provides pedestrian use areas between the building, the entry and the street. This criterion is therefore met under the exceptions for new buildings (MMC 17-3.2.040 B 1).

3. Access to individual lots, and public improvements necessary to serve the development, including, but not limited to, water, sewer, and streets, shall conform to Division III Community Design Standards;

Findings: The Applicant has submitted applications for Site Design Review (SDR08-2021) and Conditional Use Permitting (CUP02-2021) for Parcel 1 concurrently with this application. The applicant proposes access from OR-213 and utility service within these applications. Conformance with Division III Community Design Standards for access and public improvements is assessed in Exhibit B, Findings of Fact for SDR08-2021 of this staff report.

The Applicant will be required to develop Parcel 2 in conformance with Division III Community Design Standards at the time of development.

4. The proposed plat name is not already recorded for another subdivision, and satisfies the provisions of ORS Chapter 92;

Findings: This standard is met subject to a condition of approval. The Applicant shall confirm a unique name for the proposed replat with the Clackamas County Surveyors office to ensure compliance with ORS Chapter 92.

5. The proposed streets, utilities, and surface water drainage facilities conform to City of Molalla adopted master plans and applicable engineering standards, and allow for transitions to existing and potential future development on adjacent lands. The preliminary plat shall identify all proposed public improvements and dedications;

Findings: These standards are met subject to conditions of approval. The findings and conditions contained within Exhibit B of this staff report require that all public improvements be designed and constructed to City of Molalla adopted master plans and applicable engineering standards. The Applicant's submitted site plan shows public utilities and drive access stubbed to the east end of Parcel 1, as required. Franchise utilities shall be stubbed to the east end of the property to facilitate future development on Parcel 2. No new streets are proposed with this partition application, nor are any planned for this area per the Molalla Transportation Systems Plan. The proposed site design review does not meet the criteria for large format development standards which would require new streets. The Applicant's submitted site plan shows sanitary sewer connection to the Molalla Market Center private line. The Applicant will be required to extend sewer from the west side of OR-213 to their property if they are unable to connect to private lines in Molalla Market Center.

The Applicant has not shown placement of a fire hydrant onsite and has not included an easement on the preliminary plat. As a condition of approval, the Applicant shall confirm an appropriate onsite fire hydrant location with the Molalla Fire Department. The Applicant shall record a public water easement for the fire line, extending to Parcel 2 as necessary. 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 a public water line, and dedication of easements.

The applicant identifies the required 4ft right-of-way dedication to the Oregon Department of Transportation and a 10ft public utility easement on their preliminary plat.

6. All proposed private common areas and improvements, if any, are identified on the preliminary plat and maintenance of such areas is assured through appropriate legal instrument;

Findings: There are no required privately held common areas required nor are any proposed with this application. This standard does not apply.

7. Evidence that any required state and federal permits, as applicable, have been obtained or can reasonably be obtained prior to development;

Findings: This standard is met subject to conditions of approval.

A State Highway Approach Road Permit from ODOT for access to the state highway is legal for the proposed use is required. Truck turning templates shall be provided as needed to ensure vehicles can enter and exit the approach safely. Site access to the state highway is regulated by OAR 734.51.

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.

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.

The Applicant shall obtain any other state or federal permits as applicable.

8. Evidence that improvements or conditions required by the City, road authority, Clackamas County, special districts, utilities, and/or other service providers, as applicable to the project, have been or can be met; and

Findings: The required improvements and/or conditions for this application will be met through conditions precedent to Final Plat Approval, Civil Review Submission, Building Permit Application, and Occupancy Permit. The proposal meets this standard.

9. The architectural standards of Section 17-3.2.030.D are met.

Findings: The Applicant has submitted applications for Site Design Review (SDR08-2021) and Conditional Use Permitting (CUP02-2021) for Parcel 1 concurrently with this application. Conformance with Division III Community Design Standards for architecture standards is assessed in Exhibit B, Findings of Fact for SDR08-2021 of this staff report.

The Applicant will be required to develop Parcel 2 in conformance with Division III Community Design Standards at the time of development.

Exhibit B:

City Staff's Findings of Fact for SDR01-2021

Per MMC 17-4.2.050, an application for Site Design Review shall be approved if the proposal meets all of the following criteria. The Planning Official, in approving the application, may impose reasonable conditions of approval, consistent with the applicable criteria;

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

Findings: The City received the Applicant's proposal on December 3, 2021 and deemed it complete in accordance with Section 17-4.2.040 on December 17, 2021.

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 proposed use on Parcel 1 for retail coffee sales meets the "Commercial Retail Sales and Services" and is an allowed use in the C-2 General Commercial zone. Because the proposed use on Parcel 1 includes a drive-through facility a Conditional Use Permit is required in conjunction with the Site Design Review per MMC 17-2.2.030 H. The Applicant submitted a Conditional Use Permit in concurrence with this application. The Standard is met.

Use compatibility for proposed uses on Parcel 2 will be evaluated at the time of site design review.

17-2.2.040 Lot and Development Standards

Findings:

Minimum Lot Area – There is no minimum lot size in commercial zones. The proposed lots are of adequate size to accommodate commercial development. This standard is met.

Minimum Lot Width and Depth – There is no minimum lot width or depth in commercial zones. The proposed lots are of adequate size to accommodate commercial development. This standard is met.

Building and Structure Height – Maximum building height in the C-2 zone is 55ft. The height of the proposed structure is between 20ft. This standard is met.

Maximum Lot Coverage - Maximum foundation plane coverage in the C-2 zone is 100%. The existing and proposed uses cover 8.6% of Parcel 1. This standard is met.

Minimum Landscape Area % (includes required parking lot, landscaping, and required screening)
Minimum landscaped area in the C-2 zone is 5%. The proposed site plan provides a total 2,450 square feet accounting for 9.8% of Parcel 1. This standard is met.

Minimum Setbacks - 6

Front Setback Requirement: 0ft – This standard is met.

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

Alley: 3ft - This property does not abut an alley. This standard does not apply.

Adjacent to R Districts: 10ft – This proposal is not adjacent to any residential districts. This standard does not apply.

Build to Line: 0ft – The site abuts the Cascade Highway right-of-way; however, the right-of-way is not perpendicular to the south lot line. This results in the right-of-way being angled across the site. The proposed building is placed at a 90-degree angle to the south property line which results in the building being at an angle to the right-of-way. The new building is between 17.5 feet and approximately 30 feet from the new property line (after dedication) to allow for the required 10-foot utility easement. The majority of the area between the building and the street includes an outdoor dining/pedestrian area. So, while the building exceeds the 0-foot build to line it has an entrance facing the street and provides pedestrian use areas between the building, the entry and the street. This criterion is therefore met under the exceptions for new buildings (MMC 17-3.2.040 B 1).

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;

The proposal will bring all onsite improvements to City Standards. Offsite improvements will bring frontages along the subject site to ODOT and City standards. Existing development patterns do not facilitate access placement that meets ODOT spacing standards. Given that the parcel had

an existing, non-conforming access and is entitled an access, ODOT and City Staff worked with the Applicant to determine the optimal access placement given existing constraints. The location, directly across from the Les Schwab Tire access and as far northward from the northernmost Molalla Market Center as possible was determined the best access location, as proposed.

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

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

- Section 17-3.2.040 Non-Residential Buildings
- Section 17-3.2.060 Drive-Up and Drive-Through Uses and Facilities
- 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

17-3.2.040 Non-Residential Buildings

A. **Purpose and Applicability.** The following requirements apply to non-residential development, including individual buildings and developments with multiple buildings such as shopping centers, office complexes, mixed-use developments, and institutional campuses. The standards are intended to create and maintain a built environment that is conducive to pedestrian accessibility, reducing dependency on the automobile for short trips, while providing civic space for employees and customers, supporting natural surveillance of public spaces, and creating human-scale design. The standards require buildings placed close to streets, with storefront windows (where applicable), with large building walls divided into smaller planes, and with architectural detailing.

Findings: This section applies to the proposed commercial development.

B. **Building Orientation.** The following standards apply to new buildings and building additions that are subject to Site Design Review. The Planning Official may approve adjustments to the standards as part of a Site Design Review approval, pursuant to Chapters 17-4.2 and 17-4.7, respectively.

1. Buildings subject to this section shall conform to the applicable build-to line standard in Table 17-2.2.040.E, as generally illustrated in Figure 17-3.2-6. The standard is met when at least 50 percent of the abutting street frontage has a building placed no

farther from at least one street property line than the build-to line in Table 17-2.2.040.E; except in the Central Commercial C-1 zone, at least 80 percent of the abutting street frontage shall have a building placed no farther from at least one street property line than the required build-to-line. The Planning Official, through Site Design Review, may waive the build to line standard where it finds that one or more of the conditions in subdivisions a through g occurs.

- a. A proposed building is adjacent to a single-family dwelling, and an increased setback promotes compatibility with the adjacent dwelling.
- b. The standards of the roadway authority preclude development at the build-to line.
- c. The applicant proposes extending an adjacent sidewalk or plaza for public use, or some other pedestrian amenity is proposed to be placed between the building and public right-of-way, pursuant to Section 17-3.2.050 and subject to Site Design Review approval.
- d. The build-to line may be increased to provide a private open space (e.g., landscaped forecourt), pursuant to Section 17-3.2.050, between a residential use in a mixed-use development (e.g., live-work building with ground floor residence) and a front or street property line.
- e. A significant tree or other environmental feature precludes strict adherence to the standard and will be retained and incorporated in the design of the project.
- f. A public utility easement or similar restricting legal condition that is outside the applicant's control makes conformance with the build-to line impracticable. In this case, the building shall instead be placed as close to the street as possible given the legal constraint, and pedestrian amenities (e.g., plaza, courtyard, landscaping, outdoor seating area, etc.) shall be provided within the street setback in said location pursuant to Section 17-3.2.050.
- g. An existing building that was lawfully created but does not conform to the above standard is proposed to be expanded and compliance with this standard is not practicable.

Findings: The site abuts the Cascade Highway right-of-way; however, the right-of-way is not perpendicular to the south lot line. This results in the right-of-way being angled across the site. The proposed building is placed at a 90-degree angle to the south property line which results in the building being at an angle to the right-of-way. The new building is between 17.5 feet and approximately 30 feet from the new property line (after dedication) to allow for the required 10-foot utility easement. The majority of the area between the building and the street includes an outdoor dining/pedestrian area. So, while the building exceeds the 0-foot build to line it has an entrance facing the street and provides pedestrian use areas between the building, the entry and the street. This standard is met under exceptions c, d, and f above.

2. Except as provided in subsections C.5 and 6, all buildings shall have at least one primary entrance (i.e., tenant entrance, lobby entrance, breezeway entrance, or

courtyard entrance) facing an abutting street (i.e., within 45 degrees of the street property line); or if the building entrance must be turned more than 45 degrees from the street (i.e., front door is on a side or rear elevation) due to the configuration of the site or similar constraints, a pedestrian walkway must connect the primary entrance to the sidewalk in conformance with Section 17-3.3.040.

Findings: The proposed building has a primary entrance on the western façade, facing OR-213. This standard is met.

3. Off-street parking, trash storage facilities, and ground-level utilities (e.g., utility vaults), and similar obstructions shall not be placed between building entrances and the street(s) to which they are oriented. To the extent practicable, such facilities shall be oriented internally to the block and accessed by alleys or driveways.

Findings: The proposal does not include any parking, trash or utilities between the building or building entrance and street. This standard is met.

4. Off-street parking shall be oriented internally to the site to the extent practicable, and shall meet the Access and Circulation requirements of Chapter 17-3.3, the Landscape and Screening requirements of Chapter 17-3.4, and the Parking and Loading requirements of Chapter 17-3.5.

Findings: The Applicant's submitted application shows parking located along the northern side of the building, abutting the northern property line, and to the rear of the building. This standard is met. Standards pertaining to further chapters will be evaluated in Staff responses to those Chapters respectively.

5. Where a development contains multiple buildings and there is insufficient street frontage to meet the above building orientation standards for all buildings on the subject site, a building's primary entrance may orient to plaza, courtyard, or similar pedestrian space containing pedestrian amenities and meeting the requirements under Section 17-3.2.050, subject to Site Design Review approval. When oriented this way, the primary entrance(s), plaza, or courtyard shall be connected to the street by a pedestrian walkway conforming to Section 17-3.3.040.

Findings: The proposal is for a single building. This standard does not apply.

- C. **Large-Format Developments.** Plans for new developments, or any phase thereof, with a total floor plate area (ground floor area of all buildings) greater than 35,000 square feet, shall meet all of the following standards in subsections C.1 through 9, as generally illustrated in Figure 17-3.2-7. The Planning Official may approve adjustments to the standards as part of a Site Design Review approval, pursuant to Chapters 17-4.2 and 17-4.7, respectively.

Findings: The proposed building is 2,140 sqft and is not part of a phased development. These standards do not apply.

D. **Primary Entrances and Windows.** The following standards, as generally illustrated in Figures 17-3.2-8 and 17.3.2-9, apply to new buildings and building additions that are subject to Site Design Review. The Planning Official may approve adjustments to the standards as part of a Site Design Review approval, pursuant to Chapters 17-4.2 and 17-4.7, respectively.

1. **All Elevations of Building.** Architectural designs shall address all elevations of a building. Building forms, detailing, materials, textures, and color shall contribute to a unified design with architectural integrity. Materials used on the front façade must turn the building corners and include at least a portion of the side elevations, consistent with the overall composition and design integrity of the building.

Findings: The Applicant's submitted architectural plans show all elevations of the proposed building and show a cohesive design. Materials from the western, street facing, façade turn the corner to side elevations. This standard is met.

2. **Pedestrian Entrances.** Ground level entrances oriented to a street shall be at least partly transparent for natural surveillance and to encourage an inviting and successful business environment. This standard may be met by providing a door with a window or windows, a transom window above the door, or sidelights beside the door. Where ATMs or other kiosks are proposed on any street-facing elevation, they shall be visible from the street for security and have a canopy, awning, or other weather protection shelter.

Findings: The Applicant's submitted architectural plans show ground level entrances with at least partial transparency. This standard is met.

3. **Corner Entrances.** Buildings on corner lots are encouraged to have corner entrances. Where a corner entrance is not provided, the building plan shall provide an architectural element or detailing (e.g., tower, beveled corner, art, special trim, etc.) that accentuates the corner location.

Findings: The Applicant's proposal is not for a corner lot. This standard does not apply.

4. **Street Level Entrances.** All primary building entrances shall open to the sidewalk and shall conform to Americans with Disabilities Act (ADA) requirements, as applicable. Primary entrances above or below grade may be allowed where ADA accessibility is provided.

Findings: This standard is met subject to a condition of approval. As a condition of approval all primary building entrances shall open to the sidewalk and shall conform to Americans with Disabilities Act (ADA) requirements, as applicable.

5. **Windows—General.** Except as approved for parking structures or accessory structures, the front/street-facing elevations of buildings shall provide display windows, windowed doors, and where applicable, transom windows to express a storefront character.

Findings: Windows and transparent entrances are provided on the street facing façade. This standard is met.

6. **Storefront Windows.** Storefront windows shall consist of framed picture or bay windows, which may be recessed. Framing shall consist of trim detailing such as piers or pilasters (sides), lintels or hoods (tops), and kick plates or bulkheads (base)—or similar detailing—consistent with a storefront character. The ground floor, street-facing elevation(s) of all buildings shall comprise at least 60 percent transparent windows, measured as a section extending the width of the street-facing elevation between the building base (or 30 inches above the sidewalk grade, whichever is less) and a plane 72 inches above the sidewalk grade.

Findings: The Applicant's submitted application shows framed picture glazed windows that account for 60% of the frontage between 30" and 72" from grade. This standard is met.

7. **Defined Upper Story(ies).** Building elevations shall contain detailing that visually defines street level building spaces (storefronts) from upper stories. The distinction between street level and upper floors shall be established, for example, through the use of awnings, canopies, belt course, or similar detailing, materials, or fenestration. Upper floors may have less window area than ground floors, but shall follow the vertical lines of the lower level piers and the horizontal definition of spandrels and any cornices. Upper floor window orientation shall primarily be vertical, or have a width that is no greater than height. Paired or grouped windows that, together, are wider than they are tall, shall be visually divided to express the vertical orientation of individual windows.

Findings: The Applicant's submitted architectural plans are for a one story building. This standard does not apply.

8. **Buildings Not Adjacent to a Street.** Buildings that are not adjacent to a street or a shopping street, such as those that are setback behind another building and those that are oriented to a civic space (e.g., internal plaza or court), shall meet the 60 percent transparency standard on all elevations abutting civic space(s) and on elevations containing a primary entrance.

Findings: The proposed building is adjacent to a street. This standard does not apply.

9. **Side and Rear Elevation Windows.** All side and rear elevations, except for zero lot line or common wall elevations, where windows are not required, shall provide not less than 30 percent transparency.

Findings: The Applicant's submitted architectural plans show that each of the non-street facing elevations have at least 30% transparency between 30" and 72" from grade.

10. **Window Trim.** At a minimum, windows shall contain trim, reveals, recesses, or similar detailing of not less than four inches in width or depth as applicable. The use of decorative detailing and ornamentation around windows (e.g., corbels, medallions, pediments, or similar features) is encouraged.

Findings: The Applicant's submitted application proposes windows with mullions that create decorative detailing versus trim around the outside of the windows. Staff finds that this standard is met.

11. **Projecting Windows, Display Cases.** Windows and display cases shall not break the front plane of the building (e.g., projecting display boxes are discouraged). For durability and aesthetic reasons, display cases, when provided, shall be flush with the building façade (not affixed to the exterior) and integrated into the building design with trim or other detailing. Window flower boxes are allowed, provided they do not encroach into the pedestrian through-zone.

Findings: The Applicant has not proposed any projecting windows or display cases. This standard does not apply.

12. **Window Exceptions.** The Planning Official may approve an exception to the above standards where existing topography makes compliance impractical. Where it is not practicable to use glass, windows for parking garages or similar structures, the building design must incorporate openings or other detailing that resembles window patterns (rhythm and scale).

Findings: The Applicant has not requested any exceptions for windows and staff finds that none are required as the proposed windows comply with window standards.

- E. **Articulation and Detailing.** The following standards apply to new buildings and building additions that are subject to Site Design Review. The Planning Official may approve adjustments to the standards as part of a Site Design Review approval, pursuant to Chapters 17-4.2 and 17-4.7, respectively.

1. **Articulation.** All building elevations that orient to a street or civic space shall have breaks in the wall plane (articulation) of not less than one break for every 30 feet of building length or width, as applicable, pursuant to the following standards, which are generally illustrated in Figures 17-3.2-10, 17-3.2-11, and 17-3.2-12.
 - a. A “break” for the purposes of this subsection is a change in wall plane of not less than 24 inches in depth. Breaks may include, but are not limited to, an offset, recess, window reveal, pilaster, frieze, pediment, cornice, parapet, gable, dormer, eave, coursing, canopy, awning, column, building base, balcony, permanent awning or canopy, marquee, or similar architectural feature.
 - b. The Planning Official through Site Design Review may approve detailing that does not meet the 24-inch break-in-wall-plane standard where it finds that proposed detailing is more consistent with the architecture of historically significant or historic-contributing buildings existing in the vicinity.
 - c. Changes in paint color and features that are not designed as permanent architectural elements, such as display cabinets, window boxes, retractable and similar mounted awnings or canopies, and other similar features, do not meet the 24-inch break-in-wall-plane standard.
 - d. Building elevations that do not orient to a street or civic space need not comply with the 24-inch break-in-wall-plane standard but should complement the overall building design.

Findings: The Applicant’s submitted architectural plans show canopies on each façade that project in excess of 24” and do not leave any area greater than 30’ without breaks. These standards are met.

2. **Change in Materials.** Elevations should incorporate changes in material that define a building’s base, middle, and top, as applicable, and create visual interest and relief. Side and rear elevations that do not face a street, public parking area, pedestrian access way, or plaza may utilize changes in texture and/or color of materials, provided that the design is consistent with the overall composition of the building.

Findings: The Applicant’s submitted architectural plans show a mix of materials and elements to provide visual interest and relief on the street facing façade. A canopy accentuates the upper portion of the pedestrian zone and a change in materials above the canopy defines the upper portion of the building. Non-street facing facades will changes in materials, canopies and colors to provide visual interest and relief. This standard is met.

3. **Horizontal Lines.** New buildings and exterior remodels shall generally follow the prominent horizontal lines existing on adjacent buildings at similar levels along the street frontage. Examples of such horizontal lines include, but are not limited to: the base below a series of storefront windows, an awning or canopy line, a belt course between building stories, a cornice, or a parapet line. Where existing adjacent

buildings do not meet the City's current building design standards, a new building may establish new horizontal lines.

Findings: The Applicant's submitted architectural plans show horizontal lines through the window and canopy profiles on all elevations. This standard is met.

4. **Ground Floor and Upper Floor Division.** A clear visual division shall be maintained between the ground level floor and upper floors, for example, through the use of a belt course, transom, awning, canopy, or similar division.

Findings: The Applicant's proposal is for a single story building. This standard does not apply.

5. **Vertical Rhythms.** New construction or front elevation remodels shall reflect a vertical orientation, either through breaks in volume or the use of surface details

Findings: The Applicant's submitted application shows vertical rhythms in the material patterning and window detailing. This standard is met.

F. **Pedestrian Shelters.** The following standards apply to new buildings and building additions that are subject to Site Design Review. The Planning Official may approve adjustments to the standards as part of a Site Design Review approval, pursuant to Chapters 17-4.2 and 17-4.7, respectively.

1. **Minimum Pedestrian Shelter Coverage.** Permanent awnings, canopies, recesses, or similar pedestrian shelters shall be provided along at least 75 percent of the ground floor elevation(s) of a building where the building abuts a sidewalk, civic space, or pedestrian access way. Pedestrian shelters used to meet the above standard shall extend at least five feet over the pedestrian area; except that the Planning Official, through Site Design Review, may reduce the above standards where it finds that existing right-of-way dimensions, easements, or building code requirements preclude standard shelters. In addition, the above standards do not apply where a building has a ground floor dwelling, as in a mixed-use development or live-work building, and the dwelling has a covered entrance. The Planning Official shall waive the above standards if the pedestrian shelter would extend into the right-of-way and the roadway authority does not allow encroachments in the right-of-way.

Findings: The Applicant's submitted application shows that of the 80.5 ft of elevations that have pedestrian walkways abutting them, 66.5 ft, or 83% of the walkway is covered by a canopy 5 ft or greater in width. This standard is met.

2. **Pedestrian Shelter Design.** Pedestrian shelters shall comply with applicable building codes, and shall be designed to be visually compatible with the architecture of a

building. If mezzanine or transom windows exist, the shelter shall be below such windows where practical. Where applicable, pedestrian shelters shall be designed to accommodate pedestrian signage (e.g., blade signs), while maintaining required vertical clearance.

Findings: Staff finds that the Applicant's proposed pedestrian shelters are designed in visual concert with the design of the building. This standard is met.

G. Mechanical Equipment.

1. **Building Walls.** Where mechanical equipment, such as utility vaults, air compressors, generators, antennae, satellite dishes, or similar equipment, is permitted on a building wall that abuts a public right-of-way or civic space, it shall be screened pursuant to Chapter 17-3.4. Standpipes, meters, vaults, and similar equipment need not be screened but shall not be placed on a front elevation when other practical alternatives exist; such equipment shall be placed on a side or rear elevation where practical.
2. **Rooftops.** Except as provided below, rooftop mechanical units shall be set back or screened behind a parapet wall so that they are not visible from any public right-of-way or civic space. Where such placement and screening is not practicable, the Planning Official may approve painting of mechanical units in lieu of screening; such painting may consist of colors that make the equipment visually subordinate to the building and adjacent buildings, if any.
3. **Ground-Mounted Mechanical Equipment.** Ground-mounted equipment, such as generators, air compressors, trash compactors, and similar equipment, shall be limited to side or rear yards and screened with fences or walls constructed of materials similar to those on adjacent buildings. Hedges, trellises, and similar plantings may also be used as screens where there is adequate air circulation and sunlight, and irrigation is provided. The City may require additional setbacks and noise attenuating equipment for compatibility with adjacent uses.

Findings: These standards are met subject to a condition of approval. The Applicant does not propose any mechanical equipment with this application. Should mechanical equipment become necessary for the project, the applicant shall obtain a modification for this site design review and installation shall be consistent with the requirements of MMC 17-3.2.040 G.

H. Civic Space. Commercial development projects shall provide civic space pursuant to Section 17-3.2.050.

Findings: The Applicant proposes less than 10,000 SF of leasable floor area. These standards do not apply to this application. In the event that the total net leasable square footage on

Parcel 1 and Parcel 2 is greater than 10,000 SF, the applicant shall provide civic space on the two parcels pursuant to Section 17-3.2.050.

- I. **Drive-Up and Drive-Through Facilities.** Drive-up and drive-through facilities shall comply with the requirements of Section 17-3.2.060. (Ord. 2017-08 §1)

Findings: The Applicant's submitted application includes a Drive-Up and Drive-Through Facility. These standards will apply.

17-3.2.060 Drive-Up and Drive-Through Uses and Facilities

- B. **Standards.** Drive-up and drive-through facilities (i.e., driveway queuing areas, customer service windows, teller machines, kiosks, drop-boxes, or similar facilities) shall meet all of the following standards, as generally illustrated in Figure 17-3.2-13:

1. The drive-up or drive-through facility shall orient to and receive access from a driveway that is internal to the development and not a street, as generally illustrated.

Findings: The Applicant's submitted site plan shows a drive aisle that is internal to the site. This standard is met.

2. The drive-up or drive-through portion of the establishment or drive-through window shall not be oriented to street corner.

Findings: The Applicant's submitted site plan shows a drive-through window of the proposed project is on the east building façade. The east façade is the façade opposite the right-of-way. This criterion is met as the drive-up window is on the façade opposite the right-of-way and therefore does not face a street.

3. The entry into a drive-up or drive-through portion of the establishment or drive-through window shall be located a sufficient distance from a street right-of-way so as not to allow for queue into a street right-of-way during any time of the year. Applicant shall provide a section within the Traffic Impact Analysis or supply the City with a traffic engineer's report demonstrating that the drive-up or drive-through will have no impact to the street right-of-way.
4. Drive-up and drive-through queuing areas shall be designed so that vehicles will not obstruct any street, fire lane, walkway, bike lane, or sidewalk.

Findings: The Applicant's submitted site plan shows that the entry to the drive-up queue is located approximately 93.5 feet from the right-of-way and approximately 301 feet of queue length is provided. The Applicant's submitted Traffic Impact Analysis includes analysis of the

drive-through location and queue and demonstrates there will be no adverse impacts on the right-of-way.

The Applicant's submitted site plan shows a pedestrian crossing within the exit of the queue lane. The Applicant's narrative states that this portion of the pedestrian walkway will be raised to ensure its visibility and putting the crossing in the exit lane ensures that it will not be substantially obstructed by the queue itself. This standard is met.

These standards are met.

5. In the General Commercial C-2 district, a new drive-up or drive-through facility must comply with the access control distance requirements identified in the City's Transportation System Plan in relation to existing drive-up or drive-through facilities.

Findings: The Applicant's proposed project is within the C-2 zoning district. The Applicant's submitted TIA looks at the proposed drive-throughs compliance with transportation related regulations and has found no issues. This standard is 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: This condition is met subject to a condition of approval. The Applicant's submitted application shows that the applicant proposes access from OR-213 and is under the jurisdiction of the Oregon Department of Transportation (ODOT). As a condition of approval, the Applicant shall obtain an approach permit from ODOT prior to submission of building permits to the City of Molalla.

- 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: The Applicant submitted a Traffic Impact Study prepared by a Registered Engineer and addressing the appropriate standards as part of the 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 subject property's only street frontage is to OR-213, from which the Applicant proposes a single access. 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: The subject property is adjacent to OR-213, which is under ODOT jurisdiction. Due to existing access placements on neighboring properties, there is no possible placement for the proposed approach within the subject site that would meet required access separation requirements. In pre-application meetings, ODOT recommended an access location that was directly across from the Les Schwab access on the west side of OR-213 and as far from the Molalla Market Center access as feasible on the site. The Applicant's submitted site plan shows the proposed access in that location. This standard is met.

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 has proposed a paved driveway and shall be designed to meet all Molalla Public Works Design Standards. 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: Only one access to OR-213 is proposed by the Applicant. ODOT comments (see exhibit G) did not recommend limitations to directional travel or other mitigation measures. 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: This standard is met subject to a condition of approval. The Applicant's submitted application shows that the proposed driveway extends through Parcel 1 to Parcel 2. As a condition of approval, the applicant shall record crossover easement along the access drive for the benefit of Parcel 2 prior to final plat submission for MP01-2021.

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 a condition of approval. As a condition of approval, the Applicant shall confirm that the turning radius for the new parking area can accommodate fire apparatus in their engineering plan submittals.

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

Findings: This standard is met subject to a condition of approval. The Applicant's submitted narrative states that the site does not anticipate deliveries from semi-trucks. As a condition of approval, the Applicant shall submit a plan with civil review plans showing truck turning radii for the largest proposed vehicle to enter the site to ensure the proposed approaches can accommodate that vehicle.

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.
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: All proposed off-street parking and drive-through facilities are interior to the site and the submitted TIA shows that no queuing will enter the right-of-way. These standards are 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 application shows a 26' wide approach, which is designed to accommodate trucks and emergency vehicles and is consistent with Molalla Public Works Standards. 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: Neither the City Engineer nor the roadway authority recommend any traffic calming features, nor are any proposed. 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: The Applicant's proposal does not include construction of approaches along acceleration or deceleration lanes or along tapered portions of the 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: The Applicant's proposal does not include any 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.

Findings: The Applicant's proposal includes a new sidewalk within the right-of-way that meets City and ODOT standards for width. This standard is met.

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: This standard is met subject to a condition of approval. As a condition of approval, all approaches and driveways shall meet ADA accessibility requirements where they coincide with an accessible route.

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: No changes are required to the proposed configuration and design of the approach. This standard is met.

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 condition is met subject to a condition of approval. The Applicant's submitted application shows that the applicant proposes access from OR-213 and is under the jurisdiction of the Oregon Department of Transportation (ODOT). As a condition of approval, the Applicant shall obtain an approach permit from ODOT prior to submission of building permits to the City of Molalla.

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.

Findings: These standards are met subject to a condition of approval. The Applicants proposed approach crosses an existing storm main within the OR-213 right of way under the jurisdiction of ODOT. The Applicant shall obtain all permits necessary from ODOT for crossing, working around, and connection to ODOT storm facilities prior to construction.

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: These standards are met subject to a condition of approval. As a condition of approval, 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.

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 submitted a stormwater drainage plan with their application package. Onsite private storm system shall comply with plumbing code requirements. The detention and flow control facilities shall be reviewed, permitted, and inspected by Molalla Public Works. The onsite storm conveyance system shall be reviewed and inspected by Clackamas County Building under a plumbing permit. Additional stormwater analysis is provided in Staff responses to Section 17-3.6.050. Stormwater facilities adjacent to the property along OR-213 are under the jurisdiction of ODOT and the Applicant will be required to obtain all permitting for connection to ODOT facilities.

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: These standards are met subject to a condition of approval. The subject property is adjacent to OR-213, which is under ODOT jurisdiction. Due to existing access placements on neighboring properties, there is no possible placement for the proposed approach within the subject site that would meet required access separation requirements. In pre-application meetings, ODOT recommended an access location that was directly across from the Les Schwab access on the west side of OR-213 and as far from the Molalla Market Center access as possible on the site. The Applicant's submitted site plan shows the proposed access in that location. This standard is met pending ODOT comments. As a condition of approval, all driveway approaches shall be designed and constructed consistent with the current version of the Public Works Design Standards and Transportation Systems Plan and ODOT standards.

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: This standard is met subject to conditions of approval. 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 (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: This standard is met.

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 condition is met subject to a condition of approval. The Applicant’s submitted application shows that the applicant proposes access from OR-213 and is under the jurisdiction of the Oregon Department of Transportation (ODOT). As a condition of approval, the Applicant shall obtain an approach permit from ODOT prior to submission of building permits to the City of Molalla.

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 along the OR-213 frontage and throughout the site. The onsite network connecting the public sidewalk to the proposed building, proposed parking, and extends to Parcel 2 for future 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 conditions of approval. Proposed sidewalks form a direct connection between the building, parking, and future phases. The walkway deviates only to avoid the drive-up window and resolves at a safer crossing point several yards to the north, at the exit of the drive-in queue. A place where safety could be enhanced is for pedestrian crossings across the drive aisle from the northernmost row of parking. As a condition of approval, the Applicant shall provide striping between the northernmost row of parking and the main pedestrian east-west artery through the site.

As a condition of approval, all walkways connecting to primary building entrances shall be designed consistent 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 narrative states that the proposed walkway shall be raised from vehicle maneuvering areas with the exception of drive aisle crossings. 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.

Response: The Applicant's submitted site plan shows crosswalks at all intersections with the proposed drive aisles. 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 proposed sidewalks and walkways that are at least 6ft in width and the submitted narrative states that they will be designed with appropriate materials to meet standards of this code. 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: No multi-use pathway are proposed. 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.

Findings: The Applicant's submitted landscaping plan shows that all areas of Parcel 1 that are not developed with buildings, vehicular areas or pedestrian areas will be landscaped. This standard is met.

- 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 landscaping plan shows 2,450 SF of landscaping. Parcel 1 is 24,728 SF. This accounts for 9.9% landscaping coverage which meets the 5% standard for commercial zones in Tables 17-2.2.040.E. This standard is 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: These standards are met subject to a condition of approval. Applicant's submitted landscaping plan shows locally adapted plants that meet size specifications. The plan is compliant with coverage specifications. These standards are met.

The Applicant's submitted landscaping plan proposes removing 7 existing trees on Parcel 1 and 3 existing trees on Parcel 2. The Applicant's submitted landscaping plan shows 10 new trees planted on Parcel 1 as part of this application. Staff recommends granting approval of the Applicant's tree removal plan as part of the site design review approval as it is consistent with the tree retention criteria of MMC 21.90.020 Tree retention. However, the replanted

trees on Parcel 1 do not credit Parcel 2. As a condition of approval, the Applicant shall utilize at least three (3) trees as landscaping elements for the development of Parcel 2.

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 property is not in the C-1 zone. These standards do 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 8,303 SF dedicated to parking and vehicle maneuvering areas. Staff finds that substantially more than 830 SF of landscaping, greater than 10%, is placed within vehicle maneuvering areas. Five trees are proposed within the vehicle maneuvering areas, exceeding the two required trees for 23 parking spaces by this section. 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 Applicant's submitted landscaping plans show 23 parking spaces, to be reduced to 21 spaces to comply with ODOT recommendations. No parking rows have more than 10 contiguous spaces and trees are provided on the perimeter of parking rows throughout the site. 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 Applicant's submitted landscaping plan shows that parking landscaping areas not planted with trees have proposed shrubs and groundcover that cover at least 50% of the landscaping area. 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 narrative states that areas around parking stalls will be curbed to protect landscaping areas. 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 narrative states that any trees planted in paved areas will be installed with root barriers. 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 application does not include any outdoor storage areas. This standard does not apply.

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 landscaping plan shows that all parking areas are screened by evergreen plants. 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: Staff does not propose additional requirements for screening with this application.

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

Findings: This standard 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

- A. **Purpose.** This section provides general development standards for fences, and walls that are not part of a building, such as screening walls and retaining walls.
- B. **Applicability.** Section 17-3.4.040 applies to all fences, and to walls that are not part of a building, including modifications to existing fences and walls.

Findings: The Applicant's proposal includes a retaining wall near the north property line to which this section applies.

- C. **Height.**
 1. **Residential Zones.**

Findings: The Applicant's proposal is in a non-residential zone. These standards do not apply.

2. **Non-Residential Zones.** Fences and freestanding walls (i.e., exclusive of building walls) for non-residential uses shall not exceed the following height 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 for properties located within an industrial, public, or institutional zone:
 - (1) Where approved by the City Planning Official, a fence constructed of open chain link or other “see-through” composition that allows 90 percent light transmission may reach a height of up to eight feet.
 - b. Within an Interior Side or Rear Yard Setback. Eight 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.

Findings: The proposed retaining wall is within the interior/side of the property. The Applicant’s submitted narrative states that maximum height of the proposed wall is 3.68 feet. These standards are met.

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.

Findings: No fences and walls are proposed in vision clearance areas as a part of this application. This standard is met.

- 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.

Findings: No prohibited materials are proposed in the construction of the proposed wall. This standard is met.

- 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.

Findings: The proposed retaining wall for this project shall be approved as part of this site design review.

F. **Maintenance.** Fences and walls shall be maintained in good condition, or otherwise replaced by the property owner. (Ord. 2017-08 §1)

Findings: This standard is met subject to a condition of approval. As an ongoing condition of approval, fences and walls shall be maintained in good condition, or otherwise replaced by the property owner.

17-3.4.050 Outdoor Lighting

A. **Purpose.** This section contains regulations requiring adequate levels of outdoor lighting while minimizing negative impacts of light pollution.

B. **Applicability.** All outdoor lighting shall comply with the standards of this section.

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 specifications show no proposed poles over 20 feet in height. 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 shows no proposed poles over walkways with less than 8 feet 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: This standard is met subject to a condition of approval. The Applicant states in their narrative that they intend to meet this standards. As a condition of approval, the Applicant shall submit a lighting plan showing proposed lumen levels throughout the site and showing compliance with MMC 17-3.4.050 C and Dark Skies standards of MMC 21.80.

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 specifications show no fixtures that direct light downwards with cutoff and shielding toward the night sky. This standard is met.

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.

Findings: These standards are met subject to a condition of approval. The Applicant states in their narrative that they intend to meet these standards. As a condition of approval, the Applicant shall submit a lighting plan showing proposed lumen levels throughout the site and showing compliance with MMC 17-3.4.050 C and Dark Skies standards of MMC 21.80.

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.

Findings: This standard is met subject to a condition of approval. There is one parking pole like labeled as S02 on the Applicant's submitted lighting plan. The Applicant's submitted narrative states that the parking lights are over 2000 lumens. As a condition of approval, no private fixture shall illuminate the adjoining public right-of-way. If the proposed western-most light fixture labeled S02 does model to illuminate the right-of-way, the Applicant may

move the position of that fixture to a nearby location where it only illuminates private property.

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 does not include lighting standards within the pedestrian walkway. 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: This Applicant's submitted lighting specifications show lighting that are intended for outdoor use. Applicant states in their narrative that they will install lighting to manufacturers specifications. This standard is met.

- 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. (Ord. 2017-08 §1)

Findings: These standards are met subject to a condition of approval. As an ongoing condition of approval, all outdoor lighting shall be maintained in good condition, or otherwise replaced by the property owner.

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.
- 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: These standards are met subject to a condition of approval. As a condition of approval, all landscaping, parking, lighting, and other improvements 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: Only one restaurant tenant is considered in the evaluation of parking for this proposal. There are no accessory uses. Parking spaces are intended for temporary vehicle storage uses only.

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.

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: Staff finds that the proposed parking spaces are provided for customers and employees of the site and that the proposed parking lot is on site and closer than 800 ft from primary pedestrian entrances. These standards are 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: There is no proposed parking within the right-of-way. 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 B Exceptions, which includes a Parking Demand Analysis option.

Findings: This standard is met subject to a condition of approval. Staff finds that the Applicant is providing parking for 2,140 SF of indoor dining space and 840 SF of outdoor space dedicated dining. Minimum parking allowances for the site is 15 vehicular stalls. The Applicant's proposal includes 23 parking stalls.

Due to safety concerns raised by the Oregon Department of Transportation regarding the two western-most parking spaces abutting the proposed building and closest to OR-213, the Applicant has elected to remove those spaces, leaving 21 proposed parking spaces. Staff finds that this standard is met. As a condition of approval, the Applicant shall either replace the removed spaces with landscaping areas or provide additional outdoor dining and pedestrian space.

B. **Carpool and Vanpool Parking Requirements.**

2. 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.
3. Of the total spaces available for employee, student, and commuter parking, at least five percent, but not fewer than two, shall be designated for exclusive carpool and vanpool parking.
4. Carpool and vanpool parking spaces shall be located closer to the main employee, student or commuter entrance than all other parking spaces with the exception of ADA parking spaces.
5. Required carpool/vanpool spaces shall be clearly marked "Reserved—Carpool/Vanpool Only."

Findings: The submitted proposal is for a commercial use with fewer than 50 parking spaces. No carpool or vanpool spaces have been proposed. This standard does not apply.

C. Exceptions and Reductions to Off-Street Parking.

Findings: The Applicant has not requested any off-street parking exceptions and Staff finds that no exceptions are necessary to meet compliance with this code. This standard does not apply.

- 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: Staff finds that the proposal has no available adjacent off-street parking, which allows for a maximum number of parking stalls that is 1.5x minimum requirements. Maximum parking standards for the proposed development are 23 vehicle stalls. Accounting for the two-space reduction in parking to comply with ODOT spacing regulations between parking stalls and the right-of-way, the Applicant has proposed 21 vehicle stalls. 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: The Applicant has not requested any shared parking arrangements. 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: All proposed stalls are at a 90 degree angle from the drive aisle. MMC Table 17-3.5.030 F requires that 90 degree angled spaces, as proposed, have at least:

18' stall depth.

8.5' stall curb width

23' drive aisle (2 way).

The Applicant's submitted site plan shows 20' stall depths, 9' stall widths, and a 23' drive aisle. This standard is met.

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 not requested any modifications to parking area dimensions and Staff finds that no adjustments are necessary to meet compliance with this code. This standard does not apply.

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: This standard is met subject to a condition of approval. As a condition of approval, parking shall be provided consistent with ADA requirements.

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 standard 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.

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.

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

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 plan shows 5 staple racks. The racks are provided onsite, northwest of the building and adjacent to the proposed sidewalk along OR-213. With 21 proposed on-site vehicle spaces, parking for 5 bicycles is required. The proposed bicycle parking area does not impede pedestrian traffic nor does it impede vision. Bicycle parking is in close proximity to the primary retail entrances. These standards are met.

17-3.5.040 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.
- B. **Applicability.** Section 17-3.5.050 applies to uses that are expected to have service or delivery truck visits. It applies only to uses visited by trucks with a 40-foot or longer wheelbase, at a frequency of one or more vehicles per week. The Planning Official shall determine through a Type I review the number, size, and location of required loading areas, if any.

Findings: The Applicant has not proposed any loading areas nor are any required for the proposed coffee use as no shipments are expected by trucks with a wheelbase of 40ft or longer. These criteria do not apply.

Chapter 17-3.6 Public Facilities

17-3.6.020 Transportation Standards

Findings: Transportation standards are met subject to conditions of approval.

1. OR 213: OR 213 is an arterial street under ODOT jurisdiction. Applicant is proposing a shared highway access for the two proposed parcels from OR-213. The property does not have a long enough frontage to facilitate an access that meets ODOT and City spacing standards. The proposed access is aligned with the Les Schwab access on the western side of OR 213 to minimize turning movement conflicts and was placed the maximum possible distance from the existing Molalla Market Center access. Access to the State highway is regulated by OAR 734.51. Applicant is required to obtain a State Highway Approach Road Permit; donate right of way to ODOT to implement the OR 213 cross section in the city's TSP, construct frontage improvements consistent with the TSP, obtain permits for work in the ODOT right of way and eliminate all parking spaces a minimum of 30ft from the new highway right of way line.

2. The proposed change in use will add trips and the threshold for a traffic impact analysis is met. A TIA was submitted with this application and receives City approval with this site design review.
3. Right-of-way Dedications/Donations: On ODOT right-of-way, applicant will be required to donate sufficient right-of-way along variable width improvements and construct curb, sidewalk, and bike lanes as necessary to be consistent with Molalla TSP, ODOT and ADA 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.

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.

4. Access to public streets shall be limited to the location identified on the application materials or as required by ODOT. All accesses shall be constructed in such a manner as to eliminate turning conflicts. The proposed width for access shall meet ODOT requirements.
5. 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.
6. 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.
7. Roadway lighting is required on all new development. Applicant shall be required to install roadway lighting. Location and number shall be determined during design review.
8. 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.

9. A State Highway Approach Road Permit from ODOT for access to the state highway is legal for the proposed use is required. Truck turning templates shall be provided as needed to ensure vehicles can enter and exit the approach safely. Site access to the state highway is regulated by OAR 734.51. For application information go to <http://www.oregon.gov/ODOT/HWY/ACCESSMGT/Pages/Application-Forms.aspx>.

Note: It may take 2 to 3 months to process a State Highway Approach Road Permit.

10.

17-3.6.030 Public Use Areas

Findings: No public use areas are proposed with this application. These standards do not apply.

17-3.6.040 Sanitary Sewer and Water Service Improvements

Sanitary:

Applicant proposes to connect to privately owned 6" sanitary sewer line within Molalla Market Center. Sewer line runs east/west parallel to the property within Molalla Market Center and could be extended to serve the subject parcel with owner permission. Legal agreement signed by both parties shall be provided for City records. If Application is not able to obtain agreement, Applicant will be required to extend 8" sewer main from the west side of OR-213 to their property in accordance with MMC 13.08 Sanitary Sewer.

Water:

A 12-inch water main exists on Hwy 213 and will serve this development. Extensions for fire protection may be required and all public water lines shall be within a public waterline easement on formats approved by the Public Works Department. In accordance with MMC 13.04 Water.

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 a public water line, and dedication of easements.

17-3.6.050 Storm Drainage and Surface Water Management Facilities

Findings: Applicant proposes to collect and detain all stormwater onsite and discharge to ODOT facilities. Connection to ODOT facilities shall comply with all ODOT 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 in Accordance with MMC 13.13 Surface Water Management. The onsite storm conveyance system shall be reviewed and inspected by Clackamas County Building under a plumbing permit. The connection to the ODOT facilities shall be reviewed and permitted by ODOT including water quality requirements.

Per comments from ODOT, 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.

17-3.6.060 Utilities

Findings: Utilities standards are met subject to a condition of approval. All utilities to the project shall be served underground services. No overhead crossings of public right of way shall be approved by the city.

17-3.6.070 Easements

Findings: Dedication of a 10 ft public utility easement is required along OR-213. The Applicant has not shown placement of a fire hydrant onsite and has not included an easement on the preliminary plat. As a condition of approval, the Applicant shall confirm an appropriate onsite fire hydrant location with the Molalla Fire Department. The Applicant shall record a public water easement for the fire line, extending to Parcel 2 as necessary. 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 a public water line, and dedication of easements.

17-3.6.80 Construction Plan Approval

Findings: Construction Plan Approval standards are met subject to conditions of approval. 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 public utilities will be required. All public improvements shall be completed and accepted by the Public Works Department prior to issuance of any occupancy.

City of Molalla Construction plan approval requirements include:

- A. For commercial and industrial 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.
- B. 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.
- C. 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.
- D. 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.
- E. Plans submitted for review shall meet the requirements described in Section 1 of the Molalla Standard Specifications for Public Works Construction.
- F. 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.

- G. 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.
 - H. All public improvement designs shall meet the requirements of the Molalla Standard Specifications for Public Works Construction as amended by the Public Works Director.
 - I. 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.
 - J. 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.
- 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: The proposed coffee and drive-through uses are not anticipated to create adverse impacts to adjacent properties. Impacts are anticipated to be similar to present use of the site as a general contracting office. The Applicant has proposed vegetative

screening all property borders adjacent to existing uses to prevent headlight glare from the parking lot.

- 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 standards, may be required prior to issuance of building permits. (Ord. 2017-08 §1)

Findings: Staff is not aware of any prior applicable land use decisions. This standard is met.

Exhibit C:
Findings of Fact for CUP02-2021

17-4.4.040 Criteria, Standards, and Conditions of Approval

Findings: The Applicant's submitted application included proposed drive-through and outdoor dining area uses, which met the criteria for an outdoor per MMC 17-2.2.030 Allowed Uses H Outdoor Uses and Unenclosed Activities. These uses trigger the requirement for a conditional use permit. The Applicant's conditional use permit may be granted approval in conjunction with the site design review. Applicable criteria for inclusion and staff responses are as follows:

The Planning Commission shall approve, approve with conditions, or deny an application for a conditional use, including requests to enlarge or alter a conditional use, based on findings of fact with respect to all of the criteria and standards in subsections A and B.

A. Use Criteria.

1. The site size, dimensions, location, topography, and access are adequate for the needs of the proposed use, considering the proposed building mass, parking, traffic, noise, vibration, exhaust/emissions, light, glare, erosion, odor, dust, visibility, safety, and aesthetic considerations;

Findings: The Applicant's proposed design met all applicable zoning and design criteria subject to the conditions found in Exhibits A and B of this staff report. Staff finds the site suitable for the proposed development.

2. The negative impacts of the proposed use, if any, on adjacent properties and on the public can be mitigated through application of other code standards, or other reasonable conditions of approval;

Findings: The Applicant has proposed vegetative screening between vehicle maneuvering areas and parking areas and adjacent properties to limit impacts of glare. The Applicant submitted a Traffic Impact Analysis showing the proposed development would not cause substantial stress to existing roadways and intersections. Staff does not anticipate additional impacts from this use but recommends "as necessary" review after one year of issuance of this conditional use permit to address concerns that may arise within the community.

3. All required public facilities, including water, sanitary sewer, and streets, have adequate capacity or are to be improved to serve the proposal, consistent with City standards; and

Findings: The Applicant's proposed utility improvements met all applicable criteria for utilities and streets subject to the conditions found in Exhibits A and B of this staff report.

4. A conditional use permit shall not allow a use that is prohibited or not expressly allowed under Division II; nor shall a conditional use permit grant a variance without a variance application being reviewed with the conditional use application.

Findings: The Applicant's proposed use of coffee retail with a drive-through facility in an allowed use under MMC Chapter 17, Division II.

- B. **Conditions of Approval.** The City may impose conditions that are found necessary to ensure that the use is compatible with other uses in the vicinity, and that the negative impact of the proposed use on the surrounding uses and public facilities is minimized. These conditions include, but are not limited to, one or more of the following:

Findings: The subject property is surrounded by commercial and industrial land and Staff does not anticipate that the proposed outdoor dining and drive-through uses will create adverse effects on existing land uses that would require additional mitigation to conditions required through the site design review process (Exhibit B) and mitigation measures proposed by the Applicant.

Exhibit D:

Consolidated Application Package For SDR08-2021, MP01-2021, and CUP02-2021



Planning & Community Development
 117 N. Molalla Avenue
 Molalla, OR. 97038
 (503) 759-0219
 Fax: (503) 829-3676

<i>FOR OFFICE USE ONLY:</i>	
Planning File No. : _____	City Approval: _____
Date Received: _____	Title _____
Fee: _____	Date: _____
Land Use Type: II	Fee Paid: _____
Received by: _____	

APPLICATION FOR LAND USE ACTION

Type of Land Use Action Requested: (check all that apply)

- | | |
|--|---|
| <input type="checkbox"/> Annexation | <input checked="" type="checkbox"/> Conditional Use |
| <input type="checkbox"/> Plan Amendment (Proposed Zone _____) | <input checked="" type="checkbox"/> Partition (# of lots <u>two (2)</u>) |
| <input type="checkbox"/> Planned Unit Development | <input type="checkbox"/> Subdivision (# of lots _____) |
| <input checked="" type="checkbox"/> Site Design Review | <input type="checkbox"/> Other: _____ |
| <input type="checkbox"/> Variance (list standards to be varied in description) | |

Owner/Applicant:

Applicant: Jennifer L. Rinkus Phone: 503.546.1623
 Applicant Address: 2410 N. Lombard St, Portland, OR 97217 Email: jenniferr@baysingerpartners.com
 Owner: John Reinholt (contract purchaser) Phone: 971.404.5447
 Owner Address: 2150 Alpine Dr, West Linn, OR 97068 Email: john@retailcap.com
 Contact for additional info: _____

Property Information:

Address: 31330 S. Hwy 213, Molalla, OR 97038
 Assessors _____
 Map/Taxlot #: 01088851; 52E07A 02400
 Current Use of _____ Zoning _____
 Site: vacant Designation: C-2 (General Commercial)
 Intended Use: fast food with drive-through

Proposed Action:

Site Design Review, Conditional Use Review and Lot Partition for creation of two (2) lots, construction of an approximately 2,140 square building with drive-through for a coffee use tenant.

Proposed Use: fast food (coffee) with drive-through

Proposed No. of Phases (one each year): 1

Authorizing Signatures:

I hereby certify that the information on this application and attachments are correct and that the property affected by this application is in the exclusive ownership or control of the applicant, or that the applicant has the consent of all partners in ownership of the affected property. An authorization letter from the property owner has been attached in the event that the owner's signature has not been provided below.

Property Owner(s):

John Reinholt

DocuSigned by:
John Reinholt
62620FB805844EF...

Print or Type

Signature

Print or Type

Signature

Applicant(s) or Authorized Agent:

J. L. Rinkus

Print or Type

Signature

Print or Type

Signature

The following materials must be submitted with your application or it will not be accepted at the counter. Once taken at the counter, the City has up to 30 days to review the materials submitted to determine if we have everything we need to complete the review. Applicant can verify submittal includes specific materials necessary for the application per checklist.

- 3 Copies of Application Form*** completely filled out and signed by the property owner (or person with authority to make decisions on the property).
- Copy of Deed** to verify ownership, easements, etc.
- At least 3 folded** sets of plans*
- At least 3 copies** of narrative addressing application criteria*
- Fee** (along with calculations utilized to determine fee if applicable)

***Please Note** that the required numbers of copies identified on the checklist are required for completeness; however, upon initial submittal applicants are encouraged to submit only 3 copies for completeness review. Prior to completeness, the required number of copies identified on the checklist and one full electronic copy will be required to be submitted.

Entitlement Submittals

- **Type II:**
 - **Preliminary Plat (Lot Partition)**
- **Type III**
 - **Conditional Use**
 - **Site Design Review**

For John Reinholt (contract purchaser)
Pensco Trust Co (owner)

Parcel 52E07A 02400
31330 S. Hwy 213, Molalla, OR 97038

Submitted to:

City of Molalla
Planning Department
117 N. Molalla Ave.
Molalla, OR 97038

Table of Contents

I. Exhibits 3

II. Project Team (Hotel and Hotel pad site) 4

III. Site Data 5

IV. Site/Project History 7

V. Proposed Project Summary 7

VI. Project Narrative 8

 Chapter 17-3.2 Building Orientation and Design 8

 Chapter 17-3.3 Access and Circulation 19

 Chapter 17-3.4 Landscaping, Fences and Walls, Outdoor Lighting 26

 Chapter 17-3.5 Parking and Loading 35

 Chapter 17-3.6 Public Facilities 42

 Chapter 17-4.2 Site Design Review 55

 Chapter 17-4.3 Land Divisions and Property Line Adjustments 60

 Chapter 17-4.4 Conditional Use Permits 66

I. Exhibits

Within Narrative

Figure 1: Site Vicinity Map 5
 Figure 2: Zoning Map 6

Separate From Narrative

Application Forms and Checklists

1. Application

Documents

2. Narrative
3. Deed/Title Report
4. Geotechnical Report
5. Stormwater Report
6. Traffic Impact Study
7. Lighting Cut Sheets

Plans

8. Civil
 - C0.1 General Notes
 - C0.1 Existing Conditions Plan
 - C.03 Demo Plan
 - C1.0 Hardscape Plan
 - C2.0 Grading Plan
 - C3.0 Utility Plan
 - C4.0 Details
 - C4.1 Details
 - C4.2 Details
 - C4.3 Details

9. Preliminary Plat

10. Landscape
 - L1.0 Planting Plan
 - L2.0 Landscape Details
 - L3.0 Landscape & IR Specs

11. Architectural Plans
 - A101 Site Plan
 - A102 Site Lighting Plan
 - A201 Rendered elevations, colors and materials board

II. Project Team (Hotel and Hotel pad site)

Architect:	Baysinger Partners Architecture 1006 SE Grand Ave #300 Portland, OR 97214 Contact: William M. Ruecker, AIA 503.546.1614 (direct) billr@baysingerpartners.com
Planner:	Baysinger Partners Architecture 1006 SE Grand Ave #300 Portland, OR 97214 Contact: Jennifer L. Rinkus 503.546.1623 (direct) jenniferr@baysingerpartners.com
Property Owner: (Contract Purchaser)	Pensco Trust Co PO Box 173859 Denver, CO 80217 Contact: Joyce Ryan Phone - unknown Email - unknown
Property Owner: (Contract Purchaser)	2150 Alpine Dr. West Linn, OR 97068 Contact: John Reinholt 971.404.5447 (phone) john@retailcap.com
Civil Consultant:	AAI Engineering 4875 SW Griffith Drive, Suite 100 Beaverton, OR 97005 Contact: Craig Harris 503.348.5064 (phone) craigh@aaieng.com
Landscape Architect:	AAI Engineering 4875 SW Griffith Drive, Suite 100 Beaverton, OR 97005 Contact: Teresa Long 503.352.7685 (phone) teresal@aaieng.com
Traffic Engineer:	Lancaster Mobley 321 SW 4th Avenue, Suite 400 Portland, OR 97204 Contact: Jennifer Danziger, PE 503.248.0313 x327 jenniferr@lancastermobley.com

III. Site Data

Site Location: 31330 S. Hwy 213, Molalla, OR 97038
Parcel #: 01088851
Tax Map and Lot #: 52E07A 02400

Site Size: 42,475 square foot
582 square foot dedication
41,893 square foot (after dedication)
* Parcel 1 – 24,728 square feet
* Parcel 2 – 17,166 square feet

Zoning Designation: C-2 (General Commercial)



Figure 1: Site Vicinity Map



Zoning Districts

Wetlands	Light Industrial (M-1)	Low Density Residential (R-1)	Public and Semi Public (PSP)
Central Commercial (C-1)	Heavy Industrial (M-2)	Medium Density Residential (R-2)	Rural Residential Farm Forest 5 Acre (RRFF5)
General Commercial (C-2)	Rural Industrial (RI)	Medium-High Density Residential (R-3)	Exclusive Farmland Use (EFU)

Other Map Features

City Boundary	Named Seasonal Streams	City Owned Parcels
Urban Grown Boundary	Riparian Corridor	MRSD
	Wetlands	

Figure 2: Zoning Map

IV. Site/Project History

- Pre-application Meeting PRE13-2021 on September 8, 2021.

V. Proposed Project Summary

The project will construct a 2,140 square foot single story building with drive-through for occupancy by a single coffee tenant. The project includes 23 parking stalls, landscaping, outdoor dining area, and trash enclosure. The project will also divide the single parcel into two (2) lots, provide a right-of-way dedication and right-of-way improvements.

VI. Project Narrative

Chapter 17-3.2 Building Orientation and Design

17-2.2.030 Allowed Uses

Uses	Commercial Zones
	C-2
C. Commercial Uses	
Commercial Retail Sales and Services	P
Drive-through Service, accessory to primary use, not including restaurants	S/CU

RESPONSE: The proposed project is for a single-story commercial building with drive-through window that will be occupied by a single coffee use tenant. The provided materials include an application and submittal materials for a conditional use review. The proposed uses are either allowed or are a conditional use and the required conditional use materials have been provided; therefore, this criterion is met.

17-2.2.040 Lot and Development Standards

E. Lot and Development Standards for Non-Residential Districts. The development standards in Table 17-2.2.040.E apply to all new development as of November 10, 2017 in the City’s non-residential zones, as follows.

Table 17-2.2.040.E Lot and Development Standards for Non-Residential Zones

(Except as provided by 17-4.3.050, Chapter 17-4.7 Adjustments and Variances, or as approved under Chapter 17-4.8 Master Planned Developments.)

Standard	C Zones
<i>Minimum Lot Area (square feet)</i> *Development must conform to lot width, depth, yard setback, and coverage standards.	None
<i>Minimum Lot Width and Depth</i>	None
<i>Building and Structure Height</i> Standard maximum height	55 ft
<i>*[Height Increase. The City may increase the standard height, above, for specific projects with approval of a Conditional Use Permit (CUP), per Chapter 17-4.4.]</i>	Yes
<u>Fences and Non-Building Walls</u> Maximum Height – Front Yard	4 ft

Standard	C Zones
Maximum Height – Interior Side	6 ft
Maximum Height – Rear Yard	6 ft
Maximum Height – Street-Side or Reverse Frontage Lot (rear) (See also Section 17-3.4.040.)	4 ft, or 6 ft with 5 ft landscape buffer
Lot Coverage. Maximum Lot Coverage (foundation plane as % of site area)	100%
Minimum Landscape Area (% site area), includes required parking lot landscaping and any required screening. This standard does not apply to individual, detached single-family dwellings. Landscape area may include street trees and civic space improvements in some zones, per Sections 17-3.2.050 and 17-3.4.030.	5%

RESPONSE: The proposed building has a maximum height of 20 feet which is less than the maximum allowed height of 55 ft. Therefore, the height is met.

The proposed project site is 42,476 square feet in area after a 576 square foot right-of-way dedication. Parcel 1 will be 24,728 square feet in area requiring 1236.4 square feet of landscape area. The proposed site plan provides a total 2,450 square feet (9.9%) of landscape area.

These criteria are met as the building proposed is lower in height that the maximum allowed and the project provides more landscaping that required.

Table 2.2.040.E Lot and Development Standards for Non-Residential Zones

(Except as provided by 17-4.3.050, Chapter 17-4.7 Adjustments and Variances, or as approved under Chapter 17-4.8 Master Planned Developments.)

Standard	C Zones
Minimum Setback Yards (feet): (See also Section 17-2.2.050) <u>Front, Street-Side, Interior Side, and Rear</u> property lines, except garage or carport, or as required by other code provisions	0 ft
<u>Garage or Carport Entry</u> , set back from street	20 ft
<u>Alley</u>	3 ft
<u>Adjacent to R Districts</u>	10 ft
Build-To Line (feet):	0 ft; may be increased when pedestrian

<p><u>New Buildings Only</u>: At least one primary building entrance shall be built no farther from the street right-of-way than the build-to line; except where a greater setback is required for a Planned Street Improvement, then the build-to line increases proportionately. The build-to line may also be increased through Site Design Review when pedestrian amenities are provided between a primary building entrance and the street right-of-way. To avoid encroachment into the right-of-way, doorways are not required to be flush with the build-to line.</p>	<p>amenities are provided between a primary building entrance and street</p>
--	--

Note: Always locate utilities and utility easements before construction.

RESPONSE: The site abuts the Cascade Highway right-of-way; however, the right-of-way is not perpendicular to the south lot line. This results in the right-of-way being angled across the site. The proposed building is placed at a 90-degree angle to the south property line which results in the building being at an angle to the right-of-way. The new building is between 17.5 feet and approximately 30 feet from the new property line (after dedication) to allow for the required 10-foot utility easement. The majority of the area between the building and the street includes an outdoor dining/pedestrian area. So, while the building exceeds the 0-foot build to line it has an entrance facing the street and provides pedestrian use areas between the building, the entry and the street. This criterion is therefore met under the exception for new buildings.

17-3.2.040 Non-Residential Buildings

- A. Purpose and Applicability. The following requirements apply to non-residential development, including individual buildings and developments with multiple buildings such as shopping centers, office complexes, mixed-use developments, and institutional campuses. The standards are intended to create and maintain a built environment that is conducive to pedestrian accessibility, reducing dependency on the automobile for short trips, while providing civic space for employees and customers, supporting natural surveillance of public spaces, and creating human-scale design. The standards require buildings placed close to streets, with storefront windows (where applicable), with large building walls divided into smaller planes, and with architectural detailing.
- B. Building Orientation. The following standards apply to new buildings and building additions that are subject to Site Design Review. The Planning Official may approve adjustments to the standards as part of a Site Design Review approval, pursuant to Chapters 17-4.2 and 17-4.7, respectively.
 - 1. Buildings subject to this section shall conform to the applicable build-to line standard in Table 17-2.2.040.E, as generally illustrated in Figure 17-3.2-6. The standard is met when at least 50 percent of the abutting street frontage has a building placed no farther from at least one street property line than the build-to line in Table 17-2.2.040.E; except in the Central Commercial C-1 zone, at least 80 percent of the abutting street frontage shall have a building placed no farther from at least one street property line than the required build-to-line. The Planning Official, through Site Design Review, may

waive the build to line standard where it finds that one or more of the conditions in subdivisions a through g occurs.

- a. A proposed building is adjacent to a single-family dwelling, and an increased setback promotes compatibility with the adjacent dwelling.
- b. The standards of the roadway authority preclude development at the build-to line.
- c. The applicant proposes extending an adjacent sidewalk or plaza for public use, or some other pedestrian amenity is proposed to be placed between the building and public right-of-way, pursuant to Section 17-3.2.050 and subject to Site Design Review approval.
- d. The build-to line may be increased to provide a private open space (e.g., landscaped forecourt), pursuant to Section 17-3.2.050, between a residential use in a mixed-use development (e.g., live-work building with ground floor residence) and a front or street property line.
- e. A significant tree or other environmental feature precludes strict adherence to the standard and will be retained and incorporated in the design of the project.
- f. A public utility easement or similar restricting legal condition that is outside the applicant's control makes conformance with the build-to line impracticable. In this case, the building shall instead be placed as close to the street as possible given the legal constraint, and pedestrian amenities (e.g., plaza, courtyard, landscaping, outdoor seating area, etc.) shall be provided within the street setback in said location pursuant to Section 17-3.2.050.
- g. An existing building that was lawfully created but does not conform to the above standard is proposed to be expanded and compliance with this standard is not practicable.

RESPONSE: The site abuts the Cascade Highway right-of-way and has a build to line of 0 feet. The site is required to provide a 10-foot Public Utility Easement. Additionally, the right-of-way is not perpendicular to the north and south property lines which impacts the potential location and layout of the proposed building. If the building is placed parallel with property line it negatively impacts the site's ability to accommodate the intended use and drive-through queue. For that reason, the building has been placed parallel to the south property line which results in the two (2) western corners of the building at different distances from the property line. The northwest corner of the building is located 7.5' from the PUE and 17.5' from the right-of-way. The southwest corner of the building is approximately 30 feet from the property line. An approximately 840 square foot outdoor dining patio has been placed between the building and the right-of-way for approximately 65% of the length of the west façade. The building has been setback from the PUE, versus directly abutting the PUE, to allow for a canopy (and its supports) over a majority of the outdoor dining area. This criterion is met because while the building is not built to the 0 feet build to line there is a public PUE required (sub criterion f above) and a pedestrian patio is proposed between the building and right-of-way (sub criterion c above).

2. Except as provided in subsections C.5 and 6, all buildings shall have at least one primary entrance (i.e., tenant entrance, lobby entrance, breezeway entrance, or courtyard entrance) facing an abutting street (i.e., within 45 degrees of the street property line); or if the building entrance must be turned more than 45 degrees from the street (i.e., front door is on a side or rear elevation) due to the configuration of the site or similar constraints, a pedestrian walkway must connect the primary entrance to the sidewalk in conformance with Section 17-3.3.040.

RESPONSE: The proposed building has a door facing the right-of-way directly and a second door facing north that indirectly faces the street due to the curvature of the

roadway and the building not being parallel with the street. This condition is met as the building has doors facing the street.

3. Off-street parking, trash storage facilities, and ground-level utilities (e.g., utility vaults), and similar obstructions shall not be placed between building entrances and the street(s) to which they are oriented. To the extent practicable, such facilities shall be oriented internally to the block and accessed by alleys or driveways.

RESPONSE: The project does not include any parking, trash or utilities between the building or building entrance and street. This criterion is therefore met.

4. Off-street parking shall be oriented internally to the site to the extent practicable, and shall meet the Access and Circulation requirements of Chapter 17-3.3, the Landscape and Screening requirements of Chapter 17-3.4, and the Parking and Loading requirements of Chapter 17-3.5.

RESPONSE: Parking is located to the side and rear of the building and meets the requirements of Chapter 17-3.3, 17-3.4 and 17-3.5; refer to the included narrative sections for detailed information. This criterion is met as the provided parking is oriented internally and meets all applicable design criteria.

5. Where a development contains multiple buildings and there is insufficient street frontage to meet the above building orientation standards for all buildings on the subject site, a building's primary entrance may orient to plaza, courtyard, or similar pedestrian space containing pedestrian amenities and meeting the requirements under Section 17-3.2.050, subject to Site Design Review approval. When oriented this way, the primary entrance(s), plaza, or courtyard shall be connected to the street by a pedestrian walkway conforming to Section 17-3.3.040.

RESPONSE: This criterion does not apply as the project only includes a single building.

- D. Primary Entrances and Windows. The following standards, as generally illustrated in Figures 17-3.2-8 and 17.3.2-9, apply to new buildings and building additions that are subject to Site Design Review. The Planning Official may approve adjustments to the standards as part of a Site Design Review approval, pursuant to Chapters 17-4.2 and 17-4.7, respectively.
 1. All Elevations of Building. Architectural designs shall address all elevations of a building. Building forms, detailing, materials, textures, and color shall to contribute to a unified design with architectural integrity. Materials used on the front façade must turn the building corners and include at least a portion of the side elevations, consistent with the overall composition and design integrity of the building.

RESPONSE: The design of the building and materials is cohesive over all four (4) building elevations. This results in an integrated design for all facades of the building. This criterion is therefore met as the architectural design addresses all elevations of the building in form, detail, materials, textures and colors.

2. Pedestrian Entrances. Ground level entrances oriented to a street shall be at least partly transparent for natural surveillance and to encourage an inviting and successful business environment. This standard may be met by providing a door with a window or windows, a transom window above the door, or sidelights beside the door. Where ATMs or other kiosks are proposed on any street-facing

elevation, they shall be visible from the street for security and have a canopy, awning, or other weather protection shelter.

RESPONSE: The proposed building includes two (2) entry doors, one (1) on the west façade directly facing the right-of-way and one (1) on the north elevation facing the right-of-way at an angle. Both entrances are storefront doors that are primarily glass. This criterion is met as ground level entrances will be transparent.

3. Corner Entrances. Buildings on corner lots are encouraged to have corner entrances. Where a corner entrance is not provided, the building plan shall provide an architectural element or detailing (e.g., tower, beveled corner, art, special trim, etc.) that accentuates the corner location.

RESPONSE: This criterion does not apply as the lot is not a corner lot.

4. Street Level Entrances. All primary building entrances shall open to the sidewalk and shall conform to Americans with Disabilities Act (ADA) requirements, as applicable. Primary entrances above or below grade may be allowed where ADA accessibility is provided.

RESPONSE: Both building entrances open to either a sidewalk or an outdoor pedestrian patio connected to the sidewalk. Both the patio and sidewalk are designed according to the ADA standards. This criterion is met as all entries are ADA compliant and connected to pedestrian pathways.

5. Windows—General. Except as approved for parking structures or accessory structures, the front/street-facing elevations of buildings shall provide display windows, windowed doors, and where applicable, transom windows to express a storefront character.

RESPONSE: The street-facing elevation (west) has ample windows that exceed the requirements of Subsection 6 below. This criterion is therefore met.

6. Storefront Windows. Storefront windows shall consist of framed picture or bay windows, which may be recessed. Framing shall consist of trim detailing such as piers or pilasters (sides), lintels or hoods (tops), and kick plates or bulkheads (base)—or similar detailing—consistent with a storefront character. The ground floor, street-facing elevation(s) of all buildings shall comprise at least 60 percent transparent windows, measured as a section extending the width of the street-facing elevation between the building base (or 30 inches above the sidewalk grade, whichever is less) and a plane 72 inches above the sidewalk grade.

RESPONSE: The west elevation faces Cascade Highway and is 60 feet long with an area of 540 square feet (between grade and 72 inches above grade) requiring 324 square feet of glazing. The west elevation provides 364.8 square feet of glazing. Because the southern portion of the building is the back of house storage for the business windows cannot be provided on the southern 23.5 feet of the building. To accommodate the required glazing area the windows are provided on the northern 36.48 square feet to 10 feet in height. This provides ample glazing, daylighting and views into the customer and kitchen area of the business. This criterion is met as the ground floor, street-facing elevation provides at least 60% transparent windows.

7. Defined Upper Story(ies). Building elevations shall contain detailing that visually defines street level building spaces (storefronts) from upper stories. The distinction between street level and upper floors shall be established, for example, through the use of awnings, canopies, belt course, or similar detailing, materials, or fenestration. Upper floors may have less window area than ground floors, but shall follow the vertical lines of the lower level piers and the horizontal definition of spandrels and any cornices. Upper floor window orientation shall primarily be vertical, or have a width that is no greater than height. Paired or grouped windows that, together, are wider than they are tall, shall be visually divided to express the vertical orientation of individual windows.

RESPONSE: This criterion does not apply as the building proposed is a single story building.

8. Buildings Not Adjacent to a Street. Buildings that are not adjacent to a street or a shopping street, such as those that are setback behind another building and those that are oriented to a civic space (e.g., internal plaza or court), shall meet the 60 percent transparency standard on all elevations abutting civic space(s) and on elevations containing a primary entrance.

RESPONSE: This criterion does not apply as the building is adjacent to the street.

9. Side and Rear Elevation Windows. All side and rear elevations, except for zero lot line or common wall elevations, where windows are not required, shall provide not less than 30 percent transparency.

RESPONSE: The north elevation is 248.82 square feet in area (between grade and 72 inches above grade) requiring 74.64 square feet of windows. The proposed design provides 248.5 feet of glazing between zero and 10 feet above grade.

The south façade is also 248.82 square feet in area requiring 74.64 square feet of windows. The south façade is the back of house for the business as it is the storage area. Windows are being provided here however the lower portion of the window (grade to 6 feet) will be spandrel and will not provide direct views into the building due to the storage units against the wall. The glazing from six (6) to 10 feet will be clear. The south façade includes a total of 183.26 square feet of windows.

The east façade is 540 square feet in area requiring 162 square feet of glazing. The east façade is within both the storage area and kitchen of the business. The west wall has storage units, cabinets and equipment restricting clear glass below six (6) to a limited number of locations. The east façade includes a mix of spandrel glass and clear glazing and provides a total of 248.64 square feet of glazing.

This criterion is met as the project provides more than 30% glazing on all non-street facing facades.

10. Window Trim. At a minimum, windows shall contain trim, reveals, recesses, or similar detailing of not less than four inches in width or depth as applicable. The use of decorative detailing and ornamentation around windows (e.g., corbels, medallions, pediments, or similar features) is encouraged.

RESPONSE: To match the modern design style the project proposes windows with mullions that create decorative detailing versus trim around the outside of the windows.

11. Projecting Windows, Display Cases. Windows and display cases shall not break the front plane of the building (e.g., projecting display boxes are discouraged). For durability and aesthetic reasons, display cases, when provided, shall be flush with the building façade (not affixed to the exterior) and integrated into the building design with trim or other detailing. Window flower boxes are allowed, provided they do not encroach into the pedestrian through-zone.

RESPONSE: This criterion is met as the windows do not project and break the plane of the building.

12. Window Exceptions. The Planning Official may approve an exception to the above standards where existing topography makes compliance impractical. Where it is not practicable to use glass, windows for parking garages or similar structures, the building design must incorporate openings or other detailing that resembles window patterns (rhythm and scale).

RESPONSE: The application requests approval of the shown design, which includes the use of spandrel glass on non-street facing faces and glazing to 10 feet in height to meet glazing requirements in order to accommodate the back of house functions, such as storage and kitchen equipment, that make clear glazing below six (6) feet impractical or a safety concern.

- E. Articulation and Detailing. The following standards apply to new buildings and building additions that are subject to Site Design Review. The Planning Official may approve adjustments to the standards as part of a Site Design Review approval, pursuant to Chapters 17-4.2 and 17-4.7, respectively.
1. Articulation. All building elevations that orient to a street or civic space shall have breaks in the wall plane (articulation) of not less than one break for every 30 feet of building length or width, as applicable, pursuant to the following standards, which are generally illustrated in Figures 17-3.2-10, 17-3.2-11, and 17-3.2-12.
 - a. A “break” for the purposes of this subsection is a change in wall plane of not less than 24 inches in depth. Breaks may include, but are not limited to, an offset, recess, window reveal, pilaster, frieze, pediment, cornice, parapet, gable, dormer, eave, coursing, canopy, awning, column, building base, balcony, permanent awning or canopy, marquee, or similar architectural feature.

RESPONSE: The west façade is the street facing façade and includes a ample canopy that projects more than 24 inches from the building face. The building also includes an offset in the façade that is 2.5 feet in depth. This criterion is therefore met.

- b. The Planning Official through Site Design Review may approve detailing that does not meet the 24-inch break-in-wall-plane standard where it finds that proposed detailing is more consistent with the architecture of historically significant or historic-contributing buildings existing in the vicinity.

RESPONSE: This criterion does not apply as the building meet the articulation requirement.

- c. Changes in paint color and features that are not designed as permanent architectural elements, such as display cabinets, window boxes, retractable and similar mounted awnings or canopies, and other similar features, do not meet the 24-inch break-in-wall-plane standard.

RESPONSE: The west façade provides articulation through canopies and building façade

offsets.

- d. Building elevations that do not orient to a street or civic space need not comply with the 24-inch break-in-wall-plane standard but should complement the overall building design.

RESPONSE: All non-street facing facades have a design style, materials and colors that are unified with the street-facing façade. This criterion is therefore met.

2. Change in Materials. Elevations should incorporate changes in material that define a building's base, middle, and top, as applicable, and create visual interest and relief. Side and rear elevations that do not face a street, public parking area, pedestrian access way, or plaza may utilize changes in texture and/or color of materials, provided that the design is consistent with the overall composition of the building.

RESPONSE: The street facing façade uses a mix of materials and elements to provide visual interest and relief. Glazing defines the lower portion of the building. A canopy accentuates the upper portion of the pedestrian zone and a change in materials above the canopy defines the upper portion of the building. Non-street facing facades will changes in materials, canopies and colors to provide visual interest and relief. This criterion is met as changes in materials are incorporated into all elevations to provide visual interest and relief.

3. Horizontal Lines. New buildings and exterior remodels shall generally follow the prominent horizontal lines existing on adjacent buildings at similar levels along the street frontage. Examples of such horizontal lines include, but are not limited to: the base below a series of storefront windows, an awning or canopy line, a belt course between building stories, a cornice, or a parapet line. Where existing adjacent buildings do not meet the City's current building design standards, a new building may establish new horizontal lines.

RESPONSE: Horizontal lines are provided through the use of windows and canopies on all elevations. This criterion is therefore met.

4. Ground Floor and Upper Floor Division. A clear visual division shall be maintained between the ground level floor and upper floors, for example, through the use of a belt course, transom, awning, canopy, or similar division.

RESPONSE: This criterion does not apply as the building proposed is a single-story building.

5. Vertical Rhythms. New construction or front elevation remodels shall reflect a vertical orientation, either through breaks in volume or the use of surface details.

RESPONSE: Materials are oriented in a vertical manner and include vertical orientation of reveals/patterns within the materials. This criterion is therefore met.

- F. Pedestrian Shelters. The following standards apply to new buildings and building additions that are subject to Site Design Review. The Planning Official may approve adjustments to the standards as part of a Site Design Review approval, pursuant to Chapters 17-4.2 and 17-4.7, respectively.

1. Minimum Pedestrian Shelter Coverage. Permanent awnings, canopies, recesses, or similar pedestrian shelters shall be provided along at least 75 percent of the ground floor elevation(s) of a

building where the building abuts a sidewalk, civic space, or pedestrian access way. Pedestrian shelters used to meet the above standard shall extend at least five feet over the pedestrian area; except that the Planning Official, through Site Design Review, may reduce the above standards where it finds that existing right-of-way dimensions, easements, or building code requirements preclude standard shelters. In addition, the above standards do not apply where a building has a ground floor dwelling, as in a mixed-use development or live-work building, and the dwelling has a covered entrance. The Planning Official shall waive the above standards if the pedestrian shelter would extend into the right-of-way and the roadway authority does not allow encroachments in the right-of-way.

RESPONSE: The building west and north façades abut outdoor eating and pedestrian walkways. The west façade has approximately 39.5 lineal feet of patio/walkway that is fully covered by a pedestrian shelter. The north façade has approximately 27 lineal feet of walkway which is also fully covered by pedestrian shelter.

This criterion is met as all areas that abut pedestrian areas include pedestrian shelter exceeds the minimum 75% requirement.

2. Pedestrian Shelter Design. Pedestrian shelters shall comply with applicable building codes, and shall be designed to be visually compatible with the architecture of a building. If mezzanine or transom windows exist, the shelter shall be below such windows where practical. Where applicable, pedestrian shelters shall be designed to accommodate pedestrian signage (e.g., blade signs), while maintaining required vertical clearance.

RESPONSE: All pedestrian shelters have been designed to be an integral part of the overall building design and are compatible with the building's architecture. This criterion is therefore met.

G. Mechanical Equipment.

1. Building Walls. Where mechanical equipment, such as utility vaults, air compressors, generators, antennae, satellite dishes, or similar equipment, is permitted on a building wall that abuts a public right-of-way or civic space, it shall be screened pursuant to Chapter 17-3.4. Standpipes, meters, vaults, and similar equipment need not be screened but shall not be placed on a front elevation when other practical alternatives exist; such equipment shall be placed on a side or rear elevation where practical.

RESPONSE: Currently, the project does not include any equipment on the street facing façade. If equipment should become necessary other elevations will be investigated first. This criterion will therefore be met.

2. Rooftops. Except as provided below, rooftop mechanical units shall be set back or screened behind a parapet wall so that they are not visible from any public right-of-way or civic space. Where such placement and screening is not practicable, the Planning Official may approve painting of mechanical units in lieu of screening; such painting may consist of colors that make the equipment visually subordinate to the building and adjacent buildings, if any.

RESPONSE: The current project is for a shell building and does not include any mechanical equipment. Any equipment provided as part of the future TI will be screened as required. This criterion will therefore be met.

3. Ground-Mounted Mechanical Equipment. Ground-mounted equipment, such as generators, air compressors, trash compactors, and similar equipment, shall be limited to side or rear yards and screened with fences or walls constructed of materials similar to those on adjacent buildings. Hedges, trellises, and similar plantings may also be used as screens where there is adequate air circulation and sunlight, and irrigation is provided. The City may require additional setbacks and noise attenuating equipment for compatibility with adjacent uses.

RESPONSE: All ground mounted equipment will be screened with fences or landscaping as determined appropriate for the location. This criterion will therefore be met.

- H. Civic Space. Commercial development projects shall provide civic space pursuant to Section 17-3.2.050.

RESPONSE: Section 17-3.2.050(B) states that civil spaces are required for commercial developments with more than 10,000 square feet of gross leasable floor area. The proposed project includes 2,140 square feet of new building area. As the proposed building area is less than 10,000 square feet no civil spaces is required and this criterion does not apply.

- I. Drive-Up and Drive-Through Facilities. Drive-up and drive-through facilities shall comply with the requirements of Section 17-3.2.060.

RESPONSE: Refer to the included narrative section 17-3.2.060 for detailed information on how the proposed drive-up meets the requirements for drive-throughs. This criterion is therefore met.

17-3.2.060 Drive-Up and Drive-Through Uses and Facilities

- A. Purpose. Where drive-up or drive-through uses and facilities are allowed, they shall conform to all of the following standards, which are intended to calm traffic, provide for adequate vehicle queuing space, prevent automobile turning movement conflicts, and provide for pedestrian comfort and safety.
- B. Standards. Drive-up and drive-through facilities (i.e., driveway queuing areas, customer service windows, teller machines, kiosks, drop-boxes, or similar facilities) shall meet all of the following standards, as generally illustrated in Figure 17-3.2-13:
 1. The drive-up or drive-through facility shall orient to and receive access from a driveway that is internal to the development and not a street, as generally illustrated.

RESPONSE: The proposed drive-through originates from a drive aisle internal to the site. This criterion is therefore met.

2. The drive-up or drive-through portion of the establishment or drive-through window shall not be oriented to street corner.

RESPONSE: The drive-through window of the proposed project is on the east building façade. The east façade is the façade opposite the right-of-way. This criterion is met as the drive-up window is on the façade opposite the right-of-way and therefore does not face a street.

3. The entry into a drive-up or drive-through portion of the establishment or drive-through window shall be located a sufficient distance from a street right-of-way so as not to allow for queue into a street right-of-way during any time of the year. Applicant shall provide a section within the Traffic Impact Analysis or supply the City with a traffic engineer's report demonstrating that the drive-up or drive-through will have no impact to the street right-of-way.

RESPONSE: The entry to the drive-up queue is located approximately 93.5 feet from the right-of-way and approximately 301 feet of queue length is provided. The provided Traffic Impact Analysis includes analysis of the drive-through location and queue and demonstrates there will be no adverse impacts on the right-of-way. This criterion is therefore met.

4. Drive-up and drive-through queuing areas shall be designed so that vehicles will not obstruct any street, fire lane, walkway, bike lane, or sidewalk.

RESPONSE: The drive-through queue has been designed to originate from an internal drive aisle after all parking areas and to wrap the parking areas. The queue will therefore not interfere with a street or onsite circulation. There is one pedestrian sidewalk providing access from the building to the parking and trash enclosure that crosses the exit of the queue lane. The queue and walkway have been designed to limit the number of crossings and to provide the crossing in the safest location. The pedestrian walkway will be raised to ensure its visibility. This criterion is met as the drive-through queue area has been designed so that vehicles will not obstruct any street, fire lane, walkway, bike lane or sidewalk.

5. In the General Commercial C-2 district, a new drive-up or drive-through facility must comply with the access control distance requirements identified in the City's Transportation System Plan in relation to existing drive-up or drive-through facilities.

RESPONSE: The proposed project is within the C-2 zoning district. The included TIA looks at the proposed drive-throughs compliance with transportation related regulations and has found no issues. Refer to the included TIA for detailed information. This criterion is therefore met.

Chapter 17-3.3 Access and Circulation

17-3.3.010 Purpose

Chapter 17-3.3 contains standards for vehicular and pedestrian access, circulation, and connectivity. The standards promote safe, reasonably direct, and convenient options for walking and bicycling, while accommodating vehicle access to individual properties, as needed.

17-3.3.020 Applicability

Chapter 17-3.3 applies to new development and changes in land use necessitating a new or modified street or highway connection. Except where the standards of a roadway authority other than the City supersede City standards, Chapter 17-3.3 applies to all connections to a street or highway, and to driveways and

walkways. The Planning Official, through a Type II procedure, may grant adjustments to Chapter 17-3.3, pursuant to the criteria of Chapter 17-4.7 Adjustments and Variances. For street improvement requirements, refer to Section 17-3.6.020.

RESPONSE: The project is a new development that will necessitate a new approach permit with ODOT for the access to Cascade Highway; therefore, the criterion of this section apply.

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.
- 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.

RESPONSE: The project is a new development that will necessitate a new approach permit with ODOT for the access to Cascade Highway. A TIA has been provided per the requirements of Section 17-3.6. This criterion is therefore 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.

RESPONSE: The project includes a single access it Cascade Highway is the minimum practicable. This criterion is therefore 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.

RESPONSE: Cascade Highway is under ODOT jurisdiction and the approach cannot conform to their spacing standard as the site frontage is not long enough to provide any access outside the required separation distance. However, according to the included TIA the distance provided is the maximum allowed by the site frontage and does not negatively impact right-of-way safety or flow.

- 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.

RESPONSE: The access will be paved and will meet all applicable construction standards. This criterion is therefore met.

- 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.

RESPONSE: The project includes only a single full turn access to the right-of-way. The included TIA demonstrates that a single full turn access is safe and will not negatively impact traffic operations.

- 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).

RESPONSE: The single full turn access will extend through parcel 1 to future parcel 2 to allow parcel 2 access to the street. This criterion is therefore met.

- 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.

RESPONSE: The access and internal drive aisles have been designed to accommodate emergency vehicles. This criterion is therefore met.

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

RESPONSE: The proposed access is 26 feet wide and can accommodate truck turning. The proposed use does not receive large deliver by large semi-trucks. This criterion is therefore met.

- 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.

RESPONSE: The included TIA demonstrates that the proposed access and parking will not negatively impact the right-of-way and will not require backing up onto the street. This criterion is therefore met.

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

RESPONSE: The site has been designed so that vehicular parking and driveway areas do not obstruct the 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.

RESPONSE: The proposed driveway is 26 feet wide to accommodate trucks and emergency vehicles. The driveway is not wider than needed. This criterion is therefore 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.

RESPONSE: Safety features found necessary will be provided. This criterion will be 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.

RESPONSE: The project does not include construction of approaches along acceleration or deceleration lanes or along tapered portions of the roadway. This criterion therefore 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.

RESPONSE: The project does not include any loading areas as the proposed coffee store receives deliveries by smaller trucks. This criterion 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.

RESPONSE: The right-of-way work includes a new right-of-way sidewalk. Any required driveway aprons will be constructed. This criterion will be met.

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

RESPONSE: All routes are accessible, and all approaches and driveways has been designed to meet accessibility requirements. This criterion is therefore met.

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.

RESPONSE: It is understood the City Engineer may require changes.

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.

RESPONSE: The project abuts Cascade Highway and will required an access permit from ODOT. The application will be made by the landowner and their representatives shortly after this land application. This criterion will therefore be met.

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.

RESPONSE: This criterion does not apply as the approach does not cross a drainage ditch, canal, railroad or other feature.

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.

RESPONSE: This criterion does not apply as the driveway does not cross a culvert or drainage ditch.

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.

RESPONSE: Any temporary driveways will be constructed according to all applicable standards. This criterion will therefore be met.

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

RESPONSE: The project will increase impervious surface area as the site currently has minimal impervious surface. A stormwater report has been included with this submittal and the site has been designed in accordance with applicable standards of Section 17-3.6.050; refer to included narrative section 17-3.6.050 for detailed responses. This criterion is therefore met.

- 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.

RESPONSE: The proposed access is as far from the intersection of Cascade Highway and Highway 211 as is possible on the site. The included TIA has looked at all adjacent intersection, spacing and sight distance and determined the proposed design will not negatively impact the right-of-way.

- 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.

RESPONSE: Cascade Highway is under ODOT jurisdiction, and the approach cannot conform to their spacing standard as the site frontage is not long enough to provide any access outside the required separation distance. However, according to the included TIA the distance provided is the maximum allowed by the site frontage and does not negatively impact right-of-way safety or flow.

- 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.

RESPONSE: The proposed project maintains vision clearance areas at the street intersection. The included TIA analyzed site distance and found it to be acceptable. Refer to the included TIA. This criterion is therefore met.

- 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.

RESPONSE: Cascade Highway is under ODOT jurisdiction, and the approach cannot conform to their spacing standard as the site frontage is not long enough to provide any access outside the required separation distance. However, according to the included TIA the distance provided is the maximum allowed by the site frontage and does not negatively impact right-of-way safety or flow.

- 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.

RESPONSE: A joint use access easement and maintenance agreement will be put into place to allow joint use by parcels 1 and 2 of the main access to Cascade Highway as the main internal drive aisle. This criterion will therefore be met.

17-3.3.040 Pedestrian Access and Circulation

- A. Purpose and Intent. Section 17-3.3.040 implements the pedestrian access and connectivity policies of the City of Molalla Transportation System. It is intended to provide for safe, reasonably direct, and convenient 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.

RESPONSE: The proposed site plan includes a pedestrian pathway that starts at the abutting right-of-way and provides access to the outdoor plaza (between the building and street) and runs along the north façade of the building. The pathway provides access to building entries and parking and continues running east crossing the exit of the drive-through to provide access to additional parking, the trash enclosure and in the future, it can be connected to any development on Parcel 2. This criterion is met as a pedestrian pathway extends throughout the site and connects to all areas of the site and future potential development.

- 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.

RESPONSE: As mentioned above, the walkway connects entrances, plaza area, parking, utility (trash) areas and can connect the proposed development to the future development of parcel 2. The walkway is reasonably direct and straight line. The path was located to limit vehicular crossings to maximize pedestrian safety. The walkway has also been designed according to ADA requirements. These criteria are met as the walkway complies with subsections a, b and c below.

- 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.

RESPONSE: All walkways will be raised except at drive aisle crossings. The walkway across the drive-through queue exit will also be raised to increase pedestrian safety. This criterion is therefore 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.

RESPONSE: Where pedestrian pathways cross a drive aisle, ADA compliant crosswalks will be provided. The crossings will be concrete to contrast with the adjacent asphalt. This criterion will therefore be 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.

RESPONSE: All walkways will be concrete and a minimum of six (6) feet wide. This criterion is therefore met.

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.

RESPONSE: All walkways will be concrete and a minimum of six (6) feet wide. This criterion is therefore 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.

RESPONSE: The project does not include any multi-use pathways. This criterion does not apply.

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

17-3.4.010 Purpose

Chapter 17-3.4 contains standards for landscaping and screening, fences, and accessory walls, and outdoor lighting. The regulations are intended to protect public health, safety, and welfare by reducing development impacts (e.g., glare, noise, and visual impacts) on adjacent uses; minimizing erosion; slowing the rate of surface water runoff, thereby reducing infrastructure costs; buffering pedestrians from vehicle maneuvering areas; cooling buildings and parking lots in summer months with shade; and enhancing the City’s appearance.

17-3.4.020 Applicability

- A. Section 17-3.4.030 establishes design standards for landscaping and screening. Projects requiring Site Design Review or Land Division approval shall meet the landscape standards of the applicable zone, including the standards in Tables 17-2.2.040.D and 17-2.2.040.E and any Special Use requirements under Chapter 17-2.3, and the requirements of Section 17-3.4.030. Property owners are required to maintain landscaping and screening pursuant to Section 17-3.4.030.G.
- B. Section 17-3.4.040 establishes design standards for when a fence, or a wall not attached to a building, is to be erected, extended, or otherwise altered. It also applies to situations where this Code requires screening or buffering (e.g., outdoor or unenclosed storage uses). The standards of Section 17-3.4.040 supplement the development standards in Tables 17-2.2.030 and 17-2.2.040 and any applicable Special Use requirements under Chapter 17-2.3.
- C. Section 17-3.4.050, Outdoor Lighting, applies to all new outdoor lighting, i.e., lighting that is installed after November 10, 2017.
- D. The Planning Official, through a Type II procedure, may grant adjustments to Chapter 17-3.4, pursuant to the criteria of Chapter 17-4.7 Adjustments and Variances.

RESPONSE: The project requires Site Design Review therefore the standards of this section apply.

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.

RESPONSE: All areas of Parcel 1 that are not developed with buildings, vehicular areas or pedestrian areas will be landscaped. Refer to the included landscape drawings. This criterion is therefore met.

- 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.

RESPONSE: Table 17-2.2.040 E, Lot and Development Standards for Non-Residential Zones requires a minimum of 5% of C Zoned lots to be landscaped. The proposed area of Parcel 1 after dedication is 24,728 square feet requiring a minimum of 1,236.4 square feet of landscape. The project provides 2,450 square feet of landscaping. This criterion is met as the project supplies more than the minimum required landscape.

- 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.

RESPONSE: The proposed landscaping is a mix of deciduous and evergreen trees, shrubs and ground cover and specific species have been selected based on their ability to thrive in the local microclimate. Landscaping has been designed to ensure that it does not interfere with utilities or drainage onsite. This criterion is therefore met.

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

RESPONSE: Plant species were selected with natives and/or species adapted to the particular microclimates of the site in order to help reduce irrigation needs once plants are established. This criterion is therefore met.

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.

RESPONSE: All onsite trees have been specified at 1.5" caliper. Refer to Sheet L1.0. This criterion is therefore met.

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

RESPONSE: All trees required for screening are specified as 5 gallon and two (2) gallon for all other shrubs. Refer to Sheet L1.0. This criterion is therefore met.

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

RESPONSE: All shrubs will be placed to provide intended screening within two (2) years of planting. This criterion will therefore be met.

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.

RESPONSE: All areas not planted with trees or shrubs will include ground cover to no less than 75% of the area. This criterion will therefore be met.

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.

RESPONSE: Bark dust, chips, aggregate or other non-plant ground covers will not cover more than 35% of the landscape area. This criterion will therefore be met.

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.

RESPONSE: All provided facilities have been designed by a registered civil engineer in

accordance with current Public Works Design Standards. Refer to the included civil drawings. This criterion is therefore met.

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.

RESPONSE: The site includes nine (9) mature trees. The trees will need to be removed to allow for grading for drainage and for the proposed development.

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

RESPONSE: The landscape plan was designed by a registered professional landscape architect to ensure that the landscape plan avoids conflicts between plants and buildings, streets, walkways, utilities and other features of the site. This criterion is therefore met.

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

RESPONSE: All screening plants are evergreen. Refer to the included landscape plan. This criterion is therefore met.

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

RESPONSE: The landscape plan includes a mix of deciduous trees. They have been placed to maximize their visual appeal and benefits. This criterion is therefore met.

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.

RESPONSE: The project area is small in size limiting the locations for focal points. However, trees are provided at ends of the parking areas to provide wayfinding and define parking areas versus landscape areas. The trees proposed will provide interest through varied leaf style, flowers and fall color. This criterion is therefore met.

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

RESPONSE: The landscape plan includes a variety of plants that will provide seasonal variation in color and yearlong interest. This criterion is therefore met.

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.

RESPONSE: Where plants are used as screening they will meet the height requirements of the equipment being screened. This criterion will therefore be met.

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.

RESPONSE: Landscape plants will provide erosion control measures for various locations throughout the site. Refer to the included landscape and civil plans. This criterion is therefore met.

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.

RESPONSE: The soil will be amended and irrigation provides until the plants are naturalized and able to grown on their own. This criterion will therefore be 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.

RESPONSE: This criterion does not apply as the site is not zoned C-1

- 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.

RESPONSE: The total surface area of all parking areas on site is 8,303 square feet requiring a minimum of 830 square feet of interior landscaping. The project provides 2,450 square feet (29.5%) interior landscaping. The landscaping provided includes shrubs, ground cover and seven (7) tree, five (5) of which are interior parking lot trees. The proposed number of trees exceeds the minimum two (2) trees (1 per 12 spaces; 23 spaces provided). This criterion is met as the project includes landscaping that exceeds the minimum area requirements and meets the minimum planting requirements.

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.

RESPONSE: The proposed project includes 23 parking stalls and a maximum of 10 contiguous stalls. Landscape islands are located at the ends of all rows of parking and are a

minimum six (6) feet in width. This criterion is therefore 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.

RESPONSE: The proposed landscape plan includes a combination of shrubs and ground cover plant that will cover not less than 50% of the area within two years. This criterion is therefore 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.

RESPONSE: All landscape areas abutting vehicular areas will be curbed to ensure the landscape is protected. This criterion is therefore met.

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

RESPONSE: Any trees planted in paved areas will be installed with root barriers. This criterion will therefore be 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.

RESPONSE: The proposed project does not include the outdoor storage of goods, materials, equipment or vehicles. This criterion does not apply.

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.

RESPONSE: All parking and drive-through areas are screened on their perimeter by an evergreen screen. Refer to the included site plan. This criterion is therefore 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.

RESPONSE: It is understood that the Planning Official may have additional requirements on screening.

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

RESPONSE: All landscaping will be maintained in good condition and replaced as needed. This criterion will therefore be met.

17-3.4.040 Fences and Walls

- A. Purpose. This section provides general development standards for fences, and walls that are not part of a building, such as screening walls and retaining walls.
- B. Applicability. Section 17-3.4.040 applies to all fences, and to walls that are not part of a building, including modifications to existing fences and walls.

RESPONSE: The project does not include any fences but does include a retaining wall along the north property line due to grades.

- C. Height.
 - 2. Non-Residential Zones. Fences and freestanding walls (i.e., exclusive of building walls) for non-residential uses shall not exceed the following height 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 for properties located within an industrial, public, or institutional zone:
 - (1) Where approved by the City Planning Official, a fence constructed of open chain link or other “see-through” composition that allows 90 percent light transmission may reach a height of up to eight feet.

RESPONSE: The retaining wall is not in the front or street-facing yard. This criterion does not apply.

- b. Within an Interior Side or Rear Yard Setback. Eight 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.

RESPONSE: The wall ranges in height up to a maximum of 3.68 feet and if below the maximum eight (8) feet allowed. This criterion is therefore met.

- 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.

RESPONSE: The wall begins approximately 29 feet back from the west property line and is well outside the clear vision zone. This criterion will therefore be met.

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.

RESPONSE: The wall will not be constructed of straw bales, tarps, barbed or razor wire, untreated wood, corrugated metal, sheet metal, dead, diseased or dying plants. This criterion is therefore met.

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.

RESPONSE: The maximum height of the wall is approximately 3.68 feet.

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

RESPONSE: The wall will be maintained in good condition. This criterion will therefore be met.

17-3.4.050 Outdoor Lighting

- A. Purpose. This section contains regulations requiring adequate levels of outdoor lighting while minimizing negative impacts of light pollution.
- B. Applicability. All outdoor lighting shall comply with the standards of this section.
- 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.

RESPONSE: Parking lot pole lights will not exceed 20 feet in height. All pedestrian walkways will be lit by either building lighting, parking lot pole lights or lighted pedestrian bollards. This criterion is therefore met.

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

RESPONSE: All lights over a walkway will have a minimum vertical clearance of eight (8) feet. This criterion is therefore 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.

RESPONSE: A lighting plan and lighting cut sheets have been included with this submittal. Refer to those documents for detailed lighting information.

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.

RESPONSE: The project does not include any up lights. This criterion is therefore met.

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

RESPONSE: Lighting has been placed so as not to obstruct public ways, driveways or walkways. This criterion is therefore 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.

RESPONSE: All walkways will be lit to at least the minimum standards. This criterion will be met.

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

RESPONSE: All entrances will be lit to at least the minimum illumination. This criterion will therefore be met.

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

RESPONSE: This application does not include any signage.

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.

RESPONSE: Outdoor areas within parking lots and service areas will be lit to at least the minimum lighting required and with a uniform ratio. This criterion will therefore be 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 right-of-way.

RESPONSE: The wall lights are less than 2,000 lumens. The parking pole lights are greater than 2,000 lumens.

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

RESPONSE: There are no light standards proposed in walkways.

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

RESPONSE: All lighting proposed is rated for outdoor use and will be installed according to the manufacturer's specifications. This criterion will therefore be met.

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.

RESPONSE: All required permits will be applied for and secured prior to installation of any lighting. This criterion will therefore be met.

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

RESPONSE: All lighting will be maintained in good condition and working order. This criterion will therefore be met.

Chapter 17-3.5 Parking and Loading

17-3.5.010 Purpose

Chapter 17-3.5 contains requirements for automobile and bicycle parking. This Code is intended to be flexible in requiring adequate parking, rather than a minimum number of parking spaces, for each use. It provides standards for the location, size, and design of parking areas to ensure such areas can be accessed safely and efficiently. This Code also encourages non-motorized transportation by requiring bicycle parking for some uses.

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.
- 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.

RESPONSE: All parking and required landscape will be constructed and installed before occupancy. This criterion will therefore be met.

- C. Calculations of Amounts of Required and Allowed Parking.
- 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.

RESPONSE: The project includes a single restaurant tenant.

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.

RESPONSE: This criterion does not apply as there are no accessory 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.

RESPONSE: The project will not use parking stalls for equipment or good storage.

- 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.

RESPONSE: All provided parking will be fore use by patrons and employees. The project does not include any fees for parking. This criterion is therefore met.

- 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.

RESPONSE: This criterion does not apply as the project does not include any residential uses.

- 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.

RESPONSE: The project does not include any parking along a right-of-way.

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.

RESPONSE: The proposed coffee drive-through use is approximately 2,140 sf of area along with 840 square feet of outdoor dining use. The total required minimum parking for the site is 15 vehicular parking stalls. The site provides a total of 23 parking stalls. This criterion is therefore met.

Table 17-3.5.030.A Automobile Parking Spaces by Use

Use Categories	Minimum Parking per Land Use
(Chapter 17-5 contains examples of uses and definitions.)	(Fractions are rounded down to the closest whole number.)
Retail Sales and Commercial Service	Restaurants and Bars: 1 space per 200 sq. ft. floor area

- 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.
 - 2. Of the total spaces available for employee, student, and commuter parking, at least five percent, but not fewer than two, shall be designated for exclusive carpool and vanpool parking.
 - 3. Carpool and vanpool parking spaces shall be located closer to the main employee, student or commuter entrance than all other parking spaces with the exception of ADA parking spaces.
 - 4. Required carpool/vanpool spaces shall be clearly marked “Reserved—Carpool/Vanpool Only.”

RESPONSE: The proposed project does not require 50 or more parking spaces, is not an institutional or public assembly use and is not a transit park and ride. Therefore, no carpool or vanpool spaces are required.

- C. Exceptions and Reductions to Off-Street Parking.
 - 1. There is no minimum number of required automobile parking spaces for uses within the Central Commercial C-1 zone.

RESPONSE: The site is not in the C-1 zoning district; therefore, this criterion does not apply.

- 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.

RESPONSE: The proposed project provides parking with the bounds of the maximum parking allowed by sub section 17-3.5.030.D.2.

3. The Planning Official, through a Type II procedure, may reduce the off-street parking standards of Table 17-3.5.030.A for sites with one or more of the following features:
 - a. Sites containing or adjacent to a bus stop with frequent transit service, whose frontage is improved with a bus stop waiting shelter consistent with the standards of the applicable transit provider, are allowed a 20 percent reduction to the standard number of automobile parking spaces.
 - b. Space being dedicated for a transit facility such as a park-and-ride, bus pull-out, or other transit facility: Allow up to a 10 percent reduction in the number of automobile parking spaces.
 - c. Site has dedicated parking spaces for carpool or vanpool vehicles: Allow up to a 10 percent reduction to the standard number of automobile parking spaces.
 - d. Site has dedicated parking spaces for motorcycles, scooters, or electric carts: Allow reductions to the standard dimensions for parking spaces.
 - e. Site has more than the minimum number of required bicycle parking spaces: Allow up to a 10 percent reduction to the number of automobile parking spaces.
 - f. Site has off-street parking or other public parking in the vicinity of the site.

RESPONSE: These criteria do not apply as the project is not requesting a reduction in parking.

4. The number of required off-street parking spaces may be reduced through the provision of shared parking, pursuant to subsection E.

RESPONSE: This criterion does not apply as the project is not requesting a reduction in parking.

5. The Planning Official through a Type I procedure may reduce the off-street parking standards of Table 3.5.030.A by one parking space for every two on-street parking spaces located adjacent to the subject site, provided the parking spaces meet the dimensional standards of subsection F.

RESPONSE: This criterion does not apply as the project is not requesting a reduction in parking.

6. The Planning Official, through a Type I procedure, may allow property owners of existing nonresidential development to replace up to 10 percent of existing parking spaces with bus shelters and other pedestrian and transit amenities located adjacent to streets with existing or planned transit routes.

RESPONSE: This criterion does not apply as the project is not requesting to replace parking.

- 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.

RESPONSE: The site has frontage on Cascade Highway which does not have on-street parking allowing for a maximum of 1.5 times the minimum. Per subsection 17-3.5.030.A above, the site is required a minimum of 15 vehicle spaces. This allows for a maximum of 23 vehicle parking spaces on this site. The site provides a total of 23 parking spaces which meets the maximum allowed. This criterion is therefore 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.

RESPONSE: The proposed project is for a single use. There is no shared parking. This criterion 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.

RESPONSE: All stalls provided are 90 degrees. All stalls are a minimum nine (9) feet wide by 18 feet long with drive aisles that are a minimum 24 feet wide. This exceeds the minimum 8.5 feet by 18 feet with a 23 feet aisle. This criterion is therefore met.

Table 17-3.5.030.F Parking Area Minimum Dimensions*

PARKING ANGLE < °	CURB LENGTH	STALL DEPTH		AISLE WIDTH		BAY WIDTH		STRIPE LENGTH
		SINGLE D1	DOUBLE D2	ONE WAY A1	TWO WAY A2	ONE WAY B1	TWO WAY B2	
90°	8'-6"	18'	36'	23'	23'	59'	59'	18'
60°	10'	20'	40'	17'	18'	57'	58'	23'
45°	12'	18'-6"	37'	13'	18'	50'	55'	26'-6"

30°	17'	16'-6"	33'	12'	18'	45'	51'	32'-8"
0°	22'	8'-6"	17'	12'	18'	29'	35'	8'-6"

* See Figure 17-3.5-18. See also Chapter 17-3.2 Building Orientation and Design for parking location requirements for some types of development; Chapter 17-3.3 Access and Circulation for driveway standards; and Chapter 17-3.4 for requirements related to Landscaping, Screening, Fences, Walls, and Outdoor Lighting.

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.

RESPONSE: This criterion does not apply as the project is not requesting any adjustments to the parking area dimensions.

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.

RESPONSE: ADA parking has been provided to meet the requirements of the building code. All routes have also been designed to be ADA compliant. This criterion is therefore 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.

RESPONSE: The project does not include any electric charging stations. 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.

RESPONSE: The proposed project is for a 2,140 square foot restaurant with drive-through which is a conditional use. The project is required a minimum of five (5) bicycle parking spaces. The project includes five (5) bicycle parking stalls. This criterion is met as the project provides the minimum required bicycle parking spaces.

Table 17-3.5.040.A Minimum Required Bicycle Parking Spaces

Use	Minimum Number of Spaces
Commercial	2 bike spaces per primary use or 1 per 5 vehicle spaces, whichever is greater

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.

RESPONSE: The project proposes racks that will be securely anchored to concrete and a staple design. This criterion is therefore met.

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

RESPONSE: This criterion does not apply as the project does not include any residential uses, home occupations or agricultural uses.

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.

RESPONSE: The bike parking stalls are provided of the northwest corner of the building. This location leaves ample maneuvering room around the stalls; thus, they will not impede or create a hazard for pedestrians or vehicles.

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.
- B. Applicability. Section 17-3.5.050 applies to uses that are expected to have service or delivery truck visits. It applies only to uses visited by trucks with a 40-foot or longer wheelbase, at a frequency of one or more vehicles per week. The Planning Official shall determine through a Type I review the number, size, and location of required loading areas, if any.
- C. Standard. Where an off-street loading space is required, it shall be large enough to accommodate the largest vehicle that is expected to serve the use without obstructing vehicles or pedestrian traffic on adjacent streets and driveways. The Planning Official may restrict the use of other public rights-of-way, so applicants are advised to provide complete and accurate information about the potential need for loading spaces.
- D. Placement, Setbacks, and Landscaping. Loading areas shall conform to the standards of Chapter 17-3.2 Building Orientation and Design; Chapter 17-3.3 Access and Circulation; and Chapter 17-3.4 Landscaping, Fences and Walls, Outdoor Lighting. Where parking areas are prohibited between a building and the street, loading areas are also prohibited.
- E. Exceptions and Adjustments. The Planning Official, through a Type I Review, may approve a loading area adjacent to or within a street right-of-way where it finds that loading and unloading operations are

short in duration (i.e., less than one hour), infrequent, do not obstruct traffic during peak traffic hours, do not interfere with emergency response services, and are acceptable to the applicable roadway authority.

RESPONSE: The proposed use is a coffee tenant. Their shipments do not come by trucks with a wheelbase 40-ft or longer. The criteria of this section do not apply as there are no loading spaces required.

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.

RESPONSE: The proposed project is required Site Design Review therefore the standards of this section are required.

- 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.

RESPONSE: All public facility improvements have been designed according to the City of Molalla Public Works Design Standards. This criterion is therefore met.

- 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.

RESPONSE: All required public facility improvements will either be constructed or bonded for in order for the building permit to be issued. This criterion will be met.

- E. Limitations on Public Improvement Requirement. If the applicant asserts that it cannot legally be required, as a condition of building permit or site plan approval, to provide easements, dedications, or improvements at the level otherwise required by this section, then:

1. The building permit, site plan review, or appeal application shall include a rough proportionality report, prepared by a qualified civil or traffic engineer, as appropriate, showing:
 - a. The estimated extent, on a quantitative basis, to which the improvements will be used by persons served by the building or development, whether the use is for safety or for convenience;
 - b. The estimated level, on a quantitative basis, of improvements needed to meet the estimated extent of use by persons served by the building or development;
 - c. The estimated impact, on a quantitative basis, of the building or development on the public infrastructure system of which the improvements will be a part;
 - d. The estimated level, on a quantitative basis, of improvements needed to mitigate the estimated impact on the public infrastructure system; and

RESPONSE: All permits will include all required materials for their approval. This criterion will therefore be met.

3. The applicant shall, instead, be required to provide easements, dedications, and improvements that are roughly proportional to what is needed for the safety or convenience of persons served by the building or development, plus those additional easements, dedications, and improvements that are roughly proportional to what is needed to mitigate the impact of the building or development on the public infrastructure system of which the improvements will be a part, if the impacts are not fully mitigated by the easements, dedications, and improvements needed for the safety or convenience of persons served by the building or development.

RESPONSE: The project includes a four (4) foot dedication and new curb, landscape and sidewalk along the frontage.

17-3.6.020 Transportation Standards

- A. General Requirements.
 1. Except as provided by subsection A.5, existing substandard streets and planned streets within or abutting a proposed development shall be improved in accordance with the standards of Chapter 17-3.6 as a condition of development approval.
 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.

RESPONSE: The project includes a dedication and widening of the abutting right-of-way. All improvements have been designed in accordance with Section 17-3.6.020. This criterion is therefore met.

3. All new streets shall be contained within a public right-of-way. Public access ways (e.g., pedestrian ways) may be contained within a right-of-way or a public access easement, subject to review and approval of the City Engineer.

RESPONSE: This criterion does not apply as the project does not include any new streets.

4. The purpose of this subsection is to coordinate the review of land use applications with roadway authorities and to implement Section 660-012-0045(2)(e) of the State Transportation Planning Rule, which requires the City to adopt a process to apply conditions to development proposals in order to minimize impacts and protect transportation facilities. The following provisions also establish when a proposal must be reviewed for potential traffic impacts; when a Transit Analysis Letter (TAL) or

Traffic Impact Analysis (TIA) must be submitted with a development application in order to determine whether conditions are needed to minimize impacts to and protect transportation facilities; the required contents of a TAL/TIA; and who is qualified to prepare the analysis.

- a. Determining the Required Level of Transportation Analysis and Documentation. 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. When specific criteria generally associated with small developments are met, a Transportation Analysis Letter (TAL) may be substituted for the required TIA. At the discretion of the City Engineer, a TAL may satisfy the City's transportation analysis requirements, in lieu of a TIA when a development meets all the following criteria:
 - (1) The development generates fewer than 25 peak hour trips during either the AM or PM peak hour. (Two examples of common developments generating fewer trips than these threshold levels are: a subdivision containing 25 or fewer single-family residences or a general office building less than 15,000 square feet.)
 - (2) The development is not expected to impact intersections that currently fail to meet the City's level of service standards or intersections that are operating near the limits of the acceptable level of service thresholds during a peak operating hour.
 - (3) The development is not expected to significantly impact adjacent roadways and intersections that are high accident locations, areas that contain an identified safety concern, or high concentration of pedestrians or bicyclists such as school zones.
 - (4) The development generates an increase in use of adjacent streets by vehicles exceeding the 20,000-pound gross vehicle weights by less than 10 vehicles per day.

RESPONSE: A full TIA has been provided with this submittal.

- c. Transportation Impact Analysis Contents. The following information shall be included in each TIA submitted to the City. Additional information specified by the City in the scoping summary or through the pre-application meeting or other project meetings shall also be included.
 - (1) Completed TIA checklist signed by the professional engineer responsible for the preparation of the TIA.
 - (2) Table of Contents—Listings of all sections, figures, and tables included in the report.
 - (3) Executive Summary—A summary of key points, findings, conclusions, and recommendation including a mitigation plan.
 - (4) Introduction, including:
 - i. Proposed land use action including site location, zoning, building size, and project scope.
 - ii. Map showing the proposed site, building footprint, access driveways, and parking facilities.
 - iii. Map of the study area that shows site location and surrounding roadway facilities.
 - (5) Existing Conditions.
 - i. Existing site conditions and adjacent land uses.
 - ii. Roadway characteristics of important transportation facilities and modal opportunities located within the study area, including roadway functional classifications, street cross-section, posted speeds, bicycle and pedestrian facilities, on-street parking, and transit facilities.
 - iii. Existing lane configurations and traffic control devices at the study area intersections.
 - iv. Existing traffic volumes and operational analysis of the study area roadways and intersections.

- v. Roadway and intersection crash history analysis.
 - vi. Intersection and stopping sight distance related to new and impacted driveways and intersections.
- (6) Background Conditions (Without the Proposed Land Use Action).
- i. Approved in-process developments and funded transportation improvements in the study area.
 - ii. Traffic growth assumptions.
 - iii. Addition of traffic from other planned developments.
 - iv. Background traffic volumes and operational analysis.
- (7) Full Buildout Traffic Conditions (With the Proposed Land Use Action).
- i. Description of the proposed development plans.
 - ii. Trip generation characteristics of proposed project (including trip reduction documentation).
 - iii. Trip distribution assumptions.
 - iv. Full buildout traffic volumes and intersection operational analysis.
 - v. Site circulation and parking.
 - vi. Intersection and site-access driveway queuing analysis.
 - vii. Recommended roadway and intersection mitigation measures (if necessary).
- (8) Conclusions and recommendations.
- (9) Appendix—With Dividers or Tabs.
- i. Traffic count summary sheets.
 - ii. Crash analysis summary sheets.
 - iii. Existing, background, and full buildout traffic operational analysis worksheets with detail to review capacity calculations.
 - iv. Signal, left-turn, and right-turn lane warrant evaluation calculations.
 - v. Signal timing sheets depicting the timing and phasing used in analysis.
 - vi. Other analysis summary sheets such as queuing.
- (10) To present the information required to analyze the transportation impacts of development, the following figures shall be included in the TIS:
- i. Vicinity Map.
 - ii. Existing Lane Configurations and Traffic Control Devices.
 - iii. Existing Traffic Volumes and Levels of Service for each required time period.
 - iv. Future Year Background Traffic Volumes and Levels of Service for each required time period.
 - v. Proposed Site Plan, including access points for abutting parcels and for those across the street from the proposed development.
 - vi. Future Year Assumed Lane Configurations and Traffic Control Devices.
 - vii. Estimated Trip Distribution/Assignment Pattern.
 - viii. Trip reductions (pass-by trips at site access(es)).
 - ix. Site-Generated Traffic Volumes for each required time period.
 - x. Full Buildout Traffic Volumes and Levels of Service for each required time period.

RESPONSE: Refer to the included TIA for all of the above required information.

5. The City Engineer may waive or allow deferral of standard street improvements, including sidewalk, roadway, bicycle lane, undergrounding of utilities, and landscaping, as applicable, where one or more of the following conditions in subdivisions (a) through (d) is met. Where the City Engineer agrees to defer a street improvement, it shall do so only where the property owner agrees not to remonstrate against the formation of a local improvement district in the future.

- a. The standard improvement conflicts with an adopted capital improvement plan.
- b. The standard improvement would create a safety hazard.
- c. It is unlikely due to the developed condition of adjacent property that the subject improvement would be extended in the foreseeable future, and the improvement under consideration does not by itself significantly improve transportation operations or safety.
- d. The improvement under consideration is part of an approved partition and the proposed partition does not create any new street.

RESPONSE: Cascade Highway is an ODOT facility. The project will provide a four (4) feet dedication and improvements within that dedication.

- B. Street Location, Alignment, Extension, and Grades.
1. All new 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. 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 streets.
 3. Grades of streets shall conform as closely as practicable to the original (pre-development) topography to minimize grading.
 4. New streets and street extensions exceeding a grade of 10 percent over a distance more than 200 feet, to the extent practicable, shall be avoided. Where such grades are unavoidable, the City Engineer may approve an exception to the 200-foot standard and require mitigation, such as a secondary access for the subdivision, installation of fire protection sprinkler systems in dwellings, or other mitigation to protect public health and safety.
 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.
 6. Where required local street connections are not shown on an adopted City street plan, or the adopted street plan does not designate future streets with sufficient specificity, the development shall provide for the reasonable continuation and connection of existing streets to adjacent developable properties, conforming to the standards of this Code.
 7. Existing street-ends that abut a proposed development site shall be extended with the development, unless prevented by environmental or topographical constraints, existing development patterns, or compliance with other standards in this Code. In such situations, the applicant must provide evidence that the environmental or topographic constraint precludes reasonable street connection.
 8. Proposed streets and any street extensions required pursuant to this section shall be located, designed, and constructed to allow continuity in street alignments and to facilitate future development of vacant or redevelopable lands.

RESPONSE: The criterion of this section does not apply as the project does not include any new streets.

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

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.

RESPONSE: The project includes a right-of-way dedication and improvements along Cascade Highway. This criterion is therefore met.

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.

RESPONSE: The proposed street improvement included in this project has been designed in accordance with all applicable construction standards and specifications of the city, county and ODOT. This criterion is therefore met.

3. Where a range of street width or improvement options is indicated, the City Engineer shall determine requirements based on the advice of a qualified professional and all of the following factors:
 - a. Street classification and requirements of the roadway authority, if different than the City's street classifications and requirements;
 - b. Existing and projected street operations relative to applicable standards;
 - c. Safety of motorists, pedestrians, bicyclists, and South Clackamas Transit District (SCTD) users, including consideration of accident history;
 - d. Convenience and comfort for pedestrians, bicyclists, and SCTD users;
 - e. Provision of on-street parking;
 - f. Placement of utilities;
 - g. Street lighting;
 - h. Slope stability, erosion control, and minimizing cuts and fills;
 - i. Surface water management and storm drainage requirements;
 - j. Emergency vehicles or apparatus and emergency access, including evacuation needs;
 - k. Transitions between varying street widths (i.e., existing streets and new streets); and
 - l. Other factors related to public health, safety, and welfare.

RESPONSE: To the project teams knowledge this criterion does not apply as there are not a range of options for improvement widths.

- E. Engineering Design Standards. Street design shall conform to the standards of the applicable roadway authority; for City streets that is the current version of the Public Works Design Standards and Transportation System Plan. Where a conflict occurs between this Code and the Public Works Design Standards, the provisions of the Design Standards shall govern.

RESPONSE: The right-of-way abutting the site is Cascade Highway and is under the jurisdiction of ODOT. The proposed improvements have been designed in accordance to applicable ODOT standards. This criterion is therefore met.

F. Fire Code Standards. Where Fire Code standards conflict with City standards, the City shall consult with the Fire Marshal in determining appropriate requirements. The City shall have the final determination regarding applicable standards.

RESPONSE: The project has been designed in accordance with all applicable Fire Code standards.

G. Substandard Existing Right-of-Way. Where an existing right-of-way adjacent to a proposed development is less than the standard width, the City Engineer may require the dedication of additional rights-of-way at the time of Subdivision, Partition, or Site Plan Review, pursuant to the standards in the Public Works Design Standards and Transportation System Plan.

RESPONSE: The proposed project includes a four (4) foot dedication to bring the abutting Cascade Highway right-of-way up to the standard width. This criterion is therefore met.

H. Traffic Calming. The City may require the installation of traffic calming features such as traffic circles, curb extensions, reduced street width (parking on one side), medians with pedestrian crossing refuges, speed tables, speed humps, or special paving to slow traffic in neighborhoods or commercial areas with high pedestrian traffic.

RESPONSE: The included TIA demonstrates that the proposed project will not result in a need for traffic calming measures.

I. Sidewalks, Planter Strips, and Bicycle Lanes. Except where the City Engineer grants a deferral of public improvements, pursuant to Chapter 17-4.2 or Chapter 17-4.3, sidewalks, planter strips, and bicycle lanes shall be installed concurrent with development or widening of new streets, pursuant to the requirements of this chapter. Maintenance of sidewalks and planter strips in the right-of-way is the continuing obligation of the adjacent property owner.

RESPONSE: Right-of-way improvements meeting ODOTs requirements are included with this project.

J. Streets Adjacent to Railroad Right-of-Way. When a transportation improvement is proposed within 300 feet of a railroad crossing, or a modification is proposed to an existing railroad crossing, the Oregon Department of Transportation and the rail service provider shall be notified and given an opportunity to comment, in conformance with the provisions of Division IV. Private crossing improvements are subject to review and licensing by the rail service provider.

RESPONSE: This criterion does not apply as the project site does not abut a railroad right-of-way.

K. Street Names. No new street name shall be used which will duplicate or be confused with the names of existing streets in the City of Molalla or vicinity. Street names shall be submitted to the City for review and approval in consultation with Clackamas County and emergency services.

RESPONSE: This criterion does not apply as there are no new streets or street names proposed as part of the project.

- L. Survey Monuments. Upon completion of a street improvement and prior to acceptance by the City, it shall be the responsibility of the developer's registered professional land surveyor to provide certification to the City that all boundary and interior monuments have been reestablished and protected.

RESPONSE: All boundary and interior monuments will be reestablished and protected and certification provided as required. This criterion will therefore be met.

- M. Street Signs. The city, county, or state with jurisdiction shall install all signs for traffic control and street names. The cost of signs required for new development shall be the responsibility of the developer. Street name signs shall be installed at all street intersections. Stop signs and other signs may be required.

RESPONSE: The project does not require any street signs. This criterion does not apply.

- N. Streetlight Standards. Streetlights shall be relocated or new lights installed, as applicable, with street improvement projects. Streetlights shall conform to City standards, be directed downward, and full cutoff and full shielding to preserve views of the night sky and to minimize excessive light spillover onto adjacent properties.

RESPONSE: To the applicant's knowledge no street lighting changes or installation is required.

- O. Mail Boxes. Mailboxes shall conform to the requirements of the United States Postal Service and the State of Oregon Structural Specialty Code.

RESPONSE: Any required mailboxes will be located and installed in accordance with all applicable United States Postal Service and State of Oregon Structural Specialty Code requirements.

- P. Street Cross-Sections. The final lift of pavement shall be placed on all new constructed public roadways prior to final City acceptance of the roadway.

RESPONSE: All required right-of-way improvements will be installed prior to final City acceptance. This criterion will therefore be met.

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.

RESPONSE: The project site has access to public water and will be connected to City water.

The site does not have direct access to sewer. The project will connect to sewer through the abutting southern parcel through an easement granted by the abutting property owner. Both systems have been designed according to all applicable Public Works Design Standards. This criterion is therefore met.

- 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.

RESPONSE: All required permits will be submitted for and received prior to construction.

- 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.

RESPONSE: The water and sewer systems proposed have been designed and sized to accommodate both the current proposed coffee drive-through use as well as potential future development on Parcel 2.

- 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.

RESPONSE: It is understood that development permits may be restricted or rationed by the Planning Commission if deficiency exists in the existing water or sewer system.

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.

RESPONSE: The site proposed to drain to the ODOT right-of-way and will secure all required permits.

- 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.

RESPONSE: The site proposed to drain to the ODOT right-of-way and will secure all required permits.

- 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.

RESPONSE: The site proposed to drain to the ODOT right-of-way and will secure all required permits.

- 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.

RESPONSE: The proposed system has been sized to allow for future anticipated development of Parcel 2.

- 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.

RESPONSE: The property does not have a watercourse, drainage way, channel or stream that traverses it.

17-3.6.060 Utilities

The following standards apply to new development where extension of electric power, gas, or communication lines is required:

- A. General Provision. The developer of a property is responsible for coordinating the development plan with the applicable utility providers and paying for the extension and installation of utilities not otherwise available to the subject property.

RESPONSE: All utilities will be coordinated with the appropriate provider. This criterion will therefore be met.

- 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.

RESPONSE: All utilities will be undergrounded. This criterion will therefore be met.

2. Subdivisions. In order to facilitate underground placement of utilities, the following additional standards apply to all new subdivisions:
 - a. The developer shall make all necessary arrangements with the serving utility to provide the underground services. Care shall be taken to ensure that no aboveground equipment obstructs vision clearance areas for vehicular traffic, per Chapter 17-3.3 Access and Circulation.
 - b. The City Engineer reserves the right to approve the location of all surface-mounted facilities.

- c. All underground utilities installed in streets must be constructed and approved by the applicable utility provider prior to the surfacing of the streets.
- d. Stubs for service connections shall be long enough to avoid disturbing the street improvements when service connections are made.

RESPONSE: The project will divide the single parcel into two (2) parcels. The project does not include a subdivision. These criteria do not apply.

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.

RESPONSE: The project includes a 10 feet public utility easement along the right-of-way. The developer will coordinate with the City and other utility franchises. This criterion will therefore be met.

- B. Standard. Utility easements shall conform to the requirements of the utility service provider. All other easements shall conform to the City of Molalla Public Works Design Standards.

RESPONSE: The easement will conform to all applicable requirement of the utility provider as well as the City of Molalla Public Works Design Standards. This criterion will therefore be met.

- 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.

RESPONSE: All required easements will be recorded and referenced on the final plat. This criterion will therefor be met when the final plat is recorded.

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.

RESPONSE: No work will be conducted until all required permits have been issued.

17-3.6.090 Facility Installation

- 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.

RESPONSE: All improvement will conform to the requirements of this chapter and approved construction plans. This criterion will therefore be met.

- 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.

RESPONSE: All public improvement and utilities have been designed and will be installed according to applicable Public Works Design Standards. This criterion will therefore be met.

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

RESPONSE: The project is required to improve its frontage on Cascade Highway which is within ODOT jurisdiction. All required permits from ODOT will be secured prior to construction.

- 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.

RESPONSE: It is understood that if work is discontinued for more than six (6) months than the Public Works Director must be notified in writing and grant extension approvals before work is resumed.

- 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.

RESPONSE: All improvements will be constructed under the inspection of the City Engineer. Any survey monuments that are disturbed will be replaced prior to final acceptance of the improvements. This criterion will therefore be met.

- 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.

RESPONSE: The project team includes registered civil engineers with AAI Engineering. All required "as-builts" will be provided. This criterion will therefore be met.

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.

RESPONSE: A bond will be provided as required. This criterion will be met.

- 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.

RESPONSE: A bond will be provided as required. This criterion will be met.

- 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.

RESPONSE: An itemized improvement estimate, certified by a registered civil engineer, will be provided as required. This criterion will therefore be met.

- D. Agreement. A written agreement between the City and applicant shall be signed 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.

RESPONSE: A written agreement meeting all of the above requirements will be provided as required. This criterion will therefore be met.

- 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.

RESPONSE: It is understood that if the applicant fails to carry out the work of the agreement the City can call on the bond.

- 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.

RESPONSE: The agreement will not be terminated or allowed to expire without written authorization from the City. This criterion will therefore be met.

- 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.

RESPONSE: All bonds will be provided as required. This criterion will therefore be met.

Chapter 17-4.2 Site Design Review

17-4.2.020 Applicability

Site Design Review approval is required for new development. Site Design Review approval is also required to expand a nonconforming use or development. Except as specified by a condition of approval of a prior City decision, or as required for uses subject to Conditional Use Permit approval, Site Design Review is not required for the following:

- A. Change in occupancy from one type of land use to a different land use resulting in no increase in vehicular traffic or development;
- B. Single-family detached dwelling (including manufactured home) on its own lot, except as required for designated historic landmarks or properties within a designated historic district;
- C. A single duplex;
- D. Non-residential building addition of up to 500 square feet or 10 percent, whichever is greater;
- E. Home occupation, except for uses requiring a Conditional Use Permit;
- F. Development and land uses that are already approved as part of a Site Design Review or Conditional Use Permit application, provided that modifications to such plans may require Site Design Review, pursuant to Chapter 17-4.2;
- G. Public improvements required by City standards or as stipulated by a condition of land use approval (e.g., transportation facilities and improvements, parks, trails, utilities, and similar improvements), as determined by the Planning Official and City Engineer, except where a condition of approval requires Site Design Review; and
- H. Regular maintenance, repair, and replacement of materials (e.g., roof, siding, awnings, etc.), parking resurfacing, and similar maintenance and repair.

RESPONSE: The proposed project is for the construction of a new commercial building and does not meet the exemptions above; therefore, Site Design is required.

17-4.2.030 Review Procedure

Site Design Review shall be conducted using the Type II procedure in Section 17-4.1.030, except that proposals exceeding any one of the thresholds below shall be reviewed using the Type III procedure in Section 17-4.1.040:

- A. The proposed use's estimated vehicle trip generation exceeds 100 average daily trips, based on the latest edition of the Institute of Transportation Engineers (ITE) Manual;
- B. The use exceeds 5,000 square feet of gross leasable floor area; or the project involves more than one-acre total site area;
- C. The proposal involves a Conditional Use (new or expanded);
- D. The proposal involves a variance under Chapter 17-4.7;
- E. The proposal involves expansion of a nonconforming use; or
- F. The Planning Official determines that, due to the nature of the proposal, a public hearing is the most effective way to solicit public input in reviewing the application.

RESPONSE: The proposed project is for construction of an approximately 2,140 square feet single story commercial building with drive-through. The drive-through use

requires a Conditional Use review; therefore, a Type III Site Design Review is required.

17-4.2.040 Application Submission Requirements

All of the following information is required for Site Design Review application submittal, except where the Planning Official and the City Engineer determines that some information is not pertinent and therefore is not required.

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).

RESPONSE: The submitted materials include a full Traffic Impact Analysis and a Stormwater Report. This criterion is therefore met.

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. The site analysis map shall contain all the following information, as the Planning Official deems applicable:
 - a. The applicant's entire property and the surrounding property to a distance sufficient to determine the location of the development in the city, and the relationship between the proposed development site and adjacent property and development. The property boundaries, dimensions, and gross area shall be identified;
 - b. Topographic contour lines at two-foot intervals for slopes, except where the Public Works Director determines that larger intervals will be adequate for steeper slopes;
 - c. Identification of slopes greater than 15 percent, with slope categories identified in five percent increments (e.g., 0%-5%, >5%-10%, >10%-15%, >15%-20%, and so forth);
 - d. The location and width of all public and private streets, drives, sidewalks, pathways, rights-of-way, and easements on the site and adjoining the site;
 - e. Potential natural hazard areas, including, as applicable, the base flood elevation identified on FEMA Flood Insurance Rate Maps or as otherwise determined through site specific survey, areas subject to high water table, and areas designated by the City, county, or state as having a potential for geologic hazards;
 - f. Areas subject to overlay zones;
 - g. Site features, including existing structures, pavement, large rock outcroppings, areas having unique views, and drainage ways, canals, and ditches;
 - h. The location, size, and species of trees and other vegetation (outside proposed building envelope) having a caliper (diameter) of six inches or greater at four feet above grade;
 - i. North arrow, scale, and the names and addresses of all persons listed as owners of the subject property on the most recently recorded deed; and
 - j. Name and address of project designer, engineer, surveyor, and/or planner, if applicable.

RESPONSE: The above information is provided in the submittal materials. Refer to the included existing site conditions plan. This criterion is therefore met as the above information is provided.

2. Proposed Site Plan. The site plan shall contain all the following information:
 - a. The proposed development site, including boundaries, dimensions, and gross area;
 - b. Features identified on the existing site analysis maps that are proposed to remain on the site;
 - c. Features identified on the existing site map, if any, which are proposed to be removed or modified by the development;
 - d. The location and dimensions of all proposed public and private streets, drives, rights-of-way, and easements;
 - e. The location and dimensions of all existing and proposed structures, utilities, pavement, and other improvements on the site. Setback dimensions for all existing and proposed buildings shall be provided on the site plan;
 - f. The location and dimensions of entrances and exits to the site for vehicular, pedestrian, and bicycle access;
 - g. The location and dimensions of all parking and vehicle circulation areas (show striping for parking stalls and wheel stops);
 - h. Pedestrian and bicycle circulation areas, including sidewalks, internal pathways, pathway connections to adjacent properties, and any bicycle lanes or trails;
 - i. Loading and service areas for waste disposal, loading, and delivery;
 - j. Outdoor recreation spaces, common areas, plazas, outdoor seating, street furniture, and similar improvements;
 - k. Location, type, and height of outdoor lighting;
 - l. Location of mail boxes, if known;
 - m. Name and address of project designer, if applicable;
 - n. Locations of bus stops and other public or private transportation facilities; and
 - o. Locations, sizes, and types of signs.

RESPONSE: The above information is provided on Sheet A101. This criterion is therefore met.

3. Architectural Drawings. Architectural drawings shall include, as applicable:
 - a. Building elevations with dimensions;
 - b. Building materials, colors, and type; and
 - c. Name and contact information of the architect or designer.

RESPONSE: Refer to the included elevations and materials board. This criterion is therefore met.

4. Preliminary Grading Plan. A preliminary grading plan prepared by a registered engineer shall be required for development sites one-half acre or larger, or where otherwise required by the City. The preliminary grading plan shall show the location and extent to which grading will take place, indicating general changes to contour lines, slope ratios, slope stabilization proposals, and location and height of retaining walls, if proposed. Surface water detention and treatment plans may also be required, in accordance with Section 17-3.6.040.

RESPONSE: Refer to Sheet C2.0 for the Grading Plan. This criterion is therefore met.

5. Landscape Plan. Where a landscape plan is required, it shall show the following, pursuant to Chapter 17-3.4:
 - a. The location and height of existing and proposed fences, buffering, or screening materials;
 - b. The location of existing and proposed terraces, retaining walls, decks, patios, shelters, and play areas;
 - c. The location, size, and species of the existing and proposed plant materials (at time of planting);
 - d. Existing and proposed building and pavement outlines;
 - e. Specifications for soil at time of planting, irrigation if plantings are not drought tolerant (may be automatic or other approved method of irrigation), and anticipated planting schedule; and
 - f. Other information as deemed appropriate by the Planning Official. An arborist's report may be required for sites with mature trees that are to be retained and protected.

RESPONSE: Refer to Sheet L1.0 to L3.0 for all of the above information. This criterion is therefore met.

6. Deed Restrictions. Copies of all existing and proposed restrictions or covenants, including those for roadway access control.

RESPONSE: A copy of the title report has been provided. There are no existing restrictions or covenants. The proposed project will include a shared access agreement for vehicular and pedestrian traffic between the two (2) parcels. This criterion is therefore met.

7. Narrative. Letter or narrative report documenting compliance with the applicable approval criteria contained in Section 17-4.2.050.

RESPONSE: Refer to the prior and following narrative sections that address all applicable zoning codes.

8. Traffic Impact Analysis, when required by Section 17-3.6.020.A(4).

RESPONSE: A Traffic Impact Analysis has been provided. This criterion is therefore met.

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.

RESPONSE: Any additional studies or exhibits determined necessary will be submitted. This criterion will therefore be met.

17-4.2.050 Approval Criteria

An application for Site Design Review shall be approved if the proposal meets all of the following criteria. The Planning Official, in approving the application, may impose reasonable conditions of approval, consistent with the applicable criteria.

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

RESPONSE: All materials requested in Section 17-4.2.040 have been provided and the application is complete. This criterion is therefore met.

- 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;

RESPONSE: The application complies with all applicable standards of the Zoning Code as demonstrated in this narrative and the included exhibits and drawings. This criterion is therefore met.

- 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;

RESPONSE: This criterion does not apply as there is not existing development associated with the proposed project site.

- D. The proposal complies with all of the Development and Design Standards of Division III, as applicable, including, but not limited to:

1. Chapter 17-3.3 Access and Circulation,
2. Chapter 17-3.4 Landscaping, Fences and Walls, Outdoor Lighting,
3. Chapter 17-3.5 Parking and Loading,
4. Chapter 17-3.6 Public Facilities, and
5. Chapter 17-3.7 Signs;

RESPONSE: As demonstrated in this narrative and the submitted exhibits and drawings the proposed project complies with all applicable design standards in the above Chapters. This criterion is therefore met.

- 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

RESPONSE: As detailed in other areas of this narrative, the drive-through has been located and screened with landscape so that it prevents glare from the queue onto both the right-of-way and the adjacent property. This criterion is therefore met

- F. The proposal meets all existing conditions of approval for the site or use, as required by prior land use decision(s), as applicable.

RESPONSE: This criterion does not apply as there are no existing conditions of approval for the site.

Note: Compliance with other City codes and requirements, though not applicable land use criteria, may be required prior to issuance of building permits.

17-4.2.060 Assurances

Public improvement required as part of a Site Design Review approval shall be subject to the performance guarantee and warranty bond provisions of Section 17-3.6.090, as applicable.

RESPONSE: The required improvement to the Cascade Highway frontage will do conducted in accordance with the provisions of Section 17-3.6.090. This criterion is therefore met.

17-4.2.070 Compliance With Conditions, Permit Expiration, and Modifications

Development shall not commence until the applicant has received all applicable land use and development approvals. Construction of public improvements shall not commence until the City has approved all required public improvement plans (e.g., utilities, streets, public land dedication, etc.). The City may require bonding or other assurances for improvements. Site Design Review approvals are subject to all of the following standards and limitations:

- A. Approval Period.** Site Design Review approvals shall be effective for a period of one year from the date of approval. The approval shall lapse if:
1. A public improvement plan or building permit application for the project has not been submitted within one year of approval; or
 2. Construction on the site is in violation of the approved plan.

RESPONSE: It is understood that Site Design Review approval is good for a period of one (1) year.

- B. Extension.** The Planning Official, upon written request by the applicant, may grant a written extension of the approval period not to exceed one year; provided that:
1. No changes are made on the original approved plan;
 2. The applicant can show intent of initiating construction on the site within the one-year extension period;
 3. There have been no changes to the applicable Code provisions on which the approval was based. If there have been changes to the applicable Code provisions and the subject plan does not comply with those changes, then the extension shall not be granted; in this case, a new Site Design Review shall be required; and
 4. The applicant demonstrates that failure to obtain building permits and substantially begin construction within one year of site design approval was beyond the applicant's control.

RESPONSE: It is understood that extensions may be granted if the above information is provided.

- C. Modifications to Approved Plans and Developments.** Modifications to approved plans are subject to City review and approval under Chapter 17-4.5.

RESPONSE: It is understood that modifications to the approved plans will need City review and approval.

Chapter 17-4.3 Land Divisions and Property Line Adjustments

17-4.3.010 Purpose

The purpose of this chapter is to implement the objectives in subsections A through E:

- A. Provide rules, regulations, and standards governing the approval of subdivisions, partitions, and

property line adjustments as follows:

1. Subdivisions are the creation of four or more lots from one parent lot, parcel, or tract, within one calendar year.
 2. Partitions are the creation of three or fewer lots from one parent lot, parcel, or tract within one calendar year.
 3. Property line adjustments are modifications to lot lines or parcel boundaries that do not result in the creation of new lots (includes consolidation of lots).
- B. Carry out the City’s development pattern, as envisioned by the City’s comprehensive plan.
 - C. Encourage efficient use of land resources and public services, and to provide transportation options.
 - D. Promote the public health, safety, and general welfare through orderly and efficient urbanization.
 - E. Provide adequate light and air, and provide for adequate transportation, water supply, sewage, fire protection, pollution control, surface water management, and protection against natural hazards.

17-4.3.020 General Requirements

- A. Subdivision and Partition Approval Through Two-Step Process.** Applications for subdivision or partition approval shall be processed by means of a preliminary plat evaluation and a final plat evaluation, according to the following two steps:
1. The preliminary plat must be approved before the final plat can be submitted for approval consideration; and
 2. The final plat must demonstrate compliance with all conditions of approval of the preliminary plat.

RESPONSE: This submittal includes the preliminary plat materials. It is understood that the final plat cannot be approved or recorded until any conditions resulting from the preliminary plat are completed.

Note: Property line adjustments and lot consolidation requests (i.e., no new lot is created) are subject to Section 17-4.3.120; they are not subject to Sections 17-4.3.020 through 17-4.3.110.

- B. Compliance With Oregon Revised Statutes (ORS) Chapter 92.** All subdivision and partition proposals shall conform to state regulations in ORS Chapter 92 Subdivisions and Partitions.

RESPONSE: This request for a lot division conforms to all applicable state regulations in ORS Chapter 92.

- C. Future Re-Division Plan.** When subdividing or partitioning tracts into large lots (i.e., greater than three times or 300 percent the minimum lot size allowed by the underlying land use district), the lots shall be of such size, shape, and orientation as to facilitate future re-division and extension of streets and utilities. The applicant shall submit a future re-division plan, or shadow plan, indicating how re-division of oversized lots and extension of planned public facilities to adjacent parcels can occur in the future. (See also Section 17-4.3.040 Pre-Planning for Large Sites.)

RESPONSE: Per Table 17-2.2.040.E there are no minimum lot standards.

- D. Adequate Utilities.** All lots created through land division shall have adequate public utilities and facilities such as streets, water, sewer, gas, and electrical systems, pursuant to Chapter 17-3.6. These systems shall be located and constructed underground where feasible.

RESPONSE: Both lots in this requested partition will have adequate public utilities and facilities as demonstrated in this narrative and the included drawings and documents.

- E. Adequate Drainage.** All subdivision and partition proposals shall have adequate surface water drainage facilities that reduce exposure to flood damage and improve water quality. Water quality or quantity control improvements may be required, pursuant to Chapter 17-3.6.

RESPONSE: Drainage has been designed by a professional registered civil engineer and will be adequate for the site and will not result in flood damage or negatively impact water quality. This criterion will therefore be met.

- F. Adequate Access.** All lots created or reconfigured shall have adequate vehicle access and parking, as may be required, pursuant to Chapter 17-3.3.

RESPONSE: The proposed project includes two (2) lots. The western parcel will be developed at the time of the division. It is provided with adequate parking; refer to the included narrative section and drawings. Parcel 2 will provide adequate parking when it is developed in the future. This criterion is therefore met.

17-4.3.030 Preliminary Plat Approval Process

- A. Review of Preliminary Plat.** Preliminary plats for partitions shall be processed using the Type II procedure under Section 17-4.1.030. Subdivisions shall be processed using the Type III procedure under Section 17-4.1.040. All preliminary plats, including partitions and subdivisions, are subject to the approval criteria in Section 17-4.3.070.

RESPONSE: Materials for a Type II Preliminary Plat review have been submitted.

- B. Preliminary Plat Approval Period.** Preliminary plat approval shall be effective for a period of two years from the date of approval. The preliminary plat shall lapse if a final plat has not been submitted or other assurance provided, pursuant to Section 17-4.3.090, within the two-year period. The Planning Commission may approve phased subdivisions, pursuant to subsection D, with an overall time frame of more than two years between preliminary and final plat approvals.

RESPONSE: It is understood that a preliminary plat approval is effective for a period of two (2) years.

- C. Modifications and Extensions.** The applicant may request changes to the approved preliminary plat or conditions of approval following the procedures and criteria provided in Chapter 17-4.5. The Planning Commission may, upon written request by the applicant and payment of the required fee, grant written extensions of the approval period not to exceed one year per extension, provided that all of the following criteria are met:

1. Any changes to the preliminary plat follow the procedures in Chapter 17-4.5;
2. The applicant has submitted written intent to file a final plat within the one-year extension period;
3. An extension of time will not prevent the lawful development of abutting properties;
4. There have been no changes to the applicable Code provisions on which the approval was based. If such changes have occurred, a new preliminary plat application shall be required; and
5. The extension request is made before expiration of the original approved plan.

RESPONSE: It is understood that changes to an approved preliminary plat would require review by the City.

- D. Phased Subdivision.** The Planning Commission may approve plans for phasing a subdivision, and changes to approved phasing plans, provided the applicant's proposal meets all of the following criteria:
1. In no case shall the construction time period (i.e., for required public improvements, utilities, streets) for the first subdivision phase be more than one year;
 2. Public facilities shall be constructed in conjunction with or prior to each phase;
 3. The phased development shall not result in requiring the City or a third party (e.g., owners of lots) to construct public facilities that are required as part of the approved development proposal; and
 4. The proposed phasing schedule shall be reviewed with the preliminary subdivision plat application.

RESPONSE: This criterion does not apply as the project does not include a phased subdivision.

17-4.3.060 Preliminary Plat Submission Requirements

Applications for Preliminary Plat approval shall contain all of the following information:

A. General Submission Requirements.

1. Information required for a Type III review (see Section 17-4.1.040); and
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, which shall address, at a minimum, the transportation system, including required improvements for motorized and non-motorized vehicles and pedestrians; the drainage system; the parks system (for subdivisions and planned unit developments of 20 or more dwelling units); water system; and sewer system. For each system and type of impact, the study shall propose improvements necessary to meet City standards under adopted ordinances and facility master plans. The City may require a Traffic Impact Analysis pursuant to Section 17-3.6.020.A.4.

RESPONSE: This application includes a full TIA and drainage report. This criterion is therefore met.

- B. Preliminary Plat Information.** In addition to the general information described in subsection A, above, the preliminary plat application shall consist of drawings and supplementary written material (i.e., on forms and/or in a written narrative) adequate to provide all of the following information, in quantities determined by the Planning Official:

1. General Information.
 - a. Name of subdivision (partitions are named by year and file number), which shall not duplicate the name of another land division in Clackamas County (check with County Surveyor);
 - b. Date, north arrow, and scale of drawing;
 - c. Location of the development sufficient to define its location in the city, boundaries, and a legal description of the site;
 - d. Zoning district of parcel to be divided, including any overlay zones;
 - e. A title block including the names, addresses, and telephone numbers of the owners of the subject property and, as applicable, the name of the engineer and surveyor, and the date of the survey; and
 - f. Identification of the drawing as a "preliminary plat."

RESPONSE: A Preliminary Plat drawing has been submitted that includes all of the above information. This criterion is therefore met.

2. Existing Conditions. Except where the Planning Official deems certain information is not relevant, applications for Preliminary Plat approval shall contain all of the following information on existing conditions of the site:

- a. Streets. Location, name, and present width of all streets, alleys, and rights-of-way on and abutting the site;
- b. Easements. Width, location and purpose of all existing easements of record on and abutting the site;
- c. Utilities. Location and identity of all utilities on and abutting the site. If water mains and sewers are not on or abutting the site, indicate the direction and distance to the nearest one and show how utilities will be brought to standards;
- d. Ground elevations shown by contour lines at two-foot vertical intervals. Such ground elevations shall be related to some established benchmark or other datum approved by the County Surveyor; the Planning Commission may waive this standard for partitions when grades, on average, are less than six percent;
- e. The location and elevation of the closest benchmark(s) within or adjacent to the site (i.e., for surveying purposes);
- f. The Base Flood Elevation, per FEMA Flood Insurance Rate Maps, as applicable;
- g. North arrow and scale; and
- h. Other information, as deemed necessary by the Planning Official for review of the application. The City may require studies or exhibits prepared by qualified professionals to address specific site features and code requirements.

RESPONSE: Refer to Sheet C0.2 for existing conditions. This criterion is therefore met.

3. Proposed Development. Except where the Planning Official deems certain information is not relevant, applications for Preliminary Plat approval shall contain all of the following information on the proposed development:
 - a. Proposed lots, streets, tracts, open space, and park land (if any); location, names, right-of-way dimensions, approximate radius of street curves; and approximate finished street center line grades. All streets and tracts that are being held for private use and all reservations and restrictions relating to such private tracts shall be identified;
 - b. Easements: location, width, and purpose of all proposed easements;
 - c. Lots and private tracts (e.g., private open space, common area, or street): approximate dimensions, area calculation (e.g., in square feet), and identification numbers for all proposed lots and tracts;
 - d. Proposed uses of the property, including all areas proposed to be dedicated as public right-of-way or reserved as open space for the purpose of surface water management, recreation, or other use;
 - e. Proposed public street improvements, pursuant to Chapter 17-3.6;
 - f. On slopes exceeding an average grade of 10 percent, as determined by the City Engineer, the preliminary location of development on lots (e.g., building envelopes), demonstrating that future development can meet minimum required setbacks and applicable engineering design standards;
 - g. Preliminary design for extending City water and sewer service to each lot, per Chapter 17-3.6;
 - h. Proposed method of stormwater drainage and treatment, if required, pursuant to Chapter 17-3.6;
 - i. The approximate location and identity of other utilities, including the locations of street lighting fixtures, as applicable;
 - j. Evidence of compliance with applicable overlay zones; and
 - k. Evidence of contact with the applicable road authority for proposed new street connections.

RESPONSE: A preliminary plat with all of the above information has been provided. This

criterion is therefore met.

17-4.3.070 Preliminary Plat Approval Criteria

A. Approval Criteria. The Planning Commission may approve, approve with conditions, or deny a preliminary plat. The Planning Commission decision shall be based on findings of compliance with all of the following approval criteria:

1. The land division application shall conform to the requirements of Chapter 17-4.3;

RESPONSE: The proposed land division conforms with all applicable standards of Chapter 17-4.3. Refer to the included narrative section for detailed information. This criterion is therefore met.

2. All proposed lots, blocks, and proposed land uses shall conform to the applicable provisions of Division II Zoning Regulations, except as modified by the provisions of Chapter 17-4.3 (e.g., lot size averaging);

RESPONSE: The proposed lots and land uses conform to all applicable provisions of the Zoning Code. Refer to the included narrative sections for detailed responses. This criterion is therefore met.

3. Access to individual lots, and public improvements necessary to serve the development, including, but not limited to, water, sewer, and streets, shall conform to Division III Community Design Standards;

RESPONSE: Both lots have access and are served with utilities. Refer to the included narrative and drawings. This criterion is therefore met.

4. The proposed plat name is not already recorded for another subdivision, and satisfies the provisions of ORS Chapter 92;

RESPONSE: The proposed plat includes a name believed to not be in already in use. This criterion is therefore met.

5. The proposed streets, utilities, and surface water drainage facilities conform to City of Molalla adopted master plans and applicable engineering standards, and allow for transitions to existing and potential future development on adjacent lands. The preliminary plat shall identify all proposed public improvements and dedications;

RESPONSE: The project does not include any proposed streets. All utilities and surface water drainage conforms to the City of Molalla requirements as well as ODOT (for drainage). The preliminary plat identifies all proposed public improvements and dedications. This criterion is therefore met.

6. All proposed private common areas and improvements, if any, are identified on the preliminary plat and maintenance of such areas is assured through appropriate legal instrument;

RESPONSE: The project will include a shared cross property access agreement and it will be noted as required on all legal instruments.

7. Evidence that any required state and federal permits, as applicable, have been obtained or can reasonably be obtained prior to development;

RESPONSE: Evidence of all required state and federal permits will be provided. This criterion will therefore be met.

8. Evidence that improvements or conditions required by the City, road authority, Clackamas County, special districts, utilities, and/or other service providers, as applicable to the project, have been or can be met; and

RESPONSE: Evidence that improvements or conditions required by the City, road authority, Clackamas County, special district, utilities and/or other service providers will be provided as required. This criterion will therefore be met.

9. The architectural standards of Section 17-3.2.030.D are met.

RESPONSE: Applicable architectural standards of Section 17-3.2.030.D have been met. Refer to the included corresponding narrative section. This criterion is therefore met.

- B. Conditions of Approval.** The Planning Commission may attach such conditions as are necessary to carry out provisions of this Code, and other applicable ordinances and regulations.

RESPONSE: It is understood that Conditions of Approval might be imposed.

Chapter 17-4.4 Conditional Use Permits

17-4.4.010 Purpose

There are certain uses which, due to the nature of their impacts on surrounding land uses and public facilities, require a case-by-case review and analysis. Conditional uses are identified in Chapter 17-2.2 Zoning District Regulations. The purpose of this chapter is to provide procedures and standards for permitting conditional uses.

17-4.4.020 Approvals Process

The Planning Commission using a Type III procedure, per Section 17-4.1.040, reviews conditional use applications. The Planning Commission may require annual, or less frequent, renewal of conditional use permits. Modifications to conditional use permits are subject to Chapter 17-4.5 Modifications to Approved Plans and Conditions.

17-4.4.030 Application Submission Requirements

In addition to the submission requirements for a Type III review under Section 17-4.1.040, applications for conditional use permits shall include a description of existing conditions, a site plan, and information on any existing and any proposed restrictions or covenants. (For a more detailed description of each item, please refer to Section 17-4.2.040 Application Submission Requirements.) An application for a conditional use permit shall also contain a narrative report or letter responding to the applicable approval criteria in Section 17-4.4.040.

RESPONSE: The included submittal materials include an existing conditions plan site plan and information on any existing and proposed restriction and covenants. This criterion is therefore met.

17-4.4.040 Criteria, Standards, and Conditions of Approval

The Planning Commission shall approve, approve with conditions, or deny an application for a conditional use, including requests to enlarge or alter a conditional use, based on findings of fact with respect to all of the criteria and standards in subsections A and B.

A. Use Criteria.

1. The site size, dimensions, location, topography, and access are adequate for the needs of the proposed use, considering the proposed building mass, parking, traffic, noise, vibration, exhaust/emissions, light, glare, erosion, odor, dust, visibility, safety, and aesthetic considerations;

RESPONSE: The proposed use is for a single coffee drive-through tenant. The included site plan demonstrates that the site area can safely accommodate the use for both vehicular and pedestrian patrons. The included TIA demonstrates that the use can safely operate without negatively impacting adjacent properties or the abutting right-of-way. This criterion is therefore met.

2. The negative impacts of the proposed use, if any, on adjacent properties and on the public can be mitigated through application of other code standards, or other reasonable conditions of approval;

RESPONSE: The site has been designed so that the drive-through is behind the building and shielded from the street by the building itself. This will ensure that headlights will not impact the right-of-way. The location of the drive-through also places the pick-up window away from the abutting northern parcel, that while zoned light industrial, has a residential home on it. This ensures that the drive-through will not impact that parcel. This criterion is met as any negative impacts of the proposed use on adjacent properties, or the public have been mitigated.

3. All required public facilities, including water, sanitary sewer, and streets, have adequate capacity or are to be improved to serve the proposal, consistent with City standards; and

RESPONSE: All public facilities have adequate capacity as demonstrated by the included reports as well as information provided in the preapplication meeting. This criterion is therefore met.

4. A conditional use permit shall not allow a use that is prohibited or not expressly allowed under Division II; nor shall a conditional use permit grant a variance without a variance application being reviewed with the conditional use application.

RESPONSE: The use is not a prohibited use. The proposed use is for a coffee shop with drive-through. This criterion is therefore met.

B. Conditions of Approval. The City may impose conditions that are found necessary to ensure that the use is compatible with other uses in the vicinity, and that the negative impact of the proposed use on the surrounding uses and public facilities is minimized. These conditions include, but are not limited to, one or more of the following:

1. Limiting the hours, days, place, and/or manner of operation;

RESPONSE: The proposed project site abuts other commercial and industrial zoned parcels. Those parcels are developed with a number of commercial businesses including other fast-food drive-through uses. The proposed coffee drive-through will operate during standard hours and is not a 24-hour business. The hours of operation will not negatively impact other area uses.

2. Requiring site or architectural design features which minimize environmental impacts such as noise, vibration, exhaust/emissions, light, glare, erosion, odor, and/or dust;

RESPONSE: The drive-through has been oriented away from the street with the queue lane entirely shielded by the building itself. This will prevent glare and light emissions from negatively impacting cars on the right-of-way. A landscape hedge will also be installed around the southern portion of the queue lane to prevent headlights from shining on to the abutting property. The ordering board is located internal to the site and facing away from abutting properties to reduce noise. This criterion is met as design has taken into account features to minimize negative impacts of the drive-through use.

3. Requiring larger setback areas, lot area, and/or lot depth or width;

RESPONSE: The proposed project provides setbacks larger than the 0 feet build to line in order to provide outdoor patio area and a site design that works with the canted (angled) property line. This pushes the building and the drive-through (which is behind the building) further from the street reducing impacts on the right-of-way as demonstrated in subsection 2 above.

4. Limiting the building or structure height, size, lot coverage, and/or location on the site;

RESPONSE: The proposed building is single story and only 20 feet tall. The lot will be divided into two (2) parcels and the included drawings and studies demonstrate that the proposed use can operate safely on the proposed lot area of parcel 1.

5. Designating the size, number, location, and/or design of vehicle access points or parking and loading areas;

RESPONSE: The project proposes only one (1) access point to the right-of-way and it has been placed as far north on the site as practicable. This allows the access to align with the Les Schwab driveway across the highway for safety and maximizes the spacing between driveways on the abutting south parcel as well as the highway right-of-way intersection.

6. Requiring street right-of-way to be dedicated and street improvements made, or the installation of pathways or sidewalks, as applicable;

RESPONSE: The proposed project includes a right-of-way dedication and frontage improvements for Cascade Highway including the installation of a new sidewalk.

7. Requiring landscaping, screening, drainage, water quality facilities, and/or improvement of parking and loading areas;

RESPONSE: The proposed project meets the zoning requirements for landscaping, screening, drainage, water quality and parking improvements as demonstrated in the included drawings and this narrative.

8. Limiting the number, size, location, height, and/or lighting of signs;

RESPONSE: All signage will follow the applicable allowances and standards for signage as found in the City zoning code.

9. Limiting or setting standards for the location, type, design, and/or intensity of outdoor lighting;

RESPONSE: All lighting follows the applicable allowances and standards for lighting as found in the City's zoning code. Refer to the included drawings and narrative sections for illustration and detailed information on lighting and how it meets those standards.

10. Requiring berms, screening, or landscaping and the establishment of standards for their installation and maintenance;

RESPONSE: The project includes a screening hedge around the southern edge of the queue lane and a hedge around the north property line. This prevents headlights from the queue lane from spilling onto either abutting parcel.

11. Requiring and designating the size, height, location, and/or materials for fences;

RESPONSE: The project does not include any fences.

12. Requiring the protection and preservation of existing trees, soils, vegetation, watercourses, habitat areas, drainage areas, historic resources, cultural resources, and/or sensitive lands;

RESPONSE: The only item from the list above present on the site is existing trees. There are trees in the northeast corner of the site along the south and north property lines. The proposed development requires the removal of the northwestern group of trees for grading. The site does not have access to a stormwater facility onsite and infiltration rates do not allow infiltration. The best option for drainage is to drain the site to the right-of-way which requires filling the eastern end of the site as it is the low point of the site. The proposed feet of fill would kill the existing trees thus they must be removed. Additionally, there are six (6) existing trees that need to be removed on Parcel 1 due to proximity to the planned construction which would damage roots and result in the trees demise.

13. Requiring improvements to water, sanitary sewer, or storm drainage systems, in conformance with City standards; and

RESPONSE: The project includes appropriate and proportional improvements to systems to allow for connection of the parcel.

14. The Planning Commission may require review and renewal of conditional use permits annually or in accordance with another timetable. Where applicable, the timetable shall provide for periodic review and renewal, or expiration, of the conditional use permit to ensure compliance with conditions of approval; such period review may occur through a Type III review process, except where the Planning Commission delegates authority to the Planning Official to issue renewals, who shall do so through a Type I or Type II procedure (see Chapter 17-4.1 for review procedures).

RESPONSE: The proposed use is for a small drive-up coffee user. The included narrative and TIA demonstrate that the site and the use will not negatively impact the abutting right-of-way, abutting parcels or abutting uses. The applicant therefore respectfully requests that the conditional use not be encumbered with a renewal timeframe.



**First American Title Insurance Company
National Commercial Services
200 SW Market Street, Suite 250
Portland, Oregon 97201**

Escrow Officer: **Rachael Rodgers**
Phone: **(503)795-7608**
Fax: **(866)406-9291**
E-mail **rrodgers@firstam.com**

File No: **NCS-1046648-OR1**

Title Officer: **Rachael Rodgers**
Phone: **(503)795-7608**
Fax: **(866)406-9291**
E-mail **rrodgers@firstam.com**

File No: **NCS-1046648-OR1**

PRELIMINARY TITLE REPORT NO. 2

ALTA Owners Standard Coverage	Liability	\$	475,000.00	Premium	\$	TBD
ALTA Owners Extended Coverage	Liability	\$		Premium	\$	
ALTA Lenders Standard Coverage	Liability	\$		Premium	\$	
ALTA Lenders Extended Coverage	Liability	\$		Premium	\$	
ALTA Leasehold Standard Coverage	Liability	\$		Premium	\$	
ALTA Leasehold Extended Coverage	Liability	\$		Premium	\$	
Endorsements	Liability	\$		Premium	\$	
Govt Service Charge				Cost	\$	
Other					\$	

We are prepared to issue Title Insurance Policy or Policies in the form and amount shown above, insuring title to the following described land:

The land referred to in this report is described in Exhibit "A" attached hereto.

and as of 09/17/2021 at 8:00 a.m., [title to the fee simple estate is vested in:](#)

Michael W. Kelber, Trustee of the Michael W. Kelber M.D., P.C. 401(K) Profit Sharing Plan

Subject to the exceptions, exclusions, and stipulations which are ordinarily part of such Policy form and the following:

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records; proceedings by a public agency which may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the public records.
2. Facts, rights, interests or claims which are not shown by the public records but which could be ascertained by an inspection of the land or by making inquiry of persons in possession thereof.
3. Easements, or claims of easement, not shown by the public records; reservations or exceptions in patents or in Acts authorizing the issuance thereof; water rights, claims or title to water.
4. Any encroachment (of existing improvements located on the subject land onto adjoining land or of existing improvements located on adjoining land onto the subject land), encumbrance, violation, variation, or adverse circumstance affecting the title that would be disclosed by an accurate and complete land survey of the subject land.
5. Any lien, or right to a lien, for services, labor, material, equipment rental or workers compensation heretofore or hereafter furnished, imposed by law and not shown by the public records.

The exceptions to coverage 1-5 inclusive as set forth above will remain on any subsequently issued Standard Coverage Title Insurance Policy.

In order to remove these exceptions to coverage in the issuance of an Extended Coverage Policy the following items are required to be furnished to the Company; additional exceptions to coverage may be added upon review of such information:

- A. Survey or alternative acceptable to the company
 - B. Affidavit regarding possession
 - C. Proof that there is no new construction or remodeling of any improvement located on the premises. In the event of new construction or remodeling the following is required:
 - i. Satisfactory evidence that no construction liens will be filed; or
 - ii. Adequate security to protect against actual or potential construction liens;
 - iii. Payment of additional premiums as required by the Industry Rate Filing approved by the Insurance Division of the State of Oregon
6. Rights of the public in and to that portion of the Land lying within the limits of streets, roads and highways.
 7. An easement for Communication line and incidental purposes, recorded June 21, 1995 as Fee No. [95036027](#) .
 In Favor of: Molalla Telephone Company, an Oregon corporation
 Affects: as described therein
 8. An easement for Gas pipeline and incidental purposes, recorded April 8, 2003 as Fee No. [2003043142](#) .
 In Favor of: Northwest Natural Gas Company
 Affects: as described therein
 9. The terms and provisions contained in the document entitled "City of Molalla Resolution 2010-01" recorded April 13, 2010 as Fee No. [2010-022085](#) .

10. A contract of sale upon the terms, conditions and provisions contained therein, recorded as, or disclosed by a document recorded December 16, 2013 as Fee No. [2013 082470](#) .
- Vendor: Michael W. Kelber, Trustee of the Michael W. Kelber, M.D., P.C.
401(K) Profit Sharing Plan
- Vendee: Joyce Ryan

The Vendor's interest in said Contract was assigned to PENSCO Trust Company, FBO Michael W. Kelber IRA by instrument recorded April 16, 2014 as Fee No. [2014 017354](#) .

11. Terms, provisions, conditions of the Trust Agreement of Michael W. Kelber, M.D., P.C. 401(K) Profit Sharing Plan dated Undisclosed, and any subsequent modifications, a copy of which should be submitted to this office for inspection.
12. We find no outstanding voluntary liens of record affecting subject property. An inquiry should be made concerning the existence of any unrecorded lien or other indebtedness which could give rise to any security interest in the subject property.
13. Unrecorded leases or periodic tenancies, if any.
14. General and special taxes and assessments for the fiscal year 2021-2022, a lien not yet due or payable.

-END OF EXCEPTIONS-

INFORMATIONAL NOTES

NOTE: Evidence of the authority of the individual(s) to execute the forthcoming document for Retail Capital Partners, LLC, an Oregon limited liability company, copies of the current operating agreement should be submitted prior to closing.

NOTE: This report does not include a search for Financing Statements filed in the office of the Secretary of State, or in a county other than the county wherein the premises are situated, and no liability is assumed if a Financing Statement is filed in the office of the County Clerk (Recorder) covering fixtures on the premises wherein the lands are described other than by metes and bounds or under the rectangular survey system or by recorded lot and book.

NOTE: Taxes for the year 2020-2021, paid in full.

Tax Amount:	\$2,483.45
Code No.:	035-039
Map & Tax Lot No.	52E07A 02400
Property ID/Key No.	01088851

**THANK YOU FOR CHOOSING FIRST AMERICAN TITLE
WE KNOW YOU HAVE A CHOICE!**



First American Title Insurance Company of Oregon

SCHEDULE OF EXCLUSIONS FROM COVERAGE

1. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 2006 EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy, and the Company will not pay loss or damage, costs, attorneys' fees, or expenses that arise by reason of:

1. (a) Any law, ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating, prohibiting, or relating to
 - (i) the occupancy, use, or enjoyment of the Land;
 - (ii) the character, dimensions, or location of any improvement erected on the Land;
 - (iii) the subdivision of land; or
 - (iv) environmental protection;
 or the effect of any violation of these laws, ordinances, or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5.
 - (b) Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 6.
2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.
3. Defects, liens, encumbrances, adverse claims, or other matters
 - (a) created, suffered, assumed, or agreed to by the Insured Claimant;
 - (b) not Known to the Company, not recorded in the Public Records at Date of Policy, but Known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;
 - (c) resulting in no loss or damage to the Insured Claimant;
 - (d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risk 11, 13, or 14); or
 - (e) resulting in loss or damage that would not have been sustained if the Insured Claimant had paid value for the Insured Mortgage.
4. Unenforceability of the lien of the Insured Mortgage because of the inability or failure of an Insured to comply with applicable doing-business laws of the state where the Land is situated.
5. Invalidity or unenforceability in whole or in part of the lien of the Insured Mortgage that arises out of the transaction evidenced by the Insured Mortgage and is based upon usury or any consumer credit protection or truth-in-lending law.
6. Any claim, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that the transaction creating the lien of the Insured Mortgage, is
 - (a) a fraudulent conveyance or fraudulent transfer, or
 - (b) a preferential transfer for any reason not stated in Covered Risk 13(b) of this policy.
7. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching between Date of Policy and the date of recording of the Insured Mortgage in the Public Records. This Exclusion does not modify or limit the coverage provided under Covered Risk 11(b).

2. American Land Title Association OWNER POLICY - 2006 EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy, and the Company will not pay loss or damage, costs, attorneys' fees, or expenses that arise by reason of:

1. (a) Any law, ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating, prohibiting, or relating to
 - (i) the occupancy, use, or enjoyment of the Land;
 - (ii) the character, dimensions, or location of any improvement erected on the Land;
 - (iii) the subdivision of land; or
 - (iv) environmental protection;
 or the effect of any violation of these laws, ordinances, or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5.
 - (b) Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 6.
2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.
3. Defects, liens, encumbrances, adverse claims, or other matters
 - (a) created, suffered, assumed, or agreed to by the Insured Claimant;
 - (b) not Known to the Company, not recorded in the Public Records at Date of Policy, but Known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;
 - (c) resulting in no loss or damage to the Insured Claimant;
 - (d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risks 9 and 10); or
 - (e) resulting in loss or damage that would not have been sustained if the Insured Claimant had paid value for the Title.
4. Any claim, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that the transaction vesting the Title as shown in Schedule A, is
 - (a) a fraudulent conveyance or fraudulent transfer; or
 - (b) a preferential transfer for any reason not stated in Covered Risk 9 of this policy.
5. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching between Date of Policy and the date of recording of the deed or other instrument of transfer in the Public Records that vests Title as shown in Schedule A.

Exhibit "A"

Real property in the County of Clackamas , State of Oregon, described as follows:

PART OF TRACT 38, THE SHAVER PLACE [PLAT [BOOK 12, PAGE 0017](#), MAP NO. 360], COUNTY OF CLACKAMAS AND STATE OF OREGON, DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT WHICH IS SOUTH 88° 20' WEST 352.4 FEET FROM THE NORTHEAST CORNER OF SAID TRACT 38;

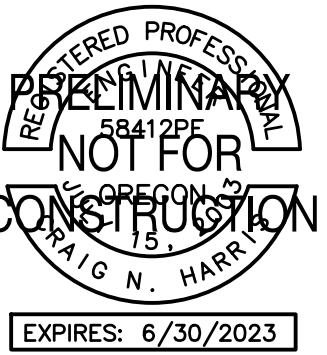
THENCE NORTH 82° WEST 311.2 FEET;

THENCE SOUTH 23° 56' WEST 146.1 FEET;

THENCE SOUTH 82° EAST 351.3 FEET;

THENCE NORTH 8° EAST 140.5 FEET TO THE POINT OF BEGINNING.

THE LEGAL DESCRIPTION WAS CREATED PRIOR TO JANUARY 01, 2020.



Well-crafted simplicity.

AAI alghan associates, inc.
ENGINEERING
4875 BW Griffin Drive | Suite 100 | Beaverton, OR | 97005
503.620.3030 fax | 503.620.5509 fax | www.aaainc.com
Project No. A21153.10

RETAIL CAPITAL PARTNERS

MOLALLA RETAIL

Revisions

JR 19079

Original Issue: 00.00.0000
Drawn/Check By: DWN/CHK_BY

©2021 Baysinger Partners Architecture

GENERAL NOTES

C0.1
DESIGN REVIEW

MATERIAL NOTES

- GENERAL: MATERIALS SHALL BE NEW. THE USE OF MANUFACTURER'S NAMES, MODELS, AND NUMBERS IS INTENDED TO ESTABLISH STYLE, QUALITY, APPEARANCE, AND USEFULNESS. PROPOSED SUBSTITUTIONS WILL REQUIRE WRITTEN APPROVAL FROM ENGINEER PRIOR TO INSTALLATION.
- STORM AND SANITARY SEWER PIPING SHALL BE PVC PIPE AS INDICATED IN THE PLANS. PIPES WITH LESS THAN 2' OF COVER SHALL BE C900/C905 PVC, HDPE OR DUCTILE IRON PIPE.
- PRIVATE WATER MAINS 4-INCH DIAMETER AND LARGER SHALL BE DUCTILE IRON PIPE SCH 52 OR C900; AS INDICATED IN THE PLANS.
- PRIVATE WATER LINES 3-INCH DIAMETER AND SMALLER SHALL BE TYPE K COPPER OR PVC; AS INDICATED IN THE PLANS.
- CONCRETE FOR CURBS, SIDEWALK AND DRIVEWAYS SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3,500 PSI AT 28 DAYS.

SEPARATION STATEMENT

ALL WATER MAIN CROSSINGS SHALL CONFORM TO THE OREGON STATE HEALTH DEPARTMENT, CHAPTER 333. WATER MAINS SHALL CROSS OVER SANITARY SEWERS WITH A 18" MINIMUM CLEARANCE BETWEEN OUTSIDE DIAMETERS OF PIPE WITH ALL PIPE JOINTS EQUIDISTANT FROM CROSSING. HORIZONTAL SEPARATION BETWEEN WATER MAINS AND SANITARY SEWERS IN PARALLEL INSTALLATIONS SHALL BE 10'. MAINTAIN 12" MINIMUM VERTICAL DISTANCE FOR ALL OTHER UTILITY CROSSINGS AND 12" HORIZONTAL PARALLEL DISTANCE. IN CASES WHERE IT IS NOT POSSIBLE TO MAINTAIN THE MINIMUM 10' HORIZONTAL SEPARATION, THE WATER MAIN SHALL BE LAID ON A SEPARATE SHELF IN THE TRENCH 18" INCHES ABOVE THE SEWER.

CONSTRUCTION NOTES

DEMOLITION

- THE CONTRACTOR SHALL BE RESPONSIBLE FOR DEMOLITION AND DISPOSAL OF EXISTING AC, CURBS, SIDEWALKS AND OTHER SITE ELEMENTS WITHIN THE SITE AREA IDENTIFIED IN THE PLANS.
- EXCEPT FOR MATERIALS INDICATED TO BE STOCKPILED OR TO REMAIN ON OWNER'S PROPERTY, CLEARED MATERIALS SHALL BECOME CONTRACTOR'S PROPERTY, REMOVED FROM THE SITE, AND DISPOSED OF PROPERLY.
- ITEMS INDICATED TO BE SALVAGED SHALL BE CAREFULLY REMOVED AND DELIVERED STORED AT THE PROJECT SITE AS DIRECTED BY THE OWNER.
- ALL LANDSCAPING, PAVEMENT, CURBS AND SIDEWALKS BEYOND THE IDENTIFIED SITE AREA, DAMAGED DURING THE CONSTRUCTION SHALL BE REPLACED TO THEIR ORIGINAL CONDITION OR BETTER.
- CONCRETE SIDEWALKS SHOWN FOR DEMOLITION SHALL BE REMOVED TO THE NEAREST EXISTING CONSTRUCTION JOINT.
- SAWCUT STRAIGHT MATCHLINES TO CREATE A BUTT JOINT BETWEEN THE EXISTING AND NEW PAVEMENT.

UTILITIES

- ADJUST ALL INCIDENTAL STRUCTURES, MANHOLES, VALVE BOXES, CATCH BASINS, FRAMES AND COVERS, ETC. TO FINISHED GRADE.
- CONTRACTOR SHALL ADJUST ALL EXISTING AND/OR NEW FLEXIBLE UTILITIES (WATER, TV, TELEPHONE, ELEC., ETC.) TO CLEAR ANY EXISTING OR NEW GRAVITY DRAIN UTILITIES (STORM DRAIN, SANITARY SEWER, ETC.) IF CONFLICT OCCURS.
- CONTRACTOR SHALL COORDINATE WITH PRIVATE UTILITY COMPANIES FOR THE INSTALLATION OF OR ADJUSTMENT TO GAS, ELECTRICAL, POWER AND TELEPHONE SERVICE.
- BEFORE BACKFILLING ANY SUBGRADE UTILITY IMPROVEMENTS CONTRACTOR SHALL SURVEY AND RECORD MEASUREMENTS OF EXACT LOCATION AND DEPTH AND SUBMIT TO ENGINEER AND OWNER.

STORM AND SANITARY

- CONNECTIONS TO EXISTING STORM AND SANITARY SEWERS SHALL CONFORM TO THE 2021 OREGON STANDARD SPECIFICATIONS FOR CONSTRUCTION, SECTION 00490, "WORK ON EXISTING SEWERS AND STRUCTURES".
- BEGIN LAYING STORM DRAIN AND SANITARY SEWER PIPE AT THE LOW POINT OF THE SYSTEM, TRUE TO GRADE AND ALIGNMENT INDICATED WITH UNBROKEN CONTINUITY OF INVERT. THE CONTRACTOR SHALL ESTABLISH LINE AND GRADE FOR THE STORM AND SANITARY SEWER PIPE USING A LASER.
- ALL ROOF DRAIN AND CATCH BASIN LEADERS SHALL HAVE A MINIMUM SLOPE OF 1 PERCENT UNLESS NOTED OTHERWISE IN THE PLANS.
- ALL STORM AND SANITARY FITTINGS TO BE ECCENTRIC FITTINGS UNLESS OTHERWISE NOTED.

WATER

- ALL WATER AND FIRE PROTECTION PIPE SHALL HAVE A MINIMUM 36-INCH COVER TO THE FINISH GRADE.
- ALL WATER AND FIRE PRESSURE FITTINGS SHALL BE PROPERLY RESTRAINED WITH THRUST BLOCKS PER DETAIL.
- ALL WATER MAIN / SANITARY SEWER CROSSINGS SHALL CONFORM TO THE OREGON STATE HEALTH DEPARTMENT REGULATIONS, CHAPTER 333.

EARTHWORKS

- CONTRACTOR SHALL PREVENT SEDIMENTS AND SEDIMENT LADEN WATER FROM ENTERING THE STORM DRAINAGE SYSTEM.
- TRENCH BEDDING AND BACKFILL SHALL BE AS SHOWN ON THE PIPE BEDDING AND BACKFILL DETAIL, THE PROJECT SPECIFICATIONS AND AS REQUIRED IN THE SOILS REPORT. FLOODING OR JETTING THE BACKFILLED TRENCHES WITH WATER WILL NOT BE PERMITTED.
- SUBGRADE AND TRENCH BACKFILL SHALL BE COMPACTED TO AT LEAST 95% OF THE MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D-698. FLOODING OR JETTING THE BACKFILLED TRENCHES WITH WATER IS NOT PERMITTED.

PAVING

- SEE ARCHITECTURAL PLANS FOR SIDEWALK FINISHING AND SCORING PATTERNS.

GENERAL NOTES

- CONSTRUCTION LAYOUT (ALL ACTUAL LINES AND GRADES) SHALL BE STAKED BY A PROFESSIONAL SURVEYOR, REGISTERED IN THE STATE OF OREGON, BASED ON COORDINATES, DIMENSIONS, BEARINGS, AND ELEVATIONS, AS SHOWN, ON THE PLANS.
- PROJECT CONTROL SHALL BE FIELD VERIFIED AND CHECKED FOR RELATIVE HORIZONTAL POSITION PRIOR TO BEGINNING CONSTRUCTION LAYOUT.
- PROJECT CONTROL SHALL BE FIELD VERIFIED AND CHECKED FOR RELATIVE VERTICAL POSITION BASED ON THE BENCHMARK STATED HEREON, PRIOR TO BEGINNING CONSTRUCTION LAYOUT.
- WHEN DIMENSIONS AND COORDINATE LOCATIONS ARE REPRESENTED - DIMENSIONS SHALL HOLD OVER COORDINATE LOCATION. NOTIFY THE CIVIL ENGINEER OF RECORD IMMEDIATELY UPON DISCOVERY.
- BUILDING SETBACK DIMENSIONS FROM PROPERTY LINES SHALL HOLD OVER ALL OTHER CALLOUTS. PROPERTY LINES AND ASSOCIATED BUILDING SETBACKS SHALL BE VERIFIED PRIOR TO CONSTRUCTION LAYOUT.
- CONTRACTOR SHALL PRESERVE AND PROTECT FROM DAMAGE ALL EXISTING MONUMENTATION DURING CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING AND PAYING FOR THE REPLACEMENT OF ANY MONUMENTS DAMAGED OR REMOVED DURING CONSTRUCTION. NEW MONUMENTS SHALL BE REESTABLISHED BY A LICENSED SURVEYOR.
- ALL CONSTRUCTION AND MATERIALS SHALL CONFORM TO THESE PLANS, THE PROJECT SPECIFICATIONS AND THE APPLICABLE REQUIREMENTS OF THE 2018 OREGON STANDARD SPECIFICATIONS FOR CONSTRUCTION, THE 2017 OREGON PLUMBING SPECIALTY CODE AND LOCAL JURISDICTION REQUIREMENTS.
- THE COMPLETED INSTALLATION SHALL CONFORM TO ALL APPLICABLE FEDERAL, STATE, AND LOCAL CODES, ORDINANCES AND REGULATIONS. ALL PERMITS, LICENSES AND INSPECTIONS REQUIRED BY THE GOVERNING AUTHORITIES FOR THE EXECUTION AND COMPLETION OF WORK SHALL BE SECURED BY THE CONTRACTOR PRIOR TO COMMENCING CONSTRUCTION.
- ATTENTION: OREGON LAW REQUIRES YOU 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. YOU MAY OBTAIN COPIES OF THE RULES BY CALLING THE CENTER. (NOTE: THE TELEPHONE NUMBER FOR THE OREGON UTILITY NOTIFICATION CENTER IS (503) 232-1987). EXCAVATORS MUST NOTIFY ALL PERTINENT COMPANIES OR AGENCIES WITH UNDERGROUND UTILITIES IN THE PROJECT AREA AT LEAST 48 BUSINESS-DAY HOURS, BUT NOT MORE THAN 10 BUSINESS DAYS PRIOR TO COMMENCING AN EXCAVATION, SO UTILITIES MAY BE ACCURATELY LOCATED.
- THE LOCATION OF EXISTING UNDERGROUND UTILITIES SHOWN ON THE PLANS ARE FOR INFORMATION ONLY AND ARE NOT GUARANTEED TO BE COMPLETE OR ACCURATE. CONTRACTOR SHALL VERIFY ELEVATIONS, PIPE SIZE, AND MATERIAL TYPES OF ALL UNDERGROUND UTILITIES PRIOR TO COMMENCING WITH CONSTRUCTION AND SHALL BRING ANY DISCREPANCIES TO THE ATTENTION OF AAI ENGINEERING, 72 HOURS PRIOR TO START OF CONSTRUCTION TO PREVENT GRADE AND ALIGNMENT CONFLICTS.
- THE ENGINEER OR OWNER IS NOT RESPONSIBLE FOR THE SAFETY OF THE CONTRACTOR OR HIS CREW. ALL O.S.H.A. REGULATIONS SHALL BE STRICTLY ADHERED TO IN THE PERFORMANCE OF THE WORK.
- TEMPORARY AND PERMANENT EROSION CONTROL MEASURES SHALL BE IMPLEMENTED. THE ESC FACILITIES SHOWN IN THESE PLANS ARE THE MINIMUM REQUIREMENTS FOR ANTICIPATED SITE CONDITIONS. DURING THE CONSTRUCTION PERIOD, ESC FACILITIES SHALL BE UPGRADED AS NEEDED FOR UNEXPECTED STORM EVENTS AND TO ENSURE THAT SEDIMENT AND SEDIMENT LADEN WATER DO NOT LEAVE THE SITE.
- THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ALL ROADWAYS, KEEPING THEM CLEAN AND FREE OF CONSTRUCTION MATERIALS AND DEBRIS, AND PROVIDING DUST CONTROL AS REQUIRED.
- TRAFFIC CONTROL SHALL BE PROVIDED BY THE CONTRACTOR THROUGHOUT CONSTRUCTION. CONTRACTOR SHALL PROVIDE A TRAFFIC CONTROL PLAN TO LOCAL JURISDICTION FOR REVIEW AND APPROVAL PRIOR TO COMMENCING CONSTRUCTION.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING AND SCHEDULING ALL WORK WITH THE OWNER.
- THE CONTRACTOR SHALL HAVE A FULL SET OF THE CURRENT APPROVED CONSTRUCTION DOCUMENTS INCLUDING ADDENDA ON THE PROJECT SITE AT ALL TIMES.
- THE CONTRACTOR SHALL KEEP THE ENGINEER AND JURISDICTION INFORMED OF CONSTRUCTION PROGRESS TO FACILITATE SITE OBSERVATIONS AT REQUIRED INTERVALS. 24-HOUR NOTICE IS REQUIRED.
- EXISTING SURVEY MONUMENTS ARE TO BE PROTECTED DURING CONSTRUCTION OR REPLACED IN ACCORDANCE WITH OREGON REVISED STATUTES 209.140 - 209.155.

NOTICE TO EXCAVATORS: ATTENTION: OREGON LAW REQUIRES YOU 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. YOU MAY OBTAIN COPIES OF THE RULES BY CALLING THE CENTER. (NOTE: THE TELEPHONE NUMBER FOR THE OREGON UTILITY NOTIFICATION CENTER IS (503)-232-1987).

POTENTIAL UNDERGROUND FACILITY OWNERS

DIG SAFELY

CALL THE OREGON ONE-CALL CENTER
1-800-332-2344

EMERGENCY TELEPHONE NUMBERS

NW NATURAL GAS 503-226-4211 EXT.4313
M-F 7am-5pm 503-226-4211
AFTER HOURS 503-226-4211

PGE 503-464-7777
QWEST 1-800-573-1311
VERIZON 1-800-483-1000



Know what's below.
Call before you dig.

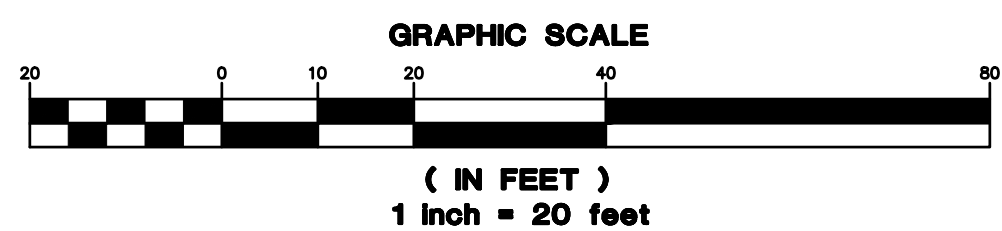
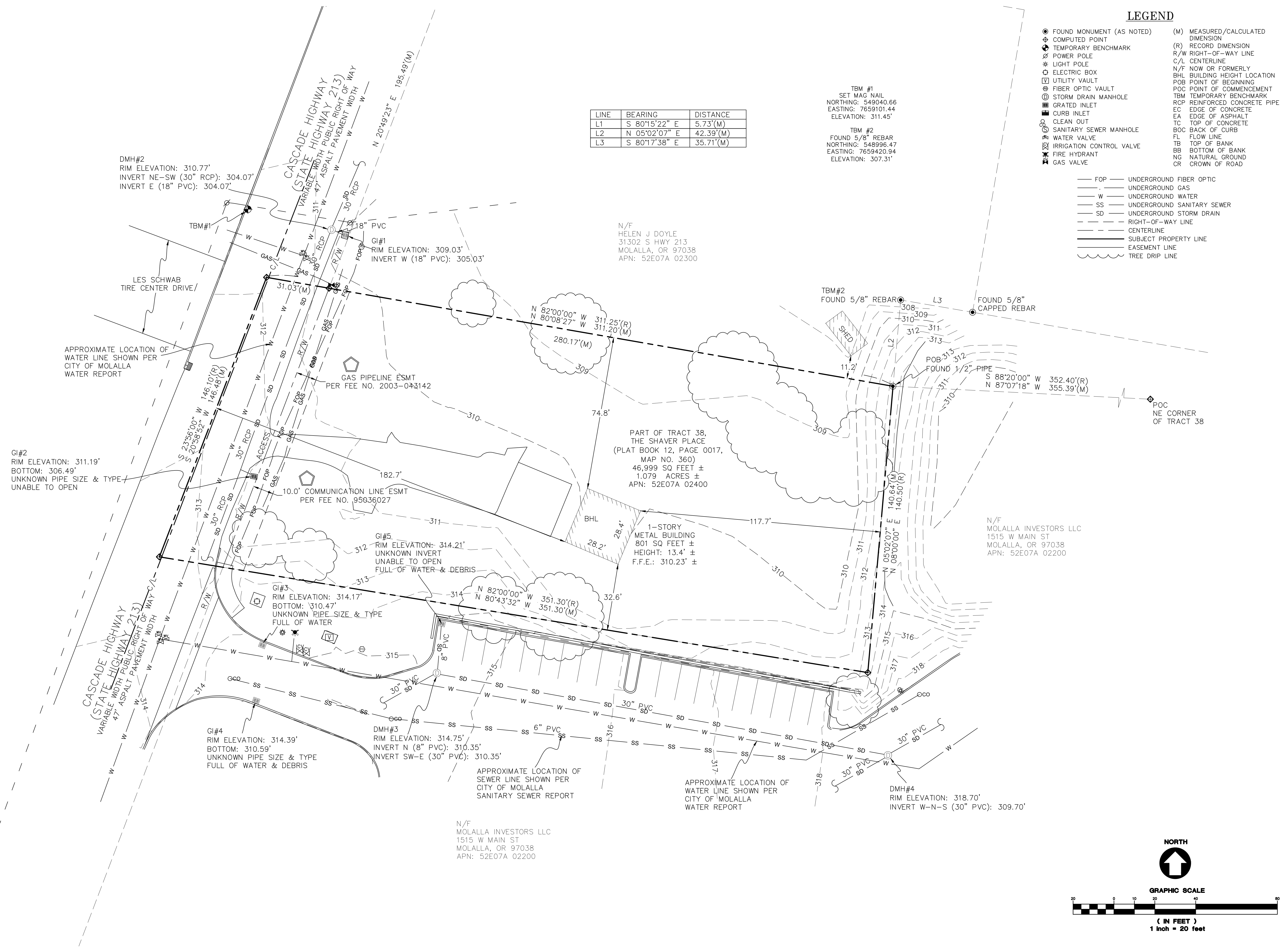
LEGEND

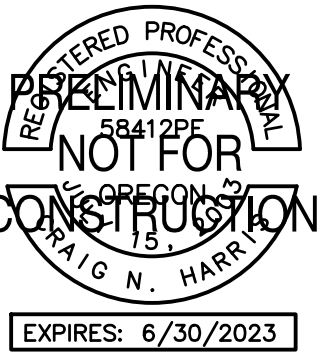
- FOUND MONUMENT (AS NOTED)
- ⊕ COMPUTED POINT
- ⊕ TEMPORARY BENCHMARK
- ⊕ POWER POLE
- ⊕ LIGHT POLE
- ⊕ ELECTRIC BOX
- ⊕ UTILITY VAULT
- ⊕ FIBER OPTIC VAULT
- ⊕ STORM DRAIN MANHOLE
- ⊕ GRATED INLET
- ⊕ CURB INLET
- ⊕ CLEAN OUT
- ⊕ SANITARY SEWER MANHOLE
- ⊕ WATER VALVE
- ⊕ IRRIGATION CONTROL VALVE
- ⊕ FIRE HYDRANT
- ⊕ GAS VALVE
- (M) MEASURED/CALCULATED DIMENSION
- (R) RECORD DIMENSION
- R/W RIGHT-OF-WAY LINE
- C/L CENTERLINE
- N/F NOW OR FORMERLY
- BHL BUILDING HEIGHT LOCATION
- POB POINT OF BEGINNING
- POC POINT OF COMMENCEMENT
- TBM TEMPORARY BENCHMARK
- RCP REINFORCED CONCRETE PIPE
- EC EDGE OF CONCRETE
- EA EDGE OF ASPHALT
- TC TOP OF CONCRETE
- BOC BACK OF CURB
- FL FLOW LINE
- TB TOP OF BANK
- BB BOTTOM OF BANK
- NG NATURAL GROUND
- CR CROWN OF ROAD
- FOP — UNDERGROUND FIBER OPTIC
- — UNDERGROUND GAS
- W — UNDERGROUND WATER
- SS — UNDERGROUND SANITARY SEWER
- SD — UNDERGROUND STORM DRAIN
- - - RIGHT-OF-WAY LINE
- - - CENTERLINE
- — SUBJECT PROPERTY LINE
- - - EASEMENT LINE
- ~ ~ ~ TREE DRIP LINE

LINE	BEARING	DISTANCE
L1	S 80°15'22" E	5.73'(M)
L2	N 05°02'07" E	42.39'(M)
L3	S 80°17'38" E	35.71'(M)

TBM #1
SET MAG NAIL
NORTHING: 549040.66
EASTING: 7659101.44
ELEVATION: 311.45'

TBM #2
FOUND 5/8" REBAR
NORTHING: 548996.47
EASTING: 7659420.94
ELEVATION: 307.31'





SHEET NOTES

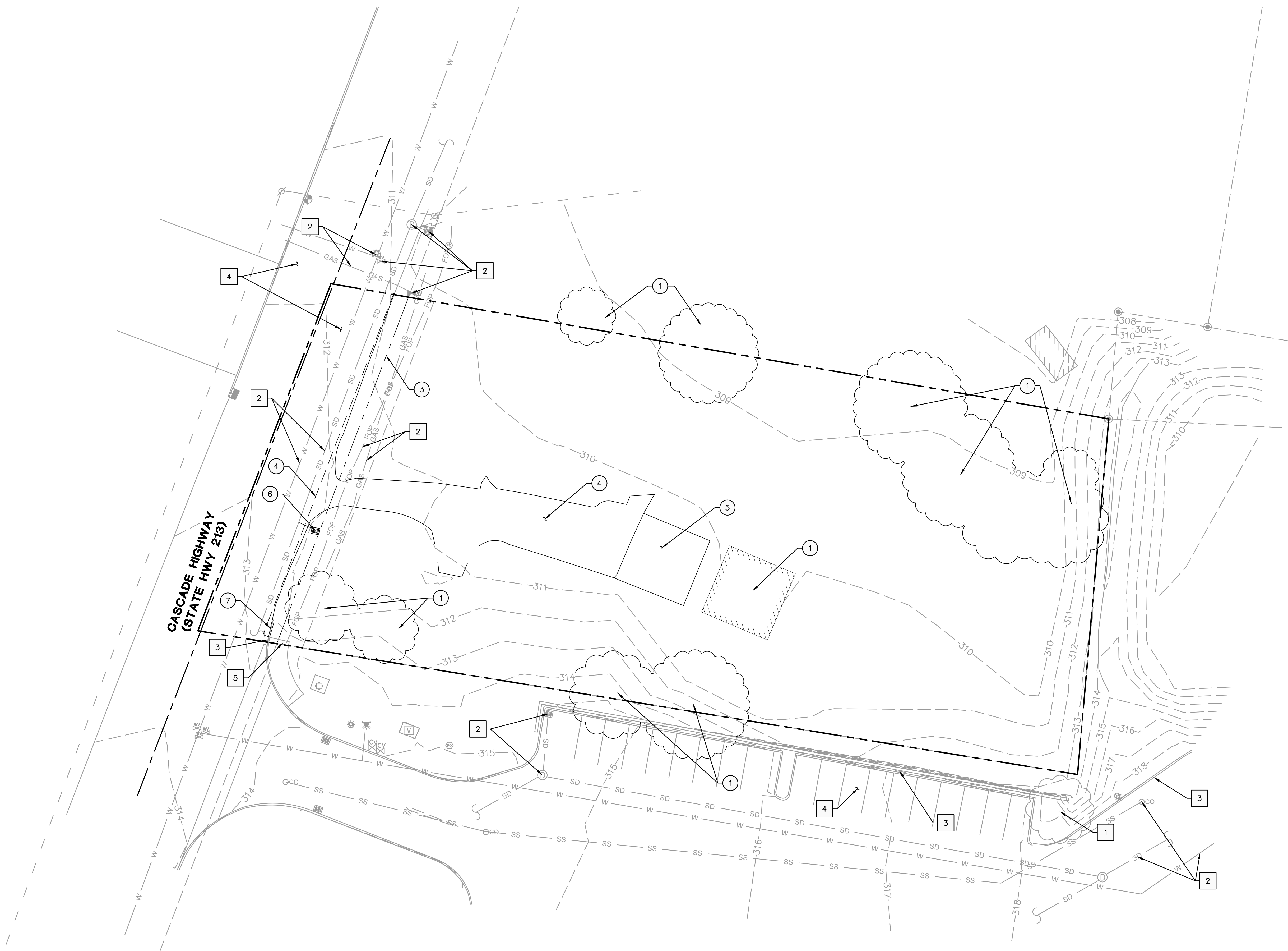
1. CONTRACTOR MAY STAGE WITHIN LIMITS OF DEMOLITION.
2. REMOVE ALL SITE COMPONENTS AND RECYCLE COMPONENTS AS REQUIRED IN THE SPECIFICATIONS.
3. ALL TRADE LICENSES AND PERMITS NECESSARY FOR THE PROCUREMENT AND COMPLETION OF THE WORK SHALL BE SECURED BY THE CONTRACTOR PRIOR TO COMMENCING DEMOLITION.
4. THE CONTRACTOR SHALL PRESERVE AND PROTECT FROM DAMAGE ALL EXISTING RIGHT-OF-WAY SURVEY MONUMENTATION DURING DEMOLITION. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING AND PAYING FOR THE REPLACEMENT BY A LICENSED SURVEYOR OF ANY DAMAGED OR REMOVED MONUMENTS.
5. PROTECT ALL ITEMS ON ADJACENT PROPERTIES AND IN THE RIGHT OF WAY INCLUDING BUT NOT LIMITED TO SIGNAL EQUIPMENT, PARKING METERS, SIDEWALKS, STREET TREES, STREET LIGHTS, CURBS, PAVEMENT AND SIGNS. CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING ANY DAMAGED ITEMS TO ORIGINAL CONDITION.
6. PROTECT STRUCTURES, UTILITIES, SIDEWALKS, AND OTHER FACILITIES IMMEDIATELY ADJACENT TO EXCAVATIONS FROM DAMAGES CAUSED BY SETTLEMENT, LATERAL MOVEMENT, UNDERMINING, WASHOUT AND OTHER HAZARDS.
7. SAWCUT STRAIGHT LINES IN SIDEWALK, AS NECESSARY.
8. CONTRACTOR IS RESPONSIBLE TO CONTROL DUST AND MUD DURING THE DEMOLITION PERIOD, AND DURING TRANSPORTATION OF DEMOLITION DEBRIS. ALL STREET SURFACES OUTSIDE THE CONSTRUCTION ZONE MUST BE KEPT CLEAN.
9. PROTECT ALL EXISTING UTILITY STRUCTURES AND UNDERGROUND MAINS TO REMAIN.
10. PROTECT ALL EXISTING VEGETATION TO REMAIN.

X PROTECTION NOTES

- 1 PROTECT EXISTING TREE
- 2 PROTECT EXISTING UTILITY
- 3 PROTECT EXISTING CURB
- 4 PROTECT EXISTING AC
- 5 PROTECT EXISTING SIDEWALK

X DEMOLITION NOTES

- 1 REMOVE EXISTING TREE
- 2 REMOVE EXISTING BUILDING
- 3 ABANDON EXISTING ROW LINE
- 4 SAWCUT AND REMOVE EXISTING AC
- 5 REMOVE EXISTING CONCRETE
- 6 REMOVE EXISTING DITCH INLET
- 7 REMOVE EXISTING CURB



RETAIL CAPITAL PARTNERS

MOLALLA RETAIL

Revisions

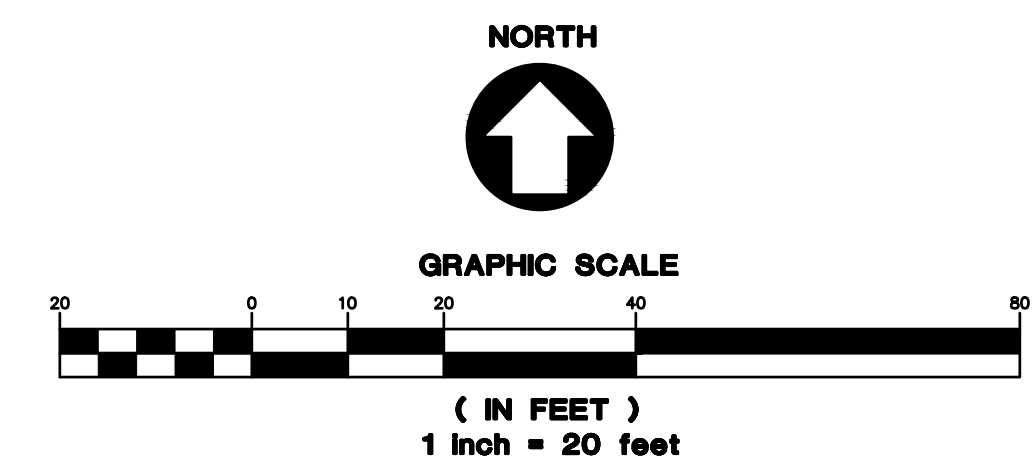
JR 19079

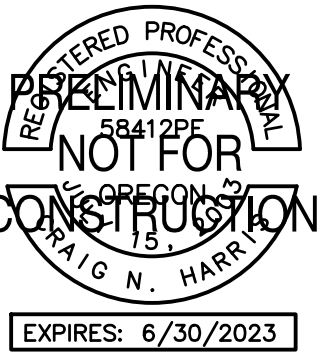
Original Issue: 00.00.0000
Drawn/Check By: DWN/CHK_BY

©2021 Baysinger Partners Architecture

DEMO PLAN

C0.3
DESIGN REVIEW






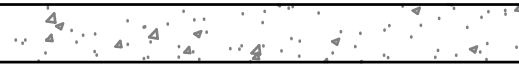
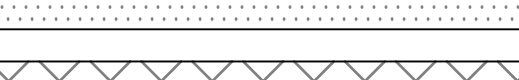

SHEET NOTES

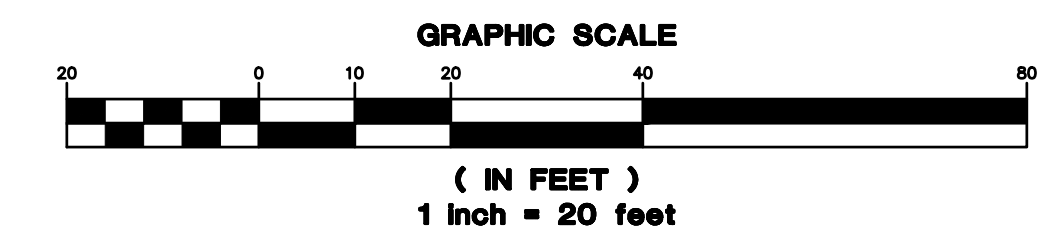
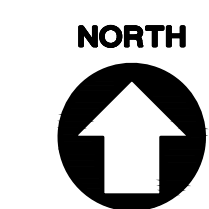
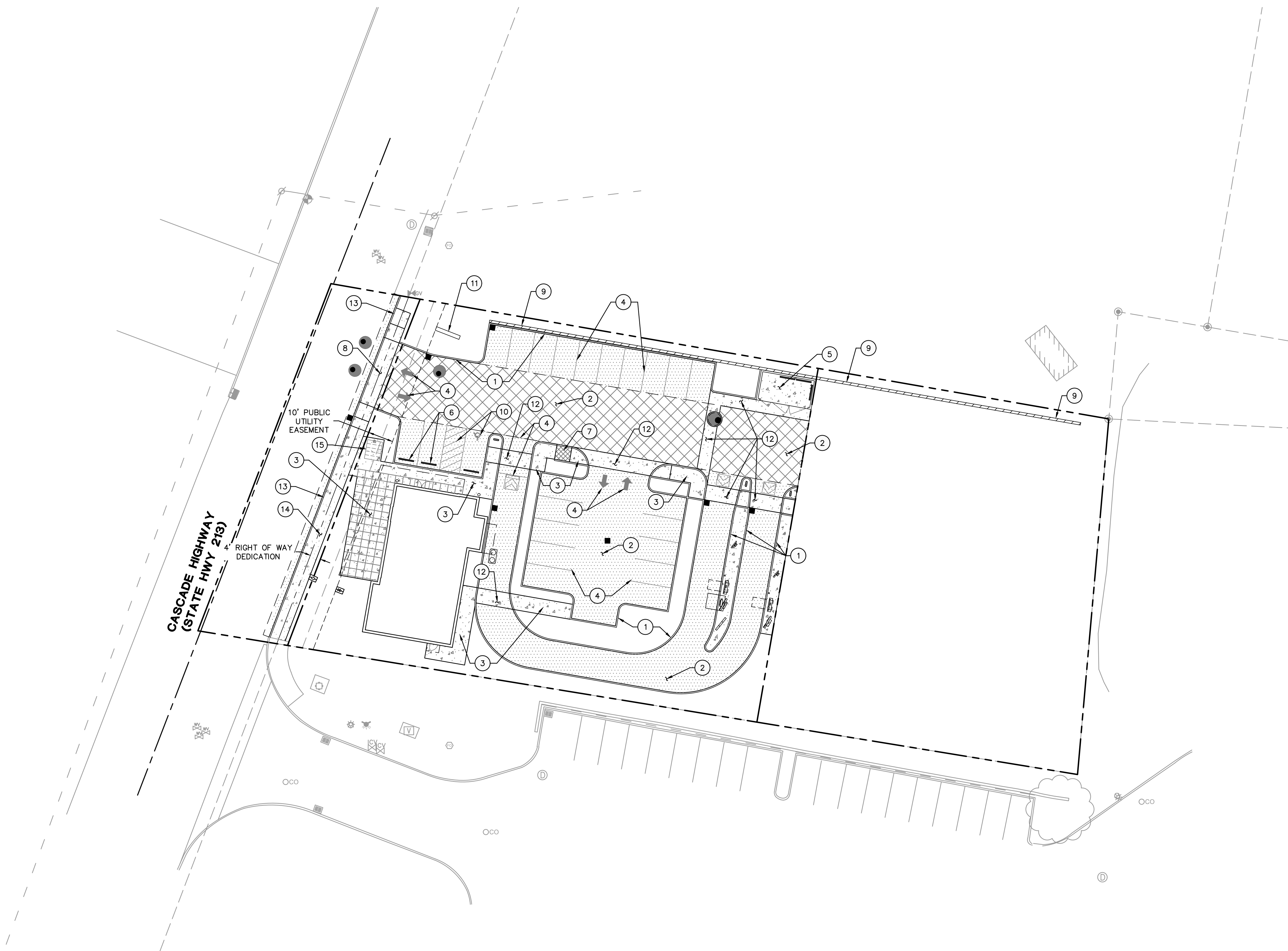
1. SEE ARCHITECTURAL PLANS FOR ADDITIONAL SITE INFORMATION.
2. THE CONTRACTOR SHALL HAVE A FULL SET OF THE CURRENT APPROVED CONSTRUCTION DOCUMENTS INCLUDING ADDENDA ON THE PROJECT SITE AT ALL TIMES.
3. THE CONTRACTOR SHALL KEEP THE ENGINEER AND JURISDICTION INFORMED OF CONSTRUCTION PROGRESS TO FACILITATE SITE OBSERVATIONS AT REQUIRED INTERVALS. 24-HOUR NOTICE IS REQUIRED.

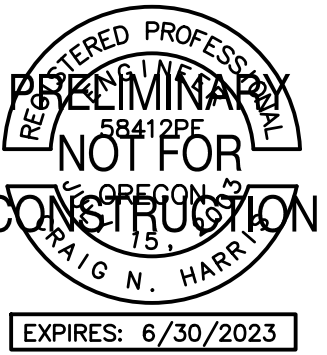
CONSTRUCTION NOTES

1. INSTALL CURB PER DETAIL 1/C4.0
2. INSTALL ASPHALT SURFACE PER DETAILS 2 & 3/C4.0
3. INSTALL CONCRETE SIDEWALK PER DETAIL 4/C4.0
4. INSTALL STRIPING. SEE ARCHITECTURAL PLANS FOR DETAILS
5. INSTALL TRASH ENCLOSURE. DESIGN BY OTHERS
6. INSTALL WHEELSTOP PER DETAIL 7/C4.0
7. INSTALL ADA RAMP - TYPE 3 PER DETAIL 6/C4.0
8. INSTALL COMMERCIAL DRIVEWAY OPTION G PER ODOT DETAIL RD735/C4.3
9. INSTALL RETAINING WALL, DESIGN BY OTHERS
10. INSTALL ADA PARKING PER DETAIL 9/C4.0
11. INSTALL SIGN. SEE ARCHITECTURAL PLANS FOR DETAILS
12. INSTALL CONCRETE PAVEMENT PER DETAIL 5/C4.0
13. INSTALL PUBLIC CURB PER ODOT DETAIL RD700/C4.3
14. INSTALL PUBLIC SIDEWALK PER ODOT DETAIL RD720/C4.3
15. INSTALL BIKE RACK, DESIGN BY OTHERS

LEGEND

PROPERTY LINE	
CONCRETE SIDEWALK SURFACING	
ASPHALT SURFACING - PARKING	
ASPHALT SURFACING - DRIVE AISLE	





SHEET NOTES

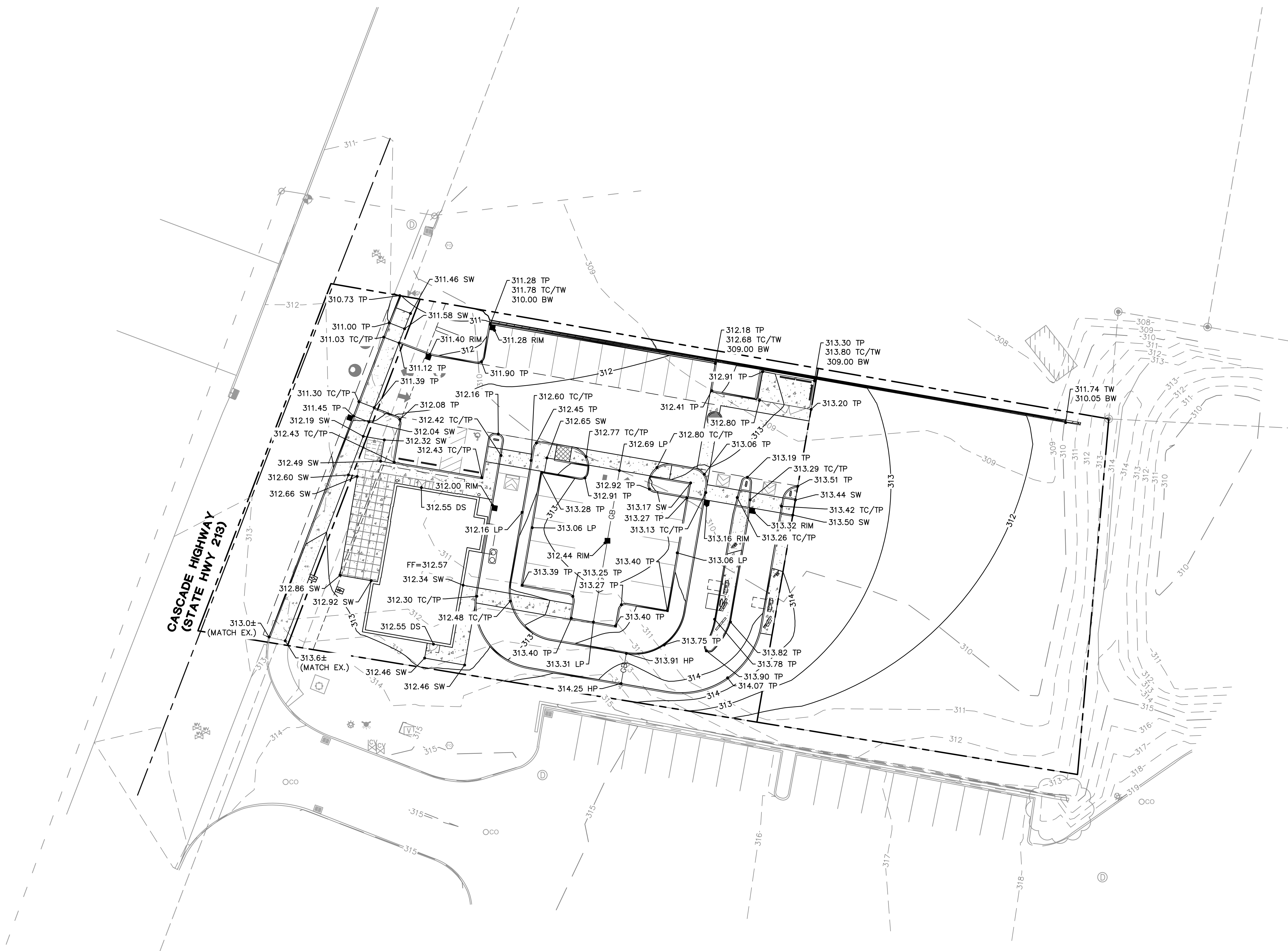
- SEE SHEET CO.1 FOR GENERAL SHEET NOTES.
- CURB HEIGHTS ARE 6" UNLESS NOTED OTHERWISE.
- LANDINGS ON ACCESSIBLE ROUTES SHALL NOT EXCEED 2% IN ANY DIRECTION.
- ALL ACCESSIBLE ROUTES SHALL COMPLY WITH CURRENT ADA ACCESSIBILITY GUIDELINES FOR BUILDING AND FACILITIES (ADAAG).
- ALL WALKWAYS FROM ACCESSIBLE UNITS ARE DESIGNED TO NOT REQUIRE HANDRAILS. THEREFORE, RAMPS WITH SLOPES STEEPER THAN 5.0% AND LESS THAN 8.33% SHALL NOT EXCEED 0.5' RISE OR 6.0' LENGTH.
- FINISH GRADES ARE TO BE BROUGHT TO WITHIN 0.08 FT IN 10 FT OF THE GRADES SHOWN AT SUBGRADE AND TO WITHIN 0.03 FT IN 10 FT AT FINISH GRADE. CONTRACTOR TO ALLOW FOR PLACEMENT OF REQUIRED TOPSOIL IN ROUGH GRADING.
- GRADING ELEVATIONS AS SHOWN ON SITE AND LANDSCAPE PLANS ARE FINISHED GRADE WHICH INCLUDES SUBGRADE SOIL, TOPSOIL, SOIL AMENDMENTS, ROCKERY AND RUNOFF PROTECTION CONTRACTOR IS RESPONSIBLE TO COORDINATE GRADING WITH BOTH EXCAVATOR AND LANDSCAPE CONTRACTOR.

GRADING LABEL LEGEND

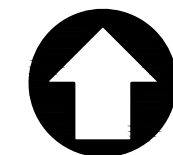
XX.XX	XX	SPOT ELEVATION
XX.XX	XX	DESCRIPTION LISTED BELOW.
BW		FINISHED GRADE AT BOTTOM OF WALL
DS		DOOR SILL
EX		EXISTING GRADE
FF		FINISHED FLOOR ELEVATION
SW		SIDEWALK
TC		TOP OF CURB
TP		TOP OF PAVEMENT
TW		FINISHED GRADE AT TOP OF WALL

LEGEND

EXISTING CONTOUR MINOR	---	102	---
EXISTING CONTOUR MAJOR	---	100	---
PROPOSED CONTOUR MINOR	---	102	---
PROPOSED CONTOUR MAJOR	---	100	---
GRADE BREAK	---	GB	---



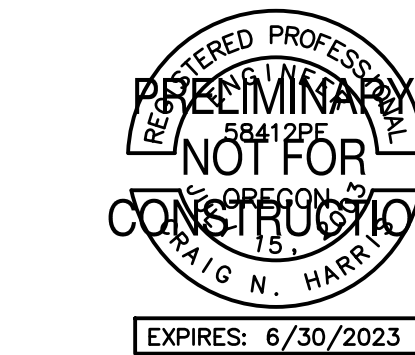
NORTH



GRAPHIC SCALE



(IN FEET)
1 inch = 20 feet



SHEET NOTES

- SEE SHEET C0.1 FOR GENERAL SHEET NOTES.
- STRUCTURES HORIZONTAL LOCATIONS AND PIPE INVERTS ARE BASED ON THE CENTER OF THE STRUCTURE.
- PIPE BEDDING AND BACKFILL UTILITIES SHALL BE DONE PER DETAIL 10/C4.0.
- INSTALL THRUST BLOCKS ON FIRE AND WATER LINES PER DETAIL 11/C4.0.
- ALL SANITARY PIPING SHALL BE PVC 3034 OR APPROVED EQUAL UNLESS NOTED OTHERWISE.
- THIS PLAN IS GENERALLY DIAGRAMMATIC. IT DOES NOT SHOW EVERY JOINT, BEND, FITTING, OR ACCESSORY REQUIRED FOR CONSTRUCTION.
- CLEAN OUTS SHALL BE INSTALLED IN CONFORMANCE WITH UPC CHAPTER SEVEN, SECTION 707 AND SECTION 719. THIS PLAN MAY NOT SHOW ALL REQUIRED CLEAN OUTS.
- DOMESTIC WATER AND FIRE LINES AND ACCESSORIES BETWEEN THE WATER METER AND THE BUILDING SHALL BE INSTALLED BY A LICENSED PLUMBER EMPLOYED BY A LICENSED PLUMBING CONTRACTOR.
- UTILITIES WITHIN FIVE FEET OF A BUILDING SHALL BE CONSTRUCTED OF MATERIALS APPROVED FOR INTERIOR USE AS DESCRIBED IN THE CURRENT EDITION OF THE UPC.
- INLETS AND OUTLETS TO ON-SITE MANHOLES SHALL HAVE FLEXIBLE CONNECTION NO CLOSER THAN 12" AND NO FARTHER THAN 36" FROM THE MANHOLE.
- CONTRACTOR TO VERIFY SANITARY AND WATER SIZING AND INVERTS WITH APPROVED PLUMBING PLANS PRIOR TO ORDERING MATERIALS OR BEGINNING CONSTRUCTION OF SAID UTILITIES.
- ALL STORM AND SANITARY FITTINGS TO BE ECCENTRIC FITTINGS UNLESS OTHERWISE NOTED.

LABEL LEGEND

PIPE LABELS

- UTILITY LENGTH
- UTILITY SIZE
- XXLF - XX" XX UTILITY TYPE
- S=X.XX% SLOPE (WHERE APPLICABLE)

STRUCTURE LABELS

- UTILITY TYPE (FP=FIRE PROTECTION, S=SANITARY, SD=STORM DRAINAGE, W=WATER)
- STRUCTURE TYPE (SEE BELOW)
- XX XX-XX ID NUMBER (WHERE APPLICABLE)
- RIM=XX.XX RIM ELEVATION
- IE IN=XX.X IE INVERT ELEVATION
- IE OUT=XX.X IE OUTLET ELEVATION

STRUCTURE TYPES

TYPE	DESCRIPTION
CB	CATCH BASIN PER DETAIL 12/C4.0
CG-2	TYPE CG-2 CATCH BASIN PER ODOT DETAIL RD366/C4.2
CO	CLEANOUT PER DETAIL 2/C4.1
DS	DOWNSPOUT CONNECTION
FCMH	FLOW CONTROL MANHOLE PER DETAIL 1/C4.1
GI	GREASE INTERCEPTOR PER OLDCASTLE DETAIL/C4.2
RPBF	REDUCED PRESSURE BACKFLOW ASSEMBLY PER DETAIL 3/C4.1
SFMH	STORM FILTER MANHOLE WITH 4 CARTRIDGES PER CONTECH DETAIL/C4.1
WM	WATER METER PER COM DETAIL W-3035/C4.1

LEGEND

SANITARY SEWER LINE	SS
WATER LINE	W
FIRE LINE	FP
FDC LINE	FDC
STORM LINE	SD

STORM NOTES

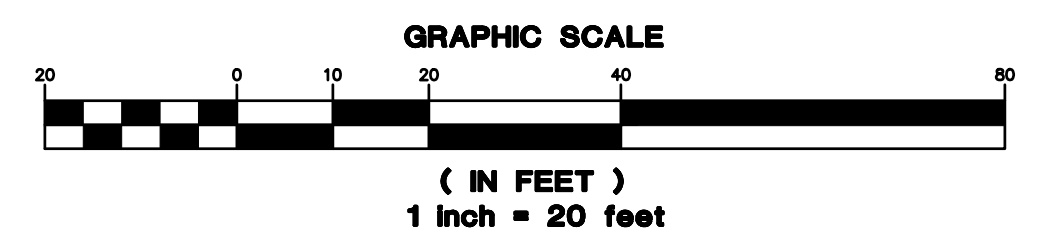
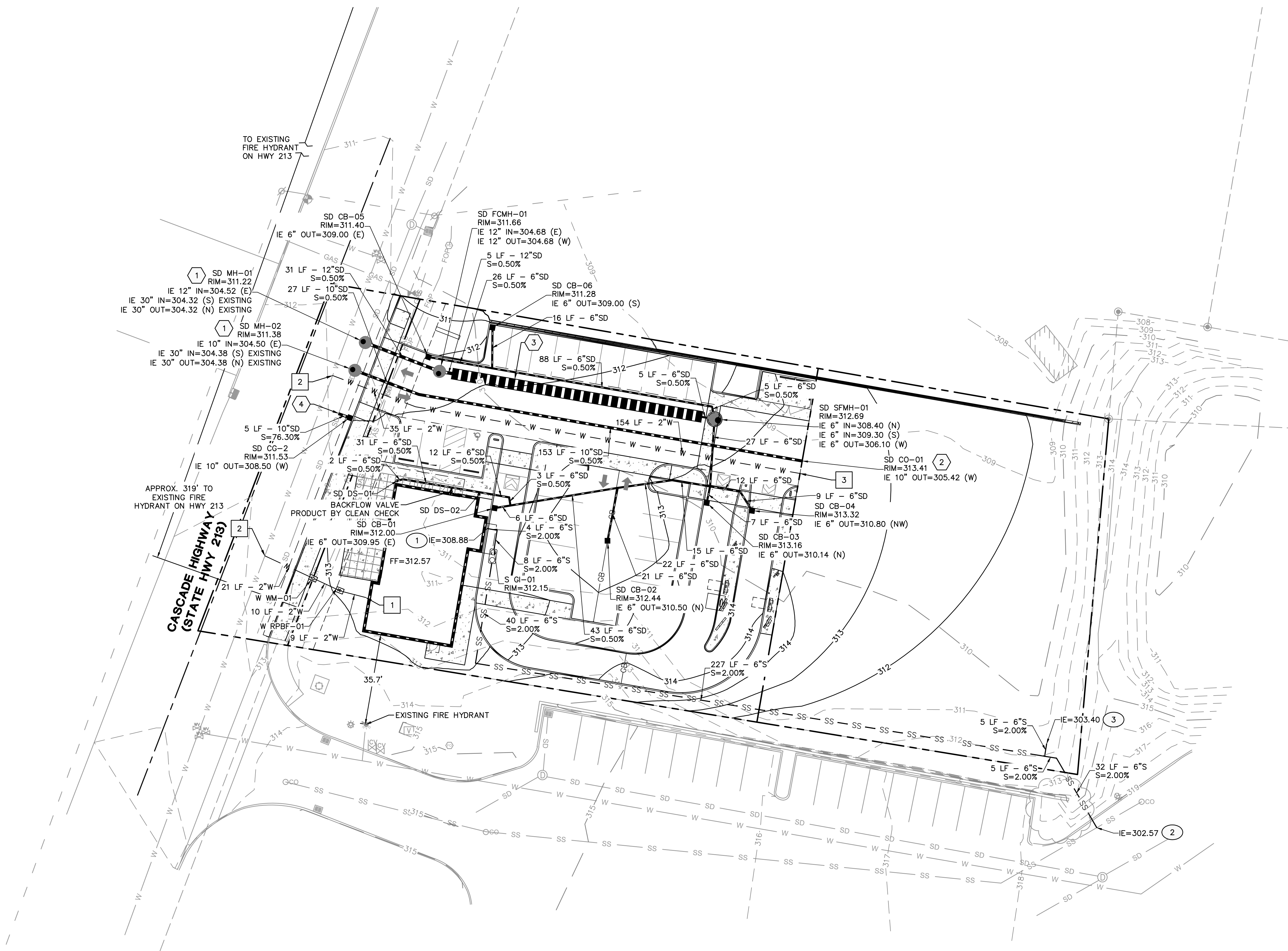
- INSTALL MANHOLE OVER EXISTING 30" STORM MAIN PER ODOT DETAIL RD336/C4.2
CONTRACTOR TO VERIFY IE
- STORMWATER LATERAL STUB FOR FUTURE DEVELOPMENT
- INSTALL 100 LF OF 48" DETENTION PIPE
- CONNECT CATCH BASIN TO EXISTING 30" STORM MAIN

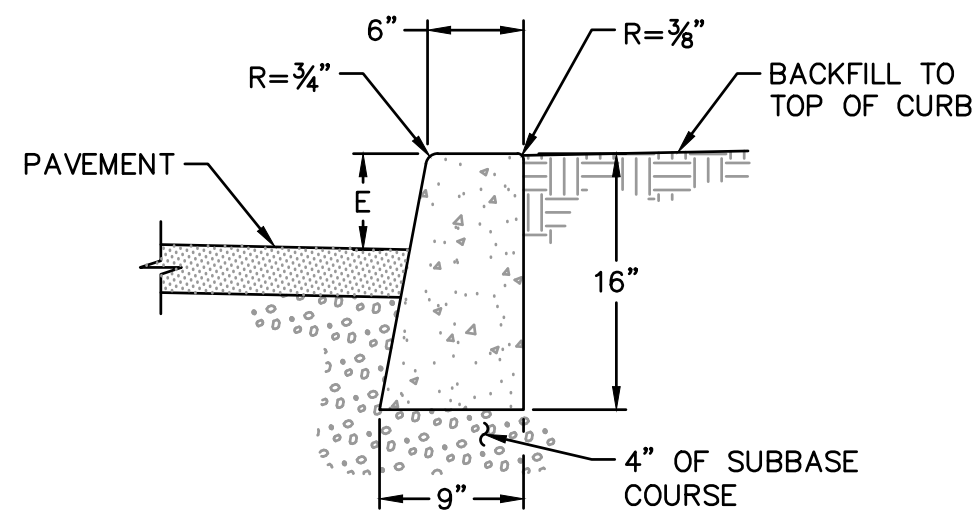
SANITARY NOTES

- CONNECT TO BUILDING
- CONNECT TO EXISTING SANITARY MAIN. CONTRACTOR TO VERIFY IE
- SANITARY LATERAL STUB FOR FUTURE DEVELOPMENT

WATER NOTES

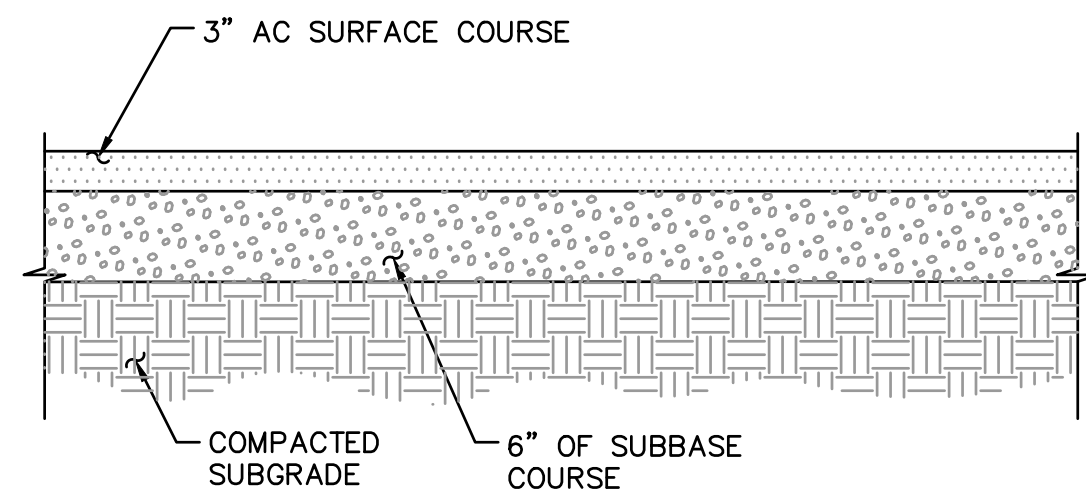
- CONNECT TO BUILDING
- CONNECT TO EXISTING 12" WATER MAIN PER COM DETAIL W-3025/C4.1
- WATER MAIN STUB FOR FUTURE DEVELOPMENT



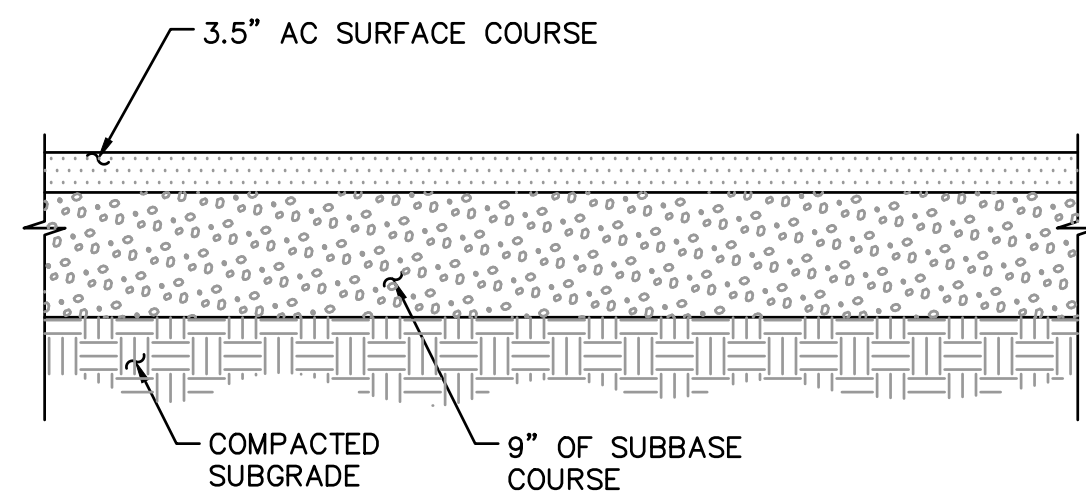


- NOTES:**
- CURB EXPOSURE 'E' = 6", TYP. VARY AS SHOWN ON PLANS OR AS DIRECTED.
 - CONSTRUCT CONTRACTION JOINTS AT 15' MAX. SPACING AND AT RAMPS. CONSTRUCT EXPANSION JOINTS AT 200' MAX SPACING AT POINTS OF TANGENCY AND AT ENDS OF EACH DRIVEWAY.
 - TOPS OF ALL CURBS SHALL SLOPE TOWARD THE ROADWAY AT 2% UNLESS OTHERWISE SHOWN OR AS DIRECTED.
 - DIMENSIONS ARE NOMINAL AND MAY VARY TO CONFORM WITH CURB MACHINE AS APPROVED BY THE ENGINEER.

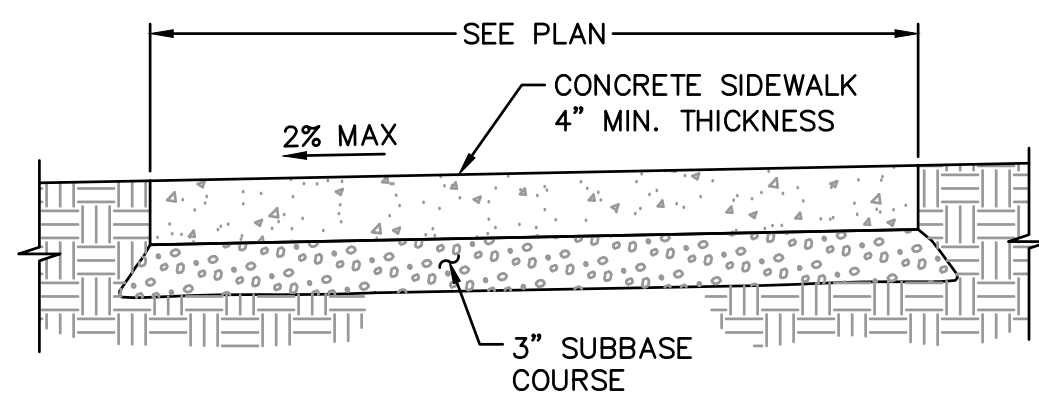
1 CONCRETE CURB - STANDARD
SCALE: NTS



2 STANDARD ASPHALT PAVEMENT SECTION PARKING
SCALE: NTS

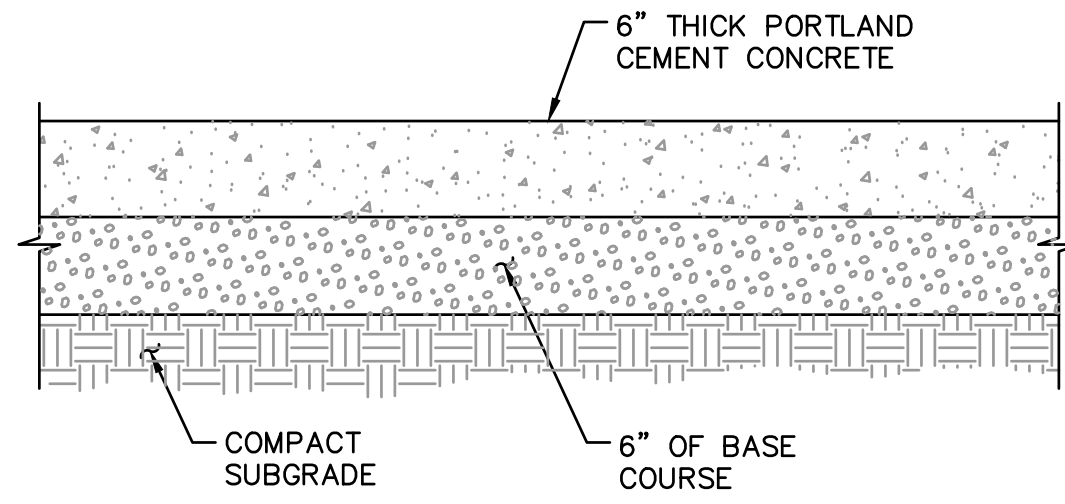


3 STANDARD ASPHALT PAVEMENT SECTION DRIVE AISLE
SCALE: NTS



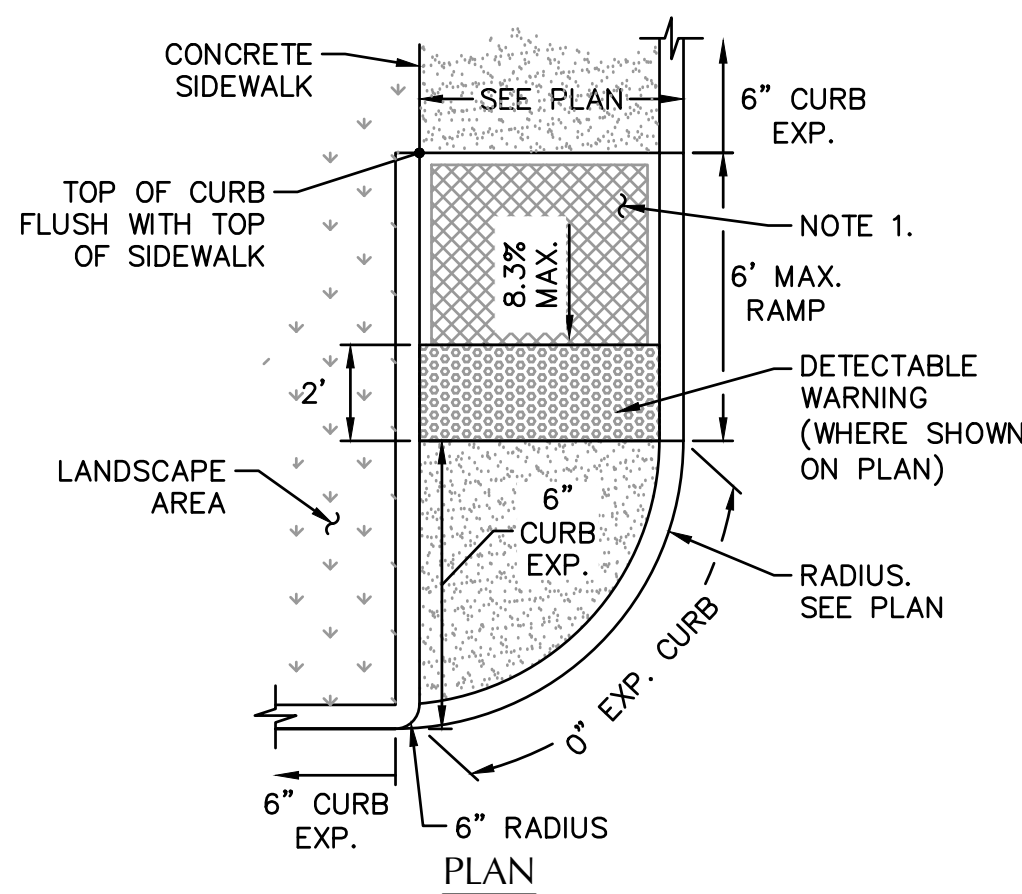
- NOTES:**
- CONSTRUCT CONTRACTION JOINTS AT 15' MAX. SPACING AND AT RAMPS. CONSTRUCT EXPANSION JOINTS AT 200' MAX SPACING, AT POINTS OF TANGENCY AND AT ENDS OF EACH DRIVEWAY, UNLESS NOTED OTHERWISE.
 - CONCRETE SHALL BE 3000 P.S.I AT 28 DAYS, 6 SACK MIX, SLUMP RANGE OF 1-1/2" TO 3".
 - PANELS SHALL BE 5 FEET LONG.
 - EXPANSION JOINTS TO BE PLACED AT SIDES OF DRIVEWAY APPROACHES, UTILITY VAULTS, WHEELCHAIR RAMPS, AND AT SPACING NOT TO EXCEED 45 FEET.
 - FOR SIDEWALKS ADJACENT TO THE CURB AND POURED AT THE SAME TIME AS THE CURB, THE JOINT BETWEEN THEM SHALL BE A TROWELED JOINT WITH A MINIMUM 1/2" RADIUS.
 - SIDEWALK SHALL HAVE A MINIMUM THICKNESS OF 6 INCHES IF MOUNTABLE CURB IS USED OR IF SIDEWALK IS INTENDED AS PORTION OF DRIVEWAY. OTHERWISE SIDEWALK SHALL HAVE A MINIMUM THICKNESS OF 4 INCHES.
 - DRAIN BLOCKOUTS IN CURBS SHALL BE EXTENDED TO BACK OF SIDEWALK WITH 3" DIA. PVC PIPE AT 2% SLOPE. CONTRACTION JOINT TO BE PLACED OVER PIPE.

4 CONCRETE SIDEWALK
SCALE: NTS



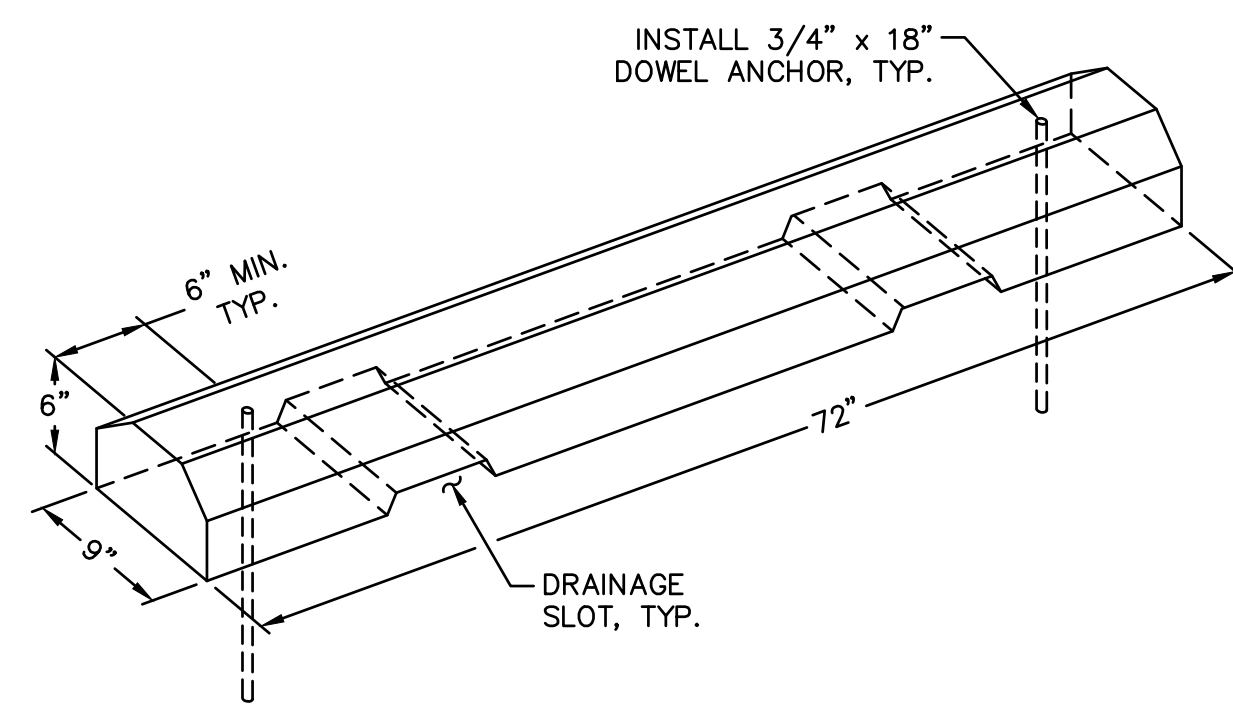
- NOTES:**
- CONSTRUCT CONTRACTION JOINTS AT 15' MAX. SPACING AND AT RAMPS. CONSTRUCT EXPANSION JOINTS AT 200' MAX. SPACING AT POINTS OF TANGENCY AND AT ENDS OF EACH DRIVEWAY.
 - PROVIDE MEDIUM TO COARSE BROOM FINISH.

5 CONCRETE PAVEMENT SECTION
SCALE: NTS



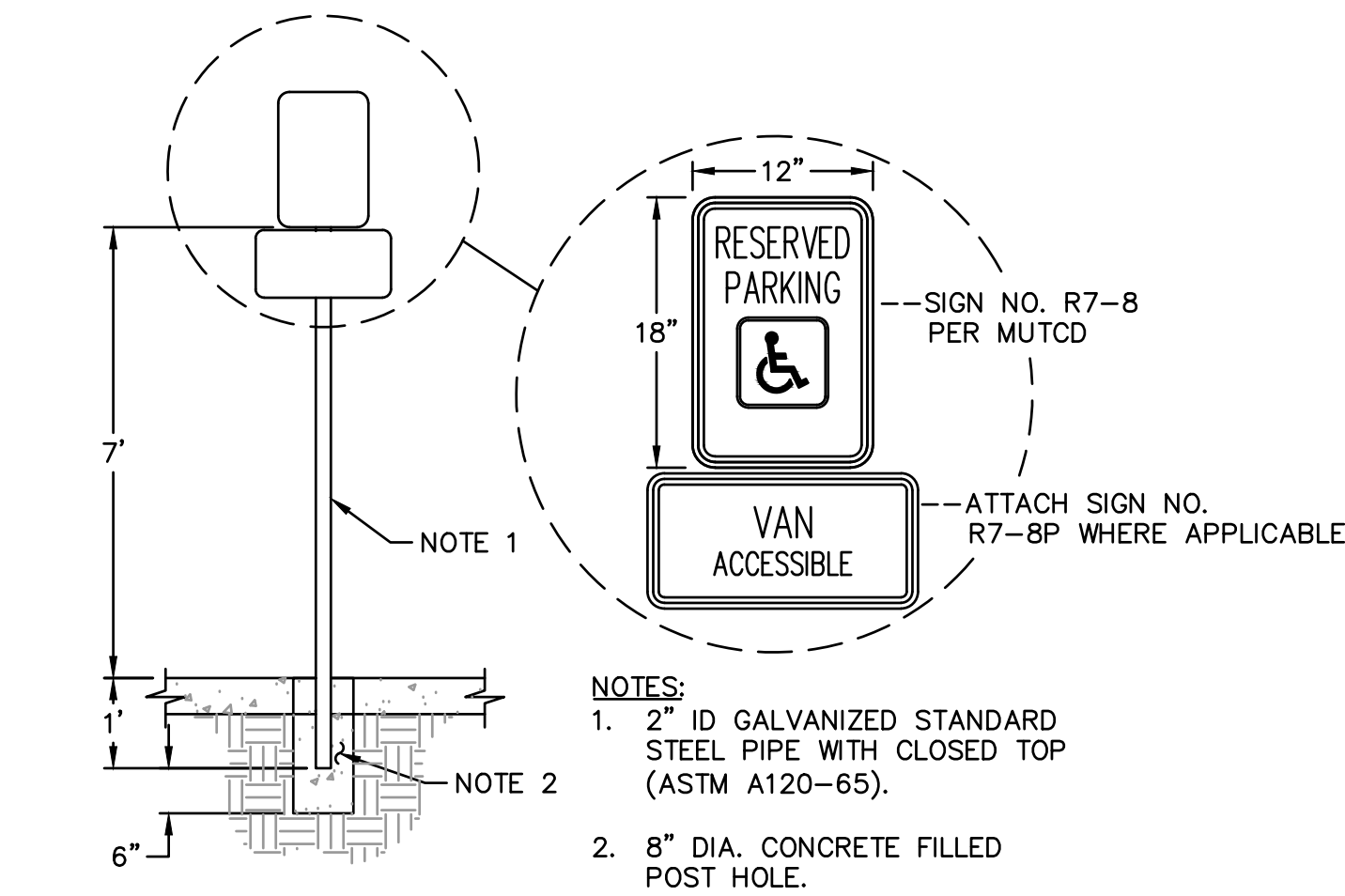
- NOTES:**
- PROVIDE RAMP TEXTURING WITH AN EXPANDED METAL GRATE PLACED ON AND REMOVED FROM WET CONCRETE TO LEAVE A DIAMOND PATTERN. EACH DIAMOND SHALL BE 1 1/2" LONG BY 1/2" WIDE WITH THE LONG SECTION AXIS ORIENTED PERPENDICULAR TO THE CURB. THE GROOVES SHALL BE 1/8" DEEP BY 1/4" WIDE.

6 CURB RAMP - TYPE 3
SCALE: NTS



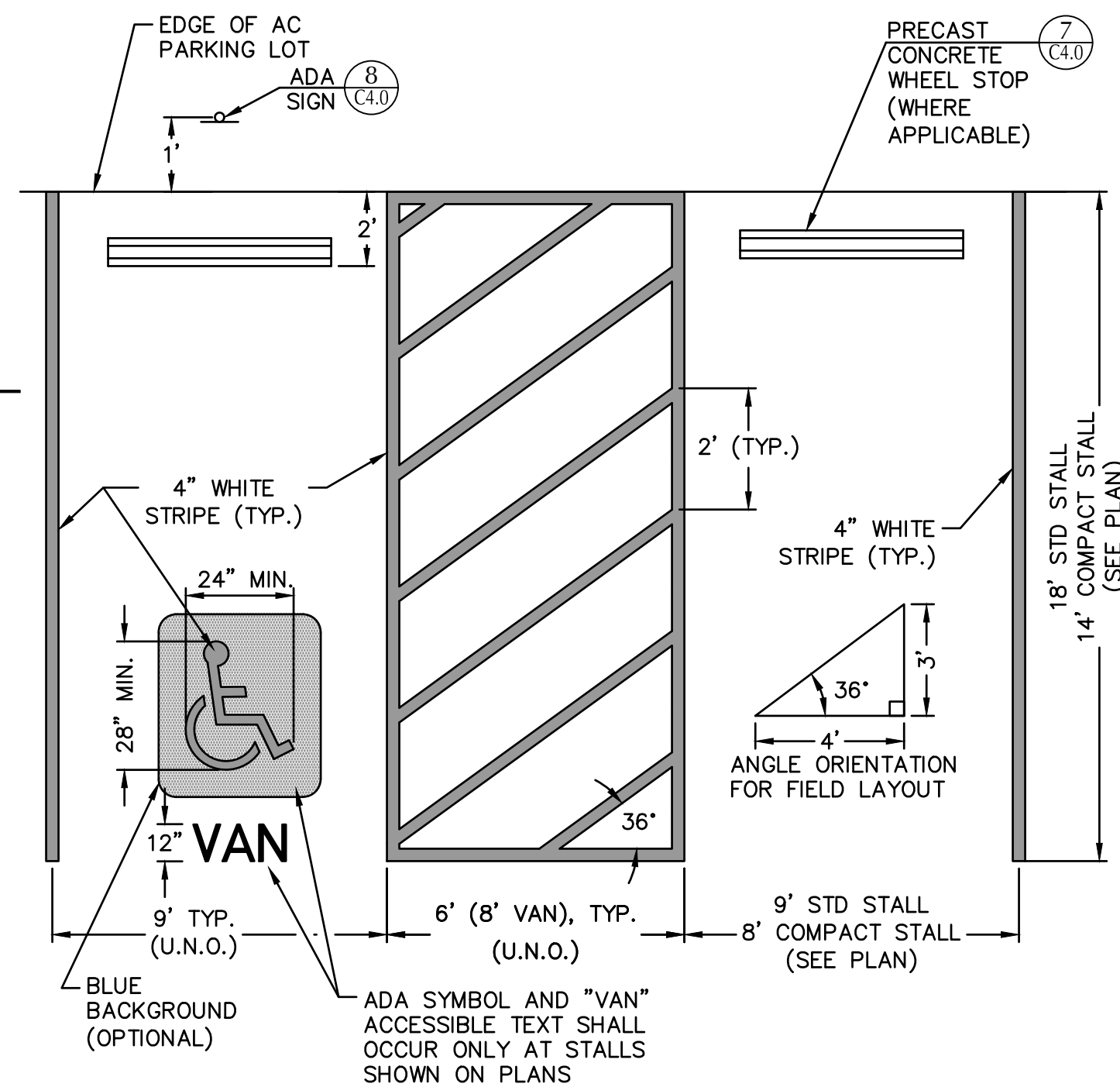
- NOTES:**
- DIMENSIONS ARE NOMINAL AND MAY VARY TO CONFORM TO MANUFACTURER'S PRODUCTS APPROVED BY ENGINEER.

7 PRECAST CONCRETE WHEEL STOP
SCALE: NTS

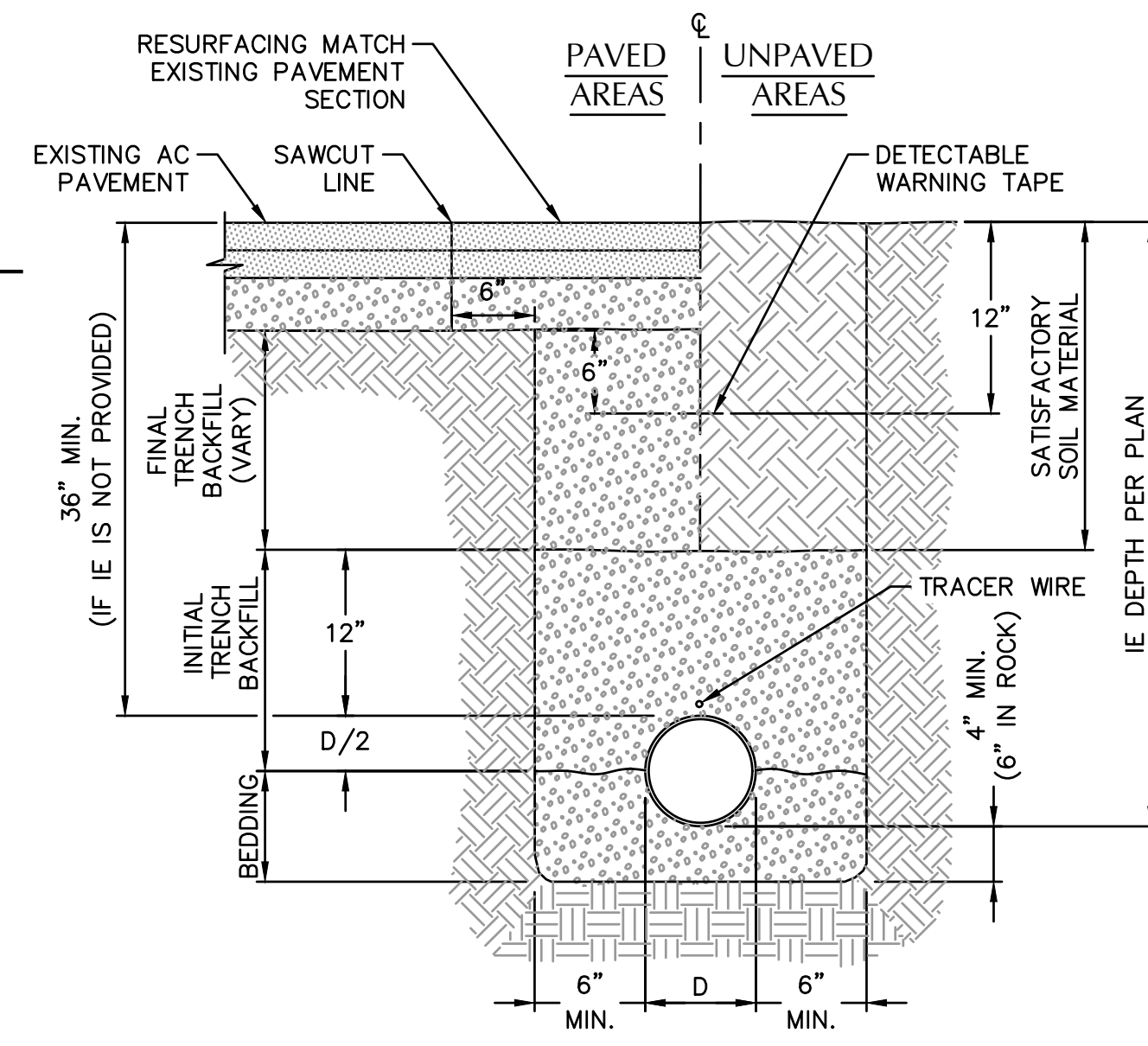


- NOTES:**
- 2" ID GALVANIZED STANDARD STEEL PIPE WITH CLOSED TOP (ASTM A120-65).
 - 8" DIA. CONCRETE FILLED POST HOLE.

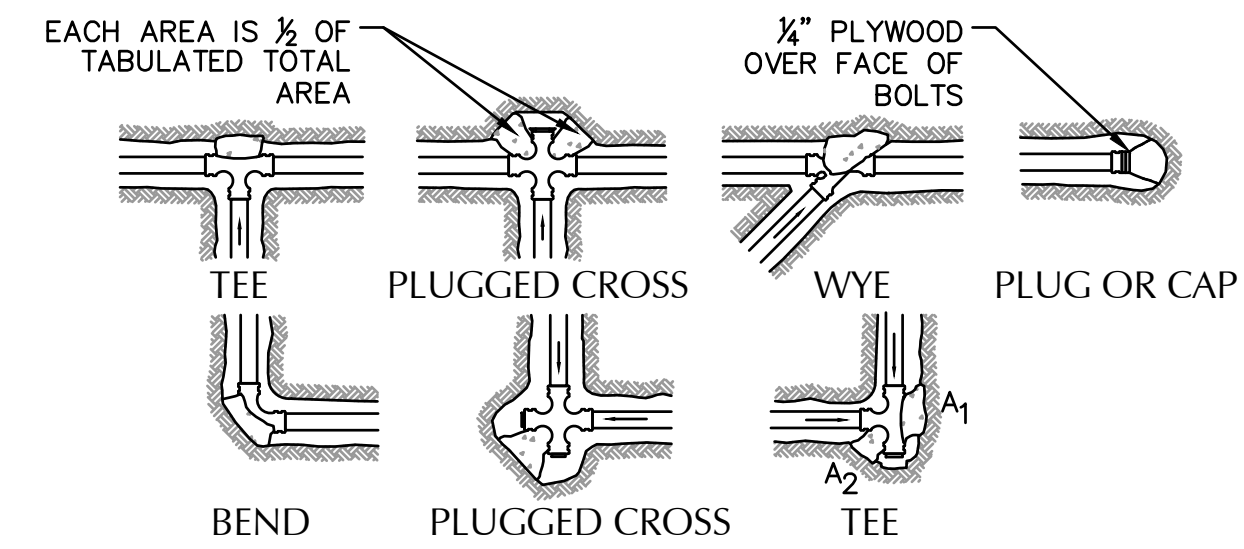
8 ADA PARKING SIGN - TYPE 1
SCALE: NTS



9 TYPICAL PARKING LAYOUT
SCALE: NTS



10 TYPICAL PIPE BEDDING AND BACKFILL
SCALE: NTS



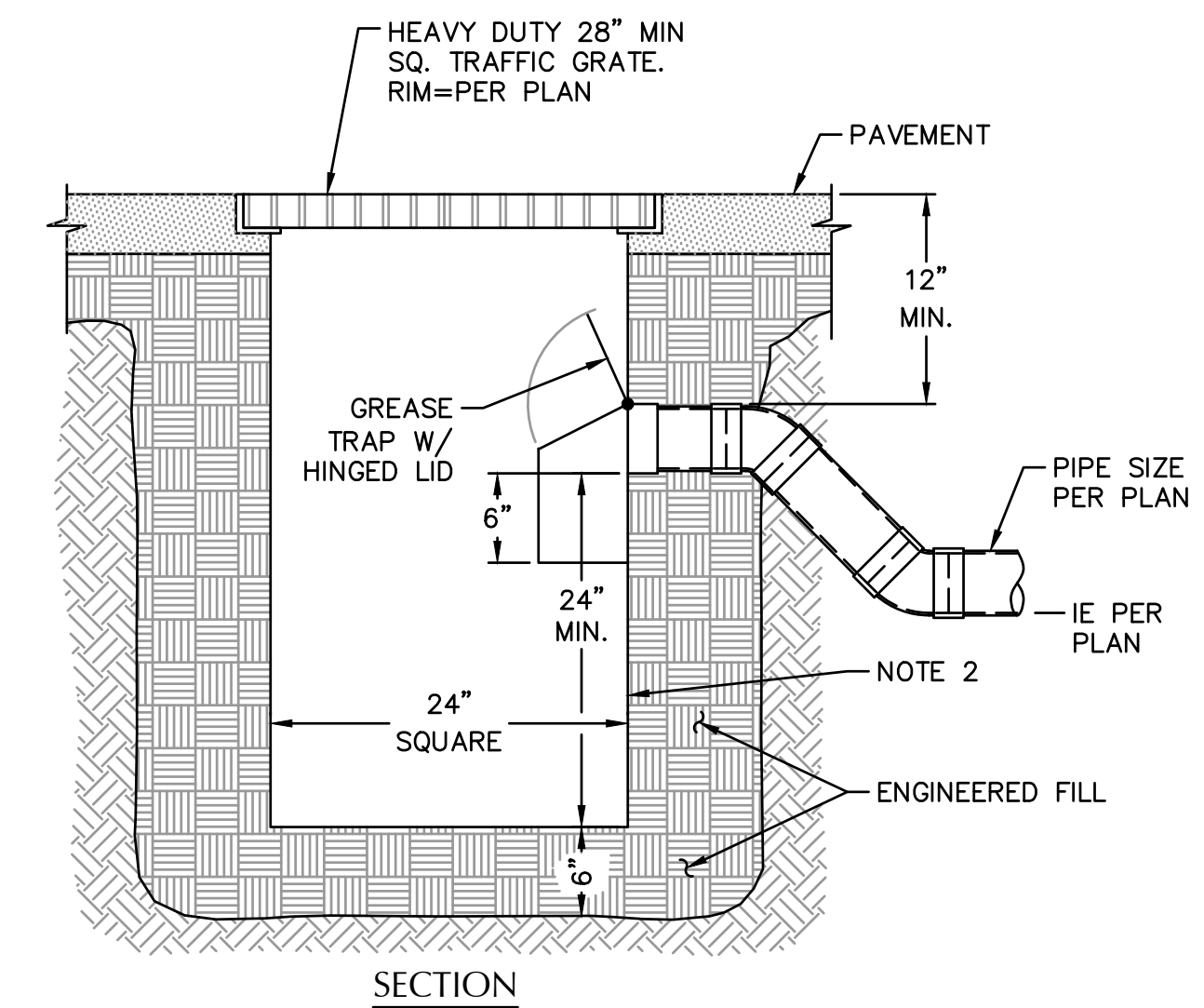
- CONCRETE THRUST BLOCKING TO BE POURED AGAINST UNDISTURBED EARTH.
- KEEP CONCRETE CLEAR OF JOINT AND ACCESSORIES.
- THE REQUIRED THRUST BEARING AREAS FOR SPECIAL CONNECTIONS ARE SHOWN ENCIRCLED ON THE PLAN; e.g. (15) INDICATES 15 SQUARE FEET BEARING AREA REQUIRED.
- IF NOT SHOWN ON PLANS REQUIRED BEARING AREAS AT FITTING SHALL BE AS INDICATED BELOW, ADJUST IF NECESSARY, TO CONFORM TO THE TEST PRESSURE(S) AND ALLOWABLE SOIL BEARING STRESS (ES) STATED IN THE SPECIAL SPECIFICATIONS.
- BEARING AREAS AND SPECIAL BLOCKING DETAILS SHOWN ON PLANS TAKE PRECEDENCE OVER BEARING AREAS AND BLOCKING DETAILS SHOWN ON THIS STANDARD DETAIL.

BEARING AREA OF THRUST BLOCK IN SQUARE FOOT

FITTING SIZE	TEE PLUGGED ON RUN		45° BEND	22 1/2° BEND	11 1/4° BEND
	TEE, WYE, PLUG, OR CAP	90° BEND PLUGGED CROSS			
4	1.0	1.4	1.9	1.4	1.0
6	2.1	3.0	4.3	3.0	1.6
8	3.8	5.3	7.6	5.4	2.9
10	5.9	8.4	11.8	8.4	4.6

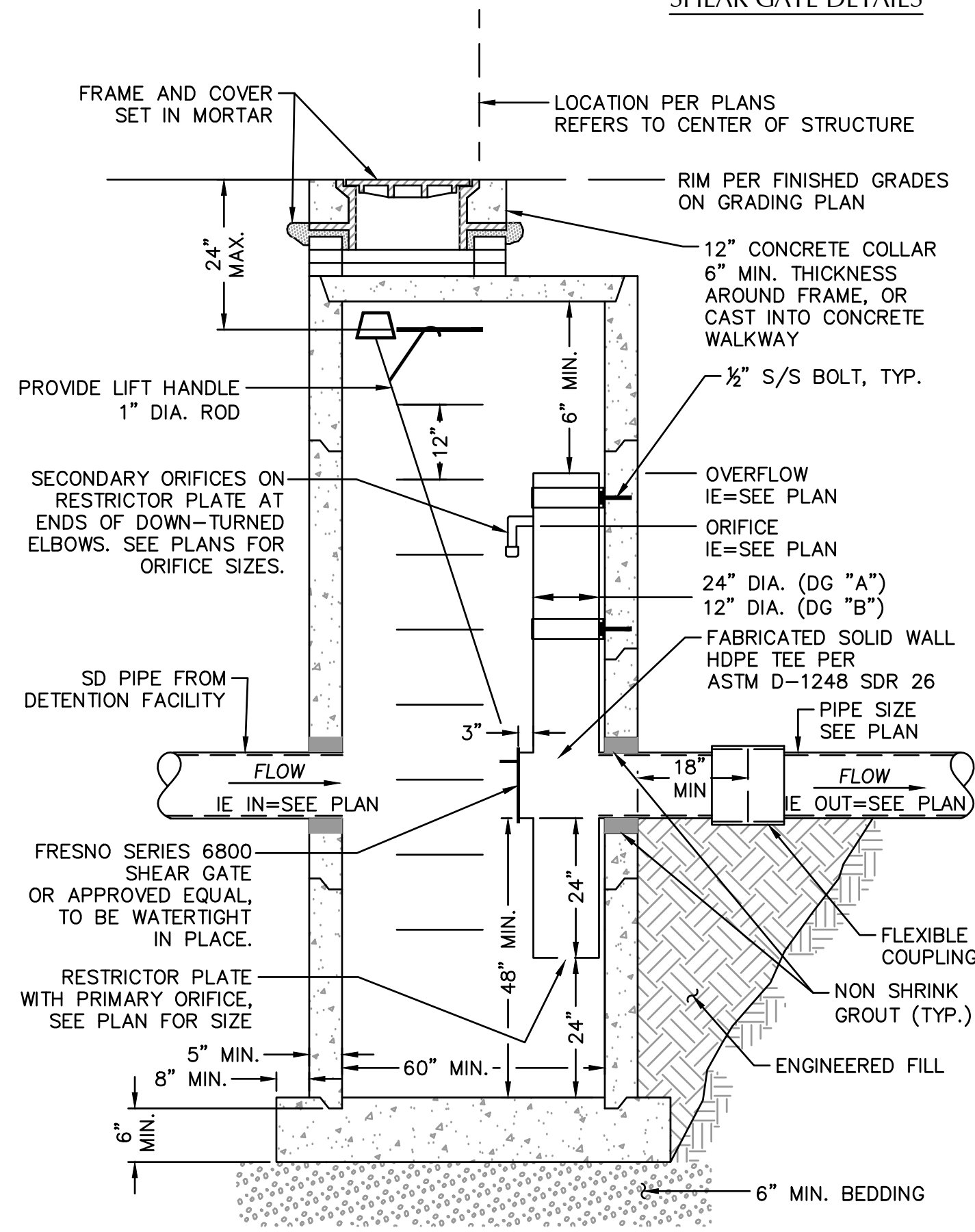
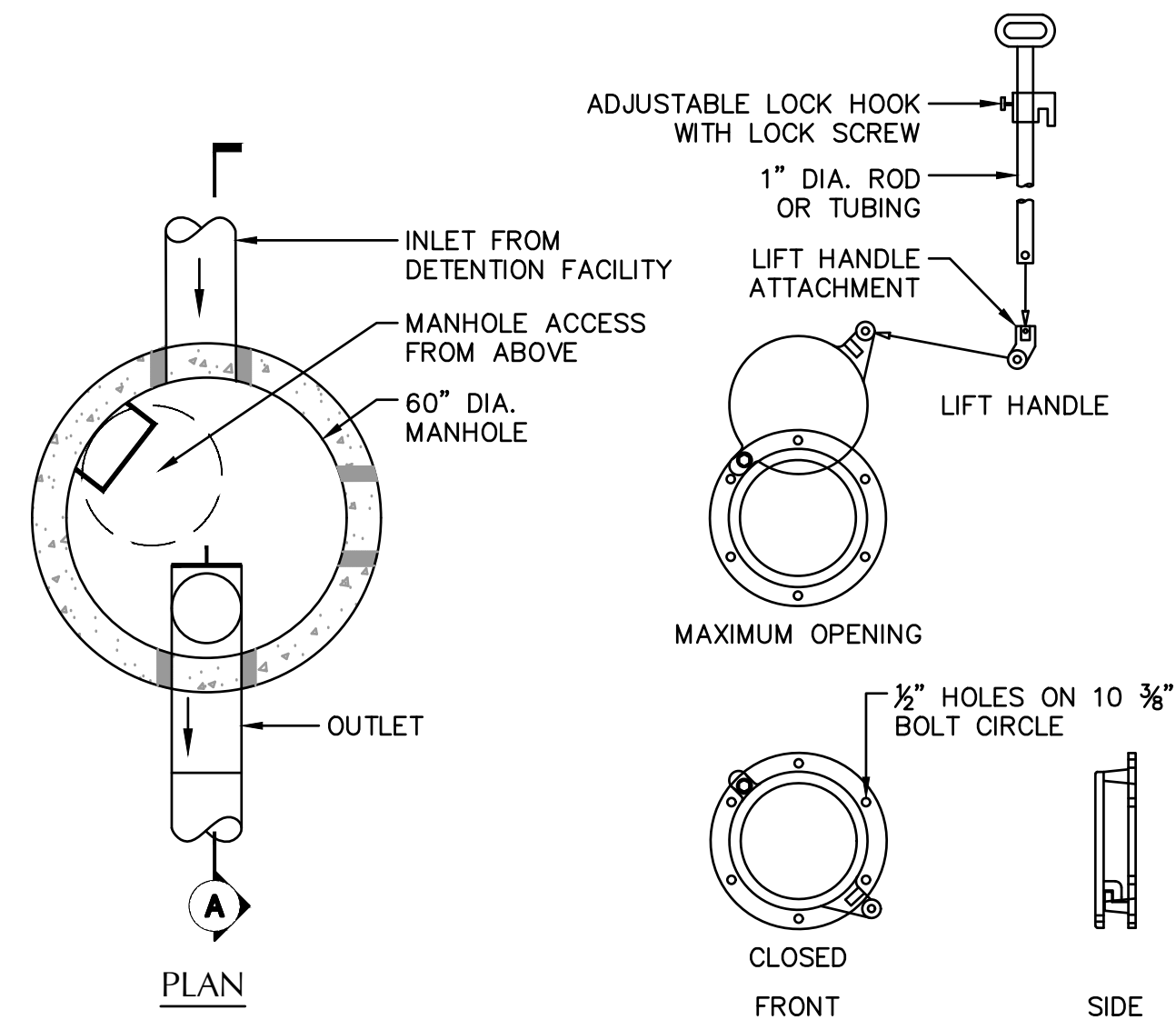
NOTE: ABOVE BEARING AREAS BASED ON TEST PRESSURE OF 150 p.s.i. AND AN ALLOWABLE SOIL BEARING STRESS OF 2000 PSF. TO COMPUTE BEARING AREAS FOR DIFFERENT TEST PRESSURE AND SOIL BEARING STRESSES, USE THE FOLLOWING EQUATION: BEARING AREA = (TEST PRESSURE/150)(2000/ SOIL BEARING STRESS)(TABLE VALUE).

11 THRUST BLOCK
SCALE: NTS

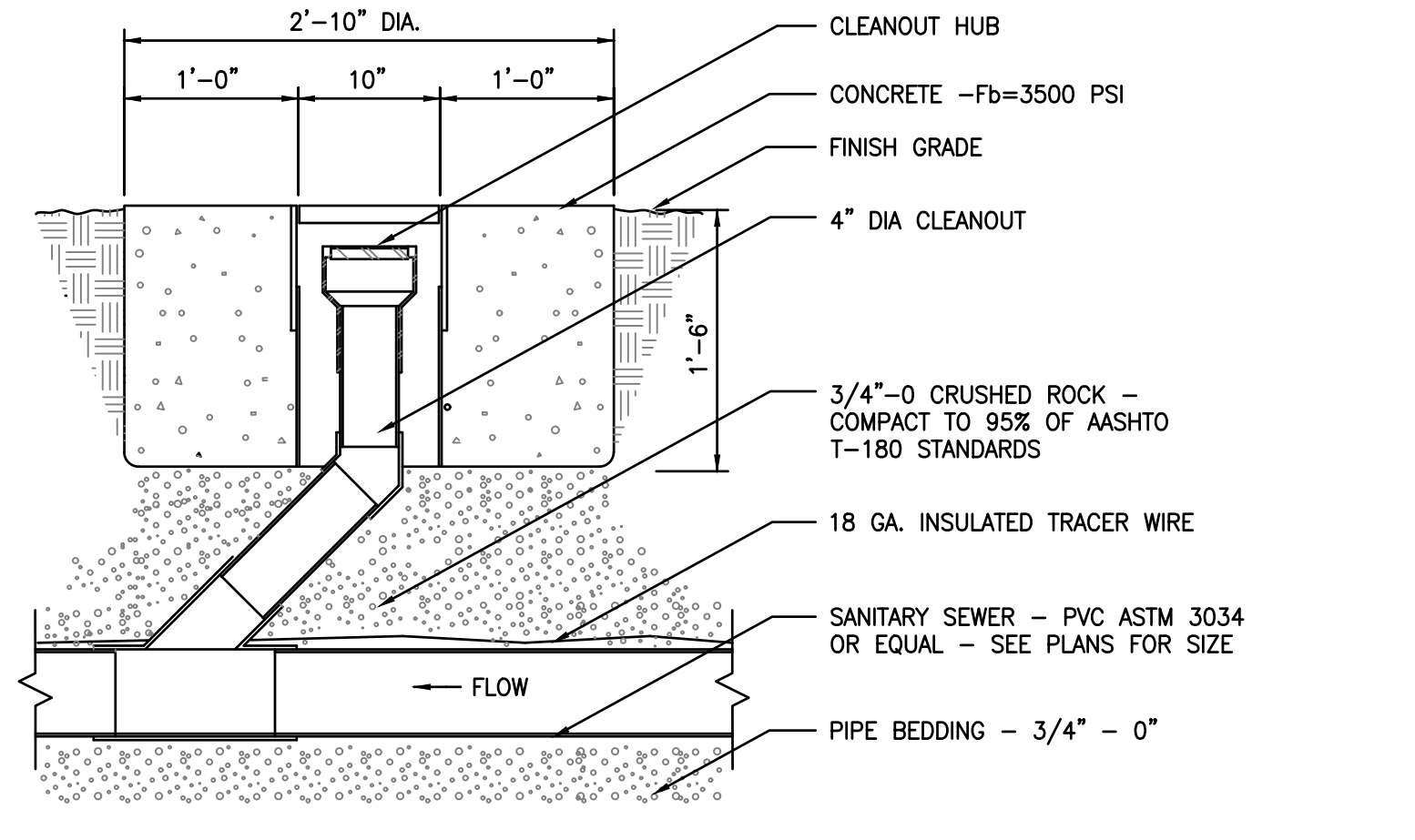
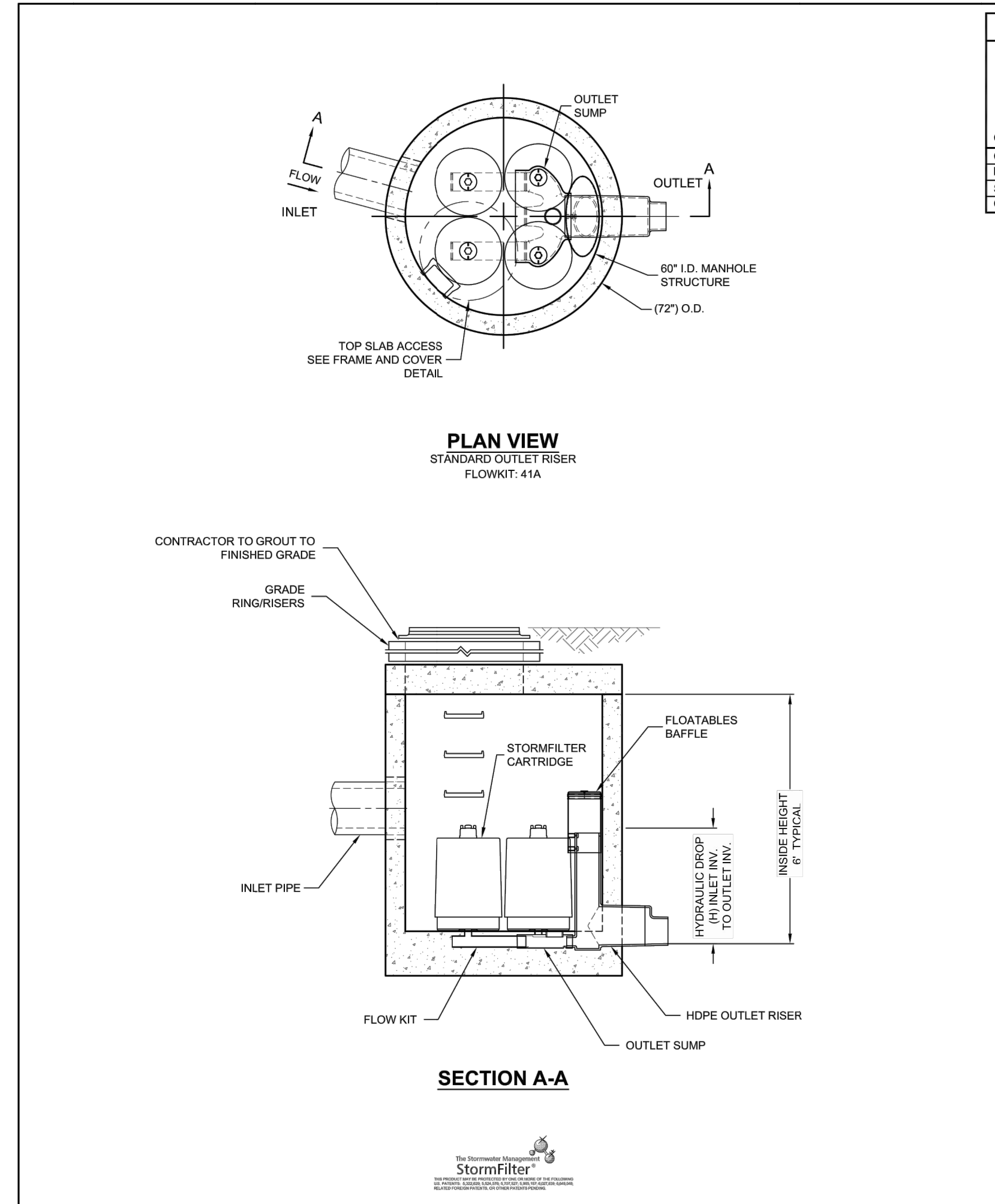


- NOTES:**
- CONTRACTOR TO WIDEN EXCAVATION AS REQUIRED TO OBTAIN COMPACTION WITH CONTRACTORS COMPACTION EQUIPMENT.
 - 1/4" STEEL PLATE, BITUMINOUS COATED. AS MANUFACTURED BY GIBSON STEEL BASINS OR APPROVED EQUAL.

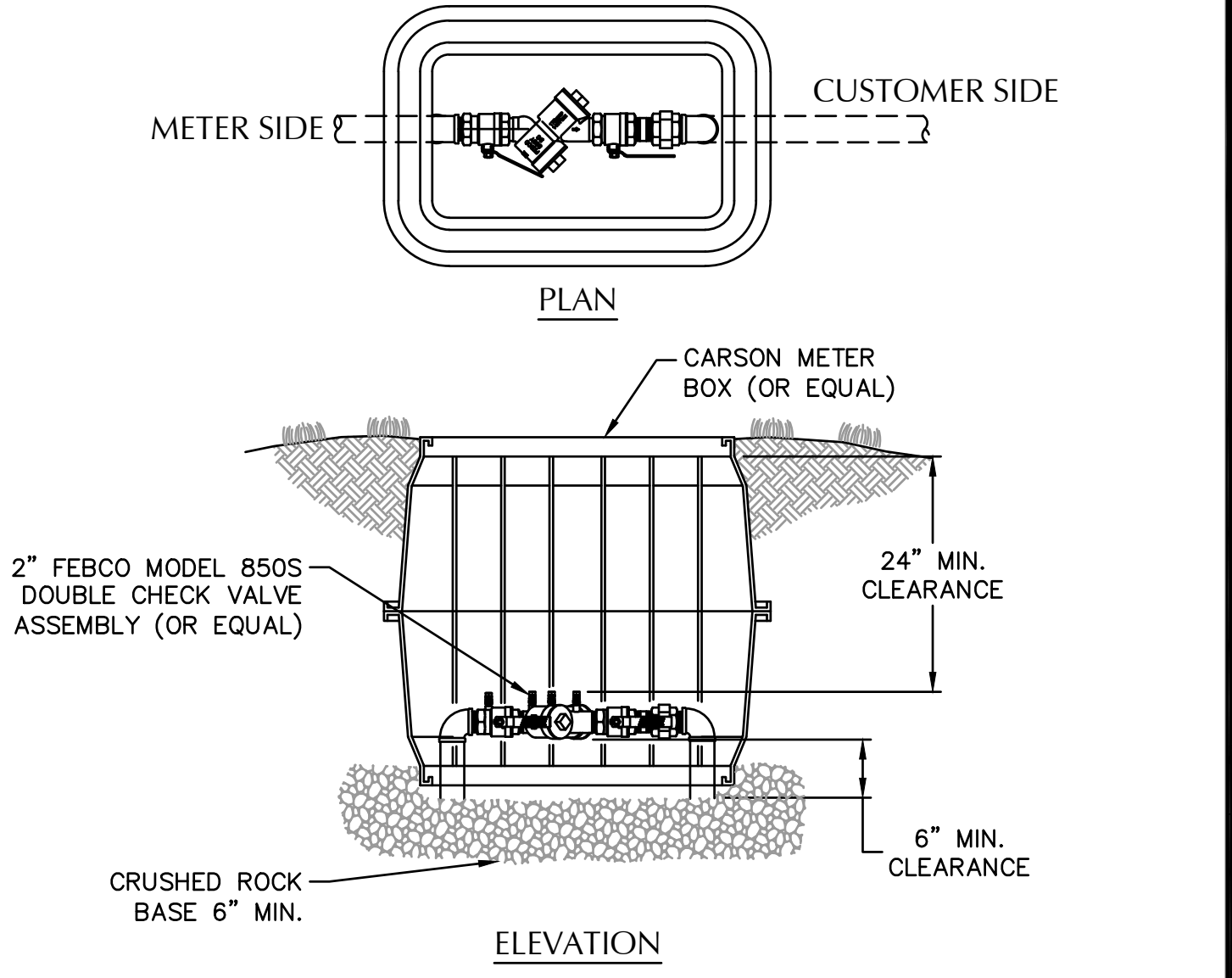
12 TRAPPED CATCH BASIN
SCALE: NTS



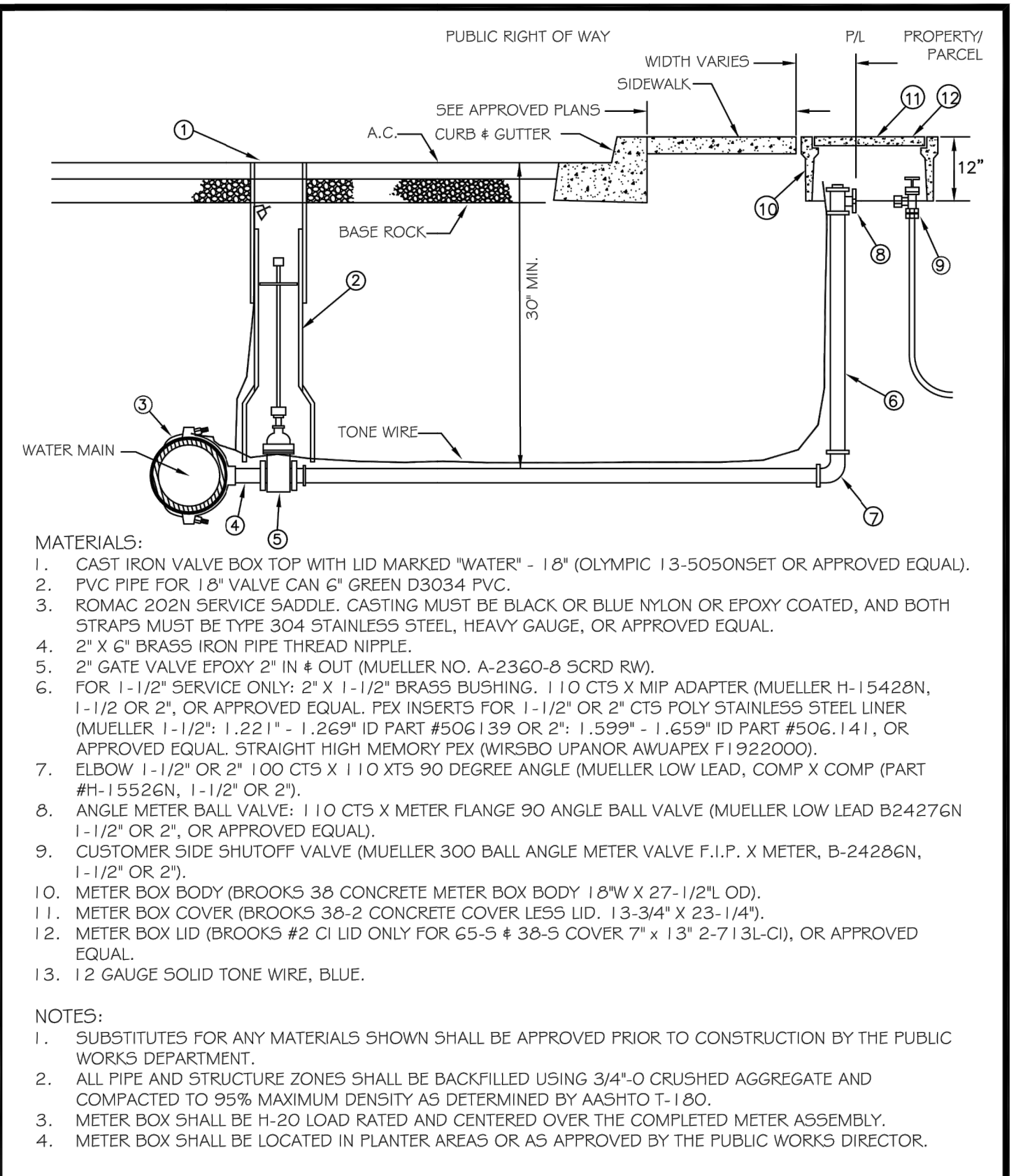
1 FLOW CONTROL MANHOLE
SCALE: NTS



2 STANDARD CLEANOUT
SCALE: NTS



3 REDUCED PRESSURE BACKFLOW ASSEMBLY
SCALE: NTS

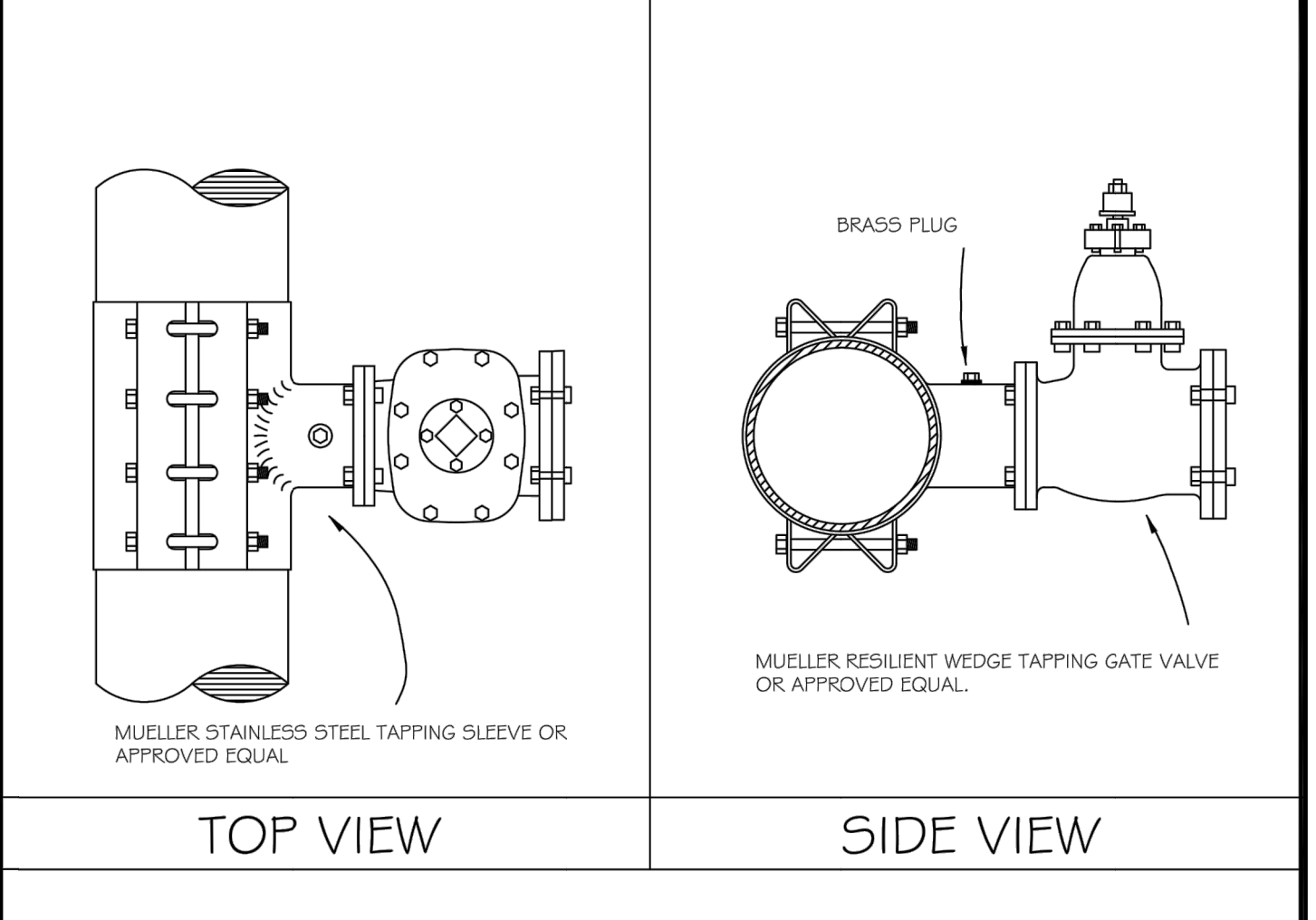


CITY OF MOLALLA
DEPARTMENT OF PUBLIC WORKS
SINGLE WATER SERVICE
1-1/2" # 2"

W-3035

NOTES:

- SUBSTITUTES FOR ANY MATERIALS SHOWN SHALL BE APPROVED PRIOR TO CONSTRUCTION BY THE PUBLIC WORKS DEPARTMENT.
- ALL PIPE AND STRUCTURE ZONES SHALL BE BACKFILLED USING 3/4"-0 CRUSHED AGGREGATE AND COMPACTED TO 95% MAXIMUM DENSITY AS DETERMINED BY AASHTO T-180.
- METER BOX SHALL BE 11-20 LOAD RATED AND CENTERED OVER THE COMPLETED METER ASSEMBLY.
- METER BOX SHALL BE LOCATED IN PLANTER AREAS OR AS APPROVED BY THE PUBLIC WORKS DIRECTOR.



CITY OF MOLALLA
DEPARTMENT OF PUBLIC WORKS
WATERLINE HOT TAP

W-3025

NOTES:

- ALL BOLTS, WASHERS, AND NUTS SHALL BE A-304 STAINLESS STEEL.
- WATER MAIN SHALL BE CLEANED BEFORE ATTACHING SLEEVE.
- SLEEVE AND VALVE SHALL BE PRESSURE TESTED BEFORE MAKING TAP.
- PRESSURE TEST AND TAP SHALL BE MADE IN THE PRESENCE OF A CITY'S AUTHORIZED REPRESENTATIVE.
- PROPER TAPPING MACHINE SHALL BE USED TO MAKE TAP.
- 3/4"-0 CRUSHED AGGREGATE SHALL BE PLACED AND COMPACTED TO 95% OF MAXIMUM DENSITY AS DETERMINED BY AASHTO T-180.
- 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.
- TAP SHALL BE MADE NO CLOSER THAN 1 1/8 INCHES FROM THE OUTSIDE EDGE OF THE SLEEVE TO THE BEGINNING OF THE BELL FLARE OR END OF THE MJ FITTING.
- SLEEVE AND VALVE SHALL BE WRAPPED WITH PLASTIC (8 MIL. MINIMUM) PRIOR TO INSTALLATION OF THRUST BLOCK AND BACKFILL.

CITY OF MOLALLA
DEPARTMENT OF PUBLIC WORKS
WATERLINE HOT TAP

W-3025

NOTES:

- SUBSTITUTES FOR ANY MATERIALS SHOWN SHALL BE APPROVED PRIOR TO CONSTRUCTION BY THE PUBLIC WORKS DEPARTMENT.
- ALL PIPE AND STRUCTURE ZONES SHALL BE BACKFILLED USING 3/4"-0 CRUSHED AGGREGATE AND COMPACTED TO 95% MAXIMUM DENSITY AS DETERMINED BY AASHTO T-180.
- METER BOX SHALL BE 11-20 LOAD RATED AND CENTERED OVER THE COMPLETED METER ASSEMBLY.
- METER BOX SHALL BE LOCATED IN PLANTER AREAS OR AS APPROVED BY THE PUBLIC WORKS DIRECTOR.



Baysinger Partners Architecture
1006 SE Grand Avenue, Suite 300
Portland, OR 97214
503-546-1600
MattL@Baysinger.com



Well-crafted simplicity.

AAI
alphan associates, inc.
ENGINEERING

4875 BW Griffith Drive | Suite 100 | Beaverton, OR 97005
503.620.3030 | 503.620.5539 | fax | www.aaainc.com
Project No. A21153.10

RETAIL CAPITAL PARTNERS
MOLALLA RETAIL

Revisions

JR 19079
Original Issue: 00.00.0000
Drawn/Check By: DWN/CHK_BY

©2021 Baysinger Partners Architecture

C4.1
DESIGN REVIEW

**DETAIL "A"
TRACER WIRE**
(See general note 6)

**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:

- All precast products shall conform to requirements of ASTM C478.
- Standard precast manhole section diameter shall be 48". Use 42" if specified by the Engineer.
- See Std. Dwg. RD345 for pipe to manhole connections.
- See Std. Dwg. RD344 for manhole base section.
- Adjust 24" maximum.
- 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.
- 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.
- See Std. Dwg. RD335 for details not shown.
- See Std. Dwg. RD356 for manhole covers and frames, manhole adjustment rings, etc.
- Max. pipe diameter varies with pipe material.
- See Std. Dwg. RD342 for shallow manholes.
- See project plans for details not shown.

CALC. BOOK NO. N/A

SDR DATE 16-JAN-2019

OREGON STANDARD DRAWINGS

STANDARD MANHOLE DETAILS

2021

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

OREGON STANDARD DRAWINGS

STANDARD MANHOLE DETAILS

2021

NOTE: Contractor is responsible for supplying crane to set vault.

Note: Designed for 0 to 5'-0" of Cover

612-GGI-2500
File Name: 020-612GGI-2500
Issue Date: 2018
oldcastleprecast.com/wilsonville

612-GGI-2500
GRAVITY GREASE
INTERCEPTOR 2500 GALLON

Effective Date: December 1, 2021 – May 31, 2022 RD336

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

- Where precast inlets are used as an alternate to cast-in-place inlets, a 4" compacted leveling bed of sand or 1/4"-0 crushed aggregate shall be provided. All precast inlets shall conform to requirements of ASTM C913.
- Graphics show CG-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.
- Provide sump only where shown on plans, and allowed by jurisdiction. See Detail B for inlet without sump.
- For curb details, see Std. Dwg. RD700 & RD701.
- See Std. Dwg. RD336 for tracer wire details, or approved alternate.
- Max. pipe diameter varies with pipe material.
- Location, elevation, diameter, slope, and number of pipe(s) varies, see project plans.
- All concrete shall be commercial grade concrete.
- 3/4" preformed filler (in concrete pavement or gutter only) to extend through thickness of concrete.
- See Std. Dwg. RD363 for gutter transition section, when curb and gutter are required. (Pay limit for inlet is expanded when curb and gutter are monolithic)
- See Std. Dwg. RD339 for pipe to structure connections.

SECTION B - B

SECTION A - A

DETAIL B WITH-OUT SUMP

DETAIL A CURB OPENING

BAR "a" DETAILS

TABLE A		
INLET TYPE	W	W ₁
CG-1	2'-8 1/2"	1'-8 1/2"
CG-2	3'-3 3/8"	2'-3 3/8"

NOTES:

- #3 "a" bars to be placed during curb construction.
- All bars to be placed 1 1/2" clear of nearest face of concrete unless shown or noted otherwise.
- All bars shall be full length.

CALC. BOOK NO. N/A

SDR DATE 20-JUL-2020

OREGON STANDARD DRAWINGS

CONCRETE INLETS
TYPE CG-1, CG-2

2021

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

OREGON STANDARD DRAWINGS

CONCRETE INLETS
TYPE CG-1, CG-2

2021

NOTE: Designed in accordance with IAPMO/ANSI Z1001. Manufactured per ASTM C1613

- Designed in accordance with IAPMO/ANSI Z1001. Manufactured per ASTM C1613
- Loading per ASTM C890 for AASHTO H20-44 vehicle loading and maximum soil cover of 5'-0"
- Maximum allowable (DfUs (Drainage Fixture Units) = 307 (equivalent to 2,500 gallon size)
- Corrosion resistant plastic liner available to extend the life of the tank.

Manufacturer's recommendations:

- Fill lift anchor pockets with grout.
- Ventilate each end to open atmosphere.
- Prior to "Start Up" of System, fill with clean water through inlet bay to bottom of transfer pipe (approx. one foot deep).
- Follow Regular Inspection, Cleaning, & Maintenance Schedule (See Clean Out & Maintenance Instructions).

612-GGI-2500
File Name: 020-612GGI-2500
Issue Date: 2018
oldcastleprecast.com/wilsonville

612-GGI-2500
GRAVITY GREASE
INTERCEPTOR 2500 GALLON

Effective Date: December 1, 2021 – May 31, 2022 RD366

612-GGI-2500 6" PIPING

612-GGI-2500
GRAVITY GREASE
INTERCEPTOR 2500 GALLON

612-GGI-2500 6" PIPING

612-GGI-2500
GRAVITY GREASE
INTERCEPTOR 2500 GALLON

Effective Date: December 1, 2021 – May 31, 2022 RD366

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

CURB AND GUTTER

MOUNTABLE CURB AND GUTTER

LOW PROFILE MOUNTABLE CURB AND GUTTER
(Where shown on plans)

VALLEY 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 req'd. for drainage.
Vary where shown on plans, and allowed by jurisdiction.

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

- 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.
- Const. curb expansion joints at 200' maximum spacing, and at points of tangency, and at ends of each driveway.
- Const. curb contraction joints at 15' maximum spacing, and at ends of each inlet and curb ramp.
- 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".
- 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.
- Dimensions are nominal, vary to conform with curb machine approved by the engineer.
- Dimensions adjacent to radii are measured to the point of intersection of curb surfaces.
- For sidewalk details, and monolithic curb & sidewalk, see Std. Dwg. RD720 & RD721.
- For drainage curbs, see Std. Dwg. RD701.
- For curb ramp details, see Std. Dwg. RD900 series.
- On or along state highways, curb and gutter is required at curb ramp.

OREGON STANDARD DRAWINGS
CURBS

Effective Date: June 1, 2021 - November 30, 2021

TYPICAL PLAN VIEW - CURB LINE SIDEWALK

TYPICAL CURB SIDEWALK CROSS SECTION

TYPICAL MONOLITHIC CURB & SIDEWALK CROSS SECTION

CLEAR CIRCULATION PATH

REQUIRED SIDEWALK WIDENING AROUND OBSTRUCTIONS

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

- Include additional paved or unpaved 2" shy distance to vertical faces higher than 5' such as retaining walls, sound walls, fences and buildings.
- Curb type and sidewalk width as shown on plans or as directed. On sidewalks 8' and wider, provide a longitudinal joint at the midpoint. Place contraction joint over top of pipe. See Std. Dwg. RD700 for weep hole details.
- 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 joints details.
- Const. contraction joints at 15' maximum spacing, and at ends of each curb ramp. See Std. Dwg. RD722 for contraction joints details.
- For curb details, see Std. Dwg. RD700 & RD701. ODOT standard E-7.
- Sidewalk details are based on applicable ODOT standards.
- Fully lowered sidewalk shown; see project plans for the driveway design specified. For driveway details not shown, see Std. Dwg. RD725, RD730, RD735, RD740, RD745 & RD750.
- See project plans for details not shown.

LEGEND:

- Sidewalk pay limit.
- Driveway pay limit, varies by option.
- Cross slope 1.5% max. (Max. 2.0% finished surface slope) (Normal sidewalk cross slope)

OREGON STANDARD DRAWINGS
CURB LINE SIDEWALKS

Effective Date: June 1, 2021 - November 30, 2021

OPTION F PARTIALLY LOWERED SIDEWALK

ALTERNATE SLOPE CONSTRUCTION DETAIL

OPTION G FULLY LOWERED SIDEWALK

PERIMETER FOUNDATION DRAIN

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

- Details are based on applicable ODOT Standards.
- Only use details allowed by jurisdiction.
- The following dimensions are as shown on plans, or as directed: driveway width, driveway slope, sidewalk width, curb exposure, driveway lip exposure, landing area length and width. See project plans for details not shown.
- Curb, gutter, and sidewalk types varies, see plans. See Std. Dwg. RD700 & RD701 for curb details. See Std. Dwg. RD720 for sidewalk details.
- See Std. Dwg. RD722 for joint details.
- A greater than or equal 4' unobstructed clear passage with cross slope 1.5% max. (Max. 2.0% finished surface slope) is required behind driveway apron.
- 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.
- 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.
- Construct a full depth expansion joints with 1#2" (in) preformed joint filler at ends of each driveway. Tooled joints are required at all driveway slope break lines.
- 15' min. of the driveway behind the sidewalk should be surfaced to prevent tracking of gravel onto the sidewalk.
- Monolithic curb & sidewalk shall retain thickened edge through lowered profile, to accommodate driveway use. See Std. Dwg. RD720 for details.

LEGEND:

- Sidewalk
- Driveway pay limit (if monolithic, include adjacent curb) (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)
- Width of driveway
- Curb exposure

OREGON STANDARD DRAWINGS
CURB LINE SIDEWALK DRIVWAYS OR ALLEYS (OPTIONS F & G) ODOT HIGHWAYS

Effective Date: June 1, 2021 - November 30, 2021

6" SEAL OF COMPACTED NATIVE SOIL (LANDSCAPED AREAS ONLY)

WRAP DRAINAGE FABRIC AROUND ALL SIDES, 12" MIN. OVERLAP

PERFORATED DRAIN PIPE. SEE NOTE 1

NOTES:

- LAY PERFORATED DRAIN PIPE ON MIN. 0.5% GRADIENT, WIDENING EXCAVATION AS REQUIRED. MAINTAIN PIPE ABOVE 2:1 SLOPE AS SHOWN.
- CONNECT TO FOUNDATION DRAIN STUBOUT SHOWN ON PLANS.

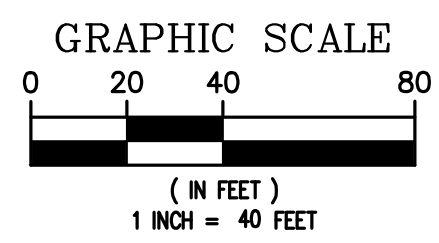
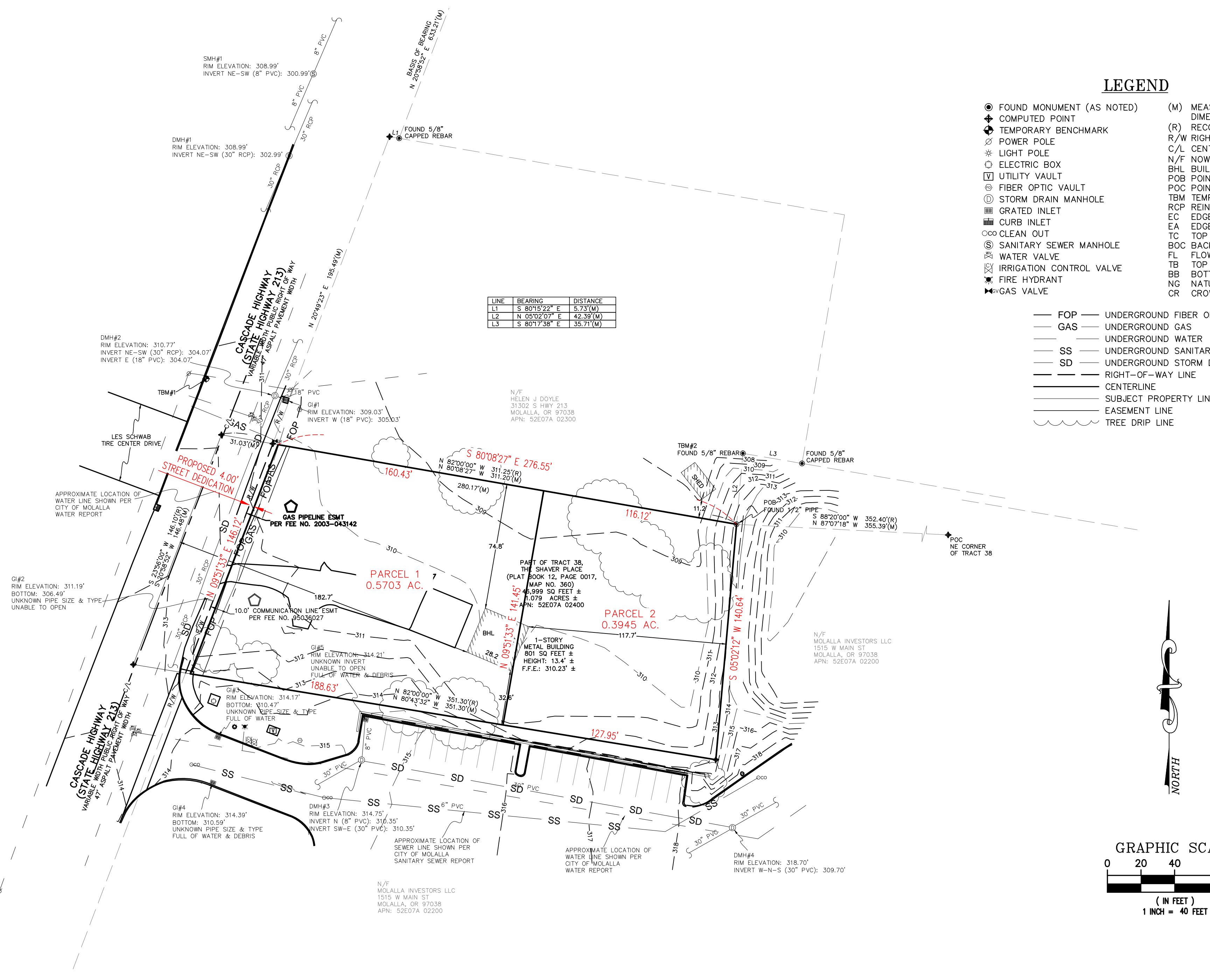
1 PERIMETER FOUNDATION DRAIN
SCALE: NTS

LEGEND

- FOUND MONUMENT (AS NOTED)
- ⊕ COMPUTED POINT
- ⊕ TEMPORARY BENCHMARK
- ⊗ POWER POLE
- * LIGHT POLE
- ⊕ ELECTRIC BOX
- ⊕ UTILITY VAULT
- ⊕ FIBER OPTIC VAULT
- ⊕ STORM DRAIN MANHOLE
- ⊕ GRATED INLET
- ⊕ CURB INLET
- CLEAN OUT
- ⊕ SANITARY SEWER MANHOLE
- ⊕ WATER VALVE
- ⊕ IRRIGATION CONTROL VALVE
- ⊕ FIRE HYDRANT
- ⊕ GAS VALVE
- (M) MEASURED/CALCULATED DIMENSION
- (R) RECORD DIMENSION
- R/W RIGHT-OF-WAY LINE
- C/L CENTERLINE
- N/F NOW OR FORMERLY
- BHL BUILDING HEIGHT LOCATION
- POB POINT OF BEGINNING
- POC POINT OF COMMENCEMENT
- TBM TEMPORARY BENCHMARK
- RCP REINFORCED CONCRETE PIPE
- EC EDGE OF CONCRETE
- EA EDGE OF ASPHALT
- TC TOP OF CONCRETE
- BOC BACK OF CURB
- FL FLOW LINE
- TB TOP OF BANK
- BB BOTTOM OF BANK
- NG NATURAL GROUND
- CR CROWN OF ROAD

- FOP — UNDERGROUND FIBER OPTIC
- GAS — UNDERGROUND GAS
- UNDERGROUND WATER
- SS — UNDERGROUND SANITARY SEWER
- SD — UNDERGROUND STORM DRAIN
- RIGHT-OF-WAY LINE
- CENTERLINE
- SUBJECT PROPERTY LINE
- EASEMENT LINE
- TREE DRIP LINE

LINE	BEARING	DISTANCE
L1	S 80°15'22" E	5.73'(M)
L2	N 05°02'07" E	42.39'(M)
L3	S 80°17'38" E	35.71'(M)



JOB#:	21-4556-1
DATE:	12-1-21
SCALE:	1"=40'
DRAWN:	SMM
CHKD:	CCF
FILE:	-

ZTEC ENGINEERS INC.
 3880 S.E. 8TH AVE., SUITE 280, PORTLAND, OR. 97202
 PH: (503) 235-8795 FAX: (503) 233-7889

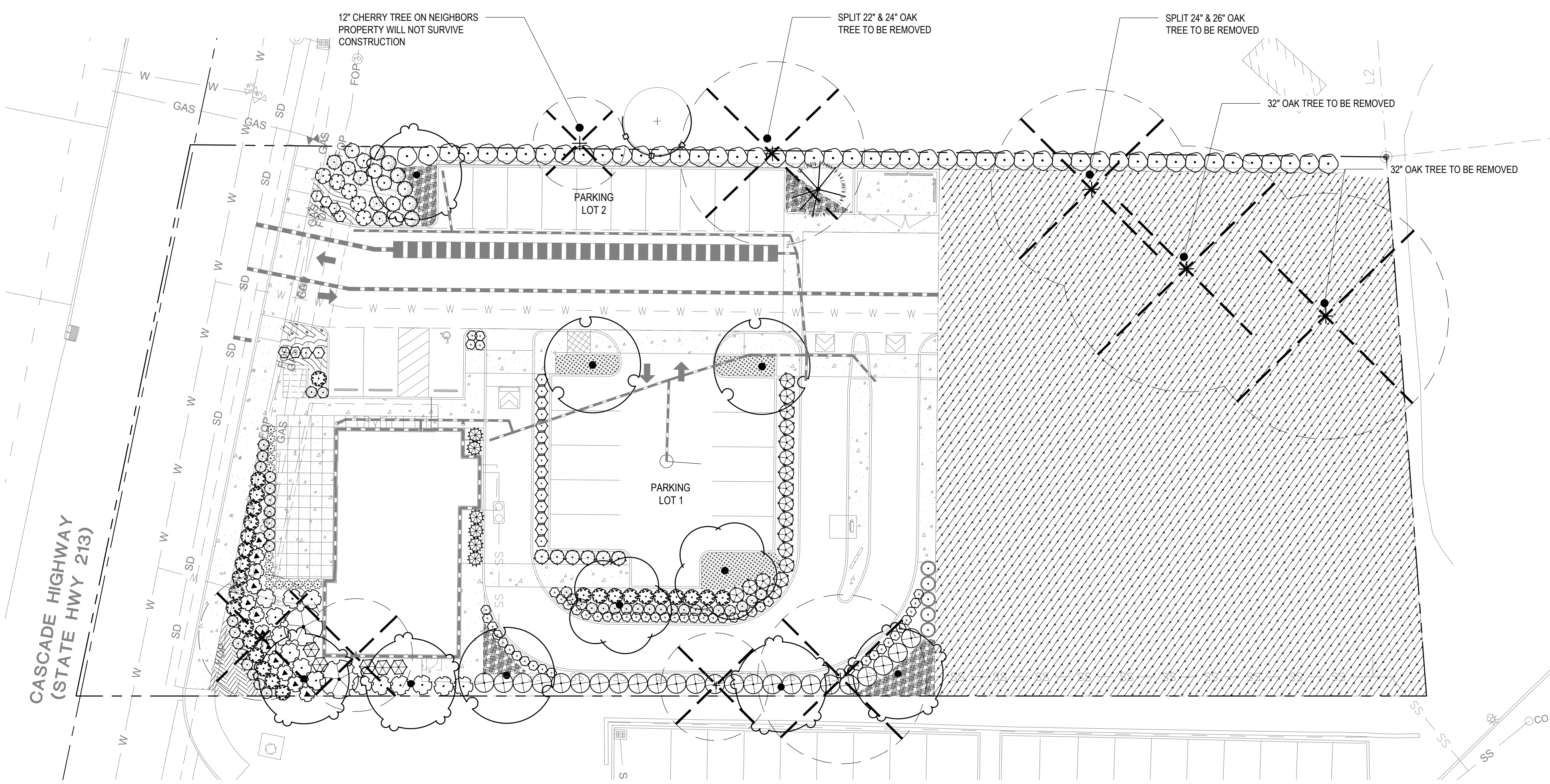
LOCATED IN THE N.E. 1/4 SECTION 7, T.5S., R.2E.,
 W.M., IN THE CITY OF MOLALLA, CLACKAMAS COUNTY, OREGON

REGISTERED
 PROFESSIONAL
 LAND SURVEYOR

OREGON
 JULY 17, 1981
 CHRIS FISCHBORN
 1944
 RENEWS : 1/1/2022

BAYSINGER PARTNERS
 31330 HWY. 213

PRELIMINARY PLAT

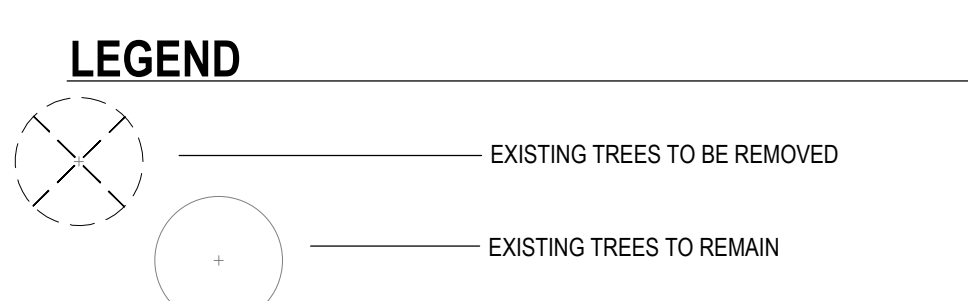


LANDSCAPE REQUIREMENTS

TOTAL SITE AREA	= 24,728 SF
LANDSCAPE AREA REQUIRED 5% OF SITE	= 1,236 SF
LANDSCAPE AREA PROPOSED 25.8% OF SITE	= 6,387 SF
PKG. LOT LANDSCAPING REQ. 10%	= 832 SF
LOT 1 AREA	= 2,952 SF
LOT 2 AREA	= 5,351 SF
PKG. LOT LANDSCAPING PROPOSED	= 2,450 SF
PKG. LOT TREES REQ. (1/12 PKG. SPACES)	= 2
PKG. LOT TREES PROPOSED	= 5

TREE SUMMARY

TREES EXISTING	= 9
TREES TO BE REMOVED	= 9
TREES TO REMAIN	= 0
MITIGATION TREES	= 9
TREES PROPOSED	= 11



PLANT SCHEDULE

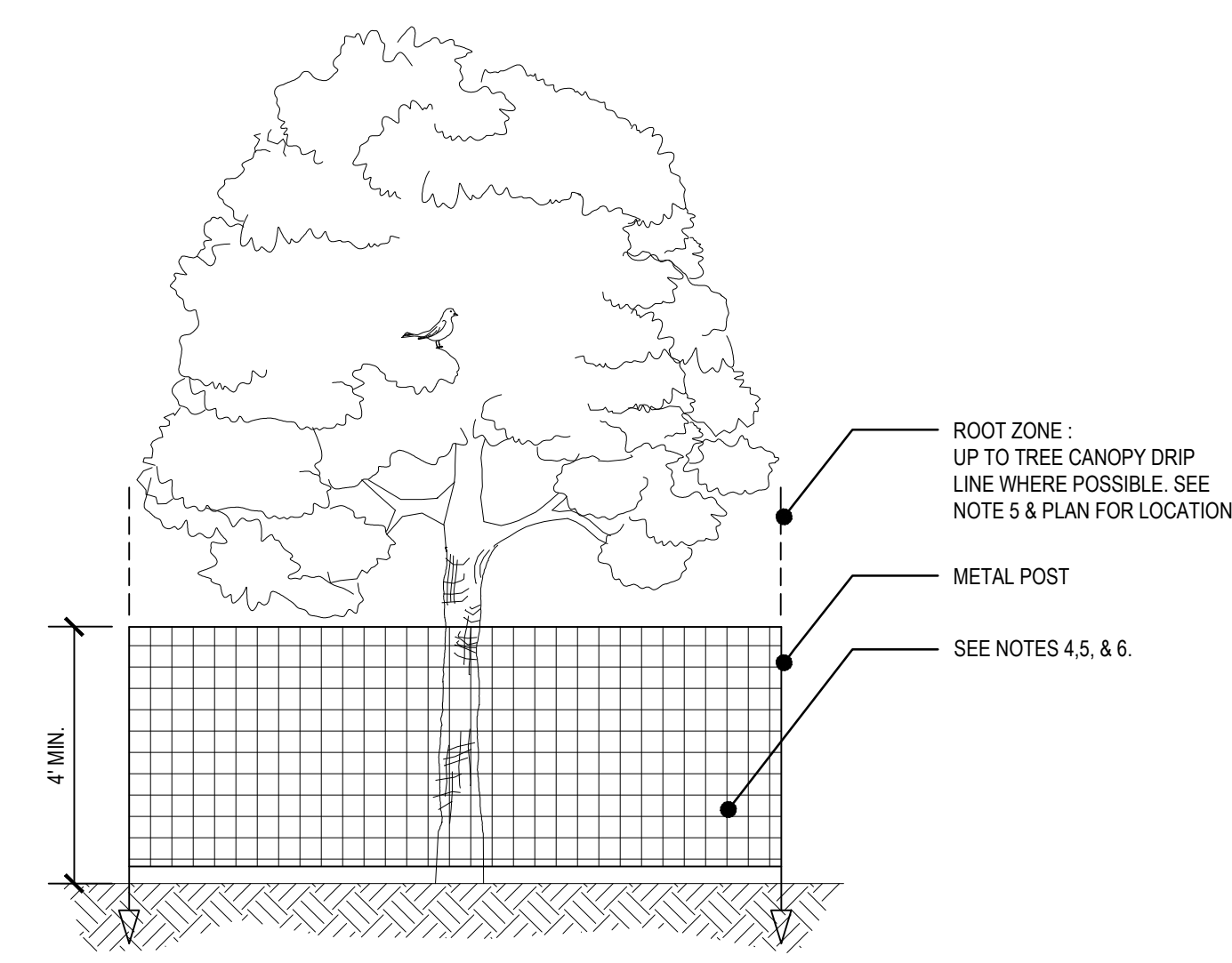
TREES	CODE	QTY	BOTANICAL NAME	COMMON NAME	SIZE	
	AF	2	ACER RUBRUM 'FRANKSRED' TM	RED SUNSET MAPLE	1.5" CAL.	
	CO	3	CELTIS OCCIDENTALIS	COMMON HACKBERRY	1.5" CAL.	
	QC	5	QUERCUS COCCINEA	SCARLET OAK	1.5" CAL.	
SHRUBS	CODE	QTY	BOTANICAL NAME	COMMON NAME	SIZE	
	AE	24	ABELIA X GRANDIFLORA 'EDWARD GOUCHER'	GLOSSY ABELIA	5 GAL.	
	AL	23	AZALEA X 'GIRARD'S CRIMSON'	GIRARD'S CRIMSON AZALEA	2 GAL.	
	BO	12	BERBERIS THUNBERGII 'ORANGE ROCKET'	ORANGE ROCKET JAPANESE BARBERRY	2 GAL.	
	CK	14	CALAMAGROSTIS X ACUTIFLORA 'KARL FOERSTER'	FEATHER REED GRASS	2 GAL.	
	CB	18	CISTUS X CYPRIUS	BICOLOR ROCK ROSE	2 GAL.	
	GS	5	GAULTHERIA SHALLON	SALAL	2 GAL.	
	HA2	6	HYDRANGEA ARBORESCENS 'ANNABELLE'	ANNABELLE HYDRANGEA	2 GAL.	
	HL	8	HYDRANGEA PANICULATA 'LIMELIGHT'	LIMELIGHT PANICLE HYDRANGEA	2 GAL.	
	LS2	52	LIATRIS SPICATA OBTAIN FROM OWNER'S YARD	SPIKE GAYFEATHER	2 GAL.	
	LP	6	LOMICERA PILEATA	PRIVET HONEYSUCKLE	2 GAL.	
	LN2	6	LOROPETALUM CHINENSE RUBRUM 'PIPA'S RED'	PIPA'S RED FRINGE FLOWER	2 GAL.	
	NC	6	NANDINA DOMESTICA 'COMPACTA'	DWARF HEAVENLY BAMBOO	2 GAL.	
	NP	6	NANDINA DOMESTICA 'FIREPOWER'	FIREPOWER HEAVENLY BAMBOO	2 GAL.	
	PA2	12	PENNISETUM ALOPECUROIDES	FOUNTAIN GRASS	2 GAL.	
	RR	39	ROSA X 'KNOCKOUT' TM	ROSE	2 GAL.	
	RX	5	ROSA X 'BOKRARUISP' TM	NITTY GRITTY WHITE ROSE	2 GAL.	
	SM3	5	SPIRAEA X BUMALDA 'GOLDMOUND'	GOLD MOUND SPIREA	2 GAL.	
	TD	5	THUJA OCCIDENTALIS 'DEGROOT'S SPIRE'	DEGROOT'S SPIRE ARBORVITAE	5 GAL.	
	VD	15	VIBURNUM DAVIDII	DAVID VIBURNUM	2 GAL.	
	VP	2	VIBURNUM PLICATUM 'DOUBLEFILE'	DOUBLEFILE VIBURNUM	5 GAL.	
	VS	49	VIBURNUM TINUS 'SPRING BOUQUET'	SPRING BOUQUET LAURESTINUS	5 GAL.	
GROUND COVERS	CODE	QTY	BOTANICAL NAME	COMMON NAME	SIZE	SPACING
	AR2	17	AJUGA REPTANS	CARPET BUGLE	1 GAL.	18" o.c.
	FC	85	FRAGARIA CHILOENSIS	BEACH STRAWBERRY	4" POT	24" o.c.
	LS	32	LIRIOPE SPICATA 'SILVER DRAGON'	SILVER DRAGON CREEPING LILYTURF	1 GAL.	24" o.c.
	MN	194	MAHONIA NERVOSA	OREGON GRAPE	1 GAL.	18" o.c.
	OB	25	OPHIPOGON JAPONICUS 'BLACK'	BLACK MONDO GRASS	1 GAL.	18" o.c.
	RG2	33	RUBRACKIA FULGIDA SULLIVANTII 'GOLDSTURM'	GOLDSTURM CONEFLOWER	1 GAL.	18" o.c.
		16,639 SF	WILDFLOWER MIX PT (PROTOME SEEDS) 652 PACIFIC NW WILDFLOWER MIX APPLICATION RATE: 1 LB PER 6,500 SF			

TREE PROTECTION NOTES:

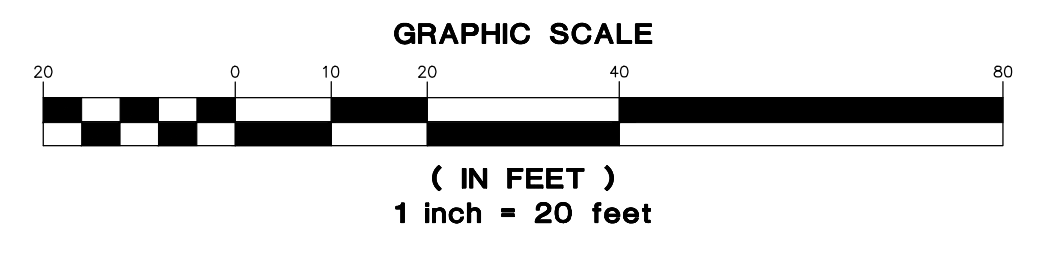
- BEFORE WORK IS STARTED, INSTALL TREE PROTECTION FENCING. CONTACT THE PROJECT LANDSCAPE ARCHITECT FOR ASSISTANCE.
- NO ENCROACHMENT OF ANY KIND IS ALLOWED WITHIN THE TREE PROTECTION FENCE ZONE DURING CONSTRUCTION.
- INSTALL FENCE ON TREE SIDE OF EXISTING CURB FOR ALL TREES TO BE PRESERVED. ROOT PROTECTION ZONE IS AN AREA AROUND A TREE THAT IS BASED ON THE DIAMETER OF THE TREE CANOPY AND BETWEEN EXISTING CURB AND PROPOSED SIDEWALK.
- FENCING SHALL BE 4-FOOT HIGH ORANGE CONSTRUCTION FENCE WITH METAL POSTS AND BE SECURED TO THE GROUND WITH 6-FOOT METAL POSTS. AVOID DRIVING POSTS OR STAKES INTO MAJOR ROOTS.
- FENCE SHALL BE INSTALLED PRIOR TO LAND CLEARING, FILLING OR ANY LAND ALTERATION AND SHALL REMAIN IN PLACE UNTIL AFTER CONSTRUCTION IS COMPLETE.
- NO EXCAVATION OR COMPACTION OF EARTH OR OTHER POTENTIALLY DAMAGING ACTIVITIES ALLOWED WITHIN THE PROTECTION FENCING.
- WORK WITHIN PROTECTION FENCE SHALL BE DONE MANUALLY. NO STOCKPILING OF MATERIALS, VEHICULAR TRAFFIC, OR STORAGE OF EQUIPMENT OR MACHINERY SHALL BE ALLOWED WITHIN THE LIMITS OF THE FENCING.
- WITHIN CLEARING/GRADING LIMITS OR AT THE EDGE OF THE CLEARING/GRADING LIMITS, TREE PROTECTION MAY BE INSTALLED AROUND GROUPS OF TREES.
- DURING WORK, ANY ROOTS GREATER THAN TWO INCHES FOUND DURING EXCAVATION SHALL BE CLEANLY CUT. MULTIPLE ROOT PRUNING EVENTS FOR SINGLE TREES SHALL BE MANAGED & MONITORED BY THE PROJECT LANDSCAPE ARCHITECT.
- AFTER CONSTRUCTION IS COMPLETE, PROJECT LANDSCAPE ARCHITECT SHALL VERIFY TREE PROTECTION FENCING CAN BE REMOVED.

PLANTING NOTES

- ALL CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH CURRENT CITY OF MOLALLA STANDARDS AND THE OREGON STRUCTURAL SPECIALTY CODE.
- CONTRACTOR SHALL CONTACT LANDSCAPE ARCHITECT AT LEAST TWO WEEKS PRIOR TO START OF LANDSCAPE WORK TO REVIEW PLANT SUBSTITUTIONS & JURISDICTIONAL REQUIREMENTS.
- SUBSTITUTIONS WILL NOT BE ACCEPTED UNLESS SPECIFICALLY ACCEPTED IN WRITING BY THE OWNER OR OWNER'S REPRESENTATIVE.
- VERIFY ALL EXISTING CONDITIONS, INCLUDING LOCATION OF PROPERTY LINES, PRIOR TO BEGINNING ANY WORK. REPORT ANY DISCREPANCIES TO THE OWNER'S REPRESENTATIVE IMMEDIATELY.
- DO NOT WILLFULLY PROCEED WITH CONSTRUCTION WHEN UNKNOWN OBSTRUCTIONS AND/OR DIFFERENCES EXIST THAT MAY NOT HAVE BEEN KNOWN DURING DESIGN. IMMEDIATELY NOTIFY OWNER'S REPRESENTATIVE OF UNKNOWN OBSTRUCTIONS AND/OR DIFFERENCES. PRIOR TO REMOVING ANY EXISTING FEATURES, REVIEW AND CONFIRM EXTENT OF DEMOLITION WITH OWNER'S REPRESENTATIVE.
- PROTECT EXISTING ITEMS TO REMAIN DURING CONSTRUCTION. ANY DAMAGE TO EXISTING ITEMS DESIGNATED TO REMAIN I.E. CURBS, WALKS, PLANT MATERIAL, LAWN OR FENCES SHALL BE REPAIRED OR REPLACED AT NO ADDITIONAL COST TO THE OWNER.
- VERIFY THE LOCATION OF ALL UNDERGROUND UTILITIES, LINES, PIPES, VAULTS, OR BOXES PRIOR TO EXCAVATION. MARK AND PROTECT ALL UTILITIES, SITE FEATURES AND VEGETATION TO REMAIN IN PLACE. ANY DAMAGE TO ANY KNOWN EXISTING UTILITY ELEMENTS SHALL BE REPAIRED PROPERLY AND IMMEDIATELY. REMOVE FROM THE SITE AND LEGALLY DISPOSE OF ALL DEBRIS AND EXCAVATED MATERIAL NOT REQUIRED FOR FILL. NO RUBBISH OR DEBRIS SHALL BE BURIED ON THE SITE.
- MAINTAIN ALL ROADWAYS AND PAVED PATHWAYS CLEAN AND FREE OF CONSTRUCTION MATERIALS AND DEBRIS, PROVIDING NECESSARY DUST CONTROL WHERE REQUIRED.
- COORDINATE AND SCHEDULE ALL WORK WITH THE OWNER'S REPRESENTATIVE.
- INSTALL EROSION CONTROL SYSTEMS IN ACCORDANCE WITH CITY OF MOLALLA STANDARDS PRIOR TO SITE WORK AND LANDSCAPE INSTALLATION.
- CONTRACTOR SHALL PROVIDE TOPSOIL, SOIL AMENDMENTS, AND EROSION CONTROL.
- CONTRACTOR SHALL SUBMIT CERTIFIED TOPSOIL ANALYSIS REPORT FOR OWNER'S APPROVAL PRIOR TO PLANT INSTALLATION. SEE SPECS.
- CONTRACTOR IS RESPONSIBLE FOR ANY AMENDMENTS TO SOIL PH FERTILITY AND/OR DRAINAGE CONDITIONS NECESSARY TO ENSURE PROPER GROWING CONDITIONS FOR PROPOSED PLANTINGS. SEE SPECS.
- CONTRACTOR SHALL FOLLOW PROVIDER'S INSTRUCTIONS AND RECOMMENDATIONS FOR SEEDING.
- ALL PLANTS SHALL BE IRRIGATED BY A FULLY AUTOMATED, PERMANENT IRRIGATION SYSTEM UNLESS OTHERWISE NOTED. SEE SPECS.
- PRIOR TO FINAL ACCEPTANCE, CONTRACTOR SHALL PROVIDE OWNER WITH AS-BUILT PLANS OF THE INSTALLATION, COPIES OF ALL OPERATION MANUALS AND WARRANTY DOCUMENTS.
- ALL NEW PLANTINGS IN LANDSCAPE AREAS SHALL BE WARRANTED FOR A PERIOD OF ONE YEAR FROM THE DATE OF FINAL ACCEPTANCE.
- COORDINATE INSTALLATION PLANTING MATERIALS WITH IRRIGATION. PLANT ONLY IN AREAS WHERE THE IRRIGATION SYSTEM IS COMPLETE AND FULLY OPERATIONAL.
- PROVIDE PLANT MATERIAL THAT IS HEALTHY NURSERY STOCK, WELL BRANCHED, AND FULL FOLIATED WHEN IN LEAF; AND FREE FROM DISEASE, INJURY, INSECTS, WEEDS AND WEED ROOTS.
- PLANT MATERIALS NOT MEETING SPECIFICATION REQUIREMENTS WILL BE REJECTED.
- INITIAL INSPECTION OF PLANT MATERIAL
- ASSEMBLE ALL PLANTS FOR EACH INSPECTION AT ONE LOCATION FOR INSPECTION TO BE COMPLETED IN ONE VISIT. ANY FURTHER INSPECTION REQUIRED DUE TO PLANTS BEING UNAVAILABLE, REJECTED, AND OR NOT MEETING SPECIFICATIONS SHALL BE CHARGED TO THE CONTRACTOR AT THE CURRENT HOURLY RATE FOR THE LANDSCAPE ARCHITECT PERFORMING THE INSPECTION.
- OWNER RETAINS RIGHT TO OBSERVE TREES AND SHRUBS FURTHER FOR SIZE AND CONDITION OF BALLS AND ROOT SYSTEMS, INSECTS, INJURIES, AND LATENT DEFECTS AND TO REJECT UNSATISFACTORY OR DEFECTIVE MATERIAL AT ANY TIME DURING PROGRESS OF WORK.
- REMOVE REJECTED TREES OR SHRUBS FROM PROJECT SITE WITHIN 24 HOURS.
- REPLACE PLANT MATERIALS REJECTED BY OWNER AT NO ADDITIONAL EXPENSE TO OWNER.
- PLANT LAYOUT AND INSPECTION
- ALL PLANTS SHALL BE INSTALLED ACCORDING TO AMERICAN STANDARD FOR NURSERY STOCK (ANSI Z60.1) AS WELL AS DETAIL DRAWINGS AND SPECIFICATIONS.
- LAYOUT OF MAJOR PLANTING AREAS AS INDICATED IN THE DRAWINGS ARE APPROXIMATE ONLY; OUTLINE IN THE FIELD LOCATIONS AND IDENTITY OF ALL TREES, SHRUBS AND GROUND COVERS, SUBJECT TO REVIEW AND APPROVAL.
- INSPECTION: NOTIFY THE OWNER 48 HOURS PRIOR TO BEGINNING PLANTING. THE OWNER MAY ADJUST PLANT MATERIAL LOCATION TO MEET FIELD CONDITIONS.
- DO NOT COMMENCE WITH PLANTING UNTIL OWNER HAS APPROVED THE LOCATION AND LAYOUT OF ALL PLANT BEDS.
- IF WORK IS NOT PROMPTLY OR PROPERLY PERFORMED BY THE CONTRACTOR, THE OWNER WILL, AT THEIR DISCRETION, HAVE THE WORK PERFORMED BY OTHERS. THE COST OF THE WORK BY OTHERS WILL BE DEDUCTED FROM THE CONTRACT AMOUNT.
- MULCH ALL SHRUBS AND GROUND COVER PLANTING BEDS WITH A 2 INCH LAYER OF IMPORTED MULCH MATERIAL WITHIN 2 DAYS AFTER PLANTING.
- COVER ENTIRE BED AREAS; APPLY EVENLY.
- EDGING AND INSTALLATION
- SHOVEL-CUT EDGING: SEPARATE MULCHED AREAS FROM TURF AREAS, CURBS, AND PAVING WITH A 45 DEGREE, 4 TO 6 INCH DEEP, SHOVEL-CUT EDGE.
- MAINTENANCE
- MAINTAIN LANDSCAPE PLANTINGS FROM INSTALLATION UNTIL FINAL ACCEPTANCE.
- MAINTAIN TREES, SHRUBS, AND GROUND COVER BY TRIMMING, PRUNING, CULTIVATING, WATERING, WEEDING, FERTILIZING, RESTORING PLANTING SAUCERS, TIGHTENING AND REPAIRING STAKES AND GUY SUPPORTS, AND RESETTling TO PROPER GRADES OR VERTICAL POSITION, AS REQUIRED TO ESTABLISH HEALTHY, VIABLE PLANTINGS.
- WATER TREES BY DEEP ROOT WATERING METHOD.
- WEEDING AND CLEANUP
- KEEP ALL LANDSCAPE AREAS CLEAN AND WEED FREE. KEEP ALL BUILDINGS, PAVEMENTS, AND OTHER EXTERIOR IMPROVEMENTS CLEAN AND FREE OF SOIL AND DEBRIS.
- WEED ALL BEDS WEEKLY.
- APPLY A 2 INCH LAYER OF MULCH MATERIAL TO SAUCER AREAS OF TREES AND SHRUBS LOCATED OUTSIDE OF PLANTING BEDS. PLACE MULCH NO CLOSER THAN 4 INCHES FROM TRUNKS OF WOODY PLANT MATERIAL AND AWAY FROM THE CROWNS OF HERBACEOUS PLANTS.



1 TREE PROTECTION FENCING DETAIL
N.T.S.



Baysinger Partners Architecture
1006 SE Grand Avenue, Suite 300
Portland, OR 97214
503-546-1600
MattL@Baysinger.Partners



Well-crafted simplicity.
AAI align associates, inc.
ENGINEERING
4875 SW Griffin Drive | Suite 100 | Beaverton, OR | 97005
503.620.3030 tel | 503.620.5529 fax | www.aainc.com
Project No. A21153.10

RETAIL CAPITAL PARTNERS
MOLALLA RETAIL

Revisions

JR 19079
Original Issue: 00.00.0000
Drawn/Check By: DWN/CHK_BY

©2021 Baysinger Partners Architecture
LANDSCAPE PLAN

L1.0
DESIGN REVIEW



Well-crafted simplicity.

AAI aligan associates, inc.
ENGINEERING
 4875 SW Griffin Drive | Suite 100 | Beaverton, OR | 97005
 503.620.3030 tel | 503.620.5539 fax | www.aaimg.com
 Project No. A21153.10

RETAIL CAPITAL PARTNERS

MOLALLA RETAIL

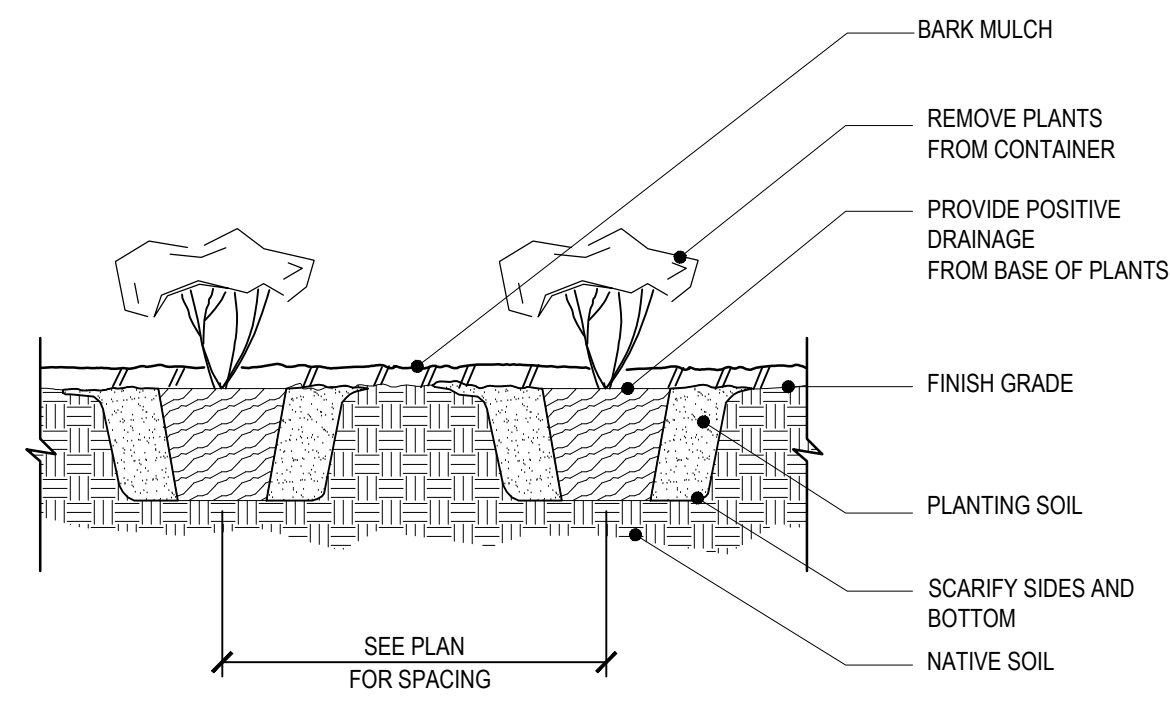
Revisions

JR 19079
 Original Issue: 00.00.0000
 Drawn/Check By: DWN/CHK_BY

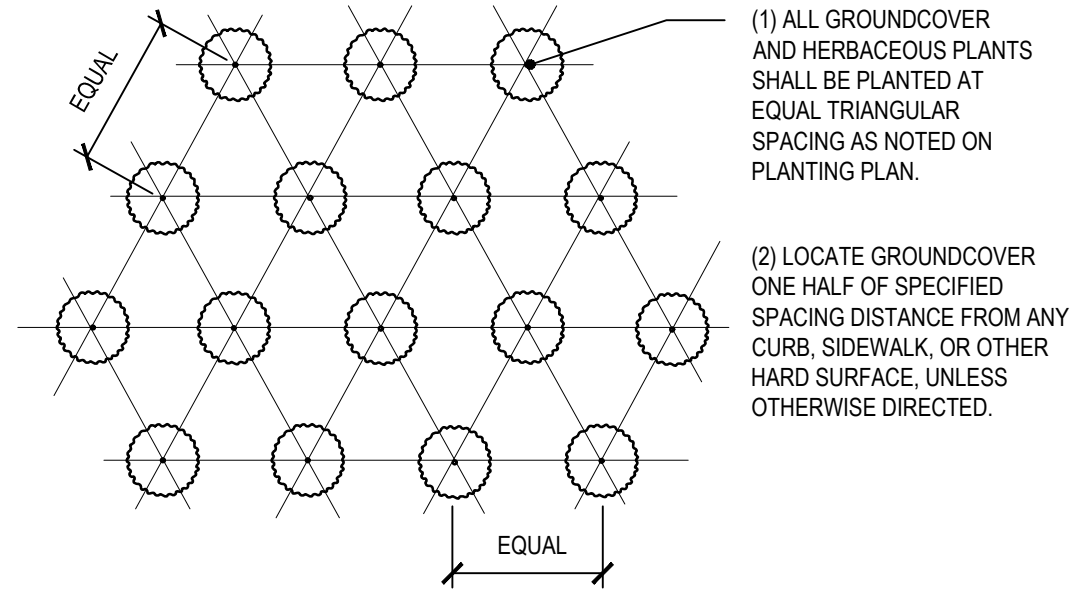
©2021 Baysinger Partners Architecture

LANDSCAPE DETAILS

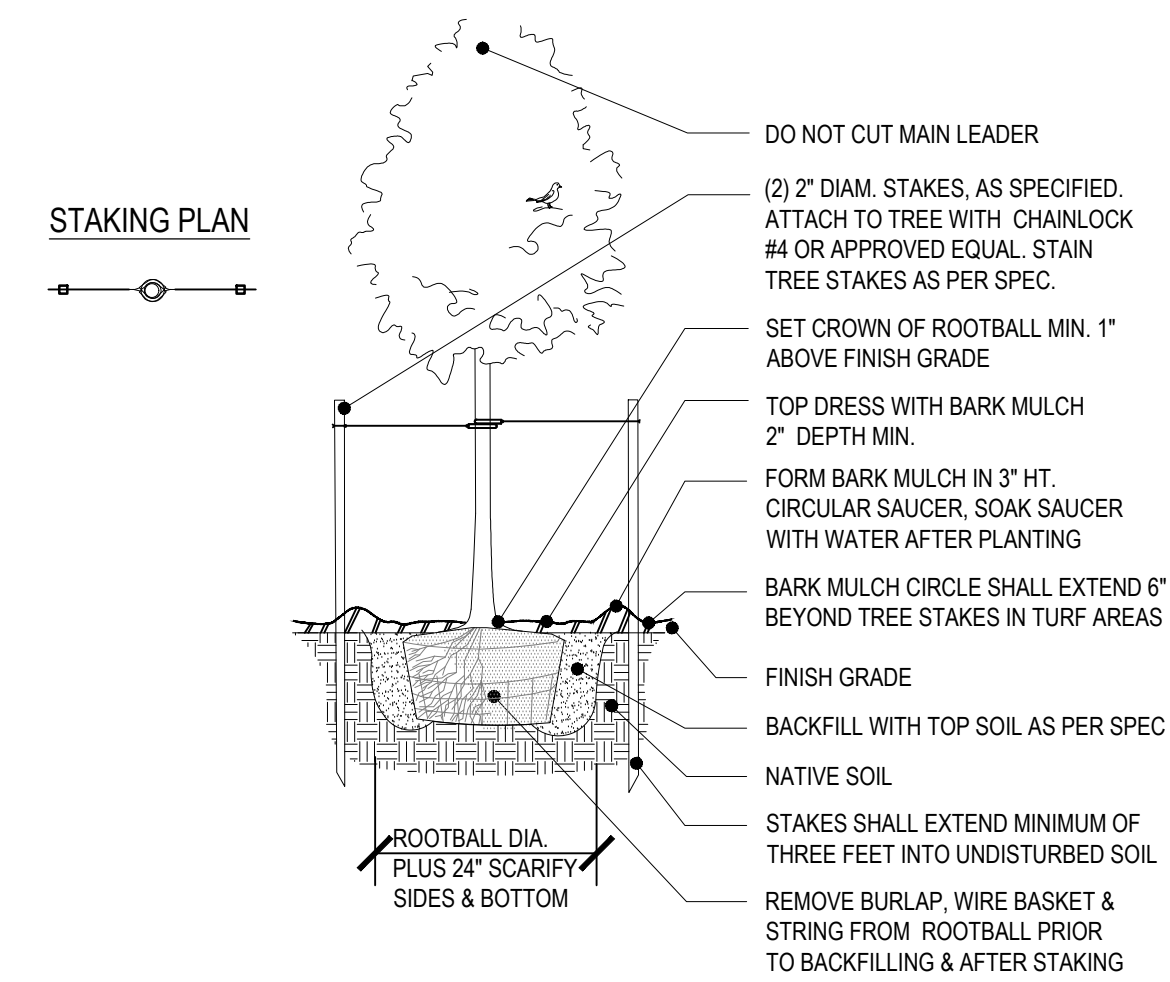
L2.0
 DESIGN REVIEW



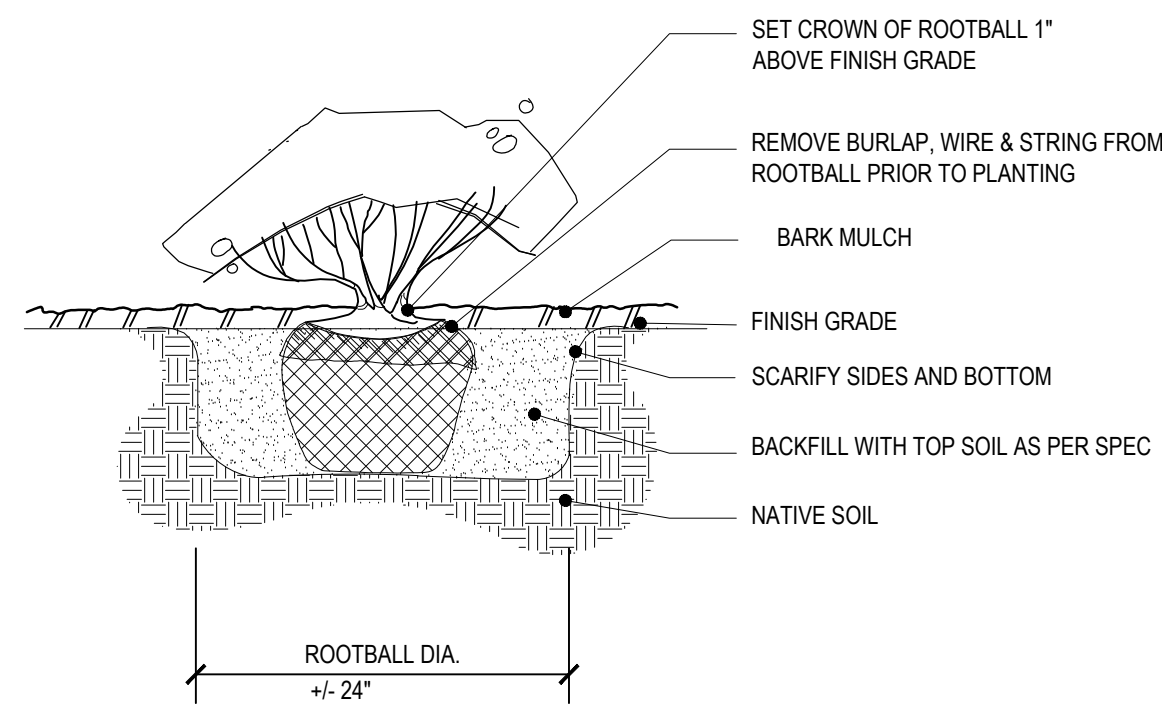
1 GROUNDCOVER & HERBACEOUS PLANT PLANTING DETAIL
 L2.0 SCALE: NTS



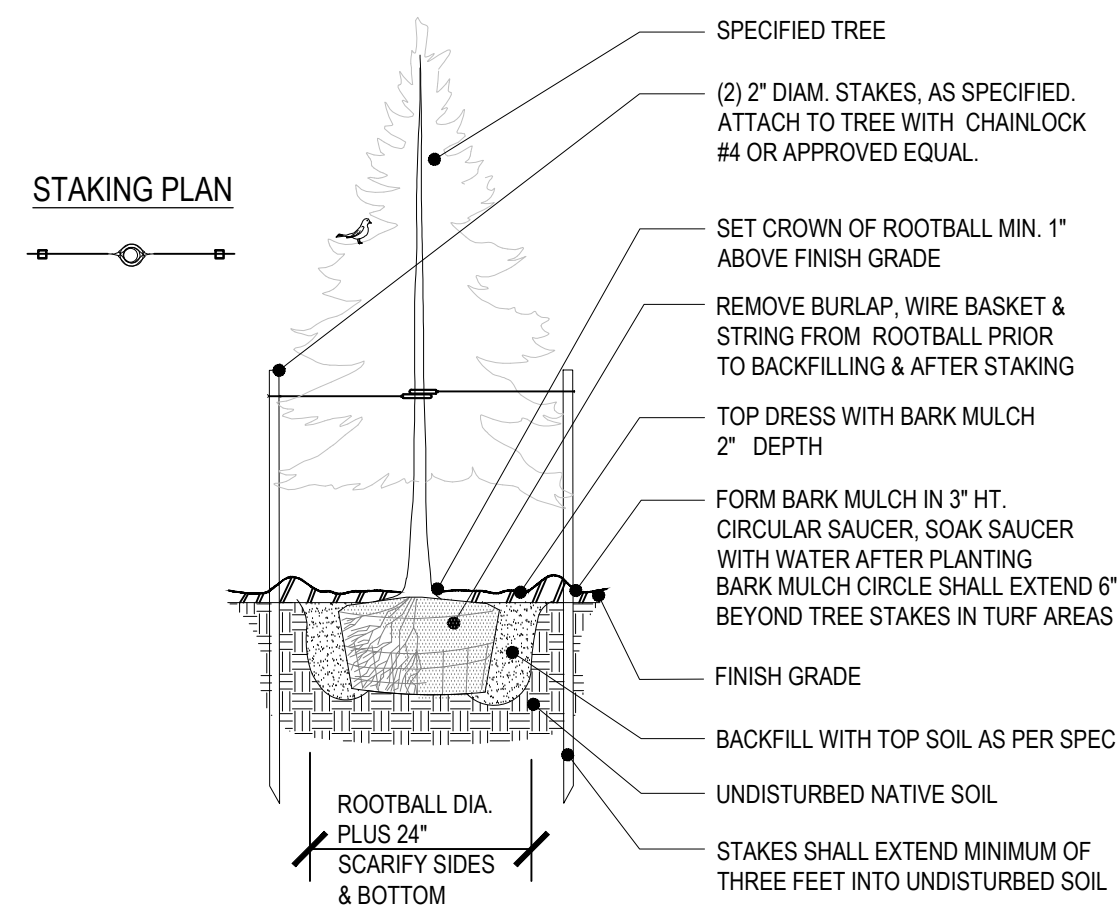
2 GROUNDCOVER & HERBACEOUS PLANT PLANTING PLAN
 L2.0 SCALE: NTS



3 DECIDUOUS TREE PLANTING DETAIL
 L2.0 SCALE: NTS



4 SHRUB PLANTING
 L2.0 SCALE: NTS



5 CONIFER TREE PLANTING DETAIL
 L2.0 SCALE: NTS

Landscape Construction Specifications

General

1. Municipal, County, State and Federal laws, regarding uses and regulations governing or relating to any portion of the work depicted on these plans are hereby incorporated into and made part of these specifications, and their provisions shall be carried out by the contractor.
2. The Contractor shall verify the locations of all existing utilities, structures, and services before commencing work. The location of utilities, structures, services shown on these plans are approximate only. Any discrepancies between these plans and the actual field conditions shall be reported to the Owner's representative.
3. The Contractor shall locate and protect all existing utilities, features and plants on and adjacent to the project site during construction. Contractor shall repair, at his own expense, all damage resulting from his operations or negligence.
4. The Contractor shall obtain all necessary valid licenses, permits, and insurance required to perform the work indicated herein before commencing work, and shall be responsible for coordinating work with all parties involved, including jurisdictional agencies.
5. The Contractor shall use all means necessary to protect the public at all times during the construction process.
6. In the event of conflict between pertinent codes, regulations, structural notes, and/or requirements, or the referenced standards of these Specifications, the provisions of the more stringent shall govern.
7. Weather Limitations: Soil work shall be performed only when the weather conditions do not detrimentally affect the quality of work.

Mandatory Site Inspection Schedule

1. Schedule for Mandatory site inspection procedures. The mandatory site inspections include but are not limited to the following:

Pre-Construction Site Meeting

Contractor shall be notified a minimum of 48 hours prior to meeting to review site conditions, proposed construction and construction schedule, and review construction specifications prior to commencement of construction operations.

Rough Grading Inspection

Contractor shall notify Owner's Representative a minimum 48 hours prior to request for inspection of rough soil grades. All rough grading operations shall be completed per specifications and prepared for inspection. No topsoil placement or backfilling in areas to be landscaped should occur until written approval by Owner's Representative has been issued.

Open Trench Irrigation Inspection

Contractor shall notify Owner's Representative 24 hours prior to inspection for written approval of irrigation trench depths, piping conditions, and pressure testing. (Refer to Irrigation Specification for inspection procedures)

Plant Material Inspection

Plant material quality and layout inspection and written approval shall occur with 24 hours notice to Owner's Representative prior to installation of any plant material. (Refer to Planting Specification for inspection procedures)

Final Landscape Areas and Irrigation Performance Inspection

Contractor shall notify Owner's Representative 48 hours prior to inspection for approval of landscape and irrigation work. Irrigation operations and coverage shall be inspected. Plant quality and layout shall be inspected. Written approval shall be issued upon inspection approval of specified construction. (Refer to relative specification sections)

Erosion Control

1. Provide and maintain positive drainage patterns throughout the construction process, and as directed by the Owner's Representative if weather or construction activity creates drainage conflicts detrimental to construction process or environmental conditions. Comply with jurisdictional requirements.
2. Maintain erosion measures throughout the landscaping process. Restore erosion control measures disturbed by landscaping operations. Remove only upon approval of Owner's Representative.

Invasive Weed Control Prior to Construction

1. Verify and identify conditions requiring eradication of invasive weeds and grasses prior to existing soil surface disturbance as directed by Owner's Representative. Stockpiled topsoil shall be treated to eradicate weeds prior to soil ripping and stockpiling. Weed eradication shall include herbicide and non-herbicide methods only administered by a currently licensed applicator. Eradication shall include and is not limited to elimination of the following invasive species from areas to be landscaped:

Cirsium arvense (Canadian Thistle) Lotus corniculatus (Bird's foot Trefoil)
Convolvulus spp. (Morning Glory) Lythrum salicaria (Purple Loosestrife)
Cytisus scoparius (Scotch Broom) Melilotus spp. (Sweet Clover)
Dipsacus sylvestris (Common Teasel) Myriophyllum spicatum (Eurasian Milfoil)
Equisetum spp. (Horsetail) Phalaris arundinaceae (Reed Canary Grass)
Festuca arundinaceae (Tall Fescue) Rubus discolor (Himalayan Blackberry)
Hedera helix (English Ivy) Solanum spp. (Nightshade)
Holcus canatus (Velvet Grass) Trifolium spp. (Clovers)
Lolium spp. (Rye Grasses)

Rough Grade Inspection

1. Conditions and quality of rough grade shall be inspected and approved by Owner's Representative prior to the commencement of specified work in areas to be landscaped. The contractor shall then be responsible for completion of activities specified herein, and defined on the plan.
2. In all plant bed areas the sub-grade shall be free of unsuitable material such as stumps, roots, rocks, concrete, asphalt, or metals, for a minimum depth of 24 inches, and in all lawn or seeded areas the sub-grade shall be free of unsuitable material for a minimum depth of 12 inches
3. The Owner's Representative, at their discretion, shall direct further rough grading or soil preparation if specified activities have not created a surface satisfactory for further work to commence. Compensation for additional surface work created by conditions unknown at the outset and as directed in writing by the Owner's Representative shall be negotiated at the time of the directive, and prior to the commencement of particular construction activities.

Finish Grading

1. Verify that rough grade in landscape areas is sufficiently below proposed final grade for planting beds and lawn areas to allow for placement of topsoil mix. Refer to grading plans for finish grade references. Verify that grades provide positive drainage at all landscape areas, and slope away from structures at a minimum of 2% slope. Final grades in all landscape areas shall be crowned at center to facilitate proposed drainage.

Installation Of Irrigation Sleeving

1. Sleeving conduit shall be installed at existing and proposed paved areas as per specifications, as directed by the Owner's Representative, or as irrigation installation requirements, prior to preparation for paving construction. Set piping to provide minimum covers of:

18-inch for sleeving beneath walkways;
24-inch for sleeving beneath vehicular traffic or structures.

Mark each end of sleeving with a 2 x 4 stake with 24" exposed, clearly marked 'SLEEVE LOCATION'. Contractor shall maintain staking identification and location throughout construction process. Protect all existing paving when installing sleeving. Restore all paving damaged by sleeve installation.
2. Size of sleeving conduit pipe shall be a minimum of two times the diameter of the bell end of the pipe that is to be fed into the sleeve.
3. Set sleeving in a compacted bed of material that will not damage the pipe during compaction of surface backfill material.

Design / Build Irrigation Specification

1.1 DESIGN BUILD SUBMITTALS AND REQUIREMENTS

- A. Design Criteria: Submitted plan shall meet the following criteria and shall be approved for construction only upon verification that all required criteria have been met.
 1. Drawings submitted for design approval:
 - a. Must clearly illustrate irrigation heads, dripline, valve, controller and point of connection locations. Individual valves and controllers shall be numbered sequentially. The size and maximum flow through each valve and capacity of each controller shall be clearly noted.
 - b. Must clearly illustrate pipe sizes from all laterals and mainline pipe.
 - c. Drawings must be to a standard measurable engineering scale that is at a minimum of 1"=30'-0".
 - d. Drawings must be CAD generated.
 - e. Drawings must include a legend that describes all symbols and materials represented on the plan.
 - f. Drawings must clearly illustrate that the proposed irrigation system meets all performance criteria described by these specifications.
 - g. Must utilize graphics that clearly distinguish between lateral and mainline pipe and sleeves under pavement; dripline; manual or automatic control valves, isolation valves and drain valves; irrigation controllers and all other equipment located on the plan.
 - B. Irrigation system as designed and installed shall perform within the tolerances and specification of the specified manufacturers.
 - C. The system shall be fully adjustable to fine-tune the system performance for specific zones. Indicate water pressure and gallonage parameters at available water source on the required submittal.
 - D. Irrigation system shall be designed so that planting beds, sloped banks and lawn zones are on separate control valves to facilitate the different water requirements of each area.
 - E. System shall be designed to supply manufacturer's specified minimum operating pressure to furthest emitter from water meter. Water flow through piping shall not exceed a velocity of 5 feet per second.
 - F. System shall furnish components to allow operation within manufacturer's specified tolerances for optimum performance. Undersized components shall not be approved for installation.
5. Upon completion of the irrigation system installation and as a condition of it's acceptance, deliver to the Owner's representative the following 'As- built' drawings; Three prints and one reproducible sepi of all changes to the irrigation system including a Controller Zone Reference chart. Instruct owner of system components operation, system winterization, and controller adjustment processes. Instruct owner of precipitation requirements and schedule of anticipated controller adjustments as landscape matures.
6. Protect existing buildings, walls, pavements, reference points, monuments, and markers on this site. Verify location of and protect all utilities. Protect adjacent property. Protect work and materials of other trades. Protect irrigation system materials before, during, and after installation. In the event of damage, repair or replace items as necessary to the approval of the Owner's representative and at no additional cost to the Owner. Use all means necessary to protect the public from injury at all times.

7. Provide warranty for all installed materials and work for one year beyond the date of final acceptance of the irrigation system installation.
8. Verify gallonage, pressure, size, and location of service water line. The Contractor shall guarantee an irrigation system that functions to manufacturer's specifications with the source volume and pressure afforded to site. Make arrangements for water shut-off during construction if necessary, notify owner 24 hours prior to suspension of water service.
9. Irrigation trenches shall be a depth to provide a minimum cover of 18 inches for sleeving beneath walkways; 18 inches for all pressurized main lines; 36 inches for sleeving beneath asphalt paving, and 12 inches for all lateral lines. Backfill with clean fill void of material injurious to system components. All sleeving under vehicular traffic to be Class 200 PVC, all other sleeving shall be class 200 PVC. Locate top of zone valves a minimum of 6" below finish grade.
10. Combine wire and piping where possible.

11. Contractor shall follow manufacturer's instructions for solvent welding of PVC pipe and fittings to achieve tight and inseparable joints. Utilize single wrap Teflon tape at all threaded joints.

12. Install all valves with fittings that facilitate maintenance removal and place valve boxes at location that are easily serviced but not in conspicuous locations. Locate in planting beds wherever possible, away from mower, edger, or de-thatcher operations.

13. Contractor shall install one manual drain valve at discharge side of each remote control valve and at all low points in mainline pipe so as to allow for complete drainage of all main lines. Mark with a painted sleeve cover and indicate locations on As-Built drawings.

14. Contractor shall provide backflow prevention as required per local and state codes, installed as per manufacturer's specifications.

15. Contractor shall install irrigation controller in accordance with manufacturer's specifications. Verify a 120 V.A.C. electrical source and a min. 1 1/2" conduit from controller location open to all electrical zone valves in field. Weatherproof any exterior wall penetrations.

16. Automatic Controller: Rainbird or Hunter capable of meeting Water Sense EPA Criteria or approved equal. Controller shall have ability for all zones to fully operate and meet both normal and specified low volume system requirements as specified herein, and as required by site conditions. Coordinate location in field with owner's representative.

17. Install all wire in accordance with manufacturer's specifications with a minimum of 18 inch looped inside valve box at each remote control valve and at the controller. All splices shall occur within valve boxes with water-proof connectors.

18. Contractor shall install all sprinkler heads with flexible risers, using flexible polyethylene pipe not to exceed 18 inches in length or PVC swing joints. Tee fittings shall extend horizontally from pipe.

19. Contractor shall thoroughly flush irrigation system after piping, risers, and valves are installed but prior to installing sprinkler heads. Thoroughly clean, adjust and balance the installed irrigation system. Adjust spray pattern of nozzles to minimize throw of water onto buildings, walls, roads and parking lots. Adjust controller for optimum performance and precipitation rates utilizing proper water conservation measures.

Topsoil Placement and Soil Preparation

1. Contractor shall submit certified topsoil analysis report for owner's approval prior to plant installation.
2. Contractor is responsible for any amendments to soil PH, fertility and/or drainage conditions necessary to ensure proper growing conditions for proposed planting.
3. Topsoil shall be friable soil from existing stockpiled material or imported, with added soil amendments as specified. It shall not be delivered while in a frozen or muddy condition. Protect from erosion at all times. Utilize existing stockpiled topsoil only under the direction of the Owner's Representative. Do not place topsoil in areas that have not been cleared of weeds listed herein. Topsoil shall meet the following requirements:
 - a. Free of roots and rocks larger than 1/2 inch,
 - b. Free of subsoil, debris, large weeds, foreign matter and any other material deleterious to plant material health.
 - c. Acidity range (pH) of 5.5 to 7.5.
 - d. Containing a minimum of 4 percent and a maximum of 25 percent inorganic matter with decaying matter of 25 percent content by volume or less.
 - e. Textural gradations shall be sand: 45-75%, silt: 15-35%, clay: 05-20%.

4. Commercial fertilizer shall be an organic base, complete fertilizer containing in available form by within a minimum of 10N 10P 5K - with 50 percent of the available nitrogen in slow-release formula, Wetfoot Organic Delux, or approved equal.a

5. Compost shall be yard debris compost meeting industry and jurisdictional standards.

6. Contractor shall remove all debris, rocks one inch in diameter or larger, sticks, mortar, concrete, asphalt, paper, contaminated soil and any material harmful to plant life, in all planting areas.

7. Contractor shall rototill subgrade six (6) inches deep before placing topsoil. Specified imported topsoil shall be placed at a minimum depth of 12" in all planting areas. Do not place material during wet conditions. Do not work saturated soils in any manner. floated to a level, sloped or mounded grade between any existing or constructed point on the site, such as curbs, walls, walks, paving and the like. Final soil grades in planting beds shall be 2" below adjacent paving and curbs for mulch application.

8. Distribute following soil amendments to all landscape areas in even layers and power rototill or spade to a minimum depth of six (6) inches into topsoil, as follows;

- Planting Beds:
- a. Compost: Apply nine cubic yards per 1000 sq. ft.
 - b. Commercial Fertilizer: Apply 50 pounds per 1000 sq. ft.

9. Preparation of backfill planting soil mix shall be as follows:

Thoroughly blend and mix the following proportion of materials while in a moist condition:

- Three cubic yards topsoil
- 1 1/2 cubic yards compost
- 1 1/2 cubic yards medium bark,
- 10 pounds commercial fertilizer
- Five pounds bonemeal

10. Keep project free from accumulation of debris, topsoil and other material. At completion of each area of work, remove debris, equipment and surplus materials. Any paved area or surfaces stained or soiled from landscaping materials shall be cleaned with a power sweeper using water under pressure. Building surfaces shall be washed with proper equipment and materials as approved by the Owner's representative.

Seed Installation

1. Seeding operations shall occur only between March 15 and October 15.

2. Seeding is not permitted during cold weather (less than 32 degrees F), hot weather (greater than 80 degrees F), when soil temperature is less than 55 degrees F, when ground is saturated, or when wind velocity is greater than 10 mph.

3. Contractor shall float rough graded seedbed. Do not disturb natural drainage patterns. Remove rocks, clumps, or debris at surface. Lightly scarify surface.

4. Contractor shall apply 10 pounds commercial fertilizer per 1,000 square feet of surface area before spreading seed.

5. Lawn Seed: Contractor shall manually broadcast or hydro-seed eight pounds of Sunmark "Northwest Supreme Lawn Mix" grass seed per 1,000 square feet.

6. Fieldgrass Seed: Contractor shall manually broadcast or hydro-seed eight pounds of Sunmark "Diamond Green" grass seed per 1,000 square feet.

7. The Contractor shall protect and maintain the seeded area by fencing, watering, feeding, reseeding, mowing and repairing as necessary to establish a thick, uniform stand of grass acceptable to the Owner's representative. Contractor to maintain lawn for a minimum of 3 mowings.

Trees, Shrubs, & Groundcover Installation

1. Contractor shall guarantee materials and workmanship in general landscape areas for one year from date of conditional acceptance. Plant material shall be in accordance with American Standard for Nursery Stock (ANSI Z60.1), shall comply with State and Federal laws with respect to inspection for insect infestation and plant diseases and shall be free of insect pests and plant diseases.

2. Plant materials shall have a minimum of 6 inches of prepared soil under the root ball, and a minimum of 6 inches on each side of the root ball. Tree roots or root ball shall have a minimum of 12 inches of plant soil under the root ball and a minimum of 12 inches on each side of the root ball, or roots. Final grade should maintain root ball slightly above surrounding grade (not to exceed one inch) for bark mulch installation.

3. Root control barrier shall be installed in trenches, alongside hardscape structures and utility lines such as sidewalks, curbs, pavement, walls, and concrete located within 5 feet of new trees measured from the trunk. Root barrier is to be 40 - 60 mil HDPE, minimum 18" deep and extend 10' in either direction measured from the center of the trunk.

4. Mulch all planting beds after planting, final raking, grading and leveling of the planting beds with a layer of Hem/Fir medium screened bark mulch as specified on the plans.

5. Balled and burlapped trees, boxed trees or bare root trees shall be either guyed or staked as detailed on the plans.

6. Remove all dead or dying branches and criss-crossing branches from trees. Do not cut leader.

7. Keep project free from accumulation of debris, topsoil and other material. At completion of each area of work, remove debris, equipment and surplus material. All paved areas or surfaces stained or soiled from landscape material shall be cleaned with a water-pressure power sweeper. Building surfaces shall be washed with proper equipment and materials as approved by the Owner.

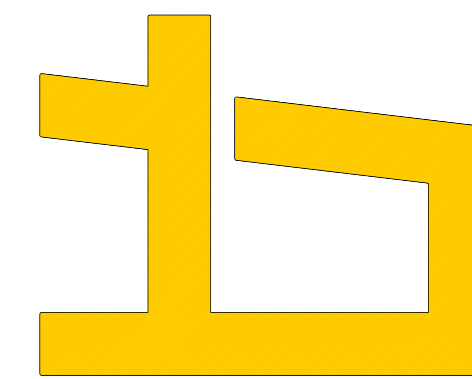
8. River Rock Mulch: River rock mulch shall be minimum 3/4" to maximum 1-1/2" diameter washed round river rock, uniform in size. All fines shall be screened from the aggregate within a one-quarter inch (1/4") tolerance. Color shall be white to light brown. Contractor shall provide the owner with samples of river rocks for approval prior to installation.

Maintenance

1. Contractor shall maintain general landscape areas for one year after accepted completion of project.

2. Maintenance shall include; all grade resettlement, weeding, policing and removal of plant material debris during maintenance period. Remove and replace dead plant material as needed at no cost to owner for maintenance period. Seasonal leaf fall removal is outside the scope of this maintenance specification.

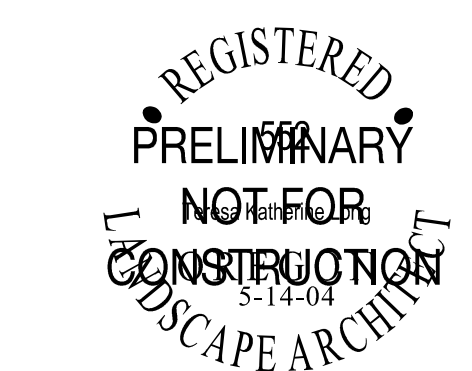
3. Any unsatisfactory condition arising during this maintenance period shall be brought to the attention of the Owner's Representative immediately.



Baysinger

Baysinger Partners Architectur
1006 SE Grand Avenue, Suite 30
Portland, OR 97211

503-546-1600
MattL@Baysinger.Partner



Well-crafted simplicity.

AAI alphan associates.
ENGINEER IN

4875 SW Griffin Drive | Suite 100 | Beaverton, OR | 97005
503.620.3030 | 503.620.5029 | www.aaieng.com
Project No. A21153.10

RETAIL CAPITAL
PARTNERS

MOLALLA RETAIL

Revision

JR 19079
Original Issue: 00.00.000
Drawn/Check By: DWN/CHK.B

©2021 Baysinger Partners Architecture

LANDSCAPE &
IR SPECS

L3.0

DESIGN REVIEW

PRELIMINARY
 NOT FOR
 CONSTRUCTION

Well-crafted simplicity.

RETAIL CAPITAL
 PARTNERS

**MOLALLA
 RETAIL**

Revisions

JR 19079

Original Issue: 00.00.0000
 Drawn/Check By: DWN/CHK_BY

©2021 Baysinger Partners Architecture

SITE PLAN

A101

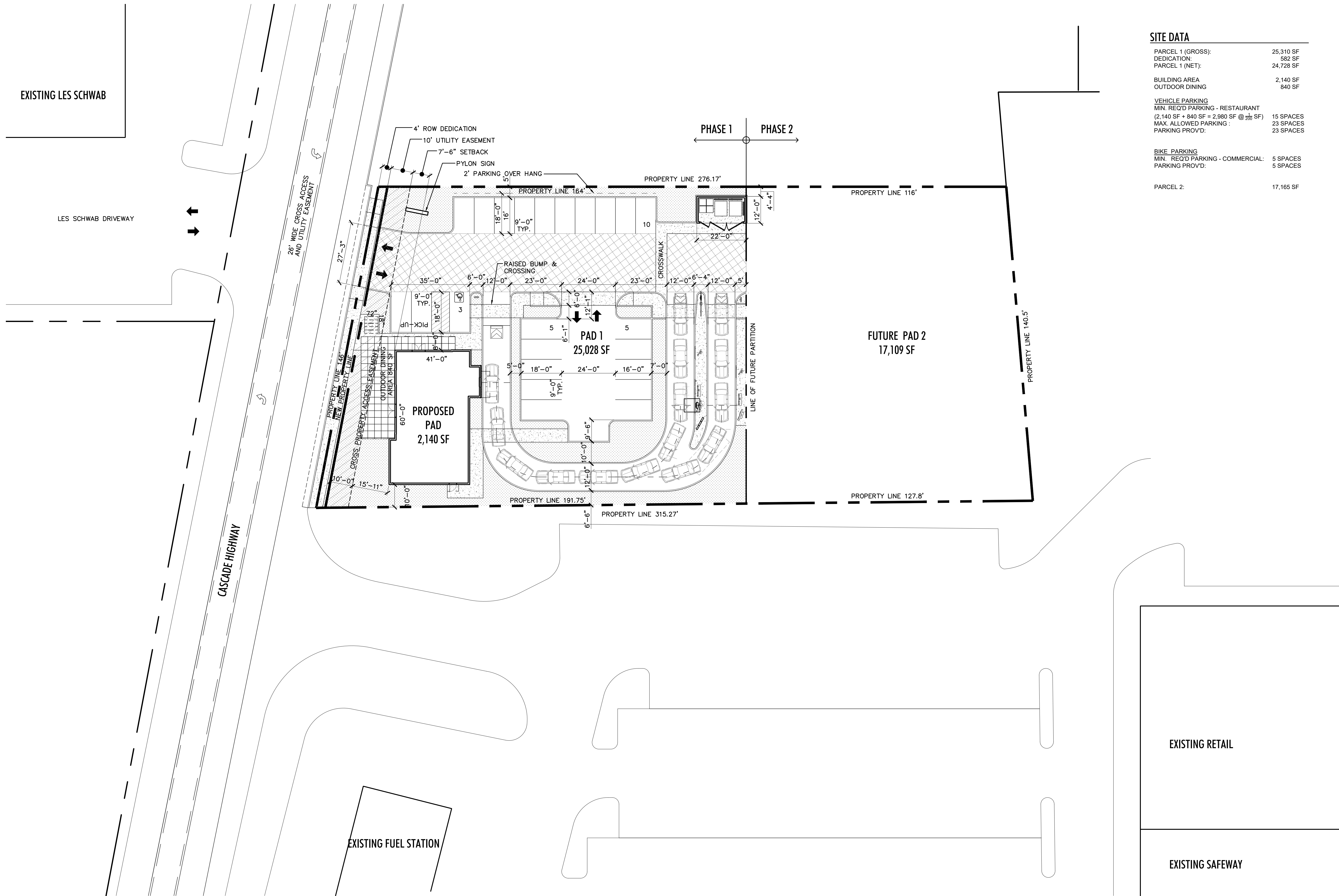
DESIGN REVIEW

SITE DATA

PARCEL 1 (GROSS):	25,310 SF
DEDICATION:	562 SF
PARCEL 1 (NET):	24,728 SF
BUILDING AREA	2,140 SF
OUTDOOR DINING	840 SF
VEHICLE PARKING	
MIN. REQ'D PARKING - RESTAURANT	15 SPACES
(2,140 SF + 840 SF = 2,980 SF @ 200 SF)	23 SPACES
MAX. ALLOWED PARKING :	23 SPACES
PARKING PROV'D:	23 SPACES

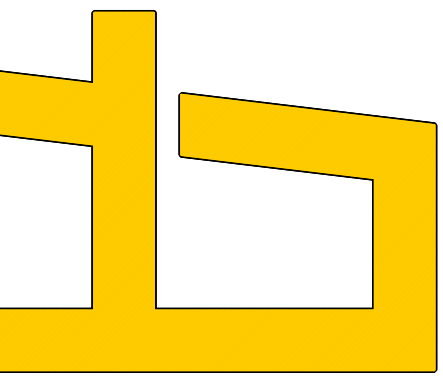
BIKE PARKING	
MIN. REQ'D PARKING - COMMERCIAL:	5 SPACES
PARKING PROV'D:	5 SPACES

PARCEL 2:	17,165 SF
-----------	-----------



1 SITE PLAN
 SCALE: 1"=20'-0"
 ID: A-FILENAME

0 FT 10' 20' 40'



Baysinger.

Baysinger Partners Architecture
1006 SE Grand Avenue, Suite 300
Portland, OR 97214
503-546-1600
BillR@Baysinger.Partners

PRELIMINARY
NOT FOR
CONSTRUCTION

Well-crafted simplicity.

RETAIL CAPITAL
PARTNERS

**MOLALLA
RETAIL**

Revisions

JR 19079

Original Issue: 00.00.0000
Drawn/Check By: DWN/CHK_BY

©2021 Baysinger Partners Architecture

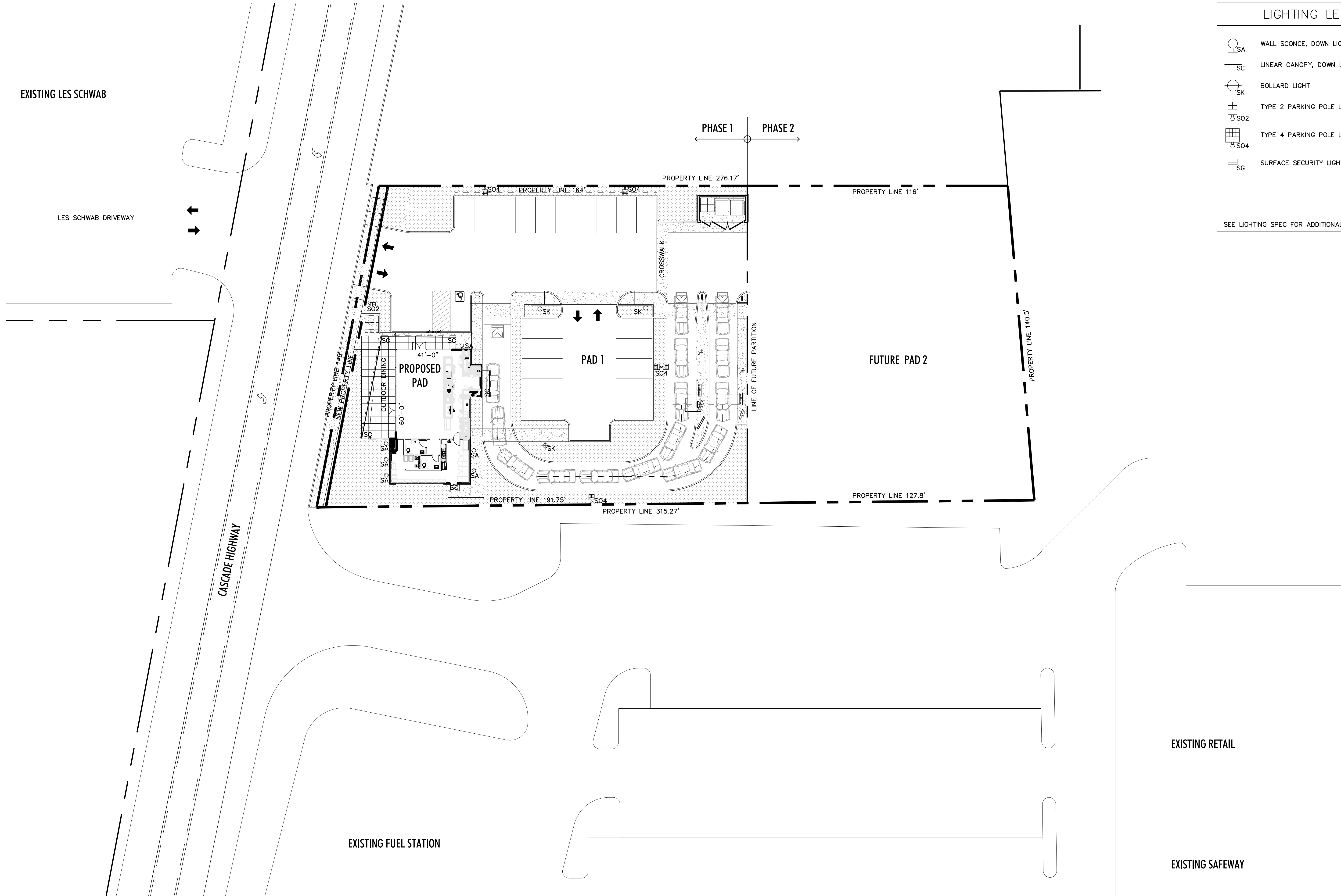
**SITE LIGHTING
PLAN**

A102

DESIGN REVIEW

LIGHTING LEGEND	
	WALL SCONCE, DOWN LIGHT
	LINEAR CANOPY, DOWN LIGHT
	BOLLARD LIGHT
	TYPE 2 PARKING POLE LIGHT
	TYPE 4 PARKING POLE LIGHT
	SURFACE SECURITY LIGHT

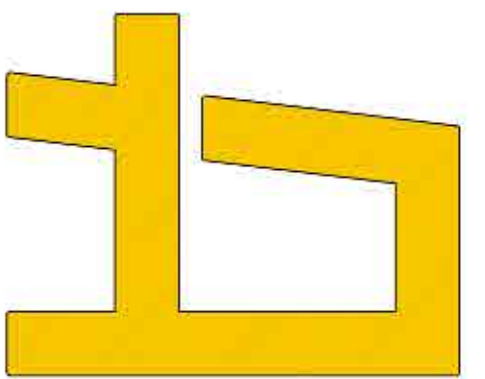
SEE LIGHTING SPEC FOR ADDITIONAL INFORMATION.



1
A102
SITE LIGHTING PLAN
SCALE: 1"=20'-0"
ID: A-FILENAME

WINDOW AREAS

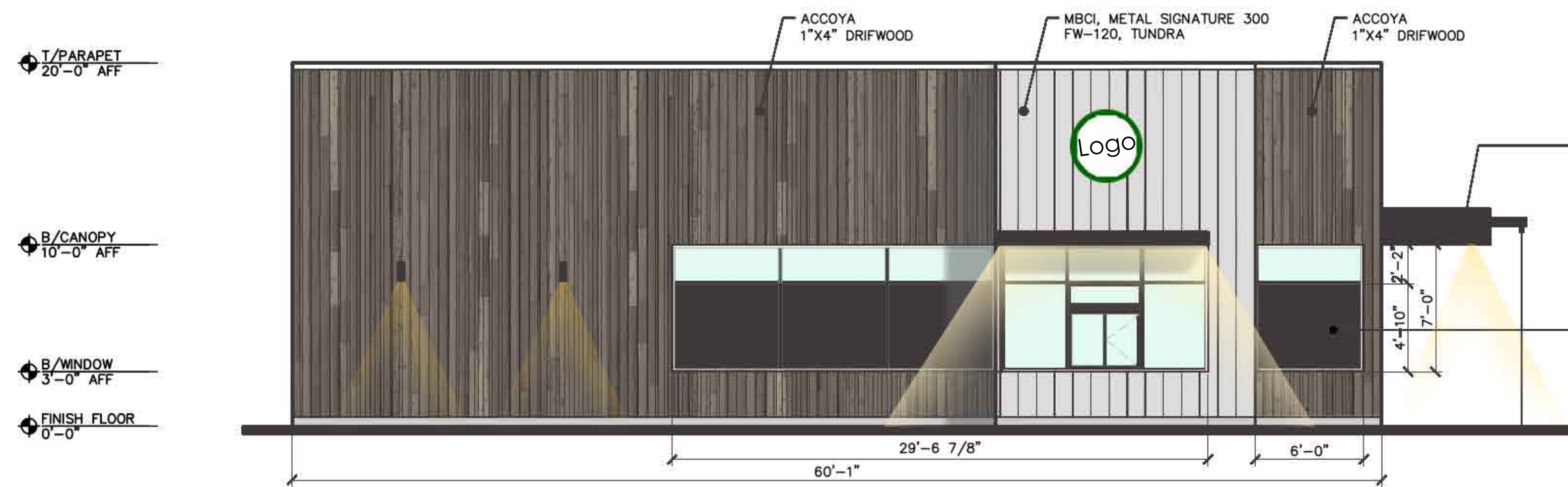
ELEVATION	AREA*	REQD WINDOW AREA	PROVIDED WINDOW AREA**
WEST ELEVATION	582 SF	324 SF (60%)	364.8 SF (87.55%)
NORTH ELEVATION	248.82 SF	74.64 SF (30%)	248.5 SF (100%)
SOUTH ELEVATION	248.82 SF	74.64 SF (30%)	183.26 SF (73.65%)
EAST ELEVATION	540 SF	162 SF (30%)	248.64 SF (46%)



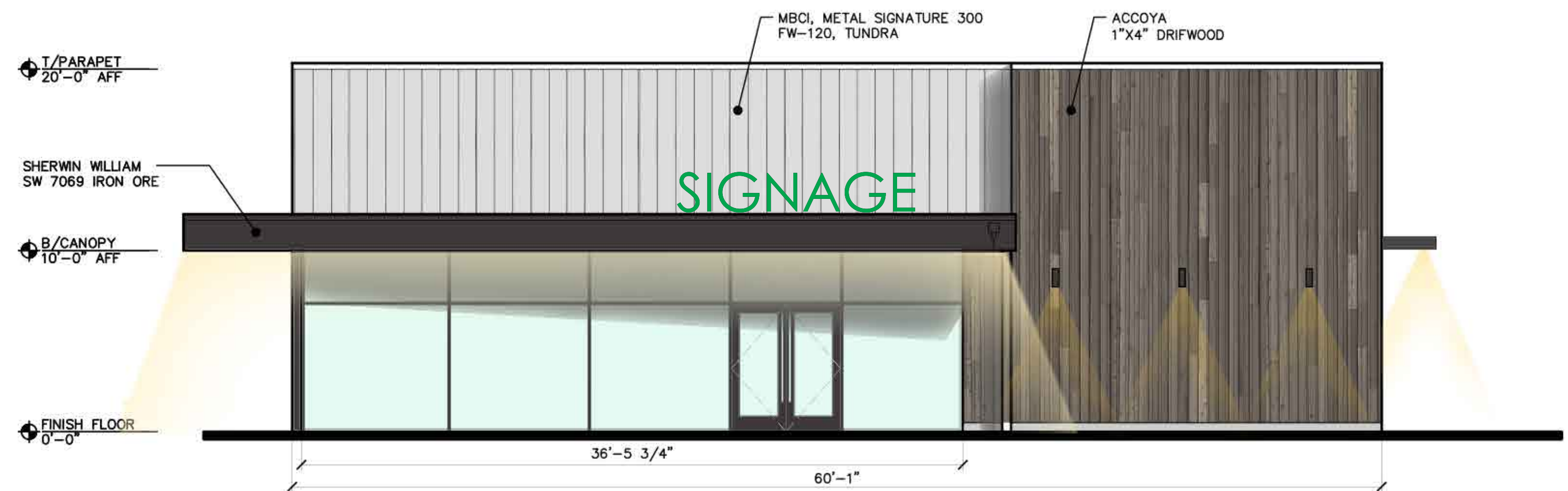
Baysinger

Baysinger Partners Architecture
1006 SE Grand Avenue, Suite 300
Portland, OR 97214
503-546-1600
BillR@Baysinger.Partners

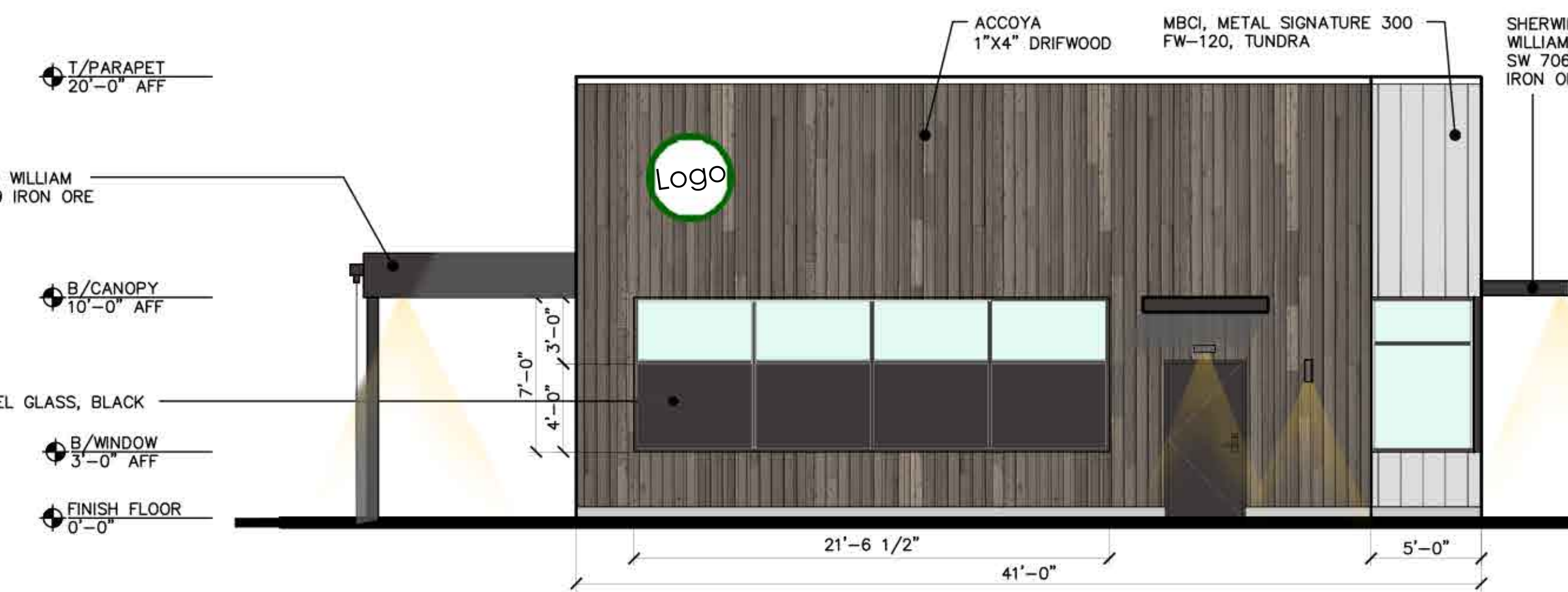
PRELIMINARY
NOT FOR
CONSTRUCTION



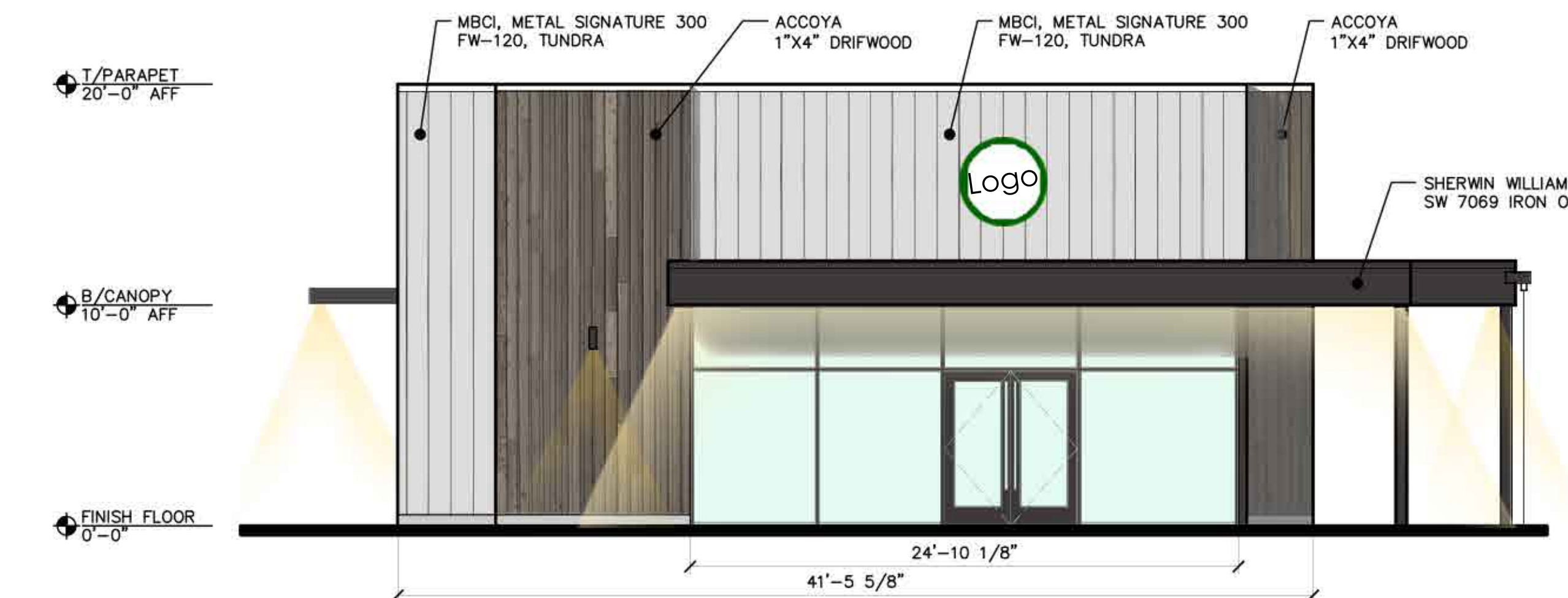
1 EAST ELEVATION
A201 SCALE: 3/16"=1'-0"
ID: A-FILENAME



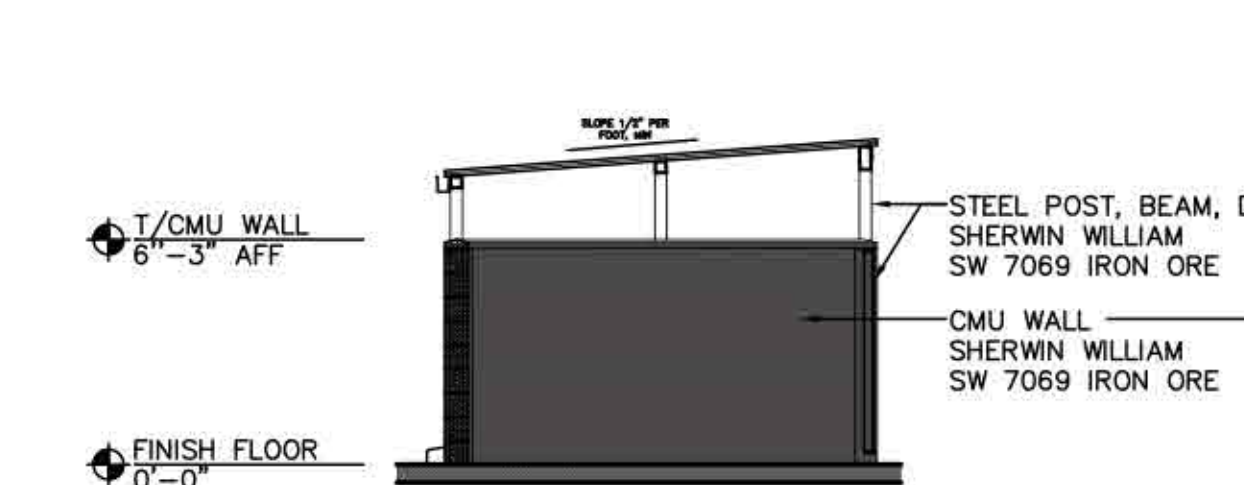
3 WEST ELEVATION - FACING CASCADE HIGHWAY
A201 SCALE: 3/16"=1'-0"
ID: A-FILENAME



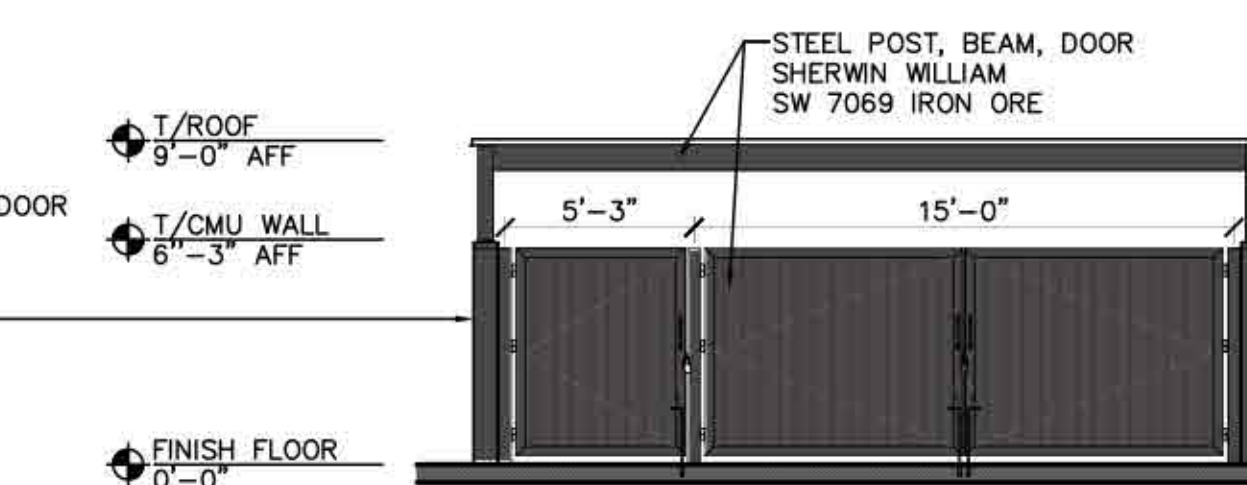
2 SOUTH ELEVATION
A201 SCALE: 3/16"=1'-0"
ID: A-FILENAME



4 NORTH ELEVATION
A201 SCALE: 3/16"=1'-0"
ID: A-FILENAME



5 SIDE SECTION / ELEV - TRASH ENCLOSURE
A201 SCALE: 3/16"=1'-0"
ID: A-FILENAME



6 FRONT ELEVATION - TRASH ENCLOSURE
A201 SCALE: 3/16"=1'-0"
ID: A-FILENAME

Well-crafted simplicity.

RETAIL CAPITAL PARTNERS

MOLALLA RETAIL

Revisions

JR 19079

Original Issue: 00.00.0000
Drawn/Check By: DWN/CHK_BY

©2021 Baysinger Partners Architecture

ELEVATIONS

A201

DESIGN REVIEW



A SPECIFIC WALL LIGHT WILL BE SELECTED FROM ONE OF THE FOLLOWING

studio three twenty one

exterior lighting design

section six fixtures

sa: **surface mounted
led downlight sconce**

the wall mounted sconces should be minimal in design so they appear to blend into the architecture

these should be fixed downlights with lenses to be sealed for outdoor conditions with good visual cutoff to the brightness of the source

the light source and lumen output need to be high enough to augment the sidewalk, patio, and entry lighting

- minimal design
- simple shape
- with internal louver accessory
- with spot and flood distributions
- with various standard paint finishes to match various architectural conditions
- with direct and indirect options
- with various size options



kichler 7" round



kichler estella 01



bk lighting el capitan



kichler walden 01



tech lighting - savino 02



avenue lighting - large black exterior wall

type sa: surface mounted led downlight sconce

housing: machined aluminum, with exterior polyester powder coated finish

location: wet locations at columns & walls

mounting: surface mounted over recessed jbox

lamp: 20 watt, led, 1300 lumens, 3000k, 90+ cri, 2 sdcm

driver: remote

manufacturer: bk lighting
ck-led-x62-fl-color?-09/10-11-b (09) - clear lens to seal fixture (10) - accessory spread lens

alternate: bk lighting
ck-par20-0-09/10-11 medium base version for led retrofit par20 lamp with integral driver (09) - clear lens to seal fixture (10) - accessory spread lens

alternate: avenue lighting - large exterior wall av9899-blk

alternate: kichler estella 01 49607aztled - bronze/black

alternate: kichler 7" round cylinder 11250azt30 - bronze/black

alternate: kichler 12.25" round cylinder 11310bktled - bronze/black

alternate: kichler walden 7.25" 49550azled - bronze/black

alternate: tech lighting - savino 02 small 700owsn02 - 11" - z/h? - led - 3k

alternate: tech lighting - savino 02 large 700owsn02 - 16" - z/h? - led - 3k

BKSSL
12-27W LED

PROJECT: _____

TYPE: _____

CATALOG NUMBER: _____

SOURCE: _____

NOTES: _____

CATALOG NUMBER LOGIC

Example: CK - LED - x58 - FL - SAP - 12 - 11 - A

Series: CK - Catskill Series™

Source: LED - 'X' Module with Cold Phosphor Technology

LED Type: x58 - 12WLED/2.7K, x59 - 12WLED/3K, x60 - 12WLED/4K, x61 - 20WLED/2.7K, x62 - 20WLED/3K, x63 - 20WLED/4K, x64 - 27WLED/2.7K, x65 - 27WLED/3K, x66 - 27WLED/4K

Optics: SP - Spot (15°), FL - Flood (35°), WFL - Wide Flood (60°)

Finish: Standard Finish (Bronze, Black, White, Aluminum, Verde) or Premium Finish (Antique Brass, Aleutian, Antique White, Black Chrome, Beige, Brown Patina, Clear Anodized, Cascade Mountain, Cracked Ice, Cream, Hunter Green, Mojave Desert, Natural Brass, Old Copper, Rocky Mountain, Sonoran Desert, Sierra Mountain, Textured Forest, Weathered Copper, Weathered Iron)

Lens Type: 9 - Clear (Standard), 10 - Spread Lens*, 12 - Soft Focus Lens*, 13 - Rectilinear Lens*

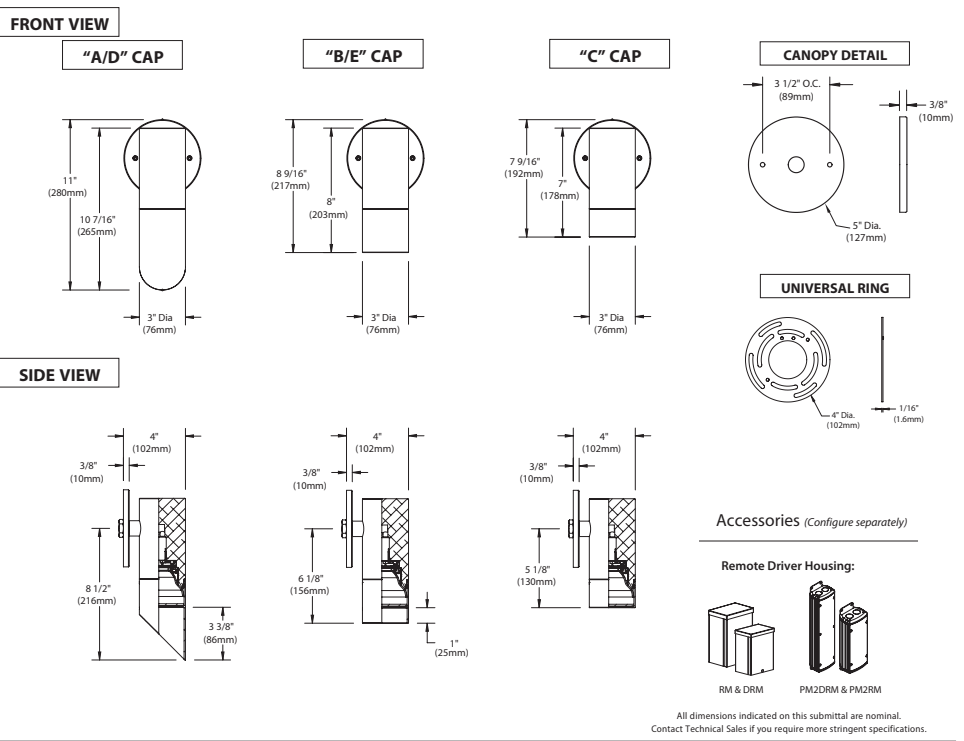
Shielding: 11 - Honeycomb Baffle*

Cap Style: A - 45°, B - 90°, C - Flush, D - 45° less Weep Hole (Interior Use Only), E - 90° less Weep Hole (Interior Use Only)

BKSSL
12-27W LED

PROJECT: _____

TYPE: _____



All dimensions indicated on this submittal are nominal. Contact Technical Sales if you require more stringent specifications.

SPECIFICATIONS

GreenSource Initiative™
Metal and packaging components are made from recycled materials. Manufactured using renewable solar energy, produced on site. Returnable to manufacturer at end of life to ensure cradle-to-cradle handling. Packaging contains no chlorofluorocarbons (CFC's). Use of this product may qualify for GreenSource efficacy and recycling rebates. Consult www.bklighting.com/greensource for program requirements.

Materials
Furnished in Copper-Free Aluminum (Type 6061-T6).

Body
Fully machined from solid billet. Unibody design provides enclosed, water-proof wireway and integral heat sink for maximum component life. High temperature, silicone 'O' Ring provides water-tight seal.

Cap
Fully machined. Accommodates (2) lens or lower media. Choose from 45° cutoff ('A' or 'D'), 1° deep bezel with 90° cutoff ('B' or 'E') or flush lens ('C') cap styles. 'A' and 'B' caps include weep-hole for water and debris drainage. 'D' and 'E' caps exclude weep-hole and are for interior use only.

Lens
Shock resistant, tempered, glass lens is factory adhered to fixture cap and provides hermetically sealed optical compartment.

BKSSL™
Integrated solid state system with 'X' technology is scalable for field upgrade. Modular design with electrical quick disconnects permit field maintenance.

Color Management
Corrected cold phosphor technology delivers near-perfect natural white light. Long term phosphor maintenance over product life. Exact color point conformity exceeds ANSI C78.377 standard. Provides uniform beam with no color variation over angle. Module exceeds 80 CRI (RA>80, R9>16).

Remote Driver
For use with remote LED driver. See remote driver submittal to determine remote distance and wiring requirements prior to detailing field installation of any remote wiring.

Installation
5" dia., machined canopy with stainless steel universal mounting ring permits mounting to 4" octagonal junction box (by others). Suitable for uplight or downlight installation.

Optics
Interchangeable OPTIKIT™ modules permit field changes to optical distribution.

Wiring
Teflon™ coated, 18AWG, 600V, 250° C rated and certified to UL1659 standard.

Hardware
Tamper-resistant, stainless steel hardware. Canopy mounting screws are additionally black oxide treated for additional corrosion resistance.

Finish
StarGuard™, our exclusive RoHS compliant, 15 stage chromate-free process cleans and conversion coats aluminum components prior to application of Class 'A' TGIC polyester powder coating.

Warranty
5 year limited warranty.

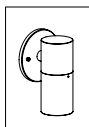
Certification and Listing
UL tested to ESNM LM-79. UL Listed. Certified to CAN/CSA/ANSI Standards. RoHS compliant. Suitable for indoor or outdoor use. Suitable for use in wet locations. IP66 Rated. Made in USA.

B-K LIGHTING 40429 Brickyard Drive • Madera, CA 93636 • USA 559.438.5800 • FAX 559.438.5900 www.bklighting.com • info@bklighting.com

SUBMITTAL DATE: 11-7-17 DRAWING NUMBER: SUB001114

B-K LIGHTING 40429 Brickyard Drive • Madera, CA 93636 • USA 559.438.5800 • FAX 559.438.5900 www.bklighting.com • info@bklighting.com

SUBMITTAL DATE: 11-7-17 DRAWING NUMBER: SUB001114



PAR20 Halogen

CATSKILL SERIES™

PROJECT: _____

TYPE: _____

CATALOG NUMBER: _____

SOURCE: _____

NOTES: _____

CATALOG NUMBER LOGIC

Example **CK** - **PAR20** - **407** - **BZP** - **10** - **11**

Series **CK** - Catskill Series™

Source **PAR20** - PAR20 Halogen

Lamp
0 - By Others
406 - 39PAR20/SP10 (39W), 10° Spot
407 - 39PAR20/FL30 (39W), 30° Flood

Finish

Standard Finish			Premium Finish		
Powder Coat Color	Satin	Wrinkle	ABP	CMG	RMG
Bronze	BZP	BZW	AMG Aleutian Mountain Granite	CRI Cracked Ice	SDS Sonoran Desert Sandstone
Black	BLP	BLW	AQW Antique White	CRM Cream	SMG Sierra Mountain Granite
White (Gloss)	WHP	WHW	BCM Black Chrome	HUG Hunter Green	TXF Textured Forest
Aluminum	SAP	—	BGE Beige	MDS Mojave Desert Sandstone	WCP Weathered Copper
Verde	—	VER	BPP Brown Patina Powder	NBP Natural Brass Powder	WIR Weathered Iron
			CAP Clear Anodized Powder	OCF Old Copper	<i>Also available in RAL Finishes See submittal SUB-1439-00</i>

Lens Type
9 - Clear (Standard)
10 - Spread*
12 - Soft Focus*
13 - Rectilinear*

Shielding
11 - Honeycomb Baffle*

* Accommodates up to 2 Lens/Shielding media

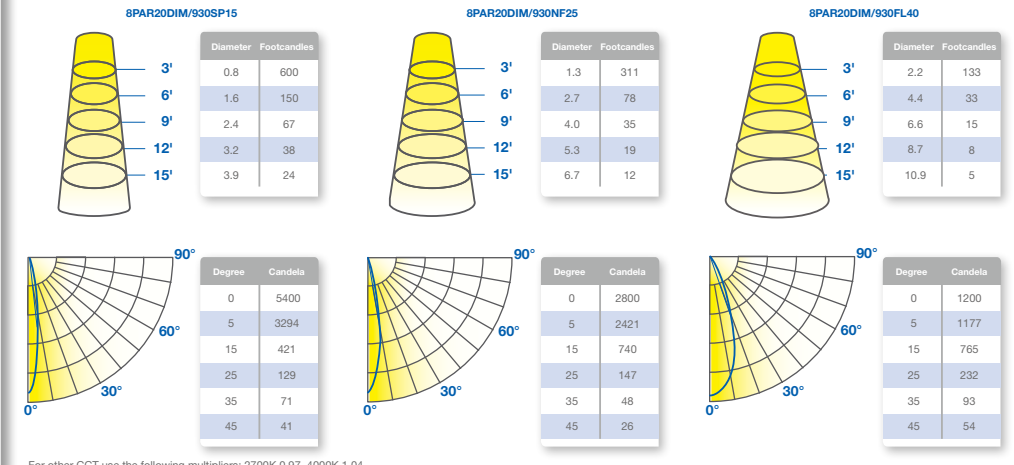
LAMP DATA

BK No.	Lamp Watts	Description	Rated Life (hrs.)	Center Beam Candlepower	Beam Angle	Beam Type
406	39	SP10	1,500	3,700	10°	Spot
407	39	FL30	1,500	1,000	30°	Flood

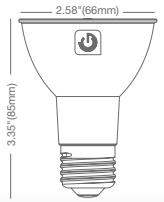
PAR20 8W DIM. TITANIUM CRI^{SP} LED SERIES

GREENCREATIVE

ILLUMINANCE & CANDELA DISTRIBUTION



Base: E26
Voltage: 120V
Dimmable: Yes***
PF: 0.9
Lifetime (L70): 50,000 hrs
Weight: 0.19lb / 88g



SPECIFICATIONS

Model	Product	Power (W)	CCT	CRI (typ.)	R9 / R13 (typ.)	Lumens	LPW	Beam Angle	CBCP (cd)
8PAR20DIM/927SP15	58104	8	Soft White 2700K	90	65/90	535	67	SP 15°	5300
8PAR20DIM/927NF25	58105	8	Soft White 2700K	90	65/90	535	67	NF 25°	2700
8PAR20DIM/927FL40	58106	8	Soft White 2700K	90	65/90	535	67	FL 40°	1170
8PAR20DIM/930SP15	58107	8	Warm White 3000K	90	65/90	550	69	SP 15°	5400
8PAR20DIM/930NF25	58108	8	Warm White 3000K	90	65/90	550	69	NF 25°	2800
8PAR20DIM/930FL40	58109	8	Warm White 3000K	90	65/90	550	69	FL 40°	1200
8PAR20DIM/940FL40	58112	8	Cool White 4000K	90	65/90	570	71	FL 40°	1250
8PAR20DIM/930FL40/B •	97901	8	Warm White 3000K	90	65/90	550	69	FL 40°	1200

• Black finish
* Savings per lamp based on \$0.11 / kw energy cost, 12 hrs / day lamp usage, \$5.50 halogen with 1500-hr lifetime, \$15 LED with 50,000-hr lifetime
** Suitable for use in totally enclosed fixtures
*** List of tested dimmer switches available on website
**** Suitable for damp locations. Not for use where directly exposed to weather or water

B-K LIGHTING 40429 Brickyard Drive • Madera, CA 93636 • USA
559.438.5800 • FAX 559.438.5900
www.bklighting.com • info@bklighting.com

RELEASED 06-16-16 DRAWING NUMBER SUB-1185-00

THIS DOCUMENT CONTAINS PROPRIETARY INFORMATION OF B-K LIGHTING, INC. AND ITS RECEIPT OR POSSESSION DOES NOT CONVEY ANY RIGHTS TO REPRODUCE, DISCLOSE ITS CONTENTS, OR TO MANUFACTURE, USE OR SELL ANYTHING IT MAY DESCRIBE. REPRODUCTION, DISCLOSURE OR USE WITHOUT SPECIFIC WRITTEN AUTHORIZATION OF B-K LIGHTING, INC. IS STRICTLY FORBIDDEN.

studio three twenty one

exterior lighting design

section six fixtures

type sa: surface mounted led downlight sconce

housing: machined aluminum, with exterior polyester powder coated finish

location: wet locations at columns & walls

mounting: surface mounted over recessed jbox

lamp: 20 watt, led, 1300 lumens, 3000k, 90+ cri, 2 sdcm

driver: remote

manufacturer: bk lighting
ck-led-x62-fl-color?-09/10-11-b
(09) - clear lens to seal fixture
(10) - accessory spread lens

alternate: bk lighting
ck-par20-0-09/10-11
medium base version for led retrofit
par20 lamp with integral driver
(09) - clear lens to seal fixture
(10) - accessory spread lens

alternate: avenue lighting - large exterior wall
av9899-blk

alternate: kichler estella 01
49607aztled - bronze/black

alternate: kichler 7" round cylinder
11250azt30 - bronze/black

alternate: kichler 12.25" round cylinder
11310bktled - bronze/black

alternate: kichler walden 7.25"
49550azled - bronze/black

alternate: tech lighting - savino 02 small
700own02 - 11" - z/h? - led - 3k

alternate: tech lighting - savino 02 large
700own02 - 16" - z/h? - led - 3k

SAVINO 2 SMALL WALL SCONCE



The futuristic though contemporary style of the Savino 2 wall sconce is visually captivating with its smoothly rounded double capsule design. What sets this wall sconce apart from many is the design flexibility to be mounted indoor or outdoor making the Savino 2 ideal for residential, hospitality or other lighting applications.

Outstanding protection against the elements:

- Powder coat finishes
- Stainless Steel mounting hardware
- Impact-resistant, UV stabilized frosted acrylic lensing

SPECIFICATIONS

DELIVERED LUMENS	1073
WATTS	28
VOLTAGE	120V
DIMMING	ELV
LIGHT DISTRIBUTION	Symmetric
MOUNTING OPTIONS	Wall
CCT	Warm Color Dimming (3000-2200K)
CRI	90
COLOR BINNING	3-Step
BUG RATING	B0-U4-G0
DARK SKY	Non-compliant
WET LISTED	IP65
GENERAL LISTING	ETL, ADA
CALIFORNIA TITLE 24	Can be used to comply with CEC 2016 Title 24 Part 6 for outdoor use. Registration with CEC Appliance Database not required.
START TEMP	-30°C
FIELD SERVICEABLE LED	Yes
CONSTRUCTION	Aluminum
HARDWARE	Stainless Steel
FINISH	Powder Coat
LED LIFETIME	L70; 70,000 hours
WARRANTY*	5 years
WEIGHT	3 lbs.

* Visit techlighting.com for specific warranty limitations and details.



SAVINO 2 SMALL
shown in bronze



SAVINO 2 SMALL
shown in charcoal

ORDERING INFORMATION

700OWSN02	SIZE	FINISH	LAMP
11 11"	Z	BRONZE	-LEDWD LED 90CRI, 3000K - 2200K, 120V
	H	CHARCOAL	

techlighting.com

SAVINO 2 LARGE WALL SCONCE



The futuristic though contemporary style of the Savino 2 wall sconce is visually captivating with its smoothly rounded double capsule design. What sets this wall sconce apart from many is the design flexibility to be mounted indoor or outdoor making the Savino 2 ideal for residential, hospitality or other lighting applications.

Outstanding protection against the elements:

- Powder coat finishes
- Stainless Steel mounting hardware
- Impact-resistant, UV stabilized frosted acrylic lensing

SPECIFICATIONS

DELIVERED LUMENS	1073
WATTS	28
VOLTAGE	120V
DIMMING	ELV
LIGHT DISTRIBUTION	Symmetric
MOUNTING OPTIONS	Wall
CCT	Warm Color Dimming (3000-2200K)
CRI	90
COLOR BINNING	3-Step
BUG RATING	B0-U4-G0
DARK SKY	Non-compliant
WET LISTED	IP65
GENERAL LISTING	ETL, ADA
CALIFORNIA TITLE 24	Can be used to comply with CEC 2016 Title 24 Part 6 for outdoor use. Registration with CEC Appliance Database not required.
START TEMP	-30°C
FIELD SERVICEABLE LED	Yes
CONSTRUCTION	Aluminum
HARDWARE	Stainless Steel
FINISH	Powder Coat
LED LIFETIME	L70; 70,000 hours
WARRANTY*	5 years
WEIGHT	7 lbs.

* Visit techlighting.com for specific warranty limitations and details.



SAVINO 2 LARGE
shown in bronze



SAVINO 2 LARGE
shown in charcoal

ORDERING INFORMATION

700OWSN02	SIZE	FINISH	LAMP
16 16"	Z	BRONZE	-LEDWD LED 90CRI, 3000K - 2200K, 120V
	H	CHARCOAL	

techlighting.com

type sa: surface mounted
led downlight sconce

housing: machined aluminum, with exterior polyester powder coated finish

location: wet locations at columns & walls

mounting: surface mounted over recessed jbox

lamp: 20 watt, led, 1300 lumens, 3000k, 90+ cri, 2 sdcm

driver: remote

manufacturer: bk lighting

ck-led-x62-fl-color?-09/10-11-b (09) - clear lens to seal fixture (10) - accessory spread lens

alternate: bk lighting
ck-par20-0-09/10-11
medium base version for led retrofit par20 lamp with integral driver (09) - clear lens to seal fixture (10) - accessory spread lens

alternate: avenue lighting - large exterior wall av9899-blk

alternate: kichler estella 01 49607aztled - bronze/black

alternate: kichler 7" round cylinder 11250azt30 - bronze/black

alternate: kichler 12.25" round cylinder 11310bktled - bronze/black

alternate: kichler walden 7.25" 49550azled - bronze/black

alternate: tech lighting - savino 02 small 700owsn02 - 11" - z/h? - led - 3k

alternate: tech lighting - savino 02 large 700owsn02 - 16" - z/h? - led - 3k

Estella Collection
Estella 1 Light LED Outdoor Wall Light AZT
 49607AZTLED (Textured Architectural Bronze)



Dimensions

Height	12.00"
Width	6.00"

Project Name: _____
 Location: _____
 Type: _____
 Qty: _____
 Comments: _____

Ordering Information

Product ID	49607AZTLED
Finish	Textured Architectural Bronze
Collection	Estella Collection

Dimensions

Extension	4.25"
Height from center of Wall opening	6.00"
Base Backplate	4.50 X 5.75
Weight	2.16 LBS

Photometrics

Kelvin Temperature	3000 K
Color Rendering Index	90

Specifications

Material	Aluminum
----------	----------

Electrical

Dimmable	Yes
Dimmable Notes	This LED is compatible with most standard incandescent dimmers, LED dimmers, and electronic low voltage dimmers. For more information, go to Kichler.com/dimming .
Voltage	120 V
Input Voltage	Single(120)

Qualifications

Safety Rated	Wet
Title 24	Yes
Dark Sky	Yes
Expected Life Span	35000 Hours
Warranty	www.kichler.com/warranty

Primary Lamping

Light Source	LED
Lamp Included	Integrated
Light Source Equivalent	60(1) Incandescent
# of Bulbs/LED Modules	1
Delivered Lumens	790
Initial Lumens	720

WALDEN COLLECTION

Walden 7.25" LED Wall Light Architectural Bronze
 49550AZLED (Architectural Bronze)



Project Name: _____
 Location: _____
 Type: _____
 Qty: _____
 Comments: _____

Certifications/Qualifications

Dark Sky Compliant	Yes
Location Rating	Wet
	www.kichler.com/warranty

Dimensions

Base Backplate	7.25 X 4.75
Extension	3.75"
Weight	3.00 LBS
Height from center of Wall opening (Spec Sheet)	3.75"
Height	7.25"
Width	5.00"

Electrical

Input Voltage	Single(120)V
---------------	--------------

Mounting/Installation

Interior/Exterior	Exterior
Mounting Style	Wall Mount
Mounting Weight	3.00 LBS

Photometrics

Color Rendering Index	90
Color Temperature Range	3000
Delivered Efficacy (Lumens/Watt)	99
Delivered Lumens	880
Kelvin Temperature	3000K

Primary Lamping

Dimmable	Yes
Dimmable Notes	This LED is compatible with most standard incandescent dimmers, LED dimmers, and electronic low voltage dimmers. For more information, go to Kichler.com/dimming .
Equivalent Light Source	Incandescent
Expected Life Span	35000
Lamp Included	Integrated
Light Source	LED
Max or Nominal Watt	8W
# of Bulbs/LED Modules	1

Product/Ordering Information

SKU	49550AZLED
Finish	Bronze
Style	Contemporary
UPC	783927458474

Specifications

Material	ALUMINUM
----------	----------

Additional Finishes

- Architectural Bronze
- Textured Black

type sa: surface mounted
 led downlight sconce

housing: machined aluminum, with exterior polyester powder coated finish

location: wet locations at columns & walls

mounting: surface mounted over recessed jbox

lamp: 20 watt, led, 1300 lumens, 3000k, 90+ cri, 2 sdcm

driver: remote

manufacturer: bk lighting
 ck-led-x62-fl-color?-09/10-11-b (09) - clear lens to seal fixture
 (10) - accessory spread lens

alternate: bk lighting
 ck-par20-0-09/10-11 medium base version for led retrofit par20 lamp with integral driver
 (09) - clear lens to seal fixture
 (10) - accessory spread lens

alternate: avenue lighting - large exterior wall
 av9899-blk

alternate: kichler estella 01
 49607aztled - bronze/black

alternate: kichler 7" round cylinder
 11250azt30 - bronze/black

alternate: kichler 12.25" round cylinder
 11310bktled - bronze/black

alternate: kichler walden 7.25"
 49550azled - bronze/black

alternate: tech lighting - savino 02 small
 700own02 - 11" - z/h? - led - 3k

alternate: tech lighting - savino 02 large
 700own02 - 16" - z/h? - led - 3k

7" 3000K LED Wall Light Textured Architectural Bronze
11250AZT30 (Bronze)

Project Name: _____
Location: _____
Type: _____
Qty: _____
Comments: _____



Certifications/Qualifications

Class 2	Yes
Dark Sky Compliant	Yes
Location Rating	Wet
Title 24 Compliant	Yes
Warranty	www.kichler.com/warranty

Dimensions

Base Backplate	5.00 X 5.00
Extension	6.50"
Weight	2.60 LBS
Height from center of Wall opening (Spec Sheet)	3.25"
Height	7.00"
Width	5.00"

Electrical

Input Voltage	Dual (120/140V)
---------------	-----------------

Mounting/Installation

Interior/Exterior	Exterior
Mounting Style	Wall Mount

Photometrics

Color Rendering Index	90
Color Temperature Range	3000
Delivered Efficacy (Lumens/Watt)	33
Delivered Lumens	350
Kelvin Temperature	3000

Primary Lamping

Expected Life Span	40000
Lamp Included	Integrated
Light Source	LED
Max or Nominal Watt	11W
# of Bulbs/LED Modules	1

Product/Ordering Information

SKU	11250AZT30
Finish	Bronze
Style	Contemporary
UPC	783927453059

Specifications

Material	ALUMINUM
----------	----------

Cylinder 3000K LED 12.25" Wall Light
11310BKTLED (Textured Black)

Project Name: _____
Location: _____
Type: _____
Qty: _____
Comments: _____



Certifications/Qualifications

Energy Star	Yes
Location Rating	Wet
Title 24 Compliant	Yes
Warranty	www.kichler.com/warranty

Dimensions

Base Backplate	5
Extension	6.50"
Weight	3.50 LBS
Height from center of Wall opening (Spec Sheet)	6.21"
Height	12.25"
Length	6.50"
Width	5.00"

Mounting/Installation

Interior/Exterior	Exterior
Mounting Style	Wall Mount
Mounting Weight	3.50 LBS

Photometrics

Color Rendering Index	90
Delivered Efficacy (Lumens/Watt)	51
Delivered Lumens	925
Kelvin Temperature	3000K

Primary Lamping

Dimmable	Yes
Expected Life Span	45000
Lamp Included	Integrated
Light Source	LED
Max or Nominal Watt	20W
Max Wattage/Range	20W

Product/Ordering Information

SKU	11310BKTLED
Finish	Black
Style	Other
UPC	78392745297

Specifications

Material	EPMM
----------	------

Additional Finishes



Kichler
7711 East Pleasant Valley Road Cleveland, Ohio 44131-8010
Toll free: 866.558.5706 or kichler.com

Notes:
1) Information provided is subject to change without notice. All values are design or typical values when measured under laboratory conditions.
2) Incandescent Equivalent: The incandescent equivalent as presented is an approximate number and is for reference only.



Kichler
7711 East Pleasant Valley Road Cleveland, Ohio 44131-8010
Toll free: 866.558.5706 or kichler.com

Notes:
1) Information provided is subject to change without notice. All values are design or typical values when measured under laboratory conditions.
2) Incandescent Equivalent: The incandescent equivalent as presented is an approximate number and is for reference only.



type sa: surface mounted
led downlight sconce

housing: machined aluminum, with exterior polyester powder coated finish
location: wet locations at columns & walls
mounting: surface mounted over recessed jbox
lamp: 20 watt, led, 1300 lumens, 3000k, 90+ cri, 2 sdcm

driver: remote
manufacturer: bk lighting
ck-led-x62-fl-color?-09/10-11-b (09) - clear lens to seal fixture (10) - accessory spread lens

alternate: bk lighting
ck-par20-0-09/10-11 medium base version for led retrofit par20 lamp with integral driver (09) - clear lens to seal fixture (10) - accessory spread lens

alternate: avenue lighting - large exterior wall av9899-blk

alternate: kichler estella 01 49607aztled - bronze/black

alternate: kichler 7" round cylinder 11250azt30 - bronze/black

alternate: kichler 12.25" round cylinder 11310bktled - bronze/black

alternate: kichler walden 7.25" 49550azled - bronze/black

alternate: tech lighting - savino 02 small 700owsn02 - 11" - z/h? - led - 3k

alternate: tech lighting - savino 02 large 700owsn02 - 16" - z/h? - led - 3k

exterior lighting design

section six fixtures

AVENUE LIGHTING



Item#: AV9899-BLK

Black
7"W x 16"H x 3.75"EXT
12W / 120V
860 Lumens
3000K

COMPANY NAME:
DATE:
PROJECT NAME:
LOCATION:
APPROVED BY:
PRODUCT ITEM CODE: AV9899-BLK

AVENUE LIGHTING

www.AvenueLighting.com (800) 798-0409 Info@AvenueLighting.com

type sa: surface mounted
led downlight sconce

housing: machined aluminum, with exterior polyester powder coated finish
location: wet locations at columns & walls
mounting: surface mounted over recessed jbox
lamp: 20 watt, led, 1300 lumens, 3000k, 90+ cri, 2 sdcm

driver: remote
manufacturer: bk lighting
ck-led-x62-fl-color?-09/10-11-b
(09) - clear lens to seal fixture
(10) - accessory spread lens

alternate: bk lighting
ck-par20-0-09/10-11
medium base version for led retrofit
par20 lamp with integral driver
(09) - clear lens to seal fixture
(10) - accessory spread lens

alternate: avenue lighting - large exterior wall
av9899-blk

alternate: kichler estella 01
49607aztled - bronze/black

alternate: kichler 7" round cylinder
11250azt30 - bronze/black

alternate: kichler 12.25" round cylinder
11310bktled - bronze/black

alternate: kichler walden 7.25"
49550azled - bronze/black

alternate: tech lighting - savino 02 small
700owsn02 - 11" - z/h? - led - 3k

alternate: tech lighting - savino 02 large
700owsn02 - 16" - z/h? - led - 3k

exterior lighting design

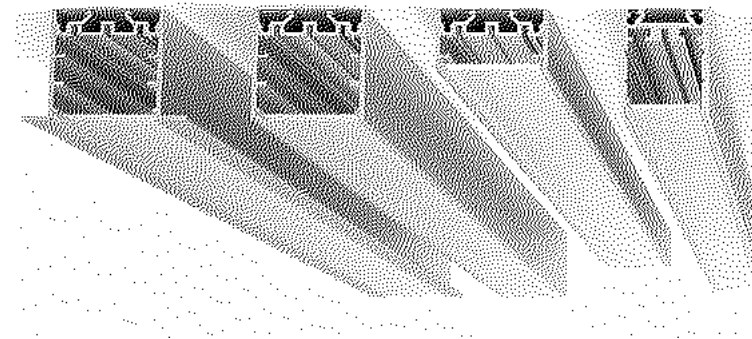
section six fixtures

sc: **recessed mounted
linear led downlight**

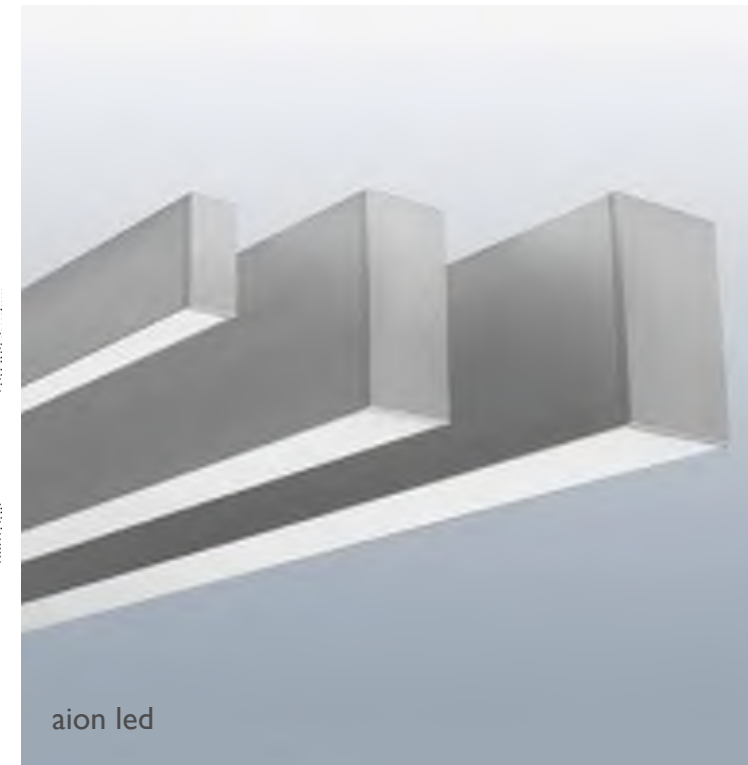
recessed linear led downlight should be minimal in design and integrate well with exterior canopy construction

the fixture family should include damp and wet listings.

- minimal in appearance and design
- minimal profile
- with uniform luminous lens
- no bright or dark spots along length
- with various standard paint finishes to match various architectural conditions
- with details for mounting in wood and stucco ceiling conditions



optic arts





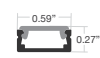














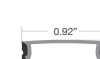








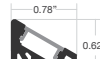



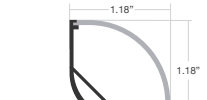
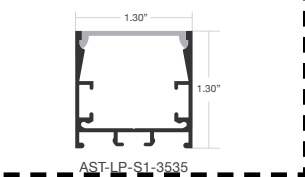
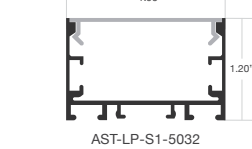
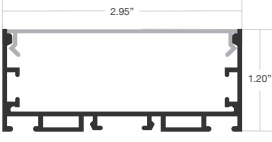
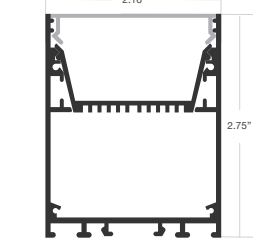
aion led



LINEAR PROFILES | AST-LP

PRELIMINARY SPECIFICATION, SUBJECT TO CHANGE WITHOUT NOTICE

SURFACE

 AST-LP-S1-1008	 AST-LP-S1-1110	 AST-LP-S1-1506	 AST-LP-S1-1612	 AST-LP-S1-1707A	 AST-LP-S1-1707B
 AST-LP-S1-1715	 AST-LP-S1-1713	 AST-LP-S1-1806 <i>Bendable</i>	 AST-LP-S1-1907	 AST-LP-S1-1919A	 AST-LP-S1-1927
 AST-LP-S1-1914	 AST-LP-S1-1919B	 AST-LP-S1-1920	 AST-LP-S1-1930	 AST-LP-S1-2114	 AST-LP-S1-2310
 AST-LP-S1-2623	 AST-LP-S1-5107	 AST-LP-S1-2907	 AST-LP-SC-1616A	 AST-LP-SC-1616B	 AST-LP-SC-1919A
 AST-LP-SC-1919B	 AST-LP-SC-1919C	 AST-LP-SC-2016	 AST-LP-S1-1818	 AST-LP-SE-001 <i>Waterproof</i>	 AST-LP-SE-002 <i>Waterproof</i>
 AST-LP-SC-3030	 AST-LP-S1-3535		 AST-LP-S1-5032		
 AST-LP-S1-7532		 AST-LP-S1-5570			

Asteri Lighting Inc. is a subsidiary of Aion LED Inc. © 2017 Asteri Lighting Component of a complete system include: light engine, housing with diffuser lens & power supply. Dimmer not included. Approved dimmers, controls, power supplies, cable, & other components only. Contact Asteri Lighting for questions regarding compatibility. Electrician installed. Strictly adhere to NEC & local building code. Limited 5-year warranty against manufacturing defects only, does not cover labor; voided by: inadequate ventilation, field modifications, installation by unqualified personnel, unapproved controls, drivers, cabling, other devices, not following installation guidelines & protocol, general negligence. Installer assumes all liability with regard to property & safety. This product is UL listed. See separate "Warranty Terms" & additional instructional materials for more information. Authorized installers only. Systems tested prior to shipping. Modified: January 15, 2019

AsteriLighting.com
(415) 255-2466
© 2019 Asteri Lighting

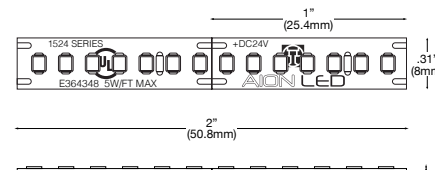


LIGHT ENGINE | 1524-LE

1524-LE
Mid Output



- 95+ CRI
- 5 W /ft.
- 427 Lumens /ft.
- 1" Cut Increment
- UL CLASS 2
- IP20 Dry Location
- 50,000 Hour Minimum Lifespan



	1524-22-LE	1524-24-LE	1524-27-LE	1524-30-LE	1524-35-LE	1524-40-LE	1524-55-LE
Total Lumens /Ft.			398.87	427.82			
Input Power (W)			5.76	5.71			
Efficacy			69.19	74.97			
Color Rendering Index (CRI)			98	98			
R9			89.07	91.10			
Input Voltage (VDC)			24.00	24.00			
Input Current (AMP)			0.24	0.24			
Correlated Color Temperature	2150K	2350K	2650K	2950K	3450K	3950K	5500K



REQUIRES AION LED DRIVER, APPROVED CONTROLLER AND MT Series HOUSING
~Sold Separately, Not Included

Components of a complete system include: Aion LED A-Track Light Engine, Aion LED A-Track housing with diffuser lens, & Aion LED driver (power supply). Dimmer not included. Approved dimmers, controls, power supplies, cable, & other components only. Contact Aion LED for questions regarding compatibility. Electrician installed. Strictly adhere to NEC & local building code. Limited 5-year warranty against manufacturing defects only, does not cover labor; voided by: inadequate ventilation, field modifications, installation by unqualified personnel, unapproved controls, drivers, cabling, other devices, not following installation guidelines & protocol, general negligence. Installer assumes all liability with regard to property & safety. This product is UL listed. See separate "Aion LED Warranty Terms" & additional instructional materials for more information. Authorized installers only. Systems tested prior to shipping.



studio three twenty one

exterior lighting design

section six

fixtures

type sc: recessed mounted linear led downlight

housing: extruded aluminum, sealed with lens
location: exterior damp location canopies
mounting: recessed flush within canopy
driver: remote, dimming driver

manufacturer: aion led lighting

aion housing:
aion asteri - lp - si - 3535 - fr - length? w/ side power feeds

aion light engine:
1524 - 30 - le, 3000 degrees kelvin,
427 lumens/ft, 2 sdcm, 98+ cri,

aion driver:
aion dc blue driver for dimming

equal: optic arts lighting

optic arts housing:
chw-s/h-3535
1.39" wide by 1.39" tall
profile with fully uniform lens image

optic arts light engine:
optic arts outdoor flex stp 40 ip67
flexstp-67-29-24-40-c2-length?-no

optic arts driver:
optic arts pure dc driver for dimming

type sc: recessed mounted linear led downlight

housing: extruded aluminum, sealed with lens
location: exterior damp location canopies
mounting: recessed flush within canopy
driver: remote, dimming driver

manufacturer: aion led lighting

aion housing:
 aion asteri - lp - si - 3535 - fr - length? w/ side power feeds

aion light engine:
 1524 - 30 - le, 3000 degrees kelvin, 427 lumens/ft, 2 sdcm, 98+ cri,

aion driver:
 aion dc blue driver for dimming

equal: optic arts lighting

optic arts housing:
 chw-s/h-3535
 1.39" wide by 1.39" tall
 profile with fully uniform lens image

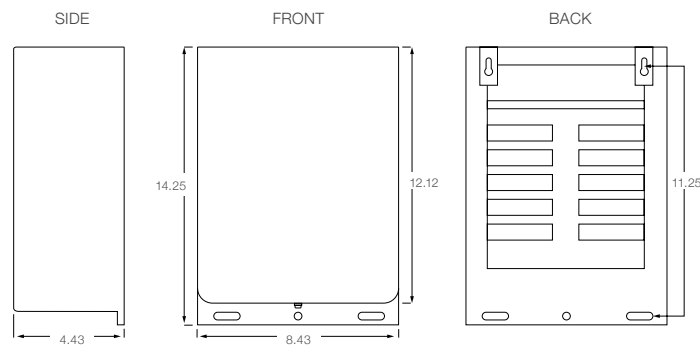
optic arts light engine:
 optic arts outdoor flex stp 40 ip67
 flexstp-67-29-24-40-c2-length?-no

optic arts driver:
 optic arts pure dc driver for dimming



DRIVER | DC BLUE | D300-DC3

D300-DC3
 3 x 96W WATT MLV DRIVER



- Premium Class 2 Dimming LED Driver
- Magnetic Low Voltage Transformer
- Pure DC MOSFET Supply
- Fully Regulated
- 0.1% DIMMING*
MADE IN USA
- UL LISTED 8750, CSA Approved
- NEMA 3R Outdoor Case
- Manual reset overload protection
- Available through the Aion LED Preferred Program

Model	D300-DC3	Watts	3x 96W
Standard Input Voltage	120 VAC	Dimensions "	14.25 x 8.43 x 4.43
Output Voltage Loaded	24 VDC	Input Current	2.5A
Output Current	3 x 96W Class 2 Circuits	Input Frequency (Hz)	50-60
Current Limit	2.5/4.5 +/- 0.25	Efficiency	80%
Load Regulation	2%	MTBF	100,000
Line Regulation	5%	Operating Environment	-30 to +60
Function Surface Temp	-40 to +80		

Max Lengths

3000 Series	180 ft. (6 x 30)
4000 Series	90 ft. (3 x 30)
8000 Series	45 ft. (3 x 15)

Max Wire Distance

18 AWG	27 ft.
16 AWG	44 ft.
14 AWG	70 ft.
12 AWG	112 ft.
10 AWG	180 ft.
8 AWG	286 ft.



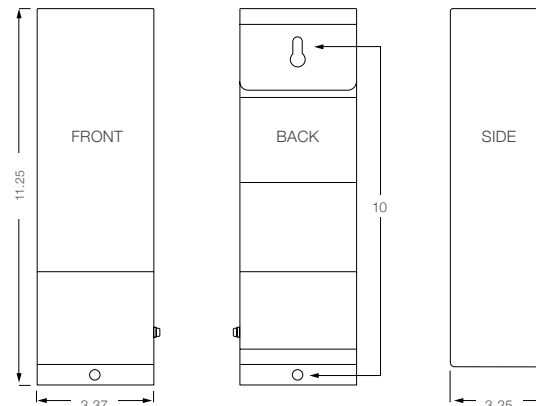
DO NOT USE PHASE-ADAPTIVE CONTROLS FORWARD PHASE MLV CONTROLS ONLY *SEE APPROVED CONTROLS LIST

Components of a complete system include: Aion LED A-Track Light Engine, Aion LED A-Track housing with diffuser lens, & Aion LED driver (power supply). Dimmer not included. Approved dimmers, controls, power supplies, cable, & other components only. Contact Aion LED for questions regarding compatibility. Electrician installed. Strictly adhere to NEC & local building code. Limited 5-year warranty against manufacturing defects only, does not cover labor, voided by: inadequate ventilation, field modifications, installation by unqualified personnel, unapproved controls, drivers, cabling, other devices, not following installation guidelines & protocol, general negligence. Installer assumes all liability with regard to property & safety. This product is UL listed. See separate "Aion LED Warranty Terms" & additional instructional materials for more information. Authorized installers only. Systems tested prior to shipping.



DRIVER | DC BLUE | D100-DC

D100-DC
 100 WATT MLV DRIVER



- Premium Class 2 Dimming LED Driver
- Magnetic Low Voltage Transformer
- Pure DC MOSFET Supply
- Fully Regulated
- 0.1% DIMMING*
MADE IN USA
- UL LISTED 8750, CSA Approved
- NEMA 3R Outdoor Case
- Manual reset overload protection
- Available through the Aion LED Preferred Program

Model	D100-DC	Watts	96
Standard Input Voltage	120 VAC	Dimensions "	11.25 X 3.37 X 3.25
Output Voltage Loaded	24 VDC	Input Current	1.12A
Output Current	4A, 96W	Input Frequency (Hz)	50-60
Current Limit	2.5/4.5 +/- 0.25	Efficiency	80%
Load Regulation	2%	MTBF	100,000
Line Regulation	5%	Operating Environment	-30 to +60
Function Surface Temp	-40 to +80		

Max Lengths

3000 Series	60 ft. (2 x 30)
4000 Series	30 ft.
8000 Series	15 ft.

Max Wire Distance

18 AWG	27 ft.
16 AWG	44 ft.
14 AWG	70 ft.
12 AWG	112 ft.
10 AWG	180 ft.
8 AWG	286 ft.



DO NOT USE PHASE-ADAPTIVE CONTROLS FORWARD PHASE MLV CONTROLS ONLY *SEE APPROVED CONTROLS LIST

Components of a complete system include: Aion LED A-Track Light Engine, Aion LED A-Track housing with diffuser lens, & Aion LED driver (power supply). Dimmer not included. Approved dimmers, controls, power supplies, cable, & other components only. Contact Aion LED for questions regarding compatibility. Electrician installed. Strictly adhere to NEC & local building code. Limited 5-year warranty against manufacturing defects only, does not cover labor, voided by: inadequate ventilation, field modifications, installation by unqualified personnel, unapproved controls, drivers, cabling, other devices, not following installation guidelines & protocol, general negligence. Installer assumes all liability with regard to property & safety. This product is UL listed. See separate "Aion LED Warranty Terms" & additional instructional materials for more information. Authorized installers only. Systems tested prior to shipping.



type sc: recessed mounted linear led downlight

housing: extruded aluminum, sealed with lens
 location: exterior damp location canopies
 mounting: recessed flush within canopy
 driver: remote, dimming driver

manufacturer: aion led lighting

aion housing:
 aion asteri - lp - si - 3535 - fr - length? w/ side power feeds

aion light engine:
 1524 - 30 - le, 3000 degrees kelvin,
 427 lumens/ft, 2 sdcm, 98+ cri,

aion driver:
 aion dc blue driver for dimming

equal: optic arts lighting

optic arts housing:
 chw-s/h-3535
 1.39" wide by 1.39" tall
 profile with fully uniform lens image

optic arts light engine:
 optic arts outdoor flex stp 40 ip67
 flexstp-67-29-24-40-c2-length?-no

optic arts driver:
 optic arts pure dc driver for dimming

FLEX STP 40 IP67

Specification Sheet

MOUNTING OPTIONS - COMPATIBLE CHANNELS

- Not Blended
- Blended w/Milky Lens
- 1** Configuration 1
- 1a** Configuration 1 with Auxiliary Housing Accessory
- 2** Configuration 2
- 3** Configuration 3

SPECIALTY CHANNELS

CHS-S-1922S

MATERIAL
Anodized Aluminum

DESCRIPTION
Slim surface mounted channel with square wrap around lens. Mounting clip is fully concealed within fixture base.

1 LENGTH
2 meter

LENS TYPES
Milky CHW-S-1922S-CM

ACCESSORIES
Endcap CHW-S-1922S-EC
Endcap w/whole CHW-S-1922S-ECH
Mounting Clip CHW-S-1922S-MC

A: 0.77" (19.50mm)
B: 0.65" (16.50mm)
C: 0.86" (21.80mm)

CHW-S/H-2027

MATERIAL
Anodized Aluminum

DESCRIPTION
Small surfaced mounted or hanging channel with wrap around lens.

1 LENGTH
2 meter

LENS TYPES
Clear CHW-SH-2027-CC
Frosted CHW-SH-2027-CF
Milky CHW-SH-2027-CM

ACCESSORIES
Endcap CHW-SH-2027-EC
Endcap w/whole CHW-SH-2027-ECH
Hanging Hardware CHW-SH-MW
Bracket Straight CHW-SH-BS
Bracket 90° Flat CHW-SH-B90F
Bracket 90° Raised CHW-SH-B90R

A: 0.79" (20.30mm)
B: 0.66" (16.70mm)
C: 1.06" (27.00mm)
D: 0.76" (19.50mm)

**Must specify for hanging or surface mount application.*

CHW-S/H-3561

MATERIAL
Anodized Aluminum

DESCRIPTION
Large surface mounted or hanging channel with wrap around lens.

1 LENGTH
2 meter

LENS TYPES
Milky CHW-SH-3561-CM

ACCESSORIES
Endcap CHW-SH-3561-EC
Endcap w/whole CHW-SH-3561-ECH
Hanging Hardware CHW-SH-MW
Bracket Straight CHW-SH-BS
Bracket 90° Flat CHW-SH-B90F
Bracket 90° Raised CHW-SH-B90R

A: 1.38" (35.00mm)
B: 1.24" (31.40mm)
C: 2.43" (61.70mm)
D: 1.57" (39.90mm)

**Must specify for hanging or surface mount application.*

CHW-S/H-3030

MATERIAL
Anodized Aluminum

DESCRIPTION
Wide and deep surface mounted or hanging channel with flat lens for even blending.

1 LENGTH
2 meter

LENS TYPES
Milky CHW-SH-3030-CM

ACCESSORIES
Endcap CHW-SH-3030-EC
Endcap w/whole CHW-SH-3030-ECH
Hanging Hardware CHW-SH-MW
Bracket Straight CHW-SH-BS
Bracket 90° Flat CHW-SH-B90F
Bracket 90° Raised CHW-SH-B90R
End Cap for FLEX AC CHW-SH-3030-ECAC
Mounting Clip for FLEX AC CHW-SH-3030-MCAC
VHB Tape VHBTAPE.AC

A: 1.18" (30.00mm)
B: 1.01" (25.60mm)
C: 1.18" (30.00mm)

**Must specify for hanging or surface mount application.*

CHW-S-3535

MATERIAL
Anodized Aluminum

DESCRIPTION
Wide and deep surface mounted or hanging channel. Eliminates visible LED nodes for most FLEXDC products when used with a milky lens.

1 LENGTH
2 meter

LENS TYPES
Frosted Milky CHW-35mm-CF
Milky CHW-35mm-CM

ACCESSORIES
Endcap CHW-S-3535-EC
Endcap w/whole CHW-S-3535-ECH
Mounting Clip CHW-S-3535-MC
Hanging Hardware CHW-SH-3535-MW
Bracket Straight CHW-S-XX35-BS
Bracket 90° Flat CHW-S-XX35-B90F
Bracket 90° Raised CHW-S-XX35-B90R

A: 1.39" (35.25mm)
B: 0.96" (24.50mm)
C: 1.39" (35.25mm)
D: 1.54" (39.00mm)

**Must specify for hanging or surface mount application.*

CHW-R-4435

MATERIAL
Anodized Aluminum

DESCRIPTION
Wide and deep recessed channel. Eliminates visible LED nodes for most FLEXDC products when used with a milky lens. Can be securely and conveniently mounted with CHW-R-4435-SC spring clip.

1 LENGTH
2 meter

LENS TYPES
Frosted Milky CHW-35mm-CF
Milky CHW-35mm-CM

ACCESSORIES
Endcap CHW-R-4435-EC
Endcap w/whole CHW-R-4435-ECH
Mounting Clip CHW-R-4435-SC
Bracket Straight CHW-S-XX35-BS
Bracket 90° Flat CHW-S-XX35-B90F
Bracket 90° Raised CHW-S-XX35-B90R
End Cap for FLEX AC CHW-R-4435-ECAC
Mounting Clip for FLEX AC CHW-R-4435-MCAC
VHB Tape VHBTAPE.AC

A: 1.39" (35.25mm)
B: 0.96" (24.50mm)
C: 1.39" (35.25mm)
D: 2.00" (51.04mm)

**Must specify for hanging or surface mount application.*

FLEX STP 40 IP67

Specification Sheet



FLEX STP 40 IP67 is a high performance flexible LED fixture distinguished by its extremely tight LED pitch and ability to blend in shallow channels, making it perfect for direct view applications.

ELECTRICAL

Input Voltage	24VDC
Dimming Options	• PURE DC™ • MLV • 0-10V • DMX • Lutron (2-WIRE, 3-WIRE, EcoSystem)
Power Consumption	4.0 Watts per foot
Wire Size	20AWG, 2 wire
Regulatory	ETL - Conforms to UL Std. 2108; Certified to CSA Std. C22.2 No. 90 Title 24 - All models are JAB when used with 0-10V, DMX, Lutron A-Series 2-Wire or Lutron Premier dimming (Config 2 and 3 only).

ACCESSORIES

Channels	Optic Arts® Channel (pg. 3-6)
Mounting Clips	FLEXMNT.SIL.EXT12 (pg. 7)
Connectors	LC-O2P-F, LC-O2P-M (pg. 7)
Strain Relief	FLEX.ZIP (pg. 7)

LUMEN OUTPUT

NOMINAL CCT	CCT w/IP67 JACKET
1800K	1760K: 216.00 lm/ft 54.00 lm/Watt
2350K	2260K: 281.70 lm/ft 70.42 lm/Watt
2750K	2620K: 304.20 lm/ft 76.05 lm/Watt
2930K	2820K: 315.00 lm/ft 78.75 lm/Watt
3550K	3410K: 317.70 lm/ft 79.42 lm/Watt
4100K	3940K: 324.20 lm/ft 81.00 lm/Watt

Note: Stated lumen values have a tolerance of +/- 10%.
 Note: All models are JAB when used with 0-10V, DMX, Lutron A-Series 2-Wire or Lutron Premier dimming (Config 2 and 3 only).

PERFORMANCE

CRI	2350-3550K = 95+, 1800K = 90+
Binning Tolerance	+/- 100K
Warranty	5 years

PART NUMBER BUILDER

SERIES	IP RATING	COLOR	VOLTAGE	WATTAGE	CONFIGURATION	LENGTH	JAB
FLEXSTP	67 = IP67 - Wet Location	18 = 1800K 23 = 2350K 27 = 2750K 29 = 2930K 35 = 3550K 41 = 4100K	24 = 24VDC	40 = 4.0W	C1 = FLEX Config 1 C2 = FLEX Config 2 C3 = FLEX Config 3 <small>Note: Contact factory for FLEX Configuration 3.</small>	XX = Custom Length	Y = Yes N = No

1: JAB when used with 0-10V, DMX, Lutron A-Series 2-Wire or Lutron Premier dimming.

716 Monterey Pass Rd, Monterey Park, CA 91754
 213.250.6069 | customerservice@opticarts.com | www.opticarts.com

Optic Arts reserves the right to modify this specification without prior notice.
 Last Modified: September 11, 2019 5:08 PM

5 of 14

© Optic Arts 2018



716 Monterey Pass Rd, Monterey Park, CA 91754
 213.250.6069 | customerservice@opticarts.com | www.opticarts.com

Optic Arts reserves the right to modify this specification without prior notice.
 Last Modified: September 11, 2019 5:08 PM

1 of 14

© Optic Arts 2018

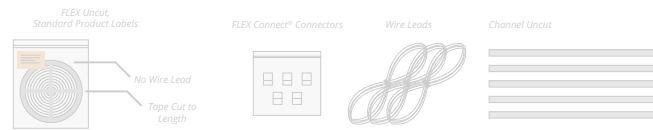


FLEX STP 40 IP67

Specification Sheet

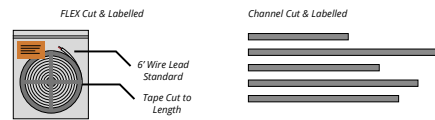
CONFIGURATION TYPES

- 1 [NOT COMPATIBLE]** FLEX cut to length with FLEX Connect® Power Feeds for Field Termination, Channel uncut for field cutting
- Specify **FLEXConfig-1**
 - Specify FLEX type and channel type
 - Flex is provided in full reels. Product is not cut to length.
 - Two FLEX Connect® power feed connector and 6' lead provided per FLEX run
 - Uncut rolls of lead wire can also be provided (see page 8 for part #)
 - Channel shipped uncut for field cutting.
 - Butt splices are offered in 5 units per pack.
 - IP68 not available in **FLEXConfig-1**
 - JA8 2016 not available in **FLEXConfig-1**

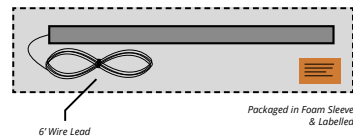


- The below channels are **NOT** compatible with FLEX Connect®:
- Small:**
- CH-SM-LS-SF (unless used with FLEX CONNECT AUXILIARY HOUSING)
 - CH-SM-LT-SF (unless used with FLEX CONNECT AUXILIARY HOUSING)
 - CH-SM-LS-RE
 - CH-SM-LT-RE
- Corner:**
- CHS-C-1919
 - CHS-C-1616
- Specialty:**
- CHC-S-1921
 - CHSP-R-2970
 - CHSP-S-1618
 - CHSP-STEP-8142

- 2 Cut To Length With Soldered Leads, Assemble On-Site 1, 2, 3**
- Specify **FLEXConfig-2**
 - Specify FLEX type and channel type
 - Specify run lengths
 - IP68 only available in **FLEXConfig-2**
 - If no config is specified, and run lengths are provided, **FLEXConfig-2** will be used



- 3 Pre-Assembled Factory Finished Fixtures 1, 2**
- Specify **FLEXConfig-3**
 - Fully assembled fixture
 - ETL stamped and listed as a fixture
 - 7.0' max length
 - Standard 6' power lead unless otherwise specified
 - The below channels **CANNOT** be factory assembled:



NOTES:

- Due to the nature of the FLEX STP product, specific lengths may not fall exactly on a cutting point. In this case, Optic Arts® will always cut to the smaller dimension unless otherwise specified.
- Unless otherwise specified, channel is cut 15mm longer than FLEX STP.
- Some on-site assembly required. See installation guides for details.

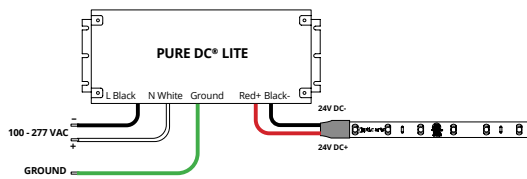


FLEX STP 40 IP67

Specification Sheet

COMPATIBLE DRIVERS

PURE DC® LITE (PDCL)



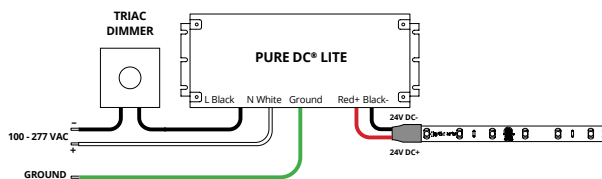
PART	DESCRIPTION
PDCL30.24	30W 100-277VAC DIMMABLE DRIVER
PDCL60.24	60W 100-277VAC DIMMABLE DRIVER
PDCL96.24	96W 100-277VAC DIMMABLE DRIVER

DIMENSIONS	
PDCL30.24	H 1.03"; W 6.50"; D 3.62"
PDCL60.24	H 1.03"; W 7.40"; D 3.62"
PDCL96.24	H 1.61"; W 8.66"; D 3.66"

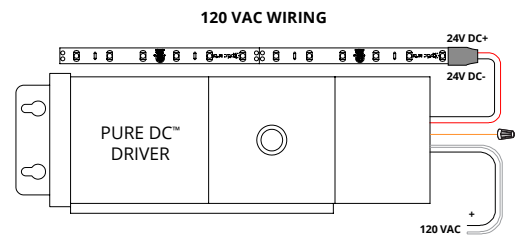
DIMMING PERFORMANCE

PURE DC® LITE DRIVER Dims to 1% on most MLV dimmers

NOTE: Must be loaded at least 10% of rated load to obtain optimal dimming.



PURE DC™ MLV (PDC)

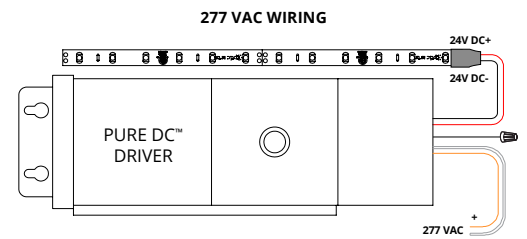


PART	DESCRIPTION
PDC40.24	40W 120/277VAC PURE DC™ MLV DIMMABLE DRIVER
PDC96.24	96W 120/277VAC PURE DC™ MLV DIMMABLE DRIVER

DIMENSIONS	
40W	L 14.25"; W 3.00"; H 2.88"
96W	L 14.75"; W 4.31"; H 4.81"

DIMMING PERFORMANCE

PURE DC™ DRIVER Dims to 0.1% on most MLV dimmers



studio three twenty one

exterior lighting design

section six

fixtures

type sc: recessed mounted linear led downlight

housing: extruded aluminum, sealed with lens
 location: exterior damp location canopies
 mounting: recessed flush within canopy
 driver: remote, dimming driver

manufacturer: aion led lighting

aion housing:
 aion asteri - lp - si - 3535 - fr - length? w/ side power feeds

aion light engine:
 1524 - 30 - le, 3000 degrees kelvin,
 427 lumens/ft, 2 sdcm, 98+ cri,

aion driver:
 aion dc blue driver for dimming

equal: optic arts lighting

optic arts housing:
 chw-s/h-3535
 1.39" wide by 1.39" tall
 profile with fully uniform lens image

optic arts light engine:
 optic arts outdoor flex stp 40 ip67
 flexstp-67-29-24-40-c2-length?-no

optic arts driver:
 optic arts pure dc driver for dimming

exterior lighting design

section six fixtures

**sg: wall mounted
security area light**

the security area lights should be a minimal design so they appear to blend into the architecture and do not draw too much attention as a design statement.

The fixture family should have 100% horizontal cutoff and good visual cutoff to the brightness of the source.

- minimal design
- simple shape
- with forward and lateral distributions
- with various standard paint finishes to match various architectural conditions
- with various size options



aquity lithonia wst led

type sg: wall mounted security area light

housing: die cast aluminum, with exterior polyester powder coated finish

location: wet locations at walls

mounting: surface mounted over recessed jbox
lamp: 1 l watt, led, 1500 lumens, 3000K, 90+ cri, 2 sdcm

driver: remote

manufacturer: lithonia
wst series wide throw
wst led-pl-30k-vw-voltage?-options?

manufacturer: lithonia
wst series forward throw
wst led-pl-30k-vf-voltage?-options?



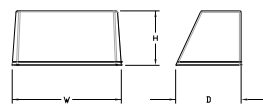
WST LED Architectural Wall Sconce



Specifications

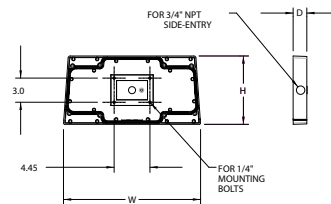
Luminaire

Height: 8-1/2" (21.59 cm)
Width: 17" (43.18 cm)
Depth: 10-3/16" (25.9 cm)
Weight: 20 lbs (9.1 kg)



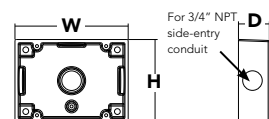
Optional Back Box (PBBW)

Height: 8.49" (21.56 cm)
Width: 17.01" (43.21 cm)
Depth: 1.70" (4.32 cm)



Optional Back Box (BBW)

Height: 4" (10.2 cm)
Width: 5-1/2" (14.0 cm)
Depth: 1-1/2" (3.8 cm)



Catalog Number
Notes
Type

Hit the Tab key or mouse over the page to see all interactive elements.

A+ Capable Luminaire

This item is an A+ capable luminaire, which has been designed and tested to provide consistent color appearance and system-level interoperability.

- All configurations of this luminaire meet the Acuity Brands' specification for chromatic consistency
- This luminaire is A+ Certified when ordered with DTL® controls marked by a shaded background. DTL DLL equipped luminaires meet the A+ specification for luminaire to photocontrol interoperability¹
- This luminaire is part of an A+ Certified solution for ROAM® or XPoint™ Wireless control networks, providing out-of-the-box control compatibility with simple commissioning, when ordered with drivers and control options marked by a shaded background¹

To learn more about A+, visit www.acuitybrands.com/aplus.

See ordering tree for details.

A+ Certified Solutions for ROAM require the order of one ROAM node per luminaire. Sold Separately: [Link to Roam](#); [Link to DTL DLL](#)

A+ Capable options indicated by this color background.

Ordering Information

EXAMPLE: WST LED P1 40K VF MVOLT DDBTXD

WST LED	Performance Package	Color temperature	Distribution	Voltage	Mounting
WST LED	P1 1,500 Lumen package P2 3,000 Lumen package P3 6,000 Lumen package	27K 2700 K 30K 3000 K 40K 4000 K 50K 5000 K	VF Visual comfort forward throw VW Visual comfort wide	MVOLT ¹ 277 ² 120 ³ 347 ² 208 ³ 480 ² 240 ³	Shipped included (blank) Surface mounting bracket Shipped separately BBW Surface-mounted back box ² PBBW Premium surface-mounted back box ^{3,4}

Options

Options	Finish (required)
NLTAIR2 PIR nLIGHT AIR Wireless enabled motion/ambient sensor for 8'-15' mounting heights ^{5,6}	DDBXD Dark bronze
NLTAIR2 PIRH nLIGHT AIR Wireless enabled motion/ambient sensor for 15'-30' mounting heights ^{5,6}	DBLXD Black
PE Photoelectric cell, button type ⁷	DNAXD Natural aluminum
PER NEMA twist-lock receptacle only (controls ordered separate) ⁸	DWHXD White
PERS Five-wire receptacle only (controls ordered separate) ⁸	DSSXD Sandstone
PER7 Seven-wire receptacle only (controls ordered separate) ⁸	DDBTXD Textured dark bronze
PIR Motion/Ambient Light Sensor, 8-15' mounting height ^{5,6}	DBLXD Textured black
PIR1FC3V Motion/ambient sensor, 8-15' mounting height, ambient sensor enabled at 1fc ^{5,6}	DNATXD Textured natural aluminum
PIRH 180° motion/ambient light sensor, 15-30' mounting height ^{5,6}	DWHGXD Textured white
PIRH1FC3V Motion/ambient sensor, 15-30' mounting height, ambient sensor enabled at 1fc ^{5,6}	DSSTXD Textured sandstone
SF Single fuse (120, 277, 347V) ²	
DF Double fuse (208, 240, 480V) ²	
DS Dual switching ⁹	
E7WH Emergency battery backup, Non CEC compliant (7W) ¹⁰	
E7WC Emergency battery backup, CA Title 20 Noncompliant (cold, 7W) ^{10,11}	
E7WHR Remote emergency battery backup, CA Title 20 Noncompliant (remote 7W) ^{10,12}	
E20WH Emergency battery pack 18W constant power, Certified in CA Title 20 MAEDBS ¹¹	
E20WC Emergency battery pack -20°C 18W constant power, Certified in CA Title 20 MAEDBS ¹¹	
E23WHR Remote emergency battery backup, CA Title 20 Noncompliant (remote 20W) ^{10,11,13}	
LCE Left side conduit entry ¹⁴	
RCE Right side conduit entry ¹⁴	
Shipped separately	
RBPW Retrofit back plate ²	
VG Vandal guard ¹⁵	
WG Wire guard ¹⁵	

Accessories

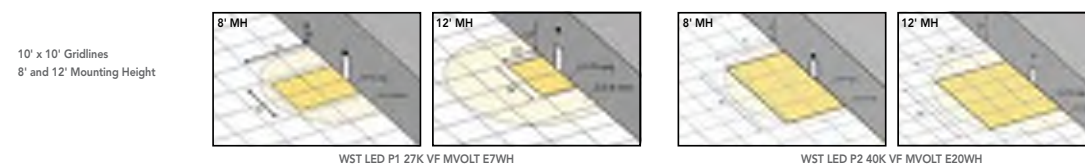
WSTVCPBBW DDBXD U	Premium Surface - mounted back box
WSBBW DDBTX U	Surface - mounted back box
RBPW DDBXD U	Retrofit back plate

NOTES

- MVOLT driver operates on any line voltage from 120-277V (50/60 Hz).
- Single fuse (SF) requires 120V, 277V or 347V. Double fuse (DF) requires 208V, 240V or 480V.
- Also available as a separate accessory; see accessories information.
- Top conduit entry standard.
- Not available with VG or WG. See PER Table.
- Reference Motion Sensor table.
- Need to specify 120, 208, 240 or 277 voltage.
- Photocell ordered and shipped as a separate line item from Acuity Brands Controls. Shorting Cap included.
- Not available with Emergency options, PE or PER options.
- Not available with 347/480V.
- Battery pack rated for -20° to 40°C.
- Comes with PBBW.
- Warranty period is 3-years.
- Not available with BBW.
- Must order with fixture; not an accessory.

Emergency Battery Operation

The emergency battery backup is integral to the luminaire — no external housing required! This design provides reliable emergency operation while maintaining the aesthetics of the product. All emergency backup configurations include an independent secondary driver with an integral relay to immediately detect AC power loss, meeting interpretations of [NFPA 70/NEC 2008 - 700.16](#) and [NFPA 101 Life Safety Code Section 7.9](#), provided luminaires are mounted at an appropriate height and illuminate an open space with no major obstructions. The examples below show illuminance of 1 fc average and 0.1 fc minimum of the P1 power package and VF distribution product in emergency mode.



One Lithonia Way • Conyers, Georgia 30012 • Phone: 800.279.8041 • www.lithonia.com
© 2011-2019 Acuity Brands Lighting, Inc. All rights reserved.

WST-LED
Rev. 05/22/19



One Lithonia Way • Conyers, Georgia 30012 • Phone: 800.279.8041 • www.lithonia.com
© 2011-2019 Acuity Brands Lighting, Inc. All rights reserved.

WST-LED
Rev. 05/22/19

exterior lighting design

section six fixtures

sk: bollard

the bollards should be soft, well shielded and indirect if possible so they are comfortable to sit and walk next to so they can be located closer to the building entry and the exterior patio areas.

- modern in appearance and design
- minimal shape
- cut-off fixture options
- dark sky compliant options
- good photometric performance, high efficacy, and high efficiency (so bollards can be spaced far apart and limited in quantity)



bega - 99058 bollard



hunza - arch round



hunza - arch square

Shielded LED bollard - asymmetric

BEGA

Shielded LED bollard - asymmetric

BEGA

type sk: bollard

Application
An LED bollard with shielded asymmetric light distribution. Designed for effective lighting of landscapes, pathways, and open spaces from low mounting heights. The fully shielded design provides visual comfort while illuminating ground surfaces. Provided with mounting system that allows the luminaire to be adjusted independent of anchor bolt orientation.

Materials
Luminaire housing constructed of die-cast and extruded marine grade, copper free (≤ 0.3% copper content) A360.0 aluminum alloy
Clear safety glass
Reflector made of pure anodized aluminum
High temperature silicone gasket
Mechanically captive stainless steel fasteners
Mounting plate constructed of heavy cast aluminum

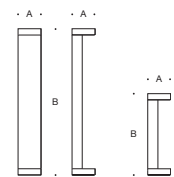
NRTL listed to North American Standards, suitable for wet locations
Protection class IP 65
Weight: 10.8 lbs

Electrical
Operating voltage 120-277V AC
Minimum start temperature -30° C
LED module wattage 11.6W
System wattage 14.0W
Controllability 0-10V dimmable
Color rendering index Ra > 80
Luminaire lumens 1361 lumens (3000K)
Lifetime at Ta = 15° C >500,000 h (L70)
Lifetime at Ta = 55° C 164,000 h (L70)

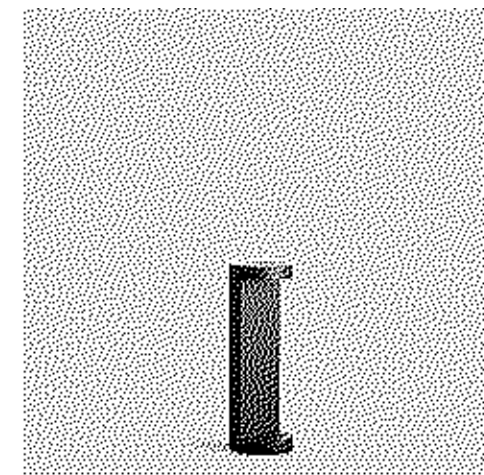
LED color temperature
 4000K - Product number + **K4**
 3500K - Product number + **K35**
 3000K - Product number + **K3**
 2700K - Product number + **K27**

BEGA can supply you with suitable LED replacement modules for up to 20 years after the purchase of LED luminaires - see website for details

Finish
All BEGA standard finishes are matte, textured polyester powder coat with minimum 3 mil thickness.
Available colors Black (BLK) White (WHT) RAL:
 Bronze (BRZ) Silver (SLV) CUS:



Shielded LED bollard - asymmetric				
	LED	A	B	Anchorage
99056	11.6W	7 5/8"	21 1/8"	79817



Application
An LED bollard with shielded asymmetric light distribution. Designed for effective lighting of landscapes, pathways, and open spaces. The fully shielded design provides visual comfort while illuminating ground surfaces. Provided with mounting system that allows the luminaire to be adjusted independent of anchor bolt orientation.

Materials
Luminaire housing constructed of die-cast and extruded marine grade, copper free (≤ 0.3% copper content) A360.0 aluminum alloy
Clear safety glass
Reflector made of pure anodized aluminum
High temperature silicone gasket
Mechanically captive stainless steel fasteners
Mounting plate constructed of heavy cast aluminum

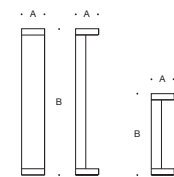
NRTL listed to North American Standards, suitable for wet locations
Protection class IP 65
Weight: 14.5 lbs

Electrical
Operating voltage 120-277V AC
Minimum start temperature -30° C
LED module wattage 11.6W
System wattage 14.0W
Controllability 0-10V dimmable
Color rendering index Ra > 80
Luminaire lumens 1361 lumens (3000K)
Lifetime at Ta = 15° C >500,000 h (L70)
Lifetime at Ta = 55° C 164,000 h (L70)

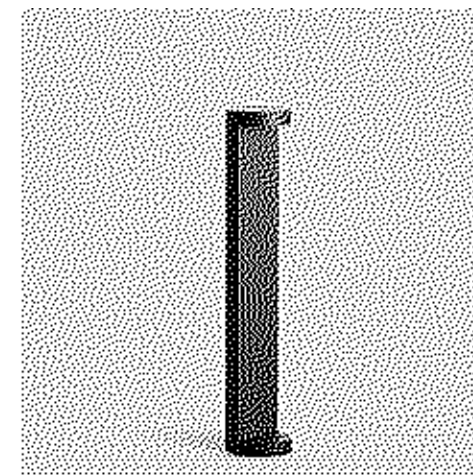
LED color temperature
 4000K - Product number + **K4**
 3500K - Product number + **K35**
 3000K - Product number + **K3 (EXPRESS)**
 2700K - Product number + **K27**

BEGA can supply you with suitable LED replacement modules for up to 20 years after the purchase of LED luminaires - see website for details

Finish
All BEGA standard finishes are matte, textured polyester powder coat with minimum 3 mil thickness.
Available colors Black (BLK) White (WHT) RAL:
 Bronze (BRZ) Silver (SLV) CUS:



Shielded LED bollard - asymmetric				
	LED	A	B	Anchorage
99058	11.6W	7 5/8"	39 3/8"	79817



housing: die cast aluminum, with exterior polyester powder coated finish
location: wet locations at drive thru & entry
mounting: surface mounted
lamp: 11.6 watt, led, 1361 lumens, 3000K, 90+ cri, 2 sdcm
driver: integral

manufacturer: bega lighting
99056 bollard

alternate: bega lighting
99058 bollard

alternate: hunza lighting
arch square bollard

alternate: hunza lighting
arch round bollard

BEGA 1000 BEGA Way, Carpinteria, CA 93013 (805)684-0533 info@bega-us.com

Due to the dynamic nature of lighting products and the associated technologies, luminaire data on this sheet is subject to change at the discretion of BEGA North America. For the most current technical data, please refer to bega-us.com Updated 07/19/18

BEGA 1000 BEGA Way, Carpinteria, CA 93013 (805)684-0533 info@bega-us.com

Due to the dynamic nature of lighting products and the associated technologies, luminaire data on this sheet is subject to change at the discretion of BEGA North America. For the most current technical data, please refer to bega-us.com Updated 07/19/18

HUNZA™ PURE OUTDOOR LIGHTING

Bollard round ARCH

PROJECT: _____

TYPE: _____

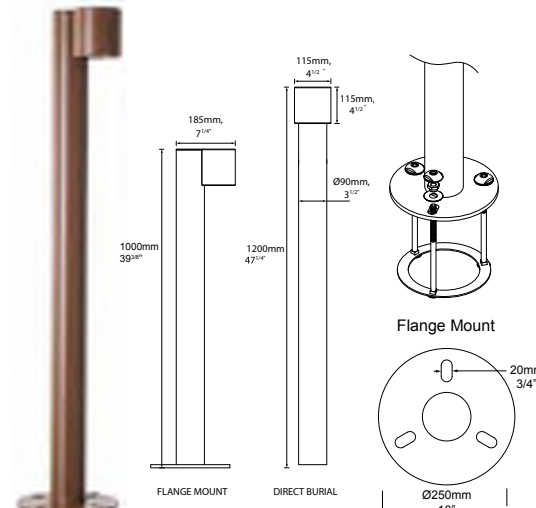
SOURCE: _____

NOTES: _____

SPECIFICATIONS



LED Chip	Cree CXA 1830 field replaceable LED board
Luminaire Output	3000 Lumens @ 700mA (26watts), delivered from luminaire with unobstructed beam.
Lumens Per Watt	100 Lumens minimum @ 26 watts, delivered from luminaire with unobstructed beam
CRI (3000K)	80+ Standard, 90+ Optional
Colour Temperatures	2700K, 3000K, 4000K
Beam Angles	TYPE 2, TYPE 4 asymmetric, 95°
Ingress Protection	IP66
Warranty	Electronics = 5 years Body Aluminium = 5 years
Standards	BS/EN 60598.2.2 cUL 1598 CE



LUMINAIRE CONSTRUCTION

CNC machined from one of the following metals:
Aluminium
 Body: High corrosion resistant 115mm (4 1/2") aluminium rod.
 Tube: high corrosion resistant 90mm (3 1/2") x 3.18mm (1/8") aluminium tube.
 Finished with chromate substrate, Epoxy layer and a UV resistant polyester powder coat colour.
 Fixings and Mechanism - made from 316 stainless steel.

Step Lens:
Extra clear optical silicone TIR.

Gaskets:
Silicone, iron impregnated 220°C (428°F)

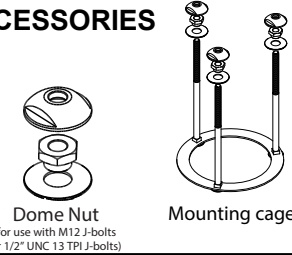
Cable:
Water resistant rubber

Mounting:
Pole is set directly into concrete.
For flange mounting please refer to the Hunza website for mounting instructions.
Dome Nut - for use with M12 J-bolts.
Dome Nut USA - for use with 1/2" UNC 13 TPI J-bolts.

Luminaire Weight:
6kg (13lbs 4oz) without flange

Colours:
Black, Bronze, Silver Star, White, White Birch, Olive Green, Dark Grey, Corten.

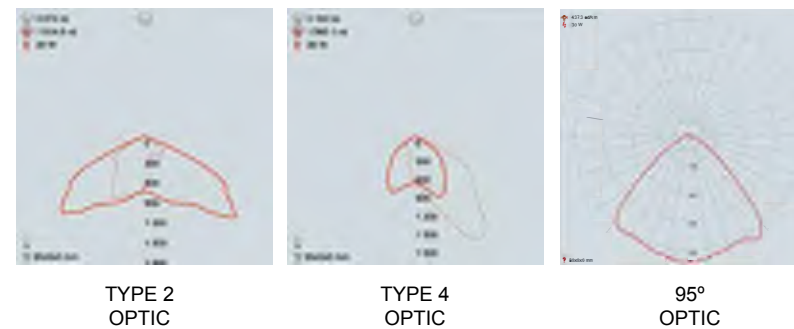
ACCESSORIES



BEAM ANGLES

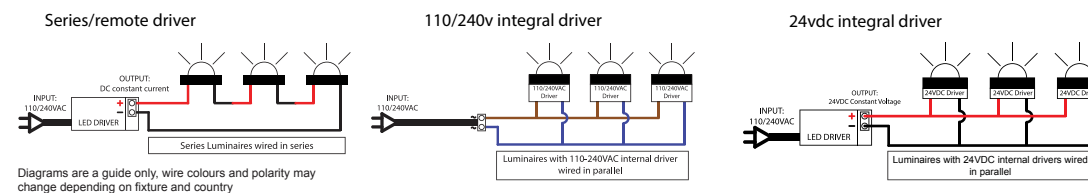
High efficiency Reflectors. Field replaceable

IES files available for download: hunzaligning.com/downloads



WIRING GUIDE

Available for download: hunzaligning.com/downloads

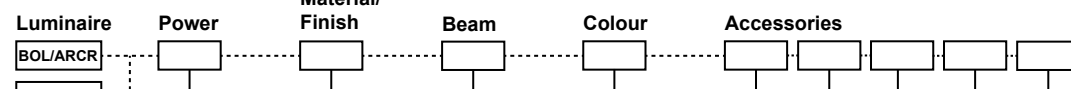


Diagrams are a guide only, wire colours and polarity may change depending on fixture and country

PRODUCT CONFIGURATION

Please fill in appropriate codes into boxes provided

Cat. No. ARCR



- Luminaire**
BOL/ARCR
BOL/ARCRFM Arch flange mount
- Power**
SR SERIES REMOTE
R RETRO, 120-277vac INPUT
D24 24VDC DRIVER

- Material/Finish**
EBK BLACK
EBZ BRONZE
EOGR OLIVE GREEN
EWH WHITE
EWB WHITE BIRCH
EDG DARK GREY
ESTAR SILVER STAR
ECT CORTEN

- Beam**
TYP2 TYPE 2 OPTIC
TYP4 TYPE 4 OPTIC
95 95°

- Colour**
2 2700K
3 3000K
4 4000K
39 3000K, 90+ CRI

- Accessories**
MC MOUNTING CAGE
CJK CABLE JOINT KIT
DN DOME NUT*
DNUSA DOME NUT USA*

SERIES REMOTE DRIVER:
Constant current driver (included) individual fixtures require 37vdc @ 700mA maximum. 0-10 volt dimming.

RETRO 110-277vac DRIVER:
Constant current driver (included).
Input: 120, 240, 227 volts.
Output: 60 watts total
37vdc @ 700mA
0-10 volt dimming.

24VDC DRIVER:
Input: 24vdc.
Output: 36vdc @ 700mA constant current (non dimming).
Note: not for USA.

ADDITIONAL COMMENTS: _____

*Only available for Flange Mount version



HUNZA FACTORY
130 Felton Mathew Ave
Saint Johns
Auckland 1072
New Zealand
Ph: +64-9-528 9471
Fax: +64-9-528 9361
hunza@hunza.co.nz
www.hunzaligning.com

INTERNATIONAL CONTACTS:
<http://www.hunzaligning.com/contact.php>
Specifications may change without notice. This document contains proprietary information of Hunza. Its receipt or possession does not convey an rights to reproduce or disclose its content.



HUNZA FACTORY
130 Felton Mathew Ave
Saint Johns
Auckland 1072
New Zealand
Ph: +64-9-528 9471
Fax: +64-9-528 9361
hunza@hunza.co.nz
www.hunzaligning.com

Specifications may change without notification Aug 2017

INTERNATIONAL CONTACTS:
<http://www.hunzaligning.com/contact.php>
This document contains proprietary information of Hunza. Its receipt or possession does not convey any rights to reproduce or disclose its content.

type sk: bollard

housing: die cast aluminum, with exterior polyester powder coated finish

location: wet locations at drive thru & entry

mounting: surface mounted

lamp: 11.6 watt, led, 1361 lumens, 3000K, 90+ cri, 2 sdcm

driver: integral

manufacturer: bega lighting
99056 bollard

alternate: bega lighting
99058 bollard

alternate: hunza lighting
arch square bollard
bol/arcr - r - ebz/ebk?-typ2-3-mc

alternate: hunza lighting
arch round bollard
bol/arcr - r - ebz/ebk?-typ2-3-mc

HUNZA™ PURE OUTDOOR LIGHTING

Bollard square ARCH

PROJECT: _____

TYPE: _____

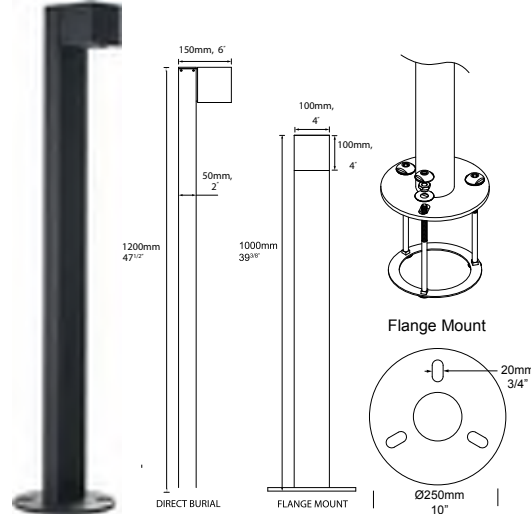
SOURCE: _____

NOTES: _____

SPECIFICATIONS



LED Chip	Cree CXA 1830 field replaceable LED board
Luminaire Output	3000 Lumens @ 700mA (26watts), delivered from luminaire with unobstructed beam.
Lumens Per Watt	100 Lumens minimum @ 26 watts, delivered from luminaire with unobstructed beam
CRI (3000K)	80+ Standard, 90+ Optional
Colour Temperatures	2700K, 3000K, 4000K
Beam Angles	TYPE 2, TYPE 4 asymmetric, 95°
Ingress Protection	IP66
Warranty	Electronics = 5 years Body Aluminium = 5 years
Standards	BS/EN 60598.2.2 cUL 1598 CE



LUMINAIRE CONSTRUCTION

CNC machined from one of the following metals:
Aluminium
 Body: High corrosion resistant 115mm (4 1/2") aluminium rod.
 Tube: high corrosion resistant 90mm (3 1/2") x 3.18mm (1/8") aluminium tube.
 Finished with chromate substrate, Epoxy layer and a UV resistant polyester powder coat colour.
 Fixings and Mechanism - made from 316 stainless steel.

Lens:
Extra clear optical silicone TIR.

Gaskets:
Silicone, iron impregnated 220°C (428°F)

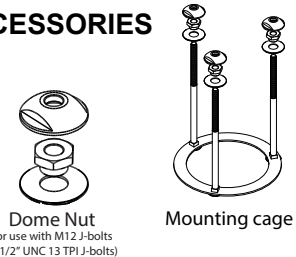
Cable:
Water resistant rubber

Mounting:
Pole is set directly into concrete.
For flange mounting please refer to the Hunza website for mounting instructions.
Dome Nut - for use with M12 J-bolts.
Dome Nut USA - for use with 1/2" UNC 13 TPI J-bolts.

Luminaire Weight:
6kg (13lbs 4oz) without flange

Colours:
Black, Bronze, Silver Star, White, White Birch, Olive Green, Dark Grey, Corten.

ACCESSORIES



BEAM ANGLES

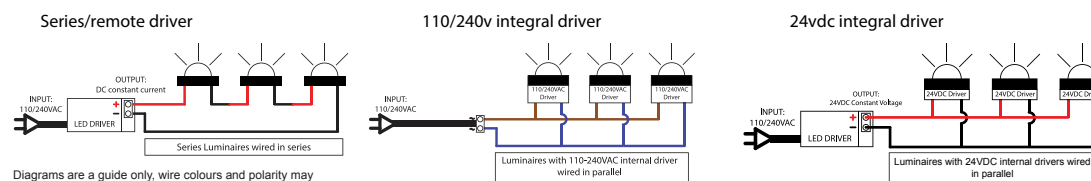
High efficiency Reflectors. Field replaceable

IES files available for download: hunzalighting.com/downloads



WIRING GUIDE

Available for download: hunzalighting.com/downloads

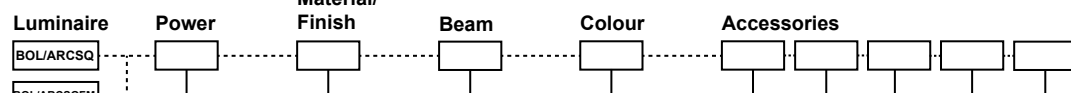


Diagrams are a guide only, wire colours and polarity may change depending on fixture and country

PRODUCT CONFIGURATION

Please fill in appropriate codes into boxes provided

Cat. No. BOL/ARCSQ



- SR SERIES REMOTE
- R RETRO, 120-277vac INPUT
- D24 24VDC DRIVER

SERIES REMOTE DRIVER:
Constant current driver (included) individual fixtures require 37vdc @ 700mA maximum. 0-10 volt dimming.

RETRO 110-277vac DRIVER:
Constant current driver (included).
Input: 120, 240, 227 volts.
Output: 60 watts total
37vdc @ 700mA
0-10 volt dimming.

24VDC DRIVER:
Input: 24vdc.
Output: 36vdc @ 700mA constant current (non dimming).
Note: not for USA.

- ALUMINIUM**
- EBK BLACK
 - EBZ BRONZE
 - EOGR OLIVE GREEN
 - EWH WHITE
 - EWB WHITE BIRCH
 - EDG DARK GREY
 - ESTAR SILVER STAR
 - ECT CORTEN

- TYP2 TYPE 2 OPTIC
- TYP4 TYPE 4 OPTIC
- 95 95°
- 2 2700K
- 3 3000K
- 4 4000K
- 39 3000K, 90+ CRI

- MC MOUNTING CAGE
- CJK CABLE JOINT KIT
- DN DOME NUT*
- DNUSA DOME NUT USA*

ADDITIONAL COMMENTS: _____

*Only available for Flange Mount version



HUNZA FACTORY
130 Felton Mathew Ave
Saint Johns
Auckland 1072
New Zealand
Ph: +64-9-528 9471
Fax: +64-9-528 9361
hunza@hunza.co.nz
www.hunzalighting.com

INTERNATIONAL CONTACTS:
<http://www.hunzalighting.com/contact.php>
Specifications may change without notice. This document contains proprietary information of Hunza. Its receipt or possession does not convey an rights to reproduce or disclose its content.



HUNZA FACTORY
130 Felton Mathew Ave
Saint Johns
Auckland 1072
New Zealand
Ph: +64-9-528 9471
Fax: +64-9-528 9361
hunza@hunza.co.nz
www.hunzalighting.com

Specifications may change without notification Aug 2017

INTERNATIONAL CONTACTS:
<http://www.hunzalighting.com/contact.php>
This document contains proprietary information of Hunza. Its receipt or possession does not convey an rights to reproduce or disclose its content.

studio three twenty one

exterior lighting design

section six

fixtures

type sk: bollard

housing: die cast aluminum, with exterior polyester powder coated finish

location: wet locations at drive thru & entry

mounting: surface mounted

lamp: 11.6 watt, led, 1361 lumens, 3000K, 90+ cri, 2 sdcm

driver: integral

manufacturer: bega lighting
99056 bollard

alternate: bega lighting
99058 bollard

alternate: hunza lighting
arch square bollard
bol/arsq - r - ebz/ebk?-typ2-3-mc

alternate: hunza lighting
arch round bollard
bol/arcr - r - ebz/ebk?-typ2-3-mc

exterior lighting design

section six fixtures

so: parking poles

the parking lot poles need to be in scale relative to the buildings, preferably never taller than the tallest portion of the buildings.

these elements, are bright and create glare and need to be held away from the buildings, the facades, and most importantly the primary entry

- minimal in appearance and design
- simple modern or minimal shape
- good 100% horizontal cut-off fixture
- dark sky compliant
- house side shield options for side and back spill light
- good photometric performance, high efficacy, and high efficiency (so quantity of poles can be limited)



hubbell - ratio pole

type so2: parking area pole - type 2
 type so4: parking area pole - type 4

housing: die cast aluminum, with exterior polyester powder coated finish

location: wet locations at parking lot

mounting: pole mounted, 20'

lamp: 165 watt, led, 21000 lumens delivered, 3000K, 70 cri

driver: integral

manufacturer: hubbell lighting rar2 pole light

alternate: so2 - type 2

rar2-320l-185-3k7-2-_-unv-bl/db?-a_u

alternate: so4 - type 4

rar2-320l-185-3k7-4w-_-unv-bl/db?-a_u

RATIO LED SERIES AREA/SITE LIGHTER	Cat.#	
	Job	
Approvals		

SPECIFICATIONS
Intended Use:
 Low profile LED area/site luminaire with a variety of IES distributions for lighting applications such as retail, commercial and campus parking lots.

Construction:
 • Rectilinear form mimics the traditional shoebox form factor keeping a similar but updated style and appearance, ideal for retrofit applications

• Die-cast housing with hidden vertical heat fins that are optimal for heat dissipation while keeping a clean smooth outer surface

• Corrosion resistant, die-cast aluminum housing with powder coat paint finish

Optics/LED:
 • 80, 160, 320 or 480 midpower LEDs

• Entire optical aperture illuminates to create a larger luminous surface area resulting in a low glare appearance without sacrificing optical performance

• 3000K, 4000K, or 5000K (70 CRI) CCT

• Zero upright at 0 degrees of tilt

• Field rotatable optics

Electrical:
 • Universal 120-277 VAC or 347-480 VAC input voltage, 50/60 Hz

• Ambient operating temperature -40°C to 40°C

• Drivers have greater than 90% power factor and less than 20% THD

• LED drivers have output power over-voltage, over-current protection and short circuit protection with auto recovery

• Field replaceable surge protection device provides 20KA protection meeting ANSI/IEEE C62.41.2 Category C High and Surge Location Category C3; Automatically takes fixture off-line for protection when device is consumed

Controls:
 • Photo control, occupancy sensor and wireless available for complete on/off and dimming control

• 7-pin ANSI C136.41-2013 photocontrol receptacle option available for twist lock photocontrols or wireless control modules (control accessories sold separately)

• 0-10V dimming leads available for use with control devices (provided by others, must specify lead length)

• SiteSync™ wireless control system is available via 7-pin and can be ordered separately. See ordering information and details at: www.hubbellighting.com/sitesync

Installation:
 • Standard square arm mounts

• Optional universal mounting block and round pole adapter also available as accessories

• Knuckle arm fitter option available for 2-3/8" OD tenon. Max tilt of 60 degrees with 4 degree adjustable increments. (Restrictions apply for 7-pin options)

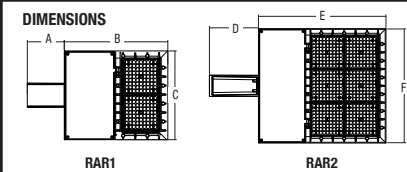
Listings:
 • Listed to UL1598 and CSA C22.2#250.0-24 for wet locations and 40°C ambient temperatures

• 3G rated for ANSI C136.31 high vibration applications

• Fixture is IP66 rated

• Meets ICA recommendations using 3K CCT configuration at 0 degrees of tilt

Warranty:
 Five year limited warranty (for more information visit: <http://www.hubbelloutdoor.com/resources/warranty/>)



A	B	C	D	E	F
5.0"	14.0"	12.0"	7.5"	19.5"	17.39"
127mm	355.6mm	304.8mm	190.5mm	495.3mm	441.7mm

G	H	I	Weight
27.0"	18.2"	3.25"	RAR-1 13.5 lbs (6.12 kgs)
685.8mm	462.8mm	82.5mm	RAR-2 24.0 lbs (10.8 kgs)

RAR-1 EPA@0°	RAR-2 EPA@0°	RAR-1 EPA@30°	RAR-2 EPA@30°
.45 ft. ²	.55 ft. ²	.56 ft. ²	1.48 ft. ²
.13 m ²	.17 m ²	.17 m ²	.45 m ²

SHIPPING INFORMATION

Catalog Number	G.W.(kg)/CTN	Carton Dimensions		
		Length Inch (cm)	Width Inch (cm)	Height Inch (cm)
RAR1	15 (6.8)	20.75 (52.7)	15.125 (38.4)	6.9375 (17.6)
RAR2	19 (8.6)	25 (63.5)	15.125 (38.4)	6.9375 (17.6)

CERTIFICATIONS/LISTINGS

ORDERING INFORMATION - STOCK CONFIGURATIONS

CATALOG NUMBER	LUMENS	WATTAGE	LED COUNT	CCT/CRI	VOLTAGE	DISTRIBUTION	MOUNTING	FINISH
RAR1-100-4K-3	12,000	100W	160L	4000K/70CRI	120-277V	Type 3	Square Arm	Bronze
RAR1-100-4K-4	12,000	100W	160L	4000K/70CRI	120-277V	Type 4W	Square Arm	Bronze
RAR2-140-4K-3	18,000	140W	320L	4000K/70CRI	120-277V	Type 3	Square Arm	Bronze
RAR2-140-4K-4	18,000	140W	320L	4000K/70CRI	120-277V	Type 4W	Square Arm	Bronze
RAR2-165-4K-3	21,000	165W	320L	4000K/70CRI	120-277V	Type 3	Square Arm	Bronze
RAR2-165-4K-4	21,000	165W	320L	4000K/70CRI	120-277V	Type 4W	Square Arm	Bronze

CONFIGURABLE ORDERING INFORMATION NEXT PAGE

Hubbell Outdoor Lighting • 701 Millennium Boulevard • Greenville, SC 29607 • Phone: 864-678-1000
 Due to our continued efforts to improve our products, product specifications are subject to change without notice.
 © 2019 HUBBELL OUTDOOR LIGHTING. All Rights Reserved • For more information visit our website: www.hubbelloutdoor.com • Printed in USA 06/07/2019 RATIO AREA-SPEC

ORDERING INFORMATION

ORDERING EXAMPLE: RAR1-80L-25-3K7-2-UNV-ASQ-BL-NXWE-BC

SERIES	# LEDS WATTAGE	OPTICS ROTATION	COLOR	CONTROL OPTIONS NETWORK	OPTIONS
RAR1 Ratio Area Size 1	80L-25 25W - 3,000 Lumens	Blank for no rotation	BL Black textured	NXWE NX Wireless Enabled (module + radio)	CD Continuous Dimming
	80L-50 50W - 6,000 Lumens	L Optic rotation left	DB Dark bronze textured	NXSPW_F ¹ NX Wireless, PIR Occ. Sensor, Daylight Harvesting	F Fusing
	160L-70 70W - 9,000 Lumens	R Optic rotation right	GT Graphite textured	NXSPW_F ² NX Wireless, PIR Occ. Sensor, Daylight Harvesting	TB Terminal Block
160L-100 100W - 12,000 Lumens			PS Platinum silver smooth	NXSP_F ³ Sensor, Daylight Harvesting	2PF 2 power feed with 2 drivers
RAR2 Ratio Area Size 2	320L-110 110W - 15,000 Lumens	DISTRIBUTION		CONTROL OPTIONS OTHER	
	320L-140 145W - 18,000 Lumens	2 IES TYPE II	UNV Universal 120-277V	SCP_F ⁴ Programmable occupancy sensor	7PR 7-Pin twist lock receptacle
	320L-165 165W - 21,000 Lumens	3 IES TYPE III	120 120V	7PR-SC 7-Pin receptacle with shorting cap	7PR-MD_F ⁵ Low voltage sensor for 7PR
	480L-185 185W - 24,000 Lumens	4W IES TYPE IV	208 208V	7PR-TL 7-Pin PCR with photocontrol	
	480L-210 210W - 27,000 Lumens	5QW IES TYPE V	240 240V		
480L-240 240W - 30,000 Lumens		277 277V	MOUNTING		
		347 347V	ASQ Arm mount for square pole/flat surface		
		480 480V	ASQU Universal Arm mount for square pole/flat surface		
			MOUNTING ROUND POLES		
			A_U ¹ Arm mount for round pole		
			A_U ² Universal arm mount for round point		
			MOUNTING OTHER		
			WB Wall Bracket		
			MAF Mast Arm Fitter for 2-3/8" OD horizontal arm		
			K Knuckle		

¹ Replace "..." with "3" for 3.5"-4.13" OD pole, "4" for 4.18"-5.25" OD pole, "5" for 5.5"-6.5" OD pole
² Replace "..." with "14" for up to 14" mounting height, "30F" for 15-30" mounting height
³ Replace "..." with "8" for up to 8" mounting height, "40F" for 9-40" mounting height
⁴ Summer 2019 Availability

STOCK - ACCESSORIES/REPLACEMENT PARTS - Order Separately

Catalog Number	Description
RARRPA3DB	Round pole adapter 3.5" TO 4.13"
RARA3UDB	Universal mount for square pole or round pole 3.5" to 4.13"

ACCESSORIES/REPLACEMENT PARTS - Order Separately

Catalog Number	Description
RAR-ASQU-XX	Universal arm mount for square pole/flat surface
RAR-A_U-XX	Universal arm mount for round poles
RAR-RPA_XX	Round pole adapter
SETAVP	4" square pole top tenon adapter, 2 3/8" OD slipfitter
RETAVP	4" round pole top tenon adapter, 2 3/8" OD slipfitter for max. Four fixtures (90); order 4" round pole adapters separately
SPIKE	Bird Deterrent
RARWB-XX	Wall Bracket - use with Mast Arm Fitter or Knuckle

¹ Replace "..." with "3" for 3.5"-4.13" OD pole, "4" for 4.18"-5.25" OD pole, "5" for 5.5"-6.5" OD pole
² Replace "..." with "14" for up to 14" mounting height, "30F" for 15-30" mounting height
³ Replace "..." with "8" for up to 8" mounting height, "40F" for 9-40" mounting height
⁴ Summer 2019 Availability

CONTROLS ACCESSORIES - Order Separately

Catalog Number	Description
SW7PR	SiteSync™ on fixture module via 7PR
SWUSB	SiteSync™ Software on USB
SWTAB	SiteSync™ Windows Tablet
SWBRG	SiteSync™ Wireless Bridge Node
SWFC	SiteSync™ Field Commission Serv
SCPREMOTE	Order at least one per project location to program and control
WIR-RME-L	wISCAPE™ external control node; use with 7PR
NXOFM-1R1D-UNV	NX external control node; use with 7PR

MOUNTING



Arm Mount - Fixture ships with integral arm for ease of installation. Compatible with Hubbell Outdoor B3 drill pattern.
MAF - Fits 2-3/8" OD arms Roadway applications.
Knuckle - Knuckle mount 15" aiming angle increments for precise aiming and control, fits 2-3/8" tenons or pipes.
Wall Mount - Wall mount bracket designed for building mount applications.

Hubbell Outdoor Lighting • 701 Millennium Boulevard • Greenville, SC 29607 • Phone: 864-678-1000
 Due to our continued efforts to improve our products, product specifications are subject to change without notice.
 © 2019 HUBBELL OUTDOOR LIGHTING. All Rights Reserved • For more information visit our website: www.hubbelloutdoor.com • Printed in USA 06/07/2019 RATIO AREA-SPEC

type so2: parking area pole - type 2
 type so4: parking area pole - type 4

housing: die cast aluminum, with exterior polyester powder coated finish

location: wet locations at parking lot

mounting: pole mounted, 20'

lamp: 165 watt, led, 21000 lumens delivered, 3000K, 70 cri

driver: integral

manufacturer: hubbell lighting rar2 pole light

alternate: so2 - type 2

rar2-320l-185-3k7-2-_-unv-bl/db?-a_u

alternate: so4 - type 4

rar2-320l-185-3k7-4w-_-unv-bl/db?-a_u

PERFORMANCE DATA

FAMILY	NOMINAL WATTAGE	SYSTEM WATTAGE	DIST. TYPE	5K (5000K nominal, 70 CRI)					4K (4000K nominal, 70 CRI)					3K (3000K nominal, 70 CRI)				
				LUMENS	LPW ¹	B	U	G	LUMENS	LPW ¹	B	U	G	LUMENS	LPW ¹	B	U	G
RAR1	25	25.4	2	3438	135	1	0	1	3445	136	1	0	1	3240	128	1	0	1
			3	3460	136	1	0	1	3467	136	1	0	1	3260	128	1	0	1
			4W	3406	134	1	0	1	3412	134	1	0	1	3209	126	1	0	1
	50	49.8	2	6310	127	1	0	2	6323	127	1	0	2	5946	120	1	0	2
			3	6349	128	1	0	2	6362	128	1	0	2	5983	120	1	0	2
			4W	6233	125	1	0	2	6245	126	1	0	2	5873	118	1	0	2
	70	68.4	2	9486	139	1	0	2	9505	139	1	0	2	8938	131	1	0	2
			3	9544	140	1	0	2	9563	140	1	0	2	8993	131	1	0	2
			4W	9395	137	1	0	2	9414	138	1	0	2	8853	129	1	0	2
	100	90.0	2	11976	133	2	0	2	12000	133	2	0	2	11285	125	2	0	2
			3	12050	134	2	0	2	12074	134	2	0	2	11354	126	2	0	2
			4W	11861	132	2	0	2	11885	132	2	0	2	11177	124	2	0	2
RAR2	110	100.3	2	15210	135	4	0	2	15215	135	4	0	2	14442	144	2	0	3
			3	15421	154	2	0	3	15452	154	2	0	3	14531	145	2	0	3
			4W	15180	151	2	0	2	15210	152	2	0	2	14304	143	2	0	2
	140	133.2	2	19395	146	2	0	3	19434	146	2	0	3	18276	137	2	0	3
			3	19515	147	2	0	3	19554	147	2	0	3	18389	138	2	0	3
			4W	19210	144	2	0	3	19248	145	2	0	3	18101	136	2	0	3
	165	153.6	2	21651	141	3	0	3	21695	141	3	0	3	20402	133	3	0	3
			3	21785	142	3	0	3	21828	142	3	0	3	20527	134	3	0	3
			4W	21444	140	3	0	3	21487	140	3	0	3	20206	132	3	0	3
	185	174.5	2	26046	149	3	0	3	26098	150	3	0	3	24543	141	3	0	3
			3	26207	150	3	0	3	26259	150	3	0	3	24694	142	3	0	3
			4W	25797	148	3	0	4	25849	148	3	0	4	24308	139	3	0	4
210	198.3	2	28848	145	3	0	4	28906	146	3	0	4	27184	137	3	0	4	
		3	29027	146	3	0	4	29085	147	3	0	4	27351	138	3	0	4	
		4W	28572	144	3	0	4	28630	144	3	0	4	26924	136	3	0	4	
240	226.9	2	32087	141	3	0	4	32151	142	3	0	4	30235	133	3	0	4	
		3	32285	142	3	0	4	32350	143	3	0	4	30422	134	3	0	4	
		4W	31780	140	3	0	4	31844	140	3	0	4	29946	132	3	0	4	

1 - Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of the configurations shown. Actual performance may differ as a result of end-user environment and application.

ELECTRICAL DATA

# OF LEDS	Nominal Wattage	Input Voltage	Oper. Current (Amps)	System Power (Watts)
RAR1	25	120	0.21	25.4
		208	0.12	
		240	0.11	
	50	120	0.09	49.8
		208	0.24	
		240	0.21	
	70	120	0.18	68.4
		208	0.57	
		240	0.33	
	100	120	0.29	90.0
		208	0.75	
		240	0.43	
RAR2	110	120	0.38	100.3
		208	0.42	
		240	0.36	
	140	120	0.48	133.2
		208	1.11	
		240	0.64	
	165	120	0.56	153.6
		208	0.48	
		240	0.74	
	185	120	0.64	174.5
		208	0.55	
		240	0.73	
210	120	0.63	198.3	
	208	1.45		
	240	0.84		
240	120	0.73	226.9	
	208	0.83		
	240	0.95		

LUMINAIRE AMBIENT TEMPERATURE FACTOR (LATF)

AMBIENT TEMPERATURE	LUMEN MULTIPLIER
0°C	1.03
10°C	1.01
20°C	1.00
25°C	1.00
30°C	0.99
40°C	0.98
50°C	0.97

Use these factors to determine relative lumen output for average ambient temperatures from 0-40°C (32-104°F).

PROJECTED LUMEN MAINTENANCE

Ambient Temp.	OPERATING HOURS					L70 (hours)
	0	25,000	TM-21-11 L90 36,000	50,000	100,000	
25°C / 77°F	1.00	0.97	0.95	0.93	0.86	238,000
40°C / 104°F	0.99	0.96	0.95	0.93	0.85	225,000



Hubbell Outdoor Lighting • 701 Millennium Boulevard • Greenville, SC 29607 • Phone: 864-678-1000
 Due to our continued efforts to improve our products, product specifications are subject to change without notice.
 © 2019 HUBBELL OUTDOOR LIGHTING, All Rights Reserved • For more information visit our website: www.hubbelloutdoor.com • Printed in USA 06/07/2019 RATIO AREA-SPEC



Hubbell Outdoor Lighting • 701 Millennium Boulevard • Greenville, SC 29607 • Phone: 864-678-1000
 Due to our continued efforts to improve our products, product specifications are subject to change without notice.
 © 2019 HUBBELL OUTDOOR LIGHTING, All Rights Reserved • For more information visit our website: www.hubbelloutdoor.com • Printed in USA 06/07/2019 RATIO AREA-SPEC



lancaster
moble

Molalla Retail Center Transportation Impact Study Molalla, Oregon

Date:

November 10, 2021

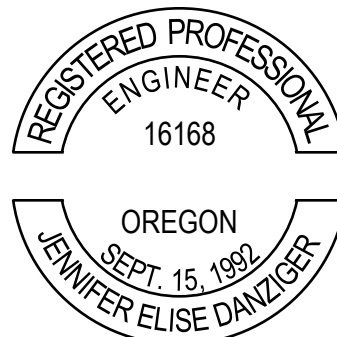
Prepared for:

Retail Capital Partners, LLC

Prepared by:

Myla Cross

Jennifer Danziger, PE



RENEWS: 12/31/2021

Executive Summary	4
Project Description	5
Introduction	5
Location Description	5
Vicinity Streets	6
Study Intersections	7
Transit	7
Site Trips	9
Trip Generation	9
Trip Distribution	10
Trip Assignment	10
Traffic Volumes	12
Existing Conditions	12
Background Conditions	13
Buildout Conditions	13
Planned Improvements	13
Safety Analysis	17
Crash History Review	17
Sight Distance Evaluation	18
Access Spacing	20
Warrant Analysis	20
Operational Analysis	21
Performance Targets	21
Delay & Capacity Analysis	21
Queueing Analysis	23
Drive-Through Queueing Analysis	25
Conclusions	28
Appendix	29



List of Figures

Figure 1: Project Location (image from Google Earth)	6
Figure 2: Vicinity Map	8
Figure 3: Site Trip Distribution & Assignment	11
Figure 4: 2021 Existing Conditions - Traffic Volumes	14
Figure 5: 2023 Background Conditions – Traffic Volumes	15
Figure 6: 2023 Buildout Conditions – Traffic Volumes	16
Figure 7: Site Access Looking North	19
Figure 8: Site Access Looking South	19

List of Tables

Table 1: Roadway Characteristics	6
Table 2: Vicinity Intersection Descriptions	7
Table 3: Trip Generation – Coffee Shop + Fast-Food Restaurant	9
Table 4: Crash Type Summary	17
Table 5: Crash Severity and Rate Summary	17
Table 6: Capacity Analysis Summary	22
Table 7: 95 th Percentile Queueing Analysis Summary	24
Table 8: Coffee Drive-Through Queueing Observations	26
Table 9: Restaurant Drive-Through Queueing Observations	27

Executive Summary

1. The proposed project intends to develop the 1.01-acre site, Tax Lot 52E07A 0240, with a 2,140-square-foot (SF) coffee shop with a drive-through window and a second building at 3,000 SF that could be a quick service restaurant with drive-through window or a small retail store. The project intends to take access via a single, two-way driveway along OR 213 at approximately the same location opposite the south driveway serving the Les Schwab on the west side of the highway. The existing zoning is classified as Central Commercial (C-2) which is consistent with the proposed development.
2. The trip generation calculations show that the proposed project is estimated to have a total trip generation of 318 morning peak hour trips, 182 evening peak hour trips, and 2,544 daily trips. Pass-by trips are estimated at 234 morning peak hour trips, 128 evening peak hour trips, and 1,730 daily trips. The resulting primary trip generation is estimated at 84 morning peak hour trips, 54 evening peak hour trips, and 814 daily trips. Detailed calculations are attached to this memo.
3. The intersection of OR 213 & Toliver Road was identified as having a significant crash rate. A roundabout is planned for construction at OR 213 & Toliver Road in 2023 to improve safety at this intersection.
4. The available sight lines will exceed the 415-foot intersection sight distance recommendation after the existing foliage on the project site is removed.
5. All study intersections are projected to operate at an acceptable v/c ratio less than 0.90 per ODOT standards upon buildout of the proposed development through year 2023, after the construction of a roundabout at the OR 213 & Toliver Road intersection.
6. Queuing analysis results show the storage lanes on the highway are adequate to accommodate anticipated the 95th percentile queues with the proposed development.
7. Although some queuing could be present within the site with the development of both a coffee shop and a quick-service restaurant, the queues are not likely to significantly interfere with the flow of traffic on site or impact the highway operations.
8. The drive-through lanes should have adequate storage to accommodate likely queues.



Project Description

Introduction

The property located at 31330 Highway 213 in Molalla, Oregon has been proposed for development with a 2,140-square-foot (SF) coffee shop with a drive-through window and a second building at 3,000 SF that could be a quick service restaurant with drive-through window or a small retail store.

This report examines the traffic impacts of the proposed development on the transportation system in the vicinity of the project site. Based on correspondence with the City of Molalla and ODOT staff this report conducts safety and capacity/level of service analyses at the following two (2) intersections and five (5) driveway accesses along the OR 213 corridor:

1. OR 213 & Toliver Road
2. OR 213 & Tractor Supply Co. driveway
3. OR 213 & Les Schwab north driveway
4. OR 213 & Les Schwab south driveway/proposed site access
5. OR 213 & Safeway shopping center north driveway
6. OR 213 & Safeway shopping center south driveway
7. OR 213 & OR 211

All supporting data and calculations are included in the appendix to this report.

Location Description

The proposed project intends to develop the 1.01-acre site, Tax Lot 52E07A 0240, with a 2,140-square-foot (SF) coffee shop with a drive-through window and a second building at 3,000 SF that could be a quick service restaurant with drive-through window or a small retail store. The project intends to take access via a single, two-way driveway along OR 213 at a location opposite the south driveway serving the Les Schwab Tire store on the west side of the highway. The existing zoning is classified as Central Commercial (C-2), which is consistent with the proposed development.

Figure 1 displays a vicinity map of the project site, with the project site outlined in red. A site plan depicting the proposed project is provided in the appendix.

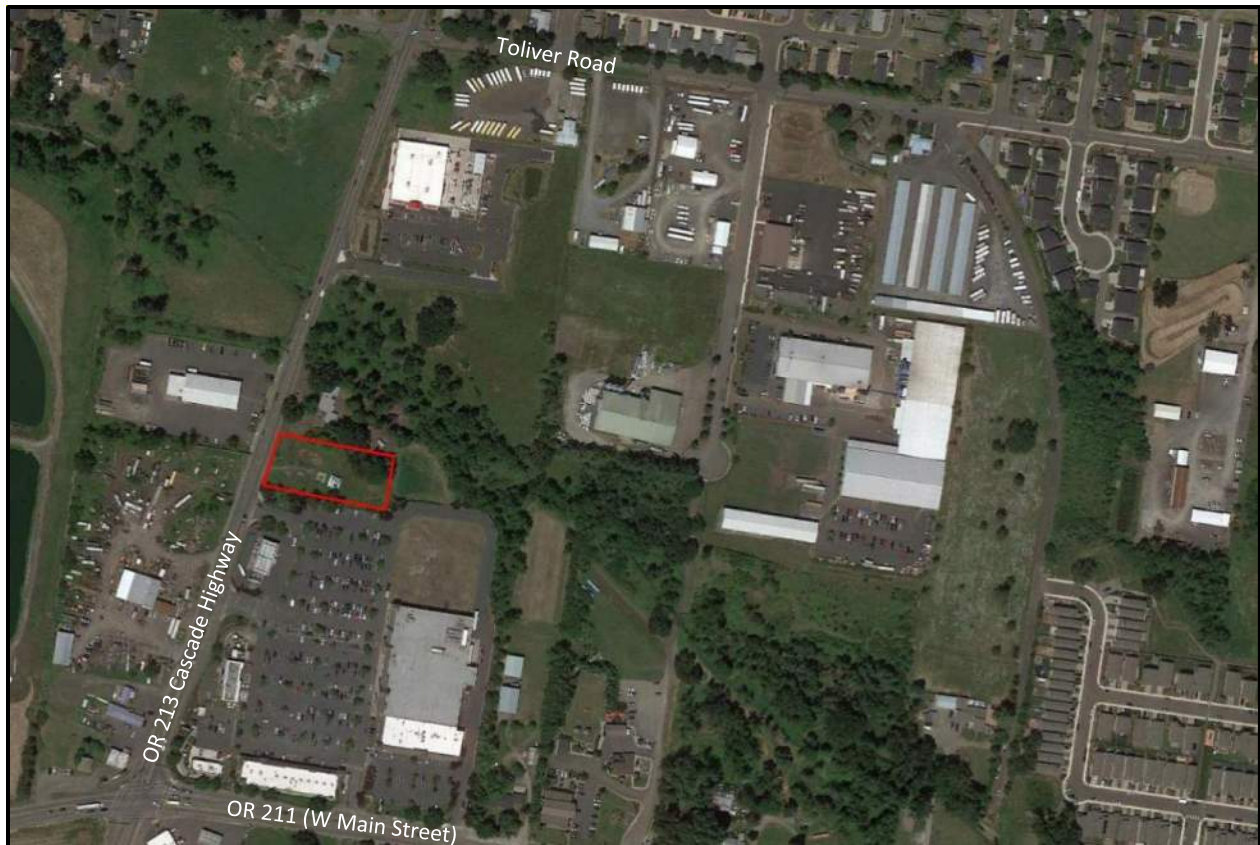


Figure 1: Project Location (image from Google Earth)

Vicinity Streets

The study area includes three roadways expected to be impacted by the proposed development. Table 1 provides a description of each of the vicinity roadways.

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	East of Kennel Avenue	Partial both sides
OR 213	ODOT	Arterial & District Hwy	2-3	35 mph	Partial both sides	None	Partial both sides
Toliver Road	City of Molalla	Major Collector	2	25-35 mph	Continuous south side, partial north side	None	Partial Shared-Use path south side

Notes: Functional Classification based on the Molalla Transportation System Plan (TSP) Update

Study Intersections

Through coordination with the City of Molalla and ODOT, seven (7) study intersections were identified for evaluation. The existing characteristics of these intersections are summarized in Table 2.

Table 2: Vicinity Intersection Descriptions

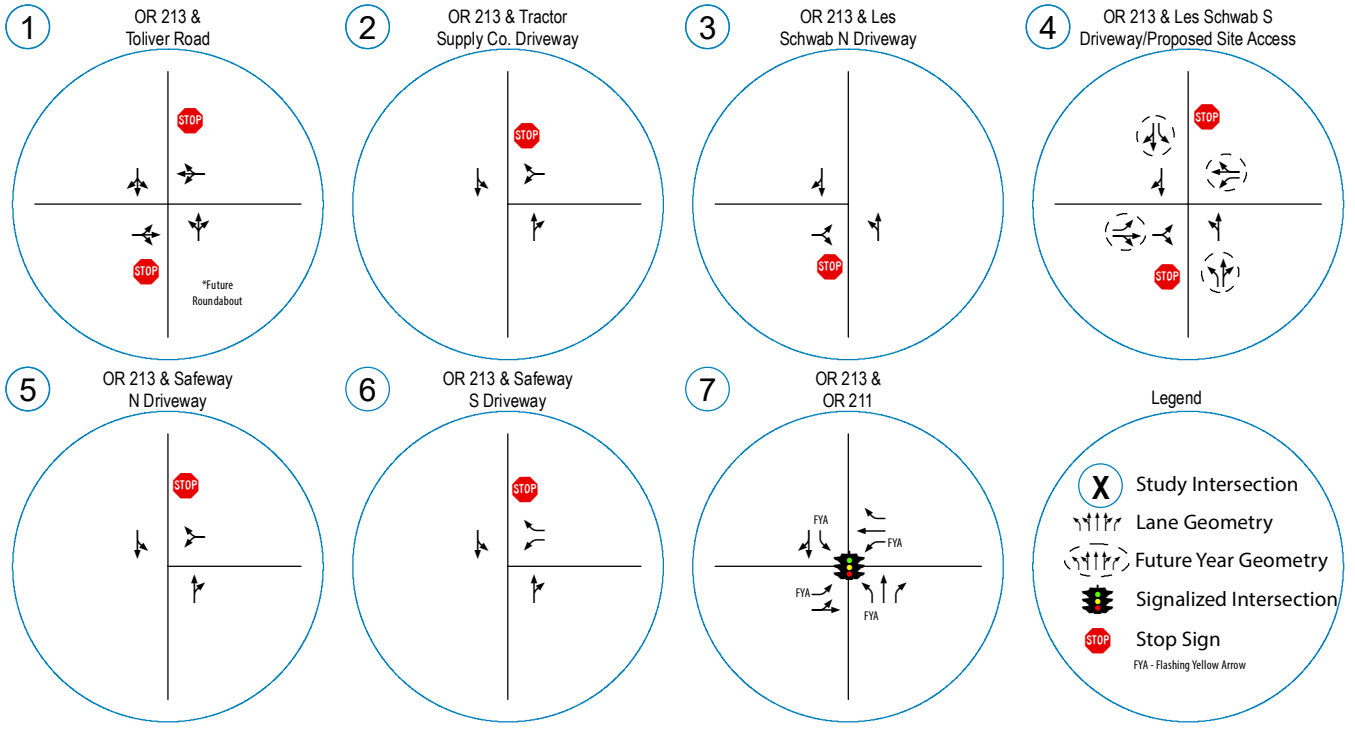
	Intersection	Geometry	Traffic Control	Phasing/Stopped Approaches
1	OR 213 & Toliver Road	4-Leg	Stop Controlled	EB/WB Stop Controlled Future Roundabout
2	OR 213 & Tractor Supply Co. Driveway	3-Leg	Stop Controlled	WB Stop Controlled
3	OR 213 & Les Schwab North Driveway	3-Leg	Stop Controlled	EB Stop Controlled
4	OR 213 & Les Schwab South Driveway/Proposed Site Access	4-Leg	Stop Controlled	EB/WB Stop Controlled
5	OR 213 & Safeway Shopping Center North Driveway	3-Leg	Stop Controlled	WB Stop Controlled
6	OR 213 & Safeway Shopping Center South Driveway	3-Leg	Stop Controlled	WB Stop Controlled
7	OR 213 & OR 211	4-Leg	Signalized	Protected/Permitted Left Turn for All Approaches

A vicinity map showing the project site, vicinity streets, and intersection configurations is shown in Figure 2.

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 1/4-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

Trip Generation

To estimate the number of trips that will be generated by the existing and proposed uses, trip rates from the *Trip Generation Manual*¹ were used. Data from the following land use code (LUC) 937, Coffee/Donut Shop with Drive-Through Window, was used to estimate site trip generation based on the gross floor area. For the second building, a worst-case trip generation option was assumed using LUC 934, Fast-Food Restaurant with Drive-Through window.

The proposed development is expected to significantly attract pass-by and diverted trips to the site. Pass-by trips are trips that leave the adjacent roadway to patronize a land use and then continue in their original direction of travel. Like pass-by trips, diverted trips are trips that divert from a nearby roadway not adjacent to the site to patronize a land use before continuing to their original destination.

Pass-by rates were determined by referencing new data from in the 11th edition of the *Trip Generation Manual*. For the coffee shop use, data is not available for LUC 937, but is available for a similar use, LUC 938, Coffee Shop with Drive-Through Window and No Indoor Seating. For the fast-food restaurant option, data is available.

The resulting trip generation is shown in Table 3. Detailed calculations are attached to this memo.

Table 3: Trip Generation – Coffee Shop + Fast-Food Restaurant

Description	Intensity (KSF)	Morning Peak Hour			Evening Peak Hour			Daily Trips
		In	Out	Total	In	Out	Total	
Coffee/Donut Shop with Drive-Through Window (ITE Code 937)								
External Trips	2.14	94	90	184	42	41	83	1,142
<i>Pass-by Trips (90%, 90%, 90%)¹</i>		83	83	166	37	37	74	1,028
Primary Site Trips		11	7	18	5	4	9	114
Fast-Food Restaurant with Drive-Through Window (ITE Code 934)								
External Trips	3	68	66	134	50	49	99	1,402
<i>Pass-by Trips (50%, 55%, 50%)²</i>		34	34	68	27	27	54	702
Primary Site Trips		34	32	66	23	22	45	700
Total Site								
External Trips	5.14	162	156	318	92	90	182	2,544
<i>Pass-by Trips</i>		117	117	234	64	64	128	1,730
Primary Site Trips		45	39	84	28	26	54	814

Table Notes:

1. Pass-by rates are based on LUC 938, Coffee with Drive-Through and No Indoor Seating. Daily is assumed to be same as morning. Evening is also assumed to be same as morning for more conservative estimate.
2. Daily pass-by rate is assumed to be same as morning.

¹ Institute of Transportation Engineers (ITE), *Trip Generation Manual*, 11th Edition, 2021.



As shown in Table 3, the trip generation calculations for a Coffee Shop + Fast-Food Restaurant show that the proposed development would have a total trip generation of 318 morning peak hour trips, 182 evening peak hour trips, and 2,544 daily trips. Pass-by trips are estimated at 234 morning peak hour trips, 128 evening peak hour trips, and 1,730 daily trips. The resulting primary trip generation is estimated at 84 morning peak hour trips, 54 evening peak hour trips, and 814 daily 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. The following trip distribution was assumed for primary trips:

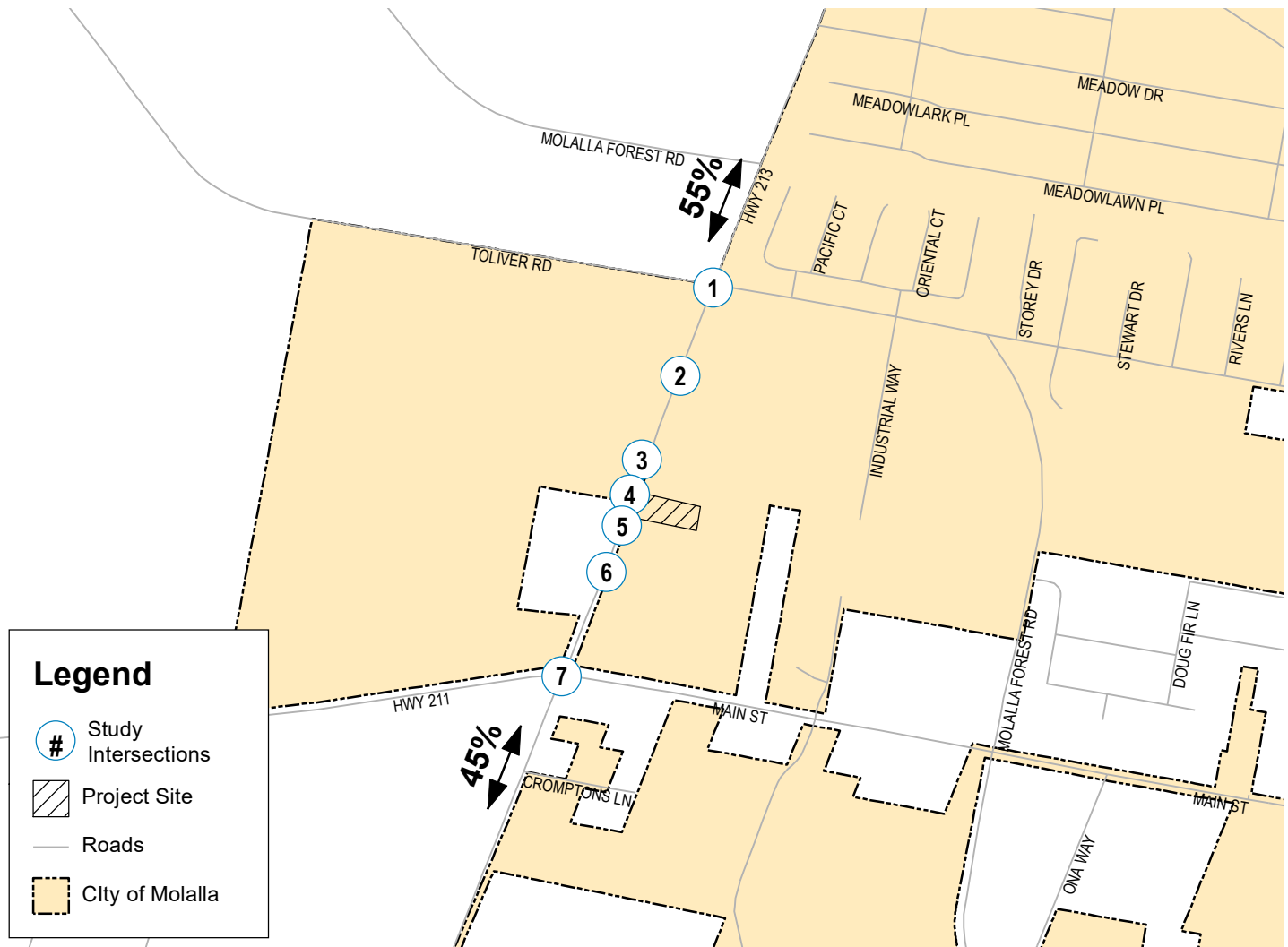
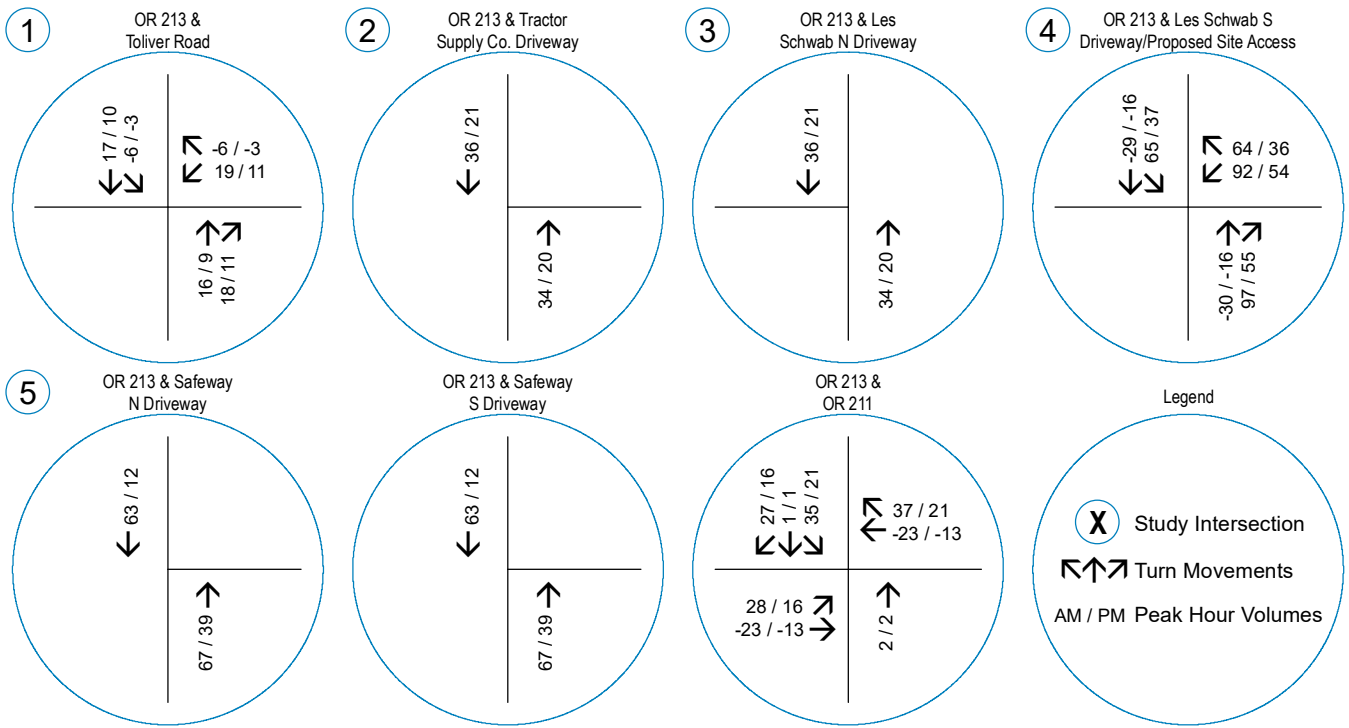
- Approximately 55 percent of trips will travel to/from the north along Highway 213
 - Approximately 10-15 percent will travel to/from the north on Highway 213
 - Approximately 10-15 percent will travel to/from the northern neighborhoods and local streets
 - Approximately 30 percent will travel to/from the east on Toliver Road
- Approximately 45 percent of trips will travel to/from the south along Highway 213
 - Approximately 10 percent of trips will travel to/from the west along Highway 211
 - Approximately 30 percent of trips will travel to/from the east along Highway 211
 - Approximately 5 percent of trips will travel to/from the south along Highway 213

The following trip distribution was assumed for pass-by/diverted trips:

- Approximately 25 percent of trips will pass by northbound from Highway 213
- Approximately 25 percent of trips will pass by southbound from Highway 213
- Approximately 20 percent of trips will divert from eastbound Highway 211
- Approximately 20 percent of trips will divert from westbound Highway 211
- Approximately 5 percent of trips will divert from westbound Toliver Road/northbound Highway 213
- Approximately 5 percent of trips will divert from southbound Highway 213/eastbound Toliver Road

Trip Assignment

The trip distribution and assignment for the total site trips generated during the morning and evening peak hours are shown in Figure 3. A detailed distribution and assignment by trip type are included in the appendix.



Traffic Volumes

Existing Conditions

Due to the ongoing COVID-19 viral pandemic, traffic volumes have been depressed relative to normal conditions since mid-March 2020. Under these conditions, traditional traffic count data collection methods are not recommended. Therefore, the following methodology was used to adjust historical traffic counts at the study intersections to estimate year 2021 traffic conditions without the influence of COVID-19:

- New turning movement counts were collected on Thursday, October 28, 2021, at the five driveways in the corridor and Tuesday, September 21, 2021, at the intersection of OR 213 at OR 211.
- Historical turning movement counts from Tuesday, October 15, 2019, were obtained at the intersection of OR 213 at OR 211 and from Wednesday, January 17, 2018, at the intersection of OR 213 at Toliver Road.
- A growth rate for the study area traffic was derived using ODOT's 2039 Future Volume Table, in accordance with ODOT's *Analysis Procedures Manual*. Averaging data corresponding to mileposts 16.08 and 16.12 of ODOT highway number 160 (OR 213) and mileposts 11.26 and 12.14 of ODOT highway number 161 (OR 211) resulted in a linear growth factor of 2.22 percent per year. This factor was applied to all historical turning movements to account for growth of two or three years.
- Traffic volumes on the highways were seasonally adjusted to reflect the 30th highest hour of traffic, per procedures described in ODOT's *Analysis Procedures Manual*. Using the ODOT's Seasonal Trend Table², seasonal adjustment factors based on the Commuter seasonal trend. The factors used are:
 - Commuter Adjustment for 10/28/21 Counts: 1.0623
 - Commuter Adjustment for 9/21/21 Counts: 1.0286
 - Commuter Adjustment for 10/9/19 Counts: 1.0266
 - Commuter Adjustment for 1/17/18 Counts: 1.1624
- At the intersection of the two highways, the seasonally adjusted and growth adjusted 2019 counts were compared to the seasonally adjusted 2021 counts to establish a COVID-19 adjustment factor. A total adjustment of 1.165 and 1.121 was applied to all intersection turning movements for the morning and evening peak hours, respectively.
- At the five driveways, all turning movements were seasonally adjusted and the through movements were balanced with the traffic at the intersection of OR 213 at OR 211. In the morning, this resulted in through traffic volumes that were 8-10 percent higher in the morning and 20-22 percent higher in the evening compared with volumes measured in 2021 under pandemic conditions.
- At the intersection of OR 213 at Toliver Road, the seasonal adjustments were applied to all movements and then volumes were grown by a factor of 1.151 in the morning and 1.115 in the evening to balance with the estimated highway volumes to/from the driveway to the south.

² ODOT Seasonal Trend Table (Updated 7/20/2021)

Figure 4 shows the year 2021 existing traffic volumes at the study intersections during the morning and evening peak hours.

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. Although buildout is targeted to be completed in 2022, an analysis year of 2023 was evaluated to provide a conservative estimate of traffic conditions.

For the general background growth, the annual growth rate of 2.26 percent per year was applied to the adjusted year 2021 existing traffic volumes. This growth rate was derived from ODOT's 2039 Future Volume Table, as described above.

In addition to the general growth, three nearby developments that are approved but not yet constructed at the time of the traffic counts were included as in-process traffic:

1. Hezzie Lane Subdivision
2. Cascade Center
3. Colima Apartments

Trips from the Cascade Center and Colima Apartments were taken directly from the Transportation Impact Studies prepared for those projects. The Hezzie Lane Subdivision was not required to prepare a TIS. For this project, the trip generation was calculated using the ITE manual. The trip assignments for these developments were added to the general growth to estimate the year 2023 background volumes shown in Figure 5 for the study intersections during the morning and evening peak hours.

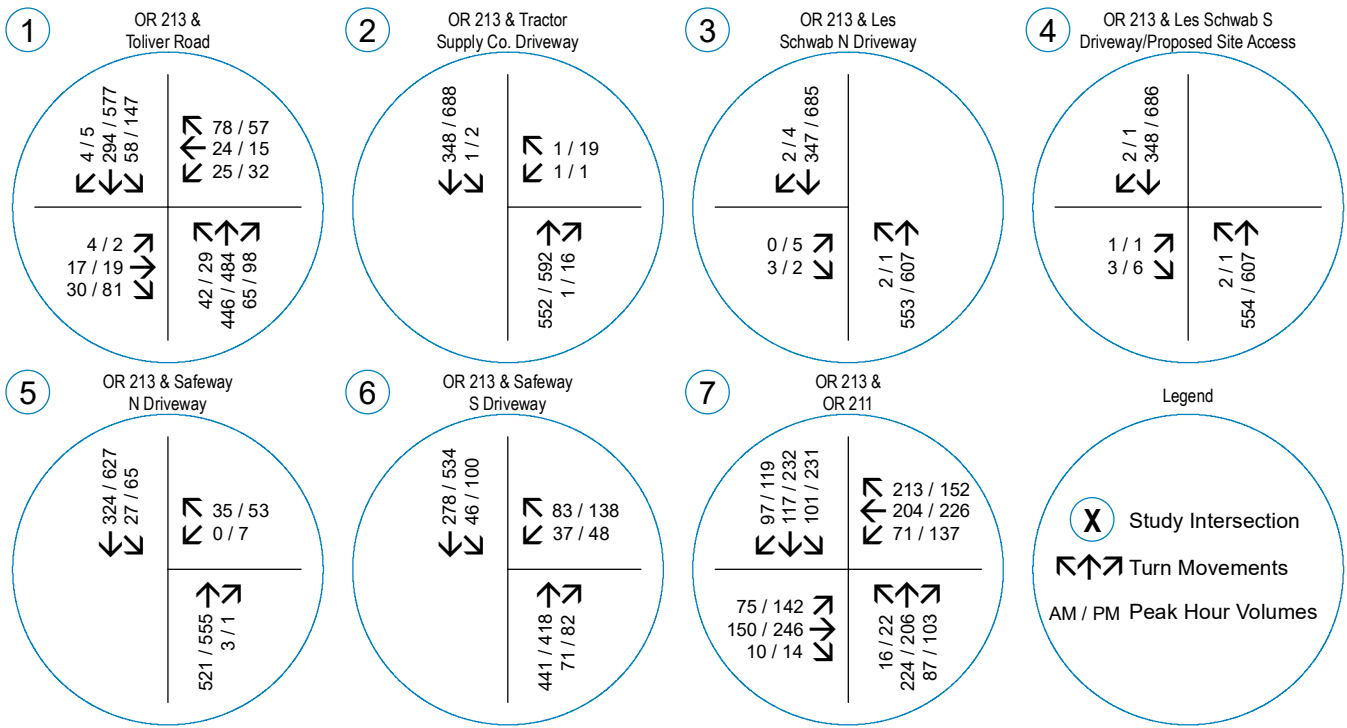
The intersection of OR 213 & Toliver Road, which is currently stop-controlled, has been identified by ODOT as having a crash rate within the top 10 percent of all highway segments in the state. According to the ODOT website, a roundabout is scheduled to be constructed in 2023 to help address these safety concerns. Therefore, this intersection change was assumed under the Year 2023 Background conditions.

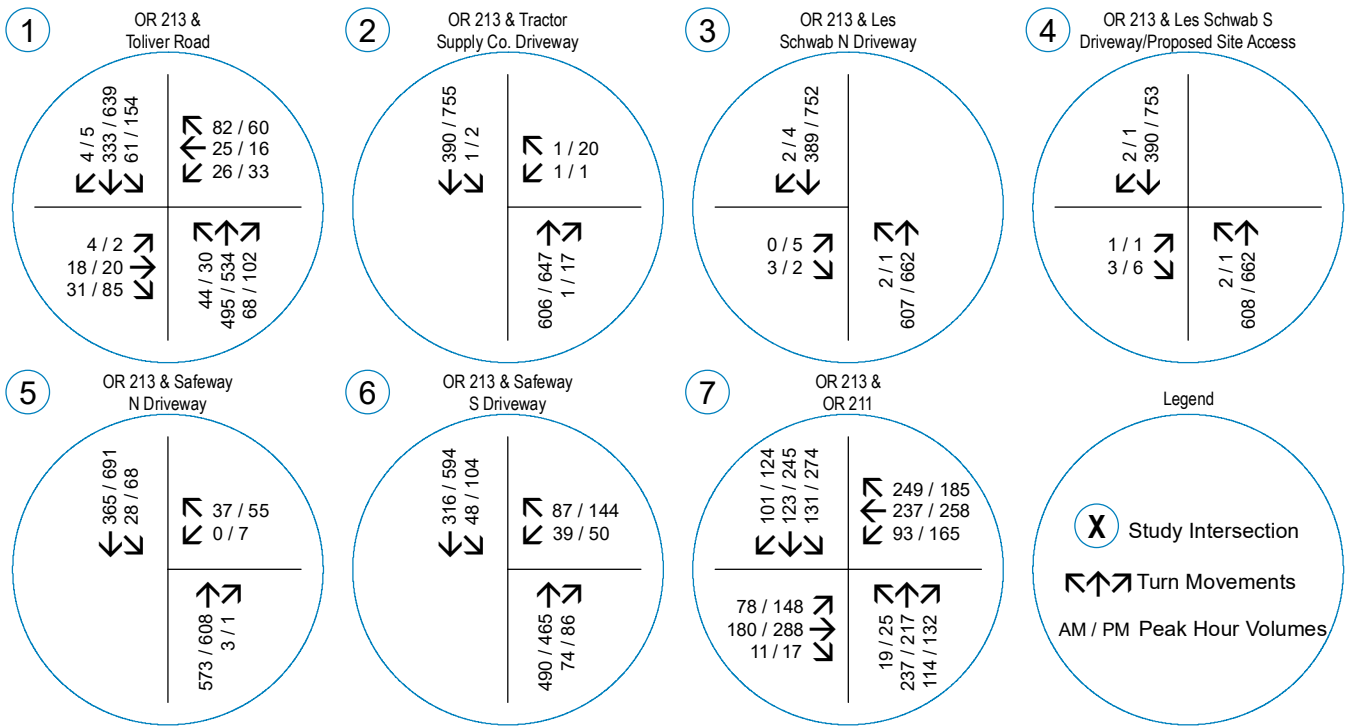
Buildout Conditions

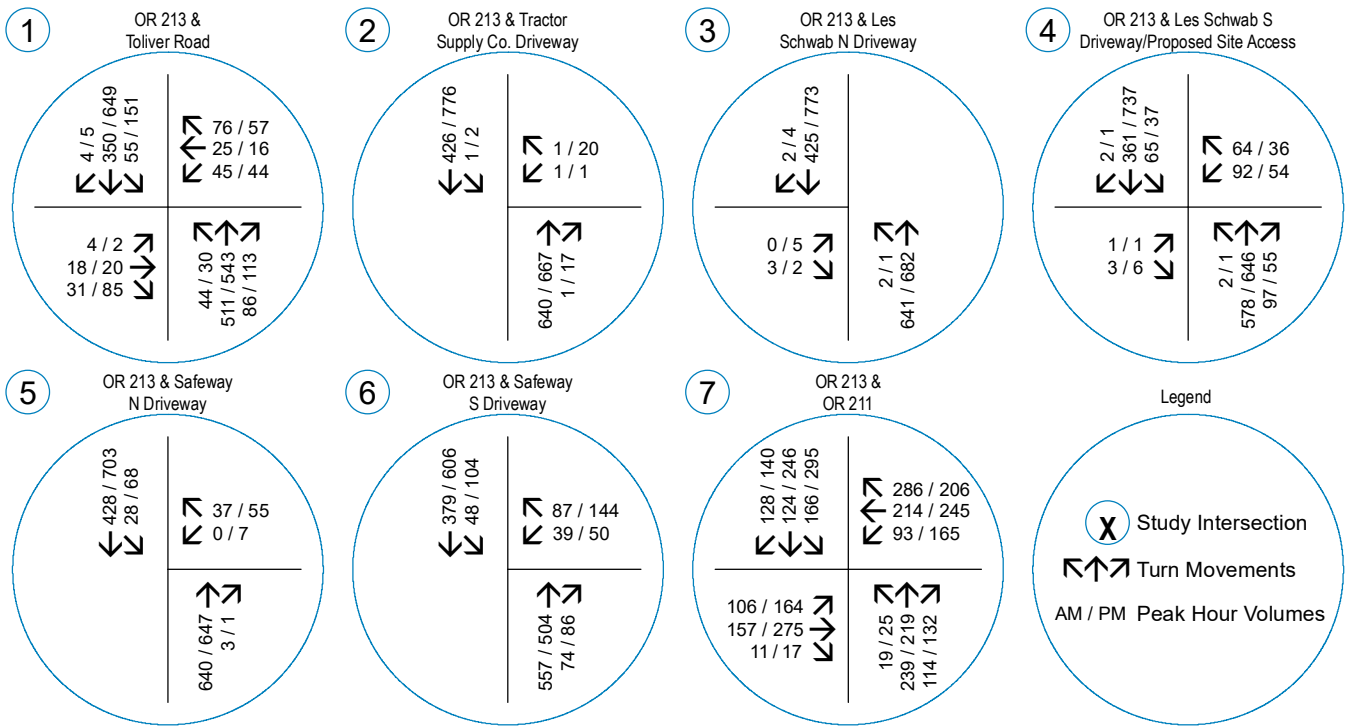
Peak hour trips calculated to be generated by the proposed development, as described earlier within the *Site Trips* section, were added to the year 2023 background volumes to obtain the expected Year 2023 buildout conditions. Figure 6 shows the resulting year 2023 buildout traffic volumes at the study intersections during the morning and evening peak hours.

Planned Improvements

A roundabout at the intersection of OR 213 and Toliver Road is currently in the design phase and construction will begin in 2023. The roundabout was assumed to be in place for the background and buildout conditions.







Safety Analysis

Crash History Review

Using data obtained from ODOT’s Crash Data System, five years of the most recent available crash history (January 2015 through December 2019) were reviewed for 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:

- *PDO* – Property Damage Only
- *Injury C* – Possible Injury
- *Injury B* – Suspected Minor Injury
- *Injury A* – Suspected Serious Injury
- *Fatality*

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 5 summarizes crash severities and rates for each of the study intersections. Detailed crash data is provided in the appendix to this report.

Table 4: Crash Type Summary

Intersection	Crash Type								Total Crashes
	Turn	Rear End	Angle	Side swipe	Fixed Object	Parked Vehicle	Ped	Bike	
1 OR 213 & Toliver Rd	5	11	6	0	1	1	3	0	27
6 OR 213 & Safeway South	1	0	0	0	0	0	0	0	1
7 OR 213 & OR 211	10	7	3	2	0	0	0	0	22

* No crashes associated with the site frontage and existing access were identified for the site.

Table 5: Crash Severity and Rate Summary

Intersection	Severity					Total Crashes	Est. ADT	Crash Rate	90 th % Rate
	PDO	C	B	A	Fatal				
1 OR 213 & Toliver Rd	5	13	8	1	0	27	15,000	0.986	0.408
6 OR 213 & Safeway South	0	1	0	0	0	1	15,000	0.037	0.293
7 OR 211 & OR 213	15	5	2	0	0	22	19,180	0.629	0.860

* OR 213 & Toliver Road is identified in worst 5% of 2019 SPIS database



One reported crash was classified as *Injury A* at the intersection of OR 213 & Toliver Road. The collision occurred when a northwest bound passenger vehicle struck a southwest bound passenger vehicle. The driver of the striking vehicle was reported to have disregarded the stop sign. The driver and two of the four passengers of the struck vehicle did not sustain any injuries, the other two passengers sustained Injury A and Injury B injuries, respectively. The driver of the striking vehicle did not sustain any injuries. The collision occurred during clear, dry, daytime conditions.

ODOT 90th Percentile Crash Rates

Evaluation of the study intersections adheres 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. The 90th percentile rates are shown in Table 5.

The intersection of OR 213 & Toliver Road was identified as having a crash rate of 0.986 CMEV during the five-year study period, exceeding ODOT 90th percentile crash rate of 0.408 CMEV for similar intersections. The planned construction of a roundabout to the intersection, as described above, is expected to improve safety conditions, and reduce the crash rate.

Sight Distance Evaluation

A sight distance analysis was conducted at the site access driveway. To evaluate the sight distance available at these intersections, intersection sight distance was measured and recommended in accordance with the current AASHTO manual³. 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.

A field investigation was conducted on Monday afternoon, September 28th, 2021, to measure sight distance for this location. Figure 7 and Figure 8 display sight distance viewpoints from the future site access driveway for the northbound and southbound approaches, respectively. Sight distance was measured to exceed 415 feet north and south of the site access when the existing foliage on the project site is removed. Sufficient sight distance will be maintained by the proposed development by keeping clear sight distance triangles for this approach including structures and planted foliage.

³ American Association of State Highway and Transportation Officials (AASHTO), *A Policy on Geometric Design of Highways and Streets*, 7th Edition, 2018.



Figure 7: Site Access Looking North



Figure 8: Site Access Looking South

Access Spacing

According to Table 16 of the OHP, for district highways in urban areas with average daily traffic volumes greater than 5,000 AADT, the access spacing standard is 350 feet measured centerline to centerline on the same side of the street.

On OR 213 northbound, the site access is proposed to be located approximately 155 feet north of the northern access serving the Safeway Shopping Center and approximately 80 feet south of an access for a property currently occupied by a single-family residence.

Although the proposed driveway location will not meet ODOT's 350-foot spacing standard, the proposed location aligns opposite the southern driveway serving the Les Schwab Tire store, which will improve safety by reducing the potential for conflicts between the driveways. At the same time, it maximizes the distance from the northern shopping center driveway. With these actions, "spacing and safety will be improved by moving in the direction of the spacing standards described in Table 16."

Warrant Analysis

Traffic Signal Warrants

Preliminary traffic signal warrants were examined for all of the unsignalized study intersections, with the exception of OR 213 at Toliver Road, to determine whether the installation of a new traffic signal will be warranted at the intersections by the project buildout year 2023. A roundabout will be constructed at the OR 213 at Toliver Road intersection thus no warrant was analyzed. Based on the preliminary analysis, traffic signal warrants are not projected to be met for any of the unsignalized study intersections. Accordingly, no signalization of the unsignalized study intersections is necessary or recommended.

Left-Turn Lane Warrants

The proposed site access will utilize the existing center refuge lane; therefore, left-turn lane warrants were not assessed.

Right-Turn Lane Warrants

Right-turn lane warrants were examined the site access using the ODOT methodology. These turn-lane warrants were evaluated based on the number of right-turning vehicles, the number of advancing vehicles, and the roadway travel speed.

Projected volumes for the site indicate a northbound right-turn lane could be considered for the site access; however, installation of a right-turn lane is not feasible given the short site frontage and proximity to the driveway to the south. According to Figure 8-8 of the ODOT Highway Design Manual, the deceleration distance should be 175 feet for a 35-mph design speed plus a minimum 50 feet of storage. The spacing between driveways would not allow for sufficient taper and deceleration length without impacting the northern shopping center driveway. With a bike lane present on the highway, a taper is not recommended either. Therefore, a right-turn deceleration lane is not recommended.

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 6th Edition* (HCM6)⁴. 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 the Synchro which applies the HCM6 methodologies. The analysis for the Year 2023 background and buildout conditions for the intersection of OR 213 at Toliver Road was performed using Sidra, and the roundabout intersection change was included.

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 213 and OR 211 are District Highways located in the City's Urban Growth Boundary with speed limits between 35 and 45 mph, the target maximum allowable v/c ratio is 0.90.⁵

Delay & Capacity Analysis

Results of the analysis are shown in Table 6. Detailed reports are provided in the appendix.

As shown, all study intersections are projected to operate within ODOT standards under all analysis scenarios. Although the OR 213 & Toliver Road intersection is approaching substandard operations in the evening peak hour under existing conditions, future operations with the roundabout will meet the ODOT mobility target.

⁴ Transportation Research Board, *Highway Capacity Manual 6th Edition*, 2016.

⁵ Oregon Department of Transportation, 1999 Oregon Highway Plan, Including amendments November 1999 through May 2015, 1999.

Table 6: Capacity Analysis Summary

Intersection & Scenario	Morning Peak Hour			Evening Peak Hour		
	LOS	Delay (s)	V/C	LOS	Delay (s)	V/C
1. OR 213 & Toliver Road						
2021 Existing Condition	D	32	0.53	F	146	0.96
2023 Background Condition	A	8	0.54	B	12	0.71
2023 Buildout Condition	A	8	0.57	B	13	0.72
2. OR 211 & Tractor Supply Co. Driveway						
2021 Existing Condition	C	16	0.01	B	14	0.05
2023 Background Condition	C	17	0.01	B	15	0.06
2023 Buildout Condition	C	18	0.01	C	16	0.06
3. OR 213 & Les Schwab N Driveway						
2021 Existing Condition	B	11	0.01	D	25	0.04
2023 Background Condition	B	11	0.01	D	29	0.05
2023 Buildout Condition	B	11	0.01	D	31	0.05
4. OR 213 & Les Schwab S Driveway/Site Access						
2021 Existing Condition	B	13	0.01	C	16	0.02
2023 Background Condition	B	14	0.01	C	18	0.3
2023 Buildout Condition	C	24	0.49	C	23	0.33
5. OR 213 & Safeway N Driveway						
2021 Existing Condition	B	13	0.08	B	14	0.13
2023 Background Condition	B	14	0.09	B	15	0.15
2023 Buildout Condition	B	15	0.10	C	15	0.16
6. OR 213 & Safeway S Driveway						
2021 Existing Condition	B	13	0.17	C	17	0.23
2023 Background Condition	B	14	0.19	C	18	0.26
2023 Buildout Condition	C	15	0.21	C	18	0.28
7. OR 213 & OR 211						
2021 Existing Condition	B	17	0.49	B	20	0.65
2023 Background Condition	B	19	0.55	C	23	0.74
2023 Buildout Condition	C	22	0.57	C	23	0.76

BOLDED results indicate operation above acceptable jurisdictional standards.



Queueing Analysis

In accordance with the ODOT Analysis Procedures Manual (APM), an analysis of projected queueing was conducted for the study intersections. To determine the expected queueing which may form at critical study intersection turning movements, the analysis was conducted using the Synchro/SimTraffic software (version 10.3.122.0), with the reported values representing 95th percentile queue lengths. 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 projected 95th percentile queue lengths reported in the simulation for the 2023 background and buildout conditions are presented in Table 7 for the morning and evening peak hours. Reported queue lengths were rounded up to the nearest 25 feet, equivalent to an average vehicle length. Five trial runs of the simulation were conducted. Detailed queueing analysis worksheets are included in the appendix to this report.

The results of the simulation show that all turn lanes on the highway can accommodate the estimated queues.

The queueing simulation shows 95th percentile queues on site that would block the exit from the coffee drive-through lane during the morning and evening peak hours. However, two aspects of the site geometry and operation are not reflected in the queueing results.

1. The SimTraffic software cannot simulate a two-stage left-turn movement, where vehicles turning left out of the site driveway would initially turn into the center median before merging with the southbound traffic. The opportunity to make this movement would measurably reduce the delays and queues for the site driveway. The HCM6 analysis estimates a 95th percentile queue of two to three vehicles which is 50 to 75 feet when the two-stage left-turn is included. This result indicates that the queues might still occasionally extend past the exit to the drive-through but with much less frequency and much shorter duration.
2. The coffee drive-through lane has storage for one vehicle between the service window and the drive aisle. If a vehicle exiting the drive-through lane is temporarily blocked from turning into the drive aisle, it can still pull forward to allow the next vehicle to be served. And, since the coffee shop will generate more than half of the site traffic, a three-vehicle 95th percentile queue is likely to include a vehicle exiting from the coffee drive-through lane anyway.

In conclusion, although some queueing could be present at the site exit with the development of both a coffee shop and a quick-service restaurant, the queues are not likely to significantly interfere with the flow of traffic on site or impact the highway operations.

Table 7: 95th Percentile Queueing Analysis Summary

Intersection/Movement	Available Storage (ft)	2023 Background Queue (ft)		2023 Buildout Queue (ft)	
		AM	PM	AM	PM
1. OR 213 & Toliver Road					
NB Approach	525	125	200	125	225
SB Approach	590	50	200	75	200
EB Approach	175	25	25	25	25
WB Approach	325	25	25	25	25
2. OR 213 & Tractor Supply					
WB Approach	50	<25	50	<25	50
3. OR 213 & Les Schwab N					
EB Approach	50	<25	25	<25	25
4. OR 213 & Les Schwab S/Proposed Site Access					
SB Left-Turn Lane	150	-	-	75	50
EB Approach	50	25	25	25	25
WB Approach	50	-	-	125	100
5. OR 213 & Safeway N					
SB Left-Turn Lane	175	50	75	50	75
WB Approach	100	75	75	50	75
6. OR 213 & Safeway S					
SB Left-Turn Lane	265	50	75	50	75
WB Left-Turn Lane	85	50	50	50	75
WB Right-Turn Lane	85	75	75	75	75
7. OR 213 & OR 211					
NB Left-Turn Lane	250	25	50	25	50
NB Right-Turn Lane	260	50	50	50	75
SB Left-Turn Lane	310	125	225	175	275
EB Left-Turn Lane	260	75	125	100	150
WB Left-Turn Lane	235	125	125	100	150
WB Right-Turn Lane	230	150	100	150	125

BOLDED text indicates queue extends beyond available lane storage.



Drive-Through Queuing Analysis

The proposed coffee shop will include a drive-lane in the development's design. If the second part of the site is developed with a quick-service restaurant, it could have a drive-through lane as well. Queuing observations from other similar facilities were used to estimate the expected queuing.

Coffee Drive-Through Lane

To estimate potential drive-through queuing which may occur at the site, queuing observations were conducted at the drive-through lanes of two existing Starbucks coffee shops. Both facilities surveyed are located in urban settings within or near shopping centers, have indoor seating areas, are located along a major roadway, and have a single drive-thru lane. The specific coffee kiosks observed include the following:

- 1510 NE 122nd Avenue in Portland, Oregon.
- 2995 SE 75th Avenue in Hillsboro, Oregon.

Video footage at each of the facilities was collected on Tuesday, August 3, 2021, and reviewed between the hours of 7:00 AM to 10:00 AM, which is the expected peak timeframe of queuing for coffee shops.

Note that video footage at a third Starbucks location, 2521 SE Tualatin Valley Highway in Hillsboro, Oregon, was recorded; however, due to poor video quality data from this location data could not be utilized. Instead, data from a Black Rock coffee shop, located at 13721 SE Mill Plain Boulevard in Vancouver, Washington and collected on Wednesday, April 14, 2021, was used for comparative purposes to estimate potential queuing. Although this particular Black Rock coffee shop is a coffee kiosk with two drive-thru windows, the use of data from this particular facility would be applicable to the proposed Starbucks for the following reasons:

- At the time of data collection, only one drive-thru lane was open for use.
- Since the coffee kiosk does not include indoor or outdoor seating, emphasis of coffee orders through the drive-thru lane may potentially provide a more conservative estimate of potential queuing.
- Based on the video footage, the observed queuing at the Black Rock coffee shop was comparable to that of the other two Starbucks coffee shops that were observed.

Table 8 presents a summary of the queuing observations during each facility's peak hour of queuing; calculations of the average, maximum, and 95th percentile queues of each facility; and an average of the Starbucks as well as overall calculated queues of the facilities.

Based on the results of the queuing analysis, the average 95th percentile queue of all observed facilities for the drive-thru lane is projected to be 10 vehicles. Note this average 95th percentile queue is generally consistent among each individual coffee shop within ± 1 vehicle. As shown in the site plan in the appendix, the drive-through lane includes storage for 12 vehicles between the pick-up window and the two order kiosks. Therefore, adequate storage is available to accommodate likely queues.

Table 8: Coffee Drive-Through Queuing Observations

Peak Hour of Queue	Starbucks		Black Rock
	Portland	Hillsboro	Vancouver
Queuing Per Coffee Shop			
Average Queue (Vehicles)	8	7	5
Max Queue (Vehicles)	12	10	10
95th Percentile Queue (Vehicles)	10	10	9
Average Queuing of Starbucks Only (Excluding Black Rock)			
Average Queue (Vehicles)	8	-	-
Max Queue (Vehicles)	11	-	-
95th Percentile Queue (Vehicles)	10	-	-
Overall Average Queuing			
Average Queue (Vehicles)	7		
Max Queue (Vehicles)	11		
95th Percentile Queue (Vehicles)	10		

Note: All queue estimates are rounded up to reflect a whole vehicle.

Quick-Service Restaurant Drive-Through Lane

To estimate potential drive-through queuing which may occur at the site, queuing observations were conducted at two existing Burger Kings and at two existing Don Pedro Mexican Restaurants. These facilities are located along or near major roadways and have a single drive-through window. The quality, cost, and type of food sold is expected to be similar to a possible restaurant on the proposed site.

Queuing observations were conducted at times between approximately 7:30 AM through 9:00 AM, 11:30 AM through 1:00 PM, and 5:30 PM through 7:00 PM. These chosen timeframes for observations were selected given they are expected to correlate with the general peaks of customer arrivals to the site for a typical weekday. Each comparative location was observed for approximately 30 minutes. The locations include:

- Two Burger Kings at 7625 NE Highway 99 and 5513 NE Gher Road in Vancouver, Washington. Queuing observations were conducted on Friday, November 22nd, 2019.
- Two Don Pedro Mexican Restaurants at 6501 NE Highway 99 and 5900 NE Fourth Plain Boulevard in Vancouver, Washington. Queuing observations were conducted on Wednesday, December 11th, 2019, and on Thursday, December 12th, 2019

Table 9 presents a summary of the queuing observations during each facility’s peak period of queuing; average calculations by type of facility; and an average of all facilities.

Based on the results of the queuing analysis, the longest observed queue was eight (8) vehicles during the midday period at a Burger King while the average of the longest queues was seven (7) vehicles for a hamburger restaurant and six (6) vehicles for a Mexican food restaurant.



Table 9: Restaurant Drive-Through Queuing Observations

Period of Observations	Burger King 1	Burger King 2	Don Pedro 1	Don Pedro 2
Longest Observed Vehicle Queue				
Morning Peak (7:30 AM to 9:00 AM)	3	2	2	3
Mid-Day Peak (11:30 AM to 1:00 PM)	8	5	5	6
Evening Peak (5:30 PM to 7:00 PM)	5	5	2	4
Average Queuing by Restaurant Type				
Morning Peak (7:30 AM to 9:00 AM)	3		3	
Mid-Day Peak (11:30 AM to 1:00 PM)	7		6	
Evening Peak (5:30 PM to 7:00 PM)	5		3	
Overall Average Queuing				
Morning Peak (7:30 AM to 9:00 AM)	3			
Mid-Day Peak (11:30 AM to 1:00 PM)	6			
Evening Peak (5:30 PM to 7:00 PM)	4			

As shown in the site plan in the appendix, the drive-through lane for the potential quick service restaurant is approximately 200 feet between the pick-up window and the order kiosk. At an average of 20 to 25 feet per vehicles, the potential drive-through lane could accommodate up to 8 to 10 vehicles. Therefore, adequate storage can be made available to accommodate likely queues.



Conclusions

Key findings of this study include:

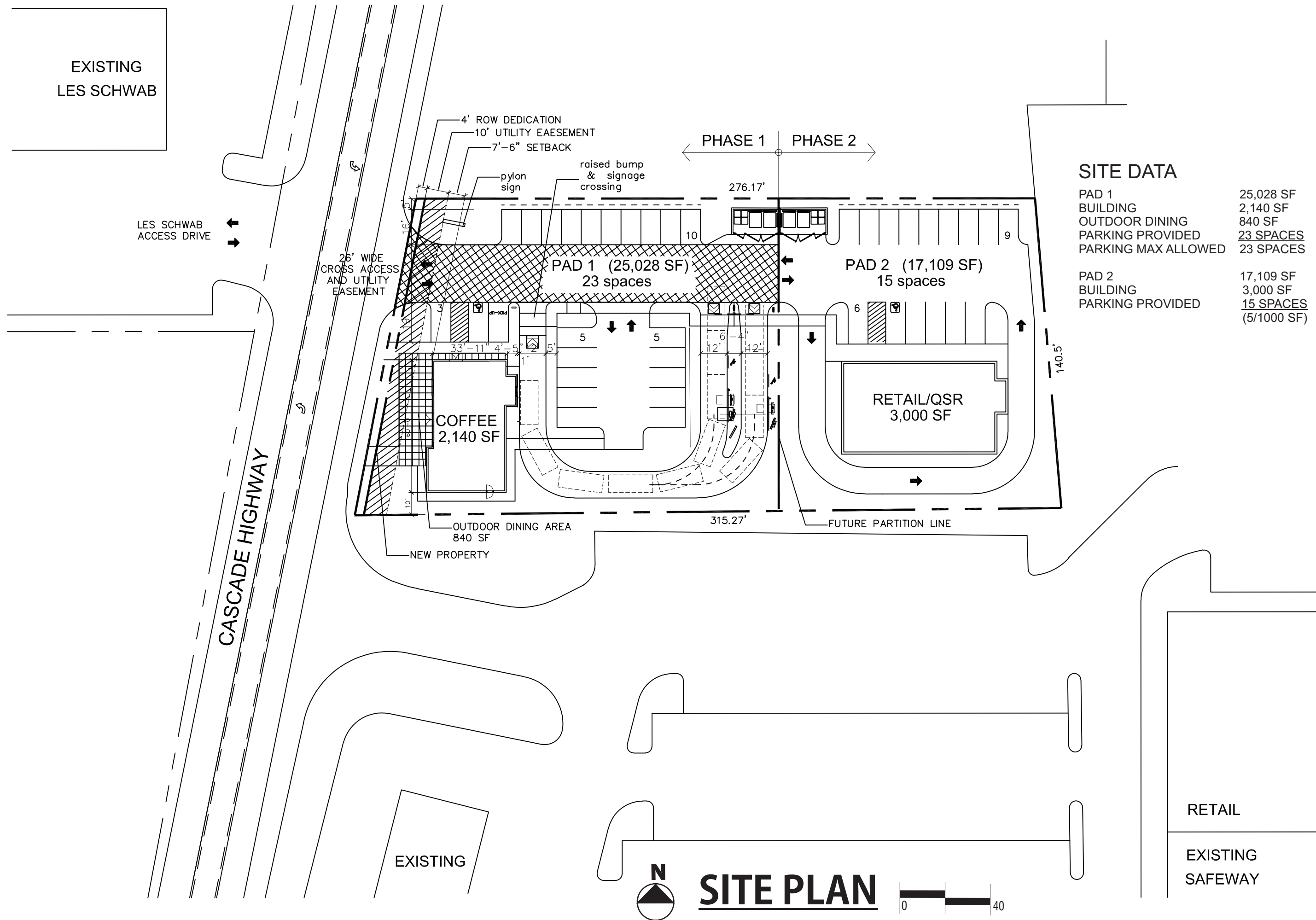
- The intersection of OR 213 & Toliver Road was identified as having a significant crash rate. A roundabout is planned for construction at OR 213 & Toliver Road in 2023 to improve safety at this intersection.
- The available sight lines will exceed the 415-foot intersection sight distance recommendation after the existing foliage on the project site is removed.
- All study intersections are projected to operate at an acceptable v/c ratio less than 0.90 per ODOT standards upon buildout of the proposed development through year 2023, after the construction of a roundabout at the OR 213 & Toliver Road intersection.
- Queuing analysis results show the storage lanes on the highway are adequate to accommodate anticipated the 95th percentile queues with the proposed development.
- Although some queuing could be present within the site with the development of both a coffee shop and a quick-service restaurant, the queues are not likely to significantly interfere with the flow of traffic on site or impact the highway operations.
- The drive-through lanes should have adequate storage to accommodate likely queues.



Appendix

- Site Plan
- Trip Generation
- Traffic Counts
- Crash History
- Operations Analysis
- Queuing Analysis
- Coffee Drive-Through Queuing





SITE DATA

PAD 1	25,028 SF
BUILDING	2,140 SF
OUTDOOR DINING	840 SF
PARKING PROVIDED	<u>23 SPACES</u>
PARKING MAX ALLOWED	23 SPACES
PAD 2	17,109 SF
BUILDING	3,000 SF
PARKING PROVIDED	<u>15 SPACES</u>
	(5/1000 SF)

RETAIL

EXISTING
SAFEWAY

TRIP GENERATION CALCULATIONS



Land Use: Coffee/Donut Shop with Drive-Through Window
Land Use Code: 937
Setting/Location: General Urban/Suburban
Mode: Vehicles
Variable: 1000 Square Feet
Variable Value: 2.14

AM PEAK HOUR

Trip Rate: 85.88

	Enter	Exit	Total
Directional	51%	49%	
Trip Ends	94	90	184
Pass-by %	90%		
Pass-by Trips	83	83	166
Primary Trips	11	7	18

PM PEAK HOUR

Trip Rate: 38.99

	Enter	Exit	Total
Directional	50%	50%	
Trip Ends	42	41	83
Pass-by %	90%		
Pass-by Trips	37	37	74
Primary Trips	5	4	9

WEEKDAY

Trip Rate: 533.57

	Enter	Exit	Total
Directional	50%	50%	
Trip Ends	571	571	1,142
Pass-by %	90%		
Pass-by Trips	514	514	1028
Primary Trips	57	57	114

Notes: Pass-by rates are based on LUC 938, Coffee with Drive-Through and No Indoor Seating. Daily is assumed to be same as morning.

Source: Trip Generation Manual, 11th Edition

TRIP GENERATION CALCULATIONS



Land Use: Fast-Food Restaurant with Drive-Through Window

Land Use Code: 934

Setting/Location: General Urban/Suburban

Mode: Vehicles

Variable: 1000 Square Feet

Variable Value: 3

AM PEAK HOUR

Trip Rate: 44.61

	Enter	Exit	Total
Directional	51%	49%	
Trip Ends	68	66	134
Pass-by %	50%		
Pass-by Trips	34	34	68
Primary Trips	34	32	66

PM PEAK HOUR

Trip Rate: 33.03

	Enter	Exit	Total
Directional	50%	50%	
Trip Ends	50	49	99
Pass-by %	55%		
Pass-by Trips	27	27	54
Primary Trips	23	22	45

WEEKDAY

Trip Rate: 467.48

	Enter	Exit	Total
Directional	50%	50%	
Trip Ends	701	701	1,402
Pass-by %	50%		
Pass-by Trips	351	351	702
Primary Trips	350	350	700

Notes: Daily pass-by rate is assumed to be same as morning.

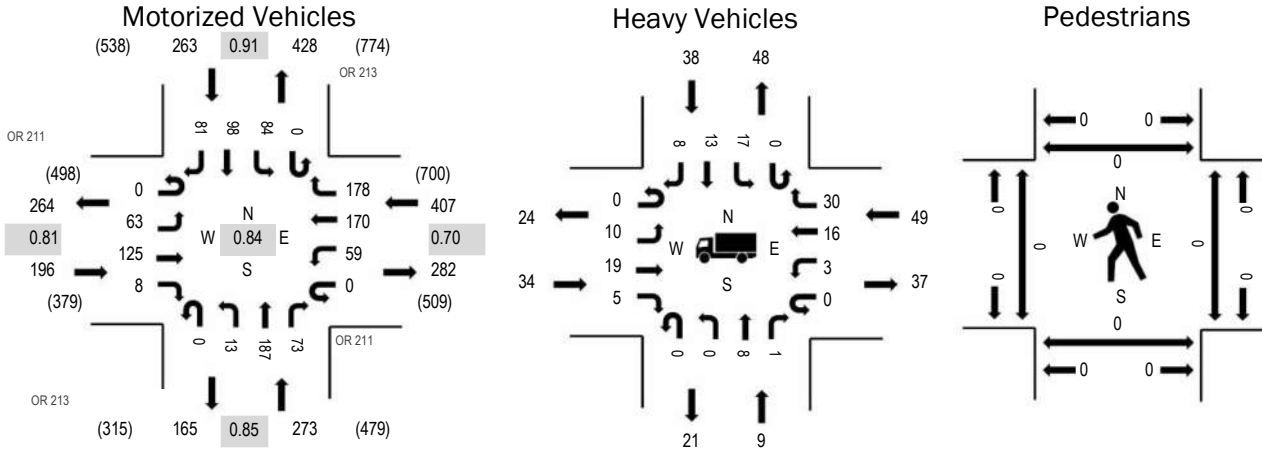
Source: Trip Generation Manual, 11th Edition



(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



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				Total	Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
7:00 AM	0	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

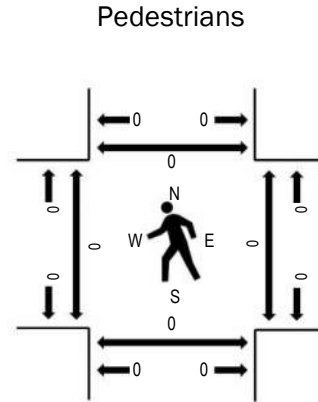
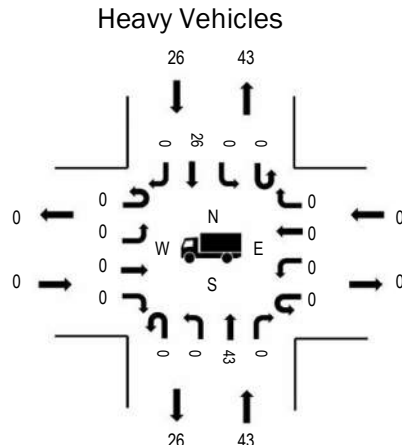
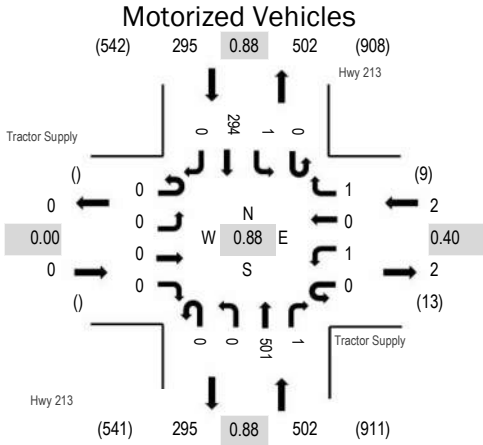
Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
7:00 AM	3	2	2	0	7	7:00 AM	0	0	0	0	0	7:00 AM	0	0	0	0	0
7:05 AM	1	0	4	2	7	7:05 AM	0	0	0	0	0	7:05 AM	0	0	0	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



(303) 216-2439
www.alltrafficdata.net

Location: 1 Hwy 213 & Tractor Supply AM
Date: Thursday, October 28, 2021
Peak Hour: 07:00 AM - 08:00 AM
Peak 15-Minutes: 07:15 AM - 07:30 AM

Peak Hour



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	0.0%	0.00
WB	0.0%	0.40
NB	8.6%	0.88
SB	8.8%	0.88
All	8.6%	0.88

Traffic Counts - Motorized Vehicles

Interval Start Time	Tractor Supply Eastbound				Tractor Supply Westbound				Hwy 213 Northbound			Hwy 213 Southbound				Total	Rolling Hour	
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru			Right
7:00 AM	0	0	0	0	0	0	0	0	0	0	43	0	0	0	20	0	63	799
7:05 AM	0	0	0	0	0	0	0	0	0	0	48	0	0	0	25	0	73	786
7:10 AM	0	0	0	0	0	0	0	0	0	0	37	0	0	0	18	0	55	761
7:15 AM	0	0	0	0	0	1	0	0	0	0	38	0	0	1	27	0	67	754
7:20 AM	0	0	0	0	0	0	0	0	0	0	55	0	0	0	25	0	80	746
7:25 AM	0	0	0	0	0	0	0	0	0	0	49	0	0	0	31	0	80	725
7:30 AM	0	0	0	0	0	0	0	0	0	0	38	0	0	0	27	0	65	698
7:35 AM	0	0	0	0	0	0	0	0	0	0	41	0	0	0	24	0	65	701
7:40 AM	0	0	0	0	0	0	0	0	0	0	48	0	0	0	18	0	66	685
7:45 AM	0	0	0	0	0	0	0	1	0	0	35	1	0	0	28	0	65	673
7:50 AM	0	0	0	0	0	0	0	0	0	0	32	0	0	0	19	0	51	662
7:55 AM	0	0	0	0	0	0	0	0	0	0	37	0	0	0	32	0	69	668
8:00 AM	0	0	0	0	0	0	0	0	0	0	36	0	0	0	14	0	50	663
8:05 AM	0	0	0	0	0	0	0	0	0	0	29	2	0	0	17	0	48	
8:10 AM	0	0	0	0	0	0	0	0	0	0	25	1	0	0	22	0	48	
8:15 AM	0	0	0	0	0	0	0	1	0	0	35	2	0	0	21	0	59	
8:20 AM	0	0	0	0	0	0	0	1	0	0	31	1	0	1	25	0	59	
8:25 AM	0	0	0	0	0	0	0	0	0	0	29	0	0	0	24	0	53	
8:30 AM	0	0	0	0	0	0	0	3	0	0	34	0	0	0	31	0	68	
8:35 AM	0	0	0	0	0	0	0	2	0	0	30	1	0	0	16	0	49	
8:40 AM	0	0	0	0	0	0	0	0	0	0	32	1	0	0	21	0	54	
8:45 AM	0	0	0	0	0	0	0	0	0	0	39	0	0	0	15	0	54	
8:50 AM	0	0	0	0	0	0	0	0	0	0	35	2	0	0	20	0	57	
8:55 AM	0	0	0	0	0	0	0	0	0	0	44	0	0	0	20	0	64	
Count Total	0	0	0	0	0	1	0	8	0	0	900	11	0	2	540	0	1,462	
Peak Hour	0	0	0	0	0	1	0	1	0	0	501	1	0	1	294	0	799	

Location: 1 Hwy 213 & Tractor Supply AM

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	1	0	3	4	7:00 AM	0	0	0	0	0	7:00 AM	0	0	0	0	0
7:05 AM	0	2	0	1	3	7:05 AM	0	0	0	0	0	7:05 AM	0	0	0	0	0
7:10 AM	0	3	0	0	3	7:10 AM	0	0	0	0	0	7:10 AM	0	0	0	0	0
7:15 AM	0	5	0	1	6	7:15 AM	0	0	0	0	0	7:15 AM	0	0	0	0	0
7:20 AM	0	3	0	4	7	7:20 AM	0	0	0	0	0	7:20 AM	0	0	0	0	0
7:25 AM	0	9	0	5	14	7:25 AM	0	0	0	0	0	7:25 AM	0	0	0	0	0
7:30 AM	0	7	0	2	9	7:30 AM	0	0	0	0	0	7:30 AM	0	0	0	0	0
7:35 AM	0	0	0	1	1	7:35 AM	0	0	0	0	0	7:35 AM	0	0	0	0	0
7:40 AM	0	4	0	1	5	7:40 AM	0	0	0	0	0	7:40 AM	0	0	0	0	0
7:45 AM	0	3	0	2	5	7:45 AM	0	0	0	0	0	7:45 AM	0	0	0	0	0
7:50 AM	0	2	0	2	4	7:50 AM	0	0	0	0	0	7:50 AM	0	0	0	0	0
7:55 AM	0	4	0	4	8	7:55 AM	0	0	0	0	0	7:55 AM	0	0	0	0	0
8:00 AM	0	3	0	2	5	8:00 AM	0	0	0	0	0	8:00 AM	0	0	0	0	0
8:05 AM	0	2	0	3	5	8:05 AM	0	0	0	0	0	8:05 AM	0	0	0	0	0
8:10 AM	0	0	0	2	2	8:10 AM	0	0	0	0	0	8:10 AM	0	0	0	0	0
8:15 AM	0	1	0	3	4	8:15 AM	0	0	0	0	0	8:15 AM	0	0	0	0	0
8:20 AM	0	3	0	6	9	8:20 AM	0	0	0	0	0	8:20 AM	0	0	0	0	0
8:25 AM	0	1	0	4	5	8:25 AM	0	0	0	0	0	8:25 AM	0	0	0	0	0
8:30 AM	0	5	0	5	10	8:30 AM	0	0	0	0	0	8:30 AM	0	0	0	0	0
8:35 AM	0	3	0	1	4	8:35 AM	0	0	0	0	0	8:35 AM	0	0	0	0	0
8:40 AM	0	0	0	3	3	8:40 AM	0	0	0	0	0	8:40 AM	0	0	0	0	0
8:45 AM	0	3	0	2	5	8:45 AM	0	0	0	0	0	8:45 AM	0	0	1	0	1
8:50 AM	0	4	0	2	6	8:50 AM	0	0	0	0	0	8:50 AM	0	0	0	0	0
8:55 AM	0	5	0	2	7	8:55 AM	0	0	0	0	0	8:55 AM	0	0	0	0	0
Count Total	0	73	0	61	134	Count Total	0	0	0	0	0	Count Total	0	0	1	0	1
Peak Hour	0	43	0	26	69	Peak Hour	0	0	0	0	0	Peak Hour	0	0	0	0	0

Location: 2 Hwy 213 & Les Schwab North AM



(303) 216-2439
www.alltrafficdata.net

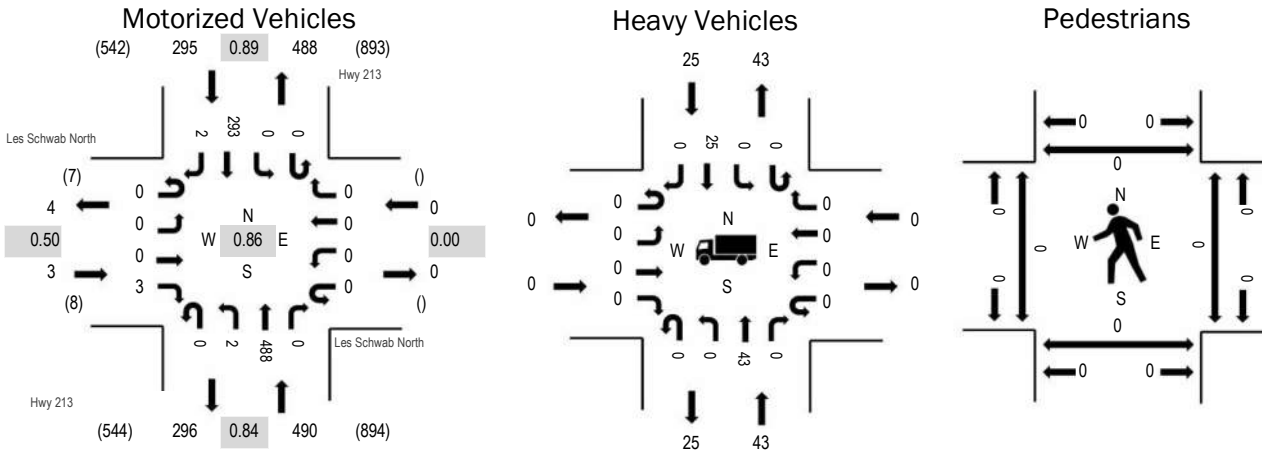
Location: 2 Hwy 213 & Les Schwab North AM

Date: Thursday, October 28, 2021

Peak Hour: 07:00 AM - 08:00 AM

Peak 15-Minutes: 07:20 AM - 07:35 AM

Peak Hour



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	0.0%	0.50
WB	0.0%	0.00
NB	8.8%	0.84
SB	8.5%	0.89
All	8.6%	0.86

Traffic Counts - Motorized Vehicles

Interval Start Time	Les Schwab North Eastbound				Les Schwab North Westbound				Hwy 213 Northbound				Hwy 213 Southbound				Total	Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
7:00 AM	0	0	0	0	0	0	0	0	0	0	35	0	0	0	22	0	57	788
7:05 AM	0	0	0	0	0	0	0	0	0	0	51	0	0	0	26	0	77	788
7:10 AM	0	0	0	0	0	0	0	0	0	0	38	0	0	0	18	0	56	760
7:15 AM	0	0	0	0	0	0	0	0	0	0	28	0	0	0	26	0	54	751
7:20 AM	0	0	0	0	0	0	0	0	0	0	55	0	0	0	27	0	82	746
7:25 AM	0	0	0	0	0	0	0	0	0	0	45	0	0	0	29	1	75	723
7:30 AM	0	0	0	0	0	0	0	0	0	0	46	0	0	0	25	0	71	714
7:35 AM	0	0	0	0	0	0	0	0	0	0	37	0	0	0	25	0	62	696
7:40 AM	0	0	0	1	0	0	0	0	0	0	47	0	0	0	18	0	66	687
7:45 AM	0	0	0	0	0	0	0	0	0	0	39	0	0	0	22	1	62	673
7:50 AM	0	0	0	2	0	0	0	0	0	0	33	0	0	0	25	0	60	664
7:55 AM	0	0	0	0	0	0	0	0	0	2	34	0	0	0	30	0	66	653
8:00 AM	0	1	0	0	0	0	0	0	0	0	38	0	0	0	18	0	57	656
8:05 AM	0	0	0	0	0	0	0	0	0	0	32	0	0	0	17	0	49	
8:10 AM	0	0	0	0	0	0	0	0	0	0	28	0	0	0	19	0	47	
8:15 AM	0	0	0	0	0	0	0	0	0	0	31	0	0	0	18	0	49	
8:20 AM	0	0	0	0	0	0	0	0	0	0	28	0	0	0	30	1	59	
8:25 AM	0	0	0	2	0	0	0	0	0	0	41	0	0	0	23	0	66	
8:30 AM	0	0	0	0	0	0	0	0	0	0	26	0	0	0	27	0	53	
8:35 AM	0	0	0	0	0	0	0	0	0	0	32	0	0	0	21	0	53	
8:40 AM	0	0	0	0	0	0	0	0	0	0	34	0	0	0	18	0	52	
8:45 AM	0	0	0	0	0	0	0	0	0	0	37	0	0	0	16	0	53	
8:50 AM	0	0	0	0	0	0	0	0	0	0	35	0	0	0	13	1	49	
8:55 AM	0	1	0	1	0	0	0	0	0	1	41	0	0	0	25	0	69	
Count Total	0	2	0	6	0	0	0	0	0	3	891	0	0	0	538	4	1,444	
Peak Hour	0	0	0	3	0	0	0	0	0	2	488	0	0	0	293	2	788	

Location: 2 Hwy 213 & Les Schwab North AM

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	1	0	2	3	7:00 AM	0	0	0	0	0	7:00 AM	0	0	0	0	0
7:05 AM	0	3	0	3	6	7:05 AM	0	0	0	0	0	7:05 AM	0	0	0	0	0
7:10 AM	0	2	0	0	2	7:10 AM	0	0	0	0	0	7:10 AM	0	0	0	0	0
7:15 AM	0	3	0	1	4	7:15 AM	0	0	0	0	0	7:15 AM	0	0	0	0	0
7:20 AM	0	6	0	3	9	7:20 AM	0	0	0	0	0	7:20 AM	0	0	0	0	0
7:25 AM	0	7	0	4	11	7:25 AM	0	0	0	0	0	7:25 AM	0	0	0	0	0
7:30 AM	0	9	0	2	11	7:30 AM	0	0	0	0	0	7:30 AM	0	0	0	0	0
7:35 AM	0	0	0	1	1	7:35 AM	0	0	0	0	0	7:35 AM	0	0	0	0	0
7:40 AM	0	4	0	1	5	7:40 AM	0	0	0	0	0	7:40 AM	0	0	0	0	0
7:45 AM	0	3	0	2	5	7:45 AM	0	0	0	0	0	7:45 AM	0	0	0	0	0
7:50 AM	0	3	0	2	5	7:50 AM	0	0	0	0	0	7:50 AM	0	0	0	0	0
7:55 AM	0	2	0	4	6	7:55 AM	0	0	0	0	0	7:55 AM	0	0	0	0	0
8:00 AM	1	4	0	2	7	8:00 AM	0	0	0	0	0	8:00 AM	0	0	0	0	0
8:05 AM	0	2	0	2	4	8:05 AM	0	0	0	0	0	8:05 AM	0	0	0	0	0
8:10 AM	0	1	0	4	5	8:10 AM	0	0	0	0	0	8:10 AM	0	0	0	0	0
8:15 AM	0	2	0	0	2	8:15 AM	0	0	0	0	0	8:15 AM	0	0	0	0	0
8:20 AM	0	2	0	9	11	8:20 AM	0	0	0	0	0	8:20 AM	0	0	0	0	0
8:25 AM	0	2	0	4	6	8:25 AM	0	0	0	0	0	8:25 AM	0	0	0	0	0
8:30 AM	0	5	0	5	10	8:30 AM	0	0	0	0	0	8:30 AM	0	0	0	0	0
8:35 AM	0	2	0	1	3	8:35 AM	0	0	0	0	0	8:35 AM	0	0	0	0	0
8:40 AM	0	1	0	2	3	8:40 AM	0	0	0	0	0	8:40 AM	0	0	0	0	0
8:45 AM	0	3	0	3	6	8:45 AM	0	0	0	0	0	8:45 AM	0	0	0	0	0
8:50 AM	0	3	0	0	3	8:50 AM	0	0	0	0	0	8:50 AM	0	0	0	0	0
8:55 AM	1	5	0	4	10	8:55 AM	0	0	0	0	0	8:55 AM	0	0	0	0	0
Count Total	2	75	0	61	138	Count Total	0	0	0	0	0	Count Total	0	0	0	0	0
Peak Hour	0	43	0	25	68	Peak Hour	0	0	0	0	0	Peak Hour	0	0	0	0	0

Location: 3 Hwy 213 & Les Schwab South AM



(303) 216-2439
www.alltrafficdata.net

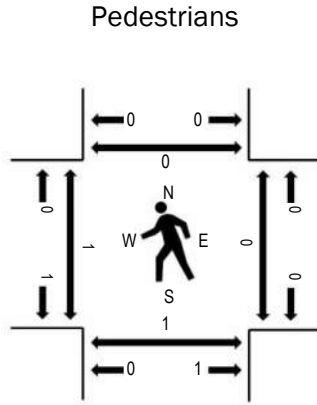
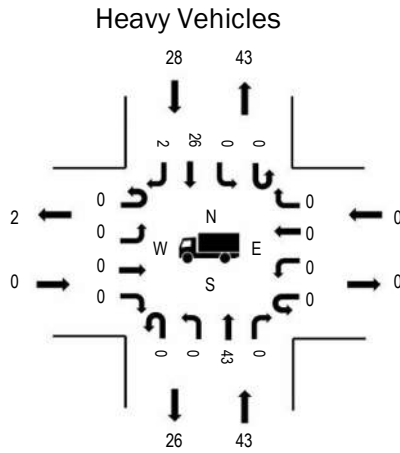
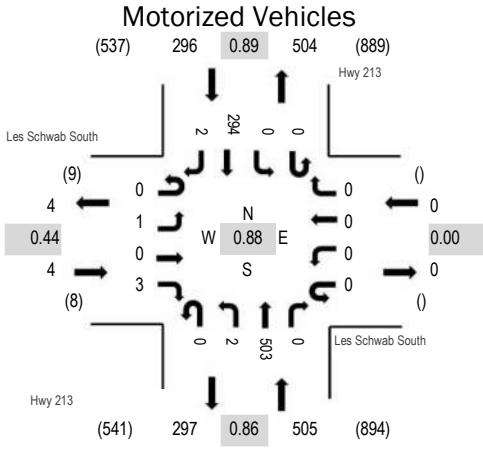
Location: 3 Hwy 213 & Les Schwab South AM

Date: Thursday, October 28, 2021

Peak Hour: 07:10 AM - 08:10 AM

Peak 15-Minutes: 07:25 AM - 07:40 AM

Peak Hour



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	0.0%	0.44
WB	0.0%	0.00
NB	8.5%	0.86
SB	9.5%	0.89
All	8.8%	0.88

Traffic Counts - Motorized Vehicles

Interval Start Time	Les Schwab South Eastbound				Les Schwab South Westbound				Hwy 213 Northbound				Hwy 213 Southbound				Total	Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
7:00 AM	0	0	0	0	0	0	0	0	0	0	32	0	0	0	18	0	50	783
7:05 AM	0	0	0	0	0	0	0	0	0	0	32	0	0	0	22	0	54	800
7:10 AM	0	0	0	0	0	0	0	0	0	0	52	0	0	0	21	0	73	805
7:15 AM	0	0	0	0	0	0	0	0	0	0	37	0	0	0	20	0	57	773
7:20 AM	0	0	0	0	0	0	0	0	0	0	34	0	0	0	27	0	61	769
7:25 AM	0	0	0	0	0	0	0	0	0	0	57	0	0	0	26	0	83	751
7:30 AM	0	0	0	0	0	0	0	0	0	0	44	0	0	0	30	1	75	731
7:35 AM	0	0	0	0	0	0	0	0	0	0	46	0	0	0	25	1	72	715
7:40 AM	0	0	0	0	0	0	0	0	0	0	38	0	0	0	25	0	63	704
7:45 AM	0	0	0	2	0	0	0	0	0	0	50	0	0	0	22	0	74	694
7:50 AM	0	1	0	1	0	0	0	0	0	1	36	0	0	0	21	0	60	674
7:55 AM	0	0	0	0	0	0	0	0	0	1	32	0	0	0	28	0	61	664
8:00 AM	0	0	0	0	0	0	0	0	0	0	38	0	0	0	29	0	67	656
8:05 AM	0	0	0	0	0	0	0	0	0	0	39	0	0	0	20	0	59	
8:10 AM	0	0	0	0	0	0	0	0	0	1	27	0	0	0	13	0	41	
8:15 AM	0	0	0	1	0	0	0	0	0	0	33	0	0	0	19	0	53	
8:20 AM	0	0	0	0	0	0	0	0	0	0	28	0	0	0	15	0	43	
8:25 AM	0	1	0	0	0	0	0	0	0	2	28	0	0	0	32	0	63	
8:30 AM	0	0	0	0	0	0	0	0	0	0	37	0	0	0	22	0	59	
8:35 AM	0	0	0	1	0	0	0	0	0	0	29	0	0	0	31	0	61	
8:40 AM	0	0	0	0	0	0	0	0	0	0	32	0	0	0	21	0	53	
8:45 AM	0	0	0	1	0	0	0	0	0	2	34	0	0	0	17	0	54	
8:50 AM	0	0	0	0	0	0	0	0	0	0	33	0	0	0	17	0	50	
8:55 AM	0	0	0	0	0	0	0	0	0	0	39	0	0	0	14	0	53	
Count Total	0	2	0	6	0	0	0	0	0	7	887	0	0	0	535	2	1,439	
Peak Hour	0	1	0	3	0	0	0	0	0	2	503	0	0	0	294	2	805	

Location: 3 Hwy 213 & Les Schwab South AM

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	1	0	0	1	7:00 AM	0	0	0	0	0	7:00 AM	0	0	0	0	0
7:05 AM	0	0	0	2	2	7:05 AM	0	0	0	0	0	7:05 AM	0	0	0	0	0
7:10 AM	0	2	0	3	5	7:10 AM	0	0	0	0	0	7:10 AM	0	0	0	0	0
7:15 AM	0	2	0	0	2	7:15 AM	0	0	0	0	0	7:15 AM	0	0	0	0	0
7:20 AM	0	4	0	1	5	7:20 AM	0	0	0	0	0	7:20 AM	0	0	0	0	0
7:25 AM	0	4	0	4	8	7:25 AM	0	0	0	0	0	7:25 AM	0	0	0	0	0
7:30 AM	0	6	0	2	8	7:30 AM	0	0	0	0	0	7:30 AM	0	0	0	0	0
7:35 AM	0	9	0	5	14	7:35 AM	0	0	0	0	0	7:35 AM	0	0	0	0	0
7:40 AM	0	1	0	1	2	7:40 AM	0	0	0	0	0	7:40 AM	0	0	0	0	0
7:45 AM	0	6	0	1	7	7:45 AM	0	0	0	0	0	7:45 AM	0	0	0	0	0
7:50 AM	0	3	0	1	4	7:50 AM	0	0	0	0	0	7:50 AM	0	0	0	0	0
7:55 AM	0	1	0	4	5	7:55 AM	0	0	0	0	0	7:55 AM	0	0	0	0	0
8:00 AM	0	3	0	4	7	8:00 AM	0	0	0	0	0	8:00 AM	0	0	0	0	0
8:05 AM	0	2	0	2	4	8:05 AM	0	0	0	0	0	8:05 AM	1	1	0	0	2
8:10 AM	0	2	0	1	3	8:10 AM	0	0	0	0	0	8:10 AM	0	0	0	0	0
8:15 AM	0	1	0	4	5	8:15 AM	0	0	0	0	0	8:15 AM	1	1	0	0	2
8:20 AM	0	1	0	1	2	8:20 AM	0	0	0	0	0	8:20 AM	0	0	0	0	0
8:25 AM	1	1	0	6	8	8:25 AM	0	0	0	0	0	8:25 AM	0	0	0	0	0
8:30 AM	0	3	0	4	7	8:30 AM	0	0	0	0	0	8:30 AM	0	0	0	0	0
8:35 AM	0	5	0	5	10	8:35 AM	0	0	0	0	0	8:35 AM	0	0	0	0	0
8:40 AM	0	2	0	2	4	8:40 AM	0	0	0	0	0	8:40 AM	0	0	0	0	0
8:45 AM	0	1	0	0	1	8:45 AM	0	0	0	0	0	8:45 AM	0	0	0	0	0
8:50 AM	0	3	0	4	7	8:50 AM	0	0	0	0	0	8:50 AM	0	0	0	0	0
8:55 AM	0	3	0	1	4	8:55 AM	0	0	0	0	0	8:55 AM	0	0	0	0	0
Count Total	1	66	0	58	125	Count Total	0	0	0	0	0	Count Total	2	2	0	0	4
Peak Hour	0	43	0	28	71	Peak Hour	0	0	0	0	0	Peak Hour	1	1	0	0	2

Location: 4 Hwy 213 & Safeway North AM



(303) 216-2439
www.alltrafficdata.net

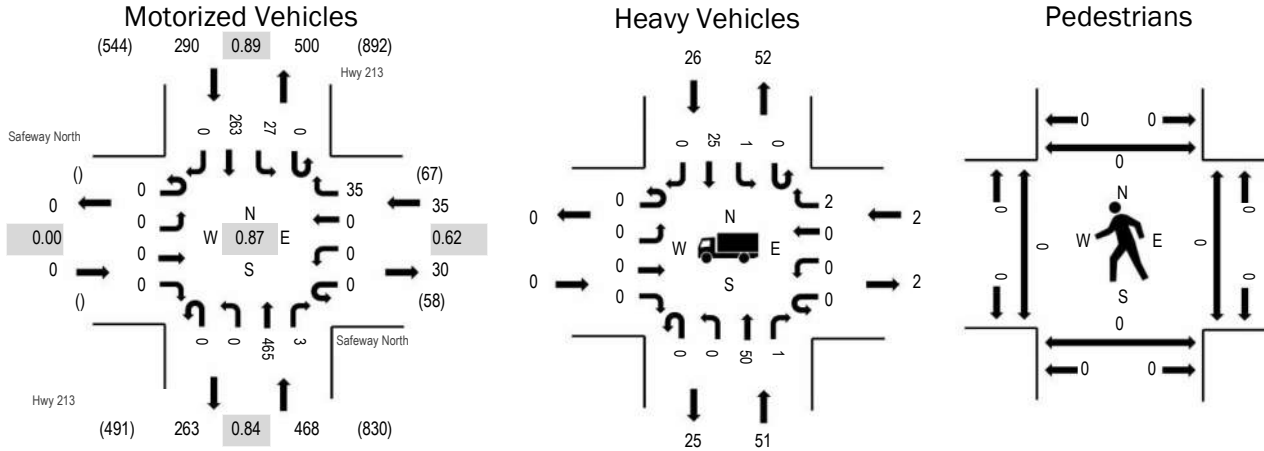
Location: 4 Hwy 213 & Safeway North AM

Date: Thursday, October 28, 2021

Peak Hour: 07:05 AM - 08:05 AM

Peak 15-Minutes: 07:15 AM - 07:30 AM

Peak Hour



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	0.0%	0.00
WB	5.7%	0.62
NB	10.9%	0.84
SB	9.0%	0.89
All	10.0%	0.87

Traffic Counts - Motorized Vehicles

Interval Start Time	Safeway North Eastbound				Safeway North Westbound				Hwy 213 Northbound				Hwy 213 Southbound				Total	Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
7:00 AM	0	0	0	0	0	0	0	1	0	0	32	0	0	5	15	0	53	784
7:05 AM	0	0	0	0	0	0	0	4	0	0	41	0	0	2	19	0	66	793
7:10 AM	0	0	0	0	0	0	0	2	0	0	39	1	0	2	12	0	56	782
7:15 AM	0	0	0	0	0	0	0	2	0	0	38	0	0	2	24	0	66	776
7:20 AM	0	0	0	0	0	0	0	1	0	0	51	0	0	2	29	0	83	754
7:25 AM	0	0	0	0	0	0	0	1	0	0	50	1	0	0	26	0	78	725
7:30 AM	0	0	0	0	0	0	0	3	0	0	37	0	0	1	25	0	66	710
7:35 AM	0	0	0	0	0	0	0	4	0	0	32	0	0	3	20	0	59	703
7:40 AM	0	0	0	0	0	0	0	4	0	0	45	0	0	3	24	0	76	696
7:45 AM	0	0	0	0	0	0	0	4	0	0	37	0	0	5	19	0	65	668
7:50 AM	0	0	0	0	0	0	0	7	0	0	23	0	0	0	26	0	56	651
7:55 AM	0	0	0	0	0	0	0	1	0	0	42	0	0	3	14	0	60	647
8:00 AM	0	0	0	0	0	0	0	2	0	0	30	1	0	4	25	0	62	657
8:05 AM	0	0	0	0	0	0	0	1	0	0	35	0	0	1	18	0	55	
8:10 AM	0	0	0	0	0	0	0	2	0	0	28	0	0	2	18	0	50	
8:15 AM	0	0	0	0	0	0	0	3	0	0	25	0	0	1	15	0	44	
8:20 AM	0	0	0	0	0	0	0	3	0	0	28	0	0	2	21	0	54	
8:25 AM	0	0	0	0	0	0	0	3	0	0	32	0	0	2	26	0	63	
8:30 AM	0	0	0	0	0	0	0	1	0	0	27	0	0	1	30	0	59	
8:35 AM	0	0	0	0	0	1	0	3	0	0	26	0	0	3	19	0	52	
8:40 AM	0	0	0	0	0	1	0	3	0	0	23	0	0	1	20	0	48	
8:45 AM	0	0	0	0	0	0	0	3	0	0	29	0	0	1	15	0	48	
8:50 AM	0	0	0	0	0	0	0	5	0	0	33	0	0	0	14	0	52	
8:55 AM	0	0	0	0	0	0	0	2	0	0	44	0	0	9	15	0	70	
Count Total	0	0	0	0	0	2	0	65	0	0	827	3	0	55	489	0	1,441	
Peak Hour	0	0	0	0	0	0	0	35	0	0	465	3	0	27	263	0	793	

Location: 4 Hwy 213 & Safeway North AM

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	0	1	1	7:00 AM	0	0	0	0	0	7:00 AM	0	0	0	0	0
7:05 AM	0	4	0	3	7	7:05 AM	0	0	0	0	0	7:05 AM	0	0	0	0	0
7:10 AM	0	4	0	1	5	7:10 AM	0	0	0	0	0	7:10 AM	0	0	0	0	0
7:15 AM	0	4	0	0	4	7:15 AM	0	0	0	0	0	7:15 AM	0	0	0	0	0
7:20 AM	0	6	0	3	9	7:20 AM	0	0	0	0	0	7:20 AM	0	0	0	0	0
7:25 AM	0	8	0	1	9	7:25 AM	0	0	0	0	0	7:25 AM	0	0	0	0	0
7:30 AM	0	6	1	5	12	7:30 AM	0	0	0	0	0	7:30 AM	0	0	0	0	0
7:35 AM	0	3	0	0	3	7:35 AM	0	0	0	0	0	7:35 AM	0	0	0	0	0
7:40 AM	0	4	0	2	6	7:40 AM	0	0	0	0	0	7:40 AM	0	0	0	0	0
7:45 AM	0	2	1	1	4	7:45 AM	0	0	0	0	0	7:45 AM	0	0	0	0	0
7:50 AM	0	3	0	4	7	7:50 AM	0	0	0	0	0	7:50 AM	0	0	0	0	0
7:55 AM	0	3	0	2	5	7:55 AM	0	0	0	0	0	7:55 AM	0	0	0	0	0
8:00 AM	0	4	0	4	8	8:00 AM	0	0	0	0	0	8:00 AM	0	0	0	0	0
8:05 AM	0	3	0	1	4	8:05 AM	0	0	0	0	0	8:05 AM	0	0	0	0	0
8:10 AM	0	1	0	4	5	8:10 AM	0	0	0	0	0	8:10 AM	0	0	1	1	2
8:15 AM	0	1	0	1	2	8:15 AM	0	0	0	0	0	8:15 AM	0	0	0	0	0
8:20 AM	0	1	0	5	6	8:20 AM	0	0	0	0	0	8:20 AM	0	0	0	0	0
8:25 AM	0	3	0	5	8	8:25 AM	0	0	0	0	0	8:25 AM	0	0	0	0	0
8:30 AM	0	2	0	7	9	8:30 AM	0	0	0	0	0	8:30 AM	0	0	0	0	0
8:35 AM	0	3	1	1	5	8:35 AM	0	0	0	0	0	8:35 AM	0	0	0	0	0
8:40 AM	0	0	2	0	2	8:40 AM	0	0	0	0	0	8:40 AM	0	0	0	0	0
8:45 AM	0	2	0	4	6	8:45 AM	0	0	0	0	0	8:45 AM	0	0	0	0	0
8:50 AM	0	2	0	1	3	8:50 AM	0	0	0	0	0	8:50 AM	0	0	0	0	0
8:55 AM	0	4	1	3	8	8:55 AM	0	0	0	0	0	8:55 AM	0	0	0	0	0
Count Total	0	73	6	59	138	Count Total	0	0	0	0	0	Count Total	0	0	1	1	2
Peak Hour	0	51	2	26	79	Peak Hour	0	0	0	0	0	Peak Hour	0	0	0	0	0

Location: 5 Hwy 213 & Safeway South AM



(303) 216-2439
www.alltrafficdata.net

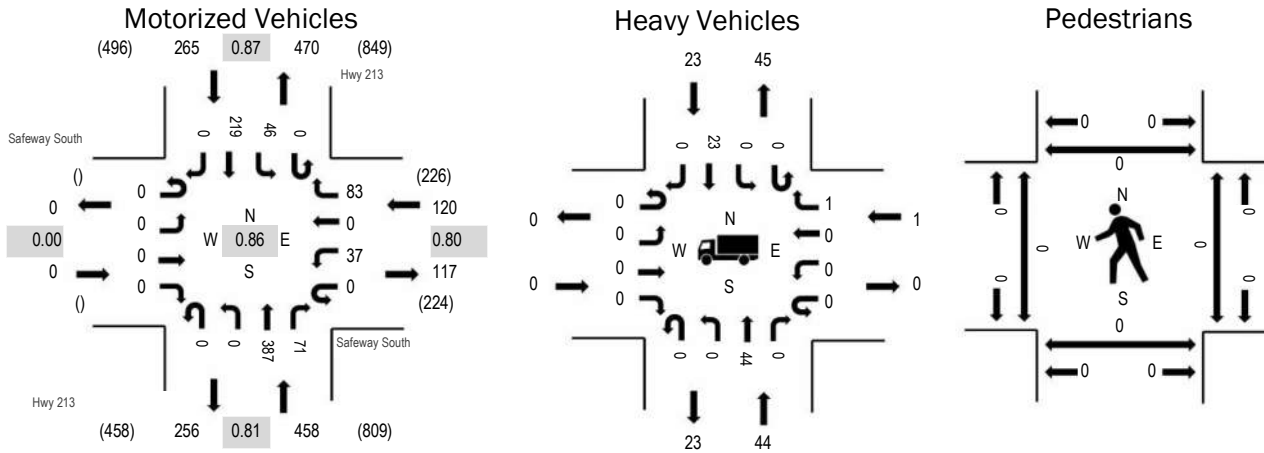
Location: 5 Hwy 213 & Safeway South AM

Date: Thursday, October 28, 2021

Peak Hour: 07:05 AM - 08:05 AM

Peak 15-Minutes: 07:20 AM - 07:35 AM

Peak Hour



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	0.0%	0.00
WB	0.8%	0.80
NB	9.6%	0.81
SB	8.7%	0.87
All	8.1%	0.86

Traffic Counts - Motorized Vehicles

Interval Start Time	Safeway South Eastbound				Safeway South Westbound				Hwy 213 Northbound				Hwy 213 Southbound				Total	Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
7:00 AM	0	0	0	0	0	2	0	8	0	0	24	6	0	3	16	0	59	836
7:05 AM	0	0	0	0	0	2	0	5	0	0	41	3	0	0	17	0	68	843
7:10 AM	0	0	0	0	0	0	0	8	0	0	29	6	0	5	13	0	61	822
7:15 AM	0	0	0	0	0	8	0	5	0	0	27	7	0	4	20	0	71	813
7:20 AM	0	0	0	0	0	2	0	7	0	0	47	7	0	3	22	0	88	789
7:25 AM	0	0	0	0	0	5	0	6	0	0	41	4	0	5	22	0	83	761
7:30 AM	0	0	0	0	0	2	0	6	0	0	37	6	0	0	22	0	73	742
7:35 AM	0	0	0	0	0	4	0	10	0	0	22	6	0	6	17	0	65	731
7:40 AM	0	0	0	0	0	4	0	7	0	0	37	5	0	4	17	0	74	721
7:45 AM	0	0	0	0	0	4	0	9	0	0	24	5	0	6	12	0	60	707
7:50 AM	0	0	0	0	0	1	0	5	0	0	21	13	0	4	22	0	66	698
7:55 AM	0	0	0	0	0	2	0	8	0	0	29	4	0	2	23	0	68	691
8:00 AM	0	0	0	0	0	3	0	7	0	0	32	5	0	7	12	0	66	695
8:05 AM	0	0	0	0	0	2	0	5	0	0	25	2	0	6	7	0	47	
8:10 AM	0	0	0	0	0	3	0	6	0	0	21	4	0	3	15	0	52	
8:15 AM	0	0	0	0	0	1	0	8	0	0	19	5	0	4	10	0	47	
8:20 AM	0	0	0	0	0	2	0	12	0	0	14	3	0	7	22	0	60	
8:25 AM	0	0	0	0	0	3	0	8	0	0	30	1	0	5	17	0	64	
8:30 AM	0	0	0	0	0	1	0	5	0	0	22	3	0	6	25	0	62	
8:35 AM	0	0	0	0	0	3	0	5	0	0	23	5	0	0	19	0	55	
8:40 AM	0	0	0	0	0	4	0	10	0	0	25	3	0	5	13	0	60	
8:45 AM	0	0	0	0	0	0	0	4	0	0	26	5	0	5	11	0	51	
8:50 AM	0	0	0	0	0	2	0	2	0	0	34	9	0	2	10	0	59	
8:55 AM	0	0	0	0	0	1	0	9	0	0	34	8	0	7	13	0	72	
Count Total	0	0	0	0	0	61	0	165	0	0	684	125	0	99	397	0	1,531	
Peak Hour	0	0	0	0	0	37	0	83	0	0	387	71	0	46	219	0	843	

Location: 5 Hwy 213 & Safeway South AM

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles on Crosswalk

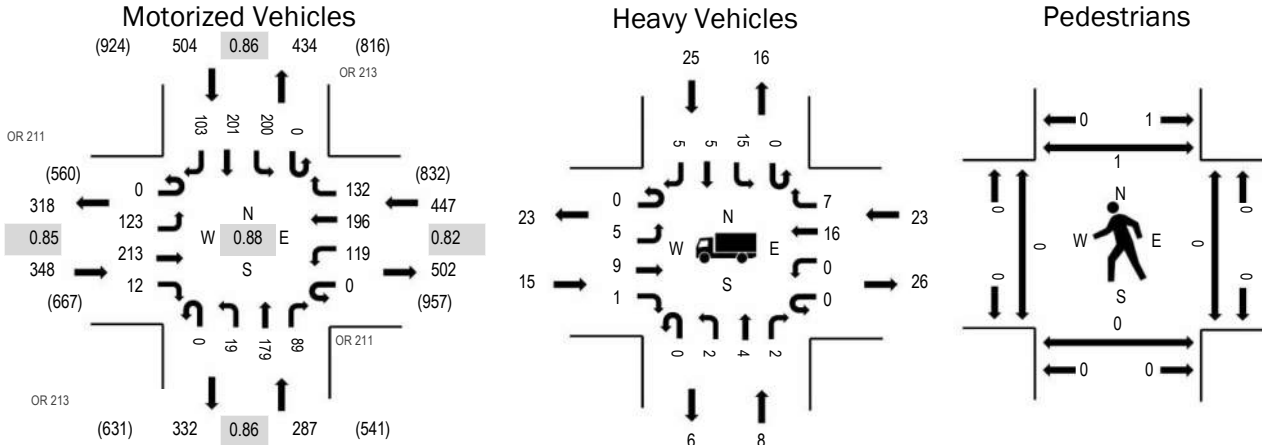
Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
7:00 AM	0	1	0	1	2	7:00 AM	0	0	0	0	0	7:00 AM	0	0	0	0	0
7:05 AM	0	3	0	3	6	7:05 AM	0	0	0	0	0	7:05 AM	0	0	0	0	0
7:10 AM	0	1	1	0	2	7:10 AM	0	0	0	0	0	7:10 AM	0	0	0	0	0
7:15 AM	0	4	0	1	5	7:15 AM	0	0	0	0	0	7:15 AM	0	0	0	0	0
7:20 AM	0	5	0	3	8	7:20 AM	0	0	0	0	0	7:20 AM	0	0	0	0	0
7:25 AM	0	8	0	1	9	7:25 AM	0	0	0	0	0	7:25 AM	0	0	0	0	0
7:30 AM	0	8	0	4	12	7:30 AM	0	0	0	0	0	7:30 AM	0	0	0	0	0
7:35 AM	0	0	0	1	1	7:35 AM	0	0	0	0	0	7:35 AM	0	0	0	0	0
7:40 AM	0	4	0	1	5	7:40 AM	0	0	0	0	0	7:40 AM	0	0	0	0	0
7:45 AM	0	3	0	1	4	7:45 AM	0	0	0	0	0	7:45 AM	0	0	0	0	0
7:50 AM	0	2	0	3	5	7:50 AM	0	0	0	0	0	7:50 AM	0	0	0	0	0
7:55 AM	0	2	0	4	6	7:55 AM	0	0	0	0	0	7:55 AM	0	0	0	0	0
8:00 AM	0	4	0	1	5	8:00 AM	0	0	0	0	0	8:00 AM	0	0	0	0	0
8:05 AM	0	2	0	1	3	8:05 AM	0	0	0	0	0	8:05 AM	0	0	0	0	0
8:10 AM	0	2	0	4	6	8:10 AM	0	0	0	0	0	8:10 AM	0	0	0	0	0
8:15 AM	0	2	1	1	4	8:15 AM	0	0	0	0	0	8:15 AM	0	0	0	0	0
8:20 AM	0	1	0	6	7	8:20 AM	0	0	0	0	0	8:20 AM	0	0	0	0	0
8:25 AM	0	2	1	4	7	8:25 AM	0	0	0	0	0	8:25 AM	0	0	0	0	0
8:30 AM	0	5	0	6	11	8:30 AM	0	0	0	0	0	8:30 AM	0	0	0	0	0
8:35 AM	0	1	0	1	2	8:35 AM	0	0	0	0	0	8:35 AM	0	0	0	0	0
8:40 AM	0	0	0	1	1	8:40 AM	0	0	0	0	0	8:40 AM	0	0	0	0	0
8:45 AM	0	3	0	4	7	8:45 AM	0	0	0	0	0	8:45 AM	0	0	0	0	0
8:50 AM	0	4	0	1	5	8:50 AM	0	0	0	0	0	8:50 AM	0	0	0	0	0
8:55 AM	0	3	0	5	8	8:55 AM	0	0	0	0	0	8:55 AM	0	0	0	0	0
Count Total	0	70	3	58	131	Count Total	0	0	0	0	0	Count Total	0	0	0	0	0
Peak Hour	0	44	1	23	68	Peak Hour	0	0	0	0	0	Peak Hour	0	0	0	0	0



(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



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				Total	Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
4:00 PM	0	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

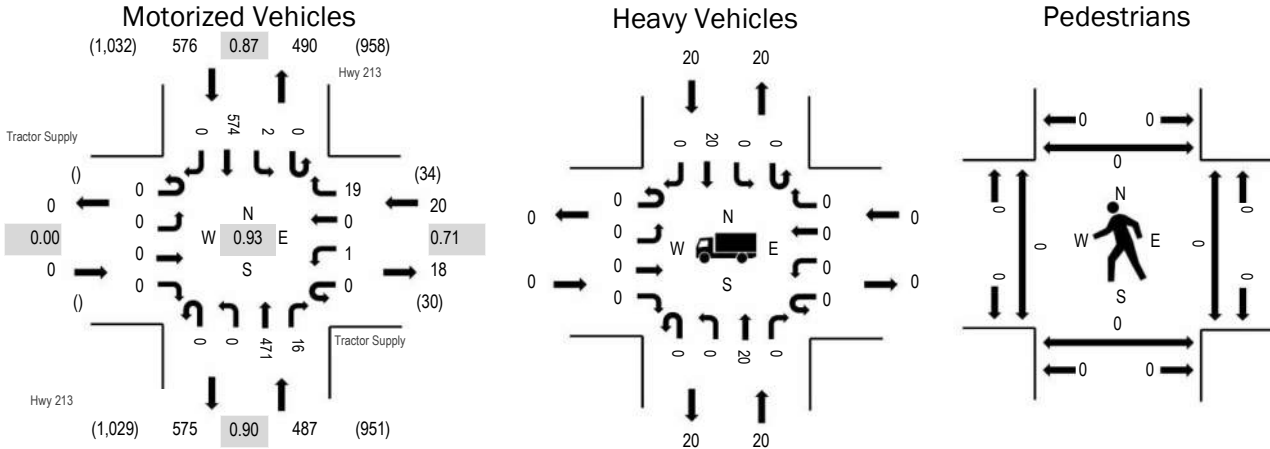
Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
4:00 PM	4	3	4	1	12	4:00 PM	0	0	0	0	0	4:00 PM	0	0	0	0	0
4:05 PM	2	0	1	2	5	4:05 PM	0	0	0	0	0	4:05 PM	0	0	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



(303) 216-2439
www.alltrafficdata.net

Location: 1 Hwy 213 & Tractor Supply PM
Date: Thursday, October 28, 2021
Peak Hour: 04:05 PM - 05:05 PM
Peak 15-Minutes: 04:50 PM - 05:05 PM

Peak Hour



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	0.0%	0.00
WB	0.0%	0.71
NB	4.1%	0.90
SB	3.5%	0.87
All	3.7%	0.93

Traffic Counts - Motorized Vehicles

Interval Start Time	Tractor Supply Eastbound				Tractor Supply Westbound				Hwy 213 Northbound			Hwy 213 Southbound				Total	Rolling Hour	
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru			Right
4:00 PM	0	0	0	0	0	0	0	1	0	0	32	1	0	0	45	0	79	1,057
4:05 PM	0	0	0	0	0	0	0	4	0	0	42	1	0	0	43	0	90	1,083
4:10 PM	0	0	0	0	0	0	0	0	0	0	35	1	0	0	34	0	70	1,071
4:15 PM	0	0	0	0	0	1	0	0	0	0	38	2	0	0	50	0	91	1,068
4:20 PM	0	0	0	0	0	0	0	3	0	0	42	2	0	0	34	0	81	1,060
4:25 PM	0	0	0	0	0	0	0	0	0	0	32	2	0	0	52	0	86	1,075
4:30 PM	0	0	0	0	0	0	0	1	0	0	31	1	0	0	52	0	85	1,076
4:35 PM	0	0	0	0	0	0	0	2	0	0	44	3	0	0	62	0	111	1,062
4:40 PM	0	0	0	0	0	0	0	2	0	0	39	1	0	0	46	0	88	1,027
4:45 PM	0	0	0	0	0	0	0	0	0	0	37	0	0	0	52	0	89	1,005
4:50 PM	0	0	0	0	0	0	0	2	0	0	52	2	0	1	47	0	104	1,001
4:55 PM	0	0	0	0	0	0	0	1	0	0	42	0	0	0	40	0	83	967
5:00 PM	0	0	0	0	0	0	0	4	0	0	37	1	0	1	62	0	105	960
5:05 PM	0	0	0	0	0	0	0	1	0	0	40	1	0	0	36	0	78	
5:10 PM	0	0	0	0	0	0	0	2	0	0	38	0	0	0	27	0	67	
5:15 PM	0	0	0	0	0	0	0	1	0	0	49	1	0	0	32	0	83	
5:20 PM	0	0	0	0	0	0	0	3	0	0	50	2	0	1	40	0	96	
5:25 PM	0	0	0	0	0	0	0	0	0	0	42	1	0	0	44	0	87	
5:30 PM	0	0	0	0	0	1	0	1	0	0	38	0	0	1	30	0	71	
5:35 PM	0	0	0	0	0	0	0	0	0	0	35	0	0	0	41	0	76	
5:40 PM	0	0	0	0	0	0	0	1	0	0	23	1	0	0	41	0	66	
5:45 PM	0	0	0	0	0	0	0	1	0	0	44	2	0	1	37	0	85	
5:50 PM	0	0	0	0	0	0	0	1	0	0	26	0	0	0	43	0	70	
5:55 PM	0	0	0	0	0	0	0	1	0	0	38	0	0	0	37	0	76	
Count Total	0	0	0	0	0	2	0	32	0	0	926	25	0	5	1,027	0	2,017	
Peak Hour	0	0	0	0	0	1	0	19	0	0	471	16	0	2	574	0	1,083	

Location: 1 Hwy 213 & Tractor Supply PM

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	2	0	3	5	4:00 PM	0	0	0	0	0	4:00 PM	0	0	0	0	0
4:05 PM	0	1	0	2	3	4:05 PM	0	0	0	0	0	4:05 PM	0	0	0	0	0
4:10 PM	0	1	0	3	4	4:10 PM	0	0	0	0	0	4:10 PM	0	0	0	0	0
4:15 PM	0	3	0	1	4	4:15 PM	0	0	0	0	0	4:15 PM	0	0	0	0	0
4:20 PM	0	3	0	1	4	4:20 PM	0	0	0	0	0	4:20 PM	0	0	0	0	0
4:25 PM	0	1	0	2	3	4:25 PM	0	0	0	0	0	4:25 PM	0	0	0	0	0
4:30 PM	0	2	0	1	3	4:30 PM	0	0	0	0	0	4:30 PM	0	0	0	0	0
4:35 PM	0	0	0	3	3	4:35 PM	0	0	0	0	0	4:35 PM	0	0	0	0	0
4:40 PM	0	0	0	2	2	4:40 PM	0	0	0	0	0	4:40 PM	0	0	0	0	0
4:45 PM	0	2	0	3	5	4:45 PM	0	0	0	0	0	4:45 PM	0	0	0	0	0
4:50 PM	0	4	0	1	5	4:50 PM	0	0	0	0	0	4:50 PM	0	0	0	0	0
4:55 PM	0	1	0	0	1	4:55 PM	0	0	0	0	0	4:55 PM	0	0	0	0	0
5:00 PM	0	2	0	1	3	5:00 PM	0	0	0	0	0	5:00 PM	0	0	0	0	0
5:05 PM	0	0	0	2	2	5:05 PM	0	0	0	0	0	5:05 PM	0	0	0	0	0
5:10 PM	0	1	0	1	2	5:10 PM	0	0	0	0	0	5:10 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0	5:15 PM	0	0	0	0	0	5:15 PM	0	0	0	0	0
5:20 PM	0	2	0	4	6	5:20 PM	0	0	0	0	0	5:20 PM	0	0	0	0	0
5:25 PM	0	3	0	1	4	5:25 PM	0	0	0	0	0	5:25 PM	0	0	0	0	0
5:30 PM	0	2	1	2	5	5:30 PM	0	0	0	0	0	5:30 PM	0	0	0	0	0
5:35 PM	0	1	0	1	2	5:35 PM	0	0	0	0	0	5:35 PM	0	0	1	0	1
5:40 PM	0	1	0	3	4	5:40 PM	0	0	0	0	0	5:40 PM	0	0	0	0	0
5:45 PM	0	0	0	2	2	5:45 PM	0	0	0	0	0	5:45 PM	0	0	0	0	0
5:50 PM	0	1	0	0	1	5:50 PM	0	0	0	0	0	5:50 PM	0	0	0	0	0
5:55 PM	0	0	0	0	0	5:55 PM	0	0	0	0	0	5:55 PM	0	0	0	0	0
Count Total	0	33	1	39	73	Count Total	0	0	0	0	0	Count Total	0	0	1	0	1
Peak Hour	0	20	0	20	40	Peak Hour	0	0	0	0	0	Peak Hour	0	0	0	0	0

Location: 2 Hwy 213 & Les Schwab North PM



(303) 216-2439
www.alltrafficdata.net

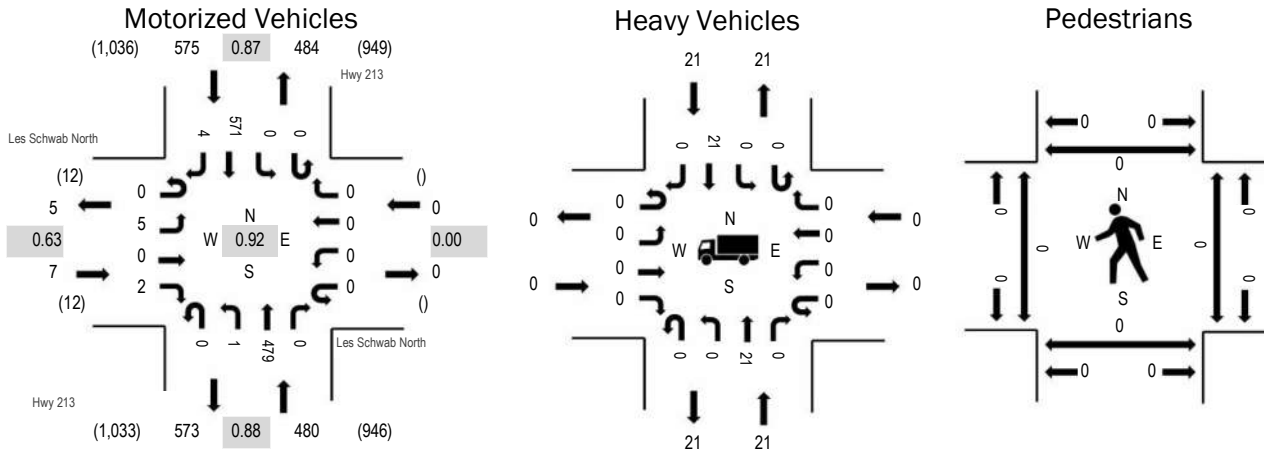
Location: 2 Hwy 213 & Les Schwab North PM

Date: Thursday, October 28, 2021

Peak Hour: 04:05 PM - 05:05 PM

Peak 15-Minutes: 04:50 PM - 05:05 PM

Peak Hour



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	0.0%	0.63
WB	0.0%	0.00
NB	4.4%	0.88
SB	3.7%	0.87
All	4.0%	0.92

Traffic Counts - Motorized Vehicles

Interval Start Time	Les Schwab North Eastbound				Les Schwab North Westbound				Hwy 213 Northbound				Hwy 213 Southbound				Total	Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
4:00 PM	0	0	0	0	0	0	0	0	0	0	35	0	0	0	51	1	87	1,040
4:05 PM	0	0	0	0	0	0	0	0	0	0	42	0	0	0	40	0	82	1,062
4:10 PM	0	0	0	0	0	0	0	0	0	0	39	0	0	0	37	1	77	1,060
4:15 PM	0	0	0	0	0	0	0	0	0	0	36	0	0	0	46	0	82	1,045
4:20 PM	0	0	0	0	0	0	0	0	0	0	44	0	0	0	34	0	78	1,054
4:25 PM	0	0	0	2	0	0	0	0	0	0	40	0	0	0	52	0	94	1,059
4:30 PM	0	0	0	0	0	0	0	0	0	0	26	0	0	0	50	0	76	1,054
4:35 PM	0	2	0	0	0	0	0	0	0	0	43	0	0	0	63	0	108	1,052
4:40 PM	0	0	0	0	0	0	0	0	0	0	43	0	0	0	49	1	93	1,018
4:45 PM	0	1	0	0	0	0	0	0	0	0	31	0	0	0	51	0	83	991
4:50 PM	0	0	0	0	0	0	0	0	0	0	56	0	0	0	38	1	95	995
4:55 PM	0	1	0	0	0	0	0	0	0	0	43	0	0	0	41	0	85	970
5:00 PM	0	1	0	0	0	0	0	0	0	1	36	0	0	0	70	1	109	954
5:05 PM	0	0	0	1	0	0	0	0	0	0	41	0	0	0	37	1	80	
5:10 PM	0	0	0	0	0	0	0	0	0	0	38	0	0	0	24	0	62	
5:15 PM	0	0	0	1	0	0	0	0	0	0	53	0	0	0	36	1	91	
5:20 PM	0	1	0	0	0	0	0	0	0	0	43	0	0	0	38	1	83	
5:25 PM	0	0	0	1	0	0	0	0	0	0	50	0	0	0	38	0	89	
5:30 PM	0	0	0	0	0	0	0	0	0	0	34	0	0	0	40	0	74	
5:35 PM	0	0	0	0	0	0	0	0	0	0	40	0	0	0	34	0	74	
5:40 PM	0	0	0	0	0	0	0	0	0	1	25	0	0	0	39	1	66	
5:45 PM	0	0	0	0	0	0	0	0	0	0	46	0	0	0	41	0	87	
5:50 PM	0	0	0	0	0	0	0	0	0	0	26	0	0	0	44	0	70	
5:55 PM	0	0	0	1	0	0	0	0	0	1	33	0	0	0	34	0	69	
Count Total	0	6	0	6	0	0	0	0	0	3	943	0	0	0	1,027	9	1,994	
Peak Hour	0	5	0	2	0	0	0	0	0	1	479	0	0	0	571	4	1,062	

Location: 2 Hwy 213 & Les Schwab North PM

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	2	0	3	5	4:00 PM	0	0	0	0	0	4:00 PM	0	0	0	0	0
4:05 PM	0	2	0	2	4	4:05 PM	0	0	0	0	0	4:05 PM	0	0	0	0	0
4:10 PM	0	2	0	4	6	4:10 PM	0	0	0	0	0	4:10 PM	0	0	0	0	0
4:15 PM	0	3	0	1	4	4:15 PM	0	0	0	0	0	4:15 PM	0	0	0	0	0
4:20 PM	0	2	0	0	2	4:20 PM	0	0	0	0	0	4:20 PM	0	0	0	0	0
4:25 PM	0	2	0	3	5	4:25 PM	0	0	0	0	0	4:25 PM	0	0	0	0	0
4:30 PM	0	2	0	1	3	4:30 PM	0	0	0	0	0	4:30 PM	0	0	0	0	0
4:35 PM	0	0	0	3	3	4:35 PM	0	0	0	0	0	4:35 PM	0	0	0	0	0
4:40 PM	0	0	0	2	2	4:40 PM	0	0	0	0	0	4:40 PM	0	0	0	0	0
4:45 PM	0	1	0	2	3	4:45 PM	0	0	0	0	0	4:45 PM	0	0	0	0	0
4:50 PM	0	3	0	2	5	4:50 PM	0	0	0	0	0	4:50 PM	0	0	0	0	0
4:55 PM	0	3	0	1	4	4:55 PM	0	0	0	0	0	4:55 PM	0	0	0	0	0
5:00 PM	0	1	0	0	1	5:00 PM	0	0	0	0	0	5:00 PM	0	0	0	0	0
5:05 PM	0	1	0	3	4	5:05 PM	0	0	0	0	0	5:05 PM	0	0	0	0	0
5:10 PM	0	1	0	1	2	5:10 PM	0	0	0	0	0	5:10 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0	5:15 PM	0	0	0	0	0	5:15 PM	0	0	0	0	0
5:20 PM	0	2	0	3	5	5:20 PM	0	0	0	0	0	5:20 PM	0	0	0	0	0
5:25 PM	0	1	0	0	1	5:25 PM	0	0	0	0	0	5:25 PM	0	0	0	0	0
5:30 PM	0	2	0	4	6	5:30 PM	0	0	0	0	0	5:30 PM	0	0	0	0	0
5:35 PM	0	1	0	0	1	5:35 PM	0	0	0	0	0	5:35 PM	0	0	0	0	0
5:40 PM	0	0	0	4	4	5:40 PM	0	0	0	0	0	5:40 PM	0	0	0	0	0
5:45 PM	0	1	0	0	1	5:45 PM	0	0	0	0	0	5:45 PM	0	0	0	0	0
5:50 PM	0	1	0	2	3	5:50 PM	0	0	0	0	0	5:50 PM	0	0	0	0	0
5:55 PM	0	0	0	0	0	5:55 PM	0	0	0	0	0	5:55 PM	0	0	0	0	0
Count Total	0	33	0	41	74	Count Total	0	0	0	0	0	Count Total	0	0	0	0	0
Peak Hour	0	21	0	21	42	Peak Hour	0	0	0	0	0	Peak Hour	0	0	0	0	0

Location: 3 Hwy 213 & Les Schwab South PM



(303) 216-2439
www.alltrafficdata.net

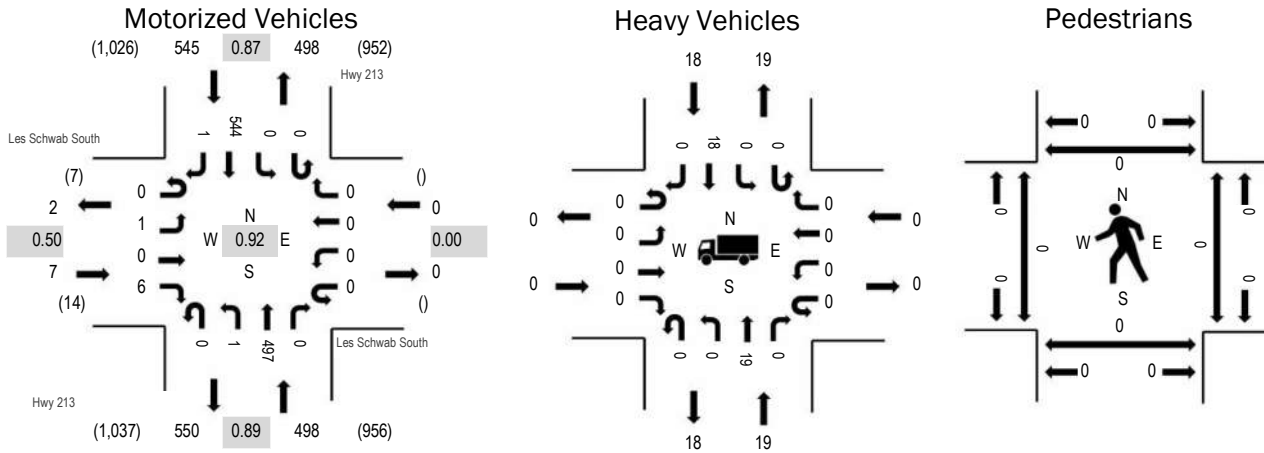
Location: 3 Hwy 213 & Les Schwab South PM

Date: Thursday, October 28, 2021

Peak Hour: 04:30 PM - 05:30 PM

Peak 15-Minutes: 04:55 PM - 05:10 PM

Peak Hour



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	0.0%	0.50
WB	0.0%	0.00
NB	3.8%	0.89
SB	3.3%	0.87
All	3.5%	0.92

Traffic Counts - Motorized Vehicles

Interval Start Time	Les Schwab South Eastbound				Les Schwab South Westbound				Hwy 213 Northbound				Hwy 213 Southbound				Total	Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
4:00 PM	0	0	0	1	0	0	0	0	0	1	39	0	0	0	31	0	72	1,029
4:05 PM	0	0	0	1	0	0	0	0	0	1	37	0	0	0	57	0	96	1,041
4:10 PM	0	0	0	0	0	0	0	0	0	0	39	0	0	0	37	0	76	1,047
4:15 PM	0	0	0	0	0	0	0	0	0	0	39	0	0	0	40	0	79	1,049
4:20 PM	0	0	0	0	0	0	0	0	0	0	37	0	0	0	41	0	78	1,038
4:25 PM	0	0	0	0	0	0	0	0	0	0	43	0	0	0	38	1	82	1,049
4:30 PM	0	0	0	1	0	0	0	0	0	0	39	0	0	0	50	0	90	1,050
4:35 PM	0	1	0	1	0	0	0	0	0	0	29	0	0	0	48	0	79	1,049
4:40 PM	0	0	0	0	0	0	0	0	0	1	36	0	0	0	61	0	98	1,048
4:45 PM	0	0	0	0	0	0	0	0	0	0	48	0	0	0	53	0	101	1,017
4:50 PM	0	0	0	0	0	0	0	0	0	0	31	0	0	0	49	0	80	988
4:55 PM	0	0	0	1	0	0	0	0	0	0	57	0	0	0	39	1	98	989
5:00 PM	0	0	0	0	0	0	0	0	0	0	45	0	0	0	39	0	84	967
5:05 PM	0	0	0	0	0	0	0	0	0	0	38	0	0	0	64	0	102	
5:10 PM	0	0	0	0	0	0	0	0	0	0	37	0	0	0	41	0	78	
5:15 PM	0	0	0	1	0	0	0	0	0	0	40	0	0	0	27	0	68	
5:20 PM	0	0	0	2	0	0	0	0	0	0	50	0	0	0	37	0	89	
5:25 PM	0	0	0	0	0	0	0	0	0	0	47	0	0	0	36	0	83	
5:30 PM	0	0	0	2	0	0	0	0	0	0	49	0	0	0	38	0	89	
5:35 PM	0	0	0	0	0	0	0	0	0	2	35	0	0	0	41	0	78	
5:40 PM	0	0	0	0	0	0	0	0	0	0	40	0	0	0	27	0	67	
5:45 PM	0	0	0	1	0	0	0	0	0	0	28	0	0	0	43	0	72	
5:50 PM	0	0	0	1	0	0	0	0	0	0	39	0	0	0	41	0	81	
5:55 PM	0	0	0	1	0	0	0	0	0	0	29	0	0	0	46	0	76	
Count Total	0	1	0	13	0	0	0	0	0	5	951	0	0	0	1,024	2	1,996	
Peak Hour	0	1	0	6	0	0	0	0	0	1	497	0	0	0	544	1	1,050	

Location: 3 Hwy 213 & Les Schwab South PM

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	2	0	0	2	4:00 PM	0	0	0	0	0	4:00 PM	0	0	0	0	0
4:05 PM	0	3	0	3	6	4:05 PM	0	0	0	0	0	4:05 PM	0	0	0	0	0
4:10 PM	0	2	0	2	4	4:10 PM	0	0	0	0	0	4:10 PM	0	0	0	0	0
4:15 PM	0	1	0	4	5	4:15 PM	0	0	0	0	0	4:15 PM	0	0	0	0	0
4:20 PM	0	3	0	0	3	4:20 PM	0	0	0	0	0	4:20 PM	0	0	0	0	0
4:25 PM	0	3	0	0	3	4:25 PM	0	0	0	0	0	4:25 PM	0	0	0	0	0
4:30 PM	0	2	0	3	5	4:30 PM	0	0	0	0	0	4:30 PM	0	0	0	0	0
4:35 PM	0	2	0	1	3	4:35 PM	0	0	0	0	0	4:35 PM	0	0	0	0	0
4:40 PM	0	0	0	3	3	4:40 PM	0	0	0	0	0	4:40 PM	0	0	0	0	0
4:45 PM	0	0	0	2	2	4:45 PM	0	0	0	0	0	4:45 PM	0	0	0	0	0
4:50 PM	0	1	0	2	3	4:50 PM	0	0	0	0	0	4:50 PM	0	0	0	0	0
4:55 PM	0	5	0	1	6	4:55 PM	0	0	0	0	0	4:55 PM	0	0	0	0	0
5:00 PM	0	3	0	1	4	5:00 PM	0	0	0	0	0	5:00 PM	0	0	0	0	0
5:05 PM	0	2	0	0	2	5:05 PM	0	0	0	0	0	5:05 PM	0	0	0	0	0
5:10 PM	0	1	0	1	2	5:10 PM	0	0	0	0	0	5:10 PM	0	0	0	0	0
5:15 PM	0	1	0	1	2	5:15 PM	0	0	0	0	0	5:15 PM	0	0	0	0	0
5:20 PM	0	0	0	0	0	5:20 PM	0	0	0	0	0	5:20 PM	0	0	0	0	0
5:25 PM	0	2	0	3	5	5:25 PM	0	0	0	0	0	5:25 PM	0	0	0	0	0
5:30 PM	0	1	0	0	1	5:30 PM	0	0	0	0	0	5:30 PM	0	0	0	0	0
5:35 PM	0	4	0	4	8	5:35 PM	0	0	0	0	0	5:35 PM	0	0	0	0	0
5:40 PM	0	1	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	3	3	5:45 PM	0	0	0	0	0	5:45 PM	0	0	0	0	0
5:50 PM	0	1	0	1	2	5:50 PM	0	0	0	0	0	5:50 PM	0	0	0	0	0
5:55 PM	0	1	0	2	3	5:55 PM	0	0	0	0	0	5:55 PM	0	0	0	0	0
Count Total	0	41	0	37	78	Count Total	0	0	0	0	0	Count Total	0	0	0	0	0
Peak Hour	0	19	0	18	37	Peak Hour	0	0	0	0	0	Peak Hour	0	0	0	0	0

Location: 4 Hwy 213 & Safeway North PM



(303) 216-2439
www.alltrafficdata.net

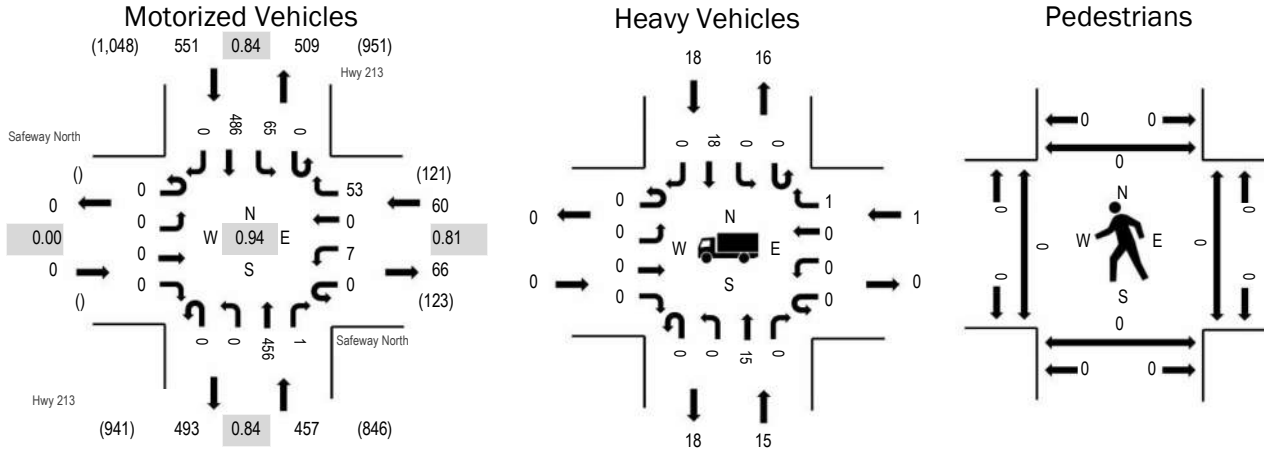
Location: 4 Hwy 213 & Safeway North PM

Date: Thursday, October 28, 2021

Peak Hour: 04:30 PM - 05:30 PM

Peak 15-Minutes: 04:40 PM - 04:55 PM

Peak Hour



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	0.0%	0.00
WB	1.7%	0.81
NB	3.3%	0.84
SB	3.3%	0.84
All	3.2%	0.94

Traffic Counts - Motorized Vehicles

Interval Start Time	Safeway North Eastbound				Safeway North Westbound				Hwy 213 Northbound				Hwy 213 Southbound				Total	Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
4:00 PM	0	0	0	0	0	0	0	4	0	0	33	0	0	5	51	0	93	1,060
4:05 PM	0	0	0	0	0	0	0	2	0	0	39	1	0	2	40	0	84	1,059
4:10 PM	0	0	0	0	0	0	0	5	0	0	38	0	0	6	34	0	83	1,056
4:15 PM	0	0	0	0	0	2	0	4	0	0	29	0	0	5	29	0	69	1,045
4:20 PM	0	0	0	0	0	0	0	3	0	0	37	1	0	6	42	0	89	1,047
4:25 PM	0	0	0	0	0	1	0	6	0	0	34	0	0	2	35	0	78	1,048
4:30 PM	0	0	0	0	0	0	0	2	0	0	32	1	0	10	52	0	97	1,068
4:35 PM	0	0	0	0	0	1	0	5	0	0	25	0	0	9	45	0	85	1,054
4:40 PM	0	0	0	0	0	0	0	4	0	0	41	0	0	6	48	0	99	1,040
4:45 PM	0	0	0	0	0	1	0	5	0	0	37	0	0	4	48	0	95	1,010
4:50 PM	0	0	0	0	0	0	0	6	0	0	40	0	0	4	40	0	90	995
4:55 PM	0	0	0	0	0	1	0	5	0	0	48	0	0	5	39	0	98	987
5:00 PM	0	0	0	0	0	1	0	3	0	0	32	0	0	4	52	0	92	955
5:05 PM	0	0	0	0	0	0	0	3	0	0	33	0	0	8	37	0	81	
5:10 PM	0	0	0	0	0	0	0	8	0	0	30	0	0	3	31	0	72	
5:15 PM	0	0	0	0	0	0	0	6	0	0	37	0	0	5	23	0	71	
5:20 PM	0	0	0	0	0	2	0	4	0	0	45	0	0	3	36	0	90	
5:25 PM	0	0	0	0	0	1	0	2	0	0	56	0	0	4	35	0	98	
5:30 PM	0	0	0	0	0	1	0	5	0	0	30	1	0	5	41	0	83	
5:35 PM	0	0	0	0	0	0	0	6	0	0	36	0	0	1	28	0	71	
5:40 PM	0	0	0	0	0	0	0	4	0	0	24	0	0	3	38	0	69	
5:45 PM	0	0	0	0	0	0	0	6	0	0	28	0	0	10	36	0	80	
5:50 PM	0	0	0	0	0	1	0	6	0	0	30	0	0	4	41	0	82	
5:55 PM	0	0	0	0	0	0	0	5	0	0	28	0	0	5	28	0	66	
Count Total	0	0	0	0	0	12	0	109	0	0	842	4	0	119	929	0	2,015	
Peak Hour	0	0	0	0	0	7	0	53	0	0	456	1	0	65	486	0	1,068	

Location: 4 Hwy 213 & Safeway North PM

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	2	1	2	5	4:00 PM	0	0	0	0	0	4:00 PM	0	0	0	0	0
4:05 PM	0	3	0	2	5	4:05 PM	0	0	0	0	0	4:05 PM	0	0	0	0	0
4:10 PM	0	0	0	4	4	4:10 PM	0	0	0	0	0	4:10 PM	0	0	0	0	0
4:15 PM	0	4	0	2	6	4:15 PM	0	0	0	0	0	4:15 PM	0	0	0	0	0
4:20 PM	0	3	0	0	3	4:20 PM	0	0	0	0	0	4:20 PM	0	0	0	0	0
4:25 PM	0	2	0	2	4	4:25 PM	0	0	0	0	0	4:25 PM	0	0	0	0	0
4:30 PM	0	2	0	2	4	4:30 PM	0	0	0	0	0	4:30 PM	0	0	0	0	0
4:35 PM	0	0	0	1	1	4:35 PM	0	0	0	0	0	4:35 PM	0	0	0	0	0
4:40 PM	0	0	0	2	2	4:40 PM	0	0	0	0	0	4:40 PM	0	0	0	0	0
4:45 PM	0	1	0	4	5	4:45 PM	0	0	0	0	0	4:45 PM	0	0	0	0	0
4:50 PM	0	3	1	1	5	4:50 PM	0	0	0	0	0	4:50 PM	0	0	0	0	0
4:55 PM	0	3	0	1	4	4:55 PM	0	0	0	0	0	4:55 PM	0	0	0	0	0
5:00 PM	0	1	0	0	1	5:00 PM	0	0	0	0	0	5:00 PM	0	0	0	0	0
5:05 PM	0	1	0	2	3	5:05 PM	0	0	0	0	0	5:05 PM	0	0	0	0	0
5:10 PM	0	1	0	1	2	5:10 PM	0	0	0	0	0	5:10 PM	0	0	0	0	0
5:15 PM	0	0	0	1	1	5:15 PM	0	0	0	0	0	5:15 PM	0	0	0	0	0
5:20 PM	0	1	0	1	2	5:20 PM	0	0	0	0	0	5:20 PM	0	0	0	0	0
5:25 PM	0	2	0	2	4	5:25 PM	0	0	0	0	0	5:25 PM	0	0	0	0	0
5:30 PM	0	3	1	3	7	5:30 PM	0	0	0	0	0	5:30 PM	0	0	0	0	0
5:35 PM	0	1	0	1	2	5:35 PM	0	0	0	0	0	5:35 PM	0	0	0	0	0
5:40 PM	0	0	0	3	3	5:40 PM	0	0	0	0	0	5:40 PM	0	0	0	0	0
5:45 PM	0	1	0	1	2	5:45 PM	0	0	0	0	0	5:45 PM	0	0	0	0	0
5:50 PM	0	1	0	2	3	5:50 PM	0	0	0	0	0	5:50 PM	0	0	0	0	0
5:55 PM	0	0	0	0	0	5:55 PM	0	0	0	0	0	5:55 PM	0	0	0	0	0
Count Total	0	35	3	40	78	Count Total	0	0	0	0	0	Count Total	0	0	0	0	0
Peak Hour	0	15	1	18	34	Peak Hour	0	0	0	0	0	Peak Hour	0	0	0	0	0

Location: 5 Hwy 213 & Safeway South PM



(303) 216-2439
www.alltrafficdata.net

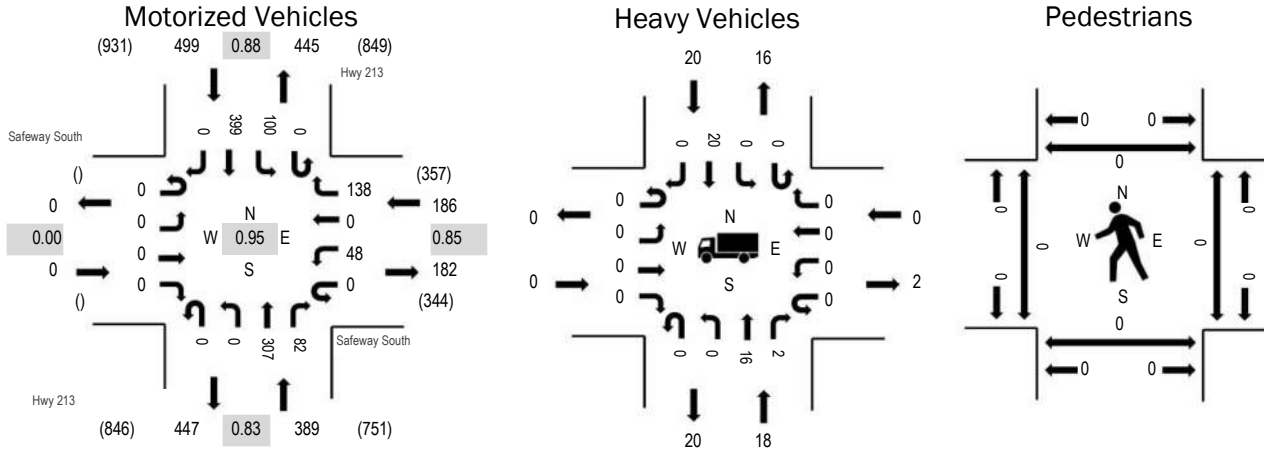
Location: 5 Hwy 213 & Safeway South PM

Date: Thursday, October 28, 2021

Peak Hour: 04:25 PM - 05:25 PM

Peak 15-Minutes: 05:15 PM - 05:30 PM

Peak Hour



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	0.0%	0.00
WB	0.0%	0.85
NB	4.6%	0.83
SB	4.0%	0.88
All	3.5%	0.95

Traffic Counts - Motorized Vehicles

Interval Start Time	Safeway South Eastbound				Safeway South Westbound				Hwy 213 Northbound				Hwy 213 Southbound				Total	Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
4:00 PM	0	0	0	0	0	3	0	8	0	0	28	2	0	1	41	0	83	1,049
4:05 PM	0	0	0	0	0	2	0	13	0	0	26	6	0	4	29	0	80	1,065
4:10 PM	0	0	0	0	0	7	0	11	0	0	23	8	0	5	33	0	87	1,066
4:15 PM	0	0	0	0	0	6	0	7	0	0	26	9	0	4	34	0	86	1,053
4:20 PM	0	0	0	0	0	6	0	13	0	0	28	2	0	11	22	0	82	1,063
4:25 PM	0	0	0	0	0	3	0	11	0	0	24	12	0	7	38	0	95	1,074
4:30 PM	0	0	0	0	0	2	0	11	0	0	17	5	0	7	38	0	80	1,072
4:35 PM	0	0	0	0	0	4	0	8	0	0	27	6	0	10	39	0	94	1,068
4:40 PM	0	0	0	0	0	2	0	13	0	0	27	5	0	12	38	0	97	1,049
4:45 PM	0	0	0	0	0	6	0	10	0	0	17	6	0	13	34	0	86	1,023
4:50 PM	0	0	0	0	0	2	0	15	0	0	35	3	0	6	31	0	92	1,020
4:55 PM	0	0	0	0	0	5	0	15	0	0	28	3	0	6	30	0	87	1,004
5:00 PM	0	0	0	0	0	2	0	13	0	0	20	5	0	15	44	0	99	990
5:05 PM	0	0	0	0	0	4	0	8	0	0	24	9	0	8	28	0	81	
5:10 PM	0	0	0	0	0	8	0	5	0	0	24	10	0	6	21	0	74	
5:15 PM	0	0	0	0	0	5	0	16	0	0	32	12	0	5	26	0	96	
5:20 PM	0	0	0	0	0	5	0	13	0	0	32	6	0	5	32	0	93	
5:25 PM	0	0	0	0	0	5	0	12	0	0	33	6	0	9	28	0	93	
5:30 PM	0	0	0	0	0	3	0	12	0	0	20	4	0	9	28	0	76	
5:35 PM	0	0	0	0	0	6	0	6	0	0	30	9	0	6	18	0	75	
5:40 PM	0	0	0	0	0	3	0	8	0	0	13	4	0	13	30	0	71	
5:45 PM	0	0	0	0	0	3	0	7	0	0	31	9	0	6	27	0	83	
5:50 PM	0	0	0	0	0	4	0	10	0	0	9	8	0	10	35	0	76	
5:55 PM	0	0	0	0	0	4	0	12	0	0	18	10	0	7	22	0	73	
Count Total	0	0	0	0	0	100	0	257	0	0	592	159	0	185	746	0	2,039	
Peak Hour	0	0	0	0	0	48	0	138	0	0	307	82	0	100	399	0	1,074	

Location: 5 Hwy 213 & Safeway South PM

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles on Crosswalk

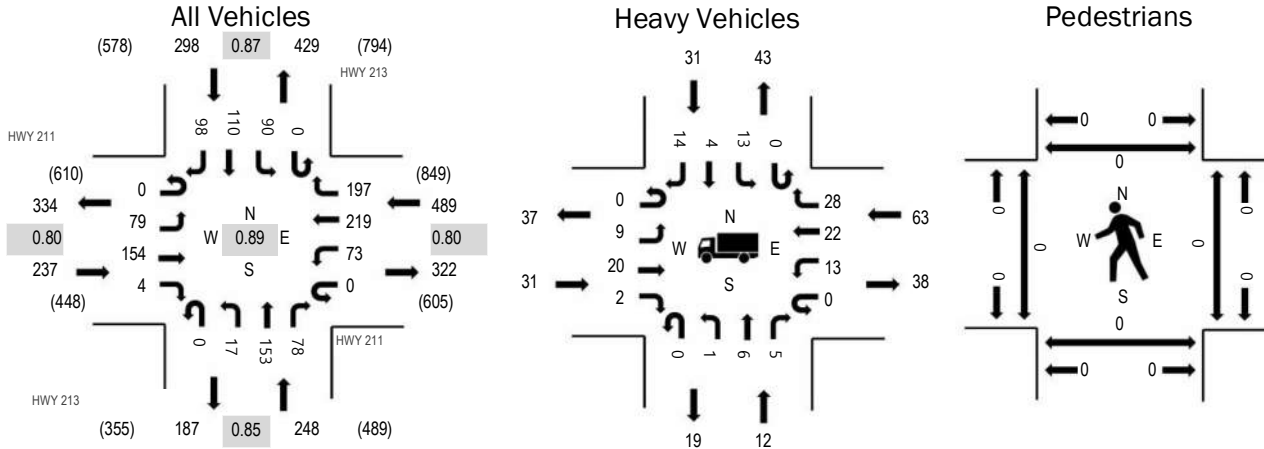
Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
4:00 PM	0	2	0	3	5	4:00 PM	0	0	0	0	0	4:00 PM	0	0	0	0	0
4:05 PM	0	4	0	2	6	4:05 PM	0	0	0	0	0	4:05 PM	0	0	0	0	0
4:10 PM	0	0	1	4	5	4:10 PM	0	0	0	0	0	4:10 PM	0	0	0	0	0
4:15 PM	0	3	0	1	4	4:15 PM	0	0	0	0	0	4:15 PM	0	0	0	0	0
4:20 PM	0	3	0	0	3	4:20 PM	0	0	0	0	0	4:20 PM	0	0	0	0	0
4:25 PM	0	2	0	3	5	4:25 PM	0	0	0	0	0	4:25 PM	0	0	0	0	0
4:30 PM	0	2	0	1	3	4:30 PM	0	0	0	0	0	4:30 PM	0	0	0	0	0
4:35 PM	0	0	0	3	3	4:35 PM	0	0	0	0	0	4:35 PM	0	0	0	0	0
4:40 PM	0	0	0	2	2	4:40 PM	0	0	0	0	0	4:40 PM	0	0	0	0	0
4:45 PM	0	1	0	2	3	4:45 PM	0	0	0	0	0	4:45 PM	0	0	0	0	0
4:50 PM	0	3	0	2	5	4:50 PM	0	0	0	0	0	4:50 PM	0	0	0	0	0
4:55 PM	0	3	0	1	4	4:55 PM	0	0	0	0	0	4:55 PM	0	0	0	0	0
5:00 PM	0	1	0	0	1	5:00 PM	0	0	0	0	0	5:00 PM	0	0	0	0	0
5:05 PM	0	2	0	2	4	5:05 PM	0	0	0	0	0	5:05 PM	0	0	0	0	0
5:10 PM	0	1	0	1	2	5:10 PM	0	0	0	0	0	5:10 PM	0	0	0	0	0
5:15 PM	0	1	0	0	1	5:15 PM	0	0	0	0	0	5:15 PM	0	0	0	0	0
5:20 PM	0	2	0	3	5	5:20 PM	0	0	0	0	0	5:20 PM	0	0	0	0	0
5:25 PM	0	2	0	1	3	5:25 PM	0	0	0	0	0	5:25 PM	0	0	0	0	0
5:30 PM	0	1	0	4	5	5:30 PM	0	0	0	0	0	5:30 PM	0	0	0	0	0
5:35 PM	0	1	0	0	1	5:35 PM	0	0	0	0	0	5:35 PM	0	0	0	0	0
5:40 PM	0	0	0	3	3	5:40 PM	0	0	0	0	0	5:40 PM	0	0	0	0	0
5:45 PM	0	1	0	1	2	5:45 PM	0	0	0	0	0	5:45 PM	0	0	0	0	0
5:50 PM	0	1	0	2	3	5:50 PM	0	0	0	0	0	5:50 PM	0	0	0	0	0
5:55 PM	0	0	0	0	0	5:55 PM	0	0	0	0	0	5:55 PM	0	0	0	0	0
Count Total	0	36	1	41	78	Count Total	0	0	0	0	0	Count Total	0	0	0	0	0
Peak Hour	0	18	0	20	38	Peak Hour	0	0	0	0	0	Peak Hour	0	0	0	0	0



(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



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				Total	Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
7:00 AM	0	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

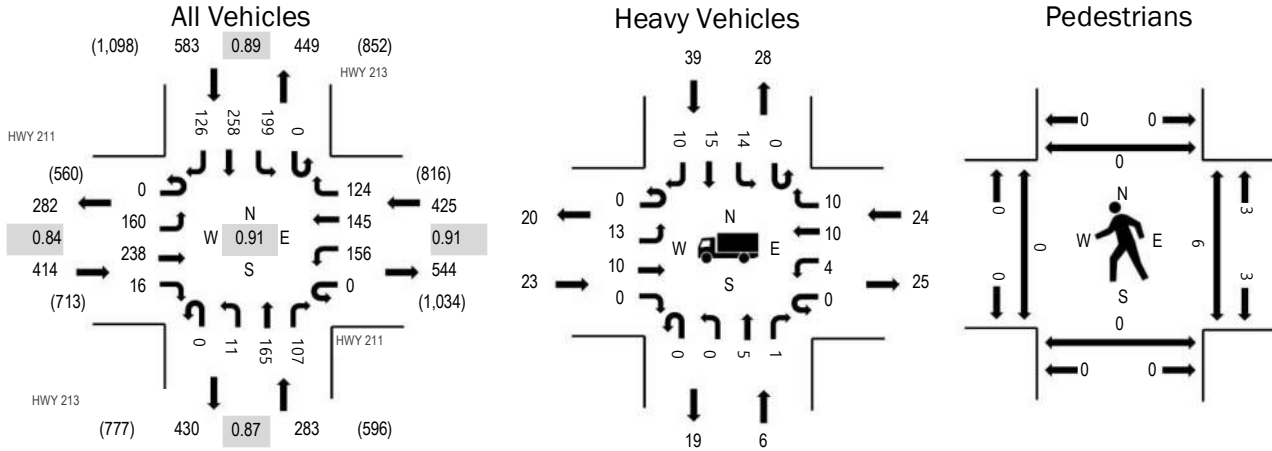
Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
7:00 AM	3	1	1	4	9	7:00 AM	0	0	0	0	0	7:00 AM	0	0	0	0	0
7:05 AM	1	1	7	1	10	7:05 AM	0	0	0	0	0	7:05 AM	0	0	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



(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



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				Total	Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
4:00 PM	0	0	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	

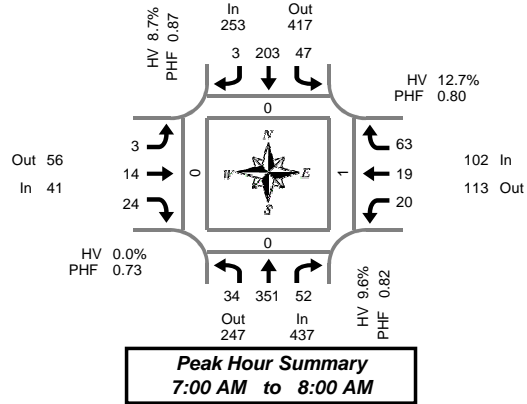
Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles on Crosswalk

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

Total Vehicle Summary



Clay Carney
(503) 833-2740



Hwy 213 & Toliver Rd

Wednesday, January 17, 2018

7:00 AM to 9:00 AM

5-Minute Interval Summary

7:00 AM to 9:00 AM

Interval Start Time	Northbound Hwy 213				Southbound Hwy 213				Eastbound Toliver Rd				Westbound Toliver Rd				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
7:00 AM	2	33	5	0	7	17	0	0	0	0	3	0	1	5	9	0	82	0	0	0	0
7:05 AM	2	21	1	0	1	16	1	0	1	0	3	0	1	1	5	0	53	0	0	0	0
7:10 AM	4	33	5	0	2	13	0	0	0	2	1	0	2	0	8	0	70	0	0	0	0
7:15 AM	5	33	2	0	4	11	0	0	0	2	2	0	2	1	7	0	69	0	0	0	0
7:20 AM	5	35	9	0	5	18	0	0	1	0	2	0	1	4	5	0	85	0	0	0	0
7:25 AM	4	36	5	0	6	17	0	0	1	2	0	0	2	2	4	0	79	0	0	0	0
7:30 AM	1	23	4	0	4	14	0	0	0	0	0	0	4	1	3	0	54	0	0	0	0
7:35 AM	2	27	2	0	4	15	0	0	0	0	4	0	1	2	2	0	59	0	0	0	0
7:40 AM	0	27	5	0	2	28	1	0	0	1	5	0	1	0	4	0	74	0	0	0	0
7:45 AM	2	30	8	0	6	16	0	0	0	2	2	0	1	2	5	0	74	0	0	0	0
7:50 AM	3	25	4	0	4	15	1	0	0	3	1	0	1	0	4	0	61	0	0	0	0
7:55 AM	4	28	2	0	2	23	0	0	0	2	1	0	3	1	7	0	73	0	0	1	0
8:00 AM	0	17	3	0	4	18	0	0	0	1	0	0	1	1	3	0	48	0	0	0	0
8:05 AM	2	20	4	0	0	14	0	0	0	0	1	0	0	0	5	0	46	0	0	0	0
8:10 AM	1	23	2	0	2	21	0	0	0	1	0	0	3	0	3	0	56	0	0	0	0
8:15 AM	3	25	1	0	3	19	0	0	1	0	1	0	1	3	6	0	63	0	0	0	0
8:20 AM	1	28	4	0	2	18	1	0	0	0	0	0	1	2	4	0	61	0	0	0	0
8:25 AM	3	24	2	0	1	19	1	0	0	0	1	0	2	1	4	0	58	0	0	0	0
8:30 AM	1	28	5	1	5	15	0	0	0	0	2	0	0	1	3	0	60	0	0	0	0
8:35 AM	3	18	2	0	3	14	0	0	0	0	2	0	2	1	4	0	49	0	0	0	0
8:40 AM	3	18	8	2	5	24	1	0	0	0	1	0	3	1	6	0	70	0	0	0	0
8:45 AM	0	21	1	0	4	21	0	0	1	0	4	0	6	1	6	0	65	0	0	0	0
8:50 AM	2	35	3	0	3	24	2	0	0	4	1	0	2	3	9	0	88	0	0	0	0
8:55 AM	1	20	3	0	1	16	1	0	1	1	0	0	5	1	5	0	55	0	0	0	0
Total Survey	54	628	90	3	80	426	9	0	6	21	37	0	46	34	121	0	1,552	0	0	1	0

15-Minute Interval Summary

7:00 AM to 9:00 AM

Interval Start Time	Northbound Hwy 213				Southbound Hwy 213				Eastbound Toliver Rd				Westbound Toliver Rd				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
7:00 AM	8	87	11	0	10	46	1	0	1	2	7	0	4	6	22	0	205	0	0	0	0
7:15 AM	14	104	16	0	15	46	0	0	2	4	4	0	5	7	16	0	233	0	0	0	0
7:30 AM	3	77	11	0	10	57	1	0	0	1	9	0	6	3	9	0	187	0	0	0	0
7:45 AM	9	83	14	0	12	54	1	0	0	7	4	0	5	3	16	0	208	0	0	1	0
8:00 AM	3	60	9	0	6	53	0	0	0	2	1	0	4	1	11	0	150	0	0	0	0
8:15 AM	7	77	7	0	6	56	2	0	1	0	2	0	4	6	14	0	182	0	0	0	0
8:30 AM	7	64	15	3	13	53	1	0	0	0	5	0	5	3	13	0	179	0	0	0	0
8:45 AM	3	76	7	0	8	61	3	0	2	5	5	0	13	5	20	0	208	0	0	0	0
Total Survey	54	628	90	3	80	426	9	0	6	21	37	0	46	34	121	0	1,552	0	0	1	0

Peak Hour Summary

7:00 AM to 8:00 AM

By Approach	Northbound Hwy 213				Southbound Hwy 213				Eastbound Toliver Rd				Westbound Toliver Rd				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	437	247	684	0	253	417	670	0	41	56	97	0	102	113	215	0	833	0	0	1	0
%HV	9.6%				8.7%				0.0%				12.7%				9.2%				
PHF	0.82				0.87				0.73				0.80				0.89				

By Movement	Northbound Hwy 213				Southbound Hwy 213				Eastbound Toliver Rd				Westbound Toliver Rd				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	34	351	52	437	47	203	3	253	3	14	24	41	20	19	63	102	833
%HV	0.0%	6.8%	34.6%	9.6%	10.6%	8.4%	0.0%	8.7%	0.0%	0.0%	0.0%	0.0%	30.0%	5.3%	9.5%	12.7%	9.2%
PHF	0.61	0.84	0.72	0.82	0.78	0.86	0.38	0.87	0.38	0.50	0.55	0.73	0.71	0.68	0.72	0.80	0.89

Rolling Hour Summary

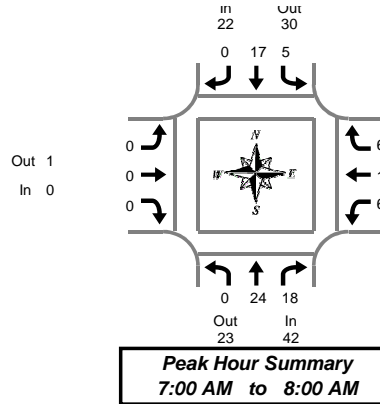
7:00 AM to 9:00 AM

Interval Start Time	Northbound Hwy 213				Southbound Hwy 213				Eastbound Toliver Rd				Westbound Toliver Rd				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
7:00 AM	34	351	52	0	47	203	3	0	3	14	24	0	20	19	63	0	833	0	0	1	0
7:15 AM	29	324	50	0	43	210	2	0	2	14	18	0	20	14	52	0	778	0	0	1	0
7:30 AM	22	297	41	0	34	220	4	0	1	10	16	0	19	13	50	0	727	0	0	1	0
7:45 AM	26	284	45	3	37	216	4	0	1	9	12	0	18	13	54	0	719	0	0	1	0
8:00 AM	20	277	38	3	33	223	6	0	3	7	13	0	26	15	58	0	719	0	0	0	0

Heavy Vehicle Summary



Clay Carney
(503) 833-2740



Hwy 213 & Toliver Rd

Wednesday, January 17, 2018

7:00 AM to 9:00 AM

Heavy Vehicle 5-Minute Interval Summary 7:00 AM to 9:00 AM

Interval Start Time	Northbound Hwy 213				Southbound Hwy 213				Eastbound Toliver Rd				Westbound Toliver Rd				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
7:00 AM	0	2	0	2	2	1	0	3	0	0	0	0	1	0	0	1	6
7:05 AM	0	1	0	1	0	2	0	2	0	0	0	0	0	0	0	0	3
7:10 AM	0	2	4	6	0	0	0	0	0	0	0	0	0	0	1	1	7
7:15 AM	0	2	1	3	0	1	0	1	0	0	0	0	0	0	0	0	4
7:20 AM	0	6	3	9	0	2	0	2	0	0	0	0	0	0	0	0	11
7:25 AM	0	1	4	5	0	1	0	1	0	0	0	0	1	1	0	2	8
7:30 AM	0	0	3	3	1	1	0	2	0	0	0	0	0	0	0	0	5
7:35 AM	0	2	0	2	0	1	0	1	0	0	0	0	1	0	0	1	4
7:40 AM	0	1	1	2	0	4	0	4	0	0	0	0	1	0	0	1	7
7:45 AM	0	4	1	5	1	2	0	3	0	0	0	0	0	0	1	1	9
7:50 AM	0	1	1	2	1	1	0	2	0	0	0	0	1	0	1	2	6
7:55 AM	0	2	0	2	0	1	0	1	0	0	0	0	1	0	3	4	7
8:00 AM	0	0	1	1	0	3	0	3	0	0	0	0	1	0	2	3	7
8:05 AM	0	1	0	1	0	2	0	2	0	0	0	0	0	0	1	1	4
8:10 AM	0	1	1	2	1	6	0	7	0	1	0	1	1	0	0	1	11
8:15 AM	0	2	0	2	0	2	0	2	0	0	0	0	1	0	0	1	5
8:20 AM	0	3	0	3	0	3	1	4	0	0	0	0	0	0	2	2	9
8:25 AM	1	3	0	4	0	6	0	6	0	0	0	0	2	0	0	2	12
8:30 AM	0	2	0	2	0	2	0	2	0	0	0	0	0	0	0	0	4
8:35 AM	0	2	0	2	1	2	0	3	0	0	1	1	0	1	0	1	7
8:40 AM	0	2	1	3	0	5	0	5	0	0	0	0	0	0	0	0	8
8:45 AM	0	2	0	2	0	4	0	4	0	0	0	0	0	0	0	0	6
8:50 AM	0	9	0	9	0	2	0	2	0	0	0	0	0	0	0	0	11
8:55 AM	0	3	3	6	0	2	0	2	0	0	0	0	0	0	0	0	8
Total Survey	1	54	24	79	7	56	1	64	0	1	1	2	11	2	11	24	169

Heavy Vehicle 15-Minute Interval Summary 7:00 AM to 9:00 AM

Interval Start Time	Northbound Hwy 213				Southbound Hwy 213				Eastbound Toliver Rd				Westbound Toliver Rd				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
7:00 AM	0	5	4	9	2	3	0	5	0	0	0	0	1	0	1	2	16
7:15 AM	0	9	8	17	0	4	0	4	0	0	0	0	1	1	0	2	23
7:30 AM	0	3	4	7	1	6	0	7	0	0	0	0	2	0	0	2	16
7:45 AM	0	7	2	9	2	4	0	6	0	0	0	0	2	0	5	7	22
8:00 AM	0	2	2	4	1	11	0	12	0	1	0	1	2	0	3	5	22
8:15 AM	1	8	0	9	0	11	1	12	0	0	0	0	3	0	2	5	26
8:30 AM	0	6	1	7	1	9	0	10	0	0	1	1	0	1	0	1	19
8:45 AM	0	14	3	17	0	8	0	8	0	0	0	0	0	0	0	0	25
Total Survey	1	54	24	79	7	56	1	64	0	1	1	2	11	2	11	24	169

Heavy Vehicle Peak Hour Summary 7:00 AM to 8:00 AM

By Approach	Northbound Hwy 213			Southbound Hwy 213			Eastbound Toliver Rd			Westbound Toliver Rd			Total
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	
Volume	42	23	65	22	30	52	0	1	1	13	23	36	77
PHF	0.58			0.61			0.00			0.46			0.80

By Movement	Northbound Hwy 213				Southbound Hwy 213				Eastbound Toliver Rd				Westbound Toliver Rd				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	0	24	18	42	5	17	0	22	0	0	0	0	6	1	6	13	77
PHF	0.00	0.60	0.45	0.58	0.63	0.61	0.00	0.61	0.00	0.00	0.00	0.00	0.75	0.25	0.30	0.46	0.80

Heavy Vehicle Rolling Hour Summary 7:00 AM to 9:00 AM

Interval Start Time	Northbound Hwy 213				Southbound Hwy 213				Eastbound Toliver Rd				Westbound Toliver Rd				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
7:00 AM	0	24	18	42	5	17	0	22	0	0	0	0	6	1	6	13	77
7:15 AM	0	21	16	37	4	25	0	29	0	1	0	1	7	1	8	16	83
7:30 AM	1	20	8	29	4	32	1	37	0	1	0	1	9	0	10	19	86
7:45 AM	1	23	5	29	4	35	1	40	0	1	1	2	7	1	10	18	89
8:00 AM	1	30	6	37	2	39	1	42	0	1	1	2	5	1	5	11	92

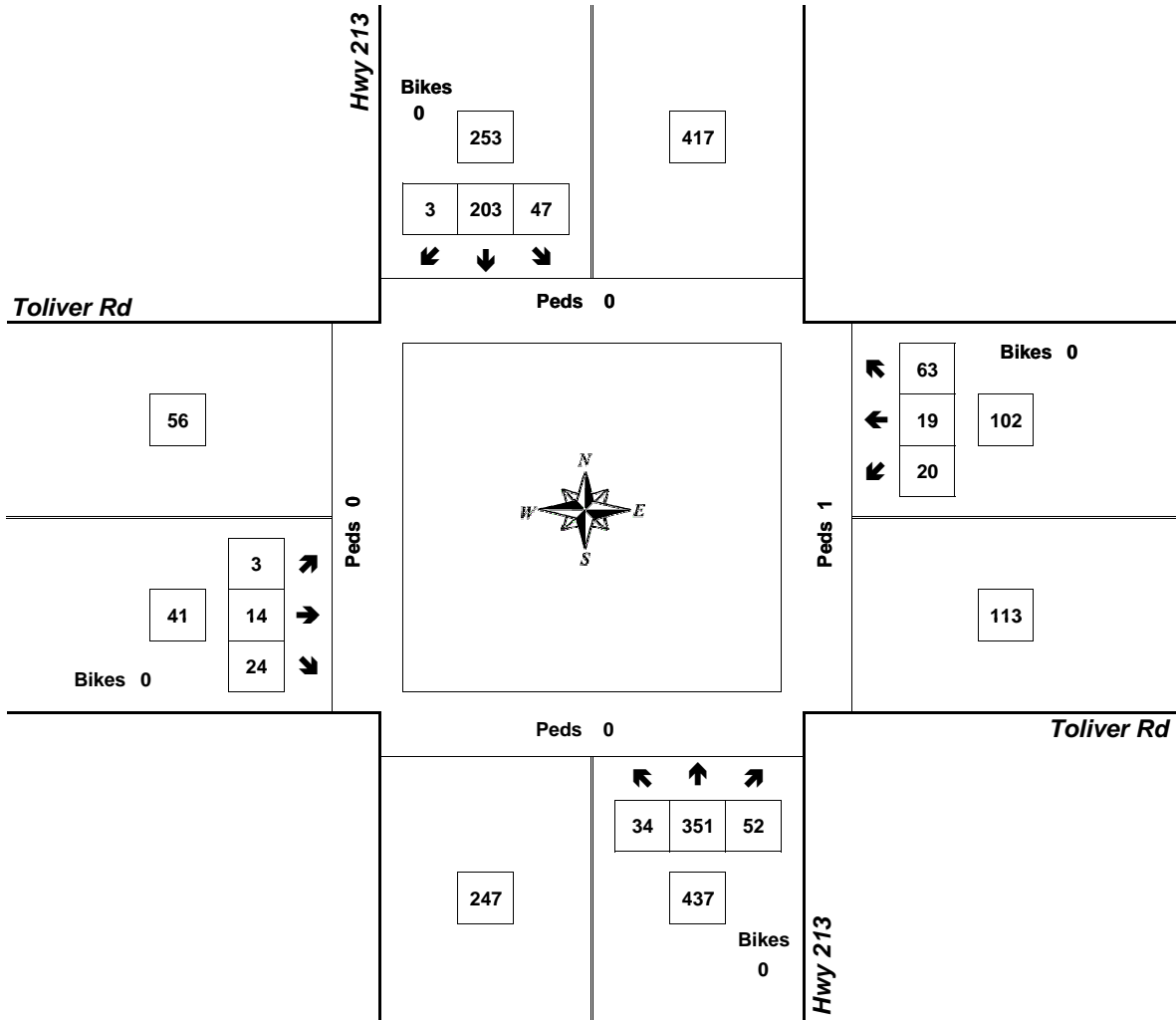
Peak Hour Summary



Clay Carney
(503) 833-2740

Hwy 213 & Toliver Rd

7:00 AM to 8:00 AM
Wednesday, January 17, 2018



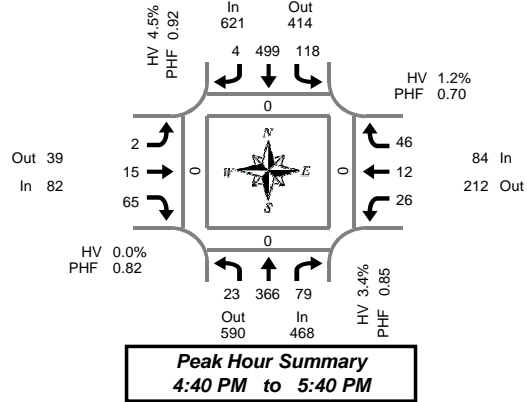
Approach	PHF	HV%	Volume
EB	0.73	0.0%	41
WB	0.80	12.7%	102
NB	0.82	9.6%	437
SB	0.87	8.7%	253
Intersection	0.89	9.2%	833

Count Period: 7:00 AM to 9:00 AM

Total Vehicle Summary



Clay Carney
(503) 833-2740



Hwy 213 & Toliver Rd

Tuesday, January 16, 2018

4:00 PM to 6:00 PM

5-Minute Interval Summary

4:00 PM to 6:00 PM

Interval Start Time	Northbound Hwy 213				Southbound Hwy 213				Eastbound Toliver Rd				Westbound Toliver Rd				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	2	18	4	0	9	41	0	0	0	0	9	0	7	2	4	0	96	0	0	0	0
4:05 PM	1	22	8	0	8	39	0	0	1	1	3	0	8	2	4	0	97	0	0	1	0
4:10 PM	1	21	8	0	8	51	0	0	0	0	6	0	4	0	6	0	105	0	0	0	0
4:15 PM	1	27	7	0	5	36	0	0	0	2	4	0	3	1	6	0	92	0	0	0	0
4:20 PM	1	33	10	0	9	42	0	0	0	3	3	0	2	1	5	0	109	0	0	0	0
4:25 PM	3	21	4	0	9	40	0	0	0	6	11	0	4	2	2	0	102	0	0	0	0
4:30 PM	0	22	14	0	7	32	1	0	0	2	10	0	6	2	2	0	98	0	0	0	0
4:35 PM	2	27	11	0	1	41	0	0	0	3	6	0	3	2	3	0	99	0	0	0	0
4:40 PM	0	35	8	0	10	48	1	0	0	1	4	0	4	0	1	0	112	0	0	0	0
4:45 PM	1	25	9	0	8	30	0	0	0	1	7	0	2	2	4	0	89	0	0	0	0
4:50 PM	2	38	11	0	5	47	0	0	0	0	5	0	1	0	9	0	118	0	0	0	0
4:55 PM	8	31	7	0	9	39	0	0	0	1	5	0	1	1	6	0	108	0	0	0	0
5:00 PM	1	36	3	0	9	30	0	0	0	1	7	0	4	3	5	0	99	0	0	0	0
5:05 PM	1	21	11	0	9	45	0	0	0	1	8	0	3	1	3	0	103	0	0	0	0
5:10 PM	2	33	4	0	8	45	2	0	0	1	6	0	1	1	2	0	105	0	0	0	0
5:15 PM	2	23	8	0	12	38	0	0	1	2	6	0	4	0	4	0	100	0	0	0	0
5:20 PM	2	36	6	0	13	46	0	0	1	1	4	0	2	1	2	0	114	0	0	0	0
5:25 PM	4	26	2	0	10	44	1	0	0	1	2	0	2	0	6	0	98	0	0	0	0
5:30 PM	0	29	4	0	13	42	0	0	0	2	3	0	2	2	3	0	100	0	0	0	0
5:35 PM	0	33	6	0	12	45	0	0	0	3	8	0	0	1	1	0	109	0	0	0	0
5:40 PM	1	30	5	0	4	30	1	0	0	1	5	0	0	1	1	0	79	0	0	0	0
5:45 PM	1	34	8	0	11	42	0	0	0	1	5	0	1	0	5	0	108	0	0	0	0
5:50 PM	0	17	8	0	7	25	0	0	0	1	5	0	1	0	3	0	67	0	0	0	0
5:55 PM	1	22	4	0	9	35	0	0	0	3	4	0	0	1	4	0	83	0	0	1	0
Total Survey	37	660	170	0	205	953	6	0	3	38	136	0	65	26	91	0	2,390	0	0	2	0

15-Minute Interval Summary

4:00 PM to 6:00 PM

Interval Start Time	Northbound Hwy 213				Southbound Hwy 213				Eastbound Toliver Rd				Westbound Toliver Rd				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	4	61	20	0	25	131	0	0	1	1	18	0	19	4	14	0	298	0	0	1	0
4:15 PM	5	81	21	0	23	118	0	0	0	11	18	0	9	4	13	0	303	0	0	0	0
4:30 PM	2	84	33	0	18	121	2	0	0	6	20	0	13	4	6	0	309	0	0	0	0
4:45 PM	11	94	27	0	22	116	0	0	0	2	17	0	4	3	19	0	315	0	0	0	0
5:00 PM	4	90	18	0	26	120	2	0	0	3	21	0	8	5	10	0	307	0	0	0	0
5:15 PM	8	85	16	0	35	128	1	0	2	4	12	0	8	1	12	0	312	0	0	0	0
5:30 PM	1	92	15	0	29	117	1	0	0	6	16	0	2	4	5	0	288	0	0	0	0
5:45 PM	2	73	20	0	27	102	0	0	0	5	14	0	2	1	12	0	258	0	0	1	0
Total Survey	37	660	170	0	205	953	6	0	3	38	136	0	65	26	91	0	2,390	0	0	2	0

Peak Hour Summary

4:40 PM to 5:40 PM

By Approach	Northbound Hwy 213				Southbound Hwy 213				Eastbound Toliver Rd				Westbound Toliver Rd				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	468	590	1,058	0	621	414	1,035	0	82	39	121	0	84	212	296	0	1,255	0	0	0	0
%HV	3.4%				4.5%				0.0%				1.2%				3.6%				
PHF	0.85				0.92				0.82				0.70				0.97				

By Movement	Northbound Hwy 213				Southbound Hwy 213				Eastbound Toliver Rd				Westbound Toliver Rd				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	23	366	79	468	118	499	4	621	2	15	65	82	26	12	46	84	1,255
%HV	0.0%	4.1%	1.3%	3.4%	6.8%	4.0%	0.0%	4.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.2%	1.2%	3.6%
PHF	0.52	0.87	0.71	0.85	0.82	0.95	0.50	0.92	0.25	0.63	0.77	0.82	0.81	0.60	0.58	0.70	0.97

Rolling Hour Summary

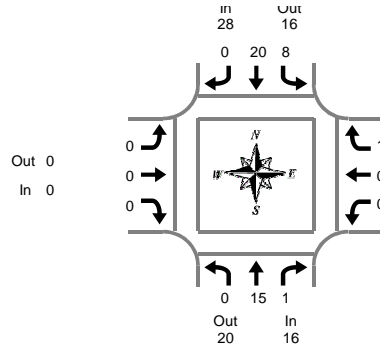
4:00 PM to 6:00 PM

Interval Start Time	Northbound Hwy 213				Southbound Hwy 213				Eastbound Toliver Rd				Westbound Toliver Rd				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	22	320	101	0	88	486	2	0	1	20	73	0	45	15	52	0	1,225	0	0	1	0
4:15 PM	22	349	99	0	89	475	4	0	0	22	76	0	34	16	48	0	1,234	0	0	0	0
4:30 PM	25	353	94	0	101	485	5	0	2	15	70	0	33	13	47	0	1,243	0	0	0	0
4:45 PM	24	361	76	0	112	481	4	0	2	15	66	0	22	13	46	0	1,222	0	0	0	0
5:00 PM	15	340	69	0	117	467	4	0	2	18	63	0	20	11	39	0	1,165	0	0	1	0

Heavy Vehicle Summary



Clay Carney
(503) 833-2740



Peak Hour Summary
4:40 PM to 5:40 PM

Hwy 213 & Toliver Rd

Tuesday, January 16, 2018

4:00 PM to 6:00 PM

Heavy Vehicle 5-Minute Interval Summary

4:00 PM to 6:00 PM

Interval Start Time	Northbound Hwy 213				Southbound Hwy 213				Eastbound Toliver Rd				Westbound Toliver Rd				Interval Total	
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total		
4:00 PM	0	2	1	3	0	3	0	3	0	0	0	0	0	0	0	0	0	6
4:05 PM	0	2	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3
4:10 PM	0	1	3	4	1	5	0	6	0	0	0	0	0	0	0	0	0	10
4:15 PM	0	1	0	1	1	1	0	2	0	0	0	0	0	0	0	0	0	3
4:20 PM	1	2	0	3	0	4	0	4	0	0	0	0	0	0	0	0	0	7
4:25 PM	0	2	0	2	0	2	0	2	0	1	0	1	0	0	0	0	0	5
4:30 PM	0	1	4	5	1	1	0	2	0	0	0	0	0	0	0	0	0	7
4:35 PM	0	2	1	3	1	4	0	5	0	0	0	0	0	0	0	0	0	8
4:40 PM	0	1	0	1	1	1	0	2	0	0	0	0	0	0	0	0	0	3
4:45 PM	0	0	0	0	2	1	0	3	0	0	0	0	0	0	0	0	0	3
4:50 PM	0	2	0	2	1	0	0	1	0	0	0	0	0	0	0	0	0	3
4:55 PM	0	2	0	2	0	2	0	2	0	0	0	0	0	0	0	0	0	4
5:00 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	1
5:05 PM	0	2	1	3	0	3	0	3	0	0	0	0	0	0	0	0	0	6
5:10 PM	0	1	0	1	1	0	0	1	0	0	0	0	0	0	0	0	0	2
5:15 PM	0	0	0	0	0	3	0	3	0	0	0	0	0	0	1	1	1	4
5:20 PM	0	3	0	3	1	4	0	5	0	0	0	0	0	0	0	0	0	8
5:25 PM	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	1
5:30 PM	0	3	0	3	1	2	0	3	0	0	0	0	0	0	0	0	0	6
5:35 PM	0	1	0	1	0	3	0	3	0	0	0	0	0	0	0	0	0	4
5:40 PM	0	1	0	1	0	1	0	1	0	0	0	0	0	0	0	0	0	2
5:45 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:50 PM	0	1	0	1	0	1	0	1	0	0	0	0	0	0	0	0	0	2
5:55 PM	0	1	0	1	0	1	0	1	0	0	0	0	0	0	0	0	0	2
Total Survey	1	32	11	44	12	43	0	55	0	1	0	1	0	0	1	1	1	101

Heavy Vehicle 15-Minute Interval Summary

4:00 PM to 6:00 PM

Interval Start Time	Northbound Hwy 213				Southbound Hwy 213				Eastbound Toliver Rd				Westbound Toliver Rd				Interval Total	
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total		
4:00 PM	0	5	5	10	1	8	0	9	0	0	0	0	0	0	0	0	0	19
4:15 PM	1	5	0	6	1	7	0	8	0	1	0	1	0	0	0	0	0	15
4:30 PM	0	4	5	9	3	6	0	9	0	0	0	0	0	0	0	0	0	18
4:45 PM	0	4	0	4	3	3	0	6	0	0	0	0	0	0	0	0	0	10
5:00 PM	0	3	1	4	1	4	0	5	0	0	0	0	0	0	0	0	0	9
5:15 PM	0	3	0	3	2	7	0	9	0	0	0	0	0	0	1	1	1	13
5:30 PM	0	5	0	5	1	6	0	7	0	0	0	0	0	0	0	0	0	12
5:45 PM	0	3	0	3	0	2	0	2	0	0	0	0	0	0	0	0	0	5
Total Survey	1	32	11	44	12	43	0	55	0	1	0	1	0	0	1	1	1	101

Heavy Vehicle Peak Hour Summary

4:40 PM to 5:40 PM

By Approach	Northbound Hwy 213			Southbound Hwy 213			Eastbound Toliver Rd			Westbound Toliver Rd			Total
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	
Volume	16	20	36	28	16	44	0	0	0	1	9	10	45
PHF	0.67			0.78			0.00			0.25			0.75

By Movement	Northbound Hwy 213				Southbound Hwy 213				Eastbound Toliver Rd				Westbound Toliver Rd				Total	
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total		
Volume	0	15	1	16	8	20	0	28	0	0	0	0	0	0	1	1	1	45
PHF	0.00	0.63	0.25	0.67	0.50	0.71	0.00	0.78	0.00	0.00	0.00	0.00	0.00	0.00	0.25	0.25	0.25	0.75

Heavy Vehicle Rolling Hour Summary

4:00 PM to 6:00 PM

Interval Start Time	Northbound Hwy 213				Southbound Hwy 213				Eastbound Toliver Rd				Westbound Toliver Rd				Interval Total	
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total		
4:00 PM	1	18	10	29	8	24	0	32	0	1	0	1	0	0	0	0	0	62
4:15 PM	1	16	6	23	8	20	0	28	0	1	0	1	0	0	0	0	0	52
4:30 PM	0	14	6	20	9	20	0	29	0	0	0	0	0	0	1	1	1	50
4:45 PM	0	15	1	16	7	20	0	27	0	0	0	0	0	0	1	1	1	44
5:00 PM	0	14	1	15	4	19	0	23	0	0	0	0	0	0	1	1	1	39

Peak Hour Summary

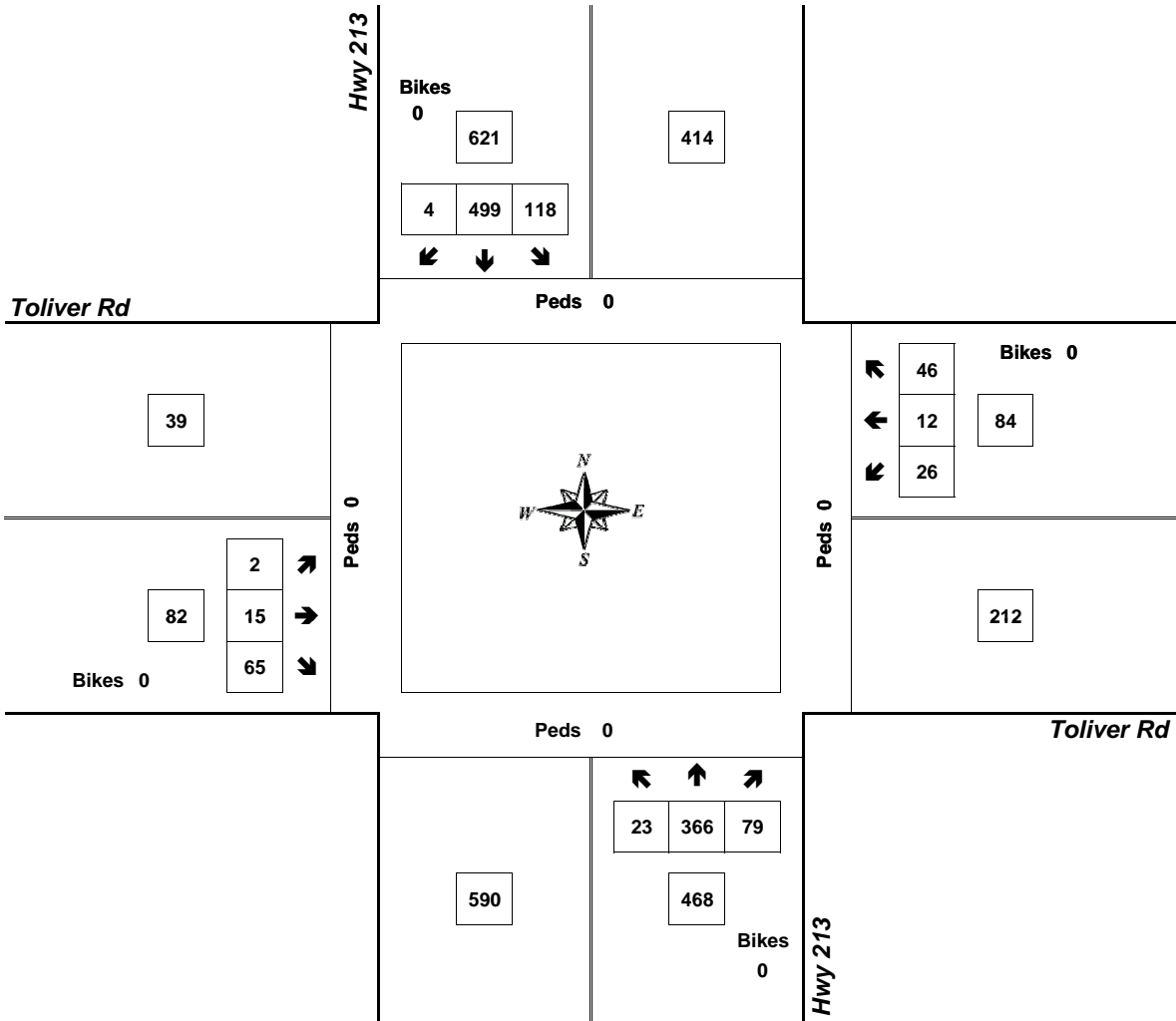


Clay Carney
(503) 833-2740

Hwy 213 & Toliver Rd

4:40 PM to 5:40 PM

Tuesday, January 16, 2018



Approach	PHF	HV%	Volume
EB	0.82	0.0%	82
WB	0.70	1.2%	84
NB	0.85	3.4%	468
SB	0.92	4.5%	621
Intersection	0.97	3.6%	1,255

Count Period: 4:00 PM to 6:00 PM

TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

URBAN NON-SYSTEM CRASH LISTING

CITY OF MOLALLA, CLACKAMAS COUNTY

CASCADE HY SOUTH and TOLIVER RD, City of Molalla, Clackamas County, 01/01/2015 to 12/31/2019

11 - 13 of 27 Crash records shown.

SER#	P	R	J	S	W	DATE	CLASS	CITY	STREET	RD	CHAR	INT-TYPE	(MEDIAN)	INT-REL	OFFRD	WTHR	CRASH	SPCL USE	TRLR	QTY	MOVE	A	S	G	E	LICNS	PED	ACT	EVENT	CAUSE			
INVEST	E	A	U	I	C	O	DAY	DIST	FIRST STREET	DIRECT	LEGS	TRAF-	RNDBT	SURF	COLL	OWNER	FROM	PRTC	INJ	G	E	LICNS	PED	ACT	EVENT	CAUSE							
RD DPT	E	L	G	N	H	R	TIME	FROM	SECOND STREET	DIRECT	LEGS	TRAF-	RNDBT	SURF	COLL	OWNER	FROM	PRTC	INJ	G	E	LICNS	PED	ACT	EVENT	CAUSE							
UNLOC?	D	C	S	V	L	K	LAT	LONG	LRS	LOCTN	(#LANES)	CONTL	DRVWY	LIGHT	SVRTY	V#	TYPE	TO	P#	TYPE	SVRTY	E	X	RES	LOC	ERROR	ACT	EVENT	CAUSE				
																		02	NONE	0	STRGHT												
																			PRVTE		SE-NW							015		00			
																			PSNGR	CAR			01	DRVR	NONE	17	F	OR-Y	028	000	02		
82423	N	N	N			06/10/2016	16		CASCADE HY SOUTH	INTER	CROSS	N	N	RAIN	O-STRGHT	01	NONE	0	STRGHT												07,26,05		
CITY						FR			TOLIVER RD	CN		NONE	N	WET	HEAD				PRVTE		NE-SW								007		00		
N						5P				04	0		N	DAY	INJ				PSNGR	CAR			01	DRVR	NONE	31	M	OR-Y	043,034	000	07,26,05		
N						45 9 21.32	-122 36 13.41		016000100S00																								
																			01	NONE	0	STRGHT											
																			PRVTE		NE-SW									007		00	
																			PSNGR	CAR			02	PSNG	INJC	06	M		000	000	00	00	
																			02	NONE	0	STRGHT											
																			PRVTE		SW-NE									000		00	
																			PSNGR	CAR			01	DRVR	INJC	49	F	OR-Y	000	000	00	00	
																			02	NONE	0	STRGHT											
																			PRVTE		SW-NE									000		00	
																			PSNGR	CAR			02	PSNG	INJC	48	M		000	000	00	00	
03803	N	Y	N	N	N	08/20/2016	16		CASCADE HY SOUTH	INTER	CROSS	N	N	CLR	ANGL-OTH	01	NONE	0	STRGHT												03		
CITY						SA			TOLIVER RD	CN		STOP SIGN	N	DRY	ANGL				PRVTE		NE-SW								000		00		
N						6P				03	0		N	DAY	INJ				PSNGR	CAR			01	DRVR	NONE	24	M	OR-Y	000	000	00		
N						45 9 21.32	-122 36 13.41		016000100S00																								
																			01	NONE	0	STRGHT											
																			PRVTE		NE-SW									000		00	
																			PSNGR	CAR			02	PSNG	INJB	14	M		000	000	00	00	
																			01	NONE	0	STRGHT											
																			PRVTE		NE-SW									000		00	
																			PSNGR	CAR			03	PSNG	INJA	29	F		000	000	00	00	
																			01	NONE	0	STRGHT											
																			PRVTE		NE-SW									000		00	
																			PSNGR	CAR			04	PSNG	NO<5	04	M		000	000	00	00	
																			01	NONE	0	STRGHT											
																			PRVTE		NE-SW									000		00	
																			PSNGR	CAR			05	PSNG	NO<5	01	M		000	000	00	00	
																			01	NONE	0	STRGHT											
																			PRVTE		NE-SW									000		00	
																			PSNGR	CAR			06	PSNG	NO<5	03	F		000	000	00	00	
																			02	NONE	0	STRGHT											
																			PRVTE		SE-NW									000		00	
																			PSNGR	CAR			01	DRVR	NONE	46	M	OR-Y	021	000	00	03	

Disclaimer: The information contained in this report is compiled from individual driver and police crash reports submitted to the Oregon Department of Transportation as required in ORS 811.720. The Crash Analysis and Reporting Unit is committed to providing the highest quality crash data to customers. However, because submittal of crash report forms is the responsibility of the individual driver, the Crash Analysis and Reporting Unit can not guarantee that all qualifying crashes are represented nor can assurances be made that all details pertaining to a single crash are accurate. Note: Legislative changes to DMV's vehicle crash reporting requirement, effective 01/01/2004, may result in fewer property damage only crashes being eligible for inclusion in the Statewide Crash Data File.

OREGON.. DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
URBAN NON-SYSTEM CRASH LISTING

CITY OF MOLALLA, CLACKAMAS COUNTY

CASCADE HY SOUTH and TOLIVER RD, City of Molalla, Clackamas County, 01/01/2015 to 12/31/2019

14 - 17 of 27 Crash records shown.

SER#	S D M P R J S W DATE				CLASS	CITY STREET	RD CHAR	INT-TYPE		OFFRD	WTHR	CRASH	SPCL USE		A S			ACT	EVENT	CAUSE									
	INVEST	E A U I C O DAY	DIST	FIRST STREET				(MEDIAN)	INT-REL				TRLR QTY	MOVE	G E LICNS	PED	RD DPT				E L G N H R TIME	FROM	SECOND STREET	DIRECT	LEGS	TRAF-	RNDBT	SURF	COLL
UNLOC?	D C S V L K LAT	LONG	LRS	LOCTN	(#LANES)	CONTL	DRVWY	LIGHT	SVRTY	V#	TYPE	TO	P#	TYPE	SVRTY	E X RES	LOC	ERROR	ACT	EVENT	CAUSE								
03679	N N N	N N	08/12/2016	16	CASCADE HY SOUTH	INTER	CROSS	N	N	N	CLR	NON-COLL	01	NONE	0	STRGHT					082	06							
CITY		FR			TOLIVER RD	CN		NONE	N	DRY	OTH	PRVTE		NE-SW						031	00								
N		5P				01	0		N	DAY	INJ	MTRCYCLE			01	DRVR	INJB	36	M	OR-Y	034,031	000	082	06					
N		45	9 21.32	-122 36 13.41	016000100S00																								
05191	N N N	N N	11/09/2016	16	CASCADE HY SOUTH	INTER	CROSS	N	N	N	CLR	ANGL-OTH	01	NONE	0	STRGHT					013	02							
CITY		WE			TOLIVER RD	CN		STOP SIGN	N	DRY	ANGL	PRVTE		S -N						000	00								
N		9A				04	0		N	DAY	INJ	PSNGR CAR			01	DRVR	INJC	68	M	OR-Y	000	000	00						
N		45	9 21.32	-122 36 13.41	016000100S00																								
													02	NONE	0	STRGHT													
														PRVTE		W -E				000	013	00							
													01	DRVR	INJC	91	M	OR-Y	028	000	00	02							
													03	NONE	0	STOP													
														PRVTE		E -W				022	00	00							
													01	DRVR	NONE	65	F	OR-Y	000	000	00	00							
04199	N N N	N N	09/13/2016	16	CASCADE HY SOUTH	INTER	CROSS	N	N	N	CLR	O-1 L-TURN	01	NONE	9	STRGHT						02,08							
NONE		TU			TOLIVER RD	CN		STOP SIGN	N	DRY	TURN	N/A		W -E						015	00								
N		5P				03	0		N	DAY	PDO	PSNGR CAR			01	DRVR	NONE	00	Unk UNK	000	000	00							
N		45	9 21.32	-122 36 13.41	016000100S00																								
													02	NONE	9	TURN-L													
														N/A		E -S				015	00	00							
													01	DRVR	NONE	00	Unk UNK	000	000	00	00								
00340	N N N	N N	01/24/2017	16	CASCADE HY SOUTH	INTER	CROSS	N	N	N	CLR	ANGL-OTH	01	NONE	0	STRGHT						02							
CITY		TU			TOLIVER RD	CN		STOP SIGN	N	DRY	TURN	PRVTE		SW-NE						000	00								
N		3P				02	0		N	DAY	INJ	PSNGR CAR			01	DRVR	INJB	38	M	OR-Y	000	000	00						
N		45	9 21.32	-122 36 13.41	016000100S00																								
													02	NONE	0	TURN-L													
														PRVTE		E -SW				015	00	00							
													01	DRVR	INJB	77	M	OR-Y	028	000	00	02							
													02	NONE	0	TURN-L				015	00	00							
														PRVTE		E -SW				015	00	00							
													02	PSNG	INJB	71	F		000	000	00	00							
02470	N N N	N N	07/16/2018	16	CASCADE HY SOUTH	INTER	CROSS	N	N	N	CLR	ANGL-OTH	01	NONE	0	STRGHT						02							
CITY		MO			TOLIVER RD	CN		STOP SIGN	N	DRY	TURN	PRVTE		NE-SW						000	00								
N		9A				03	0		N	DAY	INJ	PSNGR CAR			01	DRVR	INJC	47	M	OR-Y	000	000	00						
N		45	9 21.33	-122 36 13.44	016000100S00																								

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION

TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

CONTINUOUS SYSTEM CRASH LISTING

160: CASCADE HWY SOUTH

Highway 160 ALL ROAD TYPES, MP 15.75 to 16.05 01/01/2015 to 12/31/2019, Both Add and Non-Add mileage

1 - 1 of 1 Crash records shown.

SER#	P	R	J	S	W	DATE	COUNTY	RD#	FC	CONN#	RD CHAR	INT-TYPE	SPCL USE			A S																
INVEST	E	A	U	I	C	DAY	CITY	COMPNT	FIRST STREET	DIRECT	(MEDIAN)	INT-REL	OFFRD	WTHR	CRASH	TRLR QTY	MOVE															
RD DPT	E	L	G	N	H	R	TIME	URBAN AREA	MLG TYP	SECOND STREET	LOCTN	LEGS	TRAF-	RNDBT	SURF	COLL	OWNER	FROM	PRTC	INJ	G	E	LICNS	PED								
UNLOC?	D	C	S	V	L	K	LAT	LONG	MILEPNT	LRS	(#LANES)	CONTL	DRVWY	LIGHT	SVRTY	V#	TYPE	TO	P#	TYPE	SVRTY	E	X	RES	LOC	ERROR	ACT	EVENT	CAUSE			
01721	N	N	N	N		04/15/2016	CLACKAMAS	1	16		ALLEY	N		N	CLR	O-1 L-TURN	01	NONE	0	STRGHT										02,08,32		
CITY						FR			MN	0	UN	(NONE)	UNKNOWN	N	DRY	TURN	PRVTE	S -N											000	00		
N						9P	MOLALLA UA	16.00			04			N	DLIT	INJ	PSNGR CAR			01	DRVR	INJC	59	M	OR-Y		000	000	00			
N						45 9 7.34	-122 36 20.44			016000100S00		(02)																				

Driveway Crash - South Safeway Access

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CONTINUOUS SYSTEM CRASH LISTING

160: CASCADE HWY SOUTH

Highway 160 ALL ROAD TYPES, MP 16.06 to 16.22 01/01/2015 to 12/31/2019, Both Add and Non-Add mileage

7 - 12 of 22 Crash records shown.

S D M																								
SER#	P	R J S W DATE	COUNTY	RD# FC	CONN#	RD CHAR	INT-TYPE	SPCL USE					A S											
INVEST	E A U I C O DAY	CITY	COMPNT	FIRST STREET	DIRECT	(MEDIAN)	INT-REL	OFFRD	WTHR	CRASH	TRLR QTY	MOVE												
RD DPT	E L G N H R TIME	URBAN AREA	MLG TYP	SECOND STREET	LOCTN	LEGS	TRAF-	RNDBT	SURF	COLL	OWNER	FROM	PRTC	INJ	G E LICNS	PED								
UNLOC?	D C S V L K LAT	LONG	MILEPNT	LRS	(#LANES)	CONTL	DRVWY	LIGHT	SVRTY	V#	TYPE	TO	P#	TYPE	SVRTY	E X RES	LOC	ERROR	ACT	EVENT	CAUSE			
03184	N N N N N N	07/15/2016	CLACKAMAS	1	16	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE	0								07		
CITY	FR					W				DRY	REAR											000		
N	3P	MOLALLA UA	16.10			06	0		N	DAY	INJ					01	DRVR	NONE	51	M	OR-Y	043		
N	45 9 2.53	-122 36 22.92		016000100S00																		000		
																						000		
																						000		
																						000		
04148	N N N N N N	09/09/2016	CLACKAMAS	1	16	INTER	CROSS	N	N	CLR	ANGL-STP	01	NONE	9								08,32		
CITY	FR					W				DRY	TURN		N/A									000		
N	6P	MOLALLA UA	16.10			06	0		N	DAY	PDO					01	DRVR	NONE	00	Unk	UNK	000		
N	45 9 2.53	-122 36 22.92		016000100S00																		000		
																						000		
																						000		
																						000		
																						000		
03155	N N N N N N	09/07/2018	CLACKAMAS	1	16	INTER	CROSS	N	N	CLR	O-1 L-TURN	01	NONE	0								27,02,08		
STATE	FR					CN				DRY	TURN		PRVTE									000		
N	6A	MOLALLA UA	16.10			01	0		N	DAY	INJ					01	DRVR	INJC	48	F	OR-Y	000		
N	45 9 2.54	-122 36 22.93		016000100S00																		000		
																						000		
																						000		
																						000		
																						000		
02137	N N N N N N	06/01/2017	CLACKAMAS	1	16	INTER	CROSS	N	N	CLR	ANGL-OTH	01	NONE	9								02,13		
CITY	TH					CN				DRY	TURN		N/A									000		
N	3P	MOLALLA UA	16.10			02	0		N	DAY	PDO					01	DRVR	NONE	00	Unk	UNK	000		
N	45 9 2.53	-122 36 22.92		016000100S00																		000		
																						000		
																						000		
																						000		
																						000		
03645	N N N N	10/10/2018	CLACKAMAS	1	16	INTER	CROSS	N	N	CLR	O-1 L-TURN	01	NONE	0								02		
CITY	WE					CN				DRY	TURN		PRVTE									000		
N	2P	MOLALLA UA	16.10			02	0		N	DAY	INJ					01	DRVR	INJC	67	F	OR-Y	028		
N	45 9 2.53	-122 36 22.92		016000100S00																		000		
																						000		
																						000		
																						000		
																						000		
05191	N N N N N N	12/06/2015	CLACKAMAS	1	16	INTER	CROSS	N	N	CLR	ANGL-OTH	01	NONE	0								04		
CITY	SU					CN				DRY	ANGL		PRVTE									000		
N	10A	MOLALLA UA	16.10			03	0		N	DAY	PDO					01	DRVR	NONE	39	F	OR-Y	020		
N	45 9 2.53	-122 36 22.92		016000100S00																		000		
																						000		
																						000		
																						000		
																						000		

Disclaimer: The information contained in this report is compiled from individual driver and police crash reports submitted to the Oregon Department of Transportation as required in ORS 811.720. The Crash Analysis and Reporting Unit is committed to providing the highest quality crash data to customers. However, because submittal of crash report forms is the responsibility of the individual driver, the Crash Analysis and Reporting Unit can not guarantee that all qualifying crashes are represented nor can assurances be made that all details pertaining to a single crash are accurate. Note: Legislative changes to DMV's vehicle crash reporting requirement, effective 01/01/2004, may result in fewer property damage only crashes being eligible for inclusion in the Statewide Crash Data File.

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CONTINUOUS SYSTEM CRASH LISTING

160: CASCADE HWY SOUTH

Highway 160 ALL ROAD TYPES, MP 16.06 to 16.22 01/01/2015 to 12/31/2019, Both Add and Non-Add mileage

13 - 17 of 22 Crash records shown.

SER#	P	R	J	S	W	DATE	COUNTY	RD#	FC	CONN#	RD CHAR	INT-TYPE	SPCL USE	MOVE	A	S	INJ	G	E	LICNS	PED	ERROR	ACT	EVENT	CAUSE													
INVEST	E	A	U	I	C	O	CITY	COMPNT	FIRST STREET	DIRECT	(MEDIAN)	INT-REL	OFFRD	WTHR	CRASH	TRLR	QTY	MOVE	PTC	INJ	E	X	RES	LOC	ERROR	ACT	EVENT	CAUSE										
RD DPT	E	L	G	N	H	R	URBAN AREA	MLG	TYP	SECOND STREET	LOCTN	LEGS	TRAF-	RNDBT	SURF	COLL	OWNER	FROM	P#	TYPE	SVRTY	E	X	RES	LOC	ERROR	ACT	EVENT	CAUSE									
UNLOC?	D	C	S	V	L	K	LONG	MILEPNT	LRS		(#LANES)	CONTL	DRVWY	LIGHT	SVRTY	V#	TYPE	TO																				
01405	N	N	N	N	N	N	CLACKAMAS	1	16		INTER	CROSS	N	N	CLD	O-1 L-TURN	01	NONE	0										02									
CITY						SU		MN	0		CN		TRF	SIGNAL	N	WET	TURN	PRVTE										000	00									
N						8P	MOLALLA UA	16.10			03	0		DUSK	INJ		PSNGR	CAR			01	DRVR	INJC	20	F	OR-Y	000	000	00									
N						45 9 2.53	-122 36 22.92		016000100S00																				00									
																	02	NONE	0										000	00								
																	PRVTE													000	00							
																	PSNGR	CAR			01	DRVR	INJC	54	F	OR-Y	028,004	000		02								
																	02	NONE	0										000	00								
																	PRVTE														000	00						
																	PSNGR	CAR			02	PSNG	INJC	22	F		000	000		00								
04052	N	N	N	N	N	N	CLACKAMAS	1	16		INTER	CROSS	N	N	CLR	ANGL-OTH	01	NONE	0										04									
CITY						TU		MN	0		CN		L-GRN	SIG	N	DRY	TURN	PRVTE											000	00								
N						6P	MOLALLA UA	16.10			03	0		DAY	INJ		PSNGR	CAR			01	DRVR	NONE	64	M	OR-Y	020	000		04								
N						45 9 2.53	-122 36 22.92		016000100S00																													
																	02	NONE	0																			
																	PRVTE																000	00				
																	PSNGR	CAR			01	DRVR	NONE	61	M	OR-Y	000	000			00	00						
																	02	NONE	0															000	00			
																	PRVTE																		000	00		
																	PSNGR	CAR			02	PSNG	INJB	61	F		000	000			000	00		00				
02329	N	N	N	N	N	N	CLACKAMAS	1	16		INTER	CROSS	N	N	CLR	ANGL-OTH	01	NONE	9										04									
NONE						MO		MN	0		CN		TRF	SIGNAL	N	DRY	ANGL	N/A												000	00							
N						4A	MOLALLA UA	16.10			03	0		DLIT	PDO		PSNGR	CAR			01	DRVR	NONE	00	Unk	UNK	000	000		00	000	00						
N						45 9 2.53	-122 36 22.92		016000100S00																													
																	02	NONE	9																			
																	N/A																		000	00		
																	PSNGR	CAR			01	DRVR	NONE	00	Unk	UNK	000	000			000	000		00	000	00		
01211	N	N	N	N	N	N	CLACKAMAS	1	16		INTER	CROSS	N	N	CLD	ANGL-OTH	01	NONE	9										04									
CITY						SA		MN	0		CN		TRF	SIGNAL	N	WET	ANGL	N/A														000	00					
N						9A	MOLALLA UA	16.10			03	0		DAY	PDO		PSNGR	CAR			01	DRVR	NONE	00	Unk	UNK	000	000			000	000		00	000	00		
N						45 9 2.55	-122 36 22.94		016000100S00																													
																	02	NONE	9																			
																	N/A																			000	00	
																	PSNGR	CAR			01	DRVR	NONE	00	Unk	UNK	000	000			000	000		00	000	00		
05284	N	N	N	N	N	N	CLACKAMAS	1	16		INTER	CROSS	N	N	RAIN	O-1 L-TURN	01	NONE	0										02									
CITY						MO		MN	0		CN		TRF	SIGNAL	N	WET	TURN	PRVTE															000	00				
N						11A	MOLALLA UA	16.10			04	0		DAY	INJ		PSNGR	CAR			01	DRVR	INJC	20	F	OR-Y	000	000			000	000		00	000	00		
N						45 9 2.53	-122 36 22.92		016000100S00																													
																	02	NONE	0																			
																	PRVTE																				000	00
																	PSNGR	CAR			01	DRVR	NONE	28	M	OR-Y	028,004	000			000	000		02	000	00		

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CONTINUOUS SYSTEM CRASH LISTING

160: CASCADE HWY SOUTH

Highway 160 ALL ROAD TYPES, MP 16.06 to 16.22 01/01/2015 to 12/31/2019, Both Add and Non-Add mileage

18 - 22 of 22 Crash records shown.

SER#	P	R	J	S	W	DATE	COUNTY	RD#	FC	CONN#	RD CHAR	INT-TYPE	SPCL USE	MOVE	A	S	ACT	EVENT	CAUSE																
INVEST	E	A	U	I	C	O	CITY	COMPNT	FIRST STREET	DIRECT	(MEDIAN)	INT-REL	OFFRD	WTHR	CRASH	TRLR QTY																			
RD DPT	E	L	G	N	H	R	URBAN AREA	MLG	TYP	SECOND STREET	LOCTN	LEGS	TRAF-	RNDBT	SURF	COLL	OWNER	FROM	PRTC	INJ	G	E	LICNS	PED											
UNLOC?	D	C	S	V	L	K	LONG	MILEPNT	LRS		(#LANES)	CONTL	DRVWY	LIGHT	SVRTY	V#	TYPE	TO	P#	TYPE	SVRTY	E	X	RES	LOC	ERROR	ACT	EVENT	CAUSE						
02130	N	N	N	N	N	N	06/19/2018	CLACKAMAS	1	16	INTER	CROSS	N	N	CLR	O-1 L-TURN	01	NONE	9	TURN-L											02,08				
CITY							TU	MN	0		CN		TRF	SIGNAL	N	DRY	TURN	N/A												000	00				
N							12P	MOLALLA UA	16.10		04	0		DAY	PDO		PSNGR	CAR				01	DRVR	NONE	00	Unk	UNK			000	000	00			
N							45 9 2.54	-122 36 22.93		016000100S00																									
																	02	NONE	9	STRGHT															
																	N/A		W	-E											000	000	00		
																	PSNGR	CAR				01	DRVR	NONE	00	Unk	UNK			000	000	00			
03098	N	N	N	N	N	N	09/06/2019	CLACKAMAS	1	16	INTER	CROSS	N	N	CLR	O-1 L-TURN	01	NONE	9	TURN-R												02			
CITY							FR	MN	0		CN		TRF	SIGNAL	N	DRY	TURN	N/A													016	00			
N							9A	MOLALLA UA	16.10		04	0		DAY	PDO		PSNGR	CAR				01	DRVR	NONE	00	Unk	UNK			000	000	00			
N							45 9 2.55	-122 36 22.94		016000100S00																									
																	02	NONE	9	TURN-L												000	000	00	
																	N/A		N	-E												000	000	00	
																	PSNGR	CAR				01	DRVR	NONE	00	Unk	UNK			000	000	00			
04838	N	N	N	N	N	N	10/19/2016	CLACKAMAS	1	16	ALLEY		N	N	RAIN	O-1 L-TURN	01	NONE	0	STRGHT													02,08		
CITY							WE	MN	0		UN	(NONE)	UNKNOWN	N	WET	TURN		PRVTE		S	-N										000	000	00		
N							6P	MOLALLA UA	16.13		04			N	DLIT	INJ		PSNGR	CAR				01	DRVR	INJC	29	F	OR-Y		000	000	00			
N							45 9 1.09	-122 36 23.65		016000100S00		(02)																							
																	02	NONE	0	TURN-L												019	00		
																	PRVTE		N	-E													000	000	00
																	PSNGR	CAR				01	DRVR	NONE	52	M	OR-Y		028,004	000	000	00			
04754	N	N	N	N	N	N	10/14/2016	CLACKAMAS	1	16	ALLEY		N	N	RAIN	ANGL-OTH	01	NONE	9	TURN-R														02	
CITY							FR	MN	0		UN	(NONE)	UNKNOWN	N	WET	TURN		N/A		E	-N											018	00		
N							5A	MOLALLA UA	16.13		04			N	DARK	PDO		PSNGR	CAR				01	DRVR	NONE	00	Unk	UNK		000	000	00			
N							45 9 1.09	-122 36 23.65		016000100S00		(02)																							
																	02	NONE	9	STRGHT															
																	N/A		S	-N													000	000	00
																	PSNGR	CAR				01	DRVR	NONE	00	Unk	UNK			000	000	00			
02156	N	N	N	N	N	N	06/27/2019	CLACKAMAS	1	16	TRANS		N	N	CLR	S-STRGHT	01	NONE	9	STRGHT														02	
NONE							TH	MN	0		UN	(NONE)	NONE	N	DRY	SS-O		N/A		S	-N											052	00		
N							2P	MOLALLA UA	16.16		05			N	DAY	PDO		PSNGR	CAR				01	DRVR	NONE	00	Unk	UNK		000	000	00			
N							45 8 59.66	-122 36 24.4		016000100S00		(03)																							
																	02	NONE	9	STRGHT															
																	N/A		S	-N													000	000	00
																	PSNGR	CAR				01	DRVR	NONE	00	Unk	UNK			000	000	00			

Driveway Crash - south of intersection turning to east side (Gas Station)

Driveway Crash - south of intersection turning from east side (Gas Station)

Disclaimer: The information contained in this report is compiled from individual driver and police crash reports submitted to the Oregon Department of Transportation as required in ORS 811.720. The Crash Analysis and Reporting Unit is committed to providing the highest quality crash data to customers. However, because submittal of crash report forms is the responsibility of the individual driver, the Crash Analysis and Reporting Unit can not guarantee that all qualifying crashes are represented nor can assurances be made that all details pertaining to a single crash are accurate. Note: Legislative changes to DMV's vehicle crash reporting requirement, effective 01/01/2004, may result in fewer property damage only crashes being eligible for inclusion in the Statewide Crash Data File.

MOVEMENT SUMMARY

Site: 1 [213&Toliver Background AM (Site Folder: General)]

New Site
 Site Category: (None)
 Roundabout

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h]	[HV %]	[Total veh/h]	[HV %]				[Veh. veh]	[Dist ft]				
South: OR 213														
3	L2	44	3.0	48	3.0	0.541	9.1	LOS A	4.2	106.7	0.40	0.22	0.40	33.0
8	T1	495	3.0	538	3.0	0.541	9.1	LOS A	4.2	106.7	0.40	0.22	0.40	32.9
18	R2	68	3.0	74	3.0	0.541	9.1	LOS A	4.2	106.7	0.40	0.22	0.40	32.0
Approach		607	3.0	660	3.0	0.541	9.1	LOS A	4.2	106.7	0.40	0.22	0.40	32.8
East: Toliver Road														
1	L2	26	3.0	28	3.0	0.201	7.2	LOS A	0.8	21.3	0.61	0.59	0.61	33.5
6	T1	25	3.0	27	3.0	0.201	7.2	LOS A	0.8	21.3	0.61	0.59	0.61	33.4
16	R2	82	3.0	89	3.0	0.201	7.2	LOS A	0.8	21.3	0.61	0.59	0.61	32.5
Approach		133	3.0	145	3.0	0.201	7.2	LOS A	0.8	21.3	0.61	0.59	0.61	32.8
North: OR 213														
7	L2	61	3.0	66	3.0	0.360	6.5	LOS A	2.1	53.8	0.33	0.18	0.33	34.1
4	T1	333	3.0	362	3.0	0.360	6.5	LOS A	2.1	53.8	0.33	0.18	0.33	34.0
14	R2	4	3.0	4	3.0	0.360	6.5	LOS A	2.1	53.8	0.33	0.18	0.33	33.1
Approach		398	3.0	433	3.0	0.360	6.5	LOS A	2.1	53.8	0.33	0.18	0.33	34.0
West: Toliver Road														
5	L2	4	3.0	4	3.0	0.069	5.0	LOS A	0.3	7.0	0.51	0.41	0.51	35.0
2	T1	18	3.0	20	3.0	0.069	5.0	LOS A	0.3	7.0	0.51	0.41	0.51	34.9
12	R2	31	3.0	34	3.0	0.069	5.0	LOS A	0.3	7.0	0.51	0.41	0.51	33.9
Approach		53	3.0	58	3.0	0.069	5.0	LOS A	0.3	7.0	0.51	0.41	0.51	34.3
All Vehicles		1191	3.0	1295	3.0	0.541	7.8	LOS A	4.2	106.7	0.41	0.26	0.41	33.3

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

Intersection and Approach LOS values are based on average delay for all movements (v/c not used).

Roundabout Capacity Model: US HCM 6.

Delay Model: HCM Delay Formula (Geometric Delay is not included).

Queue Model: HCM Queue Formula.

Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

 Site: 1 [213&Toliver Background PM (Site Folder: General)]

New Site
 Site Category: (None)
 Roundabout

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h]	[HV %]	[Total veh/h]	[HV %]				[Veh. veh]	[Dist ft]				
South: OR 213														
3	L2	30	3.0	33	3.0	0.661	12.7	LOS B	7.6	195.6	0.67	0.57	0.81	31.4
8	T1	534	3.0	580	3.0	0.661	12.7	LOS B	7.6	195.6	0.67	0.57	0.81	31.3
18	R2	102	3.0	111	3.0	0.661	12.7	LOS B	7.6	195.6	0.67	0.57	0.81	30.5
Approach		666	3.0	724	3.0	0.661	12.7	LOS B	7.6	195.6	0.67	0.57	0.81	31.2
East: Toliver Road														
1	L2	33	3.0	36	3.0	0.169	7.0	LOS A	0.7	17.4	0.60	0.58	0.60	33.3
6	T1	16	3.0	17	3.0	0.169	7.0	LOS A	0.7	17.4	0.60	0.58	0.60	33.3
16	R2	60	3.0	65	3.0	0.169	7.0	LOS A	0.7	17.4	0.60	0.58	0.60	32.3
Approach		109	3.0	118	3.0	0.169	7.0	LOS A	0.7	17.4	0.60	0.58	0.60	32.8
North: OR 213														
7	L2	154	3.0	167	3.0	0.709	13.3	LOS B	7.7	196.4	0.55	0.30	0.55	30.8
4	T1	639	3.0	695	3.0	0.709	13.3	LOS B	7.7	196.4	0.55	0.30	0.55	30.8
14	R2	5	3.0	5	3.0	0.709	13.3	LOS B	7.7	196.4	0.55	0.30	0.55	30.0
Approach		798	3.0	867	3.0	0.709	13.3	LOS B	7.7	196.4	0.55	0.30	0.55	30.8
West: Toliver Road														
5	L2	2	3.0	2	3.0	0.223	10.0	LOS A	0.9	22.0	0.69	0.69	0.69	32.6
2	T1	20	3.0	22	3.0	0.223	10.0	LOS A	0.9	22.0	0.69	0.69	0.69	32.5
12	R2	85	3.0	92	3.0	0.223	10.0	LOS A	0.9	22.0	0.69	0.69	0.69	31.6
Approach		107	3.0	116	3.0	0.223	10.0	LOS A	0.9	22.0	0.69	0.69	0.69	31.8
All Vehicles		1680	3.0	1826	3.0	0.709	12.4	LOS B	7.7	196.4	0.61	0.45	0.67	31.1

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
 Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

Delay Model: HCM Delay Formula (Geometric Delay is not included).

Queue Model: HCM Queue Formula.

Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 1 [213&Toliver Buildout AM (Site Folder: General)]

New Site
 Site Category: (None)
 Roundabout

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h]	[HV %]	[Total veh/h]	[HV %]				[Veh. veh]	[Dist ft]				
South: OR 213														
3	L2	44	3.0	48	3.0	0.568	9.6	LOS A	4.6	118.1	0.41	0.22	0.41	32.8
8	T1	511	3.0	555	3.0	0.568	9.6	LOS A	4.6	118.1	0.41	0.22	0.41	32.7
18	R2	86	3.0	93	3.0	0.568	9.6	LOS A	4.6	118.1	0.41	0.22	0.41	31.8
Approach		641	3.0	697	3.0	0.568	9.6	LOS A	4.6	118.1	0.41	0.22	0.41	32.6
East: Toliver Road														
1	L2	45	3.0	49	3.0	0.224	7.7	LOS A	0.9	24.0	0.62	0.62	0.62	33.0
6	T1	25	3.0	27	3.0	0.224	7.7	LOS A	0.9	24.0	0.62	0.62	0.62	32.9
16	R2	76	3.0	83	3.0	0.224	7.7	LOS A	0.9	24.0	0.62	0.62	0.62	32.0
Approach		146	3.0	159	3.0	0.224	7.7	LOS A	0.9	24.0	0.62	0.62	0.62	32.5
North: OR 213														
7	L2	55	3.0	60	3.0	0.378	6.8	LOS A	2.2	57.1	0.37	0.22	0.37	34.0
4	T1	350	3.0	380	3.0	0.378	6.8	LOS A	2.2	57.1	0.37	0.22	0.37	33.9
14	R2	4	3.0	4	3.0	0.378	6.8	LOS A	2.2	57.1	0.37	0.22	0.37	32.9
Approach		409	3.0	445	3.0	0.378	6.8	LOS A	2.2	57.1	0.37	0.22	0.37	33.9
West: Toliver Road														
5	L2	4	3.0	4	3.0	0.072	5.2	LOS A	0.3	7.2	0.52	0.43	0.52	34.9
2	T1	18	3.0	20	3.0	0.072	5.2	LOS A	0.3	7.2	0.52	0.43	0.52	34.8
12	R2	31	3.0	34	3.0	0.072	5.2	LOS A	0.3	7.2	0.52	0.43	0.52	33.8
Approach		53	3.0	58	3.0	0.072	5.2	LOS A	0.3	7.2	0.52	0.43	0.52	34.2
All Vehicles		1249	3.0	1358	3.0	0.568	8.2	LOS A	4.6	118.1	0.42	0.27	0.42	33.1

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

Intersection and Approach LOS values are based on average delay for all movements (v/c not used).

Roundabout Capacity Model: US HCM 6.

Delay Model: HCM Delay Formula (Geometric Delay is not included).

Queue Model: HCM Queue Formula.

Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 1 [213&Toliver BuildoutPM (Site Folder: General)]

New Site
 Site Category: (None)
 Roundabout

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h]	[HV %]	[Total veh/h]	[HV %]				[Veh. veh]	[Dist ft]				
South: OR 213														
3	L2	30	3.0	33	3.0	0.678	13.3	LOS B	8.6	221.0	0.69	0.60	0.86	31.2
8	T1	543	3.0	590	3.0	0.678	13.3	LOS B	8.6	221.0	0.69	0.60	0.86	31.1
18	R2	113	3.0	123	3.0	0.678	13.3	LOS B	8.6	221.0	0.69	0.60	0.86	30.3
Approach		686	3.0	746	3.0	0.678	13.3	LOS B	8.6	221.0	0.69	0.60	0.86	31.0
East: Toliver Road														
1	L2	44	3.0	48	3.0	0.183	7.3	LOS A	0.7	19.0	0.61	0.60	0.61	33.0
6	T1	16	3.0	17	3.0	0.183	7.3	LOS A	0.7	19.0	0.61	0.60	0.61	32.9
16	R2	57	3.0	62	3.0	0.183	7.3	LOS A	0.7	19.0	0.61	0.60	0.61	32.0
Approach		117	3.0	127	3.0	0.183	7.3	LOS A	0.7	19.0	0.61	0.60	0.61	32.5
North: OR 213														
7	L2	151	3.0	164	3.0	0.724	14.0	LOS B	7.9	203.3	0.60	0.35	0.60	30.6
4	T1	649	3.0	705	3.0	0.724	14.0	LOS B	7.9	203.3	0.60	0.35	0.60	30.5
14	R2	5	3.0	5	3.0	0.724	14.0	LOS B	7.9	203.3	0.60	0.35	0.60	29.7
Approach		805	3.0	875	3.0	0.724	14.0	LOS B	7.9	203.3	0.60	0.35	0.60	30.5
West: Toliver Road														
5	L2	2	3.0	2	3.0	0.228	10.2	LOS B	0.9	22.3	0.69	0.69	0.69	32.5
2	T1	20	3.0	22	3.0	0.228	10.2	LOS B	0.9	22.3	0.69	0.69	0.69	32.4
12	R2	85	3.0	92	3.0	0.228	10.2	LOS B	0.9	22.3	0.69	0.69	0.69	31.5
Approach		107	3.0	116	3.0	0.228	10.2	LOS B	0.9	22.3	0.69	0.69	0.69	31.7
All Vehicles		1715	3.0	1864	3.0	0.724	13.0	LOS B	8.6	221.0	0.64	0.49	0.71	30.9

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
 Roundabout LOS Method: Same as Sign Control.
 Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
 LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
 Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
 Roundabout Capacity Model: US HCM 6.
 Delay Model: HCM Delay Formula (Geometric Delay is not included).
 Queue Model: HCM Queue Formula.
 Gap-Acceptance Capacity: Traditional M1.
 HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Intersection												
Int Delay, s/veh	5.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	4	17	30	25	24	78	42	446	65	58	294	4
Future Vol, veh/h	4	17	30	25	24	78	42	446	65	58	294	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	1	1	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	0	0	0	13	13	13	10	10	10	9	9	9
Mvmt Flow	4	19	34	28	27	88	47	501	73	65	330	4

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	1151	1131	332	1122	1097	539	334	0	0	575	0	0
Stage 1	462	462	-	633	633	-	-	-	-	-	-	-
Stage 2	689	669	-	489	464	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.23	6.63	6.33	4.2	-	-	4.19	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.23	5.63	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.23	5.63	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.617	4.117	3.417	2.29	-	-	2.281	-	-
Pot Cap-1 Maneuver	177	205	714	174	204	522	1182	-	-	964	-	-
Stage 1	584	568	-	450	457	-	-	-	-	-	-	-
Stage 2	439	459	-	540	545	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	117	177	714	136	176	522	1182	-	-	963	-	-
Mov Cap-2 Maneuver	117	177	-	136	176	-	-	-	-	-	-	-
Stage 1	550	521	-	423	430	-	-	-	-	-	-	-
Stage 2	322	431	-	455	500	-	-	-	-	-	-	-

Approach	EB		WB		NB			SB		
HCM Control Delay, s	20.1		32.4		0.6			1.5		
HCM LOS	C		D							

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1182	-	-	296	270	963	-
HCM Lane V/C Ratio	0.04	-	-	0.194	0.529	0.068	-
HCM Control Delay (s)	8.2	0	-	20.1	32.4	9	0
HCM Lane LOS	A	A	-	C	D	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0.7	2.9	0.2	-

HCM 6th TWSC
2: OR 213 & Tractor Supply

11/08/2021

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	1	552	1	1	348
Future Vol, veh/h	1	1	552	1	1	348
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	88	88	88	88	88	88
Heavy Vehicles, %	0	0	9	9	9	9
Mvmt Flow	1	1	627	1	1	395

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1025	628	0	0	628	0
Stage 1	628	-	-	-	-	-
Stage 2	397	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.19	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.281	-
Pot Cap-1 Maneuver	263	487	-	-	921	-
Stage 1	536	-	-	-	-	-
Stage 2	683	-	-	-	-	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	263	487	-	-	921	-
Mov Cap-2 Maneuver	263	-	-	-	-	-
Stage 1	536	-	-	-	-	-
Stage 2	682	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15.6	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	342	921
HCM Lane V/C Ratio	-	-	0.007	0.001
HCM Control Delay (s)	-	-	15.6	8.9
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	0	0

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	3	2	553	347	2
Future Vol, veh/h	0	3	2	553	347	2
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	86	86	86	86	86	86
Heavy Vehicles, %	0	0	9	9	8	8
Mvmt Flow	0	3	2	643	403	2

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	1051	404	405	0	0
Stage 1	404	-	-	-	-
Stage 2	647	-	-	-	-
Critical Hdwy	6.4	6.2	4.19	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.281	-	-
Pot Cap-1 Maneuver	253	651	1117	-	-
Stage 1	679	-	-	-	-
Stage 2	525	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	252	651	1117	-	-
Mov Cap-2 Maneuver	252	-	-	-	-
Stage 1	677	-	-	-	-
Stage 2	525	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.6	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1117	-	651	-	-
HCM Lane V/C Ratio	0.002	-	0.005	-	-
HCM Control Delay (s)	8.2	0	10.6	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	3	2	554	348	2
Future Vol, veh/h	1	3	2	554	348	2
Conflicting Peds, #/hr	0	1	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	50	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	0	0	9	9	9	9
Mvmt Flow	1	3	2	630	395	2

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	1030	397	397	0	0
Stage 1	396	-	-	-	-
Stage 2	634	-	-	-	-
Critical Hdwy	6.4	6.2	4.19	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.281	-	-
Pot Cap-1 Maneuver	261	657	1125	-	-
Stage 1	684	-	-	-	-
Stage 2	532	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	260	656	1125	-	-
Mov Cap-2 Maneuver	260	-	-	-	-
Stage 1	683	-	-	-	-
Stage 2	532	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.7	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1125	-	475	-	-
HCM Lane V/C Ratio	0.002	-	0.01	-	-
HCM Control Delay (s)	8.2	-	12.7	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection						
Int Delay, s/veh	0.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↔		↔	↔
Traffic Vol, veh/h	0	35	521	3	27	324
Future Vol, veh/h	0	35	521	3	27	324
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	-	-	-	50	-
Veh in Median Storage, #	2	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	6	6	11	11	9	9
Mvmt Flow	0	40	599	3	31	372

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1035	601	0	0	602
Stage 1	601	-	-	-	-
Stage 2	434	-	-	-	-
Critical Hdwy	6.46	6.26	-	-	4.19
Critical Hdwy Stg 1	5.46	-	-	-	-
Critical Hdwy Stg 2	5.46	-	-	-	-
Follow-up Hdwy	3.554	3.354	-	-	2.281
Pot Cap-1 Maneuver	252	493	-	-	942
Stage 1	540	-	-	-	-
Stage 2	645	-	-	-	-
Platoon blocked, %					
Mov Cap-1 Maneuver	244	493	-	-	942
Mov Cap-2 Maneuver	441	-	-	-	-
Stage 1	540	-	-	-	-
Stage 2	624	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13	0	0.7
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	493	942
HCM Lane V/C Ratio	-	-	0.082	0.033
HCM Control Delay (s)	-	-	13	9
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.3	0.1

Intersection						
Int Delay, s/veh	2.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↑	↗	↘	↑
Traffic Vol, veh/h	37	83	441	71	46	278
Future Vol, veh/h	37	83	441	71	46	278
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	100	75	-
Veh in Median Storage, #	2	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	1	1	10	10	9	9
Mvmt Flow	43	97	513	83	53	323

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	942	513	0	0	596	0
Stage 1	513	-	-	-	-	-
Stage 2	429	-	-	-	-	-
Critical Hdwy	6.41	6.21	-	-	4.19	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	-	-	2.281	-
Pot Cap-1 Maneuver	293	563	-	-	947	-
Stage 1	603	-	-	-	-	-
Stage 2	659	-	-	-	-	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	277	563	-	-	947	-
Mov Cap-2 Maneuver	475	-	-	-	-	-
Stage 1	603	-	-	-	-	-
Stage 2	622	-	-	-	-	-
























Approach	WB	NB	SB
HCM Control Delay, s	12.9	0	1.3
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	475	563	947	-
HCM Lane V/C Ratio	-	-	0.091	0.171	0.056	-
HCM Control Delay (s)	-	-	13.3	12.7	9	-
HCM Lane LOS	-	-	B	B	A	-
HCM 95th %tile Q(veh)	-	-	0.3	0.6	0.2	-

HCM Signalized Intersection Capacity Analysis

7: OR 213 & OR 211

11/08/2021

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	75	150	10	71	204	213	16	224	87	101	117	97	
Future Volume (vph)	75	150	10	71	204	213	16	224	87	101	117	97	
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.93		
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		
Satd. Flow (prot)	1421	1482		1484	1562	1328	1614	1699	1444	1458	1431		
Flt Permitted	0.45	1.00		0.61	1.00	1.00	0.60	1.00	1.00	0.38	1.00		
Satd. Flow (perm)	678	1482		956	1562	1328	1022	1699	1444	578	1431		
Peak-hour factor, PHF	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	
Adj. Flow (vph)	89	179	12	85	243	254	19	267	104	120	139	115	
RTOR Reduction (vph)	0	2	0	0	0	184	0	0	74	0	24	0	
Lane Group Flow (vph)	89	189	0	85	243	70	19	267	30	120	230	0	
Heavy Vehicles (%)	17%	17%	17%	12%	12%	12%	3%	3%	3%	14%	14%	14%	
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		
Protected Phases	5	2		1	6		3	8		7	4		
Permitted Phases	2			6		6	8		8	4			
Actuated Green, G (s)	26.0	19.7		23.6	18.5	18.5	21.0	19.2	19.2	31.3	24.5		
Effective Green, g (s)	28.0	20.7		25.6	19.5	19.5	23.0	20.2	20.2	32.3	25.5		
Actuated g/C Ratio	0.39	0.29		0.36	0.27	0.27	0.32	0.28	0.28	0.45	0.36		
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		
Vehicle Extension (s)	2.5	2.5		2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5		
Lane Grp Cap (vph)	343	431		389	428	364	353	482	410	362	513		
v/s Ratio Prot	c0.03	0.13		0.02	c0.16		0.00	c0.16		c0.04	0.16		
v/s Ratio Perm	0.08			0.06		0.05	0.02		0.02	0.11			
v/c Ratio	0.26	0.44		0.22	0.57	0.19	0.05	0.55	0.07	0.33	0.45		
Uniform Delay, d1	14.2	20.5		15.4	22.2	19.8	16.5	21.6	18.6	12.2	17.4		
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Incremental Delay, d2	0.3	0.5		0.2	1.4	0.2	0.0	1.1	0.1	0.4	0.5		
Delay (s)	14.4	21.0		15.7	23.6	19.9	16.5	22.7	18.7	12.6	17.9		
Level of Service	B	C		B	C	B	B	C	B	B	B		
Approach Delay (s)		18.9			20.8			21.3			16.2		
Approach LOS		B			C			C			B		
Intersection Summary													
HCM 2000 Control Delay			19.6	HCM 2000 Level of Service						B			
HCM 2000 Volume to Capacity ratio			0.49										
Actuated Cycle Length (s)			71.1	Sum of lost time (s)						16.0			
Intersection Capacity Utilization			48.4%	ICU Level of Service						A			
Analysis Period (min)			15										
c Critical Lane Group													

HCM 6th Signalized Intersection Summary
7: OR 213 & OR 211

11/08/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	75	150	10	71	204	213	16	224	87	101	117	97
Future Volume (veh/h)	75	150	10	71	204	213	16	224	87	101	117	97
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1518	1518	1518	1586	1586	1586	1709	1709	1709	1559	1559	1559
Adj Flow Rate, veh/h	89	179	12	85	243	254	19	267	104	120	139	115
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	17	17	17	12	12	12	3	3	3	14	14	14
Cap, veh/h	392	429	29	477	481	408	342	390	330	353	225	187
Arrive On Green	0.08	0.30	0.29	0.08	0.30	0.30	0.04	0.23	0.23	0.10	0.29	0.27
Sat Flow, veh/h	1446	1407	94	1511	1586	1344	1628	1709	1448	1485	789	653
Grp Volume(v), veh/h	89	0	191	85	243	254	19	267	104	120	0	254
Grp Sat Flow(s),veh/h/ln	1446	0	1501	1511	1586	1344	1628	1709	1448	1485	0	1441
Q Serve(g_s), s	2.3	0.0	5.7	2.1	7.1	9.1	0.5	8.0	3.3	3.2	0.0	8.6
Cycle Q Clear(g_c), s	2.3	0.0	5.7	2.1	7.1	9.1	0.5	8.0	3.3	3.2	0.0	8.6
Prop In Lane	1.00		0.06	1.00		1.00	1.00		1.00	1.00		0.45
Lane Grp Cap(c), veh/h	392	0	458	477	481	408	342	390	330	353	0	412
V/C Ratio(X)	0.23	0.00	0.42	0.18	0.50	0.62	0.06	0.69	0.31	0.34	0.00	0.62
Avail Cap(c_a), veh/h	553	0	1258	567	1245	1055	479	1158	981	497	0	1080
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	11.7	0.0	15.6	11.5	16.1	16.8	15.4	19.8	18.0	13.8	0.0	17.6
Incr Delay (d2), s/veh	0.2	0.0	0.5	0.1	0.6	1.2	0.0	1.6	0.4	0.4	0.0	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	1.8	0.6	2.3	2.6	0.2	3.0	1.0	1.0	0.0	2.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.9	0.0	16.0	11.6	16.7	17.9	15.5	21.4	18.4	14.2	0.0	18.7
LnGrp LOS	B	A	B	B	B	B	B	C	B	B	A	B
Approach Vol, veh/h		280			582			390			374	
Approach Delay, s/veh		14.7			16.5			20.3			17.3	
Approach LOS		B			B			C			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.7	21.1	6.3	20.0	8.8	21.0	9.5	16.8				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	7.0	46.0	6.0	41.0	10.0	43.0	10.0	37.0				
Max Q Clear Time (g_c+I1), s	4.1	7.7	2.5	10.6	4.3	11.1	5.2	10.0				
Green Ext Time (p_c), s	0.1	2.2	0.0	1.1	0.1	4.9	0.1	1.8				

Intersection Summary

HCM 6th Ctrl Delay	17.3
HCM 6th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

HCM 6th TWSC
1: OR 213 & Toliver Rd

11/08/2021

Intersection												
Int Delay, s/veh	12.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	19	81	32	15	57	29	484	98	147	577	5
Future Vol, veh/h	2	19	81	32	15	57	29	484	98	147	577	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	1	1	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	0	0	0	1	1	1	3	3	3	5	5	5
Mvmt Flow	2	20	84	33	15	59	30	499	101	152	595	5

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	1549	1563	598	1565	1515	551	600	0	0	601	0	0
Stage 1	902	902	-	611	611	-	-	-	-	-	-	-
Stage 2	647	661	-	954	904	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.11	6.51	6.21	4.13	-	-	4.15	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.11	5.51	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.11	5.51	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.509	4.009	3.309	2.227	-	-	2.245	-	-
Pot Cap-1 Maneuver	94	113	506	91	120	536	972	-	-	962	-	-
Stage 1	335	359	-	483	486	-	-	-	-	-	-	-
Stage 2	463	463	-	312	357	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	57	82	506	49	87	535	972	-	-	961	-	-
Mov Cap-2 Maneuver	57	82	-	49	87	-	-	-	-	-	-	-
Stage 1	319	274	-	460	463	-	-	-	-	-	-	-
Stage 2	380	441	-	185	272	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	31.4		145.6		0.4		1.9	
HCM LOS	D		F					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	972	-	-	239	112	961	-
HCM Lane V/C Ratio	0.031	-	-	0.44	0.957	0.158	-
HCM Control Delay (s)	8.8	0	-	31.4	145.6	9.4	0
HCM Lane LOS	A	A	-	D	F	A	A
HCM 95th %tile Q(veh)	0.1	-	-	2.1	6	0.6	-

Intersection						
Int Delay, s/veh	0.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	19	592	16	2	688
Future Vol, veh/h	1	19	592	16	2	688
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	93	93	93	93	93	93
Heavy Vehicles, %	0	0	4	4	3	3
Mvmt Flow	1	20	637	17	2	740

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1390	646	0	0	654
Stage 1	646	-	-	-	-
Stage 2	744	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.13
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.227
Pot Cap-1 Maneuver	158	475	-	-	928
Stage 1	526	-	-	-	-
Stage 2	473	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	157	475	-	-	928
Mov Cap-2 Maneuver	157	-	-	-	-
Stage 1	526	-	-	-	-
Stage 2	471	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.8	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	431	928
HCM Lane V/C Ratio	-	-	0.05	0.002
HCM Control Delay (s)	-	-	13.8	8.9
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.2	0

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		T
Traffic Vol, veh/h	5	2	1	607	685	4
Future Vol, veh/h	5	2	1	607	685	4
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	92	92	92	92	92	92
Heavy Vehicles, %	0	0	4	4	4	4
Mvmt Flow	5	2	1	660	745	4

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	1409	747	749	0	0
Stage 1	747	-	-	-	-
Stage 2	662	-	-	-	-
Critical Hdwy	6.4	6.2	4.14	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.236	-	-
Pot Cap-1 Maneuver	154	416	851	-	-
Stage 1	472	-	-	-	-
Stage 2	517	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	154	416	851	-	-
Mov Cap-2 Maneuver	154	-	-	-	-
Stage 1	471	-	-	-	-
Stage 2	517	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	25	0	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	851	-	188	-	-
HCM Lane V/C Ratio	0.001	-	0.04	-	-
HCM Control Delay (s)	9.2	0	25	-	-
HCM Lane LOS	A	A	D	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	6	1	607	686	1
Future Vol, veh/h	1	6	1	607	686	1
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	-	50	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	4	4	3	3
Mvmt Flow	1	7	1	660	746	1

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	1409	747	747	0	0
Stage 1	747	-	-	-	-
Stage 2	662	-	-	-	-
Critical Hdwy	6.4	6.2	4.14	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.236	-	-
Pot Cap-1 Maneuver	154	416	852	-	-
Stage 1	472	-	-	-	-
Stage 2	517	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	154	416	852	-	-
Mov Cap-2 Maneuver	154	-	-	-	-
Stage 1	472	-	-	-	-
Stage 2	517	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	16	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	852	-	335	-	-
HCM Lane V/C Ratio	0.001	-	0.023	-	-
HCM Control Delay (s)	9.2	-	16	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection						
Int Delay, s/veh	1.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↔		↔	↔
Traffic Vol, veh/h	7	53	555	1	65	627
Future Vol, veh/h	7	53	555	1	65	627
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	-	-	-	50	-
Veh in Median Storage, #	2	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	3	3	3	3
Mvmt Flow	7	56	590	1	69	667

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1396	591	0	0	591
Stage 1	591	-	-	-	-
Stage 2	805	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.13
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.227
Pot Cap-1 Maneuver	156	507	-	-	980
Stage 1	553	-	-	-	-
Stage 2	440	-	-	-	-
Platoon blocked, %					
Mov Cap-1 Maneuver	145	507	-	-	980
Mov Cap-2 Maneuver	337	-	-	-	-
Stage 1	553	-	-	-	-
Stage 2	409	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.7	0	0.8
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	479	980
HCM Lane V/C Ratio	-	-	0.133	0.071
HCM Control Delay (s)	-	-	13.7	9
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.5	0.2

Intersection						
Int Delay, s/veh	2.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↑	↗	↘	↑
Traffic Vol, veh/h	48	138	418	82	100	534
Future Vol, veh/h	48	138	418	82	100	534
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	100	75	-
Veh in Median Storage, #	2	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	5	5	4	4
Mvmt Flow	51	145	440	86	105	562

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1212	440	0	0	526	0
Stage 1	440	-	-	-	-	-
Stage 2	772	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.14	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.236	-
Pot Cap-1 Maneuver	203	621	-	-	1031	-
Stage 1	653	-	-	-	-	-
Stage 2	459	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	182	621	-	-	1031	-
Mov Cap-2 Maneuver	361	-	-	-	-	-
Stage 1	653	-	-	-	-	-
Stage 2	412	-	-	-	-	-
























Approach	WB	NB	SB
HCM Control Delay, s	13.6	0	1.4
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	361	621	1031
HCM Lane V/C Ratio	-	-	0.14	0.234	0.102
HCM Control Delay (s)	-	-	16.6	12.6	8.9
HCM Lane LOS	-	-	C	B	A
HCM 95th %tile Q(veh)	-	-	0.5	0.9	0.3

HCM Signalized Intersection Capacity Analysis

7: OR 213 & OR 211

11/08/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	142	246	14	137	226	152	22	206	103	231	232	119
Future Volume (vph)	142	246	14	137	226	152	22	206	103	231	232	119
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1599	1667		1583	1667	1417	1614	1699	1444	1583	1582	
Flt Permitted	0.37	1.00		0.41	1.00	1.00	0.50	1.00	1.00	0.41	1.00	
Satd. Flow (perm)	626	1667		691	1667	1417	852	1699	1444	686	1582	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	161	280	16	156	257	173	25	234	117	262	264	135
RTOR Reduction (vph)	0	2	0	0	0	131	0	0	85	0	15	0
Lane Group Flow (vph)	161	294	0	156	257	42	25	234	32	263	384	0
Confl. Peds. (#/hr)			1	1								
Heavy Vehicles (%)	4%	4%	4%	5%	5%	5%	3%	3%	3%	5%	5%	5%
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6		6	8		8	4		
Actuated Green, G (s)	29.4	20.0		25.4	18.0	18.0	22.8	20.9	20.9	36.5	29.6	
Effective Green, g (s)	31.4	21.0		27.4	19.0	19.0	24.8	21.9	21.9	37.5	30.6	
Actuated g/C Ratio	0.40	0.27		0.35	0.24	0.24	0.31	0.28	0.28	0.48	0.39	
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	2.5	2.5		2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	
Lane Grp Cap (vph)	377	443		334	401	341	295	471	400	457	613	
v/s Ratio Prot	c0.06	c0.18		0.05	0.15		0.00	0.14		c0.08	c0.24	
v/s Ratio Perm	0.11			0.11		0.03	0.02		0.02	0.19		
v/c Ratio	0.43	0.66		0.47	0.64	0.12	0.08	0.50	0.08	0.58	0.63	
Uniform Delay, d1	16.4	25.8		18.9	26.9	23.4	18.8	23.9	21.1	13.6	19.5	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.6	3.4		0.8	3.1	0.1	0.1	0.6	0.1	1.4	1.7	
Delay (s)	16.9	29.1		19.6	30.0	23.5	18.9	24.5	21.1	15.1	21.3	
Level of Service	B	C		B	C	C	B	C	C	B	C	
Approach Delay (s)		24.9			25.3			23.1			18.8	
Approach LOS		C			C			C			B	
Intersection Summary												
HCM 2000 Control Delay			22.7		HCM 2000 Level of Service					C		
HCM 2000 Volume to Capacity ratio			0.65									
Actuated Cycle Length (s)			78.9		Sum of lost time (s)					16.0		
Intersection Capacity Utilization			62.8%		ICU Level of Service					B		
Analysis Period (min)			15									

c Critical Lane Group

HCM 6th Signalized Intersection Summary
7: OR 213 & OR 211

11/08/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	142	246	14	137	226	152	22	206	103	231	232	119
Future Volume (veh/h)	142	246	14	137	226	152	22	206	103	231	232	119
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1695	1695	1695	1682	1682	1682	1709	1709	1709	1682	1682	1682
Adj Flow Rate, veh/h	161	280	16	156	257	173	25	234	117	262	264	135
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	4	4	4	5	5	5	3	3	3	5	5	5
Cap, veh/h	422	427	24	408	445	376	279	345	293	455	339	173
Arrive On Green	0.11	0.27	0.25	0.11	0.26	0.26	0.04	0.20	0.20	0.16	0.32	0.31
Sat Flow, veh/h	1615	1588	91	1602	1682	1423	1628	1709	1448	1602	1049	536
Grp Volume(v), veh/h	161	0	296	156	257	173	25	234	117	262	0	399
Grp Sat Flow(s),veh/h/ln	1615	0	1679	1602	1682	1423	1628	1709	1448	1602	0	1585
Q Serve(g_s), s	4.3	0.0	9.8	4.2	8.3	6.4	0.7	7.9	4.4	7.4	0.0	14.3
Cycle Q Clear(g_c), s	4.3	0.0	9.8	4.2	8.3	6.4	0.7	7.9	4.4	7.4	0.0	14.3
Prop In Lane	1.00		0.05	1.00		1.00	1.00		1.00	1.00		0.34
Lane Grp Cap(c), veh/h	422	0	451	408	445	376	279	345	293	455	0	512
V/C Ratio(X)	0.38	0.00	0.66	0.38	0.58	0.46	0.09	0.68	0.40	0.58	0.00	0.78
Avail Cap(c_a), veh/h	522	0	1258	437	1180	998	389	1036	878	472	0	1062
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	14.1	0.0	20.4	14.5	20.0	19.3	18.5	23.1	21.7	14.6	0.0	19.4
Incr Delay (d2), s/veh	0.4	0.0	1.2	0.4	0.9	0.6	0.1	1.7	0.7	1.4	0.0	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.0	3.7	1.4	3.1	2.0	0.3	3.1	1.4	2.5	0.0	5.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.6	0.0	21.6	14.9	20.9	20.0	18.6	24.9	22.4	16.0	0.0	21.3
LnGrp LOS	B	A	C	B	C	B	B	C	C	B	A	C
Approach Vol, veh/h		457			586			376			661	
Approach Delay, s/veh		19.1			19.0			23.7			19.2	
Approach LOS		B			B			C			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.9	20.8	6.8	24.2	11.1	20.6	14.3	16.7				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	7.0	46.0	6.0	41.0	10.0	43.0	10.0	37.0				
Max Q Clear Time (g_c+I1), s	6.2	11.8	2.7	16.3	6.3	10.3	9.4	9.9				
Green Ext Time (p_c), s	0.0	3.6	0.0	1.7	0.2	4.3	0.1	1.7				

Intersection Summary

HCM 6th Ctrl Delay	19.9
HCM 6th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

HCM 6th Roundabout
1: OR 213 & Toliver Rd

11/08/2021

Intersection				
Intersection Delay, s/veh	9.2			
Intersection LOS	A			
Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	59	149	681	447
Demand Flow Rate, veh/h	59	169	750	487
Vehicles Circulating, veh/h	516	670	99	119
Vehicles Exiting, veh/h	90	179	476	720
Ped Vol Crossing Leg, #/h	0	1	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	5.1	8.9	10.9	7.3
Approach LOS	A	A	B	A
Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	59	169	750	487
Cap Entry Lane, veh/h	815	697	1247	1222
Entry HV Adj Factor	1.000	0.884	0.908	0.919
Flow Entry, veh/h	59	149	681	447
Cap Entry, veh/h	815	616	1133	1123
V/C Ratio	0.072	0.243	0.601	0.398
Control Delay, s/veh	5.1	8.9	10.9	7.3
LOS	A	A	B	A
95th %tile Queue, veh	0	1	4	2

HCM 6th TWSC
2: OR 213 & Tractor Supply

11/08/2021

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		T			T
Traffic Vol, veh/h	1	1	606	1	1	390
Future Vol, veh/h	1	1	606	1	1	390
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	88	88	88	88	88	88
Heavy Vehicles, %	0	0	9	9	9	9
Mvmt Flow	1	1	689	1	1	443

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1135	690	0	0	690
Stage 1	690	-	-	-	-
Stage 2	445	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.19
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.281
Pot Cap-1 Maneuver	226	449	-	-	873
Stage 1	502	-	-	-	-
Stage 2	650	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	226	449	-	-	873
Mov Cap-2 Maneuver	226	-	-	-	-
Stage 1	502	-	-	-	-
Stage 2	649	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	17.1	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	301	873
HCM Lane V/C Ratio	-	-	0.008	0.001
HCM Control Delay (s)	-	-	17.1	9.1
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	0	0

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	3	2	607	389	2
Future Vol, veh/h	0	3	2	607	389	2
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	86	86	86	86	86	86
Heavy Vehicles, %	0	0	9	9	8	8
Mvmt Flow	0	3	2	706	452	2

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	1163	453	454	0	0
Stage 1	453	-	-	-	-
Stage 2	710	-	-	-	-
Critical Hdwy	6.4	6.2	4.19	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.281	-	-
Pot Cap-1 Maneuver	217	611	1071	-	-
Stage 1	645	-	-	-	-
Stage 2	491	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	216	611	1071	-	-
Mov Cap-2 Maneuver	216	-	-	-	-
Stage 1	643	-	-	-	-
Stage 2	491	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.9	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1071	-	611	-	-
HCM Lane V/C Ratio	0.002	-	0.006	-	-
HCM Control Delay (s)	8.4	0	10.9	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	3	2	608	390	2
Future Vol, veh/h	1	3	2	608	390	2
Conflicting Peds, #/hr	0	1	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	50	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	0	0	9	9	9	9
Mvmt Flow	1	3	2	691	443	2

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1139	445	445	0	-	0
Stage 1	444	-	-	-	-	-
Stage 2	695	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.19	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.281	-	-	-
Pot Cap-1 Maneuver	225	617	1079	-	-	-
Stage 1	651	-	-	-	-	-
Stage 2	499	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	225	616	1079	-	-	-
Mov Cap-2 Maneuver	225	-	-	-	-	-
Stage 1	650	-	-	-	-	-
Stage 2	499	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.5	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1079	-	429	-	-
HCM Lane V/C Ratio	0.002	-	0.011	-	-
HCM Control Delay (s)	8.3	-	13.5	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection						
Int Delay, s/veh	0.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	37	573	3	28	365
Future Vol, veh/h	0	37	573	3	28	365
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	-	-	-	50	-
Veh in Median Storage, #	2	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	6	6	11	11	9	9
Mvmt Flow	0	43	659	3	32	420

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1145	661	0	0	662
Stage 1	661	-	-	-	-
Stage 2	484	-	-	-	-
Critical Hdwy	6.46	6.26	-	-	4.19
Critical Hdwy Stg 1	5.46	-	-	-	-
Critical Hdwy Stg 2	5.46	-	-	-	-
Follow-up Hdwy	3.554	3.354	-	-	2.281
Pot Cap-1 Maneuver	217	455	-	-	894
Stage 1	506	-	-	-	-
Stage 2	612	-	-	-	-
Platoon blocked, %					
Mov Cap-1 Maneuver	209	455	-	-	894
Mov Cap-2 Maneuver	408	-	-	-	-
Stage 1	506	-	-	-	-
Stage 2	590	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.7	0	0.7
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	455	894
HCM Lane V/C Ratio	-	-	0.093	0.036
HCM Control Delay (s)	-	-	13.7	9.2
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.3	0.1

Intersection						
Int Delay, s/veh	2.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↑	↗	↘	↑
Traffic Vol, veh/h	39	87	490	74	48	316
Future Vol, veh/h	39	87	490	74	48	316
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	100	75	-
Veh in Median Storage, #	2	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	1	1	10	10	9	9
Mvmt Flow	45	101	570	86	56	367

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1049	570	0	0	656	0
Stage 1	570	-	-	-	-	-
Stage 2	479	-	-	-	-	-
Critical Hdwy	6.41	6.21	-	-	4.19	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	-	-	2.281	-
Pot Cap-1 Maneuver	253	523	-	-	899	-
Stage 1	568	-	-	-	-	-
Stage 2	625	-	-	-	-	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	237	523	-	-	899	-
Mov Cap-2 Maneuver	440	-	-	-	-	-
Stage 1	568	-	-	-	-	-
Stage 2	586	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.7	0	1.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	440	523	899
HCM Lane V/C Ratio	-	-	0.103	0.193	0.062
HCM Control Delay (s)	-	-	14.1	13.5	9.3
HCM Lane LOS	-	-	B	B	A
HCM 95th %tile Q(veh)	-	-	0.3	0.7	0.2

HCM Signalized Intersection Capacity Analysis

7: OR 213 & OR 211

11/08/2021

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	78	180	11	93	237	249	19	237	114	131	123	101	
Future Volume (vph)	78	180	11	93	237	249	19	237	114	131	123	101	
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.93		
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		
Satd. Flow (prot)	1421	1483		1484	1562	1328	1614	1699	1444	1458	1431		
Flt Permitted	0.37	1.00		0.53	1.00	1.00	0.60	1.00	1.00	0.36	1.00		
Satd. Flow (perm)	557	1483		832	1562	1328	1011	1699	1444	553	1431		
Peak-hour factor, PHF	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	
Adj. Flow (vph)	93	214	13	111	282	296	23	282	136	156	146	120	
RTOR Reduction (vph)	0	2	0	0	0	218	0	0	97	0	23	0	
Lane Group Flow (vph)	93	225	0	111	282	78	23	282	39	156	243	0	
Heavy Vehicles (%)	17%	17%	17%	12%	12%	12%	3%	3%	3%	14%	14%	14%	
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		
Protected Phases	5	2		1	6		3	8		7	4		
Permitted Phases	2			6		6	8		8	4			
Actuated Green, G (s)	27.4	20.8		24.8	19.5	19.5	23.5	21.6	21.6	36.8	29.9		
Effective Green, g (s)	29.4	21.8		26.8	20.5	20.5	25.5	22.6	22.6	37.8	30.9		
Actuated g/C Ratio	0.38	0.28		0.34	0.26	0.26	0.33	0.29	0.29	0.49	0.40		
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		
Vehicle Extension (s)	2.5	2.5		2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5		
Lane Grp Cap (vph)	294	415		338	411	349	353	492	418	398	567		
v/s Ratio Prot	c0.03	0.15		0.03	c0.18		0.00	c0.17		c0.06	0.17		
v/s Ratio Perm	0.09			0.09		0.06	0.02		0.03	0.13			
v/c Ratio	0.32	0.54		0.33	0.69	0.22	0.07	0.57	0.09	0.39	0.43		
Uniform Delay, d1	16.6	23.8		18.2	25.8	22.5	17.9	23.5	20.2	12.4	17.1		
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Incremental Delay, d2	0.5	1.1		0.4	4.3	0.2	0.1	1.3	0.1	0.5	0.4		
Delay (s)	17.1	25.0		18.6	30.1	22.7	17.9	24.9	20.3	12.8	17.5		
Level of Service	B	C		B	C	C	B	C	C	B	B		
Approach Delay (s)		22.7			25.1			23.1			15.8		
Approach LOS		C			C			C			B		
Intersection Summary													
HCM 2000 Control Delay			22.1	HCM 2000 Level of Service						C			
HCM 2000 Volume to Capacity ratio			0.55										
Actuated Cycle Length (s)			77.9	Sum of lost time (s)						16.0			
Intersection Capacity Utilization			53.0%	ICU Level of Service						A			
Analysis Period (min)			15										
c Critical Lane Group													

HCM 6th Signalized Intersection Summary
7: OR 213 & OR 211

11/08/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	78	180	11	93	237	249	19	237	114	131	123	101
Future Volume (veh/h)	78	180	11	93	237	249	19	237	114	131	123	101
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1518	1518	1518	1586	1586	1586	1709	1709	1709	1559	1559	1559
Adj Flow Rate, veh/h	93	214	13	111	282	296	23	282	136	156	146	120
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	17	17	17	12	12	12	3	3	3	14	14	14
Cap, veh/h	358	454	28	451	517	438	342	395	334	353	241	198
Arrive On Green	0.08	0.32	0.31	0.08	0.33	0.33	0.04	0.23	0.23	0.12	0.30	0.29
Sat Flow, veh/h	1446	1416	86	1511	1586	1344	1628	1709	1448	1485	791	650
Grp Volume(v), veh/h	93	0	227	111	282	296	23	282	136	156	0	266
Grp Sat Flow(s),veh/h/ln	1446	0	1502	1511	1586	1344	1628	1709	1448	1485	0	1442
Q Serve(g_s), s	2.7	0.0	7.8	3.0	9.4	12.2	0.7	9.8	5.1	4.7	0.0	10.2
Cycle Q Clear(g_c), s	2.7	0.0	7.8	3.0	9.4	12.2	0.7	9.8	5.1	4.7	0.0	10.2
Prop In Lane	1.00		0.06	1.00		1.00	1.00		1.00	1.00		0.45
Lane Grp Cap(c), veh/h	358	0	482	451	517	438	342	395	334	353	0	439
V/C Ratio(X)	0.26	0.00	0.47	0.25	0.55	0.68	0.07	0.71	0.41	0.44	0.00	0.61
Avail Cap(c_a), veh/h	492	0	1099	512	1086	920	451	1011	856	435	0	942
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.1	0.0	17.5	12.8	17.8	18.7	17.5	22.8	21.0	15.2	0.0	19.3
Incr Delay (d2), s/veh	0.3	0.0	0.5	0.2	0.7	1.4	0.1	1.8	0.6	0.6	0.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	2.5	0.9	3.2	3.5	0.2	3.8	1.6	1.5	0.0	3.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.4	0.0	18.0	13.0	18.4	20.1	17.5	24.6	21.6	15.9	0.0	20.3
LnGrp LOS	B	A	B	B	B	C	B	C	C	B	A	C
Approach Vol, veh/h		320			689			441			422	
Approach Delay, s/veh		16.7			18.3			23.3			18.6	
Approach LOS		B			B			C			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.4	24.6	6.7	23.6	9.0	25.0	11.4	18.8				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	7.0	46.0	6.0	41.0	10.0	43.0	10.0	37.0				
Max Q Clear Time (g_c+I1), s	5.0	9.8	2.7	12.2	4.7	14.2	6.7	11.8				
Green Ext Time (p_c), s	0.1	2.7	0.0	1.1	0.1	5.7	0.2	2.1				

Intersection Summary

HCM 6th Ctrl Delay	19.3
HCM 6th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

HCM 6th Roundabout
1: OR 213 & Toliver Rd

11/08/2021

Intersection				
Intersection Delay, s/veh	11.5			
Intersection LOS	B			
Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	111	112	687	823
Demand Flow Rate, veh/h	111	113	708	864
Vehicles Circulating, veh/h	893	602	190	82
Vehicles Exiting, veh/h	53	296	814	633
Ped Vol Crossing Leg, #/h	0	1	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	9.1	6.5	11.6	12.5
Approach LOS	A	A	B	B
Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	111	113	708	864
Cap Entry Lane, veh/h	555	747	1137	1269
Entry HV Adj Factor	1.000	0.990	0.971	0.953
Flow Entry, veh/h	111	112	687	823
Cap Entry, veh/h	555	739	1104	1209
V/C Ratio	0.200	0.151	0.623	0.681
Control Delay, s/veh	9.1	6.5	11.6	12.5
LOS	A	A	B	B
95th %tile Queue, veh	1	1	5	6

Intersection						
Int Delay, s/veh	0.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	20	647	17	2	755
Future Vol, veh/h	1	20	647	17	2	755
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	93	93	93	93	93	93
Heavy Vehicles, %	0	0	4	4	3	3
Mvmt Flow	1	22	696	18	2	812

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1521	705	0	0	714
Stage 1	705	-	-	-	-
Stage 2	816	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.13
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.227
Pot Cap-1 Maneuver	132	440	-	-	882
Stage 1	494	-	-	-	-
Stage 2	438	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	131	440	-	-	882
Mov Cap-2 Maneuver	131	-	-	-	-
Stage 1	494	-	-	-	-
Stage 2	436	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.6	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	396	882
HCM Lane V/C Ratio	-	-	0.057	0.002
HCM Control Delay (s)	-	-	14.6	9.1
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.2	0

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	2	1	662	752	4
Future Vol, veh/h	5	2	1	662	752	4
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	92	92	92	92	92	92
Heavy Vehicles, %	0	0	4	4	4	4
Mvmt Flow	5	2	1	720	817	4

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	1541	819	821	0	0
Stage 1	819	-	-	-	-
Stage 2	722	-	-	-	-
Critical Hdwy	6.4	6.2	4.14	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.236	-	-
Pot Cap-1 Maneuver	128	379	800	-	-
Stage 1	437	-	-	-	-
Stage 2	485	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	128	379	800	-	-
Mov Cap-2 Maneuver	128	-	-	-	-
Stage 1	436	-	-	-	-
Stage 2	485	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	28.9	0	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	800	-	158	-	-
HCM Lane V/C Ratio	0.001	-	0.048	-	-
HCM Control Delay (s)	9.5	0	28.9	-	-
HCM Lane LOS	A	A	D	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	6	1	662	753	1
Future Vol, veh/h	1	6	1	662	753	1
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	-	50	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	4	4	3	3
Mvmt Flow	1	7	1	720	818	1

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	1541	819	819	0	0
Stage 1	819	-	-	-	-
Stage 2	722	-	-	-	-
Critical Hdwy	6.4	6.2	4.14	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.236	-	-
Pot Cap-1 Maneuver	128	379	801	-	-
Stage 1	437	-	-	-	-
Stage 2	485	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	128	379	801	-	-
Mov Cap-2 Maneuver	128	-	-	-	-
Stage 1	437	-	-	-	-
Stage 2	485	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	17.5	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	801	-	296	-	-
HCM Lane V/C Ratio	0.001	-	0.026	-	-
HCM Control Delay (s)	9.5	-	17.5	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection						
Int Delay, s/veh	1.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↔		↔	↔
Traffic Vol, veh/h	7	55	608	1	68	691
Future Vol, veh/h	7	55	608	1	68	691
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	-	-	-	50	-
Veh in Median Storage, #	2	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	3	3	3	3
Mvmt Flow	7	59	647	1	72	735

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1527	648	0	0	648	0
Stage 1	648	-	-	-	-	-
Stage 2	879	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.13	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.227	-
Pot Cap-1 Maneuver	129	470	-	-	933	-
Stage 1	521	-	-	-	-	-
Stage 2	406	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	119	470	-	-	933	-
Mov Cap-2 Maneuver	308	-	-	-	-	-
Stage 1	521	-	-	-	-	-
Stage 2	375	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.5	0	0.8
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	444	933
HCM Lane V/C Ratio	-	-	0.149	0.078
HCM Control Delay (s)	-	-	14.5	9.2
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.5	0.3

Intersection						
Int Delay, s/veh	2.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↑	↗	↘	↑
Traffic Vol, veh/h	50	144	465	86	104	594
Future Vol, veh/h	50	144	465	86	104	594
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	100	75	-
Veh in Median Storage, #	2	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	5	5	4	4
Mvmt Flow	53	152	489	91	109	625

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1332	489	0	0	580
Stage 1	489	-	-	-	-
Stage 2	843	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.14
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.236
Pot Cap-1 Maneuver	172	583	-	-	984
Stage 1	621	-	-	-	-
Stage 2	426	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	153	583	-	-	984
Mov Cap-2 Maneuver	331	-	-	-	-
Stage 1	621	-	-	-	-
Stage 2	379	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.5	0	1.4
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	331	583	984
HCM Lane V/C Ratio	-	-	0.159	0.26	0.111
HCM Control Delay (s)	-	-	17.9	13.3	9.1
HCM Lane LOS	-	-	C	B	A
HCM 95th %tile Q(veh)	-	-	0.6	1	0.4

HCM Signalized Intersection Capacity Analysis

7: OR 213 & OR 211

11/08/2021

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	148	288	17	165	258	185	25	217	132	274	245	124	
Future Volume (vph)	148	288	17	165	258	185	25	217	132	274	245	124	
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.95		
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		
Satd. Flow (prot)	1599	1667		1583	1667	1417	1614	1699	1444	1583	1583		
Flt Permitted	0.33	1.00		0.34	1.00	1.00	0.46	1.00	1.00	0.40	1.00		
Satd. Flow (perm)	553	1667		563	1667	1417	786	1699	1444	659	1583		
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	
Adj. Flow (vph)	168	327	19	188	293	210	28	247	150	311	278	141	
RTOR Reduction (vph)	0	2	0	0	0	157	0	0	108	0	14	0	
Lane Group Flow (vph)	168	344	0	188	293	53	28	247	42	311	405	0	
Confl. Peds. (#/hr)			1	1									
Heavy Vehicles (%)	4%	4%	4%	5%	5%	5%	3%	3%	3%	5%	5%	5%	
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		
Protected Phases	5	2		1	6		3	8		7	4		
Permitted Phases	2			6		6	8		8	4			
Actuated Green, G (s)	31.3	21.8		27.3	19.8	19.8	23.9	22.0	22.0	37.7	30.8		
Effective Green, g (s)	33.3	22.8		29.3	20.8	20.8	25.9	23.0	23.0	38.7	31.8		
Actuated g/C Ratio	0.41	0.28		0.36	0.25	0.25	0.32	0.28	0.28	0.47	0.39		
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		
Vehicle Extension (s)	2.5	2.5		2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5		
Lane Grp Cap (vph)	358	463		306	422	359	277	476	405	442	613		
v/s Ratio Prot	c0.06	c0.21		c0.06	0.18		0.00	0.15		c0.10	0.26		
v/s Ratio Perm	0.13			0.16		0.04	0.03		0.03	c0.23			
v/c Ratio	0.47	0.74		0.61	0.69	0.15	0.10	0.52	0.10	0.70	0.66		
Uniform Delay, d1	16.9	26.9		19.7	27.7	23.7	19.6	24.8	21.9	15.0	20.7		
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Incremental Delay, d2	0.7	6.0		3.1	4.5	0.1	0.1	0.7	0.1	4.7	2.4		
Delay (s)	17.6	32.9		22.8	32.2	23.9	19.7	25.6	21.9	19.7	23.1		
Level of Service	B	C		C	C	C	B	C	C	B	C		
Approach Delay (s)		27.9			27.1			23.9			21.6		
Approach LOS		C			C			C			C		
Intersection Summary													
HCM 2000 Control Delay			25.0									HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.74										
Actuated Cycle Length (s)			82.0									Sum of lost time (s)	16.0
Intersection Capacity Utilization			70.2%									ICU Level of Service	C
Analysis Period (min)			15										

c Critical Lane Group

HCM 6th Signalized Intersection Summary
7: OR 213 & OR 211

11/08/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗	↖	↖	↗	↖	↖	↗	↗
Traffic Volume (veh/h)	148	288	17	165	258	185	25	217	132	274	245	124
Future Volume (veh/h)	148	288	17	165	258	185	25	217	132	274	245	124
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1695	1695	1695	1682	1682	1682	1709	1709	1709	1682	1682	1682
Adj Flow Rate, veh/h	168	327	19	188	293	210	28	247	150	311	278	141
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	4	4	4	5	5	5	3	3	3	5	5	5
Cap, veh/h	412	465	27	397	499	422	247	352	299	425	336	170
Arrive On Green	0.11	0.29	0.28	0.11	0.30	0.30	0.04	0.21	0.21	0.16	0.32	0.30
Sat Flow, veh/h	1615	1586	92	1602	1682	1423	1628	1709	1448	1602	1052	534
Grp Volume(v), veh/h	168	0	346	188	293	210	28	247	150	311	0	419
Grp Sat Flow(s),veh/h/ln	1615	0	1679	1602	1682	1423	1628	1709	1448	1602	0	1586
Q Serve(g_s), s	4.8	0.0	12.8	5.5	10.4	8.5	0.9	9.4	6.4	10.2	0.0	17.1
Cycle Q Clear(g_c), s	4.8	0.0	12.8	5.5	10.4	8.5	0.9	9.4	6.4	10.2	0.0	17.1
Prop In Lane	1.00		0.05	1.00		1.00	1.00		1.00	1.00		0.34
Lane Grp Cap(c), veh/h	412	0	492	397	499	422	247	352	299	425	0	506
V/C Ratio(X)	0.41	0.00	0.70	0.47	0.59	0.50	0.11	0.70	0.50	0.73	0.00	0.83
Avail Cap(c_a), veh/h	488	0	1129	397	1059	896	338	930	788	425	0	953
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	14.8	0.0	22.0	15.3	20.9	20.3	20.6	25.7	24.6	17.4	0.0	22.2
Incr Delay (d2), s/veh	0.5	0.0	1.4	0.7	0.8	0.7	0.1	1.9	1.0	6.1	0.0	2.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	0.0	4.9	1.9	3.9	2.7	0.3	3.7	2.1	4.0	0.0	6.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.2	0.0	23.4	16.0	21.7	20.9	20.7	27.6	25.5	23.5	0.0	24.8
LnGrp LOS	B	A	C	B	C	C	C	C	C	C	A	C
Approach Vol, veh/h		514			691			425			730	
Approach Delay, s/veh		20.7			19.9			26.4			24.2	
Approach LOS		C			B			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.0	24.5	7.1	26.3	11.7	24.7	15.0	18.4				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	7.0	46.0	6.0	41.0	10.0	43.0	10.0	37.0				
Max Q Clear Time (g_c+I1), s	7.5	14.8	2.9	19.1	6.8	12.4	12.2	11.4				
Green Ext Time (p_c), s	0.0	4.2	0.0	1.8	0.2	5.1	0.0	2.0				

Intersection Summary

HCM 6th Ctrl Delay	22.6
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

HCM 6th Roundabout
1: OR 213 & Toliver Rd

11/08/2021

Intersection				
Intersection Delay, s/veh	9.8			
Intersection LOS	A			
Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	59	164	720	459
Demand Flow Rate, veh/h	59	186	792	500
Vehicles Circulating, veh/h	554	689	92	144
Vehicles Exiting, veh/h	90	195	521	731
Ped Vol Crossing Leg, #/h	0	1	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	5.3	9.5	11.5	7.8
Approach LOS	A	A	B	A
Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	59	186	792	500
Cap Entry Lane, veh/h	784	683	1256	1191
Entry HV Adj Factor	1.000	0.883	0.909	0.917
Flow Entry, veh/h	59	164	720	459
Cap Entry, veh/h	784	604	1141	1093
V/C Ratio	0.075	0.272	0.630	0.420
Control Delay, s/veh	5.3	9.5	11.5	7.8
LOS	A	A	B	A
95th %tile Queue, veh	0	1	5	2

HCM 6th TWSC
2: OR 213 & Tractor Supply

11/08/2021

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	1	640	1	1	426
Future Vol, veh/h	1	1	640	1	1	426
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	88	88	88	88	88	88
Heavy Vehicles, %	0	0	9	9	9	9
Mvmt Flow	1	1	727	1	1	484

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1214	728	0	0	728
Stage 1	728	-	-	-	-
Stage 2	486	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.19
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.281
Pot Cap-1 Maneuver	202	427	-	-	844
Stage 1	482	-	-	-	-
Stage 2	623	-	-	-	-
Platoon blocked, %					
Mov Cap-1 Maneuver	202	427	-	-	844
Mov Cap-2 Maneuver	202	-	-	-	-
Stage 1	482	-	-	-	-
Stage 2	622	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	18.2	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	274	844
HCM Lane V/C Ratio	-	-	0.008	0.001
HCM Control Delay (s)	-	-	18.2	9.3
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	0	0

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	3	2	641	425	2
Future Vol, veh/h	0	3	2	641	425	2
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	86	86	86	86	86	86
Heavy Vehicles, %	0	0	9	9	8	8
Mvmt Flow	0	3	2	745	494	2

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	1244	495	496	0	0
Stage 1	495	-	-	-	-
Stage 2	749	-	-	-	-
Critical Hdwy	6.4	6.2	4.19	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.281	-	-
Pot Cap-1 Maneuver	194	579	1033	-	-
Stage 1	617	-	-	-	-
Stage 2	471	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	193	579	1033	-	-
Mov Cap-2 Maneuver	193	-	-	-	-
Stage 1	615	-	-	-	-
Stage 2	471	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.3	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1033	-	579	-	-
HCM Lane V/C Ratio	0.002	-	0.006	-	-
HCM Control Delay (s)	8.5	0	11.3	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

HCM 6th TWSC
 4: OR 213 & Les Schwab S/Retail Site Access

11/08/2021

Intersection												
Int Delay, s/veh	3.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↑		↕	↕	
Traffic Vol, veh/h	1	0	3	92	0	64	2	578	97	65	361	2
Future Vol, veh/h	1	0	3	92	0	64	2	578	97	65	361	2
Conflicting Peds, #/hr	0	0	1	1	0	0	0	0	1	1	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	50	-	-	75	-	-
Veh in Median Storage, #	-	0	-	-	2	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	0	0	0	0	0	0	9	9	9	9	9	9
Mvmt Flow	1	0	3	105	0	73	2	657	110	74	410	2

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	1312	1331	412	1279	1277	713	412	0	0	768	0	0
Stage 1	559	559	-	717	717	-	-	-	-	-	-	-
Stage 2	753	772	-	562	560	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.19	-	-	4.19	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.281	-	-	2.281	-	-
Pot Cap-1 Maneuver	137	156	644	144	168	435	1110	-	-	815	-	-
Stage 1	517	514	-	424	437	-	-	-	-	-	-	-
Stage 2	405	412	-	515	514	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	106	141	643	133	152	435	1110	-	-	814	-	-
Mov Cap-2 Maneuver	106	141	-	321	333	-	-	-	-	-	-	-
Stage 1	516	467	-	423	436	-	-	-	-	-	-	-
Stage 2	337	411	-	465	467	-	-	-	-	-	-	-

Approach	EB		WB		NB			SB		
HCM Control Delay, s	17.9		24.3		0			1.5		
HCM LOS	C		C							

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1110	-	-	284	360	814	-
HCM Lane V/C Ratio	0.002	-	-	0.016	0.492	0.091	-
HCM Control Delay (s)	8.2	-	-	17.9	24.3	9.9	-
HCM Lane LOS	A	-	-	C	C	A	-
HCM 95th %tile Q(veh)	0	-	-	0	2.6	0.3	-

Intersection						
Int Delay, s/veh	0.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↔		↔	↔
Traffic Vol, veh/h	0	37	640	3	28	428
Future Vol, veh/h	0	37	640	3	28	428
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	-	-	-	50	-
Veh in Median Storage, #	2	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	6	6	11	11	9	9
Mvmt Flow	0	43	736	3	32	492

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1294	738	0	0	739
Stage 1	738	-	-	-	-
Stage 2	556	-	-	-	-
Critical Hdwy	6.46	6.26	-	-	4.19
Critical Hdwy Stg 1	5.46	-	-	-	-
Critical Hdwy Stg 2	5.46	-	-	-	-
Follow-up Hdwy	3.554	3.354	-	-	2.281
Pot Cap-1 Maneuver	176	411	-	-	836
Stage 1	466	-	-	-	-
Stage 2	566	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	169	411	-	-	836
Mov Cap-2 Maneuver	369	-	-	-	-
Stage 1	466	-	-	-	-
Stage 2	544	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.8	0	0.6
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	411	836
HCM Lane V/C Ratio	-	-	0.103	0.038
HCM Control Delay (s)	-	-	14.8	9.5
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.3	0.1

Intersection						
Int Delay, s/veh	2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↑	↗	↘	↑
Traffic Vol, veh/h	39	87	557	74	48	379
Future Vol, veh/h	39	87	557	74	48	379
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	100	75	-
Veh in Median Storage, #	2	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	1	1	10	10	9	9
Mvmt Flow	45	101	648	86	56	441

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1201	648	0	0	734
Stage 1	648	-	-	-	-
Stage 2	553	-	-	-	-
Critical Hdwy	6.41	6.21	-	-	4.19
Critical Hdwy Stg 1	5.41	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-
Follow-up Hdwy	3.509	3.309	-	-	2.281
Pot Cap-1 Maneuver	205	472	-	-	840
Stage 1	523	-	-	-	-
Stage 2	578	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	191	472	-	-	840
Mov Cap-2 Maneuver	396	-	-	-	-
Stage 1	523	-	-	-	-
Stage 2	539	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.9	0	1.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	396	472	840
HCM Lane V/C Ratio	-	-	0.115	0.214	0.066
HCM Control Delay (s)	-	-	15.3	14.7	9.6
HCM Lane LOS	-	-	C	B	A
HCM 95th %tile Q(veh)	-	-	0.4	0.8	0.2

HCM Signalized Intersection Capacity Analysis

7: OR 213 & OR 211

11/08/2021

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	106	157	11	93	214	286	19	239	114	166	124	128	
Future Volume (vph)	106	157	11	93	214	286	19	239	114	166	124	128	
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.92		
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		
Satd. Flow (prot)	1421	1481		1484	1562	1328	1614	1699	1444	1458	1418		
Flt Permitted	0.39	1.00		0.60	1.00	1.00	0.58	1.00	1.00	0.35	1.00		
Satd. Flow (perm)	585	1481		930	1562	1328	980	1699	1444	544	1418		
Peak-hour factor, PHF	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	
Adj. Flow (vph)	126	187	13	111	255	340	23	285	136	198	148	152	
RTOR Reduction (vph)	0	2	0	0	0	254	0	0	97	0	28	0	
Lane Group Flow (vph)	126	198	0	111	255	86	23	285	39	198	272	0	
Heavy Vehicles (%)	17%	17%	17%	12%	12%	12%	3%	3%	3%	14%	14%	14%	
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		
Protected Phases	5	2		1	6		3	8		7	4		
Permitted Phases	2			6		6	8		8	4			
Actuated Green, G (s)	27.7	20.5		23.9	18.6	18.6	23.3	21.4	21.4	37.0	30.1		
Effective Green, g (s)	29.7	21.5		25.9	19.6	19.6	25.3	22.4	22.4	38.0	31.1		
Actuated g/C Ratio	0.38	0.28		0.33	0.25	0.25	0.33	0.29	0.29	0.49	0.40		
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		
Vehicle Extension (s)	2.5	2.5		2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5		
Lane Grp Cap (vph)	311	409		354	393	334	342	489	415	401	566		
v/s Ratio Prot	c0.04	0.13		0.03	c0.16		0.00	c0.17		c0.07	0.19		
v/s Ratio Perm	0.11			0.08		0.06	0.02		0.03	0.17			
v/c Ratio	0.41	0.48		0.31	0.65	0.26	0.07	0.58	0.09	0.49	0.48		
Uniform Delay, d1	16.7	23.5		18.7	26.0	23.3	18.0	23.7	20.3	12.7	17.3		
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Incremental Delay, d2	0.6	0.7		0.4	3.3	0.3	0.1	1.5	0.1	0.7	0.5		
Delay (s)	17.4	24.2		19.1	29.3	23.6	18.0	25.2	20.3	13.4	17.8		
Level of Service	B	C		B	C	C	B	C	C	B	B		
Approach Delay (s)		21.5			24.9			23.3			16.0		
Approach LOS		C			C			C			B		
Intersection Summary													
HCM 2000 Control Delay			21.8									HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.57										
Actuated Cycle Length (s)			77.8									Sum of lost time (s)	16.0
Intersection Capacity Utilization			55.6%									ICU Level of Service	B
Analysis Period (min)			15										
c	Critical Lane Group												

HCM 6th Signalized Intersection Summary
7: OR 213 & OR 211

11/08/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	106	157	11	93	214	286	19	239	114	166	124	128
Future Volume (veh/h)	106	157	11	93	214	286	19	239	114	166	124	128
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1518	1518	1518	1586	1586	1586	1709	1709	1709	1559	1559	1559
Adj Flow Rate, veh/h	126	187	13	111	255	340	23	285	136	198	148	152
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	17	17	17	12	12	12	3	3	3	14	14	14
Cap, veh/h	380	490	34	488	537	455	305	381	323	354	224	230
Arrive On Green	0.09	0.35	0.34	0.08	0.34	0.34	0.04	0.22	0.22	0.13	0.32	0.30
Sat Flow, veh/h	1446	1403	98	1511	1586	1344	1628	1709	1448	1485	705	724
Grp Volume(v), veh/h	126	0	200	111	255	340	23	285	136	198	0	300
Grp Sat Flow(s),veh/h/ln	1446	0	1500	1511	1586	1344	1628	1709	1448	1485	0	1429
Q Serve(g_s), s	4.1	0.0	7.5	3.4	9.5	16.7	0.8	11.6	6.0	7.1	0.0	13.6
Cycle Q Clear(g_c), s	4.1	0.0	7.5	3.4	9.5	16.7	0.8	11.6	6.0	7.1	0.0	13.6
Prop In Lane	1.00		0.06	1.00		1.00	1.00		1.00	1.00		0.51
Lane Grp Cap(c), veh/h	380	0	524	488	537	455	305	381	323	354	0	455
V/C Ratio(X)	0.33	0.00	0.38	0.23	0.48	0.75	0.08	0.75	0.42	0.56	0.00	0.66
Avail Cap(c_a), veh/h	463	0	944	529	935	792	395	870	737	374	0	804
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	14.1	0.0	18.3	14.0	19.5	21.9	20.9	27.0	24.9	18.0	0.0	22.2
Incr Delay (d2), s/veh	0.4	0.0	0.3	0.2	0.5	1.9	0.1	2.2	0.6	1.3	0.0	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.0	2.5	1.1	3.3	5.1	0.3	4.7	2.0	2.3	0.0	4.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.4	0.0	18.6	14.2	20.0	23.7	21.0	29.2	25.5	19.3	0.0	23.4
LnGrp LOS	B	A	B	B	B	C	C	C	C	B	A	C
Approach Vol, veh/h		326			706			444			498	
Approach Delay, s/veh		17.0			20.9			27.7			21.8	
Approach LOS		B			C			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.9	30.1	6.9	27.8	10.8	29.3	14.0	20.7				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	7.0	46.0	6.0	41.0	10.0	43.0	10.0	37.0				
Max Q Clear Time (g_c+I1), s	5.4	9.5	2.8	15.6	6.1	18.7	9.1	13.6				
Green Ext Time (p_c), s	0.0	2.3	0.0	1.3	0.1	5.5	0.1	2.1				

Intersection Summary

HCM 6th Ctrl Delay	22.0
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

HCM 6th Roundabout
1: OR 213 & Toliver Rd

11/08/2021

Intersection				
Intersection Delay, s/veh	11.9			
Intersection LOS	B			
Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	111	120	707	830
Demand Flow Rate, veh/h	111	121	728	871
Vehicles Circulating, veh/h	911	611	187	93
Vehicles Exiting, veh/h	53	304	835	639
Ped Vol Crossing Leg, #/h	0	1	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	9.3	6.7	12.0	13.0
Approach LOS	A	A	B	B
Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	111	121	728	871
Cap Entry Lane, veh/h	545	740	1140	1255
Entry HV Adj Factor	1.000	0.990	0.971	0.952
Flow Entry, veh/h	111	120	707	830
Cap Entry, veh/h	545	733	1108	1195
V/C Ratio	0.204	0.164	0.638	0.694
Control Delay, s/veh	9.3	6.7	12.0	13.0
LOS	A	A	B	B
95th %tile Queue, veh	1	1	5	6

Intersection						
Int Delay, s/veh	0.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	20	667	17	2	776
Future Vol, veh/h	1	20	667	17	2	776
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	93	93	93	93	93	93
Heavy Vehicles, %	0	0	4	4	3	3
Mvmt Flow	1	22	717	18	2	834

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1564	726	0	0	735
Stage 1	726	-	-	-	-
Stage 2	838	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.13
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.227
Pot Cap-1 Maneuver	124	428	-	-	866
Stage 1	483	-	-	-	-
Stage 2	428	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	124	428	-	-	866
Mov Cap-2 Maneuver	124	-	-	-	-
Stage 1	483	-	-	-	-
Stage 2	426	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	383	866
HCM Lane V/C Ratio	-	-	0.059	0.002
HCM Control Delay (s)	-	-	15	9.2
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	0.2	0

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	2	1	682	773	4
Future Vol, veh/h	5	2	1	682	773	4
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	92	92	92	92	92	92
Heavy Vehicles, %	0	0	4	4	4	4
Mvmt Flow	5	2	1	741	840	4

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	1585	842	844	0	0
Stage 1	842	-	-	-	-
Stage 2	743	-	-	-	-
Critical Hdwy	6.4	6.2	4.14	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.236	-	-
Pot Cap-1 Maneuver	120	367	784	-	-
Stage 1	426	-	-	-	-
Stage 2	474	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	120	367	784	-	-
Mov Cap-2 Maneuver	120	-	-	-	-
Stage 1	425	-	-	-	-
Stage 2	474	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	30.5	0	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	784	-	149	-	-
HCM Lane V/C Ratio	0.001	-	0.051	-	-
HCM Control Delay (s)	9.6	0	30.5	-	-
HCM Lane LOS	A	A	D	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

Intersection												
Int Delay, s/veh	1.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↑		↕	↕	
Traffic Vol, veh/h	1	0	6	54	0	36	1	646	55	37	737	1
Future Vol, veh/h	1	0	6	54	0	36	1	646	55	37	737	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	50	-	-	75	-	-
Veh in Median Storage, #	-	0	-	-	2	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	4	4	4	3	3	3
Mvmt Flow	1	0	7	59	0	39	1	702	60	40	801	1

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1636	1646	802	1619	1616	732	802	0	0	762	0	0
Stage 1	882	882	-	734	734	-	-	-	-	-	-	-
Stage 2	754	764	-	885	882	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.14	-	-	4.13	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.236	-	-	2.227	-	-
Pot Cap-1 Maneuver	82	100	387	84	105	424	813	-	-	846	-	-
Stage 1	344	367	-	415	429	-	-	-	-	-	-	-
Stage 2	404	416	-	342	367	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	72	95	387	80	100	424	813	-	-	846	-	-
Mov Cap-2 Maneuver	72	95	-	251	273	-	-	-	-	-	-	-
Stage 1	344	350	-	415	429	-	-	-	-	-	-	-
Stage 2	366	416	-	320	350	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	20.6		22.7		0		0.5	
HCM LOS	C		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	813	-	-	238	300	846	-	-
HCM Lane V/C Ratio	0.001	-	-	0.032	0.326	0.048	-	-
HCM Control Delay (s)	9.4	-	-	20.6	22.7	9.5	-	-
HCM Lane LOS	A	-	-	C	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	1.4	0.1	-	-

Intersection						
Int Delay, s/veh	1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↔		↔	↔
Traffic Vol, veh/h	7	55	647	1	68	703
Future Vol, veh/h	7	55	647	1	68	703
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	-	-	-	50	-
Veh in Median Storage, #	2	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	3	3	3	3
Mvmt Flow	7	59	688	1	72	748

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1581	689	0	0	689
Stage 1	689	-	-	-	-
Stage 2	892	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.13
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.227
Pot Cap-1 Maneuver	120	446	-	-	901
Stage 1	498	-	-	-	-
Stage 2	400	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	110	446	-	-	901
Mov Cap-2 Maneuver	298	-	-	-	-
Stage 1	498	-	-	-	-
Stage 2	368	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15.1	0	0.8
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	422	901
HCM Lane V/C Ratio	-	-	0.156	0.08
HCM Control Delay (s)	-	-	15.1	9.3
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	0.5	0.3

Intersection						
Int Delay, s/veh	2.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↑	↗	↘	↑
Traffic Vol, veh/h	50	144	504	86	104	606
Future Vol, veh/h	50	144	504	86	104	606
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	100	75	-
Veh in Median Storage, #	2	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	5	5	4	4
Mvmt Flow	53	152	531	91	109	638

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1387	531	0	0	622	0
Stage 1	531	-	-	-	-	-
Stage 2	856	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.14	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.236	-
Pot Cap-1 Maneuver	159	552	-	-	949	-
Stage 1	594	-	-	-	-	-
Stage 2	420	-	-	-	-	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	141	552	-	-	949	-
Mov Cap-2 Maneuver	321	-	-	-	-	-
Stage 1	594	-	-	-	-	-
Stage 2	372	-	-	-	-	-
























Approach	WB	NB	SB
HCM Control Delay, s	15.1	0	1.4
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	321	552	949
HCM Lane V/C Ratio	-	-	0.164	0.275	0.115
HCM Control Delay (s)	-	-	18.4	14	9.3
HCM Lane LOS	-	-	C	B	A
HCM 95th %tile Q(veh)	-	-	0.6	1.1	0.4

HCM Signalized Intersection Capacity Analysis

7: OR 213 & OR 211

11/08/2021

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	164	275	17	165	245	206	25	219	132	295	246	140	
Future Volume (vph)	164	275	17	165	245	206	25	219	132	295	246	140	
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.95		
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		
Satd. Flow (prot)	1599	1666		1583	1667	1417	1614	1699	1444	1583	1576		
Flt Permitted	0.34	1.00		0.36	1.00	1.00	0.44	1.00	1.00	0.40	1.00		
Satd. Flow (perm)	576	1666		602	1667	1417	740	1699	1444	659	1576		
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	
Adj. Flow (vph)	186	312	19	188	278	234	28	249	150	335	280	159	
RTOR Reduction (vph)	0	2	0	0	0	176	0	0	107	0	16	0	
Lane Group Flow (vph)	186	330	0	188	278	58	28	249	43	335	423	0	
Confl. Peds. (#/hr)			1	1									
Heavy Vehicles (%)	4%	4%	4%	5%	5%	5%	3%	3%	3%	5%	5%	5%	
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		
Protected Phases	5	2		1	6		3	8		7	4		
Permitted Phases	2			6		6	8		8	4			
Actuated Green, G (s)	31.3	21.6		26.9	19.4	19.4	24.2	22.3	22.3	38.0	31.1		
Effective Green, g (s)	33.3	22.6		28.9	20.4	20.4	26.2	23.3	23.3	39.0	32.1		
Actuated g/C Ratio	0.41	0.28		0.35	0.25	0.25	0.32	0.28	0.28	0.48	0.39		
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		
Vehicle Extension (s)	2.5	2.5		2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5		
Lane Grp Cap (vph)	366	458		313	414	352	267	482	409	444	616		
v/s Ratio Prot	c0.07	c0.20		c0.06	0.17		0.00	0.15		c0.11	0.27		
v/s Ratio Perm	0.14			0.15		0.04	0.03		0.03	c0.25			
v/c Ratio	0.51	0.72		0.60	0.67	0.17	0.10	0.52	0.10	0.75	0.69		
Uniform Delay, d1	17.1	26.9		20.0	27.8	24.2	19.4	24.7	21.7	15.2	20.8		
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Incremental Delay, d2	0.8	5.2		2.7	3.9	0.2	0.1	0.7	0.1	6.8	2.9		
Delay (s)	17.9	32.1		22.7	31.7	24.3	19.6	25.4	21.8	22.0	23.7		
Level of Service	B	C		C	C	C	B	C	C	C	C		
Approach Delay (s)		27.0			26.8			23.7			23.0		
Approach LOS		C			C			C			C		
Intersection Summary													
HCM 2000 Control Delay			25.1		HCM 2000 Level of Service					C			
HCM 2000 Volume to Capacity ratio			0.76										
Actuated Cycle Length (s)			82.1		Sum of lost time (s)					16.0			
Intersection Capacity Utilization			70.9%		ICU Level of Service					C			
Analysis Period (min)			15										

c Critical Lane Group

HCM 6th Signalized Intersection Summary
7: OR 213 & OR 211

11/08/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	164	275	17	165	245	206	25	219	132	295	246	140
Future Volume (veh/h)	164	275	17	165	245	206	25	219	132	295	246	140
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1695	1695	1695	1682	1682	1682	1709	1709	1709	1682	1682	1682
Adj Flow Rate, veh/h	186	312	19	188	278	234	28	249	150	335	280	159
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	4	4	4	5	5	5	3	3	3	5	5	5
Cap, veh/h	415	448	27	396	466	394	241	368	312	434	331	188
Arrive On Green	0.12	0.28	0.27	0.11	0.28	0.28	0.04	0.22	0.22	0.16	0.33	0.31
Sat Flow, veh/h	1615	1582	96	1602	1682	1423	1628	1709	1448	1602	1007	572
Grp Volume(v), veh/h	186	0	331	188	278	234	28	249	150	335	0	439
Grp Sat Flow(s),veh/h/ln	1615	0	1678	1602	1682	1423	1628	1709	1448	1602	0	1579
Q Serve(g_s), s	5.5	0.0	12.3	5.6	10.0	9.9	0.9	9.3	6.3	11.0	0.0	18.1
Cycle Q Clear(g_c), s	5.5	0.0	12.3	5.6	10.0	9.9	0.9	9.3	6.3	11.0	0.0	18.1
Prop In Lane	1.00		0.06	1.00		1.00	1.00		1.00	1.00		0.36
Lane Grp Cap(c), veh/h	415	0	475	396	466	394	241	368	312	434	0	519
V/C Ratio(X)	0.45	0.00	0.70	0.47	0.60	0.59	0.12	0.68	0.48	0.77	0.00	0.85
Avail Cap(c_a), veh/h	475	0	1131	396	1061	897	332	931	789	434	0	951
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	15.2	0.0	22.4	15.9	21.8	21.8	20.2	25.1	24.0	17.2	0.0	22.0
Incr Delay (d2), s/veh	0.6	0.0	1.4	0.7	0.9	1.1	0.2	1.6	0.9	8.0	0.0	2.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.0	4.7	1.9	3.7	3.2	0.3	3.7	2.1	4.5	0.0	6.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.8	0.0	23.7	16.5	22.8	22.9	20.4	26.8	24.8	25.3	0.0	24.9
LnGrp LOS	B	A	C	B	C	C	C	C	C	C	A	C
Approach Vol, veh/h		517			700			427			774	
Approach Delay, s/veh		20.9			21.1			25.7			25.1	
Approach LOS		C			C			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.0	23.7	7.1	26.9	12.4	23.3	15.0	19.0				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	7.0	46.0	6.0	41.0	10.0	43.0	10.0	37.0				
Max Q Clear Time (g_c+I1), s	7.6	14.3	2.9	20.1	7.5	12.0	13.0	11.3				
Green Ext Time (p_c), s	0.0	4.0	0.0	1.8	0.2	5.1	0.0	2.0				

Intersection Summary

HCM 6th Ctrl Delay	23.1
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

QUEUE ANALYSIS

Site: 1 [213&Toliver Background AM (Site Folder: General)]

New Site
 Site Category: (None)
 Roundabout

Lane Queues (Distance)															
Lane Number	Contin. Lane	Deg. Satn v/c	Prog. Factor (Queue)	Overflow Queue (ft)	Back of Queue (ft)		Queue at Start of Green (ft)		Cycle Average Queue (ft)		Queue Storage Ratio		Prob. Block. %	Prob. SL Ov. %	Ov. Lane No.
					Av.	95%	Av.	95%	Av.	95%	Av.	95%			
South: OR 213															
Lane 1		0.541	1.000	0.0	42.9	106.7	NA	NA	42.7	77.4	0.03	0.07	0.0	NA	NA
Approach		0.541			42.9	106.7	NA	NA	42.7	77.4	0.03	0.07			
East: Toliver Road															
Lane 1		0.201	1.000	0.0	8.6	21.3	NA	NA	7.5	13.5	0.01	0.01	0.0	NA	NA
Approach		0.201			8.6	21.3	NA	NA	7.5	13.5	0.01	0.01			
North: OR 213															
Lane 1		0.360	1.000	0.0	21.7	53.8	NA	NA	19.9	36.1	0.01	0.03	0.0	NA	NA
Approach		0.360			21.7	53.8	NA	NA	19.9	36.1	0.01	0.03			
West: Toliver Road															
Lane 1		0.069	1.000	0.0	2.8	7.0	NA	NA	2.1	3.7	0.00	0.00	0.0	NA	NA
Approach		0.069			2.8	7.0	NA	NA	2.1	3.7	0.00	0.00			
Intersection		0.541			42.9	106.7	NA	NA	42.7	77.4	0.03	0.07			

Queue Model: HCM Queue Formula.
 Gap-Acceptance Capacity: Traditional M1.

Lane Queues (Vehicles)															
Lane Number	Contin. Lane	Deg. Satn v/c	Prog. Factor (Queue)	Overflow Queue (veh)	Back of Queue (veh)		Queue at Start of Green (veh)		Cycle Average Queue (veh)		Queue Storage Ratio		Prob. Block. %	Prob. SL Ov. %	Ov. Lane No.
					Av.	95%	Av.	95%	Av.	95%	Av.	95%			
South: OR 213															
Lane 1		0.541	1.000	0.0	1.7	4.2	NA	NA	1.7	3.0	0.03	0.07	0.0	NA	NA
Approach		0.541			1.7	4.2	NA	NA	1.7	3.0	0.03	0.07			
East: Toliver Road															
Lane 1		0.201	1.000	0.0	0.3	0.8	NA	NA	0.3	0.5	0.01	0.01	0.0	NA	NA
Approach		0.201			0.3	0.8	NA	NA	0.3	0.5	0.01	0.01			
North: OR 213															
Lane 1		0.360	1.000	0.0	0.8	2.1	NA	NA	0.8	1.4	0.01	0.03	0.0	NA	NA
Approach		0.360			0.8	2.1	NA	NA	0.8	1.4	0.01	0.03			
West: Toliver Road															
Lane 1		0.069	1.000	0.0	0.1	0.3	NA	NA	0.1	0.1	0.00	0.00	0.0	NA	NA
Approach		0.069			0.1	0.3	NA	NA	0.1	0.1	0.00	0.00			
Intersection		0.541			1.7	4.2	NA	NA	1.7	3.0	0.03	0.07			

Queue Model: HCM Queue Formula.
 Gap-Acceptance Capacity: Traditional M1.

Continuous Lane Performance

QUEUE ANALYSIS

Site: 1 [213&Toliver Background PM (Site Folder: General)]

New Site
 Site Category: (None)
 Roundabout

Lane Queues (Distance)															
Lane Number	Contin. Lane	Deg. Satn v/c	Prog. Factor (Queue)	Overflow Queue (ft)	Back of Queue (ft)		Queue at Start of Green (ft)		Cycle Average Queue (ft)		Queue Storage Ratio		Prob. Block. %	Prob. SL Ov. %	Ov. Lane No.
					Av.	95%	Av.	95%	Av.	95%	Av.	95%			
South: OR 213															
Lane 1		0.661	1.000	11.8	78.7	195.6	NA	NA	65.6	118.9	0.05	0.12	0.0	NA	NA
Approach		0.661			78.7	195.6	NA	NA	65.6	118.9	0.05	0.12			
East: Toliver Road															
Lane 1		0.169	1.000	0.0	7.0	17.4	NA	NA	5.9	10.7	0.00	0.01	0.0	NA	NA
Approach		0.169			7.0	17.4	NA	NA	5.9	10.7	0.00	0.01			
North: OR 213															
Lane 1		0.709	1.000	0.0	79.0	196.4	NA	NA	81.9	148.6	0.05	0.12	0.0	NA	NA
Approach		0.709			79.0	196.4	NA	NA	81.9	148.6	0.05	0.12			
West: Toliver Road															
Lane 1		0.223	1.000	0.0	8.8	22.0	NA	NA	8.3	15.0	0.01	0.01	0.0	NA	NA
Approach		0.223			8.8	22.0	NA	NA	8.3	15.0	0.01	0.01			
Intersection		0.709			79.0	196.4	NA	NA	81.9	148.6	0.05	0.12			

Queue Model: HCM Queue Formula.
 Gap-Acceptance Capacity: Traditional M1.

Lane Queues (Vehicles)															
Lane Number	Contin. Lane	Deg. Satn v/c	Prog. Factor (Queue)	Overflow Queue (veh)	Back of Queue (veh)		Queue at Start of Green (veh)		Cycle Average Queue (veh)		Queue Storage Ratio		Prob. Block. %	Prob. SL Ov. %	Ov. Lane No.
					Av.	95%	Av.	95%	Av.	95%	Av.	95%			
South: OR 213															
Lane 1		0.661	1.000	0.5	3.1	7.6	NA	NA	2.6	4.6	0.05	0.12	0.0	NA	NA
Approach		0.661			3.1	7.6	NA	NA	2.6	4.6	0.05	0.12			
East: Toliver Road															
Lane 1		0.169	1.000	0.0	0.3	0.7	NA	NA	0.2	0.4	0.00	0.01	0.0	NA	NA
Approach		0.169			0.3	0.7	NA	NA	0.2	0.4	0.00	0.01			
North: OR 213															
Lane 1		0.709	1.000	0.0	3.1	7.7	NA	NA	3.2	5.8	0.05	0.12	0.0	NA	NA
Approach		0.709			3.1	7.7	NA	NA	3.2	5.8	0.05	0.12			
West: Toliver Road															
Lane 1		0.223	1.000	0.0	0.3	0.9	NA	NA	0.3	0.6	0.01	0.01	0.0	NA	NA
Approach		0.223			0.3	0.9	NA	NA	0.3	0.6	0.01	0.01			
Intersection		0.709			3.1	7.7	NA	NA	3.2	5.8	0.05	0.12			

Queue Model: HCM Queue Formula.
 Gap-Acceptance Capacity: Traditional M1.

Continuous Lane Performance

QUEUE ANALYSIS

Site: 1 [213&Toliver Buildout AM (Site Folder: General)]

New Site
 Site Category: (None)
 Roundabout

Lane Queues (Distance)															
Lane Number	Contin. Lane	Deg. Satn v/c	Prog. Factor (Queue)	Overflow Queue (ft)	Back of Queue (ft)		Queue at Start of Green (ft)		Cycle Average Queue (ft)		Queue Storage Ratio		Prob. Block. %	Prob. SL Ov. %	Ov. Lane No.
					Av.	95%	Av.	95%	Av.	95%	Av.	95%			
South: OR 213															
Lane 1		0.568	1.000	0.0	47.5	118.1	NA	NA	47.3	85.9	0.03	0.07	0.0	NA	NA
Approach		0.568			47.5	118.1	NA	NA	47.3	85.9	0.03	0.07			
East: Toliver Road															
Lane 1		0.224	1.000	0.0	9.6	24.0	NA	NA	8.7	15.7	0.01	0.01	0.0	NA	NA
Approach		0.224			9.6	24.0	NA	NA	8.7	15.7	0.01	0.01			
North: OR 213															
Lane 1		0.378	1.000	0.0	23.0	57.1	NA	NA	21.5	39.0	0.01	0.04	0.0	NA	NA
Approach		0.378			23.0	57.1	NA	NA	21.5	39.0	0.01	0.04			
West: Toliver Road															
Lane 1		0.072	1.000	0.0	2.9	7.2	NA	NA	2.1	3.9	0.00	0.00	0.0	NA	NA
Approach		0.072			2.9	7.2	NA	NA	2.1	3.9	0.00	0.00			
Intersection		0.568			47.5	118.1	NA	NA	47.3	85.9	0.03	0.07			

Queue Model: HCM Queue Formula.
 Gap-Acceptance Capacity: Traditional M1.

Lane Queues (Vehicles)															
Lane Number	Contin. Lane	Deg. Satn v/c	Prog. Factor (Queue)	Overflow Queue (veh)	Back of Queue (veh)		Queue at Start of Green (veh)		Cycle Average Queue (veh)		Queue Storage Ratio		Prob. Block. %	Prob. SL Ov. %	Ov. Lane No.
					Av.	95%	Av.	95%	Av.	95%	Av.	95%			
South: OR 213															
Lane 1		0.568	1.000	0.0	1.9	4.6	NA	NA	1.8	3.4	0.03	0.07	0.0	NA	NA
Approach		0.568			1.9	4.6	NA	NA	1.8	3.4	0.03	0.07			
East: Toliver Road															
Lane 1		0.224	1.000	0.0	0.4	0.9	NA	NA	0.3	0.6	0.01	0.01	0.0	NA	NA
Approach		0.224			0.4	0.9	NA	NA	0.3	0.6	0.01	0.01			
North: OR 213															
Lane 1		0.378	1.000	0.0	0.9	2.2	NA	NA	0.8	1.5	0.01	0.04	0.0	NA	NA
Approach		0.378			0.9	2.2	NA	NA	0.8	1.5	0.01	0.04			
West: Toliver Road															
Lane 1		0.072	1.000	0.0	0.1	0.3	NA	NA	0.1	0.2	0.00	0.00	0.0	NA	NA
Approach		0.072			0.1	0.3	NA	NA	0.1	0.2	0.00	0.00			
Intersection		0.568			1.9	4.6	NA	NA	1.8	3.4	0.03	0.07			

Queue Model: HCM Queue Formula.
 Gap-Acceptance Capacity: Traditional M1.

Continuous Lane Performance

QUEUE ANALYSIS

Site: 1 [213&Toliver BuildoutPM (Site Folder: General)]

New Site
 Site Category: (None)
 Roundabout

Lane Queues (Distance)															
Lane Number	Contin. Lane	Deg. Satn v/c	Prog. Factor (Queue)	Overflow Queue (ft)	Back of Queue (ft)		Queue at Start of Green (ft)		Cycle Average Queue (ft)		Queue Storage Ratio		Prob. Block. %	Prob. SL Ov. %	Ov. Lane No.
					Av.	95%	Av.	95%	Av.	95%	Av.	95%			
South: OR 213															
Lane 1		0.678	1.000	15.2	88.9	221.0	NA	NA	70.3	127.6	0.06	0.14	0.0	NA	NA
Approach		0.678			88.9	221.0	NA	NA	70.3	127.6	0.06	0.14			
East: Toliver Road															
Lane 1		0.183	1.000	0.0	7.7	19.0	NA	NA	6.6	11.9	0.00	0.01	0.0	NA	NA
Approach		0.183			7.7	19.0	NA	NA	6.6	11.9	0.00	0.01			
North: OR 213															
Lane 1		0.724	1.000	0.0	81.8	203.3	NA	NA	86.9	157.6	0.05	0.13	0.0	NA	NA
Approach		0.724			81.8	203.3	NA	NA	86.9	157.6	0.05	0.13			
West: Toliver Road															
Lane 1		0.228	1.000	0.0	9.0	22.3	NA	NA	8.5	15.4	0.01	0.01	0.0	NA	NA
Approach		0.228			9.0	22.3	NA	NA	8.5	15.4	0.01	0.01			
Intersection		0.724			88.9	221.0	NA	NA	86.9	157.6	0.06	0.14			

Queue Model: HCM Queue Formula.
 Gap-Acceptance Capacity: Traditional M1.

Lane Queues (Vehicles)															
Lane Number	Contin. Lane	Deg. Satn v/c	Prog. Factor (Queue)	Overflow Queue (veh)	Back of Queue (veh)		Queue at Start of Green (veh)		Cycle Average Queue (veh)		Queue Storage Ratio		Prob. Block. %	Prob. SL Ov. %	Ov. Lane No.
					Av.	95%	Av.	95%	Av.	95%	Av.	95%			
South: OR 213															
Lane 1		0.678	1.000	0.6	3.5	8.6	NA	NA	2.7	5.0	0.06	0.14	0.0	NA	NA
Approach		0.678			3.5	8.6	NA	NA	2.7	5.0	0.06	0.14			
East: Toliver Road															
Lane 1		0.183	1.000	0.0	0.3	0.7	NA	NA	0.3	0.5	0.00	0.01	0.0	NA	NA
Approach		0.183			0.3	0.7	NA	NA	0.3	0.5	0.00	0.01			
North: OR 213															
Lane 1		0.724	1.000	0.0	3.2	7.9	NA	NA	3.4	6.2	0.05	0.13	0.0	NA	NA
Approach		0.724			3.2	7.9	NA	NA	3.4	6.2	0.05	0.13			
West: Toliver Road															
Lane 1		0.228	1.000	0.0	0.4	0.9	NA	NA	0.3	0.6	0.01	0.01	0.0	NA	NA
Approach		0.228			0.4	0.9	NA	NA	0.3	0.6	0.01	0.01			
Intersection		0.724			3.5	8.6	NA	NA	3.4	6.2	0.06	0.14			

Queue Model: HCM Queue Formula.
 Gap-Acceptance Capacity: Traditional M1.

Continuous Lane Performance

Queuing and Blocking Report
2023 - Background AM

11/08/2021

Intersection: 1: OR 213 & Toliver Rd

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	40	94	165	109
Average Queue (ft)	10	33	46	29
95th Queue (ft)	35	73	121	80
Link Distance (ft)	1026	984	516	462
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: OR 213 & Tractor Supply

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	24	16
Average Queue (ft)	2	1
95th Queue (ft)	14	9
Link Distance (ft)	187	516
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 3: OR 213 & Les Schwab N

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	29	16
Average Queue (ft)	2	1
95th Queue (ft)	15	11
Link Distance (ft)	218	139
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 4: OR 213 & Les Schwab S

Movement	EB	NB	NB	SB
Directions Served	LR	L	T	TR
Maximum Queue (ft)	30	19	17	17
Average Queue (ft)	4	1	0	1
95th Queue (ft)	22	9	8	10
Link Distance (ft)	217		111	139
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		50		
Storage Blk Time (%)		0	0	
Queuing Penalty (veh)		0	0	

Intersection: 5: OR 213 & Safeway N

Movement	WB	NB	SB	SB
Directions Served	LR	TR	L	T
Maximum Queue (ft)	76	9	49	23
Average Queue (ft)	24	0	13	1
95th Queue (ft)	54	7	41	17
Link Distance (ft)	159	183		111
Upstream Blk Time (%)				0
Queuing Penalty (veh)				0
Storage Bay Dist (ft)			50	
Storage Blk Time (%)			0	
Queuing Penalty (veh)			1	

Intersection: 6: OR 213 & Safeway S

Movement	WB	WB	NB	SB
Directions Served	L	R	R	L
Maximum Queue (ft)	53	75	9	62
Average Queue (ft)	21	31	0	19
95th Queue (ft)	46	62	6	51
Link Distance (ft)	256	256		
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			100	75
Storage Blk Time (%)				0
Queuing Penalty (veh)				0

Intersection: 7: OR 213 & OR 211

Movement	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	TR	L	T	R	L	T	R	L	TR
Maximum Queue (ft)	104	194	144	257	203	42	179	57	132	153
Average Queue (ft)	35	83	53	98	67	8	81	13	59	72
95th Queue (ft)	78	157	106	192	136	28	146	36	110	137
Link Distance (ft)		942		745			896			464
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	260		340		225	275		260	205	
Storage Blk Time (%)				0	0					
Queuing Penalty (veh)				1	0					

Network Summary

Network wide Queuing Penalty: 3

Intersection: 1: OR 213 & Toliver Rd

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	67	62	298	372
Average Queue (ft)	28	20	79	101
95th Queue (ft)	61	52	218	270
Link Distance (ft)	1026	984	516	462
Upstream Blk Time (%)				0
Queuing Penalty (veh)				0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: OR 213 & Tractor Supply

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	39	42
Average Queue (ft)	16	2
95th Queue (ft)	40	17
Link Distance (ft)	187	516
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 3: OR 213 & Les Schwab N

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	30	12
Average Queue (ft)	6	0
95th Queue (ft)	26	6
Link Distance (ft)	218	139
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 4: OR 213 & Les Schwab S

Movement	EB	NB	NB	SB
Directions Served	LR	L	T	TR
Maximum Queue (ft)	30	6	6	18
Average Queue (ft)	5	0	0	1
95th Queue (ft)	23	5	5	13
Link Distance (ft)	217		111	139
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		50		
Storage Blk Time (%)			0	
Queuing Penalty (veh)			0	

Intersection: 5: OR 213 & Safeway N

Movement	WB	NB	SB	SB
Directions Served	LR	TR	L	T
Maximum Queue (ft)	68	4	62	24
Average Queue (ft)	29	0	25	1
95th Queue (ft)	56	3	55	17
Link Distance (ft)	159	183		111
Upstream Blk Time (%)				0
Queuing Penalty (veh)				1
Storage Bay Dist (ft)			50	
Storage Blk Time (%)			1	0
Queuing Penalty (veh)			8	0

Intersection: 6: OR 213 & Safeway S

Movement	WB	WB	NB	NB	SB	SB
Directions Served	L	R	T	R	L	T
Maximum Queue (ft)	62	98	13	22	87	40
Average Queue (ft)	27	37	0	1	34	2
95th Queue (ft)	52	70	7	10	69	34
Link Distance (ft)	256	256	464			183
Upstream Blk Time (%)						0
Queuing Penalty (veh)						1
Storage Bay Dist (ft)				100	75	
Storage Blk Time (%)					1	0
Queuing Penalty (veh)					3	0

Intersection: 7: OR 213 & OR 211

Movement	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	TR	L	T	R	L	T	R	L	TR
Maximum Queue (ft)	180	266	144	229	121	46	190	86	242	342
Average Queue (ft)	51	140	74	113	52	13	80	19	118	133
95th Queue (ft)	112	232	128	196	92	38	149	55	217	283
Link Distance (ft)		942		745			896			464
Upstream Blk Time (%)										0
Queuing Penalty (veh)										1
Storage Bay Dist (ft)	260		340		225	275		260	205	
Storage Blk Time (%)	0	0		0					4	2
Queuing Penalty (veh)	0	1		1					17	4

Network Summary

Network wide Queuing Penalty: 38

Intersection: 1: OR 213 & Toliver Rd

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	48	113	151	97
Average Queue (ft)	11	34	40	23
95th Queue (ft)	37	80	110	69
Link Distance (ft)	1026	984	516	462
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: OR 213 & Tractor Supply

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	24	18
Average Queue (ft)	2	1
95th Queue (ft)	14	8
Link Distance (ft)	187	516
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 3: OR 213 & Les Schwab N

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	24	28
Average Queue (ft)	2	1
95th Queue (ft)	15	11
Link Distance (ft)	212	141
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 4: OR 213 & Les Schwab S/Retail Site Access

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	L	TR
Maximum Queue (ft)	39	157	6	48	82	30
Average Queue (ft)	5	59	0	2	26	1
95th Queue (ft)	25	111	4	18	58	22
Link Distance (ft)	217	230		106		141
Upstream Blk Time (%)						0
Queuing Penalty (veh)						0
Storage Bay Dist (ft)			50		75	
Storage Blk Time (%)				0	0	
Queuing Penalty (veh)				0	2	

Intersection: 5: OR 213 & Safeway N

Movement	WB	NB	SB	SB
Directions Served	LR	TR	L	T
Maximum Queue (ft)	59	10	57	36
Average Queue (ft)	23	0	14	1
95th Queue (ft)	50	8	43	9
Link Distance (ft)	159	183		106
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			50	
Storage Blk Time (%)			1	0
Queuing Penalty (veh)			2	0

Intersection: 6: OR 213 & Safeway S

Movement	WB	WB	NB	NB	SB
Directions Served	L	R	T	R	L
Maximum Queue (ft)	57	74	4	13	59
Average Queue (ft)	22	29	0	0	20
95th Queue (ft)	48	55	3	6	51
Link Distance (ft)	256	256	464		
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)				100	75
Storage Blk Time (%)					0
Queuing Penalty (veh)					1

Intersection: 7: OR 213 & OR 211

Movement	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	TR	L	T	R	L	T	R	L	TR
Maximum Queue (ft)	114	173	125	240	179	44	222	53	211	222
Average Queue (ft)	43	73	45	105	79	8	97	14	81	79
95th Queue (ft)	88	142	91	202	141	28	180	38	158	165
Link Distance (ft)		942		745			896			464
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	260		340		225	275		260	205	
Storage Blk Time (%)				0	0		0		0	0
Queuing Penalty (veh)				1	0		0		1	1

Network Summary

Network wide Queuing Penalty: 7

Intersection: 1: OR 213 & Toliver Rd

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	79	72	234	408
Average Queue (ft)	28	24	78	122
95th Queue (ft)	59	56	179	322
Link Distance (ft)	1026	984	516	462
Upstream Blk Time (%)				1
Queuing Penalty (veh)				0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: OR 213 & Tractor Supply

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	34	31
Average Queue (ft)	13	2
95th Queue (ft)	37	19
Link Distance (ft)	187	516
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 3: OR 213 & Les Schwab N

Movement	EB	NB	SB
Directions Served	LR	LT	TR
Maximum Queue (ft)	42	37	67
Average Queue (ft)	6	2	3
95th Queue (ft)	27	22	41
Link Distance (ft)	212	141	252
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 4: OR 213 & Les Schwab S

Movement	EB	WB	NB	SB	SB
Directions Served	LTR	LTR	TR	L	TR
Maximum Queue (ft)	34	119	20	42	63
Average Queue (ft)	7	49	0	16	2
95th Queue (ft)	29	93	8	42	33
Link Distance (ft)	217	230	106		141
Upstream Blk Time (%)					0
Queuing Penalty (veh)					2
Storage Bay Dist (ft)				75	
Storage Blk Time (%)			0		1
Queuing Penalty (veh)			0		0

Intersection: 5: OR 213 & Safeway N

Movement	WB	SB	SB
Directions Served	LR	L	T
Maximum Queue (ft)	86	73	59
Average Queue (ft)	35	27	2
95th Queue (ft)	65	56	26
Link Distance (ft)	159		106
Upstream Blk Time (%)		0	0
Queuing Penalty (veh)		0	3
Storage Bay Dist (ft)		50	
Storage Blk Time (%)		1	1
Queuing Penalty (veh)		6	0

Intersection: 6: OR 213 & Safeway S

Movement	WB	WB	NB	SB	SB
Directions Served	L	R	R	L	T
Maximum Queue (ft)	74	84	17	99	90
Average Queue (ft)	29	39	1	33	5
95th Queue (ft)	61	67	9	70	50
Link Distance (ft)	256	256			183
Upstream Blk Time (%)					1
Queuing Penalty (veh)					4
Storage Bay Dist (ft)			100	75	
Storage Blk Time (%)				0	1
Queuing Penalty (veh)				2	1

Intersection: 7: OR 213 & OR 211

Movement	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	TR	L	T	R	L	T	R	L	TR
Maximum Queue (ft)	217	290	163	252	178	45	216	93	255	453
Average Queue (ft)	66	139	81	120	60	13	96	22	152	172
95th Queue (ft)	141	237	142	208	124	37	174	60	270	357
Link Distance (ft)		942		745			896			464
Upstream Blk Time (%)										1
Queuing Penalty (veh)										7
Storage Bay Dist (ft)	260		340		225	275		260	205	
Storage Blk Time (%)		0		0	0		0		11	3
Queuing Penalty (veh)		1		2	0		0		45	8

Network Summary

Network wide Queuing Penalty: 84

Peak Hour of Queue	Starbucks		Black Rock
	Portland	Hillsboro	Vancouver
Queuing Per Coffee Shop			
Average Queue (Vehicles)	8	7	5
Max Queue (Vehicles)	12	10	10
95th Percentile Queue (Vehicles)	10	10	9
Average Queuing of Starbucks Only (Excluding Black Rock)			
Average Queue (Vehicles)	8	-	
Max Queue (Vehicles)	11	-	
95th Percentile Queue (Vehicles)	10	-	
Overall Average Queuing			
Average Queue (Vehicles)	7		
Max Queue (Vehicles)	11		
95th Percentile Queue (Vehicles)	10		

Queuing Observations

Facility: Starbucks

Location: 1510 NE 122nd Avenue in Portland, Oregon

Date: 8/3/2021

Time: 7:00 AM - 10:00 AM

Hour:Min	Seconds						Peak Hour Queue	
	10	20	30	40	50	60	95th %	Average
7:00 AM	2	2	2	2	2	2		
7:01 AM	2	2	1	1	1	1		
7:02 AM	1	2	2	2	2	2		
7:03 AM	2	1	1	1	1	1		
7:04 AM	1	1	1	1	1	1		
7:05 AM	1	2	2	3	2	2		
7:06 AM	3	3	3	3	4	4		
7:07 AM	5	6	6	6	7	7		
7:08 AM	7	7	7	7	8	7		
7:09 AM	7	6	6	6	5	6		
7:10 AM	6	5	5	6	7	7		
7:11 AM	7	7	6	7	7	6		
7:12 AM	7	7	7	8	8	9		
7:13 AM	9	9	8	8	8	8		
7:14 AM	8	8	8	8	8	8		
7:15 AM	8	8	8	8	8	8		
7:16 AM	8	8	8	8	8	8		
7:17 AM	7	7	7	7	7	7		
7:18 AM	8	8	7	7	8	8		
7:19 AM	8	8	8	8	8	7		
7:20 AM	7	7	8	7	8	8		
7:21 AM	8	8	8	8	8	8		
7:22 AM	8	8	8	8	8	7		
7:23 AM	8	8	7	8	9	9		
7:24 AM	9	8	8	8	9	9		
7:25 AM	9	8	8	8	8	8		
7:26 AM	8	8	8	7	8	8		
7:27 AM	8	8	8	9	9	8		
7:28 AM	8	7	7	7	7	7		
7:29 AM	7	8	7	7	8	8		
7:30 AM	8	8	7	7	8	9		
7:31 AM	9	9	9	9	9	9		
7:32 AM	8	8	8	8	8	9		
7:33 AM	9	8	8	8	7	8		
7:34 AM	8	8	8	8	8	8		
7:35 AM	8	8	7	7	7	7		
7:36 AM	7	6	6	6	7	7		
7:37 AM	6	6	6	6	6	5		
7:38 AM	5	5	5	5	5	5		
7:39 AM	4	4	4	4	3	3		
7:40 AM	3	3	3	3	4	5		
7:41 AM	5	5	5	5	5	6		
7:42 AM	6	6	6	6	6	5		
7:43 AM	5	5	5	5	5	5		
7:44 AM	4	4	5	5	6	6		
7:45 AM	5	5	6	5	5	5		
7:46 AM	5	5	5	5	6	5		
7:47 AM	5	5	5	5	4	5		
7:48 AM	6	7	6	6	6	6		
7:49 AM	6	6	6	6	6	6		

Queuing Observations

Facility: Starbucks

Location: 1510 NE 122nd Avenue in Portland, Oregon

Date: 8/3/2021

Time: 7:00 AM - 10:00 AM

Hour:Min	Seconds						Peak Hour Queue	
	10	20	30	40	50	60	95th %	Average
7:50 AM	5	5	5	5	5	5		
7:51 AM	6	5	6	6	5	5		
7:52 AM	5	4	4	4	5	5		
7:53 AM	5	5	5	5	5	5		
7:54 AM	5	5	5	4	4	4		
7:55 AM	4	4	4	4	4	4		
7:56 AM	5	5	6	7	7	7		
7:57 AM	7	6	6	6	6	6		
7:58 AM	6	6	6	7	6	6		
7:59 AM	6	6	7	7	6	6	9	7
8:00 AM	6	6	6	7	7	7	9	7
8:01 AM	7	6	6	6	6	5	9	7
8:02 AM	5	5	6	7	7	6	9	7
8:03 AM	6	6	7	7	7	7	9	7
8:04 AM	7	7	7	7	7	8	9	7
8:05 AM	7	8	8	7	8	8	9	7
8:06 AM	8	8	8	8	8	8	9	7
8:07 AM	7	8	8	9	9	9	9	7
8:08 AM	8	7	7	7	7	7	9	7
8:09 AM	7	7	7	7	8	8	9	7
8:10 AM	8	8	8	8	9	9	9	7
8:11 AM	9	8	8	8	9	8	9	7
8:12 AM	9	10	10	10	10	10	9	7
8:13 AM	10	10	10	10	11	11	9	7
8:14 AM	11	11	11	11	10	10	9	7
8:15 AM	10	10	10	9	9	9	10	7
8:16 AM	9	9	9	8	8	7	10	7
8:17 AM	7	7	6	6	6	7	10	7
8:18 AM	7	7	7	7	6	7	10	7
8:19 AM	7	7	7	7	7	8	10	7
8:20 AM	8	8	8	8	8	8	10	7
8:21 AM	8	7	7	7	7	7	10	7
8:22 AM	8	8	7	6	7	7	10	7
8:23 AM	7	7	7	7	7	7	10	7
8:24 AM	7	7	7	7	7	6	10	7
8:25 AM	6	6	7	7	7	7	10	7
8:26 AM	7	6	6	6	6	6	10	7
8:27 AM	6	6	5	5	5	5	10	7
8:28 AM	4	4	4	4	4	4	10	7
8:29 AM	4	4	4	4	4	4	10	7
8:30 AM	6	6	5	5	5	6	10	7
8:31 AM	6	6	6	6	6	6	10	7
8:32 AM	7	6	7	7	7	7	10	7
8:33 AM	7	7	8	8	8	8	10	7
8:34 AM	8	8	9	9	8	8	10	7
8:35 AM	8	8	8	8	8	8	10	7
8:36 AM	8	8	9	9	9	9	10	7
8:37 AM	9	9	9	9	9	9	10	7
8:38 AM	9	9	9	10	10	10	10	7
8:39 AM	10	11	11	11	11	11	10	7

Queuing Observations

Facility: Starbucks

Location: 1510 NE 122nd Avenue in Portland, Oregon

Date: 8/3/2021

Time: 7:00 AM - 10:00 AM

Hour:Min	Seconds						Peak Hour Queue	
	10	20	30	40	50	60	95th %	Average
8:40 AM	10	10	10	10	10	10	10	7
8:41 AM	10	10	10	10	10	10	10	7
8:42 AM	9	9	9	9	9	9	10	7
8:43 AM	8	8	8	9	9	9	10	8
8:44 AM	9	9	9	8	8	8	10	8
8:45 AM	7	7	7	7	7	7	10	8
8:46 AM	7	7	7	6	6	6	10	8
8:47 AM	6	6	7	7	7	7	10	8
8:48 AM	7	7	7	7	7	7	10	8
8:49 AM	7	8	8	7	7	7	10	8
8:50 AM	8	8	8	8	8	9	10	8
8:51 AM	9	9	9	9	8	8	10	8
8:52 AM	8	8	8	8	8	7	10	8
8:53 AM	7	7	7	7	7	7	10	8
8:54 AM	7	7	7	7	7	7	10	8
8:55 AM	7	7	7	7	7	7	10	8
8:56 AM	7	7	7	7	7	7	10	8
8:57 AM	7	7	7	7	7	7	10	8
8:58 AM	7	7	8	8	8	8	10	8
8:59 AM	9	9	9	9	9	8	10	8
9:00 AM	8	8	8	8	7	7	10	8
9:01 AM	8	8	8	8	8	8	10	8
9:02 AM	9	9	8	8	8	8	10	8
9:03 AM	8	9	9	9	9	9	10	8
9:04 AM	9	9	8	8	8	8	10	8
9:05 AM	8	8	8	8	8	9	10	8
9:06 AM	9	9	9	8	8	8	10	8
9:07 AM	8	8	8	7	7	7	10	8
9:08 AM	7	7	7	7	8	8	10	8
9:09 AM	8	8	8	8	8	7	10	8
9:10 AM	7	7	7	7	6	7	10	8
9:11 AM	7	7	7	6	6	6	10	8
9:12 AM	6	6	6	6	6	6	10	8
9:13 AM	6	5	5	5	5	4	10	8
9:14 AM	4	4	4	3	3	3	10	8
9:15 AM	3	2	2	2	3	3	10	8
9:16 AM	3	3	3	3	4	3	10	8
9:17 AM	3	3	3	3	3	3	10	8
9:18 AM	3	3	3	3	3	4	10	8
9:19 AM	4	4	3	3	3	2	10	8
9:20 AM	2	3	3	4	4	4	10	7
9:21 AM	4	3	4	4	5	5	10	7
9:22 AM	6	5	6	7	7	7	10	7
9:23 AM	7	7	7	7	7	7	10	7
9:24 AM	7	6	6	7	7	7	10	7
9:25 AM	8	8	8	8	7	7	10	7
9:26 AM	8	7	7	6	6	6	10	7
9:27 AM	6	6	6	6	5	5	10	7
9:28 AM	5	5	5	5	5	5	10	7
9:29 AM	5	5	4	4	4	4	10	7

Queuing Observations

Facility: Starbucks

Location: 1510 NE 122nd Avenue in Portland, Oregon

Date: 8/3/2021

Time: 7:00 AM - 10:00 AM

Hour:Min	Seconds						Peak Hour Queue	
	10	20	30	40	50	60	95th %	Average
9:30 AM	4	4	4	5	5	5	10	7
9:31 AM	5	6	6	6	6	6	10	7
9:32 AM	6	5	5	5	5	5	10	7
9:33 AM	5	5	4	4	4	5	10	7
9:34 AM	5	5	5	4	4	4	10	7
9:35 AM	4	4	4	3	3	3	10	7
9:36 AM	3	3	2	2	2	2	10	7
9:37 AM	2	2	3	3	3	3	10	7
9:38 AM	3	2	2	2	3	3	10	7
9:39 AM	2	2	2	5	5	5	9	7
9:40 AM	5	5	4	4	5	5	9	7
9:41 AM	5	5	6	6	6	6	9	7
9:42 AM	5	5	5	5	5	5	9	7
9:43 AM	6	6	6	6	6	6	9	6
9:44 AM	5	5	5	5	7	7	9	6
9:45 AM	6	6	6	6	6	5	9	6
9:46 AM	5	5	5	4	5	7	9	6
9:47 AM	7	6	6	6	6	5	9	6
9:48 AM	5	5	5	6	6	6	9	6
9:49 AM	6	6	6	6	7	7	9	6
9:50 AM	7	6	6	6	6	5	9	6
9:51 AM	5	6	6	6	6	6	9	6
9:52 AM	6	7	7	7	8	8	9	6
9:53 AM	8	8	8	8	7	8	9	6
9:54 AM	8	8	9	9	10	11	9	6
9:55 AM	11	11	12	12	11	11	9	6
9:56 AM	11	11	11	11	11	11	9	6
9:57 AM	11	11	11	10	10	10	10	7
9:58 AM	10	10	10	10	10	10	10	7
9:59 AM	10	10	10	10	9	9	10	7
MAX	12						10	8

Queuing Observations

Facility: Starbucks

Location: 2995 SE 75th Avenue in Hillsboro, Oregon

Date: 8/3/2021

Time: 7:00 AM - 10:00 AM

Hour:Min	Seconds						Peak Hour Queue	
	10	20	30	40	50	60	95th %	Average
7:00 AM	2	2	2	2	1	1		
7:01 AM	1	1	0	0	1	1		
7:02 AM	2	2	2	2	2	2		
7:03 AM	2	2	2	1	1	1		
7:04 AM	1	1	1	1	1	0		
7:05 AM	1	1	1	1	1	1		
7:06 AM	1	1	1	1	1	1		
7:07 AM	1	1	1	0	1	2		
7:08 AM	2	2	2	3	3	3		
7:09 AM	3	3	4	4	4	4		
7:10 AM	4	4	4	4	3	4		
7:11 AM	5	5	5	4	4	4		
7:12 AM	5	5	4	4	4	4		
7:13 AM	4	5	5	4	4	6		
7:14 AM	5	5	5	5	4	4		
7:15 AM	4	4	4	3	3	3		
7:16 AM	4	4	4	5	5	5		
7:17 AM	5	5	4	4	4	4		
7:18 AM	4	4	4	4	4	4		
7:19 AM	4	3	3	3	3	2		
7:20 AM	2	2	1	1	1	1		
7:21 AM	1	1	2	2	2	1		
7:22 AM	1	1	1	1	1	1		
7:23 AM	1	1	1	2	2	2		
7:24 AM	2	2	2	2	2	2		
7:25 AM	2	2	2	2	2	2		
7:26 AM	1	1	1	1	0	0		
7:27 AM	2	2	2	2	2	2		
7:28 AM	2	1	1	1	1	1		
7:29 AM	3	4	4	4	4	4		
7:30 AM	3	3	3	3	3	3		
7:31 AM	3	3	3	3	2	3		
7:32 AM	3	3	3	3	3	3		
7:33 AM	3	3	3	3	2	2		
7:34 AM	2	1	2	2	2	2		
7:35 AM	1	1	1	1	2	2		
7:36 AM	1	3	3	3	3	3		
7:37 AM	3	3	3	2	2	2		
7:38 AM	2	3	3	3	3	3		
7:39 AM	3	3	3	2	2	4		
7:40 AM	4	4	4	4	4	4		
7:41 AM	4	4	4	4	4	4		
7:42 AM	4	4	4	4	3	3		
7:43 AM	2	2	2	4	4	4		
7:44 AM	4	4	4	4	4	3		
7:45 AM	3	3	3	3	3	2		
7:46 AM	3	3	2	2	2	2		
7:47 AM	2	1	1	1	2	2		
7:48 AM	2	2	2	3	4	4		
7:49 AM	4	4	4	3	4	4		

Queuing Observations

Facility: Starbucks

Location: 2995 SE 75th Avenue in Hillsboro, Oregon

Date: 8/3/2021

Time: 7:00 AM - 10:00 AM

Hour:Min	Seconds						Peak Hour Queue	
	10	20	30	40	50	60	95th %	Average
7:50 AM	4	4	5	4	4	5		
7:51 AM	5	5	5	5	5	6		
7:52 AM	6	6	5	5	5	5		
7:53 AM	5	5	5	7	7	8		
7:54 AM	8	9	8	8	8	7		
7:55 AM	7	6	6	5	5	5		
7:56 AM	5	5	4	4	4	4		
7:57 AM	4	4	4	4	4	4		
7:58 AM	4	4	4	4	4	4		
7:59 AM	5	5	6	6	6	5	6	4
8:00 AM	5	5	6	6	6	6	6	4
8:01 AM	6	6	5	5	5	6	6	4
8:02 AM	6	6	6	6	6	6	6	4
8:03 AM	6	6	6	6	6	6	6	4
8:04 AM	5	5	5	5	5	5	6	4
8:05 AM	5	5	4	4	4	4	6	4
8:06 AM	3	3	3	3	3	4	6	4
8:07 AM	4	4	4	3	3	3	6	4
8:08 AM	3	3	3	2	2	2	6	4
8:09 AM	2	2	2	1	1	1	6	4
8:10 AM	1	1	1	1	1	1	6	4
8:11 AM	0	0	0	0	0	0	6	4
8:12 AM	0	0	0	0	0	0	6	4
8:13 AM	0	0	0	0	0	0	6	4
8:14 AM	0	0	1	1	1	1	6	4
8:15 AM	2	2	3	3	3	3	6	4
8:16 AM	3	3	3	3	3	3	6	4
8:17 AM	3	3	3	3	4	4	6	4
8:18 AM	4	4	4	3	3	3	6	4
8:19 AM	3	4	4	3	3	3	6	4
8:20 AM	3	2	2	1	1	1	6	4
8:21 AM	1	1	1	1	1	1	6	4
8:22 AM	1	1	0	1	2	2	6	4
8:23 AM	2	3	3	5	5	5	6	4
8:24 AM	5	5	5	5	5	5	6	4
8:25 AM	5	5	6	6	6	7	6	4
8:26 AM	8	8	8	8	8	8	6	4
8:27 AM	8	8	8	8	8	8	8	4
8:28 AM	7	7	7	7	7	8	8	4
8:29 AM	8	7	7	7	7	6	8	4
8:30 AM	6	6	6	6	6	6	8	4
8:31 AM	6	6	5	5	5	5	8	4
8:32 AM	5	5	5	5	6	6	8	4
8:33 AM	7	7	7	7	7	6	8	4
8:34 AM	6	7	7	7	7	7	8	4
8:35 AM	7	7	7	7	7	7	8	5
8:36 AM	8	7	7	6	6	6	8	5
8:37 AM	6	6	6	6	6	6	8	5
8:38 AM	6	6	6	6	5	5	8	5
8:39 AM	5	5	4	4	6	6	8	5

Queuing Observations

Facility: Starbucks

Location: 2995 SE 75th Avenue in Hillsboro, Oregon

Date: 8/3/2021

Time: 7:00 AM - 10:00 AM

Hour:Min	Seconds						Peak Hour Queue	
	10	20	30	40	50	60	95th %	Average
8:40 AM	6	6	6	5	5	5	8	5
8:41 AM	5	5	5	5	5	4	8	5
8:42 AM	4	4	4	4	3	3	8	5
8:43 AM	2	2	1	1	1	1	8	5
8:44 AM	1	1	1	0	2	2	8	5
8:45 AM	2	2	2	2	2	2	8	5
8:46 AM	2	2	2	2	2	2	8	5
8:47 AM	2	3	5	5	5	5	8	5
8:48 AM	5	4	4	4	4	3	8	5
8:49 AM	3	3	2	2	2	2	8	5
8:50 AM	2	1	1	1	2	1	8	5
8:51 AM	1	2	2	2	3	3	8	5
8:52 AM	3	2	2	3	3	3	8	5
8:53 AM	3	3	3	3	3	4	8	5
8:54 AM	4	4	3	3	3	4	7	4
8:55 AM	4	6	6	6	7	7	7	4
8:56 AM	9	10	10	10	10	10	8	5
8:57 AM	10	10	10	10	10	10	8	5
8:58 AM	10	9	9	9	9	9	9	5
8:59 AM	10	10	10	10	10	10	10	5
9:00 AM	10	10	10	10	10	10	10	5
9:01 AM	10	10	10	10	10	10	10	5
9:02 AM	10	10	10	10	10	10	10	5
9:03 AM	9	9	9	9	9	9	10	5
9:04 AM	8	8	8	8	8	8	10	5
9:05 AM	8	8	8	8	8	8	10	5
9:06 AM	8	7	8	8	8	8	10	5
9:07 AM	8	7	7	7	7	7	10	5
9:08 AM	7	7	7	7	7	8	10	5
9:09 AM	7	7	7	7	7	7	10	5
9:10 AM	8	7	6	6	6	6	10	6
9:11 AM	6	6	7	7	6	7	10	6
9:12 AM	7	7	7	7	7	7	10	6
9:13 AM	7	7	7	7	7	6	10	6
9:14 AM	6	6	6	6	6	6	10	6
9:15 AM	6	6	6	6	6	5	10	6
9:16 AM	5	6	5	5	6	6	10	6
9:17 AM	7	8	8	8	8	8	10	6
9:18 AM	8	8	8	8	9	9	10	6
9:19 AM	9	9	9	9	9	8	10	6
9:20 AM	8	8	9	8	8	8	10	6
9:21 AM	8	8	8	9	9	8	10	7
9:22 AM	8	8	8	7	7	7	10	7
9:23 AM	7	7	7	7	7	7	10	7
9:24 AM	7	7	7	7	6	6	10	7
9:25 AM	5	5	5	5	5	5	10	7
9:26 AM	5	5	4	4	4	4	10	7
9:27 AM	4	4	3	3	3	3	10	7
9:28 AM	2	2	2	2	1	1	10	7
9:29 AM	1	1	2	2	2	4	10	6

Queuing Observations

Facility: Starbucks

Location: 2995 SE 75th Avenue in Hillsboro, Oregon

Date: 8/3/2021

Time: 7:00 AM - 10:00 AM

Hour:Min	Seconds						Peak Hour Queue	
	10	20	30	40	50	60	95th %	Average
9:30 AM	4	4	4	4	5	5	10	6
9:31 AM	5	5	5	5	5	6	10	6
9:32 AM	6	6	6	5	5	5	10	6
9:33 AM	5	5	5	5	6	6	10	6
9:34 AM	6	6	6	6	6	6	10	6
9:35 AM	6	6	6	8	9	9	10	6
9:36 AM	8	8	9	9	9	9	10	6
9:37 AM	10	10	10	10	10	10	10	6
9:38 AM	10	10	10	10	10	10	10	7
9:39 AM	10	10	10	10	10	10	10	7
9:40 AM	9	9	9	9	9	9	10	7
9:41 AM	8	8	8	8	8	8	10	7
9:42 AM	7	7	7	7	7	7	10	7
9:43 AM	6	6	6	6	7	6	10	7
9:44 AM	6	6	6	6	6	6	10	7
9:45 AM	6	6	6	6	6	5	10	7
9:46 AM	5	5	5	5	4	6	10	7
9:47 AM	6	6	5	5	5	5	10	7
9:48 AM	5	5	5	5	4	4	10	7
9:49 AM	4	4	4	3	3	3	10	7
9:50 AM	4	4	4	4	4	4	10	7
9:51 AM	4	4	4	4	4	4	10	7
9:52 AM	4	3	3	2	2	2	10	7
9:53 AM	2	2	2	2	2	2	10	7
9:54 AM	2	2	2	2	1	1	10	7
9:55 AM	1	1	1	2	1	1	10	7
9:56 AM	1	1	2	1	1	1	10	7
9:57 AM	1	1	1	1	1	1	10	7
9:58 AM	2	2	2	3	3	3	10	7
9:59 AM	3	3	3	3	3	4	10	7
MAX	10						10	7

Queuing Observations

Facility: Starbucks

Location: 1510 NE 122nd Avenue in Portland, Oregon

Date: 8/3/2021

Time: 7:00 AM - 10:00 AM

Hour:Min	Seconds						Peak Hour Queue	
	10	20	30	40	50	60	95th %	Average
7:00 AM	0	0	0	0	1	0		
7:01 AM	0	0	2	2	2	2		
7:02 AM	2	2	1	1	1	1		
7:03 AM	1	1	1	1	0	0		
7:04 AM	0	0	0	0	1	1		
7:05 AM	1	1	1	1	1	1		
7:06 AM	1	1	1	0	2	2		
7:07 AM	2	2	2	2	2	2		
7:08 AM	2	2	2	3	3	3		
7:09 AM	3	2	2	2	2	2		
7:10 AM	1	1	1	1	1	1		
7:11 AM	1	1	1	1	1	1		
7:12 AM	0	0	0	0	0	0		
7:13 AM	0	0	0	0	0	0		
7:14 AM	0	0	0	0	0	0		
7:15 AM	0	0	0	0	0	0		
7:16 AM	1	1	1	1	1	1		
7:17 AM	1	1	1	2	2	2		
7:18 AM	4	4	4	4	4	4		
7:19 AM	4	4	3	3	3	3		
7:20 AM	3	2	2	2	3	2		
7:21 AM	3	3	3	3	3	3		
7:22 AM	3	3	2	2	2	3		
7:23 AM	3	3	3	2	2	2		
7:24 AM	3	3	3	3	3	2		
7:25 AM	2	2	2	2	3	3		
7:26 AM	3	3	2	2	2	2		
7:27 AM	2	2	2	1	1	1		
7:28 AM	1	1	2	2	3	3		
7:29 AM	4	4	4	4	4	3		
7:30 AM	3	3	3	3	3	2		
7:31 AM	2	2	2	2	2	2		
7:32 AM	2	2	2	2	2	2		
7:33 AM	3	3	3	3	3	3		
7:34 AM	4	4	4	3	3	3		
7:35 AM	3	3	3	2	2	4		
7:36 AM	4	3	3	3	3	3		
7:37 AM	3	3	3	3	4	4		
7:38 AM	4	4	4	5	5	5		
7:39 AM	5	4	4	4	4	4		
7:40 AM	4	4	5	6	6	5		
7:41 AM	6	6	6	7	9	9		
7:42 AM	10	10	10	10	10	10		
7:43 AM	10	9	9	9	9	9		
7:44 AM	9	9	9	9	9	8		
7:45 AM	8	8	7	7	7	7		
7:46 AM	7	6	6	6	6	6		
7:47 AM	6	5	6	7	8	7		
7:48 AM	7	7	7	7	8	8		
7:49 AM	8	8	8	8	6	6		

Queuing Observations

Facility: Starbucks

Location: 1510 NE 122nd Avenue in Portland, Oregon

Date: 8/3/2021

Time: 7:00 AM - 10:00 AM

Hour:Min	Seconds						Peak Hour Queue	
	10	20	30	40	50	60	95th %	Average
7:50 AM	6	6	6	6	6	5		
7:51 AM	5	5	4	4	5	5		
7:52 AM	5	4	4	4	4	4		
7:53 AM	3	3	3	3	2	2		
7:54 AM	2	2	3	3	2	2		
7:55 AM	2	2	1	1	0	0		
7:56 AM	0	0	1	1	1	1		
7:57 AM	1	1	1	1	1	1		
7:58 AM	2	2	1	1	1	1		
7:59 AM	1	1	1	1	1	1	9	4
8:00 AM	1	2	3	3	3	2	9	4
8:01 AM	2	2	2	2	2	3	9	4
8:02 AM	3	3	2	2	2	2	9	4
8:03 AM	3	3	3	3	3	3	9	4
8:04 AM	3	3	3	2	2	2	9	4
8:05 AM	2	2	2	2	2	1	9	4
8:06 AM	1	1	1	2	1	1	9	4
8:07 AM	1	1	2	2	4	3	9	4
8:08 AM	3	4	4	4	4	4	9	4
8:09 AM	4	7	7	7	7	7	9	4
8:10 AM	7	7	7	6	6	6	9	4
8:11 AM	6	6	6	5	5	5	9	4
8:12 AM	5	4	4	4	5	5	9	4
8:13 AM	5	6	6	6	6	6	9	4
8:14 AM	6	6	6	6	5	5	9	4
8:15 AM	5	5	6	6	5	5	9	4
8:16 AM	4	5	5	5	5	5	9	4
8:17 AM	4	4	4	4	4	4	9	4
8:18 AM	4	4	4	4	6	6	9	4
8:19 AM	6	6	5	5	4	4	9	4
8:20 AM	4	4	4	4	3	3	9	4
8:21 AM	3	3	3	3	3	3	9	4
8:22 AM	2	3	4	4	4	4	9	4
8:23 AM	4	4	3	3	4	4	9	4
8:24 AM	4	4	4	4	4	4	9	5
8:25 AM	4	4	4	3	3	2	9	5
8:26 AM	2	2	2	2	2	2	9	5
8:27 AM	2	2	3	3	2	2	9	5
8:28 AM	2	2	3	3	3	3	9	5
8:29 AM	3	3	3	3	2	2	9	5
8:30 AM	2	2	2	2	2	2	9	5
8:31 AM	2	2	3	2	3	3	9	5
8:32 AM	3	3	3	3	3	3	9	5
8:33 AM	3	3	4	4	4	3	9	5
8:34 AM	2	2	2	2	3	3	9	5
8:35 AM	3	3	4	4	4	4	9	5
8:36 AM	4	4	4	4	5	5	9	5
8:37 AM	4	5	4	4	4	4	9	5
8:38 AM	4	4	5	5	5	5	9	5
8:39 AM	5	4	4	4	4	3	9	5

Queuing Observations

Facility: Starbucks

Location: 1510 NE 122nd Avenue in Portland, Oregon

Date: 8/3/2021

Time: 7:00 AM - 10:00 AM

Hour:Min	Seconds						Peak Hour Queue	
	10	20	30	40	50	60	95th %	Average
8:40 AM	3	3	3	3	3	3	9	5
8:41 AM	2	2	2	2	2	2	8	4
8:42 AM	3	3	3	3	3	2	8	4
8:43 AM	2	2	2	2	2	2	7	4
8:44 AM	2	2	2	2	2	2	7	4
8:45 AM	2	2	2	2	2	2	7	4
8:46 AM	2	2	2	2	1	1	7	4
8:47 AM	1	1	1	0	1	2	7	4
8:48 AM	2	2	2	2	2	2	6	4
8:49 AM	2	2	2	2	2	1	6	4
8:50 AM	2	2	2	2	3	3	6	4
8:51 AM	3	3	2	2	2	2	6	4
8:52 AM	2	2	3	4	4	4	6	4
8:53 AM	4	4	3	3	3	3	6	4
8:54 AM	3	3	3	3	3	3	6	4
8:55 AM	3	3	3	3	2	2	6	4
8:56 AM	2	2	1	1	1	1	6	4
8:57 AM	1	1	1	0	0	0	6	4
8:58 AM	0	0	0	0	0	0	6	4
8:59 AM	1	1	1	1	1	1	6	4
9:00 AM	1	1	1	1	0	0	6	4
9:01 AM	1	1	1	1	1	1	6	4
9:02 AM	1	1	1	1	1	1	6	4
9:03 AM	1	1	1	1	0	0	6	3
9:04 AM	0	0	0	0	0	0	0	3
9:05 AM	0	0	0	0	0	0	0	3
9:06 AM	0	0	0	1	1	1	0	3
9:07 AM	1	1	1	1	1	1	0	3
9:08 AM	2	2	2	2	2	2	0	3
9:09 AM	1	1	0	0	1	1	0	3
9:10 AM	1	2	2	2	2	2	0	3
9:11 AM	3	3	3	3	3	3	0	3
9:12 AM	3	3	4	4	4	4	0	3
9:13 AM	4	3	2	2	2	2	0	3
9:14 AM	2	2	2	1	1	1	0	3
9:15 AM	1	0	0	0	0	0	0	3
9:16 AM	1	1	1	1	1	1	0	3
9:17 AM	1	1	1	1	1	0	0	3
9:18 AM	0	0	0	0	0	0	0	3
9:19 AM	0	0	0	0	0	0	0	3
9:20 AM	1	1	1	1	1	1	0	3
9:21 AM	1	1	1	1	1	1	0	3
9:22 AM	1	1	1	1	1	0	0	2
9:23 AM	0	0	0	0	0	0	0	2
9:24 AM	0	1	1	1	1	1	0	2
9:25 AM	1	1	1	1	1	1	0	2
9:26 AM	1	1	1	0	0	0	0	2
9:27 AM	1	1	1	1	1	1	0	2
9:28 AM	1	1	1	2	2	2	0	2
9:29 AM	2	2	2	2	2	1	0	2

Queuing Observations

Facility: Starbucks

Location: 1510 NE 122nd Avenue in Portland, Oregon

Date: 8/3/2021

Time: 7:00 AM - 10:00 AM

Hour:Min	Seconds						Peak Hour Queue	
	10	20	30	40	50	60	95th %	Average
9:30 AM	1	1	1	1	1	1	0	2
9:31 AM	1	1	0	1	1	1	0	2
9:32 AM	2	2	2	2	2	2	0	2
9:33 AM	2	2	2	2	2	2	0	2
9:34 AM	2	2	2	2	1	2	0	2
9:35 AM	2	2	2	2	2	2	0	2
9:36 AM	2	2	2	2	2	2	0	2
9:37 AM	1	1	1	1	1	1	0	2
9:38 AM	1	1	1	1	0	0	0	2
9:39 AM	0	0	0	0	0	0	0	2
9:40 AM	0	0	0	0	0	0	0	2
9:41 AM	0	0	1	1	1	1	0	2
9:42 AM	1	1	1	1	1	3	0	2
9:43 AM	4	4	4	4	4	4	0	2
9:44 AM	4	5	5	4	5	5	0	2
9:45 AM	5	5	6	5	5	5	0	2
9:46 AM	6	6	6	6	6	6	0	2
9:47 AM	6	6	6	6	6	7	0	2
9:48 AM	7	7	7	7	6	6	0	2
9:49 AM	6	6	5	5	5	5	0	2
9:50 AM	5	5	5	5	6	5	0	2
9:51 AM	5	5	5	5	5	5	0	2
9:52 AM	5	5	5	6	6	6	0	2
9:53 AM	6	6	5	5	5	5	0	2
9:54 AM	5	5	4	4	4	4	0	2
9:55 AM	3	3	3	3	3	3	0	2
9:56 AM	3	5	5	5	5	5	0	2
9:57 AM	5	5	5	5	5	5	0	3
9:58 AM	4	4	4	4	4	5	0	3
9:59 AM	5	5	5	5	5	5	0	3
MAX	10						9	5

Period of Observations	Burger King 1	Burger King 2	Don Pedro 1	Don Pedro 2
Longest Observed Vehcile Queue				
Morning Peak (7:30 AM to 9:00 AM)	3	2	2	3
Mid-Day Peak (11:30 AM to 1:00 PM)	8	5	5	6
Evening Peak (5:30 PM to 7:00 PM)	5	5	2	4
Average Queuing by Restaurant Type				
Morning Peak (7:30 AM to 9:00 AM)	3		3	
Mid-Day Peak (11:30 AM to 1:00 PM)	7		6	
Evening Peak (5:30 PM to 7:00 PM)	5		3	
Overall Average Queuing				
Morning Peak (7:30 AM to 9:00 AM)	3			
Mid-Day Peak (11:30 AM to 1:00 PM)	6			
Evening Peak (5:30 PM to 7:00 PM)	4			

REPORT OF GEOTECHNICAL ENGINEERING SERVICES

**New Coffee Shop and Retail
Highway 213 North of Safeway, Mollalla, Oregon**

**Geotech
Solutions Inc.**

November 1, 2021

GSI Project: retailcapital-21-1-gi

November 1, 2021

retailcapital-21-1-gi

Retail Capital Partners, LLC
John Reinolt; john@retailcap.com

REPORT OF GEOTECHNICAL ENGINEERING SERVICES **New coffee shop and retail** **Highway 213 N of Safeway, Molalla, Oregon**

As authorized, we are pleased to present our report of geotechnical engineering services for the proposed roughly 2,140 square foot coffee shop and 3,000 square foot future retail located on Highway 213 abutting the north of the Safeway development in Molalla, Oregon. We anticipate single-story buildings with floor slabs on grade, with loads of less than 250 kips for columns, 6 ksf for walls and 500 psf for floors, and associated pavements and utilities. The purpose of our work was to investigate subsurface conditions and provide geotechnical recommendations for design and construction. Our specific scope of work included the following:

- Provide principal-level geotechnical project management including client communications, management of field and subcontracted services, report writing, analyses, and invoicing.
- Review previous reports, geologic maps, and vicinity geotechnical information as indicators of subsurface conditions.
- Complete a site reconnaissance to observe surface features relevant to geotechnical issues, such as topography, vegetation, presence and condition of springs, exposed soils and rock, and evidence of previous grading.
- Complete a “one call” public locate, and a private utility locate for locatable utilities (limited to metallic or with tracer wire). As-built utilities are also requested from the owner. Un-locatable utilities are the responsibility of the owner, and our scope does not include any related utility repair.
- Explore subsurface conditions by advancing four test pits to depths of up to 10 feet or refusal to evaluate near surface conditions. Complete same day falling head infiltration testing in one test pit in or near locations noted by the civil engineer.
- Classify and sample materials encountered and maintain a detailed log of the explorations.
- Determine the moisture content of selected samples obtained from the explorations and complete soil classification testing, as necessary.
- Provide an infiltration rate for the tested strata for use by the civil engineer and estimate the seasonal high ground water based on experience and observed conditions.
- Provide recommendations for earthwork including site preparation, reuse of existing fill in place or stabilized or reinstalled, seasonal material usage, compaction criteria, utility trench backfill, and the need for subsurface drainage.
- Evaluate qualitative liquefaction potential of site soils.
- Provide recommendations for shallow foundations including suitable soils, stabilization, bearing pressures, sliding coefficient, and a seismic site class, as well as geotechnical parameters for deep foundation support for up to one pile type, if needed.
- Provide recommendations for slab support, including a subgrade modulus if needed, underslab rock thickness and materials, and the need for stabilization.

- Provide recommendations for pavements including subgrade preparation and stabilization, and base rock and asphalt concrete and portland cement concrete thicknesses.
- Provide a written report summarizing the results of our geotechnical evaluation.

SITE OBSERVATIONS AND CONDITIONS

Surface Conditions

The property is located in Molalla, Oregon immediately east of Highway 213 and immediately north of the Safeway development and parking lot. Aerial photos indicate the site as relatively unchanged since 1994. The site is vegetated with tall grass, weeds, and occasional trees including oaks to the north and northeast. Several small buildings are present on site, as well as a central paved drive running east from the Highway. The site is relatively flat, but several feet lower than the adjacent Safeway parking lot, separated by an MSE wall.

Subsurface Conditions

Subsurface conditions at the site were explored on October 28 by excavating 4 test pits to depths of up to 12 feet. Subsurface conditions included silt fill and redeveloped topsoil underlain by native silt and gravel.

The fill consisted of an upper and lower fill. The upper fill included soft dark brown silt with a primary root zone of 6 to 9 inches, and soft conditions to depths of roughly 2 feet. Beneath that we encountered lower fill of medium stiff brown silt with some gravel that extended to depths of 3 to 4 feet. Under the fill in TP-2 we encountered stiff gravelly brown native silt to a depth of 6 feet. At depths of 3 feet in TP-1, TP-3, and TP-4 and at 6 feet in TP-2, we encountered very dense sandy gravels and cobbles with trace silt to the depths explored. Moisture contents ranged from 29% to 32% in the silt and silt fill, and 20% to 24% in the gravel.

We observed ground water seepage in all but test pit TP-2. Seepage was noted at depths of generally 3-5 feet perched in the upper portions of the gravel unit, then again at depths of 10-12 feet in TP-1 and TP-4. More perched ground water and at shallower depths is likely present later in the wet season.

Infiltration testing was conducted in test pit TP-2 at a depth of 6 feet in the gravel unit where silt content was trace. After an initial saturation, the test pit was flooded to a depth of one foot and allowed to infiltrate. Falling head test measurements were taken, and the raw unfactored infiltration rate was 0.2 in³/in²/hr. This reflects the well graded and very dense condition of the gravels.

CONCLUSIONS AND RECOMMENDATIONS

General

Based on the results of our explorations, laboratory testing, and engineering analyses, it is our opinion that the project can be developed following these report recommendations. The proposed structure, with the preceding loads, can be supported on shallow spread footings bearing on native soils beneath the fill. Specific geotechnical recommendations are provided in the following sections.

Site Preparation

General - Prior to earthwork construction, the site must be prepared by removing any existing structures, utilities, and vegetation as well as topsoil/root zones. Beneath the topsoil, observed fills

were generally 2 feet thick, and can be reused as structural fill in the dry season, or be cement amended in place during the wet season if mixing equipment can reach an 18-inch depth. Root balls from trees and shrubs may extend several feet and grubbing operations can cause considerable subgrade disturbance. All disturbed material must be removed to undisturbed subgrade and backfilled with structural fill. In general, roots greater than one inch in diameter must be removed as well as areas of concentrated smaller roots. Any excavation resulting from the aforementioned preparation must be brought back to grade with structural fill.

Although tamped upon backfilling, the test pit backfill is soft, and settlement and soft soils can be expected at those locations. If located beneath a building, the uncompacted soils must be completely removed and replaced with structural fill. We also recommend that these relatively uncompacted soils be removed from the test pits located within the proposed paved or hardscaped areas to a depth of 3.0 feet below finished subgrade. The resulting excavation must be brought back to grade with structural fill.

Stabilization and Soft Areas - After stripping, we must be contacted to evaluate the exposed subgrade. This evaluation can be done by proof rolling in dry conditions or probing during wet conditions. Soft areas must be repaired by over-excavating the soft soil, but only to a maximum depth of 2 feet, and installing a separation geosynthetic such as a Propex Geotex 801 or equivalent. Areas that remain soft at the base of the maximum 2-foot excavation may also require a geogrid over the fabric, such as a Gridpro BXP-12 or other suitable approved punched and drawn geogrid. Well graded, angular ¾"-0 or 1.5"-0 crushed rock backfill with less than 6% fines compacted as structural fill must be used to bring the aforementioned areas to-grade.

Working Blankets and Haul Roads - Construction equipment must not operate directly on the silt or silty subgrade in the wet season, as it is susceptible to disturbance and softening. Only in dry late summer conditions do we expect the surface can be trafficked by construction equipment with only localized disturbance. Rock working blankets and haul roads placed over a geosynthetic in a thickened advancing pad can be used to protect subgrades. We recommend that sound, angular, pit run or crushed rock with no more than 6 percent passing a #200 sieve be used to construct haul roads and working blankets over the preceding stabilization fabric. Working blankets must be at least 12 inches thick, and haul roads at least 18 inches thick. These can be reduced to 9 and 14 inches, respectively, with the use of the preceding separation fabric and geogrid. The preceding rock thicknesses are the minimum recommended. Subgrade protection is the responsibility of the contractor and thicker sections may be required based on subgrade conditions during construction and type and frequency of construction equipment.

Earthwork

Fill – After stripping, on-site inorganic silt fill can be re-used for structural fill if properly moisture conditioned and free of deleterious materials. Use of any soils with more than 6% fines will not be feasible during wet conditions. As existing fills are uncontrolled and undocumented, with no observation of compaction equipment, they require reprocessing as structural fill. Fill greater than one foot thick is too deep to recompact in place full depth and requires reducing to roughly one foot thick to rip and recompact in dry weather conditions. Alternatively, and both dry and moist seasons, the fill could be cement amended. In dry late summer conditions, the fills may be near optimum moisture or even need moisture added for compaction. Once moisture contents are within 3 percent of optimum,

the material must be compacted to at least 92 percent relative to ASTM D1557 (modified proctor) using a tamping foot type compactor. Fill must be placed in lifts no greater than 12 inches in loose thickness. In addition to meeting density specifications, fill will also need to pass a wheel roll using a loaded dump truck, water truck, or similar size equipment.

In wet conditions, existing fills are unsuitable for re-use and must be completely removed and replaced or cement amended. Imported wet condition fill must be imported granular soil with less than 6 percent fines, such as clean crushed or pit run rock. This material must also be compacted to 95 percent relative to ASTM D1557. Cement amendment requires an experienced contractor using specialty spreading and mixing equipment. Typically, 5-6% cement in one or two mixing passes is used for an amendment (i.e. mix) depth of 12-18 inches (a soil weight of 100pcf is typically used for the quantity calculation). Due to the fill depth and content, we expect a need for 16-inch amendment depth and 5% cement. However, the depth and quantities can vary based on moisture and organic contents, plasticity, and remaining existing fill depth. Compaction and grading of amended soils must be completed within 4 hours of mixing, and the amended soil must be allowed to cure for 4 days prior to trafficking. Generally, 50 percent of mixed particles should pass a No. 4 sieve.

The permeability of amended soil is extremely low. The surface of amended soils in building and pavement areas must therefore be sloped at a minimum of 0.5 percent to prevent collection of surface water during construction. Amended soils must be removed from all landscape areas prior to planting

Trenches – Caving is expected in all trenches that penetrate the gravel unit, and even with the required shoring, contingencies must be included in the budget and schedule for increased excavation and backfill. Flowing conditions may also occur if seepage is present. Shoring of utility trenches will be required for depths greater than 4 feet and where groundwater seepage or sloughing is present. We recommend that the type and design of the shoring system be the responsibility of the contractor, who is in the best position to choose a system that fits the overall plan of operation.

Depending on the excavation depth and amount of groundwater seepage, dewatering may be necessary for construction of underground utilities. Flow rates for dewatering are likely to vary depending on location, soil type, and the season during which the excavation occurs, and may be extremely high. The dewatering systems, if necessary, must be capable of adapting to variable flows.

Pipe bedding must be installed in accordance with the pipe manufacturers' recommendations. If groundwater is present in the base of the utility trench excavation, we recommend over excavating the trench by 12 to 18 inches and placing trench stabilization material in the base. Trench stabilization material must consist of well-graded, crushed rock or crushed gravel with a maximum particle size of 4 inches and be free of deleterious materials. The percent passing the U.S. Standard No. 200 Sieve must be less than 5 percent by weight when tested in accordance with ASTM C 117.

Trench backfill above the pipe zone must consist of well graded, angular crushed rock or sand fill with no more than 7 percent passing a #200 sieve. Trench backfill must be compacted to 92 percent relative to ASTM D-1557, and construction of hard surfaces, such as sidewalks or pavement, must not occur within one week of backfilling.

Infiltration

Infiltration is not recommended due to the low rates and shallow seasonal ground water.

Seismic Design

General - In accordance with the State of Oregon Structural Specialty Code (SOSSC) and based on our explorations and experience in the site vicinity, the subject project must be evaluated using the parameters associated with Site Class D.

Liquefaction - Liquefaction occurs in loose, saturated, granular soils. Strong shaking, such as that experienced during earthquakes, causes the densification and the subsequent settlement of these soils. The site's underlying silt and very dense gravels are not susceptible to liquefaction, and the risk of structurally damaging deformations from liquefaction at the site is low.

Shallow Foundations

Based on the provided information regarding building type and anticipated structural loads as previously stated, the proposed structure can be supported on shallow spread foundations bearing beneath any fill on the native medium stiff to stiff silt, dense or very dense gravels, or on properly constructed structural fill bearing on these units. Footings must be embedded at least 18 inches below the lowest adjacent, exterior grade. Such footings can be designed for an allowable net bearing pressure of 3,000 psf. The preceding bearing pressure can be increased to 5,000 psf for temporary wind and seismic loads (this is controlled by temporary bearing capacity versus long term compression). Continuous footings must be no less than 18 inches wide, and pad footings must be no less than 24 inches wide. Properly founded footings are expected to settle less than a total of 1 inch, with less than 1/2 inch differentially.

Resistance to lateral loads can be obtained by a passive equivalent fluid pressure of 350 pcf against suitable footings, ignoring the top 12 inches of embedment, and by a footing base friction coefficient of 0.35. Each of these has a factor of safety of 1.5 for less than one inch of deflection.

Excavated footing subgrades in gravel may require recompaction of the surface if the materials are loosened during excavation. If footing construction is to occur in wet conditions, a few inches of crushed rock placed at the base of footings would reduce subgrade disturbance and provide a more uniform and clean working surface for rebar placement.

Slabs

Floor slab loads up to 500 psf are expected to induce less than one-half inch of settlement. A minimum of six inches of clean, angular crushed rock with no more than 5 percent passing a #200 sieve is recommended for under slab rock, but this may need to be thicker in the wet season per the *Working Blanket* sections described herein. A modulus of subgrade reaction of 100 pci may be used for slabs on the medium stiff silt covered with at least 6 inches of crushed rock. Prior to slab rock placement the subgrade will need to be evaluated by us by probing or observing a proof rolling using a fully loaded truck. Under slab rock must be compacted to 92 percent compaction relative to ASTM D1557, and must be proof rolled as well. In addition, any areas contaminated with fines must be removed and replaced with clean rock. If the base rock is saturated or trapping water, this water must be removed prior to slab placement.

Some flooring manufacturers require specific slab moisture levels and/or vapor barriers to validate the warranties on their products. A properly installed and protected vapor flow retardant can reduce slab moistures. If a vapor flow retardant is used, care must be taken not to trap moisture within the overlying granular fill and floor slab concrete.

Retaining Walls

General - The following recommendations are based on the assumptions that: (1) Wall backfill consists of level, drained, angular, granular material, (2) Walls are concrete cantilever-type walls and are less than 5 feet in height, and (3) No surcharges such as stockpiled soil, equipment, or footings are located within 10 feet of the wall.

Walls restrained against rotation must be designed using an equivalent fluid pressure of 50 pcf. Walls not restrained against rotation must be designed using an equivalent fluid pressure of 29 pcf. These forces can be resisted by passive pressure at the toe of the wall using an equivalent fluid pressure of 350 pcf (this must exclude the top 12 inches of embedment) and friction along the base using a friction coefficient of 0.35. Walls less than 6 feet high will not be subject to additional seismic loading in the site silt.

Footings for retaining walls must be designed as recommended in the **Shallow Foundations** section of the report. Footings and floor slabs located above retaining walls and within a zone defined by a plane extending upward at 1H:1V from the bottom of the wall will increase lateral pressures on the wall. We must be consulted for lateral pressure and footing support issues if footings or other surcharge loads are located within this zone.

Backfill - Retaining walls must be backfilled with clean, imported, granular soil with less than 6 % fines, such as clean sand or rock. This material must also be compacted to a minimum of 92 % relative to ASTM D1557 (modified proctor). Within 3 feet of the wall, backfill must be compacted to not more than 90 % relative to ASTM D1557 using hand-operated equipment.

Retaining structures typically rotate and displace roughly 1% of the wall height during development of active pressures behind the wall. We therefore recommend that construction of improvements adjacent to the top of the walls greater than 5 feet high be delayed until approximately two weeks after wall construction.

Drainage

General - We recommend installing perimeter foundation drains around all exterior foundations, particularly where moisture sensitive floor coverings are planned. These drains can be eliminated if a vapor barrier is used over suitably clean under slab rock and poured directly on, and if the slab is higher than current grades and surrounding finished grades within 10 feet of the building. In all cases the surface around building perimeters must be sloped to drain away from the building. As stated previously, our retaining wall recommendations are based on drained conditions. All retaining walls must include a drain constructed as described in the following section.

Foundation and Wall Drains - Foundation and retaining wall drains must consist of a two-foot wide zone of drain rock encompassing a 4-inch diameter perforated pipe, all enclosed with a non-woven filter

fabric. The drain rock must have no more than 2 % passing a #200 sieve and must extend to within one foot of the ground surface. The geosynthetic must have an AOS of a #70 sieve, a minimum permittivity of 1.0 sec⁻¹, and a minimum puncture resistance of 80 pounds (such as Propex Geotex 601 or equivalent). Alternatively, a composite drain board such as an Amoco 500/520 could be used. In both cases, one foot of low permeability soil (such as the on-site silt) must be placed over fabric at the top of the drain to isolate the drain from surface runoff.

Pavement

Asphalt Concrete – At the time of this report we did not have specific information regarding the type and frequency of expected traffic. We therefore developed new asphalt concrete pavement thicknesses for areas exposed to passenger vehicles only and areas exposed to up to 25 trucks per day based on a 20-year design life with a mix of 3-to 5-axle trucks. Traffic volumes can be revised if specific data is available.

Our pavement analyses are based on AASHTO methods and subgrade of structural fill, cement amended fill, or undisturbed medium stiff or better native silt having a resilient modulus of 6,000 psi and prepared as recommended herein. We have also assumed that roadway construction will be completed during an extended period of dry weather. The results of our analyses based on these parameters are provided in the table below. Each of these sections can support a 75,000 GVW fire truck.

<u>Traffic</u>	<u>18k ESAL's</u>	<u>AC (inches)</u>	<u>CR (inches)</u>
Passenger Vehicle Only	-	3	6
Up to 10 Trucks Per Day	75,000	3.5	9

The thicknesses listed in the preceding table are the minimum acceptable for construction during an extended period of dry summer weather where the roadway is not used as a construction haul road or working blanket and will not be trafficked in wet conditions prior to paving. Increased rock thicknesses and stabilization will be required for such uses and for all construction during wet conditions per the **Stabilization** and **Working Blankets and Haul Roads** sections in this report. Crushed rock must conform to ODOT base rock standards and have less than 6 percent passing the #200 sieve. Asphalt concrete must be ½” dense graded level 2 or better HMAC compacted to a minimum of 91 percent of a Rice Density.

Portland Cement Concrete - We developed PCC pavement thicknesses at the site for the assumed one-way traffic levels as shown in the table below. Each of these sections is based on AASHTO methods with no reduction for wander and a composite modulus of subgrade reaction of 350 pci (AASHTO Figure 3.3 with $M_r = 6,000$ psi and 6 inches crushed rock base). Other parameters include 4,000 psi compressive strength portland cement concrete (PCC), and plain jointed concrete **without** load transfer devices or tied concrete shoulders. PCC pavements over trench backfill should not be placed within one week of fill installation unless survey data indicates that settlement of the backfill is complete. Increased rock sections are required for wet season and wet conditions per **Working Blankets and Haul Roads** herein.

Traffic	18k ESALS	PCC (inches)	CRB (inches)
Up to 5 Trucks Per Day	28,000	6	6
Up to 10 Trucks Per Day	75,000	6	6

Subgrade Preparation - The pavement subgrade must be prepared in accordance with the **Earthwork and Site Preparation** recommendations presented in this report. All pavement subgrades must pass a wheel roll prior to paving. Soft areas must be repaired per the preceding **Stabilization** section.

Subgrade Preparation - The pavement subgrade must be prepared in accordance with the **Earthwork and Site Preparation** recommendations presented in this report. All pavement subgrades must pass a proof roll prior to paving. Soft areas must be repaired by over-excavating the soft soil and installing a separation geosynthetic such as a Propex Geotex 801 or equivalent. Areas that remain soft at the base of the excavation may also require a geogrid over the fabric, such as a Gridpro BXP-12 or suitable approved punched and drawn geogrid. Well graded, angular crushed rock backfill compacted as structural fill must be used to bring the aforementioned areas to-grade.

LIMITATIONS AND OBSERVATION DURING CONSTRUCTION

We have prepared this report for use by Retail Capital Partners LLC and the design and construction teams for this project only. The information herein could be used for bidding or estimating purposes but must not be construed as a warranty of subsurface conditions. We have made observations only at the aforementioned locations and only to the stated depths. These observations do not reflect soil types, strata thicknesses, water levels or seepage that may exist between observations. We must be consulted to observe all foundation bearing surfaces, subgrade stabilization, proof rolling of slab and pavement subgrades, installation of structural fill, subsurface drainage, and cut and fill slopes. We must be consulted to review final design and specifications in order to see that our recommendations are suitably followed. If any changes are made to the anticipated locations, loads, configurations, or construction timing, our recommendations may not be applicable, and we must be consulted. The preceding recommendations must be considered preliminary, as actual soil conditions may vary. In order for our recommendations to be final, we must be retained to observe actual subsurface conditions encountered. Our observations will allow us to interpret actual conditions and adapt our recommendations if needed.

Within the limitations of scope, schedule and budget, our services have been executed in accordance with the generally accepted practices in this area at the time this report was prepared. No warranty, expressed or implied, is given.



We appreciate the opportunity to work with you on this project and look forward to our continued involvement. Please contact us if you have any questions.

Sincerely,

A handwritten signature in black ink, appearing to read 'Don Rondema', followed by a horizontal line extending to the right.

Don Rondema, MS, PE, GE
Principal



Attachments –

Site Plan, Guidelines for Classification of Soil, Exploration Logs, Moisture Contents



BASE PHOTO FROM ONXMAPS

GUIDELINES FOR CLASSIFICATION OF SOIL

Description of Relative Density for Granular Soil	
Relative Density	Standard Penetration Resistance (N-values) blows per foot
very loose	0 - 4
loose	4 - 10
medium dense	10 - 30
dense	30 - 50
very dense	over 50

Description of Consistency for Fine-Grained (Cohesive) Soils		
Consistency	Standard Penetration Resistance (N-values) blows per foot	Torvane Undrained Shear Strength, tsf
very soft	0 - 2	less than 0.125
soft	2 - 4	0.125 - 0.25
medium stiff	4 - 8	0.25 - 0.50
stiff	8 - 15	0.50 - 1.0
very stiff	15 - 30	1.0 - 2.0
hard	over 30	over 2.0

Grain-Size Classification	
Description	Size
Boulders	12 - 36 in.
Cobbles	3 - 12 in.
Gravel	1/4 - 3/4 in. (fine) 3/4 - 3 in. (coarse)
Sand	No. 200 - No. 40 Sieve (fine) No. 40 - No. 10 sieve (medium) No. 10 - No. 4 sieve (coarse)
Silt/Clay	Pass No. 200 sieve

Modifier for Subclassification	
Adjective	Percentage of Other Material In Total Sample
Clean/Occasional	0 - 2
Trace	2 - 10
Some	10 - 30
Sandy, Silty, Clayey, etc.	30 - 50

Test Pit # Depth (ft) Soil Description

Explorations completed on October 27, 2021 with a Case Backhoe (Approx. 15,000 pounds).

TP-1

Location: NW portion of site.

Surface conditions: Long Grass.

- 0 – 2 Soft, dark brown SILT FILL, with trace roots; moist. Primary roots to 6 inches.
- 2 – 3 Medium stiff, brown SILT FILL, with trace gravel and trace clay; moist.
- 3 – 6 Dense, brown GRAVELS AND COBBLES, with some silt; wet.
- 6 – 12 Very dense, sandy GRAVELS AND COBBLES, with trace silt; moist to wet.

No caving. Moderate seepage 3-5', 10-12'.

TP-2

Location: NE portion of site.

Surface conditions: Long Grass.

- 0 – 2 Soft, dark brown SILT FILL; moist. Primary roots to 7 inches.
- 2 – 3 Medium stiff, brown SILT FILL, with some brick debris; moist.
- 3 – 6 Stiff, gravelly gray/brown SILT, with trace clay and trace cobbles; moist.
- 6 – 12 Very dense, sandy GRAVELS AND COBBLES, with trace silt; moist.

No caving. No seepage.

TP-3

Location: SE portion of site.

Surface conditions: Long Grass.

- 0 – 2 Soft, dark brown SILT FILL; moist. Primary roots to 6 inches.
- 2 – 3 Medium stiff, brown SILT FILL, with some gravel; moist.
- 3 – 12 Very dense, sandy GRAVELS AND COBBLES, with trace silt; moist to wet.

No caving. Slow seepage 3-5'.

TP-4

Location: SW portion of site.

Surface conditions: Long Grass.

- 0 – 2 Soft, dark brown SILT FILL; moist. Primary roots to 8 inches.
- 2 – 4 Medium stiff, brown SILT FILL, with some gravel and trace clay; moist.
- 4 – 12 Very dense, sandy GRAVELS AND COBBLES, with trace silt; moist to wet.

No caving. Moderate seepage 10-12'.

Exploration	Depth, ft	Moisture Content
TP-1	4.0	29%
TP-1	10.0	24%
TP-2	4.0	29%
TP-2	12.0	20%
TP-3	3.0	29%
TP-4	4.0	32%

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

January 20, 2022

TO: Mac Corthell, Community Development Director
Dan Zinder, Planning Director
Julie Larson, Planning Specialist

FROM: Sam Miller, Sr. Engineer Tech.

RE: 31330 S Hwy 213 Star Bucks (SDR08-2021)

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.

CONDITIONS

1. Specific Requirements To This Site:

1. OR 213: OR 213 is an arterial street under ODOT jurisdiction. Applicant is proposing a shared highway access for the two proposed parcels from OR-213. The property does not have a long enough frontage to facilitate an access that meets ODOT and City spacing standards. The proposed access is aligned with the Les Schwab access on the western side of OR 213 to minimize turning movement conflicts and was placed the maximum possible distance from the existing Molalla Market Center access. Access to the State highway is regulated by OAR 734.51. Applicant is required to obtain a State Highway Approach Road Permit; donate right of way to ODOT to implement the OR 213 cross section in the city's TSP, construct frontage improvements consistent with the TSP, obtain permits for work in the ODOT right of way and eliminate all parking spaces a minimum of 30ft from the new highway right of way line.
2. The proposed change in use will add trips and the threshold for a traffic impact analysis is met. A TIA was submitted with this application and receives City approval with this site design review.
3. Right-of-way Dedications/Donations: On ODOT right-of-way, applicant will be required to donate sufficient right-of-way along variable width improvements and construct curb, sidewalk, and bike lanes as necessary to be consistent with Molalla TSP, ODOT and ADA 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.

4. Access to public streets shall be limited to the location identified on the application materials or as required by ODOT. All accesses shall be constructed in such a manner as to eliminate turning conflicts. The proposed width for access shall meet ODOT requirements.
 5. 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.
 6. 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.
 7. Roadway lighting is required on all new development. Applicant shall be required to install roadway lighting. Location and number shall be determined during design review.
 8. 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 based in accordance with the SDC methodology.
- A. Storm - in Accordance with MMC 17-3.6.050 Storm Drainage and Surface Water Management:
1. Applicant proposes to collect and detain all stormwater onsite and discharge to ODOT facilities. Connection to ODOT facilities shall comply with all ODOT 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 in Accordance with MMC 13.13 Surface Water Management. The onsite storm conveyance system shall be reviewed and inspected by Clackamas County Building under a plumbing permit. The connection to the ODOT facilities shall be reviewed and permitted by ODOT including water quality requirements.
 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. Sanitary - in accordance with MMC 17-3.6.040 Sanitary Sewer Service Improvements
1. Applicant proposes to connect to privately owned 6" sanitary sewer line within Molalla Market Center. Sewer line runs east/west parallel to the property within Molalla Market Center and could be extended to serve the subject parcel with owner permission. Legal agreement signed by both parties will need to be provide for City records. If Application

is not able to obtain agreement, Applicant will be required to extend 8" sewer main from the west side of OR-213 to their property in accordance with MMC 13.08 Sanitary Sewer.

2. Sanitary 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 sanitary SDC charges. SDC's shall be calculated in accordance with the SDC methodology.
- C. Water - in accordance with MMC 17-3.6.040 Water Service Improvements:
1. A 12-inch water main exists on Hwy 213 and will serve this development. Extensions for fire protection may be required and all public water lines shall be within a public waterline easement on formats approved by the Public Works Department. In accordance with MMC 13.04 Water.
 2. 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 a public water line, and dedication of easements.
 3. Water 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 water SDC charges. SDC's shall be calculated in accordance with the SDC methodology.
- D. Parks:
1. Parks SDC's – In accordance with SMC 13.70.110 this commercial design review is exempt from parks SDC charges.
- E. Franchise Utility Services:
1. All utilities to the project shall be served underground services. No overhead crossings of public right of way shall be approved by the city.

DESIGN REQUIREMENTS & POLICIES

1. General Requirements:
 - A. For commercial and industrial 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.
 - B. 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.
 - C. 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.

- D. 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.
- E. 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.
- F. 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.
- G. Plans submitted for review shall meet the requirements described in Section 1 of the Molalla Standard Specifications for Public Works Construction.
- H. 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.
- I. 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.
- J. 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.
- K. All public improvement designs shall meet the requirements of the Molalla Standard Specifications for Public Works Construction as amended by the Public Works Division Manager.
- L. 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.
- M. 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.

- N. 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 for 31330 S Hwy 213

- 1) Please place hydrant location on site map with distances to building showing compliance with fire code.
- 2) Will CO2 be used at this location? If so, please provide location of vessel, fill location.
- 3) Site plan says outdoor dining. Is this food cooked at this site or is it premade and reheated? Asking for need of type 1 hood system.
- 4) What is plan for the 24k square feet that is current labeled as "undeveloped"? Think about future hydrant extension.
- 5) How high is pylon on north side of property? Will this block vision?



Exhibit G:
Oregon Department of Transportation
Comments



Oregon

Kate Brown, Governor

Department of Transportation

Region 1 Headquarters
123 NW Flanders Street
Portland, Oregon 97209
(503) 731.8200
FAX (503) 731.8259

January 19, 2022

ODOT #12397

ODOT Response

Project Name: Starbucks with Drive-Thru	Applicant: Jennifer Danziger
Jurisdiction: City of Molalla	Jurisdiction Case #: SDR08-2021
Site Address: 31330 S Hwy 213, Molalla, OR 97038	Legal Description: 05S 02E 07A Tax Lot(s): 02400
State Highway: OR 213	

The site of this proposed land use action is adjacent to Highway 213. 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 to divide the parcel into two lots which will be developed in two phases. Phase 1, which is the subject of this land use application, proposes to construct a 2,140 sq ft coffee shop with drive through window. Phase 2, has been included in the application materials as a possible future 3,000SF building with a drive through or small retail store. The applicant is proposing a shared highway access that lines up with the Les Schwab access to minimize turning movement conflicts. Access to the State highway is regulated by [OAR 734.51](#).

ODOT has reviewed the submitted application materials including the site plan and traffic impact study (TIS). The TIS was submitted to address City of ODOT concerns about possible overlapping left turning movements and queueing within the highway as a result of the first phase of development.

Phase 1 Comments

Following our review of the TIS as well as conversations and correspondence between ODOT and the applicant, ODOT has some concerns with the location of the western most parking spaces just north of the proposed coffee shop. ODOT recommends a minimum of 30 feet between the edge of ROW donation and placement of parking spaces for the proposed coffee shop. This allows people parked in the spaces to leave without forming a queue onto the highway so that they may leave.

Recommended conditions of approval: Obtain a State Highway Approach Road Permit; donate right of way to ODOT to implement the OR 213 cross section in the city's TSP, construct frontage improvements consistent with the TSP, obtain permits for work in the ODOT right of way and eliminate all parking spaces a minimum of 30ft from the new highway right of way line.

Phase 2 Comments

For the phase 2 development on PAD 2, ODOT has some safety concerns with the location of the drive thru entrance. The entrance may create a queue beyond the drawn directional arrows which

then may block the entrance to the PAD 1 drive thru entrance. ODOT understands that PAD 2 is currently preliminary and mainly reflects the “busiest” case scenario for the development.

Based on these items and considering PAD 2 is currently in its preliminary stages, ODOT is processing the current State Highway Approach Permit Application for PAD 1 only. When development of PAD 2 moves forward, ODOT will review the proposed development to determine if the threshold or “change of use” is met for the requirement of a new State Highway Approach Road Permit for the access ([Change of Use of a Private Connection per OAR 734.51.3020](#)).

A change of use may be triggered if safety concerns arise as a result of the PAD 1 development. If a change of use is met, a new approach application must be submitted. This review will include updated data from OR 213 as well as the effects of the construction and operation of PAD 1.

If a change of use is met and a new access application required, it is possible that ODOT will require approach turn movement restrictions. However, these discussions can occur once site development plans are established for PAD 2.

General Comments

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.

ODOT RECOMMENDED LOCAL CONDITIONS OF APPROVAL

Frontage Improvements and Right of Way

- Curb, sidewalk, and bike lanes shall be constructed as necessary to be consistent with Molalla Transportation System Plan, ODOT and 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

- A State Highway Approach Road Permit from ODOT for access to the state highway is legal for the proposed use is required. Truck turning templates shall be provided as needed to ensure vehicles can enter and exit the approach safely. Site access to the state highway is regulated by OAR 734.51. For application information go to <http://www.oregon.gov/ODOT/HWY/ACCESSMGT/Pages/Application-Forms.aspx>.

Note: It may take **2 to 3 months** to process a State Highway Approach Road Permit.

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 Notice of Decision including conditions of approval to:

ODOT_R1_DevRev@odot.oregon.gov

Development Review Planner: Marah Danielson	503.731.8258, marah.b.danielson@odot.oregon.gov
Traffic Contact: Avi Tayar, P.E.	503.731.8221 Abraham.tayar@odot.state.oregon.gov
District Contact: District 2B	D2bup@odot.state.or.us